Colwood Parking Bylaw Update

WORKING PAPER NO.1

Local Understanding + Best Practices

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URBAN SYSTEMS

Submitted to

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Summary

The City of Colwood has identified the need to update its off-street parking regulations to better align with established City policies and ensure appropriate parking provisions in future development. This is particularly important given the on-going rate of growth in Colwood and to ensure that each new development reflects the community's vision.

This document (Working Paper no.1) is the first of three working papers being developed as part of the process of reviewing the off-street parking regulations. It provides a general overview of the City's current policy objectives related to transportation and parking, as well as current off-street parking requirements and how they compare to other communities. Consideration is given to best practices in off-street parking regulations related to both vehicle parking, but also bicycle parking, accessible parking, electric vehicle (EV) charging and transportation demand management (TDM). This document provides a baseline understanding to inform conversations with the community and stakeholders, and as new off-street parking regulations are contemplated.

Parking has a profound and broad reaching impact on the Colwood community. Land use and urban form are impacted specifically by the quantity and configuration (i.e., surface or structured) of parking, as an example. Housing affordability is another key consideration, where costs associated with parking are generally passed on in the form of high rent or purchase price. The updated off-street parking regulations are to developed with an understanding of the impacts that parking has on the community, while seeking to ensure they reflect the City established policy directions. Emphasis will be on inclusion of sustainable transportation provisions and an approach that helps the City achieve its targeted increase in walking, cycling and public transit use by 2038.

Colwood's vision for the future will help guide off-street parking regulations, specifically with guidance contained in the Official Community Plan (OCP) and Transportation Master Plan (TMP). At a high level, the OCP includes key objectives to pursue improved environmental performance, create public spaces (and specifically streets) for public life, continue to adapt to a changing world, and ensure residents have realistic transportation options. It also clarifies the City's intent to prioritize active transportation and public transit over single-occupant vehicles, which signifies the importance of including alternative transportation provisions in off-street parking regulations.

The TMP identifies a desire to reduce overall parking demand, encourage alternative modes and meet land use and economic goals through parking management, as well as using development regulations to require bicycle parking and cycling trip-end facilities, transportation demand management (TDM) approaches, and to facilitate growth in low-emissions travel options including electric vehicles (EVs). It specifically notes an intent to establish reduced and structured parking in the Colwood Corners, Transit Growth Corridor, Seaside Village, and Neighbourhood Centres areas, establish a "parking maximum" (i.e., a limit on the quantity of parking that may be supplied) and requirements for electric vehicle charging. Many of these items are not comprehensively addressed in the City's current off-street parking regulations and are areas of focus for the review to ensure regulations reflect policy.

An in-depth study was undertaken to understand the parking demand associated specifically with Multi-Family Residential land uses. The analysis found that the average parking demand rate among for Multi-Family Residential uses is approximately one vehicle per unit, which is at least 35% less than the City's current minimum parking supply rate. The assessment also found reduced parking need in Colwood Corners and defined Centres (as compared to the rest of the City), an increase in parking demand among larger units, and reduced parking demand among rental and affordable buildings.

Research of best practices and comparison to regulations in representative communities was undertaken to identify key opportunities to improve upon regulations in Colwood. Of importance, the review identified "parking maximums" (also flagged in the City's OCP) and open option parking as alternatives to the conventional approach of dictating minimum parking supply rates. Under these alternative approaches a greater degree of flexibility is afforded to the development applicant to determine the appropriate parking supply in consideration of parking demand, costs and affordability, and other factors.

The comparison of minimum parking supply rates determined that while rates for key land uses such as Single-Family Residential and Office are well aligned with rates found in other communities, others such as Multi-Family Residential and key Commercial uses (Retail, Grocery Store) exceed rates found in other communities and require careful consideration to ensure they are appropriate rates for Colwood. Both cash in-lieu of parking and shared parking regulations are opportunities to ensure parking supply better reflects actual parking needs and build in support for active transportation infrastructure.

Requirements for EV charging are becoming increasingly common in municipal off-street parking regulations. Guidance provided by the Capital Regional District (CRD) and recent work on the topic undertaken by Saanich is to be used to establish regulations in Colwood. Accessible parking is another area where there is significant opportunity to improve on existing regulations to ensure accessible parking provisions are aligned with best practices and help create an accessible, equitable community.

Off-street parking regulations may also include requirements for bicycle parking and supporting facilities to ensure the needs of cyclists are being met. Colwood's current bicycle parking supply rates are generally inline with those in other communities, but regulations are lacking that adequately accommodate larger bicycles, charging needs associated with electric bicycle (e-bikes) and end-of-trip facilities like showers and changerooms to support commuter cycling.

Broadly described as "new mobility", a series of new and emerging transportation options are given consideration for they may impact travel behaviour in future. Carshare, ride-hailing, curbside management and autonomous vehicles will all change how Colwood residents travel, although the exact timing and level of change is uncertain.

The overall intent of this document is to understand the City's vision for the future, opportunities to address key directions through off-street parking regulations, and identify best practices and approaches from other communities to manage and regulate parking. This document will be referenced during subsequent phases of this project during conversations with the public, stakeholders and Council, as well as to inform further analysis and the formulation of recommendations and new regulations.

Contents

1.0 Overview

The City of Colwood ("the City") is undertaking a comprehensive review of off-street parking regulations as an opportunity to pursue strategic directions around land use and built form, multi-modal transportation and parking management. Modernized, up-to-date regulations will better reflect City policies and result in a more defensible development approvals process by City staff and Council, greater certainty among the development community, and parking supply rates and facility design requirements that better align with the City's strategic objectives, and proactively respond to the anticipated changing trends in electric vehicle (EV) and electric bicycle (e-bike) uses. The end result will be greater assurance that future development includes desired parking and alternative transportation provisions.

The following will be the key project outcomes:

1. A new Off-Street Parking Regulations bylaw that regulates the supply, design and location of vehicular parking, bicycle parking and related transportation provisions associated with new development.
2. A Parking Variance Policy that clarifies the conditions that may support a variance from the new off-street parking regulations, including items such as location, access to transportation options and transportation demand management (TDM).

Research, analysis and community engagement activities are being undertaken to better understand parking needs in Colwood and support updated regulations. These activities will be documented in a series of "working papers" over the course of the project, as follows:

- **Local Understanding + Best Practices**, Working Paper no.1

  Working Paper no.1 (this document) provides a general overview of the City's current policy objectives related to transportation and parking, as well as current off-street parking requirements and how they compare to other communities. Consideration is given to best practices related to bicycle parking, accessible parking, electric vehicle (EV) charging and transportation demand management (TDM).

- **"What We Heard" Engagement Summary**, Working Paper no.2

  Working Paper no.2 is a summary of the public and stakeholder engagement activities undertaken to understand parking needs in Colwood and to test new policy and regulation options.

- **Strategic Directions**, Working Paper no.3

  Working Paper no.3 is a summary of the key directions and recommendations that will guide the development of the Off-Street Parking Regulations and Parking Variance Policy based on the community engagement and technical analysis summarized in the initial working papers.

2.0 Background ("Parking 101")

Parking has a broad and profound impact on communities in terms of form of development, rate of growth, how people travel and the health of people and the environment. Understanding the relationship between parking and the various aspects that make up the Colwood community, as well as recognizing the impact of various parking regulation options, is critical in considering a new Off-Street Parking Bylaw for the City. The following section provides a background understanding of the impact of parking in addressing key objectives of the City of Colwood.

Parking Costs + Affordability

The costs to construct parking are significant. The type of parking facility and its overall design have a substantial influence on the total cost of a development project and its overall feasibility. **Table 1** (below) highlights the wide variation in parking construction costs between surface parking, free-standing (i.e. above-grade) parking garages and underground parking. Costs may be higher in areas with challenging conditions, such as a high water tables, granite bedrock, and limited space or challenging lot sizes.

TABLE 1. CONSTRUCTION COSTS PER PARKING SPACE - VANCOUVER 2018[1]

Parking Facility Type	Construction Cost per Space	
	Low-end	High-end
Surface Parking	$5,000	$25,000
Free-Standing (Above-Grade) Parking Garages	$90,000	$125,000
Underground	$100,000	$145,000

Though not an exact comparison to Colwood, even if the cost of construction of underground parking in Colwood was closer to $50,000 per space, a 65-unit multi-family building with a parking supply rate of 1.5 spaces per unit would require close to $4.9 million to construct a 98-space structured facility.

Parking construction costs are generally passed on to in the form of a higher purchase or rent / lease costs, which directly impacts housing affordability and the viability of new businesses in Colwood. Required parking supply rates must be carefully considered for their impact on affordability, as does the type / form of parking - whether surface or structured - for its impact on affordability and other factors such as urban form (see below).

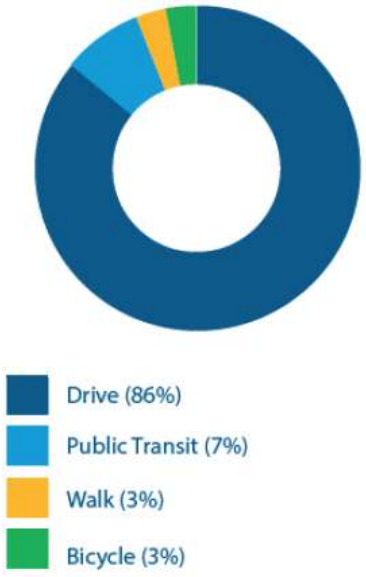
[1] Altus Group - 2018 Canada Cost Construction Guide
https://creston.ca/DocumentCenter/View/1957/Altus-2018-Construction-Cost-Guide-web-1

Sustainable Transportation

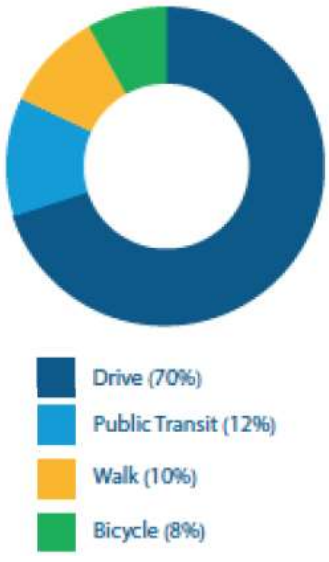
The transportation choices made by Colwood residents are a reflection of the transportation options made available to them. Where considerable investments are made in building road infrastructure and providing ample free parking, residents are inclined to make single-occupant vehicle trips. This has a whole host of negative impacts, including on the environment, air quality, personal health, and quality of life and well-being.

Parking provision, and therefore parking regulations, are an opportunity to influence the transportation choices made by Colwood residents to better align with the City's stated objectives to reduce greenhouse gas (GHG) emissions and support healthy lifestyles. Mode shift targets stated in the Official Community Plan (OCP) suggest a reduction in driving trips by 16% from an 86% mode share in 2011 to a 70% mode share by 2038 as shown in **Figure 1**, as well as corresponding increases in public transit (12%), walking (10%) and cycling (8%). Achieving these targets will require careful consideration of appropriate parking provisions to achieve the "right" amount of parking, as well as leveraging opportunities through development regulations to support a shift in emphasis toward public transit and active transportation, referred to as transportation demand management (TDM).

FIGURE 1. CITY OF COLWOOD MODE SHARE TARGETS 2038[2]



Existing (2011)



Target (2038)

[2] Figures from City of Colwood Official Community Plan (OCP), Section 8.1, accessed online at: https://www.colwood.ca/city-hall/plans-reports/official-community-plan

Parking + Urban Forum

The quantity and type of parking provided has a significant impact on communities and urban form. Parking consumes an enormous amount of land when provided in large quantities in surface lots that could otherwise be contributing to density in appropriate locations, improve public spaces, and preserving natural spaces. As shown in **Figure 2**, parking in some areas of Colwood, such as the Island Highway corridor, is the most prevalent use of land. This vast paved surface is not only a missed opportunity to encourage a more productive use of this space, it is also a detriment to the environment. Paved surface parking areas that are common throughout Colwood do not just negatively impact the environment by encouraging single-occupancy vehicle travel, they contributed to increase surface run-off impacting stormwater infrastructure, reduce valuable tree canopy cover adding to the urban heat island effect and limiting opportunities for carbon capture. Additionally, the presence of high minimum parking standards make development less viable by requiring extensive amounts of space to be dedicated to parking.

FIGURE 2. ISLAND HIGHWAY CORRIDOR

Parking Facility Design

Beyond reducing the amount of surface parking, the City's also has the opportunity to improve the design of surface parking areas where they are required. Parking lots themselves can designed and constructed to be made more environmentally friendly through improved stormwater management, use of environmentally friendly materials (permeable pavement), increasing vegetation cover and even finding opportunities to generate solar energy or urban agriculture. **Figure 3** (below) showcases an alternative parking lot design that replaces asphalt with naturalized terrains, opportunities to generate solar energy and designated areas for urban agriculture. Though the extra cost of taking parking lot design to the next level may be prohibitive for development, it reflects the possibility of being able to reduce minimum parking standards in exchange for better parking lot design.

A shift in mentality is required for the City to begin perceiving parking areas not just as spaces for cars, but as part of the public realm and an opportunity utilize the City's land base in more constructive and creative ways. Opportunities for enhanced parking facility design are to be pursued through updated Off-Street Parking Regulations.

FIGURE 3. SUSTAINABLE PARKING LOT DESIGN

3.0 Policy + Regulatory Framework

The updated Off-Street Parking Regulations are to better align with the City's established policy directions and its vision for the future. The following section provides an overview of the legislation and policies that will guide the updated regulations, including key directions contained in City planning document such as the OCP and Transportation Master Plan (TMP).

3.1 Provincial Enabling Legislation

The Local Government Act (LGA), Section 906 enables the City of Colwood to create a Parking Bylaw to efficiently regulate off-street parking and loading, and better meet the needs of the community. Specifically, the LGA defines what the City can and cannot do with respect to amending its parking regulations. The section contains specific provisions for off-street parking for motor vehicles and bicycles whereby a local government may, by bylaw, "require owners or occupiers of any land, or of any building or other structure, to provide off-street parking and loading spaces, including spaces for use by disabled persons, for the building or other structure". Under Section 906, local governments are also permitted to establish design standards for parking facilities respecting size, surfacing, landscape and lighting.

Under the LGA, a local government can allow the off-street parking and loading spaces to be provided on another site or can accept cash in-lieu of off-street parking. Any cash in-lieu monies received must be paid into a reserve fund to pay for public parking facilities or transportation infrastructure that supports walking, bicycling, public transit, or other alternative forms of transportation.

3.2 Policy Directions

The City of Colwood Official Community Plan (OCP) provides objectives and policies to guide decisions on planning and land use management in Colwood's short- and medium-term future. The OCP was most recently updated in 2018, outlining seven goals that provide the basis for the Plan's objectives and policies. The OCP goals most relevant to the Off-Street Parking Regulations bylaw and this review are as follows:

- Residents have realistic transportation options
- Public spaces – including streets – are for public life
- Colwood is carbon neutral, energy positive, and water smart
- Colwood is prepared to adapt to a changing world

These goals provide context and general direction for this review since parking regulations are highly integrated with land use, urban design and mobility, and how these concepts contribute to Colwood's vision of a livable and sustainable community. As Colwood continues to grow, including development into compact communities like the Town Centre / Colwood Corners and Royal Bay, efficient and effective parking supply, design and management can affect each of these goals by providing regulatory means to influence auto-dependency and encourage less auto-centric development. Ultimately, parking regulation is an opportunity for Colwood to encourage sustainable transportation options, create vibrant communities, streets and public spaces, reduce the environmental impacts of transportation, and prepare for future changes in transportation and mobility.

Land use and growth policy in the OCP generally supports more compact and efficient development in Colwood that provides a greater diversity of housing and transportation options, while also enabling the City to meet environmental targets. It is recognized that a greater land-use mix and densities that support local amenities and complete communities are needed for the variety of household ages, incomes, and needs that reflect changing preferences in These objectives broadly align with those of the *Regional Growth Strategy* for the Capital Regional District.

- *Objective 6.2.1, 6.2.3, 6.2.4, 9.2.2, 10.3.1, 10.3.2*
- *Policy 6.2.1.1, 6.2.1.2, 6.2.3.1, 6.2.3.2, 8.2.1.3, 9.2.1.2, 10.3.2.1, 10.3.2.2*

From a transportation perspective, the OCP establishes mode share targets for the City of Colwood as a measure around which to focus and prioritize investments in transportation, land use, and urban design. Parking management is a key tool to support this goal, ensuring that the costs of parking are accurately reflected, and contributing policies that support alternate transportation. The existing and 2038 mode share targets contained in the OCP are shown above in **Figure 1**.

The OCP also defines a transportation mode hierarchy by which to inform decision-making on transportation investment, land use, and urban design. The hierarchy prioritizes, in order of importance:

1. Walking and Rolling
2. Transit
3. Cycling
4. Goods Movement
5. Autonomous Vehicles and High Occupancy Vehicles
6. Single Occupancy Vehicles

Policy recognizes that by increasing the convenience, comfort, and safety of transit and active modes makes these modes more viable options for moving throughout Colwood and connecting to neighbouring communities. Mobility policy in the OCP recognizes the importance of the relationship of transportation choices and land use, and therefore encourages future land use to support mode share targets above.

- *Objective 8.2.1, 8.2.2, 8.2.3*
- *Policy 8.2.1.1, 8.2.1.2, 8.2.1.3*

Parking regulation is affected by most policy areas identified in the OCP, beyond land use and transportation, objectives related to housing, economic development, and climate change also provide direction for parking requirements in Colwood. **Table 2** summarizes these relevant policies and objectives.

TABLE 2. SUMMARY OF RELEVANT OCP POLICIES

Topic Area	Intent	Policy / Plan Reference
Growth Management	The City intends to manage housing, economic development, and population growth to align with broader land use, transportation, economic, and environmental goals in the OCP. Growth will maintain Colwood's existing identity and character while increasing density, access to transit and local amenities, and the efficient use of existing infrastructure	• Objective 6.2.1, pg 28 • Objective 6.2.2, pg 28 • Objective 6.2.3, pg 29 • Objective 6.2.4, pg 29 • Policy 6.2.1.1, pg 28 • Policy 6.2.1.2, pg 28 • Policy 6.2.2.1, pg 28 • Policy 6.2.1.2, pg 28 • Policy 6.2.3.1, pg 29 • Policy 6.2.3.2, pg 29 • Policy 6.2.4.1, pg 29 • Policy 6.2.4.2, pg 29
Land Use	The City will support patterns of development compatible with increasing mix of uses and densities that support vibrant centres, sustainable and complete communities through a number of Land Use Designations.	• Policy 7.2.5 pg 37 • Policy 7.2.8 pg 41 • Policy 7.2.12 pg 45
Streets & Mobility	The City will support a greater range of mobility options, particularly active modes and transit. The City intends to effectively manage development around transportation network, encouraging environmentally-friendly solutions for vehicle use, and to anticipate and adapt to trends in vehicular use by employing a broad array of strategies including transportation demand management and establishing appropriate	• Objective 8.2.1, pg 63 • Objective 8.2.2, pg 64 • Objective 8.2.3, pg 67 • Objective 8.2.5, pg 72 • Objective 8.2.6, pg 72 • Policy 8.2.1.1, pg 63 • Policy 8.2.1.2, pg 63 • Policy 8.2.1.3, pg 63 • Policy 8.2.2.8, pg 66 • Policy 8.2.2.9, pg 66

	parking standards and maximums for new development.	• Policy 8.2.3.5, pg 68 • Policy 8.2.3.6, pg 70 • Policy 8.2.4.1, pg 70 • Policy 8.2.4.5, pg 72 • Policy 8.2.5.1, pg 72 • Policy 8.2.6.2, pg 72 • Policy 8.2.6.3, pg 74 • Policy 8.2.6.6, pg 75 • Policy 8.2.6.7, pg 75
Housing	The City will encourage a diversity of housing choices across the community for existing and future residents with different needs. Options will be explored to support rental and non-market housing across that spectrum that maintains Colwood's affordability	• Objective 9.2.1, pg 77 • Objective 9.2.2, pg 79 • Policy 9.2.1.2, pg 78 • Policy 9.2.1.3, pg 78 • Policy 9.2.2.1, pg 79 • Policy 9.2.2.2, pg 79
Economy	The City will strive to create efficiencies between local growth and the City's values, attracting development that including working with the local investment and development communities to understand ongoing issues and challenges.	• Objective 15.2.1, pg 107 • Objective 15.2.2, pg 107 • Policy 15.2.2.4, pg 108 • Policy 15.2.2.6, pg 108
Climate Change	The City will adapt and mitigate climate change issues in Colwood by encouraging environmentally-sensitive development, efficient transportation systems, enhanced natural assets, and waste management that enables significant greenhouse gas emissions reductions.	• Objective 10.3.1, pg 82 • Objective 10.3.2, pg 83 • Policy 10.3.1.1, pg 82 • Policy 10.3.2.1, pg 83 • Policy 10.3.2.2, pg 83

3.3 Plan Guidance

The City's key planning documents were reviewed to identify specific guidance that may influence the Off-Street Parking Regulations. The focus is on the Official Community Plan (OCP) and Transportation Master Plan (TMP), as described below.

3.3.1 Official Community Plan

The Official Community provides direction specific to parking and loading regulation that will guide the development of the Parking Bylaw. These policy and objectives apply both to Land Use and Transportation, along with urban design objectives in various section of the OCP. These policies and objectives are summarized in **Table 3**.

Land Use

Parking direction within the Land Use policies are contained within the OCP's various Land Use Designations. These policies are focused on the location and integration of parking areas into development in these designations to meet the desired urban design characteristics of these places. Off-street parking policies included in the OCP Land-Use Designations are primarily focused on urban design and the siting of parking facilities. Direction is given that in most centres, including Colwood Corners, Seaside Village, and Neighbourhood Centres, that parking should be located underground or to the rear of the development.

Streets & Mobility

Transportation objectives and policy more broadly address current needs in the parking supply for both vehicles and bicycles, along with direction on the movement of goods. Policy also anticipates changes in parking requirements as a result of emerging trends in autonomous and electric vehicles. Several transportation-related policies have direct implications on off-street parking regulation for vehicles and bicycles along with goods movement. Regulatory actions identified in these policies that form the basis of this review, actions included among these policies are as follows:

- Review parking standards for new development
- Employing parking maximums
- Review parking standards for electric vehicles
- Contemplate standard for e-bikes
- Contemplate requirements to bicycle facilities (e.g., bike kitchens, end-of-trip facilities like showers and changerooms)
- Reviewing and adapting parking requirements to account for autonomous vehicles
- Consider ride-hailing queue lanes and similar changing mobility trends
- Contemplate charging and parking/storage standards for mobility scooters associated with seniors oriented developments

These policies and objectives provide the broad intent for parking regulation in Colwood, providing direction on strategies to decrease parking demand among single-occupancy vehicles, facilitate high-quality bicycle parking, efficient loading, and adapt to the impacts of new mobility.

Additional Parking Direction

Other OCP sections contain direction on parking, including various Development Permit Areas and the Royal Bay Area Plan. These policies generally apply to siting parking facilities, landscaping and screening in parking areas, off-street parking access.

TABLE 3. SUMMARY OF PARKING-RELATED OCP OBJECTIVES + POLICIES

Topic Area	Language	Policy / Objective
Land Use	7.2.5 Other Directions	Support the land use objectives for Colwood Corners by: f. Situating parking underground or behind buildings
	7.2.8 Other Directions	Support the land use objectives for Seaside Village by: f. Situating parking underground or behind buildings
	7.2.12 Other Directions	Support the land use objectives for Neighbourhood Centres by: f. Situating parking behind buildings and, if possible, underground
Streets & Mobility	8.2.2.8 Pedestrian-Scaled Built Form	Require human-scale development by: d. Requiring that ground floor commercial and other active uses in mixed-use areas directly front onto pedestrian priority areas, including sidewalks and plazas, and have minimal building setbacks; e. Requiring that all surface parking be situated behind buildings, such that parking does not separate pedestrians from building frontages, particularly in mixed-use areas; and f. Encouraging underground parking.
	8.2.3.5 Short Term Bicycle Parking	Provide safe and secure short term bicycle parking (i.e. less than two hours) in commercial, community, and recreation areas.
	8.2.3.6 Long Term Bicycle Parking	Provide safe and secure long term bicycle parking (i.e. more than two hours) in multi-unit residential, workplace, and transit areas, including sheltered/enclosed racks and lockers.

	Objective: 8.2.5	To enable the efficient delivery of goods to local businesses and institutions in Colwood
	8.2.5.1 Local Access	Identify strategies for goods movement and delivery in all new commercial development
	Objective: 8.2.6	To enable the safe movement of vehicles, effectively manage parking, encourage greener solutions for personal vehicle use, and anticipate changing trends in vehicular use.
	8.2.6.2 Transportation Demand Management (TDM)	Improve the relative attractiveness of transit and active modes over single occupancy vehicle use by: a. Working with developers to identify appropriate TDM measures for their development, potentially in exchange for reduced parking requirements; and b. Working with schools to encourage students and parents to walk or cycle to school.
	8.2.6.3 Parking Supply	Enable on-street parking wherever appropriate, and review parking standards for new developments to ensure oversupply does not occur, and employ parking maximums to reduce surface parking lots and supply over time as part of facilitating mode shift.
	8.2.6.6 Low or Zero Emission Vehicles	a. Building on past success, finding opportunities to install additional public charging stations at locations that are visible and easily accessible with a mix of land uses that do not currently have a charging station, such as mixed-use buildings, public parks, and community centres; and b. Reviewing parking standards to identify how electric vehicle charging stations can be included in new residential and commercial developments, as part of the Zoning Bylaw update.
	8.2.6.7 Autonomous Vehicles	As driverless vehicles become a reality, prepare Colwood for the possibly transformative impact that these vehicles could have on the transportation system by updating the Transportation Master Plan with the following directions: d. Considering how existing off-street parking may be re-purposed once no longer needed, and reviewing off-street parking requirements so that they can adapt to changing demand

3.3.2 Transportation Master Plan

The 2016 Transportation Master Plan (TMP) provides a number of strategic directions and actions for achieving the City of Colwood's transportation goals, while also contributing to Colwood's vision for livable and sustainable community. The plan establishes goals and targets that align the TMP with principles of sustainable development, support a vibrant local economy, and contribute to social and physical health.

Six overarching themes guide the actions contained in the TMP, including: a network of vibrant centres, comfortable cycling facilities, and complete streets. Under these themes, off-street parking is a critical component to several strategic directions and actions. These specific initiatives are summarized as the following:

- Use parking management to reduce overall parking demand, encourage alternative modes, support local economic activity, and meet land use goals.
- Implement zoning that supports a mix of uses and densities compatible with strong transit service and local amenities.
- Continue to incorporate bicycle parking into new development and enhance bicycle parking in regional centres, along with amending the Zoning Bylaw to require end-of-trip facilities
- Employ a variety of transportation demand strategies to reduce single-occupancy vehicle usage, including reducing parking requirements, incentivizing active transportation modes, and promoting carsharing.
- Facilitate growth in low-emission and electric vehicles by integrating charging infrastructure into parking requirements.

Table 4 summarizes the relevant strategic directions, actions, and initiatives that provide direction for the development of off-street parking regulations.

TABLE 4. SUMMARY OF PARKING-RELATED TMP ACTIONS

A Network of Vibrant Centres	
Strategic Direction	
Integrate land use and transportation planning in the development of compact, mixed-use vibrant centres to support walking, cycling, transit service, and economic development.	
Action	Initiative
Support Complete Streets Between Vibrant Centres	**Enhance Cycling and Pedestrian Connections.** Provide safe routes between Vibrant Centres for cyclists and pedestrians with separated bicycle lanes on arterial and collector roads. Provide end-of-trip facilities such as bicycle racks or long term bicycle parking at Regional Centres to support regional multi-modal trips.
	Reduce Vehicle Traffic. Utilize transportation demand management strategies to discourage automobile usage. This can include reducing available parking, limiting vehicle access to services, limiting parking to short term or pay parking, reducing parking requirements, and/or providing various incentives to pedestrians, cyclists, transit users and carpool users.
	Supportive Land Use Zoning. Support flexible land use zoning typologies to encourage a variety of civic, institutional, and commercial interests, in addition to a diversity of residential densities, within the context of Regional, Urban and Local Centres. This will support transit-oriented development and supply local community needs.
Invest in the Public Realm	**Urban Design for the People**. To support human scale development the following sample urban design recommendations apply: o Encourage ground floor commercial uses fronting onto pedestrian priority zones (i.e. plazas, greenways, traffic calmed local roads), o minimize vehicle parking fronting commercial uses from arterial or collector roads, o encourage underground parking and reduced parking ratio requirements, and o limit vehicle access to encourage walking from store to store.

Comfortable Cycling Facilities	
Strategic Direction	
Make cycling a safe, comfortable, convenient and fun experience for residents and visitors of all ages and abilities.	
Action	Initiatives
Make Cycling More Convenient	**Bicycle Parking.** Beyond continuing to require bicycle parking as part of the development process, the City should enhance bicycle parking in key areas. The City can work with businesses to provide regularly spaced and sheltered bicycle parking in the public right-of-way in all Vibrant Centres, other commercial areas, and other major destinations in the City. The City should also develop a bicycle corral program to provide on-street bicycle parking as an alternative to bicycle racks on sidewalks.
	End-of Trip Facilities. The City should amend its Zoning Bylaw to require end-of-trip facilities such as showers and clothing lockers for major employers.
	Bicycle-Transit Integration. The City should work with BC Transit to ensure that attractive and secure short-term and long-term bicycle parking is provided at all existing and planned transit exchanges. At these exchanges, short and long-term bicycle parking would allow cyclists to “park and ride” on transit

Complete Streets	
Strategic Direction	
Improve the transportation network to enable safe, convenient and comfortable travel for users of all ages abilities, and modes of mobility while managing capacity demands and future growth.	
Action	Initiatives
Managing the Impacts of Vehicle Transportation	**Support Transportation Demand Management** strategies to shift travel patterns and reduce the number of trips, change to a more sustainable mode of travel, and to change vehicle types to reduce the amount of emissions and energy use per kilometer of travel. TDM programs focus on educating and incentivizing the public to make different transportation choices. Strategies include complimentary transit passes, car share memberships, electric vehicle plug-ins, and active transportation resources.
	Promote Carsharing Programs. The City should support carsharing programs in the municipality where sufficient density exists or is planned to provide a cost-effective transportation option for residents.
	Develop a Parking Strategy. Strategic on- and off-street parking policies can be applied to encourage the use of alternative transportation modes, densification, economic activity and, over time, reduce overall parking demand.
	Low or Zero Emissions Vehicles. Promoting the use of low or zero emissions vehicles can help reduce the community-wide GHG emissions throughout the City. The City can encourage these vehicles by updating its parking requirements to provide electric vehicle charging stations throughout the City. This will build on the car charging stations the City has already installed at City Hall Colwood Transit Exchange Park and Ride, Juan de Fuca Library, Royal Bay Bakery, and Royal Roads University.

3.4 Current Parking Requirements

The following sections highlights some of the key components of the City's current off-street parking requirements that are the focus of analysis contained in this working paper[3].

3.4.1 Minimum Parking Supply Rates

Off-street parking requirements in the City of Colwood are contained within Section 2.2 of the Colwood Land Use Bylaw no.151. Vehicular parking requirements defined in Section 2.2.01 are specific to land use and are calculated based on floor area, number of dwelling units or anticipated user groups, including employees, customers etc. Current off-street vehicular parking rates are identified in **Table 5**.

In comparison to the content of the OCP and TMP reviewed in previous section, several important gaps are evident between current requirements and parking policy:

- No application of parking maximums in any land uses.
- Currently, there is no parking requirement reductions for sites in urban centres, with access to the frequent transit network, or other factors that might support City policy objectives.
- There are no nuanced standards for mixed-use building (and therefore no recognition of the potential for complementary land uses to share a site parking supply).
- There is currently no language around reduced parking requirements for affordable housing or environmentally-friendly development.
- Currently there are no parking requirement reductions for sites on intended transit corridors where the City anticipates densities that support greater transit ridership.
- There are no options for reduced parking requirements as a result of implementing transportation demand management (TDM) strategies.
- Lack of requirement for end-of-trip facilities for active transportation users.
- Provision of electric vehicle charging infrastructure is not required, nor are provisions for electric bicycles.

These gaps will be essential to address as this Parking Bylaw is developed, as they will ensure that the vision for parking in Colwood is represented in off-street parking regulations.

[3] The full parking regulations are contained in the City's Land Use Bylaw, available online at: https://www.colwood.ca/city-hall/bylaws/151/land-use-bylaw-consolidation

TABLE 5. CURRENT OFF-STREET PARKING REQUIREMENTS

Use of Lot	Required Number of Spaces for Employees, Customers and Visitors
Animal Hospital	1 per 2 employees plus 3 per veterinarian
Auction (Indoor)	1 per 10 m^2 of auction floor
Auto sales and repair	1 per 70m^2 plus 1, 1 per service bay plus 2 per employees
Bank	1 per 20m^2 of gross floor area
Boat sales and repairs	1 per 3 employee plus 1 per 100m^2
Bowling alley or billiard hall	3 per alley or table
Building material supply	1 per 2 employees plus 1 per 200m^2 of covered sales and storage
Bus depot	1 per 20m^2 waiting room plus 1 per 2 employees counted as total of 2 shifts
Campsite	1 per space plus 3
Church	1 per 4 seats
College	1 per employee plus 1 per 5 students
Community centre	1 per 20 m^2 of gross floor area
Congregate housing - where a property is developed at more than 70 units per hectare	0.5 per dwelling unit, plus 1 per support staff (maximum number of staff any shift), plus .25 per dwelling unit for visitors
Congregate housing - where a property is developed at less than 70 units per hectare	0.5 per dwelling unit, plus 1 per support staff (maximum number of staff any shift)
Contractor's yard	1 per 2 employees
Correctional centre or penitentiary	1 per 2 employees counted as total of 2 shifts
Cultural facility	1 per 40 m^2 of gross floor area
Funeral parlour	1 per 4 seats in chapel
Gasoline service station	1 per 2 employees on duty plus 2 per service bay
Golf course - 9 holes	75 spaces
Golf course - 18 holes	150 spaces
Golf driving range	1 per tee plus 1 per 2 employees

Grocery, neighbourhood	1 per 15 m^2 of gross floor area of retail portion of building or 4, whichever is greater
Health salon	1 per 15 m^2 of gross floor area
Hospital	1 per 3 beds
Hotel	1 per 2 rooms plus 1 per 3 seats in bar, restaurant and other food and drink dispensing facilities
Ice cream stand	7 per sales clerk
Laboratory	1 per employee
Laundromat	1 per washing machine
Laundry and dry cleaning establishments	1 per 2 employees counted as total of 2 shifts
Machinery sales	1 per 2 employees plus 1 per 100 m^2 of sales floor
Manufacturing and industrial uses	1 per 2 employees counted as total of 2 shifts
Motel - number of units less than the number of seats in the restaurant	1.1 per unit plus 1 per 3 seats in restaurant etc.
Motel - number of units more than the number of seats in the restaurant	0.9 per unit plus 1 per 3 seats in restaurant etc.
Nurseries and greenhouses	1 per 15 m^2 of gross floor area retail sales building
Offices, medical	5 per doctor or dentist
Offices, multi-tenant	1 per 30 m^2 of gross floor area
Offices, single-tenant	1 per 35 m^2 of gross floor area
Petroleum farm tank	1 per employee, excluding office staff, plus 5
Police station	1 per 2 employees counted as total of 2 shifts
Residential, one-family dwelling	2 per dwelling unit, provided that a front yard driveway and two-family dwelling which provides access to a parking space that is not within the front yard may be considered as the provision of a second parking space that is in tandem
Residential, multi-family (attached housing, apartments)	1.5 per dwelling unit plus 1 for each 100 m^2 of building floor area exceeding 60 m^2 times the number of dwelling units
Restaurant, coffee shop	1 per 3 seats
Restaurant, drive-in only	15

Retail store, supermarkets, liquor and other retail personal uses, except neighbourhood grocery	0.75 per 10 m^2 of gross floor area
School, elementary, day care, and community care for pre-school children	1 per employee plus 2
School, secondary	1 per employee plus 1 per 10 students
Shopping Centre, Community	5.5 per 100 m^2 of gross leasable area
Shopping Centre, Major	1 per 100 m^2 of gross leasable area up to 46,500 m^2 gross leasable area; then for the area over 46,500 m^2 at the rate of 4.3 per 100 m^2
Shopping Centre, Neighbourhood	6.5 per 100 m^2 of gross leasable area
Stadium	1 per 3 seats
Taxi Stand	1 per taxi plus 1 per office employee
Television, radio studios	1 per 2 employees counted as total of 2 shifts
Theatre, drive-in	1 per 2 employees
Theatre, not drive-in	1 per 4 seats
Tire repair	1 per 2 employees plus 1 per bay
Tourist attraction	1 per 4 persons capacity
Vegetables and other produce stand	4 per sales clerk
Warehouse	1 per 2 employees counted as total of 2 shifts

3.4.2 Bicycle Parking Requirements

Required bicycle parking rates are prescribed in *Section 2.2.09* of the Land-Use Bylaw. Similar to vehicle parking, requirements for the provision of bicycle parking is dependent on land use and is calculated depending on floor area, dwelling units, and anticipated users. Additionally, bicycle parking regulation identifies a ratio of two classes of bicycle parking, Class 1 and 2, that must be provided to meet the different needs of short- and long-term users. In Section 2.2.12, the Land-Use Bylaw generally defines these bicycle parking classes as the following:

- **Class 1 – Long-Term Parking**

  Long-term parking provides the most complete protection from the weather and theft, and is identified as spaces available for those who expect to leave their bicycles for more than four hours.

- **Class 2 – Short-Term Parking**

  Short-term bicycle parking spaces are meant to accommodate visitors, messengers, and other people expected to depart within four hours. These facilities are intended to provide some weather protection, but not for use overnight. They provide protection from theft of the frame and wheels, but not components or accessories (e.g. seat, air pump, water bottles). Often, the facility may be a simple bike rack or a post to which a bicycle may be secured.

Current bicycle parking rates are as included in **Table 6**.

Required bicycle parking facilities are set out in *Section 2.2.10* and *2.2.11*. This section clarifies the design requirements for bicycle parking spaces. This section could be expanded to include requirements for end-of-trip facilities and bicycle amenities, as is described in **Section 6** of this document.

Voluntary bicycle parking design guidelines are set out in Section 2.2.12. Optional guidelines such as these are not appropriate in a Land Use Bylaw. These guidelines are to be reviewed to determine which may be brought forward as regulations or modernized and included in the City's Official Community Plan.

TABLE 6. CURRENT BICYCLE PARKING REQUIREMENTS

Use	Bicycle Spaces Required	Type of Bicycle Parking
Residential		
Single Family/Two Family	N/A	N/A
Apartment/Townhouse	1 per unit plus 6 space rack at each entrance of an apartment	Class 1 - 100% Class 2 - 6 space rack
Senior Citizen: Buildings containing three or more dwelling units for senior citizen housing and approved by the B C Housing and Management Commission under the non-profit housing program/congregate housing	1 per 15 dwelling units	Class 1 - 70% Class 2 - 30%
Commercial		
Hotel/Motel/Temporary Lodging (includes Bed and Breakfast)	Minimum of 2 spaces 1 per 15 rooms hotel/motels > 75 rooms, an additional a 6-space visitor rack shall be provided	Class 1 - 60% Class 2 - 40%
Office (all), Retail Sales of Goods & Services, Restaurants, Research Establishments, Laboratories	1 per 250 m^2 Gross Floor Area (GFA) for first 5000 m^2 and 1 per 500 m^2 GFA for any additional area	Class 1 - 50% Class 2 – 50%
Shopping Centre	1 per 250 m^2 of gross leasable floor area for the first 5000 m^2 and 1 per 500 m^2 of gross leasable floor area for any additional area	Class 1 - 30% Class 2 – 70%
Industrial		
All	1 per 950 m^2 GFA	Class 1 - 80% Class 2 – 20%
Institutional		
Hospital	1 per 500 m^2 GFA plus 6 space rack at each entrance	Class 1 - 75% Class 2 – 25%
Public Transit Interchange	Minimum 6	Class 1 - 60% Class 2 – 40%
Place of Worship, Church	1 per 50 fixed seats	Class 2 - 100%

Civic /Library/Museum/Art Gallery	1 per 100 m^2 GFA	Class 1 - 20% Class 2 – 80%
Personal Care/ Nursing/ Home/ Group Home	1 per 15 dwelling units	Class 1 - 75% Class 2 – 25%
Community Care, Day Care	1 per 80 m^2 of GFA	Class 1 - 20% Class 2 – 80%
Correctional Institutions	1 per 50 beds	Class 1 - 70% Class 2 – 30%
Schools – All levels	1 per 10 employees	Class 1 -100% (employees only)
Elementary School	1 per 10 students	Class 1 - 50% Class 2 – 50%
Middle School	1 per 8 students	Class 1 - 50% Class 2 – 50%
Senior Secondary School	1 per 8 students	Class 1 - 50% Class 2 – 50%
Post-Secondary (includes trade schools)	1 per 5 students (full time equivalent, max. attendance)	Class 1 - 50% Class 2 – 50%
Post-Secondary Residence/ other institutional residence	1 per 4 residents	Class 1 - 50% Class 2 – 50%
Cultural & Recreational		
Stadium, Arena, Pool, Exhibition Hall, Entertainment/ theatre, similar places with spectator facilities	Min. 6-space rack 1 per 40 spectator seats 1 per 5 employees	Class 1 - 20% Class 2 – 80% Class 1 - 100% (employees only)
Gymnasium, Health Spa	1 per 80 m^2 of activity surface area (e.g. gym, pool, fitness room)	Class 1 - 20% Class 2 – 80%
Bowling Alley, Curling Rinks	1 per 2 alleys or sheets	Class 1 - 20% Class 2 – 80%

3.5 Policy Summary

Through the review of Official Community Plan and Transportation Master Plan, the following key points can be drawn from current City policy:

- Both the OCP and TMP provide specific policy direction to support sustainable development patterns and modes of transportation including walking, cycling, and public transit. These documents acknowledge the importance of integrating land use and transportation policy to achieve livability and sustainability goals.
- Specific land use designations that should be considered for reduced parking requirements based on OCP policy direction include: Colwood Corners, Seaside Village, Neighbourhood Centres, Mixed-Use Employment Centres, and Transit Growth Area.
- Parking management strategies are identified in the OCP and TMP that have yet to be included in the Land Use Bylaw. These include reviewing general parking requirements, developing regulation for electric vehicle charging infrastructure, and assessing the potentials impact of autonomous vehicles on off-street parking.
- To support the City's goal to make cycling safe, comfortable, and convenient, the TMP and OCP emphasize the importance of regulating short- and long-term bicycle parking along with end-of-trip cycling facilities.
- The parking management policies identified in these documents support OCP goals related to growth management, sustainable building, housing density and affordability, and transportation choice, including:
    - Specific parking requirement reductions for affordable housing to incentivize and lower costs for affordable development.
    - Parking supply reductions provide opportunities for GHG reductions in buildings and development oriented around sustainable transportation.
- Gaps remain in the implementation of these policies in current parking requirements, including:
    - Providing parking requirement reductions for sites in urban centres and with access to the frequent transit network, affordable housing or environmentally-friendly development.
    - Providing options for reduced parking requirements where developments support transportation demand management (TDM) strategies.
    - Implementing requirement for end-of-trip facilities for active transportation users. and electric vehicle charging infrastructure.

4.0 Parking Demand Assessment

Local parking demand information is summarized in the following section. This is intended to provide an understanding of current parking demand characteristics in Colwood and elsewhere on the Westshore as the basis considering appropriate parking supply rates in the updated parking regulations.

4.1 Approach

Parking demand data was gathered by two primary methods – collating pre-existing information and original data collection. The focus of the assessment is on multi-family residential uses. Parking characteristics for other key land uses such as commercial and institutional uses were deemed to be impacted by physical distances requirements associated with COVID-19 and any data findings not representative of typical conditions.

Existing parking demand information was assembled by reviewing past studies contained in Colwood council agenda packages. This information is primarily focused on multi-family residential uses and includes parking demand data obtained through both in-field observations and vehicle ownership data obtained from ICBC.

In-field observations were also conducted at representative sites beyond those addressed in past studies. Similar to previous studies, observations were undertaken at sites throughout the Westshore in different locations and with different tenures, including the following:

1. **Condominium**: Subject to strata title ownership, may or may not allow for rental;
2. **Apartment**: Owned by a single property owner or agency and rented to tenants at market rates; and
3. **Affordable Housing**: Housing sold or rented below market rates.

The assessment also considers variations in parking demand due to location, access to frequent transit, and unit size to understand how these factors can be reflected in parking regulation. All parking demand data collected was tabulated and assessed to establish average parking demand rates.

4.2 Results

Parking demand data was analyzed using the approach outlined above. Results are presented in the following sections. See **Appendix A** for a summary of all parking demand data used in this section.

Overall Parking Demand

The overall parking demand among all multi-family residential units was found to be approximately 0.98 vehicles per unit. This accounts for 36 multi-family residential sites in Colwood, Langford and View Royal, and represent approximately 1,281 total units.

Parking Demand, by Housing Type

Studies in other communities have demonstrated a clear difference in parking demand among multi-family units of differing ownership or tenure. To test this theory in Colwood, parking demand data was analyzed based on housing type for three distinct housing types - Condominium, Apartment, and Affordable Housing. As shown in **Table 7**, the average parking demand in condominium units (1.17 vehicles per unit) was found to be approximately 24% higher than that of apartments (0.89 vehicles per unit). In this analysis, affordable housing parking demand was similar to that of apartments at 0.87 vehicles per unit.

TABLE 7. AVERAGE PARKING DEMAND AT REPRESENTATIVE SITES

	Study Sites	Units	Observed Vehicles	
			Average (per unit)	Range (per unit)
Condominium	15	530	1.17	0.73 – 1.48
Apartment	13	556	0.89	0.42 – 1.75
Affordable	8	195	0.87	0.44 – 1.16
Overall	**36**	**1,281**	**0.98**	0.42 – 1.75

Parking Demand, by Number of Bedrooms

Various established research sources have quantified the difference in parking demand between units of a different size / number of bedrooms. The study found to be most representative of conditions in the Capital Region was a comprehensive study completed in King County, WA[4]. This was verified by a survey of a small number of local sites completed as part of the City of Victoria's review of off-street parking regulations. The parking demand ratios by number of bedrooms are as follows:

- One-bedroom units have a 20% higher parking demand than bachelor units
- Two-bedroom units have a 60% higher parking demand than one-bedroom units; an
- Three-bedroom units have a 15% higher parking demand than two-bedroom units.

Several BC municipalities have structured parking requirements by the number of bedrooms in dwelling units. The typical variation in requirements among select communities is highlighted below and in **Table 8**:

- Bachelor / Studio – 0.96 vehicles per unit
- One-Bedroom – 1.0 vehicles per unit (4.2% greater than bachelor units)
- Two-Bedroom – 1.30 vehicles per unit (30% greater than one-bedroom units)
- Three-Bedroom – 1.64 vehicles per unit (26% greater than two-bedroom units)

TABLE 8. AVERAGE PARKING DEMAND IN REPRESENTATIVE COMMUNITIES, BY NUMBER OF BEDROOMS

Unit Size	Municipalities							Average	Average Demand Ratio
	Town of View Royal	City of Langford	City of Duncan		District of Lake Country	City of West Kelowna			
			Downtown Area	All Other Areas		Westbank Centre	All Other Areas		
Bachelor / Studio	1.0	1.25	0.5	1.0	1.0	1.0	1.0	**0.96**	-
One-Bedroom	1.0	1.25	0.5	1.0	1.25	1.0	1.0	**1.0**	**+ 4.2%**
Two-Bedroom	1.5	1.25	1.0	1.2	1.5	1.25	1.5	**1.3**	**+ 30%**
Three-Bedroom	2.0	2.25	1.0	1.2	2	1.5	1.5	**1.64**	**+ 26%**

[3] King County Metro, Right Size Parking Model Code, December 2013, available online at: https://metro.kingcounty.gov/programs-projects/right-size-parking/pdf/140110-rsp-model-code.pdf

Parking Demand, by Location

Parking demand was analyzed based their location within Colwood. For the purposes of this analysis, only representative sites in Colwood were considered to maintain consistency between location definitions. Three distinct locations were identified based on the OCP Land Use Designations:

1. **Colwood Corners** – Sites within the Colwood Corners designation in the OCP;
2. **Centres** – Sites within other centres identified in the OCP, including Neighbourhood Centres, Metchosin and Lagoon Neighbourhood Hub, and Mixed-Use Employment Centres; and
3. **Other** – Sites in other areas including the Neighbourhood and Neighbourhood – Hillside and Shoreline designations.

As shown in **Table 9** The average parking demand site in Colwood Corners was found to be 0.75 vehicles per unit, approximately 16% lower than sites in the Centres area and 30% lower than those in the Other areas.

TABLE 9. AVERAGE PARKING DEMAND, BY AREA / LOCATION

Location	Average Observed Vehicles (vehicles per unit)	Difference
Colwood Corners	0.75	-30%
Centres	0.89	-16%
Other	1.07	--

Parking Demand, by Proximity to Transit

Access to reliable transit service has also been found to result in reduced parking demand in other communities. A study of residential parking demand in Metro Vancouver, as an example, found that access to frequent transit within 400m reduced parking demand by approximately 11% in condominiums and 27% in market rental sites[5].

A similar assessment was undertaken for the multi-family residential parking demand data specifically in Colwood. Sites within 200m of the identified Rapid or Frequent Transit Networks were isolated from those beyond 200m. Results showed that the average parking demand for the six sites within 200m of the Rapid or Frequent Transit Network was 40% lower than those beyond 200m, a difference of 0.75 vehicles per unit, to 1.26 vehicles per unit.

[5] Metro Vancouver. 2018 Regional Parking Study, Technical Report. Retrieved from http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RegionalParkingStudy-TechnicalReport.pdf

Again, this analysis applies only to multi-family residential sites, however a similar rationale for lower parking demand could be applied to employment land uses adjacent to transit corridors, particularly among land uses where parking demand is largely associated with commuting such as Office and Post-Secondary uses. It is also necessary to note that targeted Rapid Transit Network and Frequent Transit Network service levels have not been achieved in Colwood, and therefore the differential in parking demand from transit proximity is not necessarily reflected in the data collected.

Visitor Parking Demand

Observations of multi-family residential visitor parking were conducted at four representative sites in the Westshore. For the purposes of this analysis it is assumed that visitor parking for the site is accommodated on-site and that visitors are exclusively using parking allocated for that purpose.

At the four representative sites, peak demand for visitor parking occurred at a similar time, approximately 9:30pm on a Tuesday. The average demand among these sites was 0.12 vehicles per unit, with peak observations ranging from 0.08 to 0.17 vehicles per unit. Only one site had a rate lower than 0.1 vehicles per unit at this time. See **Appendix A** for complete visitor parking observations.

It should be noted that with visitor parking in particular, parking demand characteristics can vary quite significantly with distinct peaks in demand experienced during a limited number of occurrences focused on large gatherings or special occasions. In-field observations may not have captured these peak occurrences, although consideration should be given to the extent that parking supply should reflect infrequent peak periods.

5.0 Vehicle Parking

The following section is focused on best practices and a comparative review of parking regulations from other communities. The focus is on regulations specific to vehicle parking, including parking supply rates, design standards and requirements for accessible parking and electric vehicle (EV) charging. The updated off-street parking regulations will address other aspects of vehicle parking including items such as parking space dimensions and requirement for commercial vehicle (i.e., trucks) loading (i.e., trucks). This working paper is focused on the key aspects of the regulations and emerging trends, and as such items such as space dimensions and commercial loading have not been addressed.

5.1 Parking Supply Rates

Parking supply rates dictate the required number of parking spaces associated with various land uses. Minimum parking supply rates are the most common method of regulating off-street parking, where virtually all communities have established specific rates for most key land uses to ensure each is accompanied by at least the prescribed quantity of parking. While this approach has generally been effective in addressing concerns over new development contributing parking to established neighbourhoods, it has the potential to require parking at a rate above-and-beyond what is actually necessary to meet the needs of a particular site. This is especially true where minimum parking supply rates have been established to protect against a "worst case" scenario and/or do not reflect the factors known to influence parking demand that were identified in **Section 4** such as location, proximity to transit, unit type and size. Excessive parking supply leads to affordability issues, undesirable land use and urban form and negative environmental impacts, as was detailed in **Section 2**.

Municipalities also have the option to establish a "parking maximum" that defines an upper limit for parking supply. This is an approach that only select communities have in-place and typically only for a small number of land uses. Maximums may accompany minimum supply rates to provide a limited range of possible parking supply, or may be pursued instead of a minimum, thereby protecting against over-supply. This approach is most often applied in specified areas such as downtown or urban villages where land is scarce and the local government is seeking density and to protect against excessive parking supplies. Maximums may also help preclude "big box" style development where desired.

A third approach is to not regulate parking supply and instead rely on the market to determine an appropriate parking supply. Described by the City of Edmonton as "open option parking" (refer to the Edmonton case study on the following page), this approach relies on each development applicant to determine an appropriate parking supply in consideration of the many factors that influence parking needs, including the market appeal and ability to sell or lease their development once constructed.

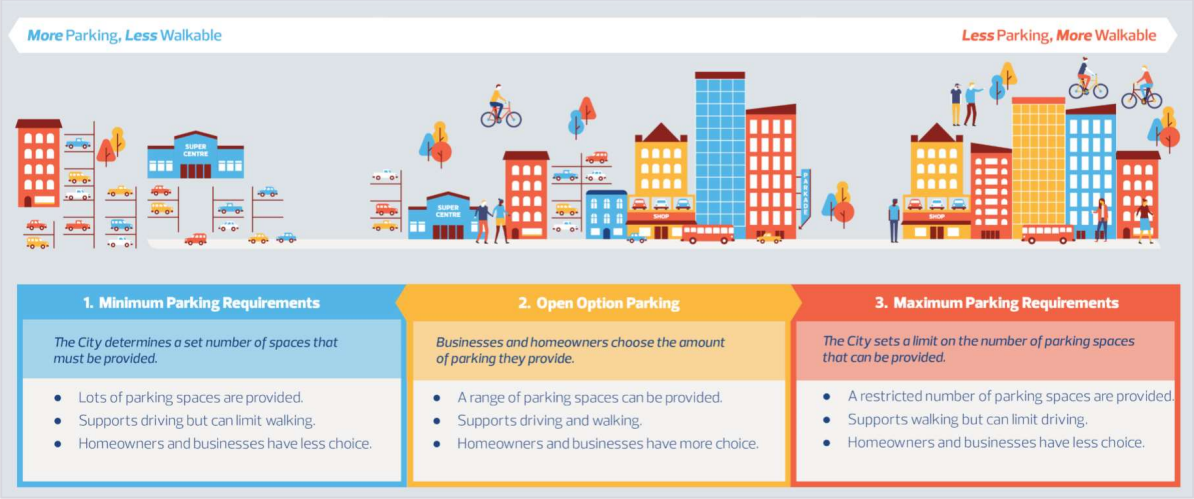
Case Study
City of Edmonton, AB

The City of Edmonton recently became the first North American city to eliminate minimum parking requirements. Referred to as "Open Option" parking, the new approach includes a full-scale removal of minimum parking requirements across the City, instead allowing developers, homeowners and businesses to decide how much on-site parking to provide on their properties based on their particular operations, activities or lifestyle.

Minimum requirements remain in-place for accessible parking and bicycle parking to ensure adequate supplies of each are provided, while parking maximums have been retained downtown and in designated transit oriented development ("TOD") and main street areas consistent with City goals to increase density and prioritize sustainable transportation in these locations.

The City of Edmonton's review of parking requirements included an extensive public consultation period and education campaign to ensure the community had the opportunity to comment on the proposed changes. A sample public-facing diagram communicating three approaches to regulating parking supply is shown in **Figure 4**.

FIGURE 4. THREE OPTIONS FOR REGULATING PARKING SUPPLY[6]



[6] City of Edmonton, Parking Rules for New Homes and Businesses, "Parking Regulation Options", access online at: https://www.edmonton.ca/city_government/urban_planning_and_design/comprehensive-parking-review.aspx

5.1.1 Minimum Supply Rates

A comparative review of the City's minimum parking supply rates for core land uses was undertaken to determine how they compare to rates in representative communities. A full account of the City's current minimum parking supply rates is provided in **Section 3.4**. The review of the City's rates compared to other communities is contained in **Appendix B**.

The following are the key take-aways from the comparative review.

General:

- Requirements for many of the City's land uses are expressed as units of measurement that are not easily determined at the time of application and/or may change over time (e.g., number of employees, students, washing machines, etc.).
- While most supply rates are expressed as one space per unit floor area (or employee), certain land uses are expressed using a non-standardized unit of measurement (e.g., Retail – 0.75 per 10m^2 of gross leasable floor area).

Single-Family Residential:

- The current single-family residential parking requirement is difficult to interpret when compared to those in representative communities. In these communities the supply rate is typically simple and expressed in plain language (e.g., Campbell River, 2 spaces per dwelling unit).

Multi-Family Residential:

- The current means of expressing the multi-family residential parking supply rate is challenging to understand and leads to confusion in undertaking the calculation (1.5 spaces per dwelling unit plus 1 spaces for each 100m2 of building floor area exceeding 60m2 times the number of dwelling units). The supply rate in most other communities is expressed in a more easily understood manner (e.g., Saanich, 1.5 spaces per dwelling unit).
- Lack of differentiated supply rates for condominium (i.e., strata ownership), apartment (market rental) and affordable housing. Differentiated rates are becoming increasingly common in other communities, a recognition of demonstrated differences in parking demand and/or supporting community objectives for rental or affordable housing.
- Visitor parking is included in the overall multi-family residential supply rate. This leads to some uncertainty as to the exact number of visitor spaces to be provided, as opposed to most other communities that require visitor parking above-and-beyond

the basic requirement (e.g., Central Saanich, 1.5 per dwelling unit plus 0.25 per dwelling unit for visitors' parking).

Office:

- The City's rates for Office uses is generally consistent with those in other jurisdictions.
- The City defines three office uses - single-tenant, multi-tenant, and medical offices - each having a unique parking supply rate. Most other representative communities use only one or two office land uses typically a general business or professional office and a medical office.
- The parking supply for medical offices is the most difficult to interpret among the categories of office uses defined in the Land-Use Bylaw, given that the parking requirement is expressed in terms of the number of dentists or doctors. To avoid confusion, there should be consistency among office uses in using one method to calculate parking requirements. For example, the Town of View Royal also defines single-tenant, multi-tenant, and medical office uses, but use floor area as means to calculate the parking supply rate.

Retail:

- The current parking supply rate for general retail uses is the highest among representative communities. The District of Saanich's rate (1 space per 14m^2) is comparable, however retail uses in most other communities were typically above 1 space per 20 m^2. The parking supply rate for banks and financial institutions is consistent with other jurisdictions.
- Like many other communities, retail parking requirements are inclusive of a variety of retail uses. Colwood specifically includes large format retail uses like supermarkets under this land use in addition to liquor stores. This variety could lead to parking oversupply in cases where retailers are required to provide the same number of parking spaces despite recognized differences in parking demand for between uses.

Shopping Centre:

- The number of shopping centre land uses in the Land-Use Bylaw is challenging to differentiate and more extensive than other communities. A single rate is more common in communities with a shopping centre land use.
- The Major Shopping Centre Major land use contains two different parking supply rates used that apply at different floor areas. Applying a single rate for this land use would allow for greater clarity in interpreting this requirement

Grocery Store:

- Few other communities define a minimum parking supply rate specifically for grocery uses. When compared these municipalities, the City has among the highest parking requirements for grocery uses with only Saanich requiring a similar rate.
- In Colwood, there are two grocery uses: neighbourhood grocery and supermarket, which could cause issues if not clearly defined. Other communities define only a single rate for grocery uses or would apply a broader retail parking supply rate.

Restaurant:

- The City has minimum supply rates for coffee shop and drive-in only restaurant uses but lacks a use that would address typical family restaurant or sit-down restaurant uses as is common in other communities.
- Calculating the parking supply rate for coffee shops based on the number of seats is consistent with some other communities. Whether determining parking supply by the number of seats or floor area, these other municipalities would apply this approach for all restaurant uses rather than using a constant number of parking stalls, as is the case for drive-in restaurants.

5.1.2 Supply Rate Variables

Several variables are applied by other representative communities as a means to provide parking requirements tailored to the context of a development. Depending on the community, these supply rate variables respond to the location, size, tenure, or proximity to transit of a site.

Location:

Among the most common supply rate variables is to provide parking requirements based on location. Many communities will identify areas with specific parking supply rates, particularly in central or urban core locations where amenities and transportation options are readily available for residents. Often these areas reflect OCP land use designations and general land use goals and objectives to which parking can contribute. For example, Nanaimo defines five unique areas within the City, each with their own parking requirement for multi-family residential development. Comox, Duncan, West Kelowna and Victoria all apply a locational variable to parking requirements in some land uses.

Unit Size / Number of Bedrooms

As discussed in **Section 4.2.2**, parking demand has been shown to vary widely between different sized units, and in particular the number of bedrooms. As such, parking regulations in many communities have adopted parking requirements for multi-family residential based on the number of bedrooms in a unit. Municipalities including Langford, View Royal Duncan apply specific parking supply rates based on unit size.

Building Type / Tenure

Structuring parking regulations based on building tenure is another viable option to provide flexibility in parking requirements and incentivize a variety of building tenures. It is widely recognized that building tenure influences parking demand, with rental apartments typically requiring fewer parking spaces than strata condominiums. This could be particularly important for the provision of affordable housing, as fewer required parking spaces places less of a financial burden on affordable development. The *Regional Housing Affordability Strategy* recommends pursuing this option for development, particularly in central areas or locations with ready access to transit or alternate forms of transportation.

None of the direct representative communities (i.e., Langford, View Royal, Saanich, etc) vary supply rates to reflect building type. Certain other communities such as Victoria and Nanaimo have varied rates to reflect demonstrated decreases in parking demand among rental buildings and as a means to encourage varied housing options, including affordable housing.

Transportation Options

Access to transportation options, particularly proximity to transit, is another method for structuring variable parking requirements. Albeit a small sample size, the parking demand assessment in **Section 4** demonstrated parking demand to be reduced among Colwood sites withing 200m of frequent transit corridors.

Again, few of the directly relevant communities include parking reductions for proximity to transportation options. Saanich includes a provision for reduced parking where a bus stop abuts the site, while Esquimalt offers a reduction among commercial and industrial uses only. Other communities that have revisited their parking regulations more recently include a provision for reduced parking where transit is nearby including Abbotsford, Vancouver, Calgary and Edmonton. These are considered best practices and not necessarily the norm in municipalities in the Capital Region.

Reductions in parking for proximity to cycling corridors has not been included in regulations elsewhere. Reductions for “walkability” is also not explicitly listed in regulations in other communities, although walkability is inherent in reductions offered for a downtown or urban location.

5.1.3 Parking Maximums

Off-street parking regulations typically specify minimum parking supply rates to ensure that sufficient parking is provided, but parking "maximums" may also be put in place to ensure that parking supply is not excessive. Establishing a maximum may be particularly important in the defined Colwood Corners, Seaside Village, Transit Growth Area, and Neighbourhood Centres areas where available land is more scarce and policies generally support increased density and structured parking. It may also have application to protect against unwanted "big box" type commercial development with excessive parking provision. Limiting parking supply is inline with the City's OCP land use and development goals and policy objectives to utilize parking to encourage mode shifts and reduce parking oversupply. Parking maximums are specifically cited in Policy 8.2.6.3 as an opportunity to meet these goals.

Only a small number of Canadian communities are known to have parking maximums in place and typically only larger municipalities. Exceptions include more modest sized communities like Whitehorse, Vernon, Kelowna, and Fredericton. Maximums are most commonly expressed as a percentage above the minimum parking supply rate (i.e., 125% of the minimum), limited only to sites within a downtown area or within a defined proximity of higher-order public transit, and applied to only certain land uses (commonly multi-family residential or downtown commercial).

5.1.4 "Open Option" Parking

As was highlighted above, the City of Edmonton is the first community in North America to eliminate minimum parking rates across the city, with the intent that each development application would include an appropriate parking supply. This change in regulations was implemented as of July 2020 and there is no information yet on the success of the change.

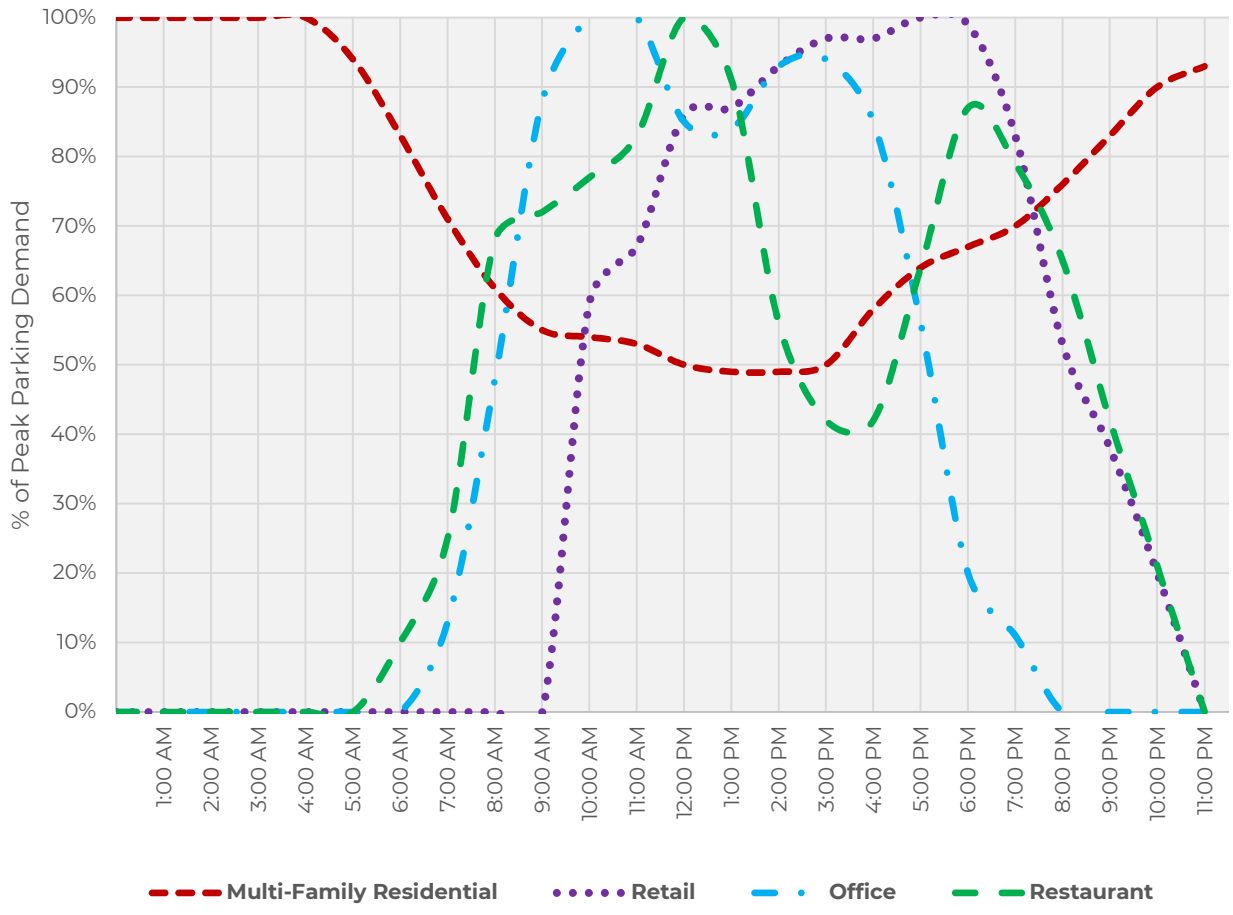
Select communities have removed required parking supply rates in specific areas of their community. The City of Victoria, for example, does not require parking associated with the office uses in the most central areas of downtown (defined as "Core Historic" and "Core Business"). This is by no means a full repeal of supply requirements on the scale that has been pursued in Edmonton.

5.2 Shared Parking

Shared parking refers to a scenario where two or more land uses in close proximity share a supply of parking spaces in order to reduce the overall parking supply for the site or area. The concept is successful where parking demand for different uses exhibits complementary demand patterns with peak demand experienced at different times of day. For example, an office building and multi-family residential are complementary land uses because office parking demand is typically highest during weekday working hours while residential demand is highest weekday evenings and weekends when office demand is low. Parking must remain unreserved (i.e., available for all users) for shared parking to work well.

The time-of-day parking characteristics for key land uses are shown in **Figure 5**.

FIGURE 5. TIME-OF-DAY PARKING DEMAND FOR KEY LAND USES[7]



[7] Time-of-day demand figures based on Institute of Transportation Engineers (ITE) *Parking Generation*, 4th Edition.

A shared parking regulation would help meet overall parking demand with fewer parking spaces, as well as support the City's desire to see mixed use development in areas specifically designated Colwood Corners and Seaside Village.

The following criteria require attention when considering a shared parking regulation:

- Land Uses – Specific land uses must be identified that may be included in the shared parking arrangement, with consideration for land uses that exhibit complementary parking demand patterns and are aligned with City policy directions.

- Reduction – The extent of the parking supply reduction that may be achieved through sharing is to be clarified, expressed as either a whole number or percentage of the total requirement between the land uses involved. This may include a maximum reduction that is no greater than the minimum requirement associated with the lesser of the land uses involved.

- Policy / Regulation – An allowance for shared parking may be included as a regulation in the Off-Street Parking Regulations or as one of the supporting rationale for a parking reduction in the Parking Variance Policy.

- Conditions – Certain communities include language to encourage / require that on-site parking spaces remain unreserved to uphold the sharing arrangement and/or a covenant to restrict a change in use that would adversely impact the shared parking arrangement.

Regulations that allow for shared parking are not common in other communities primarily due to the numerous possible combinations of land uses and associated reductions, as well as challenges ensuring spaces remain unreserved. Examples are highlighted in **Table 10**.

TABLE 10. SHARED PARKNG REGULATIONS IN OTHER COMMUNITIES

Community	Regulation
Central Saanich	Where it is determined that peak parking demand for two or more non-residential buildings, structures or uses on the same site or abutting sites occurs at different periods of time, the parking requirements for those buildings or uses may be reduced by a maximum of 25% of the total parking requirement
Nanaimo	Where more than one of the uses listed in the Bylaw are located on the same lot, parking spaces may be shared between the uses and is calculated by: a. The number of parking spaces required for the lot under this subsection is calculated by multiplying the number of parking spaces required for each land use by a given percentage where listed uses intersect. b. Where three or more uses are located on the same lot, the lowest reduction rate between any two of the uses shall apply.
Nelson	Where the peak use of off-street vehicle parking spaces for 2 or more uses on the same lot or adjacent lots occurs at different periods of time, the required number of off-street vehicle parking spaces for such uses in total may be reduced by no more than 25%.
Vernon	Where a development consists of a mix of use classes, the total on-site parking requirement shall be the sum of the on-site parking requirements for each use class, unless supported by a shared parking study endorsed by the authority having jurisdiction
West Kelowna	Where it is determined that the peak parking demand for a mixed use development with 2 or more buildings, structures or uses on the same parcel or abutting parcels occurs at sufficiently different times of the day, the General Manager may permit the cumulative parking space requirements to be reduced by a maximum of 25%.
Whitehorse	In the case of a mixed use development, or where two or more owners jointly provide and maintain composite parking facilities, the number of off-street vehicle parking spaces required shall be the sum total of off-street vehicle parking space requirements for each use unless the applicant can demonstrate to the satisfaction of a Development Officer that there is a shared use of parking spaces that would warrant a reduction in their collective requirements, in which case a Development Officer may reduce the requirements.

5.3 Cash In-Lieu of Parking

The Local Government Act (LGA) permits British Columbia municipalities to establish regulation allowing a prospective developer to pay cash in-lieu of required parking spaces. Cash in-lieu of parking is at the land developer's discretion, and is typically pursued where private off-street parking is not needed or is difficult to accommodate on-site due to physical or other constraints. Per the LGA, all monies received must be placed in a reserve fund for the purposes of providing:

a. New and existing off-street parking spaces, or

b. Transportation infrastructure that supports walking, bicycling, public transit or other alternative forms of transportation.

All monies received must be credited to the reserve fund, and the municipality is required to report annually on reserve fund contributions, expenditures, balance, and projected timeline for future projects to be funded. The City does not currently accept cash in-lieu of parking.

A number of specific conditions must be considered if a cash in-lieu regulation is to be pursued, as follows:

- Cost - A per-space cost must be established than applicant is to contribute for each required parking space that is not provided. Costs in other communities range significantly and are most commonly approximate $10,000 to $12,000 per space. Refer to **Table 11**. In setting rates, consideration should be given to the cost to provide parking, the value to the developer in not having to construct parking, and the City's goal to accrue funds to support active transportation infrastructure.
- Magnitude – An upper limit may be established to ensure that a minimum off-street parking supply is provided and so that an applicant cannot entirely "buy" their way out of supplying parking.
- Location – The option for cash in-lieu of parking may be limited only to locations where the City is strategically seeking to limit parking supply and/or generate funds for public parking or active transportation facilities.

City staff have indicated that the municipality is not interested in collecting cash in-lieu funds for public parking. On the basis that given the cost of land, it is unlikely such funds would cover the costs of acquiring lands and constructing facilities. Instead, staff have suggested that cash in-lieu funds should be used to build an active transportation reserve fund to support investments in pedestrian, cycling and transit infrastructure, which supports the modal shifts toward active transportation and public transit specified in the Official Community Plan.

TABLE 11. CASH IN-LIEU OF PARKING RATES IN OTHER COMMUNITIES

Community	Conditions	Rate (per space)
Comox	• The Town must own and operate a parking facility within 700 m • Not applicable for required spaces for dwelling units or B&B's • Public parking spaces built with the collected funds cannot be reserved	$11,500
Courtenay	• Only for one select commercial zone	$6,500
Langford	• Only where a City owned parking facility is within 150m	$11,000
Oak Bay	• Only where a District owned parking lot is nearby	Parking Space - $9,700 Loading Space - $14,500
Parksville	• Only for select zoning areas	$9,800
Sidney	• Only applies within a boundary established by the Town • Certain zoning areas may use 50% of payment toward permanent carshare memberships registered to units	$10,000
Sooke	• Only in areas outside of the Town Centre	Value equal to the outstanding parking requirement
View Royal	• Only for select zones and only to a maximum of 15% of total requirement	$12,000 Additional $10,000 if within 250 metres of a Town owned parking lot

5.4 Parking Variance Policy

A key outcome of the Parking Bylaw Update project is a supporting policy that identifies the conditions / provisions that the City may accept as support for a parking variance. This is to provide clarity to the development community on what the City will and will not accept as rationale for reduced parking, as well as provide the City with a transparent and defensible approach to evaluating variance requests.

A scan of representative communities with policies specific to parking variances was completed to understand the approach taken in other places.

Precedent Communities

Communities with parking variance policies include the following:

- City of Nanaimo, Policy for Consideration of a Parking Variance https://www.nanaimo.ca/docs/default-document-library/policy-for-consideration-of-a-parking-variance.pdf
- District of Saanich, Official Community Plan, Policy 37 https://www.saanich.ca/assets/Local~Government/Documents/Corporate~and~Annual~Reports/2008%20OCP.pdf
- City of Campbell River, Sustainable Official Community Plan, Policy 7.1.1 http://campbellriver.ca/docs/default-source/Document-Library/bylaws/sustainable-official-community-plan-(schedule-a-to-bylaw-3475-2012)-amended-to-bylaw-3640-2016.pdf?sfvrsn=21d96108_2
- District of Sooke, Official Community Plan, Policy 4.4.3 (q) https://sooke.civicweb.net/document/4044
- District of North Vancouver, Official Community Plan, Policy 5.1.8 https://www.dnv.org/sites/default/files/bylaws/Bylaw%207900.pdf
- City of Nelson, Official Community Plan, Downtown Policy 13 https://www.nelson.ca/DocumentCenter/View/227/Schedule-A---Goals-Objectives-Policies-PDF

Criteria

The following are the criteria used in other communities in support of parking variances:

- Urban Location – The proposal site is located in a downtown, urban area or "mobility hub" designation in an OCP or other plan where parking demand is anticipated to be reduced and transit, cycling and walking opportunities are present.
- Travel Options – Where the subject property is located immediately adjacent a high-order (or frequent) transit corridor or identified key cycling corridor.
- Affordable Housing – Where the site includes purpose-built affordable housing.
- TDM – The provision of specified transportation demand management (TDM) strategies are implemented, including carshare memberships, carshare vehicle contribution, cycling trip-end facilities, transit subsidy, or otherwise.
- Car Share – Where the proposal includes an on-site or nearby carshare vehicle and the vehicle and/or carshare memberships are purchased by the proponent.
- Nearby Parking – Where on-street parking is readily available nearby the subject property or there are opportunities to secure access to parking on nearby properties (secured through covenant or easement).
- Magnitude – Where only a minimal reduction in required parking is sought
- Shared Parking – Where the site contains two or more complimentary land uses with different peak parking hours and where on-site parking supply may be shared.
- Parking Study – Where the variance is supported by a technical study prepared by a professional and supported by municipal staff.

Beyond specific criteria used to evaluate variance requests, the City of Nanaimo policy specifically lists the following "Proposed Development Rationale" that applications are to demonstrate how they achieve each as rationale for the variance:

- Constraint – Meeting the parking requirements would unreasonably constrain or hinder development which is otherwise permitted on the property.
- Community Benefit - There is a net benefit to the community, environment and/ or immediate area that would be achieved through the variance approval.
- Land Use / Development - The proposed variance will result in a development that is consistent with development guidelines, any applicable neighbourhood plan and meets the character of surrounding land uses.
- Neighbourhood Consultation - The variance has been discussed with surrounding property owners, residents and the relevant neighbourhood association.

5.5 Accessible Parking

Dedicated accessible parking spaces are required throughout the community to ensure individuals with physical, sensory and cognitive challenges are able to access parking that is located and designed to specifically meet their needs.

The City's current accessible parking requirements are as follows:

> *In any development requiring 25 or more parking spaces, accessible parking spaces clearly marked for the exclusive use of vehicles properly displaying a decal issued to persons with disabilities shall be provided on the following basis:*
>
> *a) Parking spaces shall be provided in the ratio of 1 for every 50 parking spaces required and one parking space shall be provided in respect of any remainder less than 50.*
>
> *b) Each parking space shall be a minimum of 3.7 m in width and shall be the nearest parking space or spaces to a building entrance that accommodates wheelchair access.*
>
> *c) Drop curbs shall be provided on any curb between the parking space and the building entrance to accommodate wheelchair access.*
>
> *d) Each space shall have a firm, slip-resistant and level surface.*
>
> *e) In the RTS-2 Zone, parking spaces for persons with disabilities shall be provided at 5 percent of the total projected number of dwelling units in the building.*

Requirements for accessible parking supply in other communities are identified in **Table 12**.

TABLE 12. ACCESSIBLE PARKING SUPPLY REQUIREMENTS IN OTHER COMMUNITIES

Community	Required Supply
Central Saanich	One space for every dwelling unit specifically designed to be used by a disabled person 2% of the total spaces provided where 11 or more spaces are required
Courtenay	In developments requiring 20 or more parking spaces, 1 accessible space must be provided plus 1 for every 75 additional spaces
Duncan	1 accessible space must be provided for the first 20 required spaces plus 1 for every 40 additional required spaces
Esquimalt	In developments requiring 25 or more parking spaces, accessible spaces must be provided for 1 of every 50 spaces plus 1 space for any remainder in excess of the required number divided by 50 For Congregate and Seniors' Apartments, accessible spaces must be provided for 1 of every 6 parking spaces
Langford	For Commercial uses, a minimum of 1 accessible space in developments requiring between 10 and 30 off-street spaces, with an additional 1 for every 50 spaces in excess of 30
Saanich	In developments requiring 25 or more parking spaces, accessible spaces must be provided for 1 of every 100 parking spaces
Sidney	For Commercial uses, a minimum of one accessible space where more than 9 and fewer than 21 total spaces are required (excluding residential) and one for every 20 spaces in excess of 20
Sooke	Number of accessible spaces in the required parking supply: 2 – 10 required spaces: 1 accessible space 11-50 required spaces: 2 accessible spaces 51-100 required spaces: 3 accessible spaces Above 100 required spaces: 3 plus 2 per 100 spaces

Minimum Supply

Generally, the City's established requirement for accessible parking supply is inline with other communities and reflects best practices. The BC Building Code (which prior to 2018 included accessible parking requirements for the province) included a supply rate of "where more than 50 parking stalls are provided, parking stalls for persons with disabilities shall be provided in the ratio of 1 for every 100 or part thereof)", which the City's current rate exceeds.

Minimum Supply, High Generating Uses

Consideration may be given to increase the accessible parking requirement associated with specific land uses anticipated to have a higher demand for accessible parking. Examples could include medical (i.e., Hospital; Office, Medical) and seniors housing uses (i.e., Congregate Care; RTS-2, Towncentre Seniors Residential zone), as well as residential units specifically design for universal access and likely to be inhabited by an individual(s) requiring accessible parking.

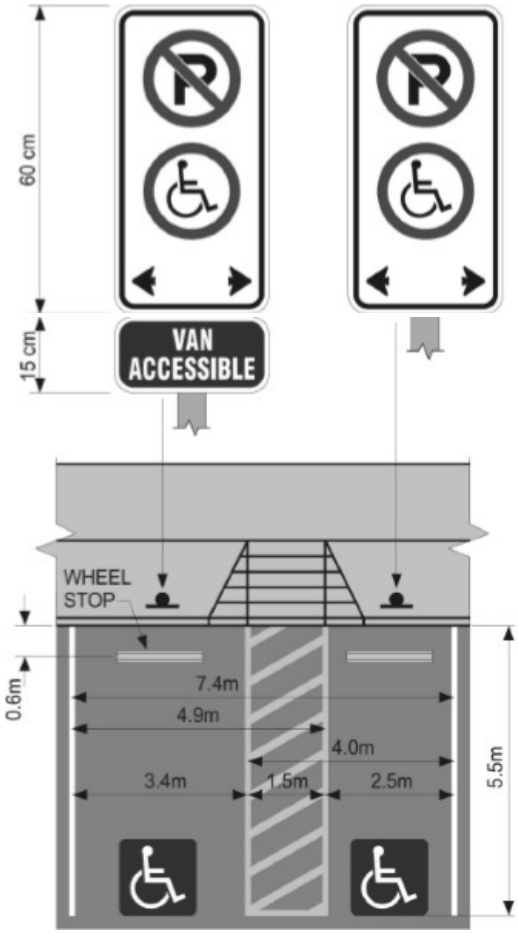
Minimum Supply, by Space Type

A current best practice included in the American with Disabilities Act (ADA) and proposed to be coming forward in forthcoming Canadian Standards Association (CSA) standards updates, as well as in certain leading BC municipalities (i.e., Richmond, Surrey), is to differentiate between two unique accessible parking user groups, as follows:

1. Limited Mobility – This user group experiences challenges with limited vision, strength or dexterity that requires they park as close as possible to their end destination. This user group benefits from a clear circulation aisle adjacent the parking space but does not need parking space wider than a conventional parking space. Spaces for this user group are simply referred to as “Accessible” (or accessible parking).
2. Assisted Mobility – This user group relies on a wheeled mobility device, such as a wheelchair (manual or motorized) or mobility scooter. They require a wider parking space to allow for maneuvering a mobility device in/out of a vehicle, but do not necessarily require close proximity to their end destination as they are capable of wheeling themselves over distance, although a circulation space between parking space and destination that is safe and free of physical barriers is important Spaces for this user group are referred to as “Van Accessible” (or van accessible parking).

An example from the City of Richmond’s off-street parking regulations is included in **Figure 6** articulating the differing spatial requirements and signage associated with accessible and van accessible parking spaces.

FIGURE 6. ACCESSIBLE + VAN ACCESIBLE DESIGN REQUIREMENTS, CITY OF RICHMOND[8]



[8] Based on diagram from City of Richmond, Zoning Bylaw 8500, Section 7: Parking and Loading, page 7-5 Available online at: https://www.richmond.ca/__shared/assets/ParkingLoading24226.pdf

5.6 Electric Vehicle Charging

EV Uptake

Electric, hybrid, and alternative energy vehicles are becoming more common and more affordable. While the overall number of electric vehicles (EV) remains relatively low, uptake has increased significantly in Colwood and throughout the Capital Region. Data compiled by the Victoria Electric Vehicle Association shows that there were over 5,600 licensed EVs on Vancouver Island as of March 2020, up from 2,800 in March 2019. The data groups Colwood, Langford, and Highlands together and says there were 369 EVs as of March 2020, which is up 97% from the 187 recorded in March 2020.

According to the 2017 CRD Origin Destination Household Travel Survey, approximately 1,900 of the 255,300 vehicles (0.7%) in the CRD are electric only. However, this number has increased from the 100 EVs identified in the 2011 survey. At the Provincial level, EV sales are also rapidly increasing. In 2019, EVs made up 9% of all light duty vehicles sold in BC, up from 4% in 2018. There are now over 30,000 EVs on the road. Sales increase of 100% over the previous year, and this followed a 58% growth in sales from 2017-2018.

These trends indicate that EV sales will likely continue to grow, especially as the costs of batteries decline, charging stations become more prevalent, and government incentives are offered to off-set the purchase price. The province is incentivizing residents and businesses to transition to EVs through the Zero-Emission Vehicles Act, which calls for 10% of all new light-duty cars and trucks sold to be zero-emissions[9] by 2025 and 100% by 2040.

About EV Charging

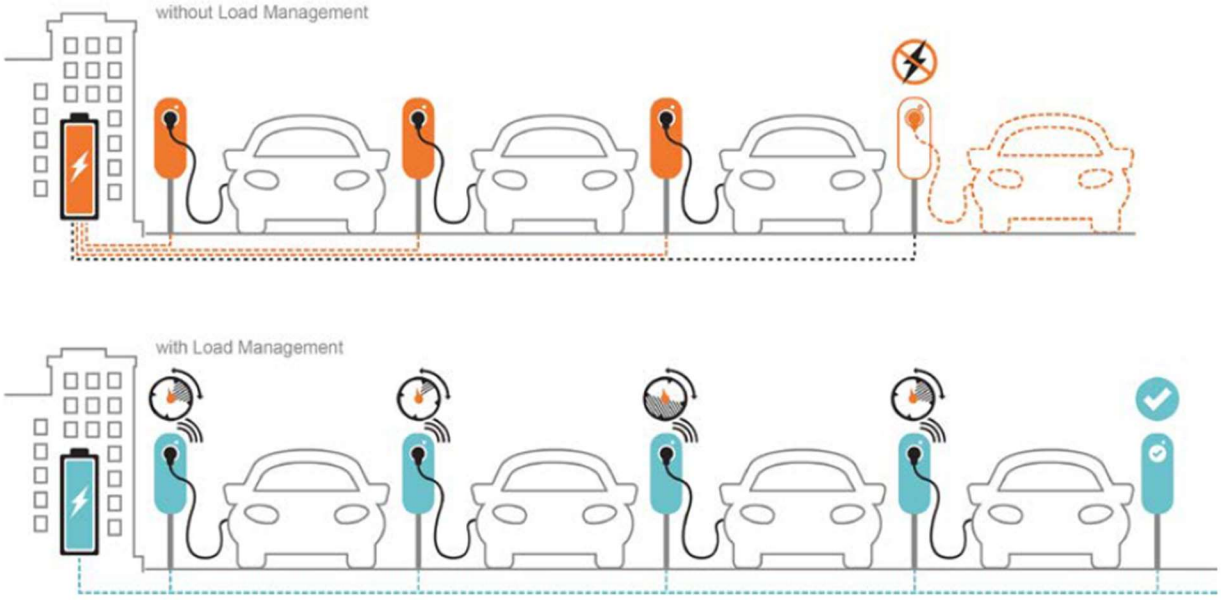
There are three levels of EV charging receptacles:

- Level 1: AC 120V (common household outlets)
- Level 2: AC 240V (higher power and require dedicated circuit)
- Level 3: DC Fast Charging (fastest but significantly more expensive to install)

One concern with EV charging is the potential draw on the utility system. Load management and load sharing can be used to reduce peak power demand and improve the overall utilization of EV charging systems by allowing multiple EV charging stations to share the same electrical line (see **Figure 7**). This distributes power equally, ensuring that all cars plugged into the system will charge. Both the Saanich and Victoria (proposed) bylaws discuss the use of EV Energy Management Systems (EVEMS) (i.e. load management) to reduce peak power demand and improve efficiency, thereby reducing electrical infrastructure costs.

[9] Zero emission vehicles include battery electric, plug-in hybrid electric, and hydrogen fuel-cell vehicles.

FIGURE 7. ILLUSTRATIVE EXAMPLE OF LOAD MANAGEMENT[10]



EV Charging in Parking Regulations

The availability of EV charging is key to facilitating the adoption of EVs. Charging stations may be installed by the City, CRD or other public agency, or provided on private property. Development regulations present the opportunity to ensure appropriate EV charging considerations are included in new development.

There are two general means of including EV charging in regulations:

1. Some communities require that a development be 'EV ready' (i.e., future-proofing the parking by providing an energized outlet capable of providing Level 2 charging or higher) so that future occupants seek to install charging stations. This approach does not represent a significant cost for developers and builders in the interim and allows for the future installation of EV charging station when demand dictates.

2. Another approach is to require dedicated EV charging infrastructure installed from the start. This may include Level 1 charging in residential sites where vehicles are typically parked overnight or for long periods of time, or Level 2 charging in commercial, institutional or other uses where vehicles are typically parked for a shorter period of time and benefit from a faster charge.

[10] Source: Capital Region Local Government Electric Vehicle (EV) + Electric Bicycle (E-Bike) Infrastructure Planning Guide

Appendix C shows electric vehicle charging requirements in other communities. A number of larger communities in Metro Vancouver have been included for comparison purposes, based off a recent policy review completed by the City of Victoria.

Saanich has recently become the regional leader in EV parking requirements, releasing detailed requirements that will become active as of September 2020. Their bylaw is the most detailed in the region, with definitions for a range of EV charging technologies and detailed requirements for a range of institutional, commercial, cultural, recreational, and industrial uses[11]. Saanich's approach is to add EV charging requirements directly into the detailed off-street parking supply table in their bylaw to make it very clear what is required for each land use category.

Saanich requires one energized space in all single family residential and 100% level 2 EV-ready in all multi-family residential. They also have requirements for the installation of EV charging units (referred to as "Electric Vehicle Supply Equipment" or EVSE[12]), with minimum requirements in institutional land uses (e.g. hospitals and schools) as well as office, industrial, cultural, recreational, and retail land uses.

The approach taken by Saanich is above-and-beyond the recommendations of the 2019 CRD Local Government Electric Vehicle + Electric Bicycle Infrastructure Planning Guide, which suggests EV-ready regulations for residential uses and a basic provision of chargers in commercial, institutional and other uses.

The City of Victoria is also considering updates to their bylaw regarding EV charging requirements, as outlined at the Committee of the Whole meeting on June 18, 2020 (see report dated June 4, 2020: *Electric Vehicle (EV) Ready Requirements for New Construction*).

Capital Region Local Government Electric Vehicle (EV) + Electric Bicycle (E-Bike) Infrastructure Planning Guide

This resource document for local governments was developed by the Capital Regional District in 2018 to guide various aspects of EV charging infrastructure. As the City considers new development regulations requiring EV charging, reference should be made to the CRD document to understand some of the key challenges associated with regulations, including the development costs associated with installing chargers and issues with chargers in strata buildings.

[11] See: Zoning Bylaw, 2003, Amendment Bylaw, 2020, No. 9627

[12] Defined as "a complete assembly consisting of conductors, connectors, devices, apparatus, and fittings installed specifically for the purpose of power transfer and information exchange between a branch electric circuit and an electric vehicle."

6.0 Bicycle Parking

6.1 Bicycle Parking Supply

Appendix D compares the supply rates of short- and long-term bicycle parking across different communities. Colwood (as well as Sooke, Saanich, and View Royal) expresses the supply of each type of bike parking as a percentage (e.g. 60% Class 1, 40% Class 2). However, the more common approach is to provide set supply rates for each type of bicycle parking, with no percentages used.

Municipalities take varying approaches in terms of the number of land use designations described in their bicycle parking bylaws. Colwood, Vancouver, North Cowichan, and others take a detailed approach, assigning requirements to a long list of sub-categories. Other municipalities use fewer categories (e.g. "all institutional uses" compared to defining requirements for each type of school).

It is important to consider the underlying rationale for determining supply rates in specific land uses. Municipalities may also wish to align these land use categories with the categories used for off-street motor vehicle parking.

A comparison of Colwood's bicycle parking supply rates across core categories showed the following:

General:

- Saanich and Colwood have almost identical bicycle parking requirements and land use categories. View Royal and Langford also have very similar requirements to Colwood.
- Central Saanich uses highly generalized land uses and lacks requirements for certain land uses but is progressive in terms of long-term multi-family requirements.
- Esquimalt and Oak Bay have no requirements.
- Vancouver and North Vancouver were included as examples of generally higher/more progressive requirements.

Multi-Family Residential:

- Long-term:
    - Colwood's rate of 1 long-term/unit is comparable to Langford, Saanich, Sidney, View Royal; higher than North Cowichan; lower than Central Saanich, North Vancouver, Vancouver (1.5 long-term spaces/unit).

  - Numerous cities have no requirements (e.g. Campbell River, Courtenay, Esquimalt, Oak Bay.

- Short-term:
  - Whereas Colwood, Saanich, and Sidney require only 6 short-term spaces per apartment (regardless of size), other municipalities require short-term bike parking as a ratio based on number of dwelling units.

Commercial / Office:

- Land use categories:
  - Common to split up hotel, office, and retail.
  - Some sub-divide further: live-work, restaurants.
  - Sooke has requirements specific to a parking structure/lot.
- Hotel requirements are similar, with 1/15 rooms and 6-space rack min required if >75 rooms.
- Office / Retail: Colwood's rates of 1 per 250m^2 Gross Floor Area (GFA) (split Class 1 and 2) are lower compared to others like North Cowichan, North Vancouver, Sidney, and Vancouver.

Industrial:

- Long-term: variation in ratios per GFA; Sidney requires a minimum of 2 plus a floor space ratio.
- Short-term: Sidney and North Vancouver require minimum 6, while Vancouver does not require any.

Institutional / Civic:

- Colwood, Saanich, and View Royal have the most detailed list of land use categories.

6.2 Bicycle Parking Design

Bicycle parking should be convenient, safe, secure, functional accessible, and where possible, aesthetically pleasing. Local governments play a key role in ensuring that high-quality bicycle parking is available in sufficient quantities in their communities. Where there is not enough bicycle parking, or the racks are low quality and poorly located, people are less likely to cycle. Additionally, there may be bicycle theft, sidewalk clutter, and damage to street furniture and property.

Several detailed bicycle parking design guidelines exist, including Chapter H.2 of the B.C. Active Transportation Design Guide and the Association of Pedestrian and Bicycle Professionals' Bicycle Parking Guidelines (2nd Edition) and Essentials of Bike Parking. These guides cover bicycle parking principles, the pros and cons of various rack designs, different types of short- and long-term bicycle parking, and various other elements.

By contrast, although the design and layout of bicycle parking facilities may be defined in a bylaw, most bylaws contain only the minimum standards that will ensure a functional and accessible bicycle parking facility. Providing too much detail may be inflexible and cumbersome for developers. For example, some of the bicycle parking guidance in the Land Use Bylaw contain a level of detail and language that would be better suited in design guidelines rather than a bylaw.

The following elements are commonly provided in land use and parking bylaws.

Location

Parking bylaws should outline the desired location of bicycle parking to ensure convenient access. For example, Sidney and Victoria specify that the bicycle parking must be located on same lot as the building, structure, or use they are intended to serve. The City of Victoria also states that short-term bicycle parking must be no more than 15 metres from the building entrance (with the exception that where 6 short-term spaces are required, any additional spaces may be located more than 15 metres from the entrance).

Vancouver requires that short-term bicycle parking be located "in a convenient, well-lit location that provides visual surveillance by occupants of the building the racks are intended to serve," and says that if the racks are not readily visible to visitors to a site, directional signage to the racks shall be provided.

Some bylaws also require short-term bicycle parking to weather protected. The City of North Vancouver requires that at least 50% of short-term spaces by sheltered from the elements where more than 6 short-term spaces are required. Several bylaws also specify that long-term bicycle parking be in a secure, weather-proof location or, in the case of bicycle lockers, that the locker is weatherproof.

North Vancouver also specifies that bicycle parking shall by located off-street unless on-street placement (e.g. bicycle corral) is approved by the City. Their bylaw also specifies that a bicycle parking stall shall not be located in a maneuvering aisle or pedestrian pathway.

Access to long-term bicycle parking is also an important consideration. Often, long-term parking facilities can be located in parkades or basements, which can present access challenges and both real and perceived safety concerns.

Victoria specifies that long-term bicycle parking be located within one floor of finished grade and, if accessed by a stairwell only, the stairwell must include a ramp for bicycles. North Vancouver requires that long-term spaces either be at the level of the grade or at the first level of vehicle parking above or beneath grade, and must be accessed directly on grade or by elevator from a primary entrance.

Stall Dimensions + Layout

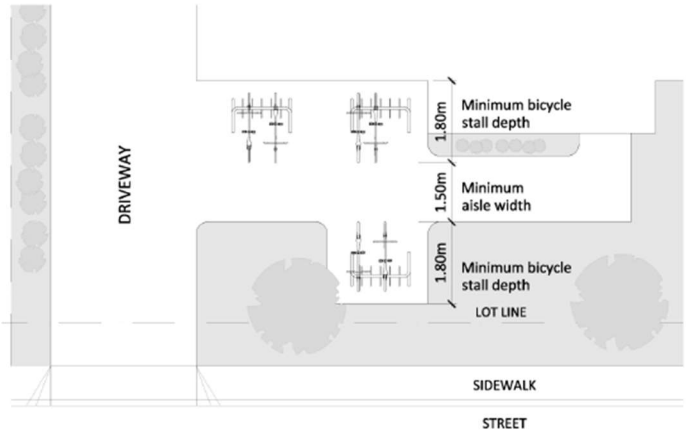
The minimum bicycle parking stall depth, aisle width, and distance between adjacent racks, doorways, and walls should also be defined so that the racks are able to meet their advertised capacity. These dimensions can change depending on the installation angle of a bicycle rack as well as the type (ground anchored or wall mounted). The aisle width is important to ensure that sufficient space if provided for maneuvering while holding a bicycle. The minimum door opening is also key, as this can be a limiting factor for larger bicycles.

The City of Victoria provides a detailed table explaining the minimum dimensions (see below) as well as sample short- and long-term bicycle parking layouts to aid in the comprehension of the bylaw requirements.

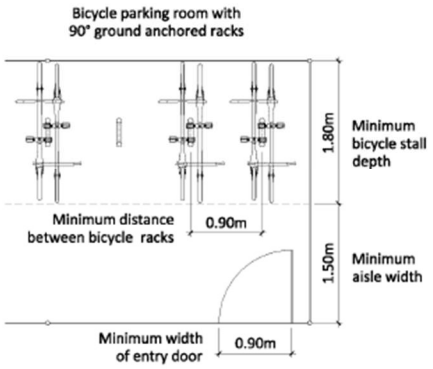
Sample bicycle parking design / layout requirements, City of Victoria:

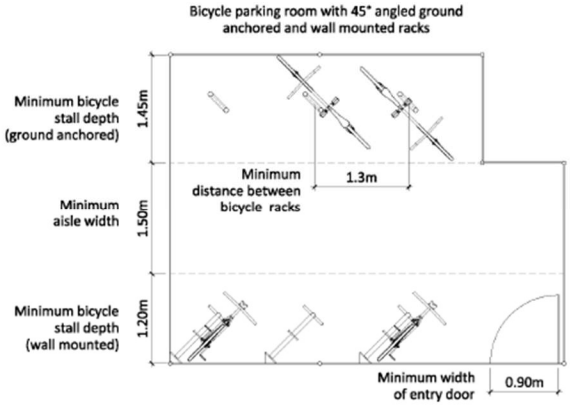
	Ground Anchored Rack		Wall Mounted Rack	
Angle of Rack (in an aerial perspective, measured from the plane of the nearest wall of a building)	>45 degrees	≤45 degrees	>45 degrees	≤45 degrees
Minimum stall depth	1.8	1.45	1.2	1.2
Minimum aisle width	1.5	1.5	1.5	1.5
Minimum distance between bicycle racks (for racks that accommodate two or more bicycles)	0.9	1.3	0.9	1.3
Minimum distance between bicycle racks (for racks that accommodate no more than one bicycle)	0.45	0.65	0.45	0.65
Minimum distance between bicycle racks and entrance door to bicycle storage facility	0.6	0.6	0.6	0.6

Example: Short-Term Bicycle Parking Configuration



Examples: Long-term Bicycle Parking Configurations





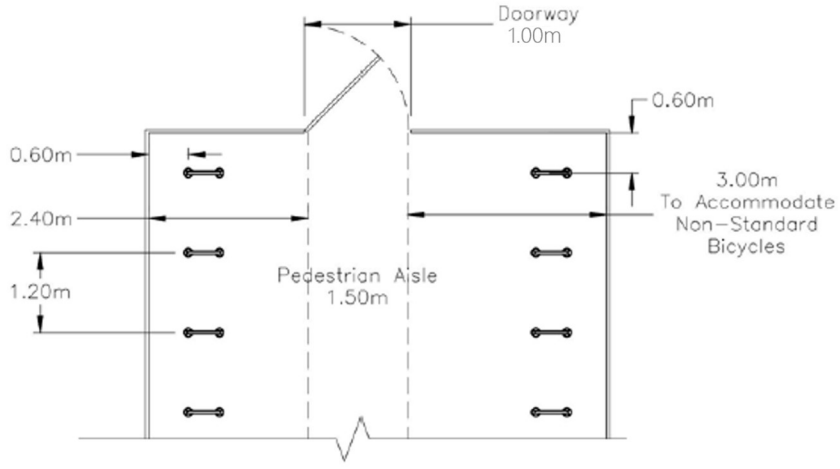
Accommodating Non-Standard Bicycles

The B.C Active Transportation Design Guide (BCAT) also provides sample bicycle parking layouts, with slightly larger minimum dimensions than Victoria (see below). This is important for accommodating "non-standard" bicycles such as cargo bicycles, recumbent bicycles, adult tricycles, bicycle with trailers, and adaptive bicycles for people with mobility impairments. These bicycle types are becoming increasingly common, as they help to make cycling accessible to a larger number of people and trip purposes (e.g. grocery shopping, taking children to school, etc.).

Many non-standard bicycles are longer, wider, and heavier than a typical bicycle, making them challenging to park using conventional bicycle racks and extremely difficult (if not impossible) to park with vertical racks. BCAT recommends that for both short- and long-term bicycle parking facilities, 10% of all bicycle parking spaces should be able to accommodate larger, non-standard bicycles such as cargo bicycles and bicycles with trailers. BCAT also states that multi-family residential buildings and schools should have the highest proportion of non-standard sizes, followed by commercial and office buildings. A stall depth of at least 3.0 metres should be used for these spaces. These spaces may be marked with a sign or pavement markings identifying their purpose as a spot for non-standard bicycles, in order to encourage compliance.

Electric bicycles must also be accommodated in short- and long-term bicycle parking requirements. Due to their motors, e-bikes tend to be larger and heavier than standard bicycles, making it challenging to park them on vertical racks. Additionally, they require access to electrical outlets for charging. More details on e-bikes and access to charging is provided in Section 6.4.

Sample long-term bicycle parking layout from the B.C. Active Transportation Design Guide:



Rack Type

Off-street, long-term bicycle parking facilities often utilize high density bicycle racks such as vertical (wall-mounted) racks or two-tier racks in order to save space. However, these high-density bicycle racks are not universally accessible (as they can require lifting up the bicycle) and they may not fit non-standard bicycles.

As a result, BCAT recommends that a minimum of 50% of all bicycle parking spots in any off-street, long-term bicycle parking facility be basic, on-ground bicycle racks that serve all ages of abilities, with high density bicycle racks providing additional capacity as needed. The City of Victoria bylaw also states that at least 50% of long-term spaces by ground anchored. The City of North Vancouver bylaw states that vertical racks may count towards no more than 35% of required secure bicycle parking spaces.

Rack Design + Security

Bylaws typically aim to ensure the security of bicycle parking by requiring that a rack is permanently anchored to the ground or a wall (e.g. City of Victoria). North Vancouver specifies that racks shall be surfaced with a hard, durable material such as asphalt, concrete or pavers. Vancouver requires that racks be constructed of sturdy, theft-resistant material and shall have secure, theft-resistant anchoring to the floor or ground. It also specifies that the rack shall enable the bicycle frame and front wheel to be locked with a U-style lock.

The City of Vancouver outlines detailed security regulations for long-term bicycle parking, including the type of fencing and the use of theft resistant materials. Both Vancouver and the City of North Vancouver state that bicycle compounds (off-street, secure parking rooms) shall be designed to accommodate a maximum of 40 bicycles per compound. Sidney looks to address safety concerns by stating that the whole interior of the bicycle room shall be visible from the entry door.

6.3 Cycling End-of-Trip Amenities

End-of-trip amenities include any amenity provided in a development that makes cycling easier, more convenient, and more comfortable, particularly for commuting. Basic end-of-trip amenities typically include:

- Change rooms
- Storage lockers
- Showers
- Sink / wash basin
- Bicycle repair equipment (tools, tire pump, workbench or stand)

Some bicycle parking facilities provide additional amenities such as bulletin boards, multi-modal trip information (e.g. maps and bus timetables), towel service, and even small lounges with seating to encourage social interaction.

Cycling end-of-trip facilities may be required in off-street parking regulations or encouraged and used as rationale for a reduced parking supply. Beyond bicycle parking, a requirement for cycling end-of-trip facilities is not commonly found in off-street parking regulations in other communities. Where it is found, it is typically provided as a ratio of the number of required long-term bicycle parking spaces. The following are examples:

- For example, in North Vancouver, one shower and wash basin are required if 3-10 long-term bicycle parking spaces are required, and the shower and wash basin requirements increase by one for each increase of 10 parking spaces. Toilets are not be required unless 30 or more long-term bicycle parking spaces are required.
- The City of North Vancouver bylaw also includes an equitable access to facilities clause, stating that facilities shall be equally divided by gender (or can be gender neutral if a smaller facility) and must include a minimum of one wash basin, grooming station, shower, and locker that is accessible to a user in a wheelchair of each gender.
- Vancouver has separate requirements for office/retail/service uses and for other uses. Both Vancouver and North Vancouver mandate grooming stations (with requirements for counter space and electrical outlets). North Vancouver includes requirements for the supply and size of personal clothing lockers.
- Esquimalt's bylaw uses end-of-trip facilities as a direct TDM measure, listing showers and change rooms (along with short- and long-term bicycle parking and proximity to regional transit) as criteria for being able to reduce motor vehicle parking requirements.

Sample cycling end-of-trip facility requirements from the City of Vancouver:

6.5.4 The number of water closets, wash basins and showers required by section 6.5.2 shall conform to Table 6.5A for Office and Retail and Service uses, and shall conform to Table 6.5B for all other uses.

Table 6.5A

Use	Minimum Number of Fixtures		
	Water Closets	Wash Basins	Showers
Office	1 water closet for every 10 Class A bicycle spaces up to 50 spaces and one for every 20 spaces above 50	1 wash basin for any development requiring between 5 and 10 Class A bicycle parking spaces, plus one for every additional 20 spaces up to 50 spaces and one for every 40 spaces above 50	1 shower for every 10 Class A bicycle spaces up to 50 spaces and one for every 20 spaces above 50
Retail and Service Uses	1 water closet for every 10 Class A bicycle spaces up to 50 spaces and one for every 20 spaces above 50	1 wash basin for any development requiring between 5 and 10 Class A bicycle parking spaces, plus one for every additional 20 spaces up to 50 spaces and one for every 40 spaces above 50	1 shower for any development requiring between 5 and 10 Class A bicycle spaces, plus one for every 40 spaces above 10

Table 6.5B
Bicycle End of Trip Facilities
Forming part of 6.5.4

Required Number of Class A Bicycle Spaces	Minimum Number of Fixtures		
	Water Closets	Wash Basins	Showers
0-3	0	0	0
4-29	2	2	2
30-64	4	2	4
65-94	6	4	6
95-129	8	4	8
130-159	10	6	10
160-194	12	6	12
Over 194	12 plus 2 for each additional 30 bicycle spaces or part thereof	6 plus 2 for each additional 30 bicycle spaces or part thereof	12 plus 2 for each additional 30 bicycle spaces or part thereof

6.5.5 There shall be no less than 1 grooming station for each shower provided, and each station shall be:

(a) separate from the wash basin;
(b) equipped with a mirror and an electrical outlet; and
(c) equipped with a counter top with a minimum width of 600 mm and a minimum depth of 250 mm.

6.4 Electric Bicycles

Electric bicycles (e-bikes) present an opportunity to significantly increase the rate of cycling among Colwood residents, particularly those who are unwilling or unable to cycle over long distances and/or steep topography. E-bikes are rapidly growing in popularity around the world, with over 150 million e-bikes sold worldwide over the past decade.

The Province is incentivizing e-bike purchases by offering rebates to increase affordability. On July 27, 2020, the Province announced that people who trade in a vehicle to scrap will have access to a rebate of $1,050 toward the purchase of any type of new e-bike (an increase of $200 from the 2019 rebate). Additionally, the Province is introducing a one-year pilot project that enables a rebate of up to $1,700 for business owners toward the purchase of a cargo e-bike.

While off-street parking regulations cannot address barriers to e-bike use such high purchase price and road safety concerns due to a lack of cycling infrastructure (the City can address this challenge through targeted investment in public infrastructure), other key barriers such as fear of theft due to a lack of secure storage and "range anxiety" resulting from limited charging opportunities can be addressed through the inclusion of specific e-bike requirements in the City's off-street parking regulations.

The B.C. Active Transportation Design Guide (BCAT) recommends that 50% of long-term and 10% of short-term bicycle parking be designed to accommodate e-bikes by providing an electrical outlet. The CRD's *Capital Region Local Government Electric Vehicle (EV) + Electric Bicycle (E-Bike) Infrastructure Planning Guide* also recommends electrifying 50% of all long-term spaces.

The review of off-street parking regulations from other communities found that only three of those reviewed – Nanaimo, North Vancouver, and Vancouver – have requirements specific to e-bike parking. None of the municipalities have short-term requirements. Vancouver's long-term requirements that 50% of spaces be electrified match the recommendations from the CRD and BCAT. Nanaimo's long-term recommendations are more ambiguous, stating that all parking areas shall have an outlet (but not specifying how many outlets per storage area).

Based on guidance from the CRD document referenced above, as well as understanding of best practices from elsewhere, the following is brought forward for consideration in the City's off-street parking regulations to facilitate e-bike use:

- Electrified 110v outlets located no more than 2m from the e-bike parking area
- E-bike parking Identification sign(s)

Beyond specific e-bike regulations (above), the provision of secure, high-quality short- and long-term bicycle parking will help address concerns over e-bike theft.

6.5 Mobility Scooters

Colwood's current bylaw (2.2.08) states that "*Bicycle parking spaces or facilities required to be provided under this Bylaw may only be used for the purpose of bicycle parking or bicycle storage*." However, the bylaw does not currently define "bicycle." This may limit the storage area's use for other devices, such as mobility scooters, kick scooters, and skateboards.

These devices may not be desired in all locations but may have important context-specific applications (e.g. space for scooters at elementary schools or mobility scooters and senior centres). Specialty racks or parking areas can be designed and designated for these devices.

Saanich's bylaw makes specific mention of providing parking for mobility scooters, stating that "*For the purpose of this section, motor scooter parking spaces must be secured, have electrical services for recharging, and have a minimum width of 1 m and length of 1.5 m*." Both Saanich's and Vancouver's bylaws allow parking for mobility scooters to count towards long-term bicycle parking requirements for certain land uses, such as senior citizen housing.

View Royal note that "*Where parking spaces for mobility scooters are provided, they must be located adjacent to the entrance of the building or use and must not impede access to the entrance*." They bylaw also specifies that mobility scooters should not impede or restrict pedestrian movements on the sidewalk.

North Vancouver notes that "*Bicycle Compounds and Rooms may be used to park wheeled mobility aids with the limitations that; (a) such use shall not impose on access aisle; (b) bicycle racks shall be provided unless it is demonstrated with reasonable accuracy the proportion of people requiring wheeled mobility aids expected to use the site*."

7.0 Demand Management + New Mobility

Transportation is evolving rapidly, with new technology and socio-behavioural shifts leading to exponential growth in new mobility services such as carsharing, ride hailing, and micromobility (e.g. bikeshare and e-scooter sharing services). There have also been shifts in goods movement, with the rise of e-commerce and human-scaled freight vehicles (e.g. e-bikes and e-cargo bikes). Further, autonomous vehicle technology is improving rapidly. Further changes are expected over the next decade, including a shift away from the privately owned, fossil fuel powered vehicles towards a variety of shared, on-demand, multi-modal transportation services.

With the advent and growth of these shared mobility services, parking demand is expected to decrease over time. As a result, many cities have already begun adjusting parking policies, including introducing shared parking and reducing or eliminating parking minimums in developments that accommodate carshare, are transit friendly, or otherwise promote alternative transportation modes.

Transportation demand management (TDM) has been well covered in previous sections of this working paper where reference is made to bicycle parking supply requirements, improved bicycle facility design. Requirements for cycling trip-end facilities, and provisions specific to e-bikes and mobility scooters.

7.1 Carshare

Car sharing has begun to play a larger role in the transportation system of many growing North American municipalities, including communities in the CRD. Car sharing can help encourage the use of alternative transportation modes and reduce private vehicle ownership, with North American research showing that each carshare vehicle typically replaces 9 to 11 private vehicles[13]. With fewer private vehicles on the road, car share has also been shown to reduce parking demand. Research conducted by Metro Vancouver[14] and the City of Kelowna[15] has demonstrated many local trends and impacts of carsharing.

Car share tends to be most successful in dense, walkable, mixed-use areas with proximity to frequent transit and restraints on parking. These areas provide a larger customer base and can be easily navigated by foot, bike, or transit, which can enable households to go without a

[13] Martin, E., & Shaheen, S. (2016). The Impacts of Car2go on Vehicle Ownership, Modal Shift, Vehicle Miles Traveled, and Greenhouse Gas Emissions: An Analysis of Five North American Cities. Berkeley, California: Transportation Sustainability Research Center (TSRC).

[14] Metro Vancouver. (2014). The Metro Vancouver Car Share Study: Technical Report. Metro Vancouver.

[15] City of Kelowna. (2017). Car Sharing Policy Review. City of Kelowna.

private vehicle or reduce from two to one vehicle. However, there are also numerous examples of car share operators in smaller communities across BC, including the Sunshine Coast, the Kootenays, and municipalities in the Capital Region.

There are two distinct types of carshare services: one-way (or free floating) and two-way (or round trip). Modo Co-Operative (two-way) is the most prominent operator in Greater Victoria, with approximately 90 vehicles (as of August 2019) in Victoria, Saanich, Saanichton, Oak Bay, Esquimalt, Brentwood Bay, Sidney, and Swartz Bay (but none in the Westshore).

Each type of car sharing serves different trip types and markets and have different implications on off-street parking. Free floating car share vehicles have no fixed parking spaces as they can be picked up and dropped off in different places, although designated operator-specific parking spots can be provided on-street and in public parkades. Round trip car share vehicles have fixed locations, both on-street and off-street. This can include public parkades and parkades in multi-family and mixed-use developments. For example, certain Modo car share vehicles are in residential parkades that require keycode entry, with car share members (even those who do not live or work in the building) provided with the entry code and any other access instructions via the carshare app.

The location of the car share vehicle has proven very important to the long-term utilization and success of the service. A Metro Vancouver study found that visibility, physical ease of access, and convenience were critical factors in vehicle utilization and general awareness of car sharing. According to Modo, car share vehicles parked on-street in front of buildings were 40% more utilized than cars in underground parkades. Draft recommendations from the City of Kelowna include regulations that outline the desired location for car sharing vehicles in developments, with reserved on-street parking in front of a building the top priority, followed by on-site at grade in a visible location and visitor parking within the development.

Securing a car share vehicle and parking space for a development typically involves an agreement between the developer and car share operator where the developer pays for the vehicle as part of a 2-3 year agreement. Car share memberships can be tied to individual units in perpetuity. Involving the car share operator early in the development process helps to ensure the integration of car sharing in the development and its success as a TDM tool. Car sharing is more successful where developers provide marketing or financial incentives for using the service, such as providing annual car share memberships.

Several BC municipalities have integrated car sharing into their development permit process as a transportation demand management tool to support reduced parking requirements. Coquitlam and Richmond provide 5 and 10% reductions in off-street parking based on TDM actions, while New Westminster allows a reduction of up to 5 on-site parking stalls for each car share vehicle (up to 10% of total spaces). Vancouver uses a 1:5 substitution ratio in residential developments.

7.2 Ride-Hailing

Ride-hailing is an app-based service where users enter their origin and destination, as well as other optional trip specifications, and are matched with a driver within the ride-hailing fleet willing to complete the requested trip for the specified price. The prevalence of ride-hailing and ride-hailing service providers – also known as Transportation Network Companies (TNCs) – have grown significantly over the past decade in communities around the world, with Uber and Lyft being the most notable TNCs operating in North America.

The Province of B.C. recently released new legislation to make ride-hailing legal in B.C., with licensing applications to the Passenger Transportation Board accepted as of September 2019. The supply, operating areas, and fare charges associated are set at the provincial level. Municipalities issue business licenses and regulate through street and traffic bylaws, but cannot prohibit ride-hailing companies from operating in their community. The City has chosen not to regulate ride-hailing through business licenses; rather, as the impacts of ride-hailing are determined the City may update it street and traffic regulation bylaws to address any unanticipated impacts.

While ride-hailing is taking time to roll-out in B.C., the number of new TNCs and approvals are indicative of future growth. Over the past ten months, local start-up TNCs like Whistle! and Coastal Rides have begun serving Whistler, Squamish, Pemberton, Tofino, Ucluelet, Comox, Prince George, and the Sunshine Coast, while Uber and Lyft have begun operating in Metro Vancouver. Service area expansions are expected if TNCs receive local approval – Uber and Lyft each had applications in the CRD denied in January 2020. Kabu Ride Inc. was approved to operate in the CRD in February 2020 – the first TNC permitted in the CRD – but has yet to begin operating.

Like traditional taxi services, an effective ride-hailing service can enhance personal mobility by providing an additional transportation option, which may support individuals without access to a private vehicle. However, research has shown that ride hailing can increase congestion and vehicle kilometres driven while pulling trips away from sustainable transportation modes such as transit, walking, and cycling[16]. Ride-hailing may also lead to reduced parking demand: a study from the University of Colorado Denver found that people who use ride-hailing are willing to pay more to avoid driving, including the stress of finding parking[17], potentially leading to reduced parking demand.

This has potential implications for setting off-street parking supply rates, especially with ride-hailing poised to enter the CRD market. However, ride-hailing impacts can differ depending

[16] Henao, A., & Marshall, W. E. (2019). The impact of ride hailing on parking (and vice versa). Journal of Transport and Land Use, 12(1). doi:10.5198/jtlu.2019.1392

[17] Henao, A., & Marshall, W. E. (2019). The impact of ride hailing on parking (and vice versa). Journal of Transport and Land Use, 12(1). doi:10.5198/jtlu.2019.1392

on a community's geographic size and location, density (or lack thereof), car ownership rates and costs, ride-hailing access and costs, transit ridership, demographics, and other variables, so the specific impacts on Colwood are yet to be determined.

7.3 Curbside Management

Increased demand for the curbside is resulting in competition for space, and on-street parking is often impacted. This competition is expected to increase in the future. The demand for flexible curbside loading space is increasing due to ride-hailing, micromobility, and increasing e-commerce and deliveries. Additional competition for the curb comes from active transportation facilities (e.g. bike lanes, bike parking corrals), transit lanes and amenities, green infrastructure, public realm improvements (e.g. parklets and patios), and COVID-19 related road space reallocation (expanding sidewalks and waiting areas to enable physical distancing).

Curbside management policies will be needed to facilitate this increased demand. However, these policies would generally fall outside of an off-street parking bylaw. In many cases, on-street parking can be reallocated without negatively impacting drivers or businesses. However, in some cases, additional off-street parking may be required to offset the loss of on-street parking.

7.4 Autonomous Vehicles

Autonomous Vehicle (AV) technology is rapidly emerging: major auto manufacturers and tech companies such as Tesla, Waymo, and Uber are racing to fine-tune autonomous technology, with vehicles already being trialled to varying degrees on city streets. In fact, all new Tesla vehicles come standard with advanced hardware capable of providing Autopilot features, with full self-driving capabilities possible in the future via software updates designed to improve functionality over time. The Tesla website features a video of an autonomous vehicle trip on an open public roadway.

Industry analysts expect fully autonomous vehicles to be commercially available and legal in some jurisdictions by the late 2020s, with broader market adoption occurring over the next 30 years. The scale of technological change amounts to a revolution in urban transportation that could radically reshape the way we live and move. However, while autonomous vehicle technology may be right around the corner, the most significant impacts – including major changes to traffic patterns and parking demand – are not expected to be realized until the widespread adoption of AVs occurs, potentially in the 2050s or 2060s[18].

[18] Litman, T. (2020). Autonomous Vehicle Implementation Predictions: Implications for Transport Planning. Victoria, BC: Victoria Transport Policy Institute.

The acronym ACES – Autonomous, Connected, Electric, and Shared – has been used to describe one potential scenario for autonomous vehicles in which private vehicle ownership is replaced by a network of connected, shared, and on-demand autonomous vehicles. This scenario would result in a dramatic reduction in parking demand, particularly on-street parking[19]. Simulations have shown that if all private vehicle trips were replaced by shared vehicles, only 10% of the existing vehicle fleet would be required, with a corresponding reduction in the need for parking spaces[20].

Off-street parking demand would also decrease, and NACTO recommends eliminating parking minimums and future-proofing off-street parking for reduced demand, including considering redevelopment strategies and building any new structures in a way that enables easy retrofit (e.g. constructing flat floorplates that could be converted into office space). In this ACES future, some off-street parking would be needed, including specialized facilities with electric charging stations and vehicle maintenance and cleaning services. This parking could likely be located off-site in strategic locations.

Even if a larger percentage of vehicles remain privately owned, parking demand is still projected to decrease. In a scenario where autonomous vehicles are widely adopted but privately owned, the system would be far less efficient. Drivers could travel one-way and send their vehicle home empty to avoid paying for parking, before summoning the vehicle when ready to be picked up. Alternatively, they could have the vehicle circle the city to avoid paying for parking.

Both of these scenarios could reduce overall parking demand, but they would increase traffic congestion, adding delays and uncertainty to passenger pick-up times. As a result, consumers would likely prefer to have parking within relatively close proximity to their destination in order to increase trip time reliability. As a result, there could be a shift to more off-site and shared parking, but not to the same extent as in the shard vehicle scenario. Again, parking demand would be reduced overall, but not eliminated entirely.

[19] NACTO. (2019). Blueprint for Autonomous Urbanism: Second Edition. National Associate of City Transportation Officials.

[20] Knorr, A. (2018). Designing For Future Mobility. Vancouver: Perkins+Will.

Appendix A.

Local Parking Demand Data

Condominium

Address	Units	Parking Demand		Data Source	
		Total	Rate	Method	Date / Time
3230 Selleck Way, Colwood[g]	18	26	1.44	Ownership Data	Fall 2016
3220 Selleck Way, Colwood[g]	25	33	1.32		
627 Brookside Rd, Colwood[g]	23	21	0.91		
631 Brookside Rd, Colwood[g]	23	20	0.87		
635 Brookside Rd, Colwood[g]	23	31	1.35		
150 Nursery Hill Dr, View Royal[g]	16	13	0.81		
170 Nursery Hill Dr, View Royal[g]	19	21	1.11		
3210 Jacklin Rd, Langford[g]	32	48	1.50		
623 Treanor Ave, Langford[g]	89	123	1.38		
286 Wilfert Rd, Langford[e]	49	66	1.36	Ownership Data	2018 - assumed (no date given)
290 Wilfert Rd, Langford[e]	44	32	0.73		
3210 Jacklin Rd, Langford[e]	32	47	1.48		
3226 Jacklin Rd, Langford[e]	36	47	1.32		
3240 Jacklin Rd, Langford[e]	30	34	1.16		
1145 Sikorsky Rd, Langford[e]	69	86	1.24		
3234 Holgate Ln, Colwood[e]	30	37	1.23		
3230 Selleck Way, Colwood[e]	22	27	1.24		

Apartment (market rental)

Address	Units	Parking Demand		Observation	
		Total	Rate	Method	Date / Time
380 Belmont Ave, Colwood	18	9	0.50	Observation	Wed July 23 2020, @ 8:30pm
2677 Fergus Crt, Langford	34	46	1.35		
338 Goldstream Ave	40	39	0.98		
790 Hockley Ave, Langford	24	42	1.75		
691 Hoylake Ave, Langford	147	117	0.80		
2653 Sooke Rd, Langford	12	5	0.42		
2606 Peatt Rd, Langford[k]	31	32	1.03	Vehicle Ownership	May 2015
2677 Fergus Crt, Langford[k]	34	40	1.18		
790 Hockley Ave, Langford[k]	24	24	1.00		
314 Goldstream Ave, Colwood[k]	24	12	0.50		
691/697 Hoylake Ave, Langford[b]	147	119	0.81	Observation	Weekday April 2019 @ 10:00pm
2606 Peatt Rd, Langford[b]	31	36	1.16		
2775 Jacklin Rd, Langford[b]	9	12	1.33		
344 Goldstream Ave, Colwood[b]	29	22	0.76		
314 Goldstream Ave, Colwood[b]	24	15	0.63		
590 Goldstream Ave, Langford[a]	42	22	0.52	Observation	Tues Oct 08 2019 @10:00pm
2771 Jacklin Rd, Langford[a]	52	40	0.77		
2885 Jacklin Rd, Langford[a]	94	81	0.86		
691 Hoylake Ave, Langford[a]	147	137	0.93		
380 Belmont Ave, Colwood[l]	18	10	0.56	Vehicle Ownership	2014, assumed (no date given)
314 Goldstream Ave, Colwood[l]	24	16	0.70		
344 Goldstream Ave, Colwood[l]	30	19	0.63		
2653 Sooke Rd, Langford[l]	12	7	0.58		

Affordable Housing

Address	Units	Parking Demand		Observation	
		Total	Rate	Method	Date / Time
2006 Sooke Rd, Colwood	82	46	0.56	Observation	Wed July 23 2020, @ 8:30pm
939 Goldstream Ave, Langford[d]	21	21	1.00	Observation	Tues, Dec 11 2018 or Wed Dec 12 2018 @ 9:45pm
616 Goldstream Ave, Langford[d]	25	29	1.16		
2006 Sooke Rd, Colwood[d]	34	26	0.76		
2749 Jacklin Rd, Langford[d]	9	5	0.56		
2637 Deveille Rd, Langford[d]	14	9	0.64		
740 Meaford Ave, Langford[d]	11	11	1.00		
210 Island Hwy, View Royal[d]	17	19	1.12		
236 Island Hwy, View Royal[d]	16	15	0.94		

Visitor Parking

Address	Units	Parking Demand		Data Source	
		Total	Rate	Method	Date / Time
486 Royal Bay Dr, Colwood	59	4	0.07	Observation	Sat, July 9 2016 @ 10:00pm
		7	0.12		Tues, July 12 2016 @ 9:30pm
		6	0.10		Wed, July 20 @ 10:00pm
		4	0.07		Sat, July 23 @ 2:00pm
630 Brookside Pl, Colwood	30	3	0.10		Sat, July 9 2016 @ 10:00pm
		5	0.17		Tues, July 12 2016 @ 9:30pm
		1	0.03		Wed, July 20 @ 10:00pm
		3	0.10		Sat, July 23 @ 2:00pm
3650 Citadel Pl, Colwood	26	2	0.08		Sat, July 9 2016 @ 10:00pm
		2	0.08		Tues, July 12 2016 @ 9:30pm
		1	0.04		Wed, July 20 @ 10:00pm
		2	0.08		Sat, July 23 @ 2:00pm
3640 Propeller Pl, Colwood	28	2	0.07		Sat, July 9 2016 @ 10:00pm
		3	0.11		Tues, July 12 2016 @ 9:30pm
		3	0.11		Wed, July 20 @ 10:00pm
		3	0.11		Sat, July 23 @ 2:00pm

Sources

a.	Royal Bay Comprehensive Parking Study	Urban Systems	Nov 08 2019
b.	360 Latoria Boulevard Parking Study	Watt Consulting Group	Aug 13 2019
c.	Nob Hill Development Parking Study	Watt Consulting Group	April 01 2019
d.	342 Wale Road Parking Study	Watt Consulting Group	Feb 22 2019
e.	2330 Sooke Road Development Parking Study	Watt Consulting Group	April 17 2018
f.	Parking Review, Colwood Corners	Watt Consulting Group	Jan 24 2017
g.	Pacific Landing Parking Study	Boulevard Transportation	Dec 14 2016
h.	Goldstream Avenue Multi-Use Development TIA	Adept Transportation Solutions	Aug 26 2016
i.	333 Wale Road Development Parking Study	Watt Consulting Group	Aug 04 2016
j.	467 Royal Bay Drive Development Parking Study	Watt Consulting Group	July 26 2016
k.	Hoylake Residential Parking Study	Boulevard Transportation	Aug 13 2015
l.	284 Belmont Avenue – Letter of Opinion for Parking Study	Bunt & Associates	Dec 18 2014
m.	Colwood City Centre DPA Parking Variance Report	Bunt & Associates	Sept 19 2011

Appendix B.

Comparative Review of Minimum Parking Supply Rates for Core Land Uses

Single-Family Residential

Community	Land Use	Rate
Colwood	Residential, one-family dwelling	2 per dwelling unit, provided that a front yard driveway and two-family dwelling which provides access to a parking space that is not within the front yard may be considered as the provision of a second parking space that is in tandem
Campbell River	Single Family Residence, Two Family Residence, Three Family Residence	2 per dwelling unit
Central Saanich	Residential Single Family	2 per dwelling unit
Courtenay	Single dwelling unit or duplex	2 per dwelling unit
Esquimalt	Single Family	1 space per dwelling unit
Langford	One-family dwelling	2 per dwelling unit
North Cowichan	Multi-family, Single-family dwelling, Single-family dwelling with Secondary Suite	2 spaces per Single-family dwelling unit plus 1 space for each secondary suite plus 15% of the total number of units designated as visitor's parking spaces
	Single-Family Dwelling	2 spaces
Oak Bay	One-Family Residential Use	Two (2) parking spaces per dwelling unit, one of which shall be within a building
Saanich	Single Family Dwellings	2 spaces per dwelling unit
Sidney	Dwelling, Single-family	1 per dwelling unit
Sooke	Residential, Single Family / Duplex / Manufactured Home	2 per dwelling unit
View Royal	Single Detached Dwelling, Modular Home, Mobile Home	2 per dwelling unit

Multi-Family Residential

Community	Land Use	Rate
Colwood	Residential, multi-family (attached housing, apartments)	1.5 per dwelling unit plus 1 for each 100 m2 of building floor area exceeding 60 m2 times the number of dwelling units
Campbell River	Apartment	1.3 per dwelling unit plus 1 visitor parking per 5 dwelling units.
	Apartment (Townhouse or Patio Home style complex)	2 per dwelling unit plus 1 visitor parking per 8 dwelling units.
Central Saanich	Residential Two Family	2 per dwelling unit
	Residential Attached	1.5 per dwelling units plus 0.25 per dwelling unit for visitors' parking
	Residential Apartment	1.5 per dwelling unit plus 0.25 per dwelling unit for visitors' parking
	Condominium Hotel	1.5 per dwelling unit plus 0.25 per dwelling unit for visitors' parking
Courtenay	Multi residential dwellings	1.5 per dwelling unit with 10% of the required spaces being provided and retained for visitor parking.
Esquimalt	Low, medium and High density Townhouse and low density Apartment	2 spaces per dwelling unit
	Medium and High density apartment	1.30 spaces per dwelling unit
	Two Family	1 space per dwelling unit
Langford	Apartment in City Centre and the Mixed Use Employment Centre designation	1.25 spaces per dwelling unit with two bedrooms or less, of which 0.25 shall be designated for visitor parking; 2.25 spaces per dwelling unit with more than 2 bedrooms, of which 0.25 shall be designated for visitor parking;
	Apartment outside City Centre and the Mixed Use Employment Centre	2.75 spaces per dwelling unit with two bedrooms or less, of which 0.25 shall be designated for visitor parking; 3.75 spaces per dwelling unit with more than 2 bedrooms, of which 0.25 shall be designated for visitor parking
	Townhouse (subdivided pursuant to the Strata Property Act)	2 per dwelling unit
	Townhouse (subdivided pursuant to the Land Title Act)	3 per dwelling unit OR 2 per dwelling unit when a minimum of 1 on-street parking space per every 3

		dwelling units is created within the frontage of the subject property
	Two-family dwelling	2 per dwelling unit
North Cowichan	Multi-Family, Apartment	1.5 spaces per dwelling unit plus 15% of the total number of units designated as visitor parking
	Multi-Family, Townhouse, Two-Family Dwelling	2 spaces per dwelling unit plus 15% of the total number of units designated as visitor parking
	Multi-family, Single-family dwelling, Single-family dwelling with Secondary Suite	2 spaces per Single-family dwelling unit plus 1 space for each secondary suite plus 15% of the total number of units designated as visitor's parking spaces
Oak Bay	Multiple Dwellings Use	Two (2) parking spaces per dwelling unit, plus additional guest parking spaces of one (1) space per four (4) dwelling units or part thereof.
Saanich	Apartments	1.5 spaces per dwelling unit
	Attached Housing	2 spaces per dwelling unit
	Two Family Dwellings	2 spaces per dwelling unit
Sidney	Dwelling, Apartment	1.0 per dwelling unit
	Dwelling, Townhouse	1 per dwelling unit
	Dwelling, Two-family	1 per dwelling unit
Sooke	Residential, Medium Density/ High Density Multifamily/Tent Lot Residential	1.5 per dwelling unit
View Royal	Duplex	2 per dwelling unit
	Rowhouse	1.5 per dwelling unit
	Townhouse	1.5 per dwelling unit
	Apartment	Studio or One Bedroom – 1 per dwelling unit Two Bedroom – 1.5 per dwelling unit Three Bedroom or more – 2 per dwelling unit

Multi-Family Residential, Visitors

Community	Rate
Colwood	N/A
Campbell River	N/A
Central Saanich	0.20 / unit
Comox	0.10 / unit
Courtenay	10% of required spaces
Esquimalt	1 of every 4 required spaces
Ladysmith	0.20 / unit
Langford	0.25 / unit
Lantzville	0.25 / unit
Metchosin	0.15 / unit
North Cowichan	0.15 / unit
Oak Bay	0.25 / unit
Saanich	0.3 / unit
Sidney	N/A
Sooke	N/A
View Royal	N/A

Office

Community	Land Use	Rate
Colwood	Offices, medical	5 per doctor or dentist
	Offices, multi-tenant	1 per 30 m^2 of gross floor area
	Offices, single-tenant	1 per 35 m^2 of gross floor area
Campbell River	Bank or Other Financial Institution, Office	1 per 40 m^2 of floor area
Central Saanich	Business Office	1 per 28 m^2 of gross floor area
	Medical/Dental Office	1 per 20 m^2 of gross floor area
	Sub-Trade Office	1 per 70 m^2 of gross floor area
Courtenay	Office (single or multiple tenant)	1 space per 37.5 m^2
Esquimalt	Business and Professional Offices	1 space per 30 m^2 of gross floor area
Langford	Office	1 per 35.0 m^2 (376.7 ft^2) GFA
	Office (medical or dental)	1 per 25.0 m^2 (269.1 ft^2) GFA
North Cowichan	Office, Professional Office	1 space per 37 m^2 (398.26 ft^2) gross floor area
Oak Bay	Office Use	One (1) parking space for every 19 m^2 (204 ft^2) of occupied building area, minus a percentage equal to the number of spaces to be calculated, or 25%, whichever is less.
	Medical and Dental Offices	1 space per 14 m^2 (150 ft^2) of building area
Saanich	General Office	For buildings not exceeding 1000 m^2 (10764 ft^2) of gross floor area: 1 space per 25 m^2 (269 ft^2). For buildings exceeding 1000 m^2 (10764 ft^2): 1 space per 25 m^2 (269 ft^2) for the first 1000 m^2 (10764 ft^2), and 1 space per 30 m^2 (323 ft^2) for any additional area.
Sidney	Office	1 per 40 m^2
Sooke	Office	1 per 30 m^2 gross floor area
View Royal	Office	Single tenant - 1 per 30 m^2 of floor area Multiple tenant - 1 per 25 m^2 of floor area
	Office – Medical Clinic	1 per 20 m^2 of floor area

Retail

Community	Land Use	Rate
Colwood	Retail store, supermarkets, liquor and other retail personal uses, except neighbourhood grocery	0.75 per 10 m^2 of gross floor area
	Bank	1 per 20 m^2 of gross floor area
Campbell River	Retail or Wholesale Store	1 per 40 $m^2$of floor area
Central Saanich	Bank	1 per 20 m^2 of retail floor area
	Retail Store	1 per 22 m^2 of gross floor area
Courtenay	Convenience stores, retail stores, storefront cannabis retailer	1 space per 35 m^2 of floor area
Esquimalt	Retail Sales of goods and services	1 space per 25 m^2 of gross floor area
	Financial Institutions	1 space per 25 $m^2$of gross floor area
Langford	Retail store >2,000.0 m^2 (21,527.8 ft^2) GFA	1 per 30.0 m^2 (322.9 ft^2) GFA
	Retail store <2,000.0 m^2 (21,527.8 ft^2 GFA) selling furniture, appliances, carpets or similar Uses	1 per 80.0 m^2 (861.1 ft^2) GFA
	Retail store >2,000.0 m^2 (21,527.8 ft^2 GFA) selling furniture, appliances, carpets or similar Uses	1 per 100.0 m^2 (1,076.4 ft^2) GFA
North Cowichan	Retail Store, Personal Service Establishments	1 space per 19 m^2 (204.5 ft^2) gross floor area
	Financial Institutions	1 space per 20 m^2 (215.2 ft^2) gross floor area
Oak Bay	Commercial Use	One (1) parking space for every 19 m^2 (204 ft^2) of occupied building area, minus a percentage equal to the number of spaces to be calculated, or 25%, whichever is less.
Saanich	Retail sales of goods and services	1 space per 14 m^2 (150 ft^2) of gross floor area
Sidney	Retail, excluding Outdoor Retail	1 per 40 m^2
	Financial Institutions	1 per 40 m^2

Sooke	Retail / Service Stores	1 per 30 m^2 gross floor area
View Royal	Retail Store	1 per 20 m^2 of floor area
	Financial Institutions	1 per 20 m^2 of floor area

Shopping Centre

Community	Land Use	Rate
Colwood	Shopping Centre, Community	5.5 per 100 m^2 of gross leasable area
	Shopping Centre, Major	1 per 100 m^2 of gross leasable area up to 46,500 m^2 gross leasable area; then for the area over 46,500 m^2 at the rate of 4.3 per 100 m^2
	Shopping Centre, Neighbourhood	6.5 per 100 m^2 of gross leasable area
Campbell River	Shopping Centre	1 per 30 m^2 of floor area
Central Saanich	N/A	
Courtenay	Shopping centre	1 space per 22.5 m^2
Esquimalt	Retail Sales of goods and services	1 space per 25 $m^2$of gross floor area
Langford	Shopping centre	1 per 20.0 m2 (215.3 ft^2) GFA
North Cowichan	Mixed Commercial Development	1 space per 20 m^2 (215.3 ft^2) of gross floor area
Oak Bay	Commercial Use	One (1) parking space for every 19 m^2 (204 ft^2) of occupied building area, minus a percentage equal to the number of spaces to be calculated, or 25%, whichever is less.
Saanich	Shopping centres less than 1,000 m^2 (10,764 ft^2) of gross leasable area	Shall be the sum of the various classes of uses calculated separately
	Shopping centres greater than 1,000 m^2 (10,764 ft^2) and less than 23,225 m^2 (250,000 ft^2) of gross leasable floor area	1 space per 19 m^2 (204 ft^2) of gross leasable floor area
	Shopping centres greater than 23,225 m^2 (250,000 ft^2) of gross leasable area	1 space per 17 m^2 (183 ft^2) of gross leasable floor area
Sidney	Retail, excluding Outdoor Retail	1 per 40 m^2
Sooke	Retail / Service Stores	1 per 30 m^2 gross floor area
View Royal	Retail Store	1 per 20 m^2 of floor area

Grocery Store

Community	Land Use	Rate
Colwood	Grocery, Neighbourhood	1 per 15 m^2 of gross floor area of retail portion of building or 4, whichever is greater
	Retail store, supermarkets, liquor and other retail personal uses, except neighbourhood grocery	0.75 per 10 m^2 of gross floor area
Campbell River	Retail or Wholesale Store	1 per 40 $m^2$of FA
Central Saanich	Supermarket	1 per 14 m^2 of gross floor area
Courtenay	Grocery store	1 space per 35 m^2
Esquimalt	Retail Sales of goods and services	1 space per 25 m^2 of gross floor area
Langford	Retail store >2,000.0 m^2 (21,527.8 ft^2) GFA	1 per 30.0 m^2 (322.9 ft^2) GFA
North Cowichan	Retail Store, Personal Service Establishments	1 space per 19 m^2 (204.5 ft^2) gross floor area
Oak Bay	Commercial Use	One (1) parking space for every 19 m^2 (204 ft^2) of occupied building area, minus a percentage equal to the number of spaces to be calculated, or 25%, whichever is less.
Saanich	Retail Food Stores greater than 275 m^2 (2,960 ft^2) of gross floor area	1 space per 14 m^2 (150 ft^2) of gross floor area
Sidney	Retail, excluding Outdoor Retail	1 per 40m^2
Sooke	Retail / Service Stores	1 per 30 m^2 gross floor area
View Royal	Supermarket	1 per 25 m^2 of floor area

Restaurant

Community	Land Use	Rate
Colwood	Restaurant, coffee shop	11 per 3 seats
	Restaurant, drive-in only	15
Campbell River	Entertainment Centre (excluding bowling centre or billiard centre), Coffee Shop, Restaurant (includes food primary), Licensed Facility (for liquor primary, with entertainment and including pubs)	1 per 4 seats of maximum seating or licensed capacity
Central Saanich	Premises Licenced under the Liquor Control and Licencing Act	Greater of 1 space per 3 seats or 1 space per 10 m^2 gross floor area
	Restaurant	Greater of 1 space per 3 seats or 1 space per 10 m^2 gross floor area
Courtenay	Restaurant	1 space per 6 seats
	Fast food restaurant	8 spaces plus 1 per 6 seats
Esquimalt	Restaurant	1 space per 5 seats with a minimum of 1 space per 14 m^2 of gross floor area
Langford	Restaurant and drive-through restaurant	1 per 4 seats
North Cowichan	Hotel, Motel, Restaurant, Tea Room, Club, Licensed Premises	1 space per sleeping unit and 1 space per 4 seats
Oak Bay	Restaurants	1 space per 14 m^2 (150 ft^2) of building area
Saanich	Restaurants, Drive-in and Fast Food Restaurants	1 space per 10 m^2 (107 ft^2) of gross floor area
Sidney	Restaurant, Class I or Class II	1 per 5 seats
Sooke	Coffee Shop, Restaurant, Fast Food Outlet, Drive-through Restaurant, Delicatessen	1 per 4 seats
View Royal	Restaurant - Self-Service	1 per 10 m^2 of floor area.
	Restaurant - Full-Service	1 per 10 m^2 of floor area.

Appendix C.

Comparative Review of Electric Bicycle + Electric Vehicle Regulations

E-Bike Regulations

Community	Short Term Bike Parking	Long Term Bike Parking
Colwood	No requirements	No requirements
Central Saanich	No requirements	No requirements
CRD (proposed)[21]	10% of all short-term bike parking spaces with access to an 110v outlet	One 110v outlet for every two bicycle parking spaces
Esquimalt	No requirements	No requirements
Langford	No requirements	No requirements
Nanaimo	No requirements	All long-term bicycle parking storage areas shall have an electrical outlet for electric bicycle charging.
North Vancouver (City)	No requirements	One electrical outlet for every 4 Bicycle Parking Spaces in a Bicycle Compound.
Oak Bay	No requirements	No requirements
Saanich	No requirements for bicycles; motor scooter parking spaces must be secured, have electrical services for recharging	
Sidney	No requirements	No requirements
Sooke	No requirements	No requirements
Vancouver	No requirements	1 outlet per 2 long term spaces
Victoria	No requirements	No requirements
View Royal	No requirements	No requirements

[21] Recommendation provided in the 2018 *Capital Region Local Government Electric Vehicle (EV) + Electric Bicycle (E-Bike) Infrastructure Planning Guide*. *As new development regulations requiring electric charging are considered, reference should be made to the CRD document to understand the key challenges associated with regulations.*

Electric Vehicle Charging Regulations[22]

Community	Single-Family Residential	Multi-Family Residential	Commercial / Other
Colwood (existing)	No requirements	No requirements	No requirements
Colwood (internal proposed)	One (1) stall in single-family homes with garages (wired for 120-volt charging)	30% of stalls in multi-unit residential buildings (wired for 240-volt charging)	10% of stalls in commercial buildings (wired for 240-volt charging)
Burnaby	100% of residential parking stalls provided with energized L2 outlet. Excludes secondary suites and visitor parking.		
Central Saanich	No requirements	No requirements	No requirements
Coquitlam	One energized L2 outlet per residential dwelling unit.		
CRD (proposed)[23]		All resident spaces (excluding visitor parking) should include energized outlet capable of providing Level 2 charging and labelled for EV charging (up to $500/dwelling unit to provide a 40A 240V circuit and outlet).	10% of all commercial parking spaces should be provided with an energized outlet capable of providing Level 2 charging.
Esquimalt	No requirements	No requirements	No requirements
Langford	No requirements	No requirements	No requirements
Nanaimo	All required off-street parking spaces within a single residential dwelling or dedicated multiple-family dwelling parking space such as a garage for an individual unit shall include an electric outlet box wired with a separate branch circuit capable of supplying electricity to support a Level 1 charger.	Minimum of 10% of all required off-street parking stalls within any common parking areas for multiple-family residential require shared access to Level 2 charging (or higher). An additional 20% of required parking spaces for a multiple-family dwelling use shall be provided with an electrical outlet box wired with a separate branch circuit capable of supplying electricity to support the installation of a Level 2 charger.	5% of all required off-street parking spaces require access to Level 2 charging (or higher).
Nelson	The minimum number of required electric vehicle parking spaces is set as follows:		

[22] Adapted from City of Victoria policy review from June 4, 2020: https://pub-victoria.escribemeetings.com/filestream.ashx?DocumentId=54670

[23] Recommendation provided in the 2018 *Capital Region Local Government Electric Vehicle (EV) + Electric Bicycle (E-Bike) Infrastructure Planning Guide*. *As new development regulations requiring electric charging are considered, reference should be made to the CRD document to understand the key challenges associated with regulations.*

Community	Single-Family Residential	Multi-Family Residential	Commercial / Other
	a. For new buildings, including mixed-use buildings, that contain at least 1 dwelling unit, at least 1 parking space per dwelling unit shall feature Level 2 Charging or higher to the parking space. b. For the first 10 required parking spaces, or a part thereof, for a commercial, industrial, mixed-use, public, or institutional use, a minimum of 2 parking spaces shall feature Level 2 Charging or higher to the parking space, plus 2 Level 2 Charging or higher spaces for any portion of each additional 10 parking spaces. c. A Service Station shall feature Alternative Fuel Infrastructure available for public use. Where one or more accessible parking spaces are required, at least 50% of the accessible parking spaces shall feature Level 2 Charging or higher to the parking space		
New Westminster	100% of residential parking stalls provided with energized L2 outlet. Excludes visitor parking and new secondary suites in existing single detached homes.	10% of commercial and institutional stalls L2 energized in developments with 10 or more parking stalls	
North Cowichan	DPA-1 Mobility: 1.4.2 Alternative Travel Options Alternatives to private automobiles should be incorporated into development and redevelopment plans. Include on-site charging stations for electrical cars.		
North Vancouver (City)	100% of stalls provided with energized L2 outlet	100% of resident stalls and 20% of residential visitor stalls provided with energized L2 outlet.	20% of commercial stalls provided with energized L2 outlet.
Oak Bay	No requirements	No requirements	No requirements
Port Coquitlam	One stall per residential unit roughed-in (all electrical infrastructure other than wire), Level 2.		
Port Moody	100% of residential parking stalls provided with energized L2 outlet, excluding visitor parking, secondary suites and new spaces to serve existing units.		20% of commercial stalls capable of providing L2 charging.
Richmond	100% of residential parking stalls provided with energized L2 outlet, excluding visitor parking		
Saanich (as of Sept 1, 2020[24])	Min 1 energized space (L2M[25]) per garage/carport	100% of spaces must be energized (L2M)	10% of commercial stalls L2 energized in developments with 10 or more parking stalls. Detailed requirements for range of institutional, commercial, cultural, recreational, industrial uses; see Zoning Bylaw, 2003, Amendment Bylaw, 2020, No. 9627

[24] https://saanich.ca.granicus.com/MetaViewer.php?view_id=&clip_id=432&meta_id=26584

[25] Level 2 with energy management enabled. Electric Vehicle Energy Management System or EVEMS – means a system to control EVSE electrical loads, comprised of monitor(s), communications equipment, controller(s), timer(s) and other applicable devices.

Community	Single-Family Residential	Multi-Family Residential	Commercial / Other
Sidney	In all Multi-Family, Commercial and Industrial buildings, all parking spaces shall be serviced by electrical conduit that can support the installation of an electric vehicle charging station.		
Sooke	No requirements	No requirements	No requirements
Squamish		100% of residential parking stalls provided with L2 energized outlet	5% of commercial stalls L2 energized in developments.
Township of Langley	Most residential land uses have a defined EV charging requirement. Parking spaces with EV charging requirements shall feature an energized outlet capable of providing Level 2 Charging or higher, installed adjacent to the parking space at the rates below: Single-family, two-family and mobile homes: 1 space per dwelling unit Townhouses: 1 space per dwelling unit Apartments: 1 space per dwelling unit Dwelling units as part of a commercial or industrial building: 1 space per dwelling unit Seniors' housing: 1 space per 4 dwelling units plus 1 space per 3 employees Community care facilities, excluding seniors' housing: 1 space per 4 occupants or residents		
Vancouver	Each storage garage or carport shall be provided with an energized outlet capable of providing Level 2 charging (or higher)	All parking spaces provided for residential use (excluding visitor parking) shall be provided with an energized outlet capable of providing Level 2 charging (or higher)	If >10 total spaces, minimum 1/10 spaces + one for each additional space must provide outlet capable of providing Level 2 charging (or higher). If <10 spaces, one Level 2 charger-ready outlet.
Victoria (proposed, June 2020, would be effective Oct 1, 2020[26])	1 energized EV outlet per required vehicle parking space	1 energized EV outlet per required vehicle parking space	# Vehicle parking spaces: If <10: no EV requirements If 10-14: 1 energized EV outlet If >15: 2 energized electric vehicle outlets or 5% of the total number of required vehicle parking spaces, whichever is greater
View Royal	For every commercial or multiple unit residential development that requires more than 100 parking spaces, an electric vehicle charging station is required on the lot, in a location which is accessible to the patrons or residents.		

[26] https://pub-victoria.escribemeetings.com/filestream.ashx?DocumentId=54665

Appendix D.

Comparative Review of Bicycle Parking Requirements

Note: Class 1/A = Long Term; Class 1/B = Short Term

Residential

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
Colwood	Single Family/Two Family	None	None
	Apartment/Townhouse	6 space rack at each entrance of an apartment	1 per unit
	Senior Citizen	1 per 15 dwelling units Class 1 - 70% Class 2 - 30%	
Central Saanich	All Comprehensive Development and Residential Attached and Residential Apartment uses	1 space per 10 required vehicular parking spaces	1.5 bicycles parking spaces per Dwelling Unit
Esquimalt	No requirements	No requirements	No requirements
Langford	Apartment	1 per dwelling unit	
	Assisted Living	1 per 15 dwelling units	
	Townhouse	1 per dwelling unit	
North Cowichan	Multi-family (parking lot)	1 space per 2.5 dwelling units	1 space per 4 dwelling units
	Congregate Housing, Assisted Living	1 space per 10 residential units	1 space per 10 residential units
North Vancouver (City)	Townhouse, Apartment, Rental Apartment, or Accessory Apartment Residential Use, not including Lock-Off Units	0-19 units: no requirement 20-59 units: 6 spaces 60 or more units: 6 spaces per every 60 units or part thereof	1.5 spaces per unit
Oak Bay	No requirements	No requirements	No requirements
Saanich	Apartment/Townhouse	6-space rack at each entrance of an apartment	1 per unit
	senior citizen housing	One per 15 dwelling units Class I - 70% Class II - 30%	
Sidney	Apartment	6 per building	1 per unit
	Congregate Care Housing, Intermediate Care Facilities	6 per building	4
Sooke	Residential multi-family	1 space per residential unit (80% Class I, 20% Class II)	
Vancouver	Multi-family	A minimum of 2 spaces for any development containing at least 20	A minimum of 1.5 spaces for every dwelling unit under 65 m2.

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
		dwelling units, and one additional space for every additional 20 dwelling units.	A minimum of 2.5 spaces for every dwelling unit over 65 m2 and under 105 m2. A minimum of 3 spaces for every dwelling unit over 105 m2.
	Senior citizen housing (not seniors supportive or assisted housing)	A minimum of 2 spaces for any development containing at least 20 dwelling units, and one additional space for every additional 20 dwelling units.	A minimum of 0.75 spaces for every dwelling unit, except that where designated spaces are provided for the purpose of parking mobility scooters, these designated spaces may form part of the required minimum.
View Royal	Apartment, Rowhouse, Townhouse	6-space rack at each entrance of an apartment	1 per unit

Commercial / Office

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
Colwood	Hotel/Motel/Temporary Lodging (includes Bed and Breakfast)	• Minimum of 2 spaces • 1 per 15 rooms • hotel/motels > 75 rooms, an additional a 6-space visitor rack shall be provided Class 1 - 60% Class 2 - 40%	
	Office (all), Retail Sales of Goods & Services, Restaurants, Research Establishments, Laboratories	• 1 per 250m2 Gross Floor Area (GFA) for first 5000m2 and 1 per 500 m2 GFA for any additional area Class 1 - 50% Class 2 – 50%	
	Shopping Centre	• 1 per 250 m2 of gross leasable floor area for the first 5000 m2 and 1 per 500 m2 of gross leasable floor area for any additional area Class 1 - 30% Class 2 – 70%	
Central Saanich	All Commercial and Comprehensive Development	1 space per 10 required vehicular parking spaces	No requirements
Esquimalt	No requirements	No requirements	No requirements
Langford	Hotel	1 per 15 rental rooms	
	Office	1 per 250.0 m^2 (2,691.0 ft2) GFA for the first 5,000 m2 (53,819.6 ft2) and 1 per 500.0 m2 (5,382.0 ft2) GFA for any additional area.	
	Shopping centre and retail store >2,000.0 m2 (21,527.8 ft2) GFA	1 per 250.0 m^2 (2,691.0 ft2) GFA for the first 5,000 m2 (53,819.6 ft2) and 1 per 500.0 m2 (5,382.0 ft2) GFA for any additional area.	
North Cowichan	Mixed Use Building	Per individual use	Per individual use
	Live-Work	1 space per 3 live-work units	1 space per each live-work unit
	Offices	1 space per 100 m2 (1,076.39 sq. ft.)	1 space per 200 m2 (2,152.78 sq. ft.) (minimum 1 space)
	Retail, Personal Service, Office, Professional Office, Museum, Laundromat, Artisan Studio, Gallery	1 space per 100 m2 (1,076.39 sq. ft.)	1 space per 400 m2 (4,305.56 sq. ft.) (minimum 1 space)
	Restaurants	1 space per 100 m2 (1,076.39 sq. ft.)	1 space per 250 m2 (2,690.98 sq. ft.) (minimum 1 space)
North Vancouver (City)	A building in the C1-A, C1-B, C-2, C-2A, C-3, CS-1, CS-2, CS-3, LL-1, LL-2, LL-3, LL-4, LL-5	6 spaces per 1,000 m2 Gross Floor Area	1 space per 250 m2 Gross Floor Area
Oak Bay	No requirements	No requirements	No requirements
Saanich	Hotel/Motel	One per 15 rooms • In addition, when hotel/motel is larger than 75 rooms, a six space visitor rack shall be provided Class I - 60% Class II - 40%	

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
	Office (all) retail sales of goods and services, restaurants research establishments, laboratories	One per 250 m2 GFA for the first 5000 m2 and one per 500 m2 GFA for any additional area Class I - 50% Class II - 50%	
	Shopping Centre	One per 250 m2 of gross leasable area for the first 5000 m2 and one per 500 m2 of gross leasable for any additional area Class I - 30% Class II - 70%	
Sidney	Hotels, motels	6 per building	1 per 500m² of GFA, with a minimum of 2
	All other uses	6 per building	2 plus 1 per each 125m² of GFA
Sooke	Hotel/Motel	1 space for every 15 rooms (60% Class I, 40% Class II)	
	Commercial, retail	1 space per 200 m2 Gross Floor Area (25% Class I, 75% Class II)	
	Commercial, office	1 space per 400 m2 Gross Floor Area (75% Class I, 25% Class II)	
	Parking Structure/Lot	1 space per 200 m2 Gross Floor Area (25% Class I, 75% Class II)	
Vancouver	Office	A minimum of 6 spaces for any development containing a minimum of 2,000 square metres of gross floor area.	A minimum of one space for each 170 square metres of gross floor area.
	Retail and Service Uses	A minimum of 6 spaces for any development containing a minimum of 1,000 square metres of gross floor area.	A minimum of one space for each 340 square metres of gross floor area.
	Hotel	A minimum of 6 spaces for any development containing a minimum of 75 dwelling, housekeeping or sleeping units, or any combination thereof.	A minimum of 1 space for every 30 dwelling, housekeeping or sleeping units, or any combination thereof.
View Royal	Hotel or Motel	1 per 15 rooms plus, where hotel or motel is larger than 75 rooms, a 6-space rack must be provided at each entrance Class 1 – 60% Class 2 – 40%	
	Office, Retail Store, Restaurant and Laboratory	1 per 250m2 of floor area for the first 5000m2 , plus one per 500m2 of additional floor area Class 1 - 50% Class 2 – 50%	
	Shopping Centre	1 per 250m2 of floor area for the first 5000m2 , plus one per 500m2 of additional floor area Class 1 – 30% Class 2 – 70%	

Industrial

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
Colwood	All	• 1 per 950 m2 GFA Class 1 - 80% Class 2 – 20%	
Central Saanich	All Industrial	1 space per 10 required vehicular parking spaces	No requirements
Esquimalt	No requirements	No requirements	No requirements
Langford	Industrial	1 per 950.0 m2 (10,225.7 ft2) GFA	
North Cowichan	No requirements	No requirements	No requirements
North Vancouver (City)	Industrial Area Commercial Use, Surveying Office, Light Industrial Use	6 spaces per 1,000 m2 Gross Floor Area	1 space per 250 m2 of Gross Floor Area
	Other Industrial Use	6 spaces for any development containing a minimum of 1,000 m2 Gross Floor Area	1 space per 2,500 m2 of Gross Floor Area
Oak Bay	No requirements	No requirements	No requirements
Saanich	All	One per 950 m2 GFA Class I - 80% Class II - 20%	
Sidney	All	6 per building	1 per 500m² of GFA, with a minimum of 2
Sooke	No requirements	No requirements	No requirements
Vancouver	Manufacturing Uses; Transportation and Storage uses; Utility and Communication Uses; Wholesale Uses.	No requirement.	A minimum of 1 space for each 1,000 square metres of gross floor area in the building or 1 space for every 17 employees on a maximum work shift, whichever is the greater.
View Royal	All	1 per 950m2 of floor area Class 1 – 80% Class 2 – 20%	

Institutional / Civic

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
Colwood	Hospital	1 per 500 m2 GFA plus 6 space rack at each entrance Class 1 - 75% Class 2 – 25%	
	Public Transit Exchange	• Minimum 6 Class 1 - 60% Class 2 – 40%	
	Place of worship	• 1 per 50 fixed seats Class 2 - 100%	
	Civic/library/museum/art gallery	• 1 per 100 m2 GFA Class 1 - 20% Class 2 – 80%	
	Personal care home	• 1 per 15 dwelling units Class 1 - 75% Class 2 – 25%	
	Community/Day Care	• 1 per 80 m2 of GFA Class 1 - 20% Class 2 – 80%	
	Correctional Institution	• 1 per 50 beds Class 1 - 70% Class 2 – 30%	
	Schools (all levels)	• 1 per 10 employees Class 1 -100% (employees only)	
	Elementary School	• 1 per 10 students Class 1 - 50% Class 2 – 50%	
	Middle School	• 1 per 8 students Class 1 - 50% Class 2 – 50%	
	Senior Secondary School	• 1 per 8 students Class 1 - 50% Class 2 – 50%	
	Post-Secondary (includes trade schools)	• 1 per 5 students (full time equivalent, max. attendance) Class 1 - 50% Class 2 – 50%	
	Post-Secondary/institutional residence	• 1 per 4 residents Class 1 100%	
	Stadium, Arena, Pool, Exhibition Hall, Entertainment/ theatre, similar places with spectator facilities	• Min. 6-space rack • 1 per 40 spectator seats Class 1 - 20% Class 2 – 80% • 1 per 5 employees Class 1 - 100% (employees only)	
	Gymnasium, Health Spa	1 per 80 m2 of activity surface area (e.g. gym, pool, fitness room) Class 1 - 20% Class 2 - 80%	
	Bowling Alley, Curling Rinks	1 per 2 alleys or sheets Class 1 - 20% Class 2 - 80%	
Central Saanich	No requirements	No requirements	No requirements
Esquimalt	No requirements	No requirements	No requirements
Langford	Community care facility	1 per 15 dwelling units	
	Cultural facility of library	1 per 100.0 m2 (1,076.4 ft2) GFA	

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
	Hospital	1 per 500.0 m2 (5,382.0 ft2) GFA plus 6 in a rack at each entrance	
	Place of Worship	1 per 50 occupants, based on maximum permitted occupancy	
	School (Elementary)	1 per 10 employees plus 1 per 10 students	
	School (Junior Secondary/Middle)	1 per 10 employees plus 1 per 8 students	
	School (Senior Secondary)	1 per 10 employees plus 1 per 8 students	
	Training and education facility	1 per 10 employees plus 1 per 5 students	
	University	1 per 10 employees plus 1 per 5 students (full-time, max attendance)	
North Cowichan	Community Care Facility	1 space per 20 beds	1 space per 10 beds
	Hotel small scale	1 space per 10 sleeping rooms	1 space per 5 sleeping rooms
North Vancouver (City)	Civic Uses	6 spaces per 1,000 m2 Gross Floor Area	1 space per 250 m2 Gross Floor Area
	Assembly Uses	6 spaces per 500 m2 Gross Floor Area	1 space per 250 m2 Gross Floor Area
Oak Bay	No requirements	No requirements	No requirements
Saanich	Hospitals	One per 500 m2 GFA plus six space rack at each entrance Class I - 75% Class II - 25%	
	Schools	All levels: One per 10 employees Class I employees Class II students	
	Elementary School	One per 10 students Class I employees Class II students	
	Middle School	One per eight students Class I employees Class II students	
	Senior Secondary School	One per eight students Class I employees Class II students	
	College	One per five students Class I employees Class II students	
	University	One per five students (full-time, max attendance) Class I employees Class II students	
	Churches	• One per 50 fixed seats Class II - 100%	
	Library/Museum/Art Gallery	One per 100 m2 GFA Class I - 20% Class II - 80%	
	Personal Care	One per 15 dwelling units Class I - 75% Class II - 25%	
	Correctional Institution	• One per 50 beds Class I - 70% Class II - 30%	

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
Sidney	Schools, Libraries, Museums, Hospitals, Fire Stations, Police Stations, Ambulance Stations, Public Works Yards	6 per building	1 per 250m² of GFA, with a minimum of 2
	Places of Worship	6 per building	6
Sooke	Recreational/Cultural/ Educational	1 space per 200 m2 Gross Floor Area (25% Class I, 75% Class II)	
Vancouver	Community Care Facility	No requirement.	A minimum of 1 space for every 100 beds.
	Hospital or other similar use	A minimum of 6 spaces at each public entrance.	A minimum of 1 space for every 17 employees on a maximum work shift.
	School - Elementary or Secondary; School - University or College.	A minimum of 0.6 space for every 10 students on a maximum attendance period except that elementary schools shall provide a minimum of 1 space for every 20 students.	A minimum of 1 space for every 17 employees and for secondary schools, universities or colleges, 0.4 space for every 10 students on a maximum attendance period.
	Church, chapel, place of worship, or similar place of assembly.	A minimum of 6 spaces.	No requirement.
View Royal	Hospitals	1 per 500m2 of floor area, plus a 6-space rack at each entrance Class 1 – 75% Class 2 – 25%	
	Schools – Elementary and Middle	1 per 10 employees, plus 1 per 10 students Class 1 – employees Class 2 – students	
	School - Secondary School	1 per 10 employees, plus 1 per 8 students Class 1 – employees Class 2 – students	
	College, University	1 per 10 employees, plus 1 per 5 students Class 1 – employees Class 2 – students	
	Place of Worship	1 per 50 fixed seats Class 2 – 100%	
	Library, Cultural Facility	1 per 100m2 of floor area Class 1 – 20% Class 2 – 80%	
	Congregate Care Facility	1 per 10 employees Class 1 - 75% Class 2 – 25%	
	Gym	1 per 80m2 of surface area Class 1 – 20%	

Cultural / Recreational

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
Colwood	Stadium, Arena, Pool, Exhibition Hall, Entertainment/ theatre, similar places with spectator facilities	• Min. 6-space rack • 1 per 40 spectator seats Class 1 - 20% Class 2 – 80% • 1 per 5 employees Class 1 - 100% (employees only)	
	Gymnasium, Health Spa	1 per 80 m2 of activity surface area (e.g. gym, pool, fitness room) Class 1 - 20% Class 2 - 80%	
	Bowling Alley, Curling Rinks	1 per 2 alleys or sheets Class 1 - 20% Class 2 - 80%	
Central Saanich	No requirements	No requirements	No requirements
Esquimalt	No requirements	No requirements	No requirements
Langford	N/A	N/A	N/A
North Cowichan	Recreational Facility Small Scale	1 space per 25m2 (269.09 sq. ft.)	1 space per 250 m2 (2,690.98 sq. ft.) (minimum 1 space)
North Vancouver (City)	N/A	N/A	N/A
Oak Bay	No requirements	No requirements	No requirements
Saanich	Community Care	One per 80 m2 of GFA Class I - 20% Class II - 80%	
	Stadium, Arena, Pool, Exhibition Hall, similar places with spectator facilities	One per 100 m2 of surface area Class I - 20% Class II - 80%	
	Gymnasium, Health Spa	One per 80 m2 of surface area Class I - 20% Class II - 80%	
	Bowling Alley, Curling Rinks	One per 2 alleys or sheets Class I - 20% Class II - 80%	
Sidney	N/A	N/A	N/A
Sooke	Recreational/Cultural/ Educational	1 space per 200 m2 Gross Floor Area (25% Class I, 75% Class II)	
Vancouver	Community centre, hall, club, bingo hall, activity centre or similar place of assembly; Casino - Class 1; Library, gallery, museum or aquarium.	A minimum of 6 spaces for any portion of each 1,500 square metres of floor area used for assembly purposes.	A minimum of 1 space for each 500 square metres of floor area used for assembly purposes.
	Theatre, auditorium, stadium, arena, or similar place with spectator facilities.	A minimum of 6 spaces for any portion of each 300-person seating capacity.	No requirement
	Fitness centre.	A minimum of 6 spaces for any portion of each 500 square metres of gross floor area.	A minimum of 1 space for each 250 square metres of gross floor area.

Community	Land Use	Short Term Bike Parking	Long Term Bike Parking
	Billiard hall; Arcade; Bowling Alley; Curling Rink.	A minimum of 6 spaces for any portion of each 40 tables, games, alleys or ice sheets.	No requirement.
View Royal	N/A	N/A	N/A

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