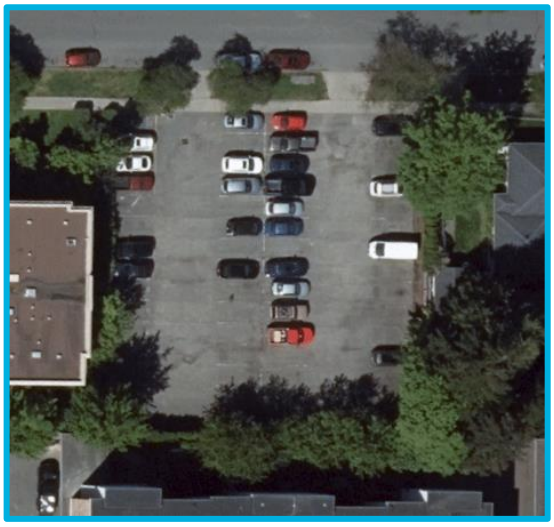
1039-1043 Meares Street

Parking Study

Jawl Residential Ltd.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1039-1043 MEARES STREET

TDM Study

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1.0 INTRODUCTION

Watt Consulting Group Ltd. was retained by Jawl Residential Ltd. to conduct a Transportation Demand Management (TDM) study for the proposed multi-family residential (condominium) building at 1039 – 1043 Meares Street. The purpose of this study is to [a] review and document the City of Victoria's minimum parking supply requirements (Schedule C), as well as related Official Community Plan policies that support increased density and sustainable transportation, and [b] comment on TDM strategies and their impact on parking demand that may be suitable for the site to justify a parking variance. The parking supply requirements as outlined in Schedule C will be considered as the unadjusted expected parking demand for the site (base case).

1.1 SUBJECT SITE

The proposed development is located at 1039 – 1043 Meares Street in the City of Victoria (See **Figure 1**).

FIGURE 1. SUBJECT SITE

1.2 SITE CHARACTERISTICS AND POLICY CONTEXT

The following provides a discussion of the services and transportation options in proximity to the subject site. In addition, the City of Victoria Official Community Plan (OCP) and other community policies pertaining to sustainable transportation and parking management are summarized.

COMMUNITY POLICIES

The City of Victoria's OCP[1] provides policies and objectives to guide decisions on planning and land management. Most recently updated in March 2022, the OCP contains several 30-year goals in 17 distinct topic areas that give expression to Victoria's sustainability commitment and work toward the achievement of long-term sustainability goals. Section 7 of the OCP (Transportation and Mobility) contains goals and policy directions to reduce overall dependency on single occupancy vehicles and prioritize sustainable modes of travel including walking, cycling, and transit, among others.

As identified in Section 7.12 of the OCP, the City should consider reductions in parking requirements where:

"*7.12.1 Geographic location, residential and employment density, housing type, land use mix, transit accessibility, walkability, and other factors support non-auto mode choice or lower parking demand.*"

"*7.12.2 Activities and circumstances of land uses, structures or building include the provision of a comprehensive suite of permanent on-site alternative travel supports and active transportation infrastructure, including such things as short-term and long-term bicycle parking facilities*

[1] Official Community Plan, City of Victoria (2012). Retrieved from https://www.victoria.ca/assets/Departments/Planning~Development/Community~Planning/OCP/Up~to~date~OCP~and~Design~Guidelines/OCP_WholeBook.pdf

including shower and locker facilities, ridesharing, car-share co-ops, payroll transit passes and other automobile trip reduction measures."

Lastly, the City of Victoria adopted its Sustainable Mobility Strategy in 2020.[2] The Strategy intends to address significant advancements occurring in the mobility space, such as the introduction of new mobility modes, shared mobility services, ride hailing and e-mobility devices. The Strategy's mission is as follows:

"Stewarding and transforming the right-of-way to meet the demands of our growing city; increasing access to mobility choices, opportunities, and services; and promoting equity, accessibility, and environmental health through our transportation investments."

The Strategy also contains several targets and indicators, many of which are relevant for parking and for this parking study. By 2026, the City would like to reduce average vehicle ownership per household by 30% from 2017 levels. Further, by 2030, the City would like to see [a] a doubling of transit ridership to, from, and within the City [b] 55% of all trips made to, from, within Victoria are by walking, rolling, or cycling, and [c] all Victoria neighbourhoods are "complete" by design, where residents can meet their daily needs within a 15-minute walk. Achieving these targets will require new developments to be approved in already walkable and compact areas with access to transportation options and where residents will not be reliant on their vehicles for most trips. The subject site is already conducive to a "car-light" lifestyle, as discussed in the following sections.

[2] City of Victoria. (2020). GO Victoria: Sustainable Mobility Strategy. Available online at: https://www.victoria.ca/assets/Community/Cycling/GoVictoria_2020DEC.pdf

SERVICES

The subject site is in the urban core and as such has access to many services and amenities. The site has access to two grocery stores within 550 m (about a 7-minute walk) and 650 m (about a 9-minute walk). In addition, the proximity to Fort Street offers several restaurants and services along that corridor. The site is located approximately 1 km (about a 12-minute walk) from Beacon Hill Park, offering many recreational opportunities within walking distance.

TRANSIT

The subject site has excellent access to transit. It is within 140 m (about a 1-2 minute walk) from a pair of bus stops along Cook Street (Cook at Meares & Cook at Rockland), 185 m (about a 2-3 minute walk) of a bus stop along Fort Street (Fort at Cook) that travels westbound and the pair stop is located 430 m along Yates Street (Yates at Cook) which travels eastbound. A total of seven routes are available to future residents of the site. A summary of the routes is shown below and their weekday service frequency.

Local Transit

- Route 3 James Bay / Royal Jubilee (half-hour service frequency)
- Route 11 Tillicum Centre / UVic (half-hour service frequency)
- Route 22 Vic General / Hillside Centre (half-hour service frequency)
- Route 24 Cedar Hill / Admirals Walk (hourly service frequency)
- Route 25 Maplewood / Admirals Walk (hourly service frequency)

Frequent Transit

- Route 14 Vic General / UVic (15-min service frequency)
- Route 15 Esquimalt / UVic (15-min service frequency)

In addition, within 850 m (about a 11-minute walk) of the subject site, future residents could get to the bus stops at Douglas Street / Fort Steet and access a multitude of routes that will make it even easier to access all the major destinations across Greater Victoria (including schools and post-secondary institutions, shopping centres, hospitals, parks, and recreation centres) using reliable transit service.

Given the site's proximity to Route 50, the BC Transit's Victoria Regional RapidBus Implementation Strategy[3] should be highlighted, which will deliver connected, frequent, fast, and reliable transit service between areas of highest travel demands in the region. In the next three years, the Westshore-Downtown Victoria Line will be introduced (Phase 1), building on the priority bus lanes that have already been completed on Douglas Street. The Westshore Line will connect Langford Exchange with the Legislature Exchange and will provide a single transfer connection to UVic and the Saanich Peninsula at the Uptown Exchange.

The City of Victoria OCP contains policies that support public transit, including the provision of rapid transit and frequent transit service. These policies include prioritizing public transit over general purpose traffic in rapid and frequent transit corridors (7.14.4), undertaking a study of options to provide potential cross-town priority frequent transit service connecting major destinations (7.14.5), and working with BC Transit to integrate new local transit service into neighbourhoods (7.14.6).

[3] Victoria Regional RapidBus Implementation Strategy, BC Transit. Available online at: https://bctransit.com/victoria-regional-rapid-transit

WALKING

With a Walk Score of 93,[4] the subject site is very walkable (i.e., daily errands do not require a personal vehicle). This is due to the high density of shopping, services, and other amenities in the area. The adjacent streets to the site all have sidewalks on both sides of the street with accessible curb letdowns at pedestrian crossings.

Furthermore, the Fairfield Neighbourhood Plan identifies Cook Street as a Future All Ages and Abilities route, and Rockland Avenue as another designated pedestrian and/or cycling route.[5] It is expected that the planned active transportation infrastructure surrounding the subject site will make it easier for people to walk, roll, and bike.

CYCLING

The proposed development is located in an area where daily errands can be accomplished on a bike. The site has immediate access to the Vancouver Street all ages and abilities (AAA) bike facility, which was constructed in May 2021. It includes a shared-use neighbourhood bikeway and uni-directional protected bike lanes providing connections to Beacon Hill Park, and north to the Oaklands neighbourhood. Additionally, the site is within short distance of the Fort Street AAA bike facility that connects to downtown Victoria and the wider AAA bike network. Other AAA projects planned for the near future (2022-2023) include the sections of Pandora Avenue and Fort Street east of Cook Street. Implementation of AAA cycling infrastructure is also in progress along the Fernwood Connector between Pandora Avenue and Kings Road / Haultain Street.[6] It is

[4] More information about the site's Walk Score is available at: https://www.walkscore.com/score/1039-meares-st-victoria-bc-canada

[5] City of Victoria. (2019). Fairfield Neighbourhood Plan. Available at: https://www.victoria.ca/assets/Departments/Planning~Development/Community~Planning/Local~Area~Planning/Fairfield~Gonzales/Fairfield_NP_Final-web.pdf

[6] More information about designated AAA networks is available at: https://www.victoria.ca/EN/main/residents/streets-transportation/walk-roll-transit/cycling/victoria-s-aaa-cycling-network.html

anticipated that the City's investments in active transportation over the medium term will have a significant impact in increasing the modal split for cycling—especially in the downtown core—and make it easier for future residents of the subject site to bike for most trip purposes.

CARSHARING

Carsharing programs are an effective way for people to save on the cost of owning a vehicle while having access to a convenient means of transportation. The Modo Car Cooperative ("Modo") is the most popular carsharing service in Greater Victoria with a fleet of approximately 110 vehicles. There are 14 Modo vehicles within 500 m (6- to 8-minute walking distance) of the subject site at the following locations:

- Burdett Avenue & Vancouver Street [300 m]
- Rockland Avenue & Linden Street [450 m]
- View Street & Ormond Street [500 m]
- Johnson Street & Chambers Street (x2) [500 m]
- View Street & Cook Street [200 m]
- View Street & Quadra Street [500 m]
- Broughton Street & Quadra Street (x2) [400 m]
- Collinson Street & Quadra Street (x2) [450 m]
- Cook Street & Meares Street (x3)[7] [80 m]

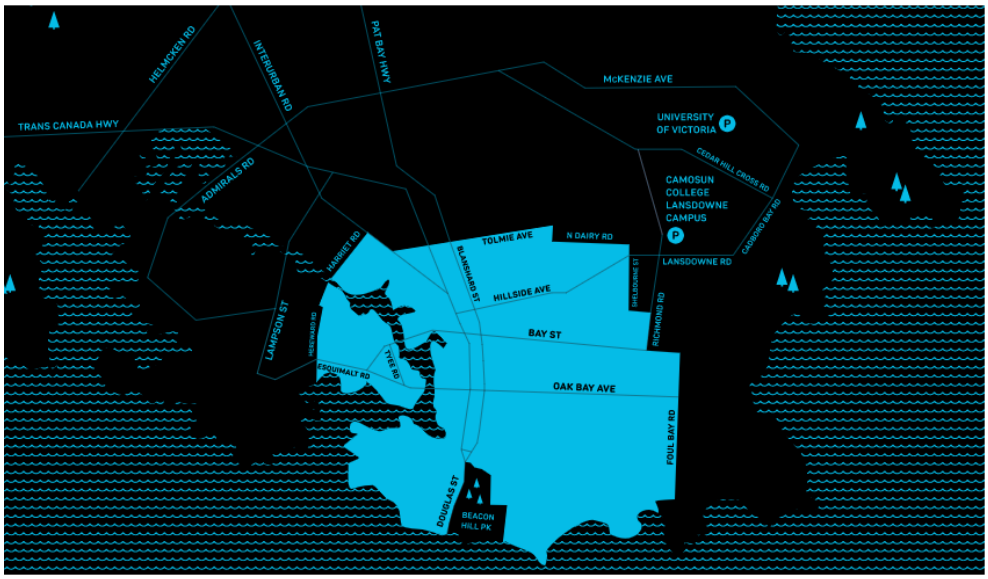
Additionally, in the summer of 2021, Evo Car Share introduced a fleet of 80 vehicles to Victoria.[8] This car share service allows members to pick up a car, use it for as long as needed, and drop it off at any permitted location within the 20-square kilometre Home Zone of where the subject site is located (see **Figure 2**). End-of-trip parking includes City parkades, surface

[7] Three carshare vehicles will be provided at the approved development at 1015 Cook Street. Available online at: https://www.thecharlesworth.ca/

[8] Times Colonist (July 30, 2021). *New car share service drives into Victoria this weekend*. Retrieved from https://www.timescolonist.com/business/new-car-share-service-drives-into-victoria-this-weekend-1.24347519

lots, reserved Evo spaces, and resident-only parking. There is also satellite parking at the University of Victoria and Camosun College's Lansdowne campus. [9]

FIGURE 2. EVO VICTORIA HOME ZONE



[9] More information about the Evo Car Share service is available online at: https://evo.ca/victoria

2.0 PROPOSED DEVELOPMENT

2.1 LAND USE

The proposed development includes a 50-unit multi-family condo building (including one of the residential units designated to operate as home-based business) and is described in detail in this section. The unit breakdown is summarized in **Table 1**. For the purposes of parking requirement calculations, the live-work unit is being separated between its residential and commercial use.

TABLE 1. UNIT BREAKDOWN

Unit Size	Total
<45m^2	11*
>45m^2 & <70m^2	35
>70m^2	5
Total	**51***

** For the purposes of parking requirement calculations, the live-work unit is being separated between its residential and commercial use, hence resulting in 51 units instead of 50 units.*

2.2 PROPOSED PARKING SUPPLY

2.2.1 VEHICLE PARKING

The proposed off-street parking supply is 22 vehicle spaces, which includes visitor parking—a rate of 0.44 spaces per unit.

2.2.2 BICYCLE PARKING

A total of 82 long-term secure bicycle parking spaces and 8 short-term bicycle parking spaces will be provided.

3.0 PARKING REQUIREMENT

3.1 VEHICLE PARKING

The City of Victoria's Zoning Bylaw No. 80-159 (Schedule C) identifies the parking requirements for the site. Schedule C specifies parking requirements based on several different factors for multi-family uses including:

- **Class of Use (i.e. Housing Tenure)** – Condominium (dwelling unit in a building owned by a Strata Corporation); Apartment (dwelling unit secured as a rental in perpetuity through a legal agreement); Affordable (affordable dwelling units secure in perpetuity through a legal agreement); All other multiple dwellings.
- **Location** – Core Area, Village/Centre and Other Area; and
- **Unit Size** – <45m² (< 485 sq.ft.), 45m² to 70m² (485 - 750 sq.ft.), and >70m² (>750 sq.ft.)

The proposed development falls in the 'Core Area' category under 'Condominium' per Figure 1 of Schedule C, see Table 2.

TABLE 2. PARKING REQUIREMENT PER SCHEDULE C

Land Use	Unit Size	Schedule C Rate
Multiple Dwelling 'Condominium in Core Area	<45m²	0.65 spaces per unit
	45-70m²	0.80 spaces per unit
	>70m²	1.20 space per unit
Visitor Parking		0.1 spaces per unit

Based on the Schedule C requirements, the site is currently required to provide a total of 46 off-street parking spaces comprising 41 residential spaces and 5 visitor spaces. Therefore, with 22 proposed off-street parking spaces, the site is short 24 parking spaces as per Schedule C. Therefore, TDM measures are required to reduce parking demand to meet the proposed parking supply (see Section 4.0).

3.2 BICYCLE PARKING

Schedule C also prescribes the minimum long-term and short-term bicycle parking requirement based on each land use. The applicable land uses are shown in Table 3. This results in a requirement of 60 long-term bicycle parking spaces. The applicant is exceeding this requirement by 22 spaces. The subject site is also required to provide a minimum of six (6) short-term bicycle parking spaces, which the applicant is exceeding by 2 spaces.

TABLE 3. BICYCLE PARKING REQUIREMENTS

Land Use		Schedule C Rate	
		Long-term Spaces	Short-term Spaces
Multiple Dwelling	< 45m^2	1 space per dwelling unit	The greater of 6 spaces per building or 0.1 spaces per dwelling unit
	> 45m^2	1.25 spaces per dwelling unit	

3.3 ELECTRIC VEHICLE PARKING

Electric Vehicle (EV) parking requirements are defined per Schedule C. Based on the bylaw; the subject site is required to provide one EV charging outlet per resident parking space.

4.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management (TDM) is the application of strategies and policies to influence individual travel choice, most commonly to reduce single-occupant vehicle travel. TDM measures typically aim to encourage sustainable travel, enhance travel options and decrease parking demand. The following sections present a menu of TDM measures that the applicant has committed to pursue for the proposed development. For all of the TDM measures, an approximate reduction in parking demand for the residential land uses has been included.

4.1 IMPROVED ACCESS TO LONG-TERM BIKE PARKING

4.1.1 OVERVIEW

Quality bicycle parking can help to legitimize cycling, "signaling to cyclists that they are invited and welcome". Allocating an entrance that is accessible to cyclists and separated from vehicular traffic increases the safety and convenience of cycling as an everyday mode of travel.[10] Strategies aimed at making cycling convenient, safe, and pleasant are considered "very beneficial" in shifting motor vehicle travel to alternative modes.[11] Further, for cycling to be an attractive alternative, it is important to ensure users have safe, convenient, and secure places to park. Best practice dictates that secure bicycle parking be located at grade and have a dedicated entrance for cyclists.

The proposed development intends to provide the secure bike room at-grade, next to the main entrance of the building, controlled by electronic access with automated doors, with CCTV cameras, ample visibility to the street and lobby, and heating.

[10] HUB Cycling. Not Just Bike Racks: Informing Design for End of Trip Cycling Amenities in Vancouver Real Estate. Available online at: https://bikehub.ca/sites/default/files/hub_cycling_amenities_report.pdf
[11] Victoria Transport Policy Institute (2019). Bicycling Improvements. Strategies to Make Cycling Convenient , Safe and Pleasant. Available online at: https://www.vtpi.org/tdm/tdm93.htm

4.1.2 RECOMMENDATION

A **6% reduction** in resident parking demand is supported since 100% of the long-term bicycle parking spaces are provided at-grade.[12]

4.2 BICYCLE MAINTENANCE FACILITY

4.2.1 OVERVIEW

Residential developments can provide dedicated on-site bicycle maintenance facilities, such as bicycle repair tools, pumps, wash stations, etc., to support ongoing bicycle use among building users.[13] This is particularly beneficial for residents living in smaller dwelling units where space is at a premium and/or access to a bicycle repair service may be inaccessible or present a financial barrier. The following amenities should be included at minimum:

- **Repair Tools:** Bicycle repair tools including: two identical tire levers; two screwdrivers (one flat head and one phillips); double sized wrenches at following sizes 8, 9, 10, 11, 15, 32 mm; allen wrenches at the following sizes 2.5, 3, 5, 6, 8 mm; a tire pump that works with Schrader and Presta valves.
- **Bike Repair Stand**
- **Bike Wash Station**: A station with a hose, drain, and supplies which can assist a resident in cleaning their bicycle.
- **Lighting and surveillance**: The facility should be well-it (inside and out), with consideration for surveillance systems to address possible personal security issues.
- **Information:** Cycling network maps, information on bicycle shops, and an advertising space for scheduled events.

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[12] This estimate was derived in tandem with the City of Vancouver's Transportation Demand Management for Developments in Vancouver, which is available online at: https://vancouver.ca/files/cov/transportation-demand-management-for-developments-in-vancouver.pdf

[13] Victoria Transport Policy Institute. (2015). *Parking Management: Strategies for More Efficient Use of Parking Resources*. Retrieved from: www.vtpi.org/tdm/tdm28.htm#_Toc128220491

The addition of these elements to the proposed development could result in a parking demand reduction as they would promote cycling for residents by providing accessible and functional facilities.

4.2.2 RECOMMENDATION

A **4% reduction** in resident parking demand is supported with the provision of a bicycle maintenance facility.

4.3 ADDITIONAL LONG-TERM BIKE PARKING

4.3.1 OVERVIEW

The provision of additional bicycle parking spaces can support residents to satisfy potential bicycle demand in the present and future. Insufficient bicycle parking is considered a key barrier to promoting cycling, with additional bicycle parking associated with an increase of cycling by 10 to 40%.[14]

4.3.2 RECOMMENDATION

A **2% reduction** in resident parking demand would be supported for every additional 10% of long-term bicycle parking spaces provided beyond what is required in Schedule C.[15] A 7% reduction is supported given that the applicant is providing an additional 22 long-term bicycle parking spaces (37% over the requirement), for a total of 82 long-term bicycle parking spaces.

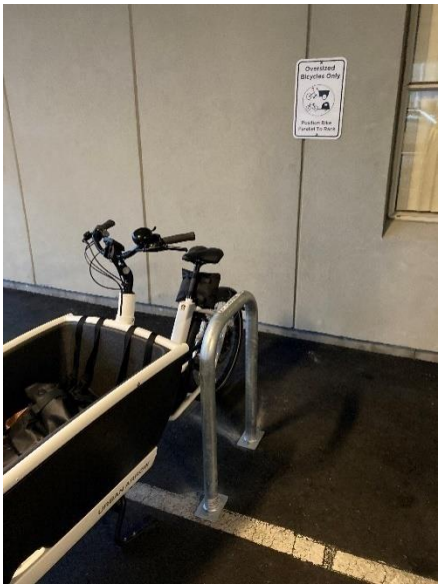
[14] Hein, E. & Buehler, R. (2019). Bicycle parking: a systematic review of scientific literature on parking behaviour, parking preferences, and their influence on cycling and travel behaviour. *Transport Reviews*, 39(5).
[15] This estimate was derived from the City of Vancouver's Transportation Demand Management for Developments in Vancouver, which is available online at: https://vancouver.ca/files/cov/transportation-demand-management-for-developments-in-vancouver.pdf

4.4 NON-STANDARD BICYCLE PARKING

4.4.1 OVERVIEW

Non-standard bicycles are longer, wider, and heavier than a typical bicycle, which makes them more challenging to park than a regular bike. Non-standard bikes include tricycles, electric cargo bikes, or a bike with a trailer, for example. Because of their size, they require different parking configurations. As electric bicycles and other non-standard bikes become more commonplace, it will be important that new developments provide the right parking to allow users to park their bicycles securely and conveniently.

There is the opportunity to design the long-term bicycle parking to accommodate non-standard bicycles. This could further reduce vehicle parking demand at the site. According to research completed in Greater Victoria, one of the top barriers facing prospective e-bike users is the fear that their bicycle might be stolen.[16] Further this research showed that users would feel more comfortable if they could park their bicycle in a locked or supervised area.



Example of a non-standard bike parking space at Royal Jubilee Hospital.

The Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Planning Guide[17] includes e-bike parking design guidelines to help address the concerns of current and prospective e-bike owners as well as to increase overall e-bike ownership in the Capital Region. The e-bike parking design guidelines include three key recommendations: (1) that all e-bike parking spaces be in a secure location (2) that 50% of the long-term bike parking spaces have access to an 110V wall outlet and (3) 10% of the spaces be designed for non-standard bicycles.

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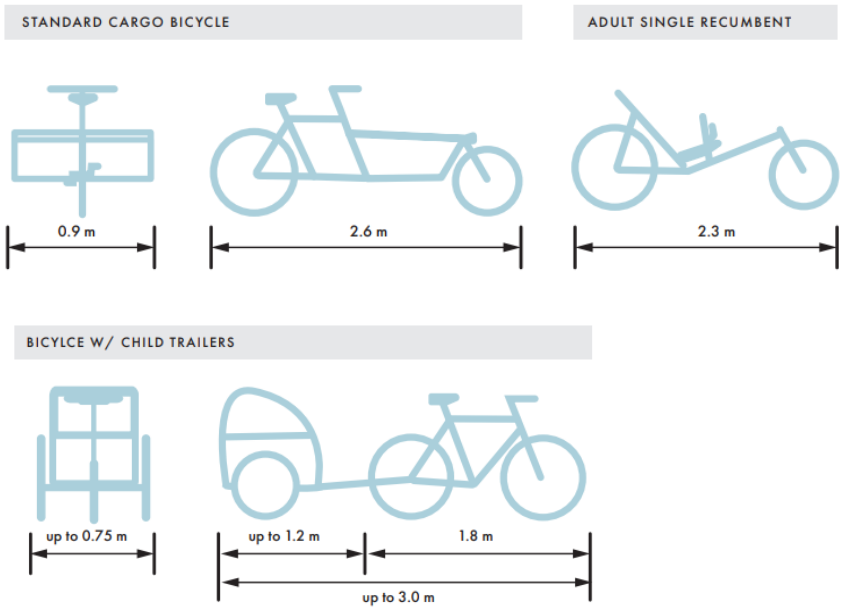
[16] WATT Consulting Group. (2018). Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Backgrounder. Available online at: https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/electric-vehicle-and-e-bike-infrastructure-backgrounder-sept-2018.pdf?sfvrsn=a067c5ca_2

[17] WATT Consulting Group. (2018). Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Planning Guide. Available online at: https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/infrastructure-planning-guide_capital-region-ev-ebike-infrastructure-project-nov-2018.pdf?sfvrsn=d767c5ca_2

Non-standard bikes, like cargo bikes, are typically electric-assist (e-bikes) that are longer than regular bicycles because they are capable of carrying cargo and/or multiple passengers with the assistance of the battery. These types of bikes can be a popular option for young families. They can be as long as 3.0 m and as wide as 0.9 m. A figure has been included below to illustrate the dimensions of different non-standard bicycles.



Typical dimensions for non-standard bicycles. Source: BC Active Transportation Design Guide

4.4.2 RECOMMENDATION

The applicant has committed to provide 100% of the long-term bicycle parking (82 spaces) with access to a 110V wall outlet, and 10% of the long-term spaces (8 spaces) as non-standard bicycle parking spaces. Based on this commitment, a **6% reduction** is supported.

Non-standard bike parking spaces should have a minimum distance of 3.0m in length and 0.9m in width. All non-standard bike parking spaces should be provided as ground anchored racks as they are heavy, long, and challenging to park in a vertical bike rack.

4.5 CARSHARING

4.5.1 OVERVIEW

As indicated in **Section 1.2**, there are 14 Modo vehicles within 500 m of the subject site and an even greater number of vehicles in the Fernwood, North Park, and Downtown neighborhoods.[18] This provides the area with adequate carsharing coverage and availability. Part of the reason why carsharing is expanding locally and being supported by municipalities is because of its ability to reduce household vehicle ownership and parking demand. Additionally, once the Harris Green Village development is complete, additional Modo vehicles will be available to future residents of the area.

A 2018 study from Metro Vancouver analyzed 3,405 survey respondents from carsharing users in the region and found that the users of Car2go and Modo reported reduced vehicle ownership after joining a carsharing service. The impact was larger for Modo users; households joining Modo reduced their ownership from an average of 0.68 to 0.36 vehicles. Further, Modo members were close to five times more likely to reduce car ownership compared to Car2go users. Additional research has found the following:

[18] The location of Modo vehicles is shown on the Modo car map, which is available online at: https://modo.coop/car-map

- A 2016 study in San Francisco reported that the potential for carsharing to reduce vehicle ownership is strongly tied to the built environment, housing density, transit accessibility, and the availability of parking.[19]

- A 2013 study from the City of Toronto looked at the relationship between the presence of carsharing in a residential building and its impact on vehicle ownership. The study surveyed residents of buildings with and without carshare vehicles. The study found that the presence of dedicated carshare vehicles has a statistically significant impact on reduced vehicle ownership and parking demand. Specifically, 29% of carshare users gave up a vehicle after becoming a member and 55% of carshare users decided against purchasing a car because of carsharing participation.[20]

While a study has not yet been completed in Greater Victoria to understand the impacts of carsharing on vehicle ownership or the specific placement of the vehicle, the results would likely be similar especially for households living in more urban areas such as Victoria where there is greater access to multiple transportation options.

4.5.2 RECOMMENDATION

Option A: Based on the research above, and the number of Modo vehicles in proximity to the site, it is recommended that the applicant provide a Modo membership for each unit ($500 non-refundable membership per unit). This would allow residents to access Modo vehicles without paying the up-front membership cost and only pay for usage. In addition, to further incentivize the use of carsharing and diversify the available alternative transportation options to future residents, it is recommended the applicant provides an incentive worth $100 of Evo Car Share driving credits for each unit.

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[19] Clewlow, R.R. (2016). Carsharing and sustainable travel behaviour: Results from the San Francisco Bay Area Transport Policy, 51, 158-164.
[20] Engel-Yan, D., & D. Passmore. (2013). Carsharing and Car Ownership at the Building Scale. Journal of the American Planning Association, 79(1), 82-91.

With the applicant's commitment to purchase Modo memberships for each unit and provide an incentive worth $100 of Evo Car Share driving credits for each unit, a parking demand **reduction of 18%** is supported.

Option B: Building on Option A, if the applicant provides the following, then a parking demand **reduction of 20%** (additional 2% from Option A) is supported:

1. The applicant to work with the City to provide a vehicle parking space on-street in front of the subject site, and equipped with a Level 2 electric vehicle charging station.
2. The applicant to purchase a Modo vehicle, which would grant the applicant 60 partner user rights[21]. These memberships should be distributed to all units in the building and would cover all 50 units.
3. The applicant to offer an incentive worth $100 of Evo Car Share driving credits for each unit.

4.6 UNBUNDLED PARKING

The applicant is proposing to unbundle the proposed off-street parking supply for the residential uses from the purchase price of each unit. Parking spaces will be sold separately from the condo units, so that residents have the option of purchasing a parking space at an additional cost. Therefore, the property buyer could save money by not purchasing a parking space. Research has identified unbundled parking as an effective TDM strategy and some research has indicated vehicle ownership reduction of 6 to 8% when unbundled parking is implemented.[22] In addition, potential reductions of

[21] Partner user rights are equivalent to a unit receiving a Modo Plus membership, which gives them access to lower hourly rates and no monthly administrative fee. However, partner user rights do not grant member voting privileges.

[22] Schure, J., Napolitan, F., & Hutchinson, R., (2012). "Cumulative Impacts of Carsharing and Unbundled Parking on Vehicle Ownership and Mode Choice." *Transportation Research Record, 2319*(1).

Mobility Lab (2018). *Arlington County Residential Building Study*. https://mobilitylab.org/research-document/arlington-county-residential-building-study-aggregate-analysis-update/

vehicle kilometres travelled (VKT) ranging from 10 to 30% attributed to unbundled parking were observed.[23]

In addition, the applicant is proposing to offer to the units that opt not to purchase a vehicle parking space a "car-free" lifestyle package, which would include a BC Transit EcoPASS for 3 years (valued at $3,000 per unit)

4.6.1 RECOMMENDATION

A **15% reduction** in resident parking demand would be supported with the provision of unbundled parking for all vehicle parking spaces and the provision of a "car-free" lifestyle package for the units that opt not to purchase a vehicle parking space.

4.7 WELCOME PACKAGE

4.7.1 OVERVIEW

Travel behaviour research has shown that people that move to a new place or start a new job have a behaviour change opportunity as they need to determine travel options and are more willing to try new modes of transportation. Providing information about alternatives to driving alone before that decision has been finalized can increase the rate at which residents carpool, bike, walk, or take transit to work and other types of trips. It is an opportunity to create a new behaviour rather than change an existing habit.

The purpose of a TDM-focused welcome package to all new building occupants is about educating them about transportation options available at their new residence. This package is meant to include information and incentives related to alternative transportation modes to owning a vehicle such as transit, cycling and carsharing.

[23] Mobility Lab. (2018). *Arlington County Residential Building Study*; Victoria Transport Policy Institute. (2018). *Parking Management: Strategies for More Efficient Use of Parking Resources*; Shoup, D. (2005). *The High Cost of Free Parking*, p. 570.

Incentives and promotions have been valuable in encouraging use of alternative modes of transportation. However, if residents are not aware of the available TDM options, they will likely not consider using them. Information about available TDM programs for the site should be included as part of marketing the development and as part of a welcome package for new tenants. Marketing the TDM programs is particularly valuable for influencing travel behaviour. Information about carsharing should be part of marketing efforts. Carsharing could provide future residents / employees with viable transportation options that may allow them to not own a vehicle at the site. Therefore, marketing this information can be an important incentive for prospective tenants.

Once residents move into the site, on-going contests, promotions and incentives should be used to maintain awareness of the available TDM programs. The use of an annual week-long contest similar to a commuter challenge or bike to work week for residents would encourage use of alternative transportation modes that residents may not normally consider or try. Prizes for participation and high TDM utilization could include gift certificates for local grocery stores, complimentary gym passes for the Crystal Pool and/or the YMCA, BC Transit vouchers or bicycle equipment such as helmets and bike lights.

4.7.2 RECOMMENDATION

A **4% reduction** in resident parking demand is supported for the provision of a TDM-focused welcome package that includes at minimum the following:

- BC Transit map
- BC Transit tickets (minimum 10 tickets per unit)
- CRD Bike Map
- Minimum of $500 per unit, provided in the form of a gift card as an incentive for the purchase of a bike (monetary incentive will be available only for use at designated bike stores in the area)
- Information on other TDM programs offered at the site

4.8 INFRASTRUCTURE IMPROVEMENTS

4.8.1 OVERVIEW

Contributions towards off-site pedestrian and cycling infrastructure that completes gaps in the active transportation can support walking and cycling. If the applicant can commit to providing financial contributions towards a pedestrian or cycling infrastructure project in the vicinity of the subject site, this will improve connection in the network for active modes and increase the accessibility and appeal of walking or cycling for future residents of the site. Improved infrastructure can further encourage modal shift for residents of this development.

The City of San Francisco's Transportation Demand Management Technical Justification Report estimated a 2% reduction in vehicle miles travelled as a result of pedestrian improvements in the adjacent road network.[24] In addition, a detailed transportation demand management study prepared for the City of Hamilton identifies off-site cycling infrastructure connections as the most effective walking & cycling TDM measure.[25]

4.8.2 RECOMMENDATIONS

A reduction in resident parking demand would be supported if the applicant commits to providing contributions towards off-site active transportation infrastructure. The reduction would depend on the type of infrastructure improvement provided. It is recommended that the applicant work with the City of Victoria to identify a specific project they could contribute to.

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[24] City of San Francisco. (2016). Transportation Demand Management Technical Justification. Retrieved from: https://default.sfplanning.org/plans-and-programs/emerging_issues/tsp/TDM_Technical_Justification.pdf

[25] IBI Group. (2016). Pier 7/8 Transportation Demand Management Detailed Report. Retrieved from: https://www.hamilton.ca/sites/default/files/media/browser/2016-06-08/west-harbour-pier6-7-8-transportation-demand-management-report.pdf

4.9 TDM SUMMARY

Table 4 is a summary of the recommended TDM measures and their potential impact on parking demand. A resident parking demand reduction of 60-62% (depending on which option in Section 4.5 is implemented) is supported if all the proposed TDM measures are provided. This represents a reduction in the estimated resident parking demand by 24 to 25 spaces. In both options for carsharing, vehicle parking demand will be aligned with the proposed supply of 22 spaces (in option B of Section 4.5, parking demand will be one less space than the proposed supply).

TABLE 4. SUMMARY OF TDM MEASURES + PARKING DEMAND REDUCTION

	Parking Reduction	
TDM Option	**Approx. Reduction** (Percentage)	**Approx. Reduction** (Number of resident spaces)
4.1 Improved Access to Long-term Bike Parking	6%	2
4.2 Bicycle Maintenance Facility	4%	2
4.3 Additional Long-term Bike Parking	7%	3
4.4 Electric and Cargo Bike Parking	6%	2
4.5 Carsharing [Option A]	18%	7
4.6 Unbundled Parking	15%	6
4.7 Welcome Package	4%	2
4.8 Infrastructure Improvements	N/A	N/A
Total	**60%**	**24**

	Parking Reduction	
TDM Option	**Approx. Reduction** (Percentage)	**Approx. Reduction** (Number of resident spaces)
4.1 Improved Access to Long-term Bike Parking	6%	2
4.2 Bicycle Maintenance Facility	4%	2
4.3 Additional Long-term Bike Parking	7%	3
4.4 Electric and Cargo Bike Parking	6%	2
4.5 Carsharing [Option B]	20%	8
4.6 Unbundled Parking	15%	6
4.7 Welcome Package	4%	2
4.8 Infrastructure Improvements	N/A	N/A
Total	**62%**	**25**

5.0 CONCLUSIONS

The proposed development at 1039 – 1043 Meares Street includes a 50-unit multi-family condo building (including one of the residential units designated to operate a home-based business). A total of 22 vehicle spaces are proposed (21 resident and 1 visitor), as well as 82 long-term secure bicycle spaces and 8 short-term bicycle spaces.

The expected parking demand per Schedule C is 46 vehicle spaces, comprising 41 resident and 5 visitor spaces. This exceeds the proposed supply by 24 spaces.

Since the expected parking demand exceeds parking supply, several TDM measures have been recommended for the applicant's consideration to reduce demand and align with the proposed supply. The total expected parking demand, if all TDM measures are adopted, is 22 parking spaces (or 21 spaces if Option B is pursued for **Section 4.5 Carsharing**), which meets the proposed parking supply. **Table 4** summarized the parking reductions that are achieved from the TDM measures.

6.0 RECOMMENDATIONS

The proposed parking supply of 22 spaces at 1039 – 1043 Meares Street is supported, provided the following conditions are being met:

1. Commit to all the TDM measures to reduce parking demand by at least 24 resident spaces.

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