

3.0 Policy Context

Parking and Traffic Impact Assessment



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To: Vancouver Coastal Health August 9, 2018
Re: Revised Parking Demand and Traffic Impact Analysis Page 2

To: Vancouver Coastal Health August 9, 2018
Re: Revised Parking Demand and Traffic Impact Analysis Page 3

MEMORANDUM

To: BC Housing
Vancouver Coastal Health

From: Victor Ngo, Transportation Planner, Watt Consulting Group

Our File #: 2400.B01

Project: 1636 Clark Drive Transportation Impact Assessment and Parking Study

Date: August 9, 2018

RE: Revised Parking Demand and Traffic Impact Analysis

Dear BC Housing and Vancouver Coastal Health,

This memo provides information for the proposed site at 1636 Clark Drive & 1321-1395 East 1st Avenue on the following matters since the submission of the draft Parking Study (dated May 30, 2018) and draft Traffic Impact Study (dated June 8, 2018):

- Revised parking demand analysis and transportation demand management (TDM) opportunities to reduce the expected parking demand;
- Expanded safety assessment using ICBC data provided by the City of Vancouver; and
- Expanded discussion on off-site neighbourhood traffic impacts.

1.0 PARKING DEMAND

Table 1 provides a summary of the estimated baseline parking demand for the site.

- The demand analysis for the Withdrawal Management Centre component has been updated and now uses an employee-based method rather than a building floor area-based method. The previous area-based method was found to have overestimated the demand relative to the planned number of employees for the Withdrawal Management Centre. New information on staffing and facility operations provided by Vancouver Coastal Health was also considered.
- Estimated vehicle ownership rates among staff in the existing facilities that will be relocated to the new Withdrawal Management Centre were obtained from VCH.

These vehicle ownership rates were then applied to the peak number of planned staff for each program to estimate the future demand.

- The method for estimating demand for the other land uses remained the same from the May 30, 2018 analysis. The visitor parking associated with the Affordable Housing was reduced to 0.05 vehicles per dwelling unit to reflect research prepared as part of the City of Vancouver's Parking By-law update.¹

Table 1: Summary of Estimated Site Parking Demand

| Proposed Use | Quantity | Demand Rate | Parking Spaces |
|---------------------------------------|---------------|------------------------|----------------|
| Residential | | | |
| Affordable Housing | | | |
| Studio | 22 units | 0.25 per unit | 6 |
| 1 BR | 29 units | 0.33 per unit | 10 |
| 2 BR | 31 units | 0.40 per unit | 12 |
| 3 BR+ | 8 units | 0.48 per unit | 4 |
| Visitor | 90 units | 0.05 per unit | 5 |
| | | Subtotal | 36 |
| Institutional | | | |
| Withdrawal Management Centre (Staff) | | | |
| Detox | 50 employees | 0.89 per employee | 44 |
| Sobering | 4 employees | 0.89 per employee | 4 |
| STAR | 3 employees | 0.89 per employee | 3 |
| AC/CAIT and START | 18 employees | 0.81 per employee | 13 |
| The Hub ¹ | 1,798 sq. ft. | 2.50 per 1,000 sq. ft. | 4 |
| Withdrawal Management Centre (Public) | | | |
| Detox | 51 beds | 0.20 per bed | 10 |
| Sobering | 20 beds | 0.20 per bed | 4 |
| STAR | 18 beds | 0.20 per bed | 4 |
| AC/CAIT and START | 2,411 sq. ft. | 1.07 per 1,000 sq. ft. | 2 |
| | | Subtotal | 88 |
| Commercial | | | |
| Social Enterprise | 3,078 sq. ft. | 0.43 per 1,000 sq. ft. | 1 |
| | | Subtotal | 1 |
| Total Site Parking Demand | | | 125 |

¹ "The Hub" uses a generalized parking demand rate that blends typical office and medical office demand as the program and staffing levels are not yet confirmed.

¹ City of Vancouver. (2018). *Parking By-law Updates to Achieve Transportation 2040 Actions*. Retrieved from: <https://council.vancouver.ca/20180724/documents/p10.pdf>

The demand analysis suggests a **baseline parking demand of 125 vehicles** for the entire site.

However, there is an opportunity to pursue a shared parking arrangement for the site. Shared parking refers to a scenario where parking is shared amongst multiple land uses. When applied successfully, a shared parking arrangement can meet the combined parking needs of all uses with fewer overall parking spaces.

Specifically, a time-of-day shared parking analysis was conducted to determine how to accommodate the proposed land uses, which have varying peak periods throughout the day. For example, peak parking demand for residential typically occurs overnight, while the Withdrawal Management Centre will peak during the weekday day time.

- Under this arrangement, employees and/or visitors for the Withdrawal Management Centre, Affordable Housing, and Social Enterprise would share parking. Residents for the Affordable Housing would have reserved parking.
- A detailed inventory of planned staff and their shift schedules were provided by Vancouver Coastal Health. Based on this information, custom time-of-day factors were developed specific to the Withdrawal Management Centre.
- Time-of-day factors for the proposed Affordable Housing and the Social Enterprise were retrieved from the Urban Land Institute's *Shared Parking* manual.
- Using this information, an hour-by-hour breakdown showing the parking demand profile of the site throughout the day was developed.
- Currently, visitors for the Vancouver Detox Centre are permitted in the afternoon from 1:00 PM to 2:00 PM. The analysis assumes longer visitor hours for the Withdrawal Management Centre to spread the demand over a long period in the afternoon.

The shared parking analysis indicates the peak period will occur from 1:00 PM to 3:00 PM with a **parking demand of 98 vehicles**. This represents a 22% reduction from the baseline demand. However, even with a shared parking arrangement, the proposed supply of 81 spaces is insufficient to meet the peak demand.

2.0 TRANSPORTATION DEMAND MANAGEMENT STRATEGY

A meeting was held with Vancouver Coastal Health on June 27, 2018 to have a preliminary discussion on potential transportation demand management (TDM) measures that would be feasible for the proposed site. VCH expressed interest and feasibility in six recommended initiatives that would address employee parking demand. They are listed below with an estimated parking demand reduction factor.²

² These TDM initiatives are based on a Transportation Demand Management Strategy that was prepared by WATT Consulting Group for a concurrent parking study for Vancouver Coastal Health's Pearson Dogwood Redevelopment Project. The applicability and effectiveness of these initiatives are expected to remain the same for the proposed Withdrawal Management Centre.

1. Implement priced parking for staff and visitors (-15% for employees; -5% for visitors).
2. Provide car-sharing vehicles (-1% for employees).
3. Provide end-of-trip bicycle facilities (-5% for employees).
4. Promote awareness of the VCH Transit Subsidy Program (-10% for employees).
5. Host Commuter Centre sessions with staff to identify alternative transportation options for commuting (-2% for employees).

If all proposed initiatives are implemented, a potential overall reduction of 19% can be achieved. This estimated reduction is a conservative estimate and can be further refined with more detailed analysis. This would result in an **adjusted parking demand of 85 vehicles**. If priced parking is not pursued, a potential overall reduction of 12% can be achieved. This would result in an **adjusted parking demand of 90 spaces**, exceeding the proposed supply of 81 spaces by nine vehicles during peak period. However, there is sufficient on-street parking supply during the afternoon with 63 available on-street spaces.

3.0 PARKING RECOMMENDATION

Based on the parking demand analysis and proposed TDM strategy, the following allocation of the parking supply is appropriate.

- 32 reserved spaces for residents associated with the Affordable Housing.
- 49 unreserved spaces for all other user groups.

4.0 OFF-SITE COLLISION REVIEW

A revised desktop safety analysis was conducted for the period of eleven years from 2007 to 2017 using ICBC collision data provided by the City of Vancouver. Crashes related to parking were removed from the data set. There were an average of 110 crashes per year and a collision rate of 5.52 crashes per million entering vehicles. This is slightly higher than the 100 crashes per year and 5.05 crashes per million entering vehicles found in the initial draft Traffic Impact Study report.

A more detailed review was done of those crashes involving an injury (no crashes involved a fatality). On average, 45 injury crashes were recorded annually, with the following patterns.

- Injury-involved crashes were 41% of the total, matching the initial 5-year analysis and slightly higher than typical comparable intersections.
- Of all injury crashes, the majority (78%) involved a rear-end configuration.
- The second-highest crash type was side impact (12%).
- The highest three years for injury crashes were 2017 (58 crashes), 2015 (52 crashes), and 2016 (50 crashes).

Typical measures to reduce rear end crashes include the following:

- Ensuring that traffic signals and traffic signs are visible to all motorists (larger traffic signal heads, reflective signal backboards, etc.);
- Timing traffic signal phases such that vehicles can safely clear the intersection (amber and all-red times);
- Ensuring that the pavement provides adequate friction for vehicles trying to stop; and
- Advance warning signs.

A more detailed safety review could be completed (potentially with ICBC). This intersection is noted in the Grandview-Woodland Community Plan as a collision hotspot in the neighbourhood and has been identified as a candidate for safety improvements.

5.0 OFF-SITE NEIGHBOURHOOD TRAFFIC IMPACTS

The proposed site access from the laneway is appropriate for this development as the site is located at the intersection of two arterial roads.

As noted in the draft Traffic Impact Study report, traffic coming from the north (Hastings Street/Downtown Eastside) is expected to be diverted into the neighbouring side streets due to the painted center median on the southbound approach at Clark Drive & East 1st Avenue. The current median would restrict left-turn movements directly into the proposed site access at the laneway and on Graveley Street, forcing vehicles to turn into the side-streets further north (e.g., Grant Street) along Clark Drive to access the site.

- Should the City prefer Graveley Street rather than Grant Street be the primary circulation pattern to the site from the north, the median strip should be reduced in length to permit legal left-turning movements.
- A raised median could be considered to replace the existing painted median to allow emergency vehicles to access the laneway when necessary, while preventing regular vehicles during regular operations.
- A median opening is not recommended to permit left-turning movements from Clark Drive directly into the laneway as it is too close to the Clark Drive & East 1st Avenue intersection.
- Traffic calming measures consistent with the neighbourhood should be implemented on McLean Drive to minimize potential safety impacts with the additional traffic expected. This would also have the benefit of reducing the impact from westbound vehicles travelling on East 1st Avenue using McLean Drive to bypass the Clark Drive & East 1st Avenue intersection during peak periods, something to occur as noted by residents at the June 11, 2018 Open House.

Should you have any questions regarding the above information, please feel free to contact me directly.

Sincerely,
Watt Consulting Group

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