Nanaimo
Transportation Master Plan

Nanaimo Transportation Master Plan

Final Report - Adopted by Council Monday May 26,2014

Acknowledgements

The Nanaimo Transportation Master Plan Team would like to acknowledge the contributions of many individuals and groups who contributed to the directions in this document.

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Submitted to the City of Nanaimo

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BEFORE YOUR EYES.

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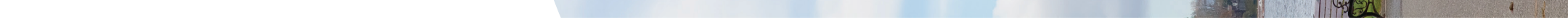


PART 1 Setting The Stage

The City of Nanaimo is a vibrant and growing regional centre on the east coast of Vancouver Island with a population of approximately 87,000 residents. Forming one of two major gateways to Vancouver Island, the City is an important service centre for a regional population of 360,000 people throughout Central and Northern Vancouver Island.

The City's early development patterns were centred on the harbour and Downtown, with the current City boundaries being established only in 1978 through amalgamation with a number of surrounding improvement districts. Through the 1980's and 90's, Nanaimo rapidly expanded northward, resulting in development of lower density neighbourhoods, commercial, retail and employment centres stretching along the Island Highway corridor. The resulting development patterns encouraged automobile use and created obstacles to creating walkable, bikeable, transit-oriented centres.

Recent growth patterns have re-focused development within the City's existing urban growth boundary, resulting in higher levels of infill throughout the City. Looking forward over the next thirty years, the City's population is projected to increase by nearly 40,000 residents and 25,000 jobs, for a total of 126,000 residents and 75,000 jobs.

Providing a vision and policy framework to accommodate future growth, the City's Official Community Plan ***planNanaimo*** supports a more sustainable, compact Nanaimo where people can work, shop, socialize and recreate in close proximity to where they live. ***planNanaimo*** recognizes that as the City grows, so too will the size and complexity of its transportation network. To ensure that future transportation programs, projects and policies support and deliver key community goals and aspirations, the need for a comprehensive transportation plan was identified.

1.1 Purpose and Content of the Plan

The City of Nanaimo began working on development of the City's first comprehensive transportation plan in October 2012. From the outset, the *Nanaimo Transportation Master Plan (NTMP)* was designed to support the City's aspirations for sustainable growth patterns as presented within ***planNanaimo***, the ***Strategic Plan*** and other City policies. The actions within the *NTMP* support and help implement the economic, social, cultural and environmental principles that will contribute toward a more sustainable Nanaimo and larger community aspirations.

The *NTMP* provides the foundation needed to expand travel choices within Nanaimo over the next 25 years and beyond while maintaining and improving the quality of life of residents. The Plan provides long-term direction that will guide transportation policies, priorities and investments within each element of the transportation network, including:

- Making ***walking and cycling*** a more comfortable way to move throughout more parts of the City for people of all ages and abilities.
- Increasing the quality, convenience and accessibility of ***transit*** for trips within the City and region.
- ***Major road*** improvements that create streets that are comfortable for all road users, make best use of the existing infrastructure and plan for an effective future road network, while seeking to reduce our use of cars.
- ***Parking management*** strategies that support the development of quality urban environments in key areas of the City and reflect the expectation that less, but better utilized, parking will be needed in denser, mixed-use areas.
- A refreshed approach toward ***neighbourhood transportation*** to reduce the negative impacts of vehicle traffic while encouraging walking and cycling; enhancing their livability and sustainability.
- Improving ***strategic connections*** for people, goods and services that support our economy between Nanaimo and adjacent communities on Vancouver Island as well as to Metro Vancouver and the rest of British Columbia.

Beyond the transportation system, the NTMP provides guidance on land use strategies that will help reduce the overall demand for travel and make sustainable travel modes more viable for more trips, to more places, for more residents.

The NTMP is a policy guide to inform and shape City Council decisions on land use and transportation. Ultimately, the Plan is Council's commitment to:

- ✓ Provide the ***Leadership*** needed to support a sustainable future.
- ✓ ***Invest*** in sustainable transportation modes that are consistent with the directions and priorities of the plan.
- ✓ ***Integrate*** with other decisions as identified through other plans, policies and initiatives.
- ✓ ***Communicate*** clearly to the residents of and businesses in Nanaimo the transportation priorities for the City.

For the NTMP to be successful, the City will need to work with both public and private sector partners. In the established parts of the City, the Plan will be used as a guide to work with residents, businesses and institutions on transportation improvements to enhance mobility choices and to support quality of life in Nanaimo. For new developments and growth areas, the NTMP will be used to shape land use and transportation choices to reduce future travel demand and encourage more sustainable travel choices.

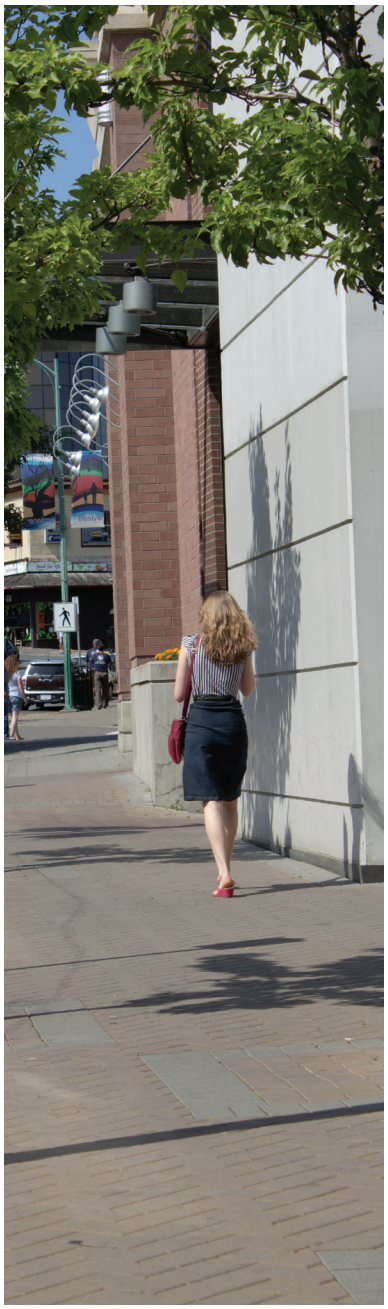
The Plan is separated into four parts.

Part 1 – Setting the Stage highlights the overall purpose, the process, community involvement as well as connections to other plans and initiatives.

Part 2 – Overall Directions features the overarching vision for the City's transportation system and describes the City's commitment toward increasing mode share for sustainable travel including walking, cycling and transit.

Part 3 – Strategy, Policies and Actions describes the long-term plans for each mode and area of transportation that will support sustainable growth and transportation choices.

Part 4 – Implementation summarizes the high priority plans, policies, and projects that the City should implement over the next five years.



1.2 The Process

Over the last eighteen months, the City has been working with the community to develop a comprehensive plan that will serve as the overall guide for planning and implementing transportation improvements in Nanaimo for the next 25 years and beyond. The development of the Plan evolved through a six phase process with check-in points that allowed for opportunities to connect with community stakeholders, the general public, other agencies, and Council; and throughout the process working under direction of the Transportation Advisory Committee.

The six-phase process moved from discussions about the issues and challenges facing the City today and in the long-term through to more in-depth conversations about the vision for the transportation system and specific targets that demonstrate commitment toward sustainable modes of transportation. These aspirations formed the foundation for the collaborative process to identify and develop transportation possibilities for the long-term to be considered with the public and other agencies.

The evolution of the process is documented in three separate Discussion Papers that were used to assist the dialogue with stakeholders and provide opportunity for feedback and more importantly to shape the next stages of the process.

This document reflects the input, feedback and directions received during the entire process providing a clear picture of the City's transportation vision.

1.3 Stakeholder Engagement

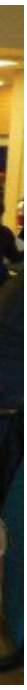
City Council, through ***planNanaimo*** and the ***Strategic Plan***, initiated the development of the NTMP, and will be responsible for approving and implementing the Plan's recommendations. The **Transportation Advisory Committee (TAC)**, a committee of Council with a mix of public and Council representation has supported the Plan throughout the full process providing oversight of the Plan's development.

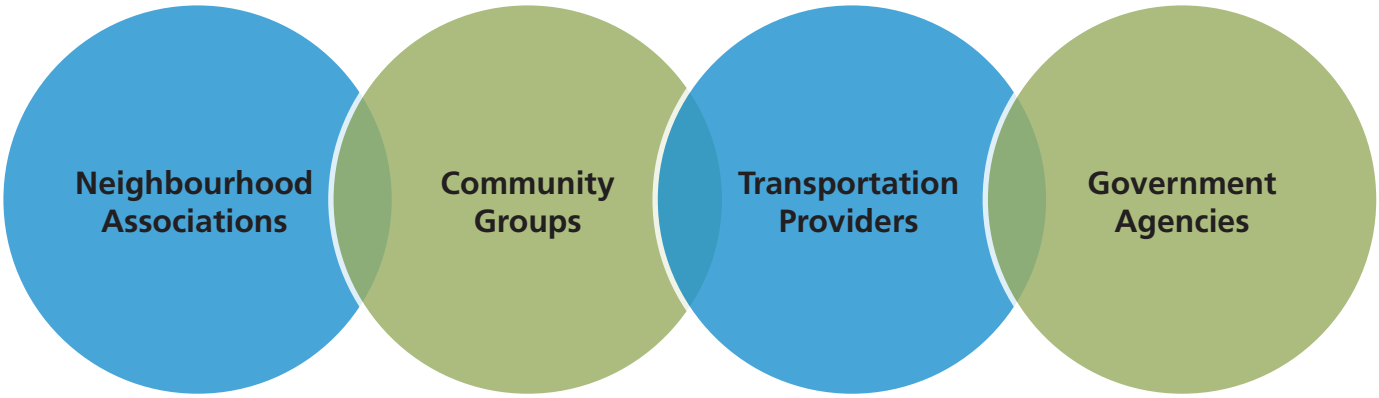
As part of the Plan's development an extensive community engagement and consultation process was undertaken.

The **general public** was invited to provide feedback through two rounds of consultation, including open houses at various locations throughout the City, and on-line surveys. Throughout the full process the City maintained a web site, email and phone contacts for continuous public input. Over 1000 people participated in consultation process across all formats.

Community and agency stakeholders also provided feedback through a series of three **stakeholder workshops**. These workshops provided input and guidance to the Plan at major milestones with the representatives of a wide range transportation and non-transportation interest groups ensuring that the Plan captured and reflected a range of perspectives and aspirations across the community.

Staff from other government and partner transportation agencies, as well as other City departments provided technical input through the **Technical Working Group (TWG)**.





Neighbourhood Associations and Community Groups

- ✓ Neighbourhood Associations
- ✓ DNBIA
- ✓ Chamber of Commerce
- ✓ Economic Development Corporation
- ✓ Greater Nanaimo Cycling Coalition
- ✓ Mid Island Velo Association
- ✓ Access Nanaimo
- ✓ Young Professionals of Nanaimo
- ✓ Nanaimo Area Land Trust
- ✓ Hub City Cycles
- ✓ Nanaimo Mountain Bike Club
- ✓ Nanaimo Disability Resource Centre

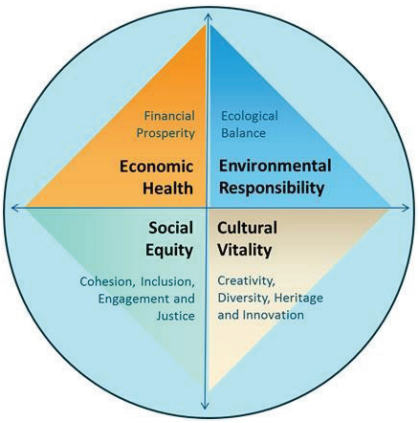
Transportation Providers and Government Agencies

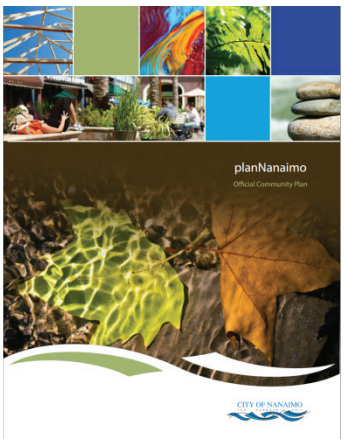
- ✓ BC Ministry of Transportation & Infrastructure
- ✓ RDN & RDN Transit
- ✓ BC Transit
- ✓ Nanaimo Port Authority
- ✓ Nanaimo Car Share
- ✓ Island Corridor Foundation
- ✓ School District #68
- ✓ Nanaimo Airport
- ✓ RCMP
- ✓ Vancouver Island University
- ✓ ICBC
- ✓ Vancouver Island Health Authority
- ✓ District of Lantzville

1.4 Connections to Other Plans

The NTMP is guided by and supports the aspirations of other City policies and plans. It provides a more detailed transportation policy consistent with and supportive of the goals and objectives contained within *the 2012 - 2015* ***Strategic Plan*** and ***planNanaimo***.

The City's ***2012-2015 Strategic Plan*** committed to four key pillars of sustainability: social equity, environmental responsibility, economic health and cultural vitality. Within the context of sustainability, transportation and mobility was identified as one of six strategic priorities. The ***Strategic Plan*** provides specific direction on the NTMP's goals and objectives and issues to be addressed.





The ***City's Official Community Plan (planNanaimo)*** presents the community vision, goals and aspirations for future growth and is the City's guide for planning and land use. Most importantly, the OCP establishes a balanced framework for these decisions and other plans that must support and enhance "social and economic opportunity that has a diverse economy and a wide range of social, recreational, cultural and artistic amenities and services." The transportation priorities and policies expressed through ***planNanaimo*** support greater accessibility and more opportunity for safe and convenient movement around the city by transit, cycling, and walking, as well as enhanced regional connections.

The City also worked with BC Transit and RDN Transit through a parallel process to develop a regional transit strategy – ***Transit Future Plan*** as well as considered the Plan within the context of the RDN's Growth Management Strategy.

In the future, it is anticipated that these and other plans will be updated to reflect the strategies, goals and actions of NTMP.

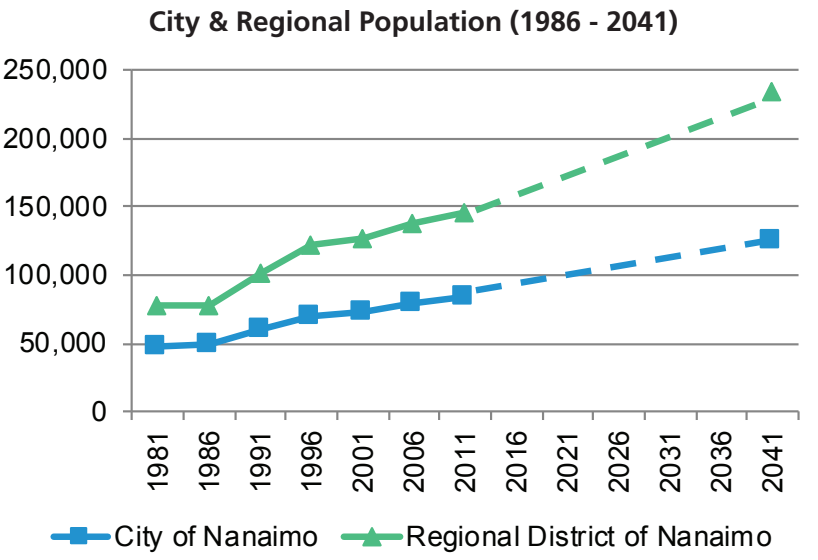
PART 2 The Overall Direction

The overall direction of the NTMP is to provide more and better transportation choices for travel within and through the City, reducing our dependence on the personal automobile and shifting towards a more sustainable transportation system. This section summarizes the overarching vision for the City's transportation system and describes the City's commitment toward reducing growth in vehicle use while increasing mode share for sustainable travel, such as walking, cycling and transit.

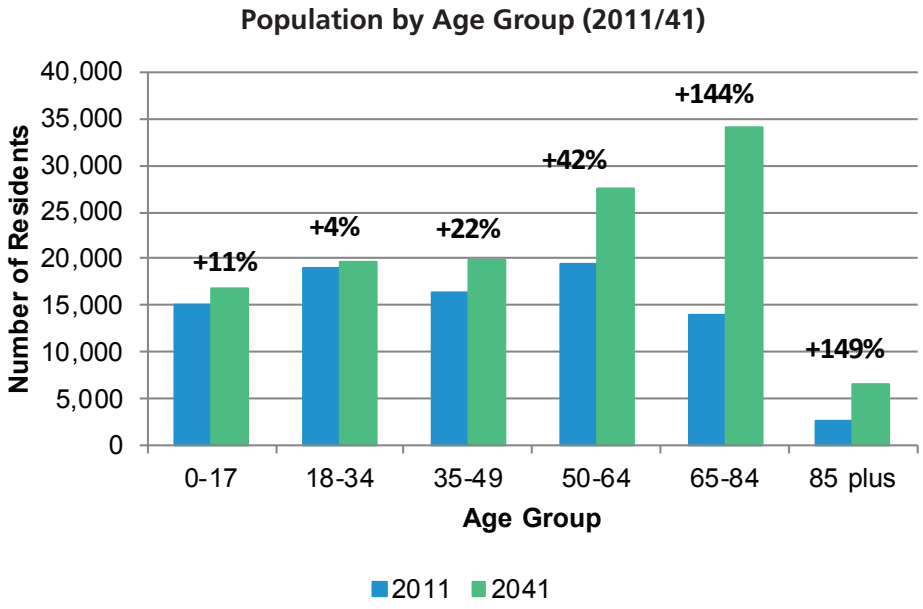
2.1 Community Context

The future needs and choices for travel in the City must be considered within the City's current and historic context as described below.

- ***A growing community in a growing region.*** The City has grown by more than 70% over since 1986. This rate of growth is expected to continue over the next 30 years, with an additional 38,000 new residents forecast to live in Nanaimo by 2041; an average of 5-600 new households per year over the next 30 years. Growth is also expected in the surrounding region, with the regional population projected to increase from 150,000 residents today to 235,000 residents in 2041. Growth in the City and the surrounding region will result in more trips being made within and through the City, placing increasing pressures on the City's transportation system.



- ***An Aging Population.*** Nanaimo's growing population coincides with a changing age demographics, dominated by baby boomers and their children. Today, approximately one fifth (20%) of the City's residents are aged 65 and over, with an additional 30% in their pre-retirement years (45 – 64 years old). By 2041, almost one third of Nanaimo residents will be aged 65 or over. These changes will influence the travel patterns and needs of Nanaimo residents and the demand for different transportation facilities and services.



- ***Evolving housing needs and choices.*** Housing is projected to grow by 54% by 2041; an increase of over 20,000 new units. While ground-oriented units will continue to represent the majority of housing stock in the City, the demand for apartments is projected to grow at a faster rate than historically experienced. By 2041, apartments are expected to represent over one-quarter (28%) of the City's housing stock.

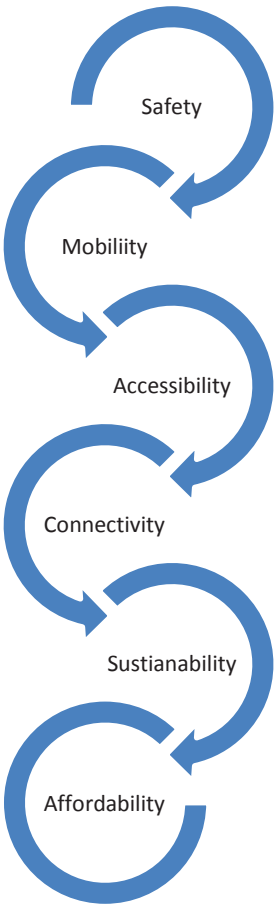
- ***Increasing employment is essential for a vibrant and sustainable Nanaimo.*** Employment in the City is projected to increase by 51% by 2041, with an additional 25,000 new jobs created in the City. The finance, insurance, and real estate sectors will be the fastest growing sectors followed by construction, education and health related jobs.

- ***A community target to reduce greenhouse gas (GHG) emissions*** by 39% below 2007 levels by 2050 is a core feature of ***planNanaimo***. Recognizing that passenger cars make up approximately 56% of all of the City's GHG emissions, investments to reduce vehicle travel are essential to encourage changes in travel behaviour and achieve GHG reduction goals.

2.2 The Transportation Vision

The Vision and strategies contained within the City's ***2012 – 2015 Strategic Plan*** are complementary to ***planNanaimo***'s vision; including a commitment to comprehensive transportation and mobility planning to advance ***planNanaimo***'s goals related to increased mobility options, reduced dependency on the car, and integration of land use and mobility planning.

The NTMP includes a long-term vision for the future of transportation in the City that is designed to support the City's commitments in ***PlanNanaimo*** and the ***Strategic Plan*** toward a vibrant and healthy community and to ensure that residents and visitors have attractive transportation choices to move around within and between different areas of the City. These choices must:



- be ***safe*** and comfortable in order to encourage people of all ages and abilities to walk, cycle, and use transit.
- provide ***mobility*** options for people of all ages and abilities to travel within the City by all modes of transportation.
- be ***accessible*** to people of all abilities and designed to overcome barriers experienced by people with cognitive and mobility challenges. Universal accessible design of the transportation system will improve mobility for all people in the community.
- provide attractive ***connections*** to key activity areas and trip generators in the community.
- be ***sustainable*** by creating attractive walking and cycling facilities and providing transit services that will reduce the need to drive around the City as the primary mode. More compact, dense land use patterns supported by active transportation solutions will serve to reduce GHG emissions and ultimately enhance overall community health and well being.
- be ***affordable*** based on current revenue streams such as general taxation, development cost charges as well as partnerships with private sector interests and development. Shift funding and investments to align with priority modes and support the Plan's Vision.

THE VISION

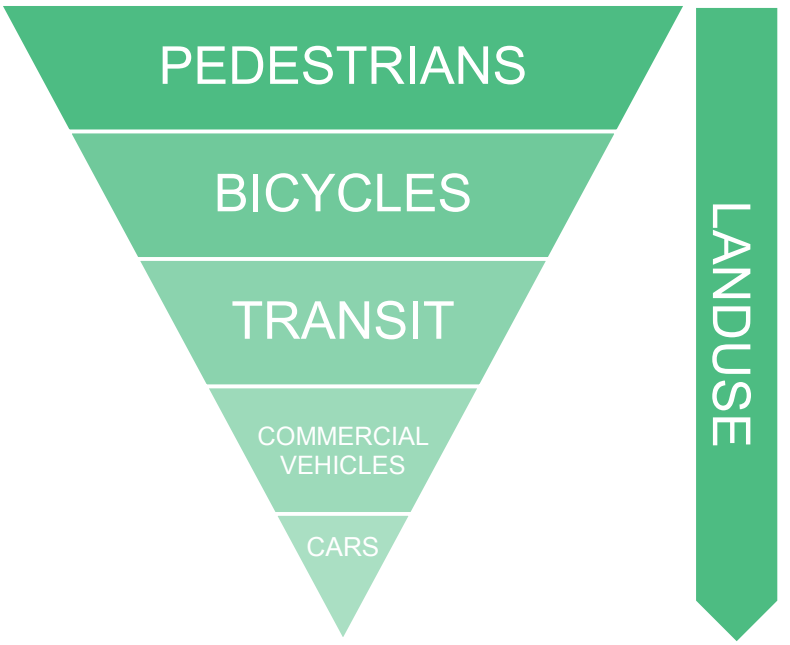
Nanaimo's ***multi-modal*** transportation system will connect the City's residents and businesses to each other, the rest of Vancouver Island and beyond. It will provide ***inclusive transportation choices*** that are safe, comfortable, and accessible for people of all ages and abilities. A system of ***interconnected facilities and services*** will provide ***affordable mobility*** while supporting a shift towards a ***more sustainable mix of transportation alternatives***. The transportation network will seek to create and support a ***vibrant, livable, healthy and sustainable community*** for residents, businesses and visitors alike.

2.3 Shaping Priorities

Like many other communities in North America, the City of Nanaimo is facing challenges from being an auto-dependent community. Over the last 60 years, the form of most North American cities has evolved from being compact and vibrant places of mixed-use areas where people could choose to live, work, shop, socialize and recreate in close proximity, to having more dispersed and segregated land use patterns. This change in the urban structure and form of cities has made it more difficult to walk and cycle to serve our daily needs, and has made it very difficult to provide attractive transit services within dispersed land use patterns.

The design of most cities has inadvertently fostered a market for auto-oriented land uses (such as single-family housing as well as retail and office space) which, in turn has increased pressures to build more road space in order to support driving for our daily needs. Unfortunately, these decisions have also reduced the vibrancy of urban areas and created sizable barriers to providing attractive transportation choices.

The City of Nanaimo has committed to creating more vibrant communities for a future generation of residents and visitors. In the future, key areas of the City could support increased scale, density and mixture of land uses to serve the housing, economic, social, health, cultural and recreational needs of our community.



The transportation system can support these land use patterns with appropriate investments to enable and encourage people to walk, cycle, and use transit. As part of the NTMP, the public and stakeholders provided input and guidance on the priorities for developing the Plan as well as future investments in the City's transportation system. The hierarchy of modes shown below proposes that the City consider the needs of pedestrians, cyclists, public transit, and goods and services movements before that of private automobiles. By considering needs of these priority modes, future transportation plans, programs and projects will provide better, safer and more convenient solutions and encourage over time more people to walk, cycle, and ride the bus.

2.4 Increasing Sustainable Travel

Today, the majority of people (88%) in Nanaimo travel by car to serve their daily needs including work, school, personal and other trip purposes. Conversely, alternative modes such as walking (8.5%), cycling (1.0%) and transit (2.5%) make up only 12% of daily trips. With the City's population projected to grow by nearly 40,000 people over the next thirty years, total travel within the City is projected to increase by 50% by 2041.

In support of planNanaimo and the Strategic Plan, the City's transportation vision seeks to reduce our dependence on automobiles, make sustainable and active travel modes (walking, cycling and transit) more attractive and reduce the growth and negative impacts of driving. The NTMP will provide strategies to accommodate future growth while reducing the environmental, social, cultural and economic costs of travel while supporting the development of a more sustainable future Nanaimo.

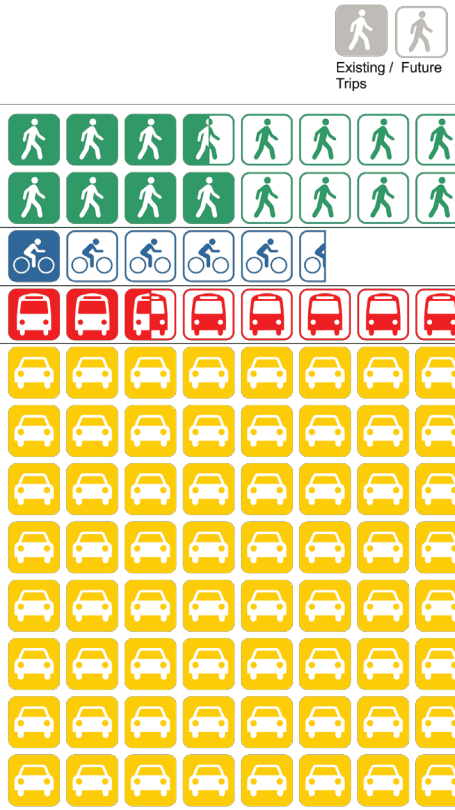
Target 1: Shifting Our Transportation Mix

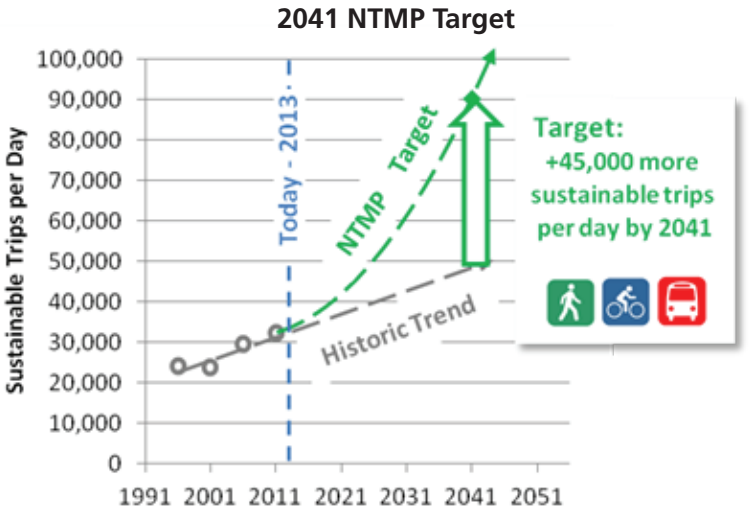
The City's transportation vision includes a significant increase in travel by sustainable modes to support a vibrant and sustainable future community. The NTMP includes a target to **double our sustainable travel mode share** for trips made by walking, cycling and transit from 12 to 24% by 2041. To meet this goal almost half of the new trips within the City would be accommodated by increasing walking (+200%), cycling (+500%) and transit (+500%) versus existing conditions.

These targets represent a significant and bold change in regards to City priorities and investments. Compared to historic changes in travel mode split, 45,000 additional daily sustainable transportation trips would need to be created over the course of the Plan. While this is an ambitious target, based on experience from other cities, they are achievable. Other North American cities with a comparable population and density as Nanaimo have achieved sustainable transportation mode shares between 15 and 20% (i.e. Bellingham, Washington and Eugene, Oregon) and are working towards similar goals. Ambitious mode-share targets are necessary to ensure that Nanaimo's transportation system develops in a way that achieves the vision and goals of the NTMP, and actively supports alternatives to the private vehicle. Sustainable transportation targets should not been seen as a limit and the Plan encourages exceeding goals where possible.

Target Transportation Modal Split (2041)

Existing			Future Target			
Total Trips	Mode Split		Trip Growth	Total Trips	Mode Split	Growth Rate
21,000 trips/day	8.5%		+23,000 trips/day	44,000 trips/day	12%	2x
3,000 trips/day	1.0%		+12,000 trips/day	15,000 trips/day	4%	5x
6,000 trips/day	2.5%		+23,000 trips/day	29,000 trips/day	8%	5x
220,000 trips/day	88%		+55,000 trips/day	275,000 trips/day	76%	1.25x
250,000 trips/day			+115,000 trips/day	365,000 trips/day		1.5x



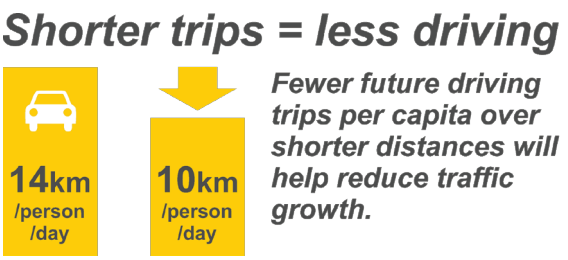


Target 2: Distance Driven

In addition to shifting our transportation mix (ie mode split) towards more sustainable transportation options, reducing the distance we drive (vehicle-kilometer per resident per day) will be an important factor in reducing future air pollution, fuel/energy consumption and green house gas emissions.

In 2011, it was estimated that Nanaimo residents drove, on average, just under 14 kilometers per day per person. While over the duration of the Plan improved vehicle emission standards and shifts to alternative fuels will reduce the impacts of this driving, reducing the total number of kilometers traveled can have an even larger impact.

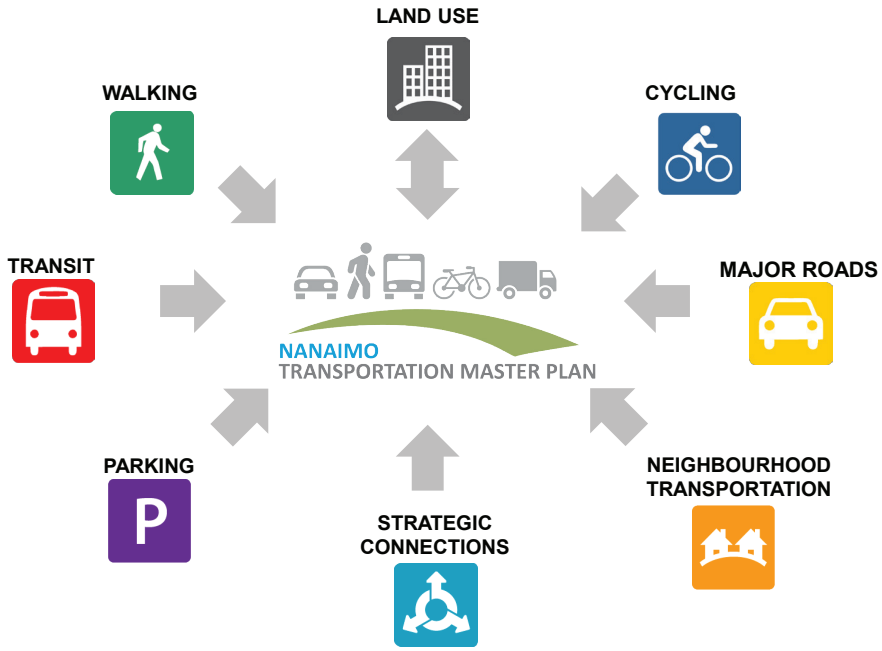
By shifting towards denser, more sustainable land use patterns, future residents would live closer to services and employment reducing trip lengths and making walking, cycling and taking transit more viable options; and when they do drive, their trips will be shorter and overall travel by car will be reduced. A target for travel by car would seek to reduce the average daily travel by car to 10 km/person/day by 2041; a reduction of over 25% over current conditions. To achieve this target will require both a denser more compact community and sustainable transportation choices that are easy, accessible, fast, and flexible.



2.5 Key Features of the Plan

The NTMP provides comprehensive direction for Nanaimo's overall transportation system, including:

1. Land Use
2. Walking
3. Cycling
4. Transit
5. Major Roads
6. Neighbourhood Transportation
7. Parking
8. Strategic Connections



For each of these components, an overarching Strategic Direction statement is provided that defines the future aspirations for that particular component of the transportation system. The strategic direction is then supported by a number of specific Goals, which are simple, succinct statements that are designed to be easily remembered and referenced. Finally, each component has a series of specific Actions, which are grouped under general Policies, and serve to provide direction on how to achieve the objectives of the NTMP. The policies and actions for each mode of transportation are strongly inter-related with the policies and actions of other modes, in order to ensure that transportation system improvements in Nanaimo are seamless, and that the community's overall transportation vision is achieved. A summary of policies from each section of the plan is provided on the following page.

Key Policies by Section

LAND USE
L1: Focus more people, jobs, and services in mobility hubs over time
L2: Create mobility hubs that support walking, biking and transit
L3: Develop complete mobility hubs

WALKING
W1: Focus sidewalk improvements in areas with high pedestrian demand and potential
W2: Develop quality, accessible crossings
W3: Ensure supportive urban design features
W4: Support walking initiatives

CYCLING
C1: Develop and expand the bicycle network
C2: Develop safe, accessible and comfortable bicycle infrastructure
C3: Integrate cycling with other modes and initiatives
C4: Support cycling education and awareness
C5: Promote marketing and communication for cycling

TRANSIT
T1: Create more attractive transit services
T2: Improve and expand transit facilities
T3: Undertake transit-supportive initiatives

MAJOR ROADS
R1: Undertake spot improvements to improve intersection safety and operations
R2: Develop streets for everyone
R3: Undertake Major Road Network Improvements
R4: Manage impacts of vehicle transportation
R5: Update Nanaimo's designated truck route network

NEIGHBOURHOOD TRANSPORTATION
N1: Develop updated neighbourhood traffic calming guidelines
N2: Provide improved standards for the design of safe, multi-modal neighbourhood streets
N3: Ensure that neighbourhood site design promotes a fine-grained, well-connected street network that encourages walking and cycling
N4: Develop neighbourhood transportation networks that respond to surrounding land use and development

PARKING
P1: Manage parking in Downtown and mobility hubs
P2: Manage parking in neighbourhoods with nearby parking generators
P3: Manage parking city-wide

STRATEGIC CONNECTIONS
S1: Strengthen connections to other Vancouver Island communities
S2: Strengthen connections to Metro Vancouver, the rest of British Columbia and beyond
S3: Support Nanaimo's role as a commercial gateway for Vancouver Island
S4: Preserve options for the future of the E&N Railway Corridor

PART 3 Strategies, Policies & Actions

3.1 LAND USE

3.1 Land Use

One of the primary goals of the City's Official Community Plan (***planNanaimo***) is to "build a more sustainable community" by developing higher density urban nodes and corridors that offer a wider range of amenities and services relative to traditional residential neighbourhoods. These urban nodes are intended to have a distinct focus and character with a concentration and diversity of land uses that support living, working, shopping, socializing, and recreating in close proximity. As hubs for social and community services, they will meet the needs of residents throughout the City.

In the future, urban nodes will be some of the most vibrant areas of the City. As most destinations will be within walking distance, streets and public spaces within them must be designed and prioritized for people.

Urban nodes will be connected to each other via attractive corridors of transit-oriented development. These infill areas will boast many of the same qualities as urban nodes at a more modest scale. While the scale will be smaller, they should support mixed use development of sufficient scale and density to provide continuity between nodes.

The aspirations and strategies for sustainable growth described within ***planNanaimo*** are fundamental to achieving the goals and targets of the NTMP. Indeed, the best transportation plans are land-use plans; where and how we travel is directly related to the location, form and character of the developed environment we live, work and play within.

Creating and strengthening urban nodes and corridors will help people meet their daily needs with less travel over shorter distances and create opportunities for them to walk and cycle within and take transit between nodes and along corridors. Over time this will reduce our overall demand for travel, especially by personal vehicles; fulfilling a key goal of the NTMP.

While land use patterns are important, to achieve this vision the transportation network needs to support alternative modes of travel. Within nodes and corridors streets and other public spaces must be designed to make walking, cycling and transit attractive for all residents and visitors. Each of the urban nodes should be developed as 'mobility hubs' served by quality facilities and an exceptional experience to encourage people to use sustainable modes of transportation. Combining both land use and transportation policies and actions can create synergies that will support the goals and objectives of both the NTMP and ***planNanaimo***.

For the purpose of the NTMP, seven mobility hubs are identified. Within these areas future development and densification is expected and in some cases shifting travel patterns towards more sustainable transportation choices have already been observed.

The existing character and aspirations for each mobility hub (**Map 1**) are briefly highlighted below.

- **Downtown** is the City's centre, with arts and culture, commercial, entertainment and government services located within its historic central business district and waterfront. It contains some of the City's highest population and employment densities, including office and apartment buildings; residential densities of 150 units per hectare in high rise buildings are supported in some areas. Downtown already has the highest proportion of sustainable transportation trips in the City.

  The combination of a grid-like network and interesting streetscapes make walking comfortable and enjoyable. From a transportation perspective, opportunities exist for increased residential and commercial densities to support a wider range of businesses and services and improvements to the transportation network, including a new Downtown Transit Exchange, cycling facilities, and streetscape improvements along Terminal Ave and Front St will help make Downtown a more successful mobility hub.

- **Country Club** is a commercial centre located in central Nanaimo. Anchored by the Country Club Centre Mall, it contains a mix of high,

medium and low density residential development, a significant amount of commercial development, a secondary school and a transit exchange. Due to its central location within the City, and access to transit, residents of Country Club already tend to drive less than in other parts of the City. A key opportunity for the Country Club mobility hub could include the redevelopment of Norwell Dr and its transit exchange along with future redevelopment of adjacent buildings, including Country Club Centre, to create a more comfortable pedestrian-friendly streetscape.

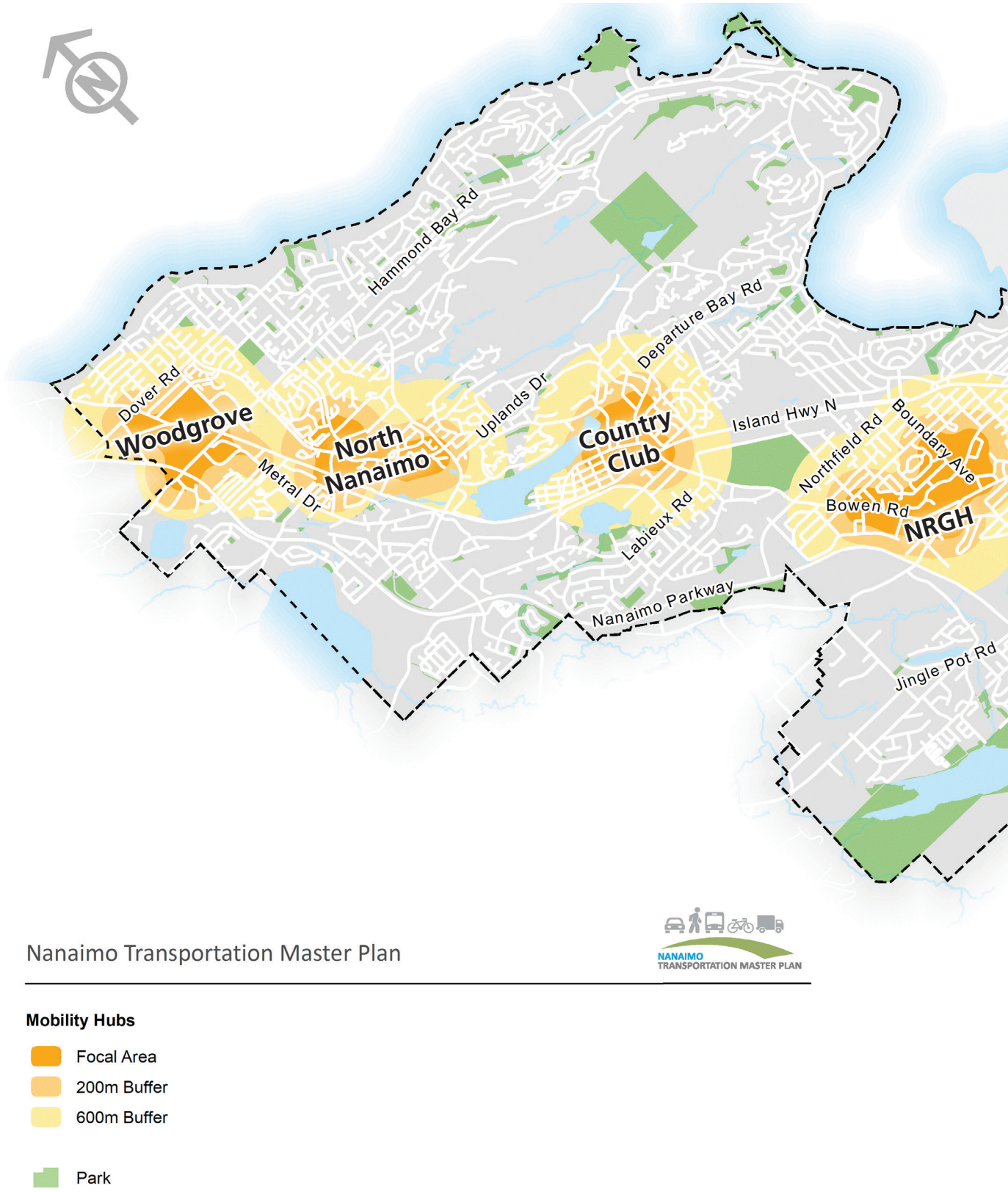
- **Nanaimo Regional General Hospital (NRGH)** is the primary centre for health services in the Nanaimo region and beyond and is one of the City's largest employers. The mobility hub is anchored by the hospital campus and surrounded by mixed density residential neighbourhoods and commercial development along the Bowen Road and Boundary Ave corridors. In future, professional offices, senior's facilities, community services, services and medium to high residential uses are encouraged in ***planNanaimo*** to enhance the area as a neighbourhood to live, work and support services.

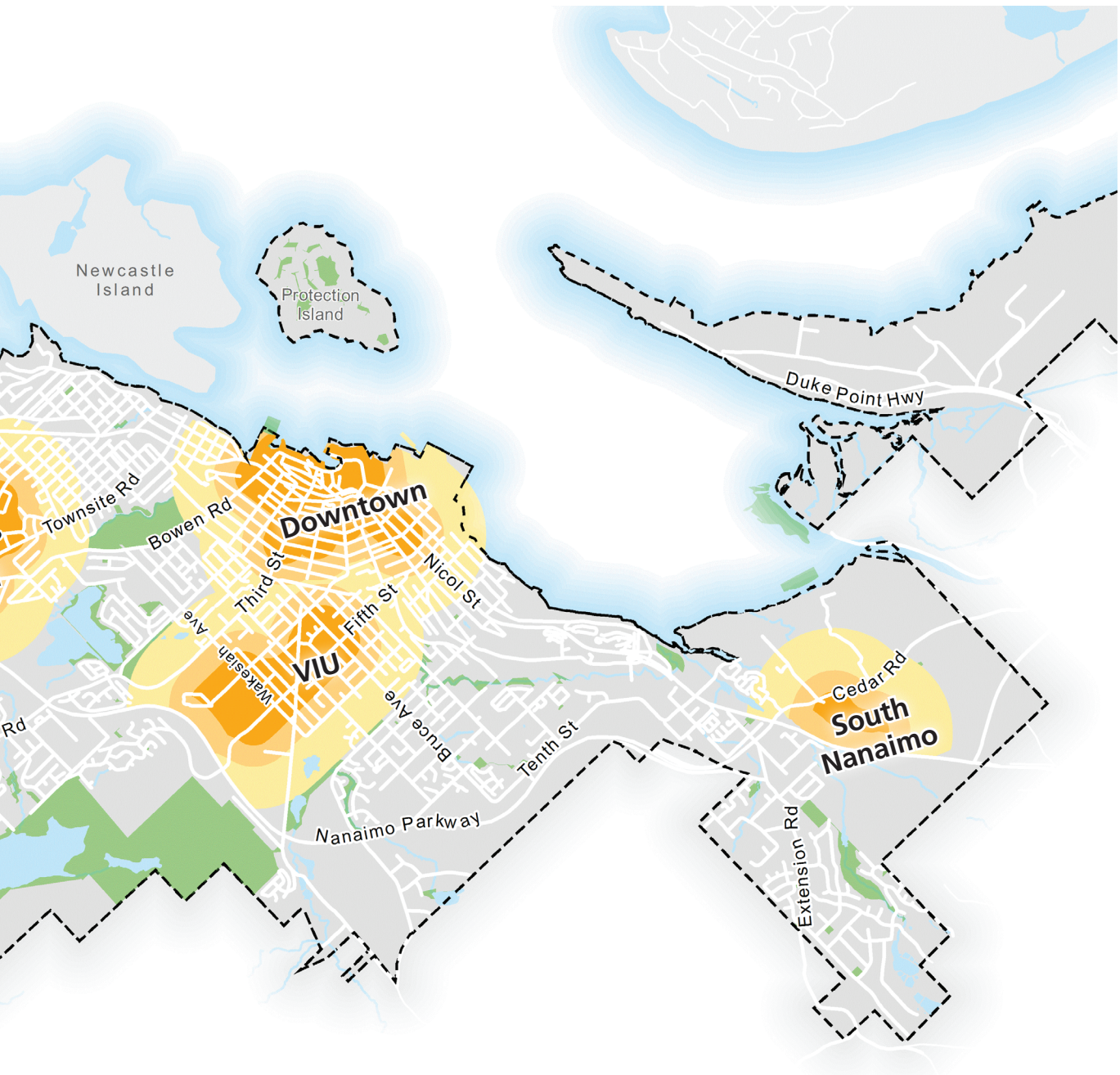
  As many services are not immediately adjacent to residential areas, the provision of a strong cycling and transit network can help residents travel beyond walking distances. High quality transit services are envisioned along Bowen Rd with local transit services providing direct service to the hospital campus. The high concentration of employment creates opportunities for working with a single employer to shift commuting travel patterns to transit and cycling and reduce parking demand within surrounding neighbourhoods.

- **Woodgrove** is identified as a future potential mobility hub, due to its role as regional commercial centre providing a wide range of retail and service uses to residents in central and northern Vancouver Island. A transit exchange, located within the Woodgrove Mall site, provides excellent access to employment and services, but limited access to other parts of the Woodgrove area. Low-density / car-oriented commercial developments currently create long travel distances, and high volume arterial roadways create barriers for those walking to nearby sites. While Woodgrove has an extensive number of services and employment with strong transit services, the built environment currently has limited residential development. In the long-term, Woodgrove is envisioned to continue to be a northern regional centre in Nanaimo with extensive commercial and retail services, with higher concentrations of medium to high residential development. Future commercial and residential redevelopment should encourage walking, cycling and transit. A future transit exchange with integrated cycling and pedestrian facilities will allow more safe and comfortable travel for non-automobile modes within and throughout Woodgrove.

- **North Nanaimo** is anchored by two commercial centres (North Nanaimo

Map 1 - Existing & Proposed Mobility Hubs





CITY OF NANAIMO THE HARBOUR CITY

URBAN systems

Centre/Longwood Station) with a mix of medium to high density residential development located between them along the Upland Dr corridor. Recent development has focused on seniors, increasing the proportion of residents with limited access to a car.

Within this area, the North Nanaimo Centre Mall is a traditional mall with a large central building surrounded by surface parking. As the area continues to develop, focusing on improving pedestrian/cyclist mobility and comfort while breaking down barriers formed by major roads will help increase the amount of walking and cycling occurring within the hub. Improved future transit services within the hub and to adjacent hubs will help make the area an even more attractive place to live and work.

- **South Nanaimo** is a future potential mobility hub envisioned within the Sandstone Master Plan. The Sandstone Master Plan outlines a village centre, located to the south-east of the Cedar Road / Island Hwy / Parkway interchange with a mix of commercial and medium to high density residential (up to 150 units per hectare). The village is located adjacent to a future regional commercial centre, light industrial areas and residential neighbourhoods providing a wide range of services and employment. The village could also host a future South Nanaimo transit exchange.

  In the long-term, the development form will support the function of the South Nanaimo Urban Node as both a finely grained, highly integrated mix of commercial and residential land uses with various forms of commercial/ office development and densities of residential development, and a regional scale shopping centre with retail commercial and services.

  Although free standing retail warehouses and large box retailer will be permitted in the South Nanaimo node, all large format retailing will be required to implement design standards that are street-oriented to create vibrant and accessible streetscapes.

- **Vancouver Island University (VIU)** is the city-wide and regional centre for educational services, and is a major employment node within the City. The area's unique demographics, good access to transit and neighbourhood layout support higher levels of non-automobile travel with the neighbourhood already achieving the second highest proportion of sustainable transportation trips in the City. A future land use vision includes higher density residential housing that meets a mix of demographic needs and income levels. Opportunities to increase social and community services in the area are also supported.

  Transit service has been identified as a way to reduce travel to campus by car and has resulted in significant service improvements between VIU and other major transit exchanges over the last five years.

Strategic Direction and Goals

In support of the overall goals and objectives of ***planNanaimo***, the policies and actions set out in the NTMP provide further direction to support the development of urban nodes as mobility hubs. This will not only ensure that they are the most vibrant areas of the City, but that walking, cycling and transit will become the most attractive modes to get to, from and around them. The overarching strategic direction for mobility hubs is summarized as follows:

STRATEGIC DIRECTION

Integrate land use and transportation planning to support the development of compact, dense, mixed-use urban nodes as mobility hubs that create shorter trips and promote walking, cycling and public transit.

GOALS

- More people and more jobs in mobility hubs and near frequent transit
- Develop complete mobility hubs
- Support land use policies that will reduce travel demands

The key policies to support this strategic direction are briefly described below.

Focus more people, jobs, and services in mobility hubs

By 2041 the population Nanaimo is projected to grow by approximately 50% from *87,000 (2011) to 126,000 (2041); a rate of 5-600 new households per year. Success of the mobility hub concept will be influenced by to what degree future commercial and residential development can be encouraged to locate within mobility hubs. With sufficient residents and employment, more services, amenities and transit can be supported making hubs attractive places to grow and at the same time reducing demand on our future transportation network.

Create mobility hubs that support walking, biking and transit.

To support denser land uses, a different transportation network with a different mix of transportation services is required. Future streets within mobility hubs will need to emphasize the movement of people, to be walkable, ridable and include interesting destinations and experiences. Infrastructure will need to accommodate all modes of travel and be attractive and accessible for people

** including SFN IR #1*

of all ages and levels of mobility. The street network in mobility hubs should strive to develop "complete streets" that better balance the needs of all road users.

In support of sustainable modes, public parking supplies should prioritize short-term parkers and new developments should be encouraged to minimize parking supplies in combination with trip reduction strategies. Where parking is developed, it should be shared between multiple users, as on-street parking is; surface parking should be avoided. Increased bicycle parking, improved pedestrian access and transit stop amenities should be provided as part of new developments.

Develop complete mobility hubs

Place-making is at the centre of the design of mobility hubs. Not only are mobility hubs destinations, but they must be designed to ensure residents and visitors will want to spend time within them. Their vibrancy can be enhanced by the design of buildings, streetscape and open spaces.

Beyond place-making, design can also shape transportation choices. Well designed communities make walking and biking the best way to move around. Specific design principles that support sustainable travel modes are embraced within the 5 D's of land use and transportation design, including:

- The presence of **destinations** that meet daily needs and are reachable by walking, cycling or riding transit.
- **Distance** matters; destinations must be close enough such that they can be conveniently reached by walking or cycling, and where they can't, be accessed by transit. Small gridded blocks allow people to walk and cycle between destinations without long detours around large private parcels.
- Higher residential, employment and service and amenity **densities** are required ensure sufficient population is present to allow businesses and services to be successful.
- A greater **diversity** in housing types, services and employment within a neighbourhood will increase the chances that residents and employees within are able to meet their needs without travelling to other parts of the City.
- **Design** characteristics of the road network, buildings, and public realm influences the attractiveness of walking, cycling and transit. The more attractive, convenient and comfortable the street environment and transit system is; the more people will be willing to travel farther and longer within it.

Policies and Actions

The vision for mobility hubs is a central theme to manage and encourage sustainable growth identified within ***planNanaimo***. The land use policies supporting the specific areas and the form of growth are in the Plan. The NMTP provides further transportation based policies that will augment the OCP to ensure that mobility hubs are designed for and to encourage walking, cycling and transit.

In order to support those transportation based policies, the following policies and actions are required to bolster the role of sustainable modes in shaping and enhancing mobility hubs.

POLICIES AND ACTIONS

L1: Focus more people, jobs and services in mobility hubs over time

- L1A: Include targets within the OCP for the proportion of future development occurring within mobility hubs, and specifically Downtown.
- L1B: Develop incentives to encourage a greater proportion of future residential, employment & commercial development to locate within mobility hubs.
- L1C: Locate future public services within mobility hubs or nearby.

L2: Create mobility hubs to support walking, biking and transit

- L2A: Support medium to high-density development forms to create consistently higher densities within mobility hubs.
- L2B: Require future development to implement street-oriented design formats that create vibrant and accessible streetscapes.
- L2C: Consider access by all modes equally thru development review processes.
- L2D: Prioritize pedestrian and cycling routes within mobility hubs, and transit between hubs, to encourage sustainable transportation trip making.
- L2E: Consider varying parking requirements within mobility hubs; reducing general parking while increasing shared and bicycle parking and providing better pedestrian access and transit amenities. Support development of on-street parking where possible and support park once and walk concept.
- L2F: Within mobility hubs develop new or rehabilitated streets with a strong focus on making them enjoyable places to walk and ride.

L3: Develop Complete Mobility Hubs

- L3A: Develop plans for each mobility hub that identify constraints on the development of each mobility hub and remove constraints through policy changes, infrastructure improvements and development.
- L3B: Encourage a balanced mix of land uses and services that provide a range of housing, employment and services; identify and address missing land uses amenities/services that necessitate travel outside of each hub.


Ferry
Dock

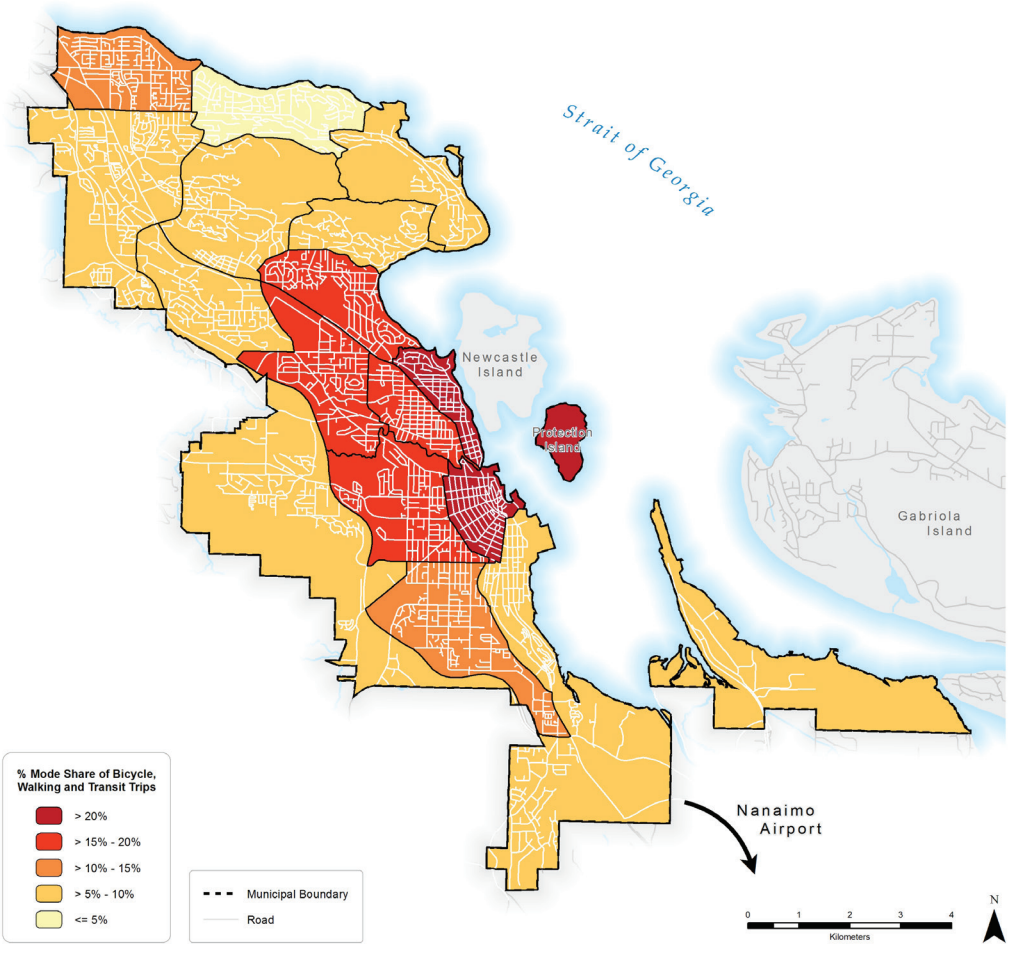
3.2 WALKING

3.2 Walking

Walking is the most fundamental mode of transportation and forms part of almost every trip, whether that trip is made by car, transit, or bicycle. Walking can be an attractive alternative to driving for short trips, especially where destinations are close and connections between them are convenient and direct.

Walking is the most popular mode of sustainable travel in Nanaimo today, accounting for 8.5% of all trips made throughout the City (21,000 trips per day). Walking levels across the City vary significantly, as areas with higher residential and employment densities, near-by destinations, well connected street networks, and safe and comfortable pedestrian facilities experience higher rates of walking and other sustainable travel modes. In 2011, 23% of Downtown residents reported walking as their primary mode of transport to and from work – three times the overall City average. Incorporating the key characteristics of existing high pedestrian activity areas into other parts of the City can help create a more walkable community.

Existing Sustainable Transportation Use (2011)



Several key challenges were identified with the pedestrian network and land use patterns that make walking a less attractive transportation option in Nanaimo today. Within the pedestrian network, missing links (including sidewalks and pathways), uncomfortable walking environments (particularly for those who are older or with children), low-accessibility infrastructure, and challenging street crossings make it harder to walk and can leave pedestrians feeling less safe. Equally important are the influences of land use and development patterns on the viability of walking. The average walking trip in Nanaimo is 800 metres, so longer distances between home, work, services and amenities along with large blocks and circuitous road networks lengthen many trips beyond an attractive walking distance. Within the City's mobility hubs, walking is already a more attractive option, with greater potential for future growth, and pedestrian priority should be emphasized in these areas.

TARGET

2x

The NTMP sets out to **double the number of walking trips and increase walking mode split to 12% by 2041**. To achieve this target, the Plan focuses on enhancing the pedestrian environment in areas with the highest pedestrian demand, improving the quality and safety of pedestrian infrastructure and changing land use patterns to make walking a more viable option for more people. By prioritizing improvements in areas that have the highest pedestrian demand, such as in Downtown, other mobility hubs,

schools, parks, and key commercial areas, the Plan seeks to maximize returns on pedestrian investments. As our population ages, safe, accessible and comfortable pedestrian infrastructure will become increasingly important. By making Nanaimo more walkable, our City will be a more enjoyable, sustainable and inclusive place to live, shop and visit.

Strategic Direction and Goals

The NTMP places pedestrians at the top of the City's transportation priority hierarchy, consistent with the Plan's vision of shifting towards a more sustainable transportation system. Not all areas of the City have the same walking potential and the Plan recognizes that some areas of the City will generate more walking activity than others. By focusing improvements on areas with high activity levels of pedestrian activity today and by increasing activity, growth and densification over time, we can get more people walking sooner.

In mobility hubs and other high pedestrian activity areas, streetscape treatments should be enhanced so that pedestrians and cyclists are priorities from the beginning of the design process. New and refurbished streets should not just be utilitarian corridors, but rather public spaces that are a pleasure to be in. In other areas of the City, improvements should be targeted in areas with localized pedestrian demand and where pedestrian safety issues exist, such as major roads and areas around schools, parks, and commercial land uses. These improvements will be more pragmatic, focusing on completing missing links in the sidewalk network that connect to key destinations.

The overarching strategic direction for walking is as follows:

STRATEGIC DIRECTION

Make walking a safe, comfortable, convenient, accessible, and enjoyable experience for residents of all ages and abilities.

GOALS

- Make walking safer, more comfortable, and more accessible
- More and better places to walk
- More people walking more often

The key policies to support this goal are briefly described below.

Focus sidewalk improvements in areas of highest potential and demand

While City standards require new streets to have sidewalks, large areas of the City, built before requirements were in place, either do not have sidewalks or have incomplete sidewalk networks. The NTMP recommends filling in the City's sidewalk network strategically and prioritizing areas of high pedestrian potential demand first, where there is the greatest opportunity to increase the number of walking trips.

Where new road infrastructure is constructed, or as part of new development, the NTMP recommends that all roads be developed with sidewalks on both sides of the street, and pedestrian networks and connections are considered at the beginning of the neighbourhood/site layout process.

The construction of new sidewalks on existing streets should be prioritized considering the number of pedestrians, the safety of existing facilities, and the attractiveness of the existing network. The City should evaluate all streets within 600 metres of mobility hubs using a prioritization process and prepare plans to complete sidewalk networks over time.

The City's long term goal for the pedestrian network should be as follows:

- **Within mobility hubs,** sidewalks should be provided on both sides of all streets within the mobility hub core. Within 600 metres of mobility hubs, sidewalks should be provided on both sides of all major and commercial roads, and where commercial/retail use, transit stops, school, senior facilities or other point pedestrian generators are present.

- **In urban areas outside of mobility hubs,** sidewalks should be provided on at least one side of all major roads and where commercial / retail, transit stops, schools, or seniors facilities are present. Where traffic conditions make crossing streets difficult, sidewalks on both sides should be considered or crossings provided.

- **In rural areas,** paved shoulders should be provided on at least one side of all major roads.

Where residents or businesses wish to expedite sidewalk infill, local improvement processes may be considered by which land owners cost share improvements with the City.

Develop Quality, Accessible Crossings

Pedestrians in many areas of the City are challenged by crossings of streets and other physical barriers, such as railways and watercourses. Crossings are also where most pedestrian/vehicle collisions occur and making improvements at these locations is a safety priority. Difficult crossings can act as significant barriers to walking, making trips much longer or creating safety issues, particularly for vulnerable road users such as seniors, children, and people with physical and cognitive disabilities.

There are a range of treatments in the City's toolbox to improve the quality and accessibility of pedestrian crossings. Basic improvements such as curb let-downs with tactile guidance, marked crosswalks, and signage are effective strategies and should be generally used at all crossings. For more challenging crossings other improvements should be considered, including; narrowing crossings/curb extensions, raised crosswalks, flashing warning beacons, two-stage crosswalks/median islands, overhead signage and lighting, pedestrian activated signals, reduced curb return radii, accessible pedestrian pushbuttons and pedestrian countdown timers.

The City should use these crossing enhancements where pedestrian demand is the greatest or where safety performance is poor.

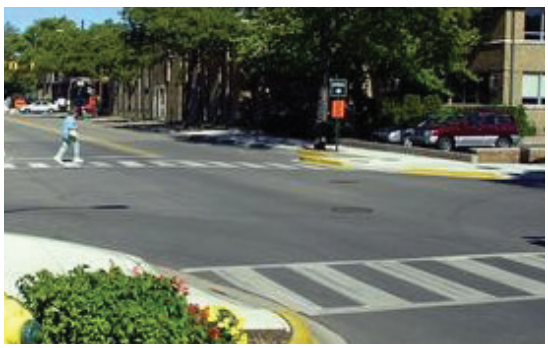
Visual Summary Pedestrian Crossing Treatments

ACCESSIBLE CURB LETDOWNS are critical to provide access between the sidewalk and the street at intersections. Where possible, separate curb letdowns should be properly aligned with crosswalks with directional guidance provided for those with visual impairments. Tactile surfaces can also be used to act as indicators to pedestrians who are visually impaired to alert pedestrians that they are approaching an intersection or grade change.

MARKED CROSSINGS enhance the visibility and safety of crossing pedestrians, where warranted. Raised crosswalks can also be used to extend the level of the sidewalk across the road and act as a traffic calming measure.

PEDESTRIAN REFUGE ISLANDS are placed in the street at an intersection or mid-block to protect crossing pedestrians from motor vehicles. The refuge islands make the crossing the road easier for pedestrians by allowing them to cross in two stages and to deal with one direction of traffic flow at a time.

ACCESSIBLE PEDESTRIAN SIGNALS can be used at signalized intersections to assist pedestrians with disabilities and communicate when to walk or not walk in visual formats, such as pedestrian countdown timers, or in non-visual formats, such as through audible tones, speech messages, or vibrating surfaces. The use of braille on pedestrian signals can also enhance the accessibility of intersection crossings.



NARROWER CROSSINGS using curb extensions, bus bulges, and median islands can be provided to reduce crossing distances. Curb extensions extend the sidewalk across the curbside parking lane. Narrower crossings benefit pedestrians by improving visibility and reducing crossing distances, and can offer opportunities for pedestrian amenities, such as landscaping and benches.

ENHANCED CROSSINGS go beyond a painted crosswalk and can include flashing pedestrian warning beacons, two-stage crossings and pedestrian half signals, where warranted.

Photo Credit: HA Photography

Ensure Supportive Urban Design Features

In addition to providing sidewalks and crossings, the overall design of the City's streets and neighbourhoods play an important role in promoting walking. To create comfortable walkable spaces requires making pedestrians a priority at each stage of the development process and considering them comprehensively within the full design process. A number of urban design features and treatments should be used to improve the attractiveness and vibrancy of the City's streets and other pedestrian facilities, including:

- **Sidewalk width** to provide a comfortable space for all pedestrians, including ensuring a minimum clear walking width of 1.5 metres (1.8 metres on major roads).
- **Boulevards between the sidewalk and the roadway** to provide a buffer between pedestrians and moving vehicles and space for street lights, trees, poles and street furniture.
- **Street trees within all street cross sections,** with priority on those with high pedestrian demand, traffic volumes and where parking does not provide a buffer between the road and sidewalk.
- **Along retail frontages** or where other street activities may be present (i.e. street front cafes), sidewalks should be widened so activities can occur without impeding pedestrians.
- **Street lighting** to ensure pedestrian comfort as well as safety and security at all times of day; consider pedestrian scale lighting along commercial frontages, at transit stops or within other high pedestrian activity spaces.
- **Pedestrian amenities** such as garbage cans, planters, public art, banners, and benches to improve the attractiveness and comfort of the pedestrian environment and to create great 'people places'.
- **Weather protection** to provide shelter from rain, snow and sun and create more inviting and sheltered outdoor spaces year round.
- **Quality, maintainable surface materials,** with preference for concrete which provides a smoother surface quality in comparison to asphalt; where decoration is desired, and concrete stamping or cutting can be used.

As pedestrians travel slowly, they are sensitive to longer trips. The layout of pedestrian networks can be as or more important than the pedestrian facilities themselves to encourage walking trips. Transportation networks should prioritize providing direct links for pedestrians over other modes. Where sites are large (2 hectares or greater) and have high pedestrian activity (such as commercial malls) internal pedestrian networks become important to provide

connections between on-site buildings, to the street, and adjacent properties. The City should take a more active role in planning these large private sites to reduce short vehicle trips within and between sites, reducing overall traffic in commercial centres.

When sidewalks are sufficiently wide they can support different uses; the Frontage Zone for street-front cafes, retail or other active uses, the Pedestrian Zone for travel and the Furnishings Zone, as a buffer between the street and pedestrians for trees, signs and street furniture.

- **Create small permeable blocks with frequent pedestrian connections through sites** to reduce trip distances and make walking a more competitive option for short trips.
- Develop **pedestrian networks within large commercial sites** that support efficient pedestrian travel within the site, to/from adjacent sites and the surrounding street network.

Support Walking Initiatives

In addition to providing quality pedestrian facilities and networks, education and social marketing initiatives can help shift travel habits by highlighting the benefits of shifting travel modes and providing information to make walking and cycling easier. Many of these programs overlap with cycling support initiatives as the two modes are both great alternatives to short local trips. In many cases, coordination with non-profit organizations, community groups, and other agencies can help make programs more effective.

Support programs could include:

- **Information about walking and cycling** in Nanaimo, a description of the current pedestrian and cyclist routes, and a link to city pedestrian and bicycle maps and other education/safety resources **on the City's website**.
- **Mobile applications** for residents and visitors to access walking and cycling information on the go.
- **Wayfinding systems** to guide people to key activity areas by walking and cycling. Enhanced wayfinding signage can benefit residents and visitors, helping to orient pedestrians to major destinations. Signage standards could include a community branding and measure distances in time units (i.e. minutes) by walking and cycling.
- **Safety education & awareness initiatives,** as promoted through the City and/or partnerships with ICBC, RCMP, and School District 68.
- **Walk/bike to school programs** in cooperation with School District 68 should be expanded to promote walking and cycling with youth.
- **Support and promote events** such as Bathtub Days, Sunday Street Closures, World Walking Day, iWalk, Move for Health, and Active Month by providing easy access street space for community events.
- Develop a **parklet / street activity program**, which promotes and manages active uses within streets such as conversion of on-street parking into public spaces, restaurant patios or seating areas.

Policies and Actions

The policies and actions below are intended to make walking safe, comfortable, accessible and enjoyable for people of all ages and abilities in Nanaimo, and to help Nanaimo achieve its targets to increase walking trips throughout the City in the coming years. The emphasis of the walking actions are to focus on strategic sidewalk improvements, improve crossings throughout the City, ensure supportive urban design features, and support walking initiatives.


CHURCH & CHAPEL
flying fish
Gabriel's Cafe

POLICIES AND ACTIONS

W1: Focus sidewalk improvements in areas with high pedestrian demand and potential

- W1A: Prioritize expansion of the sidewalk network in areas where there will be the most benefits, where walking levels are high, there is high residential and employment density, existing facilities are poor and future growth is expected.
- W1B: Consider concentrations of vulnerable road users (i.e. children, youth, seniors) when evaluating new pedestrian links.

W2: Develop Quality, Accessible Crossings

- W2A: Update street design guidelines to increase pedestrian visibility and safety at pedestrian crosswalks by standardizing basic treatments and considering crossing enhancements where warranted (eg raised crosswalks, flashing warning beacons, two-stage crosswalks/median islands, overhead signage/ lighting and pedestrian activated signals).
- W2B: Update street design guidelines to increase pedestrian visibility and safety at intersection by reducing curb return radii, increasing crossing times, installing accessible pedestrian push buttons and pedestrian countdown timers; consider where warranted leading pedestrian intervals, pedestrians scrambles and pedestrian activated signals.
- W2C: Upgrade existing signals, with accessible push buttons and audible signals at locations prioritized in consultation with representatives from the mobility and visually-impaired community.

W3: Ensure Supportive Urban Design Features

- W3A: Provide pedestrian amenities, such as weather cover, within public and private spaces through development processes.
- W3B: Use street trees, landscaping and boulevards to enhance streetscapes and provide a buffer between vehicles and pedestrians.
- W3C: Provide wider sidewalks in high pedestrian activity areas (e.g. retail frontages) to support active uses such as on-street cafes and retail.
- W3D: Provide street lighting in and around key walking destinations to increase pedestrian visibility and security at night; provide pedestrian level lighting along high pedestrian activity areas (e.g. retail frontages).

W4: Support Walking Initiatives

- W4A: Create a dedicated active transportation website, including online mapping that educates residents and visitors on the City's walking/cycling network and facilities.
- W4B: Explore partnership opportunities with other agencies and organizations on initiatives such as road safety campaigns, walking and cycling education programs, and skills building.
- W4C: Continue to support events and initiatives that support walking and street vibrancy. Create a process for managing street use activities.
- W4D: Seek the implementation of wayfinding that is consistent, legible, and user-friendly to support pedestrians as they navigate through Nanaimo.


Have an
Ice Day.

3.3 CYCLING

Photo Credit: HA Photography

3.3 Cycling

Cycling is an important commuting and recreation option in Nanaimo for short to medium distance trips that are time-competitive with driving. Not only can cycling can be a practical way to get around, it also is healthy, good for the environment and saves money. Cycling currently accounts for approximately 1% of all trips made within the City. The NTMP seeks to significantly increase the number of cycling trips in the City and under the Plan's targets, the proportion of daily bicycle trips would grow from 1 to 4% by 2041, **representing a five-fold increase in the number of daily cycling trips**. By 2041 the Plan targets 15,000 cycling trips per day in the City, a significant increase from 3,000 daily cycling trips seen currently in Nanaimo.

Nanaimo's current cycling network is made up of two primary north-south off-street multiuse trails along the Parkway and E&N Railway. The network also includes several other trails within the City's parks and along the Waterfront Pathway, and a number of signed on-street bicycle routes. The E&N is the spine of the network connecting many of Nanaimo's most important destinations with gentle, consistent grades. The on-street network is less developed. While signed bicycle routes cover much of the City, they are few dedicated cycling facilities, and in most cases, cyclists and vehicles share the same travel lanes on busy streets. The lack of on-street bicycle facilities makes it difficult to get to the E&N and to go to destinations located away from the E&N, and can be a barrier to greater bicycle use.

Many residents have indicated that they would consider cycling more if the quality of bicycle facilities were improved and the cycling network was expanded to serve more destinations such as Downtown and Vancouver Island University. Similar to walking, different parts of the City have different cycling activity levels, with Central Nanaimo showing the highest levels of current cycling activity and the greatest potential for future expansion.

Recognizing the barriers that prevent more people from cycling, the City is committed to developing a safe and attractive bicycle network that will make cycling in Nanaimo a more viable and attractive transportation option.

TARGET

5x

Developing a comprehensive cycling network that covers the entire City and which residents would feel comfortable using is integral to achieve the Plan's cycling targets. This network will connect the City's destinations with a range of high-quality on and off-street cycling facilities. Continuing as the spine of the network, the E&N Trail would be extended, upgraded and better integrated into the rest of the network.

While the development of a cycling network is a key component of the Plan, other infrastructure for bicycle parking and wayfinding are needed along with education and information resources to make cycling a safe, comfortable, and convenient mobility option for residents and visitors.

Strategic Direction and Goals

In order to achieve the cycling targets in the NTMP and to make cycling a safe, comfortable, and enjoyable transportation option for people of all ages and abilities, the Plan recommends a long-term bicycle network. This network would connect with all key destinations throughout the City and place all residents within short distance of a bicycle route. In the short- term network plan prioritizes strategic network links between areas with the highest potential and demand, connecting the City's largest destinations. An expanded toolkit of cycling facilities is recommended to help develop facilities that are more comfortable for more people. Supportive facilities, such as bicycle parking, bicycle-transit integration, and a bike share program, as well as education, awareness, marketing, and communication initiatives will also be required to develop a bicycle-based transportation system. The overarching strategic direction for cycling is as follows:

STRATEGIC DIRECTION

Make cycling a safe, comfortable, enjoyable, and normal transportation choice for residents of all ages and abilities.

GOALS

- Expand the cycling network
- Encourage and promote cycling as a normal, everyday transportation choice
- Make cycling safer and more comfortable
- Get more people cycling more often

The key policies to support these goals are briefly described below.

Develop and expand the bicycle network

The medium-long term bicycle network proposes a dense network of bicycle facilities throughout the City, particularly in areas with high cycling potential and within mobility hubs. The proposed medium-long term bicycle network shown in **Map 2** was developed based on the following considerations:

- **Provide several high quality north-south multiuse pathways as mobility spines,** focusing on enhancing the existing E&N Trail, Harbourfront Pathway, and Parkway Trail. Extending these over time across the full length of the City and at key points to provide east-west linkages between them. Mobility spines should be paved, illuminated, and have high quality intersection treatments.

- **Create a dense bicycle network in mobility hubs and in the central City** where cycling potential is the highest, and future density and mixed use development is expected. All roads within mobility hubs should be bicycle-friendly.

- **Create a comprehensive cycling network outside of mobility hubs,** with bicycle network coverage spaced 400 to 800 metres apart or along major routes, providing access between residential areas, neighbourhood centres, and key connections to major cycling facilities.

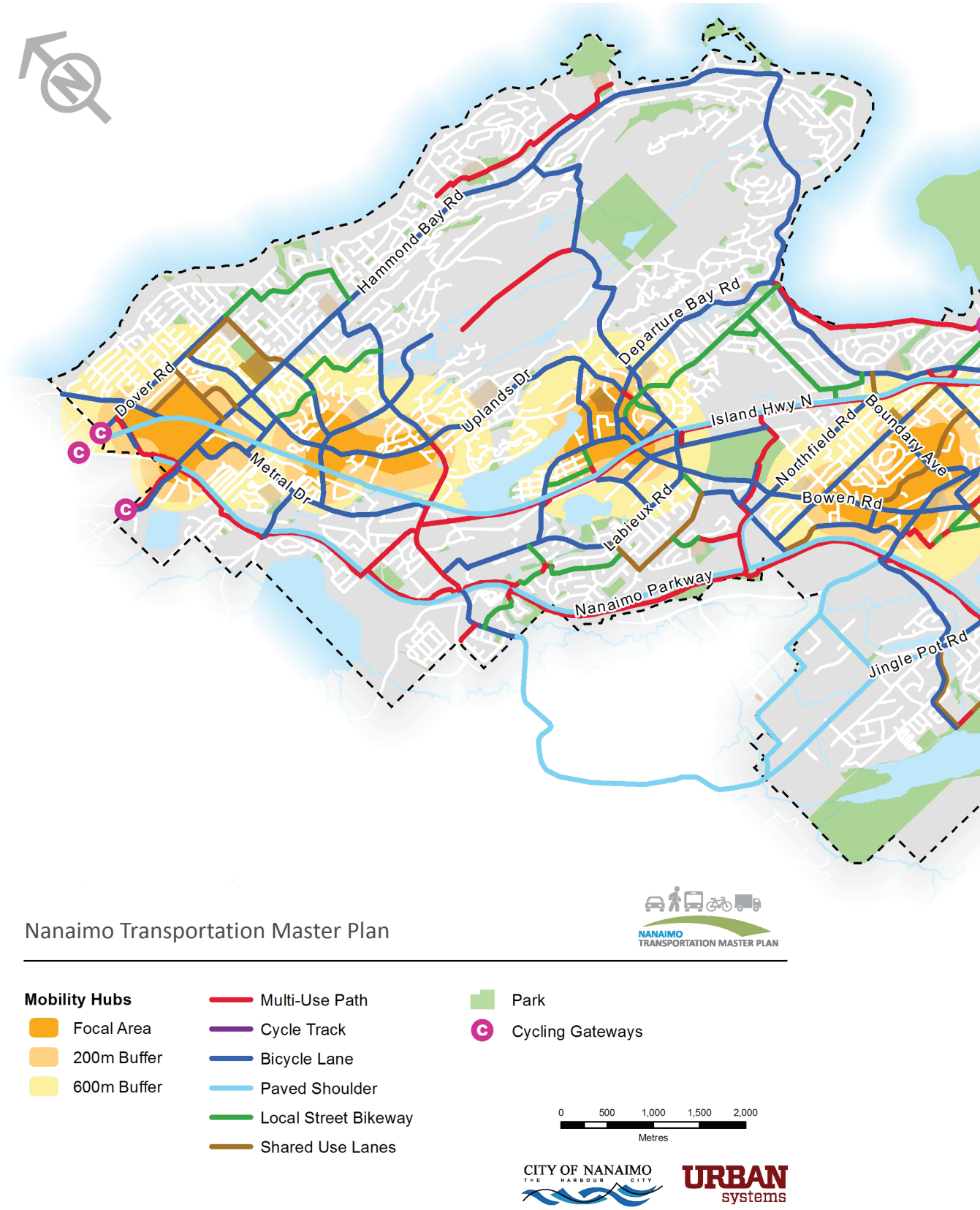
- **Create cycling gateways at key entrance points to the community** which include information for cyclists about bicycle routes within Nanaimo, as well as information on bicycle-serving businesses, key destinations, access to transit, and external linkages to other communities.

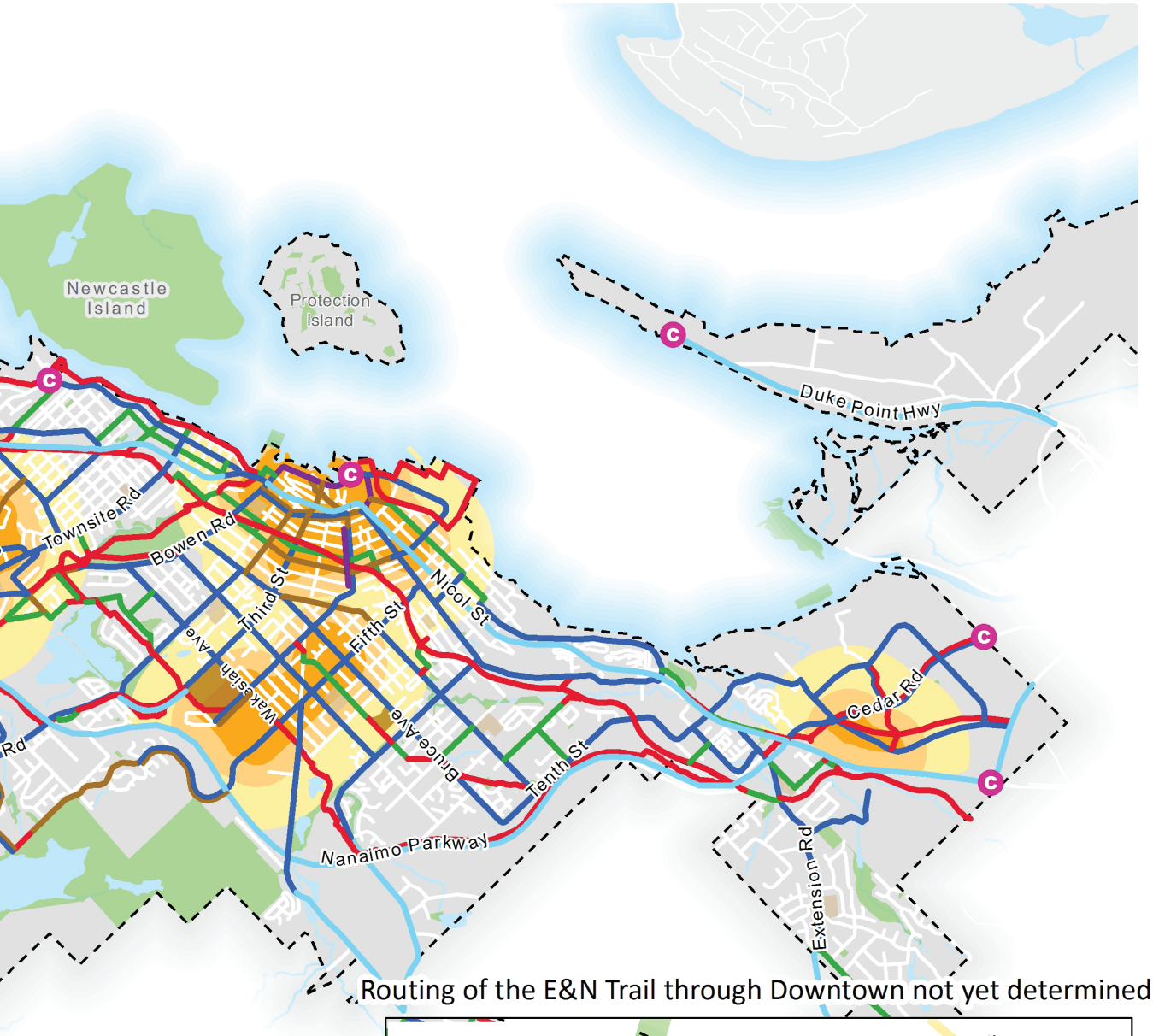
Map 2 shows the vision for the medium-long term comprehensive bicycle network across the entire City. This network establishes the City's long-term cycling vision and ensures cycling facilities created through development, capital road projects, or other opportunities in the interim are consistent with a long-term network vision.

A short term priority network of routes is proposed (**Map 3**) to develop the first phases of the bicycle network. This 65km core network will extend existing bicycle facilities and has been designed to connect the City's largest destinations and areas with the highest cycling poential. In this way, early cycling investments will maximize growth in new cycling trips.

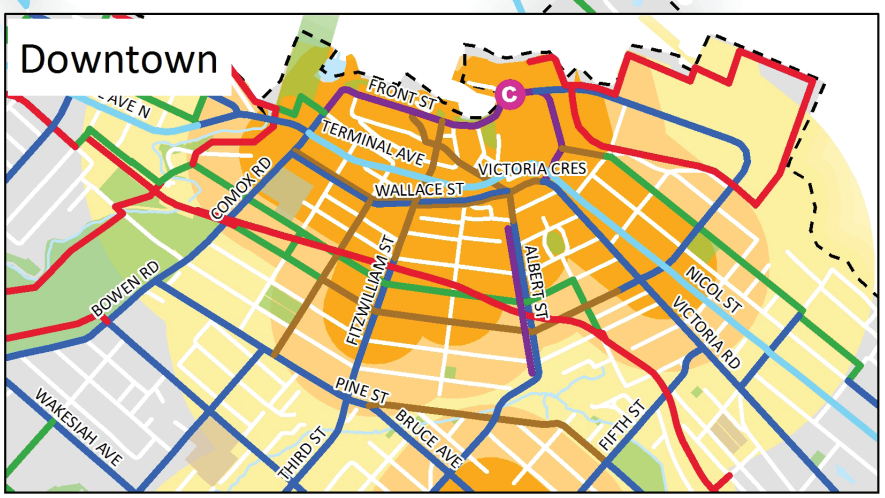
The City's future cycling network will be constructed over time in a number of ways. In areas of new development or in conjunction with capital projects, bicycle facilities will be included as part of new road construction. However, for the majority of the network, existing roads will need to be reconfigured to provide space for cyclists. In some cases, space already exists and improvements will be limited to changes to paint lines. On other segments, lanes may need to be reconfigured or the roads widened. In many cases, cycling improvements can address other road issues, providing benefits for all road users. To expedite completion of cycling and other sustainable transportation networks, the City should seek funding from external sources such as senior government. Moreover the City should work with the cycling community and groups such as the Greater Nanaimo Cycling Coalition, Nanaimo Mountain Bike Club, Mid Island Velo Association, Hub City Cycles Community Co-Op and cycling businesses and shops to assist in the development of cycling infrastructure and programs.

Map 2 - Medium-Long Term Bicycle Network Plan

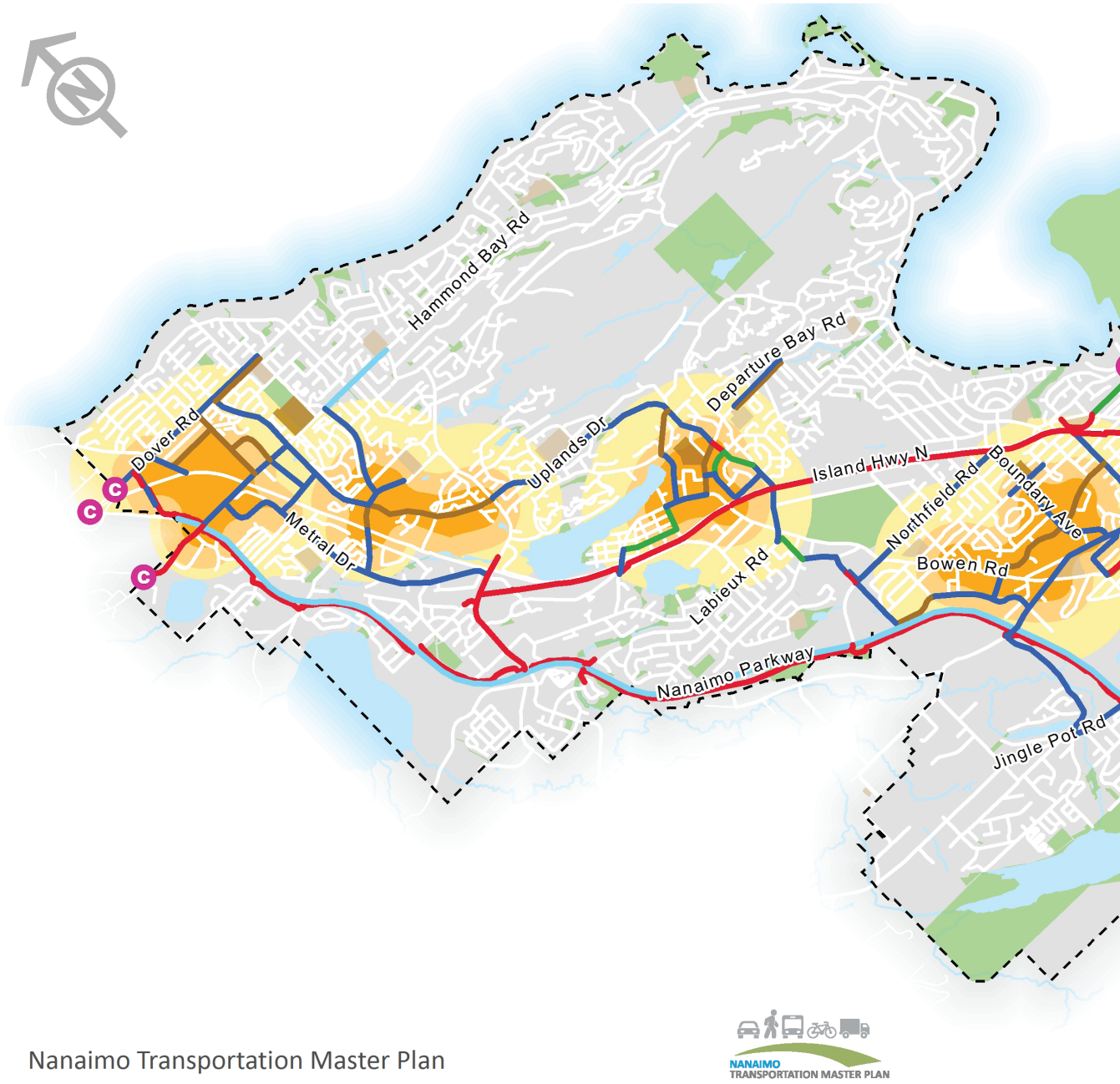




Routing of the E&N Trail through Downtown not yet determined.



Map 3 - Short Term Cycling Network Plan



Nanaimo Transportation Master Plan

NANAIMO TRANSPORTATION MASTER PLAN

Mobility Hubs
- Focal Area
- 200m Buffer
- 600m Buffer

- Multi-Use Path
- Cycle Track
- Bicycle Lane
- Paved Shoulder
- Local Street Bikeway
- Shared Use Lanes

- Park
- Cycling Gateways

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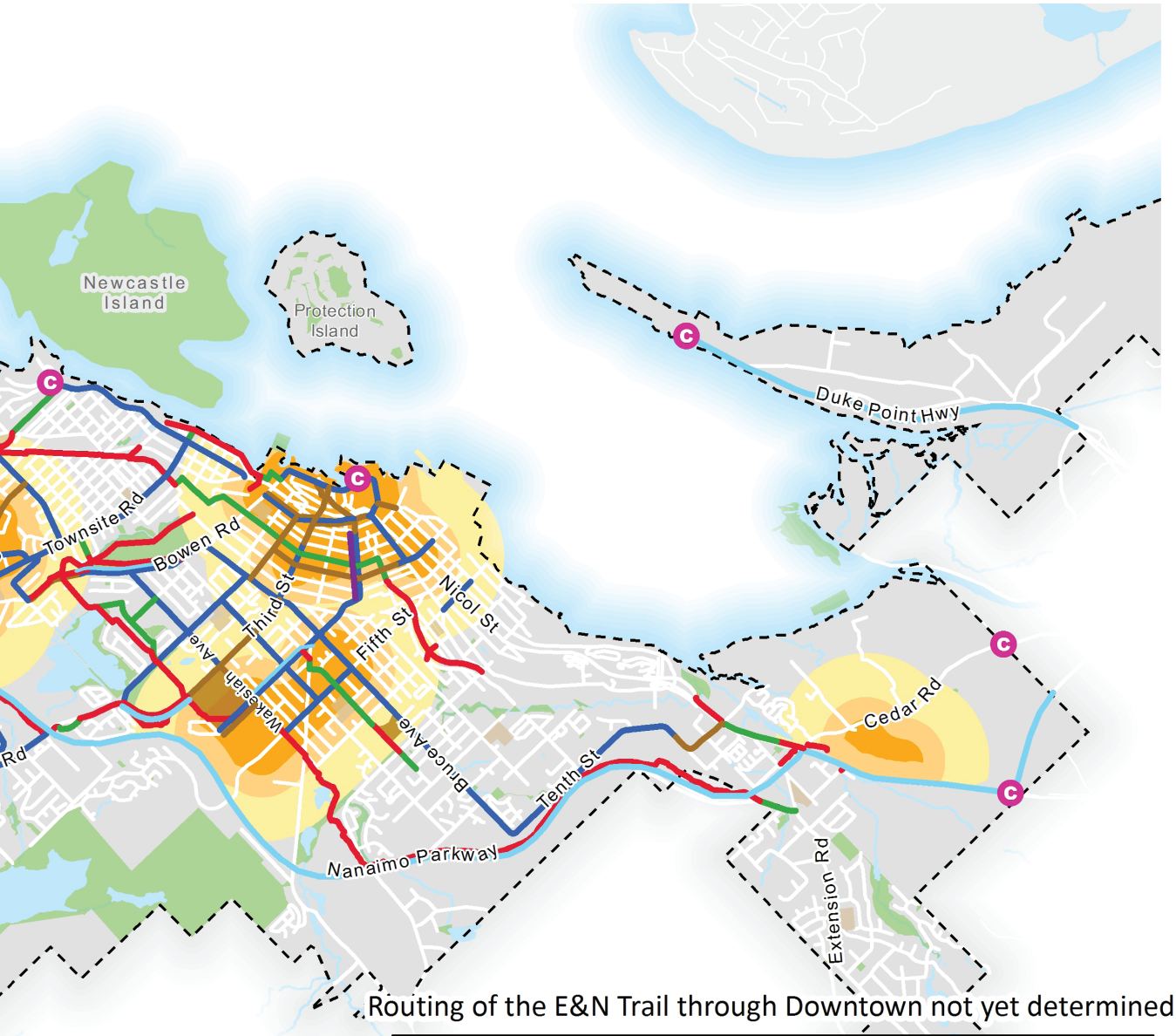

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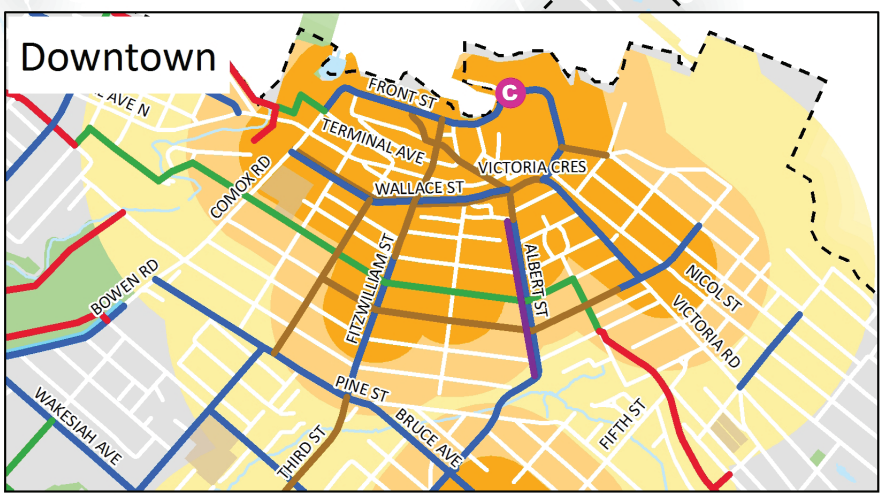


Develop comfortable bicycle infrastructure

To develop more comfortable bicycle facilities across a wide range of conditions found within our network, the City needs a larger toolbox of cycling facility types. There are a number of different corridor treatments that the City can consider for different contexts, and a number of common facilities are shown in the visual summary on the following page.

As shown on the following page, these facilities have varying levels of appeal for different users. Bicycle facilities that are physically separated from motor vehicle traffic, such as off-street pathways and cycle tracks, are generally the most comfortable. Different facilities perform better in different situations, and form a toolbox to select from as the bicycle network is developed.

Visual Summary Bicycle Facility Types

MULTI-USE PATHWAYS are physically separated from streets, typically away from the road right-of-way and designed to support cyclists, pedestrians, and other non-motorized users.

CYCLE TRACKS are bicycle only facilities physically separated from vehicle travel lanes but still located within the street. Cycle tracks can be one or two-way and combine the experience of an off-street path with the on-street infrastructure of a conventional bicycle lane.

BICYCLE LANES are lanes designated by painted markings and signage for the exclusive use of bicycles.

LOCAL STREET BIKEWAYS are local streets with low vehicle speeds and volumes in which cyclists share the same space with vehicles. They often include traffic calming measures to keep speeds low and improvements at major road crossings to help cyclists cross safely.

SHOULDER BIKEWAYS or paved shoulders, are typically found on streets without curb and gutter, with shoulders wide enough for shared bicycle/pedestrian travel. Shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway.

WIDE SHARED USE LANES provide additional width for cyclists and vehicles to share the outer lane of a roadway; currently used on many on-street bicycle routes in Nanaimo.

In addition to the corridor facilities described above, the City should carefully consider how intersections are addressed, as these are where many cycling collisions occur. Intersection and crossing treatments can be used to assist cyclists passing through major intersections and crossing major roads. Different treatments seek to minimize potential conflicts with motor vehicles, and to increase safety and convenience for cyclists. Intersection treatments that should be considered in the bicycle network are in the following Visual Summary.

Visual Summary Bicycle Crossing Types

COLOURED CONFLICT ZONE MARKINGS can be used intersections, driveways, merge areas and other conflict zones to raise visibility of cyclists and to highlight areas of potential conflicts.

DASHED BICYCLE LANE MARKINGS through intersections serve to position cyclists appropriately as they traverse the intersection, and to alert motorists of the potential presence of cyclists in the intersection.

BICYCLE BOXES can be used at signalized intersections to provide cyclists an opportunity to position themselves ahead of queued vehicles, and to proceed through the intersection when the signals turn green in advance of vehicles.

ENHANCED BICYCLE SIGNAL CROSSINGS can include full signals or pedestrian and bicycle activated signals which can be activated by a cyclists using a range of technologies, such as bicycle loop detectors, bicycle pushbuttons, or video detection at traffic signals. Dedicated bicycle signal heads can also be considered.

CROSSBIKES or crossrides, are pavement markings that indicate a crossing zone in which a cyclist does not need to dismount. These pavement markings may be combined with a pedestrian crosswalk or may be used to indicate a separate bicycle crossing.

TWO-STAGE MEDIAN CROSSINGS or refuge islands, are positioned in the middle of the roadway, allowing cyclists to cross the road in two stages instead of one. The median refuge islands provides cyclists (and pedestrians) the ability to safely wait in the middle of the road, before making the second stage of their crossing. This allows cyclists to deal with one direction of traffic flow at a time.

Integrate cycling with other modes and initiatives

Beyond on-street and off-street cycling facilities, other bicycle infrastructure and programs are required to develop a comprehensive network and to establish Nanaimo as a bicycle friendly destination. Opportunities for cycling-supportive infrastructure and programs include:

- **Establish a Bicycle Friendly Business District** in conjunction with the Downtown Nanaimo Business Improvement Association and local businesses to integrate cycling into the district's operations, events, and promotions, and to ensure bicycle facilities are provided within the BIA area in Downtown Nanaimo.

- **Enhance opportunities for bicycle parking.** Similar to vehicles, it is important to provide safe and secure bicycle parking on-street and on private sites. On-street bicycle parking is recommended in key areas of Nanaimo, such as mobility hubs, shopping areas, community centres, parks, schools, and transit exchanges.

  On-site parking should be required as part of new development. A range of bicycle parking facilities should be offered, based on the type of facility that bicycle parking is serving. For example, bicycle racks and on-street bicycle corrals are often suitable where there is short-term bicycle parking needs such as commercial areas, community centres, and parks. Longer term bicycle parking, such as bicycle shelters, cages, or lockers, are more suitable for key employment and visitor destinations such as universities and schools, hospitals, and transit exchanges. Bicycle parking should be addressed as part of development site parking studies and the City's bylaws should require bicycle parking and development design guidelines to regulate the overall quality and design of bicycle parking facilities.

- **Enhance transit integration.** Transit and cycling work well in combination, providing cyclists with the ability to make trips that are farther than they may be able to ride and allowing transit riders to reach destinations that are not adjacent to a transit routes. Existing BC Transit low-floor buses are equipped with bicycle racks, but increased demand may exceed the 2 bicycle capacity of racks. At exchanges, short and long-term bicycle parking would allow cyclists to "park and ride" on transit. In the future, transit exchanges could also host bike share stations, allowing riders without a bicycle to extend their trips beyond a quick walk from the transit drop point.

- **Explore Better Bicycle Integration with BC Ferries.** Recognizing that BC Ferries is an important regional transportation provider, ensuring good cycling integration for ferry users can enhance regional cycling connectivity. The City should work with BC Ferries to encourage the provision of

visible, safe, and secure bicycle parking facilities at the terminals and on board vessels (i.e. lock-up areas), and work collaboratively with BC Ferries to improve cycling routes to and from terminals. The Departure Bay terminal should be developed into a non-auto gateway to the island, with improvements to bicycle routes to and from the terminal prioritized. For Gabriola Island, good cycling connections and bicycle parking within Nanaimo may allow Islanders to travel to the City without their vehicles for shopping, employment, or school.

- **Explore Development of a Bikeshare Program.** Bikeshare programs provide affordable access to bicycles for short-distance trips, and solve the 'last mile' problem for users of public transportation. Areas such as Downtown Nanaimo, Vancouver Island University, the Stewart Ave corridor (including Departure Bay terminal), and future mobility hubs could potentially support a bike share system in the future. Accessible and convenient bike share systems can be attractive to the most casual riders and visitors and could encourage more Nanaimo residents and visitors to try cycling.

Support education, awareness, and marketing and communication initiatives

In addition to cycling infrastructure, the City should develop and support education, awareness, and marketing and communication initiatives to promote and support cycling. These initiatives are critical to raise awareness about the bicycle network, educate cyclists and motorists, and make residents more aware of the opportunities that exist to travel by bicycle.

Initiatives could include:

- **Develop and support education programs** in conjunction with partner agencies to develop skills, information, and confidence. These programs can support residents to cycle more through cycling skills programs, the Safer School Travel Program, Ride to Work/Bike to School Week, and Bike Month.

- **Improve signage and wayfinding** to assist cyclists as they navigate to their destinations. While most residents know how to travel through the City by car, it may not be obvious which routes are the best by bicycle. Signage can also help riders find the best routes to match their cycling abilities and comfort levels and to find new routes as they become more confident.

- Expand on the current **dedicated website** by providing links to cycling-related social media tools (i.e. cycling app, online interactive map) to promote and market cycling initiatives. The website could potentially

be a combined 'walking and cycling in Nanaimo' webpage, used to provide general information about the benefits of walking and cycling, a description of the current pedestrian and cyclist routes, and a link to the pedestrian and bicycle maps and other resources.

- Develop an **online interactive bicycle user map and support development of mobile applications** to provide information about the bicycle network, amenities, transit exchanges and bus stops, bicycle parking locations, and bicycle retailers.

- **Utilize QR Codes** for display on bicycle racks, bus shelters, and other public spaces for cyclists to scan with their mobile phones to link them to the online resources.

Visual Summary Bicycle Support Initiatives

SHORT-TERM BICYCLE PARKING is designed to enable cyclists to conveniently lock up their bicycle for a few minutes or a few hours. Short-term bicycle parking may be located in the public right-of-way, on the sidewalk zone or on-street. Many destinations and businesses can attract cyclists by offering convenient short-term bicycle parking options, including commercial and recreation centres, shopping areas, restaurants, and schools.

SECURE LONG-TERM BICYCLE PARKING is designed to accommodate cyclists who need to park for longer durations, and is often provided in a type of enclosure to provide a higher level of security than short-term racks. Purpose-built structures can be provided that provide a secure cage or room with a large capacity for storing many bicycles.

BICYCLE CORRALS typically occupy one or two on-street parking space. Bicycle corrals can improve the walking environment by removing bikes from busy sidewalks, and encourage cycling to high activity areas.

BIKESHARE programs offer access to bicycles for short-distance trips, and can be an attractive option to casual riders and visitors to try cycling in Nanaimo.

WAYFINDING AND SIGNAGE assists cyclists by providing information on the best route to take to get to community destinations. It is important that wayfinding and signage provides directions to major destinations at a glance, so cyclists don't have to stop to find their way.

BIKE RACKS ON BUSES Providing bicycle racks on buses can allow cyclists to make longer trips, and can solve the 'last mile' problem for riders who would like to quickly access destinations further away from the bus stop.

Policies and Actions

The policies and actions below are intended to help make cycling a safe, comfortable, enjoyable, and normal experience for residents of all ages and abilities. The cycling actions focus on strategic bicycle network improvements in areas of high cycling potential and demand, developing more comfortable bicycle infrastructure, integrating bicycle facilities with other modes, and supporting cycling education, awareness, and marketing and communication initiatives. The five key cycling policies and supporting actions are shown on the following pages.

POLICIES AND ACTIONS

C1: Develop and Expand the Bicycle Network

- C1A: Implement the priority cycling network, connecting the City's largest destinations over the short term.
- C1B: Implement the long-term cycling network over the long-term through capital projects, development, and other opportunities as they arise.
- C1C: Consider cycling improvements as part of all street capital projects, installing and upgrading cycling routes through road construction and rehabilitation.
- C1D: Create cycling gateways at key entry points to the City to provide information and wayfinding for visitors.

C2: Develop Safe, Accessible and Comfortable Bicycle Infrastructure

- C2A: Introduce new bicycle facilities and crossing treatments as routes are developed.
- C2B: Update the City's Bicycle Facility Design Guidelines to provide direction on the design of safer more comfortable bicycle facilities and intersection crossings.
- C2C: Update the City's Street Design Guidelines to ensure cyclists are better accommodated within standard street cross sections.
- C2D: Implement a cycle track pilot project within the Downtown and consider cycle tracks for future network elements.

C3: Integrate Cycling with Other Modes and Initiatives

Citywide

- C3A: Require bicycle parking in office, commercial, and medium-high density residential developments.
- C3B: Develop bicycle parking around key trip generators.
- C3C: Work with BC Ferries to improve bicycle routes to/from terminals, parking at terminals, and facilities on board ferries.
- C3D: Work with BC Transit to provide secure and convenient bicycle parking at transit exchanges.
- C3E: Explore development of a bike share program.

POLICIES AND ACTIONS

Mobility Hubs

- C3F: Continue efforts to create a Bicycle Friendly Business District in Downtown Nanaimo.
- C3G: Develop on-street bicycle parking within mobility hubs and other high activity streets.

C4: Support Cycling Education & Awareness

- C4A: Continue to support Bike to Work and Bike to School events.
- C4B: Encourage travel to community events by walking, cycling, and transit.
- C4C: Develop and implement consistent, legible wayfinding system on all bicycle routes.

C5: Promote Marketing & Communication for Cycling

- C5A: Create a dedicated active transportation website, including online mapping that educates residents and visitors on the City's walking/cycling network and facilities.
- C5B: Produce and regularly update citywide cycling map.

3.4 TRANSIT


Regional District of Nanaimo
Nanaimo Regional Transit System 9224
NOT IN SERVICE
BC Transit

3.4 Transit

Longer trips are required to connect between many of the City's important destinations and are too far for many residents to walk or cycle. Therefore, providing high quality transit service is an important part of developing a sustainable transportation system and providing options to travel without a vehicle. Transit in Nanaimo is planned and operated by the RDN, with support from BC Transit. The City works with these partners as representatives of the community, as well as providing space within City streets for bus stops and exchanges. Currently, 15 bus routes serve Nanaimo, providing connections between Nanaimo's neighbourhoods, transit exchanges, schools, retail and employment centres, and adjacent RDN communities.

Currently, approximately 2.5% of all daily trips in Nanaimo are made by transit. Transit supports many people in their daily travels, particularly older residents, students, and those without access to a vehicle. However, service frequency and coverage limitations prevent transit from being a convenient travel mode for more people. Low-density and dispersed land uses in many areas make transit costly to provide and less attractive to riders, generating lower ridership. Where higher residential, employment and service densities are present (i.e. Country Club, Downtown and Woodgrove) or at key community institutions, (i.e. VIU and NRGH), ridership is significantly higher. To increase ridership significantly, transit must be competitive with other modes and attract riders that have access to vehicles, but choose to take transit. This will require both the right land use conditions and attractive transit service to shift travel patterns over time.

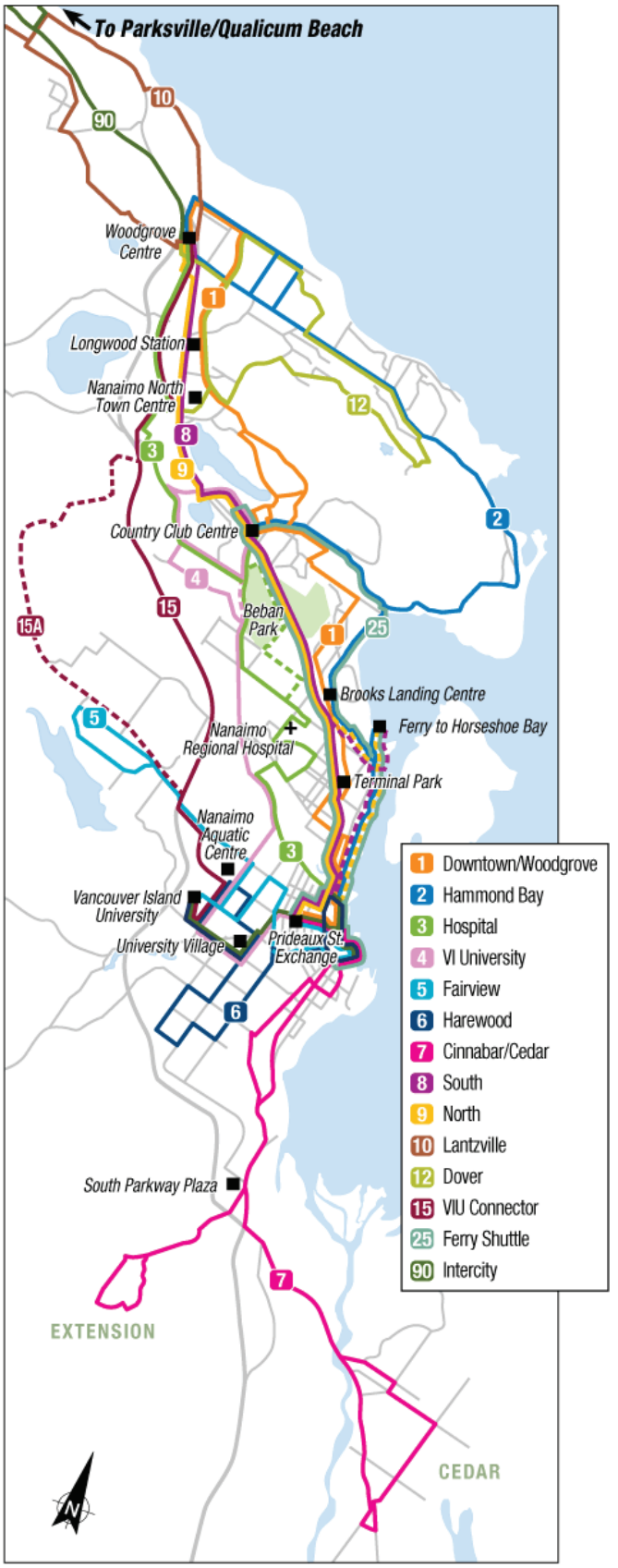
Recognizing these challenges, BC Transit and the RDN are developing a 25-year Transit Future Plan for Nanaimo to guide and prioritize future transit investments. The Transit Future Plan will guide future transit investments, such as key transit corridors, service hours, and infrastructure improvements over the long-term. The City, RDN and BC Transit are working together to ensure that both plans support each other's objectives.

TARGET

5x

The Transit Future Plan has set a regional mode share target of 5% by 2036 and target of 8% within the City of Nanaimo. As the densest and most populated part of the RDN, Nanaimo already accounts for the majority of transit ridership and service within the region. Future transit growth will continue this trend with Nanaimo projected to generate the largest component of future ridership growth. By 2041, target transit ridership will be five times higher than today.

Existing Nanaimo Transit Routes



The NTMP provides the City with an important opportunity to articulate its vision for transit service, guiding policy and infrastructure improvements that will ensure the transit system supports overarching goals and objectives of creating a sustainable transportation system. While transit forms a relatively small part of the Nanaimo's current transportation mix, it has grown consistently over the last 15 years, and will play an increasingly important role in connecting Nanaimo's neighbourhoods and mobility hubs in the future. Consistent with the Transit Future Plan, the NTMP outlines actions and policies that the City can adopt to support the RDN's goals of achieving an 8% transit mode share. The provision of strong transit service will also support the City's goal to develop mobility hubs - while mobility hubs and other large trip generators will provide the ridership required to support higher quality transit services.

Strategic Direction and Goals

The NTMP envisions a significant increase in the number of transit trips made in Nanaimo in the future. To make transit an attractive and convenient option that is time-competitive with automobile travel and is considered a viable travel option, the overarching strategic direction for transit is as follows:

STRATEGIC DIRECTION

Make transit a more economical, convenient, reliable, accessible, and practical way to move within and beyond the City by enhancing transit services and facilities and the overall customer experience.

GOALS

- Enhance transit service quality
- Develop a transit-supportive public realm
- Enhance the transit customer experience
- More people taking transit more often

The key policies to support these goals are briefly described below.

Create More Attractive Transit Services

In order to achieve the targets in the NTMP, Nanaimo's transit system needs to be designed to provide convenient and attractive services by improving the speed, frequency, and directness of transit services. By doing so, the transit system can be made to be more time-competitive with automobile travel and attracting more choice riders – people who may have access to an automobile but choose to take transit because it is convenient.

To do so, the overarching strategy to make transit more attractive is to focus on the development of a core frequent transit network (FTN) of direct routes with frequent service that serve the City's largest destinations and areas of highest transit potential. Along these routes, frequent transit service throughout the day would allow users to casually use transit without referring to schedules. Although the frequent transit network is the City's priority, the FTN will not reach all destinations. Therefore, improved local transit services will also be required to provide wider coverage to all areas of the City, Lantzville, and Cedar. Additional improvements to regional transit connections should be considered over the longer-term providing better/new linkages to regional gateways such as Duke Point and Nanaimo Airport, and other regional communities such as Qualicum Beach, Parksville and Ladysmith. This framework mirrors the key themes and directions from the Transit Future Plan for Nanaimo. The recommended future transit network is shown in **Map 4** and described in further detail on the following pages. Although the proposed transit network is still focused on Downtown, it also emphasizes stronger connections between the City's four major exchanges, as well as mobility hubs and the key institutional and employment destinations within them. Recommendations for the frequent, local, and regional transit networks in Nanaimo include:

- **Establish a Frequent Transit Network** that provides frequent, direct, and reliable connections between areas of the City with the highest demand, including mobility hubs and major transit exchanges. The FTN will also serve major destinations along the Bowen Road and Island Highway corridors where current transit ridership is the highest and future population and employment growth is expected. Transit service on FTN corridors will have a target frequency of less than 15 minutes throughout the day, so that transit riders will be able to travel without consulting a service schedule. As the FTN is intended to carry a significant share of the transit system's total ridership, the FTN should include enhanced stop amenities and corridor branding along its routes. Over time, transit priority measures may be added as warranted.

  Along the Island Highway corridor, an even higher level of service is recommended, limited-stop express **Rapid Bus Transit**. Although Rapid Bus Transit would have service frequencies similar to the rest of the FTN, it would have limited stops, allowing for faster travel times between Downtown, Country Club, Woodgrove, and key destinations in-between. As a limited stop transit service, balancing fast and direct service against providing access to key destinations will be critical to maximizing ridership. As a first step in partnership with the City, a Corridor Plan should be undertaken to establish routing and station locations. Over time, additional transit features such as branding, enhanced stations, and transit priority measures would make the service even more attractive.

  In addition to enhanced service frequency for the FTN and Rapid Bus Transit, the City should support these routes through **transit supportive land use policies**. The FTN and Rapid Bus Transit along the Island Highway corridor are key elements of the Transit Future Plan to attract choice users and make transit a more viable option for travel within Nanaimo.

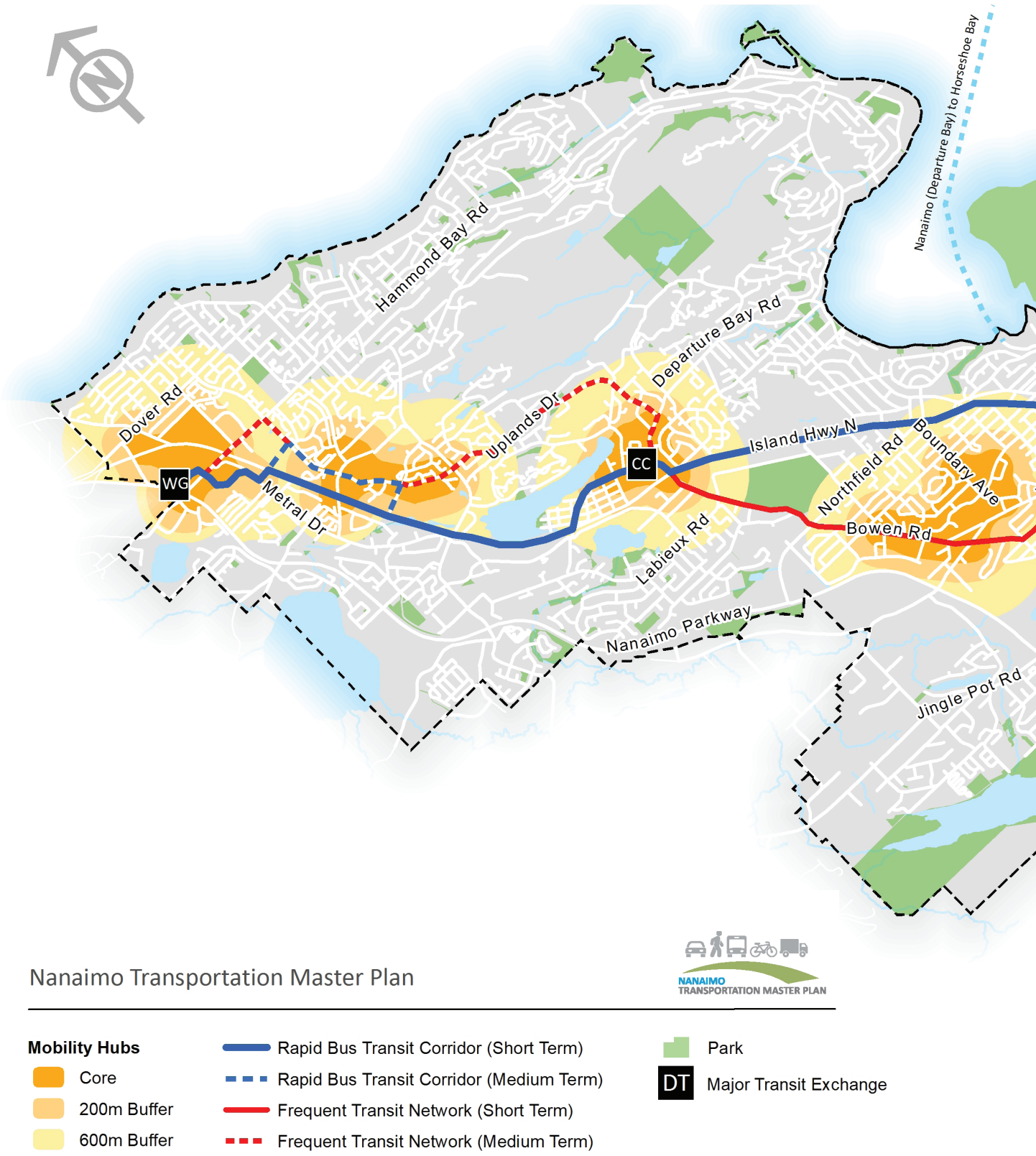
- **Enhance the Local Transit Network (LTN)** to extend the reach of the Frequent Transit Network and form connections between neighbourhoods, local destinations, and to the rest of the transit system. Although the City's priority is to focus on developing the FTN, LTN service is also important as it extends the coverage of the transit network to many of the City's neighbourhoods. A review of existing services and routes is recommended to improve the frequency and directness of services, while in areas of new development, transit service should be extended to provide coverage to new neighbourhoods. The LTN is envisioned to provide relatively frequent service (30 minutes or better during peak periods) with more focus on coverage running all day and into the evening.

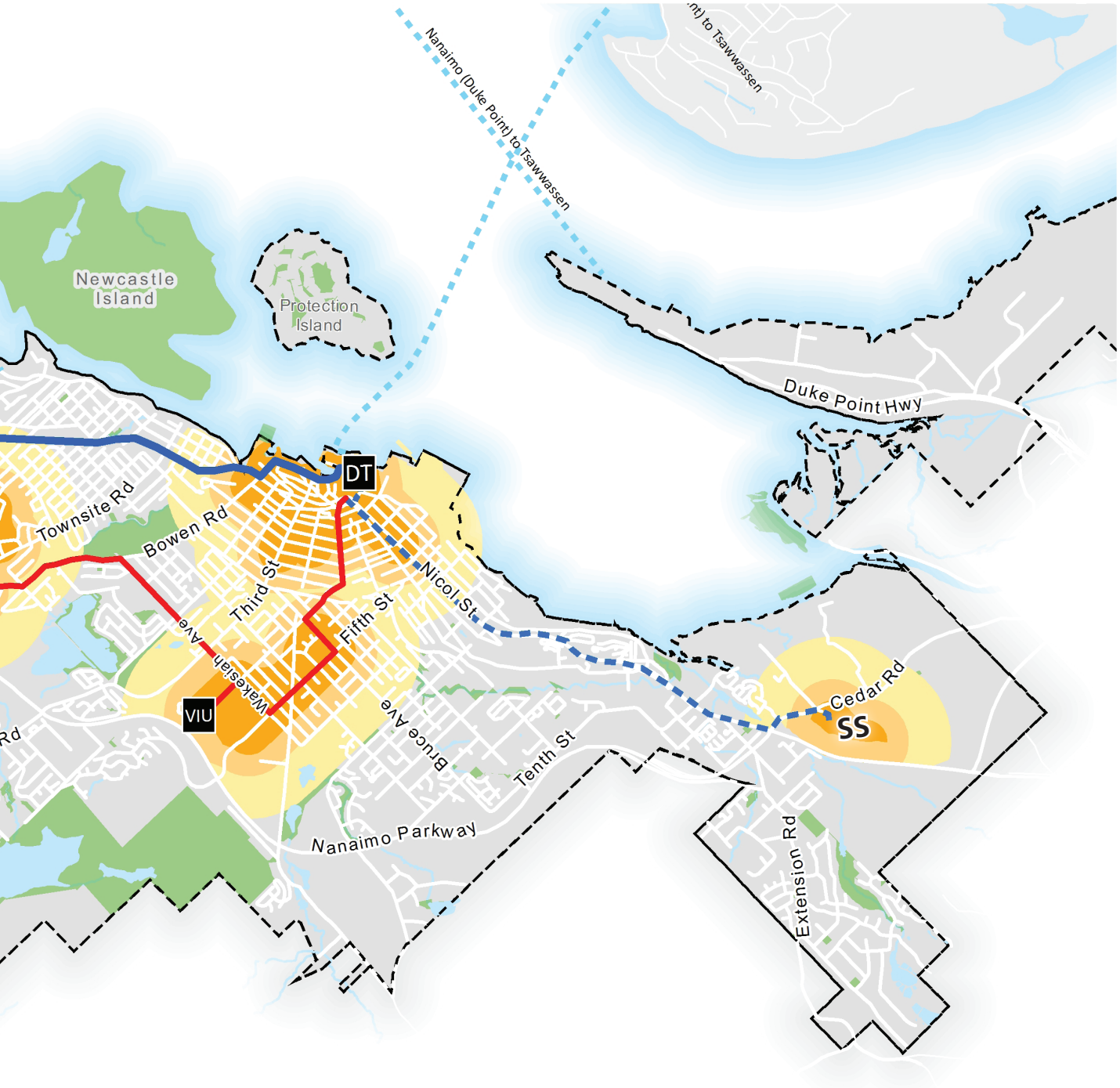
- **Support regional transit connections.** Expanded regional transit connections are important to make transit a more viable option for residents making trips between Nanaimo and adjacent communities. As proposed within the Transit Future Plan, extended inter-regional connections could link Nanaimo, Parksville, Qualicum Beach, Lantzville, Ladysmith, and the Cowichan Valley over the long term. In addition, transit can also be connected to long-distance transportation links through the Nanaimo Airport and BC Ferry terminals.

  A number of route specific changes are proposed for future consideration, including:

  - Route 4 (Frequent Transit Network) – Reroute on Bowen Road for full length providing direct connection from VIU to Country Club.
  - Route 5/6 – Review routes to reduce overlap with Routes 4/15, improve service frequency and reduce circuitousness.
  - Route 7 – Consider providing separate service to Cinnabar Valley / Cedar.
  - Route 8/9 (Frequent Transit Network / Rapid Bus Transit) – Consider extension to meet Cinnabar Valley, Cedar and Route 15 buses at a new secondary exchange located at Southgate.
  - Route 12 – Consider rerouting and improved service to better serve new development in the Linley Valley.
  - Route 15 – Consider extension of Route 15 south along Bruce Ave / Tenth St to Southgate to better service new development in South Harewood.
  - Route 90 – Consider combining/interlining Route 90 with the future Rapid Bus Transit within Nanaimo to eliminate the need for regional riders to transfer at Woodgrove.

Map 4 - Future Transit Network (Core Routes)





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Metres

CITY OF NANAIMO THE HARBOUR CITY

URBAN systems

Improve and Expand Transit Facilities

The attractiveness of transit is based not only on services, but also on passenger facilities provided at transit exchanges and bus stops. Improving transit facilities will improve the overall transit customer experience and help make transit an attractive and convenient transportation choice. Improvements to transit exchanges and bus stops include:

- **Transit exchanges** are both key destinations and transfer points between bus routes. Where properly planned and designed, transit exchanges can become multi-modal transportation hubs, with connections to transit and other modes, and commercial service centers for transit riders. Current major transit exchanges are located on Prideaux Street in Downtown, at Woodgrove Centre, Country Club, and VIU. A number of secondary exchanges are located throughout the system with transfers between bus route pairs and/or access to key destinations (i.e. NRGH, Brooks Landing, and University Village). To accommodate future growth and development, and the emergence of mobility hubs over time, the City will need to explore the role of transit exchanges in the transportation system. Recommended improvements for transit exchanges include:

- Downtown Transit Exchange. The City supports the relocation of the Prideaux Transit Exchange to the Assembly Wharf area where a new exchange could form part of a multi-modal transportation hub - with potential integration to other modes as well as direct access to the Downtown. Both public and private investment in the area is important to develop a safe, comfortable and attractive facility with a strong mix of modes and uses.

- Woodgrove Transit Exchange. The City, RDN and Woodgrove Mall should develop a long-term exchange plan to ensure that this facility can be maintained and grow with the transit system.

- Country Club Transit Exchange. The City and RDN should explore opportunities to improve bus operations, passenger amenities, and streetscaping at the exchange on Norwell Drive, as well as consider how the transit exchange can better integrate with surrounding development and Country Club Centre.

- Vancouver Island University. The City should continue to support VIU's long-term plan for the exchange, the improvements for transit services to VIU, and its long-term objective to reduce personal auto use.

- Future South Nanaimo Exchange. The City should consider the development of an exchange in the south of the City in the long-term, with potential locations at Southgate Mall or within the planned future Sandstone area. This exchange could allow transfer between routes from the north, and local services in the south. Services from this exchange would support the future planned population and employment growth in the south of the City.

- Secondary exchanges and stops should be identified and reinforced as key exchange points, with connections to and from amenities within these areas improved over time.

- **Bus Stops.** Passenger amenities at bus stops can help make transit more attractive and convenient. Amenities at bus stops can include seating, shelter, lighting, and customer information, which should be provided along frequent transit routes and other high activity stops. In addition, the City should improve accessibility to transit by providing more accessible bus stops and accessible transit exchange designs to reduce barriers to using the transit system for seniors, children and youth, and people with physical or cognitive disabilities. The City should work with RDN Transit to update the transit passenger facility guidelines and to develop a prioritization methodology for bus stop improvements, based on criteria such as whether they are on the Frequent Transit Network or a regional transit route,

and whether the bus stop is within close proximity to a mobility hub, commercial area, or school.

Transit Support Initiatives

While improvements to transit services and facilities are important strategies to help expand the use of Nanaimo's transit system over the next 25 years, there is a range of other support initiatives that can make Nanaimo's transit system easier to use, including:

- **Ensuring consistent bus stop signage** to provide a recognizable transit 'brand', making it easier for passengers to identify bus stops, exchanges, and additional transit resources.
- **Providing enhanced transit information** at bus stops, including route maps, schedules, accessibility information, bus stop ID numbers, and wayfinding information for the surrounding area.
- **Supporting online trip planner and mobile applications** through BC Transit, Google Transit Trip Planner, or other applications that allow customers to plan their transit trip by entering an address, intersection, bus stop number, or bus route.
- **Providing real-time transit information** that tells passengers the actual wait time until the next bus arrival.
- **Developing corridor and vehicle branding standards** for high activity transit corridors to ensure a recognizable brand for transit service.
- **Developing a social media presence** allowing customers to keep up-to-date via Twitter, Facebook, and other social media tools.


DOWNTOWN
1023
BCTransit
FH 3964

Visual Summary Transit Support Initiatives

CONSISTENT BUS STOP SIGNAGE can serve to provide a recognizable transit 'brand', and can make it easier for transit passengers to identify bus stops, transit exchanges, and additional transit resources.

ENHANCED INFORMATION (e.g. route maps, schedules, accessibility information, and wayfinding) can be provided at bus stops and exchanges for the convenience of passengers, which can improve the experience and ease of using the transit system.

TRIP PLANNER / MOBILE APPS can allow customers to plan their transit trip ahead of time. Providing more information through online and mobile applications can improve the convenience of using transit.

REAL-TIME INFORMATION is often displayed on electronic reader boards located at bus stops and exchanges, that display the wait time until the next bus arrival, service changes, and rider alerts. Real-time technology serves to increase communication with transit customers.

BUS SHELTERS provide transit passengers with a covered space to wait, and sometimes can include seating and scheduling information.

ACCESSIBLE BUS STOPS facilitate people with different abilities and special needs to find, board and get off the bus. Accessible bus stops can include features such as a wide landing pad for deployment of a wheelchair ramp, tactile surface indicators, signage, sidewalk curb letdowns to access the stop, and seating.

In addition, the City and BC Transit should consistently monitor transit usage and travel patterns so that transit improvements are evidence based. Data should allow the analysis of ridership by stop and the understanding of rider origins/destinations, and could be collected through on-board travel surveys, ridership counts, and farebox data collection. Future service improvements should be supported by field data to maximize ridership and other performance measures.

- **Undertake regular ridership monitoring and data collection** to understand transit user patterns and maximize the benefits of future service expansions.

Policies and Actions

The policies and actions below are intended to make transit a more economical, convenient, reliable, accessible, and practical way to move within and beyond the City by focusing on strategic improvements to the transit network that focuses on areas with the highest ridership potential. The policies focus on creating attractive transit services, including frequent and rapid bus transit, local transit, and regional connections, as well as improving and expanding transit facilities along with a range of transit support initiatives. In order to support these policy areas, the following actions are required.

POLICIES AND ACTIONS

T1: Create more attractive core transit services (frequent and rapid bus transit)

- T1A: Support the development of a Frequent Transit Network, (FTN) with 15 minute headways or better provided through the majority of the day connecting Downtown, Woodgrove, VIU, and Country Club.
- T1B: Support the development of a Rapid Bus Transit corridor, starting with an alignment and station location study, along Island Hwy connecting Downtown, Woodgrove, and other key destinations along the way.
- T1C: Support core transit services with land use and development policies.
- T1D: Support transit priority measures in partnership with BC Transit and the Ministry of Transportation and Infrastructure along Island Highway and FTN corridors where warranted.

T1: Create more attractive transit services (local transit)

- T1E: Support more frequent service on local routes, where warranted, that connects neighbourhoods to the frequent transit network.
- T1F: Collaborate with BC Transit and RDN to rationalize existing routing and coverage to reduce trip times and increase service levels.
- T1G: Support improvements that fill in network coverage gaps, particularly in new development areas in North and South Nanaimo.

T1: Create more attractive transit services (regional transit connections)

- T1H: Explore with BC/RDN Transit the potential for operating a hybrid regional-rapid bus transit route within Nanaimo and connecting to adjacent communities.
- T1I: Support stronger transit integration with BC Ferry service at Departure Bay ferry terminal.

T2: Improve and expand transit facilities

- T2A: Support the relocation of the Downtown Transit Exchange from its current Prideaux Street location to the Assembly Wharf area as part of a future Downtown multi-modal transportation hub.
- T2B: Encourage BC/RDN Transit to develop master plans for all major exchanges.
- T2C: Work with BC/RDN Transit, the public, and private sector to provide passenger amenities at and around major transit exchanges, frequent transit network stops and other high-activity stops.
- T2D: Explore strategies to replace existing transit shelters as part of a comprehensive street furniture program.

POLICIES AND ACTIONS

- T2E: Create a universally accessible transit system, through the provision of accessible waiting and boarding areas at all transit stops and sidewalk connections to stops.
- T2F: Work with the Regional District to update passenger facility guidelines and create standard, attractive, and comfortable designs for stops, shelters, and street furniture.

T3: Transit support initiatives

- T3A: Work with BC Transit to apply consistent and legible bus stop signage throughout Nanaimo, including enhanced wayfinding and transit information at key locations.
- T3B: Support the development of corridor and vehicle branding standards for frequent transit corridors.
- T3C: Support the development of online transit trip planning tools, access to transit schedules, routes, 'next-bus' information, and bus stop locations.
- T3D: Work with BC Transit to support the provision of real-time information at transit stops and along key transit corridors.
- T3E: Develop protocols to better inform Council of impacts to the City associated with changes to RDN Transit services.
- T3F: Support future service expansions with ridership and travel pattern data to optimize improvements.

3.5 MAJOR ROADS

3.5 Major Roads

Travel by private vehicle is the dominant mode of transportation within Nanaimo today, with 88% of all trips made by car. For many residents and businesses, travel via the road network is currently their only viable travel option. The City's road network is made up of different components, each serving specific functions within the overall network. While travel by car provides many benefits, our dependence on cars impacts our health, our economy and our environment. The NTMP seeks to reduce future demand for travel made by personal vehicle by making sustainable transportation options (i.e. walking, cycling, and transit) more attractive for more trips. The car will still be part of our transportation mix in the future and this chapter provides recommendations on how to manage future traffic growth by planning for an effective but sustainable road network, by working to make roads safer, and by reducing the negative community impacts of travel by car.

Under the NTMP's targets, the proportion of trips accommodated by car is projected to fall from 88% to 76% by 2041. With these targets, just under half of all new trips between now and 2041 would be accommodated by sustainable modes of transportation, a substantial shift from current trends.


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SPICE
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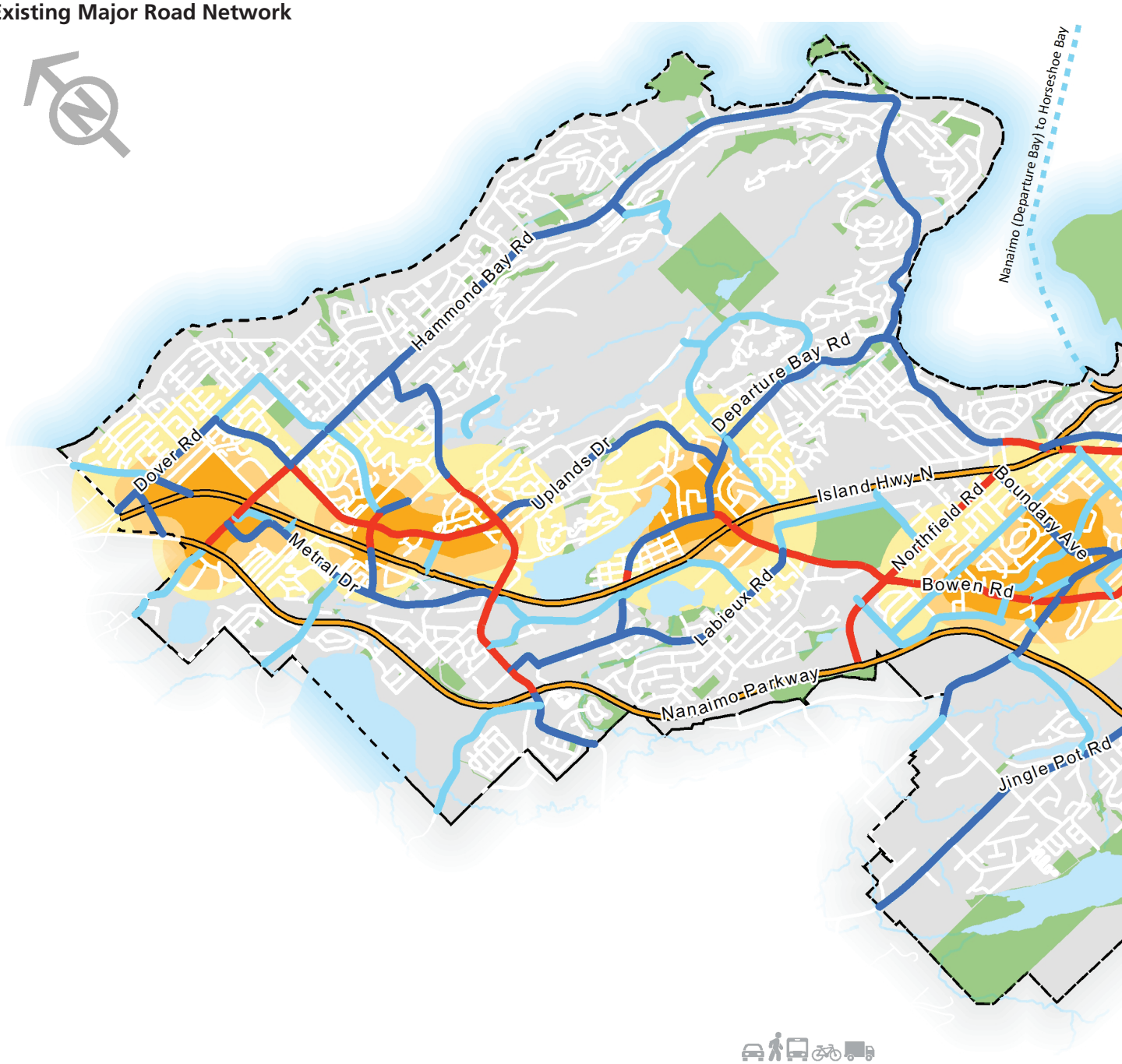
However, even with these changes, trips made by automobile are projected to still grow due to population and employment growth. By 2041 the number of trips made by automobile in the City is projected to increase by 55,000 trips per day, a 25% increase from current conditions.

While the road network is important to residents and visitors, it is also critical to businesses. Commercial vehicles deliver and distribute goods between stores, warehouses and producers throughout Nanaimo and beyond. As a regional distribution centre and gateway to Vancouver Island, the City also has a larger role in supporting intra-provincial trade. Providing strong connections between highways, ports, ferries and major commercial and industrial areas will help support local businesses and the economy.

Accommodating future growth while meeting the goals and objectives of the NTMP will require a balanced approach to developing the City's road network. By developing the network strategically, planning for future expansions in advance (but deferring improvements until they are required), the Plan seeks to reduce future road network improvements and costs. Moreover, many of the road projects identified in the Plan are not driven by capacity and congestion, but rather seek to address existing safety issues, complete missing links in the road network, are part of new neighbourhoods or upgrades to existing streets to make them better places for pedestrians, cyclists and other road users. Where expansion of the road network is recommended, it will be important that we consider all transportation modes.

The City's existing road network (**Map 5**) is divided into a road classification hierarchy that reflects the mix of traffic and function of the road. At the highest level, the Provincial Highway network, is strongly focused on mobility of all vehicle types through and within the City. The highway system also connects to BC Ferries' main terminals at Departure Bay and Duke Point. The Major Road Network (Arterials, Major and Minor Collectors) is also mobility-focused, but encompasses many of the streets Downtown and commercial centres, providing a mix of mobility and access in some areas. Finally, the City's Local Street Network (Neighbourhood Collectors, Local Streets, Lanes, Commercial and Industrial Streets) provides access to neighbourhoods and other land uses.

Map 5 - Existing Major Road Network



Nanaimo Transportation Master Plan

NANAIMO TRANSPORTATION MASTER PLAN

Major Road Network - Road Classification

Ministry of Transportation and Infrastructure

- Provincial Highway

City of Nanaimo

- Arterial
- Major Collector
- Minor Collector

Mobility Hubs

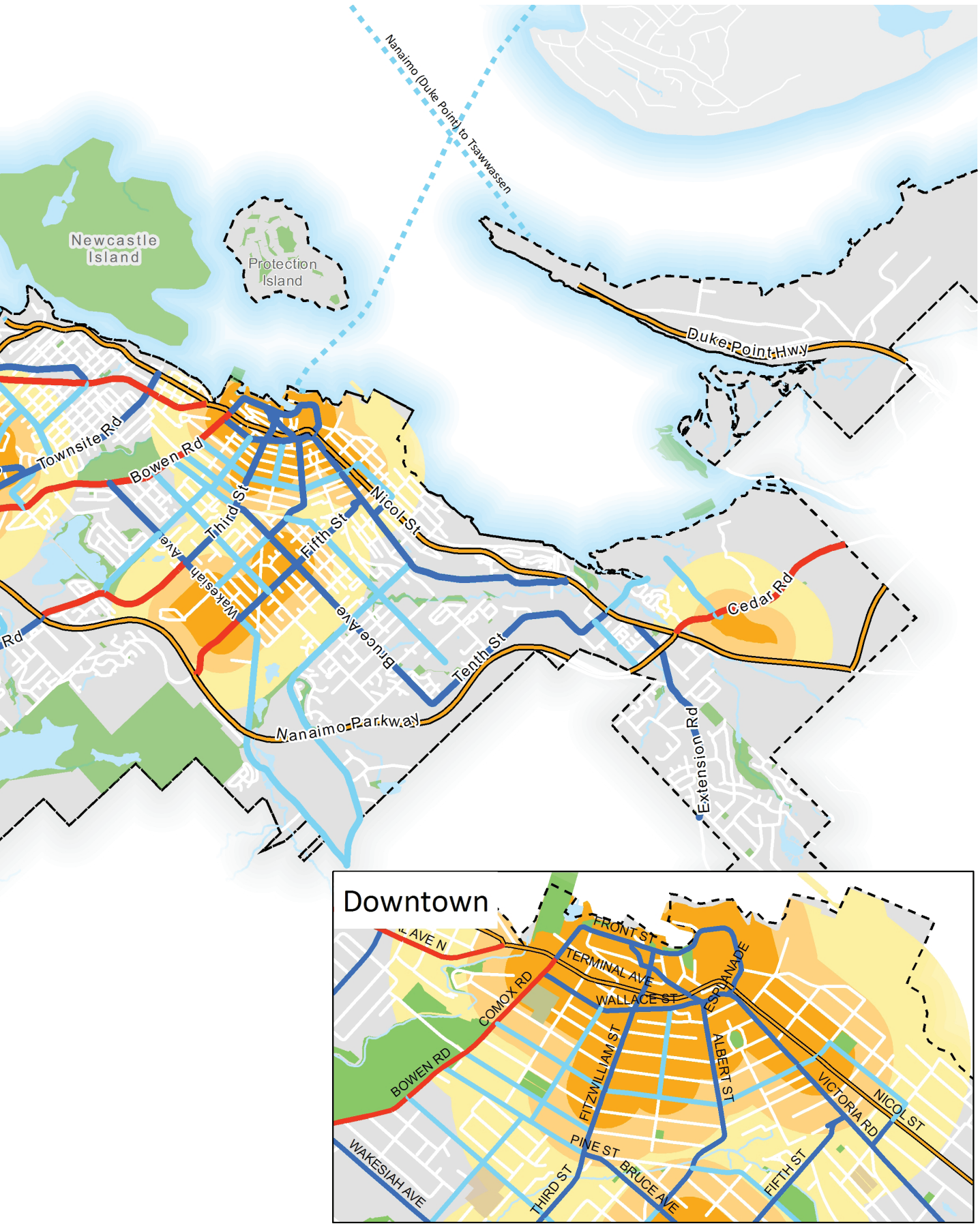
- Core
- 200m Buffer
- 600m Buffer

- Park

0 500 1,000 1,500 2,000
Metres

CITY OF NANAIMO THE HARBOUR CITY

URBAN systems


Nanaimo (Duke Point) to Tsawwassen
Newcastle Island
Protection Island
Duke Point Hwy
Townsite Rd
Bowen Rd
Third St
Fifth St
Nicol St
Wakesiah Ave
Bruce Ave
Tenth St
Cedar Rd
Nanaimo Parkway
Extension Rd
Downtown
FRONT ST
TERMINAL AVE
WALLACE ST
COMOX RD
ESPLANADE
ALBERT ST
FITZWILLIAM ST
BOWEN RD
VICTORIA RD
NICOL ST
PINE ST
BRUCE AVE
WAKESIAH AVE
THIRD ST
FIFTH ST

Strategic Direction and Goals

The major road network represents a critical component of the City's transportation system, as it supports not only automobile traffic, but transit, walking, cycling, and goods movement; it is the skeleton of the overall system. The primary objective of Nanaimo's major road network plan is to provide a strategy for managing the existing road network and to promote the integration of all travel modes into the system, particularly along major roadways where most improvements have traditionally been oriented to moving cars. The overarching strategic direction for major roads is summarized as follows:

STRATEGIC DIRECTION

The Plan should identify investments required in the road network to meet the mobility needs of current and future residents while encouraging a shift from personal auto travel to other more sustainable modes. At the same time, future street investments should aim to create more complete streets that better balance the needs of all road users.

Enhance the mobility and access of residents and visitors travelling within and throughout the City by maximizing the use of the existing road network before building new facilities, and by supporting initiatives which reduce the need to travel by single occupancy vehicle.

GOALS

- Reduce the environmental impact of vehicle trips
- Make the street network safer and more comfortable for all users
- Manage the road network in an efficient, cost-effective manner
- Ensure the efficient movement of goods and services now and into the future
- Reduce single occupant vehicle trips

The key policies to support this goal are briefly described below.

Undertake spot improvements to improve intersection safety and operations

Spot improvements are typically small scale targeted projects that address specific safety and operational issues at intersections. Based on an analysis of collision records at intersections throughout the City, a number of intersections have been identified as potential candidates for spot safety improvements. These small improvements can often mitigate existing safety issues and extend the life of infrastructure, helping to delay larger, more expensive improvements.

Where intersections are under the jurisdiction of the MoTI, the City would work with the Province. Intersections recommended for safety performance reviews include:

- Bowen Road at Northfield Road
- Bowen Road at Wakesiah Avenue
- Comox Road at Machleary Street
- Island Highway at Northfield Road
- Island Highway at Bowen Road
- Island Highway at Hammond Bay Road
- Island Highway at Rutherford Road
- Island Highway at Turner Road
- Uplands Drive at Rutherford Road
- Wakesiah Avenue at Third Street

Road safety is supported by ICBC through their Road Safety Improvement Program and could be a source of funding for spot safety improvements in Nanaimo. Over the last 5 years, ICBC has contributed over $450,000 to the City for road safety improvements. It is recommended that the City continue to invest in road safety through its partnership with ICBC.

Complete Streets

Complete Streets is an approach to street design that considers the surrounding context, land use and all street users within the street design process. In a complete street, the design and operation of the entire road right-of-way is considered to support all road users, including pedestrians, bicyclists, motorists, commercial vehicles and transit riders. This balanced approach, results in streets that function better for more street users in comparison to historic designs that emphasized motor vehicle operations. Complete streets can reduce collision rates (particularly for vulnerable road users such as pedestrians and cyclists), better support adjacent land uses (both businesses and residents), support shifts to sustainable transportation travel modes (walking, cycling and transit) and improve the quality of streets as positive public spaces within communities.

Update the City's street design standards to develop streets for everyone

Streets are the largest public space in the City, and directly influence how we travel. In the past, most streets in Nanaimo have been designed mainly to accommodate vehicle travel, however, streets should be comfortable places for all road users – places that feel safe, interesting and convenient to travel, whether by car, foot, bicycle or bus. The concept of Complete Streets encompasses many of these ideas and seeks to make streets comfortable for users of all ages, abilities and transportation modes. By including complete street principles into future design guidelines and standards, future infrastructure will help the shift towards a more sustainable transportation system.

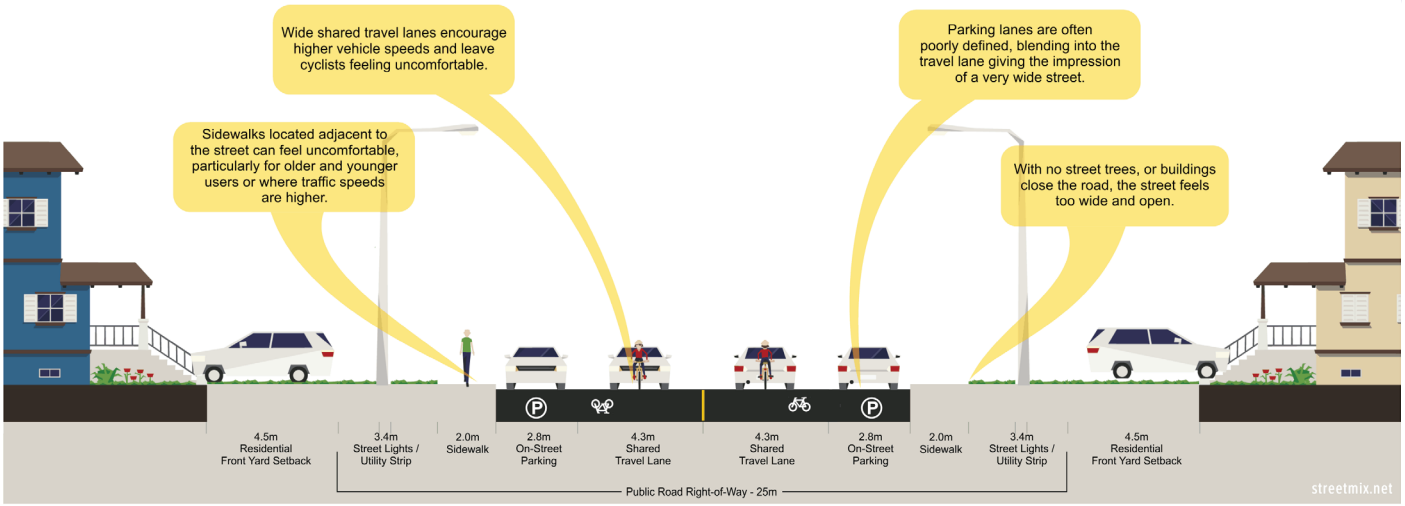
The design of new streets is guided by the City's Manual of Engineering Standards and Specifications (MOESS). While the MOESS currently provides utilitarian facilities for all users, the City should update the MOESS to integrate complete streets principles into all new street construction.

As a first step, the City's Minor Collector street cross-section has recently been updated to address some of the issues raised above. The figure on the following page shows the historic and updated street cross sections. Both provide the same basic functionally (one lane in each direction plus on-street parking) but the second cross-section includes many elements of a complete street and seeks to better accommodate all road users.

Revising road sections is a technical process that must balance the needs of all road users as well as utilities such as water, sewer, storm drain, cable, telephone, hydro, street lighting. The City should review both its street standards in the MOESS and road network classifications within the first year of the Plan.

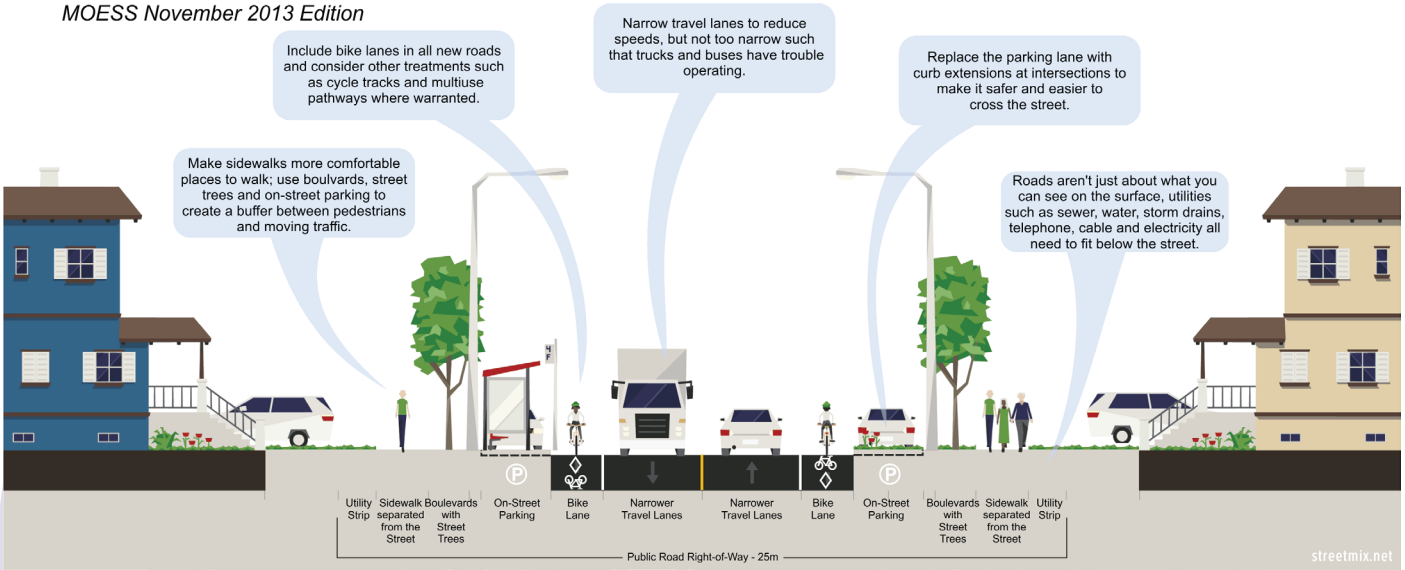
Minor Collector - Cross Section - Existing

MOESS November 2009 Edition



Minor Collector - Cross Section - Future

MOESS November 2013 Edition



Complete street elements within the City's new Minor Collector street cross-section.

Major Road Improvements

Over the next 25 years, population and employment growth within the City and surrounding region will place increasing pressures on the City's transportation network. The road network will need to accommodate the future travel needs of new businesses and residents as the City expands.

Construction of new streets and upgrades to existing roads provide an opportunity to make them better places for pedestrians, cyclists and transit users while reducing collisions and improving safety. In addition, many new roads will be developed to support new neighbourhoods, complete missing links and address congestion; these all present opportunities to create complete streets.

As with any major infrastructure network, strategically planning for the future is critical. A well planned network can be developed strategically by protecting for future improvements early, before development occurs, and by developing new infrastructure only as it's required. This section presents a series of road improvement projects that could occur over the next 25 years and beyond. By anticipating and planning for these projects, the City can deliver a better road network, for less money, and leave improvement options available for future generations.

To achieve these goals the City has prepared a list of potential future road improvement projects. These projects have been identified to address a number of issues that either impact the current road network or are expected to arise during the Plan horizon.

Improvement projects can be initiated for a wide range of reasons, many of which have been described within the NTMP. Existing roads may have poor safety performance, poor accommodation for sustainable modes, traffic congestion or may be negatively impacting surrounding neighbourhoods. New roads are required as neighbourhoods are developed or to complete missing links in the existing network. For each future project, key drivers and project timeframes have been identified and described below.

Key Project Drivers

C **Capacity/Congestion.** Current or projected traffic conditions will create significant delays. The project will seek to reduce delays and congestion by expanding road network capacity.

N **Network Completion.** The current network is missing links (or restricts turns) that will be completed through development of the project.

S **Safety.** Current conditions result in high numbers of collisions or collision rates. The proposed improvements are expected to reduce collisions significantly.

A **Multi-Modal Transportation / Complete Streets.** Improvements develop a key link within a multi-modal transportation network or sustainable transportation issues form a major component of the project rationale. Improvements support better integration between the street and surrounding land uses.

D **Development.** The project will be constructed by or to support future development. The project would likely not proceed without future development.

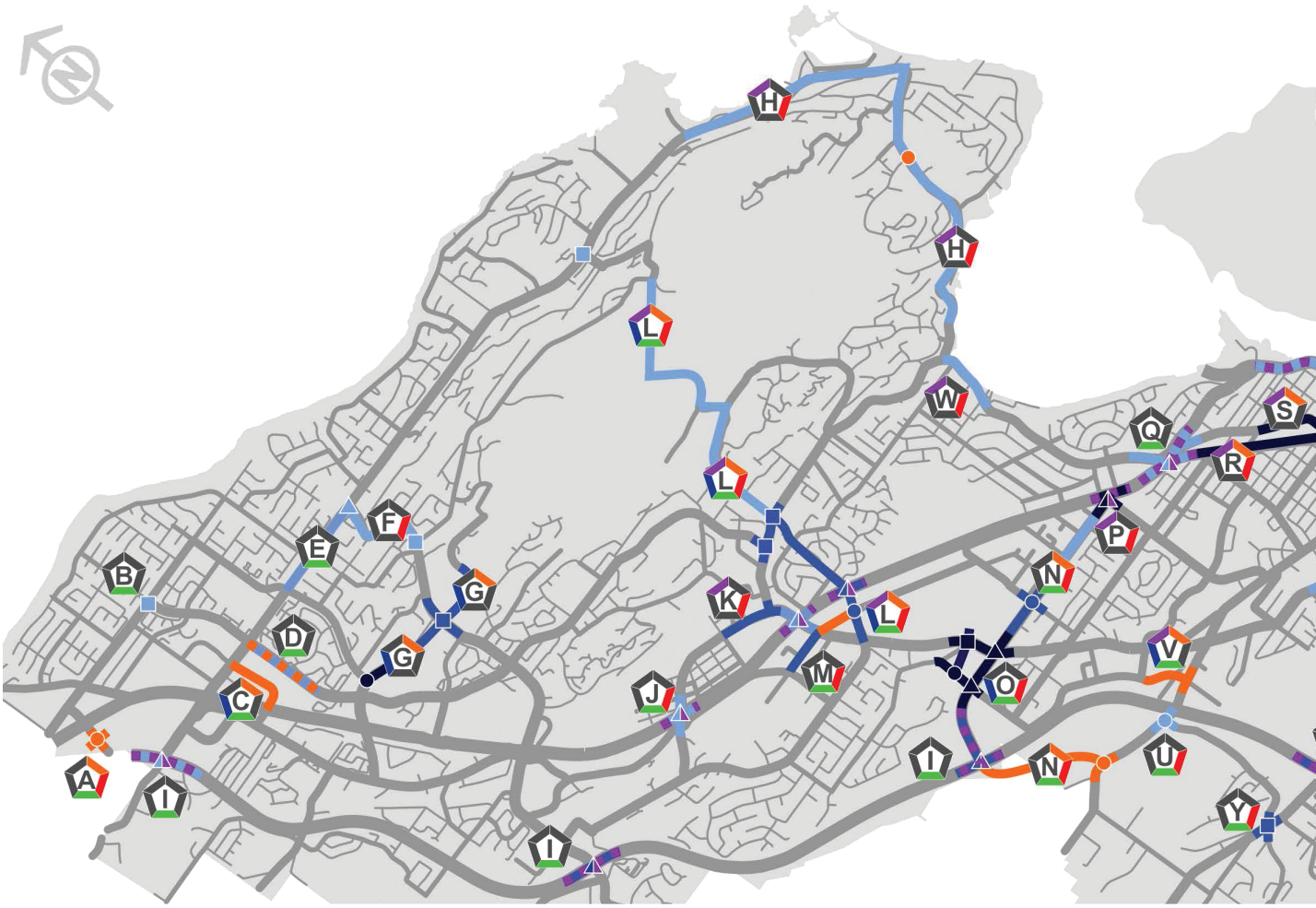

PREPARE TO STOP

Project Timeframes

Short-Term	Project is scheduled to advance within the next 5 years.
Medium-Term	Project is expected to advance within the next 5-15 years.
Long-Term	No specific schedule, project is expected to advance at some point in the future, project is a strategic.
External Agencies	The project would be developed by or with an agency other than the City; in most cases the Ministry of Transportation and Infrastructure.
Development	The project will be constructed by or to support future development; the project schedule is linked to future development.

The projects shown on **Map 6** represent a comprehensive list of road improvement projects proposed for the City over the next 25 plus years. Road network improvement projects are listed with details in Appendix B.

Map 6: Future Major Road Network Improvement Projects



Nanaimo Transportation Master Plan

NANAIMO TRANSPORTATION MASTER PLAN

Project Type

- Existing Intersection Upgrade
- Proposed New Traffic Signal
- Proposed New Roundabout
- Corridor Improvement

Project Timeframe

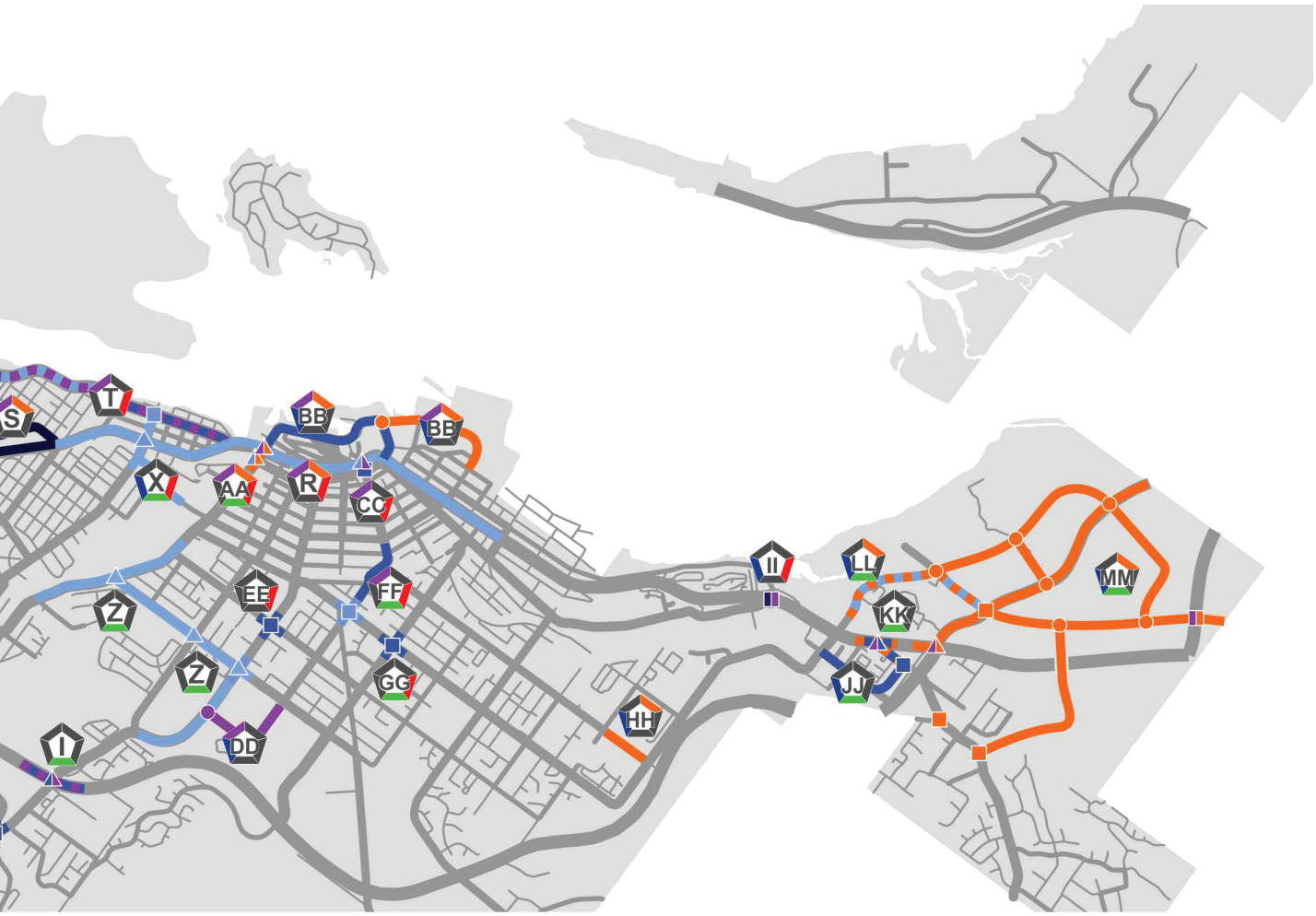
- Short-Term
- Medium-Term
- Long-Term
- Development
- Project by Others

Project Key

Primary Project Drivers

- Alternative Transportation / Land Use / Complete Streets
- Network Completion
- Capacity / Congestion
- Community Development
- Road Safety

Notes:
- Projects may have multiple drivers as indicated by multiple highlighted colours; where drivers not present, bar is grey.
- More detailed project descriptions are provided in Appendix B.



Project List

- A Mary Ellen Intersection Improvements
- B Dover / Uplands Intersection Improvements
- C Green Thumb - Future Road Network
- D Uplands Drive - Turner to Hammond Bay
- E Hammond Bay - Turner to Rutherford
- F Rutherford Road Safety Improvements
- G Linley Valley Drive
- H Hammond Bay (Morningside to Departure Bay)
- I Nanaimo Parkway Intersection Improvements
- J Norwell (N) / Island Hwy Intersection Improvements
- K Country Club High Street / Transit Exchange
- L Rock City Road / Burma Road Corridor Improvements
- M Bowen / Island Hwy Intersection Improvements
- N Northfield Road Corridor Improvements
- O Boxwood Connector
- P Northfield / Boundary / Island Hwy Int Improvements
- Q Brechin Hill Intersection Upgrade
- R Terminal Avenue Corridor Improvements
- S Estevan Complete Street Corridor
- T Stewart Avenue Complete Street Corridor
- U Westwood / East Wellington Intersection Imprvs
- V Boxwood Road - Extension to E Wellington Road
- W Departure Bay Beach Corridor Improvements
- X Wall-Holly Connector
- Y Westwood / Jinglepot Intersection Improvements
- Z Bowen/Wakesiah/Jingle Pot Corridor Improvements
- AA Wallace / Comox / Island Hwy Intersection Imprvs
- BB Front Street Complete Street Corridor Improvements
- CC Commercial/Wallace/Albert/Victoria Int Improvements
- DD VIU Road Network Improvements
- EE Howard / Third Intersection Improvements
- FF Fourth Street Multimodal Corridor Improvements
- GG Bruce / Fifth Intersection Improvements
- HH Park Avenue Completion
- II Victoria / Haliburton / Island Hwy Intersection Imprvs
- JJ Cranberry Connector
- KK Cranberry / Island Hwy Intersection Improvements
- LL Maki-Fielding Connector
- MM Sandstone Road Network

Manage the impacts of vehicle transportation

Recognizing that vehicles will continue to play an important role in the City's transportation network, the Plan seeks to reduce their negative environmental impacts and impacts on road capacity/congestion. By increasing vehicle efficiency, vehicle occupancy (i.e. carpooling), reducing trip length and shifting travel times, more traffic can be accommodated with less impact on road capacity, travel time and the environment. Vehicle efficiency standards are expected to significantly improve over the life of the Plan, reducing per kilometer emissions of both GHGs and other air pollutants. However, even larger reductions can be achieved if average trip lengths can be reduced, vehicle occupancy can be increased (through greater carpooling/trip sharing) and if some trips can be shifted away from congested time periods. Many of these changes are based on personal choices we make as individuals that can be influenced through education and marketing.

Strategies and actions the City can pursue to reduce the negative impacts of vehicle travel include:

- **Pursue Transportation Demand Management (TDM) strategies** to shift travel patterns and reduce the number of trips, change the time of day that trips are made, change the mode of travel by encouraging people to walk, bicycle, use transit and rideshare, and to change vehicle types to reduce the amount of emissions and energy used per kilometre of travel. TDM programs often focus on educating and incentivising the public and employers/employees to make different transportation choices. Through a combination of TDM strategies, the City can reduce the impact of vehicles on the road network and minimize the impacts of congestion. Major employers, small businesses, and schools can also play a role in shifting travel behaviour and reducing travel demands. This can include employer-led programs and incentives for carsharing and transit that encourage employees to change travel behaviours, company car-sharing programs, and school-led TDM strategies that encourage students and parents to walk or cycle to school.

- **Promote Carsharing Programs.** Carsharing is a model of car rental where people rent vehicles for short periods of time, often by the hour. They are attractive to customers who make only occasional use of a vehicle, or a second vehicle, as well as those who would like occasional access to vehicles of a different type (i.e. pickup truck, minivan). Carsharing programs can reduce the impact of vehicle travel by reducing the number of vehicles that are purchased and owned by Nanaimo residents. Carsharing members typically pay for use of vehicles on a time or distance basis, and thus may ration car use versus those with personal vehicles where many costs are sunk and incur regardless if the vehicle is driven

or not. The Nanaimo CarShare Cooperative, a non-profit community cooperative carsharing association, was incorporated in 2010 and serves the Nanaimo region with a carsharing program. The City should continue to support carsharing programs in the City to provide a cost-effective transportation option for residents.

- **Low or Zero Emissions Vehicles.** On-road transportation is one of the most significant contributors to community-wide Greenhouse Gas (GHG) emissions in Nanaimo (70% in 2010), and a significant proportion of transportation-related GHG emissions are from private vehicles. Promoting the use of low or zero emissions vehicles can help reduce the community-wide GHG emissions throughout the City. The City can encourage these vehicles through incentive programs and by updating its parking requirements to provide electric vehicle charging stations throughout the City.

- **Education & Awareness.** Many residents are not aware of the transportation options available to them. Marketing and education efforts can help to encourage a shift in travel behaviours and promote greater awareness of sustainable modes of transportation. Strategies to improve education and awareness generally fall into two categories: distributing existing information from other groups and agencies, and developing and running more locally generated programs.

- **Private Sector & Other Agency Initiatives.** Major employers, small businesses, and schools can also play a role for shifting travel behaviour and reducing travel demands. This can include employer-led programs and incentives for carsharing and transit that encourage employees to change travel behaviours, company car-sharing programs, and school-led TDM strategies that encourage students and parents to walk or cycle to school.

Update Nanaimo's designated truck route network

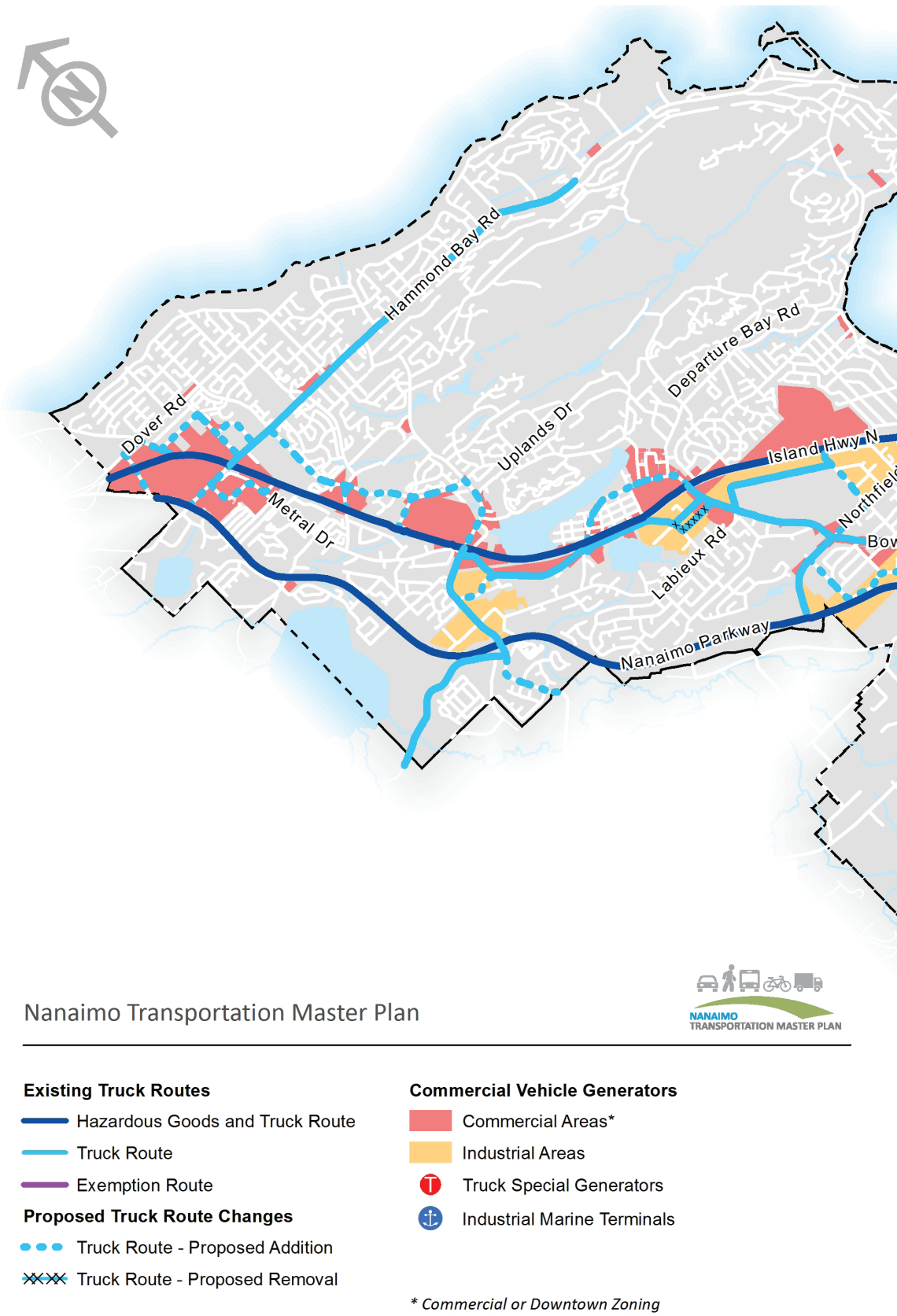
As a gateway to Vancouver Island and a regional distribution hub, a significant part of Nanaimo's local economy is dependent on the movement of goods, services and people through and within the City. The City's ***Strategic Plan*** supports this role and seeks to "position Nanaimo as the transportation and service hub for Vancouver Island". As such, the City has a designated truck route network through Nanaimo that balances the needs of businesses with the desire to minimize the impact of truck traffic on neighbourhoods and other sensitive land uses. Trucks within the City are required to use the truck route network for travel across the City, and then proceed directly from the closest truck route to their final destination via local streets.

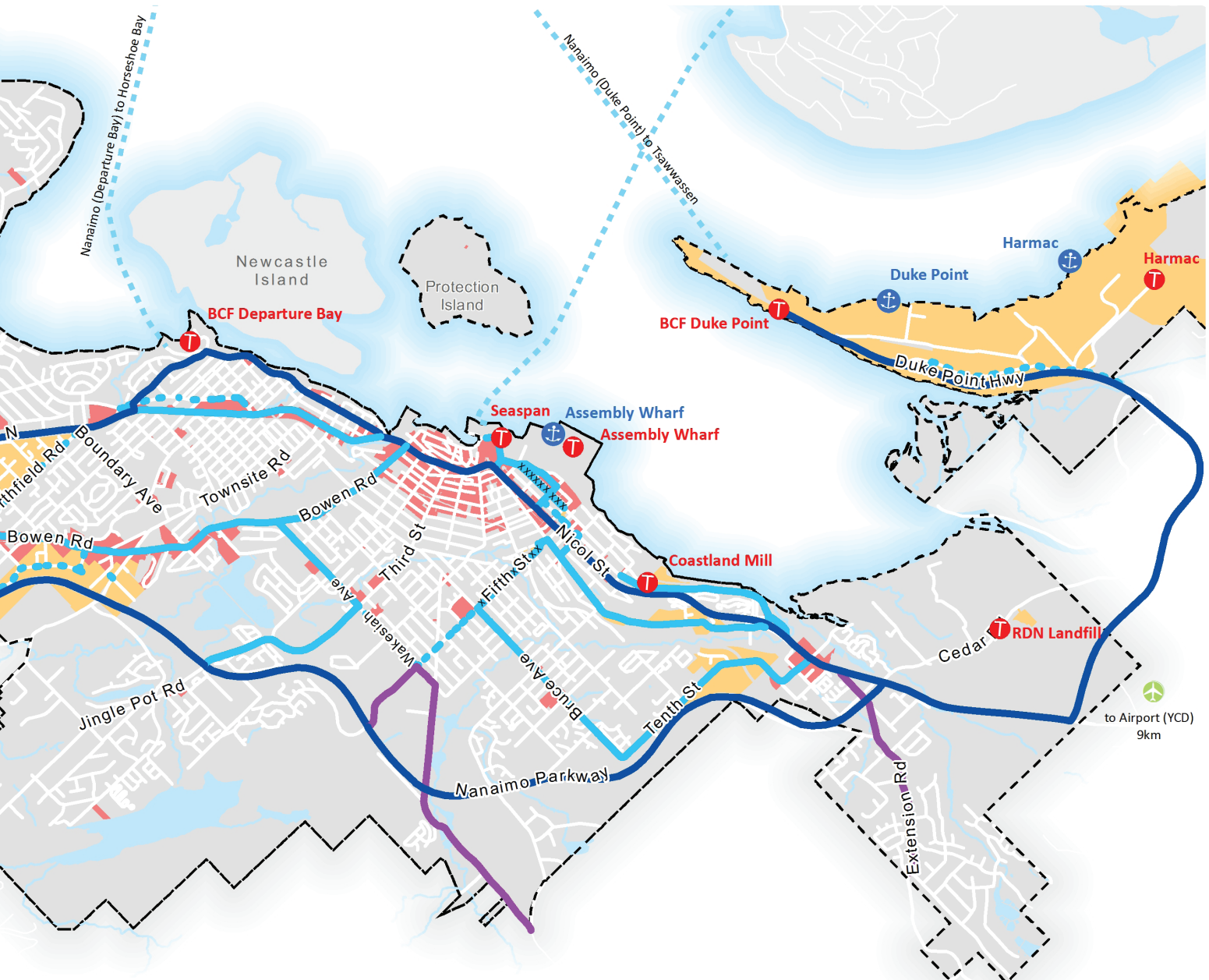
Generally, the existing truck route network functions well, but a number of changes are proposed to better connect adjacent commercial areas, include

new industrial areas and to update disused segments of the existing network. It is recommended that the City update its truck route network as shown in **Map 7**. This can better link Nanaimo's regional gateways and 'special truck generators' – including specific transportation, logistics, or industrial facilities that generate significant volumes of truck traffic (i.e. Departure Bay and Duke Point ferry terminals, Seaspan and Harmac Pacific facilities, Assembly Wharf, Coastland Mill and the Regional District's Landfill site) with commercial and industrial land uses. Truck route changes are expected to reduce overall truck travel distances and associated impacts on residents, emissions, and costs.

The proposed truck route network will facilitate better connections between Nanaimo's commercial and industrial centres, highways and ferries while minimizing impacts on residents and neighbourhoods. Adopting the proposed truck network would require amending the City's Traffic and Highways Regulation Bylaw.

Map 7 - Proposed Truck Route Network & Key Goods Movement Facilities





How the Truck Route Network Works

The City's Truck bylaw requires that trucks (>13700kg) use the truck route network to reach destinations within the City. Where a truck's destination is not located on a truck route it must travel on the truck route network as far as possible then travel directly to its final destination. Trucks generally may use any road to travel directly from the truck route network to their final destination.

Trucks with hazardous goods must travel in a similar fashion, but restrict themselves to Hazardous Goods Routes and then go directly to their destination.

Exemption Routes are not part of the truck route network, but trucks can use them with an exemption permit.

Truck Special Generators

Truck special Generators are specific facilities that generate significant volumes of truck traffic. Typically they are transportation, logistics or industrial sites.

0 500 1,000 1,500 2,000
Metres

CITY OF NANAIMO THE HARBOUR CITY
URBAN systems

Policies and Actions

With the City's road network forming the core of the transportation system, the directions within the policies and actions below will assist in the management of this critical piece of the City's infrastructure.

POLICIES AND ACTIONS

R1: Undertake spot improvements to improve intersection safety and operations

- R1A: Work with the Ministry of Transportation and Infrastructure to identify potential safety and operational spot improvements on highways within the City.
- R1B: Implement spot improvements to address localized safety and mobility issues within City of Nanaimo intersections.
- R1C: Continue to collaborate with partners (i.e. ICBC, RCMP) to promote and educate about road safety in Nanaimo.

R2: Develop streets for everyone

- R2A: Update the City's road standards and cross-sections to support all modes and based on Complete Street principles.
- R2B: Undertake a review of the City's road network classifications in conjunction with the update of the City's road standards and cross-sections.

R3: Undertake Major Road Network Improvements

- R3A: Integrate the Future Road Network Improvements Plan into other City policies and processes (e.g. OCP, DCC Bylaw, Development Process).
- R3B: Monitor major road congestion, operations and safety performance to identify future priority projects.
- R3C: Include the principles of Complete Streets in future network improvement projects.
- R3D: Work with fire, police and ambulance services to maintain emergency response times.

R4: Manage impacts of vehicle transportation

- R4A: Develop and promote Transportation Demand Management programs designed to encourage combining vehicle trips, making shorter trips, shifting travel to less congested time periods, buying more efficient vehicles, carpooling and using more sustainable travel modes.
- R4B: Promote the continued use and expansion of carsharing programs in Nanaimo.
- R4C: Support of the use of low and zero emissions vehicles. (e.g. providing electric vehicle charging stations, priority parking).

R5: Update Nanaimo's designated truck route network

- R5A: Review and update the City's truck route network.

3.6 NEIGHBOURHOOD TRANSPORTATION

3.6 Neighbourhood Transportation

PlanNanaimo describes neighbourhoods as the building blocks of the community. The unique character, diversity, and identity of each neighbourhood contributes to the vibrancy of the City as a whole. Neighbourhood street patterns, site plans, and streetscapes influence those attributes along with people's travel behaviours and mode choices.

Neighbourhoods are serviced by the City's Local Street Network, which includes Neighbourhood Collectors, Local Streets, Commercial Streets, Industrial Streets, and Lanes. Three of these street types are commonly found in neighbourhoods including, Neighbourhood Collectors, Local Streets and Lanes, while Commercial and Industrial streets provide local access to specific land uses. In addition, multi-use pathways and pedestrian linkages are also part of neighbourhood transportation networks, providing connections to schools and parks and forming links between neighbours where streets are missing. Altogether, the Local Street Network forms one of the City's largest public spaces. Policies and actions governing these streets can help to improve the livability and sustainability of new and existing neighbourhoods.

Although transportation issues and opportunities vary within each neighbourhood, a number of common issues include short-cutting traffic, speeding, uncomfortable and automobile-oriented street environments, poorly connected streets, and missing sidewalks that discourage walking and cycling. These conflicts can be addressed by creating streets that better balance the needs of all road users.

Strategic Direction and Goals

Directing efforts to improve the livability and safety of residential streets within neighbourhood transportation networks can be achieved by incorporating traffic calming features in new and existing streets, improving residential street designs to better accommodate all road users, promoting neighbourhood networks that are well-connected and promote walking and cycling, and developing streets that respond to surrounding land use and development. The overarching strategic direction for neighbourhood transportation is as follows:

STRATEGIC DIRECTION

Develop neighbourhood transportation networks (including streets, laneways and pedestrian / multi-use pathways) that provide access within and between neighbourhoods and to schools, parks, services and amenities in a way that encourages walking and cycling.

GOALS

- Improve neighbourhood livability and quality of life
- Manage the traffic impacts on neighbourhood streets

The key policies to support these goals are briefly described below.

Update neighbourhood traffic calming guidelines

Many Nanaimo residents are concerned about speeding, traffic volumes, and short-cutting traffic through their neighbourhoods – concerns which can be addressed through the development of traffic calming. Though the City has traffic calming guidelines in place, a more flexible tool is required for the City to work together with residents to develop traffic calming improvements where warranted. The City should develop updated neighbourhood traffic calming guidelines and a defined process for developing neighbourhood traffic calming. These updated guidelines can provide direction to proactively identify and prioritize neighbourhoods for traffic calming plans and solutions. Updated neighbourhood traffic calming guidelines should:

- **Incorporate a proactive approach to identify traffic calming considerations.** Neighbourhood traffic calming may either be initiated by residents, businesses or staff through the identification of issues. The

process should include mechanisms for targeted and area-wide traffic calming plans (i.e. with multiple streets or a whole neighbourhood).

- **Identify and prioritize traffic calming improvements.** To assist staff in identifying areas where traffic calming is needed, and to prioritize existing requests, a number of criteria should be used to evaluate different locations, including reported collisions, vehicle speeds, traffic volumes, proximity to schools/parks and pedestrian and cycling activity.

- **Consider several types of treatments** appropriate for local and neighbourhood streets, and provide information to residents on the range of treatments.

- **Include traffic calming in new neighbourhood designs.** The inclusion of traffic calming elements within new subdivision road design, and the development of street networks that support efficient movement of vehicles, pedestrians, and cyclists can be a cost-effective way to prevent future traffic-related issues before they develop.

- **Provide accessible information** to the public that describes the process for neighbourhood traffic calming, how they can get involved, how projects are prioritized and the range and impact of available traffic calming treatments.

Provide improved standards for the design of safe, multi-modal neighbourhood streets

Many of Nanaimo's neighbourhood streets have been designed primarily to accommodate motor vehicles, with limited focus on pedestrians or cyclists or making neighbourhoods more attractive. This type of street design makes walking, cycling, or even transit a less attractive option, and can make street environments less enjoyable for residents. Providing improved standards that guide the development of safe and multi-modal neighbourhood streets can positively influence the design and character of new neighbourhood developments, adding value and livability to the community.

The City should amend its street standards for local and neighbourhood streets to provide enhanced streetscapes in road cross-sections, including features such as boulevards between the sidewalk and curb, narrowing streets at crossings and intersections, on-street parking, street furniture, and street trees to create a more balanced streetscape. These features, while not explicitly traffic calming treatments, can have a calming impact by cueing drivers to slow down and by making pedestrians and cyclists more visible. These updates will help make the City's local streets consistent with the concept of complete streets. The City should develop guidelines and work with developers to incorporate traffic calming features into new developments.

Visual Summary Traffic Calming Treatments

CURB EXTENSIONS involve extending the curb on one or both sides of the roadway, narrowing the roadway width.

TRAFFIC CIRCLES are raised islands located in the centre of intersections.

DIVERTERS are diversions of both directions of travel on a pair of streets that prevent car through traffic, though are permeable by both pedestrians and cyclists.

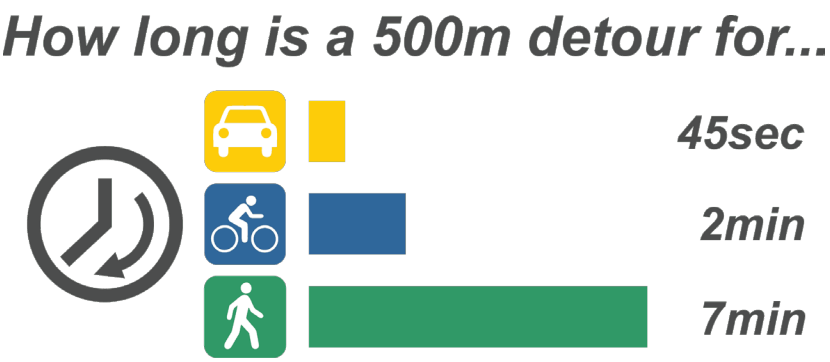
RAISED MEDIAN INTERSECTION are medians extending through the intersection to prevent through and turning movements from and to cross-streets.

SPEED HUMPS are widened speed bumps that gently rock a car at moderate speeds, and provides more of a jolt at higher speeds.

RAISED CROSSWALKS are a combination of a speed hump with a marked crosswalk.

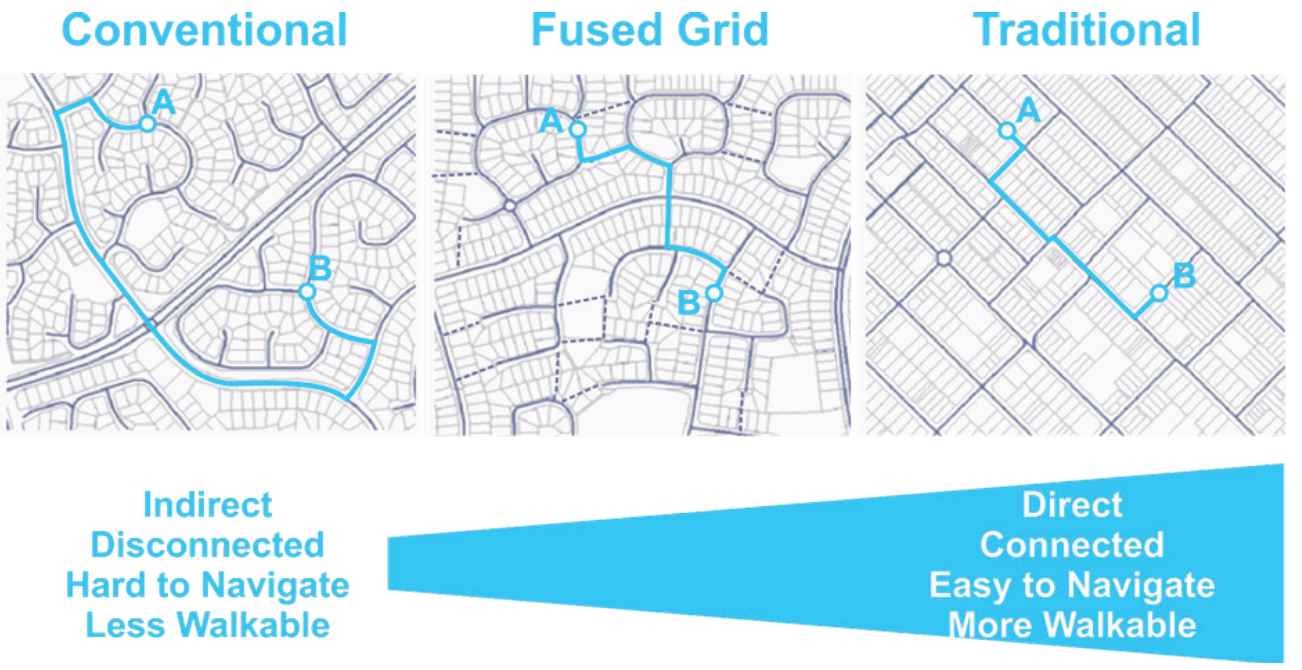
Ensure that neighbourhood site design promotes a fine-grained, well-connected street networks that encourages walking and cycling

Even where streets have comfortable infrastructure for walking or cycling, residents will be deterred from using these modes if the street network is indirect and circuitous. Pedestrians in particular are very sensitive to longer routes; they travel slowly and therefore additional trip length can add significant time onto their trips; direct routing should be a priority for pedestrians. In several neighbourhoods within the City, levels of walking are higher where a strong grid road network is present, even if sidewalks coverage is spotty.



Future neighbourhoods should be developed with more traditional, grid-style road network, which is easy to navigate for all users, provide direct access to the surrounding major road network, and reduce pollution and trip lengths. Alternatively, where a grid road network cannot be achieved, a hybrid layout – sometimes called a 'fused grid' layout – can provide some of the same benefits for pedestrians and cyclists, though with longer vehicle trip distances. The fused grid approach to neighbourhood design supplements suburban street layouts with pathways and pocket parks to provide connectivity for pedestrians and cyclists between different parts of the network.

Neighbourhoods that follow traditional street layouts are easier to navigate and typically have higher pedestrian and cycling activity.

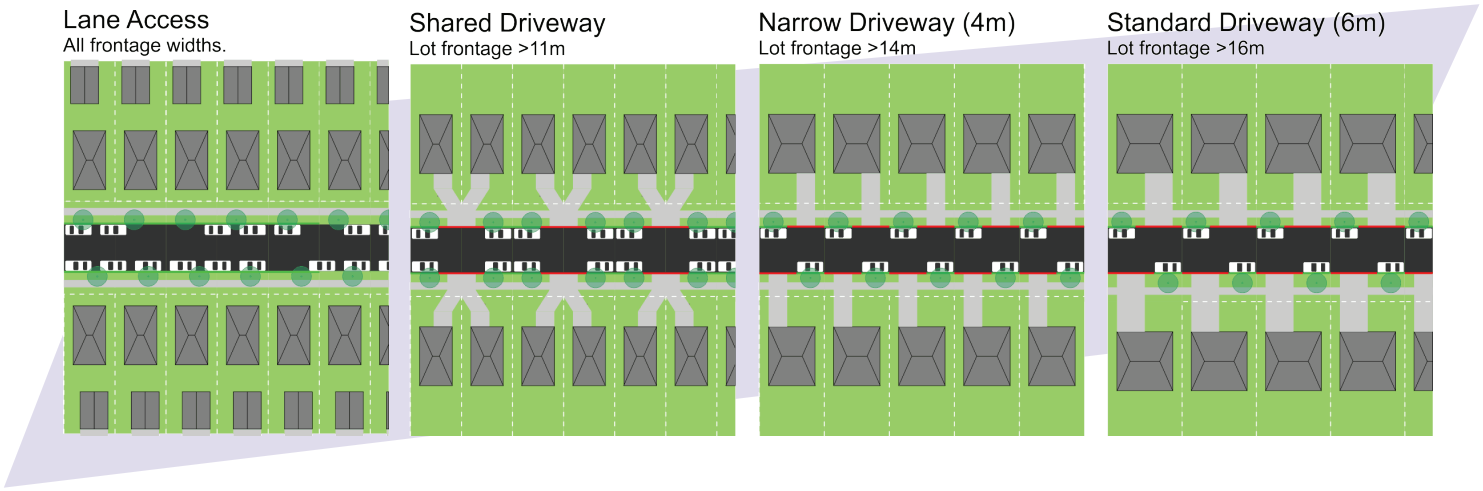


Develop neighbourhood transportation networks that respond to surrounding land use and development

As the density and mixture of land uses within neighbourhoods change, so will the demands on neighbourhood streets. In residential neighbourhoods, lot sizes are getting smaller, and number of households with secondary suites is increasing. While density is generally supported, as lot and home sizes become smaller the space available to park vehicles both on and off-street decreases.

Providing more on-street parking can resolve potential conflicts by creating a shared parking resource for the neighbourhood. Street designs should accommodate parking on both sides and strategies to improve parking supply by including parking bays, combined driveways or lane access. Where lot frontages are small, driveways occupy a larger proportion of total lot frontage, breaking up space available for on-street parking. Using narrower driveways, combining driveways of adjacent lots, or developing lanes with access in the rear can create more usable street parking and nicer streets for walking. Lanes are common in many traditional neighbourhoods, with parking creating a comfortable barrier between pedestrians and moving traffic, and a lack of driveway crossings resulting in less pedestrian-vehicle conflicts. Where lanes are present access should be provided off the lane.

Recommended driveway access configuration for lots of differing frontage widths.



In mobility hubs, where mixed land uses may be more common, commercial local streets should be used to serve higher density development and neighbourhoods. In industrial development, industrial roads should be used to provide local access for large commercial vehicles.

Policies and Actions

The Plan supports a refreshed approach towards neighbourhood transportation in Nanaimo, particularly in regards to traffic calming and neighbourhood design. The following policies and actions provide the framework to achieve these changes:

POLICIES AND ACTIONS

N1: Develop updated neighbourhood traffic calming guidelines

- N1A: Develop updated traffic calming guidelines outlining a flexible and proactive process for developing neighbourhood traffic calming.
- N1B: Develop guidelines and requirements for traffic calming in new neighbourhood streets.
- N1C: Provide public information on traffic calming treatments to increase awareness of the neighbourhood traffic calming process and potential treatments.

N2: Provide improved standards for the design of safe, multi-modal neighbourhood streets

- N2A: Amend City standards for local and neighbourhood collector streets to incorporate elements such as boulevards, street trees, curb extensions, and on-street parking that can make streets nicer places to walk and bicycle.
- N2B: Require traffic calming treatments within new residential streets as development or redevelopment occurs.
- N2C: Incorporate complete street design elements into local and neighbourhood street designs.

N3: Ensure that neighbourhood site design promotes a fine-grained, well-connected street network that encourages walking and cycling

- N3A: Develop land use and development policies that encourage grid road networks and neighbourhood street layouts. Where grids can't be achieved, use pathways and parks to provide enhanced pedestrian and cyclist connectivity.
- N3B: Support the development of permeable block layouts, with small block sizes (block perimeter < 600m or <400m within mobility hubs) that are easily navigable by pedestrians and cyclists via streets, lanes and other public passageways.
- N3C: Discourage the use of cul-de-sacs except where necessary; where cul-de-sacs are used, include a one or more pedestrian/cyclist connections, consistent with the fused grid concept.
- N3D: Develop "Neighbourhood Street Design Guidelines" for the development of future neighbourhood streets and street networks.

N4: Develop neighbourhood transportation networks that respond to surrounding land use and development

- N4A: As densities increase, develop more robust neighbourhood networks and increase on-street parking supplies. In smaller lot subdivisions with street frontages of less than 16m use narrowed driveways, shared driveways or lanes to maintain frontages for on-street parking.
- N4B: In mobility hubs, use commercial streets to service higher density mixed-use developments.

3.7 PARKING

3.7 Parking

The cost, availability, and convenience of parking influences where and how we travel to destinations and can be used as a tool to support the City's overall goal of rebalancing the transportation system towards sustainable travel modes. As the City grows, parking management and supply issues will become more important. While parking issues are currently limited to a few parts of the City, the same strategies can be used to address future parking concerns.

The Plan seeks to provide direction on addressing parking issues facing the City today and in the future, including:

- The management of parking within existing and future higher density centres such as Downtown and mobility hubs;
- The management of parking spill-over into neighbourhoods adjacent to major destinations such as VIU, NRGH, Departure Bay Ferry Terminal, Downtown and future mobility hubs; and
- The provision of parking within new and redeveloping neighbourhoods.

Traditionally, cities have used abundant and free supplies of parking to improve vehicle access to commercial districts and other key land uses. However, as the City works to rebalance the transportation system to better support alternative transportation choices, providing too much parking can create development patterns that undermine this objective.

The use of pay parking is currently limited in Nanaimo to a few areas.

Parking is an important asset for residents and businesses that should not be viewed as a source of revenue, but rather as a tool to shape and support development patterns, street environments, surrounding land uses and transportation choices. Strategic parking policies and strategies can be applied to encourage the use of alternative transportation modes, densification, economic activity and, over time reduce overall parking demand.

In mobility hubs, where future parking expansion will be more expensive, strategies to more efficiently share and manage the parking supply and maximize the benefits of each parking space are supported. Approaches such as reduced parking requirements for new development, shared parking facilities, and parking pricing can support the development of successful mobility hubs. These areas also have the greatest potential for shifting trips towards walking, cycling, and transit; reducing parking demand over time. Reductions must be applied carefully to ensure they don't negatively impact residents and businesses to the point of deterring growth.

Strategic Direction and Goals

A range of parking management tools can be applied in different areas of the City. The parking strategy recommends a toolbox to manage parking within Downtown and other mobility hubs, in neighbourhoods surrounding key destinations, and in other areas of Nanaimo. The overarching strategic direction for parking is as follows:

STRATEGIC DIRECTION

To manage the City's supply of on and off-street parking to support surrounding commercial and residential areas, manage the impacts of external parking demand on neighbourhoods, and encourage the use of sustainable transportation alternatives.

GOALS

- Support economic vitality of commercial areas and development of mobility hubs.
- Manage on-street parking in neighbourhoods.

The key policies to support this goal are briefly described below.

Manage parking downtown and in mobility hubs

The effective management of parking supply within Downtown and other mobility hubs will encourage development and help the City shift to a more sustainable transportation mix. Nanaimo's mobility hubs will change over time, evolving from a predominantly suburban character today, to higher density mixed use urban nodes in the future. As density increases, parking will become more expensive to develop. A variety of parking strategies will be needed to manage parking demand and to maximize the use of parking supplies. Strategies to manage parking in Downtown and Nanaimo's other mobility hubs include:

- **Consider reduced parking requirements within mobility hubs for new development** as is currently done in Downtown and its surrounding neighbourhoods.
- **Limit parking supply within future developments** to discourage the excess provision of parking. Combined minimum/maximum parking requirements can be applied to new developments. Additional parking, beyond the maximum, should only be supported through parking studies.
- **Encourage developments within mobility hubs to provide shared and preferential parking resources.** This can include providing parking spaces that are shared by more than one user and where preferential parking areas are designated for ridesharing participants, carsharing programs, or electric vehicles.

- **Designate cash-in-lieu parking areas in mobility hubs** to allow developers to opt to pay a fee per off-street parking space in lieu of providing the spaces, as has been the practice in Downtown. Cash-in-lieu incentives are often used in areas where there are many destinations and users in close proximity and where the cost of developing private parking is prohibitively high. Typically, cash-in-lieu fees that are collected fund public parking facilities that are shared by all users at a lower cost than if parking was to be developed for each site.

- **Consider expanding on-street parking supply** within mobility hubs and Downtown through reallocation of existing excess road space. Manage on-street parking supplies with pricing or time restrictions, where necessary, to meet occupancy targets.

- **Allocate the highest parking restrictions and pricing to parking spaces with greatest demand** to ensure availability, promote turnover, and improve access to businesses. Where and when demand is lower, reduce or remove parking rates and/or restrictions.

- **Set parking occupancy targets** for high demand areas at 85% occupancy during peak hours to create a balance between the availability of parking and excessive parking supply. Monitoring of parking occupancy will be required to evaluate parking demand over time, to establish or adjust pricing, and to identify the need for parking supply changes.

- **Move to a revenue neutral parking management model** and use parking as a travel demand management tool, which can shape land uses, development patterns, and street environments, in addition to addressing current user issues.

- **Encourage improved wayfinding and signage to locate parking facilities** and reduce the amount of time drivers spend searching for parking.

Improving wayfinding and signage to parkades can reduce the amount of people search for parking in Downtown.

- **Explore the use of parking technologies to make pay parking in high demand areas more convenient,** including meters that accept credit card and cell phone payment, and are easy to 'top up' if the stay is lengthened. This can also include the use of electronic signs outside public parking lots to indicate parking availability.

- Incorporate **bicycle parking requirements** into Nanaimo's Zoning Bylaw to require bicycle parking in office, commercial, and medium-high density residential developments. Require higher levels of bicycle parking in mobility hubs.

- **Explore parking initiatives that transform street parking into activity spaces.** Where parking spaces can be better utilized by permanently or temporarily changing their use, parking can be re-tasked to create more interesting streetscapes and support surrounding businesses. City or community-led initiatives throughout the United States and Canada have transformed on-street parking spaces into temporary parks, café/restaurant seating areas, gardens, and other active uses. The City of Vancouver's ongoing VIVA program initiated parklets within Downtown Vancouver, while the City of Surrey's PARKit program created a pop-up park in Surrey City Centre. Recently, two Downtown Nanaimo on-street parking spaces were converted into a widened sidewalk for café seating. The City should develop processes to assess, manage, and support active street uses on sidewalks and within the street.

Strategically manage parking in residential neighbourhoods with high parking generators nearby

Several residential neighbourhoods near areas of high parking demand, such as VIU, NRGH, Departure Bay Ferry Terminal and Downtown experience non-residential parking spill-over parking onto local streets as drivers seek to find available parking or avoid paying for parking. This can result in the majority of on-street parking being consumed by non-residents, leaving residents with little or no on-street parking for their own use. Where streets have not been designed for high levels of parking activity, parking areas may not be well defined, leading to unsafe/illegal parking and challenging enforcement.

Higher levels of parking management are recommended for these neighbourhood areas. The City should develop comprehensive and coordinated parking management plans between all stakeholders and use parking pricing, restrictions, education and enforcement to address both the needs of residents and facility users. Restrictions must balance the parking needs of residents and users – overly strict restrictions result in empty streets and simply shift parking demand elsewhere, while an absence of restrictions results in almost all on-street parking being consumed by non-residents.

The City should also encourage institutions and employers to use transportation demand management programs to reduce the number of people driving to site and thus reduce the parking demand, through provision of subsidized transit passes, rideshare incentives, and cash-in-lieu parking subsidies. Monitoring on-site parking supply and demand utilization of existing parking facilities can be maximized, and where required, support parking supply expansion.

Parking restrictions around large institutions will need to balance the needs of residents and institution users.

Manage Parking City-Wide

There are a number of other parking initiatives that the City should consider to for application city-wide.

In new or redeveloping neighbourhoods, on-street parking supply should be adjusted to reflect the character, density and mix of surrounding development. As density rises, demand for on-street parking also rises and space for parking within private property falls or becomes expensive. For example, subdivisions designed with smaller, narrower lots result in less space for resident parking, as the demand for on-street parking rises. In mixed-use high-density residential areas, multiple parking generators and users can lead to parking conflicts.

Other components of a parking strategy should include supporting informal carpooling (i.e. along Nanaimo Parkway) for long distance trips, and encouraging neighbouring communities (i.e. Ladysmith, Parksville, Qualicum

Beach) to create park-and-ride and carpool parking for trips destined to Nanaimo. The City's website can be utilized to identify parking supply, restrictions and regulations throughout the City. The City should also consider the development of a mobile application to allow drivers to locate public parking facilities throughout Nanaimo, and to view parking costs and on-street parking restrictions.

Policies and Actions

The policies and actions on the following page are intended to strategically manage parking within key activity areas such as downtown and other mobility hubs, as well as in residential neighbourhoods near high parking generators. A number of parking management actions are also provided for other areas throughout Nanaimo.

POLICIES AND ACTIONS P

P1: Manage parking in Downtown and mobility hubs

- P1A: Consider reduced parking requirements and cash-in-lieu options within Downtown and mobility hubs. Use parking variances and cash-in-lieu funds to develop shared parking facilities or reduce parking demand.
- P1B: Encourage development of structured or underground parking within mobility hubs and other areas of higher density.
- P1C: Identify and encourage opportunities to develop shared parking (private or public). Prioritize parking spaces for sustainable vehicle types (i.e. electric/ hybrid vehicles, car-shares, charging stations)
- P1D: Use parking pricing as a management tool, moving towards a revenue-neutral parking management model in Downtown and mobility hubs. Price parking by demand with the highest prices reserved for areas of the highest demand or where turnover is desired. In most cases target occupancy of 85% during peak demand.
- P1E: Implement the priority cycling network, connecting the City's largest destinations over the short term.
- P1F: Implement parking meter technologies that allow multiple payment methods and remote payment (e.g. online, phone) for extending parking.

P2: Manage parking in neighbourhoods with nearby parking generators

- P2A: Work with private employers and developers to encourage and create incentives for walking, cycling, rideshare, and transit commuting and reduce parking demand.
- P2B: Explore parking restrictions on local streets adjacent to VIU, NRGH and other large parking generators that balance the needs of facility users and residents.
- P2C: Provide sufficient enforcement to ensure on-street parking regulations are effective.

P3: Manage Parking City-Wide

- P3A: Support and develop informal park and ride facilities along the Nanaimo Parkway.
- P3B: Work with BC Transit to provide park-and-ride facilities for regional bus services bound to Nanaimo.
- P3C: Enhance information available on the City's website in regards to available parking areas city-wide, parking restricted areas, and parking regulations.
- P3D: In small-lot subdivisions, higher density neighbourhoods, maximize on-street parking through the narrowing/combining of driveways, use of laneways, or other measures.

3.8 STRATEGIC CONNECTIONS

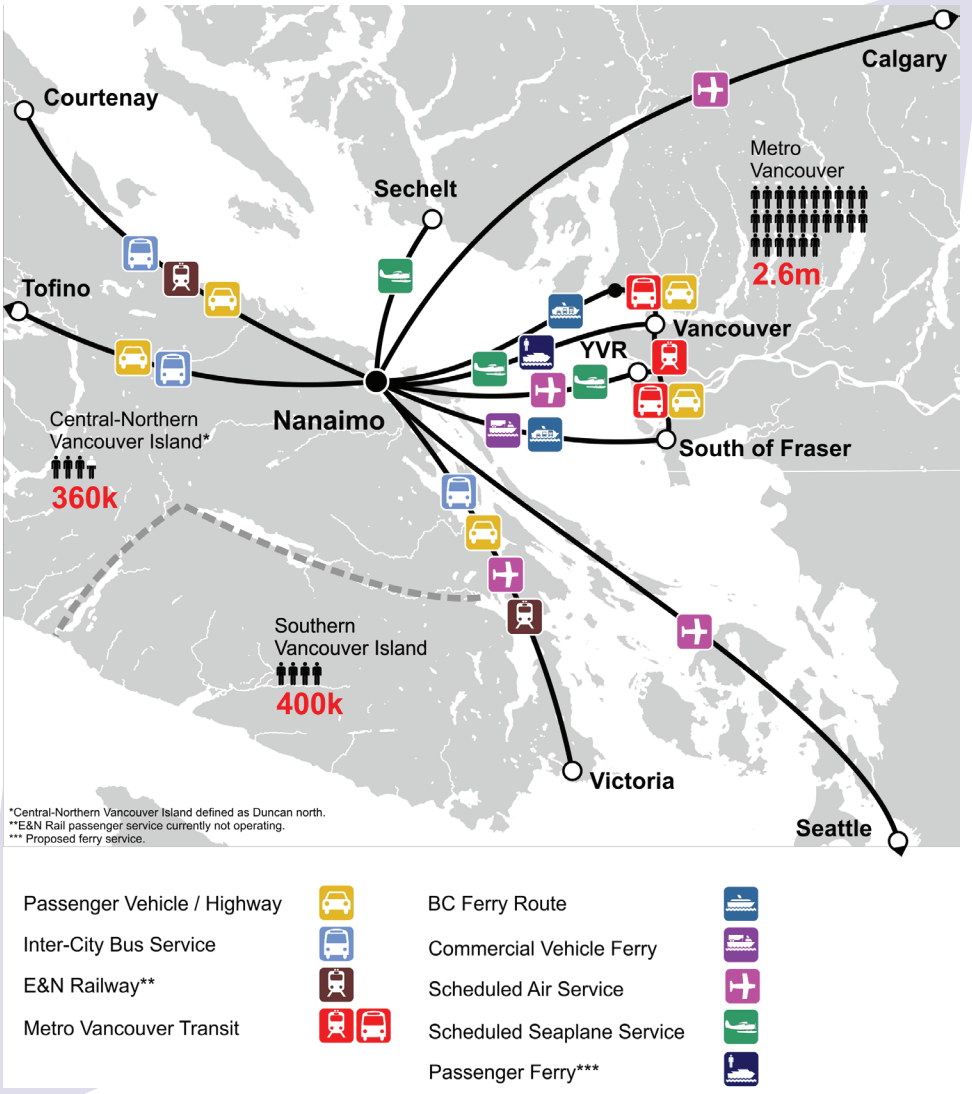
3.8 Strategic Connections

Nanaimo's strategic location positions the City as an important service centre and transportation gateway for central and northern Vancouver Island. The City's road, air, rail, and water-based transportation networks connect Nanaimo to the rest of Vancouver Island, Metro Vancouver, the British Columbia Mainland, and beyond.

While these strategic connections for people, goods, and services are important components of the City's transportation system and play a strong role in supporting the local economy, they are largely outside the City's jurisdiction. The NTMP focuses on how the City can strengthen these connections within a larger regional and provincial transportation context.

The City's existing strategic connections by road, air, water and rail are shown below:

Regional Connections to South-West BC



- **BC Ministry of Transportation & Infrastructure** (MoTI) maintains the provincial highway network, connecting Nanaimo to the rest of Vancouver Island via the Nanaimo Parkway (Route 19) to the north, and the Trans-Canada Highway (Route 1) to the south. MoTI also maintains most of the Island Highway (Route 19A), Brechin Road, Stewart Avenue, and the Duke Point Highway (Route 19) to provide connections to the Departure Bay and Duke Point ferry terminals.

- **BC Ferries** has three terminals within the City – two major terminals provide service to Metro Vancouver from Departure Bay and Duke Point, and the Nanaimo Harbour Terminal in Downtown provides local ferry service to Gabriola Island. Service to and from Metro Vancouver makes Nanaimo one of two major access points to Vancouver Island from the Mainland, and strengthens the City's function as a regional service centre and tourism gateway. Gabriola Island service is mainly used by island

residents to access goods, services, and employment within Nanaimo and particularly Downtown.

- **Inter-City Bus Services** connect residents and visitors to destinations north, west, and south of Nanaimo via Greyhound, Island Express and Tofino Bus services. Regional connections are also provided to Cedar, Parksville, and Qualicum Beach by RDN transit.

- **Seaplane terminals** located in Downtown Nanaimo Harbour and Departure Bay provide scheduled flights to Downtown Vancouver, Vancouver International Airport, and Sechelt, through a number of carriers, including Seair, Harbour Air, and Tofino Air.

- **Nanaimo Airport** is located south of the City, providing scheduled flights to Vancouver, Victoria, Seattle, Calgary and Abbotsford.

- The **E&N Railway** is an active freight railway, connecting Nanaimo with Courtenay and Victoria, as well as to the rest of the North American rail network via rail barge service from Nanaimo Harbour.

- The **E&N Trail multi-use pathway** runs adjacent to the E&N Railway for approximately 8 km from Downtown to north Nanaimo and is one of the City's most popular trails. The City's long-term objective is to extend the trail the full length of the City and connect to other regional trail segments within the RDN and District of Lantzville.

- **Passenger Ferry Service** has historically operated between Downtown Nanaimo and Vancouver during several periods over the last 30 years. The ***Strategic Plan*** and OCP both identify support for re-establishment of passenger ferry service between Nanaimo and Vancouver.

Strategic Direction and Goals

The NTMP recognizes the importance of strategic transportation connections to other communities throughout Vancouver Island, Metro Vancouver, and elsewhere in British Columbia in supporting the City's role as a service centre and transportation gateway for central and northern Vancouver Island. The overarching strategic direction for strategic connections is summarized as follows:

STRATEGIC DIRECTION

To strengthen connections to and from Nanaimo for residents, businesses and tourism to support the City's position as a transportation and service hub; providing good connections to regional trading areas; cost effective shipping connections to the BC mainland; and frequent, affordable and reliable service to the Mainland via air and water.

GOALS

- Reinforce the City's role as a hub for central Vancouver Island for movement of people and goods by road, rail, water and air.

The key policies to support this goal are briefly described below.

Strengthen connections to other Vancouver Island communities

Strengthening and providing options for connecting to Vancouver Island communities is an important objective of the NTMP. As most goods, services, and people travel between major centres by road, maintaining good road connections via the provincial highway network is a priority for the City. Other travel options for the movement of people and goods via air, ferries, trucks, and inter-city bus service provide strategic connections for goods and businesses, and for those who do not have access to, or choose not to use a

private automobile. The City can strengthen connections to other Vancouver Island communities by:

- **Continuing to support road-based connections to other Island communities using the Provincial Highway Network,** including the Nanaimo Parkway (Route 19), the Trans-Canada Highway (Route 1), and the Island Highway (Route 19A), as well as Stewart Avenue and Brechin Road. These highways carry the majority of local and regional traffic through the City. As part of the provincial highway network, these corridors fall under the jurisdiction of the Ministry of Transportation and Infrastructure (MoTI), whose primary objectives include providing north-south connectivity through Nanaimo and providing connections to the BC Ferry terminals at Departure Bay and Duke Point.

  The City supports maintaining the Nanaimo Parkway / Duke Point Highway as the primary routes through the City. The City supports efforts by MoTI to undertake safety and capacity improvements, as required, and to maintain travel time and reliability performance along the corridor. Development of interchanges along the Nanaimo Parkway over the long term is also supported, but may not occur within the timeframe of this Plan.

  In addition, the City supports the role of the Trans-Canada Highway / Island Highway / Stewart Avenue / Brechin Road as key mobility corridors; however, the City envisions a transition over time to an urban arterial streetscape. The City seeks greater connectivity between these corridors and the rest of the road network, along with better accommodation of non-auto road users, including commercial vehicles, transit, cyclists, and pedestrians. The City also seeks to see these corridors better support adjacent businesses, neighbourhoods, and land uses. Where future high-capacity transit services are provided, the City would support measures to reduce transit travel times (eg transit priority) and increase reliability relative to other road users.

- **Continuing to support Inter-City Bus Services** as a cost-effective and sustainable way to connect Nanaimo to other Island communities. This includes consideration of future intra-regional service to Nanaimo Airport/Ladysmith, inter-city bus connections to BC Ferries terminals (particularly at Departure Bay) and establishing a Downtown Nanaimo intermodal transportation hub connecting inter-city bus services with other transportation modes, and to provide a single high-quality facility to service users across multiple modes.

- **Continuing to support the development of a regional E&N trail system** through Nanaimo in cooperation with the RDN and District of Lantzville to create a major recreation asset that would promote cycling

to, from and within the City and help to develop a stronger cycling-based tourism industry within the region.

- **Improving connections to Gabriola Island and mitigating traffic impacts of the Gabriola Island ferry connection.** The City should support maintaining the ferry terminal in Downtown Nanaimo, or at a minimum, support a passenger ferry connection. While this ferry connection benefits the City, there are a number of impacts associated with ferry traffic that can be addressed by supporting the expansion of the terminal to reduce the impact of ferry queues on Front Street. This can include shifting to pre-paid ferry tickets to reduce queues, improving walking and transit connections within Downtown to reduce the need for Gabriola residents to bring vehicles into Nanaimo, and exploring opportunities for car or bike share programs that operate near the ferry terminal.

Strengthen connections to Metro Vancouver, the rest of British Columbia and beyond

As a gateway to Vancouver Island, Nanaimo's transportation network plays a key role in linking residents, businesses and visitors travelling between Vancouver Island and Metro Vancouver/BC Mainland. The Plan supports improved economic ties between Metro Vancouver and Nanaimo through enhanced water, air, and road transportation connections, including:

- **Improving BC Ferry connections to Metro Vancouver while minimizing the impacts on the City's road network and neighbourhoods.** BC Ferries provide the primary link between Nanaimo and Metro Vancouver; a key asset for business, residents and tourists. However, this link creates surges of traffic that impact the City's road network and neighbourhoods. Congestion frequently occurs after ferry arrivals. Terminal queues extend into the road network during peak travel seasons and terminal parking spill-over occurs into adjacent neighbourhoods. Potential steps to mitigate these impacts could include encouraging BC Ferries to shift arrival times to avoid peak traffic times within the City road network, shifting truck traffic to Duke Point, changing fare systems (e.g. pre-paid tickets) to reduce queuing, improving cycling facilities in approaching terminals, expanding terminal vehicle queuing capacity / parking, and actively managing parking in adjacent neighbourhoods.

- **Maintaining affordable BC Ferry connections to Metro Vancouver** for residents, visitors and goods movement is a priority for the City. The City supports restricting future ferry fare increases to the rate of inflation and supporting walk-on passengers with better cycling and transit connections for Nanaimo – Metro Vancouver travellers as a more affordable alternative to travelling with a vehicle.

- **Supporting the efforts of Nanaimo Airport (YCD)** to increase the number of flights and destinations serviced from YCD and efforts to increase flight reliability and improve passenger facilities. The City supports integration of existing intercity bus service and future transit service to the airport.

- **Enhancing seaplane connections** between Nanaimo Harbour and coastal destinations to provide fast and convenient travel options for residents, visitors, and particularly businesses. While seaplanes provide great connections directly to Downtown Vancouver and YVR when running, service is limited by weather and daylight.

- Supporting the **development of a high-speed passenger ferry service** between Downtown Nanaimo and Downtown Vancouver.

- Supporting **continued expansion of cruise ship terminal activities** as well as enhancing transportation services provided in Downtown to allow cruise ship passengers to explore Nanaimo by a variety of travel modes.

Support Nanaimo's role as a commercial gateway for Vancouver Island

Nanaimo is an important gateway for commercial operations throughout Vancouver Island. Enhancing the ability of Nanaimo's transportation network to support businesses and industries will strengthen economic ties between the Nanaimo, Vancouver Island, and other parts of the Province. Key actions that can support Nanaimo in this role include revising the City's truck route network to better connect commercial and industrial areas of City to each other, to the highway network, port facilities and ferry terminals. Continued early morning and late evening ferry departures as well as ferry rate adjustments would be supported to encourage greater use of the Duke Point-Tsawwassen ferry route by commercial vehicles. Industrial port activities within the Port of Nanaimo including private commercial vehicle ferry services are supported to reduce the cost of shipping goods on and off the Island.

Preserve options for the future of the E&N Railway Corridor

The E&N Railway currently operates as a freight railway between Nanaimo, Victoria, and Courtenay with rail barge service connecting to the BC Mainland via Nanaimo Harbour. While passenger service has been suspended since 2011 due to poor track condition, provincial and federal funding is currently being sought to restart passenger services. Under a proposed service plan, two return trips per day to Victoria and one return trip to Courtenay could be provided by Nanaimo-based trains. Although uncertainty surrounds the future of the E&N Railway, the City should seek to preserve the E&N Railway corridor over the long-term as a contiguous transportation corridor, including potential future Light Rail Transit while maximizing its benefits in the near-term through

continued development of regional rail connections. The City should assess the costs and benefits associated with continued active rail transportation to help inform future decisions related to the use of the corridor.

Policies and Actions

The NTMP seeks to reinforce Nanaimo's role as a transportation hub for central and northern Vancouver Island by strengthening regional connections that move people, goods, and services to, from, and through the city by rail, road, water, and air. While the City has limited jurisdiction over these connections, it can support and influence future decisions, and has an important role to play in developing our long-term regional transportation network.

The policies and actions described below reflect a desire to better connect the city with its neighbours on Vancouver Island and the BC Mainland by both automobile and sustainable modes. Moreover, these transportation linkages can support the City's economy through expanded goods movement and logistics services.

POLICIES AND ACTIONS

S1: Strengthen connections to other Vancouver Island communities

- S1A: Support maintaining Nanaimo Parkway and Duke Point Highway (Route 19) as primary routes through Nanaimo while working with the Ministry of Transportation and Infrastructure to maintain safety and travel time performance along these corridors.
- S1B: Support development of interchanges along the Nanaimo Parkway over the long-term with intersection capacity improvements over the short/medium-term.
- S1C: Support a transition of Island Highway (Route 1/19A) in the long-term to an urban arterial streetscape with better accommodation for pedestrians, cyclists, and transit, particularly within or adjacent to mobility hubs. Improve access and connectivity to/from Island Highway to the City's road network.
- S1D: Support intercity bus services to connect Nanaimo to other Island communities and integration with the proposed Downtown multi-modal transportation hub.
- S1E: Work with the RDN and District of Lantzville to establish the E&N trail as a regional trail system.
- S1F: Retain the downtown ferry terminal for ferry connections to Gabriola Island; integrate with the proposed Downtown multi-modal transportation hub and work to reduce impacts from ferry queues.

S2: Strengthen connections to Metro Vancouver, the rest of British Columbia and beyond

- S2A: Work with BC Ferries to maintain the reliability, frequency, and affordability of ferry services to Metro Vancouver.
- S2B: Work with BC Ferries, the RDN, and Translink to improve the quality of service for non-automobile ferry users (walk-ons, cyclists and transit riders); and provide lower cost, seamless connections between Nanaimo and Metro Vancouver.
- S2C: Work with BC Ferries to encourage scheduling, fare technologies, and terminal improvements that reduce the impact of ferry traffic on Nanaimo's road network and neighbourhoods.
- S2D: Support efforts to expand the number of daily flights and destinations served by the Nanaimo Airport, and to improve flight reliability and passenger facilities. Support land-side connections to YCD including improved intercity bus service connections and future transit bus services to YCD/Ladysmith.

POLICIES AND ACTIONS

- S2E: Support seaplane services from Nanaimo Harbour, including integration with the proposed Downtown multi-modal transportation hub.
- S2F: Support the development of a high-speed pedestrian-only ferry between Nanaimo and Vancouver, including integration with the proposed Downtown multi-modal transportation hub.

S3: Support Nanaimo's role as a commercial gateway for Vancouver Island

- S3A: Update the City's truck route network to enhance connections between Nanaimo's commercial and industrial areas, the provincial highway network, port facilities, and ferry terminals.
- S3B: Support incentives that would shift more commercial vehicles to the Duke Point-Tsawwassen route.
- S3C: Support private commercial ferry services for the transfer of goods between Vancouver Island and Metro Vancouver at affordable rates.

S4: Preserve options for the future of the E&N Railway Corridor

- S4A: Evaluate costs and benefits associated with using the E&N Railway as an active railway to inform future decision-making.
- S4B: Ensure the E&N Railway remains a contiguous transportation corridor, maximize short-term utilization but do not prevent development of potential future rail-based transit services.

PART 4 Implementation

Shifting our travel patterns towards a more sustainable transportation mix will require changes to transportation priorities, funding, standards, policies and projects. The actions presented below highlight a number of short term priority projects proposed for the first five years of the Plan. While all future projects are subject to approvals and funding, and in some cases participation of external agencies, these projects represent current priorities that will help start the shift towards a more sustainable transportation future.

Priority projects are listed below with more detailed descriptions provided in the following pages.

Mobility Hub Area Plan	within 5 years
Update Pedestrian Improvement Prioritization	within 2 years
Update Safer School Travel Program	within 2 years
Central Nanaimo Cycling Network	
Albert / Fourth Street Complete Street Corridor	within 5 years
Boundary Avenue Complete Street Corridor	2015
Harewood Bikeway (Phase 1/2)	2014
E&N Trail - Downtown to Seventh Street	within 5 years
Bowen Road Multimodal Corridor Improvements	2014
Estevan Complete Street Corridor	plan - 2015 / const - 2017
Frequent Transit Network	begin within 2 years
RapidBus Corridor Study	within 2 years
Downtown Multimodal Transportation Hub	concept within 3 years
NRGH Area Parking Strategy	within 2 years
Boxwood Connector	within 5 years
Boundary – Northfield Intersection Improvements	within 2 years
Complete Street Design Guidelines	within 2 years

Mobility Hub Area Plan

Timeframe

within 5 years

Plan Elements

Policies and Actions

L3A, L3B, W1A, C1A,T1A,R3C

Description

One of the key outcomes of Transportation Master Plan was to better define the strong linkages between travel, land use and development patterns. How, where and when we travel is largely influenced by where we live, work and shop and the character of the neighbourhoods surrounding these key destinations. To reach it's goal of shifting future travel patterns away from the car and more sustainable travel options, land use must be part of the solution.

The Plan proposes creating seven mobility hubs within corridors and nodes identified in the Official Community Plan. These hubs will be places where concentrations of housing, services and employment supported by sustainable transportation infrastructure will form an environment that is easy to travel within and between without a car.

As each mobility hub is at a different level of development, and each requires different improvements to reach its objective, the need of area plans has been identified. This priority project would undertake an area planning process for one mobility hub that could be used as a model for other mobility hubs.

Developing Mobility Hubs will be assisted by Area Plans that coordinate land use and transportation issues and improvements.

(Image Credit: Translink)

Pedestrian Improvement Priorities

Timeframe: within 2 years

Plan Elements: 

Policies and Actions: W1A,W1B,L2C

Description: Based on the recommendations of the Transportation Master Plan the process by which sidewalk and other pedestrian improvement projects are prioritized would be updated. Changes would reflect the Plan priorities and objectives, and would assess larger portions of the City's network for potential improvements. Project results would be used to identify future pedestrian improvement projects.

Update Safer School Travel Program

Timeframe: within 2 years

Plan Elements: 

Policies and Actions: W1A,W1B,W4B,C4A

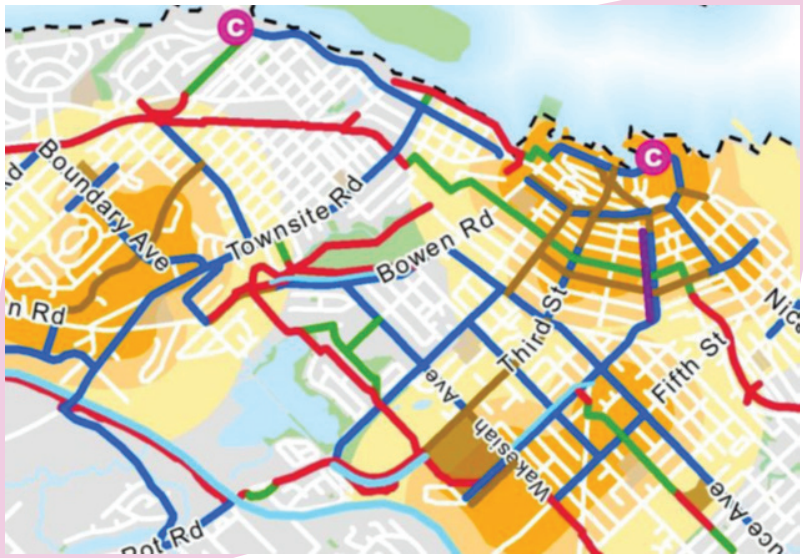
Description: The Safer School Travel Program is a collaborative process between schools and the City to improve pedestrian access to/from schools and encourage students to walk more; since 2005 five elementary schools have completed the program.

The Plan recommends the Program be updated and expanded to more schools, both elementary and secondary. Future school plans should be multimodal and consider walking, cycling and transit options for student travel. In collaboration with School District 68 and community partners the Safer School Travel Program can both improve youth pedestrian/cycling safety, but also help introduce students to more sustainable and active forms of transportation.

Central Nanaimo Cycling Network

Timeframe	within 5+ years
Plan Elements	
Policies and Actions	C1A, C1B, C2A, C2D
Description	Development of the priority cycling network within the central City (roughly defined by a triangle between VIU, NRGH and Downtown) is proposed as a starting point for development of a comprehensive cycling network. This area has the highest cycling potential and developing a comprehensive network within it will support more cycling, for more people, faster than any other area. As the network is developed, opportunities to improve the comfort, safety and accessibility of streets for other users (vehicles, pedestrians and transit) will be reviewed, resulting in better streets for everyone. A number of example projects are described below.

By focusing cycling improvements in areas with the highest cycling potential, we can get more people riding, faster.



Central Nanaimo Cycling Network

Albert / Fourth Street Complete Street Corridor

Timeframe

within 5 years

Plan Elements

Description

Connecting VIU and Downtown was identified as one of the highest priorities for the on-street cycling network. Both neighbourhoods already share the highest levels of walking, cycling and transit use in the City and both offer strong opportunities to expand the use sustainable travel modes.

This project would develop on-street cycling facilities between VIU and Downtown via Fourth and Albert Streets. A number of facility types are being considered, including the use of a cycle track (westbound) along Albert Street.

A possible street configuration for Albert Street within facilities. A cycle track with bikes placed behind parked cars is shown heading towards VIU/Harewood.

Central Nanaimo Cycling Network

Boundary Avenue Complete Street Corridor

Timeframe

Planned Construction- 2015

Plan Elements

Description

This project would seek to improve conditions for pedestrians, cyclists and vehicles along the Boundary / Bush / Pryde Corridor. The corridor is an important cycling connection between VIU and the E&N Trail and has a number of key destinations along its length including Nanaimo Regional General Hospital and Woodlands Secondary School as well as a concentration of medium-density residential and commercial development at the corner of Dufferin Cres. and Boundary Ave.

Proposed Improvements Include:

- To improve cyclist safety, bike lanes (Northfield to Bowen Road, Townsite Rd)
- To improve vehicle safety, left turn bays into NRGH Emergency.
- To improve pedestrian safety, upgrade crosswalks (curb extensions) at Nightingale Crescent, Graham Crescent and Bush Street.
- To improve pedestrian safety, sidewalk on the west side of Boundary Ave (Townsite to Dufferin). Requires the removal of one southbound travel lane.
- To improve pedestrian, cyclist and vehicle safety, reconfiguration of the intersection of Dufferin / Boundary to include left turn bays.
- To improve pedestrian safety, sidewalk on the north side of Townsite Rd (Boundary Cres to Ave)

Central Nanaimo Cycling Network

Harewood Bikeway (Phase 1/2)

Timeframe

Planned Construction– 2014

Plan Elements

Description

A segment of the Harewood Bikeway, part of the cycling network described within the Harewood Neighbourhood Plan (Oct 2013) would be developed in coordination with replacement of utilities (sewer/water) along Bruce Avenue. This first phase of the project would see a bike lane (southbound) and walking/cycling shoulder (northbound) developed along Bruce Ave between Fourth and Seventh Streets through narrowing of vehicle lanes and widening of the roadway. Ultimately in future phases this bikeway would extend from Bowen Road in the north, along Pine Street, Bruce Ave and Tenth St forming an important north-south cycling route, connecting some of Harewood's most important destinations and linking to the rest of the City.

Central Nanaimo Cycling Network

E&N Trail – Downtown to Seventh Street

Timeframe

Planned Construction– 2019

Plan Elements

Description

The E&N Trail forms the spine of the City's cycling network connecting many of the City's largest destinations with gentle grades. The current multiuse trail runs along the E&N Railway grade, is 2.5-3m wide and extends from Townsite Rd, just north of Downtown to Mostar Rd, a distance of 8.5km. Through the Downtown trail users are routed on-street and south of Downtown the route is not developed. This project would extend the E&N from Downtown south to Seventh Street, formalizing a series of existing footpaths. An initial alignment and engineering study will define the detailed trail routing and design. Extension of E&N Trail is supported by the City's ***Strategic Plan*** and the South End and Harewood Neighbourhood Plans.

Central Nanaimo Cycling Network

Bowen Road Multimodal Corridor Improvements

Timeframe

Planned Construction- 2014

Plan Elements

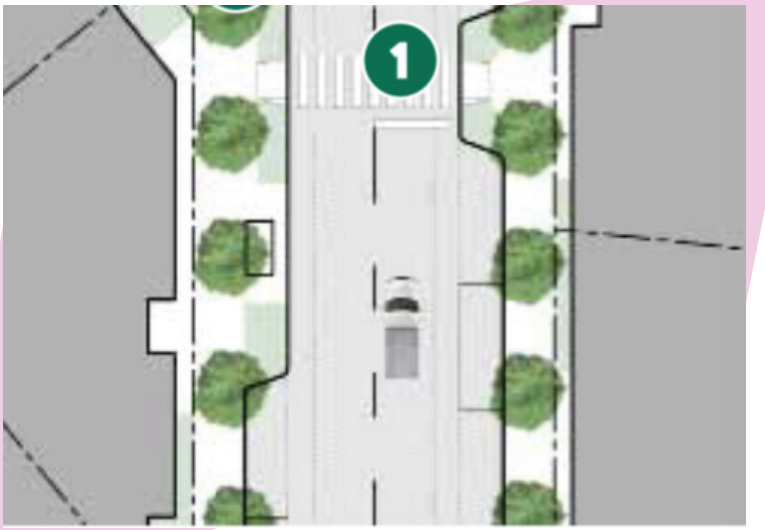
Description

The Bowen Road Multimodal Corridor Improvement Project seeks to improve conditions for all road users along Bowen Road between Buttertubs Dr and Pine Street. This section of Bowen Road is the last remaining segment of the roadway with no sidewalks and is uncomfortable to walk, particularly during the evening for pedestrians. The project will develop a sidewalk, bike lane and shared shoulder along the project length; at the intersection with Wakesiah Ave a number of other improvements will be made including more accessible transit stops, better street lighting and traffic signal upgrades. At Howard Ave the crosswalk will receive warning beacons and the bus stops will be reconfigured to make them accessible for wheelchairs/scooters; both improving access to Bowen Park.

Estevan Complete Street Corridor

Timeframe	Study - 2015 / Planned Construction - 2017
Plan Elements	
Policies and Actions	L2F, C1B, R3C, P1C
Description	Highlighted in the Newcastle + Brechin Neighbourhood Plan was the desire to reconfigure Estevan Ave to make a better neighbourhood high street over time with on-street parking, street front retail, bike lanes, transit and landscaping/street trees. This project is proposed as two phases, a planning phase in 2015 to define the scope of improvements and a construction phase in 2017. The current project objectives include, improving pedestrian crossings, adding on-street parking, rationalizing access to commercial parcels with potential median/left turn bays, reducing travel lanes from four to two and adding bike lanes.

The Newcastle+ Brechin Neighbourhood Plan supports the creation of a complete street on Estevan Road.



Frequent Transit Network

Timeframe	Service improvements within 2 years, continuous improvement to follow
Plan Elements	
Policies and Actions	T1A, L2C, L2D, T1C
Description	The development of a frequent transit network (FTN) with 15 min or less service frequency for the majority of the day between the City's major exchanges, and mobility hubs is the centerpiece of the City's transit ambition. This network of routes, connecting Downtown, VIU, Country Club, Woodgrove and points between will create reliable, direct and frequent transit within areas of the City with the highest potential for generating transit ridership. By focusing improvements on these routes, transit can attract more riders with less transit resources, particularly choice riders that have access to vehicles. While the FTN would be developed and run by the RDN and BC Transit, the City should support service improvements with stop improvements along FTN routes.

The FTN would provide direct, frequent and reliable transit service between the City's largest destinations.

RapidBus Corridor Study

Timeframe	within 2 years
Plan Elements	
Policies and Actions	T1B, T1H, L2D
Description	RapidBus is a limited stop express bus service proposed by RDN/BC Transit along the Island Highway corridor between Downtown and Woodgrove Centre. While the general corridor has been defined, routing and station locations are not yet determined and must be carefully considered to maximize the benefit of this significant transit investment. As a first step in developing the system, the RDN and BC Transit, in partnership with the City should complete a comprehensive corridor planning process.

Nanaimo's RapidBus route could include stations like this from a similar system in Kelowna.

(Photo Credit: BC Transit)

Downtown Multimodal Transportation Hub

Timeframe

Planning and Design within 3 years

Plan Elements

Policies and Actions

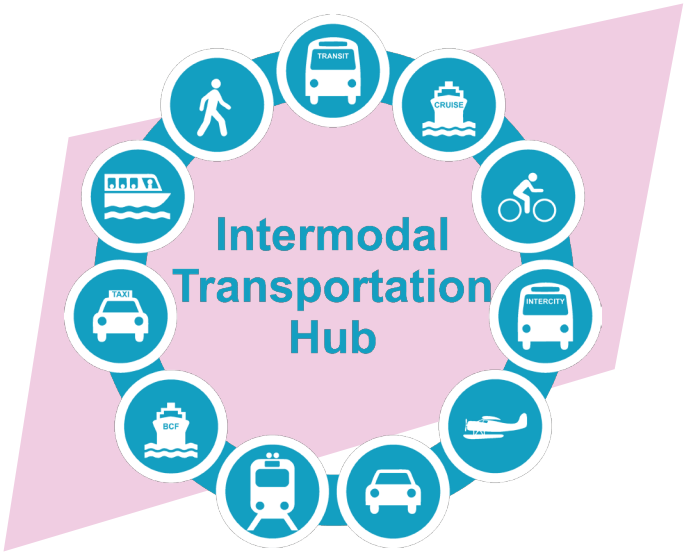
T2A, T2B, S1D

Description

Supporting work by the RDN and BC Transit, the Plan recommends the relocation of the Prideaux Transit Exchange to a site south of the Gabriola Ferry Terminal. The City envisions not only a transit exchange, but a multimodal transportation hub that integrates public and private transportation modes in one place. Located within walking distance of Downtown businesses and employment, the site has the potential to inter-connect many transportation modes, better serving all users. In addition to transit, the site could include connections to intercity bus services, a future Downtown Vancouver passenger ferry, the E&N railway, float planes, Protection and Gabriola Islands (via ferry), taxis, airport shuttles and cruise ships.

Development of an incremental plan can provide flexibility to add transportation modes over time and integration with surrounding development can create an active space, with eyes on the streets and retail services for users. The routing of transit routes approaching the exchange should be carefully considered as many transit riders currently board/alight buses throughout Downtown.

An intermodal transportation hub could include a wide range of transportation services interconnected within a single space.



NRGH Area Parking Strategy

Timeframe	within 2 years
Plan Elements	
Policies and Actions	P2A,P2B
Description	Parking overflow from Nanaimo Regional General Hospital is creating issues within neighbourhoods surrounding the hospital campus. A comprehensive parking strategy would seek to reduce conflicts between users and staff of NRGH and surrounding residents. The strategy should include all key stakeholders, seeking to balance the needs of hospital users and residents. Changes to parking regulations and supply combined with strategies to reduce parking demand should be explored while using parking management as a tool to promote development of NRGH as a mobility hub.

Boxwood Connector

Timeframe

within 5 years

Plan Elements

Policies and Actions

R1B ,R3A, R3B, R3C

Description

A proposed road network improvement, the Boxwood Connector and improvements along Northfield Road between Boxwood and Bowen Roads seek to reduce congestion and collisions at the intersection of Bowen and Northfield Roads. The intersection of Bowen and Northfield Roads currently has the highest collision rate of any intersection within the City's road network and experiences congestion during peak PM periods. The proposed improvements would see the extension of Boxwood Road north of Northfield Road, turning and connecting to Bowen Road at the south entrance of Beban Park. The proposed major road would divert traffic away from the intersection of Bowen / Northfield while supporting walking, cycling and transit through the use of complete streets principles. Coordination with land use on surrounding parcels through a Precinct Area Plan is an opportunity to create even greater community benefits.

Boundary – Northfield Intersection Improvements

Timeframe	within 2 years
Plan Elements	
Policies and Actions	R1B
Description	Proposed safety improvements to the intersections of Boundary Ave, Northfield Rd and Island Highway seek to reduce collisions at this complex and busy intersection. The intersection has the highest collision rates of all intersections in Nanaimo (including Provincial Highways). In addition to three major roads, the intersection also accommodates the E&N Railway and the E&N Trail. Proposed improvements would improve the safe operation of the intersection, reducing conflicts between vehicles, pedestrians and cyclists.

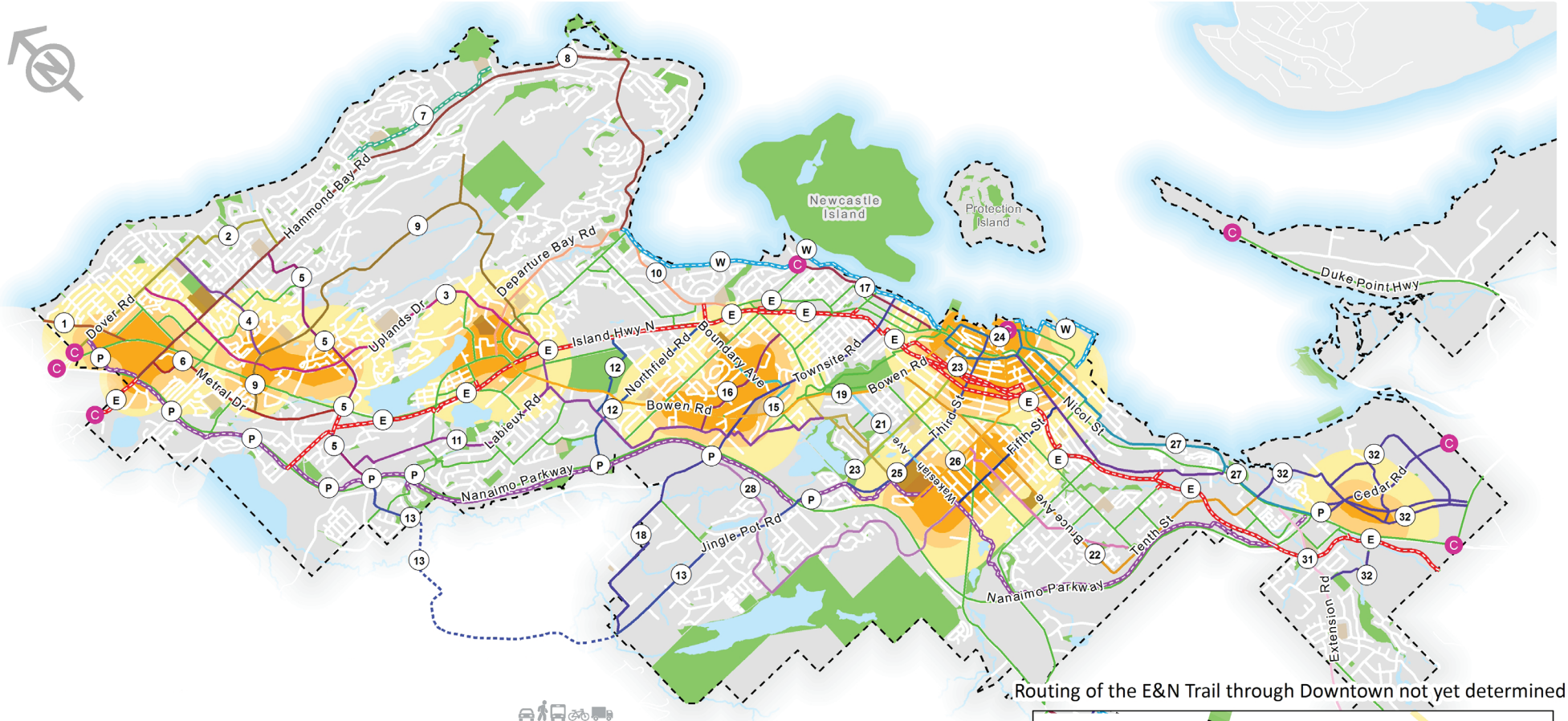
Complete Street Design Guidelines

Timeframe	within 2 years
Plan Elements	
Policies and Actions	R3C
Description	The City's Manual of Engineering Standards (MOESS) defines the key elements of new road construction both within new developments and as part of new road infrastructure projects. Similarly, the City's Bicycle Design Guidelines providing guidance on the development of new cycling infrastructure. Creating future complete streets that better accommodate pedestrians, cyclists, transit and vehicles will require an update to both these documents so that new streets are developed with a stronger focus on sustainable transportation.

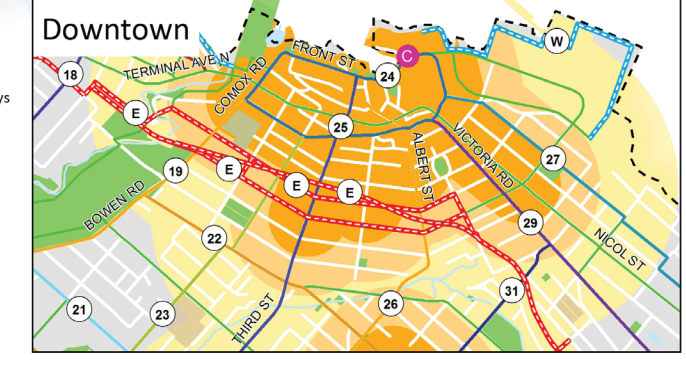
Updated design guidelines will help the City build complete streets that better support everyone's travel and form positive parts of our community.

Appendix A Cycling Network Projects

Map A1 - Long-Term Bicycle Network Plan



Routing of the E&N Trail through Downtown not yet determined



Nanaimo Transportation Master Plan

NANAIMO TRANSPORTATION MASTER PLAN

- (E) E&N Trail
- (W) Waterfront Walkway
- (P) Parkway Trail
- Other Cycling Network Routes
- (1) Lantzville Bikeway
- (2) Dover Bikeway
- (3) Uplands Bikeway
- (4) Turner Bikeway
- (5) Rutherford Bikeway
- (6) Metral Bikeway
- (7) Walley Creek Trail
- (8) Hammond Bay Bikeway
- (9) Linley Valley Bikeway
- (10) Departure Bay Bikeway
- (11) Labieux Bikeway
- (12) Northfield Bikeway
- (13) Jingle Pot Bikeway
- (14) Off Bowen Bikeway
- (15) Boundary Bikeway
- (16) Hospital Bikeway
- (17) Stewart Bikeway
- (18) Townsite Bikeway
- (19) Bowen Bikeway
- (20) Buttertubs Connector
- (21) Wakesiah Bikeway
- (22) Harewood Bikeway
- (23) Wentworth Bikeway
- (24) Downtown Loop
- (25) Bastion Bikeway
- (26) VIU Bikeway
- (27) Haliburton Bikeway
- (28) Westwood Bikeway
- (29) Victoria Bikeway
- (30) Georgia Ave Greenway
- (31) Cinnabar Valley Bikeway
- (32) Sandstone Cycling Network

Mobility Hubs

- Focal Area
- 200m Buffer
- 600m Buffer

- Parks
- Cycling Gateways

0 500 1,000 1,500 2,000
Metres

CITY OF NANAIMO THE HARBOUR CITY

URBAN systems

Route Key	Route Description
E	**E&N Trail** The E&N Multiuse Trail will form the spine of the cycling network running north-south the length of the City and passing near many of the largest destinations. As a railway corridor, gentle grades and limited road crossings make travel easier. Through the Downtown multiple routes are possible and will be considered. Future links to the north and south will connect to regional systems in adjacent communities.
W	**Waterfront Walkway** The proposed Waterfront Walkway forms a scenic and attractive cycling route along the waterfront connecting Downtown, Newcastle + Brechin, Departure Bay Ferry Terminal and Departure Bay Beach. While the current walkway is pedestrian only in the Downtown, future segments are envisioned as supporting both walking and cycling.
P	**Parkway Trail** The Parkway Multiuse Trail runs along the western edge of the City with tougher grades and links fewer destinations. A good recreational facility; it joins with the E&N Trail in the north of the City supporting a future link to Lantzville in the north.
1	**Lantzville Bikeway** One of three proposed links to connect Nanaimo with Lantzville, this route would connect to Lantzville via Dickinson Road. The route would also provide access to the west side of the Dover / North Slope Neighbourhood.
2	**Dover Bikeway** A proposed east-west link across the Dover / North Slope Neighbourood and one of three connections to Lantzville via Lantzville Road. The route provides access from neighbourhood areas to north-south routes connecting to Woodgrove and other parts of the City.
3	**Uplands Bikeway** A major north-south link running from Dover Rd south to the E&N Trail at Rock City Road. This proposed route would run roughly parallel to the E&N Trail but on the east side of the Island Highway connecting Country Club, North Nanaimo and Woodgrove mobility hubs.
4	**Turner Bikeway** A north-south link running from Dover Rd and the Dover / North Slope Neighbourhood south to Linley Valley Drive and then connecting to the Uplands Bikeway. This proposed route would connect. This proposed link connects two schools and the Dover / North Slope Neighbourhood to the North Nanaimo mobility hub at Turner and Uplands.
5	**Rutherford Bikeway** A north-south link running from Hammond Bay Rd, over Rutherford Hill and down to E&N Trail, Parkway Trail and Jingle Pot Rd. This proposed route connects the Linley Valley neighbourhood to surrounding cycling facilities. As grades are a challenge on this route its use would be largely limited to accessing neighbouroods in the Linley Valley, other nearby routes such as Turner or Uplands provide better connections for north-south through trips.

6	**Metral Bikeway**	A north-south link running from Mostar Rd to Woodgrove. This route provides a flatter alternative to the Parkway Trail accessing Woodgrove from the north end of the E&N Trail.
7	**Walley Creek Trail**	Walley Creek Trail forms an alternative east-west route along Hammond Bay Road from Entwhistle Dr to McGuffie Rd. The multiuse trail creates a comfortable riding environment for a wide range of cyclists.
8	**Hammond Bay Bikeway**	Hammond Bay Rd forms the primary transportation corridor for neighbourhoods east of Rutherford Rd. While the current roadway has limited cycling facilities, bike lanes are proposed as the corridor is upgraded. However, due to the high cost of construction in this topographically challenging area, the corridor would be improved incrementally over time.
9	**Linley Valley Bikeway**	Located along the future Linley Valley Drive and through parklands as a multiuse trail, this connection will link existing and future development and parks within the North Nanaimo Mobility hub surrounding the intersection of Turner Rd and Uplands Dr.
10	**Departure Bay Bikeway**	The proposed Departure Bay Bikeway would be the primary cycling facility within Departure Bay, connecting the beachfront with Country Club to the west, Brooks Landing to the south, the future Waterfront Walkway and Hammond Bay to the north. A secondary high-elevation route is proposed via Glenayr and Bay streets to avoid the elevation losses incurred by Departure Bay Rd.
11	**Labieux Bikeway**	The proposed Labieux Bikeway will provide access to neighbourhoods south of Divers Lake and provide an alternative route to employment along Mostar Rd.
12	**Northfield Bikeway**	The proposed Northfield Bikeway would run east-west from the Parkway Trail to the E&N Trail. Two facilities are proposed, an on-street facility via Northfield Rd, and a multi-use trail via Beban Park. Combined, these two facilities will provide a strong link for cyclists with a wide range of ability and comfort between two of the City's busiest north-south cycling corridors and provide access to the Parkway for cyclists arriving at Departure Bay Ferry Terminal.
13	**Jingle Pot Bikeway**	The Jingle Pot Bikeway would provide access to the College Heights neighbourhood and extend the Rutherford Bikeway west of the Parkway. The City would support development of cycling facilities along the RDN section of Jingle Pot Road by the Ministry of Transportation and Infrastructure.

14 **Off-Bowen Bikeway**

Bowen Road is one of the City's largest transportation corridors with heavy traffic volumes including transit. A diverse range of services and employment are located along the street with future growth and densification anticipated. With a challenging environment for on-street cycling, this proposed route would link a series of streets immediately to the west of Bowen to create a parallel cycling corridor that provides a comfortable cycling environment while remaining close to key destinations along Bowen.

15 **Boundary Bikeway**

The Boundary Bikeway will travel north-south along Boundary, Bush and Pryde Ave to connect the E&N Trail to Bowen Road. The route forms one of the best connections between the E&N Trail and VIU for students riding from the north as well as servicing the hospital and Woodlands Secondary.

16 **Hospital Bikeway**

Running along Dufferin Cres, this proposed connection would link the NRGH campus with the E&N Trail to the south, as well as services and transit in the Bowen Road corridor.

17 **Stewart Bikeway**

This proposed linkage running along Stewart Ave / Highway 1 would require support of the Ministry of Transportation and Infrastructure. Departure Bay Ferry Terminal is a gateway to the City and Vancouver Island, this link would provide good cycling access to this facility while supporting shifting Stewart Avenue towards a complete street configuration.

18 **Townsite Bikeway**

Running east-west across the City, the Townsite bikeway would connect the Waterfront Walkway, the E&N Trail and the Parkway Trail together via Townsite and East Wellington Roads. Neighbourhoods surrounding the route have high existing cycling potential and several key destinations, including Central Bowen and NRGH are near by.

19 **Bowen Bikeway**

Over time the development of cycling facilities along the Bowen Road Corridor will help shift this important arterial street to a more complete street format. Southeast of Wakesiah Ave traffic volumes fall significantly, creating opportunities for reallocating road space for cyclists and support more cycling Downtown.

20 **Buttertubs Connector**

Linking VIU, Bowen Road and the E&N Trail via Boundary Ave this route provides important linkages to the adjacent cycling network.

21 **Wakesiah Bikeway**

Running north-south along the western edge of the Harewood Neighbourhood, this major transportation corridor links a number of important civic facilities (Nanaimo Aquatic Centre, Naniamo Ice Centre and NDSS) as well as VIU, one of the largest cycling destinations in the City.

22 **Harewood Bikeway**

The Harewood Bikeway would run north-south along Pine, Bruce and Tenth streets between Bowen Road and Island Highway. The proposed route will form the spine of Harewood's cycling network, connecting the neighborhoods' two largest commercial destinations. This route was identified within the Harewood Neighbourhood Plan in 2013.

23 **Wentworth Bikeway**

This proposed route travels radially out from the Downtown, creating an east-west link across the north part of the Harewood Neighbourhood before linking up to the Bastion Bikeway on Third St.

24 **Downtown Loop**

The proposed Downtown Loop would link together radially arranged routes travelling out from Downtown (Haliburton, Victoria, VIU, Bastion, Wentworth, Bowen, Waterfront Walkway) like a hub via Front, Victoria, Wallace and Comox Rd. This link would allow easy movement around Downtown.

25 **Bastion Bikeway**

This proposed route travels radially out from the Downtown, creating an east-west link between Downtown and Harewood. At Wakesiah Ave it services the Nanaimo Aquatic and Ice Centres before linking up to the Parkway Trail, Jingle Pot and Westwood Bikeways that serve neighbourhoods to the west of the Parkway.

26 **VIU Bikeway**

This proposed route provides the shortest and most direct connection between Downtown and Vancouver Island University. An east-west link, it travels along Albert and Fourth streets within two of the City's highest areas of cycling use before reaching VIU; the City's largest cycling destination.

27 **Haliburton Bikeway**

This existing cycling route travels radially out from the Downtown passing through the South End Neighbourhood and Snuneymuxw Fist Nation's Town Reserve #1 before reaching the Cinnabar Valley and future connections to the planned Sandstone Neighbourhood.

28 **Westwood Bikeway**

This proposed route would provide cycling access to the Westwood and College Heights neighbourhoods as well as Westwood Lake Park. The challenging topography will limit its use as a through route, but will make it an attractive route for training. A connection from College Dr to Westwood Road via Westwood Lake Park will improve connectivity between these adjacent neighbourhoods.

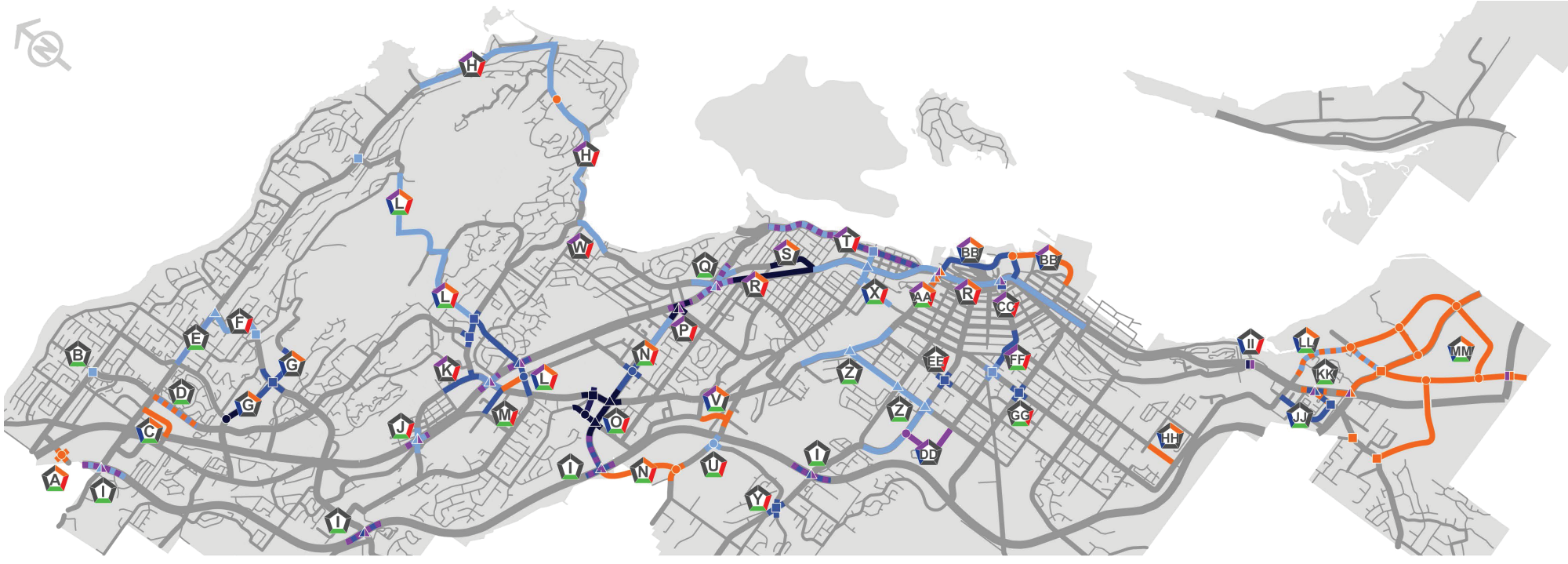
29 **Victoria Bikeway**

Running parallel but west of the Haliburton Bikeway, this cycling route travels through the South End Neighbourhood before merging with the Haliburton Bikeway. The route will service its local neighbourhood as topography limits this routes attractiveness as a north-south corridor for longer trips.

30	**Georgia Ave Greenway** Also identified within the Harewood Neighbourhood Plan in 2013, this proposed route would connect Harewood's major commercial destinations. The route would be largely located within local streets and parks, creating a friendly environment for less confident cyclists.
31	**Cinnabar Bikeway** Running north-south along Cranberry Ave and Extension Rd the Cinnabar Bikeway provides access to the Cinnabar Valley neighbourhood and to recreational routes south of the City.
32	**Sandstone Cycling Network** The future Sandstone Neighbourhood will include a comprehensive cycling network on all major roads within the development both providing local and city-wide connectivity for cyclists.

Appendix B Major Road Network Projects

Map A2 - Future Major Road Network Improvement Projects



Nanaimo Transportation Master Plan

NANAIMO TRANSPORTATION MASTER PLAN

Project Type

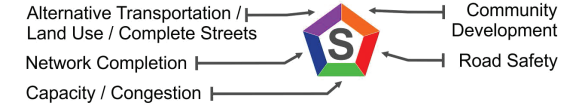
- Existing Intersection Upgrade
- Proposed New Traffic Signal
- Proposed New Roundabout
- Corridor Improvement

Project Timeframe

- Short-Term
- Medium-Term
- Long-Term
- Development
- Project by Others

Project Key

Primary Project Drivers



Notes:
- Projects may have multiple drivers as indicated by multiple highlighted colours; where drivers not present, bar is grey.

Project List

- A Mary Ellen Intersection Improvements
- B Dover / Uplands Intersection Improvements
- C Green Thumb - Future Road Network
- D Uplands Drive - Turner to Hammond Bay
- E Hammond Bay - Turner to Rutherford
- F Rutherford Road Safety Improvements
- G Linley Valley Drive
- H Hammond Bay (Morningside to Departure Bay)
- I Nanaimo Parkway Intersection Improvements
- J Norwell (N) / Island Hwy Intersection Improvements
- K Country Club High Street / Transit Exchange
- L Rock City Road / Burma Road Corridor Improvements
- M Bowen / Island Hwy Intersection Improvements
- N Northfield Road Corridor Improvements
- O Boxwood Connector
- P Northfield / Boundary / Island Hwy Int Improvements
- Q Brechin Hill Intersection Upgrade
- R Terminal Avenue Corridor Improvements
- S Estevan Complete Street Corridor
- T Stewart Avenue Complete Street Corridor
- U Westwood / East Wellington Intersection Imprvs
- V Boxwood Road - Extension to E Wellington Road
- W Departure Bay Beach Corridor Improvements
- X Wall-Holly Connector
- Y Westwood / Jinglepot Intersection Improvements
- Z Bowen/Wakesiah/Jingle Pot Corridor Improvements
- AA Wallace / Comox / Island Hwy Intersection Imprvs
- BB Front Street Complete Street Corridor Improvements
- CC Commercial/Wallace/Albert/Victoria Int Improvements
- DD VIU Road Network Improvements
- EE Howard / Third Intersection Improvements
- FF Fourth Street Multimodal Corridor Improvements
- GG Bruce / Fifth Intersection Improvements
- HH Park Avenue Completion
- II Victoria / Haliburton / Island Hwy Intersection Imprvs
- JJ Cranberry Connector
- KK Cranberry / Island Hwy Intersection Improvements
- LL Maki-Fielding Connector
- MM Sandstone Road Network

Key	Project Drivers	Time Frame	Project Description
A	C S D	Development	**Mary Ellen / Mall Access Intersection Improvements.** During peak shopping periods congestion and safety issues are present at the mall accesses mid-way between Highways 19/19A. A single lane roundabout is proposed in conjunction with adjacent future development. A divided median, bike lanes and on-street parking along Mary Ellen is also proposed to moderate speeds along the corridor.
B	C	Long-Term	**Dover / Uplands Intersection Improvements.** Signalization or development of a roundabout is proposed for this intersection over the long term to accommodate future traffic volumes.
C	C N D	Development	**Green Thumb Nursery - Future Road Network.** Development of a road network connection between Enterprise Way and Calinda Street is proposed in coordination with the future development of the Green Thumb Nursery Site.
D	C	Long-Term / Development	**Uplands Drive - Turner to Hammond Bay Rd.** Completion of Uplands Dr between Turner and Hammond Bay Roads may proceed as a long-term project or in coordination with development of Green Thumb Nursery Site.
E	C	Long-Term	**Hammond Bay Road - Turner Rd to Rutherford Rd.** Widening of Hammond Bay Road between McGirr and Rutherford Roads to four lanes is proposed in the long term to accommodate future traffic volumes.
F	S	Long-Term	**Rutherford Road Hill.** Improvements to the two-lane alignment of Rutherford Road Hill are proposed to improve safety performance between Hammond Bay and Vanderneuk Roads.
G	N D	Phased / Development	**Linley Valley Drive**. Linley Valley Drive is designed as the major road network supporting future development within the Linley Valley and connecting to the City's existing road network at Turner and Rutherford Roads. Portions of the roadway have already been constructed within recent developments and the westernmost approach to Turner Road will be constructed in 2014. The requirement for / alignment of undeveloped sections will be reviewed in the context of plans to expand Linley Valley (Cottle Lake) Park.
H	S A	Phased	**Hammond Bay Road - Morningside to Departure Bay Road.** The Hammond Bay Mobility Study undertaken by the City in 2005 proposed an improved two lane road cross section for Hammond Bay Road between Morningside and Departure Bay Roads. The proposed improvements retained the existing two lane cross-section, but added shoulders, a sidewalk, left-turn bays at key intersections and transit pull-outs to improve safety for all users along the corridor. Due to the high cost of implementation, this project will be constructed over time in segments.

I	C	**Phased / External Agency**	**Nanaimo Parkway (Highway 19) Intersection Improvements.** While traffic projections for the Nanaimo Parkway indicate improvements will be required at intersections in central Nanaimo (Jingle Pot, Northfield and Mostar) in the medium term they do not suggest traffic volumes will be large enough to support interchanges in the timeframe of the Plan. Initial improvements could include the extension and/or addition of left turn lanes. The Nanaimo Parkway is a provincial highway and improvements would be lead by the Ministry of Transportation and Infrastructure.
J	C S	**Long-Term/External Agency**	**Norwell Dr (North) and Island Highway.** A lack of left turn bays on Norwell Drive and Jinglepot Road approaching this intersection leads to delays and collisions. Long-term improvements would widen both approaches to improve intersection operations. Island Highway is a provincial highway and improvements would be in collaboration with the Ministry of Transportation and Infrastructure.
K	S A	**Medium-Term/External Agency**	**Country Club High Street and Transit Exchange.** In conjunction with future improvements at the Country Club Transit Exchange; this project envisions developing a more comprehensive streetscape plan for Norwell Dr, improving conditions for pedestrians, cyclists, transit buses and riders while encouraging street-orientated development and the evolution of the Country Club mobility hub. This project would be completed in cooperation with RDN and BC Transit.
L	C N S D A	**Phased/External Agency**	**Rock City Road Corridor.** Initial proposed improvements include a signalized intersection and extension of Rock City Road south across Island Hwy connecting to Labieux, Kenworth and Bowen Roads. This will improve access to the adjacent neighbourhood, particularly exiting to the south, reduce congestion at Island Hwy and Bowen Road and formalize a strong pedestrian/cycling desire line. Intersection improvements at Departure Bay Rd and extension of Rock City Rd north to the east end of Linley Valley Dr is proposed over the long term in coordination with future development. Island Highway is a provincial highway and improvements would require support from the Ministry of Transportation and Infrastructure.
M	C S	**Long-Term/External Agency**	**Bowen Road / Island Hwy - Intersection Improvements.** Congestion at the intersection of Bowen Road and Island Hwy is projected to increase over the long-term. The widening of Bowen Road/Norwell Dr could increase capacity of the intersection, improve crossing conditions for E&N Trail users and improve the overall intersection safety performance. Island Highway is a provincial highway and improvements would require cooperation from the Ministry of Transportation and Infrastructure.
N	C S D	**Phased**	**Northfield Road Corridor.** Northfield Road forms a major link between Island Hwy, Bowen Rd and the Parkway. Improvements between Bowen and Boxwood Roads (in coordination with the Boxwood Connector) will likely occur in the short-term. Longer term improvements would see intersection improvements at Dorman Rd and road widening from Boxwood Rd towards the Parkway. Future development west of the Parkway could see Northfield Rd extended to East Wellington Road.

O	C N S	**Short-Term**	**Boxwood Connector, Bowen and Northfield Roads.** Complementary to improvements along Northfield Road, the Boxwood Connector includes development of a new road from the intersection of Northfield and Boxwood Roads to Bowen Road at the south entrance to Beban Park. These planned improvements will reduce congestion and collisions at the intersection of Bowen and Northfield Roads; improve access to Beban Park and the pedestrian and cycling network.
P	S A	**Short-Term/External Agency**	**Northfield / Boundary / Island Hwy - Intersection Improvements.** Improvements at the intersection of Island Hwy / Northfield Road / Boundary Ave are proposed to address existing safety and operations issues, as well as, improve crossing conditions for E&N Trail users.
Q	C	**Long-Term/External Agency**	**Brechin Hill Intersection Improvements.** Projected increases in future traffic volumes combined with ferry traffic will require increased capacity and reliability for this important node within the City's road network. The complexity of the intersections will require further analysis to identify potential improvement concepts. Island Highway and Brechin Road are provincial highways and improvements would be lead by the Ministry of Transportation and Infrastructure.
R	S D A	**Phased/External Agency**	**Terminal Ave Corridor Improvements.** Terminal Ave is one of the City's most important streets but has a number of safety, operational and development issues along its length. A joint study of the corridor with the Ministry of Transportation, DNBIA and the City is proposed to better define improvements to support both vehicle mobility and safety, but also adjacent businesses and neighbourhoods. Portions of Terminal Ave are a provincial highway and improvements would require support from the Ministry of Transportation and Infrastructure.
S	D A	**Short-Term / Development**	**Estevan Complete Street Corridor.** Consistent with the proposed vision within the Newcastle + Brechin Neighbourhood Plan, this project could include reducing travel lanes from four to two, providing left-turn bays, bike lanes and through future development improved pedestrian features and on-street parking.
T	S A	**Medium-Term/External Agency**	**Stewart Avenue Complete Street Corridor.** Consistent with the proposed vision within the Newcastle + Brechin Neighbourhood Plan, this project would study options for reallocating space within the existing Stewart Avenue cross-section to create bike lanes, add left-turn bays and shorten crosswalks along the corridor. A joint study with the Ministry of Transportation, BC Ferries and the City is proposed as a first step. Stewart Ave is a provincial highway and improvements would require support from the Ministry of Transportation and Infrastructure.

U	C S	**Long-Term**	**Westwood Road / East Wellington Road - Intersection Improvement.** Proposed improvements would include widening of Terminal Avenue at its intersection with Townsite Road to facilitate the addition of left-turn bays on Terminal Ave. This would improve the safety performance of the intersection and create better options for access to the Newcastle neighbourhood from the north. As additional road right-of-way is required for these improvements, they would likely not proceed until re-development occurred on several corners of the intersection.
V	C N A	**Medium-Term**	**Boxwood Road - South Extension to East Wellington Road.** The extension of Boxwood Road from Dufferin Crescent to East Wellington Road will complete the Boxwood corridor and provide an alternate route to Bowen Road for vehicles and cyclists.
W	S A	**Long-Term**	**Departure Bay Beach Corridor Improvements.** This project would seek to improve conditions for all road users along the Departure Bay beachfront including pedestrians, cyclists and vehicles accessing the beach while supporting future access to Hammond Bay via Departure Bay.
X	C N S	**Long-Term**	**Wall-Holly Connector.** Traffic volumes crossing the Millstone River are projected to grow in the future resulting in increased traffic on the City's five road crossings of the river. Proposed long-term improvements to Wall, Holly and Bradley Streets are proposed to improve the safety and capacity of this corridor.
Y	C S	**Medium-Term**	**Westwood Road / Jingle Pot Road - Intersection Improvements.** To improve existing safety performance and capacity at the intersection of Westwood and Jingle Pot Road; signalization of the intersection is proposed over the medium term.
Z	C	**Long-Term**	**Bowen/Wakesiah/Third Corridor Improvements.** A series of long-term projects to widen Bowen Road, Wakesiah Avenue and Third Streets to accommodate future projected traffic volume increases within the central portion of the City.
AA	C D S A	**Long-Term / Development / External Agency**	**Wallace / Comox and Comox / Island Hwy Intersection Improvements.** A long-term project to improve the intersection of Comox Rd and Terminal Ave and Comox Rd approaching from the west. This project would seek to improve capacity at the intersection, improve traffic safety and provide space to accommodate cyclists. Improvements may be coordinated with redevelopment of adjacent parcels. Terminal Avenue is a provincial highway and improvements would require cooperation from the Ministry of Transportation and Infrastructure.
BB	N D A	**Medium-Term / Development**	**Front Street Corridor Improvements.** Improvements along the Front Street corridor would seek to make the street a better place for vehicles, pedestrians, cyclists and transit riders consistent with the vision of the Front Street Comprehensive Plan. Extension of Front Street south, as part of future possible development within the Assembly Wharf area, may provide an additional southern access point for the Downtown.
CC	S A	**Medium-Term**	**Commercial / Wallace / Albert / Victoria - Intersection Improvements.** Improvements to this atypical intersection within the Downtown would seek to improve safety and operations for pedestrians, cyclists and vehicles.

DD	N A	**External Agency**	**VIU Road Network Improvements.** Identified within the 2008 VIU Campus Master Plan, improvements to Fourth Street west of Wakesiah Ave and development of a new road connection and intersection with Third Street will improve access for transit and vehicles to the VIU Campus and reduce traffic volumes on Wakesiah Ave. Improvements will be undertaken by VIU.
EE	S	**Medium-Term**	**Howard Ave / Third St - Intersection Improvements.** The proposed signalization of the intersection of Howard Ave and Third Street to improve safety at this intersection.
FF	C S A	**Medium-Term**	**Fourth Street Complete Street Corridor Improvements.** Improvements would help better facilitate cyclists on this important connection between VIU and Downtown while addressing improving safety performance within the corridor. In the long-term signalization of Fourth and Bruce Ave is also expected.
GG	C S	**Medium-Term**	**Bruce Ave / Fifth St - Intersection Improvements.** The proposed signalization of the intersection of Bruce Ave and Fifth Street will help increase capacity and improve safety at this intersection.
HH	N D	**Development**	**Park Ave Completion.** The southern extension of Park Street to Tenth Avenue will complete the major road network in the area, reducing traffic volumes on Ninth Ave and Douglas St to the east.
II	S N	**Short-Term / External Agency**	**Island Highway / Victoria Road / Haliburton Road Intersection Improvements**. Signalization of the intersection of Island Hwy / Victoria Rd / Haliburton Rd will improve safety performance and access to and across Island Highway for residential and industrial traffic. This project would be lead by the Ministry of Transportation and Infrastructure with funding support from the City.
JJ	C N	**Medium-Term / Development**	**Cranberry Connector.** Proposed improvements would connect Cranberry Avenue with Lawlor Street via a new roadway in front of Fire Hall #4 creating a connection between the Cinnabar Valley and the Southgate Commercial without the need to use Island Hwy. Timing of this project is correlated to future development within the Cinnabar Valley.
KK	C	**Medium-Term / Development**	**Cranberry Ave / Island Hwy - Intersection Improvements.** Proposed intersection improvements and expanded left-turn capacity would seek to reduce congestion for vehicles entering or leaving the Cinnabar Valley via Cranberry Ave. Timing of this project is correlated to future development within the Cinnabar Valley.
LL	C N D	**Long-Term / Development**	**Maki-Fielding Connector.** Proposed improvements would connect the ends of Maki and Fielding Roads via a new roadway creating a connection between the Cedar Rd and the Southgate Commercial Area without the need to use Island Hwy. This project would be advanced in coordination with future development and would form part of the future road network for Sandstone.

MM	C N D	**Development**	**Sandstone Road Network.** A number of new roadways are proposed as part of the Sandstone Master Plan. These new connections will be constructed as the development proceeds. While most improvements are contained within the development site, improvements to Extension Rd, Cranberry Ave, Cedar Rd and the Duke Point Highway are proposed.

CITY OF NANAIMO
THE HARBOUR CITY