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MEMORANDUM

Date: November 27, 2024
To: Julie Brown, D'Ambrosio architecture + urbanism
Cc: Tim Shah, WATT Consulting Group
From: Tania Wegwitz, WATT Consulting Group
Our File No: 3065.B01
Subject: Future Evergreen – Preliminary Parking & TDM Analysis

1.0 INTRODUCTION

WATT Consulting Group has been retained by D'Ambrosio architecture + urbanism to undertake the transportation analysis for the Future Evergreen redevelopment project.

The purpose of this memo is to:

- **Provide updated demand estimates by land use** for the parking that may be required for the development depending on the potential mix of future uses, which will only be confirmed later in the development process.
- **Outline the suite of Transportation Demand Management (TDM) options** that could be drawn from and adopted in the future to manage any gap between projected demand and supply.

It should be noted that unit counts, unit composition, tenure type and parking supply are **not confirmed at this time and are expected to be defined at the development permit application stage** for each building or building phase. Therefore, the final mix of land uses, resulting projected parking demand based on that mix, and any blend of TDM options required to meet final proposed parking supply would be confirmed at that stage. This also means that the exact blend of TDM approaches would be fine-tuned to the demand and expected resident needs of each building, within the larger overarching goal at the site level of creating a renewed Future Evergreen site that emphasizes connection, a suite of mobility options, and travel that prioritize modes other than private vehicles.

Through the course of project correspondence, City of Victoria staff have also requested further information on ICBC vehicle ownership rates for the current Evergreen Terrace site and its uses, as well as any publicly available information on TDM programs at the representative sites referenced in this memo. This follow up data request and research is in progress and will be provided at a later stage in a separate memo.

2.0 SUMMARY OF PROPOSED SITE AND PARKING DEMAND ANALYSIS

2.1 Site Overview and Potential Land Uses

As described previously, the exact mix of land uses, unit types and parking provision are not yet confirmed for Evergreen Terrace and these are expected to be defined at later stages of the development process.

However, it expected that the site may include the following multi-family residential types:

- **Social Housing Replacement (Low Income)** - According to BC Housing, social housing replacement units are defined as "subsidized housing". This refers to long-term housing for people who permanently reside in BC. The rental fees are calculated on a rent geared to income basis (30% of household total gross income, subject to minimum rent based on number of people).
- **Non-Market Affordable Rental** - Non-market rental units refer to affordable rental housing and are intended for people who have a low-to-moderate income but may not be eligible for subsidized housing.[1]
- **Market Rental** - Market rental typically refers to any rental unit where rent is unsubsidized and at a fixed rate that is not based on the amount of income or income source. Rental rates would typically be aligned with those in the private market. However, as defined by BC Housing for their own units of this type, "Market Rental" is expressed as having rents equal to, or slightly lower than, average rents in the private market.[2] This means that even "market rental" units that are part of BC Housing's portfolio may still have an element of "affordable" classification to them, which typically is also associated with lower parking demand.
- **Supportive Housing** - Supportive housing is subsidized housing with on-site supports for single adults, seniors and people with disabilities at risk of or experiencing homelessness. [3]

In addition to the multi-family residential uses, it is expected that the site may also include a **childcare centre**, as well as **small scale commercial uses** that are not yet

[1] More information about BC Housing rental housing definitions is available online at: https://www.bchousing.org/housing-assistance.

[2] BC Housing's definition of market rental is available online at here: ore information about supportive housing is available online at: https://www.bchousing.org/housing-assistance/rental-housing/market-rent-housing

[3] More information about supportive housing is available online at: https://www.bchousing.org/housing-assistance/housing-with-support/supportive-housing

defined. It is expected that a childcare centre, commercial uses and any supportive housing on the site would also have staff and would need to account for staff parking and/or employee-based TDM options.

2.2 Parking Demand Estimate Methodology

Parking demand rates for each of the potential Future Evergreen land uses was estimated based on the data and analysis methodology briefly outlined here.

- **Social Housing and Non-Market Rental** - ICBC vehicle ownership data were obtained for the social housing replacement and non-market rental units. Specifically, data were obtained for several representative sites within the City of Victoria, District of Saanich and City of Langford that have similar walkability and access to transit as the subject site. (Evergreen Terrace has a Walk Score ranging from 84 to 97 depending on location within the site). The representative sites are managed by affordable housing providers including the Greater Victoria Housing Society and Pacifica Housing.
- **Market Rental -** ICBC vehicle ownership data was also gathered for existing privately owned market rental sites within the City of Victoria that have similar walkability and access to transit as the subject site.
- **Supportive Housing** - Vehicle ownership data for the supportive housing sites were obtained by contacting various housing operators including Pacifica Housing and the Victoria Cool Aid Society. All of the sites are located in the City of Victoria.
- **Child Care** – Estimated parking demand was developed using data from the 2022 CRD Origin-Destination Household Travel Survey, as well as past parking studies undertaken by WATT for other childcare operations and a set of assumptions. See **Section 2.5** for a full outline of the methodology and assumptions used.
- **Small Scale Commercial** – Potential commercial land uses on the site could include smaller neighbourhood-scale retail, office, personal services, or restaurant, etc. Since the exact type or extent of such uses is not yet known, it is recommended that parking demand be calculated in line with the City of Victoria's Zoning Bylaw No. 80-159 – Schedule C Off-Street Parking Regulations (or any future updates), with the caveat that applying Off-Street Parking Regulation Village / Centre sub area rate –instead of 'Other Areas'—would likely be more fitting within the Future Evergreen context (see **Section 2.6**).

2.3 Parking Demand Results, Residential Housing

2.3.1 Social Housing Replacement

Based on the ICBC vehicle ownership data, the overall average demand rate of 0.44 vehicles per unit was determined for this type of housing. The representative sites (**Table 2**) are made up of a range of unit sizes and the number of vehicles per unit cannot be confidently ascribed to these. However, there is high confidence in the overall validity and reliability of the ICBC data in terms of applying it to Future Evergreen social housing replacement units.

Table 2: Social Housing Replacement Representative Sites

Address	Walkscore	Units	Registered Vehicles	Vehicles/Unit
731 Station Avenue	91	100	49	0.49
2993 Tillicum Road	74	53	26	0.49
1025 North Park Street	97	10	11	1.10
2105 Dowler Place	92	67	24	0.36
3015 Jutland Road	79	30	26	0.87
918 Collinson Street	95	100	24	0.24
921 North Park Street	96	74	30	0.41
			Arithmetic mean:	**0.44**

2.3.2 Non-Market Rental

Similar to the process used for social housing replacement units, ICBC vehicle ownership data for representative non-market rental housing sites was used to calculate an overall average demand rate of 0.59 vehicles per unit for this type of housing. (**Table 3**)

Table 3: Non-Market Rental Representative Sites

Address	Walkscore	Units	Registered Vehicles	Vehicles/Unit
506 Grafton Street	71	39	22	0.56
330 Goldstream Avenue	90	102	52	0.51
713 Treanor Avenue	67	132	88	0.67
616 Goldstream Avenue	77	73	52	0.71
2782 Spencer Road	70	58	34	0.59
830 Hockley Avenue	90	120	79	0.66
1780 Townley Street	75	64	40	0.63
2014 Government Street	95	25	11	0.44
2558 Quadra Street	95	19	7	0.37
35 Gorge Road E	73	68	46	0.68
411 Sitkum Road	81	73	24	0.33
			Arithmetic mean:	**0.59**

2.3.3 Market Rental

Likewise, ICBC vehicle ownership data was gathered and analyzed for these market rental housing sites, which resulted in an overall average demand rate of 0.65 vehicles per unit for this type of housing. (**Table 4**) As discussed earlier, since "market rental" units that are part of BC Housing's portfolio may still have an element of affordable classification to them, the projected demand for the Evergreen Terrace site may still be less than this, meaning that 0.65 should be considered a conservative estimate.

Table 4: Market Rental Representative Sites

`	Walkscore	Units	Registered Vehicles	Vehicles/Unit
820 Cook Street	94	21	16	0.76
1343 Harrison Street	80	44	29	0.66
1345 Pandora Avenue	92	62	49	0.79
1928 Lee Avenue	87	42	26	0.62
2310 Quadra Street	85	19	14	0.74
310 Saint James Street	83	28	24	0.86
425 Simcoe Street	82	173	108	0.62
853 Burdett Avenue	97	26	15	0.58
955 Cook Street	94	31	14	0.45
1022 Pandora Avenue	96	32	17	0.53
905 Burdett Avenue	93	35	21	0.60
967 Collinson Street	92	41	34	0.83
825 Cook Street	94	43	27	0.63
1130 Pandora Avenue	97	45	31	0.69
715 Vancouver Street	91	46	28	0.61
710 Vancouver Street	91	52	27	0.52
			Arithmetic mean:	**0.65**

2.3.4 Supportive Housing

Parking demand for supportive housing was determined based on vehicle ownership and mode share data provided by supportive housing operators in Greater Victoria. Supportive housing units includes two user groups: (1) residents and (2) employees.[4] The demand rate for both groups is shown below:

- Residents | 0.03 spaces / unit
- Employees | 0.76 spaces / employee

[4] Note: in addition to residential and employee parking, supportive housing developments typically require visitor parking to accommodate community support organizations / partners and maintenance vehicles. These have been excluded from the analysis at this stage as it was assumed that these vehicles could park in the general visitor parking area that is shared for all the residential units.

2.4 Parking Demand Results, Visitor Parking

Residential visitor parking in the City of Victoria is typically in the range of 0.03 to 0.07 spaces per unit based on past parking studies completed by WATT. Sites that have access to more on-street parking have been observed to have lower off-street visitor parking demand as visitors use the available street parking. Using a conservative approach, a rate of 0.07 spaces per unit is recommended.

2.5 Parking Demand Results, Child Care Parking

Parking demand for child care centres includes two user groups: (1) employees and (2) families dropping off and picking up children.

- To estimate the staff parking demand, data was utilized from the 2022 CRD Origin-Destination Household Travel Survey. For "Victoria North", where the subject site is located, the travel mode share for 'auto driver' is 31% for "within District" trips, which assumes that most of the child care staff will be residing in proximity to the site.
- The parking demand for child care parents/guardians is subject to a range of factors including [a] when the child care's operating hours will be, [b] whether there will be staggered drop-off and pick-up times, [c] the number of siblings attending (i.e., a family of two children attending the child care only requires one parking spaces), and [d] the number of parents/guardians that might drop-off and pick-up more than one child.

  For the purposes of this analysis, it was assumed that:
  - Drop-off and pick-up would occur over an extended period (drop-off: 7:30am to 9:00am; pick-up: 3:30pm to 5:00pm).
  - About 50% of the families will live within walking/cycling distance and therefore will not require parking
  - About 20% of the parents/guardians will drop-off and pick-up more than one child, either because the family has more than one child or because of parents of different families coordinating for carpooling purposes.

Based on the above assumptions and calculations undertaken for typical childcare sizes and staffing levels, it was determined that the estimated parking demand would be in line with the existing City of Victoria Schedule C Off-Street Parking Bylaw requirement of 1 space per 80m^2, which is recommended for the site.

2.6 Parking Demand Recommendations – Small Scale Commercial Use Parking

As described previously, potential commercial uses that may be included at the site are not yet confirmed but they are expected to be smaller footprint enterprises that would be primarily serving the Future Evergreen site and surrounding neighbourhood. It is therefore expected that a higher proportion of customers would be accessing the commercial uses by means other than private vehicle and would therefore not require parking. This is referred to as the captive market, which means that the total commercial parking supply could be reduced to avoid double-counting parking.

In the current City of Victoria Schedule C Off-Street Parking Regulations Figure 1: Off-Street Parking Sub-Areas, the Future Evergreen site is defined in the "Other Areas" geographic area. However, it is located directly between two "Village / Centre" areas: Humber Green Village Area (immediately across the street on Blanshard Street) and Quadra Village Area (which is less than 200m away).

As the Future Evergreen is located on an AAA cycling corridor that links these two Village areas, and where there are surrounding pedestrian facilities that make it easier to access nearby commercial amenities, the site should be treated as a Village area from a parking requirement perspective. This also aligns with the direction for the site from the Hillside-Quadra Neighbourhood Plan: "Consider opportunities to incorporate other commercial and community uses on the site that may provide expanded services and amenities, complement the assets at Humber Green and Quadra Villages, and knit the site together with the broader community."[5]

Given that policy direction and that any anticipated neighbourhood-serving commercial uses would focus on access by active transportation modes, it is recommended that if small-scale commercial uses are incorporated into the Future Evergreen site, they should be subject to the Schedule C Village / Centre parking requirement as their starting point for calculating parking demand. In addition, there could be further opportunities to reduce the parking demand estimates based on future analysis at the development permit stage once the specific uses are confirmed due to the captive market conditions described above.

[5] Pg. 46; https://www.victoria.ca/media/file/neighbourhoods-hillside-quadra-planpdf

2.7 Summary of Parking Demand Results

The following summarizes the proposed calculated parking demand rates by land use and tenure type. These do not take into account Transportation Demand Management measures that may further reduce demand (see **Section 3.0**)

Table 5. Summary of Expected Vehicle Parking Demand

Land Use / Tenure	Expected Vehicle Parking Demand Rate per Unit*
Social Housing Replacement (Low Income)	0.44
Non-Market Affordable Rental	0.59
Market Rental	0.65
Supportive Housing - Residents	0.03
Supportive Housing - Staff	0.76
Residential Visitor Parking	0.07
Child Care Centre	1 per 80m^2
Small Scale Commercial Uses	Recommended to use Off-Street Parking Regulation Village / Centre rate for the respective commercial type once the use(s) are confirmed. It is expected that this demand rate would likely be the starting point for analysis as parking could be further reduced to the captive market.

*Does not account for transportation demand management (TDM) measures, which are anticipated to lower the parking demand

3.0 SUMMARY OF POTENTIAL TDM MEASURES

The Future Evergreen site's excellent walkability and proximity to services and shopping as well as Rapid Transit, Frequent Transit and AAA cycling facilities already puts the site in a position whereby future residents, customers, and employees will not require a vehicle, at least not for all trips. BC Housing could further support this—as well as reduce any gap that may arise between parking supply and demand based on the final land use and tenure of each building phase—by including transportation demand management (TDM) measures to align vehicle parking demand with supply as required.

Table 6 summarizes a range of potential TDM measures and their estimated impacts on site-level parking demand. The table also notes potential "precinct-level" TDM measures which would contribute to the City's larger mobility goals expressed in its GoVictoria Sustainable Mobility Strategy and which may contribute to further reducing vehicle use not only at the site but also in the surrounding area. The intention would be to draw from this table as each building phase moves through the development permit process and to tailor the complement of TDM measures as the land use type, unit mix and vehicle parking provision is confirmed.

Further, as the Future Evergreen development is going to be constructed in phases, the applicant could consider implementation of TDM through a phased approach, much like the parking supply will be providing in phases. This could result in situations where the parking supply may not meet the anticipated demand in the first phase, for example, but demand would be offset through future TDM measures.

Table 6. Summary of Potential TDM Measures & Typical Impacts

TDM Option	Residential	Non-Residential	Precinct-Level Benefits?	Precinct-Level Measure Benefit Description (Initiatives that may not be quantified for direct building parking demand reduction but which will contribute to reduced vehicle demand in area and City)
	Approx. Reduction (Percentage)	Approx. Reduction (Percentage)		
3.1 Active Transportation Network & Accessbility Improvements	-	-	✓	Many improvements benefiting the site and neighbourhood, including links to AAA cycling network,
3.2 At-Grade Bicycle Parking Entrance	2%	-		
3.3 Additional Long-term Bike Parking	2% reduction per 10% additional long term bike parking provided	1% reduction per 10% additional long term bike parking provided		
3.4 Non-Standard Bike Parking	3-5% for every 10% of non-standard bike parking space + energized	3-5% for every 10% of non-standard bike parking space + energized	✓	Consideration for cargo bike parking in short term spaces, particularly near child care centre.
3.5 Bicycle Maintenance & Wash Facilities	3%	-	✓	Public amenity space
3.6 Bicycle End-of-Trip Facilities	-	2%		
3.7 Public Bikeshare Space or Provision of Site Bikeshare Program	5-10%; 10%	5-10%; 10%	✓	Provision of space for public bike share would benefit residents of site and larger area.
3.8 Transit Pass Program (Residential; Employee)	15%	5%		Requires further discussion with BC Transit; larger reduction may be possible depending on program scope.
3.9 Carsharing	% ranges depending on number of cars and memberships	% ranges depending on number of cars and memberships	✓	Benefits larger neighbourhood; potentially could include space(s) for Evo carshare
3.10 Curbside Management & Amenities	-	-	✓	Opportunity to integrate improved transit passenger amenites on Hillside Avenue and Bay Street, plus passenger pick up and drop off, loading, charging spaces on Dowler.
3.11 TDM Welcome Package (Residential; Daycare family; Employee)	2%	2%		
3.12 TDM Coordinator	3-5%	5%		

3.1 Active Transportation Network & Accessibility Improvements

Site-Level and Precinct-Level TDM Measure

- **Overview:** The site plan currently provides a considerable expansion to the local active transportation network within Evergreen Terrace and surrounding neighbourhood. These connections fill gaps and enhance the walking and cycling for the broader City and region. Universal design principals are inherent to the proposed development, and substantially improves the accessibility of the area for active transportation users and those with accessibility requirements.
- **Estimated Impacts:** These active transportation improvements represent both a site-level and a **precinct-level TDM measure**. While a specific estimated parking reduction cannot be assigned to the provisions, these changes foundationally support the ability of all to travel by non-private motor vehicle modes of transportation. Additionally, they directly support GoVictoria's Initiative 3 - *Accelerate Accessible and Active Transportation* as well as work towards initiative *1 – Adopt Vision Zero*.

3.2 At Grade Bike Parking Entrance

Site-Level TDM Measure

- **Overview:** Quality bicycle parking can help to legitimize cycling by "signaling to cyclists that they are invited and welcome."[6]. Allocating an entrance for cyclists and non-vehicular traffic increases the safety and convenience of cycling as an everyday mode of travel.[7] Best practice dictates that secure bicycle parking be located at grade and have a dedicated entrance for cyclists.
- **Estimated Impacts:**. A **2% reduction** in resident parking demand could be supported if long-term bicycle parking spaces are provided at-grade.

[6] 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
[7] 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

3.3 Additional Long-term Bike Parking

Site-Level TDM Measure

- **Overview:** The provision of additional bicycle parking spaces supports residents' ability to use a bicycle by providing adequate protected parking to satisfy potential bicycle demand. 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%.
- **Estimated Impacts:** A 2% reduction in resident parking demand is typically supported for every additional 10% of resident long-term bicycle parking spaces provided beyond what is required in Victoria's existing Schedule C Parking Bylaw, and a further 1% reduction in non-residential parking demand is typically supported for every additional 10% of non-residential long-term bicycle parking spaces.

3.4 Non-Standard Bicycle Parking

Site-Level & Precinct-Level TDM Measures

- **Overview:** Non-standard bicycles – such as cargo bikes, trailer bikes, and electric bikes (e-bikes) - are longer, wider, and heavier than a typical bicycle, which makes them more challenging to park than a regular bike. Due to their size and weight, they require different parking configurations and may be limited to floor secured spaces. As e-bikes and other non-standard bikes continue to grow in popularity, it is imperative that new developments provide bicycle parking that supports a wide range of non-standard bicycles.
- **Estimated Impacts:** It is recommended that the site consider providing 50% of long-term bike parking spaces with access to a 110V wall outlet, in line with the Capital Region Local Government Electric Vehicle (EV) + Electric Bike (E-Bike) Infrastructure Planning Guide.[8] Typically a 3-5% reduction in parking demand is supported for every 10% of long-term spaces that are non-standard bicycle parking spaces.

[8] Capital Regional District (2018). Capital Region Local Government Electric Vehicle (EV) + Electric Bike (E-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 bike parking spaces should have a minimum distance of 2.4m in length and 0.9m in width. All non-standard bike parking spaces should be provided as ground anchored racks. Non-standard bicycles, especially electric cargo bikes, are heavy, long, and challenging to park in a vertical bike rack. bicycles. Consideration should also be made for the provision of short-term non-standard bike parking, particularly adjacent to any potential child care centre.

3.5 Bicycle Maintenance and Wash Facilities

Site-Level & Precinct-Level TDM Measures

- **Overview:** Residential developments can provide dedicated on-site bicycle maintenance facilities, such as bicycle repair tools, pumps, wash stations, bike information, etc., to support ongoing bicycle use among building users. This is particularly beneficial for residents living in smaller dwelling units where space is at a premium and for people without access to a bicycle repair service due to a financial or accessibility barrier.
- **Estimated Impacts:** A 3% reduction in resident parking demand would be supported with the provision of a bicycle maintenance facility. If the bicycle maintenance facility is publicly-available, it would also represent a precinct-level benefit that directly supports GoVictoria's Initiative 3 - *Accelerate Accessible and Active Transportation*.

Example of an all-in-one bicycle maintenance station. (Image source: Dero, Kearney Centre)

3.6 End of Trip Facilities

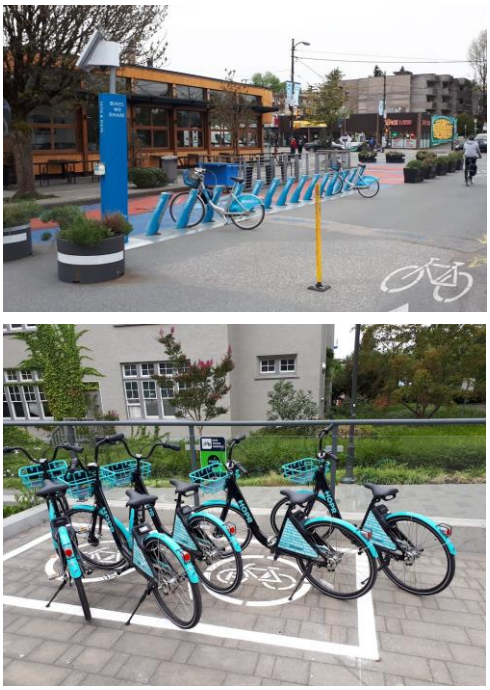
Site-Level TDM Measure

- **Overview:** Bicycle end-of-trip facilities encourage the use of cycling. These facilities typically contain change rooms and showers and personal lockers. The provision of end-of-trip facilities has the potential to reduce parking demand. In particular, providing showers and clothing lockers at workplaces has been found to be effective at encouraging bicycle use, particularly among commuters who require professional clothing attire.
- **Estimated Impacts:** A **2% reduction** in non-resident parking demand is supported with the provision of end-of-trip facilities.

3.7 Public BikeShare Space Provision or Site Based BikeShare.

Site-Level and Precinct-Level TDM Measure

- **Overview:** Bikeshare programs enable users to make use of a shared fleet of bicycles, typically administered through payment systems, membership and pass fees, and per-hour usage fees. The programs may be public and open to anyone within a community who has signed up, downloaded the app and provided payment information (such as current bikeshare programs in the cities of Vancouver and Kelowna), or they may be privately based and focused on serving the residents or users of a specific residential or hotel development, large employer site or post-secondary campus.



Two examples of pubic bikeshare systems, including one with bicycle docks (City of Vancouver's Mobi system, top) and a dockless HOPR model with home zone's for bicycles indicated using pavement markings (bottom).

Depending on the type of system and program used, bicycles can be standard fully pedal powered models or pedal assist e-bikes. E-bikes are electric bicycles with an electric motor of 500 watts or less and functioning pedals that are limited to a top speed of 32 km/h without pedalling. They may also use docking stations or may be "dockless," with drop off zones typically indicated through pavement markings and iconography that correspond to geofenced "home" locations indicated through GPS. (The fully dockless model that was previously used by the now defunct U-Bicycle program in Victoria has now generally fallen out of favour in the bikeshare industry).

As there is currently no public bikeshare program within the City of Victoria, there is an opportunity as part of the site's exterior design to designate a **contingency space to support a public bikeshare program** should the City implement one in the future. Alternatively, as the Evergreen Terrace site is expected to have some on-site staff, there is also potentially an opportunity to implement a **site-based**

bikeshare program that would make use of e-bikes. Both opportunities are discussed here.

- **Space Provision for Potential Future Public Bike Share** – Potentially the Evergreen Terrace site could create space provision in its exterior site design for placement of a public bikeshare program should a modernized version of the program become reintroduced within the City in future. Operation of any future public bike share would be the responsibility of the City. However, as space for bicycles can be a limiting factor in deploying public bikeshare programs, there is opportunity as part of the Evergreen Terrace redevelopment to plan for and designate potential space for this.

  The location of bikeshare, type of bicycles used, whether docked or dockless, and the feasible number of bikes for placement at any location would typically be decisions for the City and contracted bikeshare operator(s). However, as reference, an 8m by 4m space would meet the specifications to host a typical10-bike docked system since a docked system usually takes up more space. The scale of Evergreen Terrace could likely support several of these.

- **Site-Based E-Bikeshare Program** – A site-level private e-bikeshare program would be the responsibility of the site owner to house and operate. This would usually be operated through contract with a bikeshare operator, such as the bike and scooter sharing company HOPR which would provide the required app and administrative support. Such a program would provide a transportation option to residents who may not own a vehicle or for residents who own a vehicle but may not require it for all trip purposes.

  A site-level private e-bike program would have the following considerations:
  - Typically, the number of e-bikes to be provided should be in the range of 8-10% of total units, and each e-bike should have its own dedicated parking space.
  - To create more flexibility and suit residents' needs, it is recommended that the applicant provide different types of electric bikes such as cargo bikes which can be better for transporting children and heavier items such as groceries.

  - The e-bikes should be owned and maintained by the building operator, with maintenance provided under contract by a local bike shop.
  - Shared e-bikes are intended for various trip purposes including errands, shopping, appointments, etc., which are all shorter duration trips and would allow the e-bikes to be more available to the site for other residents.
  - The process to reserve an e-bike will most likely be on a first come first serve basis but will ultimately need to be determined by the building operator.
  - Overall e-bike utilisation should be carefully monitored in the first year. If demand is consistently high, consideration should be given to adding more e-bikes to the fleet after year 1.

- **Estimated Impacts:** Depending on the number of provided bicycles, a reduction of **5%-10%** parking demand would be supported if a **public bike share was available in proximity to the site**. The placement of provisional space to support future potential public bikeshare is also a **precinct-level measure** that contributes to mobility options in the larger neighbhourhood and which supports GoVictoria's initiatives 3 - Accelerate Accessible and Active Transportation and 5 – Rethink the Curb.

  A reduction of **10%** would be supported with the provision of a **site-based e-bikeshare program** as described above.

3.8 Transit Pass Programs (Residential + Employee)

Site-Level TDM Measure

- **Overview:** The site has excellent transit access, in terms of its proximity to RapidBus on Douglas Street, Frequent Transit on Hillside Avenue and Quadra Street, and local bus service on Bay Street. Many future residents may also qualify for existing free or low-cost annual transit passes through the City of Victoria's Youth U-PASS program for youth 18 and under or the provincial BC Bus Pass Program for lower income seniors and people with a disability.

The Victoria Regional Transit System has recently updated its EcoPASS Program for New Developments, which is a program that provides developers within the area served by the Transit System a potential solution to enhance resident mobility options and reduce parking demand. The new EcoPASS Program makes use of BC Transit's electronic fare payment system called Umo. Rather than allocate a specific pass per month to each unit in a development (as the old EcoPASS Program did), it offers a standardized discount structure **(right)** that enables developers to purchase a "pool" of rides or passes that all residents of a development could have access to, thereby creating more opportunities for residents to use transit as their mode of choice. This new EcoPASS program option would also be able to remain in place for longer periods of time without the need for a defined expiration date. If the program is well utilized by residents, tenant organizations could also take advantage of the program once developer funds are exhausted.

Amount Spent	% Discount	Cost per Ride*	Cost per Adult 30-Day Pass*
$5,000	5.0%	$2.38	$80.75
$10,000	5.5%	$2.36	$80.33
$20,000	6.0%	$2.35	$79.90
$30,000	6.5%	$2.34	$79.48
$40,000	7.0%	$2.33	$79.05
$50,000	7.5%	$2.31	$78.63
$100,000	10.0%	$2.25	$76.50
$150,000	12.5%	$2.19	$74.38
$200,000	15.0%	$2.13	$72.25
*Utilizing the existing Fare Product Pricing of $2.50 for cash rides and $85.00 for a 30-Day Pass.			

Level of discount available based on bulk purchase in BC Transit's new EcoPASS program. It may be possible for BC Housing to negotiate a specific rate with the Victoria Regional Transit System.

The new program would enable to set up a consolidated transit pass or ride fund for the site that any confirmed resident or employee would be able to access through their Umo account. This means that the fund would only be drawn down as it is actually used, which better allocates this resource into future years and also more efficiently enables residents to blend transit with other modes of travel (such as biking more in the summer when weather is better and taking more trips by transit at other times of the year). It also means that multiple residents living in a unit could have access to the benefit and that its app-based interface would enable the current list of users with access to the discount to be managed and verified.

- **Estimated Impacts:** Building on the revised EcoPass program, it may be possible to BC Housing to work with BC Transit staff and present to the Victoria Regional Transit Commission to negotiate a further preferred rate given the size of the site and its affordable housing composition. Due to the location of the site, if BC

Housing is able to secure and administer a transit pass program for residents and employees, up to a **15% reduction in residential parking demand and 5% reduction in non-residential** would be supported depending on the level of subsidy.

3.9 Carsharing

Site-Level and Precinct-Level TDM Measure

- **Overview:** 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. Modo is the most popular carsharing service in the Victoria area, with Evo carsharing also growing in terms of number of vehicles and members. Many municipalities have supported carsharing programs and their expansion due to their documented ability to reduce household vehicle ownership and parking demand.
- **Estimated Impacts:** The estimated parking reduction impact of carsharing depends on how many vehicles and memberships are provided. The typical purchase cost of a Modo vehicle is $35,000 per vehicle and would come with one Modo Plus membership per $500 spent on the vehicle (~70 memberships). It is also possible to provide additional $500 non-refundable memberships. The provision of memberships enables residents to access Modo vehicles without paying the up-front membership cost and only pay for usage.

  The anticipated parking reduction depends on building tenure and the number of vehicles and memberships provided. However, as an example, a 210 unit building with 3 Modo vehicles, designated charging and parking spaces, and associated memberships for all units would typically create an anticipated parking reduction of 15%. Provision of car sharing memberships only for such a building would be in the order of 10%. Parking space for Evo carsharing vehicles could also potentially be considered. Demand reductions could be higher if more vehicles + memberships were attached to the site.

  Publicly accessible car-sharing vehicles and/or spaces would also provide a precinct-level benefit that could additionally support the mobility of the larger neighbourhood and access to its destinations.

3.10 Curbside Management & Amenities

Site-Level and Precinct-Level TDM Measure

- **Overview:** Potential curbside management amenities that are planned for and/or could be incorporated into the design to help support mobility choice for site residents, visitors and the broader neighbourhood include:
  - **Public EV charging space** for privately owned vehicles.
  - **Improved transit passenger waiting facilities** (including shelters and benches) at stops adjacent to the site on Hillside Avenue and Bay Street.
  - **Accessible van short-term parking area(s)** for the site that would facilitate connection by handyDART transit vehicles and other similar vehicles.
  - **Other designated short-term pick up and drop off vehicle parking areas** that can be used by a variety of vehicles (taxi, ride hailing, family members, etc.)
  - Loading zones.
- **Estimated Impacts:** The curbside management changes are both a **building-level** and **precinct-level TDM measures** that help to manage vehicles in the vicinity of the site. These measures also directly support GoVictoria's initiatives 2 – *Transform Public Transit*, *4 Shift to Zero Emissions* and 5 – *Rethink the Curb*.

3.11 Welcome Package

Site-Level TDM Measure

- **Overview:** The purpose of a TDM-focused welcome package to all new building occupants and staff is about educating them about transportation options available at their new residence or employer. This package is meant to include information and incentives related to alternative transportation modes to owning a vehicle such as transit, cycling and carsharing. 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, new staff, and families accessing the child care.
- **Estimated Impacts:** A **2% reduction** in resident parking demand and a **2% reduction** in non-resident parking demand would generally be supported for the provision of a TDM-focused welcome package that includes information on the TDM programs offered at the site plus links to BC Transit and CRD Bike Map information.

3.12 TDM Coordinator

Site-Level TDM Measure

- **Overview:** As the Future Evergreen site will have a complement of staff, it would be possible to assign a TDM Coordinator role to the site. Such a role could:
    - **Help promote the site's mobility options**, such as undertaking outreach to new residents and on-site employees to provide them with the TDM welcome package and orienting them to the site's mobility features.
    - **Assist residents and non-residents in accessing the various travel choices**, such as supporting the delivery of any potential transit pass or bikeshare programs or providing wayfinding or troubleshooting.
    - **Support and document transportation behaviour change**, such as by administering an initial travel survey to capture existing transportation usage for arriving residents and non-residents, reaching out to conduct a check in after a month to see if further assistance is needed to access the travel options, and administering a follow up survey after year to document any usage changes. Such a process is not only best practice for helping to encourage sustainable transportation mode use, but it would also enable the site to better monitor usage and trends to inform TDM investments in subsequent building phases and as the site matures.
    - **Act as a connection point** to ensure the timely maintenance and upkeep of transportation infrastructure and assets on the site.

- **Estimated Impacts:** A **3-5% reduction** in resident parking demand and a **5% reduction** in non-resident parking demand would generally be supported for the provision of a TDM Coordinator role that would be attached to the site.

3.13 TDM Impacts Summary

As shown in **Table 6**, there are a wide range of TDM measures that could be included as part of the programming and design of Evergreen Terrace to support sustainable mobility. These measures can also be used to manage any potential gaps between anticipated demand and proposed vehicle parking supply once the composition and parking of specific building phases is confirmed.

As the right mix of TDM measures depends on the specifics of each building, it is recommended that the contents of this memo serve as a general guide to those later discussions with the exact measures required to meet the proposed building-level demand and parking provision confirmed at that time.

4.0 CONCLUSION

The exact Future Evergreen unit counts, unit composition, tenure type and parking supply are not confirmed at this time and are expected to be defined at the development permit application stage for each building or building phase.

However, it is expected that the site may include a child care centre, small scale commercial uses that are yet to be defined, and a range of multi-family residential types, including Social Housing, Non-Market Rental, Market Rental and Supportive Housing. Based on these types, an analysis of ICBC vehicle ownership data for representative sites and other data sources was undertaken to determine proposed parking demand rates by land use type and tenure. These recommended parking demand rates are presented in **Table 7**.

Table 7. Summary of Expected Vehicle Parking Demand

Land Use / Tenure	Expected Vehicle Parking Demand Rate per Unit*
Social Housing Replacement (Low Income)	0.44
Non-Market Affordable Rental	0.59
Market Rental	0.65
Supportive Housing - Residents	0.03
Supportive Housing - Staff	0.76
Residential Visitor Parking	0.07
Child Care Centre	1 per 80m^2
Small Scale Commercial Uses	Recommended to use Off-Street Parking Regulation Village / Centre rate for the respective commercial type once the use(s) are confirmed. It is expected that this demand rate would likely be the starting point for analysis as parking could be further reduced to the captive market.

*Does not account for transportation demand management (TDM) measures, which are anticipated to lower the parking demand

Building on the site's excellent proximity to existing and future high-quality pedestrian, cycling and transit connections, there is an extensive suite of transportation demand management options that could be used to enhance the mobility choices for the site's residents and staff and the broader area. These TDM measures can also be drawn upon as required to reduce expected parking demand to proposed supply once the final mix of

land uses, resulting projected parking demand based on that mix, and parking provision is known.

This means that any blend of TDM options required to meet final proposed parking supply would be confirmed at the development permit stage. That timing would also enable the exact blend of TDM approaches to be fine-tuned to the demand and expected resident and non-resident needs of each building, within the larger overarching goal at the site level of creating a renewed Future Evergreen site that emphasizes connection, a suite of mobility options, and travel that prioritize modes other than private vehicles.

At this time, a review of the City of Victoria's off-street parking bylaw is in progress and may deliver further changes to parking requirements.

Therefore, it is recommended that the parking ratios based on this analysis be established and approved as part of the rezoning process, with the caveats that:

- Lower minimums be used if they result from the City's off-street parking bylaw review currently underway.
- That the exact mix of TDM measures would be confirmed at the development permit stage for each phase of the site in keeping with the discussion and anticipated reduction ratios provided here.

Sincerely,
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