THE CORPORATION OF THE CITY OF WHITE ROCK CORPORATE REPORT



DATE:	June 27, 2022
то:	Land Use and Planning Committee
FROM:	Anne Berry, Director, Planning and Development Services
SUBJECT:	White Rock Zoning Bylaw, 2012, No 2000, Amendment (CD Zone 67 - 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435

RECOMMENDATIONS

THAT the Land Use and Planning Committee recommend that Council:

- Receive for information the corporate report dated June 27, 2022, from the Director of Planning and Development Services, titled "White Rock Zoning Bylaw, 2012, No 2000, Amendment (CD Zone 67 – 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435."
- 2. Give first and second readings to "White Rock Zoning Bylaw, 2012, No. 2000, Amendment (CD Zone 67 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435" as presented, and direct staff to schedule the required Public Hearing;
- 3. Direct staff to resolve the following issues prior to final adoption, if Bylaw No. 2435 is given third reading after the public hearing:
 - a) Ensure that all engineering requirements and issues, are addressed to the satisfaction of the Director of Engineering and Municipal Operations;
 - b) Confirm and ensure the recommendations of the final arborist report, approved by the Director of Planning and Development Services and, more specifically the City's Arboricultural Technician, are implemented and maintained through future demolition and construction activities.

EXECUTIVE SUMMARY

This is a draft Zoning Amendment Bylaw, and a draft Major Development Permit to be considered by Council. The bylaws and permit are related to a proposed multi-building development at -15704, 15724/28/38/48/58/70 North Bluff Road. Therefore, the application is being presented for the first and second reading for the Draft Zoning Amendment Bylaw and, before adoption, the issuance of a Major Development Permit.

Motion # & Motion Details			
Meeting Date	Wotton Details		
LU/P-038 March 29, 2021	THAT the Land Use and Planning Committee endorse in relation to Town Centre Transition area Option C as noted in the March 8, 2021 corporate report, with an amendment noting four (4) to six (6) stories where it is defined that along North Bluff on the east or west side permit six (6) stories; and For the remaining sites it be noted as four (4) stories to six (6) stories with a notation that proposals over four (4) stores would be considered when there is an affordable housing component. CARRIED		
LU/P-039 March 29, 2021	THAT the Land Use and Planning Committee endorse Option A as noted in the March 8, 2021 corporate report titled "Results of OCP Review Survey- Building Heights Outside the Town Centre" in regard to the East Side Large Lot Infill. CARRIED		
LU/P40 March 29, 2021	THAT the Land Use and Planning Committee endorse removal of the row of single family homes on Finlay Street - section below Russell Avenue from the area titled as "East Side Large Infill" from Official Community Plan and it remain with the mature neighbourhood designation. CARRIED		
LU/P-041 March 29, 2021	THAT the Land Use and Planning Committee endorse a maximum of a four (4) storey height along North Bluff road along the east side (East of Lee Street to Maccaud Park). CARRIED		
LU/P-042 March 29, 2021	THAT the Land Use and Planning Committee endorse the Waterfront Village be limited and/ or referred to as only the buildings that front onto Marine Drive.		
LU/P-043 March 29, 2021	THAT the Land Use and Planning Committee endorse, at West Beach along Marine Drive, permitting a building height of three (3) stories. CARRIED		

PREVIOUS COUNCIL DIRECTION

INTRODUCTION/BACKGROUND

Project Overview

Initial Application

This application has undergone several revisions based on Council direction and comments from the Public Information Meeting (PIM) and the Advisory Design Panel (ADP).

The original application presented at the PIM and to ADP was a 6-storey, 2.5 floor area ratio (FAR) form of development. It consolidates seven existing single-family home lots on North Bluff Road between Lee Street and Maccaud Park. Three buildings were proposed: two mid-rise,

multi-unit, market residential buildings and one mid-rise, multi-unit, affordable non-market rental housing located at the corner of North Bluff and Lee Street.

The project site is located within the East Side Large Lot Infill Area, as defined by the City of White Rock Official Community Plan (OCP), which at the time of the initial application allowed for the development of a 2.5 FAR density and 6 storeys building height. The initial design was for 115 homes (Figure 1).

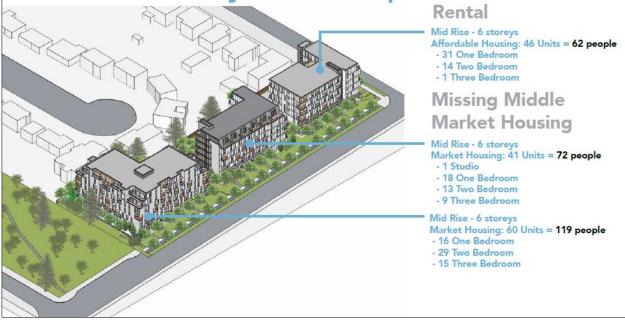


Figure 1 Birds view of the Site Plan of the APD Submission (October 1, 2020)

The community and the ADP overall supported this design. The summary of the PIM is in (Appendix A). The application complied with the OCP for height in the East Side Large Lot category. It included a car-sharing program in exchange for relaxation in the parking requirements. At the March 8, 2021, meeting as a result of the Official Community Plan Review Survey - Building Heights Outside the Town Centre, Council made a resolution to reduce the FAR and the maximum storey height from 6 to 4, with the ability for the developer to reach 2.5 FAR and 6 storeys if Affordable housing was included as per Policy 11.2.1.c.

Affordable Housing Bonus – Allow rezonings in the Town Centre Transition area to permit buildings up to six storeys and 2.5 FAR where the development provides:

For a development replacing existing rental units and providing compensation to tenants in accordance with the City's Tenant Relocation Policy, at least 5% of the units as Affordable Rental Housing. Projects with applications submitted prior to 2021 may be approved with at least 5% of the units secured at average rents for a period of 10 years, instead of 20% below average for the life of the building. Developments in this category may have a density up to 2.8 FAR.

This project progressed to the ADP and was presented to the panel at the October 20, 2020, meeting. A summary of ADP's comments and the applicants' responses are summarized in Appendix B. The ADP passed the following motion:

It was MOVED and SECONDED THAT the Advisory Design Panel recommends that the application for the development proposal at 15704, 15724/28/38/48/58/70 North Bluff

Road (ZON/MJP 19-017) North Bluff Road [Beachway II] be referred to Council subject to the applicant giving consideration to.

- 1. Adequacy of parking supply:
- 2. Adequacy of the location of spaces for deliveries/drop-offs;
- 3. Management of stormwater and;
- 4. Further development of the landscape proposal in the Southeast corner of the site.

The table below summarized the applicant's responses to the considerations ADP passed in the above motion.

Table 1

	Consideration	ADP Comments	Response
(1-4 abo 1. Adec supp	uacy of parking	Limited parking supply identified as a concern – reduction may be too aggressive – may require additional supply ("excavation") – alternative opinion regarding the opportunity presented by the proposal is looking at efforts to change auto reliance.	Parking reductions are no longer being proposed. The developments parking provision will meet the requirements of the City of White Rock Zoning Bylaw.
of sp	quacy of the location aces for reries/drop-offs.	Comments were made regarding the need for allocation for service vehicles, e.g. food delivery or taxis, to stop near the buildings and overall accessibility (or distance) from portions of the overall development site.	Service parking is located both at grade with a Zoning compliant oversized loading bay. There is also smaller service/loading stalls within the below-grade parkade, one per elevator shaft. Due to prohibitions on curb cuts along both North Bluff Road and Maccaud Park, there is limited ability to achieve additional service delivery lay-by locations. Any potential on-street lay-bys would be under the purview of the City of White Rock Engineering Department.
	agement of nwater.	Applicant states that "all" rainwater is to be reused– that would be excellent. However, this needs to be confirmed or clarified through the City's review of the stormwater management plan.	The current stormwater management proposal is to provide a stormwater detention tank complete with a flow control device that limits flows to the

			pre-development conditions. Stormwater reuse is not feasible for this site.
4.	Further development of the landscape proposal in the Southeast corner of the site.	The landscape plan has a good flow of spaces and fits the configuration of the property well; would like to see the pedestrian path between Buildings 2 and 3 (see figures 3) made wider (~1 foot wider) and in the southeast corner of the site; would like steppingstones south of Building 3 to be evaluated in terms of the impact that trees (roots) may have on the area over time and the type of steppingstones used in terms of their longevity (larger basalt stones may be a better option).	The pedestrian path connecting Buildings 2 and 3 through the drive aisle is limited to 1.2m (4') width because of slope requirements to get to the parkade entry. Pedestrian bridge width is designed per Architecture/Structural standards. The landscape path connection matches at 1.32m (4'4"). The exit path at the southeast site corner is 1.2m (4') wide which adheres to code requirements – note this is not a main route through the site. All stepping stones on the site are located at play areas and meant to act as a nature play element, encouraging children to interact with the planting.

Current Application

The revisions to the proposal are in direct response to the Council motion to reduce the height to a maximum of four storeys in this area. The project no longer seeks the additional density provided for affordable housing per the East Side Large Lot Infill Redevelopment Area (*Policy 11.2.1.c*). The revised approach will meet 1.5 FAR over three buildings (two four-storey multifamily residential buildings and one three-storey townhouse building in the middle). In addition, the previous application sought reductions in parking requirements by providing a car-share program in the building. A reduction is no longer needed, and the car-sharing program has been removed. Parking is now proposed to meet the requirements in the Zoning Bylaw. Below are site plans of the two proposals (see figures 3&4).



Figure 3- Site Plan of the APD Submission (Oct 1, 2020)



Figure 2- Site Plan of the Current Submission (Apr 14, 2022)

Design Changes

In comparison to the past application, the development has undergone the following amendments:

Previous ADP Submission (October 1, 2020) Current Submission (April 14, 2022)				
2020)	Current Submission (April 14, 2022)			
Density Comparison				
 2.5 FAR overall 149 units 2.5 FAR Affordable housing was previously proposed, aligned with the East Side Large Lot Infill Redevelopment Area. Lot Coverage 51.6% 	 1.5 FAR overall 87 units With Council's decision to reduce height/density at this location, affordable housing targets per the East Side Large Lot Infill Redevelopment Area are not being pursued. It is not financially feasible based on the rising construction cost and the allowable density. Lot Coverage 46.0% 			
Form of Development				
 Three buildings at 6 storeys each per the East Side Large Lot Infill Redevelopment Area with affordable housing. Each building is roughly L-shaped in plan, which results in a more broken-up courtyard space south of the buildings. 	 4-storey buildings bookend on either side of the site, with a 3-storey townhouse building. Overall footprints of Buildings 1 and 3 remain very similar to the October 1, 2020 submission. Building 2 has been revised to suit townhouses only and is no longer stacked townhomes with apartments on the upper levels. The 4-storey apartment buildings are located at the corners of the site to take advantage of multiple street frontages. The central townhouse building is limited in width (6 units facing North Bluff Road), and the linear form removes building mass from the south-facing courtyard, thereby increasing the size and quality of the outdoor amenity space. 			
Height				
 Building Heights previously presented at 6 storeys maximum, per the East Side Large Lot Infill Redevelopment Area. 	 Building height maximum has been reduced to 4 storeys for Buildings 1 and 3. Building 2 has been proposed as a three- storey townhouse to bring the developable FAR to 1.5 FAR overall. Building heights at Building 2 have been set to create a consistent street wall in relation to Building 3 along North Bluff Road. 			

Setbacks	
 Proposed minimum setbacks are in alignment with the OCP. 	 No change in minimum setback requirements from OCP. Townhouses (Building 2) are provided with a greater setback distance to North Bluff Road to deal with the grade change across the site and to create a more varied street wall (One of the long side boundaries of a street, formed by buildings, hedges, etc.). Patio terraces have been adjusted to provide a minimum of 600mm of landscape buffer to the adjacent sidewalk.
Architectural Character	
 The western two buildings (Buildings 1+2) were more in character with one another, being shown with fibre-cement cladding, while the easternmost building (Building 3) has brick cladding. 	 The site design allows the two larger L-shaped 4-storey buildings to act as bookends, anchoring the northwest corner of the site, facing the park, and the southwest corner at Lee Street. There have been some adjustments to Building 1 to align with the character of Building 3 as previously proposed, with similar brick facades. The brick proposed for Buildings 1 and 3 is darker than presented at ADP to help "anchor" each end of the site, create streetscape variety along North Bluff Road, and differentiate from the townhouse building. Balcony guardrails previously shown as coloured glass have been revised to clear safety glass.
- A common entrance to Buildings 2 and 3 was proposed from the courtyard.	 Units facing streets are similar to the previous design, with an individualized expression of each unit and semi-private front terraces. Patios have been adjusted slightly to provide for a minimum 600mm landscape buffer to the adjacent sidewalk. Finish floor elevations and street-facing patios have been adjusted to provide for raised terraces within 1500 mm of grade. The northeast corner townhouse unit at Building 3 has been rotated to more directly face Maccaud Park, providing eyes on the park and connectivity with the other units facing the park.

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Amenity Spaces	
 Indoor amenity spaces totalling 207.8 sq.m (1.4 sq.m. per unit) were located in both Buildings 1 and 3. 	 With the reduction in the number of units, amenity spaces have been consolidated in Building 3 to create a vibrant community hub. The size has been adjusted to 187.5 sq.m. (2.1 sq.m per unit) With a reduced building footprint, there is an increase in outdoor amenity area from the October 1, 2020 submission.
Parking and Loading	
 A parking variance was previously proposed to reduce the number of required parking stalls. Loading spaces were provided both at the lane (for larger vehicles) and within the parkade (for smaller vehicles). 	 Parking is proposed to meet the requirements of the Zoning Bylaw, with no requests for a variance. As the request for a variance has been removed, so have car and bike share facilities. However, some enhanced bike facilities (bike repair station and bike wash) remain. The approach to loading spaces is similar to the October 1, 2020 submission. with one larger loading space at the lane and smaller loading spaces within the underground parkade for more day-to-day deliveries.
Open Space/Landscaping	
- Buildings were provided with landscaped patio terraces facing the adjacent streets and Maccaud Park. A common courtyard south of the buildings provided an available amenity area with good solar access and site porosity.	 Overall landscape concept remains similar to the October 1, 2020 submission. However, transitions between buildings leading to the courtyard from North Bluff Road have been adjusted to suit the revised building siting. The lane access from the Lee Street ramp has increased to achieve zoning-conforming clear height in the parkade. In addition, an additional accessible route into the courtyard between Buildings 1 and 2 has been added to improve accessibility to the outdoor amenity area.

Unit Changes

Overall, 62 units have been removed from the project from the October 1, 2020, submission to the current proposal (from 149 units to 86 units). As noted previously, this coincides with the overall development density and building height reduction. Below are the details of the decrease in the unit per building (1,2&3).

Previous ADP Submission (Oct 1, 2020)	Current Submission (Apr 14, 2022)
Building 1	Building 1
Midrise – 6 storeys	Midrise – 4 storeys
Market housing – 60 units	Market housing 31 units
 16 one-bedroom units 	o 20 one-bedroom
 29 two-bedroom units 	o 4 two-bedroom
• 15 three-bedroom units	• 7 townhomes
	Detailed changes:
	Building 1 (a net reduction of 16 units):
	• Level 1 (+1 unit):
	• Indoor amenity removed due to a lower overall building population, with the removal of overall density. This was replaced with a 1-bedroom
	unit.Level 2 (no net change in unit count):
	A minor adjustment in the size of Unit
	110 to better align the structure and
	improve the functionality of the unit's
	floor plan.
	• Level 3 (no net change in unit count):
	• No significant changes to units.
	• Level 4 (no net change in unit count):
	• No significant changes to units.
	• Level 5 & 6 (-17 units):
	• Floor levels deleted.
	• 9 units were removed at Level 5.
	• 8 units were removed at Level 6.
Building 2	
Midrise – 6 storeys	Midrise – 3 storeys
Market housing – 41 units	Market housing 12 units
o 1 Studio	• 12 townhomes
 18 one-bedroom units 	
 13 two-bedroom units 	Detailed changes:
• 9 three-bedroom units	
	 Building 2 (a net reduction of 30 units): Building 2 changed from a 42-unit, 6- storey Multi-Residential Building (mix of apertments and townhouses)

	to twelve 3-storey townhouses. All new unit types to suit—a net total of
	30 units removed from the project.
Building 3	
Midrise – 6 storeys Non-Market housing – 46 units (affordable rental housing) o 31 one-bedroom units o 14 two-bedroom units o 1 three-bedroom unit	Midrise – 4 storeys Market housing 44 units o 14 one-bedroom o 16 two-bedroom o 14 townhomes Detailed changes:
	 Building 3 (a net reduction of 16 units): Level 1 (no net change in unit count): Entry to building relocated to face North Bluff Road, improving wayfinding, addressing, and fire department access. Unit 106B two- storey townhouse was removed (October 1, 2020 submission) to provide a location for the new building lobby; a single-storey unit on Level 2 has replaced this. Unit 106B (April 14, 2022 plans) rotated to front more directly on Maccaud Park, improving the park frontage and benefitting the livability of the unit. Exit stair #2 at the southeast corner of the building was adjusted to flatten the façade at this location. Minor adjustments to the entry doors into Units 111B and 112B (April 14, 2022 plans) to suit. Indoor Amenity reconfigured to maximize plan efficiency. Level 2 (no net change in unit count): Adjustment of Unit 202B floor plan to suit reconfiguration of Stair #3. Units 101B-105B: plans flipped to better coordinate balcony positions. Unit 201B is shown as a single-storey 1-bedroom unit due to its position above the new entry lobby. This unit replaces the former two-storey townhouse unit; therefore, there is no

	 addition to the overall unit count at this location. Unit 106B: reconfigured to face park (see above). Units 107B-114B: balconies adjusted to improve building envelope detailing. Level 3 (no net change in unit count): No significant changes to units. Level 4 (no net change in unit count): No significant changes to units. Levels 5 & 6 (-16 units): Floor levels deleted. 8 units were removed at Level 6.
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Staff have reviewed the application changes and compared them to the previous plans and the ADP roles and mandate. In the review of development permits applications, the panel's mandate is to consider the following:

- The alignment with applicable policies of the Official Community Plan and the Development Permit Area Guidelines:
 - A local government may designate certain lands as Development Permit Areas (DPA) within an Official Community Plan (OCP). The Form and Character DPA controls the form and character objectives for commercial, industrial and residential development (e.g. landscaping, siting, exterior design).
 - The form, character, appearance and landscaping are important part of what makes a place attractive and livable.
 - Staff have concluded through the review that the application still meets the intent of the guidelines, the density has been reduced but the overall form and characteristics of the development has not changed. Modifications are primarily the reconfiguration of townhomes and apartments.
- Form and character impacts that may arise out of a request for relief from a zoning bylaw standard(s) (e.g., reduction in yard setbacks, additional building height, etc.):
 - $\circ~$ There is no longer a request for relief from zoning bylaw standards.
- The intended function of the project and how the development fits within the neighbourhood context (e.g., urban design, site design, compatibility of built form, the potential for land use impacts such as shadowing, insufficient parking, negative impacts to traffic volumes, etc.):
 - The urban design has not changed significantly. The overall site plans in figures 1 and 2 are similar. The medication to the design include a reduction in height, number of units, and shadowing has been reduced due to the reduction in height. The proposed parking meets the requirements our zoning bylaw and have been verified by staff. Traffic volumes will be reduced due to the reduction in units.
- The overall quality of building and site design considering:

- the livability of the project for future occupants / site users including specific regard for public safety (CPTED) and accessibility;
 - The applicant included these features into their design. No significant changes have been made to the current submission that would affect this.
- the constructability of the design with regard to the potential impact on building longevity and cost (affordability for future owners / renters);
 - The design for the use of a prefabricated timber system will:
 - Enhance quality of construction,
 - Sequester carbon creating an environmentally sustainable building,
 - Reduce construction time limiting the impact on neighbours,
 - Result in a quieter construction site with reduced trades on site,
 - Support local industry, and
 - Result in affordable, warm, compelling homes for a wide range of residents.

This method of construction has not changed since the Previous ADP Submission (Oct 1, 2020).

- the environmental sustainability of the design considering efforts for stormwater; retention, passive solar gain, electric vehicle use, and other measures;
 - See the Climate Change Implications section of the report.
- the way in which the building design interacts with, and positively contributes to, the public realm (e.g., interface of the building with the street, landscaping treatment, pedestrian connections, variability in design and massing, etc.);
 - The project focuses on providing open and engaging spaces for public life, enhancing the character of the built environment and public realm. A network of pedestrian routes link to the central courtyard. Green space both within and surrounding the site provides area for growth of a healthy tree canopy, improving the character and walk-ability of the neighbourhood. This has not changed from the Previous ADP Submission (October 1, 2020). The intent is the same.
- the impact of the siting of buildings and structures, as well as other site features (e.g., driveways, impermeable amenity spaces, etc.) on protected trees, both private and public, and the ability to avoid tree removals and/or support tree plantings through the design of the building(s) and the layout of the site; and
- the potential for conflicts with other municipal bylaws where such conflicts may affect the overall form and character of the development or the way in which the project upholds the policy objectives of the Official Community Plan.

Based on the above information and comments, staff concluded that the changes made to the October 1, 2020 submission are not enough to be sent back to the ADP for further comments. The revised current Submission (Apr 14, 2022) meets the intent of the design guidelines and it aligns with the mandate of the ADP. Further, all considerations made by the ADP have been addressed (table 1). Council may choose to direct this application back to the ADP should council deem a further review necessary.



Site Context

The development is located within the East Side Large Lot Development Infill permit area, on North Bluff Road, between Maccaud Park and Lee Street (see figure 5). This site is well placed to encourage walking, transit use, and biking:

- The site is within a 15-minute walk to the Semiahmoo Town Centre.
- The Peace Arch Hospital Precinct is a 5-minute walk to the west.
- Earl Marriot Secondary School is located north of the site along North Bluff Road, and Peace Arch Elementary School is less than 5-minute walk to the southeast through the residential neighbourhood.
- The Kent Street Activity Centre, located within Maccaud Park and home to the Kent Street Seniors Activity groups, is a 2-minute walk.
- Proposed new R1 RapidBus service will be located along 152nd Street with an extension to 156th Ave/Finlay Street and North Bluff Road within the Semiahmoo Town Centre.

The surrounding neighbourhood is generally comprised of low density, detached residential homes, except for the 'ALTUS' development, a 13-storey mixed-use building currently under construction. Several institutional uses are also near the site, with the BC Hydro substation and Peace Arch Hospital to the west, and Earl Marriott Secondary School (in Surrey) and Maccaud Park to the east. Nearby projects under development or construction include:

- ALTUS development with 4.3 FAR at Finlay and Russell.
- Immediately to the north of the site, the Semiahmoo Town Centre Expansion Area has a projected FAR of 2.5 between 156th and 157th streets.

• Between 157th and Earl Marriot School there includes a proposal for 114 units in 2 six storey mid-rise affordable housing and 4 storey stacked townhouses.



Figure 4 - Site Context

White Rock Official Community Plan, 2017, No. 2220

The Official Community Plan (OCP) sets out land use, density, height, and other policy directions for development applications. It's objective is to enable a mix of residential forms and choices in the area east of the Peace Arch Hospital – as well as select commercial uses to support the Hospital – that are compatible with adjacent Mature Neighbourhood areas and supportive of transit along North Bluff Road.

This designation contemplates providing opportunities by allowing multi-unit residential uses in townhouses and low to mid-rise buildings, mixed-use buildings (commercial/office/residential), and single family homes. In reference to permissible densities and heights the OCP would allow a density of up to 1.5 FAR (gross floor area ratio) in buildings up to four storeys in height with an 2 story addition for projects with 20% of the units with an affordable housing component.

This site is within the East Side Large Lot Infill Development Permit Area (DPA). The objectives of this Development Permit Area are to:

- Establish an attractive, comfortable, well-connected, pedestrian-oriented environment.
- Ensure the compatibility of new development with adjacent existing buildings.
- Enhance quality of life.
- Conserve energy and water and reduce GHGs.
- Enhance the character of the built environment and public realm in the City of White Rock.

Zoning Bylaw No. 2000

The subject properties are currently zoned 'RS-1 One Unit Residential' in the White Rock Zoning Bylaw. The intent of this zone is to accommodate one-unit residential buildings on lots of 464 m2 (4,995 ft2) or larger. Under the current zoning, the subject property would be permitted to construct a 17,000 ft2 (excluding basement, garage, and other areas) single-family dwelling with a maximum height of 7.7 metres (25.26 feet).

Traffic Impact Study

The traffic impact study (Appendix C) was prepared for a development of 149 units and this revised development is for 87 units. Due to the lower number of units staff did not feel it was necessary to have the applicant update the study. The overall impact of the development on current traffic patterns is minimal.

FINANCIAL IMPLICATIONS

The following fees would be collected if approved for rezoning and subdivision (Table 2). Note these fees are subject to change:

	Fee (per unit)	Units Subject to Fee	Sub-Total
City of White Rock Development Cost Charges (DCCs)	\$11,253.27	87	\$979,036.80
TransLink DCCs			
- Townhomes	\$4,695.00	12	\$56,340.00
- Apartments	\$3,530.00	75	\$264,750.00
Metro Vancouver (Regional) DCCs			
- Townhomes	\$4,695.00	12	\$56,340.00
- Apartments	\$3,530.00	75	\$264,750.00
Surrey School District School Site Acquisition Charges (SSAC)	\$800.00	87	\$69,600.00
Total			\$1,690,816.80

Table 2: Applicable Development Costs

This development does not meet the threshold for Community Amenity Contributions.

COMMUNICATION AND COMMUNITY ENGAGEMENT IMPLICATIONS

A Public Information Meeting (PIM) for this proposal was held on September 9, 2020. A copy of the applicant's PIM Summary is included in Appendix A.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

The zoning bylaw amendment application and development permit were referred to municipal departments for comments. Comments provided to the applicant have been addressed related to this stage of the rezoning proposal.

Approval of the final detailed (civil) designs and the execution of a "Works and Servicing Agreement" to the satisfaction of the Director of Engineering and Operations would be required as a condition of 3rd reading.

CLIMATE CHANGE IMPLICATIONS

The application will enable the intensification of the 'East Side Large Lot Infill Area', thereby lessening the demand for outward sprawl otherwise necessary to accommodate growth. The applicant has also proposed several initiatives to address climate change, which include the following:

- Prefabricated wood construction to reduce energy and greenhouse gas emission, support local industry, and to reduce construction time,
- High performance building envelopes and mechanical systems to conserve energy and reduce greenhouse gas emissions,
- Enhanced stormwater retention strategies will be incorporated into the buildings and site design to manage the quality and quantity of rainwater runoff,
- Native plant species and xeriscaping will ensure the landscape supports a rich biodiversity, enhancing the natural environmental and human health performance of the community

IMPLICATIONS FOR TREE PRESERVATION AND TREE CANOPY ENHANCEMENT

All the trees identified on the Tree Retention/Removal Plan and have been given their Retention/Removal recommendation on a preliminary basis (Appendix E). Final recommendations will be based upon design/construction and grading details. Any City tree that is removed will have replacement tree bonds collected as Cash-in-Lieu. There are 40 total replacement and two of the trees will be handled by Cash in Lieu (\$1,500) as these are straddling city property.

The applicant has been advised that any trees that need to be removed on neighbouring properties must be approved by the property owner. The applicant has obtained letters of approval from the properties owners.

ALIGNMENT WITH STRATEGIC PRIORITIES

Council has expressed a desire to support a high quality of life in the City. The ability to support residential infill can help lessen the demand for sprawl while also making the best use of existing infrastructure.

OPTIONS / RISKS / ALTERNATIVES

The following options for Council's consideration are:

- 1. Give first and second readings to "White Rock Zoning Bylaw, 2012, No. 2000, Amendment (CD Zone 65 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435." and Development Permit No. 423 as presented, and direct staff to schedule the required public hearing; or
- 2. Reject "White Rock Zoning Bylaw, 2012, No. 2000, Amendment (CD Zone 65 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435.; or
- 3. Defer consideration of "White Rock Zoning Bylaw, 2012, No. 2000, (CD Zone 65 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435. pending further information to be identified.

Staff recommends Option 1, which is incorporated into the recommendations at the beginning of this corporate report.

CONCLUSION

This application proposes to rezone seven properties from the "RS-1 One Unit Residential Zone" to the "Comprehensive Development Zone (CD) 65". If approved, it would enable the proposed multi-building residential project that consists of 87 units a mixture of townhomes and apartments ranging from studios to 3 bedroom units to be built. If council is supportive of this application staff will bring the development permit forward at third reading. Overall, staff supports the proposal subject to the recommended conditions noted.

Respectfully submitted,

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Anne Berry Director, Planning and Development Services

Comments from the Chief Administrative Officer

I concur with the recommendations of this corporate report.

Guillermo Ferrero Chief Administrative Officer

Appendix A: Public Information Meeting (PIM) Summary

Appendix B: ADP Comments – Comparison Memo

Appendix C: Traffic Impact Study for 15704, 15724/28/38/48/58/70 North Bluff Road

Appendix D: Zoning Amendment No. 2435 - 15704, 15724/28/38/48/58/70 North Bluff Road

Appendix E: Arborist Report - 15704, 15724/28/38/48/58/70 North Bluff Road

Beachway 2 – Project: 19-017 Virtual Public Information Meeting Summary



Email Correspondence: Virtual Public Information Meeting

Below is a table outlining email correspondence (questions) that was received by the City of White Rock regarding the Virtual Public Information Meeting for the project numbered: **19-017**.

Email Correspondence Total			
3			

Upon our review, the main concerns of the public and our responses to them are below:

Height:

A six-storey development is in compliance with the OCP for height in the East Side Large Lot category. Only two blocks to the east is the site of a 13-storey building.

Parking:

Including the car-share rationale, we feel Beachway 2 would provide enough parking and transportation options. For construction and trade purposes, Waterstock owns lands on the Surrey side of North Bluff road that will house the parking during construction.

Density:

Waterstock Properties are great champions of Floor Space Ratio (FSR) compliance. Beachway 2 fits into the allowable 2.5 FSR in the East-Side Large Lot designation.

Virtual Public Information Meeting Live Comments

Below are questions or comments that were received and answered during the live Virtual Public Information Meeting for the project numbered: **19-017**. These comments are written precisely how they were presented. Any spelling or grammatical errors seen here are an exact recreation to what was shown at the Virtual Public Information Meeting.

1)	Identity	Timestamp
1)	Anonymous	9/10/2020 0:39

Content:

I think it is a good fit. Height is only 69.55 feet and it is medium density.

Response:

We thank you for your support of the project and how it will contribute to the community!





2)	Identity	Timestamp
	Anonymous	9/10/2020 0:48

Content:

White Rock desperately needs affordable, long term rental accommodations. The designated location seems perfect!

Response:

Thank you for the support! We are excited to bring the rental component to the area.

3)

Identity	Timestamp
Anonymous	9/10/2020 0:54

Content:

Below market rentals are not the same as affordable housing. It is just used to get the extra 3 stories of height for all buildings.

For Beechway 1 they were going to turn the affordable units property over to BC Housing ?

Response:

Any correspondence on Beachway 1 is available on the White Rock website. Beachway 2 has been proactive in understanding all avenues with regards to affordable housing.

4)

Identity	Timestamp
Anonymous	9/10/2020 1:02

Content:

A bit too much density . Townhouses would be better like the ones yuo built in Surrey.

Response:

We feel Beachway 2 offers a great mix for people in all stages of life. First time homebuyers, downsizers, and essential workers (especially hospital employees) were at the forefront of the design discussion.

5)

Identity	Timestamp
Anonymous	9/10/2020 1:07

Content:

A good mix of units.

Response:

Thank you for your support!

6)	Identity	Timestamp
0)	Anonymous	9/10/2020 1:13

Content:

From experience people living in two and three bedroom apartments need at least 2 parkade stalls each . So around 260 stalls are needed.



Beachway 2 – Project: 19-017 Virtual Public Information Meeting Summary



Response:

Including the car-share rationale, we feel Beachway 2 would provide enough parking and transportation options.

7)	Identity	Timestamp
,	Anonymous	9/10/2020 1:16

Content:

When you cut down parking stalls the parking goes out to the street in the form of permit parking . Basically this project will be eligible for 584 residents only parking passes. This project will add huge street parking issues.

Response:

Including the car-share rationale, we feel Beachway 2 would provide enough parking and transportation options. The location strategically placed on the artery that is North Bluff road to encourage different modes of transportation. The RapidBus will also be implemented to support this.

0)	Identity	Timestamp
0)	Anonymous	9/10/2020 1:17

Content:

How many levels of underground parking?

Response:

There will be two levels.

9)	Identity	Timestamp
5)	Erin Carter	9/10/2020 1:19

Content:

This looks great! As a local Realtor, I'd love to see more affordable housing options in White Rock.

Response:

Thank you for your comment, Erin!

10)	Identity	Timestamp
10)	Anonymous	9/10/2020 1:20

Content:

What will north bluff road look like in 5 years?

Response:

Waterstock, and all developers, work diligently with the municipality to ensure the infrastructure is upgraded as needed.





	Identity	Timestamp
11)	Anonymous	9/10/2020 1:23

Content:

I appreciate the presentation and certainly you have envisioned living in this development. What about people living on connected streets (i.e.: Parker) who have lived here a long time and may not be excited about having six stories looking down into their properties?

Response:

Thank you for your support and envisioning living in this development. White Rock has seen exponential growth (in height) of new developments over the past few years. Beachway 2 is compliant with the OCP designation East-Side Large Lot and we feel strongly in keeping within the designated height and density parameters.

12)	Identity	Timestamp
12)	Anonymous	9/10/2020 1:24

Content:

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Are you going to use Government Loans?
```

Response:

Waterstock's Founding Principal, Raghbir Gurm, spoke to this note in the PIM presentation and is available to the public on the White Rock Website. Any financial questions will not be will be deferred to further correspondence.

13)

Identity	Timestamp
Anonymous	9/10/2020 1:26

Content:

Tell me about the electric care shared program? That sounds exciting! What type of cars would there be and would this be provided to the community?

Response:

We are excited about the car-share program as well! There are a few different options that are going through the due diligence necessary to be implemented in White Rock. We feel this will be a great start to bringing emissions down.

	Identity	Timestamp
14)	Anonymous	9/10/2020 1:26

Content:

how will this development affect the market value of our existing bordering properties?



Beachway 2 – Project: 19-017 Virtual Public Information Meeting Summary



Response:

Waterstock feels that Beachway 2 will add positively to the community. These units are a different offering than the surrounding properties and feel that it will bring economic benefit to the entire community and contribute to surrounding market value.

	Identity	Timestamp
15)	Anonymous	9/10/2020 1:26

Content:

Nice looking project and needed in W.R. We need more affordable housing people cannot afford to buy into the new towers currently under construction and we are blocking no WR views with Surrey to the North

Response:

Thank you for your comment and the support!

	Identity	Timestamp
16)	Anonymous	9/10/2020 1:27

Content:

My wife works at Peace Arch Hospital and there's very little new rental in the neighbourhood, especially larger rental units where you can actually raise a kid. How would you qualify for the affordable housing component for this project?

Response:

This is the grouping of citizens we are aiming to apply to. When it comes to the affordable rentals, parameters of qualification will be introduced as the project gets closer to that stage. We are excited to hear more people becoming interested in this!

17)

Identity	Timestamp
Anonymous	9/10/2020 1:28

Content:

Very excited about about the car share program!! Can you tells us more about the fleet and the charging infrastructure. Will it be accessible for the general community?

Response:

Thank you for your comment! We are excited to have this come to the community as well. This was touched upon in the Public Information Meeting and various sources on the internet.

	Identity	Timestamp
18)	Anonymous	9/10/2020 1:28





Content:

Times are changing... this project will reduce emissions and create housing options and transportation options for young adults. A lot of my friends don't want cars... or they cant afford cars and houses.

Response:

Thank you for your comment, we are excited to present this project!

19)

IdentityTimestampAnonymous9/10/2020 1:29

Content:

Did you look at the option of building town houses? If so what was the reason you did not choose to include this in the project

Response:

Waterstock wanted to offer a great mix of affordable housing options for people of the area while being compliant with the OCP designation.

20)

、	Identity	Timestamp
)	Anonymous	9/10/2020 1:31

Content:

Car share is the way of the furture!

Response:

Thank you for your comment – we agree!

21)

Identity	Timestamp
Anonymous	9/10/2020 1:31

Content:

I love the idea of a "100 mile build" utilizing local trades and materials. Ive never heard of this before... it shows the type of planning that has gone into this project.

Response:

Thank you for your comment! As members of this community, we understand the importance of local business and environmentally sound options for building.

22)	Identity	Timestamp
22)	Anonymous	9/10/2020 1:33

Content:

Love the design and the fact that the main floor is wrapped with step up 2 level suites.



Beachway 2 – Project: 19-017 Virtual Public Information Meeting Summary



Response:

Thank you for your comment! We are excited to get the opportunity to present this to the community.

22)	Identity	Timestamp
23)	Anonymous	9/10/2020 1:35

Content:

Yes can see now

Response:

Thank you for joining the Public Information Meeting and taking the time to comment.

	Identity	Timestamp
24)	Anonymous	9/10/2020 1:35

Content:

Good presentation, can you please explain why town houses were not included in on the plan?

Response:

Thank you for taking the time to comment and we are pleased to hear that you enjoyed the presentation. We wanted to offer an affordable and expansive unit mix to ensure options were available to the surrounding community.

25)	Identity	Timestamp
25)	Anonymous	9/10/2020 1:35

Content:

Agreed RE: the car use decrease, I didn't gas my car for a month. The proposed parking is more than enough IMO

Response:

Thank you for your support and taking the time to comment!

26)	Identity	Timestamp
	Anonymous	9/10/2020 1:39

Content:

How will transit service the densification of the area?

Response:

The location strategically placed on the artery that is North Bluff road to encourage different modes of transportation. The RapidBus will also be implemented to support this.





27)	Identity	Timestamp
	Anonymous	9/10/2020 1:40

Content:

How wheelchair accessible units will there be in the rentals units and in the owner units.

Response:

Shelley Craig, a Principal at Urban Arts Architecture spoke to this in the presentation but was unsure of the actual count. Waterstock and UAA are great champions of accessible units.

28)	Identity	Timestamp
	Anonymous	9/10/2020 1:42

Content:

These homes are older now and we need to regenerate the area.

Response:

Thank you for joining the Virtual Public Information Meeting and writing a comment!

29)	Identity	Timestamp
	Anonymous	9/10/2020 1:43

Content:

For people my age (39) with two kids, this project would allow us to live close to my mom who never fails to remind us how rarely we see her...we prefer townhomes to singlefamily anyway, we don't have time to worry about things like grass mowing and roof maintenance. Whats the price ranges.?

Response:

Thank you for writing a thoughtful comment. This is one of the demographics that Waterstock wanted to reach. The prices will be below \$800,000 to purchase, with affordable rental rates established by the city of White Rock.

30)	Identity	Timestamp
	Anonymous	9/10/2020 1:47

Content:

what is the estimated time period of construction and how will the noise and dust be mitigated?

Response:

We are hoping to start construction as early as 2021. As members of the community, Waterstock implements all the safety standards in compliance with the BC Building Code to mitigate noise and dust.



Beachway 2 – Project: 19-017 Virtual Public Information Meeting Summary



	Identity	Timestamp
31)	Anonymous	9/10/2020 1:49

Content:

After reading the ocp, this is literally in lock step with what the city has asked for. Is the only holdup the parking? Or does the city not want to follow its own dictates?

Response:

Thank you for taking the time to write a comment. Waterstock are great champions of operating within the parameters of the OCP designation. We are currently at the first stage of the process in bringing this forward to the community and we look forward to working with City Staff and the community to bring this forward to the City Councillors.

32)	Identity	Timestamp
	Anonymous	9/10/2020 1:55

Content:

When you say "eyes on the street" what does that mean and how was it used for the design?

Response:

Eyes on the street simply refers to safety. We wanted to create a space where families and individuals would always feel safe. This is a big component of the design by eliminating blind corners and creating porous spacing.

33)	Identity	Timestamp
	Anonymous	9/10/2020 1:56

Content:

What sort of plans does the developer have for Construction worker parking during construction.

Response:

Waterstock owns lands on the Surrey side of North Bluff road that will be staged for the use of construction workers and vehicles during that time.

34)	Identity	Timestamp
	Anonymous	9/10/2020 1:57

Content: thanks yes it does



Beachway 2 – Project: 19-017 Virtual Public Information Meeting Summary



Response:

Thank you for joining the Public Information Meeting and taking the time to comment.

36)	35) Identity	Timestamp
	Anonymous	9/10/2020 2:00

Content:

I don't see any West Coast Architectural components such as the Sanctuary at Horseshoe Bay. Its too boxy?

Response:

Thank you for taking the time to join the Public Information Meeting but we are unsure of how to answer this question. We will defer to Urban Arts architecture and if you wish further information, we recommend you reach out directly.

Feedback Forms

Upon completion of the Virtual Public Information Meeting, the City of White Rock website provided an online form for public feedback. These forms were open to public completion for one (1) week after the date of the Virtual Public Information Meeting. In total, one (1) form was filled out, and was in support of Beachway 2. Below is a breakdown of the comments and responses:

1)	Identity	Timestamp
	Unknown	Unknown

Content:

Excellent location for this type of housing. Rental component Provided much needed.

Response:

Thank you for taking the time to look over the project and to write in a comment. We feel strongly that Beachway 2 will provide a great mix of affordable homes for people at all stages of life.



MEMO



Date:	June 6, 2022
То:	City of White Rock Planning and Development Services
	13450 - 104 Avenue, Surrey BC, V3T 1V8
Attention:	Attn: Alex Wallace; Anne Berry
	E: <u>awallace@whiterockcity.ca</u> ; <u>aberry@whiterockcity.ca</u>
From:	Alan Tse, Architect AIBC, MRAIC, Associate
Re:	Rezoning/Major Development Permit 15704 North Bluff Road (Courtyard Commons)

Dear Alex and Anne,

As discussed in your discussions with Waterstock Properties, the City of White Rock has requested that the proponent team provide a summary of changes to residential units from the previous development permit submission relating to 15704 North Bluff Road. The summary below is intended to be read in conjunction with drawings and commentary submitted to the City of White Rock on April 14, 2022 and May 4, 2022 - and is compared to the previous ADP submission, dated October 1, 2020 which represented a 6-storey, 2.5 FAR form of development.

	ADP Discussion	Response
1	Encouraged by the use of timber	The use of timber remains consistent between both iterations.
2	Appreciation expressed for context provided at the outset by the proponent;	Project context remains the same from the previous iteration.
3	General support offered for the form and massing of the buildings;	The project has been reduced in overall mass from 6 storeys to 4 storeys at Buildings 1 and 3, while Building 2 has been converted to 3-storey ground-oriented townhouses. Overall approach to building massing and site planning remains similar to previous, albeit with lower building heights.
4	What is the surface between buildings 2 and 3? It would be a different paver (colour);	Drive aisle is vehicular concrete, detail per Civil, w/ vehicular pavers at crossings and a 6m wide paver area at entry.
5	Demarcation of open spaces between Buildings 1 and 2 more semi-private in its design due to the private balconies which access the space; the space between Buildings 2 and 3 are more open and publically accessible	Open spaces between buildings are intended to have a more publicly-accessible character. With the proposed re-grading of the parking ramp area to suit Zoning requirements for clear overhead height within the parkade, the route between Buildings 1 and 2 has been provided as an additional accessible route into the common outdoor space.

6	Concerns raised about the façade, including	Coloured glass guardrails have been removed
0	coloured glass, and how it would look in many	from the current project proposal. Coloured
	years – later discussed by Panel with support for	glass guardrails could be considered at Buildings
	the use of colour and the "playfulness" it adds to	1 and 3.
	the development;	
7	Limited parking supply identified as a concern –	Parking reductions are no longer being
	reduction may be too aggressive – may require	proposed; parking provision will meet the
	additional supply ("excavation") – alternative	requirements of the City of White Rock Zoning
	opinion regarding the opportunity presented by	By-law.
	the proposal in looking at efforts to change auto-	
	reliance;	
8	Would like to see more (100%) of the parking	100% of parking spaces are intended to be
	spaces roughed in for electrical vehicles	roughed-in for electric vehicles.
9	Garbage collection details including location for	A location for waste pick-up staging is located at
-	pickup and terms of pick-up (internal garbage	the laneway off of Lee Street. This staging area
	storage tied to each building)	(enclosed but outside the building thermal
		boundary) is intended to accept waste bins
		transferred from below-grade waste sorting
		rooms on pick-up day.
		Below-grade waste collection and sorting rooms
		are located on the parkade level in proximity to
		the elevator cores, for the convenience of
		residents. On pick-up day, maintenance staff will
		transfer the bins via pickup truck to the staging
		area, from which location the oversized
		garbage/recycling truck will receive the bins for
		final delivery to the landfill/transfer station.
10	Separation of laneway/garbage loading and	Separation of outdoor spaces remains similar to
	children's play-area – grade differential (less than	previous iterations. The parking ramp has been
	5%) and plantings used to separate the two	adjusted to ensure zoning-conforming overhead
	activities / spaces	clearance for the below-grade parking while
		retaining unit entrances within 1.5m of grade
		along North Bluff Road. An additional accessible
		route to the common outdoor space has been
4.4		provided between Buildings 1 and 2.
11	Applicant states that "all" rainwater to be reused	The current stormwater management proposal is
	 that would be excellent but needs to be 	to provide a stormwater detention tank complete
	and fine and an elemitic but the Court of the	with a flavor and and the second seco
	confirmed or clarified through City's review of	with a flow control device that limits flows to the
	confirmed or clarified through City's review of stormwater management	pre-development conditions. Stormwater re-use
10	stormwater management	pre-development conditions. Stormwater re-use is not feasible for this site.
12	stormwater management Accessibility of units- how many are there and	pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building
12	stormwater management Accessibility of units- how many are there and can the proposed units be converted to	pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This
12	stormwater management Accessibility of units- how many are there and	pre-development conditions. Stormwater re-use is not feasible for this site.20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the
	stormwater management Accessibility of units- how many are there and can the proposed units be converted to accessible units in the future	pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the development.
12	stormwater management Accessibility of units- how many are there and can the proposed units be converted to accessible units in the future Rain-screen assembly (brick as cladding with air	 pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the development. Wall assembly design intent remains consistent
	stormwater management Accessibility of units- how many are there and can the proposed units be converted to accessible units in the future Rain-screen assembly (brick as cladding with air gap, exterior insulation, wood stud, vapor	pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the development.
	stormwater management Accessibility of units- how many are there and can the proposed units be converted to accessible units in the future Rain-screen assembly (brick as cladding with air gap, exterior insulation, wood stud, vapor barrier, and dry wall) – looking as mass timber for	 pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the development. Wall assembly design intent remains consistent
	stormwater management Accessibility of units- how many are there and can the proposed units be converted to accessible units in the future Rain-screen assembly (brick as cladding with air gap, exterior insulation, wood stud, vapor barrier, and dry wall) – looking as mass timber for the floor structure, roof structure and elevator	 pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the development. Wall assembly design intent remains consistent
	stormwater management Accessibility of units- how many are there and can the proposed units be converted to accessible units in the future Rain-screen assembly (brick as cladding with air gap, exterior insulation, wood stud, vapor barrier, and dry wall) – looking as mass timber for	 pre-development conditions. Stormwater re-use is not feasible for this site. 20 adaptable units conforming to BC Building Code are proposed within Building 1. This equates to 23% of total units across the development. Wall assembly design intent remains consistent

		previous. Building 2 has been replaced with townhouse units.
15	Design of the mansard roof with Building 1 – provides variability in the design and accommodates some stepping of height moving west to east	The reduction of building height from 6 storeys to 4 storeys mitigates overall height impacts to adjacent buildings.
16	Design of floors, mass timber with concrete topping to help with sound attenuation and additional space for insulation to keep rainwater out of the building	Floor assembly design intent remains consistent with previous iterations.
17	How will rainwater management facilities impact the design of the roof of Building 2 – intent is to manage rainwater through plumbing within the party walls or to hide the infrastructure if required on the exterior of the building	Rainwater is intended to be managed via rainwater leaders whenever feasible.
18	Management of market and non-market buildings, ideally, undertaken by same entity so that there is a cohesive management direction between buildings	Non-market housing is no longer proposed. Differences in management structure is no longer applicable.
19	Construction materials should weather well in the White Rock context	Construction materials selected are similar to previous and are intended to be long-lasting and durable.
20	Compliment for use of renderings and variability / breaks in massing	Proposed breaks in massing remain consistent with previous iterations.
21	Building 1 and 2 are similar in design and material, and may be read as a single large building – perhaps worth looking at materiality to create some additional variation between buildings	With the reconfiguration of building typology at Building 2 from a multi-unit residential building to grade-oriented townhouses, there variation in form, massing, and material character proposed. Buildings 1 and 3 have been reconsidered with more similar treatments between them, effectively "bookending" the site and providing greater visual coherence amongst the buildings.
22	Comments made regarding the need for a location for service vehicles, e.g. food delivery or taxis, to stop near the buildings and overall accessibility (or distance) from portions of the overall development site	Service parking is located both at grade (Zoning- compliant oversized loading bay) as well as with smaller service/loading stalls within the below- grade parkade, one per elevator shaft. Due to prohibitions on curb cuts along both North Bluff Road and McCaud Park, there is limited ability to achieve additional service delivery lay-by locations. Any potential on-street lay-bys would be under the purview of the City of White Rock.
23	Landscape plan has good flow of spaces and fits the configuration of the property well; would like to see the pedestrian path between Buildings 2 and 3 made wider (~1 foot wider) and in southeast corner of the site; would like stepping stones south of Building 3 to be evaluated in terms of the impact that trees (roots) may have on the area over time and the type of stepping stones used in terms of their longevity (larger basalt stones may be a better option).	Pedestrian path connecting Building 2 and 3 through the drive aisle is limited to 1.2m (4') width because of slope requirements to get to the parkade entry. Pedestrian bridge width is designed per Arch/Structural, and landscape path connection matches at 1.32m (4'4"). Exit path at S-E site corner is 1.2m (4') wide which adheres to code requirements – note this is not a main route through the site. All stepping stones on the site are located at play areas and meant to act as a nature play element, encouraging children to interact with the planting.

The Advisory Design Panel recommended that the application for the development proposal be referred to Counci subject to the applicant giving consideration to the following. Please see below and above for responses to the items requiring further consideration.

	Consideration to be given	Response
А	Adequacy of parking supply	Refer to Item 7, above.
В	Adequacy of location of spaces for deliveries / drop-offs	Refer to Item 22, above.
С	Management of stormwater	Refer to Item 11, above.
D	Further development of the landscape proposal in the Southeast corner of the site.	Refer to Item 23, above.

We look forward to working with the City of White Rock on this much needed housing project. Please feel free to call if you have any questions.

Sincerely, URBAN ARTS ARCHITECTURE

Alan Tse, Architect AIBC, MRAIC, Assoc. AIA, LEED AP Associate

 Date:
 23 October 2019

 Our File No:
 7130-01

BY EMAIL

Mr. Raghbir Gurm

1168620 BC Limited 13063 56 Ave Surrey BC V3X2Z3

Dear Mr. Gurm,

Re: Beachway 2 – Residential Development Traffic Impact Assessment White Rock, BC

Creative Transportation Solutions Ltd. (CTS) is pleased to submit this **DRAFT** report summarising our work on the above study. CTS was retained by Mr. Raghbir Gurm on September 26th, 2019 to undertake a traffic impact study for a proposed residential townhouse and condominium development in the City of White Rock. The primary objectives of this study are as follows:

- 1. To undertake a traffic impact assessment of the development site;
- 2. To provide a rationale for the proposed 30% parking variance;
- 3. To review the swept path requirements; and,
- 4. To document the results in a report suitable for submission to the City of White Rock.

This report documents our analyses and findings.

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1.0 BACKGROUND

1.1 The Site

1168620 BC Ltd is proposing to build a residential development, Beachway 2, at the following addresses in the City of White Rock, BC:

- 15704 North Bluff Road
- 15724 North Bluff Road
- 15728 North Bluff Road
- 15738 North Bluff Road
- 15748 North Bluff Road
- 15758 North Bluff Road
- 15770 North Bluff Road

The current zoning is RS-1 (One Unit Residential Zone) and the site is located in the east side large-lot infill redevelopment area. The proposed development location is illustrated in **FIGURE 1** below.

The residential development is proposed to be rezoned as a comprehensive development and will have 34 city homes and 113 condominium units for a total of 147 dwelling units. Of the 147 units, 46 are designated as non-market units with seven (7) of them being townhouse units, and 39 of them being condominium units.

Access to the site is proposed via a driveway on Lee Street. For the purposes of this study, development was assumed to be completed and fully occupied by 2021.

The study area and the existing roadways are illustrated in **FIGURE 2**. The referenced site plan is included in **APPENDIX A**.



FIGURE 1 SITE CONTEXT



Beachway 1, an adjacent residential development highlighted in orange in **FIGURE 1** above, was examined in a separate traffic impact assessment and is attached as **APPENDIX B**. The study site of this report, Beachway 2, is highlighted in yellow in **FIGURE 1** above.

The 400 metre radius illustrated in **FIGURE 1** above represents a five minute walk from the site.

As illustrated in **FIGURE 1**, the site has excellent walking access to significant commercial and retail areas.

The following attractions and destinations are all approximately a five (5) to fifteen (15) minute walk from the study site:

- Semiahmoo Shopping Centre
- Semiahmoo Public Library
- Peace Arch Hospital
- Commercial / retail developments all along Johnston Road
- White Rock Centre transit exchange
- Earl Marriott Secondary School
- Peach Arch Elementary
- Kent Street Activity Centre
- Maccaud Park



The study intersections analyzed within this traffic impact assessment include the following:

- Lee Street at North Bluff Road
- Lee Street at Russell Avenue

The following study intersections were counted and analyzed in the traffic impact assessment for Beachway 2 and may be referenced to in **APPENDIX B**:

- Maple Street at North Bluff Road
- Maple Street at Russell Avenue



FIGURE 2 STUDY AREA AND INTERSECTIONS



1.2 Site Visit/Road Network

A site visit was conducted in order to document current conditions. The following road network characteristics were confirmed.

North Bluff Road / 16th Avenue

- East-west arterial
- Centerline forms the municipal boundary between City of White Rock and City of Surrey.
- Four lanes.
- Truck Route.
- No Stopping on north side. 'Permit Parking Only' on south side
- Concrete curb and gutter along both sides of the road.
- Street lighting.

Russell Avenue

- East / west primary collector
- Two lanes two through lanes with two parking lanes.
- 'Permit parking Only' on both sides
- Concrete curb and gutter along both sides of the road.
- Street lighting.

Lee Street

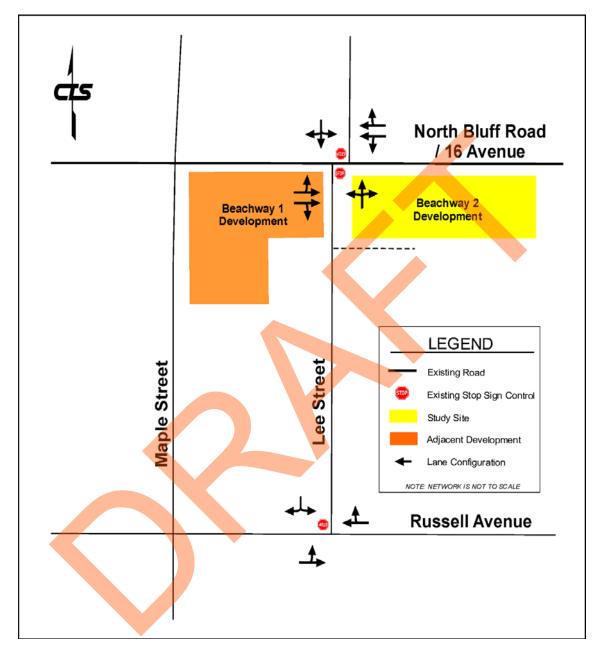
- North / south neighborhood local road.
- Two lanes.
- 'Permit parking Only' on both sides
- No curb or gutter.
- Street Lighting.

The laning configuration for the study intersections are illustrated in **FIGURE 3**.

It should be noted that due to the proximity of Peace Arch Hospital, on-street parking management is a key traffic management element for the City of White Rock.



FIGURE 3 LANING CONFIGURATION





1.3 Scope of Work

CTS selected the weekday morning and afternoon peak hours as the analysis design hours for this study as it represents the peak traffic time for the adjacent road network and the peak traffic times a residential development.

The following scenarios were used in this traffic impact assessment:

- 1. 2019 existing base traffic
- 2. 2021 future base traffic
- 3. 2026 future base traffic
- 4. 2021 future base traffic + proposed development traffic
- 5. 2026 future base traffic + proposed development traffic



2.0 BASE TRAFFIC VOLUMES

2.1 Existing Base Traffic Volumes

2019 Base Traffic Volumes

CTS conducted turning movement counts from 07:00 to 09:00, and 15:00 to 18:00 to document the typical weekday peak hour traffic volume for the following intersections on the following dates:

- Lee Street and North Bluff Road (Thursday, November 8th, 2018);
- Lee Street and Russell Avenue (Thursday, November 8th, 2018);

The traffic count data was summarized and reviewed to ensure data integrity and validity. The summarized traffic data sheets are included in **APPENDIX C.**

The 2018 base traffic volumes were factored up by a traffic volume growth rate of 2.0% to represent base year 2019 volumes.

From the collected data, the weekday morning peak hour was determined to occur from 7:45 to 8:45 and the afternoon peak hour was determined to occur from 15:00 to 16:00.

The 2019 base traffic volumes for the weekday morning and afternoon peak hours are illustrated in **FIGURE 4** and **FIGURE 5** respectively.



€_15 **€**870 4 ↓ 4 4 ↓ 4 North Bluff Road **€**²⁸ / 16 Avenue £_8 698**→** 6**→** Beachway 2 Development Beachway 1 Development **Maple Street** Street LEGEND Existing Road Existing Stop Sign Control Lee Adjacent Development (Beachway 1) Study Area (Beachway 2) Proposed Access 19 19 - 100 Traffic Volumes **€**_7 **Russell Avenue ←**94 NOTE: NETWORK IS NOT TO SCALE 10 7**_**7 75**→**

FIGURE 4 2019 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES



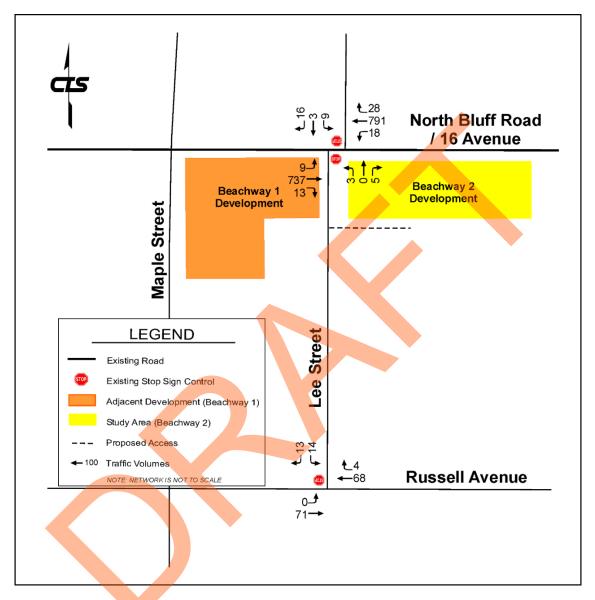


FIGURE 5 2019 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES



2.2 Future Base Traffic Volumes

The 2019 base volumes were factored up by a traffic volume growth rate of 2.0% to the 2021 and 2026 horizon years.

2021 Future Base Traffic Volumes

2021 is anticipated to be the year of full buildout for the proposed development. The 2018 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent base year 2021 volumes.

FIGURE 6 and FIGURE 7 illustrate the weekday morning and afternoon peak hour vehicle volumes, respectively.

2026 Future Base Traffic Volumes

2026 is ten years after the anticipated year of full buildout for the proposed development, and is a scenario requested by the City of White Rock. The 2019 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent base year 2026 volumes.

FIGURE 8 and FIGURE 9 illustrate the weekday morning and afternoon peak hour vehicle volumes, respectively.



2021 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES **€_**16 ↓ ↓ ↓ ↓ North Bluff Road ←905 €-30 / 16 Avenue <mark>ך ↑</mark> ך ل_و 726-**Beachway 2** Beachway 1 Development 77 Development **Maple Street** LEGEND Street Existing Road Existing Stop Sign Control lee Adjacent Development (Beachway 1) Study Area (Beachway 2) _ _ Proposed Access 121 ← 100 Traffic Volumes €_8 **Russell Avenue** NOTE: NETWORK IS NOT TO SCALE ←98 **€_**8 78→

FIGURE 6



2021 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES **€_**30 10 North Bluff Road ←823 € 19 / 16 Avenue 10-767-**Beachway 2** Beachway 1 Development 147 Development **Maple Street** Street LEGEND Existing Road Existing Stop Sign Control Lee Adjacent Development (Beachway 1) Study Area (Beachway 2) _ _ Proposed Access + 15 15

€_5 **€**71

€_0 74→ **Russell Avenue**

← 100 Traffic Volumes

NOTE: NETWORK IS NOT TO SCALE



FIGURE 7



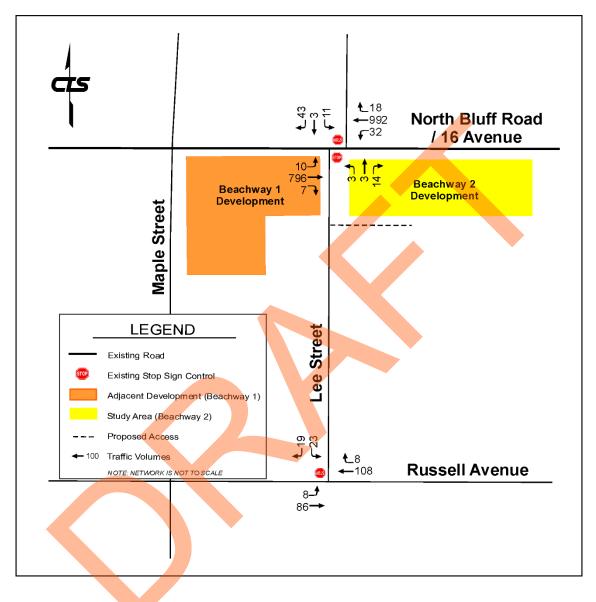


FIGURE 8 2026 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES

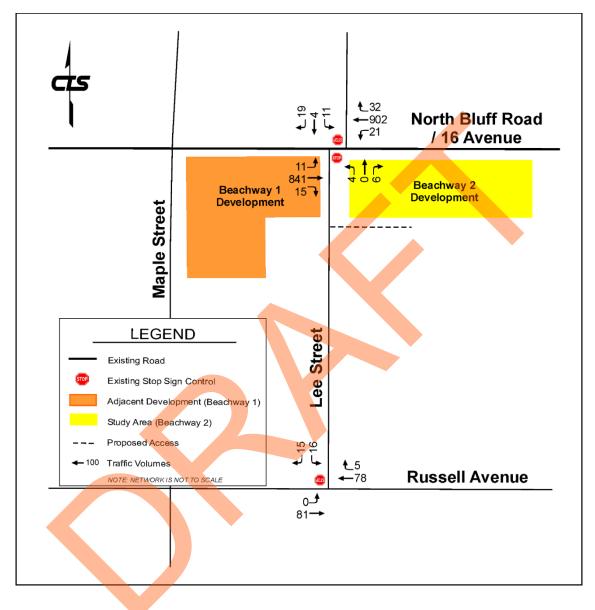


FIGURE 9 2026 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES



3.0 SITE TRAFFIC VOLUMES

3.1 Trip Generation

The published vehicle trip rates from *the Institute of Transportation Engineers (ITE)* 10th *Edition* were used to forecast the site generated traffic volumes. The proposed residential development consists of 34 townhouse units and 113 condominium units.

TABLE 1 summarizes the estimated site generated traffic for the existing apartment building as well as the forecast site generated traffic from the proposed development.

Land Use	Trip Generation Variable	Scope of Development	Trip Rate Source	Peak Hour	Vehicle Trip Generation	Directi	onal Split	Peak H	our Volum	es (vph)	
	Valiable	Development	Source		Rate	% in % (in	out	total	
Multifamily Housing	Dwelling Units	34	ITE 10th Edition -	Weekday Morning	0.46	23%	77%	3	13	16	
(Low-Rise)	Dwening Onits		Code 220	Weekday Afternoon	0.56	63%	37%	12	8	20	
Multifamily Housing	Dwelling Units	113	ITE 10th Edition -	Weekday Morning	0.36	26%	74%	10	31	41	
(Mid-Rise)		19	Code 220	Weekday Afternoon	0.44	61%	39%	30	20	50	
	WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES										
	WEEKDAY AFTERNOON PEAK HOUR TRAFFIC VOLUMES										

TABLE 1 SUMMARY OF SITE GENERATED TRAFFIC

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have three or more levels (floors). The Vehicle Trip Generation Rate was selected using the General Urban/Suburban setting.

From **TABLE 1**, the proposed development is forecasted to generate a total of 57 vehicle trips (13 inbound, 44 outbound) during the weekday morning peak hour and 70 vehicle trips (42 inbound, 28 outbound) during the weekday afternoon peak hour. This is the equivalent of approximately one vehicle movement every 1.1 minutes during the weekday morning peak hour and one vehicle movement every 57 seconds during the weekday afternoon peak hour.

3.2 Trip Distribution

The trip distribution parameters for distributing site generated vehicle trips to / from the site were developed from existing traffic patterns entering and exiting the study area. The traffic volume assignment is summarized in **TABLE 2**.

TABLE 2 TRIP DISTRIBUTION VEHICLE VOLUMES FOR SITE GENERATED TRAFFIC

From / To	Weekday Al	M Peak Hour	Weekday PM Peak Hou					
	Inbound	Outbound	Inbound	Outbound				
North Bluff Road (W)	9	19	20	13				
Lee St (N)	1	1	1	1				
North Bluff Road (E)	1	20	17	12				
Russell Ave (E)	1	2	2	1				
Russell Ave (W)	1	2	2	1				
TOTAL	13	44	42 28					
	5	57	70					

The weekday morning and afternoon peak hour site generated traffic volumes of the proposed development for the build-out year of 2021 are illustrated in **FIGURE 10** and **FIGURE 11**.

€_0 ⊷0 ┛┇╚ North Bluff Road €1 / 16 Avenue €_0 ←0 Î ່ຊ Beachway 2 Development ດ Beachway 1 Development 97 **Maple Street €**_40 0 €4 Street LEGEND 1 🟲 0 0 Existing Road Existing Stop Sign Control Lee Adjacent Development (Beachway 1) Study Area (Beachway 2) Proposed Access Ľ, - 100 Traffic Volumes **€_**1 **←**0 **Russell Avenue** NOTE: NETWORK IS NOT TO SCALE 1_ . 0**→**

FIGURE 10 WEEKDAY MORNING PEAK HOUR SITE TRAFFIC VOLUMES

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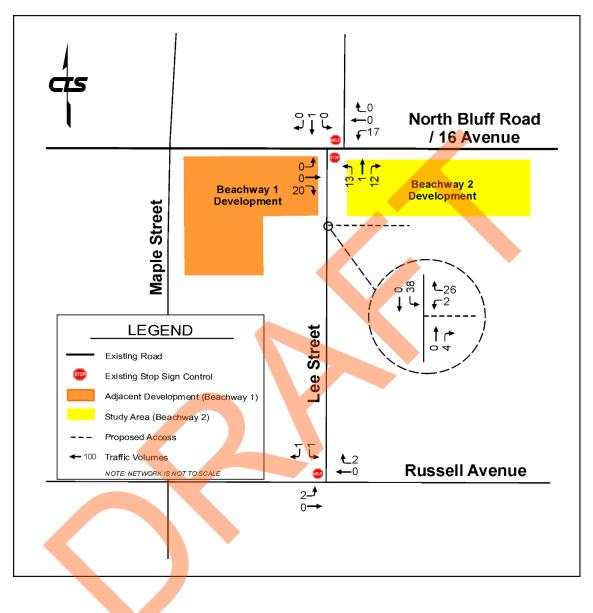


FIGURE 11 WEEKDAY AFTERNOON PEAK HOUR SITE TRAFFIC VOLUMES



4.0 BASE + SITE TRAFFIC VOLUMES

2021 Future Base + Site Traffic Volumes

For the purposes of this study, the proposed development is assumed to be fully built-out and occupied by the year 2021. The 2021 future base plus proposed development traffic volumes were calculated by first factoring up the 2019 base traffic volumes up by the approved volume growth rate of 2.0% per annum (simple-straight line) to the year 2021. Then, the forecast traffic generated by the proposed development were added to the 2021 base traffic volumes.

FIGURE 12 illustrates the total projected traffic for the 2021 weekday morning peak hour consisting of the future base plus the proposed development site generated traffic.

FIGURE 13 illustrates the total projected traffic for the 2021 weekday afternoon peak hour consisting of the future base plus the proposed development site generated traffic.

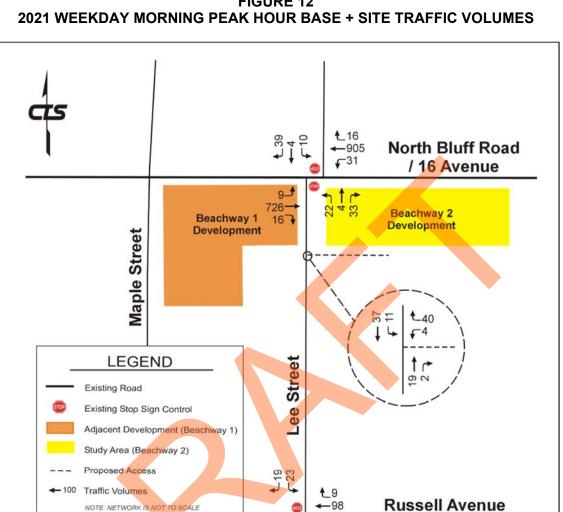
2026 Future Base + Site Traffic Volumes

For the purposes of this study, the proposed development is assumed to have been fully built-out and occupied for five years by the year 2026. The 2026 future base plus proposed development traffic volumes were calculated by first factoring up the 2019 base traffic volumes up by the approved volume growth rate of 2.0% per annum (simple-straight line) to the year 2026. Then, the forecast traffic generated by the proposed development were added to the 2026 base traffic volumes.

FIGURE 14 illustrates the total projected traffic for the 2026 weekday morning peak hour consisting of the future base plus the proposed development site generated traffic.

FIGURE 15 illustrates the total projected traffic for the 2026 weekday afternoon peak hour consisting of the future base plus the proposed development site generated traffic.





1_0 78-

FIGURE 12



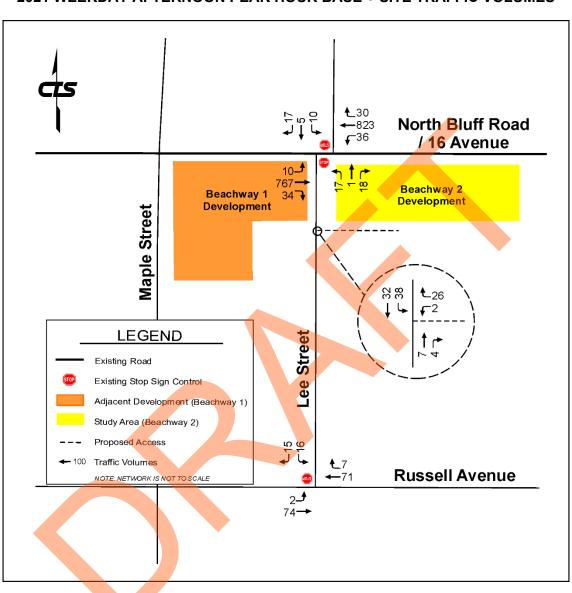
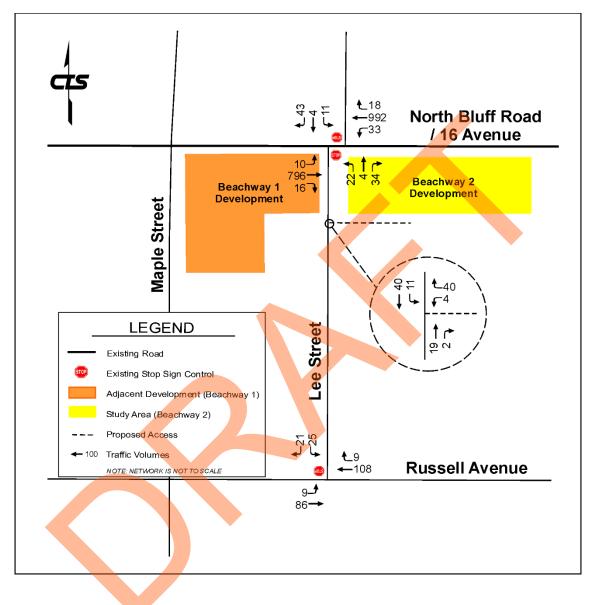


FIGURE 13 2021 WEEKDAY AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES







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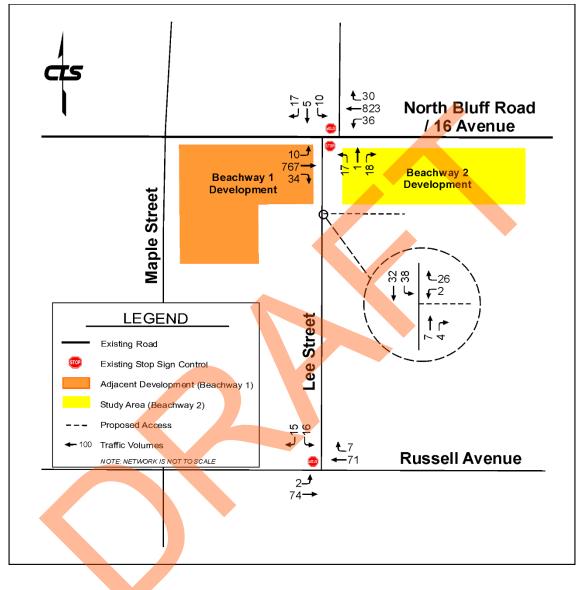


FIGURE 15



5.0 INTERSECTION CAPACITY ANALYSIS

5.1 Capacity Analysis

Capacity analysis was performed at each of the locations in order to determine the intersection levels of service (LOS) that is provided to motorists. The LOS for intersections and movements is defined in terms of delay (seconds per vehicle), which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from "A" (Excellent) to "F" (Fail). See **TABLE 3.** A LOS of "F" (Fail) indicates that an intersection or movement is failing because the intersection or movement is over capacity and delays are considered excessive. A LOS of "D" during the critical peak hours is considered acceptable by many public agencies in large urban areas for overall intersection operation and a LOS of "E" or better is considered acceptable for left turn movements as it recognizes that the intersections normally perform much better the remaining 90% of the day.

Level of Service	Description
A	Excellent
В	Good
C	Fair
D	Poor
E	Very Poor
F	Fail

 TABLE 3

 LEVEL OF SERVICE DESCRIPTIONS

Highway Capacity Software (HCS 7.8.5) was used for the analysis of the unsignalized intersections.

The following assumptions were made with respect to the intersection capacity analysis:

- Saturation flow rate = 1,900 passenger cars/hour of green time/lane (pcphgpl)
- *Peak hour factor* (PHF) = 0.83 (weekday morning peak hour) and 0.85 (weekday afternoon peak hour) were the weighted average factors observed from the surveyed intersections.
- Heavy vehicle percentage for roads = 2%

Saturation flow rate is the equivalent hourly rate at which previously queued vehicles can traverse an intersection approach under prevailing conditions, assuming that the green signal is available at all times and no lost times are experienced. It is a base rate to which adjustment factors are applied.



Peak Hour Factor is a measure of traffic demand fluctuation within the analysis hour. The closer the number is to 1.00, the less fluctuation during the hour.

TABLE 4 to **TABLE 6** summarizes and compares the main performance parameters of the intersection capacity analysis for the <u>unsignalized</u> intersections.

For unsignalized intersections, the delay time in seconds for each lane group is summarized. Delay is additional travel time experienced by a driver, passenger, bicyclist, or pedestrian beyond that required to travel at the desired speed.

This analysis does not include the effects of upstream signals. In addition, it is assumed that all of through movements travelling eastbound and westbound on North Bluff Road will experience the same delay as the eastbound and westbound left turn movements. Hence, the results of this analysis are more conservative. The capacity analysis worksheets with level of services for each individual movement are included in **APPENDIX D**.

TABLE 4
CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTION
LEE ST AT NORTH BLUFF RD

	TIME OF	SCENARIO	PERFORMANCE	EA	STBOU	ND	W	ESTBOU	ND	NO	RTHBOI	JND	SO	UTHBO	JND	LOS	NOTES
	DAY	OCENANIO	MEASURE	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	200	NOTED
			Volumes	8	698	6	28	870	15	2	2	12	9	2	37		NB and SB approaches are experiencing
		2019 Base	Delay	10.7	10.7	0.0	10.6	10.6	0.0		33.0			35.4		в	
			95% Queue (m)	0.0	0.0	0.0	0.2	0.2	0.0		0.4			1.4			medium delays.
			Volumes	9	726	7	30	905	16	3	3	13	10	3	39		NB and SB
		2021 Base	Delay	11.0	11.0	0.0	10.8	10.8	0.0		46.6			48.7		В	approaches are experiencing
			95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		0.7			2.0			medium delays
	Weekday		Volumes	10	796	7	32	992	18	3	3	14	11	3	43		NB and SB
	Morning Peak Hour	2026 Base	Delay	11.6	11.6	0.0	11.3	11.3	0.0		65.0			84.2		в	approaches are experiencing hig
	Feak Hour		95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		1.1			3.2			delays.
			Volumes	9	726	16	31	905	16	22	4	33	10	4	39		NB and SB approaches are experiencing high delays. NB and SB approaches are experiencing high delays.
		2021 Base + Site	Delay	11.0	11.0	0.0	10.8	10.8	0.0		129.7			58.6		С	
			95% Queue (m)	0.1	0.1	0.1	0.2	0.2	0.0		4.2			58.6			
		2026 Base + Site	Volumes	10	796	16	33	992	18	22	4	34	11	4	43		
			Delay	11.6	11.6	0.0	11.3	11.3	0.0		260.3			110.5		С	
Lee Street (N/S) and North Bluff			95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		5.7			3.8			
Road (E/W)		2019 Base	Volumes	9	737	13	18	791	28	3	0	5	9	3	16		NB and SB
			Delay	10.2	10.2	0.0	10.3	10.3	0.0		28.7			36.6		В	approaches are experiencing medium delays.
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.2			0.8			
			Volumes	10	767	14	19	823	30	4	0	6	10	4	17		NB and SB approaches are experiencing
		2021 Base	Delay	10.4	10.4	0.0	10.5	10.5	0.0		33.9			45.4		В	
			95% Queue (m)	0.1	0.1	0.0	0.1	0.1	0.0		0.3			1.1			medium delays
	Weekday		Volumes	11	841	15	21	902	32	4	0	6	11	4	19		experiencing
	Afternoon Peak Hour	2026 Base	Delay	10.9	10.9	0.0	10.9	10.9	0.0		44.1			64.8		В	medium delays. approach is
	r cak riou		95% Queue (m)	0.1	0.1	0.0	0.1	0.1	0.0		0.4			1.7			experiencing his
			Volumes	10	767	34	36	823	30	17	1	18	10	5	17		NB and SB
		2021 Base + Site	Delay	10.4	10.4	0.0	10.8	10.8	0.0		68.8			59.5		В	approaches ar experiencing hig
			95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		1.8			1.5	-		delays.
			Volumes	11	841	35	38	902	32	17	1	18	11	5	19		NB and SB
		2026 Base + Site	Delay	10.9	10.9	0.0	11.3	11.3	0.0		114.5			93.0		В	approaches are experiencing high delays.
			95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		2.6			2.2			

elay = Average Delay (seconds/vehicle) Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec)

UNSIGNALIZED QUEUE IS PER VEHICLE

From **TABLE 4**, the following observations can be made:

Lee Street at North Bluff Road:

- During the weekday morning peak hour:
 - The intersection is forecast to operate at LOS B (Good) for the 2019, 2021, and 2026 base years. However, the northbound and southbound approaches are expected to experience medium delays for the 2019 and 2021 base years and high delays for the 2026 base year.
 - The intersection is forecast to operate at LOS C (Fair) for the 2021 and 2026 base + site years. However, the northbound and southbound approaches are expected to experience high delays for the 2021 and 2026 base + site years.

- During the weekday afternoon peak hour:
 - The intersection is forecast to operate at LOS B (Good) for all horizon years and scenarios. However, the northbound and southbound approaches are expected to experience medium delays for the 2019 and 2021 base years and high delays for the 2026 base, 2021 base + site, and 2026 base + site years.

TABLE 5 CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTION LEE ST AT RUSSELL AVE

	-	SCENARIO	DEDEODIMINOE	EA	STBOU	ND	WE	ESTBOU	ND 🖌	NO	RTHBOI	DNL	so	итнвоі	JND		
INTERSECTION	TIME OF DAY		PERFORMANCE MEASURE	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	LOS	NOTES
			Volumes	7	75	Right	Leit	94	Right 7	Leit	Thru	Rigili	20	Thru	16		
		2019 Base	Delay		.5				.0				20	9.7	10	А	Okay.
		2010 Duse	95% Queue (m)	0.0					.0					0.2			onay.
			Volumes	8	78		\leftarrow	98	8				21	0.2	17		
		2021 Base	Delay	-	.5			0						9.8		А	Okay.
			95% Queue (m)	0	.0				.0					0.2			
			Volumes	8	86			108	8				23		19		
	Weekday Morning	2026 Base	Delay	7	.6			0	.0					9.9		А	Okay.
	Peak Hour		95% Queue (m)	0	.0			0	.0					0.2			
			Volumes	9	78			98	9				23		19		Okay.
		2021 Base + Site	Delay	7	.5			0	.0					9.8		А	
			95% Queue (m)	0	.0			0	.0					0.2			
		2026 Base + Site	Volumes	9	86			108	9				25		21		
			Delay	7	.6			0	.0					10.0		А	Okay
Lee Street (N/S) and Russell			95% Queue (m)	0	.0			0	.0					0.2			
Avenue (E/W)		2019 Base	Volumes	0	71			68	4				14		13		Okay.
			Delay	7	.5			0	.0					9.4		А	
			95% Queue (m)	0	.0			0	.0					0.1			
			Volumes	0	74			71	5				15		14		
		2021 Base	Delay	7	.5			0	.0					9.4		А	Okay.
			95% Queue (m)	0	.0			0	.0					0.1			
	Weekday		Volumes	0	81			78	5				16		15		
	Afternoon Peak Hour	2026 Base	Delay		.5			0	.0					9.5		А	Okay.
	1 call floar		95 <mark>% Qu</mark> eue (m)	0	.0			0	.0					0.1	-		
			Volumes	2	74			71	7				16		15		
		2021 Base + Site	Delay		.5				.0					9.5		A	Okay.
			95% Queue (m)		.0				.0					0.1			
			Volumes	2	81			78	7				17		16		Okay
		2026 Base + Site	Delay	7					.0					9.6		A	
		av (seconds/vehicle)	95% Queue (m)	0	.0			0	.0					0.1			

Delay = Average Delay (seconds/vehicle)

Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec)

UNSIGNALIZED QUEUE IS PER VEHICLE



From **TABLE 5**, the following observations can be made:

George Lane at Russell Avenue:

- During the weekday morning peak hour:
 - The intersection is forecast to continue to operate at LOS A (Excellent) for all horizon years and scenarios.
- During the weekday afternoon peak hour:
 - The intersection is forecast to continue to operate at LOS A (Excellent) for all horizon years and scenarios.

TABLE 6 CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTION LEE ST AT SITE ACCESS

	TIME OF	SCENARIO	PERFORMANCE	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			LOS	NOTES
	DAY	002101110	MEASURE	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	200	
			Volumes				4		40		19	2	11	37			
		2021 Base + Site	Delay					8.7			0	.0	7	.3		А	Okay
	Weekday Morning		95% Queue (m)					0.2			0	.0	0	.0			l
	Peak Hour	2026 Base + Site	Volumes				4		40		19	2	11	40			Okay
			Delay					8.7			0	.0	7	.3		А	
Lee Street (N/S) &			95% Queue (m)					0.2			0	.0	0	.0			
Site Access (E/W)		2021 Base + Site	Volumes				2		26		7	4	38	32			Okay
			Delay					<mark>8.</mark> 6			0	.0	7	.3		А	
	Weekday Afternoon		95% Queue (m)					0.1			0	.0	0	.1			
	Peak Hour		Volumes				2		26		7	4	38	35			
		2026 Base + Site	Delay					8.6			0	0.0	7	.3		А	Okay
			95% Queue (m)					0.1			0	.0	0	.1			

Delay = Average Delay (seconds/venicle) Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec) UNSIGNALIZED QUEUE IS PER VEHICLE

From **TABLE 6**, the following observations can be made:

Lee Street at Site Access

- During the weekday morning peak hour:
 - The intersection is forecast to continue to operate at LOS A (Excellent) for all horizon years and scenarios.
- During the weekday afternoon peak hour:
 - The intersection is forecast to continue to operate at LOS A (Excellent) for all horizon years and scenarios.

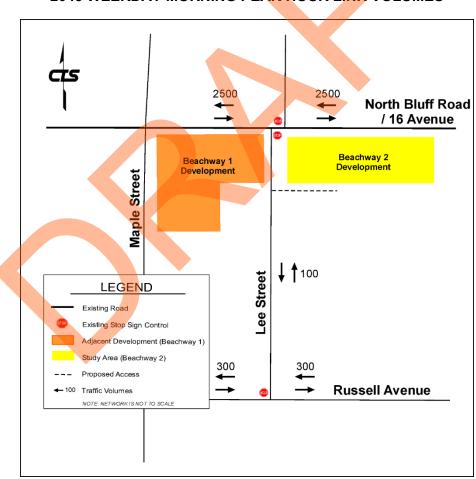


6.0 2045 LINK VOLUMES

The City of White Rock requested that estimates for the 2045 vehicle traffic volumes within the study network be made in order to provide a point of reference for the City of White Rock 2045 OCP.

As this scenario is 26 years into the future, it is difficult to accurately forecast vehicle volumes in the context of intersection analysis. Therefore, peak hour road link volumes were determined to provide an estimated magnitude of vehicle volumes.

FIGURE 16 and **FIGURE 17** show the estimated 2-way link volumes for the morning and afternoon peak hour based on an approved growth rate of 2.0% per annum (simple-straight line) factored up from the 2019 turning movement counts with the proposed site traffic included.







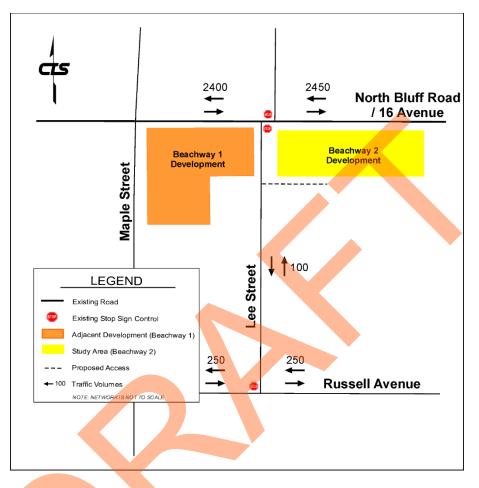


FIGURE 17 2045 WEEKDAY AFTERNOON PEAK HOUR LINK VOLUMES

In the morning peak hour, the estimated 2-way link volume on North Bluff Road, Lee Street, and Russell Avenue, are 2500, 100, and 300 vehicles, respectively.

In the afternoon peak hour, the estimated 2-way link volume on North Bluff Road, Lee Street, and Russell Avenue, are 2450, 100, and 250 vehicles, respectively.

As the theoretical capacity for North Bluff Road is 3200 vehicles per hour (two-way), the road network is deemed to have sufficient capacity for the forecasted traffic volumes in the year 2045.



7.0 TRANSPORTATION DEMAND MANAGEMENT

In support of the requested 30% parking variance, the proposed land uses, existing nearby amenities and infrastructure, and opportunities for alternative modes of travel were considered.

7.1 City of White Rock Policy

With reference to the City of White Rock 2045 OCP, Objective 11.2 is "to support rental housing and a range of non-market housing options and needs along the housing spectrum". Building 1 of the three buildings is proposed to be a non-market affordable rental development which aligns with the City's OCP objectives and a parking relaxation should be considered given Policy 11.2.1 g) recommends "reviewing parking requirements to determine the extent to which they can be relaxed for non-market and rental housing within walking distance of frequent transit service and / or commercial areas.

The proposed residential development is a 15 minute walk to Semiahmoo Shopping Centre and White Rock Centre transit exchange, which connects to Translink's Frequent Transit Network.

7.2 Adjacent Land Uses and Amenities

As previously noted in **Section 1.0**, the site is conveniently located near amenities and public transit. The following attractions and destinations are all approximately a five (5) to fifteen (15) minute walk from the study site:

- Semiahmoo Shopping Centre
- Semiahmoo Public Library
- Peace Arch Hospital
- Commercial / retail developments all along Johnston Road
- White Rock Centre transit exchange
- Earl Marriott Secondary School
- Peach Arch Elementary
- Kent Street Activity Centre
- Maccaud Park



7.3 Alternative Modes of Travel

The study area has good connectivity to transit, as well as cycling and pedestrian infrastructure. The alternative modes of travel are illustrated in **FIGURE 18** below.



FIGURE 18 ALTERNATIVE MODES OF TRAVEL WITHIN 400 METRES

Transit Network

The study area has good connectivity to transit with several options for regular busses and community shuttles. The White Rock Centre transit exchange, located at 152nd Street at North Bluff Road, is within a fifteen (15) minute walk from the site and 152nd Street is part of Translink's Frequent Transit Network.

The following bus route are within a five (5) minute walk from the proposed development:

- Route #375 White Rock South Guildford During peak travel times, this bus operates in half hour intervals. Bus stop is on North Bluff Road.
- Route #321 Surrey Central Station Newton Exchange/White Rock Centre/White Rock South – During peak travel times, this bus operates in fifteen-minute intervals. Bus Stop is on North Bluff Road.

The following route is serviced on Russell Avenue to the south.

• Route #361 White Rock Centre - Ocean Park – During weekday peak travel times, this bus operates in half hour intervals. On the weekend peak travel times, this bus operates in one-hour intervals. Bus Stop is on Thrift Avenue.

The above bus routes can be used to connect to the nearby Frequent Transit Network at White Rock Centre, which provides connections to Surrey, Richmond, and Langley. Routes along the Frequent Transit Network have headway times of 15 minutes of better throughout the day, seven days a week.

The following routes are accessible just west of Finlay Street on either North Bluff Road or Russell Avenue. These bus stops are located adjacent to the Peach Arch Hospital, which is within a 5-minute walking distance of the proposed development.

- Route #360 Ocean Park Peace Arch Hospital During weekday peak travel times, this bus operates in half hour intervals. On the weekend peak travel times, this bus operates in one-hour intervals. Bus Stop is on Thrift Avenue, west of Finlay Street.
- Route #363 South Point Peace Arch Hospital During peak travel times, this bus operates in half hour intervals. Bus Stop is on Thrift Avenue, west of Finlay Street.

The bus stop locations within a 400 metre radius (or five (5) minute walking distance) are illustrated in **FIGURE 18** above.

The City of Surrey is in discussion with Translink to bring B-Line rapid bus service to North Bluff Road between Johnston Road and Finlay Street. The addition of a B-Line would upgrade this section of North Bluff Road to part of the Frequent Transit Network which has headway times of 15 minutes or better throughout the day, seven days a week.

Bicycle Network

According to the City of White Rock Strategic Transportation Plan:

- North Bluff Road is proposed in the future to be designated as a bicycle route;
- Finlay Street is currently designated as a shared use lane; and
- Thrift Avenue is currently designated as a shared use lane.

The proposed development is exceeding the bylaw requirement in its provision of 156 secured Class I parking spaces and 26 publically accessible bike share parking spaces within the proposed shared mobility hub, yielding a total of 182 bicycle parking spaces. This provision encourages residents and visitors to utilise the existing bicycle infrastructure in the study network.

The bicycle routes within the study area are illustrated in **FIGURE 18** above.

Pedestrian Network

It is noted in the *City of White Rock Strategic Transportation Plan,* that walking in the City is the most popular form of transportation aside from the use of motor vehicles. This is attributed to the dense and walkable built form within the City. With the City of White Rock Town Centre and Semiahmoo Town Centre being located within a 12-minute walk of the proposed development, there is significant opportunity for residents to take advantage of the pedestrian infrastructure that is offered.

The study area is well connected with sidewalks. All arterial and collector roads have a sidewalk on at least one side. Some local roads also have sidewalks on one side. Currently, there are no sidewalks on Maple Street or Lee Street.

The proposed development will be including enhanced sidewalks on the frontage and also a greenway through the property.

In consideration of the intended land use and the available nearby amenities and infrastructure, the proposed development is anticipated to have a good utilization of alternative modes of travel, particularly walking.

The existing sidewalks are illustrated in **FIGURE 18** above.



7.4 Transportation Demand Management Initiatives

7.4.1 Pedestrian Facilities and Initiatives

Walking is the primary mode of transportation for nearly everyone whether linking with cycling, transit or vehicle modes. People will generally walk for up to fifteen minutes or within a distance of 400 to 800 meters (five to ten minute walk) to connect with another mode or access local amenities.

To encourage transportation by walking, the following initiatives may be considered:

• Directional signage within the lobby or at the main entrance for the nearest bus stops and estimated walking times to popular destinations

7.4.2 Bicycle Facilities and Initiatives

People will generally travel by bicycle up to five kilometers to their place of work, for recreation, or personal reasons.

To encourage transportation by bicycling, the applicant has committed to providing the following initiatives:

- Residents will receive a welcome package containing transit and cycling information.
- A car and bike share hub
 - Public access will be granted by security code access via the Building 2 stairs and elevators.
 - Equipped with 26 bicycles and bicycle spaces will be located within the parkade on P1.
 - A bicycle wash station will be provided within the bicycle share hub located within parkade level 1.
- The bicycle space bylaw requirement of 176 bicycle spaces is exceeded via the provision of 182 bicycle spaces.
- All 156 secured Class I bicycle parking spaces and all 26 bicycle share spaces are conveniently located close to elevators within the parkade on P1.
- Gently sloped ramps leading up to the main entrance for cyclist comfort.

7.4.3 Transit Facilities and Initiatives

To encourage the use of public transit, the provision of the following initiatives may be considered:

- Directional signage within the lobby or at the main entrance for the nearest bus stops and estimated walking times to popular destinations.
- A pre-loaded compass card (e.g. \$100) for each dwelling unit.
- Residents will receive a welcome package containing transit and cycling information.
- A live screen within the lobby displaying current bus route schedules



7.4.4 Vehicle Facilities and Initiatives

To encourage more sustainable transportation, the applicant has committed to providing the following initiatives:

- Electrical vehicle charing parking spaces
 - Four (4) non-market residential EV parking spaces
 - Two (2) non-market visitor EV parking spaces
 - o 20 market residential EV parking spaces
- Car and bike share hub consisting of:
 - 17 EV car share parking spaces
 - 100% electric vehicle fleet
 - Public access will be granted by security code access via the Building 2 stairs and elevators.
 - Exit via the two vehicular gates in the parkade will be granted via the same access code



8.0 PARKING ANALYSIS

8.1 Parking Requirements and Provision

8.1.1 Vehicle Parking Requirements

The required parking rates and spaces for the proposed development are summarized in **TABLE 7** and are based on meetings the applicant has had with the City of White Rock.

Land Use Description	Parking Space Type	CoWR Required Parking Rate	# of Units	Parking Stalls Required
Non-Market Units	Residential Spaces	1 space per Dwelling Unit	46	46
Market Units	Residential Spaces	1.2 per Dwelling Unit	101	121
Market Onits	Visitor Spaces	0.3 per Dwelling Unit		30
	198			

TABLE 7 CITY OF WHITE ROCK VEHICLE PARKING SPACE REQUIREMENTS

As shown in **TABLE 11** above, the total number of required parking spaces for the proposed development is 198 parking spaces. The proposed development is providing a total of 138 parking spaces as per the project summary page in **APPENDIX A**, resulting in a variance of 60 parking spaces, or 30.3%.

It should be noted that the City of White Rock visitor parking rate of 0.3 spaces per dwelling unit is higher than other municipalities' rate of 0.2 spaces per dwelling unit.

With reference to the Information Data sheet in **APPENDIX A**, the proposed development is providing 46 non-market residential parking spaces, two (2) non-market visitor parking spaces, 63 market residential parking spaces, 10 market visitor parking spaces, 12 market car share spaces, and 5 market visitor car share spaces, resulting in a total of 138 parking spaces.

With reference to the *City of White Rock Zoning Bylaw Section 4.17.1*, "a minimum of 1 of every 10 off-street parking spaces shall feature an energized outlet capable of providing Level 2 charging...[and] an additional 1 of every 10 off-street parking spaces shall feature roughed-in electric vehicle charging infrastructure, including an electrical outlet box located within 3 metres of the parking space". The proposed development will be exceeding the bylaw requirement in its provision of 43 electrical vehicle (EV) charging parking spaces – four (4) non-market EV parking spaces, two (2) non-market visitor EV parking spaces, 20 market EV parking spaces, and 17 EV car share parking spaces.



8.1.2 Car Share Provision

The proposed residential development is providing 17 electric vehicle car share spaces through the car and bicycle share hub located on P1 of the parkade as per the architectural drawings attached as **APPENDIX A**. While the City of White Rock does not have direction in the bylaw with regards to the provision of shared vehicles, the City of Surrey Zoning Bylaw 12000 states that the "required residential parking spaces may be reduced by 5 parking spaces for each shared vehicle that is provided for multiple unit residential buildings with underground parking on lots located within City Centre." Additionally, "required residential parking spaces may be reduced by 1 additional parking space for each shared vehicle parking space provided that features an energized outlet capable of providing Level 2 charging, as defined by SAE International's 11772 standard, as amended or higher, and where an electric vehicle and electric vehicle supply equipment are provided in accordance with the shared vehicle development permit requirements."

To summarize the above City of Surrey bylaw, five (5) parking spaces may be reduced for each car share space, plus one (1) additional parking space may be reduced for electric vehicle car share space, for a total ratio of one (1) electric vehicle car share space equating to six (6) regular parking spaces. Since the proposed residential development is providing 17 electric vehicle charging car share spaces, this is the City of Surrey bylaw equivalent of 102 regular parking spaces.

If the car share ratio of one (1) to six (6) parking spaces is applied, the proposed development is providing a bylaw equivalent of a total of 223 parking spaces, which is in excess of the City of White Rock requirement of 198 parking spaces.

8.1.3 Bicycle Parking Requirements

The required bicycle parking spaces for the proposed development are summarized in **TABLE 8** with reference to the *City of White Rock Zoning Bylaw Section 4: General Provisions & Regulations.*

Bylaw Land Use Classification	Bicycle Space Type	Required Bicycle Space Rate	# of Units	Bicycle Space Required
Table 4.16.3 -	Class I	1 per Dwelling Unit	147	147
Apartment, Townhouse	Class II	0.2 per Dwelling Unit	147	29
	176			

		TABLE 8
BYLA	N BICY	CLE PARKING SPACE REQUIREMENTS

As summarized in **TABLE 8** above, the total number of required bicycle parking spaces for the proposed development is 176 bicycle parking spaces – 147 Class I parking spaces and 29 Class II parking spaces. The proposed development is exceeding the bylaw



requirement in its provision of 156 secured Class I bicycle parking spaces and 26 publically accessible bicycle share parking spaces within the proposed shared mobility hub, yielding a total of 182 bicycle parking spaces.

8.1.4 Loading Space Requirements

With reference to the *City of White Rock Zoning Bylaw Section 4.15.2,* "one (1) off-street loading space shall be provided for every apartment complex...Where the apartment complex...is provided in more than one principal building with separate elevators for each building, one (1) off-street loading space shall be provided for each principal building containing more than ten (10) dwelling units". **TABLE 9** below summarizes the bylaw requirement.

Bylaw Land Use Classification	Bylaw Required Loading Bay Rate	# of Buildings	Loading Bays Required
Residential	1 per Building	3	3
	3		

TABLE 9 BYLAW LOADING SPACE REQUIREMENTS

The proposed development is providing one (1) loading space for the non-market dwelling units in building 1 and one (1) loading space for the market units in building 2 and 3. The proposed development is not able to provide a loading space exclusively for building 3 because of the City's request that no access be provided off of North Bluff Road.

8.2 Average Parking Demand

In order to consider the peak parking demand of the proposed development, the Institute of Transportation Engineers (ITE) Parking Generation Manual 5th Edition is referenced.

The parking generation manual contains observed data for common land uses, along with an average peak parking demand based on variables such as gross floor area, number of dwelling units, or number of bedrooms.

Lane Use Code 221 – Multifamily Housing (Mid-Rise), provides data that represents multifamily developments, that include apartments, townhouses, and condominiums located within the same building, and are between three and ten levels (floor). This land use describes the proposed market dwelling units in Building 2 and Building 3 of the proposed residential development.

Land Use Code 223 – Affordable Housing, provides data that represents all kinds of multifamily housing that is rented at below market rate. The land use describes the non-market affordable rental dwelling units in Building 1 of the proposed residential development.

For the parking demand analysis, CTS considered data only in the general urban/suburban scenario, and data according to the number of dwelling units.

General urban/sub-urban areas are associated with almost homogenous vehicle centered access. Although the proposed development is located in an area with good alternative transportation infrastructure, this setting is applied as it is more applicable than other settings, and will provide a conservative analysis.

TABLE 10 summarizes the average peak parking demand for each of the two considered land uses. It is noted that for both of these land uses, the peak period is between 10:00 PM and 5:00 AM, for a weekday.

Land Use Description	Setting/Location	Period	Average Peak Period Parking Demand	Applicable To:	Number of Units	Average Peak Parking Demand
Land Use: 222 Multi Family (Mid-Rise)	General Urban/Suburban	Weekday	1.31 Per Dwelling Unit	Market Dwelling Units	101	132.3
Land Use: 223 Affordable Housing (Income Limits)	General Urban/Suburban	Weekday	0.99 Per Dwelling Unit	Non-Market Dwelling Units	46	45.5
				Total	147	178

 TABLE 10

 AVERAGE PEAK PARKING DEMAND

As summarized in **TABLE 10** above, the average peak parking demand expected for midrise (market) land uses is 1.31 parked vehicles per dwelling unit, and for affordable (nonmarket) land uses is 0.99 parked vehicles per dwelling unit. The average peak parking demand for the proposed development is forecasted to be approximately 178 parked vehicles, which is 10% (or 20 parking spaces) lower than the City of White Rock parking requirements summarized previously in **TABLE 7**. This does not consider site specific conditions that may reduce parking demand, such local data trends, requirements for nonmarket rental, or available alternative modes of transportation.

8.3 Parking Supply in Metro Vancouver

The data collected as part of *The 2018 Regional Parking Study*, was also considered for its representation of local data. The key findings of this report emphasize that generally within the Metro Vancouver area, parking is typically oversupplied for strata sites in the range of 32 percent to 58 percent. For rental sites, the oversupply of parking ranges from 24 percent to 44 percent.

This study also provides some data specifically for non-market (affordable) rental units in the region. Data was observed at one site showing that for non-market rental units, a parking demand of 0.14 vehicles per dwelling unit was observed via a parkade facility survey. A household questionnaire style survey was conducted that received 28 responses for non-market rental units, which determined the number of parked vehicles per dwelling unit to be 0.43. Although these sample sizes are small, they are consistent

with the expectation for affordable rental units to generally have significantly less parking demand.

8.4 Parking Space Allocation

Based on the above analysis, it is determined that non-market (affordable) rental dwelling units require less than one parking space per unit. The site plan attached as **APPENDIX A** show that 46 residential parking spaces and 2 visitor parking spaces are being provided to the non-market dwelling units. The reallocation of half (or 23) of the non-market residential parking spaces and the two (2) non-market visitor parking spaces to the market dwelling units should be considered to aid in meeting the parking demand of the market dwelling units.

8.5 Parking Space Summary and Recommendation

Based on the above analysis, CTS recommends that the proposed residential development provide one (1) parking space for every two (2) non-market (affordable) rental dwelling units, one (1) parking spaces for every market dwelling unit, and 0.2 visitor parking spaces for every market dwelling. This would result in a provision of 23 non-market residential parking spaces, 101 market residential parking spaces, and 20 market visitor parking spaces, for a total of 144 parking spaces.



9.0 LOADING SWEPT PATH ANALYSIS

Two (2) loading bays are proposed to be provided accessed off Lee Street and the proposed east-west lane as per the architectural drawings included in **APPENDIX A**.

Swept path analysis was conducted to test the viability of the loading bays using an MSU-TAC as the design vehicle. This is a standard medium single unit vehicle described by the Transportation Association of Canada, and is what would typically be expected for basic deliveries or people moving in and out. It has an overall length of 10 metres and a width of 2.6 meters.

It is recommended that any vehicles using the loading bay always reverse in and drive forward out. This will be a safer combination of maneuvers as drivers will have clear vision while exiting, driving forward. Drivers will also have clear vision of the driveway and adjacent sidewalks before reversing in.

FIGURE 19 illustrates the MSU-TAC reversing into loading bay 1 without any conflicts.

FIGURE 20 illustrates the MSU-TAC exiting from loading bay 1 without any conflicts.

FIGURE 21 illustrates the MSU-TAC reversing into loading bay 2 without any conflicts. There is not sufficient space for the MSUTAC to turn-around on-site. Therefore, trucks should reverse into the east-west laneway, into loading bay 2, in order to forward exit.

FIGURE 22 illustrates the MSU-TAC exiting from loading bay 2 without any conflicts.



FIGURE 19 MSU ENTERING LOADING BAY 1

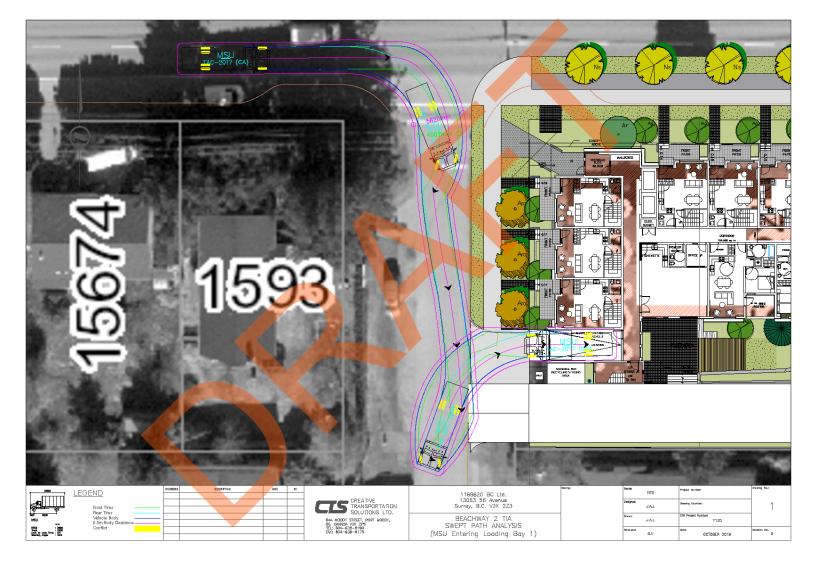


FIGURE 20 MSU EXITING LOADING BAY 1

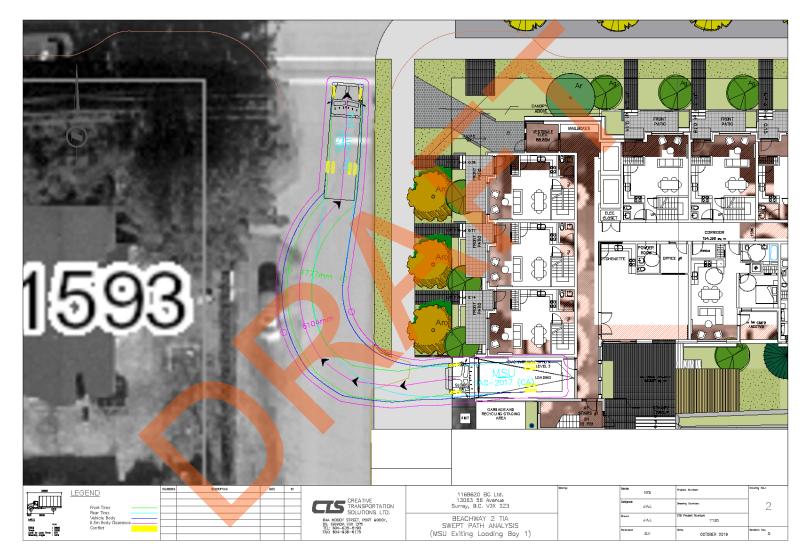


FIGURE 21 MSU ENTERING LOADING BAY 2

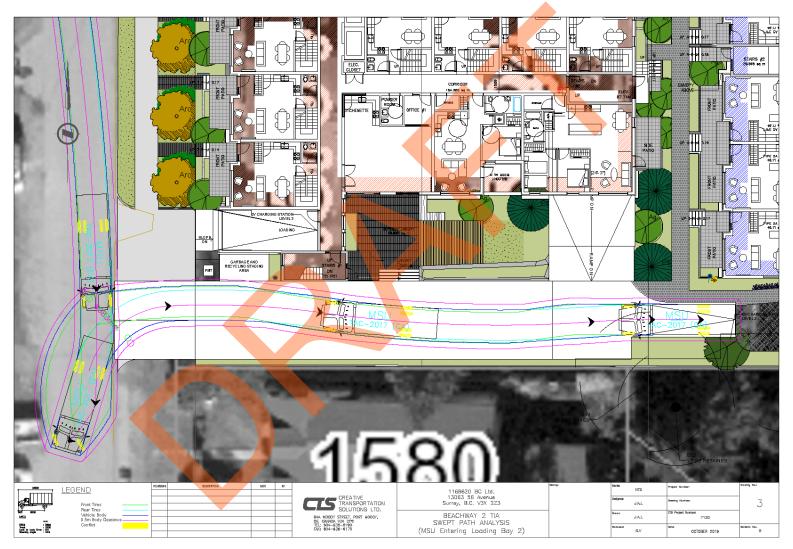






FIGURE 22 MSU EXITING LOADING BAY 2



10.0 CONCLUSIONS & RECOMMENDATIONS

10.1 Conclusions

- 1168620 BC Ltd is proposing to build a residential development, Beachway 2, at 15704, 15724, 15728, 15738, 15748, 15758, 15770 North Bluff Road in the City of White Rock. The proposed development is to consist of 34 city homes and 113 condominium units for a total of 147 dwelling units. Of the 147 units, 46 are designated as non-market (affordable) rental units with seven (7) of them being city homes and 39 of them being condominium units.
- 2) CTS staff performed weekday traffic volume surveys on Thursday, November 8th, 2018 in order to document existing conditions. Future base traffic volumes were projected using a 2.0% annual traffic volumes growth rate (simple straight line) and then the proposed development traffic was superimposed on top to estimate future baseline conditions. The design hours of analysis were the weekday morning and afternoon peak hours.
- 3) Upon the full build-out, the overall development is forecasted to generate a total of 57 vehicle trips (13 inbound, 44 outbound) during the weekday morning peak hour and 70 vehicle trips (42 inbound, 28 outbound) during the weekday afternoon peak hour.
- 4) The capacity analysis for the unsignalized intersections and the site accesses determined that the road network can accommodate the projected increase in traffic volumes without any operational and/or geometrical improvements.
- 5) 2045 peak hour link volumes are estimated using collected turning movement counts. This is provided to give an estimated magnitude of vehicle volumes in the context of the City of White Rock 2045 OCP.
- 6) The City of White Rock parking requirements of 1 space per non-market dwelling unit and 1.5 spaces per market dwelling unit results in a total requirement of 198 parking spaces. The proposed residential development is providing 138 parking spaces, resulting in a 30% or 60 parking space variance.
- 7) In support of a 30% parking variance, reference was made to the intended land use, nearby amenities and infrastructure to encourage alternative modes of travel:
 - Proposed development will have 46 non-market (affordable) rental units
 - Within a 10-15 minute walk of Semiahmoo Shopping Centre and White Rock Centre where the Frequent Transit Network connects
 - Within a 5 minute walk of 5 different bus routes
 - Nearby destinations include Peach Arch Hospital, Earl Marriott Secondary School, Peach Arch Elementary School, Kent Street Activity Centre in Maccaud Park
 - Provision of a car and bike share hub on P1 of the parkade
 - Provision of 186 bicycle spaces, exceeding the 176 bicycle space bylaw requirement
 - Provision of a total of 43 electric vehicle charging parking spaces

- Proposed development will include enhanced sidewalks on the frontage and a greenway through the property.
- 8) The proposed loading bay was reviewed to assess its viability and impact on the adjacent road and curb. The swept path analysis shows that a design vehicle of a MSUTAC can be accommodated without any conflicts. Impacts on the adjacent road way can be minimized and truck turning maneuvering can be safer, if vehicles enter by reversing in while traveling northbound and by exiting forward to travel southbound.

10.2 Recommendations

Based on this transportation impact assessment, CTS recommends the following:

- 1) The applicant work with the City to ensure any improvements to the fronting sidewalks align with the City of White Rock *Strategic Transportation Plan;*
- 2) That the proposed residential development provide one (1) parking space for every two (2) non-market (affordable) rental dwelling units, one (1) parking spaces for every market dwelling unit, and 0.2 visitor parking spaces for every market dwelling. This would result in a provision of 23 non-market residential parking spaces, 101 market residential parking spaces, and 20 market visitor parking spaces, for a total of 144 parking spaces.
- 3) That trucks using the loading bay be instructed to reverse into the east-west lane, and forward exit out from the loading bay.



We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS LTD.

Reviewed by:

Prepared by:

Gary Vlieg, P.Eng. Engineering Group Manager Jacqueline Lee, EIT Junior Traffic Engineer

Attachment



Appendix A Architectural Drawing

BEACHWAY 2 - ISSUED FOR DP APPLICATION 2019.10.24





STREET VIEW FROM NORTH BLUFF ROAD LOOKING SOUTH

PROJECT TEAM

ARCHITECTURAL:

URBAN ARTS ARCHITECTURE #300-111 WATER STREET VANCOUVER, BC V6B 1A7 604-683-5060 PARTNER-IN-CHARGE: SHELLEY CRAIG

LANDSCAPE: ETA LANDSCAPE ARCHITECTURE 1690 WEST 2ND AVENUE VANCOUVER, BC V6J 1H4 604-683-1456 CONTACT: DARYL TYACKE

ARBORIST: VDZ+A 102-355 KINGSWAY VANCOUVER, BC V5T 3J7 604-882-0024 CONTACT: KAYLEE KOZNIAK

DRAWING LIST

SHEET NO	SHEET NAME	SCALE
A000	Cover Page	NTS
A001	Information Data 1	NTS
A002	Information Data 2 FAR per building	NTS
A101	Site Plan	1:200
A102	Parkade LVL 01	1:200
A103	Parkade LVL 02.0	1:200
A105	Preliminary slab plan	1:200
A106	Site Plan Coverage	1:200
A107	Average Natural Grade Calculation	1:200
A201	Non-Market LVL 01 (Building#1)	1:100
A201 area	Non-Market LVL 01 (Building#1)	1:100
A202	Non-Market LVL 02 (Building#1)	1:100
A202 area	Non-Market LVL 02 (Building#1)	1:100
A203	Non-Market LVL 03 (Building#1)	1:100
A203 area	Non-Market LVL 03 (Building#1)	1:100
A204	Non-Market LVL 04 (Building#1)	1:100
A204 area	Non-Market LVL 04 (Building#1)	1:100
A205	Non-Market LVL 05 (Building#1)	1:100
A205 area	Non-Market LVL 05 (Building#1)	1:100
A206	Non-Market LVL 06 (Building#1)	1:100
A206 area	Non-Market LVL 06 (Building#1)	1:100
A207	Non-Market Roof (Building#1)	1:100
A208	Market LVL 01 (Building#2)	1:100
A208 area	Market LVL 01 (Building#2)	1:100
A209	Market LVL 1.5 Mezzanine (Building#2)	1:100
A210	Market LVL 02 (Building#2)	1:100
A210 area	Market LVL 02 (Building#2)	1:100
A211	Market LVL 03 (Building#2)	1:100
A211 area	Market LVL 03 (Building#2)	1:100
A212	Market LVL 04 (Building#2)	1:100
A212 area	Market LVL 04 (Building#2)	1:100
A213	Market LVL 05 (Building#2)	1:100
A213 area	Market LVL 05 (Building#2)	1:100
A214	Market LVL 06/Roof (Building#2)	1:100
A214 area	Market LVL 06 (Building#2)	1:100
A215	Roof (Building#2)	1:100
A216	Market LVL 01 (Building#3)	1:100
A216 area	Market LVL 01 (Building#3)	1:100
A217	Market LVL 1.5 (Building#3)	1:100
A217 area	Market LVL 1.5 (Building#3)	1:100
A218	Market LVL 02 (Building#3)	1:100
A218 area	Market LVL 02 (Building#3)	1:100
A219	Market LVL 03 (Building#3)	1:100
A219 area	Market LVL 03 (Building#3)	1:100
A220	Market LVL 04 (Building#3)	1:100
A220 area	Market LVL 04 (Building#3)	1:100
A221	Market LVL 05 (Building#3)	1:100
A221 area	Market LVL 05 (Building#3)	1:100
A222	Market LVL 06 (Building#3)	1:100
A222 area	Market LVL 06 (Building#3)	1:100
A223	Roof (Building#3)	1:100
A400	Elevation	1:200
A401	Elevation	1:200
A402	Streetscapes	NTS
A403	Bird's Eye Views 1	NTS
A404	Bird's Eye Views 2	NTS
A405	3D Perspective Views	NTS
A406	3D Perspective Views	NTS
A407	3D Perspective Views	NTS
A408	Car & Bike Share Hub	NTS
A501	Section	1:200
A502	Section	1:200
A503	Section	1:100
A504	Section	1:100
L		

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CREATIVE TRANSPORTATION SOLUTIONS LTD

CONTACT: GARY VLIEG/JACQUELINE LEE

DATE
2019.10.24
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SEAL:

NOTES:

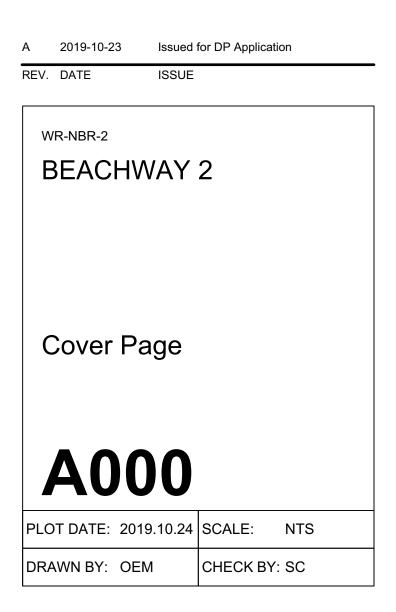
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Consultant Name





CIV LEG LC LC US N P PA PARI PAR

SITE DATA:								
CIVIC ADRESS:	15704 North Bluff Road, White Rock, BC (Lot 1), 15728 North Bluff Road, White Rock, BC (Lot Re 15748 North Bluff Road, White Rock, BC (Lot 30 15770 North Bluff Road, White Rock, BC (Lot 4)	m1),15738 North Bluff Road,	White Rock, BC (Lot Rem2)					
LEGAL ADRESS:	Lots 1 to 2, New Westminster District, Plan 1869 Lots 305, New Westminster District, Plan 35289;							
LOT AREA:	5,366.241 sq.n	n. 57761.684 sq	ft					
LOT COVERAGE:	2,788.209 sq.n	n. 30012 sq	ft 51.958%					
DEVELOPMENT STATISTICS:								
ZONING:								
USES:	Multi-Residential							
NUMBER OF UNITS:	NON.MARKET 46	MARKET 101	TOTAL 147					
FAR SUMMARY:	(31.3%)	(68.7%)	(100%)					
MAX. FAR	GROSS AREA SQ.M. 13,415.603 sq.m.	GROSS AREA SQ.FT. sq ft 144,404.209 sq.ft.	t FAR 2.5	RESIDENTIAL SQ.M.	RESIDENTIAL SQ.FT.	FAR		
PROPOSED FAR:								
BUILDING #1 (NON-MARKET) BUILDING #2 (MARKET)	3,783.70 sq.m. 3,897.22 sq.m.	40,727.390 sq ft 41,949.299 sq ft	0.705 FAR 0.726 FAR	2,918.26 sq.m. 3,321.59 sq.m.	31411.809 sq ft 35753.314 sq ft	0.544 FAR 0.619 FAR		
BUILDING #3 (MARKET)	5,732.43 sq.m.	61,703.292 sq ft	1.068 FAR	4,699.92 sq.m.	50,918.9 sq.ft.	0.882 FAR		
ΤΟΤΑ	L: 13,413.4 sq.m.	144,380.0 sq.ft.	2.5 FAR	10,939.8 sq.m.	118,084.0 sq.ft.	2.044 FAR		
EFFICIENCY (RESIDENTIAL/GROS	5): 82%							
PROPOSED UNIT AREAS:	(Refer to A004)							
INDOOR AMENITY								
BUILDING #1 (NON-MARKET) BUILDING #2 (MARKET) BUILDING #3 (MARKET)	54.17 sq.m. 49.24 sq.m. 163.05 sq.m.	583.049 sq ft 530.006 sq ft 1755.099 sq ft						
τοτα	L: 266.46 sq.m.	2,868.153 sq ft						
PARKING:								
PARKING AREA LEVEL 1 PARKING AREA LEVEL 2	4,224 sq.m. 1,057 sq.m.	45464.657 sq ft 11376.312 sq ft						
ΤΟΤΑ	L: 5,281 sq.m.	56,840.969 sq ft						
PARKING SPACES REQUIRED:	NON-MARKET (1 per 46 units) MARKET (1.2 per 101 units)	46 121.2						
	MARKET VISITORS (0.3 per 101 units)	30.3						
	ΤΟΤΑ	.: 197.5						
PARKING SPACES PROPOSED:	NON-MARKET	46	RELAXATION RATIONALE	GRAND TOTAL 46				
	NON-MARKET VISITOR MARKET	2 63	-	2 63				
	MARKET VISITOR MARKET CAR SHARE	10 12	- 5 Parking Spaces = 1 car share	10 60				
	MARKET VISITOR CAR SHARE	5	5 Parking Spaces = 1 car share	25				
	τοτα	.: 138		206				
ВІКЕ	S: NON-MARKET (CLASS 1)	51						
	MARKET (CLASS 1) MARKET BIKE SHARE	105 26	Added to relax the number of pa	rking				
	ΤΟΤΑ		r -					
UNIT DISTRIBUTION BY TYPE OF UNI	T:							
	2 BED TOWNHOUSE	3 BED TOWNHOUSE	1 BED APARTMENT	2 BED APARTMENT	TOP UNIT (3 BED)	TOP UNIT (2 BED)	TOP UNIT (1 BED)	STUDIO
BUILDING #1 (NON-MARKET)	6	1	31	8	0	0	0	0
BUILDING #2 (MARKET) BUILDING #3 (MARKET)	8 6	4 9	17 16	4 23	5 6	1 O	1 0	1 0
TOTA PERCENTAG		14 (9.5%)	64 (43.5%)	35 (23.8%)	11 (7.5%)	1 (0.7%)	1 (0.7%)	1 (0.7%)
UNIT DISTRIBUTION BY BEDROOM:			· ·	· · ·	·	· · ·	· · · · · · · · · · · · · · · · · · ·	
ONE BEDROOI		PERCENTAGE (44.2%)						
TWO BEDROOM THREE BEDROOM STUDIO	S: 25	(38.1%) (17.0%) (0.7%)						
Σ TOTAL UNIT	S: 147							



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SEAL:

NOTES:

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FAR CALCULATION BUILDING #2

FAR CALCULATION BUILDING #1

	# UNIT	TYPE UNIT	LEVEL OF UNIT	AREA OF UNIT SQ M	AREA OF UNIT SQ F	
JILDING #1 (NON-MARKET)						BUILDING #2 (MARKE
	101	UNIT A (2 BED)	Level 1 B1	42.951 sq m	462.321 sq ft	
	102	UNIT A (2 BED)	Level 1 B1	42.951 sq m	462.321 sq ft	
	103 104	UNIT A (2 BED)	Level 1 B1	42.951 sq m	462.321 sq ft	
	104	UNIT A (2 BED)	Level 1 B1 Level 1 B1	42.951 sq m	462.321 sq ft	
	109	UNIT A (2 BED) UNIT A (2 BED)	Level 1 B1	42.951 sq m 42.951 sq m	462.321 sq ft 462.321 sq ft	
-		,			•	
-			TOTAL:	257.706 sq m	2773.923 sq ft	
	101 102	UNIT A (2 BED) 2ND FLOOR UNIT A (2 BED) 2ND FLOOR	Level 2 B1 Level 2 B1	34.889 34.889	375.543 sq ft 375.543 sq ft	
	102	UNIT A (2 BED) 2ND FLOOR	Level 2 B1	34.889	375.543 sq ft	
	104	UNIT A (2 BED) 2ND FLOOR	Level 2 B1	34.889	375.543 sq ft	
	108 109	UNIT A (2 BED) 2ND FLOOR	Level 2 B1	34.889	375.543 sq ft	
		UNIT A (2 BED) 2ND FLOOR		34.889	375.543 sq ft	
TOTAL NUMBER OF UNITS:	6		TOTAL:	209.335 sq m	2253.26 sq ft	
	107 107	UNIT A1 (3 BED) 1ST FLOOR	Level 1 B1 Level 2 B1	42.951 52.617	462.321 sq ft 566.36 sq ft	
_		UNIT A1 (3 BED) 2ND FLOOR				TOTAL NUMBER
TOTAL NUMBER OF UNITS:	1		TOTAL:	95.568 sq m	1028.681 sq ft	
	106	UNIT B (1 BED)	Level 1 B1	57.033	613.901 sq ft	
	202	UNIT B (1 BED)	Level 2 B1	57.033	613.901 sq ft	
	203 301	UNIT B (1 BED)	Level 2 B1	57.033	613.901 sq ft	
	301 302	UNIT B (1 BED)	Level 3 B1 Level 3 B1	57.033 57.033	613.901 sq ft 613.901 sq ft	
	303	UNIT B (1 BED) UNIT B (1 BED)	Level 3 B1 Level 3 B1	57.033 57.033	613.901 sq ft 613.901 sq ft	
	305	UNIT B (1 BED)	Level 3 B1	57.033	613.901 sq ft	
	306	UNIT B (1 BED)	Level 3 B1	57.033	613.901 sq ft	
	307	UNIT B (1 BED)	Level 3 B1	57.033	613.901 sq ft	
	308	UNIT B (1 BED)	Level 3 B1	57.033	613.901 sq ft	
	309	UNIT B (1 BED)	Level 3 B1	57.033	613.901 sq ft	
	401	UNIT B (1 BED)	Level 4 B1	57.033	613.901 sq ft	
	402 403	UNIT B (1 BED)	Level 4 B1	57.033	613.901 sq ft 613.901 sq ft	
	405	UNIT B (1 BED) UNIT B (1 BED)	Level 4 B1 Level 4 B1	57.033 57.033	613.901 sq ft	
	406	UNIT B (1 BED)	Level 4 B1	57.033	613.901 sq ft	
	407	UNIT B (1 BED)	Level 4 B1	57.033	613.901 sq ft	
	408	UNIT B (1 BED)	Level 4 B1	57.033	613.901 sq ft	
	409	UNIT B (1 BED)	Level 4 B1	57.033	613.901 sq ft	TOTAL NUMBER
	501	UNIT B (1 BED)	Level 5 B1	57.033	613.901 sq ft	
	502 503	UNIT B (1 BED)	Level 5 B1	57.033	613.901 sq ft	
	505	UNIT B (1 BED) UNIT B (1 BED)	Level 5 B1 Level 5 B1	57.033 57.033	613.901 sq ft 613.901 sq ft	
	506	UNIT B (1 BED)	Level 5 B1	57.033	613.901 sq ft	
	507	UNIT B (1 BED)	Level 5 B1	57.033	613.901 sq ft	
	508	UNIT B (1 BED)	Level 5 B1	57.033	613.901 sq ft	
	509	UNIT B (1 BED)	Level 5 B1	57.033	613.901 sq ft	
	601	UNIT B (1 BED)	Level 6 B1	57.033	613.901 sq ft	
	602	UNIT B (1 BED)	Level 6 B1	57.033	613.901 sq ft	
	603 605	UNIT B (1 BED) UNIT B (1 BED)	Level 6 B1 Level 6 B1	57.033 57.033	613.901 sq ft 613.901 sq ft	
TOTAL NUMBER OF UNITS:	31		TOTAL:	1768.034 sq m	19030.937 sq ft	
TOTAL NUMBER OF UNITS.					·	
	105 201	TYPE C2 (2BED)	Level 1 B1	78.585	845.876 sq ft	
	304	UNIT C (2 BED)	Level 2 B1	71.206	766.453 sq ft 766.453 sq ft	
	404	UNIT C (2 BED) UNIT C (2 BED)	Level 3 B1 Level 4 B1	71.206 71.206	766.453 sq ft	
	504	UNIT C (2 BED)	Level 5 B1	71.206	766.453 sq ft	TOTAL NUMBER
	604	UNIT C (2 BED)	Level 6 B1	71.206	766.453 sq ft	
TOTAL NUMBER OF UNITS:	6		TOTAL:	434.614 sq m	4678.141 sq ft	
	606	UNIT D (2 BED)	Level 6 B1	76.5	823.433 sq ft	
	607	UNIT D (2 BED)	Level 6 B1	76.5	823.433 sq ft	
TOTAL NUMBER OF UNITS:	2		TOTAL:	152.999 sq m	1646.867 sq ft	TOTAL NUMBER (
TOTAL NUMBER OF UNITS:	46					
	100-A	CIRCULATION LEVEL 1	Level 1 B1	186.994 sq m	2012.779 sq ft	
	200	CIRCULATION LEVEL 2	Level 2 B1	124.268 sq m	1337.607 sq ft	
	300 400	CIRCULATION	Level 3 B1	124.015 sq m	1334.89 sq ft	
	500	CIRCULATION	Level 4 B1 Level 5 B1	124.015 sq m 124.015 sq m	1334.89 sq ft 1334.89 sq ft	
	600	CIRCULATION LEVEL 06		127.972 sq m	1377.475 sq ft	
			TOTAL:	811.28 sq m	8732.532 sq ft	
					I	TOTAL NUMBER (
	100-B	INDOOR AMENITY	Level 1 B1	54.167 sq m	583.049 sq ft	
			TOTAL:	54.167 sq m	583.049 sq ft	
			Σ TOTAL AREA:	3783.702 sq m	40727.39 sq ft	TOTAL NUMBER (
			GROSS FLOOR AREA:	3783.702 sq m	40727.39 sq ft	
			GROSS FLOOR FAR:	0.71	0.71	TOTAL NUMBER (
		1	RESIDENTIAL FLOOR AREA:	2918.255 sq m	31411.809 sq ft	
		GROSS RESID	DENTIAL FLOOR FAR (LOTS 1& 2):	0.54	0.54	Σ TOTAL NUMBER

FAR CALCULATION BUILDING #3

# OF BUILDING ING #2 (MARKET)	# UNIT	TYPE UNIT	LEVEL OF UNIT	AREA OF UNIT SQ M	AREA OF UNIT SQ F
	101A	TYPE 2A (2BED)	Level 1 B2	49.11 sq m	528.619 sq
	102A	TYPE 2A3 (2BED)	Level 1 B2	50.862 sq m	
	103A 108A	TYPE 2A3 (2BED) TYPE 2A3 (2BED)	Level 1 B2 Level 1 B2	50.862 sq m 50.862 sq m	
	109A	TYPE 2A3 (2BED) TYPE 2A3 (2BED)	Level 1 B2	50.862 sq m	
	110A	TYPE 2A (2BED)	Level 1 B2	49.11 sq m	
	111A 112A	TYPE 2A (2BED)	Level 1 B2	49.11 sq m	
	ΠΖΑ	TYPE 2A (2BED)	Level 1 B2	49.11 sq m	
-			TOTAL:	399.888 sq m	4304.356 sq
	101A 102A	TYPE 2A2	Level 2 B2	54.705 sq m	
	102A 103A	TYPE 2A3 LEVEL 2 TYPE 2A (LEVEL 2)	Level 2 B2 Level 2 B2	46.15 sq m 44.919 sq m	
	108A	TYPE 2A (LEVEL 2)	Level 2 B2	44.919 sq m	
	109A	TYPE 2A (LEVEL 2)	Level 2 B2	44.919 sq m	483.501 sq
	110A	TYPE 2A (LEVEL 2)	Level 2 B2	44.919 sq m	
	111A 112A	TYPE 2A (LEVEL 2) TYPE 2A (LEVEL 2)	Level 2 B2 Level 2 B2	44.919 sq m 44.919 sq m	
	8		TOTAL:	I	'
TAL NUMBER OF UNITS:				370.368 sq m	
	104A 105A	TYPE 2A2 (2BED+MEZZ) TYPE 2A1 (2BED+MEZZ)	Level 1 B2 Level 1 B2	50.862 sq m 50.862 sq m	
	106A	TYPE 2A2 (2BED+MEZZ)	Level 1 B2	50.862 sq m	
	107A	TYPE 2A2 (2BED+MEZZ)	Level 1 B2	50.862 sq m	
-			TOTAL:	203.447 sq m	2189.879 sq
-					
	105A 107A	TYPE 2A1 MEZZANINE TYPE 2A2 MEZZANINE	Level 1.5 B2 Level 1.5 B2	17.904 sq m 17.48 sq m	
	106A	TYPE 2A2 MEZZANINE	Level 1.5 B2	17.48 sq m	
	104A	TYPE 2A2 MEZZANINE	Level 1.5 B2	17.48 sq m	
-		· · · · · · · · · · · · · · · · · · ·	TOTAL:	70.345 sq m	757.19 sq
	105A	TYPE 2A1 LEVEL 2	Level 2 B2	65.233 sq m	702.159 sq
	106A	TYPE 2A2 LEVEL 2	Level 2 B2	44.919 sq m	483.501 sq
	107A	TYPE 2A2 LEVEL 2	Level 2 B2	44.919 sq m	483.501 sq
	104A	TYPE 2A2 LEVEL 2	Level 2 B2	44.919 sq m	483.501 sq
TAL NUMBER OF UNITS:	4		TOTAL:	199.989 sq m	2152.66 sq
	302A	TYPE 2B (1 BED TYP.)	Level 3 B2	54.44 sq m	585.986 sq
	303A	TYPE 2B (1 BED TYP.)	Level 3 B2	54.44 sq m	585.986 sq
	304A	TYPE 2B1 (1BED & DEN)	Level 3 B2	71.767 sq m	
	305A 306A	TYPE 2B (1 BED TYP.) TYPE 2B (1 BED TYP.)	Level 3 B2 Level 3 B2	54.44 sq m 54.44 sq m	
	307A	TYPE 2B (1 BED TYP.)	Level 3 B2	54.44 sq m	
	308A	TYPE 2C (1 BED)	Level 3 B2	42.981 sq m	462.643 sq
	402A 403A		Level 4 B2	54.44 sq m	
	403A 404A	TYPE 2B (1 BED TYP.) TYPE 2B2 (1 BED+DEN)	Level 4 B2 Level 4 B2	54.44 sq m 70.755 sq m	
	405A	TYPE 2B (1 BED TYP.)	Level 4 B2	54.44 sq m	585.986 sq
	406A 407A	TYPE 2B (1 BED TYP.)	Level 4 B2	54.44 sq m	
	408A	TYPE 2B (1 BED TYP.) TYPE 2C (1 BED)	Level 4 B2 Level 4 B2	54.44 sq m 42.981 sq m	
	507A	TYPE 2B (1 BED TYP.)	Level 5 B2	54.44 sq m	585.986 sq
	508A	TYPE 2B (1 BED TYP.)	Level 5 B2	54.44 sq m	585.986 sq
	509A				
	509A	TYPE 2B (1 BED TYP.)	Level 5 B2	54.44 sq m	585.986 sq
TAL NUMBER OF UNITS:	17	TYPE 2B (1 BED TYP.)	Level 5 B2 TOTAL:	54.44 sq m 936.204 sq m	585.986 sq 10077.202 sq
TAL NUMBER OF UNITS:	17 301A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED)	Level 5 B2 TOTAL: Level 3 B2	54.44 sq m 936.204 sq m 70.666	585.986 sq 10077.202 sq 760.639 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2	54.44 sq m 936.204 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq
FAL NUMBER OF UNITS:	17 301A 309A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2	54.44 sq m 936.204 sq m 70.666 84.629	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq
	17 301A 309A 401A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq
	17 301A 309A 401A 409A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 910.942 sq 3343.163 sq
	17 301A 309A 401A 409A 4 502A 502A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq
	17 301A 309A 401A 409A 4 502A 502A 502A 502A 503A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2E (2BED) TYPE 2F1 (3BED) TYPE 2F LEVEL 2 TYPE 2F	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq
	17 301A 309A 401A 409A 4 502A 502A 502A 502A 503A 503A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2F TYPE 2F LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 6 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq
	17 301A 309A 401A 409A 4 502A 502A 502A 502A 503A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2E (2BED) TYPE 2F1 (3BED) TYPE 2F LEVEL 2 TYPE 2F	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq
	17 301A 309A 401A 409A 4 502A 502A 502A 502A 503A 503A 503A 504A 504A 505A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2F	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 6 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq
	17 301A 309A 401A 409A 4 502A 502A 502A 502A 503A 503A 503A 504A 504A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq
	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 503A 504A 504A 505A 505A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2F	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 6 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 505A 511A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 505A 505A 505A 505A 511A 511A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 505A 511A 511A 5 5 501A 501A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq 6448.602 sq 454.512 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 511A 511A 511A 501A 501A 501A 506A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq 6448.602 sq 454.512 sq 752.698 sq 347.63 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 505A 511A 511A 5 5 501A 501A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq 6448.602 sq 454.512 sq 752.698 sq 347.63 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 511A 511A 511A 501A 501A 501A 506A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq 6448.602 sq 454.512 sq 752.698 sq 347.63 sq 511.294 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 511A 511A 511A 511A 501A 501A 501A 506A 506A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 476.566 sq 677.339 sq 676.566 sq 6448.602 sq 347.63 sq 311.294 sq 2066.133 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 511A 511A 511A 501A 506A 506A 506A 506A 506A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2I LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 476.566 sq 676.566 sq 6448.602 sq 347.63 sq 311.294 sq 2066.133 sq 427.529 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 511A 511A 511A 511A 511A 501A 506A 506A 506A 506A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2I LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 55.008 73.012 74.508 75.008	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 476.566 sq 676.566 sq 6448.602 sq 347.63 sq 311.294 sq 2066.133 sq 427.529 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 511A 511A 511A 501A 506A 506A 506A 506A 506A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2I LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 476.566 sq 676.566 sq 6448.602 sq 347.63 sq 311.294 sq 2066.133 sq 427.529 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 511A 511A 511A 511A 501A 501A 506A 506A 506A 2 510A 1	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2J LEVEL 2 TYPE 2I LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 476.566 sq 676.566 sq 6448.602 sq 347.63 sq 311.294 sq 2066.133 sq 427.529 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 511A 511A 511A 511A 511A 506A 506A 506A 506A 1 41	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 677.339 sq 676.566 sq 6448.602 sq 347.63 sq 511.294 sq 2066.133 sq 427.529 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 505A 505A 505A 505A 505A 501A 501A 501A 501A 501A 506A 506A 506A 1 41 41 100A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2J (3BED) TYPE 2J (3BED) TYPE 2J LEVEL 2 TYPE 2I (1BED) TYPE 2I LEVEL 2 TYPE 2I (1BED) TYPE 2I LEVEL 2	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.017 55.97.095 sq m 39.719 sq m 99.874 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 476.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 511A 511A 511A 511A 511A 506A 506A 506A 506A 1 41	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.602 sq 677.339 sq 676.566 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 31075.036 sq 3333.373 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 505A 505A 501A 501A 501A 506A 506A 2 2 510A 1 41 41 100A 200A 300A 400A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 6 B2 Level 7 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 99.874 sq m 40.726 sq m 125.236 sq m 125.033 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1075.845 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 503A 504A 504A 505A 505A 505A 505A 511A 501A 501A 501A 501A 506A 506A 2 2 510A 1 41 41 100A 200A 300A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 99.874 sq m 40.726 sq m 125.236 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1075.845 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 505A 505A 501A 501A 501A 506A 506A 2 2 510A 1 41 41 100A 200A 300A 400A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 7 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 99.874 sq m 40.726 sq m 125.236 sq m 125.033 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 12066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1348.024 sq 1345.845 sq 1458.701 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 511A 505A 505A 501A 501A 501A 506A 506A 2 2 510A 1 41 41 100A 200A 300A 400A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2F (2BED) TYPE 2J	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 39.719 sq m 125.236 sq m 125.236 sq m 125.236 sq m 125.518 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 752.698 sq 347.63 sq 511.294 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1348.024 sq 1345.845 sq 1458.701 sq 5665.979 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 504A 505A 505A 505A 505A 511A 505A 501A 501A 506A 506A 506A 2 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED)	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 6 B2 Level 5 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 39.719 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 752.698 sq 347.63 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1348.024 sq 1348.024 sq 1348.73 sq 1348.73 sq 1348.74 sq 1348.77 sq <tr td=""> 1345.77 sq</tr>
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 505A 505A 505A 505A 511A 505A 505A 501A 506A 506A 506A 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED) TY	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 1 B2 Level 5 B2 Level 5 B2 Level 5 B2 Level 1 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 39.719 sq m 39.719 sq m 125.236 sq m 125.236 sq m 125.033 sq m 135.518 sq m 34.753 sq m 14.487 sq m </td <td>585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1075.036 sq 3148.024 sq 1345.845 sq 1458.701 sq 5665.979 sq 374.074 sq 155.932 sq</td>	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1075.036 sq 3148.024 sq 1345.845 sq 1458.701 sq 5665.979 sq 374.074 sq 155.932 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 505A 505A 505A 505A 511A 505A 505A 501A 506A 506A 506A 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED) TY	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 39.719 sq m 125.236 sq m 125.236 sq m 125.236 sq m 135.518 sq m 34.753 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1075.036 sq 3148.024 sq 1345.845 sq 1458.701 sq 5665.979 sq 374.074 sq 155.932 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 505A 505A 505A 505A 511A 505A 505A 501A 506A 506A 506A 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED) TY	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 TOTAL: Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 1 B2 Level 5 B2 Level 5 B2 Level 5 B2 Level 1 B2 Le	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 39.719 sq m 39.719 sq m 125.236 sq m 125.236 sq m 125.033 sq m 135.518 sq m 34.753 sq m 14.487 sq m </td <td>585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 752.698 sq 347.63 sq 511.294 sq 2066.133 sq 427.529 sq 427.529 sq 347.63 sq 511.294 sq 2066.133 sq 1075.036 sq 1348.024 sq 1348.024 sq 1348.024 sq 1345.845 sq 1458.701 sq 5665.979 sq 374.074 sq 155.932 sq 530.006 sq</td>	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 752.698 sq 347.63 sq 511.294 sq 2066.133 sq 427.529 sq 427.529 sq 347.63 sq 511.294 sq 2066.133 sq 1075.036 sq 1348.024 sq 1348.024 sq 1348.024 sq 1345.845 sq 1458.701 sq 5665.979 sq 374.074 sq 155.932 sq 530.006 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 505A 505A 505A 505A 511A 505A 505A 501A 506A 506A 506A 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED) TY	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 1 B2 Level 3 B2 Level 4 B2 Level 1 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 39.719 sq m 125.236 sq m 125.237 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 12066.133 sq 427.529 sq 427.529 sq 1075.036 sq 1348.024 sq 1348.024 sq 1345.845 sq 1458.701 sq 5665.979 sq 374.074 sq 155.932 sq 41949.299 sq
TAL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 505A 505A 505A 505A 511A 505A 505A 501A 506A 506A 506A 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED) TY	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 6 B2 Level 6 B2 Level 5 B2 Level 1 B2 Level 3 B2 Level 4 B2 Level 1 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 3 B2 Level 4 B	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 39.719 sq m 125.236 sq m 125.518 sq m 125.236 sq m 125.237 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 2066.133 sq 427.529 sq 427.529 sq 347.63 sq 311.294 sq 2066.133 sq 1075.036 sq 348.024 sq 1348.024 sq 1348.024 sq 374.074 sq 155.932 sq 530.006 sq 41949.299 sq 41949.299 sq
AL NUMBER OF UNITS:	17 301A 309A 401A 409A 4 502A 502A 502A 503A 503A 504A 505A 505A 505A 505A 511A 505A 505A 501A 506A 506A 506A 2 510A 1 41 100A 200A 300A 400A 500A	TYPE 2B (1 BED TYP.) TYPE 2D (2BED) TYPE 2C (2BED) TYPE 2D (2BED) TYPE 2D (2BED) TYPE 2E (2BED) TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2F LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J LEVEL 2 TYPE 2J (2BED) TYPE 2J (2BED) TY	Level 5 B2 TOTAL: Level 3 B2 Level 3 B2 Level 4 B2 Level 4 B2 Level 5 B2 Level 5 B2 Level 6 B2 Level 5 B2 Level 1 B2 Level 3 B2 Level 4 B2 Level 1 B2	54.44 sq m 936.204 sq m 70.666 84.629 70.666 84.629 310.59 sq m 46.241 73.012 45.008 73.012 45.008 73.012 45.008 73.012 62.927 62.855 599.095 sq m 42.226 69.928 32.296 47.501 191.95 sq m 39.719 sq m 39.719 sq m 125.236 sq m 125.237 sq m	585.986 sq 10077.202 sq 760.639 sq 910.942 sq 760.639 sq 910.942 sq 3343.163 sq 497.736 sq 785.892 sq 484.465 sq 785.892 sq 676.566 sq 6448.602 sq 2066.133 sq 12066.133 sq 2066.133 sq 427.529 sq 427.529 sq 345.845 sq 1348.024 sq 1348.024 sq 1348.024 sq 1348.024 sq 155.932 sq 530.006 sq 41949.299 sq 41949.299 sq 0.7

Data of y Marker						
100 100 <th># OF BUILDING BUILDING #3 (MARKET)</th> <th># UNIT</th> <th>TYPE UNIT</th> <th>LEVEL OF UNIT</th> <th>AREA OF UNIT SQ M</th> <th>AREA OF UNIT SQ F</th>	# OF BUILDING BUILDING #3 (MARKET)	# UNIT	TYPE UNIT	LEVEL OF UNIT	AREA OF UNIT SQ M	AREA OF UNIT SQ F
1000 0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.		101B	TYPE 3A1 (2BFD)	Level 1 B3	43.811 sa m	471.582 sq ft
No. No. <th></th> <th>102B</th> <th>TYPE 3A1 (2BED)</th> <th>Level 1 B3</th> <th>43.811 sq m</th> <th>471.582 sq ft</th>		102B	TYPE 3A1 (2BED)	Level 1 B3	43.811 sq m	471.582 sq ft
19.00 19.10 <th< th=""><th></th><th></th><th></th><th></th><th></th><th>471.582 sq ft 471.582 sq ft</th></th<>						471.582 sq ft 471.582 sq ft
Image: constraint of the second sec						471.582 sq ft 528.619 sq ft
1000 11.25.1022 1000 14.25.2022 1000 14.25.2022 10.25.2022 10.25.2022 14.25.2022 10.25.2022 10.25.2022 14.25.2022 10.25.2022 14.25.2022 10.25.2022 14.25.2022 10.25.2022 14.25.2022 10.25.2022 14.25.2022 10.25.2022 14.25.2022 10.25.2022 </th <th></th> <th>10.15</th> <th></th> <th></th> <th></th> <th></th>		10.15				
1940 1950 1950 1950 1950 1950 1950 1950 195						431.965 sq ft 431.965 sq ft
100 101 <th></th> <th></th> <th></th> <th></th> <th></th> <th>431.965 sq ft</th>						431.965 sq ft
- - - - - 1 -		105B	TYPE 3A1 LEVEL 2	Level 2 B3	40.131	431.965 sq ft
The source of the sou		106B	TYPE 3A4 LEVEL 2 (2BED)	Level 2 B3	45.43	489.002 sq ft
Nee TYPE 5.580 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.280 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.220 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.220 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.220 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.220 ME2 Local 3 Section 2000 Section 2000 100 TYPE 5.220 ME2 Local 3 Section 2000 Section 2000		6		TOTAL:	246.084 sq m	2648.826 sq ft
1000 1776 10.000-1982 Luc. 18 2008 55-5 4.0 1100 1771 20.000-1997 17.0000 17.0000 17.0000						528.619 sq ft
Tota, Model of Julia Julia </th <th></th> <th>109B</th> <th></th> <th>Level 1 B3</th> <th>50.862</th> <th>547.47 sq ft</th>		109B		Level 1 B3	50.862	547.47 sq ft
100 1772 32 (28) VE2 100 1001 1772 32 (28) VE2 100 1001 1274 32 (28) VE2 100 1001 1274 32 (28) VE2 100 1274 32 (28) VE2 100 <t< th=""><th></th><th></th><th></th><th></th><th></th><th>547.47 sq ft 547.47 sq ft</th></t<>						547.47 sq ft 547.47 sq ft
THE SUBJECTION OF THE SUB						460.869 sq ft
Image: constraint of the		114B	TYPE 3A (2BED+MEZZ)			547.47 sq ft
Dist TYPE MUZZANINE TYPE M		1158	TYPE 3A (2BED+MEZZ)	Level 1 B3	50.862	547.47 sq ft
980 TTP23.44072-014				TOTAL:	439.913 sq m	4735.175 sq ft
International and the second						190.085 sq ft
TYPE A METZANY Jacobi Strawy Jacobi Strawy <thjacobi strawy<="" th=""> Jacobi S</thjacobi>		109B	TYPE 3A MEZZANINE	Level 1.5 B3	17.66	190.085 sq ft
156 1160						
108 TPE & VERSA VARE VERSA VAREAVARE VERSA VAREAVAREAVARE VERSA VAREAVAREAVAREAVAREA VAREAVAREAVAREAVARE			TYPE 3A2 MEZZANINE	Level 1.5 B3	16.032	172.57 sq ft
Under State Under State Under State Under State 10000 1000 10000		114B	TYPE 3A MEZZANINE	Level 1.5 B3	17.66	190.085 sq ft
Image: constraint of the source of		115B	TYPE 3A MEZZANINE			190.085 sq ft
NUME TYPE ALLEPS Loco 2 ps 0.5.2 (37.00 pc) 110 117.00 LLL Loco 2 ps 0.5.4 (37.00 pc) 0.5.5 (37.00 p				TOTAL:	155.681 sq m	1675.737 sq ft
1996 1995 <th< th=""><th></th><th></th><th></th><th></th><th></th><th>489.002 sq ft 489.002 sq ft</th></th<>						489.002 sq ft 489.002 sq ft
118 118 118 119 <th></th> <th>109B</th> <th>TYPE 3A LEVEL 2</th> <th>Level 2 B3</th> <th>45.43</th> <th>489.002 sq ft</th>		109B	TYPE 3A LEVEL 2	Level 2 B3	45.43	489.002 sq ft
1156 1179 (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)		111B	1			489.002 sq ft
1920. 1920. <th< th=""><th></th><th></th><th>1</th><th></th><th></th><th>408.396 sq ft 408.396 sq ft</th></th<>			1			408.396 sq ft 408.396 sq ft
0 0		114B	TYPE 3A LEVEL 2	Level 2 B3	45.43	489.002 sq ft
200 1778 34 (1880-Dex) 1797 31 (1880 Lowi 2 is Lewi 2 is 4 4 4 200 4 5 5 3 5 4 e j 5 5 3 5 5 4 e j 5 5 5 5 5 4 e j 5 5 5 5 5 6 e j 5 5 5 5 5 6 e j 5 5 5 5 6 e j 5 5 5 5 6 e j 5 5 6 e j 5 5 7 6 e j 5 7 7 6 e j 5 6 e j 5 7 7 7 6 e j 5 6 e j 5 7 7 7 7 7 7 7 6 e j 5 7 7 7 7 7 6 e j 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			TYPE 3A LEVEL 2	Level 2 B3	45.43	489.002 sq tt
2020 1000 1000 1000 10000 1000 10000 1000 10000 1000 10000 1000 10000 1000 10000 10000 10000 1000 10000 1000	TOTAL NUMBER OF UNITS:	9		TOTAL:	393.891 sq m	4239.806 sq ft
3005 1179F 33 (1900) Low 118 64.48 955 57 9 (1) 2006 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 2006 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 2007 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 2008 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 2008 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 53 (1900) Low 158 64.48 955 57 9 (1) 4005 7179F 51 (2000) Low 158 64.48 955 57 9 (1) 5005 7179F 51 (2000)						882.48 sq ft 585 969 sq ft
Sold Sill TYPE SIL TYPE SILLED SILE Level 30 (44) Sold Sill Sold Sill Sold		302B	TYPE 3B (1BED)	Level 3 B3	54.438	585.969 sq ft
1008 1709 20 (1620) Level 30 555.00 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 40 557.40 557.95 etc. 4008 1770 20 (1620) Level 50 567.40 557.95 etc. 4008 1770 20 (1620) Level 50 567.40 557.95 etc. 3008 1770 21 (2620) Level 50 664.00 577.14 32.20 etc. 3008 1770 21 (2620) Level 30 667.90 771.34 32.95 etc. 3008 1770 21 (2620) Level 30 677.40 771.34 32.95 etc. 31000 1770 20 (2620) Lev						585.969 sq tt 585.969 sq ft
1702.8 1702.83 100.44 100.45 100.44 100.45 100.44 100.45						585.969 sq ft 585.969 sa ft
101AL NUMBER OF UNITS 1000 A 410 (410) 1000 A 410 (410) 1000 A 410 (312B	TYPE 3B (1BED)	Level 3 B3	54.438	585.969 sq ft
4075 1050 177E 55 (16E0) 1472 56 (16E0) 1472 57 (16E0) 1474 57 (16E0) 1		403B				585.969 sq ft 585.969 sq ft
4:00 0000 TYPE 36 (RED) 0000 Lune 4:03 0000 44.48 04.448 54.448 04.448 55.65 m m 04.448 TOTAL NUMBER OF UNITS 16 TYPE 36 (RED) 1000 (RED) Lune 4:03 04.448 64.448 64.448 2008 TYPE 36 (RED) 1000 (RED) Lune 4:03 04.448 64.448 64.449 2008 TYPE 36 (RED) 1000 (RED) Lune 4:03 04.448 64.449 64.449 2008 TYPE 36 (RED) 1000 (RED) Lune 4:03 00.027 77.22.52 77.22.52 3058 TYPE 30 (RED) 1000 (RED) Lune 4:03 00.027 77.22.52 77.22.52 3058 TYPE 31 (RED) 1000 (RED) Lune 4:03 00.027 60.77 77.22.52 3058 TYPE 31 (RED) 1000 (RED) Lune 4:03 00.027 77.22.52 77.22.52 3058 TYPE 31 (RED) 1000 (RED) Lune 4:03 00.027 77.22.52 77.22.52 3058 TYPE 31 (RED) 1000 (RED) Lune 4:03 00.027 77.22.54 77.22.54 3058 TYPE 31 (RED) 1000 (RED) Lune 4:03 00.027 77.22.54 77.22.54 4068 TYPE 31 (RED) 1000 (RED) Lune 4:03 07.72.57 77						585.969 sq ft 585.969 sq ft
9028 0028 TYPE 38 (18ED) 0028 Lue of 83 0028 94.38 0029 95.55 (4 m) 0029 (4 m) 10TAL NUMBER OF UNITS 1 TYPE 38 (18ED) 0036 1000000000000000000000000000000000000		410B	TYPE 3B (1BED)	Level 4 B3	54.438	585.969 sq ft
TOTAL NUMBER OF UNITS 16 TOTAL Deck dam 9472.04.6 arr 1776 342 (2805) 0.000 3018 TYPE 342 (2805) Level 5 B 68.154 7.23.04.6 arr 2.23.04.6 arr 1776 342 (2805) Level 5 B 68.154 7.23.04.6 arr 2.23.04.6 arr 1776 342 (2805) 3008 TYPE 342 (2805) Level 5 B 68.154 7.23.04.6 arr 2.23.04.6 arr 1776 342 (2805) 3008 TYPE 342 (2805) Level 5 B 66.277 7.76.13 arr 1776 342 (2805) 3138 TYPE 342 (2805) Level 5 B 66.277 7.73.24 arr 1772 342 (2805) 4038 TYPE 342 (2805) Level 4 B 67.14 7.72.54 arr 1772 342 (2805) 4038 TYPE 342 (2805) Level 4 B 67.74 7.72.65 arr 178.73 arr 179.74 arr 178.73 arr 179.74 arr 178.73 arr 179.74 arr 178.73 arr 179.74 arr 1		502B	, , ,			585.969 sq ft
2008 TYPE 3H (2850) Level 2B 64.453 99/1.19 sp(1 3068 TYPE 3H (2850) Level 3B3 60.164 7.326.41 sp(1) 3068 TYPE 3H (2850) Level 3B3 7.322 7.78.13 sp(1) 3068 TYPE 3H (2850) Level 3B3 66.77 7.78.13 sp(1) 3068 TYPE 3H (2850) Level 3B3 66.77 7.78.13 sp(1) 3078 TYPE 3H (2850) Level 3B3 66.74 9.77.22 3078 TYPE 3H (2850) Level 4B3 66.74 9.77.22 4078 TYPE 3H (2850) Level 4B3 66.277 7.72.34 sp(1) 4088 TYPE 3H (2850) Level 4B3 66.277 7.72.34 sp(1) 4088 TYPE 3H (2850) Level 4B3 66.277 7.72.35 sp(1) 4088 TYPE 3H (2850) Level 4B3 67.74 7.79.55 sp(1) 4088 TYPE 3H (2850) Level 4B3 67.74 7.79.55 sp(1) 418 TYPE 3H (2850) Level 4B3 67.74 7.79.55 sp(1) 6058 TYPE 3H		602B	TYPE 3B (1BED)	Level 6 B3	54.438	585.969 sq ft
3018 TYPE 3/2020) Level 33: 9:152 7:25.05 (1) 3068 TYPE 3/2020) Level 33: 7:32 7:81.3 (2) 3068 TYPE 3/2020) Level 33: 7:32 7:81.3 (2) 3068 TYPE 3/2020) Level 33: 6:62.73 7:71.454 (4) 3088 TYPE 3/2020) Level 33: 6:62.73 7:71.454 (4) 3088 TYPE 3/2020) Level 33: 6:62.73 7:71.454 (4) 3088 TYPE 3/2020) Level 33: 6:4.48 6:64.186 (4) 4018 TYPE 3/2020) Level 43: 7:2.72 7:72.313 (4) 4038 TYPE 3/2020) Level 43: 7:7.47 7:72.313 (4) 4038 TYPE 3/2020) Level 43: 7:7.47 7:72.313 (4) 4038 TYPE 3/2020) Level 43: 7:7.47 7:72.37 7:72.37 4038 TYPE 3/2020) Level 43: 7:7.47 7:72.37 7:7.37 4038 TYPE 3/2020) Level 43: 7:7.47 7:7.37 7:7.77 7:7.77	TOTAL NUMBER OF UNITS:	16		TOTAL:	898.561 sq m	9672.016 sq ft
3058 TYPE 31 (2820) Lewel 38 (37,2672) 72,872 (78,238,46) 3068 TYPE 30 (2820) Lewel 38 (66,273) 77,13,45,47,47 3068 TYPE 31 (2820) Lewel 38 (66,273) 77,13,45,47,47 3118 TYPE 31 (2820) Lewel 38 (66,273) 77,13,45,47,47 3118 TYPE 31 (2820) Lewel 38 (66,273) 77,13,45,47,47 4011 TYPE 31 (2820) Lewel 38 (77,272) 782,238,46,17 4018 TYPE 31 (2820) Lewel 48 (74,872) 738,138,46,17 4068 TYPE 30 (2820) Lewel 48 (74,873,772) 738,238,46,17 4068 TYPE 30 (2820) Lewel 48 (74,873,772) 738,238,46,17 4068 TYPE 30 (2820) Lewel 48 (74,873,772) 738,238,46,17 4038 TYPE 30 (2820) Lewel 48 (74,873,774) 637,744,473,474,474 4038 TYPE 30 (2820) Lewel 48 (74,873,774,474,474,474,474,474) 633,744,433,744,474,474,474,474,474,474,4						694.196 sq ft 733.604 sa ft
300B TYPE 3rt (28ED) Level 3 8 66.273 77.4.24 μr. 4.073 311B TYPE 3rt (28ED) Level 3 8 67.14 77.9.54 μr. 4.071 311B TYPE 3rt (28ED) Level 3 8 67.14 77.9.54 μr. 4.071 311B TYPE 3rt (28ED) Level 3 8 67.14 77.9.55 μr. 4.076 401B TYPE 3rt (28ED) Level 4 8 77.27 77.8.33 μr. 4.076 77.8.33 μr. 4.076 400B TYPE 3rt (28ED) Level 4 8 77.27 77.8.33 μr. 4.078 77.8.33 μr. 4.078 77.8.33 μr. 4.078 400B TYPE 3rt (28ED) Level 4 8 66.279 77.14.44 μr. 4.078 77.14.24 μr. 4.078 77.14.24 μr. 4.078 411B TYPE 3rt (28ED) Level 4 8 66.279 77.14.24 μr. 4.071 77.14.24 μr. 4.071 77.14.24 μr. 4.071 77.658 μr. 4.071 77.14.071 77.24.24 μr. 4.071			TYPE 3I (2BED)	Level 3 B3	72.672	782.238 sq ft
318 TYPE 31 (28ED) Lewi 35 3 * 7/4 92.95 million 308 TYPE 31 (28ED) Lewi 35 6443 66136 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.95 77.84.36 67.97 77.84.36 67.97 77.84.36 67.97 77.84.36 67.97 77.97.95 67.97 77.97.95 67.97 <		308B				788.13 sq ft 713.424 sq ft
3138 TYPE 31 (20ED) Lewit 3E 64.402 (04/15) (32.502 + 1) 4098 TYPE 32 (20ED) Lewit 4E 72.22 78.23 ± 1, 73.203 ± 1, 4098 TYPE 30 (20ED) Lewit 4E 72.22 78.23 ± 1, 73.203 ± 1, 4098 TYPE 30 (20ED) Lewit 4E 73.23 ± 1, 73.23 ± 1, 73.24 ± 1, 4098 TYPE 30 (20ED) Lewit 4E 86.727 73.23 ± 1, 73.24 ± 1, 4098 TYPE 31 (20ED) Lewit 4E 87.74 93.75 ± 1, 73.24 ± 1, 4118 TYPE 31 (20ED) Lewit 4E 87.74 93.75 ± 1, 73.24 ± 1, 5078 TYPE 31 (20ED) Lewit 4E 87.74 93.75 ± 1, 93.75 ± 1, 5078 TYPE 37 (20ED) Lewit 8E 77.74 93.75 ± 1, 93.75 ± 1, 6008 TYPE 37 (20ED) Lewit 8E 77.74 93.75 ± 1, 93.75 ± 1, 6008 TYPE 32 (20ED) Lewit 8E 77.74 93.75 ± 1, 93.75 ± 1, 7074L 7074L 77.44 94.1,						713.424 sq ft 937.965 sa ft
4068 TYPE 30 (2000) Lowid 453 77.22.33 erg 4068 TYPE 30 (2000) Lowid 453 77.22.33 erg 4068 TYPE 30 (2000) Lowid 453 66.270 77.13.43 erg 4068 TYPE 30 (2000) Lowid 453 66.277 77.13.43 erg 4118 TYPE 31 (2000) Lowid 453 67.14 97.95 erg 4118 TYPE 31 (2000) Lowid 453 67.14 97.95 erg 4118 TYPE 31 (2000) Lowid 53 67.14 97.95 erg 4118 TYPE 31 (2000) Lowid 53 67.14 97.95 erg 4118 TYPE 37 (2000) Lowid 53 77.00 63.75 99.95 erg 4118 TYPE 37 (2000) Lowid 53 77.44 63.93 stg r 4005 TYPE 37 (2000) Lowid 53 77.44 63.93 stg r 4005 TYPE 37 (2000) Lowid 53 77.44 63.93 stg r 4005 TYPE 37 (2000) Lowid 53 77.44 63.93 stg r 4007 TYPE 37 (2000) Lowid 53 97.95 r			TYPE 3H (2BED)	Level 3 B3	64.493	694.196 sq ft
4088 TYPE 341 (28ED) Lewel 453 66.279 77.34.24 spt 4118 TYPE 341 (28ED) Lewel 453 67.14 97.95.24 spt 4118 TYPE 34 (28ED) Lewel 453 67.14 97.95.24 spt 5078 TYPE 34 (28ED) Lewel 453 67.14 97.95.95 spt 6033 TYPE 34 (28ED) Lewel 63 77.97.06 85.79.99 spt 6034 TYPE 37 (28ED) Lewel 63 77.97.06 85.79.99 spt 6048 TYPE 37 (28ED) Lewel 63 77.441 833.368 spt 6068 TYPE 37 (28ED) Lewel 63 76.53 843.138 spt 6068 TYPE 37 (28ED) Lewel 63 76.53 56.857 spt 6068 TYPE 37 (28ED) Lewel 63 76.53 56.857 spt 7074.1 103.052 spt 106.073 spt 106.734 spt 106.734 spt 6076 TYPE 351 (28ED) Lewel 63 70.555 spt 106.1734 spt 50358 TYPE 352 (38ED) Lewel 53 90.657 106.1734 spt 50368		405B				782.238 sq ft
1008 TYPE 3H (28ED) Level 483 66.279 713.424 spt. 4118 TYPE 3H (28ED) Level 483 64.463 64.4796 spt. 6078 TYPE 3H (28ED) Level 483 64.463 64.4796 spt. 6078 TYPE 3F (28ED) Level 683 77.765 65.7967 spt. 6068 TYPE 3F (28ED) Level 683 77.663 65.7967 spt. 6068 TYPE 3F (28ED) Level 683 77.644 682.495 spt. 6068 TYPE 3F (28ED) Level 683 77.441 63.557 spt. 6068 TYPE 3F (28ED) Level 683 77.441 63.557 spt. 6068 TYPE 3F (28ED) Level 683 71.4 927.963 spt. 6068 TYPE 3F (28ED) Level 683 60.11017 108.42.032 spt. 6058 TYPE 3F (28ED) Level 683 60.012 101.017 6058 TYPE 3F (28ED) Level 583 101.017 108.42.032 spt. 6058 TYPE 3F (28ED) Level 583 60.012 103.43 spt. 5048						
113B TYPE 3H (32ED) Lewel 1 as 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 64.465 67.145 <			TYPE 3H1 (2BED)	Level 4 B3	66.279	713.424 sq ft
6018 TYPE 3F (28ED) Lowil 6 B3 79.706 85.7945 ag ft 6038 TYPE 3F (28ED) Lowil 6 B3 79.706 85.7945 ag ft 6048 TYPE 3F (28ED) Lowil 6 B3 77.411 83.356 ag ft 6066 TYPE 3F (28ED) Lowil 6 B3 76.644 824.985 ag ft 6066 TYPE 3F (28ED) Lowil 6 B3 76.644 824.985 ag ft 60676 TYPE 3F (28ED) Lowil 6 B3 76.33 83.318 ag ft 60768 TYPE 3F (28ED) Lowil 6 B3 76.37 828.351 ag ft 60768 TYPE 3F (28ED) Lowil 6 B3 76.37 828.353 ag ft 5018 TYPE 3E (28ED) Lowil 5 B3 101.017 1087.342 ag ft 5038 TYPE 3E (28ED) Lowil 5 B3 98.657 100.137.343 ag ft 5038 TYPE 3E (38ED) Lowil 5 B3 101.017 1087.342 ag ft 5038 TYPE 3E (38ED) Lowil 5 B3 103.534 ag ft 103.534 ag ft 5038 TYPE 3E (38ED) Lowil 5 B3 103.034 ag ft 107.332 ag ft </th <th></th> <th>413B</th> <th>TYPE 3H (2BED)</th> <th>Level 4 B3</th> <th>64.493</th> <th>694.196 sq ft</th>		413B	TYPE 3H (2BED)	Level 4 B3	64.493	694.196 sq ft
6036 TYPE 3F (28ED) Lewel 6 B3 77.76 887.749 st (1 803.65 st (1 80.66 st (1)) 0058 TYPE 3F (28ED) Lewel 6 B3 77.64 st (3 80.66 st (1)) 883.565 st (1 80.66 st (1)) 0078 TYPE 3F (28ED) Lewel 6 B3 77.83 st (3 80.83.134 st (1)) 883.134 st (1) 0078 TYPE 3F (28ED) Lewel 6 B3 77.85 st (1) 883.557 st (1) 0078 TYPE 3F (28ED) Lewel 6 B3 77.85 st (1) 883.557 st (1) 0078 TYPE 3F (28ED) Lewel 6 B3 77.85 st (1) 883.57 st (1) 0078 TYPE 3E (38ED) Lewel 6 B3 101.017 1007.32 st (1) 5038 TYPE 3E (38ED) Lewel 5 B3 90.612 1001.33 st (1) 5068 TYPE 3E (38ED) Lewel 5 B3 96.67 1001.33 st (1) 5068 TYPE 3E (38ED) Lewel 5 B3 100.058 1109.32 st (1) 5068 TYPE 3E (38ED) Lewel 5 B3 100.058 1109.32 st (1) 5068 TYPE 3E (38ED) Lewel 5 B3 100.058 1109.32 st (1) 2006 LEVEL 2 B3 CIRCUL		601B				857.949 sq ft
0056 b TYPE 974 (28ED) Lowie 6 33 78.644 824,985 sq. ft. 0078 b TYPE 972 (28ED) Level 6 83 78.33 843,134 sq. ft. 0078 b TYPE 37 (28ED) Level 6 83 78.54 824,985 sq. ft. 0078 b TYPE 37 (28ED) Level 6 83 76.857 828.357 sq. ft. 0078 b TYPE 37 (28ED) Level 6 83 76.957 828.357 sq. ft. 0078 b TYPE 32 (38ED) Level 5 83 101.017 1087.342 sq. ft. 008 b TYPE 32 (38ED) Level 5 83 96.677 1001.934 sq. ft. 008 b TYPE 32 (38ED) Level 5 83 96.612 103.345 sq. ft. 008 b TYPE 32 (38ED) Level 5 83 96.612 1033.45 sq. ft. 008 b TYPE 32 (38ED) Level 5 83 96.187 1033.45 sq. ft. 1008-A LEVEL 1 83 CIRCULATION Level 5 83 196.597 sq. m. 1353.33 sq. ft. 1008-A LEVEL 2 83 CIRCULATION Level 3 83 145.597 sq. m. 1570.527 sq. ft. 1008-B LEVEL 383 CIRCULATION Level 38			TYPE 3F (2BED)			857.949 sq ft 833.568 sq ft
6078 8088 TYPE 3J (2BED) TYPE 3F (2BED) Level 6 B3 87.34 937.945 sq. ft TOTAL NUMBER OF UNITS 23 TOTAL 1704.032 sq. m 18342.032 sq. ft 5018 TYPE 3F (2BED) Level 6 B3 01.017 1087.342 sq. ft 5038 TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq. ft 5048 TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq. ft 5069 TYPE 3E3 (3BED) Level 5 B3 98.657 1033.44 sq. ft 5069 TYPE 3E1 (3BED) Level 5 B3 96.012 1033.44 sq. ft 5069 TYPE 3E1 (3BED) Level 5 B3 96.012 1033.44 sq. ft 60 TOTAL 592.587 sq. m 6389.316 sq. ft 7008 LEVEL 1 B3 CIRCULATION Level 5 B3 105.0527 sq. m 3008 LEVEL 2 B3 CIRCULATION Level 3 B3 145.907 sq. m 1570.527 sq. ft 3008 LEVEL 2 B3 CIRCULATION Level 6 B3 126.728 sq. m 1570.527 sq. ft 5008 LEVEL 3 B3 CIRCULATION Level 6 B3 145.907 sq. m <t< th=""><th></th><th>605B</th><th>TYPE 3F4 (2BED)</th><th>Level 6 B3</th><th>76.644</th><th>824.985 sq ft</th></t<>		605B	TYPE 3F4 (2BED)	Level 6 B3	76.644	824.985 sq ft
TOTAL NUMBER OF UNITS: 23 TOTAL TOTAL TOTAL TOTAL TOTAL 32 sq m 18342.032 sq ft 501B TYPE 3E (3BED) Level 5 B3 101.017 1087.342 sq ft 503B TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq ft 506B TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq ft 506B TYPE 3E (3BED) Level 5 B3 96.612 1003.45 sq ft 506B TYPE 3E (3BED) Level 5 B3 103.058 1109.3202 sq ft 6 TOTAL 593.587 sg m 6389.316 sq ft 1035.43 sq ft 6 TOTAL 593.587 sg m 6389.316 sq ft 107.527 sq ft 200B LEVEL 2 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 200B LEVEL 2 B3 CIRCULATION Level 1 B3 145.907 sq m 1570.527 sq ft 300B LEVEL 38 CIRCULATION Level 1 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 383 CIRCULATION Level 4 B3 145.907 sq m 1570.527 sq ft 6000B		607B	TYPE 3J (2BED)	Level 6 B3	87.14	937.965 sq ft
S01B TYPE 3E (3BED) Level 5 B3 101.017 1087.342 sq ft 503B TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq ft 506B TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq ft 506B TYPE 3E (3BED) Level 5 B3 98.657 1061.934 sq ft 506B TYPE 3E (3BED) Level 5 B3 96.012 103.46 sq ft 506B TYPE 3E (3BED) Level 5 B3 96.012 103.346 sq ft 506B TYPE 3E (3BED) Level 5 B3 96.187 103.533 sq ft 6 TOTAL 593.587 sq m 6389.316 sq ft 1035.33 sq ft 60 LEVEL 2 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 200B LEVEL 2 B3 CIRCULATION Level 2 B3 125.572 sq m 1535.33 sq ft 300B LEVEL 3 B4 CIRCULATION Level 2 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 384 CIRCULATION Level 4 B3 145.907 sq m 1570.527 sq ft 600B LEVEL 6 B3 CIRCULATION Level 6 B3 123			TYPE 3F1 (2BED)			828.357 sq ft
5038 TYPE 3E2 (38ED) Level 5 B3 99.657 1061.934 sq ft 5048 TYPE 3E2 (38ED) Level 5 B3 99.657 1061.934 sq ft 5058 TYPE 3E2 (38ED) Level 5 B3 99.657 1061.934 sq ft 5068 TYPE 3E4 (38ED) Level 5 B3 99.6127 1033.343 sq ft 5068 TYPE 3E4 (38ED) Level 5 B3 103.058 1109.9302 sq ft 5008 TYPE 3E1 (38ED) Level 5 B3 99.6127 1033.343 sq ft 6 TOTAL 593.587 sq m 6389.316 sq ft 1003.930 sq ft 1008-A LEVEL 1 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 2008 LEVEL 2 B3 CIRCULATION Level 2 B3 145.907 sq m 1570.527 sq ft 3008 LEVEL 344 CIRCULATION Level 4 B3 145.907 sq m 1570.527 sq ft 4000B LEVEL 344 CIRCULATION Level 6 B3 145.907 sq m 1570.527 sq ft 5008 LEVEL 6 B3 CIRCULATION Level 6 B3 145.907 sq m 1570.527 sq ft 600B LEVEL 6 B3 CIRCULATION <t< th=""><th>TOTAL NUMBER OF UNITS:</th><th></th><th></th><th>TOTAL:</th><th>1704.032 sq m</th><th>18342.032 sq ft</th></t<>	TOTAL NUMBER OF UNITS:			TOTAL:	1704.032 sq m	18342.032 sq ft
504B TYPE 3E2 (BED) Level 5 B3 98.657 1061.934 sq ft 505B TYPE 3E3 (BED) Level 5 B3 96.012 1033.46 sq ft 508B TYPE 3E1 (BED) Level 5 B3 96.012 1033.533 sq ft 6 TYPE 3E1 (BED) Level 5 B3 96.187 1035.343 sq ft 6 TOTAL 593.587 sg m 6.389.316 sq ft 100B-A LEVEL 1 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 200B LEVEL 2 B3 CIRCULATION Level 2 B3 125.729 sq m 1353.33 sq ft 300B LEVEL 2 B3 CIRCULATION Level 2 B3 145.907 sq m 1570.527 sq ft 300B LEVEL 3& CIRCULATION Level 3 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 3 B3 CIRCULATION Level 4 B3 123.642 sq m 1330.873 sq ft 500B LEVEL 5 B3 CIRCULATION Level 6 B3 123.642 sq m 1330.873 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3						1087.342 sq ft 1061.934 sq ft
506B TYPE 3E4 (3BED) Level 5 B3 103.058 1109.302 q ft 508B TYPE 3E1 (3BED) Level 5 B3 96.187 1035.343 sq ft 6 TOTAL 592.587 sq m 6389.316 sq ft 6389.316 sq ft 6 TOTAL 592.587 sq m 6389.316 sq ft 6389.316 sq ft 100B-A LEVEL 1 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 200B LEVEL 2 B3 CIRCULATION Level 2 B3 125.729 sq m 1353.33 sq ft 300B LEVEL 344 CIRCULATION Level 3 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 344 CIRCULATION Level 4 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 344 CIRCULATION Level 5 B3 128.642 sq m 1330.873 sq ft 600B LEVEL 5 B3 CIRCULATION Level 5 B3 128.642 sq m 1330.873 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3		504B	TYPE 3E2 (3BED)	Level 5 B3	98.657	1061.934 sq ft
δ TOTAL 593.587 sq m 6389.316 sq ft 5 TOTAL NUMBERS OF UNITS: 60		506B				1109.302 sq ft
EXAMPLE Control of a control o			TYPE 3E1 (3BED)	Level 5 B3	96.187	1035.343 sq ft
100B-A LEVEL 1 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 200B LEVEL 2 B3 CIRCULATION Level 2 B3 125.729 sq m 1353.33 sq ft 300B LEVEL 3&4 CIRCULATION Level 3 B3 145.077 sq m 1570.527 sq ft 400B LEVEL 3&4 CIRCULATION Level 3 B3 145.077 sq m 1570.527 sq ft 500B LEVEL 5 B3 CIRCULATION Level 5 B3 154.495 sq m 1662.97 sq ft 600B LEVEL 6 B3 CIRCULATION Level 6 B3 123.642 sq m 1330.873 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 9358.756 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 CIRCULATION Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 CIRCULATION Level 1 B3 163.054 sq m 1755.099 sq ft <th></th> <th>6</th> <th></th> <th>TOTAL:</th> <th>593.587 sq m</th> <th>6389.316 sq ft</th>		6		TOTAL:	593.587 sq m	6389.316 sq ft
100B-A LEVEL 1 B3 CIRCULATION Level 1 B3 173.778 sq m 1870.531 sq ft 200B LEVEL 2 B3 CIRCULATION Level 2 B3 125.729 sq m 1353.33 sq ft 300B LEVEL 3&4 CIRCULATION Level 3 B3 145.077 sq m 1570.527 sq ft 400B LEVEL 3&4 CIRCULATION Level 3 B3 145.077 sq m 1570.527 sq ft 500B LEVEL 5 B3 CIRCULATION Level 5 B3 154.495 sq m 1662.97 sq ft 600B LEVEL 6 B3 CIRCULATION Level 6 B3 123.642 sq m 1330.873 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 9358.756 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 CIRCULATION Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 CIRCULATION Level 1 B3 163.054 sq m 1755.099 sq ft <th>Σ TOTAL NUMBERS OF UNITS:</th> <th>60</th> <th></th> <th></th> <th></th> <th></th>	Σ TOTAL NUMBERS OF UNITS:	60				
200B LEVEL 2 B3 CIRCULATION Level 2 B3 125.729 sq m 1333.33 sq ft 300B LEVEL 2 B3 CIRCULATION Level 3 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 3&4 CIRCULATION Level 4 B3 145.907 sq m 1570.527 sq ft 400B LEVEL 5 B3 CIRCULATION Level 4 B3 145.907 sq m 1570.527 sq ft 500B LEVEL 6 B3 CIRCULATION Level 6 B3 154.495 sq m 1662.97 sq ft 600B LEVEL 6 B3 CIRCULATION Level 6 B3 123.642 sq m 1330.873 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 AMENITY Level 1 B3 163.054 sq m 1755.099 sq ft 100B-B LEVEL 1 B3 CIRCULATION LEVEL 1 B3 CIRCULATION 1670.3292 sq ft 1670.3292 sq ft </th <th></th> <th></th> <th></th> <th></th> <th>172 770 ~~ ~~</th> <th>1870 531 ~~ #</th>					172 770 ~~ ~~	1870 531 ~~ #
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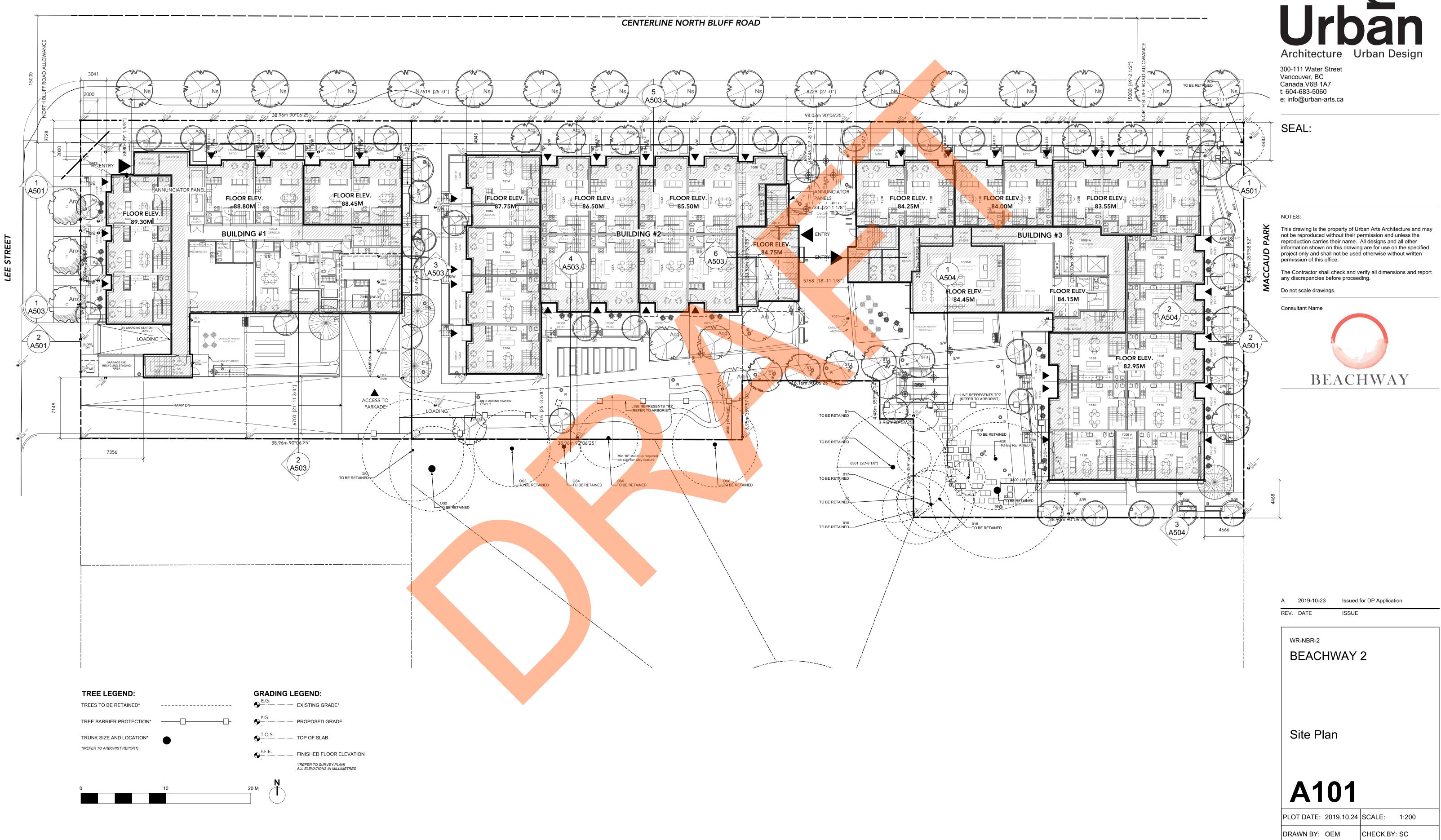
REV. DATE

WR-NBR-2 **BEACHWAY 2**

Information Data 2 FAR per building

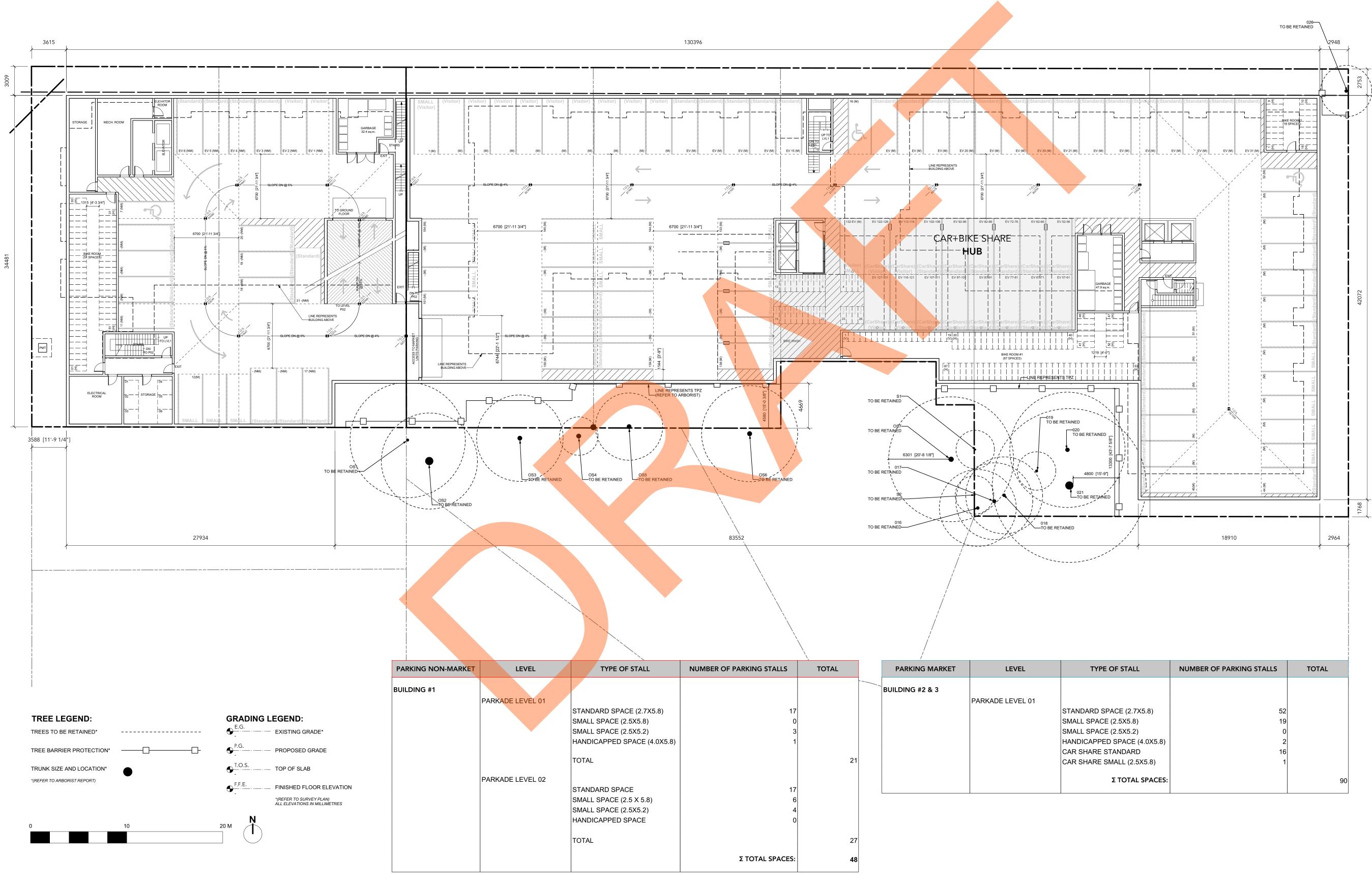
A002 PLOT DATE: 2019.10.24 SCALE: NTS

DRAWN BY: OEM









NORTH BLUFF ROAD



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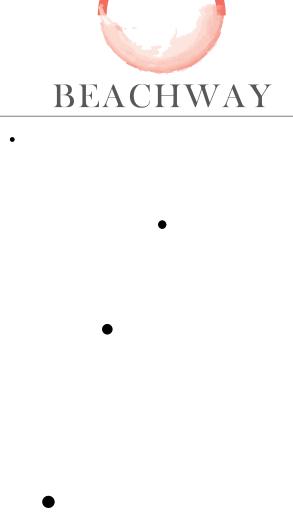
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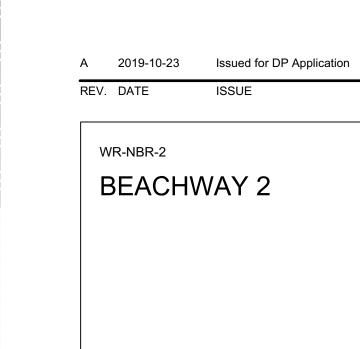
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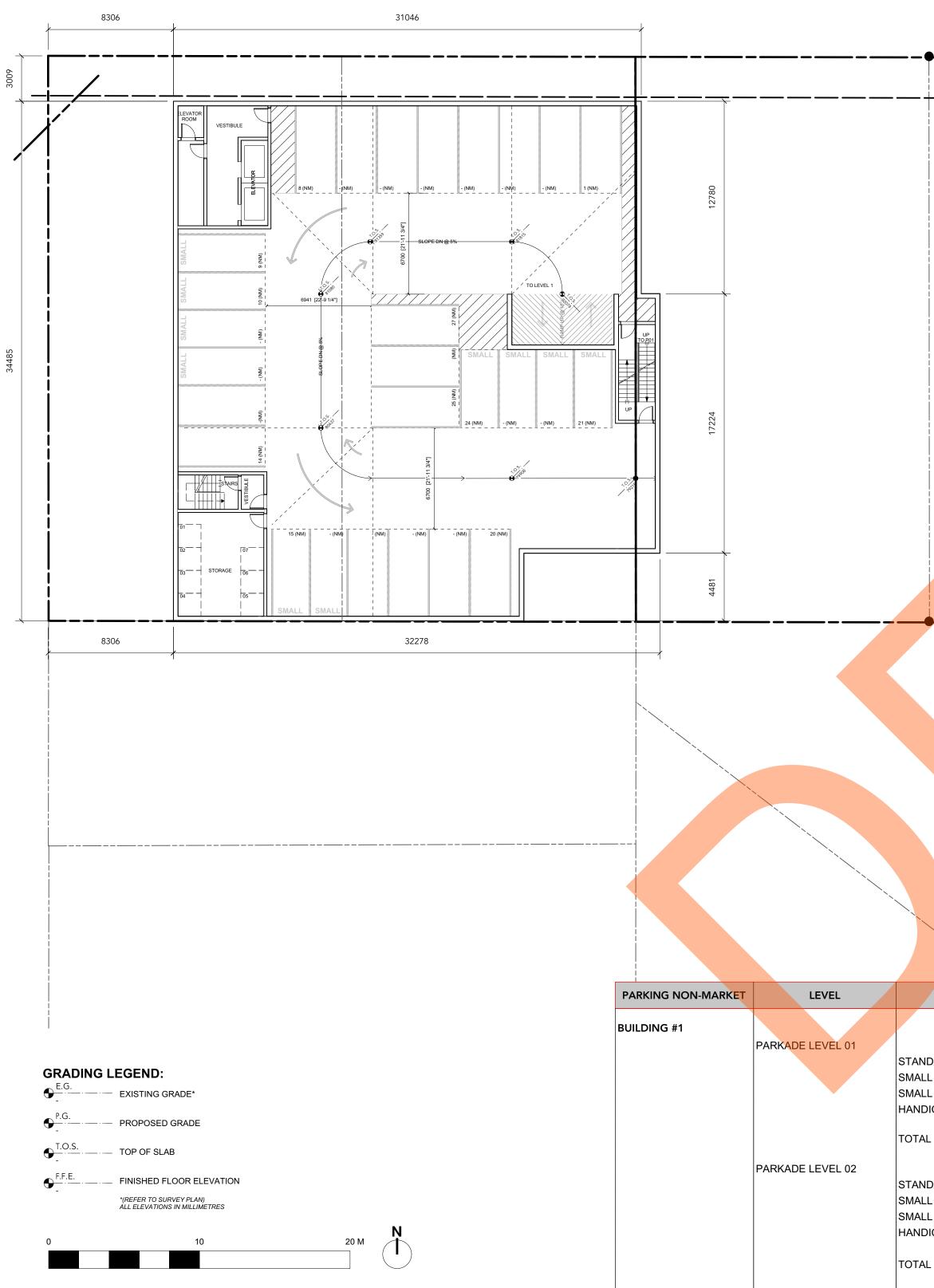




Parkade LVL 01

A102	
PLOT DATE: 2019.10.24	SCALE: 1:200
DRAWN BY: OEM	CHECK BY: SC

NUMBER OF PARKING STALLS	TOTAL
52	
19	
0	
2	
16	
1	
	90
	52 19 0 2



	, ,	N.		/				
TYPE OF STALL	NUMBER OF PARKING STALLS	TOTAL		PARKING MARKET	LEVEL	TYPE OF STALL	NUMBER OF PARKING STALLS	TOTAL
				BUILDING #2 & 3				
					PARKADE LEVEL 01			
STANDARD SPACE (2.7X5.8)	17					STANDARD SPACE (2.7X5.8)	52	
SMALL SPACE (2.5X5.8)	0					SMALL SPACE (2.5X5.8)	19	
SMALL SPACE (2.5X5.2)	3					SMALL SPACE (2.5X5.2)	0	
HANDICAPPED SPACE (4.0X5.8)	1					HANDICAPPED SPACE (4.0X5.8)	2	
						CAR SHARE STANDARD	16	
TOTAL		21				CAR SHARE SMALL (2.5X5.8)	1	
						Σ TOTAL SPACES:		90
STANDARD SPACE	17							
SMALL SPACE (2.5 X 5.8)	6							
SMALL SPACE (2.5X5.2)	4							
HANDICAPPED SPACE	0							
TOTAL		27	,					
	Σ TOTAL SPACES:	48	•					
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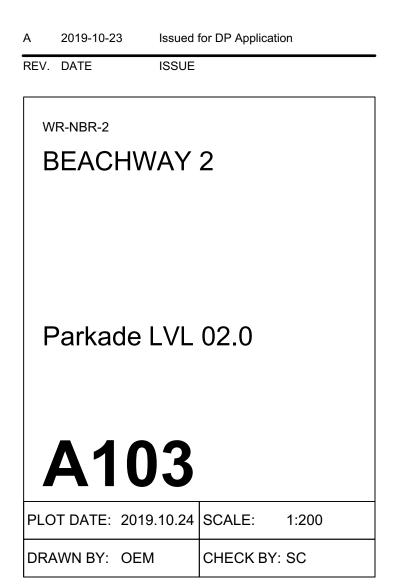
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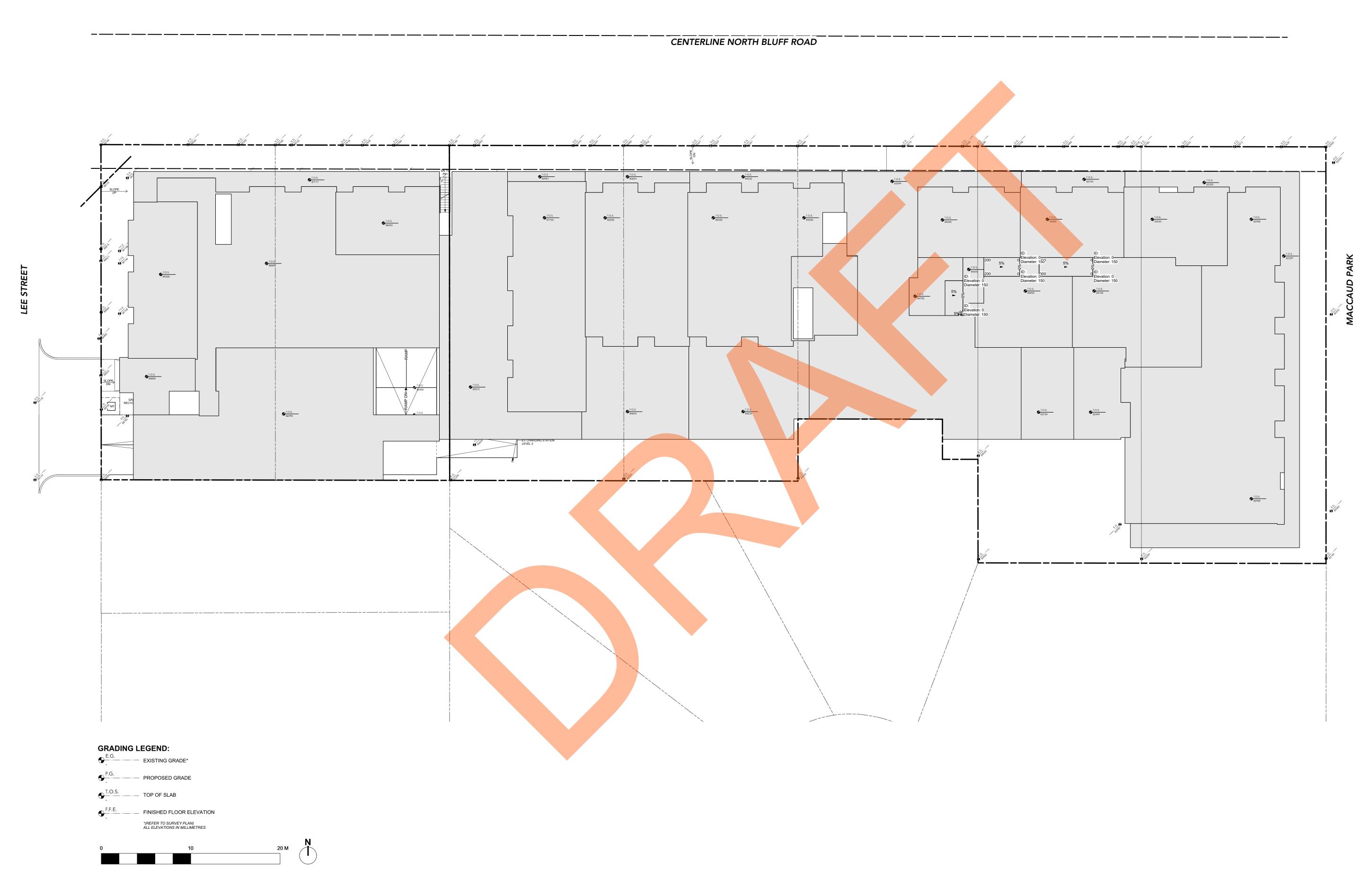
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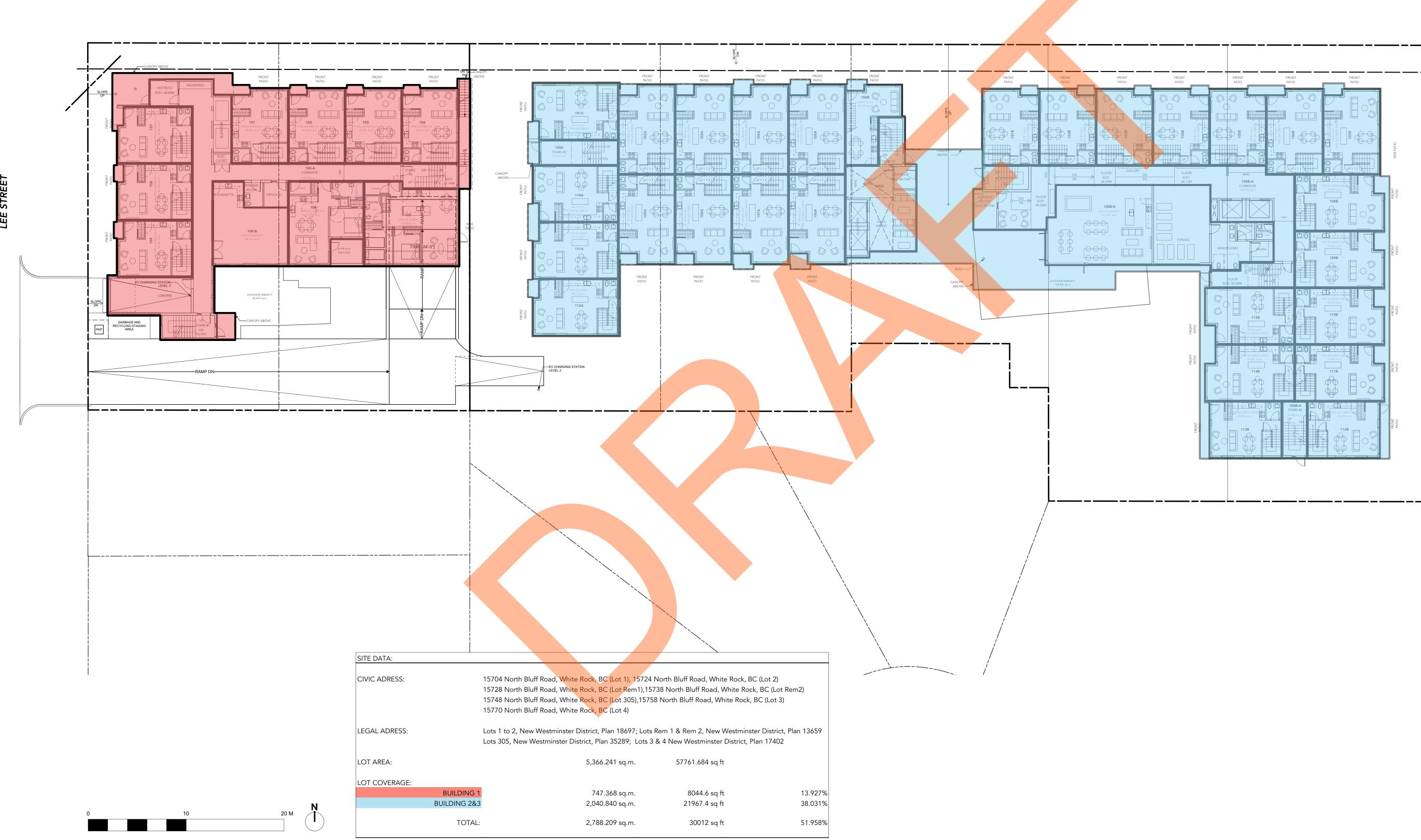
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Appendix B Beachway 1 Draft Traffic Impact Assessment

Date: 19 December 2018 Our File No: 5935-01

BY EMAIL

Mr. Raghbir Gurm

1168620 BC Limited 13063 56 Ave Surrey BC V3X2Z3

Dear Mr. Gurm,

Re: Traffic Impact Assessment Study – Beachway Residential Development White Rock, BC

Creative Transportation Solutions Ltd. (CTS) is pleased to submit this **DRAFT** report summarising our work on the above study. CTS was retained by **Mr. Raghbir Gurm** on 9 October 2018 to undertake a traffic impact study for a residential townhouse and condominium development at Maple Street, Lee Street, and North Bluff Road in the City of White Rock, BC. The primary objectives of this study are as follows:

- 1. To conduct a traffic impact assessment of the proposed development; and,
- 2. To document the analyses, findings and recommendations in a report that satisfies that requirements of the City of White Rock.

This report documents our analyses and findings.

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1.0 BACKGROUND

1.1 The Site

It is being proposed to build a residential development at the following addresses in White Rock, BC:

- 15654 North Bluff Road
- 15664 North Bluff Road
- 15674 North Bluff Road
- 1593 Lee Street
- 1580 Maple Street
- 1570 Maple Street

The current zoning is RS-1 (One Unit Residential Zone) and the site is located in the east side large-lot infill redevelopment area (Please see **FIGURE 1**). The development area is noted in the City of White Rock OCP as a potential affordable market housing. A section of the property is noted as suitable for Small Lot & Street-Front Townhouse, and the remaining section is noted as suitable for Multi-Unit Residential (Low Density)..

FIGURE 1 SITE CONTEXT





The residential development is proposed to be rezoned as a comprehensive development and will have 14 townhouse units and 76 condominium units for a total of 90 dwelling units. 25 of the condominium units will be non-market rental.

Access to the site is proposed via a driveway on Maple Street and a driveway on Lee Street. For the purposes of this study, development was assumed to be completed and fully occupied by 2020.

The study area and the existing roadways are illustrated in **FIGURE 2**. The referenced site plan is included in **APPENDIX A**.



FIGURE 2 STUDY AREA AND INTERSECTIONS



1.2 Site Visit / Road Network

A site visit was conducted in order to document current conditions. The following road network characteristics were confirmed.

North Bluff Road / 16th Avenue

- East-west arterial
- Centerline forms the municipal boundary between City of White Rock and City of Surrey.
- Four lanes.
- Truck Route.
- No Stopping on north side. 'Permit Parking Only' on south side
- Concrete curb and gutter along both sides of the road.
- Street lighting.

Russell Avenue

- East / west primary collector
- Two lanes two through lanes with two parking lanes.
- 'Permit parking Only' on both sides
- Concrete curb and gutter along both sides of the road.
- Street lighting.

Lee Street

- North / south neighborhood local road.
- Two lanes.
- 'Permit parking Only' on both sides
- No curb or gutter.
- Street Lighting.

Maple Street

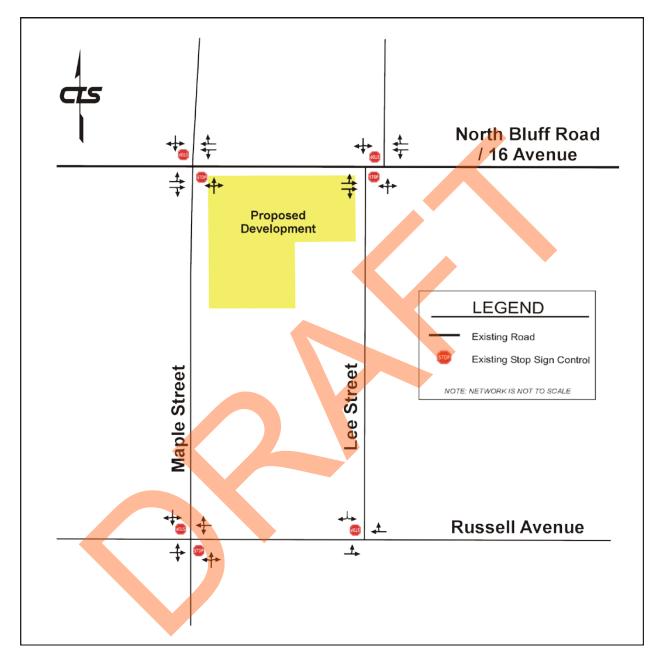
- North / south neighborhood local road.
- Two lanes.
- 'Permit parking Only' on both sides
- No curb or gutter.
- Street Lighting.

The laning configuration for the study intersections are illustrated in **FIGURE 3**.

It should be noted that due to the proximity of Peace Arch Hospital, on-street parking management is a key traffic management element for the City of White Rock.



FIGURE 3 LANING CONFIGURATION





1.3 Scope of Work

CTS selected the weekday morning and afternoon peak hours as the design hours of analysis for this study as they represent the peak trip generation period for a residential development.

The following scenarios were used in this traffic impact assessment:

- 1. 2018 (i.e. existing base)
- 2. 2020 (future base)
- 3. 2030 (future base)
- 4. 2020 (future base + site generated)
- 5. 2030 (future base + site generated)



2.0 BASE TRAFFIC VOLUMES

2018 Base Traffic Volumes

CTS conducted turning movement counts from 07:00 to 09:00, and 15:00 to 18:00 to document the typical weekday peak hour traffic volume for the following intersections on the following dates:

- Lee Street and North Bluff Road (Thursday, November 8th, 2018);
- Lee Street and Russell Avenue (Thursday, November 8th, 2018);
- Maple Street and North Bluff Road (Friday, September 22th, 2017); and
- Maple Street and Russell Avenue (Friday, September 22th, 2017)

The traffic count data was summarized and reviewed to ensure data integrity and validity. The summarized traffic data sheets are included in **APPENDIX B**.

The 2017 base traffic volumes were factored up by a traffic volume growth rate of 2.0% to represent base year 2018 volumes.

From the collected data, the weekday morning peak hour was determined to occur from 7:45 to 8:45 and the afternoon peak hour was determined to occur from 15:00 to 16:00.

The 2018 base traffic volumes for the weekday morning and afternoon peak hours are illustrated in **FIGURE 4** and **FIGURE 5** respectively.

2020 Future Base Traffic Volumes

2020 is anticipated to be the year of full buildout for the proposed development. The 2018 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent base year 2020 volumes.

FIGURE 6 and FIGURE 7 illustrate the weekday morning and afternoon peak hour vehicle volumes, respectively.

2030 Future Base Traffic Volumes

2030 is ten years after the anticipated year of full buildout for the proposed development, and is a scenario requested by the City of White Rock. The 2018 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent base year 2030 volumes.

FIGURE 8 and FIGURE 9 illustrate the weekday morning and afternoon peak hour vehicle volumes, respectively.



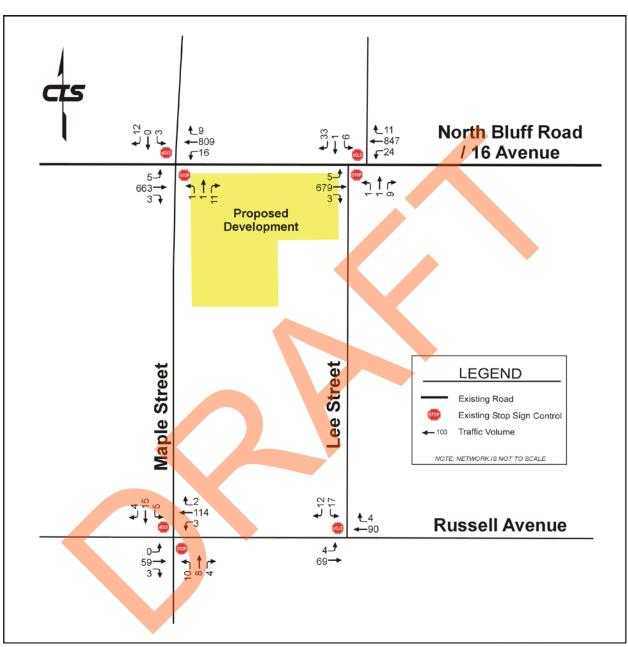


FIGURE 4 2018 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES



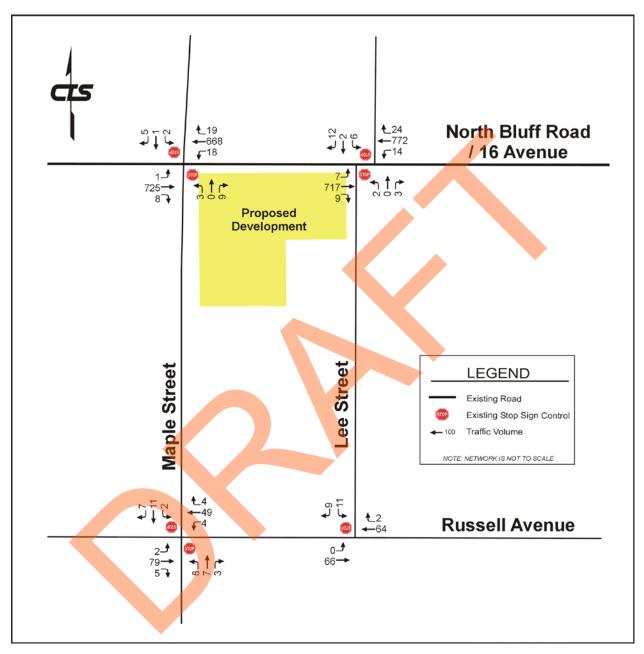


FIGURE 5 2018 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES

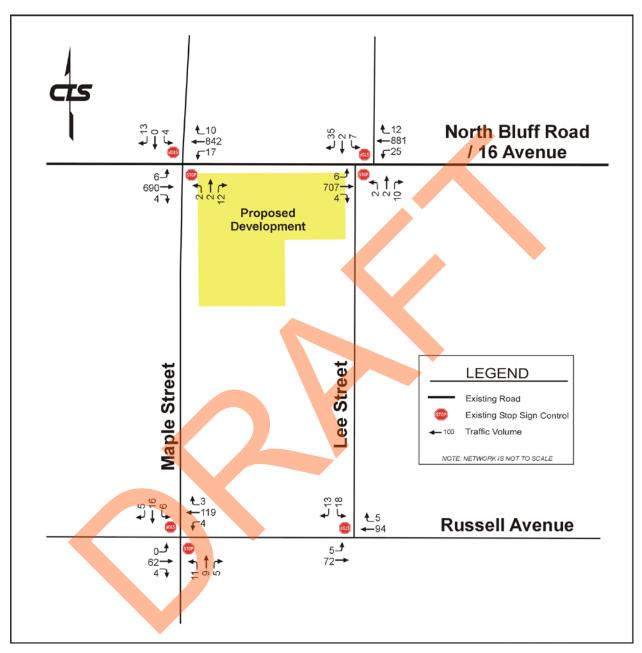


FIGURE 6 2020 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES



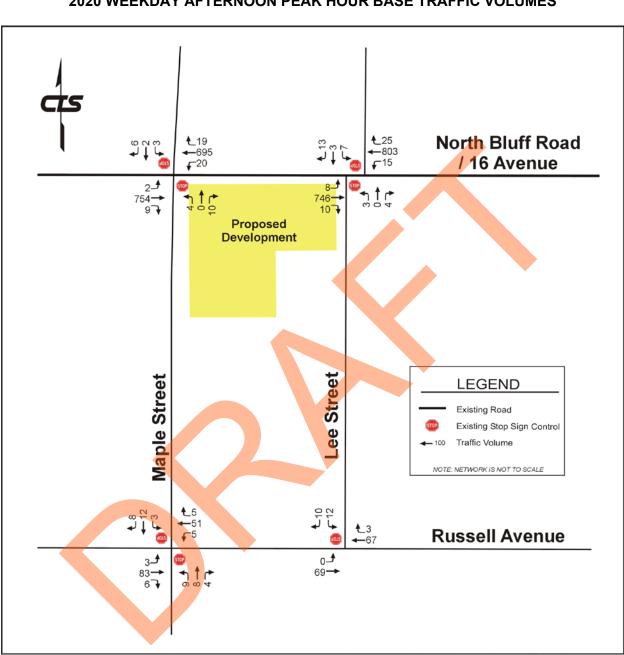


FIGURE 7 2020 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES

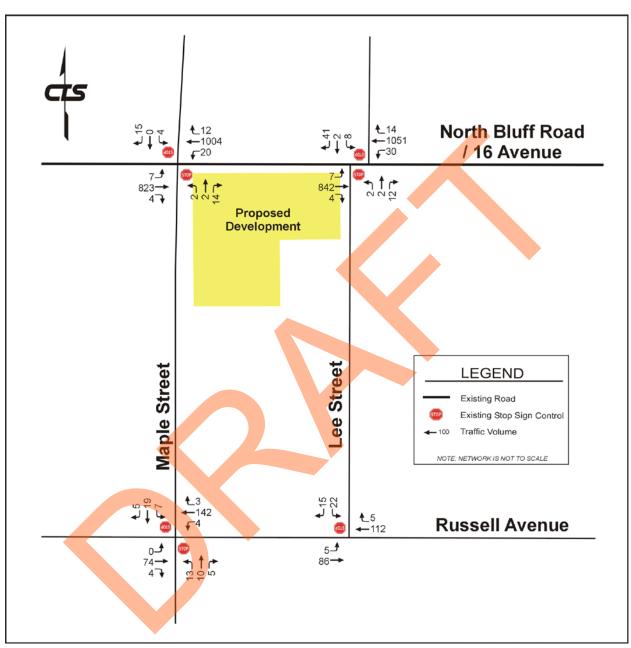


FIGURE 8 2030 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES



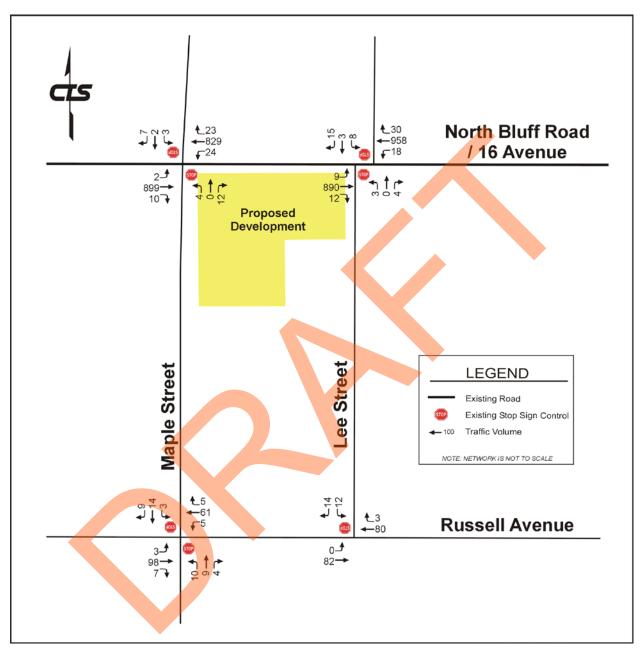


FIGURE 9 2030 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES



3.0 SITE TRAFFIC VOLUMES

3.1 Trip Generation

The published vehicle trip rates from *the Institute of Transportation Engineers (ITE) 10th Edition* were used to forecast the site generated traffic volumes. **TABLE 1** summarizes the forecast site generated traffic for the proposed residential development.

Land Use	Peak Hour	Trip Generation	Scope of	Vehicle Trip Generation	Trip Rate	Directi	onal Split	Peak Ho	our Volum	ies (vph)
		Variable	Development	Rate	Source	% in	% out	in	out	total
Multifamily Housing (Mid-Rise)	Morning Peak	Dwelling Units	14.00	0.36	ITE 10th Edition -	26%	74%	1	4	5
Townhomes	Afternoon Peak	Dweining Onits	14.00	0.44	Code 221	61%	39%	3	3	6
Multifamily Housing (Mid-Rise)	Morning Peak	Dwelling Units	76.00	0.36	ITE 10th Edition -	26%	74%	7	21	28
Condominium	Afternoon Peak	Dwening Onits	78.00	0.44	Code 221	61%	39%	20	14	34
Total		Ν	Iorning Peak H	our		26%	74%	8	25	33
rotai			Afternoon Peak He	our		61%	39%	23	17	40

TABLE 1 SUMMARY OF SITE GENERATED TRAFFIC

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors). The Vehicle Trip Generation Rate was selected using the General Urban/Suburban setting.

From **TABLE 1**, the site is forecasted to generate a total of 33 vehicle trips (8 inbound, and 25 outbound) during the weekday morning peak hour and 40 vehicle trips (23 inbound and 17 outbound) during the weekday afternoon peak hour.

The morning peak hour volume is equivalent to 1 vehicle movement approximately every 2.8 minutes. The afternoon peak hour volume is equivalent to 1 vehicle movement approximately every 1.5 minutes.

For reference, the Ministry of Transportation and Infrastructure threshold for undertaking traffic impact assessments is site vehicle trip generation in excess of 100 vehicle trips in any hour.

3.2 Trip Distribution

The trip distribution parameters for distributing site generated vehicle trips to / from the site were developed from existing traffic patterns entering and exiting the study area for the afternoon peak hour. The traffic volume assignment is summarized in **TABLE 2**.



TABLE 2 TRIP DISTRIBUTION VEHICLE VOLUMES FOR SITE GENERATED TRAFFIC

FROM / TO	WEEKDAY AN	I PEAK HOUR	WEEKDAY PN	I PEAK HOUR			
	INBOUND	OUTBOUND	INBOUND	OUTBOUND			
Lee St (N)	0	0	0	0			
Maple St (N)	0	0	0	0			
Maple St (S)	0	0	0	0			
North Bluff Rd (E)	4	10	11	8			
North Bluff Rd (W)	4	12	10	7			
Russell Ave (E)	0	1	1	1			
Russell Ave (W)	0	2	1	1			
TOTAL	8	25	23 17				
TOTAL	~	3	40				

3.3 Traffic Assignment

The additional vehicle trips generated from the development were subsequently assigned to the road network using the trip distribution parameters in **TABLE 2**. **FIGURE 10** and **FIGURE 11** illustrate the <u>site generated traffic volumes on the road network for the weekday morning and afternoon peak hours.</u>

It is noted that the access off of Maple Street is for parking for the townhouses, and access off of Lee Street is for parking in the condominiums. Driveway usage is based on the proportional trip generation of each of these land uses as previously noted in **TABLE 1**.

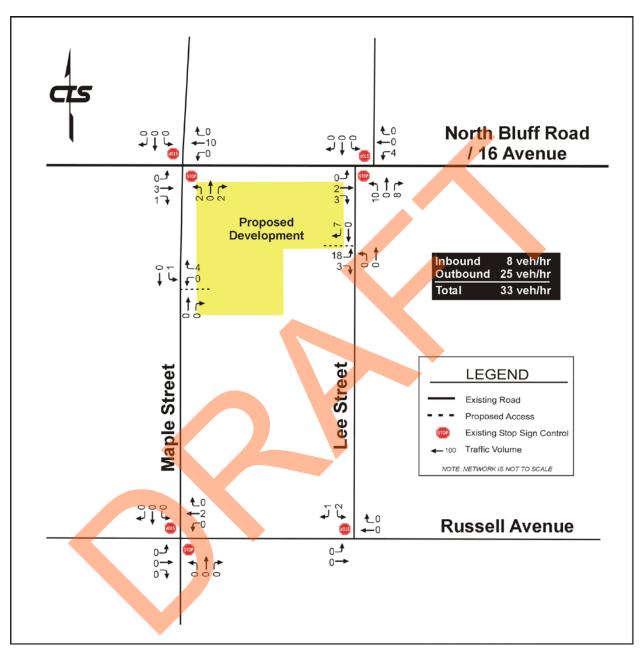


FIGURE 10 SITE TRAFFIC VOLUMES FOR THE WEEKDAY MORNING PEAK HOUR



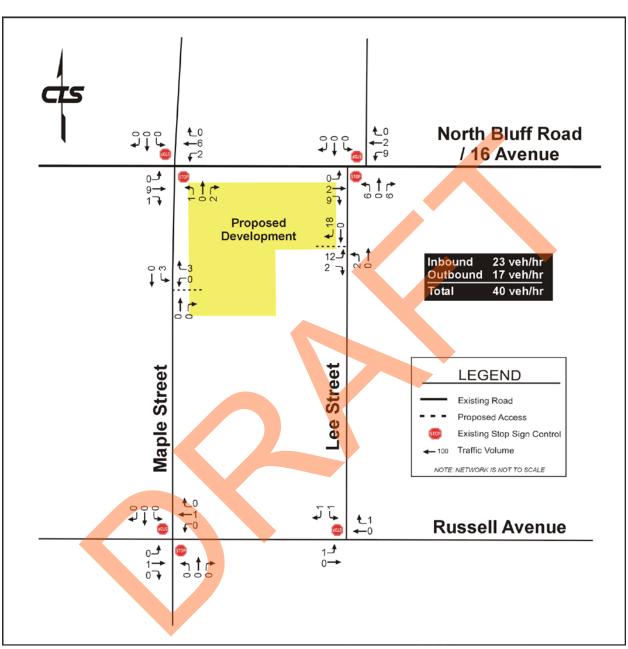


FIGURE 11 SITE TRAFFIC VOLUMES FOR THE WEEKDAY AFTERNOON PEAK HOUR

4.0 TOTAL PROJECTED TRAFFIC VOLUMES

FIGURE 12 illustrates the total projected traffic for the year <u>2020</u> weekday morning peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing **FIGURE 10** onto **FIGURE 6**.

FIGURE 13 illustrates the total projected traffic for the year <u>2020</u> weekday afternoon peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing **FIGURE 11** onto **FIGURE 7**.

FIGURE 14 illustrates the total projected traffic for the year <u>2030</u> weekday morning peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing **FIGURE 10** onto **Figure 8**.

FIGURE 15 illustrates the total projected traffic for the year <u>2030</u> weekday afternoon peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing **FIGURE 11** onto **Figure 9**.



₽ ₽ ₽ ₽ **1**0 **4**852 **€**_12 **€**_881 North Bluff Road ₽ 1 1 35 **€**²⁹ / 16 Avenue **F**17 693**→** 5**→** 1_6 4 **1** 1 ∰ 7 1 ∰ 709-٦ Proposed **↓**31 Development 18_ **₽** ↓ 1 1 3-F <mark>م 1</mark> LEGEND Existing Road Lee Street **Maple Street** Proposed Access Existing Stop Sign Control Traffic Volume - 100 NOTE: NETWORK IS NOT TO SCALE ▲3 ←121 √4 ↓ 15 19 9 1 1 1 1 1 1 1 1 **€**_5 **€**94 **Russell Avenue** 601 €_0 5_**^** 62**→** 4 **→** 72→

FIGURE 12 2020 MORNING PEAK HOUR BASE + SITE TRAFFIC VOLUMES



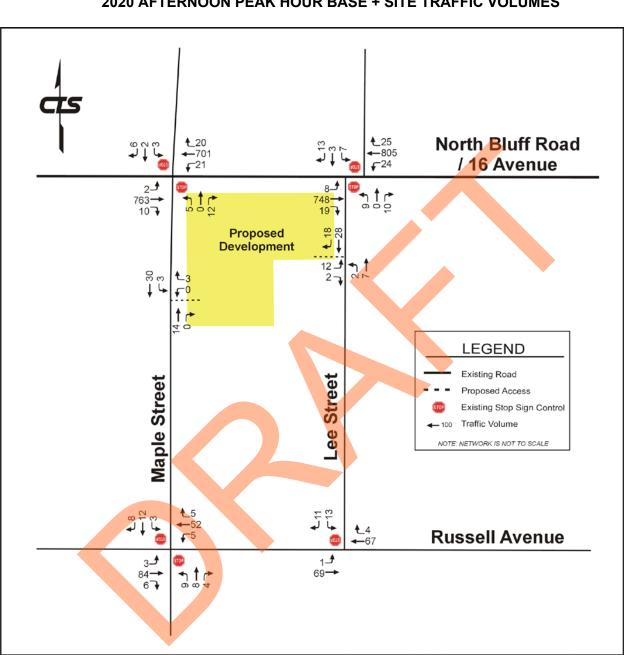


FIGURE 13 2020 AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES

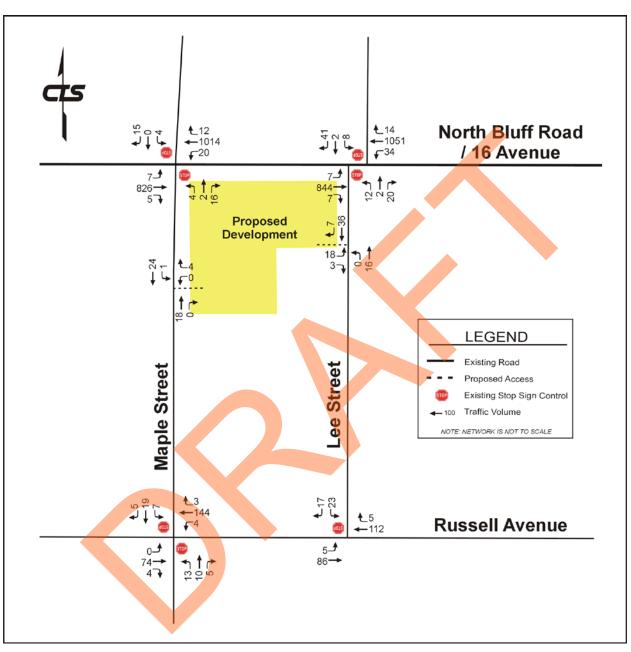


FIGURE 14 2030 MORNING PEAK HOUR BASE + SITE TRAFFIC VOLUMES



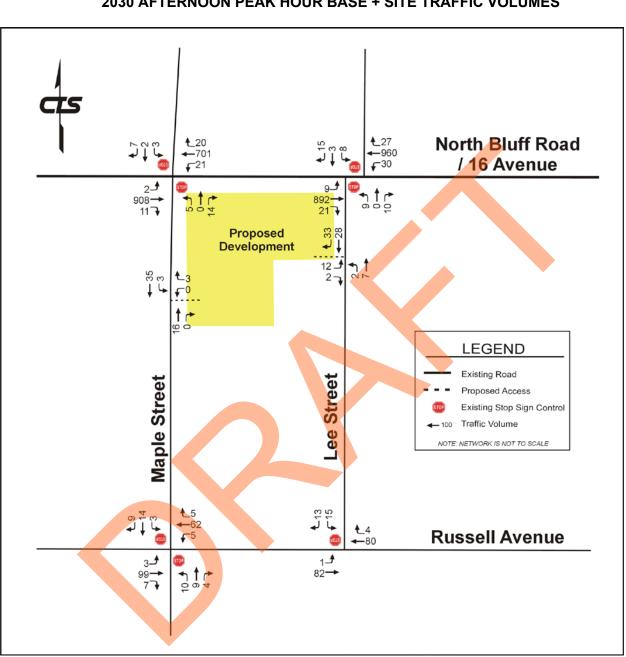


FIGURE 15 2030 AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES



5.0 TRAFFIC ENGINEERING ANALYSIS

5.1 Capacity Analysis

Capacity analysis was performed at each of the locations in order to determine the intersection levels of service (LOS) that is provided to motorists. The LOS for intersections and movements is defined in terms of delay (seconds per vehicle), which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from "A" (Excellent) to "F" (Fail). See **Table 3.** A LOS of "F" (Fail) indicates that an intersection or movement is failing because the intersection or movement is over capacity and delays are excessive. A LOS of "D" during the critical peak hours is considered acceptable by many public agencies in large urban areas for overall intersection operation and a LOS of "E" or better is considered acceptable for left turn movements as it recognizes that the intersections normally perform much better the remaining 90% of the day.

Level of Service	Description
А	Excellent
В	Good
С	Fair
D	Poor
E	Very Poor
F	Fail

 TABLE 3

 LEVEL OF SERVICE DESCRIPTIONS

Highway Capacity Software (HCS 7) was used for the analysis of the unsignalized intersections.

The following assumptions were made with respect to the intersection capacity analysis:

- Saturation flow rate = 1,900 passenger cars/hour of green time/lane (pcphgpl)
- *Peak hour factor* (PHF) = 0.80 (morning peak) and 0.91 (afternoon peak), which is the average factor observed from the surveyed intersections on North Bluff Road.
- Heavy vehicle percentage for roads = 2%

Saturation flow rate is the equivalent hourly rate at which previously queued vehicles can traverse an intersection approach under prevailing conditions, assuming that the green signal is available at all times and no lost times are experienced.

Peak Hour Factor is a measure of traffic demand fluctuation within the analysis hour.



TABLE 4 summarizes and compares the main performance parameters of the intersection capacity analysis for unsignalized intersections.

For unsignalized intersections, the delay time in seconds for each lane group is summarized. Delay is additional travel time experienced by a driver, passenger, bicyclist, or pedestrian beyond that required to travel at the desired speed.

Wherever necessary, attempts at improvements have been made to maintain intersection and approach movement level of service standards for each of the postdevelopment scenarios. The capacity analysis worksheets with level of services for each individual movement are included in **APPENDIX C**.

This analysis does not include the effects of upstream signals. In addition, it is assumed that all of through movements travelling eastbound and westbound on North Bluff Road will experience the same delay as the eastbound and westbound left turn movements. The results of this analysis are more conservative.

NTERSECTION DAY	SCENARIO	PERFORMANCE	EA	STBOU	ND	W	STBOL	JND	NO	RTHBOI	JND	so	UTHBO	UND	LOS	NOTES		
INTERSECTION	DAY	SCENARIO	MEASURE	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	203	NOTES	
			Volumes	5	663	3	16	809	9	1	1	11	3	0	12			
		2018 Base	Delay	11.1	11.1	0.0	9.7	9.7	0.0		19.6			24.8		в	Okay.	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.1		0.2			0.3				
			Volumes	6	690	4	17	842	10	2	2	12	4	0	13		Northbound and southbound	
		2020 Base	Delay	11.4	11.4	0.0	9.9	9.9	0.0		28.0			30.1		в	approach will experience medium delay	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.4			0.4			medium delay	
	Weekday		Volumes	7	823	4	20	1004	12	2	2	14	4	0	15		Northbound and southbound	
	Morning Peak Hour	2030 Base	Delay	12.7	12.7	0.0	10.7	10.7	0.0		43.2			47.4		в	approach will experience	
	Peak Hour		95% Queue (m)	0.1	0.1	0.0	0.1	0.1	0.0		0.7			0.8			medium delay	
		0000 0	Volumes	6	693	5	17	852	10	4	2	14	4	0	13		Northbound and southbound	
		2020 Base + Site	Delay	11.5	11.5	0.0	9.9	9.9	0.0		30.7			30.9		В	approach will experience medium delay	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.5	-		0.4			medium delay	
		2030 Baset	Volumes	7	826	5	20	1014	12	4	2	16	4	0	15		Northbound approach will	
		2030 Base+	Delay	12.8	12.8	0.0	10.7	10.7	0.0		50.2			49.0		В	experience high delays. Southbound approach wil experience medium delay	
Maple Street (N/S) and North Bluff			95% Queue (m)	0.1	0.1	0.0	0.1	0.1	0.0		1.0			0.8				
Road (E/W)			Volumes	1	725	8	18	668	19	3	0	9	2	1	5			
		2018 Base	Delay	9.4	9.4	0.0	9.6	9.6	0.0		17.3			21.5		Α	Okay.	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.1			0.1				
			Volumes	2	754	9	19	695	20	4	0	10	3	2	6		Southbound approach will	
		2020 Base	Delay	9.6	9.6	0.0	9.8	9.8	0.0		19.5			26.3		A	experience medium delay	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.2			0.2				
	Weekday		Volumes	2	899	10	23	829	24	4	0	12	3	2	7		Southbound approach will	
	Afternoon Peak Hour	2030 Base	Delay	10.2	10.2	0.0	10.5	10.5	0.0		24.6			36.2		В	experience medium delay	
	- daix riour		95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.3			0.3				
		2020 Base +	Volumes	2	763	10	21	701	20	5	0	12	3	2	6		Southbound approach will	
		Site	Delay	9.6	9.6	0.0	9.8	9.8	0.0		20.3			27.0		Α	experience medium delay	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.2			0.2				
		2030 Base+	Volumes	2	908	11	25	835	24	5	0	14	3	2	7		Northbound and southbound	
		2030 Base+ Site	Delay	10.2	10.2	0.0	10.6	10.6	0.0		26.3			37.4		В	approach will experience medium delay	
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.4			0.3			mediam delay	

TABLE 4 CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTIONS

Delay = Average Delay (seconds/vehicle) Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)



INTERSECTION	TIME OF	SCENARIO	PERFORMANCE	EA	STBOU	ND	w	ествои	ND	NO	RTHBO	UND	so	итнвоі	UND	LOS	NOTES		
INTERSECTION	DAY	SCENARIO	MEASURE	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	LUS	NOTES		
			Volumes	0	59	3	3	114	2	10	8	4	5	15	4				
		2018 Base	Delay		7.6			7.4			10.4			10.6		А	Okay.		
			95% Queue (m)		0.0			0.0			0.1			0.1					
			Volumes	0	62	4	4	119	3	11	9	5	6	16	5				
		2020 Base	Delay		7.6			7.4			10.5			10.7		А	Okay.		
			95% Queue (m)		0.0			0.0			0.1			0.2					
	Weekday		Volumes	0	74	4	4	142	3	13	10	5	7	19	5				
	Morning	2030 Base	Delay		7.6			7.4			10.9			11.1		А	Okay.		
	Peak Hour		95% Queue (m)		0.0			0.0			0.2			0.2					
			Volumes	0	62	4	4	121	3	11	9	5	6	16	5				
		2020 Base + Site	Delay		7.6			7.4			10.5			10.7		Α	Okay.		
			95% Queue (m)		0.0			0.0			0.1			0.2					
			Volumes	0	74	4	4	144	3	13	10	5	7	19	5				
		2030 Base+ Site	Delay		7.6			7.4			10.9			11.1		A	Okay		
aple Street (N/S) and Russell			95% Queue (m)		0.0			0.0			0.2			0.2					
Avenue (E/W)			Volumes	2	79	5	4	49	4	8	7	3	2	11	7				
		2018 Base	Delay	-	7.4			7.4			9.9			9.8		A	Okay.		
			95% Queue (m)		0.0			0.0			0.1			0.1					
			Volumes	3	83	6	5	51	5	9	8	4	3	12	8				
		2020 Base	Delay	-	7.4			7.4			10.0			9.8		A	Okay.		
			95% Queue (m)		0.0			0.0			0.1			0.1					
	Weekday		Volumes	3	98	7	5	61	5	10	9	4	3	14	9				
	Afternoon Peak Hour	2030 Base	Delay		7.4			7.5			10.2			10.0		Α	Okay.		
	reaktioui		95% Queue (m)		0.0			0.0			0.1			0.1					
	2020 Bas	2020 Base +	Volumes	3	84	6	5	52	5	9	8	4	3	12	8				
		Site	Delay		7.4		7.4			~	10.0			9.9		Α	Okay.		
			95% Queue (m)		0.0			0.0			0.1			0.1					
		2030 Base+ Site	Volumes	3	99	7	5	62	5	10	9	4	3	14	9				
			Delay		7.4			7.5			10.3			10.0		A	Okay		
			95% Queue (m)		0.0			0.0	-		0.1	1		0.1					
			Volumes	5	679	3	24	847	11	1	1	9	6	1	33		Southbound approach		
		2018 Base	Delay	11.5	11.5	0.0	9.9	9.9	0.0		24.0			31.6		В	experience medium de		
			95% Queue (m)	0.0	0.0	0.0	1.0	1.0	0.0		0.2			0.9	1				
			Volumes	6	707	4	25	881	12	2	2	10	7	2	35		Northbound and southbo		
		2020 Base	Delay	11.8	11.8	0.0	10.1	10.1	0.0		36.6			42.9		В	approach will experien medium delay		
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.4	r –		1.6	r –		-		
	Weekday		Volumes	7	842	4	30	1051	14	2	2	12	8	2	41		Northbound and southbo		
	Morning Peak Hour	2030 Base	Delay	13.2	13.2	0.0	11.0	11.0	0.0		66.4			118.9		В	approach will experien high delay		
			95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		0.9		_	3.7					
		2020 Base +	Volumes	6	709	7	29	881	12	12	2	18	7	2	35		Northbound approach experience high delay		
		Site	Delay	11.8	11.8	0.0	10.2	10.2	0.0		57.8			45.1		В	Southbound approach		
			95% Queue (m)	0.0	0.0	0.0	0.2	0.2	0.0		1.5			1.6			experience medium de		
		2030 Base+	Volumes	7	844	7	34	1051	14	12	2	20	8	2	41	_	Northbound and southbo		
Lee Street (N/S)		Site	Delay	13.2	13.2	0.0	11.1	11.1	0.0		164.8			133.1		С	approach will experien high delay		
and North Bluff			95% Queue (m)	0.1	0.1	0.0	0.2	0.2	0.0		3.2			3.9					
Road (E/W)			Volumes	7	717	9	14	772	24	2	0	3	6	2	12	_	Southbound approach		
		2018 Base	Delay	10.1	10.1	0.0	9.5	9.5	0.0		21.8			27.4		A	experience medium de		
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.1		-	0.4					
		0000 0	Volumes	8	746	10	15	803	25	3	0	4	7	3	13	_	Southbound approach		
		2020 Base	Delay	10.3	10.3	0.0	9.7	9.7	0.0		24.7			32.6		В	experience medium de		
			95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.1			0.6					
	Weekday	0000 0	Volumes	9	890	12	18	958	30	3	0	4	8	3	15	_	Northbound approach experience medium de		
	Afternoon Peak Hour	2030 Base	Delay	11.2	11.2	0.0	10.4	10.4	0.0		36.3			53.1		В	Southbound approach		
			95% Queue (m)	0.1	0.1	0.0	0.1	0.1	0.0		0.2		<u> </u>	1.0			experience high dela		
		2020 Base +	Volumes	8	748	19	24	805	25	9	0	10	7	3	13		Northbound and southb		
	1	Site	Delay	10.3	10.3	0.0	9.8	9.8	0.0		29.5			34.6		В	approach will experien medium delay		
		Site	Site .		95% Queue (m)	0.0	0.0	0.0	0.1	0.1	0.0		0.4			0.6		l I	
		2030 Base+	Volumes	9	892	21	27	960	30	9	0	10	8	3	15		Northbound approach experience medium del		
		2030 Base+ Site		9 11.2	892 11.2	21 0.0	27 10.5	960 10.5	30 0.0	9	0 47.4	10	8	3 58.2	15	в	Northbound approac experience medium d Southbound approac		

TABLE 4 CONTINUED CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTIONS

Delay= Average Delay (seconds/vehicle) Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec)

Traffic Impact Assessment Study – Beachview Development –DRAFT Report (19 December 2018)



	TIME OF	CENADIO	PERFORMANCE	EA	STBOU	ND	WE	STBOU	ND	NO	RTHBOL	JND	SO	UTHBOI	UND	1.00-	NOTES
INTERSECTION	DAY	SCENARIO	MEASURE	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	LOS	NOTES
			Volumes	4	69	rugin	Lon	90	4	Lon		rugin	17		12		
		2018 Base	Delay	. 7				0.						9.6		А	Okay.
		2010 2000	95% Queue (m)	0				0.						0.1		~	
			Volumes	5	72			94	5				18	0.1	13		
		2020 Base	Delay		.5			0.					10	9.7	10	А	Okay.
		2020 Dase	95% Queue (m)	0				0.						0.2		^	Okay.
				5	86			112	5				22	0.2	15		
	Weekday Morning	2030 Base	Volumes Delay	5				0.					22	10.0	15	А	Okay.
	Peak Hour	2030 Base	95% Queue (m)	0				0.						0.2	-	~	Okay.
			Volumes	5	.0			94	5				19	0.2	15		
		2020 Base +		5				94					19	9.7	15	А	Okay.
		Site	Delay											<u> </u>	-	~	Okay.
			95% Queue (m)	0				0.					00	0.2	47		
		2030 Base+	Volumes	5	86			112	5				23		17		0
Lee Street (N/S)		Site	Delay		.6			0.						10.0		A	Okay
and Russell			95% Queue (m)	0				0.						0.2			
Avenue (E/W)			Volumes	0	66			64	2				11		9		
		2018 Base	Delay	7.				0.						9.2		A	Okay.
			95% Queue (m)	0	1			0.						0.1			
			Volumes	0	69			67	3				12		10		
		2020 Base	Delay	7.	.4			0.	0					9.3		A	Okay.
			95% Queue (m)	0	.0			0.	0					0.1			
	Weekday		Volumes	0	82			80	3				14		12		
	Afternoon Peak Hour	2030 Base	Delay	7.	.5			0.	0				9.4		9.4	А	Okay.
	Feak Hour		95% Queue (m)	0.0				0.	0				0.1		0.1		
		0000 0	Volumes	1	69			67	4				13		11		
		2020 Base + Site	Delay	7.	.4			0.	0				9.3		9.3	А	Okay.
			95% Queue (m)	0	.0			0.	0				0.1		0.1		
			Volumes	1	82			80	4				15		13		
		2030 Base+ Site	Delay	7.	.5			0.	0				9.5		9.5	А	Okay
		Olic	95% Queue (m)	0	.0			0.	0				0.1		0.1		
			Volumes				0	0	4		16	0	1	21			
		2020 Base + Site	Delay				8.4	0.0	8.4		0.0	0.0	7.3	7.3		А	Okay.
	Weekday	Sile	95% Queue (m)		-		0.0	0.0	0.0		0.0	0.0	0.0	0.0			
	Morning Peak Hour		Volumes				0	0	4		18	0	1	24			
		2030 Base+	Delay				8.4	0.0	8.4		0.0	0.0	7.3	7.3		А	Okay
Maple Street (N/S)		Site	95% Queue (m)				0.0	0.0	0.0		0.0	0.0	0.0	0.0			
& Site Access (E/W)			Volumes				0	0	3		14	0	3	30			
· ··/		2020 Base +	Delay				8.4	0.0	8.4		0.0	0.0	7.3	7.3		А	Okay
	Weekday	Site	95% Queue (m)				0.0	0.0	0.0		0.0	0.0	0.0	0.0			-
	Afternoon Peak Hour		Volumes				0.0	0.0	3		16	0.0	3	35			
	. con riodi	2030 Base+	Delay				8.4	0.0	8.4		0.0	0.0	7.3	7.3		А	Okay
		Site	95% Queue (m)				0.4	0.0	0.4		0.0	0.0	0.0	0.0			
			Volumes	18	0	3	0.0	0.0	0.0	0	14	0.0	0.0	31	7		
		2020 Base +	Delay	8.9	0.0	3 8.9				7.3	7.3			0.0	0.0	А	Okay
	Weekday	Site														^	Undy
	Morning		95% Queue (m)	0.0	0.0	0.0				0.0	0.0			0.0	0.0		
	Peak Hour	2030 Base+	Volumes	18	0	3				0	16			36	7		0
		Site	Delay	8.9	0.0	8.9				7.3	7.3			0.0	0.0	A	Okay
Lee Street (N/S) & Site Access (E/W)			95% Queue (m)	0.0	0.0	0.0				0.0	0.0			0.0	0.0		
		2020 Base +		Volumes 12 0 2 2 7	28	18											
	Mediate	Site	Delay	8.8	0.0	8.8				7.3	7.3			0.0	0.0	A	Okay
	Weekday Afternoon		95% Queue (m)	0.0	0.0	0.0				0.0	0.0			0.0	0.0		
	Peak Hour	2030 Base+	Volumes	12	0	2				2	7			33	18		
			Delay	8.8	0.0	8.8				7.3	7.3			0.0	0.0	A	Okay
		Site	,		0.0	0.0				0.0	0.0			0.0			

TABLE 4 CONTINUED CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTIONS

Delay= Average Delay (seconds/vehicle) Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec)



From **TABLE 4**, the following observations can be made:

Maple & North Bluff Road

- In the morning peak hour this intersection is forecasted to operate at a LOS B (Good) for all horizon years and scenarios. Starting at the 2020 Base scenario, the northbound approach and southbound approach will experience medium delays. In the 2030 Base + Site scenario, the northbound approach and southbound approach will experience high and medium delays.
- In the afternoon peak hour this intersection is forecasted to operate at a LOS A (Excellent) and LOS B (Good) for all horizon years and scenarios. In the 2020 Base scenario, the southbound approach will experience medium delays. In the 2030 Base + Site scenario, the northbound approach and southbound approach will experience medium delays.
- Note that the northbound and southbound approaches will experience medium and high delays primarily due to the northbound and southbound approach through and left turn movements. The analysis assumes a consistent trip distribution using the existing and observed turning movements. It is expected that as vehicle volumes continue to grow on the major street, North Bluff Road, making through and left movements from the side street will be less desirable during the peak periods. It is anticipated that traffic seeking to make these movements will find alternative routes.
- No operational and/or geometrical improvements are recommended for this location.

Maple Street & Russell Avenue

- In the morning and afternoon peak hour this intersection is forecasted to operate at a LOS A (Excellent) for all horizon years and scenarios. No operational or capacity issues were identified.
- No operational and/or geometrical improvements are recommended for this location.

Lee Street & North Bluff Road

- In the morning peak hour this intersection is forecasted to operate at LOS B (Good) or LOS C (Fair) for all horizon years and scenarios. Starting in the 2020 Base scenario, the northbound approach and southbound approach will experience medium delays. In the 2030 Base + Site scenario, the northbound approach will experience high delays.
- In the afternoon peak hour this intersection is forecasted to operate at LOS A (Excellent) or LOS B (Good) for all horizon years and scenarios. In the 2018 Base scenario, the southbound approach will experience medium delays. In the



2030 Base + Site scenario, the northbound approach and southbound approach will experience medium and high delays.

- Note that the northbound and southbound approaches will experience medium and high delays primarily due to the northbound and southbound approach through and left turn movements. The analysis assumes a consistent trip distribution using the existing turning movements. It is expected that as vehicle volumes continue to grow on the major street, North Bluff Road, making through and left movements from the side street will be less desirable during the peak periods. It is anticipated that traffic seeking to make these movements will find alternative routes.
- No operational and/or geometrical improvements are recommended for this location.

Lee Street & Russell Avenue

- In the morning and afternoon peak hour this intersection is forecasted to operate at a LOS A (Excellent) for all horizon years and scenarios. No operational or capacity issues were identified.
- No operational and/or geometrical improvements are recommended for this location.

Maple Street & Site Access

- In the morning and afternoon peak hour this intersection is forecasted to operate at a LOS A (Excellent) for all horizon years and scenarios. No operational or capacity issues were identified.
- No operational and/or geometrical improvements are recommended for this location.

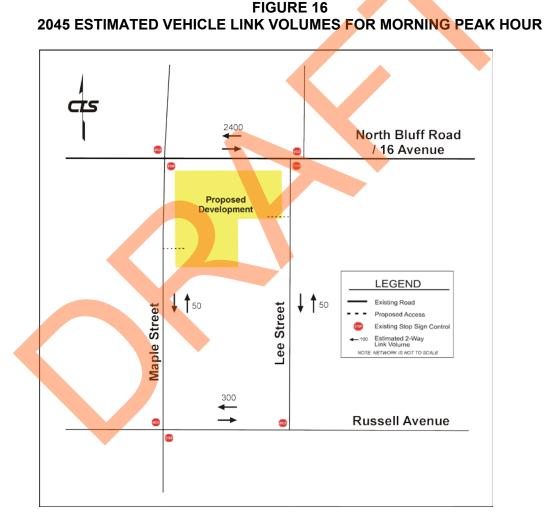
<u>Lee Street & Site Access</u>

- In the morning and afternoon peak hour this intersection is forecasted to operate at a LOS A (Excellent) for all horizon years and scenarios. No operational or capacity issues were identified.
- No operational and/or geometrical improvements are recommended for this location.

6.0 2045 LINK VOLUMES

It was requested by the City of White Rock that vehicle link volumes for the year 2045 be considered as part of this Traffic Impact Assessment Study. This is to provide vehicle volume information, relative to the City of White Rock 2045 OCP.

This scenario is 25 years post buildout of the proposed development. It is difficult to accurately forecast vehicle volumes, in the context of intersection analysis. For this reason, peak hour link volumes are determined, to provide an estimated magnitude of vehicle volumes. **FIGURE 16** and **FIGURE 17** show the estimated 2-way link volumes for the morning peak hour and afternoon peak hour.





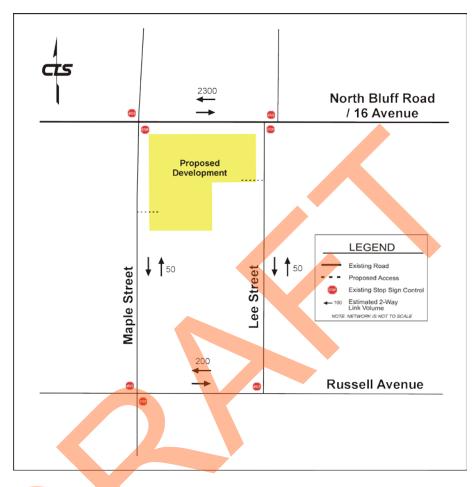


FIGURE 17 2045 ESTIMATED VEHICLE LINK VOLUMES FOR AFTERNOON PEAK HOUR

In the morning peak hour, the estimated 2-way link volume on North Bluff Road, Maple Street, Lee Street, and Russell Avenue, are 2400, 50, 50, and 300 vehicles, respectively.

In the afternoon peak hour, the estimated 2-way link volume on North Bluff Road, Maple Street, Lee Street, and Russell Avenue, are 2300, 50, 50, and 200 vehicles, respectively.

It should be noted that the theoretical capacity for North Bluff Road is 3200 vehicles per hour (two-way).

7.0 PARKING REVIEW

7.1 Parking Requirements

The required parking spaces are summarized in **TABLE 5** with reference to the *City of White Rock Zoning Bylaw Section 4: General Provisions & Regulations.* The unit descriptions and numbers are based on information provided on architectural drawings.

 TABLE 5

 VEHICLE PARKING REQUIREMENTS FOR PROPOSED DEVLEOPMENT

Land Use Description	Land Use Bylaw Classification	Required Parking Rate	# of Units	Parking Stalls Required
Townhouse	Townhouse	2 per Dwelling Unit	14.0	28
Condominium	Apartment	1.5 per Dwelling Unit	76.0	114
Total			90.0	142

The total required amount of parking for the entire development is 142 vehicle parking spaces. The proposed development is planned to provide a total of 129 vehicle parking spaces. It is noted that the townhouse parking is arranged as tandem parking. A parking variance of 10% or 13 parking spaces is required.

The required bicycle parking is noted as 1 Class I bicycle parking space per unit, and 0.2 Class II bicycle parking spaces per unit. The proposed development will be meeting this requirement by providing a total of 90 Class I and 18 Class II bicycle parking spaces.

In addition to these requirements, it is also noted that electric vehicle charging stations are required for any new multi-unit residential developments (4.17.1). It is noted that a minimum of 1 of every 10 off-street parking spaces shall feature an energized outlet capable of providing Level 2 charging and in addition, that 1 of every 10 off-street parking spaces shall feature roughed-in electric vehicle charging infrastructure. The proposed development will be providing this for the condominium units.

7.2 Parking Variance

In support of a 10% parking variance, the proposed land uses, existing nearby amenities and infrastructure, and opportunities for alternative modes of travel are considered.

Objective 11.2 of the City of White Rock 2045 OCP notes its policy that new non-market housing be supported by reviewing parking requirements for relaxation, when they are within walking distance of frequent transit service and/or commercial areas. The proposed development will be providing 25 non-market units.

As noted previously in **FIGURE 1**, the Semiahmoo Shopping Centre is within a 10-15 minute walking distance from the proposed development. Also within a 10-15 minute walking distance, at White Rock Centre, is a connection to the Frequent Transit Network along 152nd Street. Within a 5 minute walking distance of the proposed development, are bus stops with routes that operate in fifteen minute and half hour intervals.

Other nearby destinations of note include the Peach Arch Hospital, Earl Marriott Secondary School, Peach Arch Elementary School, and the Kent Street Activity Centre in Maccaud Park which is home to the Kent Street Seniors Activity groups.

The study area has good connectivity to transit, as well as cycling and pedestrian infrastructure. The below summarizes these alternative modes of travel:

Transit Network

The proposed development is well connected to transit with options for regular busses and community shuttles. The site is serviced by the following routes:

- Route #375 White Rock South Guildford During peak travel times, this bus operates in half hour intervals. Bus stop is on North Bluff Road.
- Route #321 Surrey Central Station Newton Exchange/White Rock Centre/White Rock South – During peak travel times, this bus operates in fifteen-minute intervals. Bus Stop is on North Bluff Road.
- Route #361 White Rock Centre Ocean Park During weekday peak travel times, this bus operates in half hour intervals. On the weekend peak travel times, this bus operates in one-hour intervals. Bus Stop is on Thrift Avenue.

The above bus routes can be used to connect to the nearby Frequent Transit Network at White Rock Centre.

- Route #360 Ocean Park Peace Arch Hospital During weekday peak travel times, this bus operates in half hour intervals. On the weekend peak travel times, this bus operates in one-hour intervals. Bus Stop is on Thrift Avenue, west of Finlay Street.
- Route #363 South Point Peace Arch Hospital During peak travel times, this bus operates in half hour intervals. Bus Stop is on Thrift Avenue, west of Finlay Street.

Bus stop locations are illustrated in **FIGURE 4**.



Bicycle Network

According to the City of White Rock Strategic Transportation Plan:

- North Bluff Road is proposed in the future to be designated as a bicycle route;
- Finlay Street is currently designated as a shared use lane; and
- Thrift Avenue is currently designated as a shared use lane.

The proposed development will be providing 90 Class I and 18 Class II bicycle parking spaces, which will help to facilitate this mode of travel for residents or visitors.

The bicycle routes within the study area are illustrated in **FIGURE 4**.

Pedestrian Network

The study area is well connected with sidewalks. All arterial and collector roads have a sidewalk on at least one side. Some local roads also have sidewalks on one side. Currently, there are no sidewalks on Maple Street or Lee Street.

The proposed development will be including enhanced sidewalks on the frontage and also a greenway through the property.

The existing sidewalks are illustrated in FIGURE 18.



FIGURE 18 ALTERNATIVE MODES OF TRAVEL



In consideration of the intended land use and the available nearby amenities and infrastructure to encourage alternative modes of travel, it is expected that the proposed number of off-street vehicle parking stalls is sufficient to fully support the development.

8.0 LOADING SWEPT PATH ANALYSIS

A loading bay is proposed to be provided on Maple Street and is shown in the Architectural Drawings included in **APPENDIX A**.

In order to assess the viability of the proposed loading bay, a swept path analysis was conducted to determine the impact on the adjacent road and curb.

The design vehicle used is the MSU-TAC. This is a standard medium single unit vehicle described by the Transportation Association of Canada, and is what would typically be expected for basic deliveries or people moving in and out. It has an overall length of 10 metres and a width of 2.6 meters.

It is recommended that any vehicles using the loading bay always reverse in and drive forward out. This will be a safer combination of maneuvers as drivers will have clear vision while exiting, driving forward. Drivers will also have clear vision of the driveway and adjacent sidewalks before reversing in.

Reversing into the loading bay from the northbound lane is preferred, as it will have a lower overall impact on vehicle traffic on Maple Street. The swept path of a truck travelling northbound, entering the loading bay, is illustrated in **FIGURE 19**.

When a truck is exiting the loading bay, it is recommended that it travel southbound. As a left turn maneuver, it is already expected to cross both lanes. The truck is able to comfortably wait for a safe gap in traffic to exit. This is preferred over making a right turn, and requiring a wider turn that may not be expected. **FIGURE 20** illustrates an MSU exiting the loading bay and travelling southbound.

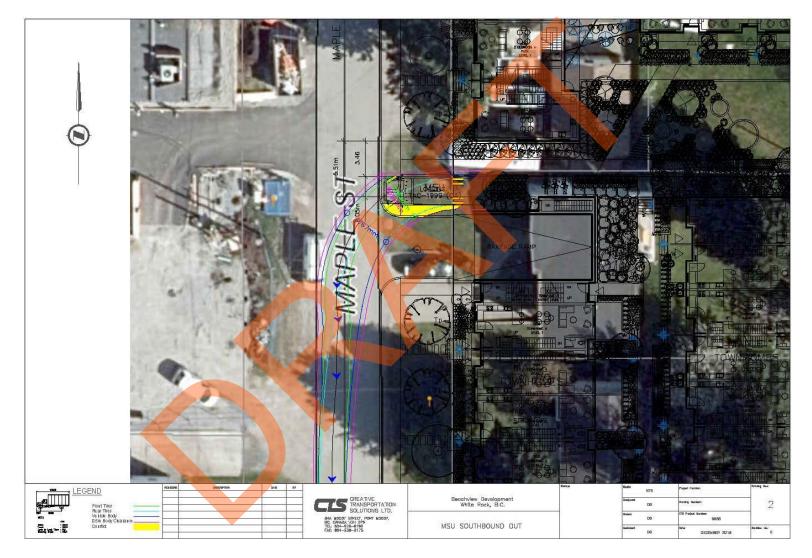


FIGURE 19 MSU INGRESSING TRAVELLING NORTHBOUND





FIGURE 21 MSU EGRESSING TRAVELLING SOUTHBOUND





The swept path analysis shows that a design vehicle of a MSUTAC can be accommodated with some widening at the throat of the proposed loading zone.

The truck turning manoeuvres illustrated are one- and two-point turns that are not expected to require a lot of time to complete.

Based on the 2020 Base + Site vehicle volumes forecasted for Maple Street, the twoway vehicle volume is 42 vehicles in the morning peak hour, and 50 vehicles in the afternoon peak hour. This is equivalent to one vehicle every 1.4 minutes in the morning peak hour, and one vehicle every 1.2 minutes in the afternoon peak hour. Both turning maneuvers to enter and exit the loading bay require the northbound and southbound lanes on Maple Street, however, gaps in traffic are not expected to be difficult to find.

Impacts on the adjacent road way can be minimized, and truck turning maneuvering can be safer, if vehicles enter by reversing in while traveling northbound and by exiting forward to travel southbound.



9.0 CONCLUSIONS & RECOMMENDATIONS

9.1 Conclusions

- 1) The proposed development is to be located at 15654, 15664, 15674 North Bluff Road, 1593 Lee Street, and 1580, 1570 Maple Street, in the City of White Rock. The residential development is proposed to be rezoned as a comprehensive development consisting of 14 townhouse units and 76 condominium units for a total of 90 dwelling units. 25 of the condominium units will be non-market rental.
- 2) CTS staff performed weekday traffic volume surveys on Friday, 22 September 2017 and on Thursday 22 November 2018 in order to document existing conditions. Future base traffic volumes were projected using a 2.0% annual traffic volumes growth rate (simple straight line) and then the proposed development traffic was superimposed on top to estimate future baseline conditions. The design hours of analysis were the weekday morning and afternoon peak hours.
- 3) Upon the full build-out, the overall development is forecasted to generate a total of 33 vehicle trips (8 inbound, and 25 outbound) during the morning peak hour and a total of 40 vehicle trips (23 inbound, and 17 outbound) during the afternoon peak hour.
- 4) The capacity analysis for the unsignalized intersections and the site accesses determined that the road network can accommodate the projected increase in traffic volumes without any operational and/or geometrical improvements.
- 5) 2045 peak hour link volumes are estimated using collected turning movement counts. This is provided to give an estimated magnitude of vehicle volumes in the context of the City of White Rock 2045 OCP.
- 6) As per the City of White Rock Zoning Bylaw, for a development with 14 townhomes and 76 condominium units, the overall required parking is 142 stalls. The proposed development is providing 129 vehicle parking spaces and will require a parking variance of 10% or 13 parking spaces.
- 7) In support of a 10% parking variance, reference was made to the intended land use, nearby amenities and infrastructure to encourage alternative modes of travel:
 - Proposed development will have 25 non-market units
 - Within a 10-15 minute walk of Semiahmoo Shopping Centre and White Rock Centre where the Frequent Transit Network connects
 - Within a 5 minute walk of 5 different bus routes
 - Nearby destinations include Peach Arch Hospital, Earl Marriott Secondary School, Peach Arch Elementary School, Kent Street Activity Centre in Maccaud Park
 - Providing 90 Class I and 18 Class II bicycle parking spaces
 - Proposed development will include enhanced sidewalks on the frontage and a greenway through the property.



8) The proposed loading bay was reviewed to assess its viability and impact on the adjacent road and curb. The swept path analysis shows that a design vehicle of a MSUTAC can be accommodated with some widening at the throat of the proposed loading zone. Impacts on the adjacent road way can be minimized and truck turning maneuvering can be safer, if vehicles enter by reversing in while traveling northbound and by exiting forward to travel southbound.

9.2 **Recommendations**

It is recommended that the development consider the following transportation related item for the benefit of the development as well as that of the surrounding community.

- 1) The developer work with the City to ensure any improvements to the fronting sidewalks align with the City of White Rock *Strategic Transportation Plan;*
- 2) That the City grant a vehicle parking variance of 10% or 13 vehicle parking stalls, based on the supporting information provided in this report;
- 3) The driveway for the proposed loading zone throat be widened as noted in this report, to accommodate for a MSUTAC design vehicle;
- 4) That trucks using the loading bay be instructed to enter from the northbound lane via reversing in, and exit to the southbound lane by driving forward out.

We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS LTD.

Reviewed by:

Prepared by:

Gary Vlieg, P.Eng. Engineering Group Manager **Dominique Bram Guevarra**, EIT Junior Traffic Engineer

Attachment

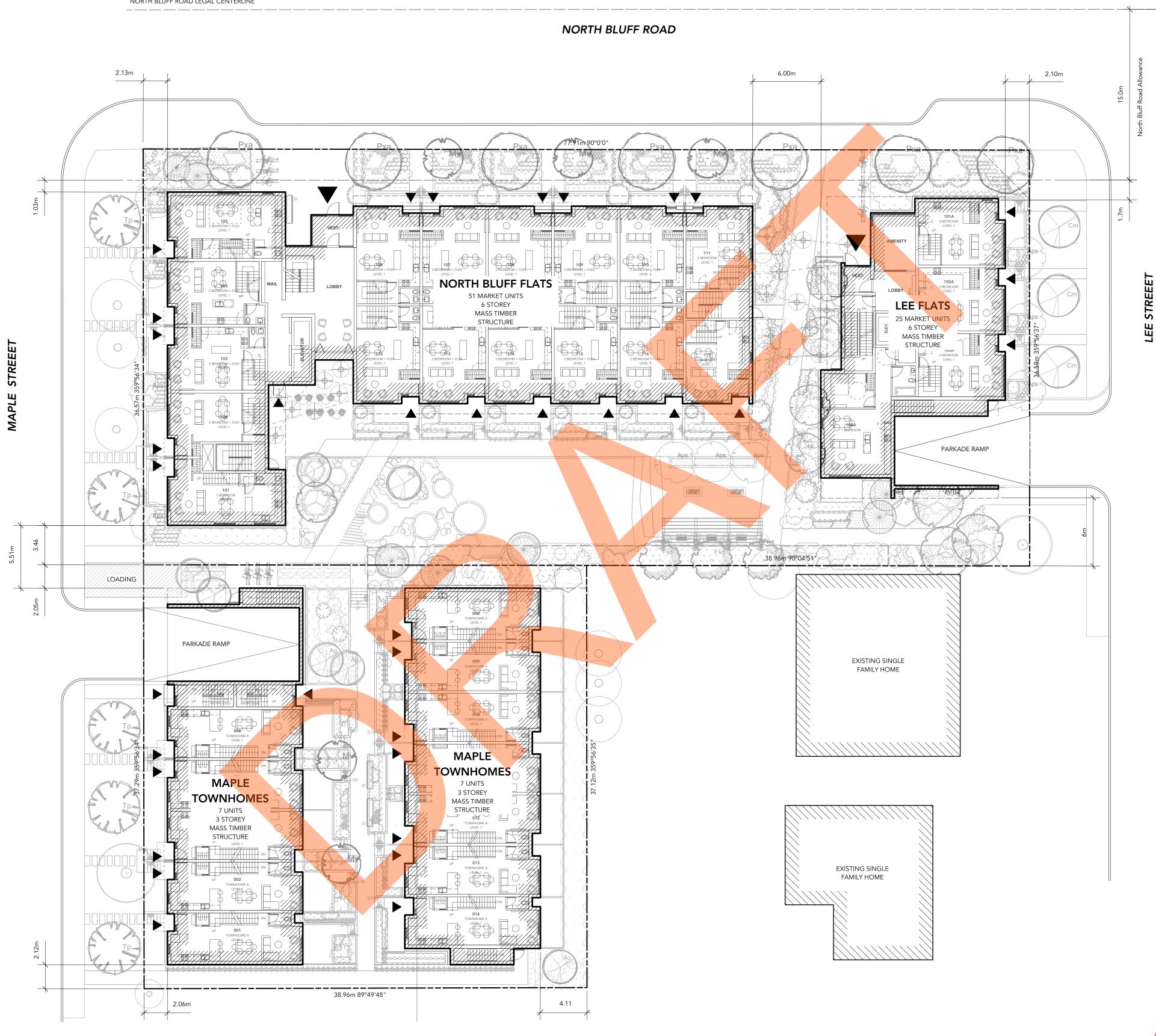


Appendix A Architectural Drawing

N

20 M

10







issued for DP 2018.10.15

Beachway White Rock, BC



Appendix B Turning Movement Counts



Friday, September 22, 2017 Vehicle Classification Summary

Project: Municipality: #5740: Russell Ave TIA White Rock Weather: Clear, Sunny

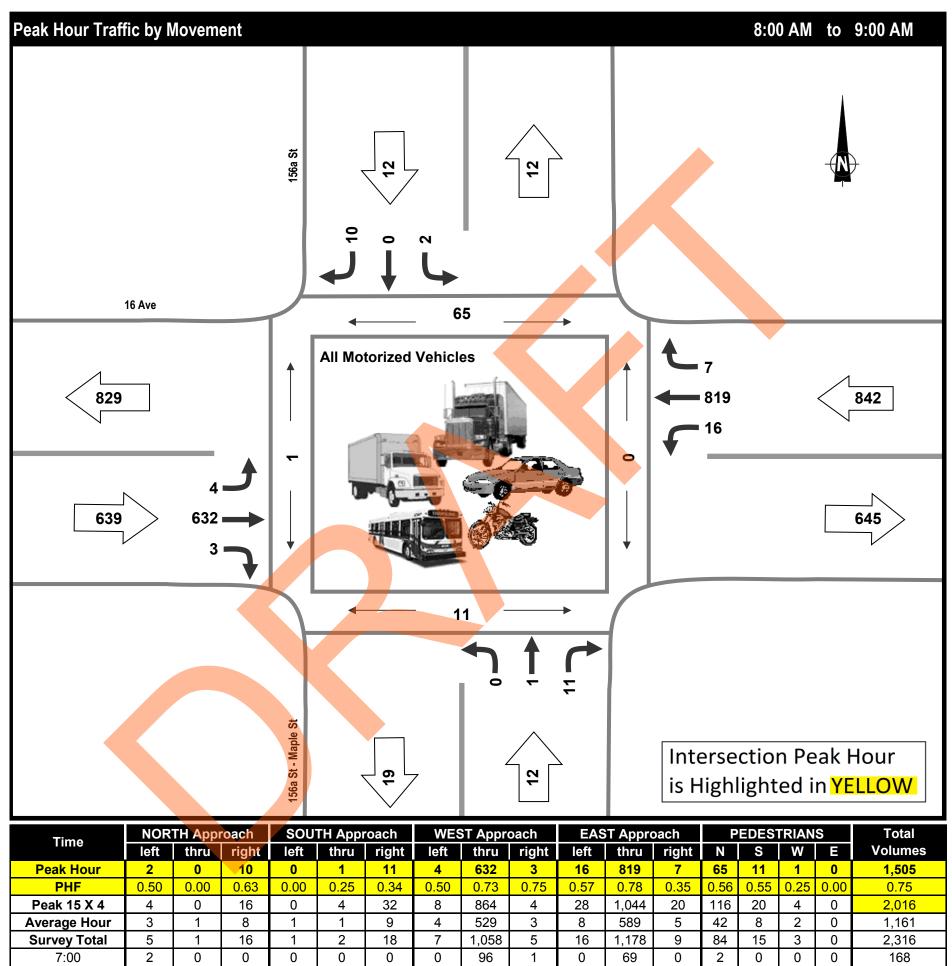
			Ve	hicle Classificat	ion	
Time Period	Entering Intersection	Passenger Cars	Heavy Vehicles (3 or more axles)			Total
Morning	Volume	2,264	52			2,316
(07:00 - 09:00)	%	97.8%	2.2%			100.0%
Midday	Volume					
(00:00 - 00:00)	%					
Afternoon	Volume	4,006	24			4,030
(15:00 - 18:00)	%	99.4%	0.6%			100.0%
Total	Volume	6,270	76			6,346
(5 Hours)	%	98.8%	1.2%			100.0%



Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: All Motorized Vehicles



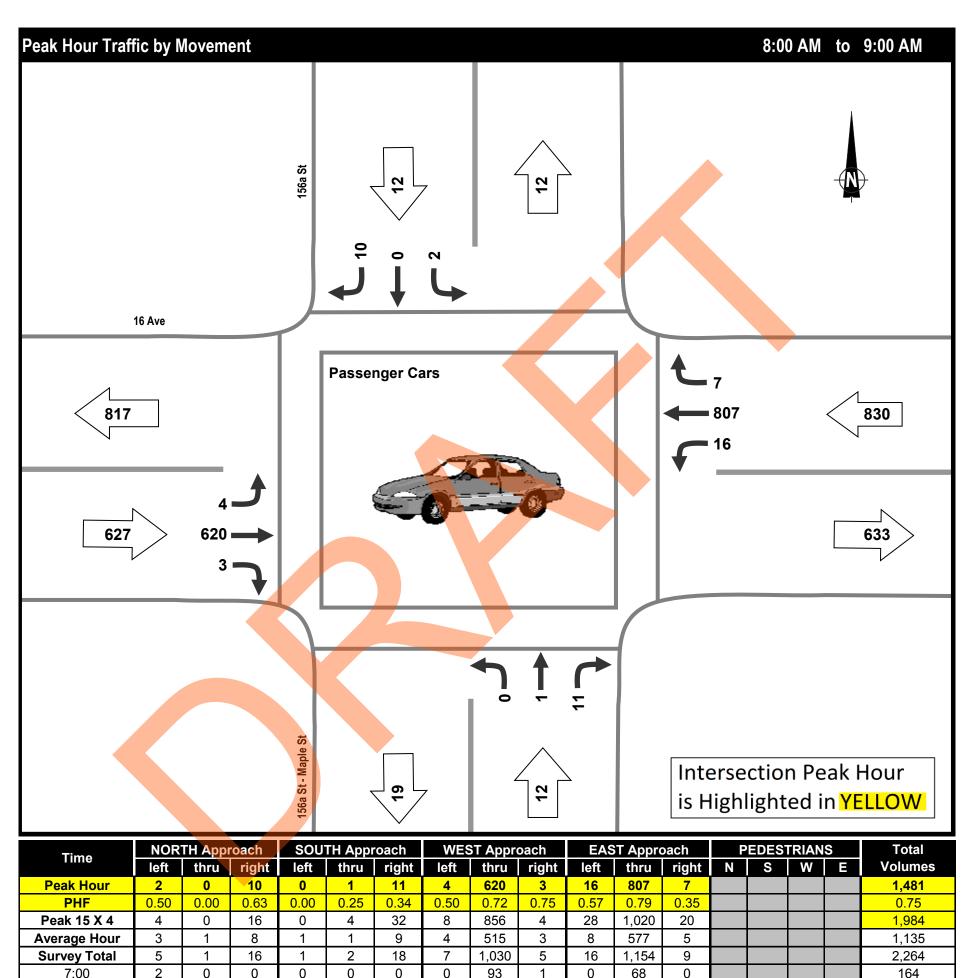
7:15	0	0	1	0	1	2	1	99	0	0	82	0	2	1	0	0	186
7:30	0	1	2	0	0	4	0	111	0	0	78	0	7	2	0	0	196
7:45	1	0	3	1	0	1	2	120	1	0	130	2	8	1	2	0	261
8:00	1	0	3	0	0	1	1	140	1	4	184	0	19	3	1	0	335
8:15	1	0	4	0	0	8	2	216	0	7	261	5	29	5	0	0	504
8:30	0	0	2	0	1	1	0	174	1	5	218	2	14	0	0	0	404
8:45	0	0	1	0	0	1	1	102	1	0	156	0	3	3	0	0	262



Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: Passenger Cars



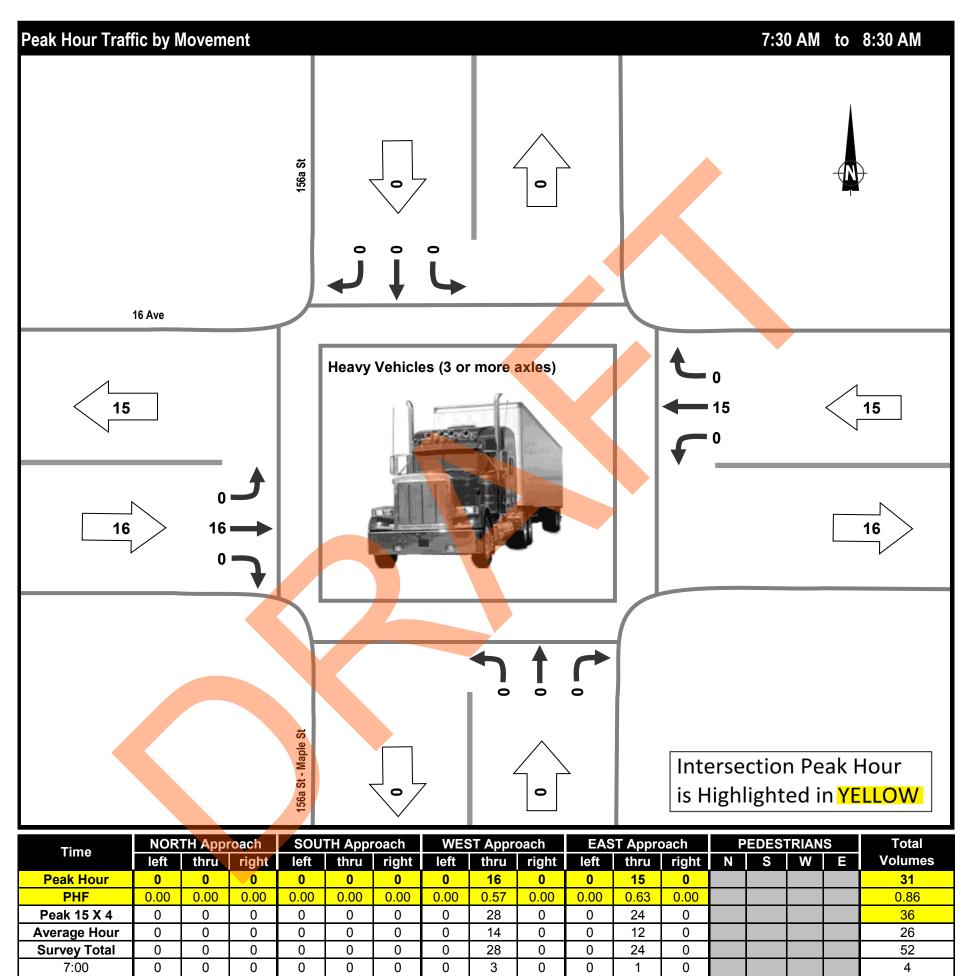
1.00	~	v	•	0	•	•	U	00		U	00	U U			104
7:15	0	0	1	0	1	2	1	97	0	0	78	0			180
7:30	0	1	2	0	0	4	0	104	0	0	76	0			187
7:45	1	0	3	1	0	1	2	116	1	0	125	2			252
8:00	1	0	3	0	0	1	1	137	1	4	182	0			330
8:15	1	0	4	0	0	8	2	214	0	7	255	5			496
8:30	0	0	2	0	1	1	0	170	1	5	216	2			398
8:45	0	0	1	0	0	1	1	99	1	0	154	0			257



Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: Heavy Vehicles (3 or more axles)



7:15	0	0	0	0	0	0	0	2	0	0	4	0			6
7:30	0	0	0	0	0	0	0	7	0	0	2	0			9
7:45	0	0	0	0	0	0	0	4	0	0	5	0			9
8:00	0	0	0	0	0	0	0	3	0	0	2	0			5
8:15	0	0	0	0	0	0	0	2	0	0	6	0			8
8:30	0	0	0	0	0	0	0	4	0	0	2	0			6
8:45	0	0	0	0	0	0	0	3	0	0	2	0			5

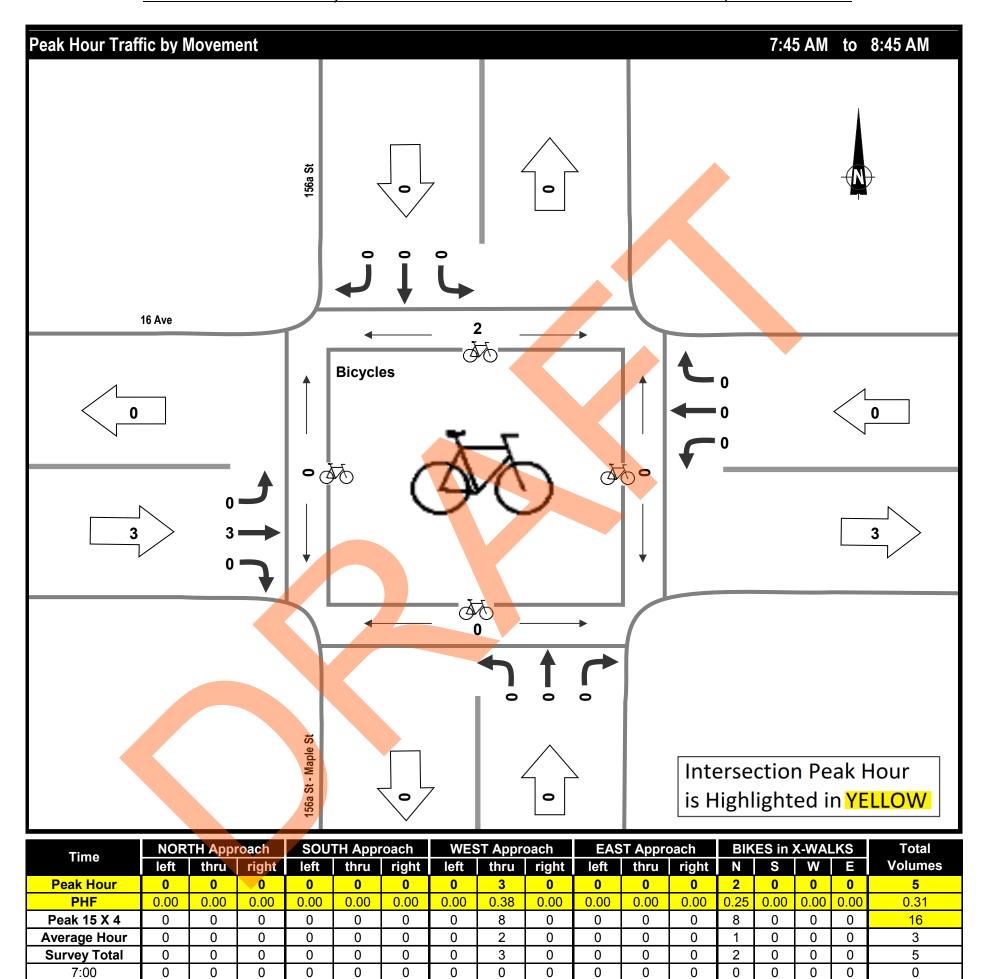


Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



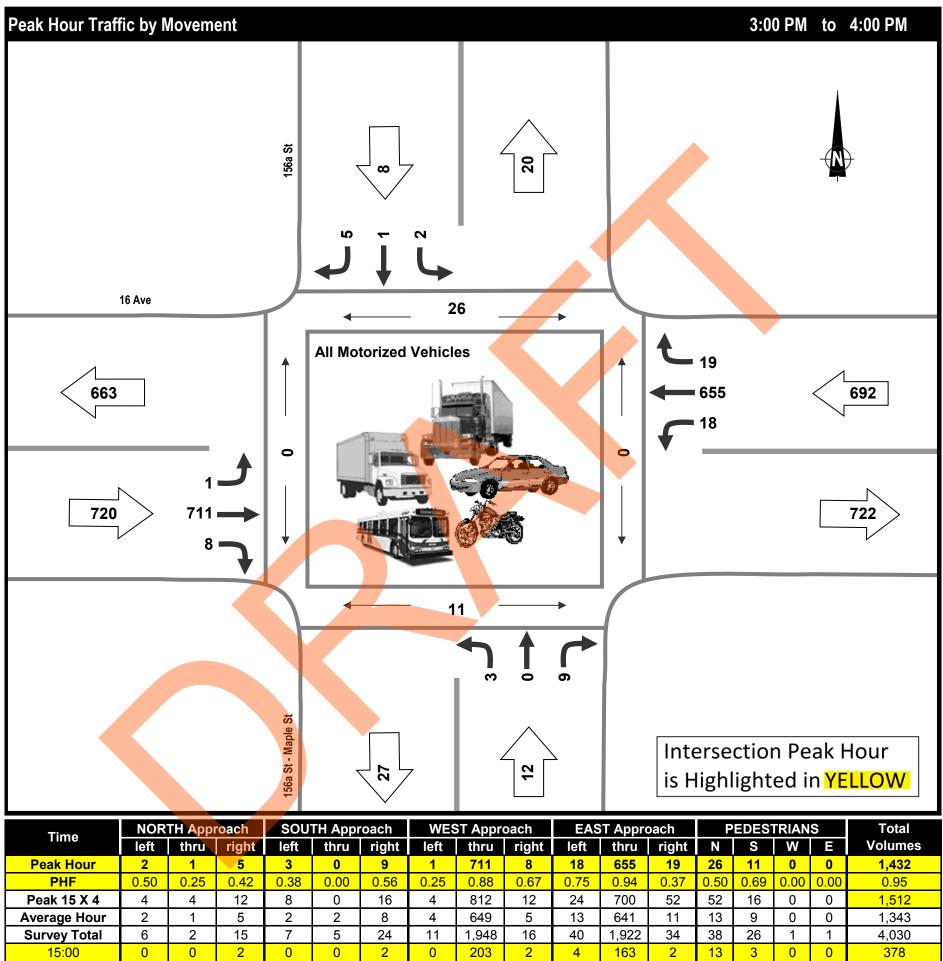
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:30	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	4
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: All Motorized Vehicles



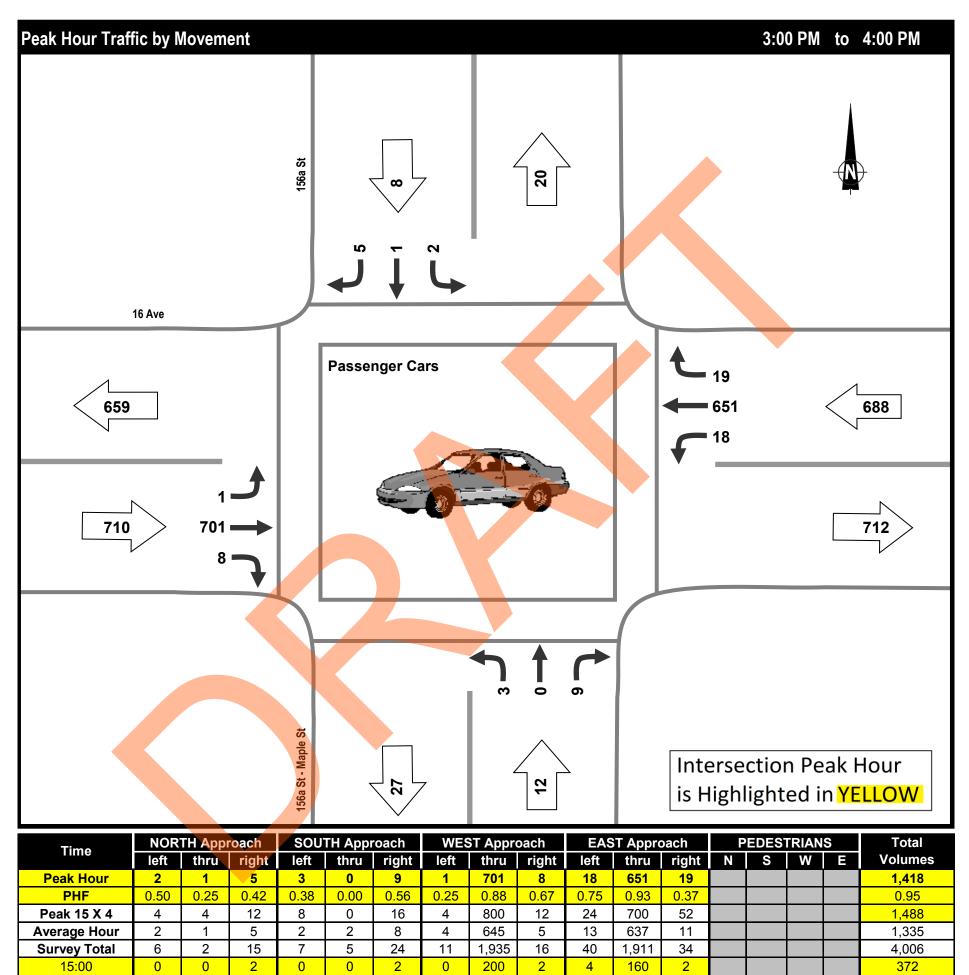
15:15	1	0	0	1	0	4	0	159	2	5	175	13	7	1	0	0	360
15:30	0	1	3	0	0	0	1	180	3	3	162	3	4	3	0	0	356
15:45	1	0	0	2	0	3	0	169	1	6	155	1	2	4	0	0	338
16:00	0	0	0	2	0	2	0	177	0	1	150	1	1	3	0	0	333
16:15	0	0	2	0	0	4	2	165	0	2	192	4	6	1	0	0	371
16:30	1	0	0	0	2	2	1	195	1	0	170	1	3	1	0	0	373
16:45	0	0	2	0	1	2	1	156	1	6	144	4	1	0	0	0	317
17:00	0	0	4	0	0	2	2	176	2	6	131	1	1	1	0	0	324
17:15	1	0	0	0	0	1	1	122	2	3	165	1	0	4	1	0	296
17:30	0	0	2	0	0	0	2	124	0	1	161	3	0	0	0	1	293
17:45	2	1	0	2	2	2	1	122	2	3	154	0	0	5	0	0	291



Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: Passenger Cars



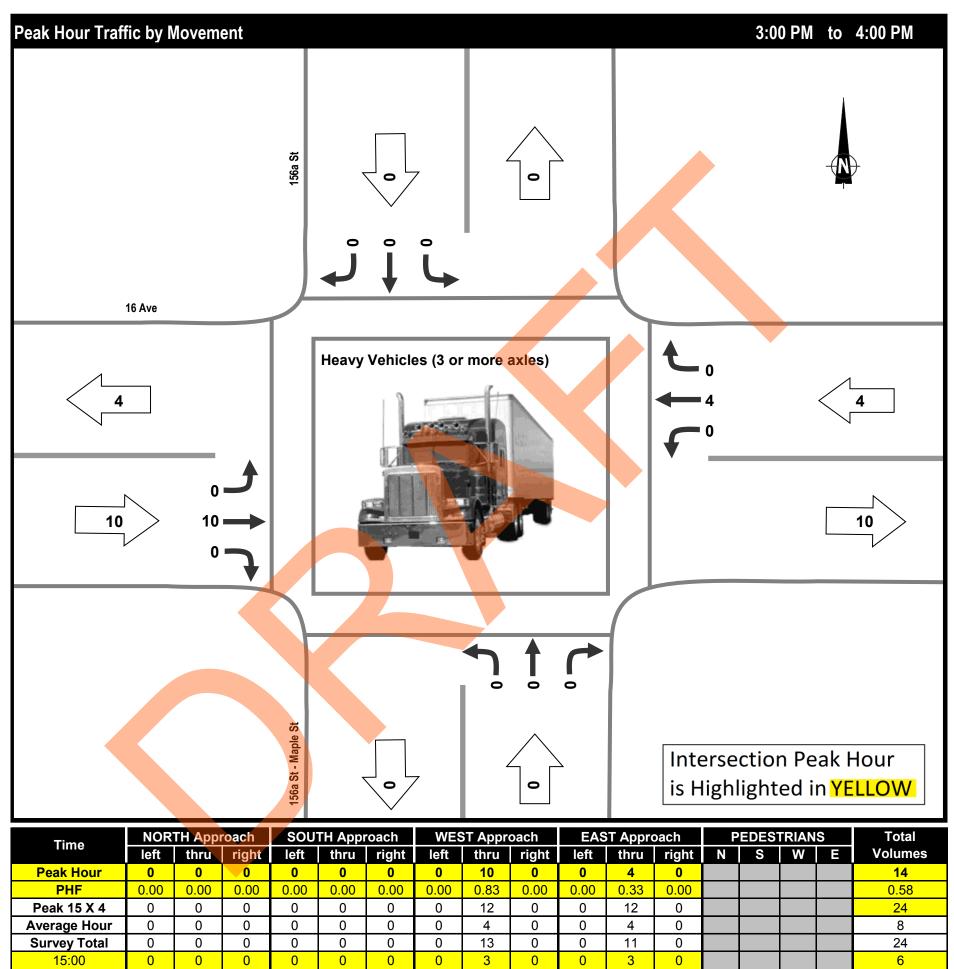
15:15	1	0	0	1	0	4	0	156	2	5	175	13			357
15:30	0	1	3	0	0	0	1	178	3	3	161	3			353
15:45	1	0	0	2	0	3	0	167	1	6	155	1			336
16:00	0	0	0	2	0	2	0	176	0	1	149	1			331
16:15	0	0	2	0	0	4	2	165	0	2	192	4			371
16:30	1	0	0	0	2	2	1	195	1	0	170	1			373
16:45	0	0	2	0	1	2	1	156	1	6	143	4			316
17:00	0	0	4	0	0	2	2	176	2	6	130	1			323
17:15	1	0	0	0	0	1	1	122	2	3	163	1			294
17:30	0	0	2	0	0	0	2	123	0	1	160	3			291
17:45	2	1	0	2	2	2	1	121	2	3	153	0			289



Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: Heavy Vehicles (3 or more axles)



15:15	0	0	0	0	0	0	0	3	0	0	0	0			3
15:30	0	0	0	0	0	0	0	2	0	0	1	0			3
15:45	0	0	0	0	0	0	0	2	0	0	0	0			2
16:00	0	0	0	0	0	0	0	1	0	0	1	0			2
16:15	0	0	0	0	0	0	0	0	0	0	0	0			0
16:30	0	0	0	0	0	0	0	0	0	0	0	0			0
16:45	0	0	0	0	0	0	0	0	0	0	1	0			1
17:00	0	0	0	0	0	0	0	0	0	0	1	0			1
17:15	0	0	0	0	0	0	0	0	0	0	2	0			2
17:30	0	0	0	0	0	0	0	1	0	0	1	0			2
17:45	0	0	0	0	0	0	0	1	0	0	1	0			2

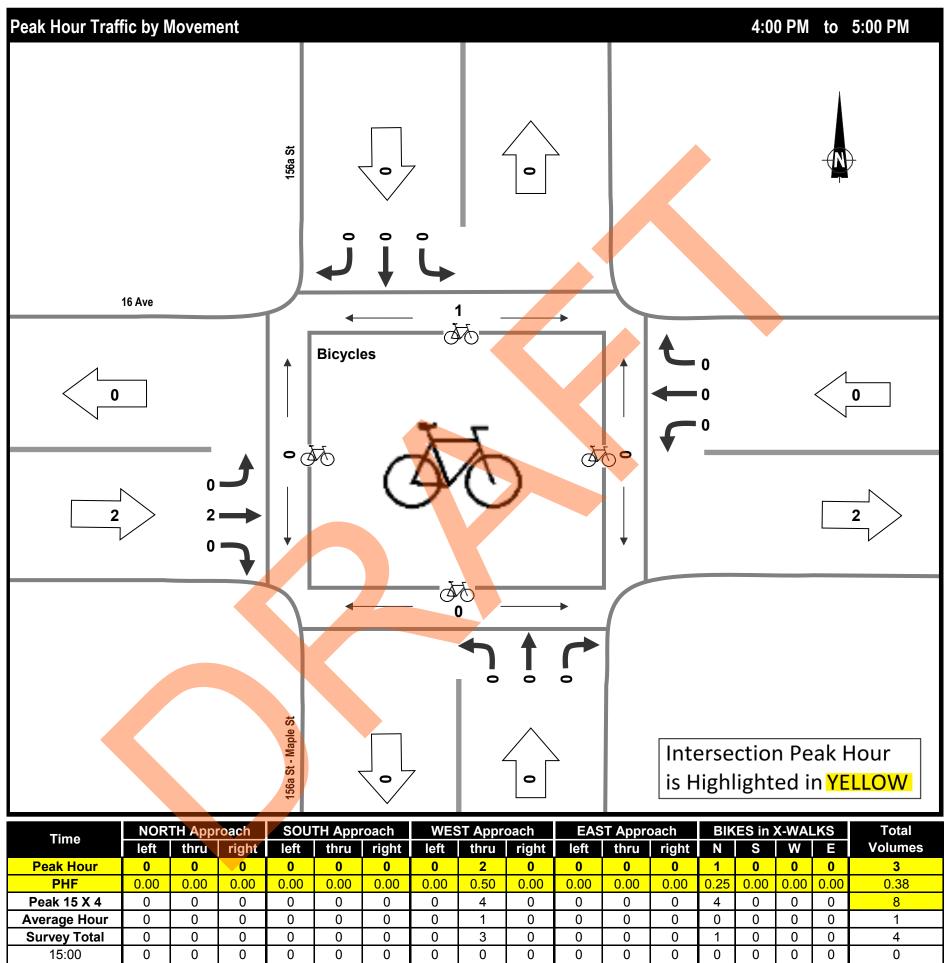


Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Sunny Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2
16:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Thursday, November 08, 2018 Vehicle Classification Summary

Project:	#5935: Beachway Traffic Impact Assessment
Municipality:	White Rock
Weather:	Cloudy

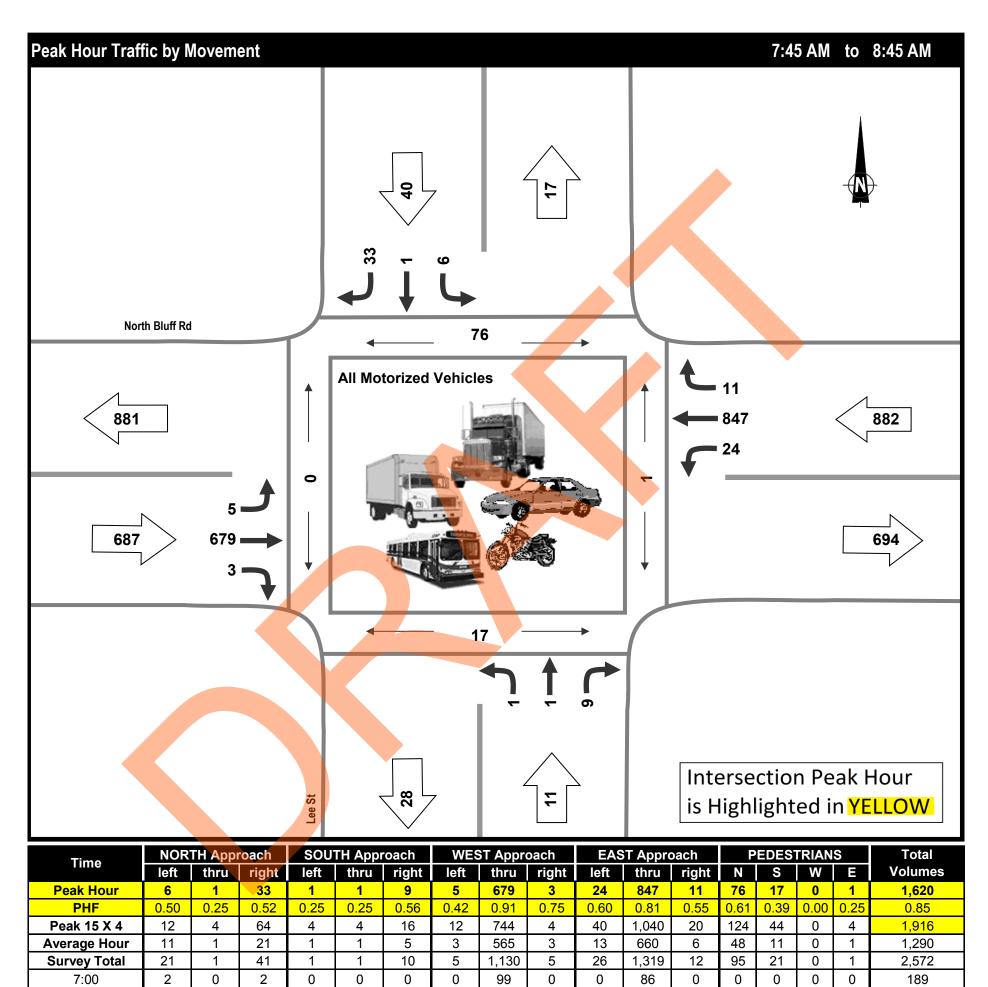
			Ve	hicle Classificat	ion	
Time Period	Entering Intersection	Passenger Cars	Heavy Vehicles (3 or more axles)			Total
Morning	Volume	2,538	34			2,572
(07:00 - 09:00)	%	98.7%	1.3%			100.0%
Midday	Volume					
	%					
Afternoon	Volume	4,528	17			4,545
(15:00 - 18:00)	%	99.6%	0.4%			100.0%
Total	Volume	7,066	51			7,117
(5 Hours)	%	99.3%	0.7%			100.0%



Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles



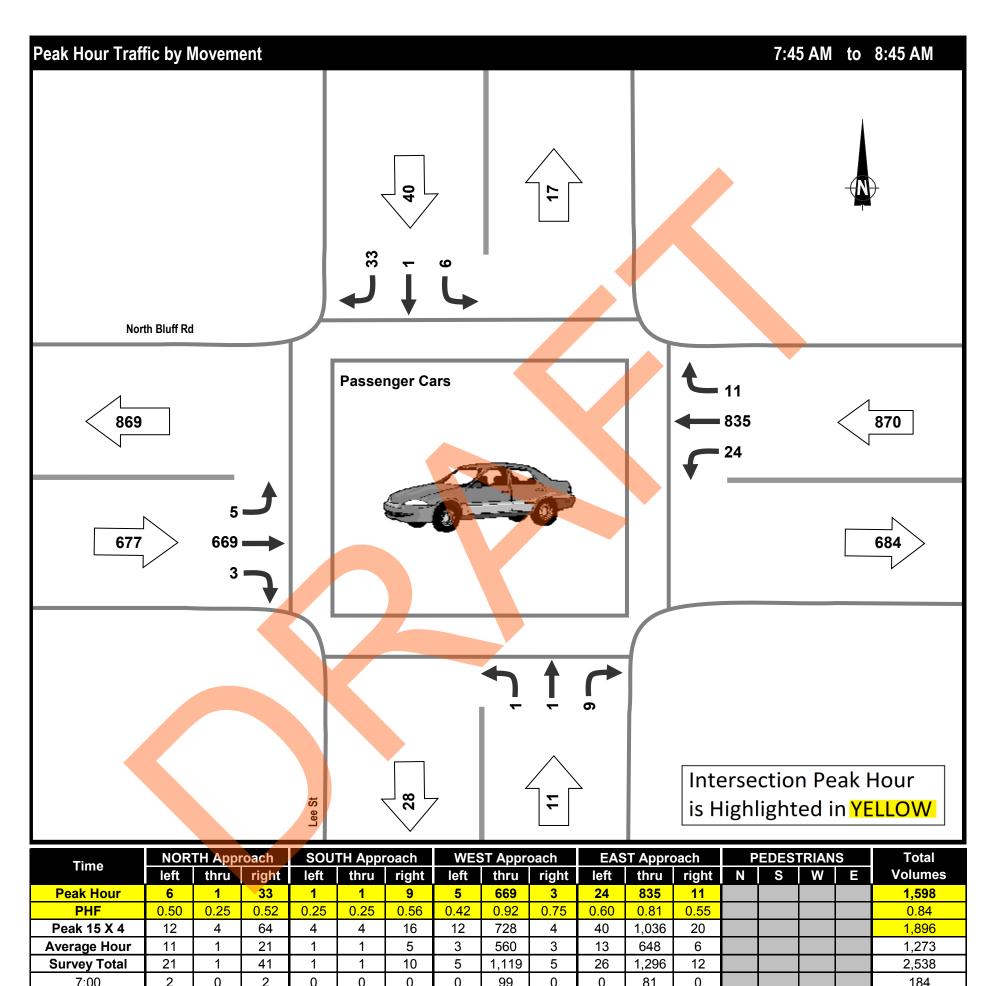
7:15	4	0	2	0	0	0	0	89	0	1	94	0	1	0	0	0	190
7:30	6	0	1	0	0	1	0	137	0	0	120	1	1	4	0	0	266
7:45	2	0	2	0	0	0	0	160	0	2	162	1	8	2	0	0	329
8:00	1	0	6	1	0	2	1	181	1	5	189	5	13	3	0	1	392
8:15	0	1	16	0	0	3	3	186	1	7	260	2	31	11	0	0	479
8:30	3	0	9	0	1	4	1	152	1	10	236	3	24	1	0	0	420
8:45	3	0	3	0	0	0	0	126	2	1	172	0	17	0	0	0	307



Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



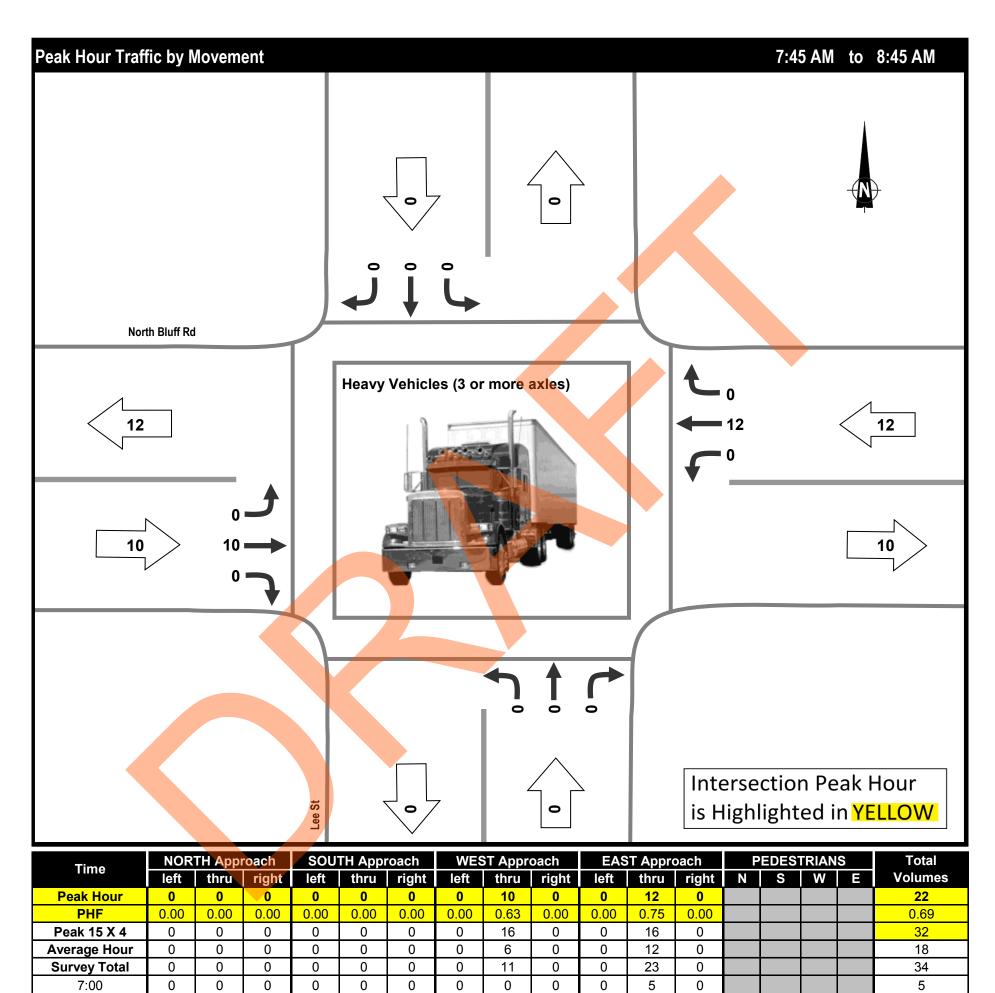
7.00	~	0	~	0	0	0	0	33	0	0	01	0			10-
7:15	4	0	2	0	0	0	0	89	0	1	93	0			189
7:30	6	0	1	0	0	1	0	136	0	0	116	1			261
7:45	2	0	2	0	0	0	0	159	0	2	158	1			324
8:00	1	0	6	1	0	2	1	180	1	5	186	5			388
8:15	0	1	16	0	0	3	3	182	1	7	259	2			474
8:30	3	0	9	0	1	4	1	148	1	10	232	3			412
8:45	3	0	3	0	0	0	0	126	2	1	171	0			306



Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



7:15	0	0	0	0	0	0	0	0	0	0	1	0			1
7:30	0	0	0	0	0	0	0	1	0	0	4	0			5
7:45	0	0	0	0	0	0	0	1	0	0	4	0			5
8:00	0	0	0	0	0	0	0	1	0	0	3	0			4
8:15	0	0	0	0	0	0	0	4	0	0	1	0			5
8:30	0	0	0	0	0	0	0	4	0	0	4	0			8
8:45	0	0	0	0	0	0	0	0	0	0	1	0			1

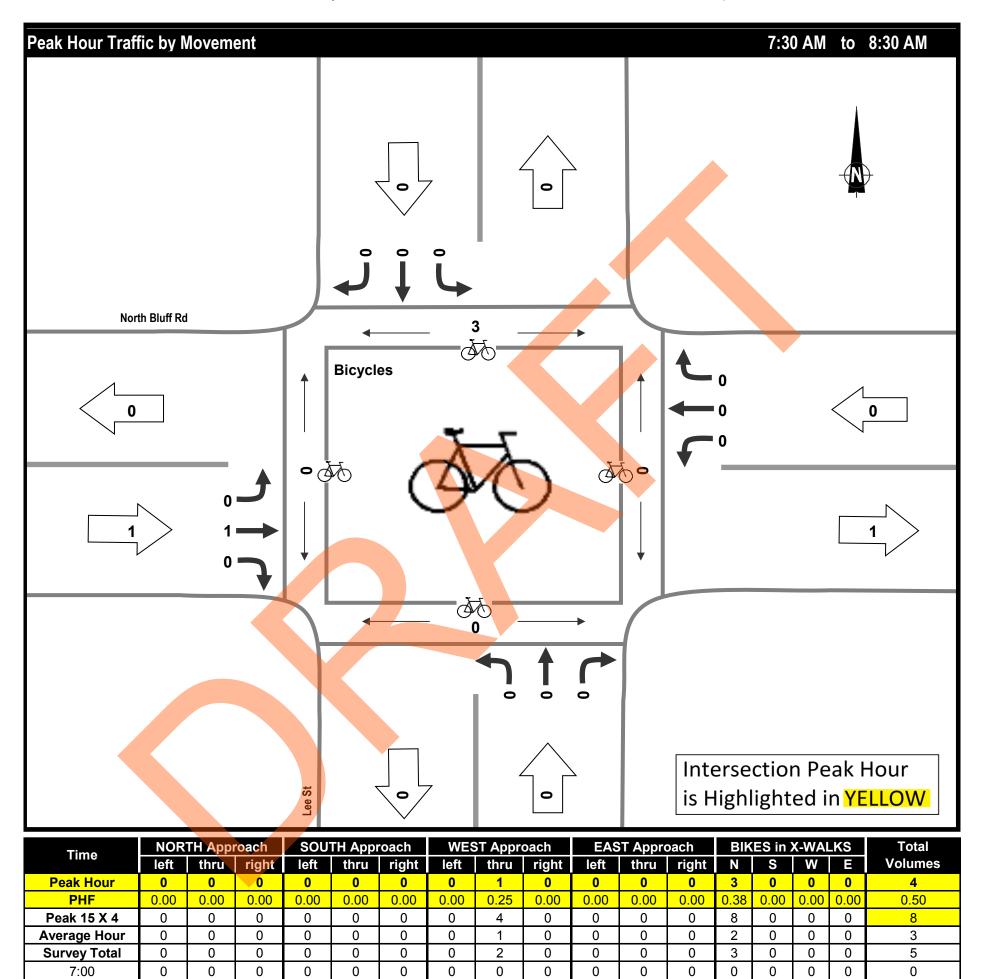


Thursday, November 08, 2018



Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals





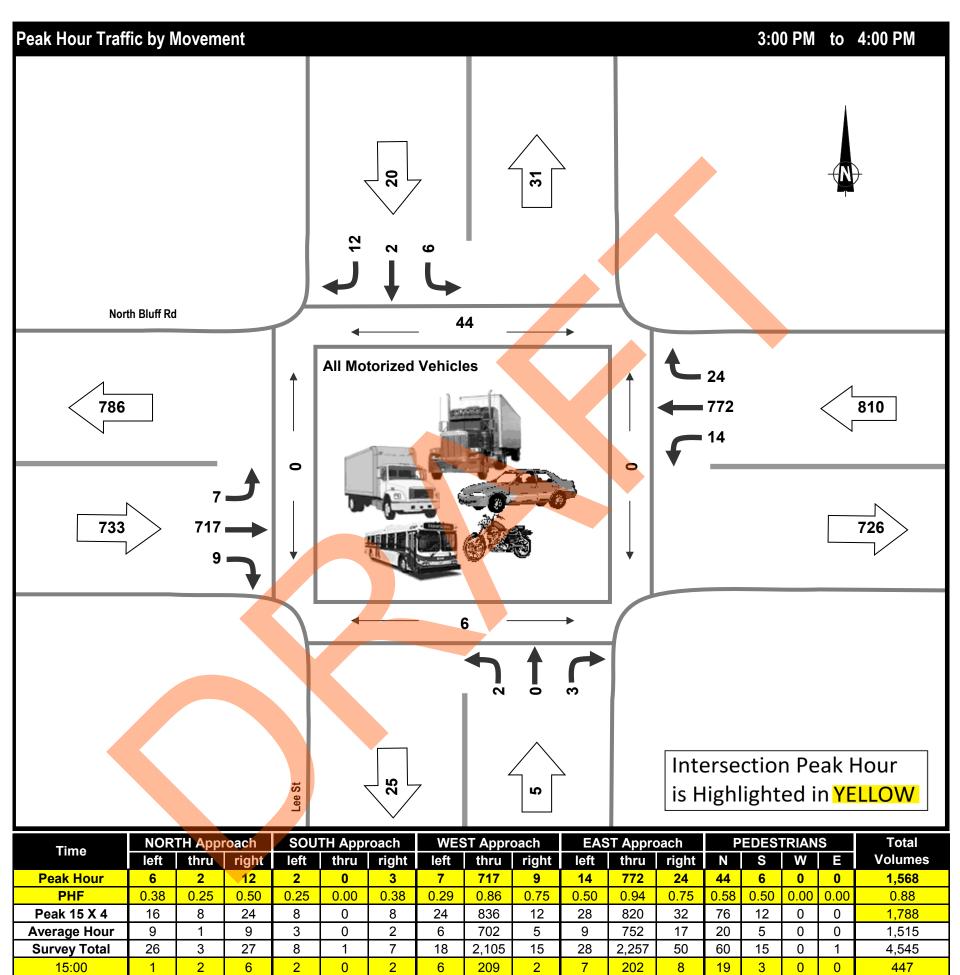
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
8:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles



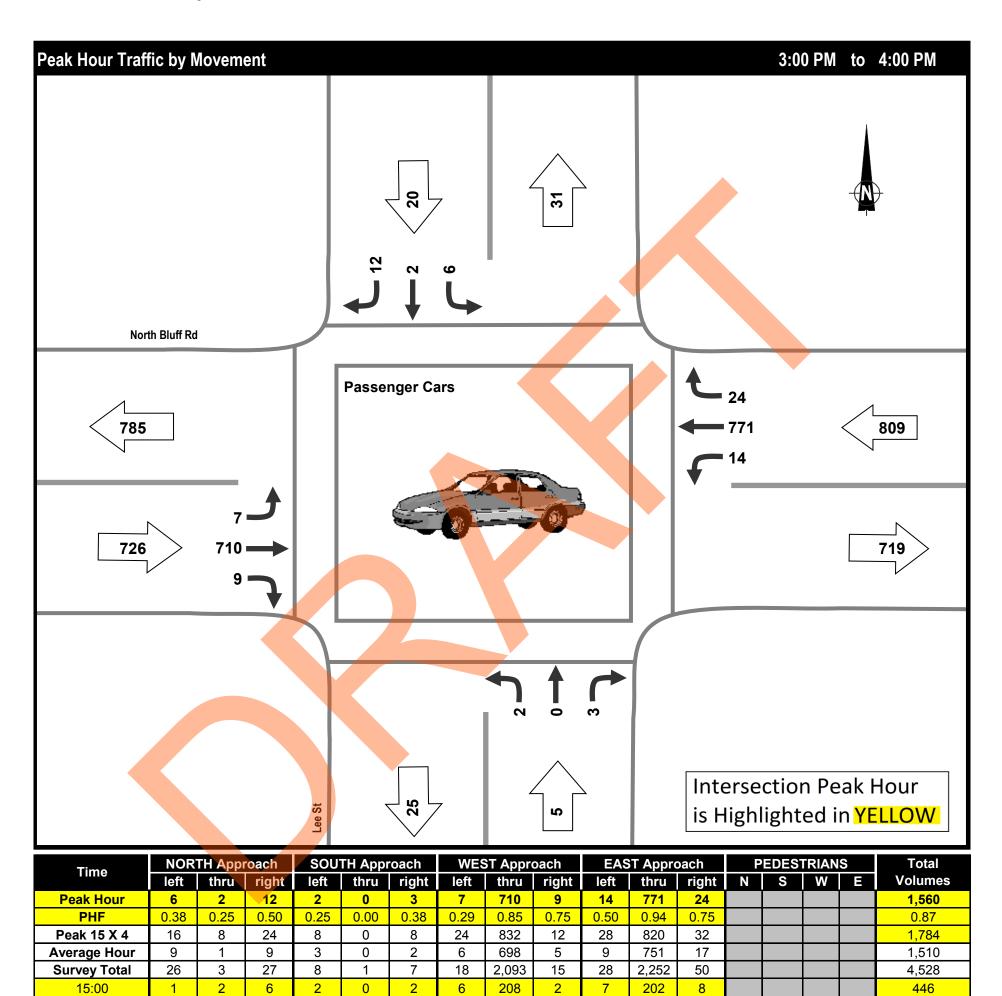
15:15	1	0	2	0	0	0	0	163	3	2	194	6	13	3	0	0	371
15:30	0	0	2	0	0	0	0	186	2	3	171	8	5	0	0	0	372
15:45	4	0	2	0	0	1	1	159	2	2	205	2	7	0	0	0	378
16:00	1	0	2	2	0	0	0	195	2	1	186	1	0	1	0	0	390
16:15	2	0	1	0	0	0	2	181	0	3	181	2	5	2	0	1	372
16:30	4	1	2	0	0	1	2	188	0	3	169	2	0	0	0	0	372
16:45	3	0	2	1	0	1	3	184	1	0	212	5	3	0	0	0	412
17:00	2	0	2	1	0	0	0	206	2	2	186	6	2	0	0	0	407
17:15	2	0	2	0	1	2	2	153	1	1	203	1	4	1	0	0	368
17:30	3	0	2	1	0	0	0	147	0	1	171	4	1	1	0	0	329
17:45	3	0	2	1	0	0	2	134	0	3	177	5	1	4	0	0	327
17.45	5	0	2		0	0		134	0	5	177	5		-	0	0	521



Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



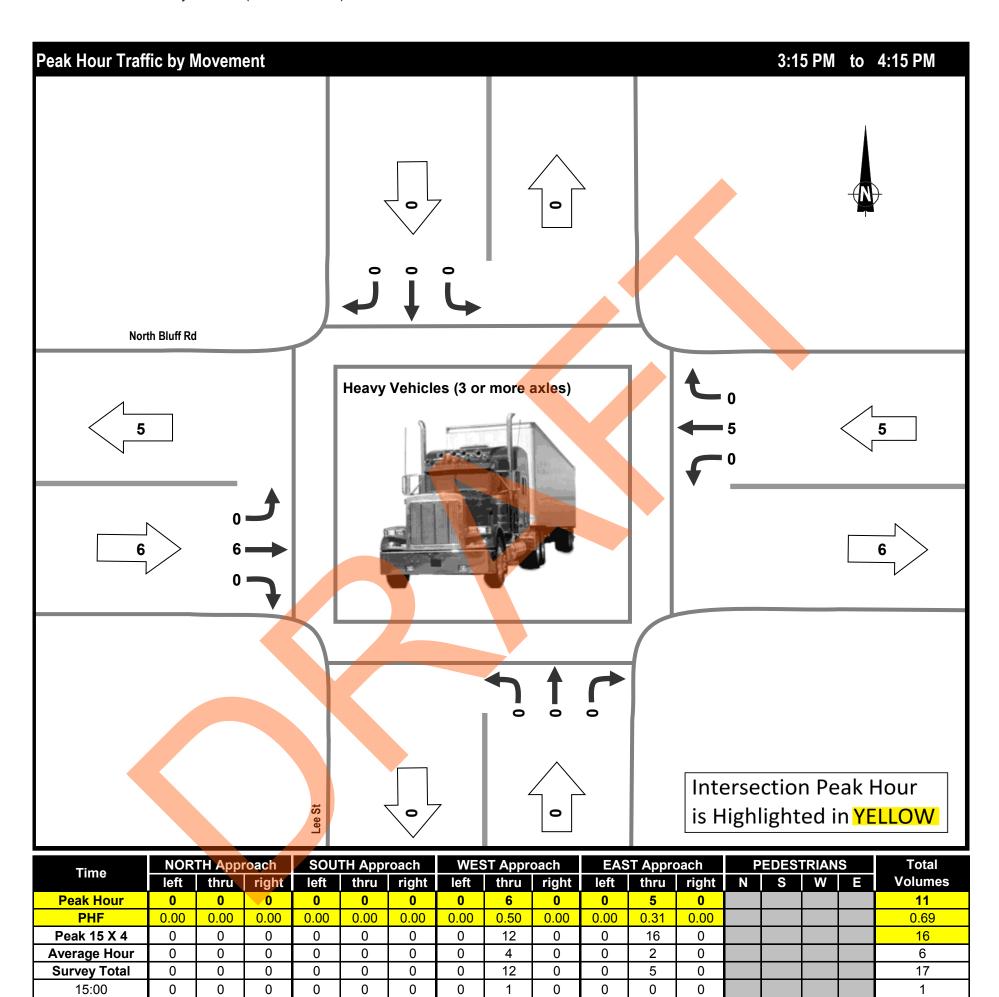
															4
15:15	1	0	2	0	0	0	0	160	3	2	193	6			367
15:30	0	0	2	0	0	0	0	183	2	3	171	8			369
15:45	4	0	2	0	0	1	1	159	2	2	205	2			378
16:00	1	0	2	2	0	0	0	195	2	1	182	1			386
16:15	2	0	1	0	0	0	2	180	0	3	181	2			371
16:30	4	1	2	0	0	1	2	187	0	3	169	2			371
16:45	3	0	2	1	0	1	3	184	1	0	212	5			412
17:00	2	0	2	1	0	0	0	204	2	2	186	6			405
17:15	2	0	2	0	1	2	2	153	1	1	203	1			368
17:30	3	0	2	1	0	0	0	146	0	1	171	4			328
17:45	3	0	2	1	0	0	2	134	0	3	177	5			327



Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



		-	-	-	-	-	-	-	-	-	-	-	-			
	15:15	0	0	0	0	0	0	0	3	0	0	1	0			4
	15:30	0	0	0	0	0	0	0	3	0	0	0	0			3
	15:45	0	0	0	0	0	0	0	0	0	0	0	0			0
	16:00	0	0	0	0	0	0	0	0	0	0	4	0			4
	16:15	0	0	0	0	0	0	0	1	0	0	0	0			1
l	16:30	0	0	0	0	0	0	0	1	0	0	0	0			1
l	16:45	0	0	0	0	0	0	0	0	0	0	0	0			0
	17:00	0	0	0	0	0	0	0	2	0	0	0	0			2
	17:15	0	0	0	0	0	0	0	0	0	0	0	0			0
	17:30	0	0	0	0	0	0	0	1	0	0	0	0			1
	17:45	0	0	0	0	0	0	0	0	0	0	0	0			0



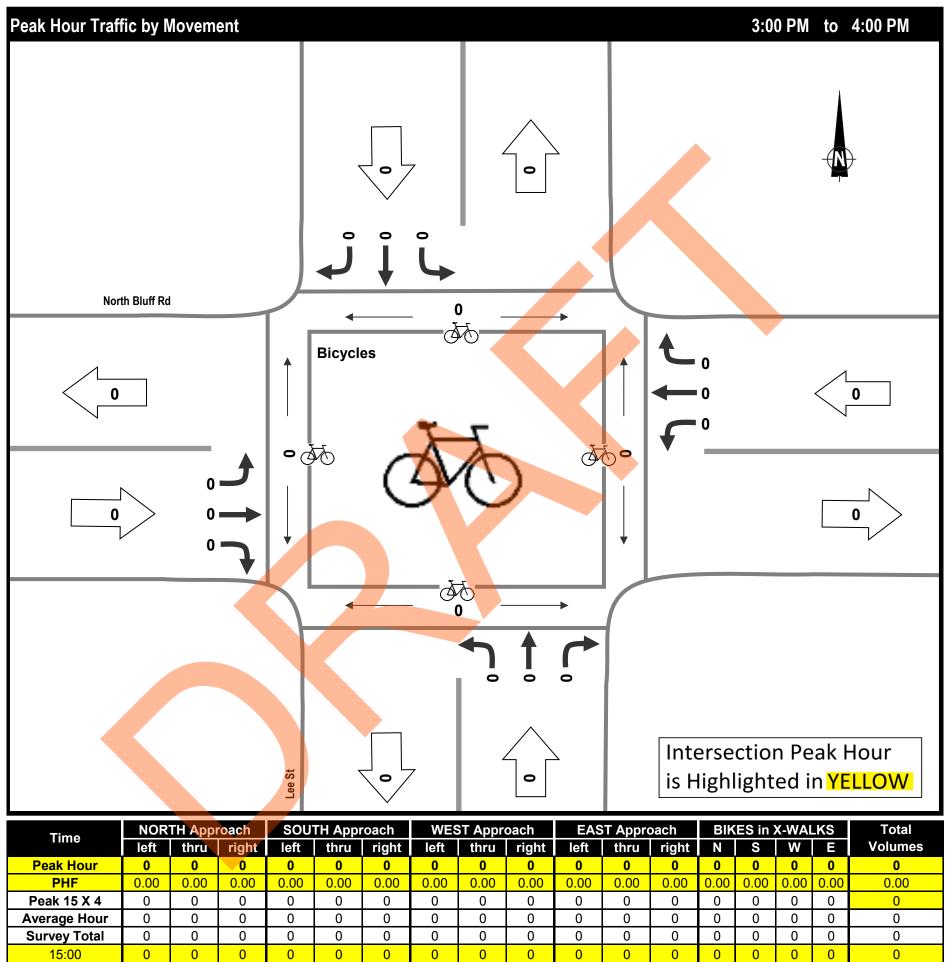
Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

LLS

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Lee St & Russell Ave

Thursday, November 08, 2018 Vehicle Classification Summary

Project:	#5935: Beachway Traffic Impact Assessment
Municipality:	White Rock
Weather:	Cloudy

			Ve	hicle Classificat	ion	
Time Period	Entering Intersection	Passenger Cars	Heavy Vehicles (3 or more axles)			Total
Morning	Volume	259	3			262
(07:00 - 09:00)	%	98.9%	1.1%			100.0%
Midday	Volume					
	%					
Afternoon	Volume	374	3			377
(15:00 - 18:00)	%	99.2%	0.8%			100.0%
Total	Volume	633	6			639
(5 Hours)	%	99.1%	0.9%			100.0%



Lee St & Russell Ave

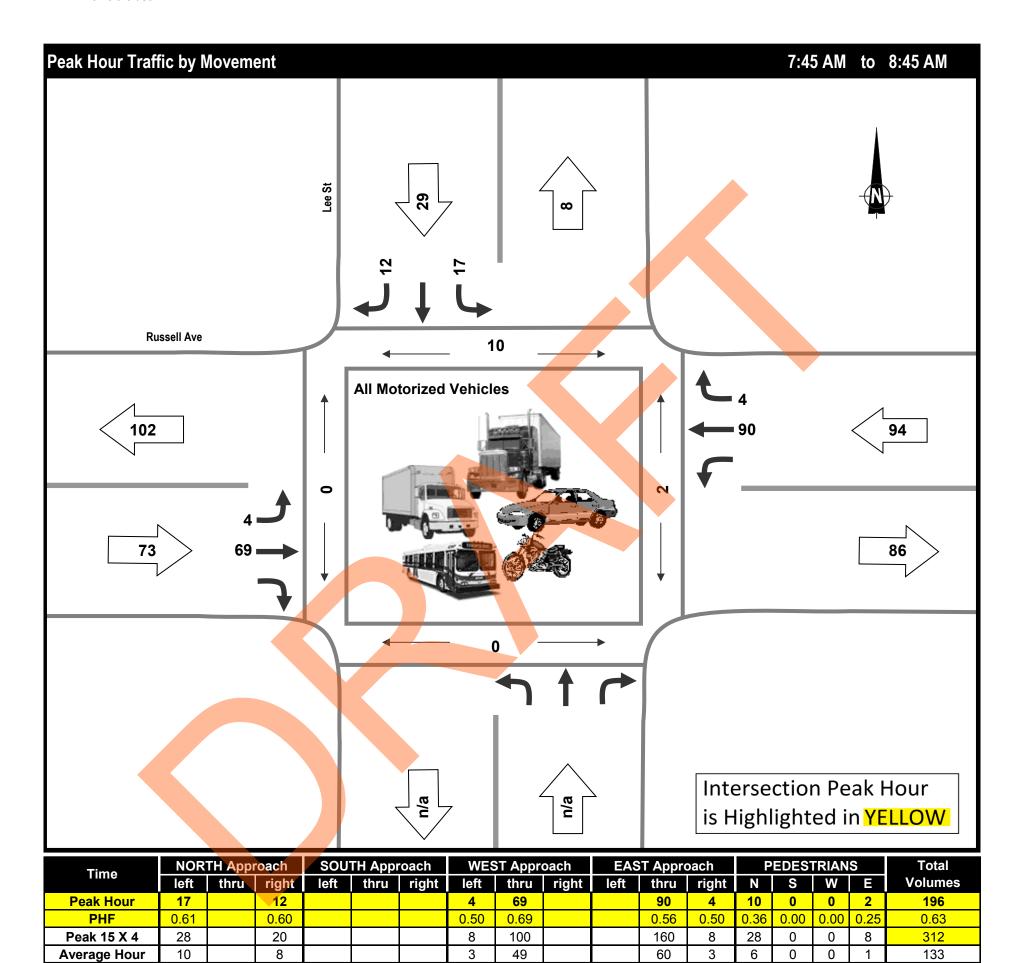
Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles

Survey Total

7:00



7:15	0	1		0	13		5	0	0	0	0	0	19
7:30	0	1		1	6		7	0	0	0	0	0	15
7:45	0	1		0	13		18	0	3	0	0	0	32
8:00	4	5		1	13		15	0	0	0	0	0	38
8:15	6	4		1	25		40	2	7	0	0	0	78
8:30	7	2		2	18		17	2	0	0	0	2	48
8:45	2	1		0	4		15	1	1	0	0	0	23



Survey Total

19

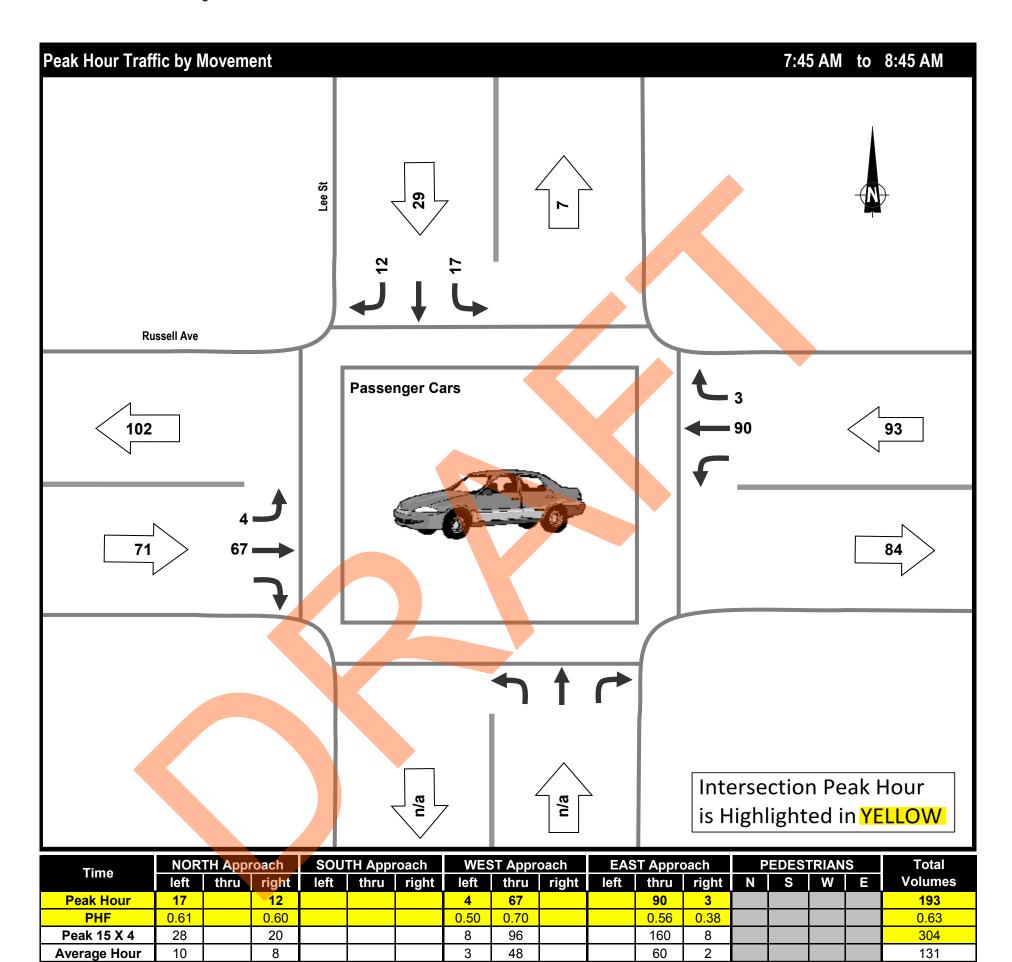
15

Lee St & Russell Ave

Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



7:00	0	0		0	6		3	0			9	l
7:15	0	1		0	13		5	0			19	1
7:30	0	1		1	6		7	0			15	1
7:45	0	1		0	13		18	0			32	l
8:00	4	5		1	12		15	0			37	1
8:15	6	4		1	24		40	1			76	1
8:30	7	2		2	18		17	2			48	1
8:45	2	1		0	4		15	1			23	1

96

120

4

259



Average Hour

Survey Total

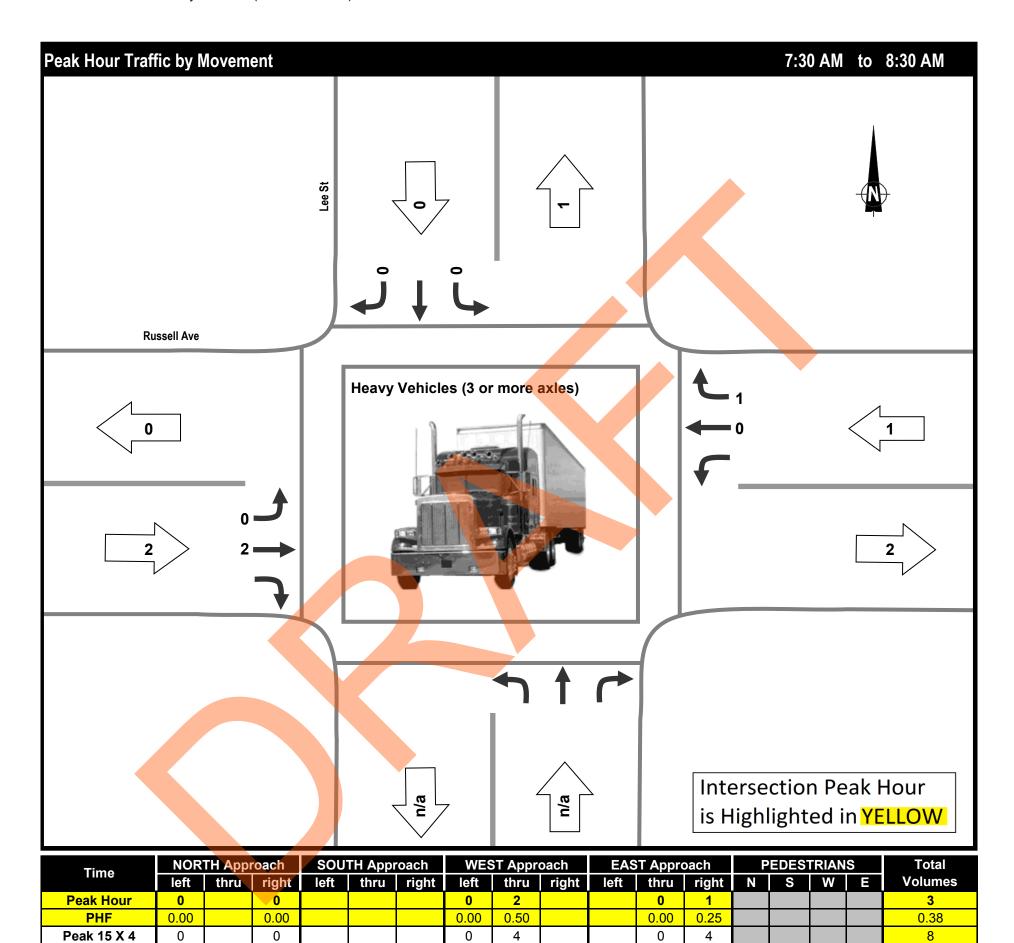
7:00

Lee St & Russell Ave

Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



7:15	0	0		0	0		0	0			0
7:30	0	0		0	0		0	0			0
7:45	0	0		0	0		0	0			0
8:00	0	0		0	1		0	0			1
8:15	0	0		0	1		0	1			2
8:30	0	0		0	0		0	0			0
8:45	0	0		0	0		0	0			0



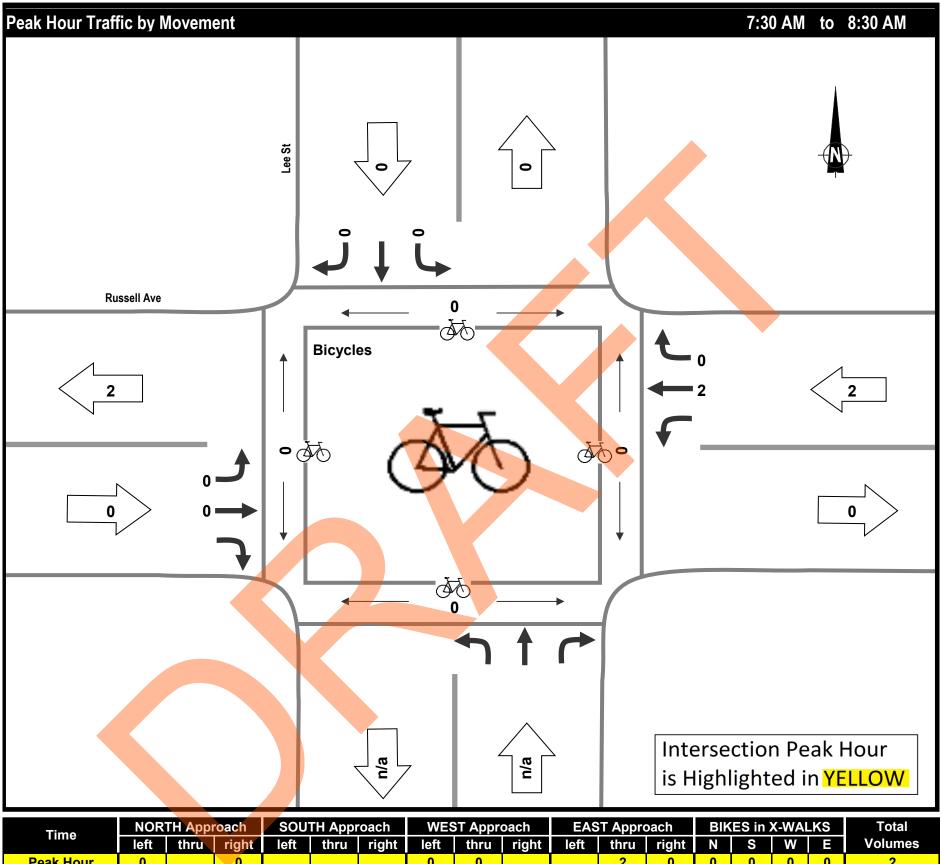
Lee St & Russell Ave

Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



	left	thru	right	Ν	S	W	Е	Volumes									
Peak Hour	0		0				0	0			2	0	0	0	0	0	2
PHF	0.00		0.00				0.00	0.00			0.50	0.00	0.00	0.00	0.00	0.00	0.50
Peak 15 X 4	0		0				0	0			4	0	0	0	0	0	4
Average Hour	0		0				0	0			1	0	0	0	0	0	1
Survey Total	0		0				0	0			2	0	0	0	0	0	2
7:00	0		0				0	0			0	0	0	0	0	0	0

7:15	0	0		0	0		0	0	0	0	0	0	0
7:30	0	0		0	0		0	0	0	0	0	0	0
7:45	0	0		0	0		0	0	0	0	0	0	0
8:00	0	0		0	0		1	0	0	0	0	0	1
8:15	0	0		0	0		1	0	0	0	0	0	1
8:30	0	0		0	0		0	0	0	0	0	0	0
8:45	0	0		0	0		0	0	0	0	0	0	0

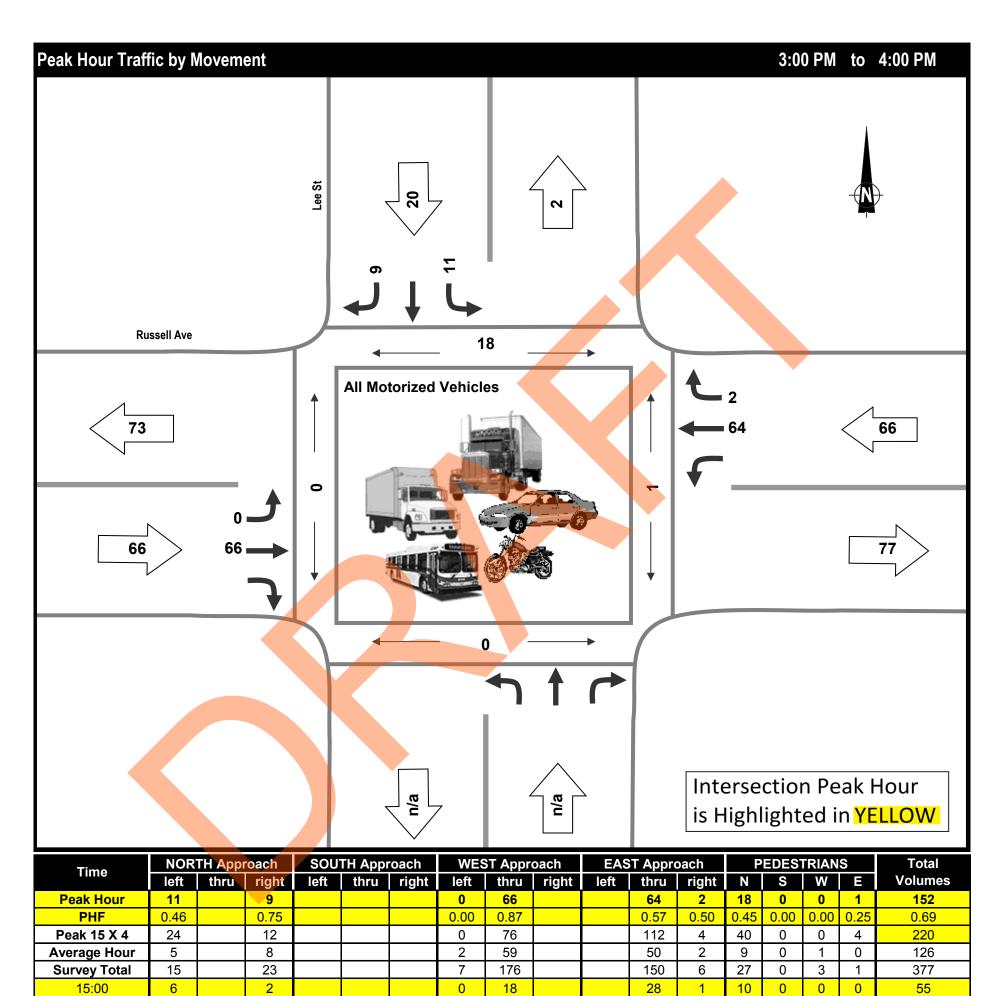


Lee St & Russell Ave

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles



3				13			11		3	0	0		27
3			0	16			14	0	5	0	0	0	36
2			0	19			11	0	0	0	0	0	34
0			1	14			17	1	2	0	0	0	34
3			1	16			19	0	1	0	0	0	39
4			1	13			15	0	0	0	0	0	34
0			2	14			5	0	0	0	0	0	22
2			0	20			7	0	0	0	0	0	30
2			1	11			13	2	4	0	0	0	29
0			0	16			5	0	1	0	0	0	21
3			1	6			5	1	1	0	3	0	16
	3 4 0 2 2 0	3 4 0 2 2 0	3 4 0 2 2 0	0 1 3 1 4 1 0 2 2 0 2 1 0 0 2 0 0 0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{bmatrix} 0 \\ 3 \\ 4 \\ 0 \\ 2 \\ 2 \\ 0 \\ 2 \\ 0 \end{bmatrix} $ $ \begin{bmatrix} 1 \\ 14 \\ 16 \\ 1 \\ 13 \\ 2 \\ 14 \\ 0 \\ 20 \\ 2 \\ 1 \\ 11 \\ 11 \\ 0 \end{bmatrix} $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{bmatrix} 0 & \\ 3 & \\ 4 & \\ 0 & \\ 2 & \\ 2 & \\ 0 & \\ 2 & \\ 0$	$ \begin{bmatrix} 0 & 0 \\ 3 & 0 \\ 4 & 0 \\ 0 & 2 \\ 2 & 2 \\ 0 & 0 \end{bmatrix} $ $ \begin{bmatrix} 1 & 14 \\ 1 & 16 \\ 1 & 13 \\ 2 & 14 \\ 0 & 20 \\ 1 & 11 \\ 11 \end{bmatrix} $ $ \begin{bmatrix} 17 & 1 \\ 19 & 0 \\ 15 & 0 \\ 20 \\ 7 & 0 \\ 1 & 11 \\ 13 & 2 \\ 0 \end{bmatrix} $	$ \begin{bmatrix} 0 \\ 3 \\ 4 \\ 0 \\ 2 \\ 2 \\ 0 \end{bmatrix} $	$ \begin{bmatrix} 0 & 0 \\ 3 & 0 \\ 4 & 0 \\ 0 & 2 \\ 2 & 2 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 14 & 14 \\ 16 & 19 & 0 & 1 \\ 13 & 15 & 0 & 0 \\ 2 & 14 & 5 & 0 & 0 \\ 0 & 20 & 7 & 0 & 0 \\ 0 & 20 & 7 & 0 & 0 \\ 1 & 11 & 13 & 2 & 4 & 0 \\ 0 & 16 & 5 & 0 & 1 & 0 \end{bmatrix} $	$ \begin{bmatrix} 0 & 0 \\ 3 & 0 \\ 4 & 0 \\ 0 & 4 \\ 2 & 2 \\ 2 & 2 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 14 \\ 16 \\ 1 & 16 \\ 1 & 13 \\ 2 & 14 \\ 0 & 20 \\ 1 & 11 \\ 0 \end{bmatrix} \begin{bmatrix} 17 & 1 & 2 & 0 & 0 \\ 19 & 0 & 1 & 0 & 0 \\ 15 & 0 & 0 & 0 & 0 \\ 5 & 0 & 0 & 0 & 0 \\ 7 & 0 & 0 & 0 & 0 \\ 7 & 0 & 0 & 0 & 0 \\ 11 & 11 \\ 13 & 2 & 4 & 0 & 0 \\ 13 & 2 & 4 & 0 & 0 \\ 0 & 16 \end{bmatrix} $	0 1 14 17 1 2 0 0 0 3 1 16 19 0 1 0 0 0 4 1 13 15 0 0 0 0 0 2 14 2 14 15 0 0 0 0 0 2 14 13 2 14 5 0 0 0 0 0 2 14 11 13 2 4 0 0 0 2 14 11 11 13 2 4 0 0 0 2 0 16 5 0 1 0 0 0



Average Hour

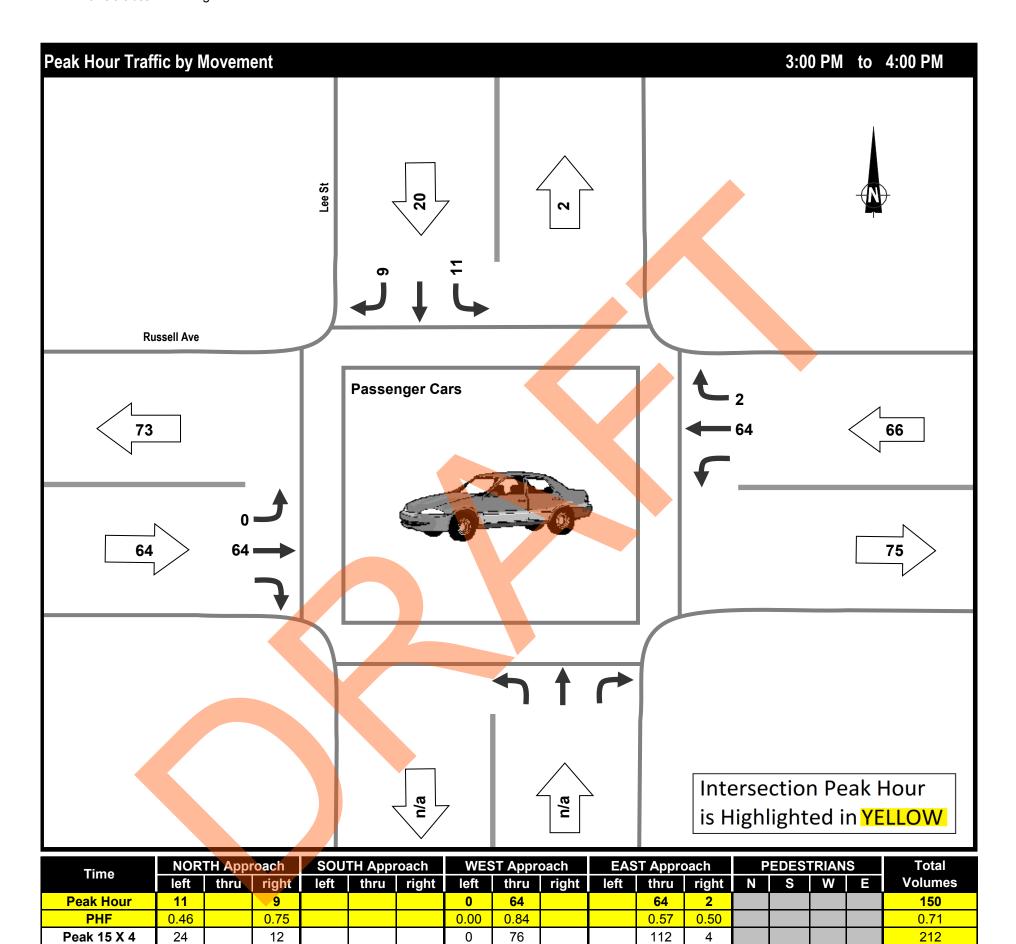
Survey Total

Lee St & Russell Ave

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



15:00	6	2		0	16		28	1			53
15:15	0	2		0	13		11	1			27
15:30	3	3		0	16		14	0			36
15:45	2	2		0	19		11	0			34
16:00	1	0		1	14		17	1			34
16:15	0	3		1	16		19	0			39
16:30	1	4		1	13		15	0			34
16:45	1	0		2	13		5	0			21
17:00	1	2		0	20		7	0			30
17:15	0	2		1	11		13	2			29
17:30	0	0		0	16		5	0			21
17:45	0	3		1	6		5	1			16



Lee St & Russell Ave

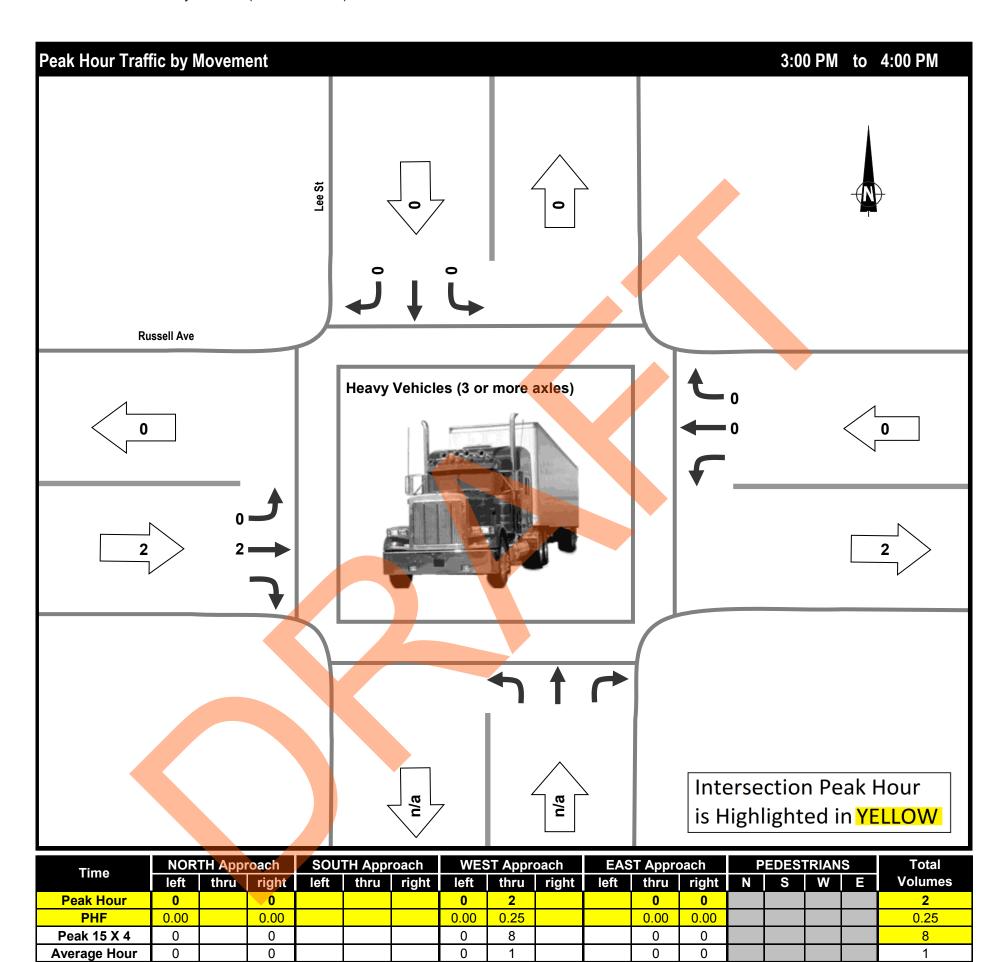
Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)

Survey Total

15:00



15:15	0	0		0	0		0	0			0
15:30	0	0		0	0		0	0			0
15:45	0	0		0	0		0	0			0
16:00	0	0		0	0		0	0			0
16:15	0	0		0	0		0	0			0
16:30	0	0		0	0		0	0			0
16:45	0	0		0	1		0	0			1
17:00	0	0		0	0		0	0			0
17:15	0	0		0	0		0	0			0
17:30	0	0		0	0		0	0			0
17:45	0	0		0	0		0	0			0



Survey Total

15:00

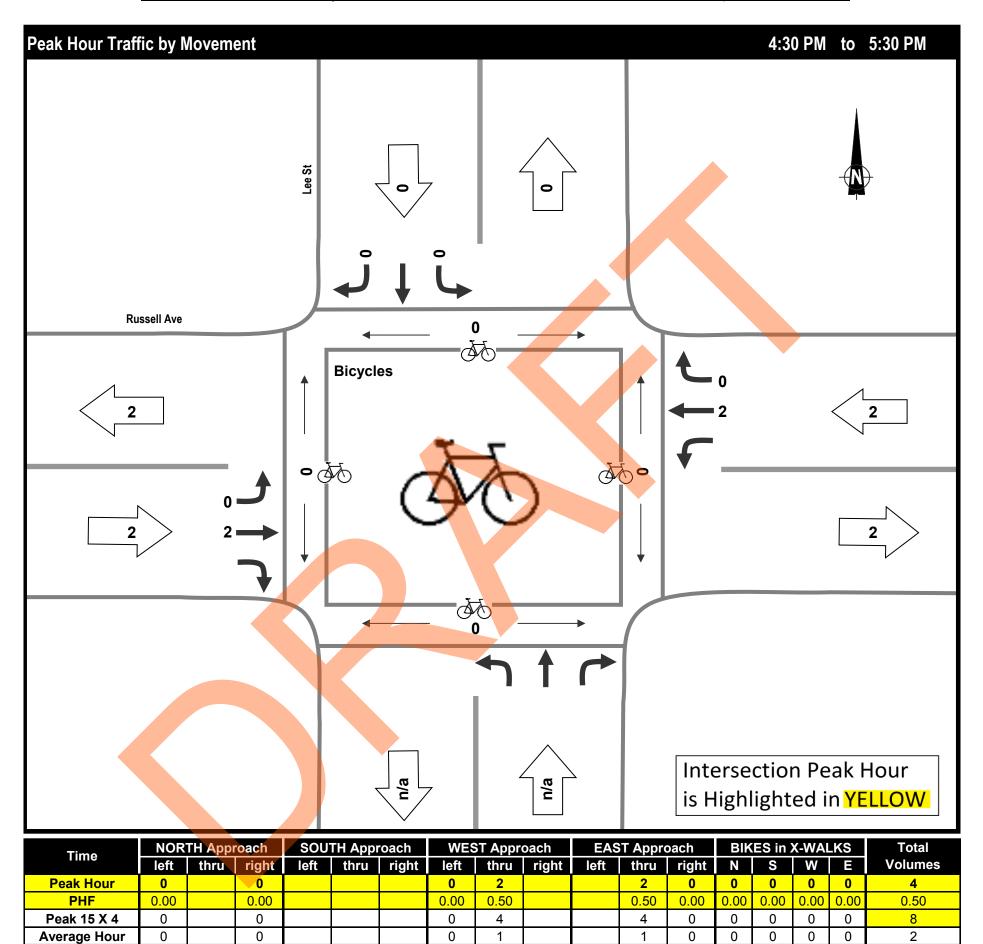
Lee St & Russell Ave

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



15:15	0	0		0	0		0	0	0	0	0	0	0
15:30	0	0		0	0		0	0	0	0	0	0	0
15:45	0	0		0	2		0	0	0	0	0	0	2
16:00	0	0		0	0		0	0	0	0	0	0	0
16:15	0	0		0	0		0	0	0	0	0	0	0
16:30	0	0		0	0		0	0	0	0	0	0	0
16:45	0	0		0	0		1	0	0	0	0	0	1
17:00	0	0		0	1		1	0	0	0	0	0	2
17:15	0	0		0	1		0	0	0	0	0	0	1
17:30	0	0		0	0		0	0	0	0	0	0	0
17:45	0	0		0	0		0	0	0	0	0	0	0



Friday, September 22, 2017 Vehicle Classification Summary

Project: Municipality: #5740: Russell Ave TIA White Rock Weather: Clear, Cloudy

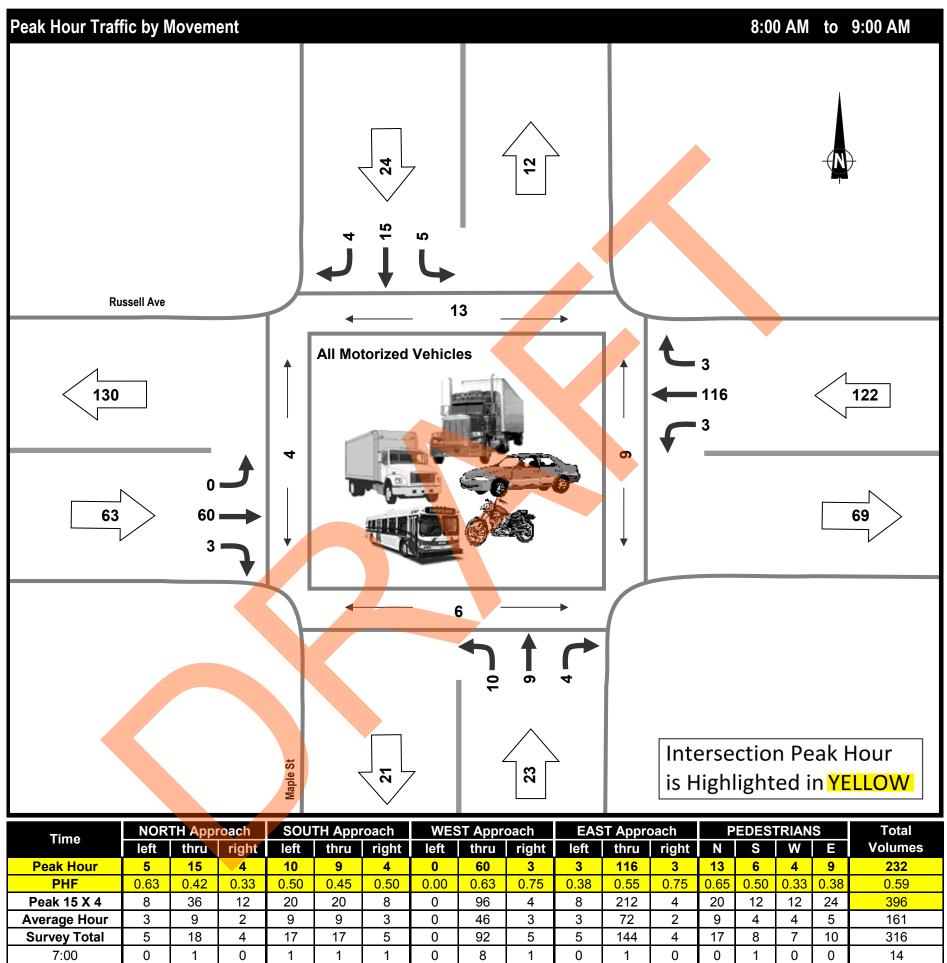
			Ve	hicle Classificat	ion	
Time Period	Entering Intersection	Passenger Cars	Heavy Vehicles (3 or more axles)			Total
Morning	Volume	316	0			316
(07:00 - 09:00)	%	100.0%	0.0%			100.0%
Midday	Volume					
(00:00 - 00:00)	%					
Afternoon	Volume	448	0			448
(15:00 - 18:00)	%	100.0%	0.0%			100.0%
Total	Volume	764	0			764
(5 Hours)	%	100.0%	0.0%			100.0%



Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: All Motorized Vehicles



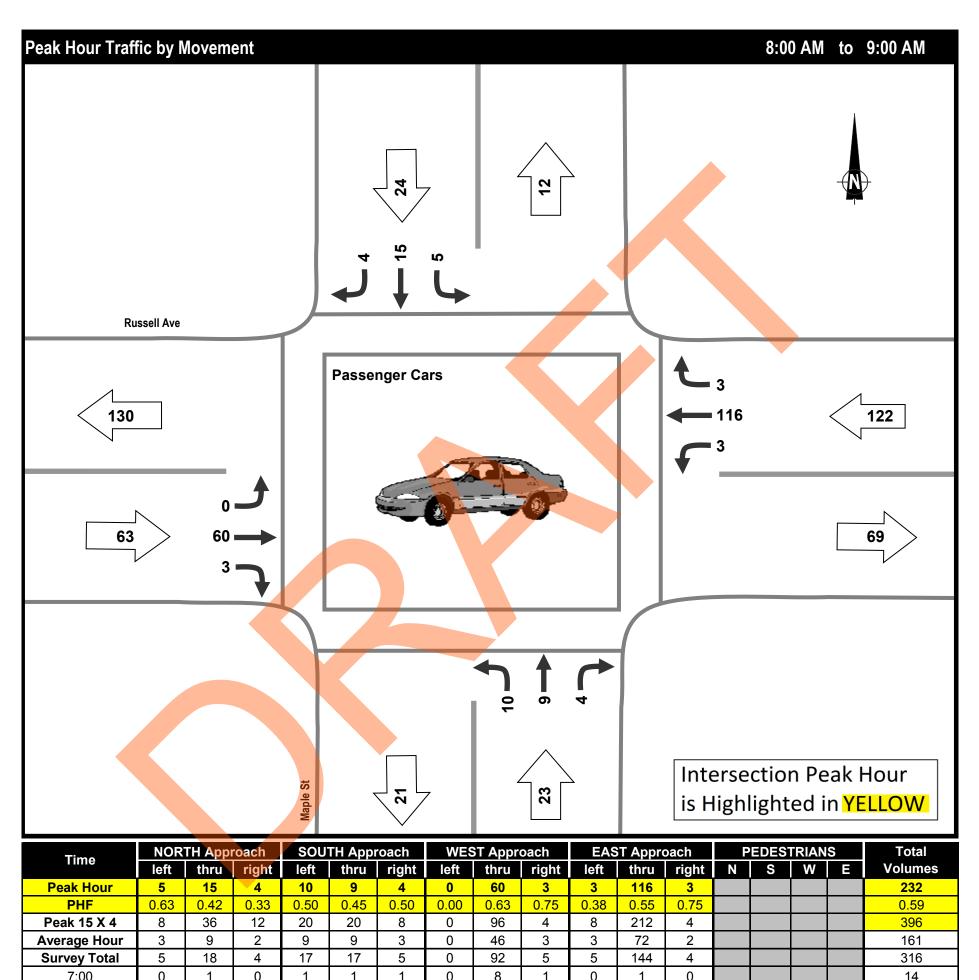
7:15	0	0	0	3	2	0	0	2	0	0	7	1	1	1	0	1	15
7:30	0	1	0	2	5	0	0	10	0	2	11	0	0	0	0	0	31
7:45	0	1	0	1	0	0	0	12	1	0	9	0	3	0	3	0	24
8:00	2	1	3	0	1	2	0	9	1	0	19	0	3	3	0	1	38
8:15	2	4	1	5	5	2	0	24	0	2	53	1	5	2	3	6	99
8:30	1	9	0	4	2	0	0	13	1	1	31	1	2	1	1	1	63
8:45	0	1	0	1	1	0	0	14	1	0	13	1	3	0	0	1	32



Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: Passenger Cars



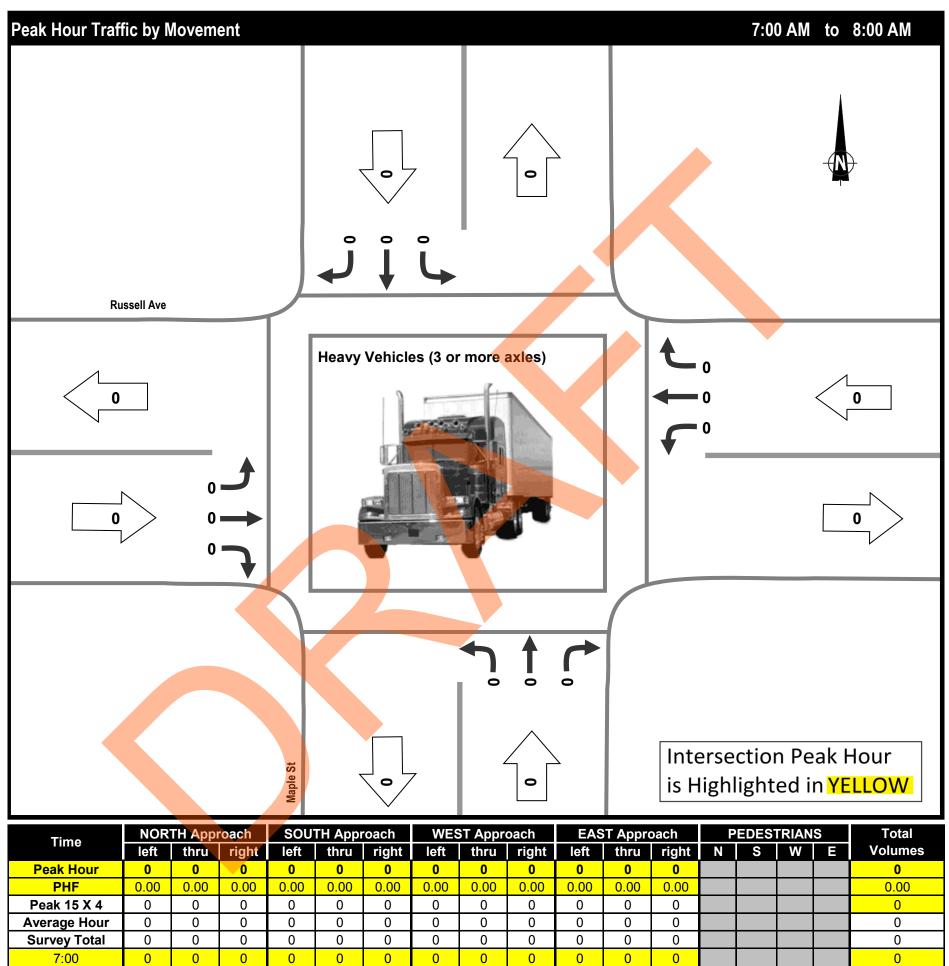
7.00	U		0				0	0		U		0			17
7:15	0	0	0	3	2	0	0	2	0	0	7	1			15
7:30	0	1	0	2	5	0	0	10	0	2	11	0			31
7:45	0	1	0	1	0	0	0	12	1	0	9	0			24
8:00	2	1	3	0	1	2	0	9	1	0	19	0			38
8:15	2	4	1	5	5	2	0	24	0	2	53	1			99
8:30	1	9	0	4	2	0	0	13	1	1	31	1			63
8:45	0	1	0	1	1	0	0	14	1	0	13	1			32



Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



7:15	0	0	0	0	0	0	0	0	0	0	0	0			0
7:30	0	0	0	0	0	0	0	0	0	0	0	0			0
7:45	0	0	0	0	0	0	0	0	0	0	0	0			0
8:00	0	0	0	0	0	0	0	0	0	0	0	0			0
8:15	0	0	0	0	0	0	0	0	0	0	0	0			0
8:30	0	0	0	0	0	0	0	0	0	0	0	0			0
8:45	0	0	0	0	0	0	0	0	0	0	0	0			0

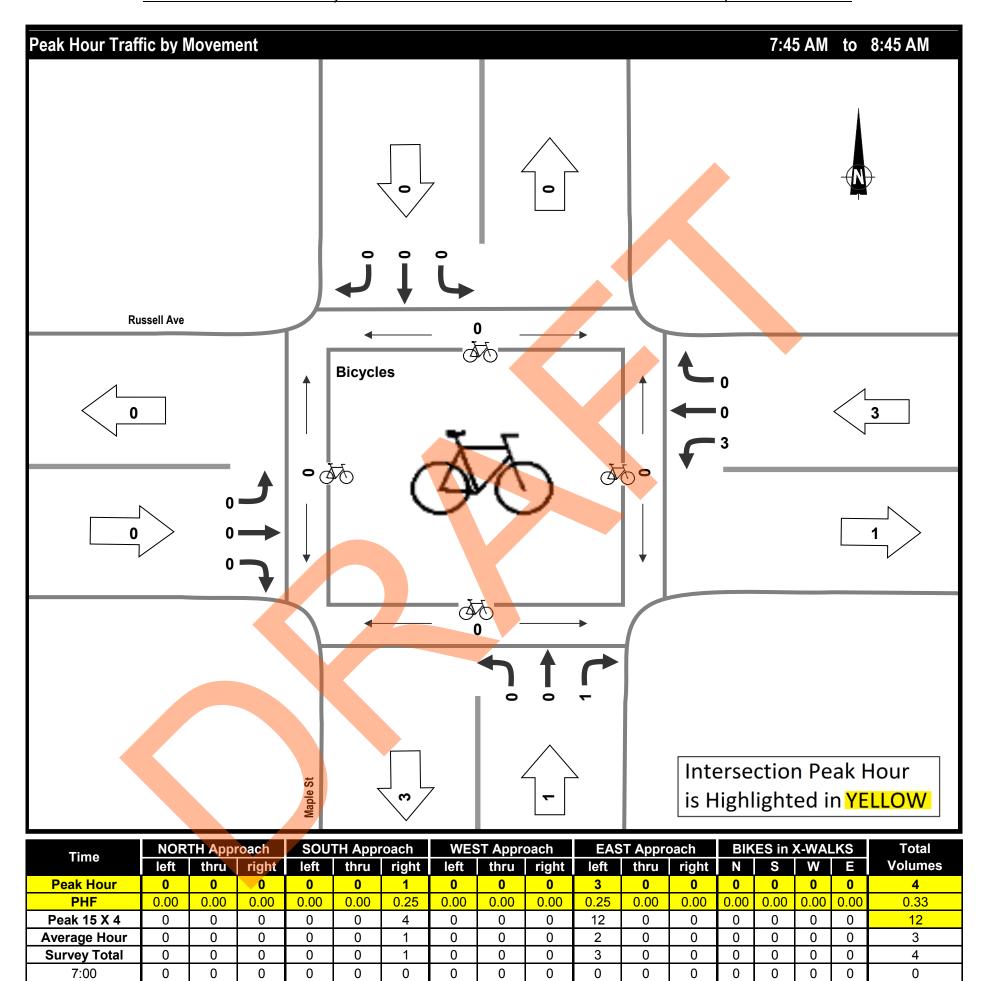


Friday, September 22, 2017

Morning Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



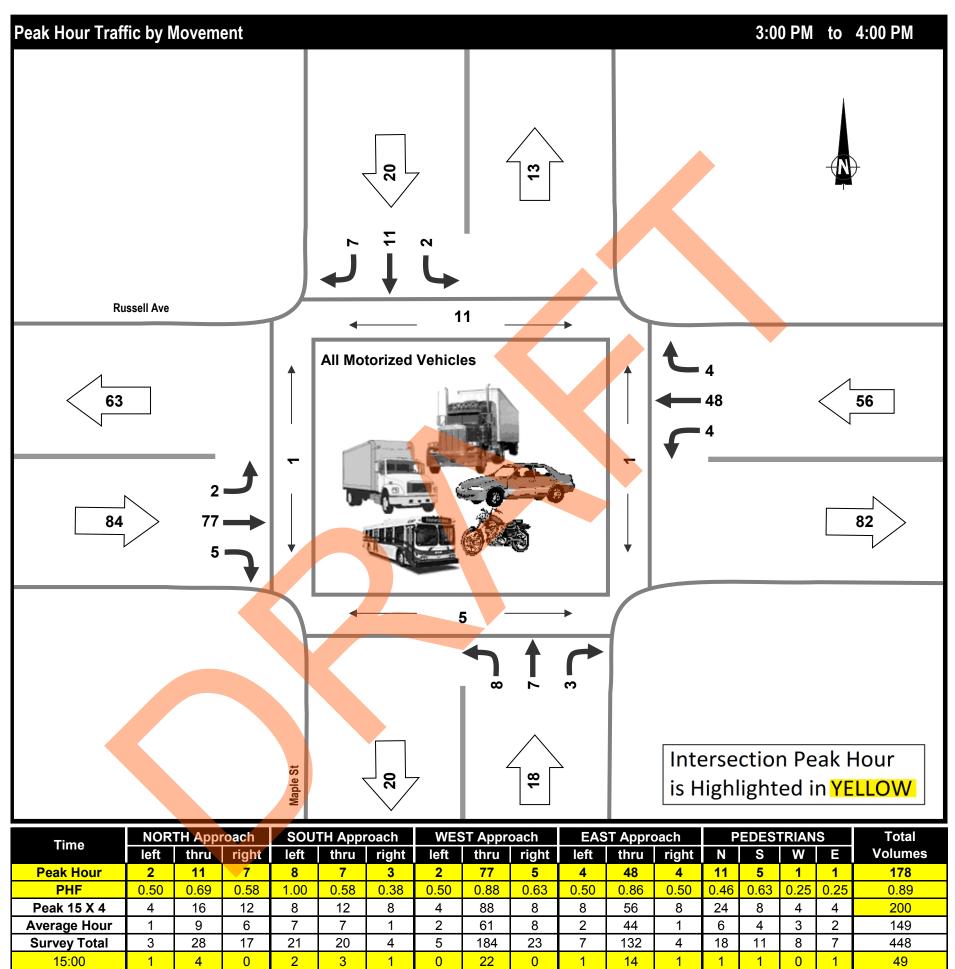
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: All Motorized Vehicles



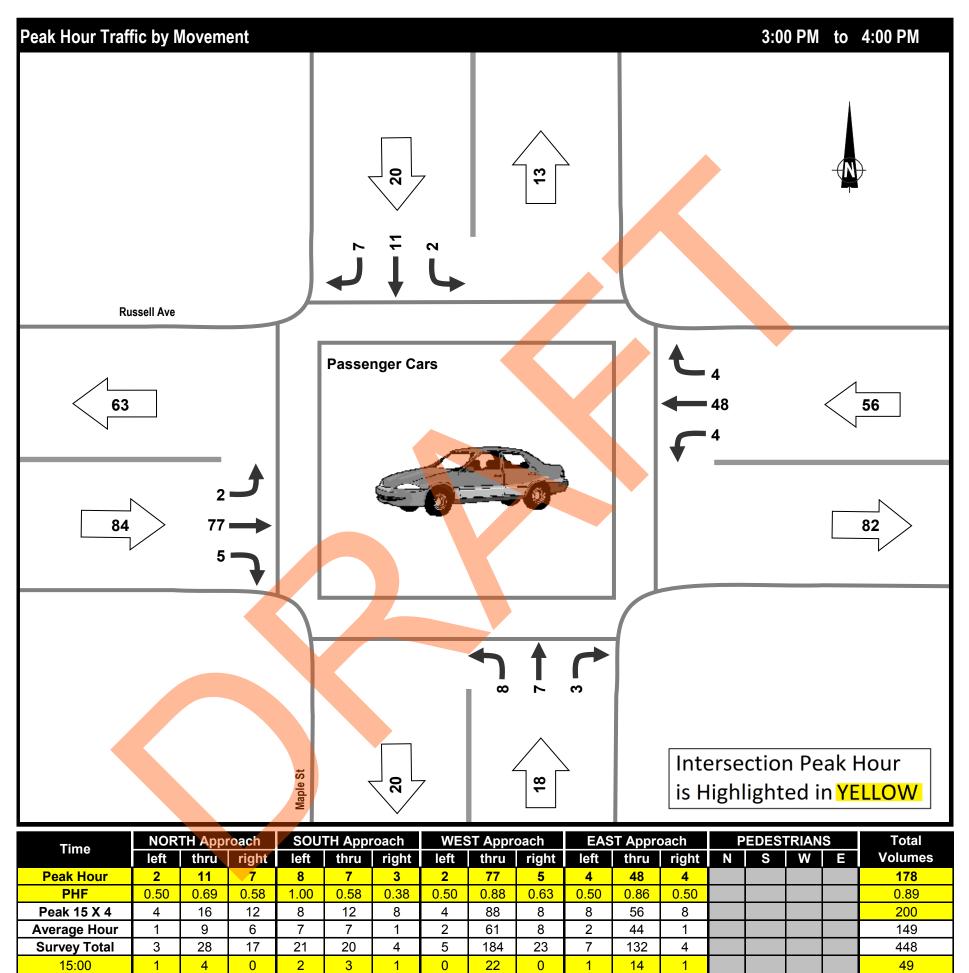
15:15	1	2	1	2	1	2	1	20	2	2	14	2	1	2	0	0	50
15:30	0	2	3	2	0	0	0	19	1	0	11	0	3	1	1	0	38
15:45	0	3	3	2	3	0	1	16	2	1	9	1	6	1	0	0	41
16:00	0	2	2	1	3	1	0	9	4	0	14	0	0	3	3	1	36
16:15	0	1	1	5	2	0	0	11	1	1	6	0	0	0	1	0	28
16:30	0	1	1	3	2	0	1	16	3	0	12	0	0	0	0	0	39
16:45	0	4	2	1	2	0	0	13	2	1	14	0	3	0	0	2	39
17:00	0	6	2	3	2	0	0	21	0	0	10	0	2	0	0	1	44
17:15	0	2	1	0	0	0	1	10	2	0	13	0	0	1	1	1	29
17:30	0	1	0	0	0	0	0	14	2	1	8	0	0	1	0	0	26
17:45	1	0	1	0	2	0	1	13	4	0	7	0	2	1	2	1	29



Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: Passenger Cars



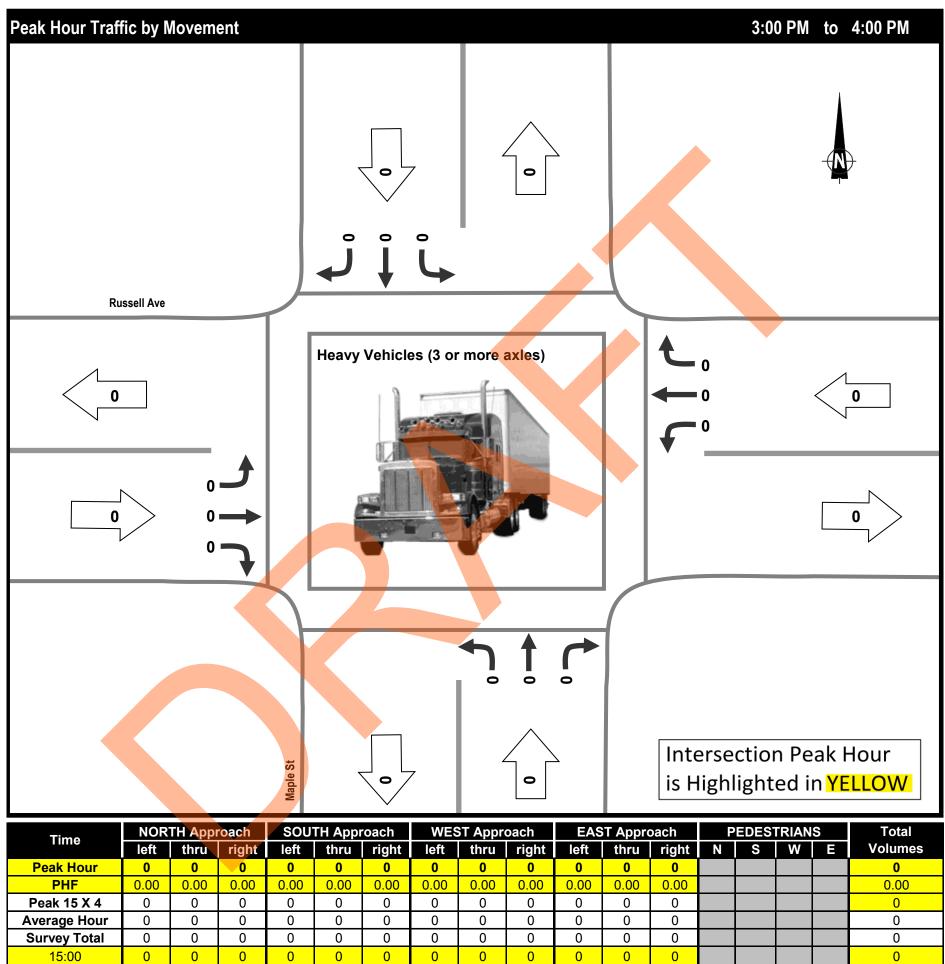
15	:15	1	2	1	2	1	2	1	20	2	2	14	2			50
15	:30	0	2	3	2	0	0	0	19	1	0	11	0			38
15	:45	0	3	3	2	3	0	1	16	2	1	9	1			41
16	:00	0	2	2	1	3	1	0	9	4	0	14	0			36
16	:15	0	1	1	5	2	0	0	11	1	1	6	0			28
16	:30	0	1	1	3	2	0	1	16	3	0	12	0			39
16	:45	0	4	2	1	2	0	0	13	2	1	14	0			39
17	:00	0	6	2	3	2	0	0	21	0	0	10	0			44
17	:15	0	2	1	0	0	0	1	10	2	0	13	0			29
17	:30	0	1	0	0	0	0	0	14	2	1	8	0			26
17	:45	1	0	1	0	2	0	1	13	4	0	7	0			29



Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



15:15	0	0	0	0	0	0	0	0	0	0	0	0			0
15:30	0	0	0	0	0	0	0	0	0	0	0	0			0
15:45	0	0	0	0	0	0	0	0	0	0	0	0			0
16:00	0	0	0	0	0	0	0	0	0	0	0	0			0
16:15	0	0	0	0	0	0	0	0	0	0	0	0			0
16:30	0	0	0	0	0	0	0	0	0	0	0	0			0
16:45	0	0	0	0	0	0	0	0	0	0	0	0			0
17:00	0	0	0	0	0	0	0	0	0	0	0	0			0
17:15	0	0	0	0	0	0	0	0	0	0	0	0			0
17:30	0	0	0	0	0	0	0	0	0	0	0	0			0
17:45	0	0	0	0	0	0	0	0	0	0	0	0			0

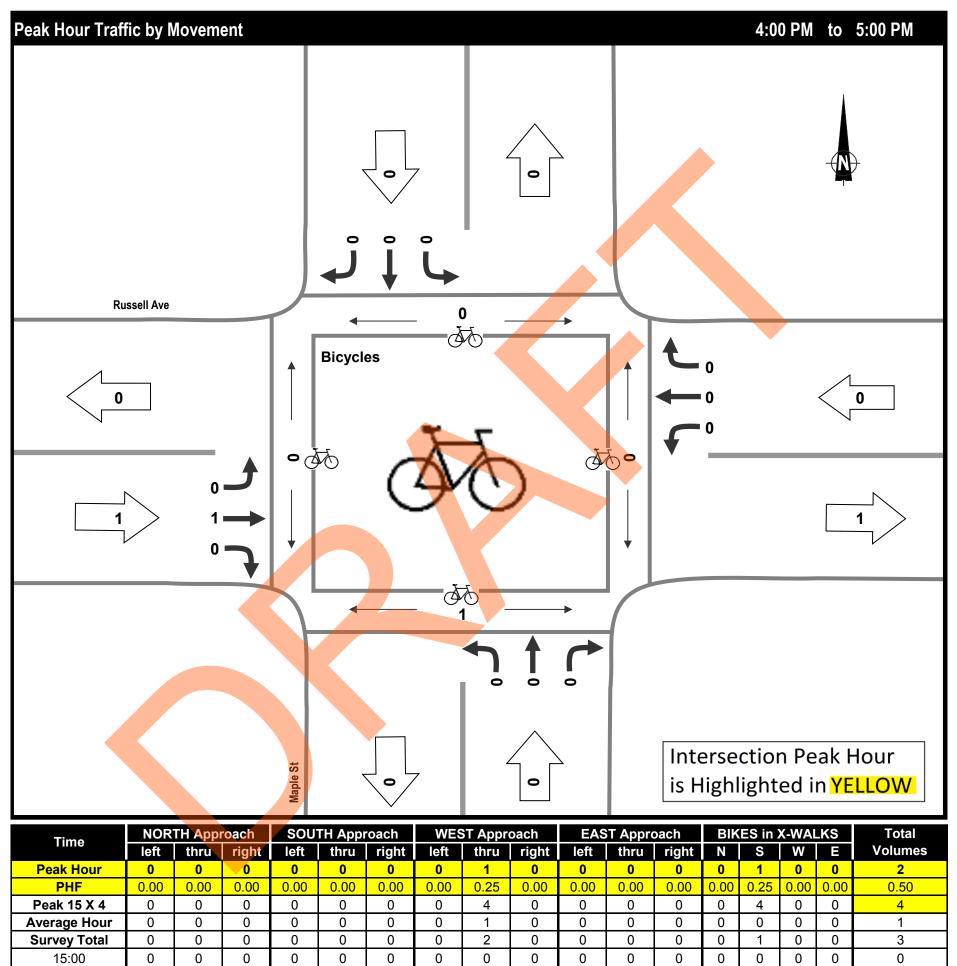


Friday, September 22, 2017

Afternoon Peak Period

Project: #5740: Russell Ave TIA Municipality: White Rock Weather: Clear, Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix C Capacity Analysis Worksheets

Analysis Year 2018 Time Analyzed AM E Intersection Orientation East-	Base West hview	T 2 679 679	R 3 0 0 TR 3	¢ •	or Street Ed	Inters Jurisc East/ North Peak Analy	Inform ection iction West Strets Hour Fac sis Time R 6 0 TR 11	eet Street :tor	Northi L 7 0	City or Average of City of Cit	R 9 0	ROck	Southi L 10 0	T 11 1 LTR	R 12 0
Agency/Co. CTS Date Performed 12/11 Analysis Year 2018 Time Analyzed AM E Intersection Orientation East- Project Description Beac Lanes Intersection Orientation Vehicle Volumes and Adjuster Keiner Approach U Movement U Proportin Time Blocked 0 Configuration 0 Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked 0 Percent Grade (%) Right Tum Chanelized Median Type J Storage C Critical Headway (sec) C Critical Headway (sec) C Follow-Up Headway (sec) 1	Saase West hview Ents East L 1 0 LT 5	T 2 2	R 3 0 TR		Westl U 4 0 LT 24	Jurisci East/ North Peak Analy Salvest	Iction West Stre /South S Hour Face sis Time R 6 0 TR	tor Period (Northi L 7 0	City or Average of City of Cit	x White billuff Ro t	ROck	Southi L 10 0	T 11 1 LTR	12 0
Date Performed 12/11 Analysis Year 2018 Time Analyzed AM E Intersection Orientation East- Project Description Beac Lanes Intersection Orientation Vehicle Volumes and Adjuster Reginer Approach U Movement U Projert Heavy Vehicles (%) P Propert Heavy Vehicles (%) P Proportion Time Blocked P Percent Heavy Vehicles (%) P Percent Heavy Vehicles (%) P Proportion Time Blocked P Percent Heavy Vehicles (%) P Percent Grade (%) P Base Critical Headway (sec) P Gritical Headway (sec) P Base Follow-Up Headway (sec) P	Saase West hview Ents East L 1 0 LT 5	T 2 2	R 3 0 TR		Westl U 4 0 LT 24	East/1 North Peak Analy S-West	West Strett /South S Hour Face sis Time R 6 0 TR	tor Period (Northi L 7 0	bound T 8 1 LTR	R 9 0		L 10 0	T 11 1 LTR	12 0
Analysis Year 2018 Time Analyzed AM B Intersection Orientation East- Project Description Beac Lanes Search Vehicle Volumes and Adjust Karten Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) Piorent Proportion Time Blocked 0 Percent Heavy Vehicle (%) 10 Proportion Time Blocked 0 Right Tum Channelized 10 Median Type Storage 10 Critical and Follow-up Headway (sec) 10 Base Erollow-Up Headway (sec) 10 Follow-Up Headway (sec) 10	Saase West hview Ents East L 1 0 LT 5	T 2 2	R 3 0 TR		Westl 4 0 L L 4 2 4	North Peak Analy S-West	/South S Hour Face sis Time R 6 0 TR	tor Period (Northi L 7 0	Lee SI 0.80 0.25	k R 9 0 0		L 10 0	T 11 1 LTR	12 0
Time Analyzed AM I Intersection Orientation East- Project Description Beac Lanes Search Vehicle Volumes and Adjust Head Approach M Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) Percent Heavy Vehicles (%) Proproint Time Blocked Percent Grade (%) Right Tum Channelized M Median Type Storage T Critical and Follow-up Headway (sec) C Follow-Up Headway (sec) 1	3ase West hview Entry East 1 0 LT 5	T 2 2	R 3 0 TR		Westl 4 0 L L 4 2 4	Peak Analy Starwest Starwest	R 6 0 TR	tor	Northi L 7 0	0.80 0.25	R 9 0	U	L 10 0	T 11 1 LTR	12 0
Intersection Orientation East- Project Description Beac Lanes James Vehicle Volumes and Adjutter Vehicle Volumes and Adjutter Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 10 Proportion Time Blocked 10 Proportion Time Blocked 10 Prercent Grade (%) 10 Right Tum Channelized 10 Median Type Storage 10 Critical and Follow-up Headway (sec) 10 Base Critical Headway (sec) 10 Base Follow-Up Headway (sec) 10 Follow-Up Headway (sec) 10	West hview Easti L 1 0 LT 5	T 2 2	R 3 0 TR		Westl 4 0 L L 4 2 4	Analy Ananaly Anan	R 6 0 TR	Period (Northi L 7 0	0.25 Dound T 8 1 LTR	9	U	L 10 0	T 11 1 LTR	12 0
Project Description Bear Lanes Image: Constraint of the second of the s	hview Easti L 1 0 LT 5	T 2 2	R 3 0 TR		Westl 4 0 L L 4 2 4	sa-West	R 6 0 TR		Northi L 7 0	bound T 8 1 LTR	9	U	L 10 0	T 11 1 LTR	12 0
Lanes Vehicle Volumes and Adjustme Approach Movement U Priority 1U Number of Lanes 0 Configuration U Volume (veh/h) 0 Percent Heavy Vehicles (%) 0 Proportion Time Blocked 0 Percent Grade (%) 0 Right Tum Channelized 0 Median Type Storage 0 Critical and Follow-up Heatway (sec) 0 Base Critical Headway (sec) 0 Critical Headway (sec) 0 Base Follow-Up Headway (sec) 0 Follow-Up Headway (sec) 0	Easti L 1 0 LT 5	T 2 2	R 3 0 TR		Westl U 4 0 LT 24	st-West bound T 5 2	6 0 TR	U	L 7 0	T 8 1 LTR	9	U	L 10 0	T 11 1 LTR	12 0
Vehicle Volumes and Adjutestere Approach Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 10 Proportion Time Blocked 0 Percent Heavy Vehicles (%) 0 Percent Grade (%) 0 Right Tum Channelized 0 Median Type Storage 0 Ease Critical Headway (sec) 0 Critical Headway (sec) 0 Base Follow-Up Headway (sec) 0 Follow-Up Headway (sec) 0	East L 1 0 LT 5	T 2 2	R 3 0 TR		Westl U 4 0 LT 24	st-West bound T 5 2	6 0 TR	U	L 7 0	T 8 1 LTR	9	U	L 10 0	T 11 1 LTR	12 0
Approach U Movement U Priority 1U Number of Lanes 0 Configuration U Volume (veh/h) P Proportion Time Blocked P Percent Grade (%) Right Tum Chanelized Median Type Storage E Critical and Follow-up Heatway (sec) C Critical Headway (sec) E Sase Follow-Up Headway (sec) E	East L 1 0 LT 5	T 2 2	3 0 TR	U 4U	Westl L 4 0 LT 24	T 5 2	6 0 TR	U	L 7 0	T 8 1 LTR	9	U	L 10 0	T 11 1 LTR	12 0
Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 1 Percent Heavy Vehicles (%) 1 Proportion Time Blocked 1 Percent Grade (%) 1 Right Tum Channelized 1 Median Type Storage 1 Critical and Follow-up Heatway (sec) 1 Critical Headway (sec) 1 Follow-Up Headway (sec) 1	L 1 0 LT 5	T 2 2	3 0 TR	4U	L 4 0 LT 24	T 5 2	6 0 TR	U	L 7 0	T 8 1 LTR	9	U	L 10 0	T 11 1 LTR	12 0
Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 1 Percent Heavy Vehicles (%) 1 Proportion Time Blocked 1 Percent Grade (%) 1 Right Tum Channelized 1 Median Type Storage 1 Ease Critical Headway (sec) 1 Critical Headway (sec) 1 Base Follow-Up Headway (sec) 1 Follow-Up Headway (sec) 1	1 0 LT 5	2	3 0 TR	4U	4 0 LT 24	5	6 0 TR	U	7	8 1 LTR	9	U	10	11 1 LTR	12 0
Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	0 LT 5	2	0 TR	_	0 LT 24	2	0 TR		0	1 LTR	0		0	1 LTR	0
Configuration Image: Configuration Volume (veh/h) Image: Configuration Percent Heavy Vehicles (%) Image: Configuration Proportion Time Blocked Image: Configuration Percent Grade (%) Image: Configuration Right Tum Channelized Image: Configuration Median Type Storage Image: Configuration Critical and Follow-up Headway (sec) Image: Configuration Base Critical Headway (sec) Image: Configuration Follow-Up Headway (sec) Image: Configuration	LT 5		TR	0	LT 24		TR			LTR				LTR	
Volume (veh/h) Image: Constraint of the second of the se	5	679	_		24	847									33
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Heatway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		679	3			847	11								33
Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Heatway Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	2				2				1	1	9		6	1	
Percent Grade (%) Image: Comparison of the second of the									2	2	2		2	2	2
Right Tum Channelized Median Type Storage Critical and Follow-up Heatway Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		1													
Median Type Storage Critical and Follow-up Headway Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)									(о с					
Critical and Follow-up Headwar Base Critical Headwar (sec) Critical Headwar (sec) Base Follow-Up Headwar (sec) Follow-Up Headwar (sec)															
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			Ur	divided				L							
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	iys												K		
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Follow-Up Headway (sec)	4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
	2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Delay, Queue Length, and Leve	2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
- enay, queue rengin, and rere	l of S	ervic	e												
Flow Rate, v (veh/h)	6	1			30					14				50	
Capacity, c (veh/h)	560				758					203				185	
v/c Ratio	0.01				0.04					0.07				0.27	
95% Queue Length, Q ₉₅ (veh)	0.0				0.1					0.2				1.0	
Control Delay (s/veh)	11.5				9.9					24.0				31.6	
Level of Service (LOS)	-			-	1					_					<u> </u>
Approach Delay (s/veh)	В				A					C				D	

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Generated: 12/19/2018 3:19:30 PM

General Information							Site									
Analyst	DG						Inters	ection			Lee St	t & Nort	h Bluff R	d		
Agency/Co.	CTS						Jurisd	liction			City of White ROck					
Date Performed	12/1	8/2018					East/\	Nest Stre	eet		North	n Bluff Ro	1			
Analysis Year	2020						North	/South S	Street		Lee St	t				
Time Analyzed	AM E	ase					Peak	Hour Fac	tor		0.80					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	hview														
Lanes																
$\langle \rangle$						or Street: Ea	st-West	4 4 4 4 4 4 4								
Vehicle Volumes and Adj	ustme		ound		1	West	oound			North	bound			South	bound	
Movement	U		Т	R	U	vvesu	Т	R	U	North	T	R	U	South	T	
Priority	10	1	2	3	40	4	5	6	0	7	8	9	0	10	11	1
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	
Configuration		LT	-	TR	0	LT	-	TR			LTR			0	LTR	
Volume (veh/h)		6	707	4		25	881	12		2	2	10		7	2	3
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	
Proportion Time Blocked																
Percent Grade (%))				0	
Right Turn Channelized															-	
Median Type Storage				Undi	l vided											_
Critical and Follow-up He	adwa	vs														
Base Critical Headway (sec)		4.1			I	4.1				7.5	6.5	6.9		7.5	6.5	6
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3
		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3
Follow-Up Headway (sec)						<u> </u>	<u> </u>									
Follow-Up Headway (sec) Delay, Queue Length, and	d Leve	l of Se	ervice													-
	d Leve	l of Se	ervice			31					18				55	
Delay, Queue Length, and	d Leve		ervice			31 735					18 131				55 148	
Delay, Queue Length, and Flow Rate, v (veh/h)	d Leve	8	ervice													
Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	8 539	ervice			735					131				148	
Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	8 539 0.01	ervice			735 0.04					131 0.13				148 0.37	
Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	d Leve	8 539 0.01 0.0	ervice			735 0.04 0.1					131 0.13 0.4				148 0.37 1.6	
Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh) Control Delay (s/veh)		8 539 0.01 0.0 11.8 B	2			735 0.04 0.1 10.1	.7			36	131 0.13 0.4 36.6 E			4	148 0.37 1.6 42.9	

HCS7 Two-Way Ston-Control Report

HCS1000 TWSC Version 7.6 Lee St & North Bluff Rd 2018_AM_B.xtw

General Information		Vay Stop-Control Report														
		Site Information Intersection Lee St & North Bluff Rd														
Analyst	DG						Inters							d		
Agency/Co.	CTS	(2010					Jurisd					f White				
Date Performed		8/2018						Nest Stre				Bluff Ro	1			
Analysis Year	2020							/South S			Lee St	[
Time Analyzed		ase+S					<u> </u>	Hour Fac		la se el	0.80					
Intersection Orientation	East-\ Beach						Anaiy	sis Time	Period (nrs)	0.25					
Project Description	Beacr	iview														
Vehicle Volumes and Adj Approach Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	Ustme U 1U 0		T 2 709	R 3 0 TR 7		Westl Vestl 29 2		R 6 0 TR 12	U	North L 7 0 12 2	bound T 8 1 LTR 2 2	R 9 0 18 2		South L 10 7 2	bound T 11 11 1 LTR 2 2	R 12 0 355 2
Proportion Time Blocked											n 🧹					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized										(0	
Percent Grade (%) Right Turn Channelized				Undi	vided	1					0				0	
Percent Grade (%) Right Tum Channelized Median Type Storage	adwa	vs		Undi	vided						0					
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He	eadwa	-		Undi	vided	41						69				69
Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	4.1		Undi	vided	4.1				7.5	6.5	6.9		7.5	6.5	6.9
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	4.1 4.14		Undi	vided	4.14				7.5	6.5 6.54	6.94		7.5 7.54	6.5 6.54	6.94
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	4.1 4.14 2.2		Undi	vided	4.14 2.2				7.5 7.54 3.5	6.5 6.54 4.0	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.14 2.2 2.22			vided	4.14				7.5	6.5 6.54	6.94		7.5 7.54	6.5 6.54	6.94
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		4.1 4.14 2.2 2.22 I of Se	ervice		vided	4.14 2.2 2.22				7.5 7.54 3.5	6.5 6.54 4.0 4.02	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		4.1 4.14 2.2 2.22 I of So 8	ervice		vided	4.14 2.2 2.22 36				7.5 7.54 3.5	6.5 6.54 4.0 4.02 40	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02 55	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		4.1 4.14 2.2 2.22 I of So 8 539	ervice		vided	4.14 2.2 2.22				7.5 7.54 3.5	6.5 6.54 4.0 4.02	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02 55 143	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Fol		4.1 4.14 2.2 2.22 I of So 8 539 0.01	ervice		vided	4.14 2.2 2.22 36 731 0.05				7.5 7.54 3.5	6.5 6.54 4.0 4.02 40 107 0.38	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02 55 143 0.38	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Capacity, c (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh)		4.1 4.14 2.2 2.22 of So 8 539 0.01 0.0	ervice		vided	4.14 2.2 2.22 36 731 0.05 0.2				7.5 7.54 3.5	6.5 6.54 4.0 4.02 40 107 0.38 1.5	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02 55 143 0.38 1.6	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Follow-Up Headway (s		4.1 4.14 2.2 2.22 1 of So 539 0.01 0.0 111.8	ervice		vided	4.14 2.2 2.22 36 731 0.05 0.2 10.2				7.5 7.54 3.5	6.5 6.54 4.0 4.02 40 107 0.38 1.5 57.8	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02 55 143 0.38 1.6 45.1	6.94 3.3
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Capacity, c (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh)		4.1 4.14 2.2 2.22 of So 539 0.01 0.0 11.8 B	ervice		vided	4.14 2.2 2.22 36 731 0.05 0.2 10.2 B	9			7.5 7.54 3.5	6.5 6.54 4.0 4.02 40 107 0.38 1.5 57.8 F	6.94 3.3		7.5 7.54 3.5	6.5 6.54 4.0 4.02 55 143 0.38 1.6 45.1 E	6.94 3.3

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Site Information General Information Analyst DG Intersection Lee St & North Bluff Rd CTS Agency/Co. Jurisdiction City of White ROck Date Performed 12/18/2018 East/West Street North Bluff Rd Analysis Year 2030 North/South Street Lee St Time Analyzed AM Base Peak Hour Factor 0.80 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description Beachview Lanes]442466 4 1 4 4 4 1447126 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound Movement U U U Т U Т R L Т R L Т R L R L Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 0 Number of Lanes 0 2 0 0 0 2 0 0 1 0 0 1 0 TR LTR LTR Configuration LT TR LT 14 Volume (veh/h) 7 842 4 30 1051 2 2 12 8 2 41 Percent Heavy Vehicles (%) 2 2 2 2 2 2 2 2 Proportion Time Blocked Percent Grade (%) 0 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 7.54 6.54 6.94 Critical Headway (sec) 4.14 4.14 7.54 6.54 6.94 3.5 4.0 Base Follow-Up Headway (sec) 2.2 2.2 3.5 4.0 3.3 3.3 Follow-Up Headway (sec) 2.22 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 9 38 20 64 446 87 Capacity, c (veh/h) 634 78 v/c Ratio 0.02 0.06 0.26 0.74 95% Queue Length, Q₉₅ (veh) 0.1 0.2 0.9 3.7 Control Delay (s/veh) 13.2 11.0 66.4 118.9 Level of Service (LOS) В В F F Approach Delay (s/veh) 66.4 0.4 1.3 118.9 Approach LOS F F Copyright © 2018 University of Florida. All Rights Reserved. HCSTMI TWSC Version 7.6 Lee St & North Bluff Rd 2030_AM_B.xtw Generated: 12/19/2018 3:17:14 PM

HCS 1000 TWSC Version 7.6 Lee St & North Bluff Rd 2020_AM_B+S.xtw

Analysis Year 203 Time Analyzed AM Intersection Orientation Eas Project Description Bea Lanes State Vehicle Volumes and Adjust Homoson Approach U Priority 1U Number of Lanes O Configuration O Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized I Median Type Storage I	18/2018 0 Base + S t-West chview	Image: state	R 3 0 TR 7		• • • •	Inters Jurisd East/ North Peak Analy	R 6 0 TR 14	eet Street		City or North Lee SI 0.80 0.25	of White n Bluff Ro		South L 10 0	T 11 1 LTR	R 12 0 41
Agency/Co. CTS Date Performed 12/ Analysis Year 203 Time Analyzed AM Intersection Orientation Eas Project Description Bear Lanes Intersection Orientation Vehicle Volumes and Adjust M Approach U Movement U Proportion Time Blocked 0 Configuration G Volume (veh/h) Percent Grade (%) Right Tum Channelized M Median Type Storage C Base Critical Headway (sec) C Critical Headway (sec) C	18/2018 Base + S E-West - Chview East I I I I I I I I I I I I I I I I I I I	bound T 2 2	R 3 0 TR	Маў U 4U	Westl L L L L T 34	Jurisdi East/ North Peak Analy South	Iction West Strey /South S Hour Face sis Time R 6 0 TR	Street tor Period (North L 7	City or Average of City of Cit	vf White Bluff Rc	ROck	South L 10	T 11 1 LTR	12 0
Date Performed 12/ Analysis Year 203 Time Analyzed AM Intersection Orientation Eas Project Description Beat Lanes Intersection Orientation Vehicle Volumes and Adjust Heat Approach U Movement U Proportin Time Blocked O Configuration G Proportin Time Blocked Percent Grade (%) Right Tum Channelized I Median Type Storage I Base Critical Headway (sec) C Critical Headway (sec) I	18/2018 Base + S E-West - Chview East I I I I I I I I I I I I I I I I I I I	bound T 2 2	R 3 0 TR	Маў U 4U	Westl L L L L T 34	East/View Peak Analy	West Stretter All Stretter R 6 0 TR	Street tor Period (North L 7	North Lee SI 0.80 0.25	R 9		L 10	T 11 1 LTR	12 0
Analysis Year 203 Time Analyzed AM Intersection Orientation Eas Project Description Bea Lanes Ease Vehicle Volumes and Adjutt Home Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Proportion Time Blocked Percent Grade (%) Proportion Time Blocked 10 Proportion Time Blocked 10 Protitical and Follow-up Heuteston 10 Critical Headway (sec) 10 <td>0 Base + S t-West chview East L 1 0 1 1 0 1 7</td> <td>bound T 2 2</td> <td>R 3 0 TR</td> <td>Маў U 4U</td> <td>Westl L L L L T 34</td> <td>North Peak Analy Street</td> <td>/South S Mour Factors is in the second secon</td> <td>Street tor Period (</td> <td>North L 7</td> <td>Lee SI 0.80 0.25</td> <td>R 9</td> <td></td> <td>L 10</td> <td>T 11 1 LTR</td> <td>12 0</td>	0 Base + S t-West chview East L 1 0 1 1 0 1 7	bound T 2 2	R 3 0 TR	Маў U 4U	Westl L L L L T 34	North Peak Analy Street	/South S Mour Factors is in the second secon	Street tor Period (North L 7	Lee SI 0.80 0.25	R 9		L 10	T 11 1 LTR	12 0
Time Analyzed AM Intersection Orientation Eas Project Description Bear Lanes American State S	Base + S / S / S / S / S / S / S / S / S / S	bound T 2 2	R 3 0 TR	Маў U 4U	Westl L 4 0 LT 34	Peak Analy Street Stres	Hour Face sis Time	tor Period (North L 7	0.80 0.25	R 9		L 10	T 11 1 LTR	12 0
Intersection Orientation Eas Project Description Beat Lanes Beat Lanes Seat Vehicle Volumes and Adjust Weither Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Percent Heavy Vehicles (%) 0 Percent Grade (%) 10 Right Turn Channelized 10 Median Type Storage 10 Esse Critical Headway (sec) 10	t-West chview East L L L L T V Z	bound T 2 2	R 3 0 TR	Маў U 4U	Westl L 4 0 LT 34	Analy set-West	R 6 0 TR	Period (North L 7	0.25 bound T 8 1	9		L 10	T 11 1 LTR	12 0
Project Description Beat Lanes Image: Construct of the second se	chview ents East L 1 0 LT 7	T 2 2	R 3 0 TR	May U 4U	Westl L L L L T 34	sst-West bound T 5 2	R 6 0 TR		North L 7	bound T 8 1	9		L 10	T 11 1 LTR	12 0
Vehicle Volumes and Adjust Approach Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) Percent Heavy Vehicles (%) Percent Grade (%) 0 Right Turn Channelized 0 Median Type Storage 0 Critical and Follow-up Heatures 0 Base Critical Headway (sec) 0 Critical Headway (sec) 0	East East L 1 0 LT 7	T 2 2	R 3 0 TR	May U 4U	Westl L L L L T 34	bound T 5 2	6 0 TR	U	L 7	T 8 1	9		L 10	T 11 1 LTR	12 0
Vehicle Volumes and Adjuurs Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) Percent Heavy Vehicles (%) Percent Grade (%) 0 Right Turn Channelized 0 Median Type Storage 0 Critical and Follow-up Russe 0 Critical Headway (sec) 0 Critical Headway (sec) 0	East L 1 0 LT 7	T 2 2	R 3 0 TR	May U 4U	Westl L L L L T 34	bound T 5 2	6 0 TR	U	L 7	T 8 1	9	U	L 10	T 11 1 LTR	12 0
Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 10 Percent Heavy Vehicles (%) 10 Proportion Time Blocked 10 Percent Grade (%) 10 Right Tum Channelized 10 Median Type Storage 10 Critical and Follow-up Headway 10 Base Critical Headway (sec) 10 Critical Headway (sec) 10	East L 1 0 LT 7	T 2 2	R 3 0 TR	May U 4U	Westl L L L L T 34	bound T 5 2	6 0 TR	U	L 7	T 8 1	9	U	L 10	T 11 1 LTR	12 0
Approach U Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 10 Percent Heavy Vehicles (%) 10 Proportion Time Blocked 10 Percent Grade (%) 10 Right Tum Channelized 10 Median Type Storage 10 Critical and Follow-up Headway 10 Base Critical Headway (sec) 10 Critical Headway (sec) 10	East L 1 0 LT 7	T 2 2	3 0 TR	4U	L 4 0 LT 34	T 5 2	6 0 TR	U	L 7	T 8 1	9	U	L 10	T 11 1 LTR	12 0
Movement U Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 10 Percent Heavy Vehicles (%) 10 Proportion Time Blocked 10 Percent Grade (%) 10 Right Tum Channelized 10 Median Type Storage 10 Critical and Follow-up Heav 10 Base Critical Headway (sec) 10	L 1 0 LT 7	T 2 2	3 0 TR	4U	L 4 0 LT 34	T 5 2	6 0 TR	U	L 7	T 8 1	9	U	L 10	T 11 1 LTR	12 0
Priority 1U Number of Lanes 0 Configuration 0 Volume (veh/h) 10 Percent Heavy Vehicles (%) 10 Proportion Time Blocked 10 Percent Grade (%) 10 Right Tum Channelized 10 Median Type Storage 10 Critical and Follow-up Heavier Base Critical Headway (sec) 10 Critical Headway (sec) 10	1 0 LT 7	2	3 0 TR	4U	4 0 LT 34	5	6 0 TR	U	7	8	9	U	10	11 1 LTR	12 0
Number of Lanes 0 Configuration 0 Volume (veh/h) 0 Percent Heavy Vehicles (%) 0 Proportion Time Blocked 0 Percent Grade (%) 0 Right Tum Channelized 0 Median Type Storage 0 Critical and Follow-up Heatter 0 Base Critical Headway (sec) 0 Critical Headway (sec) 0	0 LT 7	2	0 TR	· ·	0 LT 34	2	0 TR			1				1 LTR	0
Configuration Image: Configuration Volume (veh/h) Image: Configuration Percent Heavy Vehicles (%) Image: Configuration Proportion Time Blocked Image: Configuration Percent Grade (%) Image: Configuration Right Tum Channelized Image: Configuration Median Type Storage Image: Configuration Critical and Follow-up Heatway (sec) Image: Configuration	LT 7		TR	0	LT 34		TR		0		0		0	LTR	
Volume (veh/h) Image: Constraint of the second se	7	844			34	1051				LTR					41
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Heatway (sec) Critical Headway (sec)	_	844	7		-	1051	14								A1
Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec)	2				2				12	2	20		8	2	41
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway Base Critical Headway (sec) Critical Headway (sec)			1		1				2	2	2		2	2	2
Right Tum Channelized Median Type Storage Critical and Follow-up Headw Base Critical Headway (sec) Critical Headway (sec)		1													
Median Type Storage Critical and Follow-up Headw Base Critical Headway (sec) Critical Headway (sec)									(р 🔨				0	
Critical and Follow-up Headw Base Critical Headway (sec) Critical Headway (sec)														-	
Base Critical Headway (sec) Critical Headway (sec)			Und	ivided											
Critical Headway (sec)	ays														
	4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Pasa Follow, Up Headway (sec)	4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Op Headway (sec)	2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)	2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and Lev	el of S	ervice	e												
Flow Rate, v (veh/h)	9	1			43					43				64	
Capacity, c (veh/h)	446				631					57				82	
v/c Ratio	0.02				0.07					0.74				0.78	
95% Queue Length, Q ₉₅ (veh)	0.1				0.2					3.2				3.9	
Control Delay (s/veh)	13.2				11.1					164.8				133.1	
Level of Service (LOS)	В				В					F				F	
Approach Delay (s/veh)	-			1	1				16					3.1	

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		Н	CS7	Two-	-Way	' Stoj	o-Co	ntrol	Rep	ort								
General Information	Site Information																	
Analyst	DG						Intersection Maple St & R							ussell Ave				
Agency/Co.	CTS						Juriso	liction			City o	City of White ROck						
Date Performed	12/18	8/2018					East/	West Stre	eet		Russe	ell Ave						
Analysis Year	2018						North	n/South !	Street		Lee S	t						
Time Analyzed	AM B	ase					Peak	Hour Fac	tor		0.80							
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25							
Project Description	Beach	nview									1							
Lanes																		
Vehicle Volumes and Adju	istme	nts																
Approach		Eastb	ound			West	bound			North	bound			South	bound			
Movement	U	L	Т	R	U	L	т	R	U	L	Т	R	U	L	Т	R		
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12		
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0		
Configuration		LT						TR							LR			
Volume (veh/h)		4	69				90	4						17		12		
Percent Heavy Vehicles (%)		2												2		2		
Proportion Time Blocked																		
Percent Grade (%)															0			
Right Turn Channelized																		
Median Type Storage				Undi	vided													
Critical and Follow-up He	adwa	ys																
Base Critical Headway (sec)		4.1												7.1		6.2		
Critical Headway (sec)		4.12												6.42		6.22		
Base Follow-Up Headway (sec)		2.2												3.5		3.3		
Follow-Up Headway (sec)		2.22												3.52		3.32		
Delay, Queue Length, and	Delay, Queue Length, and Level of Service																	
Flow Rate, v (veh/h)		5													36			
Capacity, c (veh/h)		1445													813			
v/c Ratio		0.00													0.04			
95% Queue Length, Q ₉₅ (veh)		0.0													0.1			
Control Delay (s/veh)		7.5													9.6			
Level of Service (LOS)		A													А			
Approach Delay (s/veh)		0	.4									9.6						
Approach LOS													A					
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Lee St & Russell Ave 2018AM_B.xtw

HCS1000 TWSC Version 7.6 Lee St & North Bluff Rd 2030_AM_B+S.xtw

General Information							Site	Inforr	natio	n						
Analyst	DG							ection			Manl	e St & Ri	ISSEL AV	<u> </u>		
Agency/Co.	CTS							liction				of White		-		
Date Performed		/2018						Nest Stre	eet		-	ell Ave	noen			
Analysis Year	2020	,						/South S			Lee S					
Time Analyzed	AM B	ase						Hour Fac			0.80	-				
Intersection Orientation	East-V							sis Time		'hrs)	0.25					
Project Description	Beach	nview														
Lanes	1															
				144444	n R Mai	or Street: Ea	st-West	ans shu								
Vehicle Volumes and Adju	ustme								1							
						Month	bound			North	bound			South	bound	
Approach		Eastb					1			1						_
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	Т	R
Movement Priority	10	L 1	T 2	3	4U	L 4	Т 5	6	U	L 7	Т 8	9	U	L 10	т 11	12
Movement Priority Number of Lanes		L 1 0	T			L	Т	6 0	U	L	T		U	L	T 11 1	
Movement Priority Number of Lanes Configuration	10	L 1 0 LT	T 2 1	3	4U	L 4	T 5 1	6 0 TR	U	L 7	Т 8	9	U	L 10 0	т 11	12 0
Movement Priority Number of Lanes Configuration Volume (veh/h)	10	L 1 0 LT 5	T 2	3	4U	L 4	Т 5	6 0	U	L 7	Т 8	9	U	L 10 0 18	T 11 1	12 0 13
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	10	L 1 0 LT	T 2 1	3	4U	L 4	T 5 1	6 0 TR	U	L 7	Т 8	9	U	L 10 0	T 11 1	12 0
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	10	L 1 0 LT 5	T 2 1	3	4U	L 4	T 5 1	6 0 TR		L 7	Т 8	9	U	L 10 0 18 2	T 11 1 LR	12 0 13
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	10	L 1 0 LT 5	T 2 1	3	4U	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2	T 11 1	12 0 13
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized	10	L 1 0 LT 5	T 2 1	3	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2	T 11 1 LR	12 0 13
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage		L 1 LT 5 2	T 2 1	3	4U	L 4	T 5 1	6 0 TR		L 7	Т 8	9	U	L 10 0 18 2	T 11 1 LR	12 0 13
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He		L 1 0 LT 5 2	T 2 1	3	4U 0	L 4	T 5 1	6 0 TR	U	L 7	Т 8	9	U	L 10 0 18 2	T 11 1 LR	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)		L 1 0 LT 5 2	T 2 1	3	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9	U	L 10 0 18 2 7.1	T 11 1 LR	12 0 13 2 6.2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec)		L 1 0 LT 5 2 	T 2 1	3	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9	U	L 10 0 18 2 7.1 6,42	T 11 1 LR	12 0 13 2 6.2 6.22
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		L 1 0 LT 5 2 	T 2 1	3	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 LR	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)	1U 0	L 1 0 LT 5 2 	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6,42	T 11 1 LR	12 0 13 2 6.2 6.22
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	1U 0	L 1 0 LT 5 2 2 	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 LR	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)	1U 0	L 1 0 LT 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	1U 0	L 1 0 LT 5 2 2	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Ealey, Queeu Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio	1U 0	L 1 0 LT 5 2 2 2 2 2 2 2 2 2 2	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Attended (sec) Follow-Up Headway (sec)	1U 0	L 1 0 LT 5 2 2	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 0 13 2
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Ealey, Queeu Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio	1U 0	L 1 0 LT 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	T 2 1 7 7 2	Undi	4U 0	L 4	T 5 1	6 0 TR		L 7	Т 8	9		L 10 0 18 2 7.1 6.42 3.5	T 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 0 13 2

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General Information							Cito	Inform	natio							
								Inforr	πατιο	n	1					
Analyst	DG							ection				e St & Ri		e		
Agency/Co.	CTS							liction				of White	ROck			
Date Performed		8/2018						West Stre				ell Ave				
Analysis Year	2020							n/South !			Lee S	t				
Time Analyzed		ase +S						Hour Fac		• .	0.80					
Intersection Orientation	East-						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
$\langle \rangle$				111144111	h H	A or Street. Ea	st-West	2 4 4 4 4 4 4 U								
Vehicle Volumes and Adju	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	т	R	U	L	т	R	U	L	Т	R	U	L	т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		5	72				94	5						19		15
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32
Delay, Queue Length, and	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		6													43	
Capacity, c (veh/h)		1437													807	
v/c Ratio		0.00													0.05	
95% Queue Length, Q ₉₅ (veh)		0.0													0.2	
Control Delay (s/veh)		7.5													9.7	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)		0	.5											9	.7	
															Ą	

Lee St & Russell Ave 2020AM_B+S.xtw

HCS 1000 TWSC Version 7.6 Lee St & Russell Ave 2020AM_B.xtw

General Information							Site	Inform	natio	n						
Analyst	DG							ection	natio		Maril	e St & Ri	urcoll A.	0		
Analyst Agency/Co.	CTS							liction				of White		e		
Agency/Co. Date Performed		/2018						Nest Stre	ant		City c Russe		NULK			
Analysis Year	2030	/2010						/South S			Lee S					
Time Analyzed	2030 AM B	250						Hour Fac			0.80					
Intersection Orientation	East-							sis Time		hrs)	0.80					
Project Description	Beach						Analy	313 111110	Tenou (1113)	0.25					
Lanes	beact															
				144444	h	or Street: Ea	ist-West	4.1174.910								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
		LT														
Configuration								TR							LR	
Configuration Volume (veh/h)		5	86				112	TR 5						22	LR	15
Volume (veh/h) Percent Heavy Vehicles (%)			86				112							22 2	LR	15 2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked		5	86				112							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		5	86				112							2	LR	
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized		5	86				112							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage		5	86	Undi	vided		112							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He	eadwa	5 2 ys	86	Undi	vided		112							2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	5 2 ys 4.1	86	Undi	vided		112							2		6.2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	5 2 ys 4.1 4.12	86	Undi	vided		112							2 7.1 6,42		2 6.2 6.22
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	5 2 ys 4.1 4.12 2.2	86	Undi	vided		112							2 7.1 6,42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		5 2 ys 4.1 4.12 2.2 2.22			vided		112							2 7.1 6,42		2 6.2 6.22
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		5 2 ys 4.1 4.12 2.2 2.22			vided									2 7.1 6,42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		5 2 ys 4.1 4.12 2.2 2.22			vided									2 7.1 6,42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		5 2 ys 4.1 4.12 2.22 2.22 I of Se			vided									2 7.1 6,42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		5 2 ys 4.1 4.12 2.2 2.22 I of Se 6			vided									2 7.1 6,42 3.5	46	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		5 2 ys 4.1 4.12 2.2 2.22 1 of Se 6 1410			Vided									2 7.1 6,42 3.5	46 767	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		5 2 4.1 4.12 2.2 2.22 6 1410 0.00												2 7.1 6,42 3.5	46 767 0.06	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		5 2 4.1 4.12 2.2 2.22 1 of Se 6 1410 0.00 0.0												2 7.1 6,42 3.5	46 767 0.06 0.2	2 6.2 6.22 3.3

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General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & Ri	ussell Av	e		
Agency/Co.	CTS						Jurisd				City o	of White	ROck			
Date Performed	12/18	8/2018					East/\	Nest Stre	eet		Russe	ell Ave				
Analysis Year	2030						North	/South S	Street		Lee S	t				
Time Analyzed		ase+S						Hour Fac			0.80					
Intersection Orientation	East-						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	nview														
Lanes																
				ALL DARK N		or Street. Ea	ist-West	4 1 4 4 4 4 0								
Vehicle Volumes and Adju	ıstme	nts			-											
Approach		Eastb	ound			West	bound			North	bound			South	bound	_
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	F
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	13
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		5	86				112	5						23		17
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.
Critical Headway (sec)		4.12						-						6.42		6.2
Base Follow-Up Headway (sec)		2.2												3.5		3.
Follow-Up Headway (sec)		2.22												3.52		3.3
Delay, Queue Length, and	Leve	l of Se	ervice													
Flow Rate, v (veh/h)		6													50	
Capacity, c (veh/h)		1410													770	
v/c Ratio		0.00													0.06	
95% Queue Length, Q ₉₅ (veh)		0.0											_		0.2	
Control Delay (s/veh)		7.6													10.0	
Level of Service (LOS)		A													A	
Approach Delay (s/veh) Approach LOS		0	.4												0.0 A	

HCS 1001 TWSC Version 7.6 Lee St & Russell Ave 2030AM_B.xtw

			CS7	100	vvay	5.0				UIL _						
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Lee S	t & Site	Access			
Agency/Co.	CTS						Jurisc	liction			City c	of White	ROck			
Date Performed	12/18	/2018					East/	West Stre	eet		Site A	ccess				
Analysis Year	2020						North	n/South S	Street		Lee S	t				
Time Analyzed	AM B	ase+S					Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				DALLARU A	1 1	Street: No		14 144 150								
Vehicle Volumes and Adj	justme	nts			Majoi	street: Nor	rth-South									
Approach		Eastb	ound			West	bound			North	bound			South	bound	· · · · ·
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		18		3						0	14				31	7
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32				K_		2.22						
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)			26							0						
Capacity, c (veh/h)			957							1560						
v/c Ratio			0.03							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			8.9							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)			.9							0	.0					
Approach LOS		,	۹.													

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Site Information General Information Analyst DG Intersection Lee St & Site Access CTS Agency/Co. Jurisdiction City of White ROck Date Performed 12/18/2018 East/West Street Site Access Analysis Year 2030 North/South Street Lee St Time Analyzed AM Base+S Peak Hour Factor 0.80 Intersection Orientation North-South Analysis Time Period (hrs) 0.25 Project Description Beachview Lanes 1447471 14 4 5 6 6 5 11147116 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound Movement U т U Т U Т U Т R L R L R L R L Priority 10 11 12 7 8 9 1U 1 2 3 4U 4 5 6 0 0 0 Number of Lanes 0 1 0 0 0 0 1 0 0 1 0 LR LT TR Configuration 18 36 7 Volume (veh/h) 3 0 16 Percent Heavy Vehicles (%) 2 2 2 Proportion Time Blocked Percent Grade (%) 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 7.1 6.2 4.1 6.22 4.12 Critical Headway (sec) 6.42 3.5 3.3 2.2 Base Follow-Up Headway (sec) Follow-Up Headway (sec) 3.52 3.32 2.22 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 26 0 Capacity, c (veh/h) 946 1552 v/c Ratio 0.03 0.00 0.1 0.0 95% Queue Length, Q₉₅ (veh) Control Delay (s/veh) 8.9 7.3 Level of Service (LOS) А А Approach Delay (s/veh) 0.0 8.9 Approach LOS А Copyright © 2018 University of Florida. All Rights Reserved. HCS TIM TWSC Version 7.6 Lee St & Site Access 2030AM_B+S.xtw Generated: 12/19/2018 3:30:40 PM

									Rep							
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Maple	e St & N	orth Blui	ff Rd		
Agency/Co.	CTS						Jurisd	iction			City o	f White	ROck			
Date Performed	12/18	/2018					East/\	Nest Stre	eet		North	Bluff Ro	ł			
Analysis Year	2018						North	/South S	Street		Maple	9				
Time Analyzed	AM B	ase					Peak	Hour Fac	tor		0.80					
Intersection Orientation	East-\	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				J 4 1 4 4 1 4 4 5	h Maji	* or Street: Ea	st-West	A PARAMA								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		5	663	3		16	809	9		1	1	11		3	0	12
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
					1					. (о с				0	
Percent Grade (%)	1															
Percent Grade (%) Right Turn Channelized	-															
				Undi	vided									-		
Right Turn Channelized	eadwa	ys		Undi	vided									-		
Right Turn Channelized Median Type Storage	eadwa	ys 4.1		Undi	vided	4.1				7.5	6.5	6.9		7.5	6.5	6.9
Right Turn Channelized Median Type Storage Critical and Follow-up He	eadwa			Undi	vided	4.1				7.5	6.5 6.54	6.9 6.94		7.5 7.54	6.5 6.54	6.9 6.94
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	4.1		Undi	vided						_					
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	4.1 4.14		Undi	vided	4.14				7.54	6.54	6.94		7.54	6.54	6.94
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.14 2.2 2.22	ervice	Undi	vided	4.14 2.2				7.54 3.5	6.54 4.0	6.94 3.3		7.54 3.5	6.54 4.0	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		4.1 4.14 2.2 2.22	ervice	Undi	vided	4.14 2.2				7.54 3.5	6.54 4.0	6.94 3.3		7.54 3.5	6.54 4.0	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		4.1 4.14 2.2 2.22 of S	ervice		vided	4.14 2.2 2.22				7.54 3.5	6.54 4.0 4.02	6.94 3.3		7.54 3.5	6.54 4.0 4.02	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		4.1 4.14 2.2 2.22 of So 6	ervice		vided	4.14 2.2 2.22 20				7.54 3.5	6.54 4.0 4.02	6.94 3.3		7.54 3.5	6.54 4.0 4.02 19	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.14 2.2 2.22 of So 6 592	ervice		vided	4.14 2.2 2.22 2.22 20 783				7.54 3.5	6.54 4.0 4.02 16 262	6.94 3.3		7.54 3.5	6.54 4.0 4.02 19 201	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.14 2.2 2.22 of So 6 592 0.01	ervice		vided	4.14 2.2 2.22 20 783 0.03				7.54 3.5	6.54 4.0 4.02 16 262 0.06	6.94 3.3		7.54 3.5	6.54 4.0 4.02 19 201 0.09	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₈₅ (veh)		4.1 4.14 2.2 2.22 of So 6 592 0.01 0.0	ervice		vided	4.14 2.2 2.22 20 783 0.03 0.1				7.54 3.5	6.54 4.0 4.02 16 262 0.06 0.2	6.94 3.3		7.54 3.5	6.54 4.0 4.02 19 201 0.09 0.3	6.94 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/C Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)		4.1 4.14 2.2 2.22 of So 592 0.01 0.0 11.1 B			vided	4.14 2.2 2.22 20 783 0.03 0.1 9.7 A	4			7.54 3.5 3.52	6.54 4.0 4.02 16 262 0.06 0.2 19.6	6.94 3.3		7,54 3.5 3.52	6.54 4.0 4.02 19 201 0.09 0.3 24.8	6.94 3.3

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General Information							Site	Inform	natio	1						
Analyst	DG							ection			Maple	e St & N	orth Blut	ff Rd		
Agency/Co.	CTS						Jurisd					of White				
Date Performed	_	8/2018						Nest Stre	et			n Bluff Ro				
Analysis Year	2020	-						/South S			Maple	e				
Time Analyzed	AM B	ase					Peak	Hour Fac	tor		0.80					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	nview														_
Lanes																
$\langle \rangle$				24 1 4 4 1 U		*	20									
Vehicle Volumes and Adj	ustme	nts			iviaj	or street, ca	st-mest									
Approach		Eastb	ound			West	ound			North	bound			South	bound	_
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	F
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	(
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		6	690	4		17	842	10		2	2	12		4	0	1
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	
Proportion Time Blocked																
Percent Grade (%)										(0				0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		8				21					20				21	
Capacity, c (veh/h)		571				760					177				164	
v/c Ratio		0.01				0.03					0.11				0.13	
		0.0				0.1					0.4				0.4	
95% Queue Length, Q ₉₅ (veh)	_					9.9					28.0				30.1	
		11.4		_												
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh) Level of Service (LOS)		11.4 B				А					D				D	
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		В	.2				.5			28				30		

HCS1000 TWSC Version 7.6 Maple St & North Bluff Rd 2018_AM_B.xtw

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				_		Stop		_								
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Maple	e St & N	orth Blui	ff Rd		
Agency/Co.	CTS						Jurisd	iction			City c	of White	ROck			
Date Performed	12/18	/2018					East/	Nest Stre	eet		North	n Bluff Ro	ł			
Analysis Year	2020						North	/South S	Street		Maple	e				
Time Analyzed	AM B	ase+S					Peak	Hour Fac	tor		0.80					
Intersection Orientation	East-V	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				U 4 1 1 4 4 1 0		or Street: Ea										
Vehicle Volumes and Adju	istme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	`
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		6	693	5		17	852	10		4	2	14		4	0	13
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											<u>ه</u>				0 /	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22		K		3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	Leve	l of Se	ervice													
Flow Rate, v (veh/h)		8				21					25				21	
Capacity, c (veh/h)		564				756					165				160	
v/c Ratio		0.01				0.03					0.15				0.13	
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.5				0.4	
Control Delay (s/veh)		11.5				9.9					30.7				30.9	
Level of Service (LOS)		В				A					D				D	
Approach Delay (s/veh)		0	.2			0	.5			30).7			30).9	
Approach LOS										1	2			[D	

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		Н	CS7	Two-	Way	' Stoj	o-Co	ntrol	Rep	ort						
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & N	orth Blui	ff Rd		
Agency/Co.	CTS						Jurisd	iction			City c	of White	ROck			
Date Performed	12/18	/2018					East/\	Nest Stre	eet		North	n Bluff Ro	ł			
Analysis Year	2020	-					North	/South !	Street		Mapl	e				
Time Analyzed	AM B	ase					Peak	Hour Fac	ctor		0.80					
Intersection Orientation	East-	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	view														
Lanes	1															
				111 1 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A Maj	* • •	st-West									
Vehicle Volumes and Adju	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		7	823	4		20	1004	12		2	2	14		4	0	15
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		9				25					23				24	
Capacity, c (veh/h)		476				657					116				108	
v/c Ratio		0.02				0.04					0.19				0.22	
95% Queue Length, Q ₉₅ (veh)		0.1				0.1					0.7				0.8	
Control Delay (s/veh)		12.7				10.7					43.2				47.4	
Level of Service (LOS)		В				В					E				E	
Approach Delay (s/veh)		0	.4			0	.8			43	3.2			4	7.4	
Approach LOS											E				E	
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						Stop				_						
General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Maple	e St & N	orth Blui	ff Rd		
Agency/Co.	CTS						Jurisd	iction			City o	of White	ROck			
Date Performed	12/18	/2018					East/	Nest Stre	eet		North	n Bluff Ro	ł			
Analysis Year	2020						North	/South S	Street		Maple	е				
Time Analyzed	AM B							Hour Fac			0.80					
Intersection Orientation	East-V						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				14174PLU		or Street: Ea										
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	,
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		7	826	5		20	1014	12		4	2	16		4	0	15
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked					<u> </u>											
Percent Grade (%)											р С)	
Right Turn Channelized				Lind	vided							-		_		
Median Type Storage	·			Unai	vided											
Critical and Follow-up He	eadwa	-														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14	4			7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22		K		3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	d Leve	l of Se	ervice								_					
Flow Rate, v (veh/h)		9				25					28				24	
Capacity, c (veh/h)		471				654					107				105	
v/c Ratio		0.02				0.04					0.26				0.23	
95% Queue Length, Q ₉₅ (veh)		0.1				0.1					1.0				0.8	
Control Delay (s/veh)		12.8				10.7					50.2				49.0	
Level of Service (LOS)		В				В					F				E	
Approach Delay (s/veh)		0	.4			0	.8			50				49		
Approach LOS											F				E	

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		H	CS7	Two-	-Way	' Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & Ri	ussell Av	e		
Agency/Co.	CTS						Jurisc	liction			City o	of White	ROck			
Date Performed	12/18	/2018					East/	West Stre	eet		Russe	ell Ave				
Analysis Year	2018						North	n/South !	Street		Mapl	e St				
Time Analyzed	AM B	ase					Peak	Hour Fac	tor		0.80					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				14 14 414 10	D Ma	+ + or Street: Ea	st-West									
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	59	3		3	114	2		10	8	4		5	15	4
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		0				4					28				30	
Capacity, c (veh/h)		1404				1505					698				677	
v/c Ratio		0.00				0.00					0.04				0.04	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.1				0.1	
Control Delay (s/veh)		7.6				7.4					10.4				10.6	
Level of Service (LOS)		А				A					В				В	
Approach Delay (s/veh)		0	.0			0	.2				0.4				0.6	
Approach LOS											В				В	

Maple St & Russell Ave 2018AM_B.xtw

Analysic DG Intersection Maple S & Russell Ave Agency/Co. CTS Varial Color Intersection City of Winke ROA Varial Color Intersection Reserve Rese	General Information							Site	Inform	natio	n						
Agency/Ca.CTSVerisdictionCity of White ROckUDate Performed12/18/2018Image SectorRusel RescordRusel Rescord <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>natio</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>										natio							
Date Performed12/15/2018UUUUUUUAnalysis Year2020UVerth/South StreetNagle SUUUUIntersection OrientationEast-WestEast-WestVerth/South Street0.25UUUProject DescriptionBeachuewUUUUUUVerth/South StreetVerth/South StreetVerth/	•														e		
Analysis Year2020Unit Visual V												-		ROck			
Time Analyzed AMB Ase Peck Hour Factor 0.80 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description Beach-uew East-West Analysis Time Period (hrs) 0.25 Control Description Beach-uew USENT USEN			3/2018														
Intersection Orientation East-Wick Analysis Time Period (hrs) 0.25 Project Description Beachview Seathview													e St				
Project Description Beachview Lanes Section of the	· · · · · · · · · · · · · · · · · · ·	_									1						
Interview								Analy	sis rime	Period	nrs)	0.25					
And And <thand< th=""> <thand< th=""> <thand< th=""></thand<></thand<></thand<>		Beach	nview														
Vehicle Volumes and Adjustenses Approach Eastbourd Vestbourd Northbourd Southbourd I A U L T R U L L R U L<					1444414		*	st-West									
Movement U L T R U L<	Vehicle Volumes and Adj	ustme	nts														
Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 11 Number of Lanes 0 0 1 0 0 1 0 0 1 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0<	Approach		Eastb	ound			West	bound			North	bound			South	bound	
Number of Lanes 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 1 0 0 1 0 0 1 0 1 <th1< th=""> 0 0</th1<>	Movement	U	L	т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Configuration I <	Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Volume (veh/h) 0 62 4 4 119 3 11 9 5 6 16 5 Percent Heavy Vehicles (%) 2 <td>Number of Lanes</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td></td> <td>0</td> <td>1</td> <td>0</td> <td></td> <td>0</td> <td>1</td> <td>0</td>	Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Percent Heavy Vehicles (%) 2 2 1 2 1 2 <th2< th=""> 2<td>Configuration</td><td></td><td></td><td>LTR</td><td></td><td></td><td></td><td>LTR</td><td></td><td></td><td></td><td>LTR</td><td></td><td></td><td></td><td>LTR</td><td></td></th2<>	Configuration			LTR				LTR				LTR				LTR	
Proportion Time Blocked Image: Control Time Blocked	Volume (veh/h)		0	62	4		4	119	3		11	9	5		6	16	5
Percent Grade (%) Image: Control Legislation (Control Legislation (Contret) (Contret)))	Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Right Tum Channelized Und Image: Stratege Und Image: Stratege	Proportion Time Blocked																
Median Type Storage Undivided Critical and Follow-up Headway (sec) 4.1 4.1 7.1 6.5 6.2 7.1 6.5 4.0 3.3 3.5 4.0 3.3 3.5 4.0 3.3 3.5 4.0 3.3 3.5 4.02<	Percent Grade (%)										(ט 🔪				5	
Critical and Follow-up Headway (sec) 4.1 4.1 7.1 6.5 6.2 7.1 6.5 6.0 3.3 3.5 4.0 3.3 3.5 4.0 3.3 3.5 4.0 3.3 3.5 4.0 3.3 3.5<	Right Turn Channelized																
Base Critical Headway (sec) 4.1 4.1 7.1 6.5 6.2<	Median Type Storage				Undi	vided											
Critical Headway (sec) 4.12 4.12 4.12 4.12 7.12 6.52 6.22 7.12 6.52 6.23 7.12 6.52 6.23 <	Critical and Follow-up H	eadwa	ys														
Base Follow-Up Headway (sec) 2.2 2.2 2.2 2.2 3.5 4.0 3.3 3.5 4.0 3.3 Follow-Up Headway (sec) 2.22 2.22 2.22 2.22 2.22 3.52 4.0 3.32 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.52 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 3.55 4.02 5.55 4.02 5.55 4.02 5.55 4.02 5.55 4.02 5.55 4.05 5.55 4.05 5.55 4.05 5.55 5.55 5.55 5.55 5.55 5.55 5.55 5.55	Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Follow-Up Headway (sec) 2.22 2 2 2 3.52 4.02 5.55	Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Delay, Queue Length, and Level of Service 5 31 34 Flow Rate, v (veh/h) 0 5 31 667 Capacity, c (veh/h) 1395 1498 687 667 V/c Ratio 0.00 0.00 0.05 0.05 95% Queue Length, Q ₉₅ (veh) 0.0 0.0 0.1 0.2 Control Delay (s/veh) 7.6 7.4 10.5 10.7 Level of Service (LOS) A A B B	Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Flow Rate, v (veh/h) 0 5 31 34 Capacity, c (veh/h) 1395 1498 687 667 v/c Ratio 0.00 0.00 0.00 0.05 0.05 95% Queue Length, Q ₉₅ (veh) 0.0 0.0 0.0 0.1 0.2 Control Delay (s/veh) 7.6 7.4 0 10.5 10.7 Level of Service (LOS) A A A B B B	Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Flow Rate, v (veh/h) 0 5 31 34 Capacity, c (veh/h) 1395 1498 687 667 v/c Ratio 0.00 0.00 0.00 0.05 0.05 95% Queue Length, Q ₉₅ (veh) 0.0 0.0 0.0 0.1 0.2 Control Delay (s/veh) 7.6 7.4 0 10.5 10.7 Level of Service (LOS) A A A B B B	Delay, Queue Length, an	d Leve	l of Se	ervice													
Capacity, c (veh/h) 1395 I 1498 I 687 I 667 v/c Ratio 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.05		1					5					31				34	
v/c Ratio 0.00 0.00 0.00 0.05 0.05 0.05 95% Queue Length, Q ₃₅ (veh) 0.0 0.0 0.0 0.1 0.2 0.2 Control Delay (s/veh) 7.6 7.4 0 10.5 10.7 10.7 Level of Service (LOS) A A A B B B			<u> </u>														
95% Queue Length, Q ₆₅ (veh) 0.0 0.0 0.0 0.1 0.2 0.2 Control Delay (s/veh) 7.6 7.4 10.5 10.7						1											
Control Delay (s/veh) 7.6 7.4 10.5 10.7 Level of Service (LOS) A A B B B			<u> </u>														
Level of Service (LOS) A A A B B B	95% Queue Length, Q ₉₅ (veh)	-															
	-		7.6														
Approach Delay (s/veh) 0.0 0.3 10.5 10.7	Control Delay (s/veh)											В				В	

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General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & Ri	ussell Av	e		
Agency/Co.	CTS						Jurisd	liction			City c	of White	ROck			
Date Performed	12/18	/2018					East/\	West Stre	eet		Russe	II Ave				
Analysis Year	2020						North	n/South S	Street		Mapl	e St				
Time Analyzed	AM B	ase + S					Peak	Hour Fac	tor		0.80					
Intersection Orientation	East-V	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	view														
Lanes																
				JAHAANU		* or Street: Ea										
Vehicle Volumes and Adj	iustme															
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	62	4		4	121	3		11	9	5		6	16	5
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		0				5					31				34	
Capacity, c (veh/h)		1392				1498					685				665	
v/c Ratio		0.00				0.00					0.05				0.05	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.1				0.2	
Control Delay (s/veh)		7.6				7.4					10.5				10.7	
		A				A					В				В	
Level of Service (LOS)		A														
			.0				.3			1().5			10).7	

HCS 1000 TWSC Version 7.6 Maple St & Russell Ave 2020AM_B.xtw

							City	Inforr	Rep							
General Information								-	πατιοι	1						
Analyst	DG							ection					ussell Av	e		
Agency/Co.	CTS						Jurisd				-	of White	ROck			
Date Performed		/2018						Nest Stre			Russe					
Analysis Year	2030							/South S			Maple	e St				
Time Analyzed	AM B							Hour Fac			0.80					
Intersection Orientation	East-\						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	iview														
Lanes																
				14174876	Maj	or Street: Ea	st-West	1114 W								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
			LTR				LTR				LTR				LTR	
Configuration															LIIK	
Configuration Volume (veh/h)		0	74	4		4	142	3		13	10	5		7	19	5
		0 2	74	4		4	142	3		13 2	10 2	5		7		5
Volume (veh/h)			74	4			142	3							19	
Volume (veh/h) Percent Heavy Vehicles (%)			74	4			142	3		2					19 2	
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked			74	4			142	3		2	2			2	19 2	
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)			74		vided		142	3		2	2			2	19 2	
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized	eadwa	2	74		vided		142	3		2	2			2	19 2	
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage	eadwa	2	74		vided		142	3		2	2			2	19 2	
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Ho	eadwa	2 ys	74		vided	2	142	3		2	2	2		2	19 2	2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	2 ys 4.1	74		vided	2	142	3		2	6.5	2		2	19 2 6.5	6.2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	2 ys 4.1 4.12	74		vided	2 4.1 4.12	142	3		2 7.1 7.12	2 6.5 6.52	2 6.2 6.22		2 7.1 7.12	19 2 6.5 6.52	2 6.2 6.22
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		2 ys 4.1 4.12 2.2 2.22			vided	2 4.1 4.12 2.2	142	3		2 7.1 7.12 3.5	2 6.5 6.52 4.0	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.52 4.0	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		2 ys 4.1 4.12 2.2 2.22			vided	2 4.1 4.12 2.2		3		2 7.1 7.12 3.5	2 6.5 6.52 4.0	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.52 4.0	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		2 ys 4.1 4.12 2.22 2.22 I of So			vided	2 4.1 4.12 2.2 2.22		3		2 7.1 7.12 3.5	2 6.5 6.52 4.0 4.02	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.52 4.0 4.02	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		2 ys 4.1 4.12 2.22 2.22 I of So 0			vided	2 4.1 4.12 2.22 2.22	142	3		2 7.1 7.12 3.5	2 6.5 6.52 4.0 4.02 35	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.52 4.0 4.02 39	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		2 4.1 4.12 2.22 2.22 1 of Sol 0 1362			vided	2 4.1 4.12 2.2 2.22 5 1480		3		2 7.1 7.12 3.5	2 6.5 6.52 4.0 4.02 35 642	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.52 4.0 4.02 39 626	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		2 4.1 4.12 2.22 2.22 1 of Se 0 1362 0.00			vided	2 4.1 4.12 2.2 2.22 5 1480 0.00		3		2 7.1 7.12 3.5	2 6.5 6.52 4.0 4.02 35 642 0.05	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.52 4.0 4.02 39 626 0.06	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		2 ys 4.1 4.12 2.2 2.22 1 of Sc 0 1362 0.00 0.0			vided	2 4.1 4.12 2.2 2.22 5 1480 0.00 0.0		3		2 7.1 7.12 3.5	2 6.5 6.52 4.0 4.02 35 642 0.05 0.2	2 6.2 6.22 3.3		2 7.1 7.12 3.5	19 2 6.5 6.5 6.5 4.0 4.02 39 626 0.06 0.2	2 6.2 6.22 3.3

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						Stop		_		_						
General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & Ri	ussell Av	e		
Agency/Co.	CTS						Jurisd					of White	ROck			
Date Performed		8/2018						Vest Stre				ell Ave				
Analysis Year	2030							/South !			Mapl	e St				
Time Analyzed	_	ase + S						Hour Fac			0.80					
Intersection Orientation	East-						Analy	sis Time	Period ((hrs)	0.25					
Project Description	Beac	nview														
Lanes																
$\langle \rangle$				24 HAA NU	n Ha	* or Street: Ea	st-West									
Vehicle Volumes and Adj	ustme								1				1			
Approach			ound				ound				bound				bound	_
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	Т	
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	
Configuration			LTR				LTR			12	LTR	-		-	LTR	
Volume (veh/h)		0	74	4		4	144	3		13	10	5		7	19	
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized Median Type Storage	-			لمما	vided											
	· .			Undi	vided											
Critical and Follow-up Ho	eadwa	-														
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3
Delay, Queue Length, and	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		0				5					35				39	
Capacity, c (veh/h)		1359				1480					640				624	
v/c Ratio		0.00				0.00					0.05				0.06	
		0.0				0.0					0.2				0.2	
95% Queue Length, Q ₉₅ (veh)		7.6				7.4					10.9				11.1	
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		7.0														
		A				A					В				В	
Control Delay (s/veh)		A	1.0				.2				В).9 В				В 1.1 3	

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					,				Rep							
General Information							Site	Inform	natio	า						
Analyst	DG						Inters	ection			Maple	e & Site	Access			
Agency/Co.	CTS						Jurisd	iction			City c	of White	ROck			
Date Performed	12/18	8/2018					East/	Nest Stre	eet		Site A	ccess				
Analysis Year	2020						North	/South S	Street		Maple	e St				
Time Analyzed	AM B	ase+S					Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	n-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				DALLARD	Maior	F Street: Nor	th-South	тантана								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						0		4			16	0		1	21	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		
Delay, Queue Length, and	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)							5							1		
Capacity, c (veh/h)							1055							1593		
v/c Ratio							0.00							0.00		
95% Queue Length, Q ₉₅ (veh)							0.0							0.0		
Control Delay (s/veh)							8.4							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						8	.4							0).3	
	1						Ą									

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General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Maple	e & Site	Access			_
Agency/Co.	CTS						Jurisd	liction			City o	f White	ROck			
Date Performed	12/18	8/2018					East/\	Nest Stre	eet		Site A	ccess				
Analysis Year	2030						North	/South !	Street		Maple	e St				
Time Analyzed	AM B	ase+S					Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	1-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	view														
Lanes																
				24 4 X 4 4 4		*	.	A STATES								
Vehicle Volumes and Adj	ustme	nts			Majo	r Street: Nor	th-South									
Approach		Eastb	ound			West	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	F
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	(
Configuration							LR					TR		LT		
Volume (veh/h)						0		4			18	0		1	24	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						())									
Right Turn Channelized																
Median Type Storage				Undi	vided											
Cuiting and Fallery and I	eadwa	vs														
Critical and Follow-up H		-		_		7.1		6.2						4.1		<u> </u>
Critical and Follow-up H Base Critical Headway (sec)	1													4.12		
Base Critical Headway (sec)						6.42		6.22								
Base Critical Headway (sec) Critical Headway (sec)						6.42 3.5		6.22 3.3								
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Leve	l of Se	ervice													
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	d Leve	l of Se	ervice			3.5	c	3.3						2.2		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	d Leve	l of Se	ervice			3.5	5	3.3						2.2 2.22 1		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	l of Se	ervice			3.5	1052	3.3						2.2 2.22 1 1590		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	l of Se	ervice			3.5	1052 0.00	3.3						2.2 2.22 1 1590 0.00		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₃₅ (veh)	d Leve	I of Se	ervice			3.5	1052 0.00 0.0	3.3						2.2 2.22 1 1590 0.00 0.0		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₁₅ (veh) Control Delay (s/veh)	d Leve	l of Se	ervice			3.5	1052 0.00 0.0 8.4	3.3						2.2 2.22 1 1590 0.00 0.0 7.3		
Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh)	d Leve	l of Se	ervice			3.5 3.52	1052 0.00 0.0	3.3						2.2 2.22 1 1590 0.00 0.0 7.3 A	3	

HCS 1000 TWSC Version 7.6 Maple St & Site Access 2020AM_B+S.xtw

Concerel Information							City									
General Information								Inforr	natio	n						
Analyst	DG						Inters						h Bluff R	d		
Agency/Co.	CTS						Jurisd					of White				
Date Performed		8/2018						Nest Stre				n Bluff Ro	1			
Analysis Year	2018							/South S			Lee S	t				
Time Analyzed	PM B							Hour Fac			0.91					
Intersection Orientation	East-\						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	IVIEW														
Vehicle Volumes and Adj Approach Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	USTME U 1U 0		T 2 717	R 3 0 TR 9		Vesti L 4 0 LT 14 2	. 24	R 6 0 TR 24		L 7 0 2 2	bound T 8 1 LTR 0 2	R 9 0 3 2	U	L 10 6 2	bound T 11 1 LTR 2 2	R 12 0 12 2
Percent Grade (%)											<u>ه</u>				5 /	
Right Turn Channelized	-															
	1			Undi	vided											
Median Type Storage																
Median Type Storage Critical and Follow-up He	adwa	ys										-	-			
Critical and Follow-up He Base Critical Headway (sec)	adwa	4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical and Follow-up He	eadwa	4.1 4.14				4.14				7.5 7.54	6.5 6.54	6.9 6.94		7.54	6.5 6.54	6.9 6.94
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	4.1 4.14 2.2				4.14 2.2				7.54 3.5	6.54 4.0	6.94 3.3		7.54 3.5	6.54 4.0	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.14 2.2 2.22				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		4.1 4.14 2.2 2.22	ervice			4.14 2.2				7.54 3.5	6.54 4.0	6.94 3.3		7.54 3.5	6.54 4.0	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.14 2.2 2.22	ervice			4.14 2.2				7.54 3.5	6.54 4.0	6.94 3.3		7.54 3.5	6.54 4.0	6.94 3.3
Critical Headway (sec) Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		4.1 4.14 2.2 2.22 I of Se	ervice			4.14 2.2 2.22				7.54 3.5	6.54 4.0 4.02	6.94 3.3		7.54 3.5	6.54 4.0 4.02	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		4.1 4.14 2.2 2.22 I of Se 8	ervice			4.14 2.2 2.22 15				7.54 3.5	6.54 4.0 4.02 5	6.94 3.3		7.54 3.5	6.54 4.0 4.02 22	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.14 2.2 2.22 I of Se 8 708	ervice			4.14 2.2 2.22 15 811				7.54 3.5	6.54 4.0 4.02 5 220	6.94 3.3		7.54 3.5	6.54 4.0 4.02 22 182	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.14 2.2 2.22 1 of Se 8 708 0.01	ervice			4.14 2.2 2.22 15 811 0.02				7.54 3.5	6.54 4.0 4.02 5 220 0.02	6.94 3.3		7.54 3.5	6.54 4.0 4.02 22 182 0.12	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh)		4.1 4.14 2.2 2.22 of Se 8 708 0.01 0.0	ervice			4.14 2.2 2.22 15 811 0.02 0.1				7.54 3.5	6.54 4.0 4.02 5 220 0.02 0.1	6.94 3.3		7.54 3.5	6.54 4.0 4.02 22 182 0.12 0.4	6.94 3.3
Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) V/C Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)		4.1 4.14 2.2 2.22 of Se 8 708 0.01 0.0 10.1 B	ervice			4.14 2.2 2.22 15 811 0.02 0.1 9.5 A	3			7.54 3.5 3.52	6.54 4.0 4.02 5 220 0.02 0.1 21.8	6.94 3.3		7,54 3.5 3.52	6.54 4.0 4.02 22 182 0.12 0.4 27.4	6.94 3.3

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General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Lee S	t & Nort	h Bluff F	d		_
Agency/Co.	CTS						Jurisd	liction			City c	of White	ROck			
Date Performed	12/18	8/2018					East/\	West Stre	eet		North	n Bluff Ro	ł			
Analysis Year	2020						North	n/South S	Street		Lee S	t				
Time Analyzed	PM B	ase					Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	nview														
Lanes																
$\langle \rangle$				14 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		• or Street: Ea		1 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		8	746	10		15	803	25		3	0	4		7	3	13
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										()				0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	d Leve	l of Se	ervice	•												
Flow Rate, v (veh/h)		9				16					8				25	
Capacity, c (veh/h)		686				788					191				156	
		0.01				0.02					0.04				0.16	
v/c Ratio			1	1		0.1					0.1				0.6	
v/c Ratio 95% Queue Length, Q ₉₅ (veh)	CTS 12/18/2018 2020 PM Base Fast-West Beachview															1
						9.7					24.7				32.6	
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh) Level of Service (LOS)		10.3 B				Α					С				D	
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		10.3 B	.2			Α	.3			24	С			32		

HCS7 Two-Way Stop-Control Report

HCS 1000 TWSC Version 7.6 Lee St & North Bluff Rd 2018_PM_B.xtw

General Information							Site	Inforr	natio	n						
Analyst	DG							ection			1.00 5	t & Nort	h Bluff R	ld.		
Agency/Co.	CTS							iction				of White				
Date Performed		/2018						Nest Stre	et			n Bluff Ro				
Analysis Year	2020	/2010						/South S			Lee S		-			
Time Analyzed		ase+S						Hour Fac			0.91					
Intersection Orientation	East-V							sis Time		'hrs)	0.25					
Project Description	Beach						<u> </u>			,						
Lanes		-														
				14 1 1 4 1 1 1 4 1	h H Mair	or Street: Ea	st-West									
Vehicle Volumes and Adj	ustme	nts														
Approach			ound			1	bound			1	bound			1	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		8	748	19		24	805	25		9	0	10		7	3	13
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized	-			11	utala d											
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa															
		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Base Critical Headway (sec)	-									7.54	0.04		1	7.54	6.54	6.94
Critical Headway (sec)		4.14				4.14					6.54	6.94				
Critical Headway (sec) Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		2.2 2.22														3.3 3.32
Critical Headway (sec) Base Follow-Up Headway (sec)	d Leve	2.2 2.22	ervice			2.2				3.5	4.0	3.3		3.5	4.0	
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Leve	2.2 2.22	ervice			2.2				3.5	4.0	3.3		3.5	4.0	
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	d Leve	2.2 2.22 I of Se	ervice			2.2 2.22				3.5	4.0 4.02	3.3		3.5	4.0 4.02	
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)	d Leve	2.2 2.22 0 of Se 9	ervice			2.2 2.22 26				3.5	4.0 4.02 21	3.3		3.5	4.0 4.02 25	
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	2.2 2.22 1 of Se 9 685	ervice			2.2 2.22 26 780				3.5	4.0 4.02 21 168	3.3		3.5	4.0 4.02 25 146	
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	2.2 2.22 of Se 9 685 0.01	ervice			2.2 2.22 26 780 0.03				3.5	4.0 4.02 21 168 0.12 0.4 29.5	3.3		3.5	4.0 4.02 25 146 0.17	
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh)	d Leve	2.2 2.22 9 685 0.01 0.0 10.3 B	22			2.2 2.22 26 780 0.03 0.1 9.8 A	.6			3.5 3.52	4.0 4.02 21 168 0.12 0.4	3.3		3.5	4.0 4.02 25 146 0.17 0.6	

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General Information							Site	nform	natior	۱						
Analyst	DG						Inters	ection			Lee St	t & Nort	h Bluff F	ld.		
Agency/Co.	CTS						Jurisd	iction			City o	of White	ROck			
Date Performed	12/18	8/2018					East/\	Vest Stre	et		North	n Bluff Ro	i			
Analysis Year	2030						North	/South S	Street		Lee St	t				
Time Analyzed	PM B	ase					Peak I	Hour Fac	tor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (I	hrs)	0.25					
Project Description	Beach	nview														
Lanes																
$\langle \rangle$				14 B A & B & U		or Street: Ea										
Vehicle Volumes and Adj	ustme	nts			may		, mest									
Approach		Eastb	ound			West	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		9	890	12		18	958	30		3	0	4		8	3	15
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										()			(D	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.9
						2.2				3.5	4.0	3.3		3.5	4.0	3.
Base Follow-Up Headway (sec)		2.2				6.6										3.3
		2.2				2.22				3.52	4.02	3.32		3.52	4.02	
Base Follow-Up Headway (sec)	d Leve	2.22	ervice							3.52	4.02	3.32		3.52	4.02	0.0
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Leve	2.22	ervice							3.52	4.02 8	3.32		3.52	4.02 29	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	d Leve	2.22 I of Se	ervice			2.22				3.52		3.32		3.52		
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	d Leve	2.22 I of Se 10	ervice			2.22				3.52	8	3.32		3.52	29	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	2.22 l of Se 10 588	ervice			2.22 20 686				3.52	8 123	3.32		3.52	29 103	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	2.22 l of Se 10 588 0.02	ervice			2.22 20 686 0.03				3.52	8 123 0.06	3.32		3.52	29 103 0.28	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh)	d Leve	2.22 1 of Se 10 588 0.02 0.1	ervice			2.22 20 686 0.03 0.1				3.52	8 123 0.06 0.2	3.32		3.52	29 103 0.28 1.0	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)	d Leve	2.22 of Se 10 588 0.02 0.1 11.2 B	ervice			2.22 20 686 0.03 0.1 10.4	5			3.52	8 123 0.06 0.2 36.3 E	3.32			29 103 0.28 1.0 53.1	

HCS7 Two-Way Ston-Control Report

HCS TW TWSC Version 7.6 Lee St & North Bluff Rd 2020_PM_B+S.xtw

AnalysitDGIntersectionIntersectionSet North Bulf RG /Set North Suff RG /Agency/Co.C7JunidationCity of Winte ROCkLes View ILes View ILes View ILes View IAnalysis Year230East West StreetLes Street0.31Intersection OrigonitationBast WestPeak Hour Factor0.31Intersection OrigonitationBast WestEast West StreetNorth/South StreetLes StLes StLes StProject DescriptionBeachviewEast West StEast West StEast West StLes StLes StProject DescriptionBeachviewEast West StEast West StEast West StStreet StStreet StProject DescriptionBeachviewEast West StEast West StStreet StStreet StStreet StProject DescriptionEast West StEast West StNorth/South Street StStreet StStreet StMorenentQULTRULTRULTRMorenentQULTRULTRULTRPronthQULTRULTRULTRPronthQULTRULTRULTRMorenentQULTRULTRULTRPronthQULTR <td< th=""><th>General Information</th><th></th><th></th><th></th><th></th><th></th><th></th><th>Site</th><th>Inform</th><th>natio</th><th>n</th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	General Information							Site	Inform	natio	n						
Agency/Co. CTS Juridiction City of White ROck Date Performed 12/18/2018 Ear/West Street North Buff Rd Imagency/Co. Time Analysed PM Base-5 Peak Hour Factor 0.91 Imagency/Co. 0.91 Intersection Orientation Ear-West Peak Hour Factor 0.91 Imagency/Co. 0.91 Project Description Beachwise Use Street 0.91 Imagency/Co. 0.91 Venter Street Str		DG									-	Lee S	t & Nort	h Bluff R	d		
Date Performed12/18/2018Image and the performant of the period (performant of the performant of the per															u		
Analysis Year 2030 Venth / South Street Lee St Use St			3/2018							et		-					
Time Analyzed Intersection OrientationPask West Jest Vest Vest Vest Vest Vest Vest Vest V														-			
Intersection Orientation East-Wice Analysis Time Period (km) 0.25 Project Description Beachwice Section (km) 0.25 Lanes Section (km) Section (km) Section (km) Section (km) Vehicle Volumes and Adjustment Section (km) Section (km) Section (km) Section (km) Approach Eastbound Westbound Northbound Section (km) Section (km) Movement U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U <thl< th=""> T R</thl<>		-											-				
Lanes Markersens	,										'hrs)	0.25					
Lanes Image: Severe and Sev											,						
Note of the section of the sect																	
Approach East-June June - June North-June South-June Movement U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L U U L L U U L U L L L L L L L L L L L <					1412451	Maji	+ or Street: Ea	st-West	A PARANA								
Movement U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R N I<	Vehicle Volumes and Adj	ustme	nts														
Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 Number of Lanes 0 0 2 0 0 2 0 1 0 1 0 1 0 1 0 1 0 Configuration 1 1T TR 1T TR 1T TR TR TR TR TR 1 1 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 0 1 1 1 0 1 1 0 1 1 1 1 0 1 1 1 0 1 1 0 1 1 0 1 1 0	Approach		Eastb	ound			West	bound			North	bound			South	bound	
Number of Lanes 0 0 2 0 0 2 0 0 1 0 0 0 1 0 Configuration 1 1 1 1 1 1 1 0 0 1 1 0 0 1 0 Configuration 1										U				U			
Configuration II II IR II II II III III III III III III IIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	· ·		<u> </u>														
Volume (veh/h) 9 892 21 27 960 30 9 0 10 8 3 15 Percent Heavy Vehicles (%) 2 3	Number of Lanes	0		2		0		2			0		0		0		0
Percent Heavy Vehicles (%) 2 <th2< th=""> 3<td>Configuration</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th2<>	Configuration																
Proportion Time Blocked Image: Control Time Blocked				892	21			960	30								
Percent Grade (%) Image: Control Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (LOS) Image: Control Level of Service (Level of Service (Level of Service (LOS)) Image: Control Level of Service (Level of Service (Level of Service (LOS)) Image: Control Level of Service (Level of Service (Leve	Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Right Tum Channelized Image: Strate Str	Proportion Time Blocked																
Median Type Storage Undivided Critical and Follow-up Headway (sec) 8ase Critical Headway (sec) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 Critical Headway (sec) 4.1 4.14 7.54 6.54 6.94 7.54 6.54 6.94 7.54 6.54 6.94 3.3 3.5 4.00 3.3 Follow-Up Headway (sec) 2.2 2 2.2 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 Follow-Up Headway (sec) 2.22 2 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Lever Service 21 3.2 4.02 3.2 4.02 3.2 Flow Rate, v (veh/h) 10 30 21 105 2 4 95 105 v/c Ratio 0.02 0.04 0.01 0.02 0.04 0.01 0.02 0.01 10 3.02 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>(</td><td>) (</td><td></td><td></td><td></td><td>5</td><td></td></t<>											() (5	
Critical and Follow-up Headway (sec) 4.1 7.5 6.5 6.9<	Right Turn Channelized																
Base Critical Headway (sec) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 Critical Headway (sec) 4.14 4.14 7.54 6.34 6.94 7.54 6.54 6.94 Base Follow-Up Headway (sec) 2.2 2.2 2.2 3.5 4.0 3.3 3.3 4.0 3.3 Follow-Up Headway (sec) 2.2 2.2 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Level of Service 587 678 105 105 2.0 9.5 9.5 Yc Ratio 0.02 0.04 0.0 0.02 0.04 0.0 0.0 0.00 10 0.00 0.01 0.02 0.04 0.02 0.01 10 0.02 0.01 10 0.02 0.04 0.02 0.01 10 0.02 0.01 10 0.02 0.01 10 0.02 0.01 0.02 0.01 0.01 0.01 0.02 0.01 10 0.02 0.01 10 0.02 0.01 11 0.	Median Type Storage				Undi	vided											
Critical Headway (sec) 4.14 4.14 4.14 7.54 6.54 6.94 7.54 6.54 6.94 <	Critical and Follow-up He	eadwa	ys												K		
Base Follow-Up Headway (sec) 2.2 2 2.2 3.5 4.0 3.3 3.5 4.0 3.3 3.5 4.0 3.3 Follow-Up Headway (sec) 2.22 2 2.22 2 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Leve of Service Service Service 21 2 2 2 2 2 2 2 2 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Leve of Service Service Service 5	Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Follow-Up Headway (sec) 2.22 2.22 2.22 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 3.52 4.02 3.32 4.03 3.32 4.03 3.03 3.03 3.03 3.03	Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 10 30 21 29 29 20 20 29 20 20 29 20 20 20 20 29 20 29 29 20 20 20 29 29 29 20 20 29 29 20 20 20 29 29 20	Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Flow Rate, v (veh/h) 10 30 21 29 Capacity, C (veh/h) 587 678 105 95 v/c Ratio 0.02 0.04 0.20 0.30 95% Queue Length, Q ₉₅ (veh) 0.1 0.1 0.1 0.7 1.1 Control Delay (s/veh) 11.2 10.5 47.4 58.2 Level of Service (LOS) 8 8 8 F F	Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Capacity, c (veh/h) 587 678 105 95 v/c Ratio 0.02 0.04 0.20 0.30 95% Queue Length, Q ₉₅ (veh) 0.1 0.1 0.1 0.1 0.1 0.7 1.1 Control Delay (s/veh) 11.2 10.5 0.4 0.47.4 58.2 58.2 Level of Service (LOS) B B B 0.7 0.7 1.7 58.2	Delay, Queue Length, and	d Leve	l of S	ervice													
Capacity, c (veh/h) 587 678 105 95 v/c Ratio 0.02 0.04 0.20 0.30 95% Queue Length, Q ₉₅ (veh) 0.1 0.1 0.1 0.1 0.1 0.7 1.1 Control Delay (s/veh) 11.2 10.5 0.4 0.47.4 58.2 58.2 Level of Service (LOS) B B B 0.7 0.7 1.7 58.2	Flow Rate, v (veh/h)		10				30					21				29	
v/c Ratio 0.02 0.04 0.20 0.30 95% Queue Length, Q ₈₅ (veh) 0.1 0.1 0.1 0.7 1.1 Control Delay (s/veh) 11.2 10.5 47.4 58.2 Level of Service (LOS) B B F F			587														
Control Delay (s/veh) 11.2 10.5 47.4 58.2 Level of Service (LOS) B B E F	v/c Ratio		0.02				0.04					0.20				0.30	
Control Delay (s/veh) 11.2 10.5 47.4 58.2 Level of Service (LOS) B B E F			0.1				0.1					0.7				1.1	
	Control Delay (s/veh)		11.2				10.5					47.4				58.2	
	Level of Service (LOS)		В				В					E				F	
Approach Delay (s/veh) 0.3 0.8 47.4 58.2	Approach Delay (s/veh)		0	.3		1	0	.8			47	7.4			58	3.2	
Approach LOS E F	Approach LOS	All 01 1										-					
Durricht © 2019 University of Elocid All Bickte Record UCSSE TMSC Version 7.6 Concerted: 12/19/2019 2:02:27 DM																	

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General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Maple	e St & Ru	ussell Av	'e		_
Agency/Co.	CTS						Jurisc	liction			City o	f White	ROck			
Date Performed	12/18	8/2018					East/	West Stre	eet		Russe	II Ave				
Analysis Year	2018						North	n/South !	Street		Lee St	t				
Time Analyzed	PM B	ase					Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	nview														
Lanes																
$\langle \rangle$				JA HAABAU		A	st-West	ALMER AND ALM								
Vehicle Volumes and Adj	ustme								1				1			
Approach			ound				oound				bound			1	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	66				64	2								9
							04	-						11		
Percent Heavy Vehicles (%)		2					04							11 2		2
Percent Heavy Vehicles (%) Proportion Time Blocked		2					04							2		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		2					04							2	0	
Percent Heavy Vehicles (%) Proportion Time Blocked		2					04							2	0	
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		2		Undir	vided		04							2	0	
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	eadwa			Undi	vided		04							2	0	
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa			Undir	vided									2	0	2
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He	eadwa	ys		Undi	vided									2	D	6.2
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	ys 4.1		Undi	vided									2		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	ys 4.1 4.12		Undi	vided									2 7.1 6.42		2 6.2 6.2
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		ys 4.1 4.12 2.2 2.22	ervice		vided									2 7.1 6.42 3.5		2 6.2 3.3
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		ys 4.1 4.12 2.2 2.22	ervice		vided									2 7.1 6.42 3.5	22	2 6.2 3.3
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		ys 4.1 4.12 2.22 2.22 I of Se	ervice		vided									2 7.1 6.42 3.5		6.2 6.2 3.3
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		ys 4.1 4.12 2.22 2.22 I of Se 0	ervice		vided									2 7.1 6.42 3.5	22	6.2 6.2 3.3
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway		ys 4.1 4.12 2.22 I of Se 0 1479	ervice		vided									2 7.1 6.42 3.5	22 870	2 6.2 3.3
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Company (sec) Follow-Up Headway (sec) Follow-Headway		 4.1 4.12 2.22 2.22 I of Set 0 1479 0.00 	ervice		vided									2 7.1 6.42 3.5	22 870 0.03	2 6.1 6.2 3.1
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway		4.1 4.12 2.2 2.22 1 of Se 0 1479 0.00 0.0	ervice		vided									2 7.1 6.42 3.5	22 870 0.03 0.1	2 6.2 3.3
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Keadway (sec)		ys 4.1 4.12 2.2 2.22 1 of Se 0 1479 0.00 0.0 7.4 A												2 7.1 6.42 3.5 3.52	22 870 0.03 0.1 9.2	2 6. 6.2 3.

HCS100 TWSC Version 7.6 Lee St & North Bluff Rd 2030_PM_B+S.xtw

General Information							C :::			-						
								Inforr	natio	n						
Analyst	DG							ection				e St & Ru		e		
Agency/Co.	CTS							liction				of White	ROck			
Date Performed	12/18,	/2018						West Stre			Russe					
Analysis Year	2020							/South S			Lee St	t				
Time Analyzed	PM Ba							Hour Fac			0.91					
Intersection Orientation	East-V						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	view														
Lanes																
				1114416	h S Mair	or Street: Ea	st-West	4.1.74.9.00								
Vehicle Volumes and Adju	stmei	nts			,											
Approach	L	Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	69				67	3						12		10
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															5	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up Hea	adway	ys														
	adway	ys 4.1												7.1		6.2
Critical and Follow-up Hea	adway													7.1 6.42		6.2 6.22
Critical and Follow-up Hea Base Critical Headway (sec)	adway	4.1														
Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec)	adway	4.1 4.12												6.42		6.22
Critical and Follow-up Heat Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice											6.42 3.5		6.22 3.3
Critical and Follow-up Heat Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice											6.42 3.5	24	6.22 3.3
Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		4.1 4.12 2.2 2.22 of Se	ervice											6.42 3.5	24	6.22 3.3
Critical and Follow-up Heat Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		4.1 4.12 2.2 2.22 of Se 0	ervice											6.42 3.5		6.22 3.3
Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.12 2.2 2.22 of Se 0 1473	ervice											6.42 3.5	864	6.22 3.3
Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.12 2.2 2.22 of Se 0 1473 0.00	ervice											6.42 3.5	864 0.03	6.22 3.3
Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₀₅ (veh)		4.1 4.12 2.2 2.22 of Se 0 1473 0.00 0.0	ervice											6.42 3.5	864 0.03 0.1	6.22 3.3

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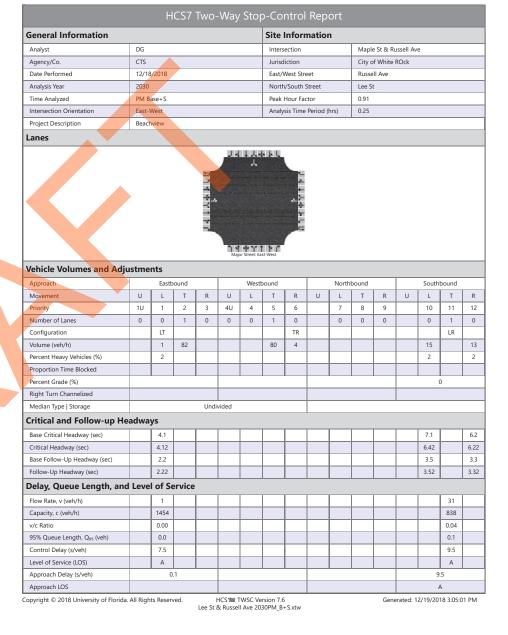
Site Information **General Information** Analyst DG Intersection Maple St & Russell Ave CTS City of White ROck Agency/Co. Jurisdiction Date Performed 12/18/2018 East/West Street Russell Ave Lee St Analysis Year 2020 North/South Street Time Analyzed PM Base+S Peak Hour Factor 0.91 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description Beachview Lanes]442466 * 4 4 7 4 4 1447120 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound U Movement U U Т R U Т R Т R L Т R L L L Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 0 0 Number of Lanes 0 1 0 0 1 0 0 0 0 0 1 0 TR LR Configuration LT 67 4 13 Volume (veh/h) 1 69 11 Percent Heavy Vehicles (%) 2 2 2 Proportion Time Blocked Percent Grade (%) 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 7.1 6.2 4.12 6.22 Critical Headway (sec) 6.42 2.2 Base Follow-Up Headway (sec) 3.5 3.3 Follow-Up Headway (sec) 2.22 3.52 3.32 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 1 26 Capacity, c (veh/h) 1472 862 v/c Ratio 0.00 0.03 95% Queue Length, Q₉₅ (veh) 0.0 0.1 Control Delay (s/veh) 7.4 9.3 Level of Service (LOS) А А Approach Delay (s/veh) 0.1 9.3 Approach LOS А Copyright © 2018 University of Florida. All Rights Reserved. HCS 1000 TWSC Version 7.6 Lee St & Russell Ave 2020PM_B+S.xtw Generated: 12/19/2018 3:07:07 PM

HCS 1000 TWSC Version 7.6 Lee St & Russell Ave 2020PM_B.xtw

General Information	_						C:4.									
								-	natio	1						
Analyst	DG							ection				e St & Ru		e		
Agency/Co.	CTS							liction				of White	ROck			
Date Performed	12/18,	/2018						West Stre			Russe					
Analysis Year	2030							/South S			Lee St	t				
Time Analyzed	PM Ba							Hour Fac			0.91					
Intersection Orientation	East-V						Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	view														
Lanes																
				1114411	h N Mair	or Street: Ea	st-West	4 1 4 4 4 5 4 0								
Vehicle Volumes and Adju	stmer	nts														
Approach	L	Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	82				80	3						14		12
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
															0 /	
Percent Grade (%)																
Right Turn Channelized																
				Undi	vided											
Right Turn Channelized	adway	ys		Undi	l vided											
Right Turn Channelized Median Type Storage	adway	ys 4.1		Undi	vided									7.1		6.2
Right Turn Channelized Median Type Storage Critical and Follow-up Hea	adway			Undi	vided									7.1 6,42		6.2
Right Turn Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec)	adway	4.1		Undi	vided											
Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec)	adway	4.1 4.12		Undi	vided									6.42		6.22
Right Turn Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided									6.42 3.5		6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided									6.42 3.5	29	6.22 3.3
Right Tum Channelized Median Type Storage Critical and Follow-up Hea Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		4.1 4.12 2.2 2.22 of Se	ervice		vided									6.42 3.5	29 840	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up Heet Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		4.1 4.12 2.2 2.22 of Se 0	ervice		vided									6.42 3.5		6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.12 2.2 2.22 of Se 0 1456	ervice		vided									6.42 3.5	840	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.12 2.2 2.22 of Se 0 1456 0.00	ervice		vided									6.42 3.5	840 0.03	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up Hee Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Capacity, C (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Qas (veh)		4.1 4.12 2.2 2.22 of Se 0 1456 0.00 0.0	ervice		vided									6.42 3.5	840 0.03 0.1	6.22 3.3

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HCS 1001 TWSC Version 7.6 Lee St & Russell Ave 2030PM_B.xtw

							p-Co		_							
General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Lee S	t & Site	Access			
Agency/Co.	CTS						Jurisc	liction			City c	of White	ROck			
Date Performed	12/18	/2018					East/	West Stre	eet		Site A	ccess				
Analysis Year	2020						North	/South S	Street		Lee S	t				
Time Analyzed	PM Ba	ase+S					Peak	Hour Fac	tor		0.91					
Intersection Orientation	North	-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	view														
Lanes																
				JA LARKI		1 4 \$*		14117411								
Vehicle Volumes and Adju	ustmei	nts				r Street: Nor		•								
Approach		Eastb	ound			Westh	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		12		2						2	7				28	18
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%))													
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadway	ys														
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32				K		2.22						
Delay, Queue Length, and	l Level	of Se	ervice													
Flow Rate, v (veh/h)			15							2						
Capacity, c (veh/h)			964							1556						
v/c Ratio			0.02							0.00						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			8.8							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		8	.8							1	.6					
Approach LOS	1		4													

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General Information							Site	Inform	natio	n						
Analyst	DCIntersectionLee St & Site Access//Co.CTSJurizdicionCity of White ROC//Co.CTSCity of White ROC//Co.CTSCity of White ROC//Co.CTSCity of White ROC//Co.PAIL SQ18City of Co.//Co.PAIL SQ18City of White ROC//Co.PAIL SQ18City of Co.City of Co.//Co.City of Co.City of Co.City of Co.//Co.City															
Agency/Co.	Site Information Intersection Lee St & Site Access CG Contrological Controlo															
Date Performed	Site Information Les Site Access Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" <th colspa<="" td=""></th>															
Analysis Year	2030						North	/South S	Street		Lee S	t				
Time Analyzed	PM B	ase+S					Peak	Hour Fac	tor		0.91					
Intersection Orientation	Site Information Intersection Les 8.2 Site Access CIG of White Rock CIG of White Rock Site Information PR Bachon South Site Access Site Access PR Bachon South Site Access Previous South Street Site Access Total South Street South Street Total South Street South Street Total South Street South Street South South Street South South Street South South Street South South Street South South Street															
Project Description	Site InformationLeg Site Site AccessClip of White RockClip of White RockSite AccessSite Access															
Lanes	Site informationLeg Site Site AccessLeg Site Site AccessClippinieLeg Site Site AccessSite Access <th< td=""></th<>															
$\langle \rangle$				JA UARANA	An	Street: Nor	th-South	14 14 4 4 4								
Vehicle Volumes and Adj	DG Intersection Les St. 8 Site Access Use St. 8 Site Access Cond CTS Juridacion CTy of Withe IPOCK Site Access Site Access Version 200 ¹ Version Site Access Use Site Access Use Access Version PMA Sourt Sourt Les Site Access Use Access Use Site Access Version PMA Sourt Sourt Version PMA Hour Factor Og I Use Site Access Version Readers Version Version Version Version Version Version Readers Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version Version															
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	1
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	(
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	(
Configuration			LR							LT						Т
Volume (veh/h)		12		2						2	7				33	1
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
		. ()													
Percent Grade (%)																
Percent Grade (%)				Undi	/ided											
Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys		Undi	vided											
Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa				vided					4.1						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	eadwa	7.1		6.2	vided											
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	7.1 6.42		6.2 6.22	vided					4.12						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	eadwa	7.1 6.42 3.5		6.2 6.22 3.3	/ided					4.12 2.2						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.1 6.42 3.5 3.52	ervice	6.2 6.22 3.3 3.32	<i>i</i> ided					4.12 2.2						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.1 6.42 3.5 3.52		6.2 6.22 3.3 3.32	vided					4.12 2.2 2.22						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		7.1 6.42 3.5 3.52	15	6.2 6.22 3.3 3.32	vided					4.12 2.2 2.22 2.22						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		7.1 6.42 3.5 3.52	15 958	6.2 6.22 3.3 3.32	vided					4.12 2.2 2.22 2.22 2.22 2 1549						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		7.1 6.42 3.5 3.52	15 958 0.02	6.2 6.22 3.3 3.32	rided					4.12 2.2 2.22 2 1549 0.00						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		7.1 6.42 3.5 3.52	15 958 0.02 0.0	6.2 6.22 3.3 3.32	/ided					4.12 2.2 2.22 2 1549 0.00 0.0						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh)		7.1 6.42 3.5 3.52	15 958 0.02 0.0 8.8	6.2 6.22 3.3 3.32	/ided					4.12 2.2 2.22 1549 0.00 0.0 7.3						
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Qa5 (veh) Control Delay (s/veh)	Site Information Intersection Lee St & Site Access 12/19/018 Lee St & Site Access PRE VWest Street Lee St PRE VWest Street Lee St Site Access PRE VWEST VWEST O I Site Access VEVENT VEVENT VEVENT VEVENT VEVENT Southout VEVENT VEVENT Southout VEVENT VEVENT Southout VEVENT VEVENT Southout VEVENT <th colsp<="" td=""></th>															

HCS7 Two-Way Stop-Control Report

HCS 1000 TWSC Version 7.6 Lee St & Site Access 2020PM_B+S.xtw

General Information							Site	Inform	natio	n						
	L DC								natio	•	Maria	- C+ 0- N	and Dia	(D.J.		
Analyst	DG						Inters						orth Blut	rt Rd		
Agency/Co.	CTS	(2010					Jurisd				-	of White				
Date Performed		8/2018						Nest Stre				n Bluff Re	1			
Analysis Year	2018							/South S			Maple	e				
Time Analyzed	PM B							Hour Fac		la se el	0.91					
Intersection Orientation	East-\ Beach						Analy	sis Time	Period (nrs)	0.25					
Project Description Lanes	Beacr	iview														
Vehicle Volumes and Adj Approach Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	USTIME		T 2 2 725	R 3 0 TR 8		* * Vesti L 4 0 LT 18 2		R 6 0 TR 19		L 7 0 3 2	bound T 8 1 LTR 0 2	R 9 0 9 2		L 10 2 2	bound T 11 1 1 1 2	R 12 0 5 2
Right Turn Channelized																
Median Type Storage				Undi	l vided											
Critical and Follow-up He	Padwa	vs														
Base Critical Headway (sec)		4 .1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.1				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
	d Love					L.LL				5.52	4.02	5.52		5.52	4.02	5.52
Delay, Queue Length, and	u Leve		ervice		_						_					
Flow Rate, v (veh/h)		1				20					13				9	
Capacity, c (veh/h)		812				799					305				227	
v/c Ratio		0.00				0.02					0.04				0.04	
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.1				0.1	
Control Delay (s/veh)		9.4				9.6					17.3				21.5	
Level of Service (LOS)		A				A					C				С	
Approach Delay (s/veh)		0	.0			0	.4			17	7.3			2	.5	
Approach LOS	-										с				2	

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General Information							Site	Inforr	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & N	orth Blu	ff Rd		
Agency/Co.	CTS						Jurisc	liction			City c	of White	ROck			
Date Performed	12/18	8/2018					East/	West Stre	eet		North	n Bluff Ro	ł			
Analysis Year	2020						North	n/South !	Street		Mapl	e				
Time Analyzed	PM B	ase					Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
\mathbf{V}					n N Maj	* or Street: Ea	st-West	4 5 5 5 10								
Vehicle Volumes and Ad	justme				I				I				I			
Approach			ound				bound			_	bound				bound	
																R
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	
Priority	1U	1	2	3	4U	4	5	6	0	7	8	9	0	10	11	12
Priority Number of Lanes		1		3 0		4		6 0			8				11 1	<u> </u>
Priority Number of Lanes Configuration	1U	1 0 LT	2 2	3 0 TR	4U	4 0 LT	5	6 0 TR		7	8 1 LTR	9		10 0	11 1 LTR	12
Priority Number of Lanes Configuration Volume (veh/h)	1U	1 0 LT 2	2	3 0	4U	4 0 LT 19	5	6 0		7 0 4	8 1 LTR 0	9 0 10		10 0 3	11 1 LTR 2	12 0 6
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	1U	1 0 LT	2 2	3 0 TR	4U	4 0 LT	5	6 0 TR		7	8 1 LTR	9		10 0	11 1 LTR	12 0 6
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	1U	1 0 LT 2	2 2	3 0 TR	4U	4 0 LT 19	5	6 0 TR		7 0 4 2	8 1 LTR 0	9 0 10		10 0 3 2	11 1 LTR 2	12 0 6
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	1U	1 0 LT 2	2 2	3 0 TR	4U	4 0 LT 19	5	6 0 TR		7 0 4 2	8 1 LTR 0 2	9 0 10		10 0 3 2	11 1 LTR 2 2	12
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	1U	1 0 LT 2	2 2	3 0 TR 9	4U	4 0 LT 19	5	6 0 TR		7 0 4 2	8 1 LTR 0 2	9 0 10		10 0 3 2	11 1 LTR 2 2	12 0 6
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	1U 0	1 0 LT 2 2	2 2	3 0 TR 9	4U 0	4 0 LT 19	5	6 0 TR		7 0 4 2	8 1 LTR 0 2	9 0 10		10 0 3 2	11 1 LTR 2 2	12 0 6
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	1U 0	1 0 LT 2 2	2 2	3 0 TR 9	4U 0	4 0 LT 19	5	6 0 TR		7 0 4 2	8 1 LTR 0 2	9 0 10		10 0 3 2	11 1 LTR 2 2	12 0 6 2
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	1U 0	1 0 LT 2 2	2 2	3 0 TR 9	4U 0	4 0 LT 19 2	5	6 0 TR		7 0 4 2	8 1 LTR 0 2	9 0 10 2		10 0 3 2	11 1 LTR 2 2	112 0 6 2
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	1U 0	1 0 LT 2 2 2 ys 4.1	2 2	3 0 TR 9	4U 0	4 0 LT 19 2	5	6 0 TR		7 0 4 2 7.5	8 1 LTR 0 2 0	9 0 10 2 6.9		10 0 3 2 7.5	11 1 LTR 2 2 0	12 0 6
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	1U 0	1 0 LT 2 2 2 ys 4.1 4.14	2 2	3 0 TR 9	4U 0	4 0 LT 19 2	5	6 0 TR		7 0 4 2 7.5 7.54	8 1 LTR 0 2 	9 0 10 2 6.9 6.94		10 0 3 2 7.5 7.54	11 1 LTR 2 2 0 6.5 6.54	6.9 6.9
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	1 0 LT 2 2 3 4.1 4.14 2.2 2.22	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 	5	6 0 TR		7 0 4 2 7.5 7.54 3.5	8 1 LTR 0 2 	9 0 10 2 		10 0 3 2 7.5 7.54 3.5	11 1 LTR 2 2 0 6.5 6.54 4.0	6.9 6.9 6.9
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Ease Follow-Up Headway (sec)	eadwa	1 0 LT 2 2 3 4.1 4.14 2.2 2.22	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 	5	6 0 TR		7 0 4 2 7.5 7.54 3.5	8 1 LTR 0 2 	9 0 10 2 		10 0 3 2 7.5 7.54 3.5	11 1 LTR 2 2 0 6.5 6.54 4.0	6.9 6.9 6.9
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Ease Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	eadwa	1 0 LT 2 2 2 4.1 4.14 2.2 2.22 1 of Sc	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 	5	6 0 TR		7 0 4 2 7.5 7.54 3.5	8 1 LTR 0 2 2 	9 0 10 2 		10 0 3 2 7.5 7.54 3.5	11 1 LTR 2 2 	6.9 6.9 6.9
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	eadwa	1 0 LT 2 2 4.1 4.14 2.22 2.22 L of Sc 2	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 4.1 4.14 2.2 2.22 21	5	6 0 TR		7 0 4 2 7.5 7.54 3.5	8 1 LTR 0 2 2 	9 0 10 2 		10 0 3 2 7.5 7.54 3.5	11 1 LTR 2 2 2 	6.9 6.9 6.9
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (eadwa	1 0 LT 2 2 2 2 4.1 4.14 2.2 2.22 I of Sc 2 790 0.00 0.0	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 2 	5	6 0 TR		7 0 4 2 7.5 7.54 3.5	8 1 LTR 0 2 2 5 5 6.5 6 5 6.5 4 4.0 4.02 15 264 0.06 0.2	9 0 10 2 		10 0 3 2 7.5 7.54 3.5	11 1 LTR 2 2 	6.9 6.9 6.9
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base follow-Up Headway (sec) Ease Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Qas (veh) Control Delay (s/veh)	eadwa	1 0 LT 2 2 2 4.1 4.14 2.2 2.22 1 of Se 2 790 0.00 0.00 9.6	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 2 	5	6 0 TR		7 0 4 2 7.5 7.54 3.5	8 1 LTR 0 2 	9 0 10 2 		10 0 3 2 7.5 7.54 3.5	11 1 LTR 2 2 	6. 6. 3.
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Tollow-Up Headway (sec) Ease Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	eadwa	1 0 LT 2 2 2 4.1 4.14 2.2 2.22 1 of Se 2 790 0.00 0.00 9.6 A	2 2 754	3 0 TR 9 Undi	4U 0	4 0 LT 19 2 4.1 4.14 4.14 2.2 2.22 21 776 0.03 0.1 9.8 A	5	6 0 TR		7 0 4 2 7.5 7.54 3.5 3.52	8 1 LTR 0 2 2 5 5 6.5 6 5 6.5 4 4.0 4.02 15 264 0.06 0.2	9 0 10 2 		10 0 3 2 7.5 7.54 3.5 3.52	11 1 LTR 2 2 	6. 6. 3.

HCS 1000 TWSC Version 7.6 Maple St & North Bluff Rd 2018_PM_B.xtw

							o-Co									
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Maple	e St & N	orth Blui	ff Rd		
Agency/Co.	CTS						Jurisd	iction			City c	of White	ROck			
Date Performed	12/18	/2018					East/	Nest Stre	eet		North	n Bluff Ro	ł			
Analysis Year	2020						North	/South S	Street		Maple	e				
Time Analyzed	PM Ba	ase+S					Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-V	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				14 1 1 4 P 1 1		or Street: Ea		In the second								
Vehicle Volumes and Adju	ustme	nts														
Approach		Eastb	ound			West	ound			North	bound			South	bound	`
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		2	763	10		21	701	20		5	0	12		3	2	6
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											<u>ه</u>				0 /	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	Leve	l of Se	ervice													
Flow Rate, v (veh/h)		2				23					19				12	
Capacity, c (veh/h)		786				769					253				176	
v/c Ratio		0.00				0.03					0.07				0.07	
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.2				0.2	
Control Delay (s/veh)		9.6				9.8					20.3				27.0	
Level of Service (LOS)		А				A					С				D	
Approach Delay (s/veh)		0	.0			0	.5			20	0.3			2	7.0	
Approach Delay (s/vell)																

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Site Information General Information Analyst DG Intersection Maple St & North Bluff Rd CTS Jurisdiction City of White ROck Agency/Co. Date Performed 12/18/2018 East/West Street North Bluff Rd Maple Analysis Year 2030 North/South Street Time Analyzed PM Base Peak Hour Factor 0.91 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description Beachview Lanes]442466 1 4 1 A 4 1 4 4 5 1447126 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound Movement U U U Т U Т R L Т R L Т R L R L Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 0 Number of Lanes 0 2 0 0 0 2 0 0 1 0 0 1 0 TR LTR LTR Configuration LT TR LT 24 Volume (veh/h) 2 899 10 23 829 4 0 12 3 2 7 Percent Heavy Vehicles (%) 2 2 2 2 2 2 2 2 Proportion Time Blocked Percent Grade (%) 0 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 7.54 6.54 6.94 Critical Headway (sec) 4.14 4.14 7.54 6.54 6.94 3.5 4.0 Base Follow-Up Headway (sec) 2.2 2.2 3.5 4.0 3.3 3.3 Follow-Up Headway (sec) 2.22 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 2 25 18 13 693 201 Capacity, c (veh/h) 675 128 v/c Ratio 0.00 0.04 0.09 0.10 95% Queue Length, Q₉₅ (veh) 0.0 0.1 0.3 0.3 Control Delay (s/veh) 10.2 10.5 24.6 36.2 Level of Service (LOS) В В С Е Approach Delay (s/veh) 24.6 0.1 0.6 36.2 Approach LOS С Е Copyright © 2018 University of Florida. All Rights Reserved.

HCS TMI TWSC Version 7.6 Maple St & North Bluff Rd 2030_PM_B.xtw

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HCSTM TWSC Version 7.6 Maple St & North Bluff Rd 2020_PM_B+S.xtw

General Information							Site	Inform	natio	n						
	DG						Inters		natio		Manl	- C+ 9: N	e eth Divi	(C D.J		
Analyst	CTS												orth Blut	п ка		
Agency/Co. Date Performed		8/2018					Jurisd	Nest Stre	ant		-	of White				
Analysis Year	2030	0/2010						/South S			Maple		1			
Time Analyzed	-	ase+S						Hour Fac			0.91	5				
Intersection Orientation	East-							sis Time		hre)	0.25					
Project Description	Beach						Analy	313 111110	Tenou	1113)	0.25					
Lanes	Deaci	IVICVV														
				U 4 1 X 4 N 1 U		*		HALLAR BUU								
Vehicle Volumes and Adj	ustme	nts				or Street: Ea										
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		2	908	11		25	835	24		5	0	14		3	2	7
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											<u>ه</u>				5	
Right Turn Channelized																_
Median Type Storage				Undi	vided											
Critical and Follow-up Ho	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		2				27					21				13	
Capacity, c (veh/h)		689				668					189				124	
v/c Ratio		0.00				0.04					0.11				0.11	
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.4				0.3	
Control Delay (s/veh)		10.2				10.6					26.3				37.4	
Level of Service (LOS)		В				В					D				E	
Approach Delay (s/veh)		0	.1		1	0	.7			26	5.3			. 37	7.4	
Approach Delay (s/vell)																

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Site Information General Information Analyst DG Intersection Maple St & Russell Ave CTS City of White ROck Agency/Co. Jurisdiction Date Performed 12/18/2018 East/West Street Russell Ave Maple St Analysis Year 2018 North/South Street Time Analyzed PM Peak Hour Factor 0.91 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description Beachview Lanes]442466 4 4 7 4 4 1447126 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound Movement U U U Т U Т R L Т R L Т R L R L Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 0 Number of Lanes 0 1 0 0 0 1 0 0 1 0 0 1 0 LTR LTR LTR Configuration LTR 79 Volume (veh/h) 2 5 4 49 4 8 7 3 2 11 7 Percent Heavy Vehicles (%) 2 2 2 2 2 2 2 2 Proportion Time Blocked Percent Grade (%) 0 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 4.1 7.1 6.5 6.2 7.1 6.5 6.2 7.12 6.52 6.22 Critical Headway (sec) 4.12 4.12 7.12 6.52 6.22 3.5 4.0 Base Follow-Up Headway (sec) 2.2 2.2 3.5 4.0 3.3 3.3 Follow-Up Headway (sec) 2.22 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 2 4 20 22 1510 754 778 Capacity, c (veh/h) 1486 v/c Ratio 0.00 0.00 0.03 0.03 95% Queue Length, Q₉₅ (veh) 0.0 0.0 0.1 0.1 Control Delay (s/veh) 7.4 7.4 9.9 9.8 Level of Service (LOS) А А А А Approach Delay (s/veh) 9.9 0.2 0.5 9.8 Approach LOS А А Copyright © 2018 University of Florida. All Rights Reserved. Generated: 12/19/2018 3:13:16 PM HCS TW TWSC Version 7.6

Maple St & Russell Ave 2018PM_B.xtw

HCSTM TWSC Version 7.6 Maple St & North Bluff Rd 2030_PM_B+S.xtw

			CS7			-510		_	_	_						
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Maple	e St & R	ussell Av	e		
Agency/Co.	CTS						Jurisd	iction			City c	of White	ROck			
Date Performed		8/2018						West Stre			Russe					
Analysis Year	2020							/South S			Maple	e St				
Time Analyzed	PM							Hour Fac			0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				14174876		or Street: Ea	st-West									
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	83	6		5	51	5		9	8	4		3	12	8
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										() (5 -	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Follow-up Headway (sec)	d Leve	l of S	ervice													
Delay, Queue Length, an						5					23				25	
		3				1479					744				769	
Delay, Queue Length, an	-	3 1506				14/9				1						
Delay, Queue Length, an Flow Rate, v (veh/h)						0.00					0.03				0.03	
Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		1506									0.03 0.1				0.03 0.1	
Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		1506 0.00				0.00										
Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		1506 0.00 0.0				0.00					0.1				0.1	
Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)		1506 0.00 0.0 7.4 A	.3			0.00 0.0 7.4 A	.6			1(0.1 10.0			9	0.1 9.8	

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									Rep							
General Information							Site	Inforr	natio	n						_
Analyst	DG						Inters	ection			Maple	e St & Ru	ussell Av	e		
Agency/Co.	CTS						Jurisd	liction			City o	of White	ROck			
Date Performed	12/18	8/2018					East/\	Nest Stre	eet		Russe	II Ave				
Analysis Year	2020						North	/South !	Street		Maple	e St				
Time Analyzed	PM+	5					Peak I	Hour Fac	tor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				14 1 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	D H	+ or Street: Ea	st-West	14 + 44 + 5 U								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	84	6		5	52	5		9	8	4		3	12	8
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%))				D	
Right Turn Channelized																
Right Turn Channelized Median Type Storage				Undi	vided											
	adwa	ys		Undi	vided											
Median Type Storage	eadwa	ys 4.1		Undi	vided	4.1				7.1	6.5	6.2		7.1	6.5	6.2
Median Type Storage Critical and Follow-up He	eadwa	-		Undi	vided	4.1						6.2			6.5 6.52	6.2
Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	4.1		Undi	vided					7.1	6.5			7.1		
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	4.1 4.12		Undi	vided	4.12				7.1 7.12	6.5 6.52	6.22		7.1	6.52	6.22
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided	4.12 2.2				7.1 7.12 3.5	6.5 6.52 4.0	6.22 3.3		7.1 7.12 3.5	6.52 4.0	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided	4.12 2.2				7.1 7.12 3.5	6.5 6.52 4.0	6.22 3.3		7.1 7.12 3.5	6.52 4.0	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and		4.1 4.12 2.2 2.22	ervice		vided	4.12 2.2 2.22				7.1 7.12 3.5	6.5 6.52 4.0 4.02	6.22 3.3		7.1 7.12 3.5	6.52 4.0 4.02	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)		4.1 4.12 2.2 2.22 I of Se 3 1505 0.00	ervice		vided	4.12 2.2 2.22 5 1478 0.00				7.1 7.12 3.5	6.5 6.52 4.0 4.02 23 742 0.03	6.22 3.3		7.1 7.12 3.5	6.52 4.0 4.02 25 767 0.03	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.12 2.2 2.22 I of Se 3 1505	ervice		vided	4.12 2.2 2.22 5 1478				7.1 7.12 3.5	6.5 6.52 4.0 4.02 23 742	6.22 3.3		7.1 7.12 3.5	6.52 4.0 4.02 25 767	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.12 2.2 2.22 I of Se 3 1505 0.00	ervice		vided	4.12 2.2 2.22 5 1478 0.00				7.1 7.12 3.5	6.5 6.52 4.0 4.02 23 742 0.03	6.22 3.3		7.1 7.12 3.5	6.52 4.0 4.02 25 767 0.03	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh)		4.1 4.12 2.2 2.22 of Se 3 1505 0.00 0.0	ervice		vided	4.12 2.2 2.22 5 1478 0.00 0.0				7.1 7.12 3.5 3.52	6.5 6.52 4.0 4.02 23 742 0.03 0.1 10.0 B	6.22 3.3		7.1 7.12 3.5 3.52	6.52 4.0 4.02 25 767 0.03 0.1 9.9 A	6.22 3.3
Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)		4.1 4.12 2.2 2.22 1 of Se 3 1505 0.00 0.0 7.4 A	ervice		vided	4.12 2.2 2.22 5 1478 0.00 0.0 7.4				7.1 7.12 3.5	6.5 6.52 4.0 4.02 742 0.03 0.1 10.0 8 0.0	6.22 3.3		7.1 7.12 3.5 3.52	6.52 4.0 4.02 25 767 0.03 0.1 9.9 A 9.9	6.22 3.3

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									Rep		_					
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Maple	e St & R	ussell Av	e		
Agency/Co.	CTS						Jurisd	liction			City o	of White	ROck			
Date Performed	12/18	/2018					East/	West Stre	eet		Russe	II Ave				
Analysis Year	2030						North	/South S	Street		Maple	e St				
Time Analyzed	PM						Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-\	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	iview														
Lanes																
				144446		er Street: Ea	st-West	1114 ÷								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	,
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	98	7		5	61	5		10	9	4		3	14	9
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										(o 🔪			(5	
rercent diade (70)																
Right Turn Channelized																
				Undi	vided											
Right Turn Channelized	eadwa	ys		Undi	vided											
Right Turn Channelized Median Type Storage	eadwa	ys 4.1		Undi	vided	4.1				7.1	6.5	6.2		7.1	6.5	6.2
Right Turn Channelized Median Type Storage Critical and Follow-up H	eadwa			Undi	vided	4.1 4.12				7.1	6.5 6.52	6.2 6.22		7.1 7.12	6.5 6.52	6.2 6.22
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	4.1		Undi	vided						_					
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	eadway	4.1 4.12		Undi	vided	4.12				7.12	6.52	6.22		7.12	6.52	6.22
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided	4.12 2.2				7.12 3.5	6.52 4.0	6.22 3.3		7.12 3.5	6.52 4.0	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		4.1 4.12 2.2 2.22 I of Se	ervice		vided	4.12 2.2 2.22				7.12 3.5	6.52 4.0 4.02	6.22 3.3		7.12 3.5	6.52 4.0 4.02	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		4.1 4.12 2.2 2.22	ervice		vided	4.12 2.2				7.12 3.5	6.52 4.0	6.22 3.3		7.12 3.5	6.52 4.0	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		4.1 4.12 2.2 2.22 of Se 3	ervice		vided	4.12 2.2 2.22 5				7.12 3.5	6.52 4.0 4.02 25	6.22 3.3		7.12 3.5	6.52 4.0 4.02 29	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.12 2.2 2.22 1 of Se 3 1492	ervice		vided	4.12 2.2 2.22 5 1458				7.12 3.5	6.52 4.0 4.02 25 712	6.22 3.3		7.12 3.5	6.52 4.0 4.02 29 744	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/C Ratio 95% Queue Length, Q ₈₅ (veh)		4.1 4.12 2.2 2.22 I of Se 3 1492 0.00	ervice		vided	4.12 2.2 2.22 5 1458 0.00				7.12 3.5	6.52 4.0 4.02 25 712 0.04	6.22 3.3		7.12 3.5	6.52 4.0 4.02 29 744 0.04	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/C Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)		4.1 4.12 2.2 2.22 of Se 3 1492 0.00 0.0	ervice		vided	4.12 2.2 2.22 5 1458 0.00 0.0				7.12 3.5	6.52 4.0 4.02 25 712 0.04 0.1	6.22 3.3		7.12 3.5	6.52 4.0 4.02 29 744 0.04 0.1	6.22 3.3
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/C Ratio 95% Queue Length, Q ₈₅ (veh)		4.1 4.12 2.2 2.22 of Se 3 1492 0.00 0.0 7.4 A	ervice		vided	4.12 2.2 2.22 5 1458 0.00 0.0 7.5	.6			7.12 3.5	6.52 4.0 4.02 25 712 0.04 0.1 10.2 B	6.22 3.3		7.12 3.5 3.52	6.52 4.0 4.02 29 744 0.04 0.1 10.0	6.22 3.3

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General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Mapl	e St & Ri	ussell Av	e		
Agency/Co.	CTS						Jurisd	iction			City c	of White	ROck			
Date Performed	12/18	8/2018					East/\	Vest Stre	eet		Russe	II Ave				
Analysis Year	2030						North	/South S	Street		Mapl	e St				
Time Analyzed	PM+	5					Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beac	nview														
Lanes																
$\langle \rangle$				14 14 4 10	n a Maj	or Street: Ea	st-West									
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	99	7		5	62	5		10	9	4		3	14	9
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										(D				C	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
		loff	ervice													
Delay, Queue Length, and	d Leve	10130							_		-			-	_	
Delay, Queue Length, and Flow Rate, v (veh/h)	d Leve	3				5					25				29	
	d Leve					5 1456					25 710				29 742	
Flow Rate, v (veh/h)	d Leve	3				<u> </u>										
Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	3 1491				1456					710				742	
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	3 1491 0.00				1456 0.00					710 0.04				742 0.04	
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	d Leve	3 1491 0.00 0.0				1456 0.00 0.0					710 0.04 0.1				742 0.04 0.1	
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		3 1491 0.00 0.0 7.4 A	.2			1456 0.00 0.0 7.5 A	.5			10	710 0.04 0.1 10.3			10	742 0.04 0.1 10.0	

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					,				Rep							
General Information							Site	Inforr	natio	ı						
Analyst	DG						Inters	ection			Maple	e & Site	Access			
Agency/Co.	CTS						Jurisd	liction			City c	f White	ROck			
Date Performed	12/18	8/2018					East/	West Stre	eet		Site A	ccess				
Analysis Year	2020						North	/South S	Street		Maple	e St				
Time Analyzed	PM B	ase+S					Peak	Hour Fac	tor		0.91					
Intersection Orientation	North	n-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				1417481	Major	r Street: Nor	th-South	THE PLANE								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						0		3			14	0		3	30	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		
Delay, Queue Length, and	d Leve	l of S	ervice													
Flow Rate, v (veh/h)							3							3		
Capacity, c (veh/h)							1062							1599		
v/c Ratio							0.00							0.00		
95% Queue Length, Q ₉₅ (veh)							0.0							0.0		
Control Delay (s/veh)							8.4							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						8	.4							0	0.7	
Approach LOS							Ą									

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				1000	- vvay	/ Stop			Kep	UIL _						
General Information							Site	Inform	natio	n						
Analyst	DG						Inters	ection			Maple	e & Site	Access			
Agency/Co.	CTS						Jurisd	iction			City o	f White	ROck			
Date Performed	12/18	8/2018					East/\	Nest Stre	eet		Site A	ccess				
Analysis Year	2030						North	/South !	Street		Maple	e St				
Time Analyzed	PM B	ase+S					Peak I	Hour Fac	tor		0.91					
Intersection Orientation	North	1-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	Beach	nview														
Lanes																
				2412454	Majo	k street Nor	th-South	Nel strange								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						0		3			16	0		3	35	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		
Delay, Queue Length, and	d Leve	l of S	ervice													
Flow Rate, v (veh/h)							3							3		
Capacity, c (veh/h)							1059							1597		
v/c Ratio							0.00							0.00		
95% Queue Length, Q ₉₅ (veh)							0.0							0.0		
Control Delay (s/veh)							8.4							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)							.4							0	.6	
Approach LOS					1		Ą									

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Appendix C Traffic Count Data



Lee St & Russell Ave

Thursday, November 08, 2018 Vehicle Classification Summary

Project:	#5935: Beachway Traffic Impact Assessment
Municipality:	White Rock
Weather:	Cloudy

			Ve	hicle Classificat	ion	
Time Period	Entering Intersection	Passenger Cars	Heavy Vehicles (3 or more axles)			Total
Morning	Volume	259	3			262
(07:00 - 09:00)	%	98.9%	1.1%			100.0%
Midday	Volume					
	%					
Afternoon	Volume	374	3			377
(15:00 - 18:00)	%	99.2%	0.8%			100.0%
Total	Volume	633	6			639
(5 Hours)	%	99.1%	0.9%			100.0%



Lee St & Russell Ave

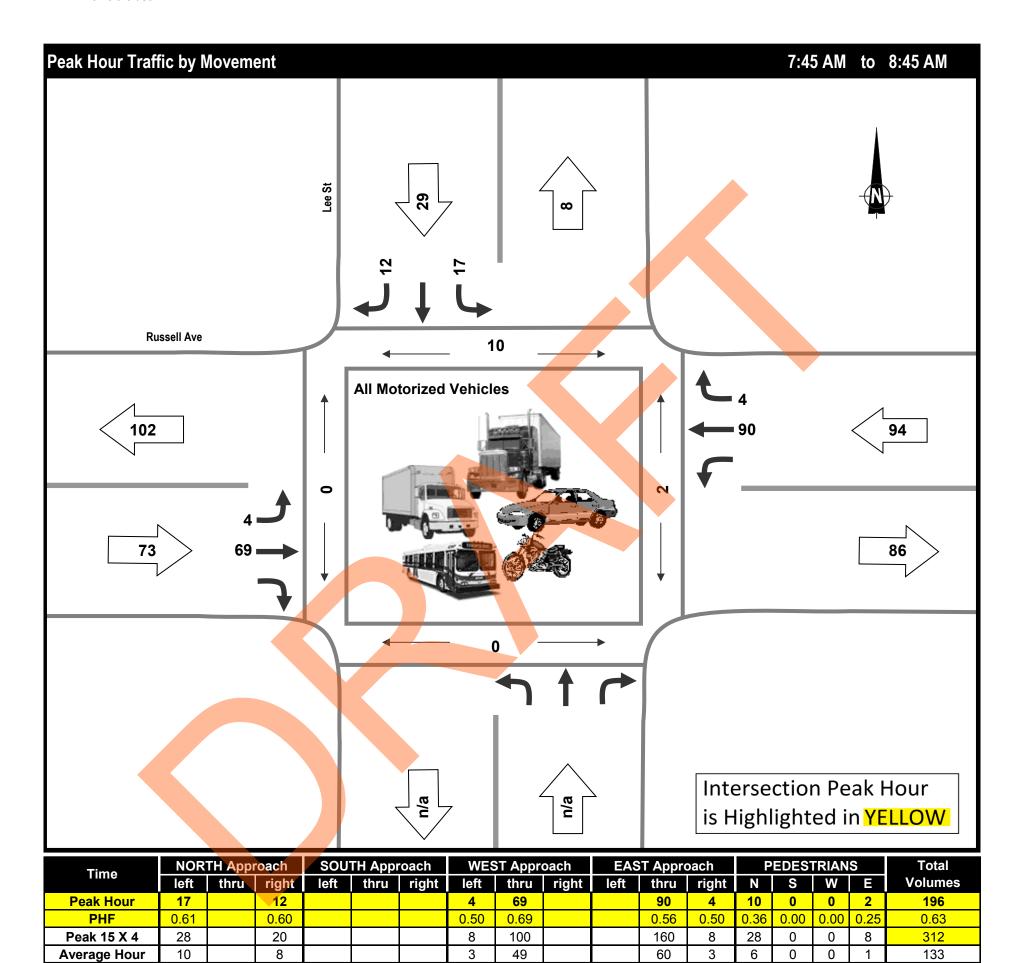
Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles

Survey Total

7:00



7:15	0	1		0	13		5	0	0	0	0	0	19
7:30	0	1		1	6		7	0	0	0	0	0	15
7:45	0	1		0	13		18	0	3	0	0	0	32
8:00	4	5		1	13		15	0	0	0	0	0	38
8:15	6	4		1	25		40	2	7	0	0	0	78
8:30	7	2		2	18		17	2	0	0	0	2	48
8:45	2	1		0	4		15	1	1	0	0	0	23



Survey Total

19

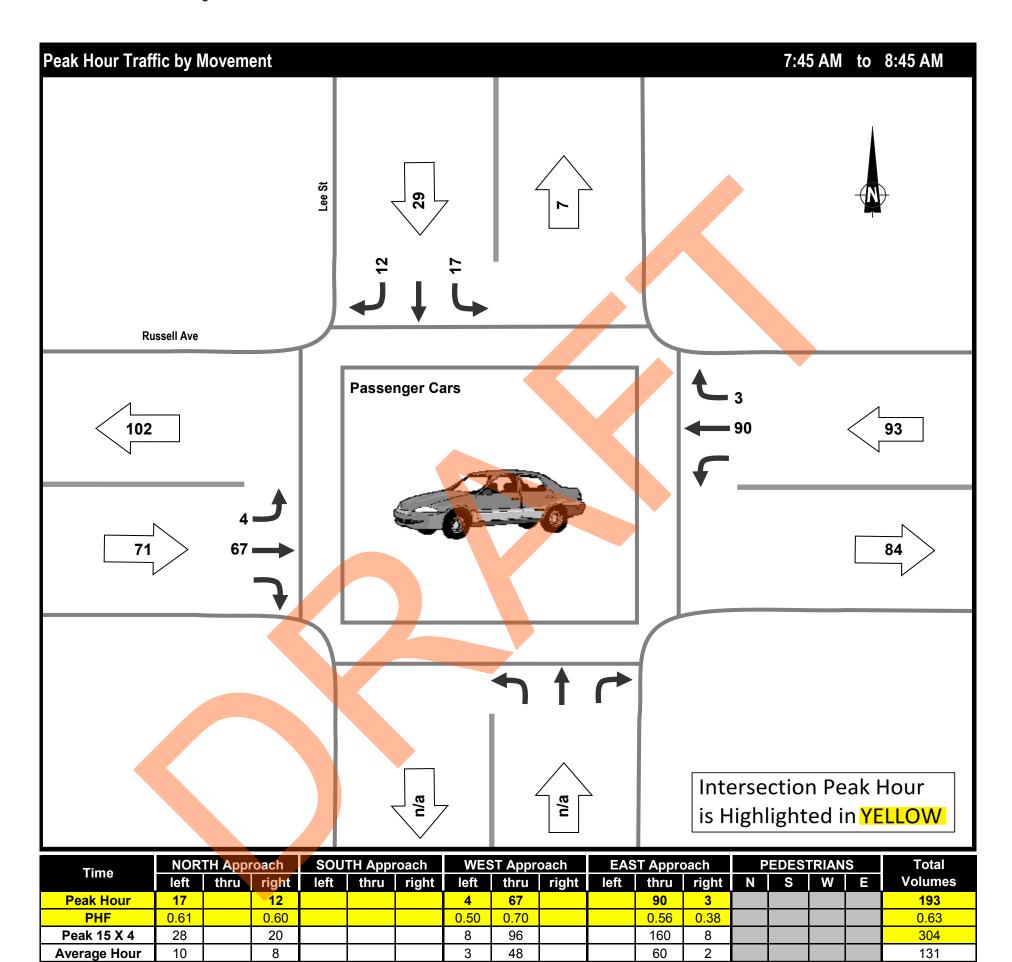
15

Lee St & Russell Ave

Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



7:00	0	0		0	6		3	0			9	l
7:15	0	1		0	13		5	0			19	1
7:30	0	1		1	6		7	0			15	1
7:45	0	1		0	13		18	0			32	l
8:00	4	5		1	12		15	0			37	1
8:15	6	4		1	24		40	1			76	1
8:30	7	2		2	18		17	2			48	1
8:45	2	1		0	4		15	1			23	1

96

120

4

259



Average Hour

Survey Total

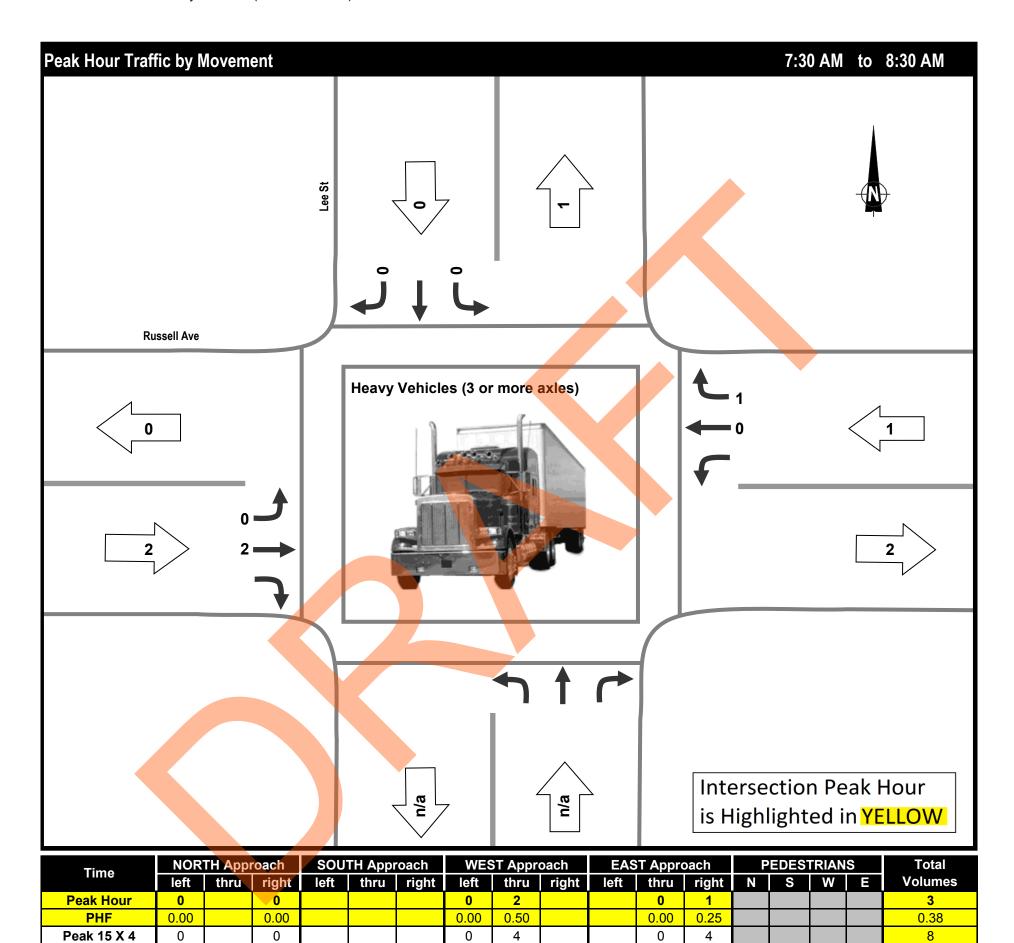
7:00

Lee St & Russell Ave

Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



7:15	0	0		0	0		0	0			0
7:30	0	0		0	0		0	0			0
7:45	0	0		0	0		0	0			0
8:00	0	0		0	1		0	0			1
8:15	0	0		0	1		0	1			2
8:30	0	0		0	0		0	0			0
8:45	0	0		0	0		0	0			0



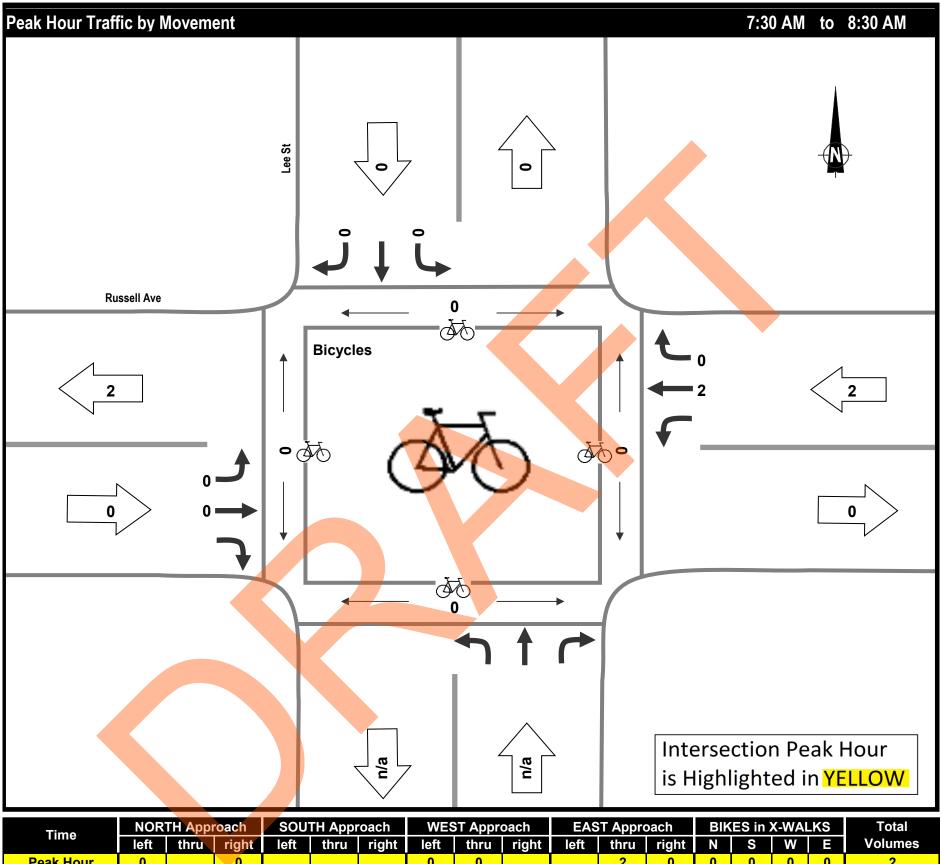
Lee St & Russell Ave

Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



	left	thru	right	Ν	S	W	Е	Volumes									
Peak Hour	0		0				0	0			2	0	0	0	0	0	2
PHF	0.00		0.00				0.00	0.00			0.50	0.00	0.00	0.00	0.00	0.00	0.50
Peak 15 X 4	0		0				0	0			4	0	0	0	0	0	4
Average Hour	0		0				0	0			1	0	0	0	0	0	1
Survey Total	0		0				0	0			2	0	0	0	0	0	2
7:00	0		0				0	0			0	0	0	0	0	0	0

7:15	0	0		0	0		0	0	0	0	0	0	0
7:30	0	0		0	0		0	0	0	0	0	0	0
7:45	0	0		0	0		0	0	0	0	0	0	0
8:00	0	0		0	0		1	0	0	0	0	0	1
8:15	0	0		0	0		1	0	0	0	0	0	1
8:30	0	0		0	0		0	0	0	0	0	0	0
8:45	0	0		0	0		0	0	0	0	0	0	0

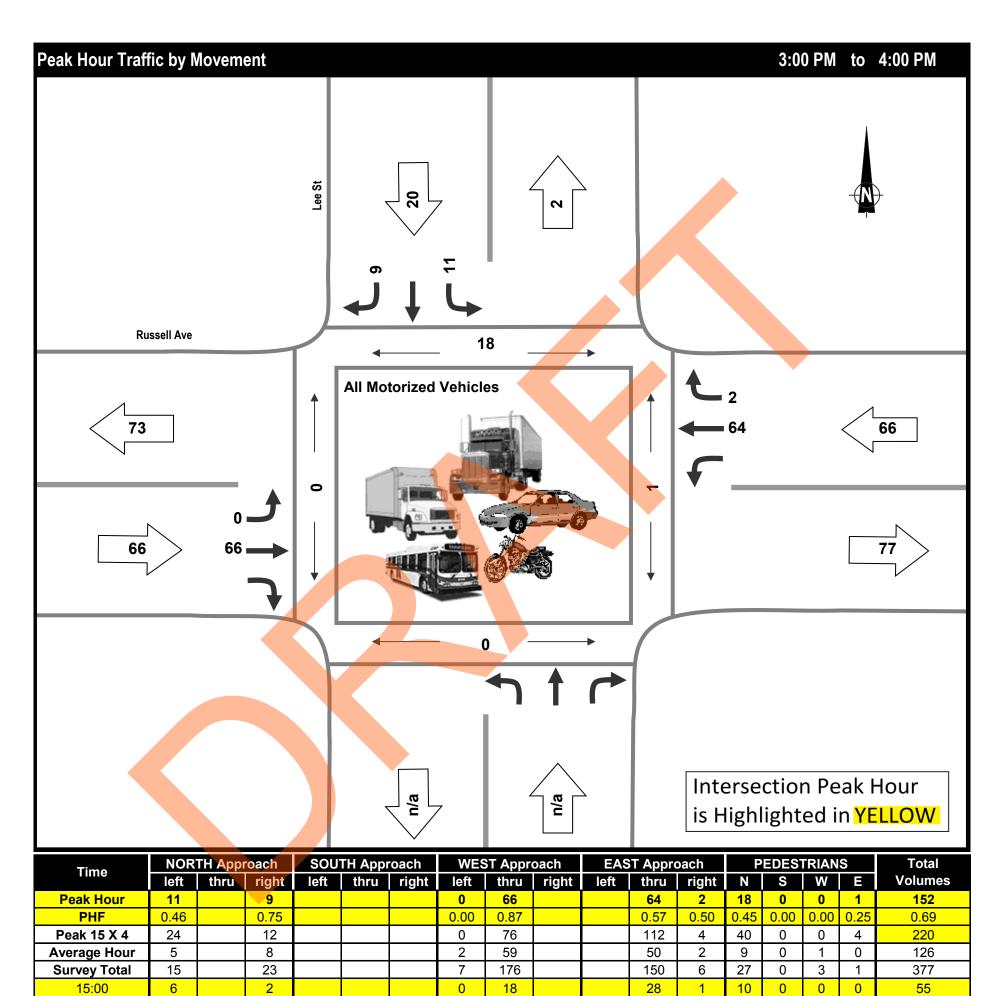


Lee St & Russell Ave

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles



3				13			11		3	0	0		27
3			0	16			14	0	5	0	0	0	36
2			0	19			11	0	0	0	0	0	34
0			1	14			17	1	2	0	0	0	34
3			1	16			19	0	1	0	0	0	39
4			1	13			15	0	0	0	0	0	34
0			2	14			5	0	0	0	0	0	22
2			0	20			7	0	0	0	0	0	30
2			1	11			13	2	4	0	0	0	29
0			0	16			5	0	1	0	0	0	21
3			1	6			5	1	1	0	3	0	16
	3 4 0 2 2 0	3 4 0 2 2 0	3 4 0 2 2 0	0 1 3 1 4 1 0 2 2 0 2 1 0 0 2 0 0 0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{bmatrix} 0 \\ 3 \\ 4 \\ 0 \\ 2 \\ 2 \\ 0 \\ 2 \\ 0 \end{bmatrix} $ $ \begin{bmatrix} 1 \\ 14 \\ 16 \\ 1 \\ 13 \\ 2 \\ 14 \\ 0 \\ 20 \\ 2 \\ 1 \\ 11 \\ 11 \\ 0 \end{bmatrix} $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{bmatrix} 0 & \\ 3 & \\ 4 & \\ 0 & \\ 2 & \\ 2 & \\ 0 & \\ 2 & \\ 0$	$ \begin{bmatrix} 0 & 0 \\ 3 & 0 \\ 4 & 0 \\ 0 & 2 \\ 2 & 2 \\ 0 & 0 \end{bmatrix} $ $ \begin{bmatrix} 1 & 14 \\ 1 & 16 \\ 1 & 13 \\ 2 & 14 \\ 0 & 20 \\ 1 & 11 \\ 11 \end{bmatrix} $ $ \begin{bmatrix} 17 & 1 \\ 19 & 0 \\ 15 & 0 \\ 20 \\ 7 & 0 \\ 1 & 11 \\ 13 & 2 \\ 0 \end{bmatrix} $	$ \begin{bmatrix} 0 \\ 3 \\ 4 \\ 0 \\ 2 \\ 2 \\ 0 \end{bmatrix} $	$ \begin{bmatrix} 0 & 0 \\ 3 & 0 \\ 4 & 0 \\ 0 & 2 \\ 2 & 2 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 14 & 14 \\ 16 & 19 & 0 & 1 \\ 13 & 15 & 0 & 0 \\ 2 & 14 & 5 & 0 & 0 \\ 0 & 20 & 7 & 0 & 0 \\ 0 & 20 & 7 & 0 & 0 \\ 1 & 11 & 13 & 2 & 4 & 0 \\ 0 & 16 & 5 & 0 & 1 & 0 \end{bmatrix} $	$ \begin{bmatrix} 0 & 0 \\ 3 & 0 \\ 4 & 0 \\ 0 & 4 \\ 2 & 2 \\ 2 & 2 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 14 \\ 16 \\ 1 & 16 \\ 1 & 13 \\ 2 & 14 \\ 0 & 20 \\ 1 & 11 \\ 0 \end{bmatrix} \begin{bmatrix} 17 & 1 & 2 & 0 & 0 \\ 19 & 0 & 1 & 0 & 0 \\ 15 & 0 & 0 & 0 & 0 \\ 5 & 0 & 0 & 0 & 0 \\ 7 & 0 & 0 & 0 & 0 \\ 7 & 0 & 0 & 0 & 0 \\ 11 & 11 \\ 13 & 2 & 4 & 0 & 0 \\ 13 & 2 & 4 & 0 & 0 \\ 0 & 16 \end{bmatrix} $	0 1 14 17 1 2 0 0 0 3 1 16 19 0 1 0 0 0 4 1 13 15 0 0 0 0 0 2 14 2 14 15 0 0 0 0 0 2 14 13 2 14 5 0 0 0 0 0 2 14 11 13 2 4 0 0 0 2 14 11 11 13 2 4 0 0 0 2 0 16 5 0 1 0 0 0



Average Hour

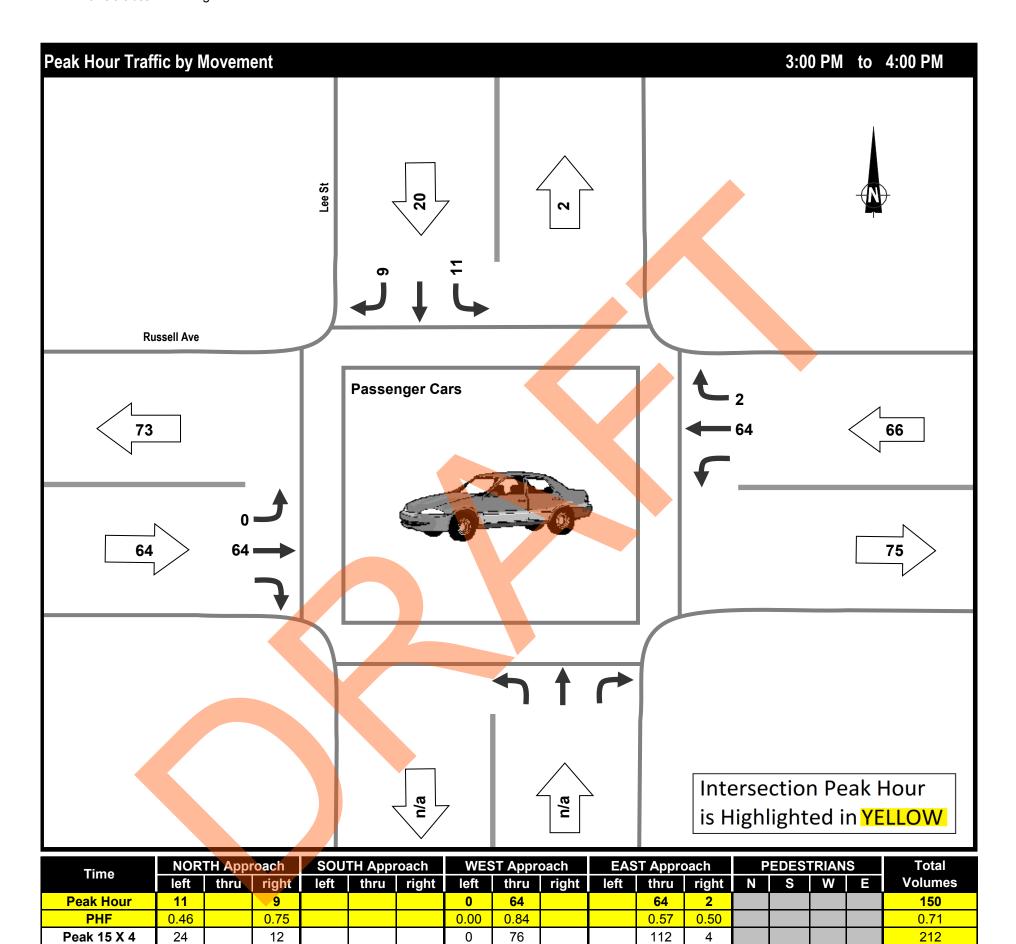
Survey Total

Lee St & Russell Ave

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



15:00	6	2		0	16		28	1			53
15:15	0	2		0	13		11	1			27
15:30	3	3		0	16		14	0			36
15:45	2	2		0	19		11	0			34
16:00	1	0		1	14		17	1			34
16:15	0	3		1	16		19	0			39
16:30	1	4		1	13		15	0			34
16:45	1	0		2	13		5	0			21
17:00	1	2		0	20		7	0			30
17:15	0	2		1	11		13	2			29
17:30	0	0		0	16		5	0			21
17:45	0	3		1	6		5	1			16



Lee St & Russell Ave

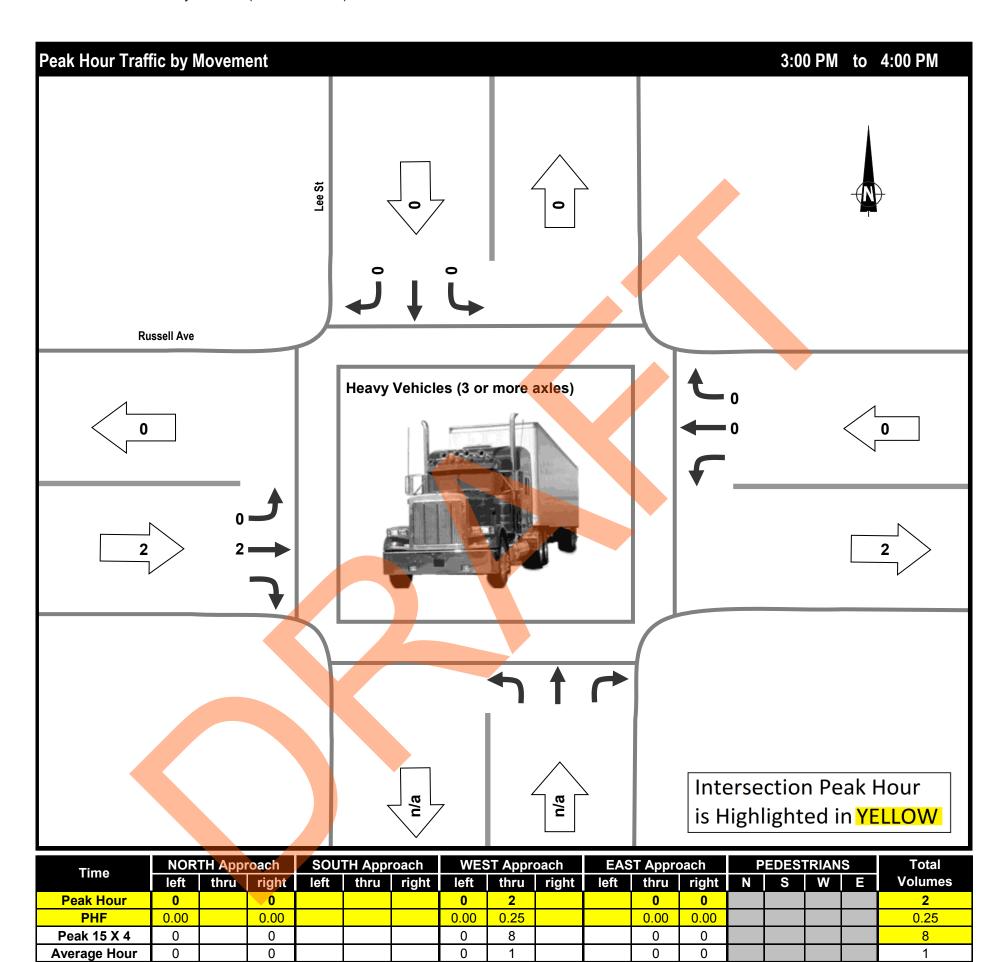
Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)

Survey Total

15:00



15:15	0	0		0	0		0	0			0
15:30	0	0		0	0		0	0			0
15:45	0	0		0	0		0	0			0
16:00	0	0		0	0		0	0			0
16:15	0	0		0	0		0	0			0
16:30	0	0		0	0		0	0			0
16:45	0	0		0	1		0	0			1
17:00	0	0		0	0		0	0			0
17:15	0	0		0	0		0	0			0
17:30	0	0		0	0		0	0			0
17:45	0	0		0	0		0	0			0



Survey Total

15:00

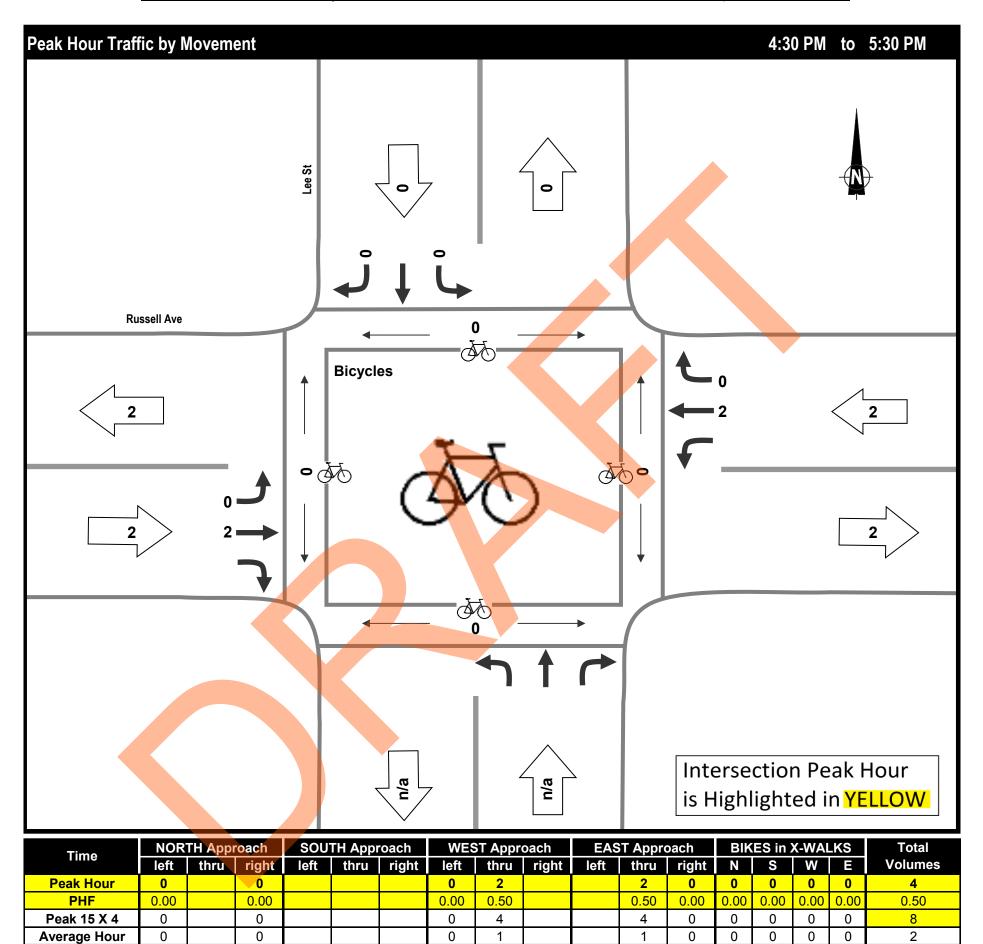
Lee St & Russell Ave

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



15:15	0	0		0	0		0	0	0	0	0	0	0
15:30	0	0		0	0		0	0	0	0	0	0	0
15:45	0	0		0	2		0	0	0	0	0	0	2
16:00	0	0		0	0		0	0	0	0	0	0	0
16:15	0	0		0	0		0	0	0	0	0	0	0
16:30	0	0		0	0		0	0	0	0	0	0	0
16:45	0	0		0	0		1	0	0	0	0	0	1
17:00	0	0		0	1		1	0	0	0	0	0	2
17:15	0	0		0	1		0	0	0	0	0	0	1
17:30	0	0		0	0		0	0	0	0	0	0	0
17:45	0	0		0	0		0	0	0	0	0	0	0



Thursday, November 08, 2018 Vehicle Classification Summary

Project:	#5935: Beachway Traffic Impact Assessment
Municipality:	White Rock
Weather:	Cloudy

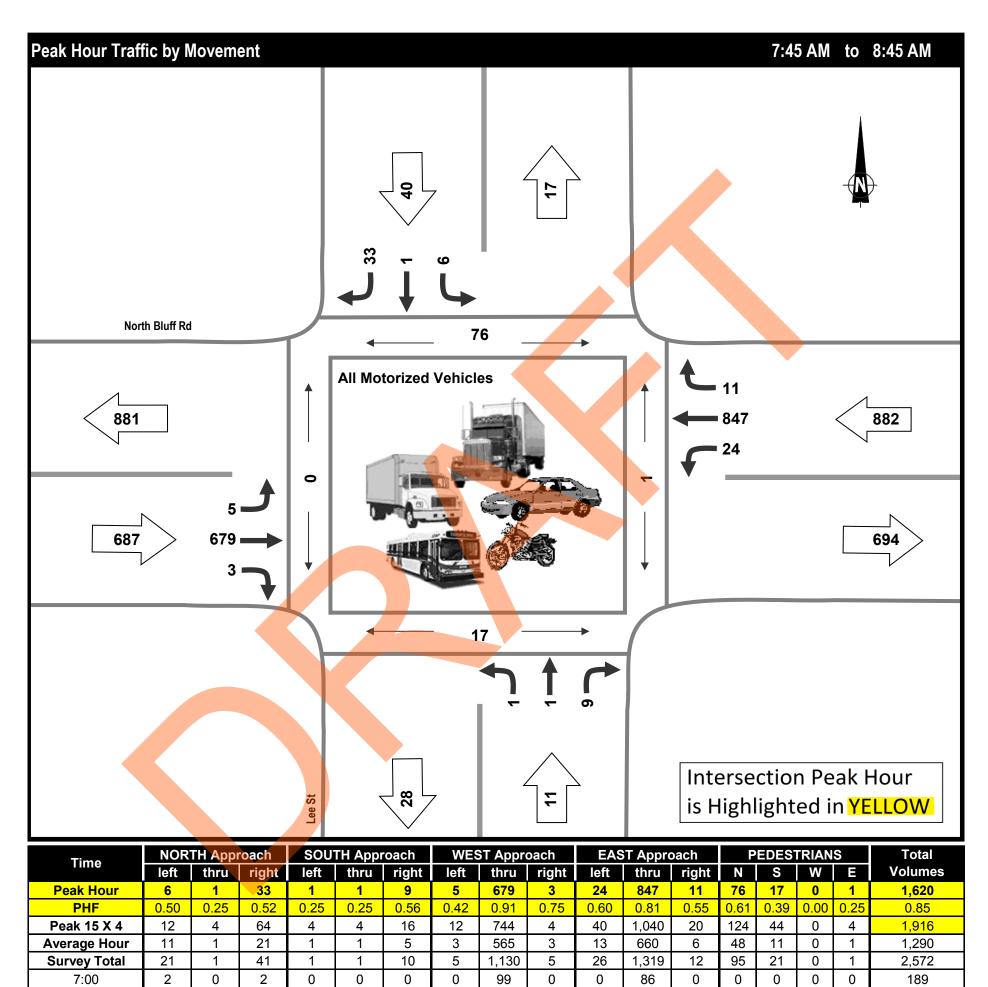
			Vehicle Classification											
Time Period	Entering Intersection	Passenger Cars	Heavy Vehicles (3 or more axles)				Total							
Morning	Volume	2,538	34				2,572							
(07:00 - 09:00)	%	98.7%	1.3%				100.0%							
Midday	Volume													
	%													
Afternoon	Volume	4,528	17				4,545							
(15:00 - 18:00)	%	99.6%	0.4%				100.0%							
Total	Volume	7,066	51				7,117							
(5 Hours)	%	99.3%	0.7%				100.0%							



Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles



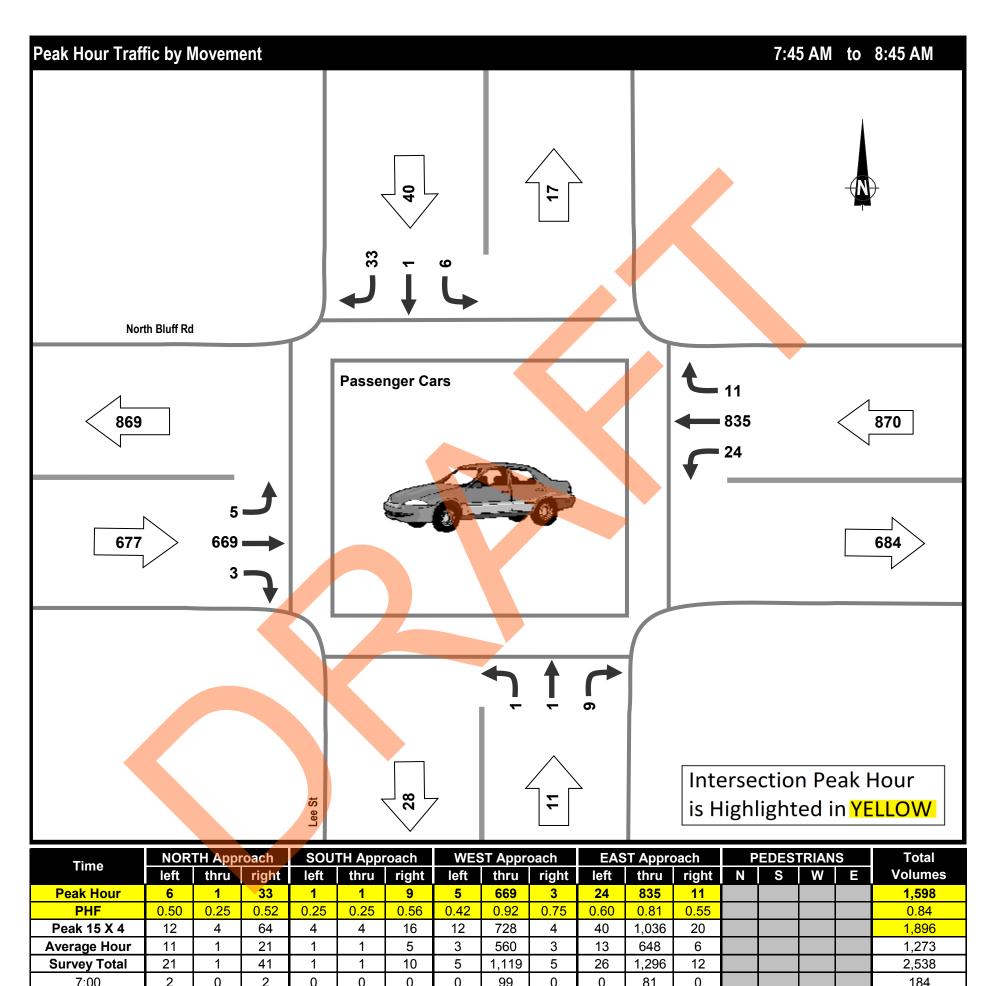
7:15	4	0	2	0	0	0	0	89	0	1	94	0	1	0	0	0	190
7:30	6	0	1	0	0	1	0	137	0	0	120	1	1	4	0	0	266
7:45	2	0	2	0	0	0	0	160	0	2	162	1	8	2	0	0	329
8:00	1	0	6	1	0	2	1	181	1	5	189	5	13	3	0	1	392
8:15	0	1	16	0	0	3	3	186	1	7	260	2	31	11	0	0	479
8:30	3	0	9	0	1	4	1	152	1	10	236	3	24	1	0	0	420
8:45	3	0	3	0	0	0	0	126	2	1	172	0	17	0	0	0	307



Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



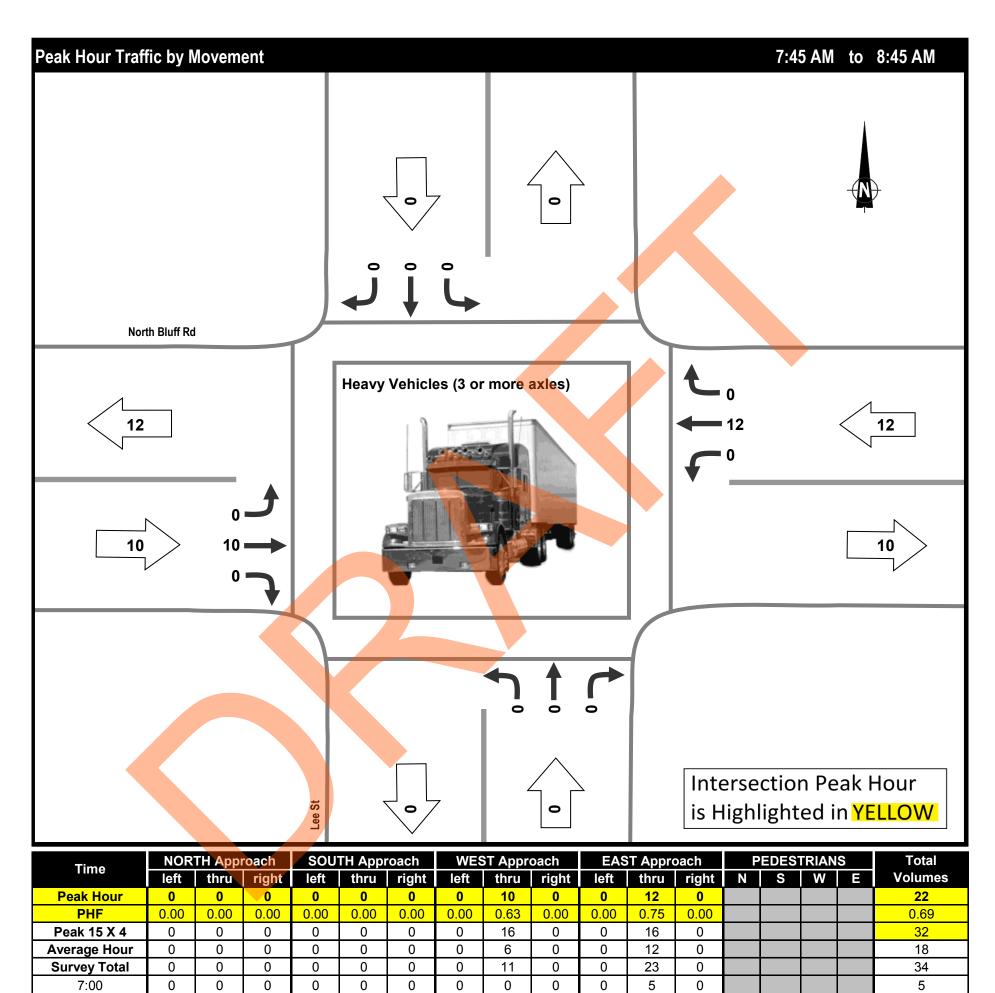
7.00	~	0	~	0	0	0	0	33	0	0	01	0			10-
7:15	4	0	2	0	0	0	0	89	0	1	93	0			189
7:30	6	0	1	0	0	1	0	136	0	0	116	1			261
7:45	2	0	2	0	0	0	0	159	0	2	158	1			324
8:00	1	0	6	1	0	2	1	180	1	5	186	5			388
8:15	0	1	16	0	0	3	3	182	1	7	259	2			474
8:30	3	0	9	0	1	4	1	148	1	10	232	3			412
8:45	3	0	3	0	0	0	0	126	2	1	171	0			306



Thursday, November 08, 2018

Morning Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



7:15	0	0	0	0	0	0	0	0	0	0	1	0			1
7:30	0	0	0	0	0	0	0	1	0	0	4	0			5
7:45	0	0	0	0	0	0	0	1	0	0	4	0			5
8:00	0	0	0	0	0	0	0	1	0	0	3	0			4
8:15	0	0	0	0	0	0	0	4	0	0	1	0			5
8:30	0	0	0	0	0	0	0	4	0	0	4	0			8
8:45	0	0	0	0	0	0	0	0	0	0	1	0			1

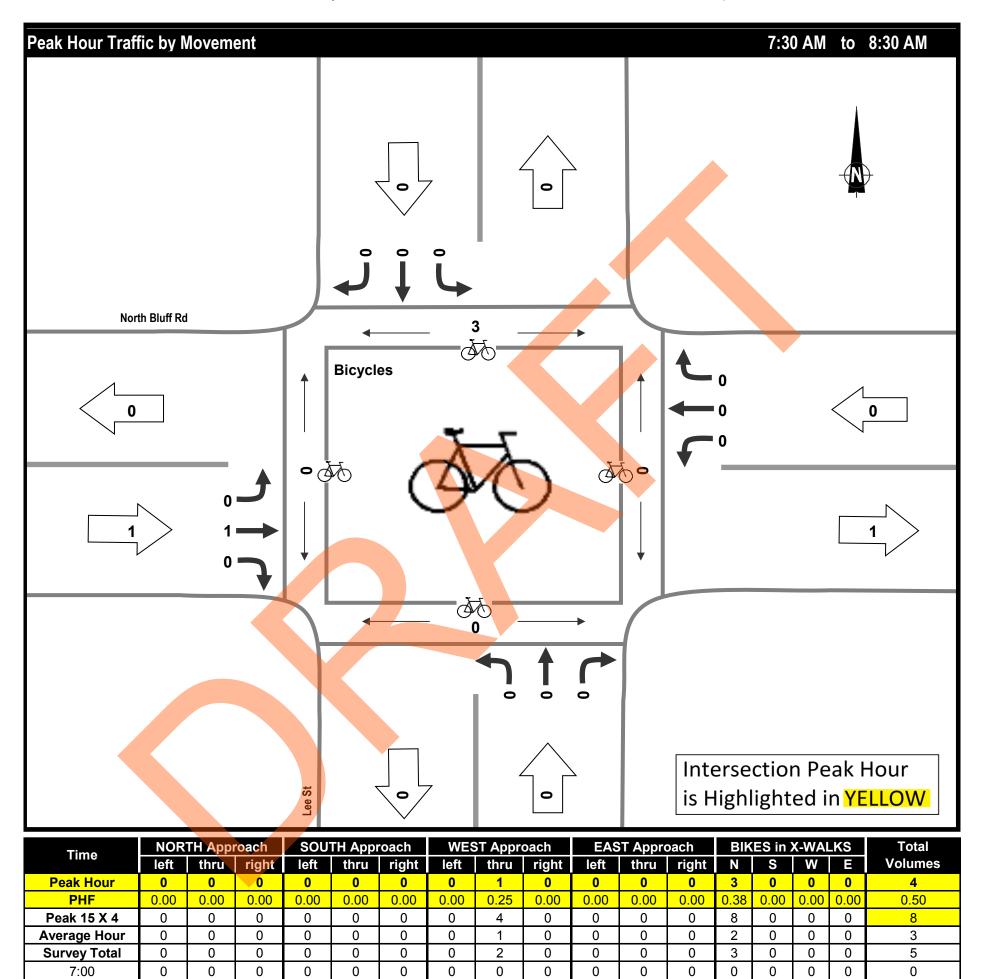


Thursday, November 08, 2018



Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals





7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
8:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

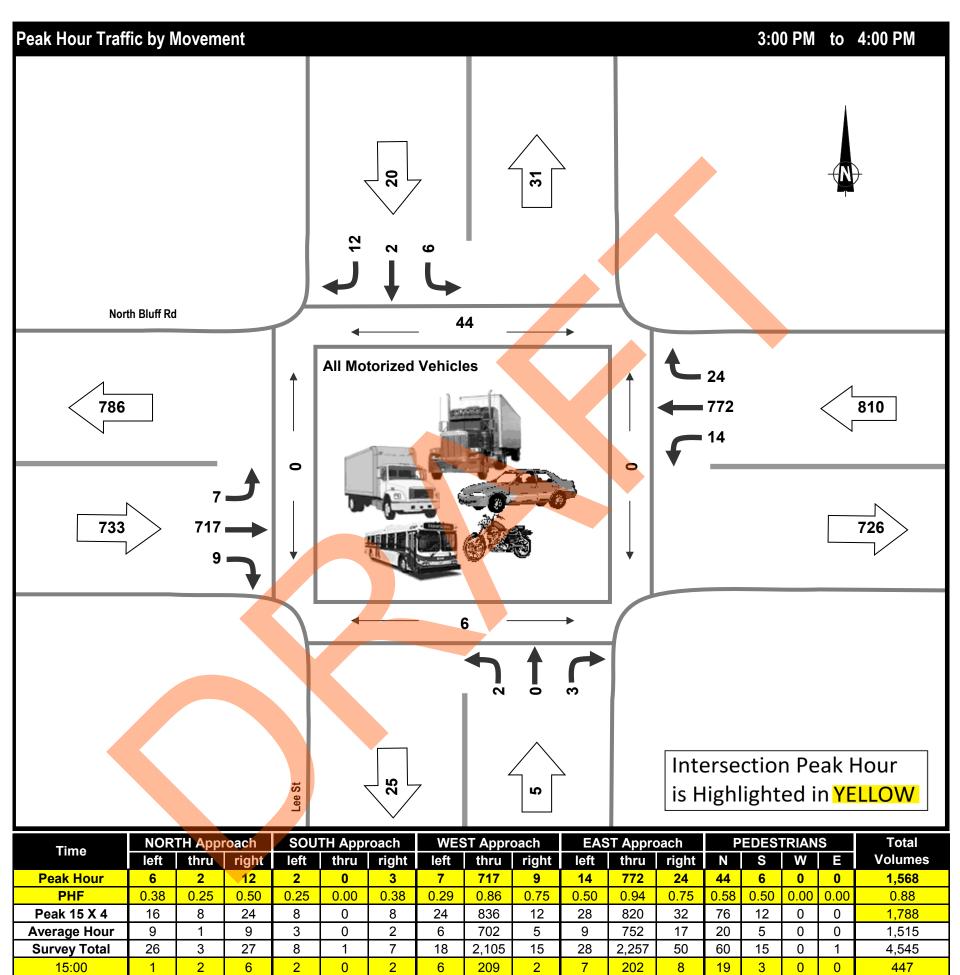


Lee St & North Bluff Rd

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: All Motorized Vehicles



15:15	1	0	2	0	0	0	0	163	3	2	194	6	13	3	0	0	371
15:30	0	0	2	0	0	0	0	186	2	3	171	8	5	0	0	0	372
15:45	4	0	2	0	0	1	1	159	2	2	205	2	7	0	0	0	378
16:00	1	0	2	2	0	0	0	195	2	1	186	1	0	1	0	0	390
16:15	2	0	1	0	0	0	2	181	0	3	181	2	5	2	0	1	372
16:30	4	1	2	0	0	1	2	188	0	3	169	2	0	0	0	0	372
16:45	3	0	2	1	0	1	3	184	1	0	212	5	3	0	0	0	412
17:00	2	0	2	1	0	0	0	206	2	2	186	6	2	0	0	0	407
17:15	2	0	2	0	1	2	2	153	1	1	203	1	4	1	0	0	368
17:30	3	0	2	1	0	0	0	147	0	1	171	4	1	1	0	0	329
17:45	3	0	2	1	0	0	2	134	0	3	177	5	1	4	0	0	327
17.45	5	0	2		0	0		134	0	5	177	5		-	0	0	521

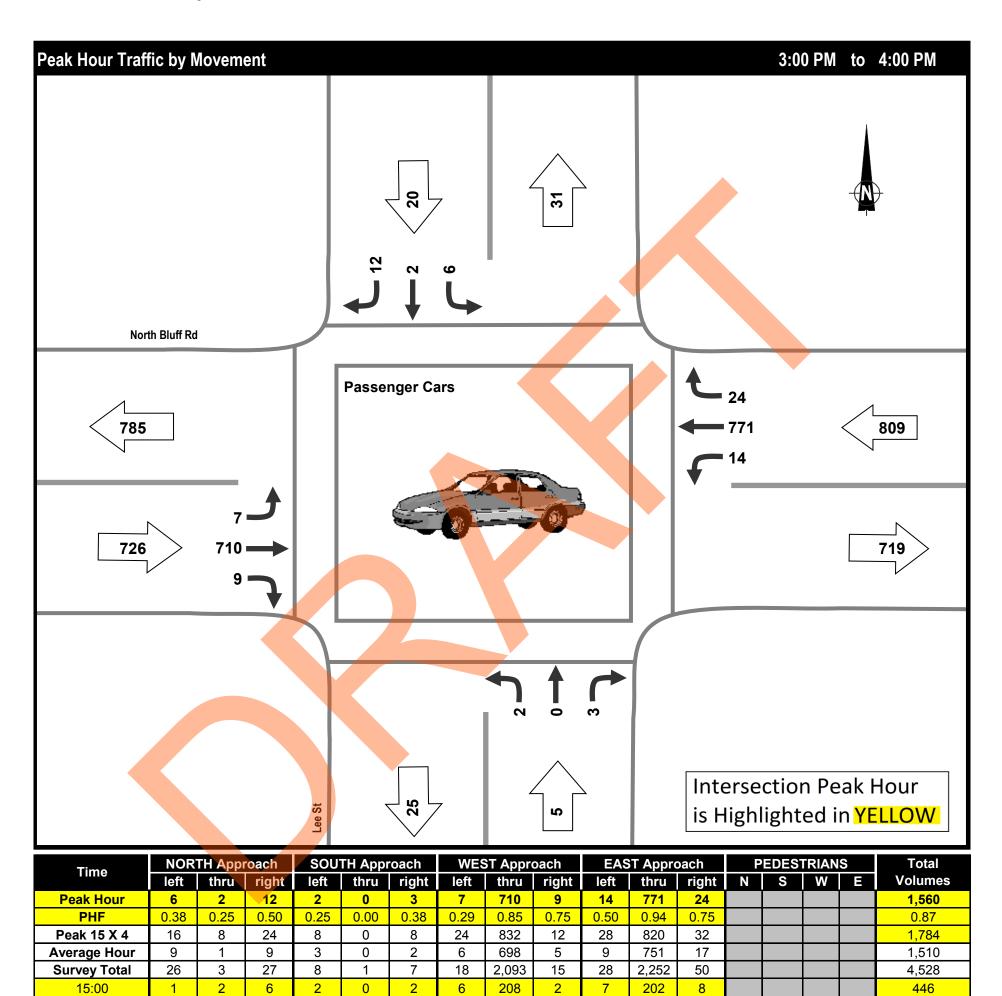


Lee St & North Bluff Rd

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Passenger Cars



															4
15:15	1	0	2	0	0	0	0	160	3	2	193	6			367
15:30	0	0	2	0	0	0	0	183	2	3	171	8			369
15:45	4	0	2	0	0	1	1	159	2	2	205	2			378
16:00	1	0	2	2	0	0	0	195	2	1	182	1			386
16:15	2	0	1	0	0	0	2	180	0	3	181	2			371
16:30	4	1	2	0	0	1	2	187	0	3	169	2			371
16:45	3	0	2	1	0	1	3	184	1	0	212	5			412
17:00	2	0	2	1	0	0	0	204	2	2	186	6			405
17:15	2	0	2	0	1	2	2	153	1	1	203	1			368
17:30	3	0	2	1	0	0	0	146	0	1	171	4			328
17:45	3	0	2	1	0	0	2	134	0	3	177	5			327

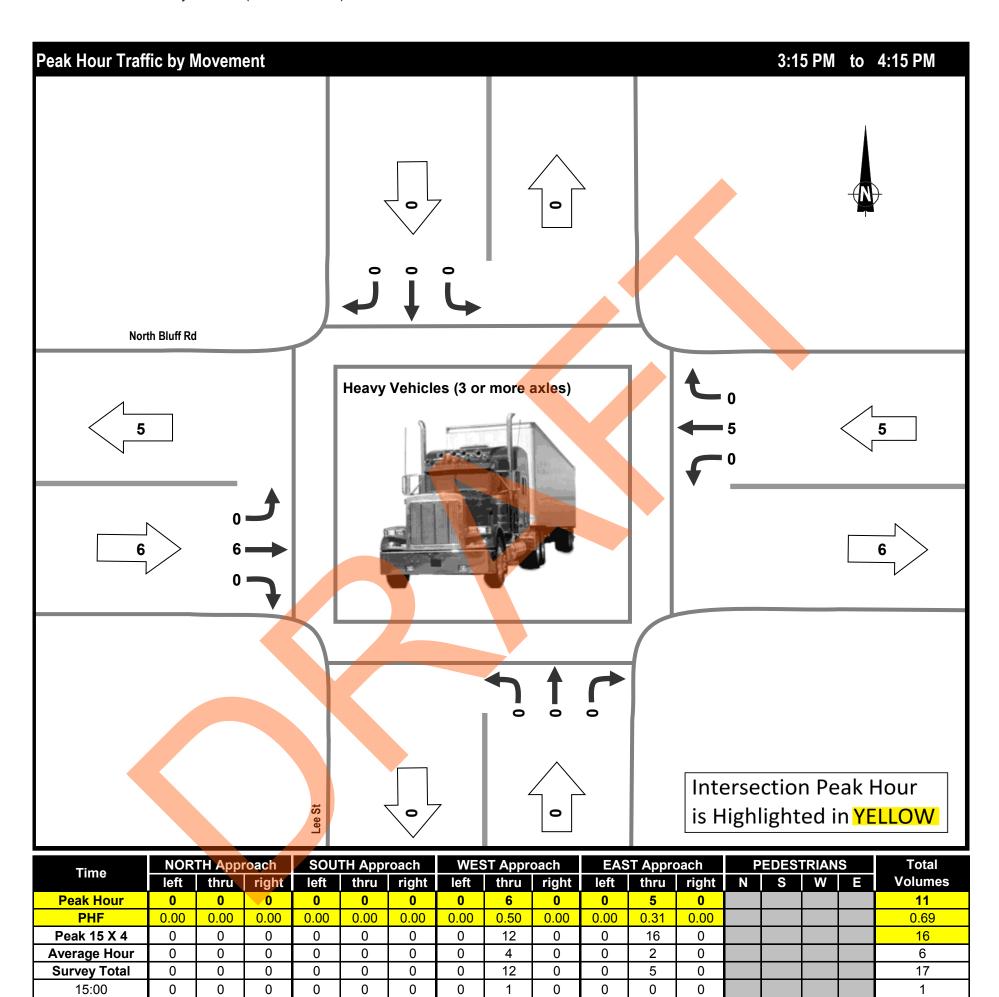


Lee St & North Bluff Rd

Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Heavy Vehicles (3 or more axles)



		-	-	-	-	-	-	-	-	-	-	-	-			
	15:15	0	0	0	0	0	0	0	3	0	0	1	0			4
	15:30	0	0	0	0	0	0	0	3	0	0	0	0			3
	15:45	0	0	0	0	0	0	0	0	0	0	0	0			0
	16:00	0	0	0	0	0	0	0	0	0	0	4	0			4
	16:15	0	0	0	0	0	0	0	1	0	0	0	0			1
l	16:30	0	0	0	0	0	0	0	1	0	0	0	0			1
l	16:45	0	0	0	0	0	0	0	0	0	0	0	0			0
	17:00	0	0	0	0	0	0	0	2	0	0	0	0			2
	17:15	0	0	0	0	0	0	0	0	0	0	0	0			0
	17:30	0	0	0	0	0	0	0	1	0	0	0	0			1
	17:45	0	0	0	0	0	0	0	0	0	0	0	0			0



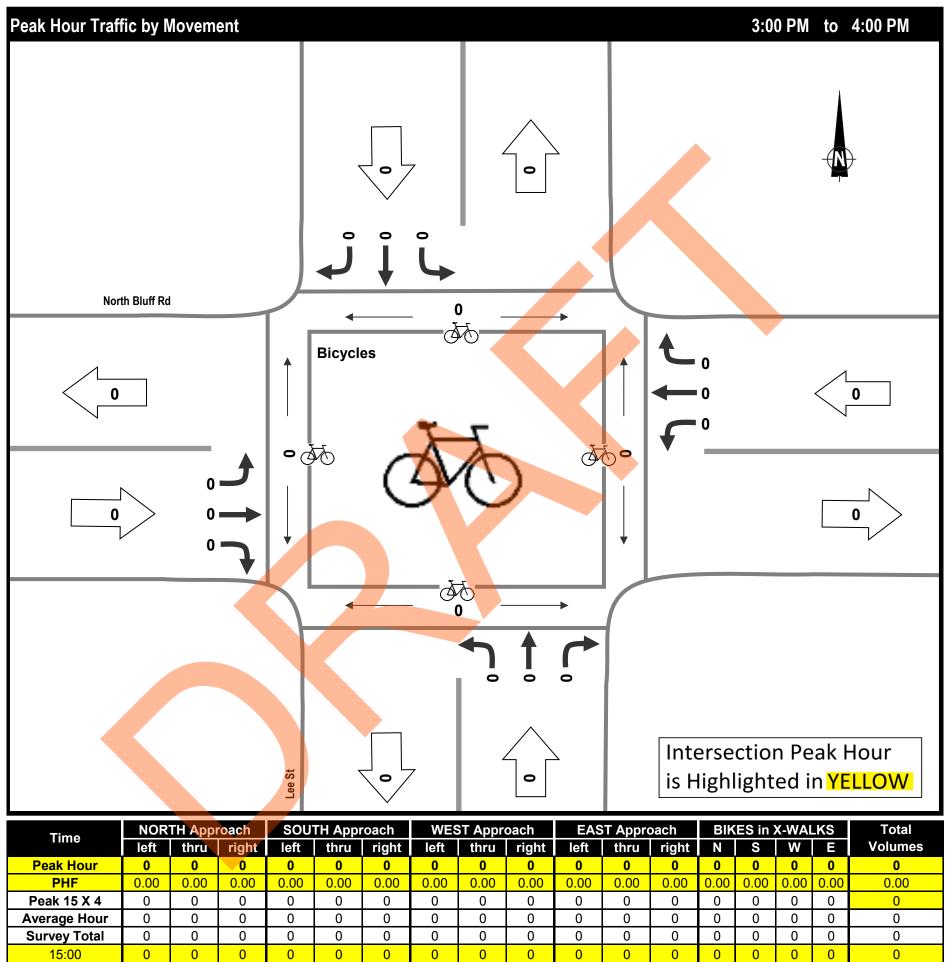
Thursday, November 08, 2018

Afternoon Peak Period

Project: #5935: Beachway Traffic Impact Assessment Municipality: White Rock Weather: Cloudy Vehicle Class: Bicycles

LLS

Note: Crosswalk bike volumes shown are cyclists who rode their bike across the crosswalk and are not included in the pedestrian volume totals



15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix D Intersection Capacity Analysis

General Information						Stop		Inforr		_						
	1								natio	n						
Analyst	JAL							ection					h Bluff R	d		
Agency/Co.	CTS							iction				Rock				
Date Performed)/2019						Nest Str				n Bluff Ro	1			
Analysis Year	2019							/South S			Lee S	t				
Time Analyzed	AM B							Hour Fac			0.83					
Intersection Orientation	East-						Analy	sis Time	Period ((hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	4												
Lanes																
				4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	- NR Mai	+ or Street: Ed	st-West	4 4 4 4 4 6								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		8	698	6		28	870	15		2	2	12		9	2	37
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										() (5	
Right Turn Channelized															_	
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Base Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Follow-Up Headway (sec)																
Follow-Up Headway (sec)	d Leve	l of S	ervice					_			19					_
Follow-Up Headway (sec) Delay, Queue Length, an	d Leve	1 of S	ervice			34									58	
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	d Leve		ervice			34 682					19				58 175	
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	10	ervice													
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	10 636	ervice			682					148				175	
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	10 636 0.02	ervice			682 0.05					148 0.13				175 0.33	
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh)	d Leve	10 636 0.02 0.0	ervice			682 0.05 0.2					148 0.13 0.4				175 0.33 1.4	
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₁₅ (veh) Control Delay (s/veh)	d Leve	10 636 0.02 0.0 10.7 B	arvice			682 0.05 0.2 10.6 B	.9			3:	148 0.13 0.4 33.0 D			35	175 0.33 1.4 35.4 E	

Generated: 10/16/2019 3:05:26 PM

Site Information General Information Analyst JAL Intersection Lee St & North Bluff Rd CTS Agency/Co. Jurisdiction White Rock Date Performed 10/10/2019 East/West Street North Bluff Rd Analysis Year 2019 North/South Street Lee St Time Analyzed PM Base Peak Hour Factor 0.85 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description 7130 - Beachway 2 TIA Lanes ノイトムチトリ 4 4 4 4 4 1447126 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound Movement U L Т R U L Т R U L Т R U L Т R Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 0 Number of Lanes 0 2 0 0 0 2 0 0 1 0 0 1 0 LT TR LTR LTR Configuration LT TR 737 13 18 28 0 Volume (veh/h) 9 791 3 5 9 3 16 Percent Heavy Vehicles (%) 2 2 2 2 2 2 2 2 Proportion Time Blocked Percent Grade (%) 0 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 4.14 7.54 6.54 6.94 Critical Headway (sec) 4.14 7.54 6.54 6.94 2.2 2.2 4.0 4.0 Base Follow-Up Headway (sec) 3.5 3.3 3.5 3.3 Follow-Up Headway (sec) 2.22 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 11 21 9 33 Capacity, c (veh/h) 702 703 161 146 v/c Ratio 0.02 0.03 0.06 0.22 95% Queue Length, Q₉₅ (veh) 0.0 0.1 0.2 0.8 Control Delay (s/veh) 10.2 10.3 28.7 36.6 Level of Service (LOS) В В D Е Approach Delay (s/veh) 28.7 0.3 0.5 36.6 Approach LOS D Е Copyright © 2019 University of Florida. All Rights Reserved. HCS[™] TWSC Version 7.8.5 Generated: 10/16/2019 3:05:52 PM

Lee N Bluff - 2019 pmb.xtw

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General Information							Site	Inforr	natio	n						
Analyst	JAL							ection			Lee St	t & Nort	h Bluff R	d		
Agency/Co.	CTS							liction			White			-		
Date Performed)/2019						Nest Str	eet			Bluff Ro	ł			
Analysis Year	2021							/South S			Lee St					
Time Analyzed	AM B	ase						Hour Fac			0.83					
Intersection Orientation	East-\	West					Analy	sis Time	Period ((hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	4												
Lanes	1															
				2415454	D H Mair	of Street: Ea	st-West	4 5								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		9	726	7		30	905	16		3	3	13		10	3	39
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										(о с				5 /	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
														3.5	4.0	3.3
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	1.0	
		2.2 2.22				2.2 2.22				3.5 3.52	4.0	3.3 3.32		3.5	4.02	3.32
Base Follow-Up Headway (sec)	d Leve	2.22	ervice													3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Leve	2.22 l of S 11	ervice								4.02 23					3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	d Leve	2.22 I of S	ervice			2.22					4.02				4.02	3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)	d Leve	2.22 1 of S 11 613 0.02	ervice			2.22 36 661 0.05					4.02 23 109 0.21				4.02 63	3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	2.22 l of So 11 613	ervice			2.22 36 661					4.02 23 109				4.02 63 143	3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	J Leve	2.22 I of S 11 613 0.02 0.1 11.0	ervice			2.22 36 661 0.05					4.02 23 109 0.21 0.7 46.6				4.02 63 143 0.44 2.0 48.7	3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₈₅ (veh)	l Leve	2.22 1 of So 11 613 0.02 0.1 11.0 B	ervice			2.22 36 661 0.05 0.2					4.02 23 109 0.21 0.7				4.02 63 143 0.44 2.0	3.32

General Information							Site	Inforn	natio	1						
Analyst	JAL						Inters	ection			Lee St	t & Nort	h Bluff R	d		
Agency/Co.	CTS						Jurisd	liction			White	Rock				
Date Performed	10/10	0/2019					East/\	West Stre	eet		North	Bluff Ro	i			
Analysis Year	2021						North	n/South S	Street		Lee St	t				
Time Analyzed	AM B	ase + Sit	te				Peak	Hour Fac	ctor		0.83					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	4												
Lanes																
$\mathbf{\langle}$				A LANK		or Street: Ea	st-West	4 + 44 + 40								
Vehicle Volumes and Ad	ustme	ents														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		9	726	16		31	905	16		22	4	33		10	4	39
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										()			(0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.9
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.3
Delay, Queue Length, an	d Leve	l of S	ervice													
		11				37					71				64	
Flow Rate, v (veh/h)		613				655					89				128	
Flow Rate, v (veh/h) Capacity, c (veh/h)		015				0.06					0.80				0.50	
		0.02				0.00										
Capacity, c (veh/h)						0.00					4.2				2.3	
Capacity, c (veh/h) v/c Ratio		0.02									4.2 129.7				2.3 58.6	
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		0.02				0.2										
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		0.02 0.1 11.0 B	.3			0.2 10.8	.0			12	129.7 F			58	58.6	

HCS7 Two-Way Stop-Control Report

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	encyCo. CTS Jurisdiction White Rock tate Performed 10/10/2019 East/West Street North Buff Rock aging iver 2021 Peak Hour Factor 0.85 me Analyzed PM Base Peak Hour Factor 0.85 gere conformation East/West Analyze Time Period (firs) 0.25 Street Less P Street Less P <th cols<="" th=""></th>															
									natio	n						
Analyst							Inters	ection			Lee S	St & Nort	h Bluff R	d		
Agency/Co.	CTS						Jurisc	liction								
Date Performed)/2019											ł			
Analysis Year	2021						North	/South	Street			St				
Time Analyzed	_															
Intersection Orientation	-						Analy	sis Time	Period	(hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	4												
Lanes																
				14 1 1 4 N 1	n R Mai	or Street: Ea		4 5								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement		L			U	L		R	U		Т		U	L		R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0		2		0		2			0		0		0		0
Configuration															LTR	
Volume (veh/h)			767	14			823	30								
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											0				0 /	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22		K		3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, an	d Leve	l of S	ervice													
	T					22					12				36	
Flow Rate, v (veh/h)	+	678				681					136				125	
Flow Rate, v (veh/h) Capacity, c (veh/h)						0.03					0.09				0.29	
		0.02														
Capacity, c (veh/h)		0.02 0.1				0.1					0.3				1.1	
Capacity, c (veh/h) v/c Ratio						0.1 10.5					0.3 33.9				1.1 45.4	
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		0.1														
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q₀s (veh) Control Delay (s/veh)		0.1 10.4 B	.3			10.5 B	0.6			3:	33.9			4!	45.4	

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	_															
General Information							Site	Inforn	natio	n						
Analyst	JAL						Inters	ection			Lee S	t & Nort	h Bluff R	.d		
Agency/Co.	CTS						Jurisd	liction			White	Rock				
Date Performed	10/10	/2019					East/\	West Stre	eet		North	Bluff Ro	ł			
Analysis Year	2021						North	n/South S	Street		Lee S	t				
Time Analyzed	PM B	ase + Sit	e				Peak	Hour Fac	ctor		0.85					
Intersection Orientation	East-	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beachv	vay 2 TIA	4												
Lanes																
				24 144 140		t Sireet Ed		4.5								
Vehicle Volumes and Adj	ustme	nts			Maj	or street. Ea	st-west									
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		10	767	34		36	823	30		17	1	18		10	5	17
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked															_	
Percent Grade (%)											0				0	
Right Turn Channelized				11	vided											
Median Type Storage	· .			Undi	vided											
Critical and Follow-up He	adwa	-														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, an	d Leve		ervice									_				
Flow Rate, v (veh/h)		12				42					42				38	
Capacity, c (veh/h)		678				667					96	_			102	
v/c Ratio		0.02				0.06					0.44				0.37	
95% Queue Length, Q ₉₅ (veh)		0.1				0.2					1.8				1.5	
Control Delay (s/veh)		10.4				10.8					68.8				59.5	
Level of Service (LOS)		В	2			В	1				F				F	
Approach Delay (s/veh) Approach LOS		0	.3			1	.1				3.8 F				9.5 F	

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Commel Info ::								_	Rep	_						
General Information									natio	n						
Analyst	JAL						Inters						h Bluff R	d		
Agency/Co.	CTS						Jurisd					Rock				
Date Performed)/2019					<u> </u>	Vest Str				n Bluff Ro	ł			
Analysis Year	2026							/South S			Lee S	t				
Time Analyzed	AM B						<u> </u>	Hour Fac			0.83					
Intersection Orientation	East-\						Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	\												
Lanes																
				141445		+ or Street: Ea	st-West	4 5 5 1 1								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		10	796	7		32	992	18		3	3	14		11	3	43
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										(5 /	
Right Turn Channelized															_	
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Critical Headway (sec)					1					3.5	4.0	3.3		3.5	4.0	3.3
Critical Headway (sec) Base Follow-Up Headway (sec)		2.2				2.2										3.32
		2.2 2.22				2.2 2.22				3.52	4.02	3.32		3.52	4.02	5.52
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Leve	2.22	ervice			<u> </u>				3.52	4.02	3.32		3.52	4.02	3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	d Leve	2.22	ervice			<u> </u>				3.52	4.02	3.32		3.52	4.02	5.52
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Leve	2.22 I of S	ervice			2.22				3.52		3.32		3.52		3.32
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	2.22 l of S 12	ervice			2.22				3.52	24	3.32		3.52	69	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	2.22 l of S 12 557	ervice			2.22 39 614				3.52	24 83	3.32		3.52	69 108	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	2.22 l of So 12 557 0.02	ervice			2.22 39 614 0.06				3.52	24 83 0.29	3.32		3.52	69 108 0.64	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₁₅ (veh) Control Delay (s/veh)	d Leve	2.22 1 of So 12 557 0.02 0.1	ervice			2.22 39 614 0.06 0.2				3.52	24 83 0.29 1.1	3.32		3.52	69 108 0.64 3.2	
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh)	d Leve	2.22 1 of S 12 557 0.02 0.1 11.6 B	ervice			2.22 39 614 0.06 0.2 11.3 B	2			3.52	24 83 0.29 1.1 65.0 F	3.32		3.52	69 108 0.64 3.2 84.2 F	

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Site Information General Information Analyst JAL Intersection Lee St & North Bluff Rd CTS Agency/Co. Jurisdiction White Rock Date Performed 10/10/2019 East/West Street North Bluff Rd Analysis Year 2026 North/South Street Lee St Time Analyzed AM Base + Site Peak Hour Factor 0.83 Intersection Orientation East-West Analysis Time Period (hrs) 0.25 Project Description 7130 - Beachway 2 TIA Lanes ノイトムチトリ 4 4 4 4 4 1447126 Vehicle Volumes and Adjustments Approach Eastbound Westbound Northbound Southbound Movement U L Т R U L Т R U L Т R U L Т R Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 12 0 Number of Lanes 0 2 0 0 0 2 0 0 1 0 0 1 0 LT TR LTR LTR Configuration LT TR 796 16 33 18 Volume (veh/h) 10 992 22 4 34 11 4 43 Percent Heavy Vehicles (%) 2 2 2 2 2 2 2 2 Proportion Time Blocked Percent Grade (%) 0 0 Right Turn Channelized Median Type | Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 4.1 7.5 6.5 6.9 7.5 6.5 6.9 4.14 7.54 6.54 6.94 Critical Headway (sec) 4.14 7.54 6.54 6.94 2.2 2.2 4.0 4.0 Base Follow-Up Headway (sec) 3.5 3.3 3.5 3.3 Follow-Up Headway (sec) 2.22 2.22 3.52 4.02 3.32 3.52 4.02 3.32 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 12 40 72 70 Capacity, c (veh/h) 557 609 64 95 v/c Ratio 0.02 0.07 1.13 0.74 95% Queue Length, Q₉₅ (veh) 0.1 0.2 5.7 3.8 Control Delay (s/veh) 11.6 11.3 260.3 110.5 Level of Service (LOS) В В F F Approach Delay (s/veh) 260.3 110.5 0.4 1.3 Approach LOS F F Copyright © 2019 University of Florida. All Rights Reserved. HCS[™] TWSC Version 7.8.5 Generated: 10/16/2019 3:08:13 PM

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Analyst Agency/Co. Date Performed Analysis Year Time Analyzed Intersection Orientation Project Description Lanes	cross Jurisdiction White Rock Performed 10/10/2019 East/West North/South Street North Bulf Rd sis Year 2026 North/South Street Lee St North/South Street Lee St Analyzed PM Base Peak Hour Factor 0.25 U Lee St at Description 7130 - Beachway 2 TIA T Analysis Time Period (hrs) 0.25 S S S S S S S S															
Agency/Co. Date Performed Analysis Year Time Analyzed Intersection Orientation Project Description	CTS 10/10 2026 PM B	-					Intere	action				8 Nort	b Bluff R			
Date Performed Analysis Year Time Analyzed Intersection Orientation Project Description	10/10 2026 PM B	-														
Analysis Year Time Analyzed Intersection Orientation Project Description	2026 PM B	-							eet				ч			
Time Analyzed Intersection Orientation Project Description	PM B															
Intersection Orientation Project Description		ase														
Project Description										hrs)						
	7130		vav 2 TIA	4												
Lanes			.,													
				14 1 1 4 6 F				4 1 1 2 2 2 2								
Vehicle Volumes and Adju	ustme	nts			Maji	or Street: Ea	st-West									
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		11	841	15		21	902	32		4	0	6		11	4	19
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										() (0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	adwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, and	l Leve	l of S	ervice													
Flow Rate, v (veh/h)		13				25					12				40	
Capacity, c (veh/h)		624				630					104				98	
v/c Ratio		0.02				0.04					0.11				0.41	
95% Queue Length, Q ₉₅ (veh)		0.1				0.1					0.4				1.7	
Control Delay (s/veh)		10.9				10.9					44.1				64.8	
Level of Service (LOS)		В				В					E				F	
Approach Delay (s/veh)		0	.4			0	.7			44	.1			64	4.8	

General Information							Site	Inforn	natio	n						
Analyst	JAL						Inters	ection			Lee S	t & Nort	h Bluff R	Rd		
Agency/Co.	CTS						Jurisd	liction			White	Rock				
Date Performed	10/10	0/2019					East/\	West Stre	eet		North	Bluff Ro	ł			
Analysis Year	2026						North	n/South S	Street		Lee S	t				
Time Analyzed	PM B	ase + Sit	te				Peak	Hour Fac	ctor		0.85					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	way 2 TIA	4												
Lanes																
$\mathbf{\langle}$				141448	Амаји	or Street: Ea	st-West	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4								
Vehicle Volumes and Ad	justme	ents														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		11	841	35		38	902	32		17	1	18		11	5	19
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)		13				45					42				41	
Capacity, c (veh/h)		624				618					70				79	
		0.02				0.07					0.60				0.52	
v/c Ratio	1	0.1				0.2					2.6				2.2	
v/c Ratio 95% Queue Length, Q ₉₅ (veh)		0.1														
		10.1				11.3					114.5				93.0	
95% Queue Length, Q ₉₅ (veh)						11.3 B					F				93.0 F	
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		10.9 B	.4			В	.3			11				9:		

HCS7 Two-Way Stop-Control Report

Lee N Bluff - 2026 pmbs.xtw

HCS™ TWSC Version 7.8.5 Lee N Bluff - 2026 pmb.xtw

General Information							Site	Inforr	natio	1						
Analyst	JAL							ection		-	100 5	t & Russ	ell Ave			
Agency/Co.	CTS							liction				e Rock	en Ave			
Date Performed	10/10	/2019						West Str	eet			ell Ave				
Analysis Year	2019	, 2015						/South S			Lee S					
Time Analyzed	AM B	ase						Hour Fac			0.83					
Intersection Orientation	East-V							sis Time		hrs)	0.85					
Project Description		- Beachv	vav 2 TIA	4												
Lanes				-												
				14 174 511		**	1 2 6	4 1 4 4 4 1 1								
Vehicle Volumes and Adj	justme	nts			Majo	or Street: Ea	ist-West									
Approach	T	Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
		LT						TR							LR	
Configuration															Litt	
Configuration Volume (veh/h)		7	75				94	7						20		16
			75				94							20 2		16 2
Volume (veh/h)		7	75				94									
Volume (veh/h) Percent Heavy Vehicles (%)		7	75				94									
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked		7	75				94							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		7	75	Undi	vided		94							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized	eadway	7 2	75	Undi	vided		94							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage	eadwa	7 2	75	Undi	vided		94							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He	eadwa	7 2 ys	75	Undi	vided		94							2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	7 2 ys 4.1	75	Undi	vided		94							2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadway	7 2 ys 4.1 4.12	75	Undi	vided		94							2 7.1 6.42		2 6.2 6.22
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		7 2 ys 4.1 4.12 2.2 2.22			vided		94							2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		7 2 ys 4.1 4.12 2.2 2.22			vided		94							2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		7 2 4.1 4.12 2.2 2.22 I of Se			vided		94							2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Readway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		7 2 ys 4.1 4.12 2.2 2.22 1 of Se 8			vided		94							2 7.1 6.42 3.5	43	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		7 2 4.1 4.12 2.2 2.22 I of So 8 1440			vided		94							2 7.1 6.42 3.5	43 807	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		7 2 4.1 4.12 2.2 2.22 1 of Sc 8 1440 0.01					94							2 7.1 6.42 3.5	43 807 0.05	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Critical Peadway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Peadway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Peadway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Peadway (sec) Follow-Up Headway (sec) Follow-Up Headw		7 2 4.1 4.12 2.2 2.22 1 of Se 8 1440 0.01 0.0					94							2 7.1 6.42 3.5	43 807 0.05 0.2	2 6.2 6.22 3.3

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General Information							Site	Inforr	natio	1						
Analyst	JAL						Inters	ection			Lee S	t & Russ	ell Ave			
Agency/Co.	CTS						Jurisc	liction			White	e Rock				
Date Performed	10/10	/2019					East/	Nest Str	eet		Russe	ell Ave				
Analysis Year	2019						North	/South !	Street		Lee S	t				
Time Analyzed	PM B	ase					Peak	Hour Fa	ctor		0.85					
Intersection Orientation	East-								Period (hrs)	0.25					
Project Description	7130	- Beachv	vav 2 TIA	4						-						
Lanes																
$\langle \rangle$				JAHAANU		A		A TATA PUD								
Vehicle Volumes and Adj	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	т	R	U	L	Т	R	U	L	т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	71				68	4						14		13
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Right Turn Channelized Median Type Storage				Undi	vided											
	eadwa	ys		Undi	vided											
Median Type Storage Critical and Follow-up He	eadwa	ys		Undi	vided									7.1		6.2
Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	_		Undi	vided									7.1		6.2
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	4.1		Undi	vided									7.1		6.2
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	4.1 4.12		Undi	vided									7.1 6.42 3.5		6.2. 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided									7.1		6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.12 2.2 2.22	ervice		vided									7.1 6.42 3.5	32	
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		4.1 4.12 2.2 2.22 I of Se	ervice		vided									7.1 6.42 3.5	32	6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		4.1 4.12 2.2 2.22 I of Se 0	ervice		vided									7.1 6.42 3.5		6.22 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.12 2.2 2.22 I of Se 0 1464	ervice		vided									7.1 6.42 3.5	855	6.2. 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		4.1 4.12 2.2 2.22 I of Se 0 1464 0.00	ervice		vided									7.1 6.42 3.5	855 0.04	6.2. 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh)		4.1 4.12 2.2 2.22 I of Se 0 1464 0.00 0.0	ervice		vided									7.1 6.42 3.5	855 0.04 0.1	6.2. 3.3
Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh) Control Delay (s/veh)		4.1 4.12 2.2 2.22 I of Se 0 1464 0.00 0.0 7.5 A	ervice		vided									7.1 6.42 3.5 3.52	855 0.04 0.1 9.4	6.2 3.3

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General Information							Site	Inform	natio	n						
Analyst	JAL							ection			Lee S	it & Russ	ell Ave			
Agency/Co.	CTS						Juriso	liction			White	e Rock				
Date Performed	10/10	/2019						West Str	eet			ell Ave				
Analysis Year	2021							/South			Lee S					
Time Analyzed	AM B	ase					Peak	Hour Fa	ctor		0.83					
Intersection Orientation	East-V	Vest					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beachv	vay 2 TIA	4												
Lanes	-															
				1417451		**	1 2 4	1 1 4 4 4								
Vehicle Volumes and Adj	luctmo	ntc				or Street: Ea										
Approach		Eastb	aad		1	Mast	bound			Nonth	bound		1	Couth	bound	
Movement	U	L		R											T	R
													1 11			
			T 2		U 411	L 4	T 5	R	U	L 7	T 8	R	U	L 10		
Priority	1U	1	2	3	4U	4	5	6	0	7	8	9	U	10	11	12
Priority Number of Lanes		1				-		6					U		11 1	
Priority Number of Lanes Configuration	1U	1 0 LT	2	3	4U	4	5	6 0 TR		7	8	9	U	10 0	11	12 0
Priority Number of Lanes Configuration Volume (veh/h)	1U	1 0 LT 8	2	3	4U	4	5	6 0		7	8	9	U	10 0 21	11 1	12 0 17
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	1U	1 0 LT	2	3	4U	4	5	6 0 TR		7	8	9	U	10 0	11 1	12 0
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	1U	1 0 LT 8	2	3	4U	4	5	6 0 TR		7	8	9		10 0 21	11 1 LR	12 0 17
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	1U	1 0 LT 8	2	3	4U	4	5	6 0 TR		7	8	9		10 0 21 2	11 1 LR	12 0 17
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized	1U	1 0 LT 8	2	3	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2	11 1 LR	12 0 17
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	1U 0 	1 0 LT 8 2	2	3	4U	4	5	6 0 TR		7	8	9		10 0 21 2	11 1 LR	12 0 17
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage	1U 0 	1 0 LT 8 2	2	3	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2	11 1 LR	12 0 17
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He	1U 0 	1 0 LT 8 2	2	3	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2	11 1 LR	12 0 17 2
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec)	1U 0 	1 0 LT 8 2 2 ys 4.1	2	3	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1	11 1 LR	12 0 17 2 6.2
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	1U 0 	1 0 LT 8 2 	2	3	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6.42	11 1 LR	12 0 17 2 6.2 6.22
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	1U 0 	1 0 LT 8 2 	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR	12 0 17 2 6.2 6.22 3.3
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	1U 0 	1 0 LT 8 2 2 4.1 4.12 2.2 2.22 L of Sc	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR	12 0 17 2 6.2 6.22 3.3
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Ease Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	1U 0 	1 0 LT 8 2 	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR	12 0 17 2 6.2 6.22 3.3
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Critical Headway (sec) Eollow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec)	1U 0 	1 0 LT 8 2 2 4.1 4.12 2.2 2.22 2.22 L of Sc 10	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR 46 798	12 0 17 2 6.2 6.22 3.3
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical Annelized Median Type Storage Critical Headway (sec) Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Metal (sec) Follow-Up Headway (sec)	1U 0 	1 0 LT 8 2 2 4.1 4.12 2.2 2.22 1 of Se 10 1432	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR	12 0 17 2 6.2 6.22 3.3
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Critical Headway (sec) Eollow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec)	1U 0 	1 0 LT 8 2 2 	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR 46 798 0.06	12 0 17 2 6.2 6.22 3.3
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)	1U 0 	1 0 LT 8 2 2 4 1 4.1 4.12 2.2 2.22 1 of So 1432 0.01 0.0	2 1 78	3 0	4U 0	4	5	6 0 TR		7	8	9		10 0 21 2 7.1 6,42 3.5	11 1 LR 46 798 0.06 0.2	12 0 17 2 6.2 6.22 3.3

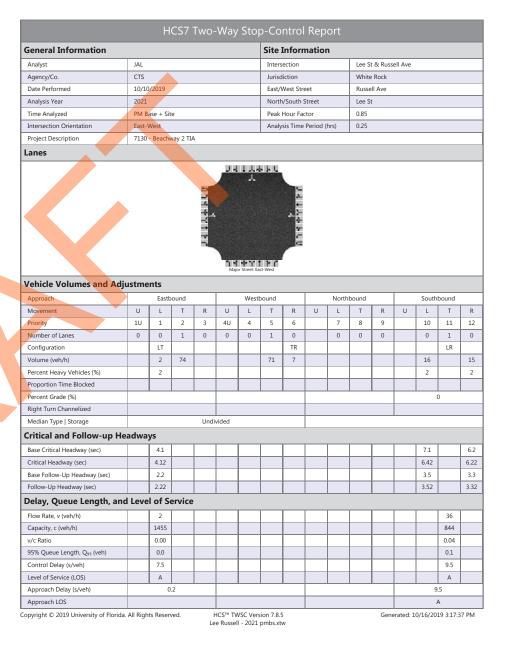
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		Н	CS7	Two	-Way	Sto	p-Co	ntrol	Rep	ort_						
General Information							Site	Inforr	natio	n						
Analyst	JAL						Inters	ection			Lee S	t & Russ	ell Ave			
Agency/Co.	CTS						Juriso	liction			White	e Rock				
Date Performed	10/10	/2019					East/	West Str	eet		Russe	ell Ave				
Analysis Year	2021						North	n/South !	Street		Lee S	t				
Time Analyzed	AM B	ase + Sit	te				Peak	Hour Fa	ctor		0.83					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	vay 2 TI	Ą												
Lanes																
				14 114 10	n H Majr	پې ۲ Street: Ea	st-West	14 4 4 4 6 0								
Vehicle Volumes and Adj	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		9	78				98	9						23		19
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	ivided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32
Delay, Queue Length, an	d Leve	l of S	ervice	•										1	1	
Flow Rate, v (veh/h)		11		<u> </u>										1	51	
Capacity, c (veh/h)		1431													796	
v/c Ratio		0.01				-						1			0.06	
95% Queue Length, Q ₉₅ (veh)		0.0													0.2	
Control Delay (s/veh)		7.5		-											9.8	
Level of Service (LOS)		A													A.	
20101 01 DEIVICE (200)			.8												.8	
Approach Delay (s/yeh)																
Approach Delay (s/veh) Approach LOS		0	.0												A	

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General Information							Site	Inforr	natio	n						
Analyst	JAL							ection			100 5	t & Russ	ell Ave			
Agency/Co.	CTS							liction				e Rock	en Ave			
Date Performed	10/10	/2019						West Str	eet			ell Ave				
Analysis Year	2021	, 2015						/South S			Lee S					
Time Analyzed	PM B	ise						Hour Fac			0.85					
Intersection Orientation	East-V							sis Time		(hrs)	0.85					
Project Description		- Beachv	vav 2 TV	4			/ "	515 11110	1 chod ((113)	0.25					
Lanes			, =													
				URITABLE VILLABLE		*7	1 2 6	1 1 1 4 4 4 1 P 1								
Vehicle Volumes and Adj	justme	nts			Majo	or Street: Ea	ist-West									
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
comguation																
Volume (veh/h)		0	74				71	5						15		14
		0	74				71	5						15 2		14 2
Volume (veh/h)			74				71	5								
Volume (veh/h) Percent Heavy Vehicles (%)			74				71	5								
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked			74				71	5						2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)			74	Undi	vided		71	5						2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized	eadway	2	74	Undi	vided		71	5						2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage	eadwa	2	74	Undi	vided		71	5						2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He	eadwa	2 ys	74	Undi	vided		71	5						2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec)	eadwa	2 ys 4.1	74	Undi	vided		71	5						2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	2 ys 4.1 4.12	74	Undi	vided		71	5						2 7.1 6,42		2 6.2 6.22
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		2 ys 4.1 4.12 2.2 2.22			vided		71	5						2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		2 ys 4.1 4.12 2.2 2.22			vided		71	5						2 7.1 6.42 3.5	34	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec)		2 4.1 4.12 2.2 2.22 I of So			vided		71	5						2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		2 4.1 4.12 2.22 2.22 I of Se 0			vided		71	5						2 7.1 6.42 3.5	34	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		2 4.1 4.12 2.22 2.22 I of So 0 1458			vided			5						2 7.1 6.42 3.5	34 849	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		2 4.1 4.12 2.22 2.22 1 of So 0 1458 0.00			vided			5						2 7.1 6.42 3.5	34 849 0.04	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Critical A the sec (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh)		2 4.1 4.12 2.22 2.22 1 of Sc 0 1458 0.00 0.0			vided			5						2 7.1 6.42 3.5	34 849 0.04 0.1	2 6.2 6.22 3.3

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General Information							Site	Inforr	natio	1						
Analyst	JAL							ection		-	100 5	t & Russ	ell Ave			
Agency/Co.	CTS							liction				e Rock	on Ave			
Date Performed	-	/2019						West Str	eet			ell Ave				
Analysis Year	2026	,2013						/South S			Lee S					
Time Analyzed	AM B	ase						Hour Fac			0.83					
Intersection Orientation	East-V							sis Time		hrs)	0.85					
Project Description		- Beachv	vav 2 TI	4			/ didiy	515 11110	1 chod (0.25					
Lanes																
				1414411		**		114 PV 1 P								
Vehicle Volumes and Adj	justme	nts			Majo	or Street: E	ast-West									
Approach	T	Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
		LT			1										LR	
Configuration								TR							LK	
Configuration Volume (veh/h)		8	86				108	TR 8						23	LK	19
			86				108							23 2	LR	19 2
Volume (veh/h)		8	86				108									
Volume (veh/h) Percent Heavy Vehicles (%)		8	86				108									
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked		8	86				108							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		8	86	Undi	vided		108							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized	eadwa	8	86	Undi	vided		108							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage	eadwa	8	86	Undi	vided		108							2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He	eadwa	8 2 ys	86	Undi	vided		108							2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec)	eadwa	8 2 ys 4.1	86	Undi	vided									2		2
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	8 2 ys 4.1 4.12	86	Undi	vided									2 7.1 6.42		2 6.2 6.22
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		8 2 ys 4.1 4.12 2.2 2.22			vided									2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		8 2 4.1 4.12 2.2 2.22 I of Se			vided									2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		8 2 ys 4.1 4.12 2.2 2.22			vided									2 7.1 6.42 3.5		2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Tum Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		8 2 4.1 4.12 2.2 2.22 1 of Se 10			vided									2 7.1 6.42 3.5	51	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		8 2 4.1 4.12 2.2 2.22 1 of So 10 1418												2 7.1 6.42 3.5	51 780	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		8 2 4.1 4.12 2.2 2.22 10 1418 0.01			vided									2 7.1 6.42 3.5	51 780 0.06	2 6.2 6.22 3.3
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh)		8 2 4.1 4.12 2.2 2.22 1 of So 1418 0.01 0.0												2 7.1 6.42 3.5	51 780 0.06 0.2	2 6.2 6.22 3.3

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General Information							Site	Inforr	natio	n						
Analyst	JAL						Inters	ection			Lee S	t & Russ	ell Ave			
Agency/Co.	CTS						Jurisc	liction			White	e Rock				
Date Performed		0/2019						West Str	eet			ell Ave				
Analysis Year	2026						North	n/South !	Street		Lee S	t				
Time Analyzed		ase + Sit	.e					Hour Fa			0.83	-				
Intersection Orientation	East-							sis Time		'hrs)	0.25					
Project Description		- Beachv	vav 2 TIA	4			1				0.20					
Lanes																
				14 1 4 4 5 4 0	D A Maj	۸. or Street: Ea	st-West	14 144 14 0								
Vehicle Volumes and Adj	justme	ents														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		9	86				108	9						25		21
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up Ho	eadwa	ys														
Base Critical Headway (sec)	1	4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32
Delay, Queue Length, an	d Leve	l of S	ervice	1	1				1				1		1	<u> </u>
Flow Rate, v (veh/h)		11													55	
Capacity, c (veh/h)		1416													778	
v/c Ratio		0.01													0.07	
95% Queue Length, Q ₉₅ (veh)		0.0													0.2	
Control Delay (s/veh)		7.6													10.0	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)		0	.8											1	0.0	
															A	
Approach LOS																

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General Information							Site	Inforr	natio	1						
Analyst	JAL							ection		-	100 5	t & Russ	ell Ave			
Agency/Co.	CTS							liction				e Rock	en Ave			
Date Performed		/2019						West Str	eet			ell Ave				
Analysis Year	2026	,2015						/South S			Lee S					
Time Analyzed	PM B	ase						Hour Fac			0.85					
Intersection Orientation	East-V							sis Time		hrs)	0.85					
Project Description		- Beachv	vav 2 TIA	4			1									
Lanes	1			-												
				1411481		4 Y		4 + 4 + 4 + 4								
Vehicle Volumes and Ad	ustme	nts			Majo	or Street: Ea	ast-West									
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	81				78	5						16		15
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														(5	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	adwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		0													36	
Capacity, c (veh/h)		1448													835	
v/c Ratio		0.00													0.04	
95% Queue Length, Q ₉₅ (veh)		0.0													0.1	
Control Delay (s/veh)		7.5													9.5	
Level of Service (LOS)		A													A	
	1						1.00				•	1				
Approach Delay (s/veh)		0.	.0											9	.5	

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		Н	CS7	Two	-Way	' Sto	p-Co	ntrol	Rep	ort_						
General Information							Site	Inforr	natio	n						
Analyst	JAL						Inters	ection			Lee S	t & Russ	ell Ave			
Agency/Co.	CTS						Juriso	liction			White	e Rock				
Date Performed	10/10	/2019					East/	West Str	eet		Russe	ell Ave				
Analysis Year	2026						North	n/South !	Street		Lee S	t				
Time Analyzed	PM B	ase + Sit	e				Peak	Hour Fa	ctor		0.85					
Intersection Orientation	East-	Nest					Analy	sis Time	Period	hrs)	0.25					
Project Description	7130	- Beachv	vay 2 TI	4												
Lanes																
				14 174 810	nr	A.		14.74.10								
Vehicle Volumes and Adj	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		2	81				78	7						17		16
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)		2													39	
Capacity, c (veh/h)		1445													830	
v/c Ratio		0.00													0.05	
95% Queue Length, Q ₉₅ (veh)		0.0													0.1	
Control Delay (s/veh)		7.5													9.6	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)			.2												.6	
Approach LOS															A	

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General Information							Site	Inforr	natio	1						
Analyst	JAL							ection		-	Lee S	t & Acce				
Agency/Co.	CTS						Jurisc					Rock	.33			
Date Performed)/2019						Nest Str	eet		Acces					
Analysis Year	2021	,,2015						/South S			Lee S					
Time Analyzed	-	ase + Sit	0					Hour Fac			0.83	·				
Intersection Orientation		-South							Period (hrc)	0.25					
Project Description	_	- Beach	vav 2 TI4					313 111110	Tenou (1113)	0.25					
Lanes	/100	beach	109 2 12													
				1417451	1151	1	1 2 6	74474Pr								
Vehicle Volumes and Ad	justme	nts			Major	Street: Nor	th-South									
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						4		40			17	2		11	37	
Percent Heavy Vehicles (%)						2		3						2		
Proportion Time Blocked																
rioportion nine biocked							-									
Percent Grade (%)							0									
							0									
Percent Grade (%)				Undi	vided		0									
Percent Grade (%) Right Turn Channelized	eadwa	ys		Undi	vided		0									
Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys		Undi	vided	7.1		6.2						4.1		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	eadwa	ys		Undi	vided			6.2 6.23						4.1 4.12		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	ys		Undi	vided	7.1										
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	eadwa	ys		Undi	vided	7.1		6.23						4.12		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)			ervice	Undi	vided	7.1 6.42 3.5		6.23 3.3						4.12 2.2		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice		vided	7.1 6.42 3.5	53	6.23 3.3						4.12 2.2		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an			ervice		vided	7.1 6.42 3.5		6.23 3.3						4.12 2.2 2.22		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)			ervice		vided	7.1 6.42 3.5	53	6.23 3.3						4.12 2.2 2.22 13		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)			ervice		vided	7.1 6.42 3.5	53	6.23 3.3						4.12 2.2 2.22 13 1592		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			ervice		vided	7.1 6.42 3.5	53 1037 0.05	6.23 3.3						4,12 2,2 2,22 13 1592 0.01		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₃₅ (veh)			ervice		vided	7.1 6.42 3.5	53 1037 0.05 0.2	6.23 3.3						4,12 2.2 2.22 13 1592 0.01 0.0		
Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) V/c Ratio 95% Queue Length, Q ₈₅ (veh) Control Delay (s/veh)			ervice			7.1 6.42 3.5 3.52	53 1037 0.05 0.2 8.7	6.23 3.3						4,12 2.2 2.22 13 1592 0.01 0.0 7.3	7	

General Information							Site	Inform	natio	1						
Analyst	JAL						Inters	ection			Lee S	t & Acce	ess			
Agency/Co.	CTS						Jurisd	liction			White	Rock				
Date Performed	10/10	/2019					East/	Nest Stre	eet		Acces	s				
Analysis Year	2021						North	/South S	Street		Lee S	t				_
Time Analyzed	PM B	ase + Sit	:e				Peak	Hour Fac	ctor		0.85					
Intersection Orientation	North	-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	4												_
Lanes	1															
$\langle \rangle$				2412454	An Major	F Street: Nor	th-South	лантанг Тантанг								
Vehicle Volumes and Adj	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	Γ
Configuration							LR					TR		LT		
						2		26			7	4		38	32	Γ
Volume (veh/h)								20								
-						2		3					1	2		Γ
Volume (veh/h)						-		-								
Volume (veh/h) Percent Heavy Vehicles (%)						2	0	-								
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked						2	0	-								
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)				Undi	vided	2	0	-								
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys		Undi	vided	2	0	-								
Volume (vel/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys		Undi	vided	2	0	-								
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turr Channelized Median Type Storage Critical and Follow-up He	eadwa	ys		Undi	vided	2	D	3						2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)	eadwa	ys		Undi	vided	2	D	6.2						2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	eadwa	ys		Undi	vided	2 7.1 6.42		3 6.2 6.23						2 4.1 4.12		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)			ervice		vided	2 7.1 6.42 3.5		3 6.2 6.23 3.3						2 4.1 4.12 2.2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice		vided	2 7.1 6.42 3.5	0	3 6.2 6.23 3.3						2 4.1 4.12 2.2		
Volume (vel/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an			ervice		vided	2 7.1 6.42 3.5		3 6.2 6.23 3.3						2 4.1 4.12 2.2 2.22		
Volume (vel/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (vel/h)			ervice		vided	2 7.1 6.42 3.5	33	3 6.2 6.23 3.3						2 4.1 4.12 2.2 2.22 45		
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HCS7 Two-Way Stop-Control Report

HCS™ TWSC Version 7.8.5 Lee Access - 2021 ambs.xtw

									Rep							
General Information							Site	Inforr	natio	ı						
Analyst	JAL						Inters	ection			Lee S	t & Acce	ss			
Agency/Co.	CTS						Jurisd	liction			White	e Rock				
Date Performed	10/10	/2019					East/\	Nest Str	eet		Acces	is				
Analysis Year	2026						North	/South S	Street		Lee S	t				
Time Analyzed	AM B	ase + Sit	te				Peak	Hour Fac	tor		0.83					
Intersection Orientation	North	-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	vay 2 TIA	4												
Lanes																
				141146			1.26	7 11 4 14 1								
Vehicle Volumes and Ad	justme	nts			Major	Street: Nor	th-South									
Approach		Eastb	ound			West	bound			North	oound			South	bound	
Movement	U	L	Т	R	U	L	т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						4		40			19	2		11	40	
Percent Heavy Vehicles (%)						2		3						2		
Proportion Time Blocked																
Percent Grade (%)						(0								-	
Right Turn Channelized																
				Undi	vided											
Median Type Storage																
Median Type Storage Critical and Follow-up He	eadway	ys														
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General Information	Site Information															
Analyst	_	JAL CTS				Intersection						t & Acce	SS			
Agency/Co.							Jurisd					e Rock				
Date Performed	_	/2019					<u> </u>	Vest Stre			Acces					
Analysis Year	2026							/South S			Lee S	t				
Time Analyzed	_	ase + Sit	e					Hour Fac			0.85					
Intersection Orientation		-South					Analy	sis Time	Period (hrs)	0.25					
Project Description	7130	- Beach	vay 2 TL	4												
Lanes																
\checkmark				141445	ahi	1	120	412420								
Vehicle Volumes and Ad	justme	nts			Majo	Street: Nor	th-South									
Approach		Eastb	ound			Westbound			Northbound			Southbound				
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						2		26			7	4		38	35	
Percent Heavy Vehicles (%)						2		3						2		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage				Undi	rided											
Critical and Follow-up H	oadwa	ve														
endear and ronotr up n	cuumu	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	1		7.1		6.2		1	1			4.1		1
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Critical Headway (sec)						6.42		6.23								
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Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₀₅ (veh) Control Delay (s/veh)		l of S	ervice			3.52	1046 0.03 0.1 8.6	3.3						2.22 45 1606 0.03 0.1 7.3 A	.9	

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The Corporation of the CITY OF WHITE ROCK BYLAW No. 2435



A Bylaw to amend the "White Rock Zoning Bylaw, 2012, No. 2000" as amended

The CITY COUNCIL of the Corporation of the City of White Rock in open meeting assembled ENACTS as follows:

1. THAT Schedule C of the *White Rock Zoning Bylaw*, 2012, *No.* 2000 as amended is further amended by rezoning the following lands:

LOT 4, BLOCK 39B, PLAN NWP17402, PART E1/2, SECTION 11, TOWNSHIP 1, NEW WESTMINSTER LAND DISTRICT PID: 010-289-461

(15770 NORTH BLUFF RD)

LOT 3, PLAN NWP17402, SECTION 11, TOWNSHIP 1, NEW WESTMINSTER LAND DISTRICT PID: 004-519-043

(15758 NORTH BLUFF RD)

LOT 305, PLAN NWP35289, SECTION 11, TOWNSHIP 1, NEW WESTMINSTER LAND DISTRICT PID: 007-144-563

(15748 NORTH BLUFF RD)

LOT 2 EXCEPT: PARCEL "K" (REFERENCE PLAN 30172); SECTION 11 TOWNSHIP 1 NEW WESTMINSTER DISTRICT PLAN 13659 PID: 009-848-096

(15738 NORTH BLUFF RD)

LOT 1, PLAN NWP13659, PART E1/2, SECTION 11, TOWNSHIP 1, NEW WESTMINSTER LAND DISTRICT, EXCEPT PLAN PCL L REF 30172

PID: 009-848-053

(15728 NORTH BLUFF RD)

LOT 2 SECTION 11 TOWNSHIP 1 NEW WESTMINSTER DISTRICT PLAN 18697 PID:010-427-384

(15724 NORTH BLUFF RD)

LOT 1 SECTION 11 TOWNSHIP 1 NEW WESTMINSTER DISTRICT PLAN 18697 PID: 010-427-325

(15704 NORTH BLUFF RD)

as shown on Schedule "1" attached hereto, from the 'RS-1 One Unit Residential Zone' to the 'CD-67 Comprehensive Development Zone.'

2. THAT White Rock Zoning Bylaw, 2012, No. 2000 as amended is further amended:

(1) by adding to the Table of Contents for 'Schedule B (Comprehensive Development Zones)', Section 7.62 CD-67 Comprehensive Development Zone';

(2) by adding the attached Schedule "2" to 'Schedule B (Comprehensive Development Zones)' Section 7.62 CD-67 Comprehensive Development Zone'.

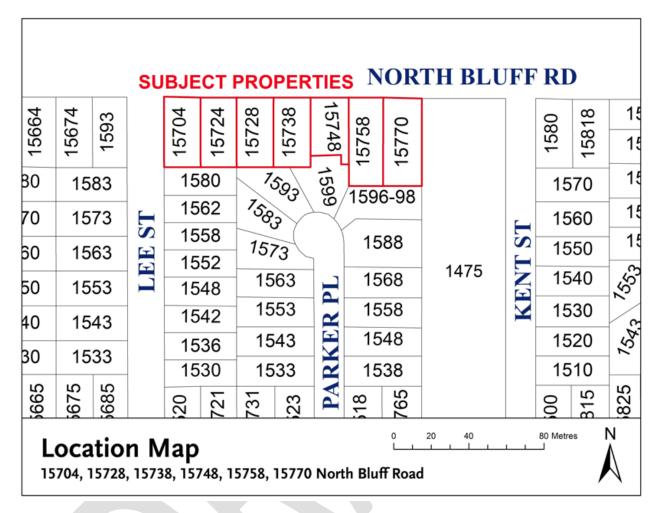
3. This bylaw may be cited for all purposes as "White Rock Zoning Bylaw, 2012, No. 2000, Amendment (CD-67 – 15704, 15724/28/38/48/58/70 North Bluff Road) Bylaw, 2022, No. 2435".

Public Information Meeting held this	9 th	day of September,	, 2020
Read a first time this		day of	, 2022
Read a second time this		day of	, 2022
Considered at a Public Hearing this		day of	, 2022
Read a third time this		day of	, 2022
Adopted this		day of	, 2022

Mayor

Director of Corporate Administration

Schedule "1"



Schedule "2"

7.62 CD-67 COMPREHENSIVE DEVELOPMENT ZONE

INTENT

The intent of this zone is to accommodate the development of multi residential development on a site of approximately 5,366.241 square metres.

- 1. Permitted Uses:
 - (a) *Townhouse* use
 - (b) *Apartment* use
 - (b) *accessory home occupation* use in accordance with the provisions of section 5.3 and that does not involve clients directly accessing the *principal building*
- 2. Lot Coverage:
 - (a) *lot coverage* shall not exceed 46%
- 3. Density:
 - (a) The maximum gross floor area shall not exceed 1.5 times the lot area.
 - (b) The maximum number of *dwelling units* must not exceed 87.

5. Building Height:

- (a) The *principal building* shall not exceed a height of 73.5 metres geodetic.
- (b) Ancillary buildings and structures shall not exceed a height of 5.0 metres from the *finished grade*.

6. Siting Requirements:

- (a) Minimum setbacks are as follows:
 - (i) Setback from front (east) lot line = 4.5 metres
 (ii) Setback from rear (west) lot line = 2.4 metres
 - (ii) Setback from rear (west) lot line = 2.4 metres
 (iii) Setback from interior side (north) lot line = 2.0 metres
 - (iv) Setback from interior side (north) for line = 2.0 metres = 3.5 metres
 - (iv) Setback from interior side (south) for fine = 5.5 metre
- (b) Notwithstanding the above, the following siting exemptions are permitted:
 - (i) Ancillary buildings and structures may be located on the subject property in accordance with the Plans prepared by Urban Arts Architecture dated June 17, 2022 that are attached hereto and on file at the City of White Rock, with the exception that no ancillary buildings or structures are permitted within a 2.0 metre distance from the front (east) lot line
- 7. Parking:

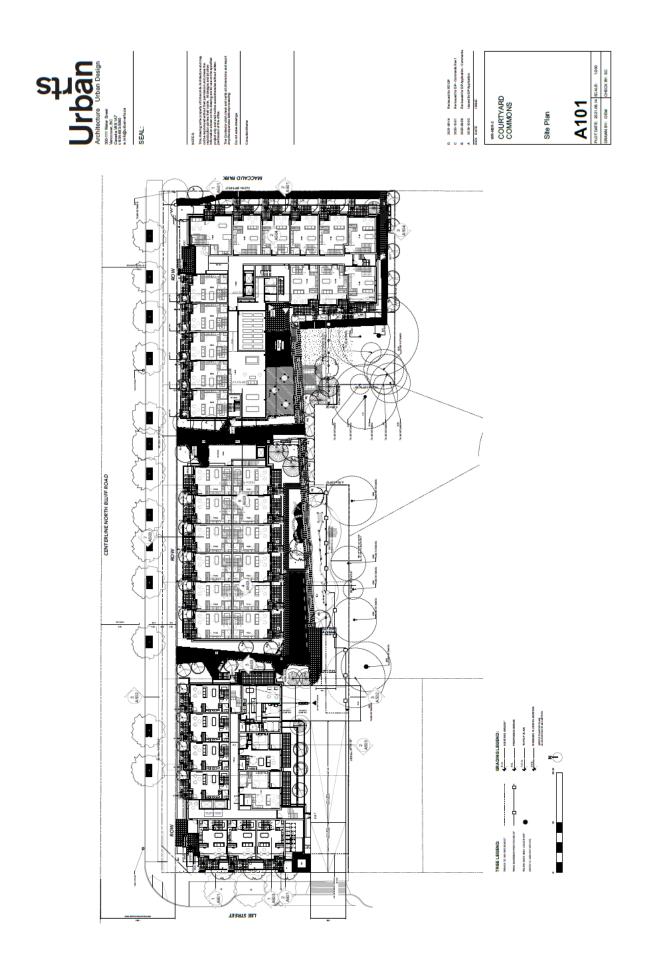
Parking shall be provided in accordance with Sections 4.14 and 4.17, with the minimum number of spaces required as follows:

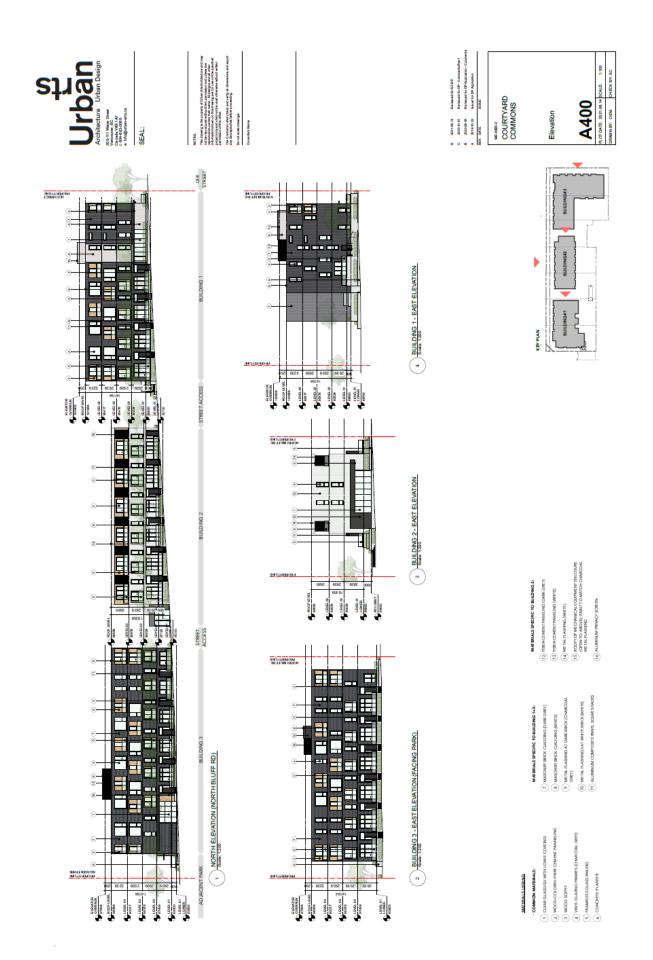
- (a) A minimum of one hundred and forty-eight (148) spaces shall be provided for the *multi-unit residential development:*
 - (a) Apartments: 1.2 per unit (54 units) 65
 - (b) Townhouses: 2.0 per unit (33 units) 66
 - (c) Visitors 0.3 per unit (54 units) 17
- (d) A minimum of one (1) of the required forty (40) spaces shall be provided as accessible parking spaces and two (2) van accessible shall be clearly marked in accordance with the B.C. Building Code Requirements.
- (e) A minimum of four (15) stalls must have electric charging capacity.
- (f) A minimum of four (15) stalls must be roughed for electric charging capacity.

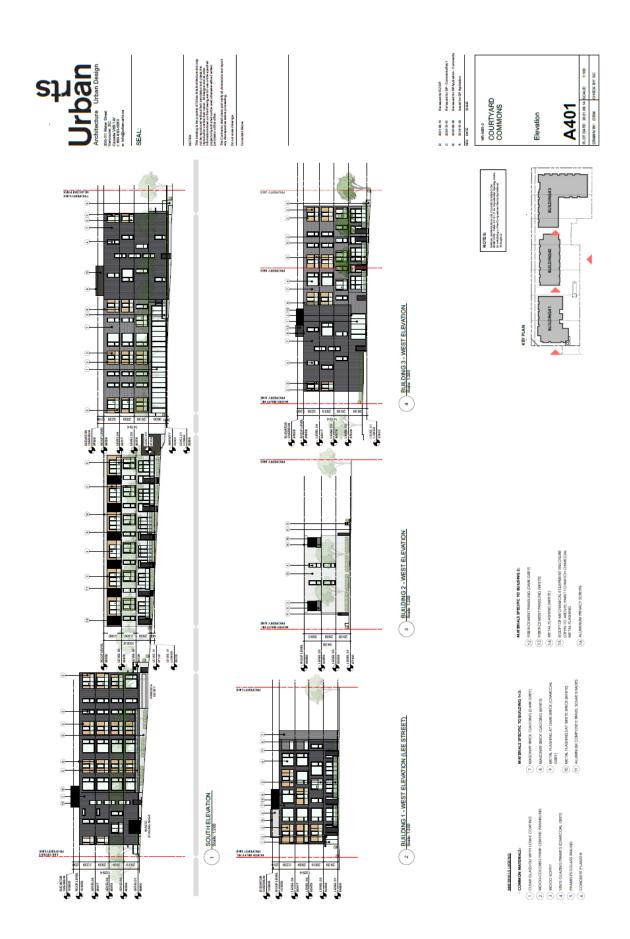
8. Bicycle Parking:

Bicycle parking shall be provided in accordance with Section 4.16, with the minimum number of spaces required as follows:

- (a) A minimum of twenty (89) Class I spaces shall be provided
- (b) A minimum of four (24) Class II spaces shall be provided
- 9. Loading:
 - (a) One loading space shall be provided for the *multi-unit residential use* in accordance with Section 4.15







ARBORIST REPORT

PROJECT:

WATERSTOCK_Beachway 2

SITE ADDRESS:

15704 - 15770 NORTH BLUFF ROAD, WHITE ROCK, BC

CLIENT:

WATERSTOCK PROPERTIES INC.

PROJECT #

AR2019-05

PREPARED BY:

VDZ + A Consulting Inc.

Suite 102, 9181 Church Street Fort Langley, BC, V1M 2R8

Suite 102, 355 Kingsway Vancouver, BC, V5T 3J7

PROJECT ARBORIST **Kelly Koome** Urban Forestry - ISA Certified Arborist, PN-5962A Tree Risk Assessment Qualified Wildlife Danger Tree Assessor, #P2546

CONSULTING ARBORIST Sarah Bishop ISA Certified Arborist, PN-9038A ISA Member Certified Wildlife Dangerous Tree Assessor, P2515

September 21st, 2020



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INTRODUCTION	 2
Background Assignment Limitations of Assignment	 2 2 2
Testing & Analysis Purpose & Use of Report	 2 2
SITE DESCRIPTION	 2
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Environmental Description	 3
Tree Preservation Summary	 3
Summary of Findings	 4
OBSERVATIONS	 5

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Background

VDZ + A Consulting Inc. was contracted by Waterstock Properties Inc. to prepare an ISA Certified Arborist Tree Report for the properties at 15704 – 15770 North Bluff Road, White Rock, BC.

Assignment

VDZ + A Consulting Inc. have been retained by the client to prepare a report to assess the tree(s) located at 15704 – 15770 North Bluff Road, White Rock, BC. The Consulting Arborist performed a site review entailing identification and visual assessment of the tree(s) on site. A tree survey of all off-site trees was completed by the client or representative(s).

The Project Arborist will provide recommendations for the retention or removal of tree(s) on this site based on the existing site conditions and the proposed use of the site. Mitigation of development impact on the tree(s) has been considered as part of the tree assessment process.

Limits of the Assignment

The Consulting Arborist's observations were limited to one site visit on April 9, 2019. No tissue or soil samples were sent to a lab for identification or analysis. VDZ + A Consulting Inc. located the trees using existing landmarks and onsite navigation.

Testing and Analysis

The Consulting Arborist used visual tree assessment and mallet sounding to test the trees' health, condition and risk level.

Purpose and Use of Report

The purpose of this report is to assist the property owner in compliance with the City of White Rock Tree Management Bylaw, 2008 No. 1831.

Site Review



Fig. 1 – Aerial view of properties (WROMS, 2019).



Proposed Site Development

Two new residential buildings.

Environmental Description

ISA Certified Arborist Austin Peterson of VDZ + A Consulting Inc. conducted a site review and evaluation of the trees located at the above referenced property on April 9, 2019.

The property consists of 16th Avenue to the north, single family homes to the south, Lee Street to the west, and a greenway to the east.

There are no seasonal creeks that transect the property.

There is no evidence of raptors nests, osprey nests or heron colonies on the site. Removal of trees however between March 15 – August 15 (date subject to change depending on seasonal nesting behavior and therefore must be confirmed with City of White Rock) will require a bird nesting survey. This is as prescribed by the federal Migratory Birds Convention Act (MBCA), 1994 and Section 34 of the BC Wildlife Act. It is the responsibility of the owner/developer to ensure they are in compliance with the city's regulations governing nesting birds on sites where development is occurring.

Off-site Trees – There are private off-site trees associated with this project. Municipal Trees – There are City of White Rock trees associated with this project. Trees Straddling the Property Line – There are trees straddling the property line associated with this project.

Tree Preservation Summary

All the trees identified on the Tree Retention/Removal Plan and within the Tree Assessment Data Table have been given their Retention/Removal recommendation on a preliminary basis. Final recommendations will be based upon design/construction and grading details. Any City tree that is removed will have replacement tree bonds collected as Cash-in-Lieu. These replacement trees will be planted by the City of White Rock on City lands.

Long-term tree preservation success is dependent on minimizing the impact caused during pre-construction clearing operations, construction and post construction activities. Best efforts must be made to ensure the Tree Protection Zone remains undisturbed.

Ongoing monitoring of retained trees through the development process and implementation of mitigating works (watering, mulching, etc.) is essential for success.

Tree Health Care Plan During Construction

To ensure continued health of the protected trees during construction, the following is recommended:

- 1. Remove dead, dying, and diseased branches prior to the start of construction.
- 2. Install tree protection barriers per bylaw specifications.
- 3. Regular weekly watering of trees between June 1 October 1.
- 4. Application of wood chips within the tree protection zone (1-3 inches).
- 5. Monthly monitoring of protected trees by assigned Arborist.

Retained protected trees will require supplemental watering on a weekly basis (weather dependent), as well as the application of wood chips or mulch to the tree protection zone within the tree protection barriers. Wood chips are preferred to ensure porous movement through soil and protection from



compaction during construction. The mulch or wood chip height should not exceed the root collar (not to exceed 10cm) to avoid moisture retention concentrated on the stem. In addition to the City's requirements, recommendations include the pruning of dead or dying limbs prior to construction for worker safety, as well as monthly monitoring of the trees by an Arborist to ensure the health and well-being of the protected trees.

Summary of Findings

- 1. Arborist is to monitor any work within 1- meter of a tree protection zone with 72 hours-notice given.
- 2. Areas identified that require arborist consultation / monitoring:
- Trees 016, 017, 018, 019, 020, 021, S1, OS 7 There will be an on-grade north to south gravel path through the open space / green space. Minor crown raising may be required to accommodate walking clearance. VDZ Arborist to monitor pruning on site.
- **Trees 020, 021 -** A raised timber deck will be installed to the east of these trees. The arborist will advise on the locations of the posts as to avoid roots.
- Trees 020, 021 The patio for unit 113B will require excavation Arborist to monitor.
- Tree OS 1 Loading zone will require excavation Arborist to monitor.
- **Trees 08, 09 –** When removing these trees the stumps must be left in the ground in order to limit damage to the roots of adjacent trees Arborist to monitor.



Table 1 - Tree Assessment Data:

Tree #	Tag #	Common Name Botanical Name	DBH (m.)	C-Rad (m.)	LCR (%)	Comments	Retain / Remove
Limita Many		us trees were dormar	nt at the	time of as	ssessme	nt; therefore, a limited Level 1 Visual Assessment was conducted.	
				Tł	ne follov	ving trees are located on-site.	
001	2125	Apple <i>Malus</i> spp.	0.40	4.0	80	CROWN – Ivy growing up 80% of stem. Hammock in crown. FIGURE 2 WITHIN PROPOSED UNDERGROUND PARKING ENTRANCE	REMOVE
002	0961	English holly Ilex aquifolium	0.30	-	-	INVASIVE SPECIES – NOT PROTECTED UNDER BYLAW	REMOVE
003	0960	Western redcedar Thuja plicata	0.45	4.0	90	CROWN – Flagging present. WITHIN PROPOSED UNDERGROUND PARKING ENTRANCE	REMOVE
004	0958	Scots pine <i>Pinus sylvestris</i> 'Chantry blue'	0.25	3.0	60	TRUNK – Leans south 45° before self-correcting. CROWN – Some dieback on ends of branches. UNDERSIZED	REMOVE
005	0959	Cypress Chamaecyparis spp.	0.30	1.0	80	TRUNK – Codominant at 1 meter. Decay column from base to 1 meter on west side. FIGURE 3 WITHIN PROPOSED BUILDING ENVELOPE	REMOVE
006	3913	Lawson cypress Chamaecyparis Iawsonia	0.40 0.40	3.5	100	TRUNK – Ivy growing up base. Codominant stems at base. CROWN – Excessive coning. Some flagging present. FIGURE 4 WITHIN PROPOSED BUILDING ENVELOPE	REMOVE
007	3912	Lawson cypress Chamaecyparis Iawsonia	0.50 0.35	3.5	100	TRUNK – Ivy growing up base. Codominant stems at base. CROWN – Excessive coning. Some flagging present. FIGURE 4 WITHIN PROPOSED BUILDING ENVELOPE	REMOVE
007A	3914	Mountain-ash Sorbus sitchensis	0.39	4.5	75	TRUNK – Healed wound on south side. LOCATION – Growing next to driveway. WITHIN PROPOSED BUILDING ENVELOPE	REMOVE



Tree #	Tag #	Common Name Botanical Name	DBH (m.)	C-Rad (m.)	LCR (%)	Comments	Retain / Remove
008	0962	Douglas-fir Pseudotsuga menziesii	0.87	7.5	80	TRUNK – Broken fence leaning on south side. CROWN – Crown weighted to south side. Broken branches in lower crown on north side. Large hanger on east side. LOCATION – Adjacent to shed. WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING STUMP MUST BE LEFT IN GROUND	REMOVE
009	0963	Scots pine Pinus sylvestris	0.58	6.5	80	TRUNK – Ivy growing up 80% of stem. CROWN – Previously topped. WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING STUMP MUST BE LEFT IN GROUND	REMOVE
010	2511	Monkey puzzle Araucaria araucana	0.15	-	-	UNDERSIZED	REMOVE
011	2510	Monkey puzzle Araucaria araucana	0.25	-	-	UNDERSIZED	REMOVE
012	2512	Butterfly bush Buddleia spp.	0.05 - 0.15	5.0	95	TRUNK – Multi-stem at 1 meter. Leans south before self-correcting. WITHIN PROPOSED BUILDING ENVELOPE	REMOVE
013	2514	Magnolia <i>Magnolia</i> spp.	0.25 0.20 0.20	6.0	75	TRUNK – Codominant stems at base. WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING	REMOVE
014	2513	English holly <i>llex aquifolium</i>	0.25	-	-	UNDERSIZED	REMOVE
015	2502	Douglas-fir Pseudotsuga menziesii	0.85	7.5	90	Declining CROWN – Excessive coning. Pruned on north side for Hydro clearance. FIGURE 5 WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING	REMOVE



Tree #	Tag #	Common Name Botanical Name	DBH (m.)	C-Rad (m.)	LCR (%)	Comments	Retain / Remove
016	2506	Paper birch Betula papyrifera	0.36	4.0	40	Declining TRUNK – Holly growing up 60% of stem. FIGURE 6	REMOVE
017	2505	Paper birch <i>Betula papyrifera</i>	0.31	4.0	40	TRUNK – Conks present. Lean north. Past stems trimmed at base on south side. CROWN – Broken top. Likely decay column in broken top from Bronze Birch Borer. FIGURE 6 RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
018	2504	Paper birch <i>Betula papyrifera</i>	0.30 0.30	4.0	50	TRUNK – Conks present. Lean north. Past stems trimmed at base on south side. Codominant stems at base. CROWN – Broken top. Likely decay column in broken top from Bronze Birch Borer. FIGURE 6 RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
019	2509	English holly Ilex aquifolium	0.25	-	-	UNDERSIZED	RETAIN
020	2508	Monkey puzzle Araucaria araucana	0.40	6.0	90	RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
021	2503	Douglas-fir Pseudotsuga menziesii	0.80	8.0	90	ROOTS – Structural roots exposed. CROWN – Dieback present. Flagging present. SUITABLE FOR RETENTION	RETAIN
022	0957	Western hemlock <i>Tsuga heterphylla</i>	0.10 - 0.20	3.0	50	TRUNK – Four codominant stems at base. FIGURE 7 WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING	REMOVE
023	0956	Douglas-fir Pseudotsuga menziesii	0.15 0.15	3.0	40	CROWN – No foliage in lower crown. FIGURE 7 WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING	REMOVE



Tree #	Tag #	Common Name Botanical Name	DBH (m.)	C-Rad (m.)	LCR (%)	Comments	Retain / Remove
024	0955	English holly Ilex aquifolium	-	-	-	INVASIVE SPECIES – NOT PROTECTED UNDER BYLAW FIGURE 7	REMOVE REMOVE
025	0952	Western redcedar <i>Thuja plicata</i>	0.50	5.5	80	 CROWN – Pruned on north side for Hydro clearance. Flagging ir upper crown. WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING. PROJECT ARBORIST TO MONITOR 	
026	0953	Western redcedar Thuja plicata	0.30	2.5	100	RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
	The foll	owing trees are loca	ated off			trees were assessed onsite and were separated by fencing. The of	f-site
				assessn	nent the	refore was limited by these factors.	
OS 1	-	Willow <i>Salix</i> spp.	0.25 0.10	6.0	70	TRUNK – Leans north. Codominant stems at base. Bend in trunk north at 0.5 meters. ROOTS – Debris piled against stem. EXCAVATION WITHIN THE TPZ PREMITTED WITH ARBORIST SUPERVISION. RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
OS 2	-	SPECIES COULD NOT BE IDENTIFIED DUE TO IVY COVERAGE	0.80	5.0	-	TRUNK – Ivy covering entire stem. SPECIES COULD NOT BE IDENTIFIED DUE TO IVY COVERAGE RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
OS 3	-	Eastern white cedar <i>Thuja occidentalis</i>	0.15 - 0.30	4.5	95	TRUNK – Five codominant stems at base. CROWN – Previously pruned on north side. RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
OS 4	-	Mountain-ash Sorbus sitchensis				TRUNK – Multi-stem at base. Fence leaning on north side of trunk. RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN



Tree #	Tag #	Common Name Botanical Name	DBH (m.)	C-Rad (m.)	LCR (%)	Comments	Retain / Remove
OS 5	-	Western redcedar <i>Thuja plicata</i>	0.15 - 0.35	3.5	100	TRUNK – Five codominant stems at base. CROWN – Flagging present. Excessive coning. RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
OS 6	-	English walnut <i>Juglas regia</i>	0.45 0.35	5.0	80	TRUNK – Codominant stems at 1 meter. North stem growing through fence onto onsite property. FIGURE 9 RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
OS 7	-	Douglas-fir Pseudotsuga menziesii	0.60	6.5	80	RETAIN WITH TREE PROTECTION FENCING SUITABLE FOR RETENTION	RETAIN
				The	f <mark>ollowi</mark> n	g trees are straddling the property line.	
S 1	0951	English laurel Prunus laurocerasus	0.15	-	-	UNDERSIZED	RETAIN
S 2	2507	English holly Ilex aquifolium	0.15	-	-	UNDERSIZED	RETAIN
S 3	0954	Douglas-fir Pseudotsuga menziesii	0.40	4.5	90	LOCATION – Adjacent to fence. CROWN – Pruned on east side. Sparse foliage. FIGURE 8 STRADDLING TREE REQUIRES CITY PERMISISON TO REMOVE – REPLACEMENTS HANDLED CASH IN LIEU WITHIN PROPOSED EXCAVATION ZONE FOR BUILDING AND UNDERGROUND PARKING	REMOVE



APPENDIX A – GLOSSARY OF KEY TERMS

Abutment: A structure built to support the lateral pressure of an arch or span, e.g., at the ends of a bridge.

Adapted Trunk Diameter Method: This method uses the trees age and tolerance to construction damage to determine the factor that will be multiplied by the diameter to provide a sufficient tree protection zone given these factors.

Age: The relative age (young, intermediate, mature) within the particular stand of trees or forest.

Algae: Is a simple, nonflowering plant (includes seaweeds and many single-celled forms). They do contain chlorophyll (but lack true stems, roots, and vascular tissue)

ALR: The Agricultural Land Reserve in which agriculture is recognized as the priority. **Bole:** The stem or trunk of a tree.

Chlorotic: Yellowing of plant tissues caused by nutrient deficiency &/or pathogen.

Co-dominant Leaders: Forked dominant stems nearly the same size in diameter, arising from a common junction.

Co-dominant Within Stand: Individual tree whose height is generally equal to trees (regardless of species) within the same stand.

Compaction: Compression of the soil that breaks down soil aggregates and reduces soil volume and total pore space, especially macropore space.

Conk: A fungal fruiting structure typically found on trunks and indicating internal decay. **Dead Standing:** A tree that has died but is still standing erect.

DBH: The Diameter of the tree at 1.40 meters above the ground.

Dominant Within Stand: Individual tree whose height is significantly greater than adjacent trees (regardless of species) within the same stand.

C-rad: Crown radius, is the dripline measured from the edge of the trunk to the outermost branches of the crown.

CRT: Critical Root Zone

CRZ: Critical Root Zone - The area between the trunk and to the end of the Drip Line.

Fair: Healthy but has some defects such as co-dominant trunk, dead branches.

Feeder Roots: The smaller roots responsible for water and nutrient absorption and gas exchange. These roots can extend far beyond the Drip Line (or outer canopy) of the tree. **Fungus (singular) / Fungi (plural):** Unicellular, multicellular or syncytial spore-producing organisms that feed on organic matter (including molds, yeast, mushrooms and toadstools)

Girdling Root: Root that encircles all or part of the trunk of a tree or other roots and constricts the vascular tissue and inhibits secondary growth and the movement of water. **Good:** Good form and structure, healthy with no defects.

Hazardous: Significant hazard exists with a high risk of immediate failure; which could result in serious damage to property or person(s).

Height: Height of tree is approximate.

LCR: Live Crown Ratio – The ratio of crown length to total tree length.

Level 1 Limited Visual Assessment: Limited visual assessment looking for obvious defects such as, but not limited to dead trees, large cavity openings, large dead or broken



branches, fungal fruiting structures, large cracks, and severe leans.

Level 2 Basic Visual Assessment: Detailed visual inspection (aboveground roots, trunk, canopy) of tree(s) may include the use of simple tools to perform assessment (i.e. sounding mallet, trowel, measuring tape, binoculars). The assessment does not include advanced resistance drilling of trunk.

Level 3 Advanced Assessment: To provide detailed information about specific tree parts, defects, targets, or side conditions. May included aerial inspection, resistance drilling of tree parts, laboratory diagnosis of fungal or plant tissue.

Mildew: Is a minute powdery or web-like fungi (of different colours) that is found on diseased or decaying substances.

Moss: A small, green, seedless plant that grows on stones, trees or ground.

No Disturbance Zone: (Trunk Diameter x 6) + Trunk Radius + (60 cm excavation zone). For example, a 50-cm diameter tree would have a No Disturbance Zone = 3.85 meters measured from the edge of the trunk.

Poor: multiple defects, disease, poor structure and or form, root and or canopy damage. **Phloem**: Plant vascular tissue that transports sugar and growth regulators. Situated on the inside of the bark, just outside the cambium. Is bidirectional (transports up and down). Contrast with xylem.

Phototropic: Growth toward light source or stimulant.

Retain & Monitor: Monitor health and condition of tree every 12 months for signs of deterioration.

Root Crown: Also, called the root collar, it includes the flare at the base of the trunk and the initial roots that develop below the trunk. These roots generally taper and subdivide rapidly to form the root system of the tree.

SPEA: Streamside Protection and Enhancement Area

Spiral Decline: The health and condition of the tree is deteriorating.

Sub-dominant Within Stand: Individual tree whose height is significantly less than adjacent trees (regardless of species) within the same stand.

Suppressed: Individual tree whose growth, health and condition is negatively impacted by adjacent tree(s).

TPZ: Tree Protection Zone - The area between the trunk and the Tree Protection Barrier. **Wildlife Tree:** A tree or a group of trees that are identified to be retained to provide future wildlife habitat. Wildlife habitat can exist in tree risks (cavities, dead snags, broken tops). Often times the tree risk to potential targets (people & property) is reduced by removing that part of the tree posing the risk of failure, but the tree (or portion of) is retained to provide future to provide future habitat.

Witches Broom: A dense mass of shoots growing from a single point, with the resulting structure resembling a broom or a bird's nest.

Xylem: Thin overlapping cells that helps provide support and that conducts water and nutrients up

ward from the roots all the way to the leaves.



APPENDIX B – PHOTOS

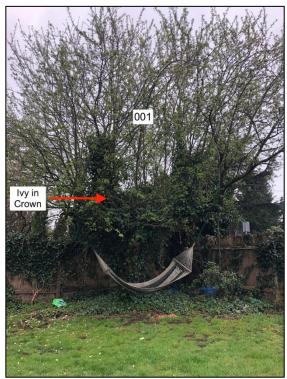


Fig. 2 – Tree 001 with ivy growing throughout crown.



Fig. 3 – Tree 005 with decay from base to 1 meter.



Fig. 4 – View of Trees 006 and 007.



Fig. 5 – Tree 015 with pruning on north side.



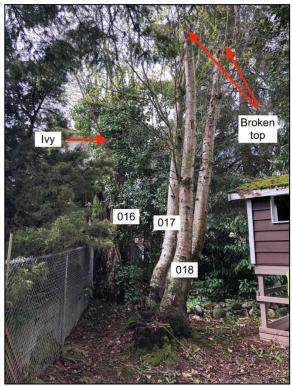


Fig. 6 – Trees 016, 017, and 018 in poor condition.



Fig. 7 – West view of Tree 022, 023, and 024.



Fig. 8 – Tree S 3 with crown weighted to west side.



Fig. 9 – Tree OS 6 growing through fence.

TREE REPLACEMENT SUMMARY

White Rock Tree Management Bylaw, 2008, No. 1831

The number and size of the replacement trees is dependent upon the size of the

protected tree removed. Replacement trees shall be required according to the following:

(a) Less than 50 cm DBH protected tree removed – Two replacement trees

(b) 51 cm to 65 cm DBH protected tree removed – Three replacement trees

(c) 66 cm to 75 cm DBH protected tree - Four replacement trees

(d) 76 cm to 85 cm DBH protected tree – Five replacement trees

(e) Greater than 85 cm DBH protected tree - Six replacement trees

Size	Removed	Replacement Trees
Less then 50cm DBH	10	20
51-65cm DBH	3	9
66-75 DBH	0	0
76-85cm DBH	1	5
85cm+ DBH	1	6
Undersize Trees	7	0
	Total	40

40 Total Replacement Trees Required, 2 of which will be handled by Cash in Lieu as Tree S3 is straddling city property.

Recommended Replacement Species

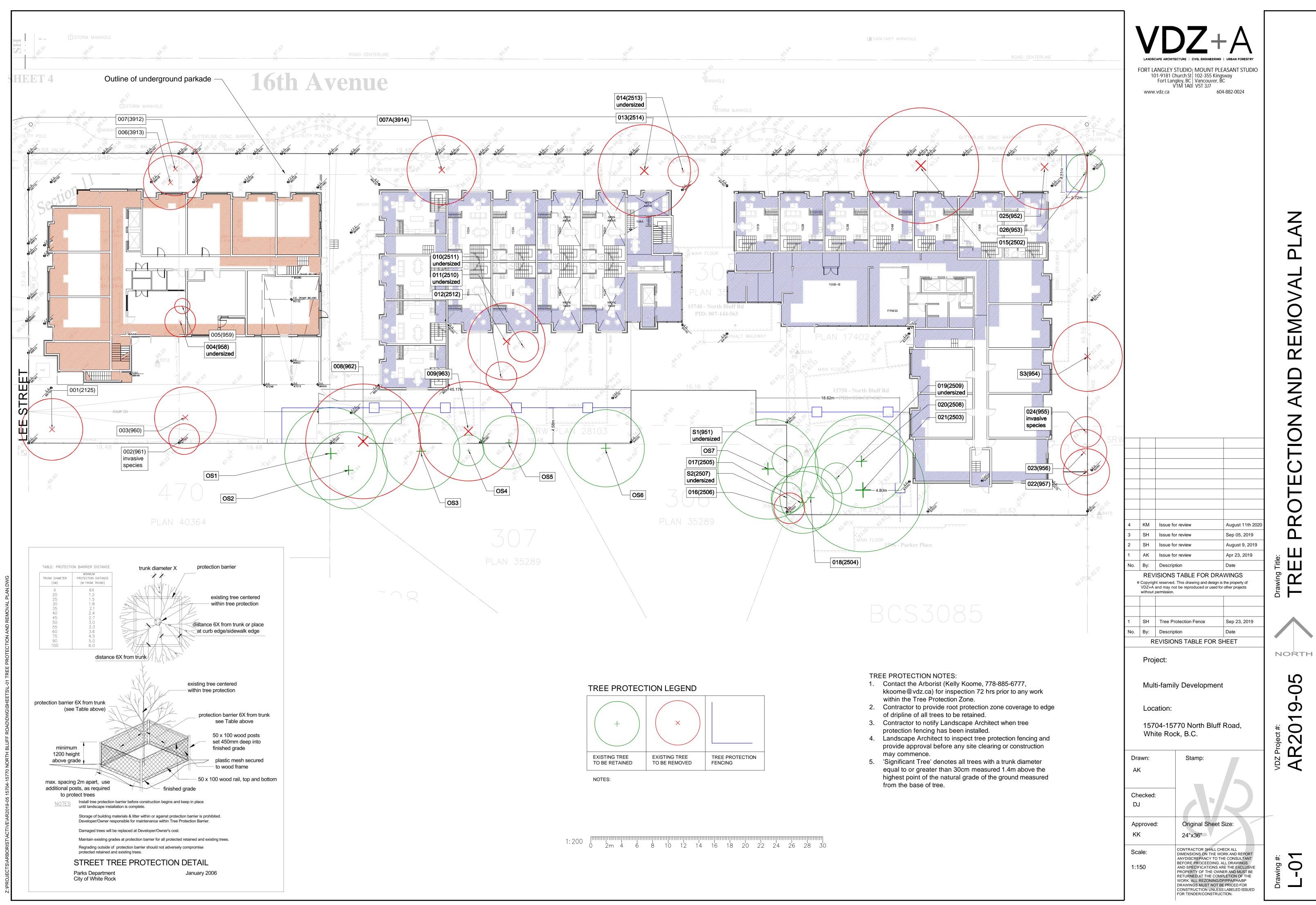
It is recommended that the landscape architect use a mix of the following species in the replanting plan:

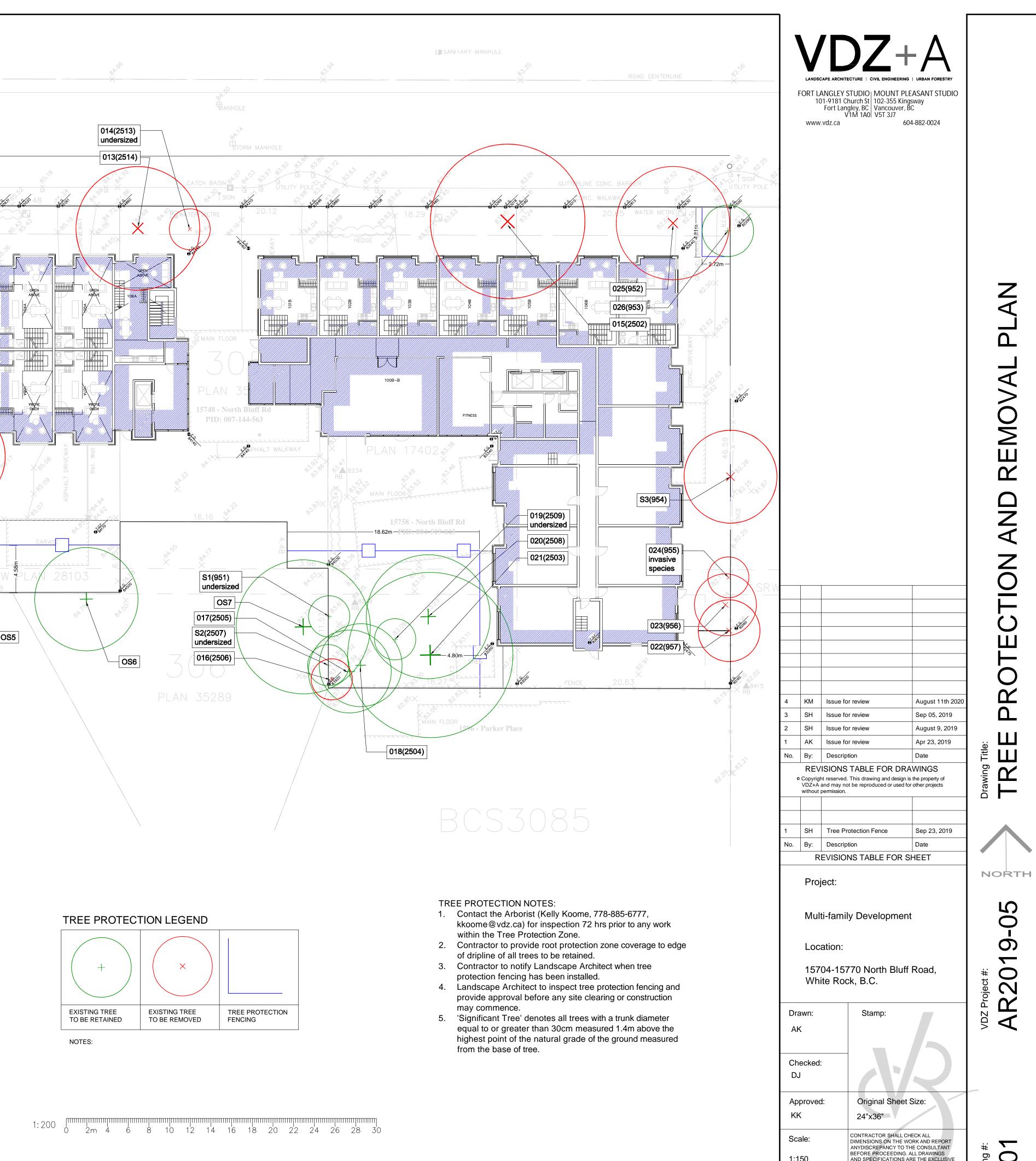
- Acer Griseum 6 cm cal. 1.2m Std.
- Nyssa Sylvatica ' Tupelo Tower' 6 cm cal. 1.2m std.
- Picea Omorika "Bruns" 3m
- Stewartia Pseudocamellia 6 cm cal. 1.2m Std.



APPENDIX C – TREE RETENTION AND REMOVAL PLAN

Inserted at original size Print at 11X17

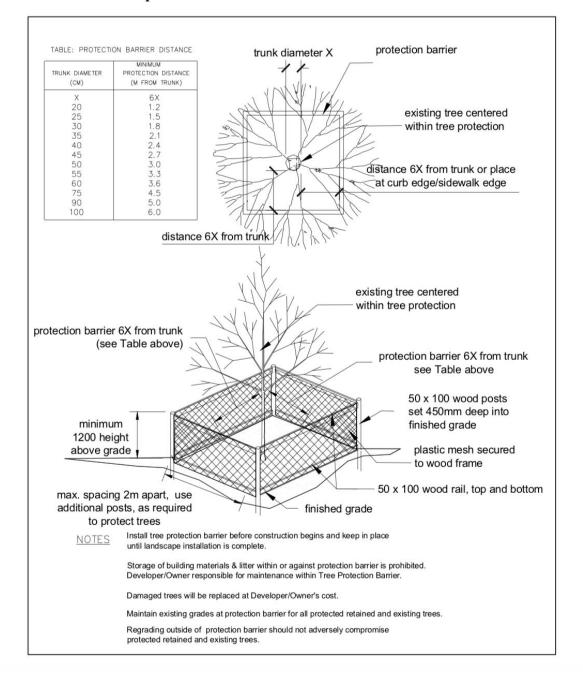




X3-

APPENDIX D – CONSTRUCTION ACTIVITY AROUND TREE PROTECTION ZONE

Tree Protection Fencing



Specifications for Tree Protection Barriers



General Requirements and Limitations for Operations Within the Tree Protection Zone

- The Contractor shall not engage in any construction activity within the Tree Protection Zone (TPZ) without the approval of the Project Arborist including: operating, moving or storing equipment; storing supplies or materials; locating temporary facilities including trailers or portable toilets and shall not permit employees to traverse the area to access adjacent areas of the project or use the area for lunch or any other work breaks. Permitted activity, if any, within the Tree Protection Zone maybe indicated on the drawings along with any required remedial activity as listed below.
- In the event that construction activity is unavoidable within the Tree Protection Zone, notify the Project Arborist and submit a detailed written plan of action for approval. The plan shall include: a statement detailing the reason for the activity including why other areas are not suited; a description of the proposed activity; the time period for the activity, and a list of remedial actions that will reduce the impact on the Tree Protection Zone from the activity. Remedial actions shall include but shall not be limited to the following:
- In general, demolition and excavation within the drip line of trees and shrubs shall proceed with
 extreme care either by the use of hand tools, directional boring and/or Air Spade. If any excavation
 work is required within the Tree Protection Zone (TPZ), the Project Arborist must be present during
 excavation, and a trench should be 'hand dug' to a depth of 60 cm outside the Drip Line, to uncover
 any potential roots. The Project Arborist should cleanly prune roots and recommend the appropriate
 treatment for any structural roots encountered.
- Knife excavation where indicated or with other low impact equipment that will not cause damage to the tree, roots soil.
- When encountered, exposed roots, 1 inches and larger in diameter shall be worked around in a
 manner that does not break the outer layer of the root surface (bark). These roots shall be covered
 in Wood Chips and shall be maintained above permanent wilt point at all times. Roots one inch and
 larger in diameter shall not be cut without the approval of the Project Arborist. Excavation shall be
 tunnelled under these roots without cutting them. In the areas where roots are encountered, work
 shall be performed and scheduled to close excavations as quickly as possible over exposed roots.
- Tree branches that interfere with the construction may be tied back or pruned to clear only to the
 point necessary to complete the work. Other branches shall only be RETAINED when specifically
 indicated by the Project Arborist. Tying back or trimming of all branches and the cutting of roots
 shall be in accordance with accepted arboriculture practices (ANSI A300, part 8) and be performed
 under supervision of the Project Arborist.
- Do not permit foot traffic, scaffolding or the storage of materials within the Tree Protection Zone.
- Protect the Tree Protection Zone at all times from compaction of the soil; damage of any kind to trunks, bark, branches, leaves and roots of all plants; and contamination of the soil, bark or leaves with construction materials, debris, silt, fuels, oils, and any chemicals substance. Notify the Project Arborist of any spills, compaction or damage and take corrective action immediately using methods approved by the Project Arborist.



APPENDIX E – LIMITATIONS

This report is valid for the day the trees were reviewed. This report is not to be re-printed, copied, published or distributed without prior approval by VDZ + A Consulting Inc.

Sketches, diagrams and photographs contained in this report being intended as visual aids, should not be construed as engineering reports or legal surveys.

Only the subject tree(s) was inspected and no others. This report does not imply or in any other way infer that other trees on this site or near this site are sound and healthy.

The tendency of trees or parts of trees to fall due to environmental conditions and internal problems are unpredictable. Defects are often hidden within the tree or underground. The project arborist has endeavored to use his skill, education and judgment to assess the potential for failure, with reasonable methods and detail. It is the owner's responsibility to maintain the trees and inspect the trees to reasonable standards and to carry out recommendations for mitigation suggested in this report.

APPENDIX F – REFERENCES

Bond, Jerry & Buchanan, Beth (2006) Best Management Practices: Tree Inventories, International Society of Arboriculture, Champaign, IL.

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Dunster, Dr. Julian & Edmonds, Dr. R. (2014) Common Fungi Affecting Pacific Northwest Trees, ISA Pacific Northwest Chapter, Silverton, OR, USA

Fite, Kelby & Smiley, E. Thomas (2016) Best Management Practices: Managing Trees During Construction, International Society of Arboriculture, Champaign, IL.

Sibley, David Allen (2009) The Sibley Guide to Trees. Alfred A. Knopf, New York, NY

Smiley, E.T., Matheny, N., Lilly, S. (2011) Best Management Practises: Tree Risk Assessment. International Society of Arboriculture, Champaign, IL.