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TRANSPORTATION MASTER PLAN UPDATE 2016

City of Parksville

DATE: December 19, 2016 Files: 986 / 1878

EXECUTIVE SUMMARY

A comprehensive review and update of the 2001 City of Parksville Transportation Master Plan was conducted. The review included the existing and plans for long-term road network, pedestrian network and accessibility, bicycle network, transit opportunities as well as strategies to encourage the use of alternative transportation. This updated plan provides a framework to guide the development of transportation infrastructure and policies over the next 20 years. The main objectives of the 2016 *Transportation Master Plan* are to:

- Make recommendations for transportation network improvements considering, all modes of transportation, future requirements, development plans, and plans of other agencies
- Make recommendations for policy improvements considering environmental impacts, TDM, and Active Transportation
- Consider the City's growth strategy and OCP in ensuring accessibility and mobility for all and supporting economic development as deemed appropriate by the City
- Document and review current conditions

Two community open houses and one walk-about/bike-about were held between June and November 2009 to gather input and feedback from the community. Over 800 people attended one or more of the community consultation events and feedback was received from 245 people.

ROAD NETWORK

Road Classifications and Cross Sections

Road classifications create a hierarchy of roads with a gradation in function from direct access to vehicle mobility on the road. Parksville has eight road classifications including, lanes, local, collector, arterial, downtown, and industrial roads. No significant changes in the road classifications are proposed. Minor changes are recommended to the existing cross sections as follows:

- Urban Arterial (RC4) add bicycle lanes, increase sidewalks to 2m, reduce boulevard to one side
- Rural Arterial (RC5) increased paved shoulder to 2m
- Resort Collector (RC3) update title to include Rural Collectors, increase path width to 2m
- Urban Local (RC1) increase sidewalk width to 1.8m

Existing Traffic Conditions

Since 2001 there have been changes in the traffic patterns in the PM peak hour. The significant changes include an increase in traffic turning on and off Highway 19A at McMillan Street and an increase on Jensen Avenue, Corfield Street, and Church Road. Traffic has decreased on Highway 19A between McMillan Street and McVickers Street, on Alberni Highway, and on Stanford Avenue west of



Corfield Street. The majority of locations reviewed for the 85th percentile speed were found to be within 10km/h of the posted speed limit; however there are several locations at 15km/h over the posted speed limit. Locations with 85th percentile speeds greater than 10km/h may be locations where measures are necessary to bring 85th percentile speeds in line with the posted speed limit.

The signalized intersections within the City of Parksville operate at an overall LOS C or better in the AM and PM peak hours with the exception of several movements at Highway 19A/Pym Street, Highway 19A/McMillan Street, and Highway 19A/Corfield Street, which are at a LOS D. Unsignalized intersections along Highway 19A are operating at a LOS D/E/F due to the volume of traffic on Highway 19A in the AM and PM peak hours.

Short Term Improvements

The following short term improvements should be implemented based on existing traffic operations and anecdotal safety concerns:

- Add a northbound protected/permitted left turn phase at Highway 19A/McMillan Street.
- Install a southbound protected/permitted left turn phase at Highway 19A/Pym Street.
- Restrict Tuan Road at Highway 19A to the right-out movement only.
- Provide improved parking lot signage for downtown area. (See Downtown Parking Study)

In addition the City should:

• develop and adopt a roundabout policy

Long Term Traffic Conditions

Traffic projections for the 20 year horizon were developed using the Official Community Plan land uses and modelled using VISUM software. Five long term major road connection options were reviewed. The results of the review indicated that the 'do nothing' option is the best option based on cost, traffic operations, and the challenges of providing road connections through the Regional District of Nanaimo. Two minor road network connections have been identified as being required in the long term – a multi-use path connection from Beachside Drive to the Community Park and the realignment of Tuan Road at Highway 19A to tie into the signal at Highway 19A/Resort Road. In addition, the section of Highway 19A from Roscow Street to Pym Street (east of the intersection) should be upgraded to a five lane cross section in the long term. Interim improvements have started on Highway 19A.

The following intersection improvements should be planned for the long term:

• a four way stop at Hirst Avenue/Alberni Highway

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- a roundabout (or traffic signal and associated turn lanes) at Jensen Avenue/Craig Street
- a northbound protected/permitted left turn phase at Alberni Highway/Despard Avenue
- Re-align Tuan Road at Highway 19A to Resort Road (required redevelopment)

In addition the City should:

• encourage schools (and Parent Advisory Committees) to develop a *safe routes to school plan* and to develop strategies and events to encourage the use of alternative transportation. Plans will need to adjust as schools are reclassified and closed.

BICYCLE AND TRAIL NETWORK

Bicycles offer additional mobility options for those looking for an economical alternative and can cover fairly significant distances, while being virtually carbon-zero. Bicycles are highly flexible, allowing users to choose a variety of routes. Within the City of Parksville there are limited existing designated bicycle lanes. Several multi-use paths have been constructed within Parksville to supplement the bicycle lanes. Three types of bicycle facilities are proposed to create a comprehensive bicycle network – i) designated bicycle lanes, ii) bicycle routes, and iii) multi-use trails. In addition to bicycle facilities additional measures should be implemented as part of the bicycling network:

- Paint bicycle detection at traffic signals
- Ensure paint markings across railway crossings direct cyclists to cross at 90 degrees
- Use elephant's feet at multi-use trail bicycle crossings
- Provide long and short term bicycle parking at public locations and require new and existing developments to provide off street bicycle parking

PEDESTRIAN NETWORK

The pedestrian environment provides opportunities for non-vehicular travel, including walking and those with physical challenges. Existing sidewalks within Parksville are mainly located within the downtown core, the Despard Avenue/Hirst Avenue/Pym Street/Temple Street area, and newer subdivisions (ie. Maple Glen). There are areas of the downtown where sidewalks require upgrading to create continuous sidewalks within the core area. Other areas where sidewalks are required include routes to schools, access to the waterfront and Community Park, and routes that connect to trails. Sidewalks should be in-place along all new urban development frontages.

Important considerations for the pedestrian realm include design elements that ensure the environment is attractive, safe and accessible. The following design guidelines should be incorporated into the design of future pedestrian networks.

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- Sidewalk width (1.8m to 3m)
- Safety
- Connectivity
- PUBLIC TRANSIT

- Accessibility
- Signage/Wayfinding
- Crosswalk Warrants

Transit is an economical alternative to automobile travel and offers a reduction in emissions and energy consumption over private automobile use. Significant densification of Parksville may be required before BC Transit will increase their current operating schedule. The City could implement a shuttle in the interim until such time as BC Transit can provide additional service. By providing a separate (shuttle) service the City will have the ability to tailor the service to the community's needs. The City should explore opportunities to have BC Transit expand the #88 intra city route to include the resort area and operate a more frequent service (ie. every 15-30 minutes). The PDBA has been providing a free Shoppers Shuttle during the summer months between downtown and the resort area. The City could explore opportunities to expand this type of shuttle service.

The City should also develop a transit exchange on Jensen Avenue at the Parksville Civic and Technology Centre (PCTC). The exchange should include shelters, benches, garbage receptacles, transit/shuttle information, and bicycle lockers. Bus stops within the City should be upgraded to meet the BC Transit *Infrastructure Design Guidelines* and to ensure accessibility. Additional signage between VIA train station and downtown should be explored when rail service resumes.

NEIGHBOURHOOD ZERO EMISSION VEHICLES (NZEVS)

Neighbourhood Zero Emission Vehicles (NZEVs) present an opportunity to expand the breadth of transportation options available to Parksville residents, while creating a sustainable alternative to automobile travel. NZEVs are slow moving vehicles powered by an electric motor that produces no emissions and are designed to travel on four wheels at a maximum speed of between 32km/h and 40km/h. The City could develop a bylaw that allows for the use of NZEVs on all roads with a 50km/h or less posted speed limit once the section of Highway 19A, if the speed limit east of Englishman River is reduced (by MoT).

TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) refers to a wide range of policies, programs, and services that are designed to influence travel behaviour and providing more travel options to local residents, such as improved transit, walking, cycling, and introduction of carshare and rideshare programs. TDM programs strive to reduce demand for vehicle use. The following are proposed TDM strategies:

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- Registration on a ridesharing website for City employees and promotion of ridesharing
- Develop a marketing and advertising campaign around TDM measures including mapping of pedestrian / bicycle facilities
- Bicycle parking requirements for developments
- Connections between bicycle and pedestrian networks with multi-use trails
- Development of *Safe Route to School* plans
- Implementation of a Bike to Work Week

- Increased pedestrian facilities
- Implementation of bicycle lanes and routes
- Review of City policies and regulations to ensure incentives and requirements for TDM measures are incorporated
- Implementation of a shuttle service or expanded transit service
- Encourage special events to implement TDM policies and plans
- Identify / explore hiring a TDM coordinator

IMPLEMENTATION PLAN

The implementation of the transportation master plan requires capital planning and funding. The 20 Year Capital Plan requires \$15,135,000 of transportation funding. There are a variety of approaches that the City may take to fund the development of the transportation network including development cost charges (DCC), grants, and donations. Grants are available from associations, the provincial and federal governments for a variety of transportation projects, particularly projects which encourage alternative transportation and reduce greenhouse gas emissions. Donation programs to support alternative transportation projects and programs are a way to involve the community in a project, gather support / interest as well as alternative sources of funding.



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1.0 INTRODUCTION

The City of Parksville initiated a process in December 2008 to update the City's 2002 Transportation Master Plan. A Request for Proposal (RFP) was issued by the City and Boulevard Transportation Group Ltd. was the consultant chosen to develop the transportation master plan in January 2009.

The final phase of the Inland Island Highway (Highway 19) had opened just prior to the completion of the 2002 Study and the impacts of changes in traffic patterns on Highway 19A, Highway 4A (Alberni Highway), and other routes in Parksville could not be discerned at that time. Since 2002, the City has also undertaken several road upgrades including implementing a downtown streetscape on Alberni Highway between Highway 19A and Jensen Avenue, on Jensen Avenue from Alberni Highway to Corfield Street, and on McMillan Road from Jensen Avenue to Highway 19A. All of this has influenced traffic patterns within the City. This update will review the changes in traffic patterns and identify improvements to the road network resulting from these changes. In addition, the use of alternative and active transportation modes, which have become a significant priority for the City of Parksville, will be explored.

This Transportation Master Plan update identifies and reviews the necessity of long term network connections and intersection improvements. The focus of the update is on alternative transportation with identification of pedestrian, cycling, and transit improvements. This Transportation Master Plan update provides a framework to guide the development and implementation of all transportation infrastructure over the next 20 years. In addition, Transportation Demand Management (TDM) strategies to encourage alternative transportation and new emerging technologies such as neighbourhood zero emission vehicles, are explored. The Transportation Master Plan should be reviewed between 5 and 10 years after adoption to incorporate growth and any significant changes in community principles and values.

Throughout the Transportation Master Plan update public consultation was a key component. Two open houses and a walk-about/bike-about were held to gather input and to present options on all aspects of the update. The open houses were well attended with over 100 attending the first open house and over 600 people attending the second open house.

For the purposes of this report Highway 19 and Highway 19A (Island Highway) are east-west roads and Highway 4A, McMillan Street, and Corfield Street are north-south roads. **Figure 1** outlines the regional road network, railway, and transit network for the Parksville and surrounding area.







2.0 BACKGROUND

To support the transportation planning efforts of this study the following documents were reviewed during the process:

- 2002 Master Transportation Plan (Boulevard Transportation Group)
- 2005 Parks and Open Space Master Plan (RRL Recreation Resources)
- 2006 Downtown Revitalization Study (Lanarc Consultants)
- 2006 Beachside Drive Design Considerations and Study (Boulevard Transportation Group)
- 2010 Beachside Drive Connection Assessment (Boulevard Transportation Group)
- 2010 Working Paper on Downtown Road Network Review (Boulevard Transportation Group)
- 2010 Downtown Core Area Parking Study (Boulevard Transportation Group)
- 2014 Highway 19A Urbanization Study (McElhanney)

The 2002 Master Transportation Plan stated that the existing road network was generally sufficient to sustain the expected traffic with the Alberni Highway increasing in importance as a gateway to Parksville (from Highway 19). The Jensen Ring Road was suggested to be completed to help with congestion on Highway 19A and Alberni Highway and that additional lanes west of McMillan would be required either through a Despard Avenue extension or widening of Highway 19A. A link to the east across Englishman River was not required. Improvements for pedestrians, cyclists, and transit were promoted.

One of the purposes of the 2006 Downtown Revitalization Study was to identify methods of enhancing the Highway 19A corridor, and improving connectivity between the Waterfront and Downtown. The study recommended the reduction of Highway 19A, through the core area (McMillan Street to McVickers Street), to two lanes plus centre median/turn lanes and on-street parking. The Downtown Revitalization Study was not reviewed by the City's Engineering department nor a transportation engineering consultant to determine the traffic (vehicle) impacts of reducing the number of lanes.

There is still one resort property remaining in the Downtown area (north side of Highway 19A) that has not proposed development at this time. This site currently has a right in/right out access off Highway 19A. The Beachside Drive reports / reviews assessed a series of network options for vehicles, pedestrians, and bicycles to improve circulation to the Community Park, Downtown, and the Highway. As the properties develop on the north side connection options should be reviewed in the context of the entire north side particularly in terms of pedestrian and bicycle connectivity east-west.

The 2014 Highway 19A Urbanization Study reviewed the feasibility of reducing the number of through lanes from four to two lanes between the Englishman River Bridge and McMillan Road and



identified opportunities to improve pedestrian crossing opportunities between McVickers and Shelly Road. The study found that reducing the number of lanes on the Highway was not recommended.

3.0 OBJECTIVES

The objectives of the 2016 Transportation Master Plan update are to:

- Make recommendations for transportation network improvements considering all modes of transportation, future requirements, development plans, and plans of other agencies
- Consider the City's growth strategy and OCP in ensuring accessibility and mobility for all and supporting economic development as deemed appropriate by the City
- Make recommendations for policy improvements considering environmental impacts, TDM, and Active Transportation
- Document and review existing conditions















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4.0 COMMUNITY CONSULTATION

Two community open houses and a bike-about/walk-about were held for this project to gather input and feedback on existing conditions and proposed recommendations from the community. In addition, several council workshops were held to explore current transportation issues and options for the City of Parksville.

4.1 Open House No. 1 - June 18, 2009

The initial open house for this project was held on June 18, 2009 at the Parksville Civic and Technology Centre (PCTC) from 4pm to 7pm. This open house was held jointly with the Downtown Parking study and was attended by over 100 people. The open house provided information on existing issues/concerns regarding all modes of transportation. Exit surveys were made available to residents for their input on concerns/issues. A total of forty (40) survey responses were received.

Based on the responses received the highest priority is pedestrian facilities followed by transit facilities, road network improvements and then bicycle facilities. Respondents identified the need for bicycle lanes on Highway 19A, Despard Avenue, and most areas throughout the City. The identified need for sidewalks included Corfield Street, Highway 19A, McMillan Street, and Hirst Avenue. Areas of congestion that were identified included Highway 19A (all intersections),



Highway 19A/Alberni Highway, Alberni Highway/Hirst Avenue, McMillan Street/Hirst Avenue, Highway 19A/Finholm Street, and Highway 19A/Pym Street. General comments were received on Highway 19A and Jensen Avenue regarding the extension of Jensen Avenue to McVickers Street and changes to the laning on Highway 19A. These comments included comments for and against the changes. Complete survey results and open house materials are included in *Appendix A*.

4.2 Bike-about/Walk-about – June 13, 2009 A walk-about and bike-about were held on Saturday June 13, 2009 from 9am to 12pm. Members of the community joined with the consulting team to physically explore and identify poor conditions and areas of concern. One group cycled through the community to identify conditions for cycling. Good and poor elements were



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noted. A second group of community members and consulting team members walked throughout the downtown and Community Park to identify poor conditions and noted the challenges to walking. This group also reviewed the challenges of walking between the Community Park and downtown.

4.3 Open House No. 2 - November 12, 2009

The second open house for this project was a joint open house with the Downtown Parking Study and the Downtown Traffic Review. The open house was held in afternoon/evening and attracted over 600 attendees. Three presentations on the materials were provided for attendees. (The material presented included proposed City wide and downtown network options, intersection improvements, potential bicycle,



pedestrian, and transit network plans.) These presentations and other information relative to the studies were also posted on the City's website. Over 20 display boards were in-place for viewing between the presentations with consultants from Boulevard Transportation Group available to discuss the material with attendees. An exit survey was provided to gather feedback on options and to identify any additional measures or concerns not identified previously. Two hundred and five (205) responses were collected.

Additional bicycle routes and areas where pedestrian facilities should be located were identified including bicycle lanes and sidewalks on Highway 19A. The majority of respondents (74%), who answered the question, supported the idea of a trolley, while 57% supported the use of TDM and NZEVs to encourage use of alternative modes. Sixty five percent of those that answered the question were also in support of the use of traffic calming measures and 57% support the use of roundabouts.

Four long-term City wide road network connections were presented. Respondents were asked which option they preferred, including a fifth option of 'doing nothing'. The 'do nothing' (or maintain existing road network within Parksville) received the highest response with 30% in favour of not implementing any new road network connections over the next 20 years. The second most popular response was Option 1 - extending Despard Avenue to Church Road. Seventy percent of respondents who answered the question supported the proposed City wide intersection improvements presented. Ten transportation projects were identified and respondents were asked to rank them in terms of priority. The projects that ranked the highest were sidewalks near schools, bicycle lanes on major roads, sidewalks downtown, and left turn lanes at Highway 19A/Bay Avenue/Finholm Street. Complete survey results are in*Appendix B*.



5.0 ROAD NETWORK

5.1 Road Classifications

Road classifications are typically identified in Official Community Plans (OCP) or in a Transportation Master Plan. In Parksville the road classifications are identified in the Transportation Master Plan. The road classifications identify the road function for each road within a municipality. Road classifications and functions do not necessarily correlate to actual observed use of a road, but indicate where it is desired for major routes through a community. Ideally, roads should operate as they are classified. If roads are not operating as classified they should be reviewed to determine if improvements or changes to the physical road or changes in classification are required.

Road classifications create a hierarchy of roads with a gradation in function from direct access to vehicle mobility on the road. Local roads typically carry less than 1,000 vehicles per day and give priority to direct access over vehicle mobility. Collector roads typically carry between 1,000 and 8,000 vehicles per day and give equal priority to direct access and vehicle mobility. Arterial roads typically carry between 5,000 and 30,000 vehicles per day, and give priority to vehicle mobility over direct access.

See **Figure 2** for Road Classifications. See Tables 1 and 2 for typical urban and rural road classification characteristics in Parksville.





	Local Roads	Downtown Roads	Collector Roads	Arterial Roads
Service	Traffic movement	Traffic movement	Traffic movement	Traffic
Function	secondary to access	secondary to access	equal to access	movement major
				consideration
Land Service/	Land access	Land access	Traffic movement	Some access
Access	primary	primary	equal to access	control
Typical Daily	<1,000 vpd	<3,000 vpd	<8,000 vpd	5,000+ vpd
Volumes				
Typical	Predominately	Passenger cars and	Passenger cars and	All types
Vehicle Types	passenger cars	delivery vehicles	service vehicles	
Parking	Maybe on both	Parking on both	On one or both	May be provided
	sides	sides	sides	on one side
Pedestrians &	No special	Wide sidewalks on	Sidewalks on both	Sidewalks on
Cyclists	provisions	both sides.	sides. Bicycles:	both sides.
		Bicycles integrate.	Shared (4.3m) lanes	Bicycle lanes
		No special	or bicycle lanes	(1.5m) on both
		provisions for	(1.5m) for cyclists	sides.
		cyclists		
	Generally avoided.	Generally avoided.	Permitted	Permitted
Transit	Service may be by	Service by shuttle		
	Community Bus.	or Community Bus.		

Table 1: Road Classification Characteristics - Urban Roads



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	Industrial Roads	Rural Collector Roads	Rural Arterial Roads
Service	Traffic movement secondary	Traffic movement equal	Traffic movement
Function	to access	to access	primary consideration
Land Service/	Traffic movement secondary	Traffic movement equal	Land access secondary
Access	to access	to access	to traffic movement
Typical Daily	<5,000 vpd	<5,000 vpd	<12,000 vpd
Volumes			
Typical	All types up to 30% trucks	All types	All types
Vehicle Types			
Parking	Parking on one or both sides	No parking	No parking
Pedestrians &	Paved shoulders	Paved shoulders	Wider paved shoulders
Cyclists			
Transit	Permitted	Permitted	Permitted

Table 2: Road Classification Characteristics-Rural & Industrial Roads

5.2 Road Cross Sections

The City of Parksville has eight road cross sections for arterial, collector, local, downtown, resort, and industrial roads. The number and type of cross sections are appropriate for the City. However, minor changes are recommended to the cross sections as follows:

- Urban Arterial (RC4) add bicycle lanes, increase sidewalks to 2m, reduce boulevard to one side
- Rural Arterial (RC5) increased paved shoulder to 2m
- Resort Collector (RC3) update title to include Rural Collectors, increase path width to 2m
- Urban Local (RC1) increase sidewalk width to 1.8m

Bicycle lanes are recommended for urban arterials to provide separate accommodation for bicycles on higher volumes roads. Pedestrian facilities (sidewalks and shoulders) are recommended to be increased on all roads to provide increased buffer from vehicle traffic and to allow for two pedestrians to pass without touching. Increased width (to 2m) is recommended on the arterial and collectors roads while an increase to 1.8m is recommended for local roads due to the lower volume of traffic. To be able to accommodate the urban arterial cross section within the 25m right of way the boulevard is reduced to one side of the road. Bicycle facilities are not proposed on downtown roads since these roads are typically lower speed roads where bicycles and cyclists can share the road without increased road width.



The following cross section illustrates the eight cross sections for Parksville.







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Boulevard

5.3 Existing Traffic Conditions

5.3.1 Traffic Volumes

Weekday (Tuesday to Thursday) manual traffic counts were undertaken at key intersections in the AM peak hour (8:00am-9:00am) and the PM peak hour (3:00pm-4:00pm) between April and September 2009. The AM peak hour occurs, as expected between 8:00am and 9:00pm; however the PM peak hour occurs earlier than the typical 4:00pm to 6:00pm time period at 3:00pm to 4:00pm. This may be due to the City's demographics of an older population. See **Figures 3 and 4** for the AM and PM Peak Hour Traffic Volumes (2009).

A review of daily traffic volumes to AM and PM peak hour volumes found that there is a wide range of peak hour to daily percentages. AM peak hour ranges from 2% to 14% of daily traffic with the typical being 4%. For the PM peak hour the range is narrower from 9% to 11%; therefore for PM peak hour a ratio of 10% of daily traffic is recommended to be utilized. An automatic count undertaken on Highway 19A north of McCarter Street in August and again in late October was utilized to identify summer to typical traffic volumes. SADT (summer average daily traffic) is 11.8% higher than ADT (average daily traffic). The weekday SADT is slightly lower at 9.2%, while the peak hours see even less of a variation at 5.0% in the AM peak hour and 3.1% in the PM peak hour. This is due to the mid-day volumes being higher during summer months than the rest of the year.

The peak hour traffic volumes were compared to the 2001 PM peak hour volumes and to automatic counts undertaken in 2015 to determine any changes in traffic patterns since 2001. (Note: AM traffic volumes were not collected in 2001 and therefore a comparison of AM peak hour volumes can't be undertaken.) The following is a summary of areas where traffic has increased:

- Highway 19A west of Finholm Street (3% per year)
- Westbound traffic on Jensen Avenue at Alberni Highway (4% per year)
- McMillan Street (5-8% per year)
- Northbound and southbound traffic on Corfield Street (6% per year)
- Church Road (6% per year)
- Stanford Avenue east of Corfield Street (11-16% per year)
- Eastbound right and northbound left traffic at McMillan Street/Highway 19A intersection (13% and 7% per year)

There are several key locations were traffic volumes have significantly decreased in the past fifteen years, including:

- Highway 19A between McMillan Street and McVickers Street (2-4% per year)
- Highway 19A east of McMillan Street (up to 1% per year)

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- Highway 19A east of Franklin's Gull (up to 1% per year)
- Northbound traffic on Alberni Highway between Jensen Avenue and Highway 19A (4% per year)
- Stanford Avenue west of Corfield Street (6-11% per year)

Traffic volumes have been dropping on Highway 19A within the downtown area since 2001 which indicates a trend in less traffic utilizing Highway 19A within the downtown core; this trend may be due to the opening of Highway 19; however, it is more likely due to increased traffic on alternative routes such as Jensen Avenue and Stanford Avenue as well as to due to the opening of Highway 19. Reduced volumes on Stanford Avenue West may be due to right-in / right-out access at Alberni Highway and/or the connection of Despard Avenue to Corfield Street. A review of peak hour traffic volumes on Highway 19A and Highway 4A were compared to the peak hour counts undertaken in 2001 to determine if the addition of Highway 19 has significantly reduce the volume of traffic within Parksville. The review found that there have been limited changes in traffic along Highway 19A after the opening of Highway 19, traffic volumes have increased to similar levels as 2001. On Highway 4A, south of Highway 19, traffic volumes have increased to similar levels as 2001. On Highway 4A, south of Highway 19 there has been a peak hour drop in traffic of 100 vehicles per hour (two way total) which is approximately a 10% drop in traffic on Highway 4A in the peak hour since Highway 19 opened.

Northbound traffic on Alberni Highway, north of Jensen Avenue has decreased due to the slower speed limit on Alberni Highway and the change in signage directing traffic to utilize McMillan Street. The drop in traffic on Stanford Avenue may be due to the right in/right out implemented at Stanford Avenue/Alberni Highway and the opening of Despard Avenue between Craig Street and Corfield Street.

Average 24 hour traffic volume data was collected from the City of Parksville's 2008 traffic count program. These 24 hour volumes are based on seven day short counts undertaken in April/May/June 2008. The daily traffic volumes are used to confirm the road classifications. Supplemental data was collected on Highway 19A and Highway 4 in the summer of 2015. See **Figure 5** and Table 3 for daily traffic volumes.

The City should create a traffic count program that collects data via manual intersections and automatic counters to assist in verifying traffic projections. The manual count program should include the intersections as shown on Figure 4. The manual count program should be a rolling 5 year program that counts one-fifth of the intersections each year. The automatic count program should be undertaken on a three year rotation with one-third of the locations (as listed in Table 3). Addition locations should

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be added to the count program as new or re-developments occur or areas of interest in the transportation network such as Stanford Avenue West, Despard Avenue West, and Craig Street (due to school closures/changes).

Location	NB or EB	SB or	Total	Road	Speed
		WB		Class	Limit
Despard Avenue, west of Alberni	973 vpd	1,126 vpd	2,009	Collector	50km/h
Highway					
Stanford Avenue, east of Corfield Street	1,748 vpd	2,422 vpd	4,169	Collector	50km/h
Stanford Avenue, west of Corfield Street	737 vpd	993 vpd	1,730	Collector	50km/h
Corfield Street, north of Stanford	1,326 vpd	1,180 vpd	2,506	Collector	50km/h
Avenue					
Corfield Street, south of Stanford	1,919 vpd	1,896 vpd	3,815	Collector	50km/h
Avenue					
Morison Avenue, west of Acacia Street	672 vpd	802 vpd	1,474	Local	40km/h
Pym Street, south of Humphrey Road	2,056 vpd	1,795 vpd	3,851	Collector	50km/h
Pym Street, north of Highway 19A	1,591 vpd	1,839 vpd	3,429	Collector	50km/h
Humphrey Road, west of Renz Road	1,779 vpd	2,143 vpd	3,922	Collector	50km/h
Church Road, south of Humphrey Road	2,060 vpd	2,101 vpd	4,161	Collector	50km/h
Church Road, north of Humphrey Road	2,810 vpd	2,546 vpd	5,356	Collector	50km/h
Highway 19A, west of Wright Road	7,973 vpd	8,366 vpd	16,339	Arterial	60km/h
Highway 19A, east of McMillan Road	9,571 vpd	9,039 vpd	18,610	Arterial	50km/h
Highway 19A, west of McCarter Road	10,430vpd	9,608 vpd	20,038	Arterial	50km/h
Highway 19A, east of Franklin's Gull	6,689 vpd	6,595 vpd	13,284	Arterial	60 km/h
Alberni Highway, south of Despard	7,953 vpd	7,977 vpd	15,930	Arterial	50 km/h

Table 3: 2008 Annual Daily Traffic Volumes

All of the roads, with the exception of Morison Avenue, west of Acacia Street, are functioning at the same level as their road classification. Morison Avenue has slightly more (approximately 500 vehicles per day) traffic than should be on a local road. This street could be a candidate for traffic calming to reduce volumes to below 1,000 vehicles per day.

Temple Street has daily traffic volumes less than 1,000 vehicles per day which shows that the road is functioning as a local road.





5.3.2 Traffic Conditions

The traffic volume data was used to analyze the existing AM and PM peak hour traffic conditions using Synchro software. Synchro is a two part software program that models and micro-simulates traffic conditions. Synchro utilizes the Highway Capacity Manual methodology. The Synchro analysis yields measures of effectiveness – Level of Service (LOS), queue lengths, and delays. LOS is based on the type of traffic control and delay and ranges from LOS A (excellent operations) to LOS F (unstable/failing). Movements at a LOS C or better are considered to be acceptable and reasonable conditions in Parksville. LOS D is considered to be the threshold, particularly at traffic signals, for when improvements should be considered. See *Appendix C* for additional information on Levels of Service.

The AM and PM peak hour conditions are the two highest periods of traffic within the twenty-four hour period and therefore represent the worst conditions. Conditions may remain poor between the peak hours due to higher through volumes on Highway 19A reducing the amount of time / gaps for side street traffic to access Highway 19A; however, they are typically better than the peak hours.

AM Peak Hour (8:00am-9:00am)

The signalized intersections within the City of Parksville operate at a LOS C or better with the exception of the southbound left turn at Highway 19A/Pym Street and the northbound left/through movement at Highway 19A/McMillan Street which are at a LOS D. The unsignalized intersection of Finholm Street/Highway 19A is operating at a LOS D due to the volume of traffic on Highway 19A. All other unsignalized intersections are operating at a LOS C or better in the AM peak hour. Table 4 outlines the movements that are operating at a LOS D/E/F.

Intersection	Turning Movement	Volume (per hr)	LOS
	6	ч ,	
Highway 19A / Pym Street (signal)	Southbound Left	139 vph	D
			_
Highway 19A / Finholm Street	Northbound Left	18 vph	D
		10 (p.	2
(unsignalized)	Northbound Right	30 vph	D
(_
Highway 19A / McMillan Street			
8	Northbound Left/Through	79 $vph(L)/4 vph(T)$	D
(signal)			
(~-0)			

Table 4: AM Peak Hour Turning Movements with LOS D or Below

PM Peak Hour (3:00pm-4:00pm)

In the PM peak hour the signalized intersections with movements at a LOS D are Highway 19A/Pym Street, Highway 19A/McMillan Street, and Highway 19A/Corfield Street. The unsignalized intersections with LOS E/F include Highway 19A/Finholm Street and Highway 19A/Shelley Road.



See **Figure 6** for PM Peak Hour LOS. Table 5 outlines the PM peak hour movements at a LOS D or worse.

Intersection	Turning Movement	Volume (per hr)	LOS
Highway 19A / Pym Street (signal)	Southbound Left	120 vph	D
Highway 19A / Finholm Street	Northbound Left	15 vph	Е
(unsignalized)	Northbound Right	27 vph	Е
Highway 19A / McMillan Street (signal)	Northbound Left/Through	211 vph (L) / 1 vph (R)	D
Highway 19A / Corfield Street	Northbound Left	3 vph	D
(signal)	Southbound Left	38 vph	D
	Northbound Left	12 vph	F
Highway 104 / Shelley Pood	Northbound Through	3 vph	F
(unsignalized)	Northbound Right	74 vph	F
(unsignalized)	Southbound Left	7 vph	F
	Southbound Right	32 vph	F

Table 5: PM Peak Hour Turning Movements with LOS D or Below

5.3.3 Traffic Speeds

Vehicle speed data was collected from the City of Parksville's 2008 traffic count program and the automatic counts undertaken in 2015. This information was collected at the same time as the 24 hour traffic volumes. The 85th percentile speed is the speed at which 85% or vehicles are travelling at or below and typically indicates the running speed on a roadway. The 85th percentile is seen as the speed at which motorists are driving at a reasonable speed for the road geometrics and conditions.

The majority of locations are within 10km/h of the posted speed limit; however there are several locations at 15km/h over the posted speed limit. Locations with 85th percentile speeds greater than 10km/h may be locations where traffic calming measures or changes to the road environment are necessary to bring 85th percentile speeds in line with the posted speed limit. See **Figure 5** and Table 6 for details.





T	05.1 D		
Location	85th Percentile	Posted Speed	
	Speed	Limit	
	speed	LIIIII	
Corfield Street south of Stanford Avenue	61-65km/h	50 km/h	
conicid street, south of staniold Avenue	01-05811/11	JU KII/II	
Church Road south of Humphrey Road	61-65km/h	50 km/h	
Charon Roud, south of Hamphroy Roud	01 021411	50 MII II	
Morison Avenue, west of Acacia Street	56-60km/h	40 km/h	
,			
Church Road, north of Humphrey Road	56-60km/h	50 km/h	
Despard Avenue, west of Alberni Highway	56-60 km/h	50 km/h	
Corfield Street, north of Stanford Avenue	51-55km/h	50 km/h	
		40.1 /1	
Pym Street, south of Humphrey Road	51-55km/h	40 km/h	
	<u> </u>	50 1 /1	
Humphrey Road, west of Renz Road	51-55km/h	50 km/h	
Stanford Avanua aget of Corfield Street	51 55 lm/h	50 lm/h	
Staniolu Avenue, east of Comeiu Street	51-55 KIIVII	JU KIIVII	
Stanford Avenue west of Corfield Street	51 55 km/h	50 km/h	
Staniord Avenue, west of conicid street	51-55 KII/II	JU KII/II	
Highway 19A west of Wright Road	74.5 km/h	60km/h	
inghway 1971, west of winght Road	/+/ KII/II		
Highway 19A, east of McMillan Road	52.9 km/h	50km/h	
Highway 19A, east of Franklin's Gull	78.1 km/h	60 km/h	

Table 6: 2008 85th Percentile Speeds

5.3.4 Short Term Improvements

Based on the above existing traffic operations and anecdotal safety concerns short term improvements were identified to improve traffic conditions.

The following improvements were undertaken between 2010 and 2016:

- Signal review of Highway 19A corridor
- Westbound protected left turn at Highway 19A/Corfield Street
- Signalization of Highway 19A/Shelly Road
- Signalization of Hirst / McMillan Street
- Management of Highway 19A accesses at Finholm (left turn bay), Bay (signal), and Moilliet (signal)

At Highway 19A/Pym Street a protected/permitted southbound left turn phase should be implemented to improve the southbound left turn delays and LOS. At the intersection of Highway 19A/McMillan Street add a northbound protected/permitted left turn phase. The implementation of the phase will improve the LOS at the intersection to LOS C or better. The implementation of the protected/permitted left turn phase may require upgrading of the wiring and/or the traffic controller.



The intersection of Tuan Road and Highway 19A is located immediately east of the signal at Highway 19A/Resort Road. The close proximity of the unsignalized full movement intersection to the signalized intersection creates potential conflicts. The City should restrict access for Tuan Road to right-out only until a long term solution can be implemented.

Based on speeds and volume on Morison Avenue the City may consider undertaking a traffic calming review of the corridor to assess potential options for the corridor

5.4 Traffic Projections

Traffic projections for the 20 year horizon were developed using the Official Community Plan land uses and modelled using VISUM software. VISUM is a macroscopic travel demand modelling software program used for transportation planning. The model utilizes land use data to develop trips through the road network allowing for traffic volume projections.

5.4.1 Zonal Boundaries

The initial stage of the development of the VISUM model for the City is to delineate zones (or areas). The zones for the model were based on the 2001 model and include 92 internal zones (within the City) and 5 external zones.

Land use information from the 2001 model was compared to the 2008 land use to determine the changes in land use.

5.4.2 Future Traffic Conditions

Based on discussions with City staff and a review of previous reports, five long term major network link options were determined. These include:

- 'do-nothing' (keep existing major road network)
- Despard Avenue Extension west to Church Road
- Despard Avenue Extension west to Church Road plus an interchange at Highway 19/Church Road
- Despard Avenue Extension to Tuan Road
- Despard Avenue extended to Church Road and Tuan Road plus the interchange at Highway 19/Church Road

5.4.3 Future Network Link Options

The major network link options that included an interchange at Highway 19/Church Road were eliminated since the location of the interchange would not conform to Transportation Association of



Canada (TAC) guidelines for interchange spacing on rural freeways and therefore would not be supported by MoT.

The network link option of extending of Despard Avenue to link to Church Road and/or Tuan Road would require coordination with RDN and MoT since portions of each extension would be through RDN. A further complication to developing these roads is that multiple agricultural land reserve (ALR) properties would be impacted and applications to the Agricultural Land Commission would be required to designate the right of way. There are no alternative routes that would avoid the ALR properties. The extension towards Tuan Road would also require a second bridge crossing of the Englishman River. Based on the modelling less than several hundred vehicles per hour would utilize the major network links. Based on these factors (cost, environmental impacts, and low volumes) the extension of Despard Avenue to Church Road and/or Tuan Road were deemed to have limited benefits for the cost and impact to ALR lands and the complexity of connecting roads through the Regional District.

Two minor road network links were identified as needed for the long term – the connection of a multiuse path from Beachside Drive to the Community Park, and the realignment of Tuan Road at Highway 19A. The Beachside Drive connections to the Community Park will provide an alternative pedestrian and bicycle corridor to Highway 19A. Tuan Road currently connects to Highway 19A immediately east of the signal at Highway 19A/Resort Road. This intersection adjacent to a signalized intersection creates potential conflicts between turning vehicles at the unsignalized intersection and through vehicles at the traffic signal. The City should work towards obtaining right-of-way to realign Tuan Road to create a four legged intersection at the traffic signal as a long term minor network link.

The Jensen Avenue extension is not required based on existing or projected traffic volumes. Traffic flows will remain similar on Highway 19A with and without the extension in the long term. The City does currently own the right-of-way for this potential extension. The right-of-way should be maintained by the City and should be utilized as a multi-use trail link.

5.4.4 Downtown Road Network

A working paper was developed for the downtown road network in Parksville (*Working Paper on Downtown Road Network Review* dated: March 30, 2010). The working paper outlines the options reviewed for the downtown network (Highway 19A and Jensen Avenue) – maintaining existing Highway 19A and Jensen Avenue laning, reducing Highway 19A to two travel lanes, and creating a one way couplet with Highway 19A one way westbound and Jensen Avenue one way eastbound. Each option was reviewed based on a technical assessment through modelling, parking, pedestrian and



cycling connectivity, impacts to side streets, vehicle exposure and cost. The conclusion of the review was the existing four lanes on the Highway were the best option. For more details see the *Working Paper on Downtown Road Network Review* dated: March 30, 2010.

5.4.5 Highway 19A Cross Section

The section of Highway 19A between Bay Street and east of Pym Street is a two lane cross section; however, on either side of this section the highway is a five lane cross section (two travel lanes per direction plus median/turn lanes). To provide continuity in the road network, reduce number of merges, increased capacity, and dedicated left turn lanes at key intersections this section of Highway 19A should be upgraded to a five lane cross section. In the short term left turn lanes should be added to increase the cross section to three lanes as was completed at Finholm Avenue / Highway 19A. Property is required along the corridor to complete the widening to the five lane cross section. The City should acquire property along the corridor as development occurs.

5.4.6 Future Intersection Improvements

Although no major network links are proposed for the long term conditions, minor network links and intersection improvements will be required over the next 20 years as traffic volumes increases with changes in land use. The following intersection improvements should be planned for:

- Implementation of a four way stop at Hirst Avenue/Alberni Highway
- Implementation of a single lane roundabout (or traffic signal and associated turn lanes) at Jensen Avenue/Craig Street
- Implementation of a single lane roundabout (or traffic signal and associated turn lanes) at Jensen Avenue/Corfield Street
- Implementation of a northbound protected/permitted left turn phase at Alberni Highway/Despard Avenue
- Provide a multi-use connection from Beachside Drive to the Community Park that may or may not include vehicle access
- Re-align Tuan Road at Highway 19A to connect to Resort Road (requires redevelopment)

See Section 10 (Implementation Plan) for details on when these improvements need to be implemented.

5.5 Roundabouts

The City of Parksville currently has one roundabout within the city limits that was installed, in support of a new subdivision, at Church Road / Humphrey Road. Properly designed and implemented roundabouts operate safer than conventional intersections (signals, two and four way stops) due to



reduced speeds and significantly lower conflict points. Collisions in roundabouts are typically side swipes or right turn collisions. These types of collisions are typically less severe than other types (head on, left turns, etc.) The lower speeds on the approach and through a roundabout also reduce the severity of collisions and allow for cyclists to safely integrate with motor vehicles.

Typically roundabouts operate more efficiently than traffic signals since vehicles yield upon entering rather than having to stop at a traffic signal (even if there are no vehicles on the adjacent street). While there are decreased speeds through a roundabout, overall traffic typically spends less time traversing the intersection compared to a traffic signal where vehicles may be required to stop (when light is red) even if there is no traffic on the adjacent street. Roundabouts are better able to adapt to time of day traffic fluctuations compared to a traffic signal. Less stop and go traffic (more continuous movement) relates to a decrease in carbon and general emissions due to reduced idling at intersections.



Examples of Roundabouts in North Cowichan, BC

Roundabouts allow for crosswalks on all legs of the intersection and allow pedestrians to cross one lane of traffic at a time with a splitter island refuge to stop and observe the next lane of traffic. Cyclists are accommodated by integrating with the vehicle traffic, which is travelling at similar speeds to the cyclist, while travelling through the roundabout.

Roundabouts also provide an opportunity to landscape and beautify an intersection and create a gateway to an area. Roundabouts can be more expensive to implement than traffic signals during construction; however, the long term maintenance costs are typically lower as there is no need for signal installation and maintenance.

Roundabouts require more right of way at the intersection of two roads compared to traffic signals, but they generally require less on the approaches due to the lack of turn lanes. Typical inscribed diameters



for single lane roundabouts are between 35m and 46m. For two lane roundabouts the inscribed diameter ranges from 45m to 60m.

5.5.1 Roundabout Policy

Roundabouts are not recommended to replace an existing signalized intersection unless significant changes are proposed for the intersection. In this situation, a cost-benefit analysis would need to be undertaken to determine if the upgrade/replacement of the signal is better than implementing a roundabout.

For unsignalized intersections a roundabout review should be undertaken for any intersection proposed to be signalized. The review should include an evaluation of traffic operations (comparison of delays, queues, and emissions), geometrics (number of lanes, grades, inscribed diameter, entries and exits), drainage, right of way identification and cost for a roundabout or a signal. This analysis would include determining the capacity of single lane roundabout, multi-lane roundabout, and a traffic signal at a location. Based on a review of each location, the ability to provide a roundabout will be identified. Depending on the location signals may be a preferred option to a roundabout based on capacity, property, sightlines, and grades. Many existing intersections may not have sufficient right of way to accommodate a roundabout without property acquisition.

5.6 Traffic Calming

Traffic Calming has been described as "mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour and improve conditions for non-motorized street users." Streets are modified to create a driving environment that encourages appropriate vehicle speeds, discourages cut-through traffic and makes walking and cycling more comfortable and safe. Traffic calming measures are aimed at motor vehicles but should not negatively impact pedestrians, cyclists, transit or emergency and service vehicles.

The number of requests received by the City for traffic calming have been increasing; therefore the City established and formally adopt a traffic calming policy in 2016.

5.7 Safe Routes to School

In 2014, School District 69 closed Parksville Elementary and Winchelsea Elementary Schools and converted Springwood Middle School and Oceanside Middle School to K-7 elementary schools. Ballenas High School is now for grades 8-12.



Safety of school children is a priority for parents, schools, and municipalities. The provision of safe pedestrian and bicycle infrastructure facilities within close proximity to schools is important and will encourage students to use alternative modes of transportation. Encouraging students to use alternative modes of transportation choice behaviours in the long term. Another benefit of alternative transportation use is in the reduction of vehicles picking up and dropping off at schools. Reducing the number of vehicles will improve the level of safety for students who are biking and walking, and lower the level of vehicle emissions.

The 'Way to Go!' school program for elementary and middle schools should be developed for all schools in Parksville. A resource kit is available through ICBC for schools and parent advisory committees. The resource kit includes a manual on collecting data on the number of students bicycling, walking, or being driven, mapping exercises to identify hazards and safe routes, how to determine the best routes to school, information on how to integrate pedestrian and cycling education into the classroom. Also included in the program are safe transportation ideas from other communities and programs and suggested activities to encourage involvement by students, parents, and teachers. The development of safe routes to school plans for each school will help the City identify the need for improvements near schools. These improvements may include improved off-street parking / pick-up areas, better bicycle facilities, and sidewalks and crosswalks to provide connectivity to the schools. Traffic counts in the areas of the schools should be undertaken, post 2014, to identify current traffic patterns / changes in traffic patterns due to school closures.



6.0 BICYCLE AND TRAIL NETWORK

Bicycle use is an environmentally, socially and economically viable alternative to automobile travel. Bicycles offer additional mobility options for those looking for an economical alternative and can cover fairly significant distances while being virtually carbon-zero. Bicycling offers health benefits to users, while being a relatively safe travel mode when operated on designated routes. Bicycles are highly flexible, allowing users to choose from a variety of routes and with the possibility of combining with other travel modes such as transit, vehicles, walking, etc. In order to promote bicycle use, it is necessary to ensure appropriate infrastructure is provided. This section of the master plan identifies bicycle infrastructure and programs to encourage Parksville residents and tourists to cycle. See **Figure 7** for the Bicycle Network Plan. This plan outlines the existing and proposed bicycle facilities within Parksville.

6.1 Existing Conditions

Within the City of Parksville there are limited existing designated bicycle lanes. Bicycle lanes have recently been added to Highway 19A, east of Shelly Road and for 2km on Temple Street. Bicycle lanes are also in place along Stanford Avenue, Despard Avenue, Hirst Avenue, Pym Street, Renz Road, Stanhope Road, McMillan Street, and Moilliet Street.

Several multi-use paths have been constructed within Parksville including, the waterfront pathway, Despard Avenue and Franklin's Gull Way to the beach.

6.2 Proposed Bicycle and Trail Network

Three types of bicycle facilities are proposed for the City of Parksville:

- i) designated bicycle lanes
- ii) bicycle routes
- iii) multi-use trails

The City's intent with the bicycle network is to create primary east-west and north-south routes to allow cyclists to travel through the City. Secondary routes are provided to key destinations such as the Community Park, Downtown Business area, the Resort Area, the Industrial Park area, and residential areas. Route planning considered existing parks and trails within the City and RDN. Continued planning and connections between trails and the bicycle network should be made as additional trails are added; especially those at the municipal boundaries.





6.2.1 Bicycle Lanes

Designated bicycle lanes are a 1.5m to 1.8m lane adjacent to the curb or edge of the road that is striped, signed, and marked for bicycle use. Bicycle lanes are proposed for arterials where traffic volumes are highest and there is room to accommodate both vehicles and bicycles. Additional bicycle lanes are proposed along collector roads and several local roads to provide a connective bicycle lane network. Typically these routes are utilized by commuter cyclists.



Typical Paint Markings for Bicycle Lanes Source: Bikeway Traffic Control Guidelines for Canada

6.2.2 Bicycle Routes

Bicycle routes are proposed to support the bicycle lane network and provide connections between the bicycle lane network and the multi-use trail network. Bicycle routes will be routes marked with signs, stencils and/or sharrows. Sharrows are a shared-use lane marking/stencil that indicates the intended area of travel for cyclists. Sharrows consist of two white chevron markings with the bicycle symbol. Shared lanes are typically 4.2 to 4.3m in width. Bicycle routes are proposed for Doehle Avenue, Sanderson Road, Jensen Avenue, Craig Street, Pioneer Crescent, Turner Road/Martindale Road, Community Park, Highway 19A east of Rath Road / Grieg Road, Resort Drive, Industrial Way/Tuan Road, Morison Avenue, and Northwest Bay Road. These routes are meant for commuters and recreational users.



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Source: Bikeway Traffic Control Guidelines for Canada

6.2.3 Multi-use Trails

The City's *Parks and Open Space Master Plan* identified existing and proposed multi-use trails. The bicycle lanes and bicycle routes, together with the multi-use trails create a comprehensive and connected network for bicycles to travel throughout the City. An engineering feasibility study is being undertaken to understand the challenges of creating a multi-use trail between the Community Park and Rathtrevor Provincial Park. This project requires right-of-way permission to cross RDN property (San Pareil), a pedestrian bridge across the Englishman River Bridge as well as an agreement with the provincial park for access.

The three types of bicycle facilities provide safe environment for all types and levels of cyclists.

6.3 Additional Bicycle Improvements

The provision of bicycle lanes and routes is a key starting point in providing for cyclists within a community; however, additional measures should be implemented to provide a better cycling environment and to encourage cycling over the use of single occupied vehicles.

6.3.1 Bicycle Detection at Traffic Signals

Bicycle detection marking uses a line with a bicycle symbol to identify the most sensitive area of detection on a *signal actuation loop* where a bicycle will activate the traffic signal if no vehicles are present.





Boulevard

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RANSPOR

6.3.2 Railway Crossings

There are two locations within the City of Parksville where railway tracks cross a road (Highway 19A at Craig's Crossing Interchange, and Alberni Highway). Railway tracks create a significant hazard for cyclists if cyclists do not cross the tracks at a 90 degree angle. When crossed at an angle other than 90 degrees bicycle wheels can easily slip into the gap of the tracks causing injuries to cyclists and damage to bicycle wheels. Therefore the bicycle lanes at the two railway crossings require extra care in the design process and extra emphasis on pavement markings and signage.



UNRESTRICTED RIGHT-OF-WAY WIDTH - NO GATE

Source: Bikeway Traffic Control Guidelines for Canada

6.3.3 Multi-use Trail Crossings

The TAC *Bikeway Traffic Control Guidelines for Canada* recommend that 'elephant's feet' paint markings be used to identify bicycle crossing locations. These paint markings can be placed on either side of a marked crosswalk or parallel, on one side, to the marked crosswalk.



Source: Bikeway Traffic Control Guidelines for Canada

For multi-use trail crossing signalization guidance (for both the intersection and midblock applications) the TAC *Traffic Signal Guidelines for Bicycles* should be referenced.





Examples of Bicycle Pavement Markings at multi-use trail crossing (unsignalized intersection) *Source: Bikeway Traffic Control Guidelines for Canada*

6.3.4 Bicycle Parking

Bicycle parking facilities are a major factor in choosing bicycling as a mode choice. If a potential bicycle rider is unable to securely park their bicycle, they are less likely to cycle. In addition to the provision of parking, it is essential that bicycle parking facilities offer an element of comfort, including being well-lit and protected from weather. Bicycle parking is typically provided as part of a private development and/or may be provided by the municipality in appropriate public places. Existing commercial destinations should be encouraged to provide short and long term bicycle facilities. Additional bicycle parking at the PCTC would be a benefit as this location has the bus exchange as well as City Hall, School District and Vancouver Island University staff and students as well as the community library.

Long Term Parking

Class I parking facilities are intended for bicycle users parking a minimum of four (4) hours, typically residents of a residential development, employees of a commercial development or transit users. Class I parking must be fully secure and weather protected, as the bicycle may be unattended for a long period of time. Each bicycle must be independently accessible and securable, and an enclosure should provide protection from theft and damage to both the bicycle and its accessories. There are two types of Class I parking – secured rooms/cages and bicycle lockers. Typically secured rooms/cages are utilized in multi-family and commercial developments within underground parking lots or a room within the building. Bicycle lockers can utilize locks (provided by user) or on a swipe card/user pay system if in a public location (ie. transit exchange). As the bus stops at Jensen Avenue/Craig Street are proposed to become the downtown transit and shuttle exchange location the addition of user pay bicycle lockers would be a significant benefit to both transit users and employees/visitors to the Parksville Civic and Technology Centre.







Example of Secured Room/Cage

Example of Bicycle Lockers

Short Term Parking

Class II facilities are intended for short-term users, typically visitors and customers, and are not meant to accommodate bicycles overnight. They should provide theft protection to the bicycle and core components (ie. frame, wheels, etc.), but do not protect from theft of accessories such as a pump or water bottle. Class II facilities are not required to be weather protected. Facilities should secure a bicycle in such a way as to not damage the frame and wheels, and must permit both the frame and wheels to be locked by the users own locking device. Class II facilities should be located no more than fifteen (15) metres from the building entrance.

Within the downtown core of Parksville there is limited visible bicycle parking. Bicycle parking was found on Alberni Highway and within the Community Park. Additional Class II bicycle parking should be provided within the downtown core to encourage the use of cycling. Key locations to provide bicycle parking include recreation areas and parks, Parksville Civic and Technology Centre, coffee shops, schools, Stedmans, and SOS Thrift Shop. The design of these bicycle parking racks could be inspired by an existing theme on the Alberni Highway or one that represents Parksville. The options for bicycle rack design are endless and can be more than the standard triangles and circles. Examples and best practices for bicycle parking can be found in *Bicycles at Rest* by John Luton and *Bicycle Parking Guidelines* by the Association of Pedestrian and Bicycle Professional.











Examples of Bicycle Racks which are designed to reflect a theme



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6.3.5 Bicycle Parking Requirement

The City of Parksville's Zoning Bylaw does not currently require developers to provide off street bicycle parking. The City's bylaw should be amended to require class I and class II parking stalls as part of a new or re-developed site. The bylaw should require a development application to include details indicating the size of Class I and Class II parking facilities, as well as specifications for the fixtures and security measures. See the *Core Area Parking Study* for suggested bicycle parking requirements.

Shower/change facilities remove one of the primary barriers to bicycle commuting, which is that business attire is not conducive to cycling. Shower facilities and change areas for employees could be a negotiated condition of approval for new retail and office developments with more than ten (10) employees.



7.0 PEDESTRIAN NETWORK

Walking is a healthy, environmentally friendly, inexpensive mode of transportation, which the majority of people do on a daily basis whether it is walking to work, walking to catch a bus or walking from a vehicle to the store. The walking environment informs people's opinions on what mode they will choose and where they are willing to park and walk. Wide sidewalks with room to walk, benches to sit on, and/or enjoy a stop at the coffee shop, and boulevards that separate pedestrians from the roadway provide an inviting, walkable atmosphere. See **Figure 8** for the Pedestrian Network Plan.

Existing sidewalks within Parksville are mainly located within the downtown core, the Despard Avenue/Hirst Avenue/Pym Street area, Moilliet / Morison area, and newer subdivisions (ie. Maple Glen). Eighty percent (80%) of Highway 19A has sidewalks. The majority of these sidewalks are 1.5m in width and in varying condition. However, the City has already begun to provide wider sidewalks within the core area with the Jensen Avenue and Alberni Highway upgrades. Additional improvements have been made along McMillan Street and Temple Street. The waterfront walkway extends from the McMillan Street sidewalk along the waterfront to the Community Park.





Examples of Wider Sidewalks on Jensen Avenue and Alberni Highway



Example of Decorative Sidewalk on McMillan Street



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Example of sidewalk separated from the travelled roadway. (Memorial Avenue)

Wide boulevard allows for the sidewalk to remain at the same elevation, while the driveway drop is within the boulevard width.



Examples of driveway drops within sidewalk (difficult for mobility challenged to navigate) and obstacles within the sidewalk which further narrow the 1.5m sidewalk. Corfield Street (Left); Craig Street (Right)

7.1 Proposed Routes

While the City has sidewalks within downtown, there are areas of the downtown where sidewalks simply stop, forcing pedestrians to travel on gravel shoulders, dirt paths or if mobility challenged onto the roadway. The lack of connectivity and safe walking routes on some streets is encouraging people to drive to destinations within downtown rather than walking. Upgrades for these disconnected pedestrian routes should be a high priority. Key routes for sidewalk upgrades include Corfield Street, Morison Avenue (proposed safe route to school), and Despard Avenue.

The proposed pedestrian network plan identifies the areas where sidewalks should be implemented as well as the location of existing sidewalks. Sidewalks should be provided along all new urban development frontages when a site is developed regardless of when the sidewalk is proposed to be improved. Internal linkages within new developments should also be a priority.

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7.2 Pedestrian Realm Design Considerations

Important considerations for the pedestrian realm include design elements to ensure the environment is attractive, safe and accessible. The following is a series of design guidelines that the City should incorporate into the design of pedestrian facilities.

7.2.1 Sidewalk Width

Sidewalks within the downtown core and areas of higher pedestrian activity are recommended to be a minimum of 2m and ideally 3m wide. To allow for two-way wheelchair passage a 2.4m width is required. In areas of lower pedestrian activity sidewalks should be a minimum of 1.8m and wider where possible. If benches, trees or other features are to be incorporated into the sidewalk area then the sidewalk may need to be widened to ensure a minimum of 1.8m to allow for two pedestrians to pass each other. Pedestrian friendly control joints are recommended for use as they reduce bumps and noise for wheels, wheelchairs, scooters, and strollers.

7.2.2 Safety

The pedestrian realm must be designed for safety and security. Pedestrian safety means protecting pedestrians from vehicle conflict, but it also means designing a built environment that reduces incidences of crime and the perception of crime. Fundamental built environment elements, such as natural surveillance, lighting, as well as programming and maintenance, are key is this regard. This also includes the City implementing new methods to prevent sidewalk vertical separation from occurring to prevent tripping hazards. The City has also implemented an Active Sidewalk Maintenance program to monitor hazards in the sidewalks.

7.2.3 Connectivity

A key element of this transportation study is to identify and improve connectivity throughout the community. A major component of this connectivity is linking the downtown area with the Community Park (as per the *Downtown Revitalization Strategies* report). The Community Park is a valuable asset to the City of Parksville and draws a significant number of tourists and visitors to the community. The Community Park is located approximately 6m (or 2 storeys) below Highway 19A and the downtown area. This difference in elevation makes the two areas seem disconnected even though there is less than 700m (horizontally) between the waterfront and the downtown area. Current options to access the waterfront from downtown lack connectivity and wayfinding signage. Northsouth options to access the waterfront include McMillan Street, a pedestrian path along the east side of the Beach Club, a stairway from baseball fields to McCarter Street, and a sidewalk along Corfield Street. The path along the east edge of the Beach Club is a starting point to connectivity; however signage is required to inform pedestrians that they can utilize the path. In addition, this path does not

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connect to Highway 19A or any crossing point to access downtown. Additional north-south paths through the waterfront properties between McMillan Street and the Community Park should be obtained by the City. These paths need to be connected to Highway 19A at Alberni Highway through the City's lands. A strong pedestrian link through the City's lands would connect downtown to Beachside Drive and allow pedestrians to choose a path to the waterfront depending on their destination. This pedestrian connection should take into consideration the significant grade difference at the location and accessibility requirements for the physically challenged. Alberni Highway is the ideal location for a pedestrian connection between downtown and the waterfront as Alberni Highway is the 'centre' of downtown; however, if alternative properties become available for pedestrian access they should be considered. The stairway at McCarter Street should be improved to include wayfinding signage for tourists. As Beachside Drive extends from McMillan Street to the Community Park pedestrian facilities should be included to provide a second east-west connection through the waterfront area.

Improving connectivity of the pedestrian network is one method to encourage walking as a travel mode. The more pedestrian connections available the more convenient walking becomes compared to driving. Connectivity is measured by a ratio of intersections to links. Increasing the number of links increases connectivity. Pedestrian connectivity should be increased in Parksville by providing mid-block connections on properties that allow it, particularly in areas of high density and high pedestrian volumes. Connectivity is also improved by improving existing walking routes along streets with sidewalks. These areas are identified by worn paths along the road.

7.2.4 Accessibility

Accessibility refers to the provision of infrastructure that is accessible to all users, including those with physical, visual and other disabilities. Disabled users require specific design features to allow them to fulfil all their trips without compromise to safety or mobility. The Canadian Standards Association provides standards for accessibility in *CSA-B651-04 Accessible design for the built environment*. The City should always consider accessibility (as per the CSA standards) in their design of pedestrian infrastructure, including:

- Tactile surface marking to aid navigation by visually-impaired users
- Letdowns at road crossings to permit wheelchair access
- Minimum sidewalk clearings acceptable for two-way wheelchair passage (2.4m) in the downtown
- Location and design of street furniture to permit use by all users
- Keep grades of paths at less than 5% where possible



There are numerous locations within the downtown area where the existing pedestrian letdowns are too narrow for wheelchairs, too steep for mobility challenged, there is an elevation difference between the edge of the curb and the asphalt, there is no curb letdown to access the sidewalk, and/or direct pedestrians into the middle of an intersection. The City should inventory these locations and upgrade the letdowns to allow all users safe access. The City has been moving towards smooth let-down transitions being used at mountable curb locations in subdivisions.







Narrow, steep letdown that directs pedestrians into the intersection



Example of a safe accessible letdown

The City now incorporates audible signals and wheel chair accessible sidewalk letdowns along with suitably graded sidewalks (for accessibility) and pedestrian friendly sidewalk control joints in all new projects. The City also liaises with local advisory groups, to gain insight into problem areas and issues, on a regular basis.

7.2.5 Signage/Wayfinding

The City has started a wayfinding / signage program that directs motorists to key destinations and parks. This program should be continued and expanded to include key pedestrian routes. This signage should be on a smaller scale than the signage for motorists. Signage to guide pedestrians to the location of popular pedestrian destinations, typically civic or institutional destinations, should be



added. Signage should be in keeping with established signage themes for the City and should be consistent throughout the pedestrian network.



Examples of Wayfinding Signage to Parks in Parksville

Wayfinding may employ such vague elements as distinctions in colour or materials to guide users. It can also use specific treatments for specific objectives, such as tactile patterns to guide visuallyimpaired users or audible indicators to guide the deaf. The City should build on and incorporate wayfinding elements from the *Downtown Revitalization Strategies* report into the pedestrian realm to ensure that as the pedestrian network expands it includes appropriate signage/wayfinding.



7.3 Crosswalk Warrants

Crosswalks are an integral part of the pedestrian network. Consideration for crosswalks within the downtown area may be different from the areas outside of the core area. All intersections are legal crossing locations, whether they are unmarked or have a higher level of crossing control (ie. signed and marked). The warrant criteria in the *Pedestrian Crossing Control Manual for BC* should be used to determine the type of crossing at an intersection or mid-block location. The manual's warrant utilizes pedestrian type (children, adults and seniors/disabilities) and volumes, crossing opportunities (number of safe gaps in traffic for pedestrian to cross), and an adjustment for community population to determine the level of crossing.



8.0 PUBLIC TRANSIT

Public transit presents significant benefit to a community. Transit offers increased mobility for those unable to drive and helps to reduce the number of single occupied vehicles on the road. Transit is an economical alternative to automobile travel and offers a reduction in emissions and energy consumption over private automobile use. It can also be used to support existing land use patterns and proposed future development. While the benefits of transit to the City are undeniable, the challenge is to have sufficient land use densities for BC Transit to expand service using their fleet of vehicles. Significant densification of Parksville may be required to increase the BC Transit system; however there are alternatives which the City can implement to supplement public transportation until such a time as BC Transit can provide service. By providing a separate service the City will have the ability to tailor the service to their community's needs rather than the region's; however, the use of BC Transit's infrastructure for increased service could reduce the City's potential operating costs for a transit/shuttle system. See **Figure 9** for the Transit/Shuttle Network Plan.

8.1 Existing BC Transit Service

The City of Parksville has two (2) BC Transit routes within the City. The first route (#91) provides inter-city service between Ravensong in Qualicum and Woodgrove Mall in Nanaimo. Service on the #91 route is 15 trips per weekday per direction, 11 trips on Saturday, and 4 trips on Sunday per direction. The #91, within Parksville travels along Northwest Bay Road (unless trip is express service), Highway 19A, downtown (McVickers Street, Stanford Avenue, Corfield Street, Jensen Avenue, McMillan Street), back to Highway 19A to Wembley Mall.

The second route (#88) is the intra-city route in Parksville and is a loop between Wembley Mall and downtown. This route covers most major areas of the City, except for the resort area; however, there are areas and subdivisions that are more than 400m (or an average 5 minute walk) from the route. Areas not covered by transit include the Dogwood Street/Ruston Avenue area, Lodgepole Drive and Chestnut Street area, Renz Road area, and south of Despard Avenue. The #88 route runs 13 times per day between 8:00am and 7:00pm Monday to Saturday (no service on Sunday). Service on this route is typically every hour.

Overall transit provides 26 hours of service on the #88 and 30 hours of service on the #91 per weekday. Overall in a week there is 336 hours of transit service provided in Parksville. The two transit routes provide 27km of coverage within the City.

The #88 bus route has an average ridership is 11 passengers per bus with the highest ridership occurring in the afternoon with 29 passengers (based on a typical day in 2010). The #91 bus has an





average of 8 passengers exit within Parksville (northbound) and 8 passengers board within Parksville (southbound). The highest use for the #91 bus was 17 passengers within Parksville (in 2010).

8.2 Transit Stops and Exchanges

The location and amenities at a transit stop are important components that will encourage the use of transit. If a stop feels unsafe, is uncomfortable to wait at, hard to locate or is difficult to navigate, people will be less motivated to use the bus. The majority of transit stops within Parksville consist of a single bus stop sign with no waiting area, accessible pad, bench or shelter. All transit stops within Parksville should be upgraded to meet BC Transit's *Infrastructure Design Guidelines* and include a sign and accessible bus pad at a minimum. Stops located in urban areas (ie. downtown) and high transit traffic locations should be further upgraded to include bus shelters, seating, and garbage receptacles. Up to three additional stops could be provided along Resort Road (when transit route includes this road).

Transit stop shelters, street furniture, lighting, and even signage should be designed with a common theme that is a continuation of the City's existing theme or is an area specific theme ie. different neighbourhoods or districts could have different colours, symbols, etc.

Transit exchanges are where two or more buses (typically 6+) can park and passengers can easily change from one bus route to another. Within Parksville there are several locations were two buses stop at the same location; however these are not transit exchanges. Wembley Mall could be considered an existing transit exchange in Parksville as three buses stop at this location and allow passengers to transfer to another bus. The exchange at Wembley Mall is informal and more like a bus stop than an exchange as only one bus can be stopped at one time. The informal exchange can remain at Wembley Mall; however a more centralized exchange should be developed in downtown Parksville. An ideal location for an exchange is on Jensen Avenue at PCTC. Jensen Avenue is an ideal location as it is central, adjacent to City Hall, library, and community meeting space. In addition, Jensen Avenue is an existing stop location where the #88 and #90 buses stop and there are wide sidewalks. In order to make this location a transit exchange space for two, community buses should be provided at the stop plus the addition of shelters, seating, transit schedules, and bicycle lockers.

8.3 Expansion of Transit Service

While the transit service covers most areas of town it does not provide frequent service between key areas within the City ie. service between downtown and the resort area. An option is to negotiate with BC Transit to expand the intra-city route (#88) to include the resort area (ie. areas east of McVickers Street). In addition to expanding the route, the City should work towards increasing the frequency of



service to 15 minutes. More frequent service would encourage a person who has missed a bus to wait for the next bus rather than deciding to drive. Frequency of service removes one barrier to transit use, which is that "service times aren't convenient for my trip purpose." In 2016, RDN added 5,000 hours of local bus service in Parksville.

8.4 Shuttle System

If expansion of the BC Transit system is not possible an alternative option to supplement existing transit service is for the City to develop a shuttle system. The City could work with the PDBA to explore opportunities to expand their shuttle bus service.

8.4.1 Background

Several other communities on Vancouver Island (Langford and Ladysmith) have implemented a public shuttle/trolley system to provide supplemental transit service to their residents/visitors. The Parksville Downtown Business Association (PDBA) provided a free shuttle bus system during the summer months (July and August) for several years. The system ran hourly Monday to Saturday on a loop between the Parksville Visitors' Centre, Resort area, Rathtrevor Park, downtown, and west to Moilliet Street. The unique designs of the shuttles/trolleys can attract riders who would not normally take a public transit vehicle. The trolleys add personality and charm, and can become an icon that enriches the theme and culture of a community.

In both Langford and Ladysmith, the business community came together along with individuals to provide the initial start up funding for the purchase of a trolley bus and initial operating costs. The start up funding of approximately \$75,000 would be required. Advertising space on the shuttles can be sold to pay for on-going operating costs and/or fares charged. An additional source of revenue would be using a portion of the 'additional 2% hotel tax' revenue that the City receives to finance tourism marketing, programs, and projects. The Town of Ladysmith has added fares to their trolley service (\$1 for under 18 and over 65 and \$2 for adults). The use of a shuttle would promote tourism within the community by providing a connection from the tourist/resort area, Rathtrevor Beach, the Community Park, and downtown businesses. These shuttle/trolley services operate by-donation (or free) with the money from donations put towards operating expenses.





Example of Langford's Trolley Bus (above) Example of PDBA Free Shuttle (right)



8.4.2 Shuttle Routing and Service

Two shuttle routes have been proposed for Parksville. Routes and stop locations can be adjusted after an initial operating period (ie. 3-6 months). Although Parksville welcomes tourists throughout the year, it would be beneficial to initiate the shuttle service in the late spring/early summer when there is a significantly higher influx of tourists to the community. As momentum grows for the use of the shuttle service it can be expanded into the fall/winter seasons.

Route One for the shuttle is proposed to be from Resort Drive to Rathtrevor Beach parking lot, Highway 19A into the Community Park, Beachside Drive to McMillan Street and Jensen Avenue/McVickers Street before looping back to Resort Drive. This route is proposed to be on a fixed 30 minute loop. Initial operating hours are suggested to be 10am to 5pm, seven days a week. These hours could be increased based on operating budget and if special events are occurring outside of these hours. Transit stops would be provided at the resort accesses on Resort Drive, within the Community Park, and throughout downtown.

The second route for the shuttle would be a Downtown route which travels from the Community Park to Beachside Drive, McMillan Street to Jensen Avenue, and loop along McVickers and behind the Quality Foods before heading back to the Community Park. This route would be a 15 minute loop. Twice per day this route could be varied to provide a connection between the VIA Rail Train Station on Alberni Highway and downtown (once train service resumes). Service to the VIA Rail Train Station should be provided throughout the year (once train service resumes).



The additional benefit of a shuttle system is the ability to utilize the shuttle(s) for special events. During major events within the City where parking and movement of people is an issue a special event shuttle route can be implemented. The route could be tailored to the events needs (ie. alternative transit stops) and provide service between special event parking lots. Special event parking could be at churches and/or schools outside of downtown and the shuttle used to shuttle people from these parking lots to the event and/or downtown. Another benefit would be the City's ability to rent out a shuttle to groups to generate additional revenue.

8.4.3 Shuttle Stops

Shuttle stops are proposed for key destinations within Parksville including five stops along Resort Drive, Rathtrevor Beach parking lot, Railway Station, and the Community Park. Stops within the downtown area are proposed for Highway 19A/Corfield Street, McMillan Street at the Beach Club, McMillan Street at Highway 19A, Alberni Highway/Jensen Avenue, Craig Street/Jensen Avenue, Corfield Street/Jensen Avenue, and McVickers Street/Highway 19A. For the Downtown Shuttle route additional stops would be at Alberni Highway/Highway 19A, Craig Street/Hirst Avenue, and McVickers Street/Pioneer Crescent.

Where possible shuttle stops should be combined with existing BC Transit stops to minimize impacts to on-street parking and to create recognizable single stop location for access to transit services. The use of signage and distinctive street lighting can be used to indicate shuttle stops.



Example of a shared transit and trolley stop

Example of distinctive signage / lighting for trolley at a shared stop



9.0 NEIGHBOURHOOD ZERO EMISSION VEHICLES (NZEVS)

Neighbourhood Zero Emission Vehicles (NZEVs) present an opportunity to expand the breadth of transportation options available to Parksville residents, while creating a sustainable alternative to automobile travel. NZEVs are slow moving vehicles powered by an electric motor that produces no emissions and are designed to travel on four wheels at a maximum speed of between 32km/h and 40km/h. NZEVs are equipped with some of the safety features of an automobile, such as seatbelts, glazed windshields, lights, and brakes, which make them appropriate for safe travel on public roadways.

Examples of Neighbourhood Electric Vehicles



9.1 Regulatory Environment

In 2000, the Canadian government amended the Motor Vehicle Safety Act to include low speed vehicles (LSVs) as a distinct vehicle class. A LSV is defined as a vehicle that is powered by an electric motor, produces no emissions, and is designed to travel on four (4) wheels at a speed of between 32 km/h and 40 km/h. The definition also states that LSVs include features such as headlights/taillights, turn signals, windshields, a parking brake and seatbelts in compliance with Motor Vehicle Safety Regulations.

Federal Legislation leaves the responsibility of setting out the requirements, licensing and use of LSVs on public roads to the provinces and territories. British Columbia has developed licensing and operating conditions for LSV or NZEVs use on public roadways. The BC Motor Vehicle Act defines NZEVs as a vehicle that:

- Travels on 4 wheels
- Is powered by an electric motor
- Attains a speed of 32 to 40 km/h
- Meets or exceeds standards of the Motor Vehicle Safety Act for a Low Speed Vehicle

Provincial regulations allow NZEVs to travel on any road with a maximum speed limit of 40 km/h. Individual municipalities are allowed to alter bylaws to allow NZEVs on municipal roads with a



maximum speed limit of 50 km/h. All vehicles capable of reaching and maintaining a speed of 32 km/h must be registered licensed and insured through the Insurance Corporation of British Columbia (ICBC). All drivers of NZEVs must have a valid driver's license.

9.2 Permitted Roads

The majority of roads within the City of Parksville are posted at 50km/h or below which, with a bylaw to allow NZEVs on 50km/h roads, would allow the use of these vehicles on the majority of roads within the City. However, there are several sections of Highway 19A with a posted speed limit of 60km/h or greater – west of Pym Street and east of the Englishman River. NZEVs would be allowed on these roads if the City reduced the posted speed limit to below 50km/h. Posting a lower speed limit on a road with design characteristics that are for a higher speed will not change driver behaviours and can create an unsafe situation where there is a significant speed differential between vehicles. Therefore, prior to lowering the speed an assessment of the road's characteristics should be undertaken to determine if additional changes to the road should be undertaken in addition to lowering the speed limit.

The section of Highway 19A from Rath Road / Grieg Road to the Englishman River (west side) is part of the Regional District of Nanaimo and therefore under the jurisdiction of the Ministry of Transportation and Infrastructure. This section of road is also posted at 60km/h. This combination of speed and road authority will not allow for NZEVs to utilize this portion of road. See **Figure 10** for Permitted NZEV roads.

9.3 Implementation

NZEVs have the potential to provide a cost effective alternative to motor vehicles and reduce the amount of emissions generated. Parksville is an ideal community for the use of NZEVs where the majority of roads are less than 50km/h and most local trips are within 5km to 10km; however without the section of Highway 19A at 50km/h a portion of the City would be excluded.

If the City decided to pursue NZEVs a bylaw would need to be developed that allows for the use of NZEVs on all roads with a 50km/h or less posted speed limit. If the City chooses to implement the bylaw, they would need to undertake a promotional/education process on NZEVs. The education of the community should alert them to the economic and environmental benefits of NZEV use, and could be focused on those user groups most likely to choose these vehicles initially.





10.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) refers to a wide range of policies, programs, and services designed to improve the efficiency of roadways by reducing automobile congestion and use. TDM strives to achieve this by reducing the demand for vehicle use, especially single occupant vehicles, by influencing travel behaviour and providing more travel options to local residents, such as improved transit, walking, cycling, and introduction of carshare and rideshare programs. The benefits of TDM include:

- Helps to manage the City's transportation systems by providing a balance between travel modes, and ensuring the most cost-effective and strategic infrastructure improvements
- Effectively supports and addresses many of the long range goals of the City, province, and country such as greenhouse gas reductions
- Supports policies and programs that result in a sustainable transportation system including land use planning, parking policies, sustainable site design, and focused programs that seek to maximize the liveability of a community through encouraging behaviour change

These TDM benefits should be considered in combination with the parking strategies in the *Core Area Parking Study*. Implementation of parking related TDM measures along with increased opportunities to use alternative modes will reduce parking demand as well as reduce the amount of traffic on the road network in the long term.

Several TDM strategies for the City of Parksville have already been outlined in the Transportation Master plan including:

- Increased pedestrian facilities (wider sidewalks, connectivity to the waterfront, accessible letdowns, increase sidewalks, crosswalks)
- Implementation of bicycle lanes and bicycle routes
- Bicycle parking requirements for developments
- Connections between bicycle and pedestrian networks with multi-use trails
- Implementation of a shuttle service or expanded transit service
- Development of safe route to school plans
- Implementation of a NZEV bylaw

There are additional TDM measures which the City should work towards implementing either as the City or in partnership with other companies (existing within the City) and/or new developments.



10.1 Bike to Work Week

Bike to Work Week is a week-long initiative in early June started in Victoria in 1995 to encourage people to try cycling. In 2009, over 15 communities and over 22,000 cyclists participated in Bike to Work week across the province with over 6,000 of them being new to cycling. This program is an effective way to promote cycling within Parksville and encourage people to try cycling. More information on Bike to Work week and developing program events for the week can be found at www.biketowork.ca.



source: www.biketowork.ca

10.2 Carshare

Carsharing is an arrangement that allows individuals to gain the benefits of private automobile use without bearing the full cost and responsibility of ownership. Under carsharing a household or business has access to a fleet of shared automobiles on an as-need basis. Liability and collision coverage, regular vehicle maintenance, and gas is administered by the car sharing organization. There are a variety of membership times from one-time use to monthly plans and memberships. In BC there are a number of carshare:

- Modo (Greater Vancouver & Greater Victoria)
- ZipCar (Greater Vancouver, Whistler, & Greater Victoria)
- Car2Go (Greater Vancouver)
- Evo (Greater Vancouver)
- Nelson Carshare Cooperative (Kootenays)



Example of Modo Vehicles

(photo courtesy: www.modo.coop)



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There are several options for implementation of carshare including working with developers to provide vehicles and parking stalls within new developments (slight reduction in parking requirements would be an incentive for developers to participate), encouraging existing businesses to donate a vehicle, and working with the carshare to implement a vehicle in Parksville. The carshare program would be run by an outside organization.

Once a carshare program is available, the City could purchase memberships for staff. The cost through the Co-operative Auto Network (through their corporate subsidiary The Company Car) would be a maximum of \$4,500 if all 75 of the City's staff were given memberships. A portion of this would be refundable if the City chose to leave the program after registration. The cost after membership is on a per use hourly basis.

10.3 Transit Passes

The Nanaimo Transit system offers the ProPass program for employees of an organization. The ProPass offers an \$9.56 monthly savings on monthly transit passes and the cost of the pass is deducted from the employees pay cheque. Employers should be encouraged to further subsidize these passes to make the cost of transit more equivalent with the cost of



driving a vehicle to work. An added benefit to the employee enrolled in the ProPass is that they can claim a 15.25% tax credit on their income tax.

For Vancouver Island University students discounted monthly and semester passes are available at the University Student Union Building. A monthly College/University student pass is \$55.00 or an 18.5% discount on an adult pass. If a semester pass (4 month pass) is purchased there is a savings of 35% or \$94.00 over regular transit passes. Students in the Parksville area should be encouraged to utilize these transit pass programs. Transit route timings, within Parksville, may need to be adjusted for internal commuting to/from work.



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10.4 Ridesharing

Ridesharing involves any arrangement where a number of travellers share a single vehicle. Ridesharing often occurs among commuters, although not exclusively. Ridesharing can either be a carpool (informal) or vanpool (formal). There are



opportunities for the City, developments (ie. Beach Club), and companies within Parksville to register on the Jack Bell Ride-Share website (www.online.ride-share.com). This website allows registered users of specific companies (with an appropriate email) to register and match with other company employees (or with all users of the site). Once individuals are registered they can enter a search for a ride and review matches. Individuals may also register for ridesharing. Ride sharing may be beneficial for retirees who may have a more flexible schedule. Education of the ridesharing website and TDM measures are required in order to make the community aware of them.

10.5 Policies and Regulations

The City of Parksville OCP was last updated in 2013; however, the transportation section should be reviewed and updated to include TDM measures. Appropriate bylaw regulations and incentives for the promotion of alternative modes should be incorporated into the zoning bylaw. These could include bicycle parking, parking reductions for carshare, and access/distance to transit.

10.6 Special Events

The use of alternative modes becomes particularly important during special events when parking and/or vehicle access is limited by the event. The City should work with special event planners to encourage the use of alternative modes as part of their events. These could include adding to ticket prices up front and providing a transit pass with their ticket, providing information on websites and advertising regarding access by alternative mode, prizes or special access for users of alternative modes to access the event, and implementation of special event parking and shuttles to move people from parking to event.

10.7 Promotion

One of the best methods to encourage the use of alternative modes is information. The City should work with the Oceanside Tourism Association and Parksville & District Chamber of Commerce to develop maps and brochures on alternative transportation within the City. This information could then be available at City Hall, on the City's website, at businesses, and tourist accommodations. These brochures could provide maps of pedestrian, bicycle and trails to key destinations or scenic locations, information on how to access transit, where to purchase a bicycle, etc. In addition, special TDM

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events such as bike to work week and commuter challenges throughout the year will promote alternative modes and encourage residents (and visitors) to try a mode that is new to them.



Example of City of Nanaimo Cycling Route Map (for Bike to Work Week 2009)

10.8 TDM Coordinator

The above TDM programs and measures will require a level of coordination by a part-time staff member of the City (may be an existing employee with an expanded role or a new position). This staff member would be responsible for developing TDM programs like Bike to Work week, developing / coordinating marketing materials, and coordinating a shuttle service. It is expected that this role would start out as a part-time position and expand to a full-time role over the next 5 to 10 years.



11.0 IMPLEMENTATION PLAN

The implementation of the transportation master plan requires capital planning and funding. The following sections outline the proposed capital plans to implement the transportation master plan in five (5) year horizons and funding opportunities to pay for the improvements.

As developments occur, sidewalks, bicycle facilities, and road upgrades along their frontages should be required to be completed by the development. The timing of improvements may be adjusted as development occurs in an area.

The following items are recommended to occur on an on-going basis. These items will require Council buy-in.

Item	Yearly Cost
Bicycle Racks (10 per year)	\$8,500
TDM Coordinator (part time staff member)	\$30,000
TDM Marketing	\$50,000
Accessibility Improvements (curb letdowns, etc.)	\$50,000

In addition there are 80 transit stops within Parksville with the majority lacking shelters, waiting pads. The cost to improve one bus stop is \$12,500. The City should include plans to improve several bus stops per year starting within the core area. Up to three new stops could be added if BC Transit utilized Resort Road. The cost to implement these stops would be \$37,500 (assuming bus pad, shelter, sign, etc.) Fifteen shuttle stop signs would be required is a shuttle service was started by the City. The cost would be \$2,250 for these signs.

Wayfinding signage for pedestrians and bicycles should be undertaken immediately. Based on implementing 100 signs the cost would be \$15,000. The signage should direct pedestrians and cyclists to key destinations and routes.

11.1 Capital Plans

For detailed cost estimates see *Appendix D*. Sidewalk costs are based on installation of curb and gutter and either a 2m or 3m sidewalk (3m sidewalks are on downtown streets.) Bicycle route costs include the addition of sharrows and bicycle route signs. Bicycle route costs do not include any road widening. Bicycle lane costs assume addition of 1.5m of asphalt on both sides of the road. The costs exclude any property costs required to obtain property to complete the improvements. The Capital Plan priorities are based on when LOS improvements are triggered, safety improvements, and the City's current plans. The following tables outline the Capital Plans.

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11.1.1 2016 to 2020 (See Figure 11)

Improvement	Cost
Corfield Street Upgrade (Sidewalks, Bike Lanes) + Multi Use Path	\$3,508,750
Highway 19A - Shelley to Englishman River Bridge (Sidewalks, Bike Lanes)*	\$2,205,750
Dogwood Street right in/right out	\$25,000
Signalize Highway 19A/Shelley Road	\$200,000
Shelley Road Sidewalks	\$220,100
Hirst Avenue Sidewalks	\$376,300
Community Park Bike Routes	\$44,975
Stanford Avenue Upgrade (Sidewalks and Bike Lanes)	\$674,900
Protected/permitted southbound left turn phase at Highway 19A/Pym Street	\$10,000
Total for 2016-2020 (rounded)	\$7,266,000

*Cost may be lower as there may be sufficient asphalt to re-stripe the road to create the bicycle lanes rather than adding asphalt.

11.1.2 2021 to 2025 (See Figure 12)

Improvement	Cost
Beachside Drive Multi-Use Path	\$220,000
Forsyth Avenue Sidewalks	\$465,050
N. Pym Street Bike Lanes	\$605,000
Highway 19A Bike Routes (east of Englishman River and west of Moilliet)	\$106,750
Morison Avenue Sidewalks	\$344,350
Morison Avenue Bike Lane	\$563,750
Morison Avenue Bike Routes	\$17,850
Northwest Bay Road / Resort Drive Bike Routes	\$130,200
Pioneer Crescent Bike Route (and area)	\$98,525
Four way stop at Hirst Avenue/Alberni Highway	\$1,500
Weld Street Sidewalks	\$117,150
Finholm Street Upgrade (Sidewalks and Bike Route)	\$284,400
Total for 2021-2026 (rounded)	\$3,395,000

