Edgemont Village
Transportation Study
June 2015

The District of North Vancouver completed a comprehensive transportation network study for Edgemont Village for a 20-year time horizon. A transportation study considers all modes of transportation and potential future redevelopment. The study builds on the redevelopment parameters outlined in the Edgemont Village Centre Plan and Design Guidelines (2014) and information in the Edgemont Village Traffic and Parking Technical Report (2014). The outcome of the study represents a sound transportation plan for the area based on the best information available at the time of study.

This document is to be used to guide development applications and civic improvement decisions on a case-by-case basis with public input.

Key Findings

- Improvements to sidewalks and boulevard space are expected to help make the Village an even better place for walking.
- Improvements to the cycling network are identified on Ayr Avenue and Woodbine Drive corridor, Ridgewood Drive, and Highland Boulevard.
- Improvements to transit access are made by consolidating stops on Edgemont Boulevard south of Ridgewood Drive to provide easier access to transit.
- To reduce delay and improve crossing safety, a new traffic signal is warranted with current traffic volumes at Ridgewood Drive and Edgemont Boulevard intersection. Metro Vancouver plans to install a temporary signal during the traffic detour for the No. 9 Capilano water main project (late 2015 to 2016). The temporary signal could be used as a trial period.
- Acknowledgment of the current limited parking supply in the Village means maintaining on-street parking is important to Village access. As property redevelops, there is opportunity to provide more on-site parking.
- Goods movement routes to the Village include Edgemont Boulevard and Ridgewood Drive. These streets are to accommodate widths and turning for goods delivery vehicles.

A full copy of the study follows.

Edgemont Village Transportation Concepts

Transportation Section,
District of North Vancouver

NORTH VANCOUVER DISTRICT

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MEMORANDUM

URBAN systems

Date:	April 15, 2015
To:	Transportation Section, District of North Vancouver
From:	Urban Systems
File:	1333.0018.08
Subject:	Edgemont Village Transportation Concepts

The purpose of this memo is to summarize relevant steps taken to complete the *Edgemont Village Transportation Plan* assignment and document recommendations, including:

- Future traffic and trip generation assumptions;
- Multi-modal needs (i.e. walking, cycling and transit) for the study area road network;
- Relevant design assumptions; and
- Cross-section and right-of-way drawings

Additional information has been appended to this memo where appropriate.

1. Background

The work undertaken to complete the *Edgemont Village Transportation Plan* assignment is part of a larger effort to refresh the local plan for Edgemont Village and builds on a number of other planning and transportation assignments[1]. The most relevant of these is the *Traffic and Parking Study for Edgemont Village Centre*, completed in January 2014.

The *Traffic and Parking Study* included an assessment of existing conditions related to safety, accessibility, and operations at six key intersections, as well as a review of parking within the study area. The current assignment seeks to build upon the previous work to include new information about local developments and a more detailed assessment of the future street network.

2. Scope of work

The focus of this study is to determine property needs (e.g. right-of-way) to accommodate long-range transportation and land use plans in keeping with the vision of the *Edgemont Village Centre: Plan and Design Guidelines*. In particular, the purpose of the assignment is to:

- Incorporate multi-modal plans for walking, cycling, transit, goods movement and personal vehicles including identification of facility types and preferred road cross-sections, based on development opportunities that may arise within a 20-year time horizon; and
- Refine previous traffic & parking work:
    - Include development plans for Grosvenor, Edgemont Seniors Living, Credit Union

[1] *Edgemont Village Centre: Plan and Design Guidelines*, District of North Vancouver, January 2014 and *Traffic and Parking Study for Edgemont Village Centre*, Urban Systems, January 2014.

    - Include high-level assessment of new residential density in the village core as a result of Edgemont Village Centre: Plan & Design Guidelines
- Provide cross-sections and right-of-way drawings as well as CAD files for Edgemont Village, annotated with options or comments related to long-term possibilities, as applicable; and
- Provide updated Synchro files.

These deliverables will assist the District with its review of future development applications within Edgemont Village and provide a consistent plan for all modes of transportation infrastructure.

3. Approach/ Methodology

The assignment followed a number of key steps to ensure that an efficient yet thorough approach was followed. The assessment included these steps:

- Reviewed background materials, in particular information related to new developments within the Village area (Grosvenor and Edgemont Seniors Living)) and nearby (Griffin Community Recreation Centre);
- Hosted a workshop meeting on October 6, 2014 with DNV staff from a number of departments as well as representatives for the Grosvenor development;
- Evaluated individual development plans for active sites against long-term multi-modal plans, vision goals and available right of way; and
- Incorporated District input and refinements throughout the process.

At the study outset, District planning staff provided information and mapping related to sites that were anticipated to redevelop within the study horizon (i.e. by 2030). The District provided guidance in the form of mapping and anticipated changes to occur in tabular format (e.g. approximate number of new residential units). Only roadways adjacent to redevelopment sites were considered as opportunities to implement changes within the right-of-way.

4. Multi-modal Plans

To the extent possible, the broad goals outlined in the *Edgemont Village Centre: Plan and Design Guidelines* document were used to guide multi-modal plans. In most instances, the intent was maintained but several details had to be revised. The following describes the outcomes by mode.

4.1 Pedestrian Needs

Given the nature of Edgemont Village, the overall goal for the pedestrian network is to improve the walking environment to make it more comfortable, safe and attractive. The following objectives were pursued:

- Provide as much sidewalk space as possible to enhance the user experience for pedestrians of all ages and abilities, including those with mobility devices;

- Add boulevard space where possible to allow for street furnishings and plantings that would improve streetscaping and public realm treatments;
- Reduce pedestrian crossing distances at intersections, where possible to enhance safety (e.g. using of bulb outs);
- Enhance safe and active routes to school, in particular to Highlands Elementary; and
- Address transit passenger needs at bus stops within the Village.

The following is a summary of pedestrian improvements included as part of this assessment:

- Pedestrian phases are planned as part of the signalized operations of Edgemont & Ridgewood, as well as marked cross-walks;
- A short section of multi-use pathway was identified on the east side of Colwood Drive to provide a safe, off-road link from the corner of Colwood Drive & West Queens Road to the elementary school property;
- A number of pedestrian bulb outs are planned at intersections within the Village that will reduce crossing distance or enhance crossing prominence. These include:
  - West Queens Road and Woodbine Drive, northeast corner
  - Highland Boulevard and Edgemont Boulevard, northwest corner
  - Edgemont Boulevard and Crescentview Drive, southeast corner
  - Edgemont Boulevard and Connaught Crescent, northeast corner

- Long-term objectives to create an enhanced public realm along Highland Boulevard can be initiated through a redevelopment opportunity on the northwest side of Highlands, south of Edgemont; and
- A mid-block pedestrian cross-walk is recommended to be removed on Edgemont Boulevard between Ridgewood and Crescentview if a signal at Edgemont and Ridgewood is implemented. A consolidation of bus stops in this area makes it safer and more practical for passengers to cross at intersections rather than mid-block.

4.2 Cycling Needs

The goals for the cycling network through Edgemont Village include:

- Addressing different levels of skill and ability for cyclists through provision of on and off-street cycling routes (near elementary school); and
- Providing enhanced connections to local and regional destinations, the wider bicycle network, schools and transit services.

The following is a summary of cycling improvements that have been included as part of this assignment:

- Due to angle parking maneuvers on Edgemont Boulevard, this plan builds a cycling connection on Woodbine Drive through interim and long-term improvements. It is a long-term plan due to the tight parking supply in the Village at this time. Adjacent development and the possible provision of more on-site parking allows other street layout options to be considered.. However, **Edgemont Boulevard** would remain a shared facility mainly used by “strong and confident” cyclists given their

higher comfort level with the number of parking manoeuvres taking place and higher traffic volumes along that corridor;

- A new **Ayr-Woodbine spine** will feature bike lanes where possible (e.g. along both sides of Ayr Avenue and parts of the northbound blocks of Woodbine Drive) and shared lanes in other locations, until such time that full redevelopment occurs (i.e. beyond 2030).
- New bike lanes can be accommodated on **Ridgewood Drive** in both directions, from a transition point west of Edgemont Boulevard (note: the McKay Creek bridge is a key constraint) and running east to Highland Boulevard;
- New bike lanes can be accommodated on **Highland Boulevard** from Woodbine Drive to near Ridgewood Drive / Colwood Drive. A transitional downhill shared lane is proposed for the west side where right-of-way is insufficient;
- Other improvements include:
  - A short section of multi-use pathway is planned on the east side of Colwood Drive to provide a safe, off-road link from the corner of Colwood Drive & West Queens Road to the elementary school property;
  - Conspicuity paint markings have been planned at Edgemont Boulevard & Ridgewood Drive;
  - As part of the Griffin Community Recreation Centre redevelopment, bike lanes and/or shared lanes are being planned along West Queens Road.

4.3 Transit & Goods Movement Needs

There are a number of TransLink routes that serve Edgemont Village including:

- Route 232 which travels between Phibbs Exchange and Grouse Mountain on a half hour frequency throughout the weekday and weekends.
- Route 246 Lonsdale Quay/ Highland/ Vancouver which travels through the village along Edgemont and Highlands on a high frequency during weekday peaks (e.g. every 15 minutes or less) and less frequently throughout the weekend.

A travel lane width of 3.5 metres has been maintained on transit routes, where possible, to meet TransLink's preferences. In locations where available right-of-way was insufficient slight reductions to the 3.5 metre width are required. This includes Highland Boulevard (between Ridgewood and Highland) where 3.3 metre lanes are suggested in order to accommodate cycling facilities. This lane width can be revisited if the road is shifted into the right-of-way on the east side of Highland Boulevard (there are no current development plans in this area).

Changes to transit that result from this assignment include:

- Consolidation of northbound stops for Routes 232 and 246 on Edgemont Boulevard between Ridgewood & Crescentview, adjacent to the Grosvenor site, use of TransLink's transit stop design guidelines and incorporation of passenger amenities within the building façade (e.g. weather-related overhang); and
- A potential long-term consideration of relocating the mid-block stop for Route 232 from Highland (between Edgemont & Woodbine) to Edgemont on the far side of Highland likely if/when redevelopment occurs in that block. This would bring bus route 232 to the heart of the Village along

Edgemont Boulevard and easier transfer between routes. Opportunities to relocate the parking spaces elsewhere would need to be explored, recognizing the constraint of parking in the Village, as discussed later in the memo.

It is anticipated that the signalization of Edgemont and Ridgewood would lead to transit travel time improvements through this intersection, particularly during the peak periods.

The goods movement routes in this area include Ridgewood Drive and Edgemont Boulevard. The Grosvenor Edgemont development plans to have goods delivery primarily access the site via Ayr Avenue. To ensure this transition meets District design requirements the following have been incorporated into the design:

- minimum 3.3 metre[2] wide travel lanes on Edgemont Boulevard, Ridgewood Drive and Ayr Avenue
- 8-metre turn radius at key intersections, particularly for Medium Single Unit (MSU) vehicles

4.4 Parking

Parking plays a key role in the commercial and social vibrancy of the Village, as highlighted in the *Edgemont Village Centre: Plan and Design Guideline*. Throughout the workshop for this assignment and subsequent discussions with the District the desire to maintain pull-in angle parking was emphasized. This approach provides a maximum of parking spaces and also maintains the status quo in terms of resident familiarity with the design and appearance of the street. Though redevelopment will bring forth opportunities to revisit the current approach to parking, there is a strong sense that very little change to parking capacity and/or design should be proposed in the near term.

Among other reasons, redeveloping parcels will provide some on-site parking, which can increase overall parking supply in the Village, and will also provide an opportunity to share parking among different land uses (e.g. residential and commercial can have off-setting time of day demands). The primary benefit to be gained by reducing on-street parking capacity relates to public realm and sidewalk space – angle parking is the most space intensive design. Converting angle parking to parallel parking reduces the number of stalls available but also frees up several metres of space that can be put to higher use to accommodate sidewalk widening, greater use of boulevard amenities (e.g. benches, retail space, landscaping). Loss of on-street parking can be made up through on-site parking through redevelopment.

Another consideration if angle parking is to be retained is a reconfiguration to back-in angle parking. This design provides safety benefits to cyclists using a shared roadway since arriving motorists would know whether there were cyclists within the roadway and departing motorists would have a clear field of view. In some North American cities, the design for back-in angle parking has been modified such that the drive lane includes a delineated lane for cyclists. Patrons with small children would agree that it is preferable for children entering or existing parked vehicles to do so from the curb side, rather than from the street side. Patrons whose car trunks would be accessible from the curb side rather than the roadside would also experience a benefit from better proximity.

[2] Along Ridgewood Drive an effective width of 3.3 is achieved by incorporating half a painted hatching area (0.6 metre width) located between the travel lane and the cycling lane.

5. Traffic & Parking Refinements

A review of the *Traffic and Parking Study for Edgemont Village Centre* was undertaken as part of this assignment. The primary considerations are new development proposals, a watermain reconstruction project and incorporation of other future plans which, consistent with the vision, primarily include the addition of residential density within the Village area.

Existing traffic volumes were revisited, based on new data collected in support of active development plans (Grosvenor, Seniors Living Complex, Credit Union) as well as a project underway through Metro Vancouver to replace a watermain along Ridgewood Drive. Existing and future traffic volumes were grounded in traffic volumes determined through traffic impact assessments; please see **Appendix A** for more information on traffic data.

The land use changes anticipated in Edgemont Village are primarily of a commercial nature with some additional residential density. As a result, the afternoon peak hour was determined to be the governing time of day for analysis. For completeness, AM volumes were verified to ensure that operational issues didn't arise due to traffic volumes in the opposite direction. **Table 5-1** displays the above-noted additional trips generated by further redevelopment of Edgemont Village to the 2030 horizon. These additional trips are not expected to have been explicitly included in the Bunt forecast. As such, the table excludes Grosvenor trips, which are already accounted for in Bunt's future horizon volumes.

Table 5-1: Edgemont Additional PM Peak Hour Trips (excludes Grosvenor)

INBOUND	OUTBOUND	TOTAL
106	138	244

The above trips were distributed using the same matrix employed by Bunt to distribute Grosvenor traffic, as displayed in Table 5-2**.**

Table 5-2: Edgemont Trip Distribution

Route	Percent	
	Inbound	Outbound
Edgemont Blvd North	10%	10%
Ridgewood Dr West	30%	30%
Edgemont Blvd South (South of Queens)	20%	20%
Queens Rd East (East of Woodbine)	30%	30%
Highland North	10%	10%
Total	**100%**	**100%**

A document included in **Appendix B** describes the updated traffic volume data in more detail.

Traffic data analysis for the future condition was used to:

- Establish operating conditions/ Level of Service (LOS) at intersections throughout the Village;
- Determine queue length/ potential conflicts at intersections throughout the Village;
- Establish a concept design for the intersection of Edgemont & Ridgewood where a new signal is planned (includes laning, signal timing and auxiliary lane lengths)

Figure 5-1 displays future (2030) traffic volumes for the PM peak hour, as well as corresponding Level of Services. Intersections are modelled to reflect the recommended changes noted in Urban Systems' *Traffic and Parking Study for Edgemont Village Centre.* These recommendations include new signal treatments at Edgemont Boulevard / Ridgewood Drive and Colwood Drive / W Queens Road and a new four-way STOP configuration at Edgemont Boulevard / Highland Boulevard.

Figure 5-1: Future PM Peak Total Traffic Volumes and Intersection Level of Service

6. Right-of-way Needs

This section includes right-of way needs for Edgemont Village, according to current redevelopment opportunities. It begins with the details for a concept design for the intersection of Edgemont & Ridgewood if it is determined that it should be signalized. A temporary signal is expected to be installed by Metro Vancouver as part of the Capilano water main project. The temporary signal can serve to pilot signalization of the intersection. Depending on how the traffic signal functions for all travel modes during the trial, a signal may be implemented following the temporary one or may be returned to a 4-way stop.

The second sub-section outlines right-of-way needs for the Village as a whole, including relevant cross-sections. Given the uncertainty of timing for redevelopment, options beyond the 2030 time frame are included to provide the District with a list of longer-term possibilities.

6.1 Concept for Edgemont & Ridgewood

The concept design for the intersection of Edgemont & Ridgewood incorporates a number of considerations:

- Existing design issues with the current stop-controlled intersection;
- Grosvenor development site plans (including plaza area and consolidated transit stop); and
- Cycling lanes along Ridgewood Drive.

The concept design is shown in Drawing A1 and includes the following details:

- Along Edgemont Boulevard, bordering the Grosvenor site:
  - Bus pull-out and passenger amenities have been incorporated
  - Ridgewood Drive lane configuration accommodates all modes:
    - 0.55 curb and gutter on south side, not included in bike lane width calculation.
- Intersection auxiliary lane recommendations followed TAC lane warrants. The intersection laning includes:
  - North-South:
    - Use of northbound through and shared right, removal of northbound right turn channel;
    - Use of northbound left turn lane; and
    - Addition of southbound auxiliary left turn lane to shadow northbound
  - East-West:
    - Shifted centreline on Ridgewood Drive south by 1.56 metres to address existing skew and new laning on Ridgewood, east of Edgemont;
    - Shifted centreline on Ridgewood to improve alignment through the Edgemont & Ridgewood intersection;
    - Added bike lane transition eastbound on Ridgewood through the developing eastbound right turn auxiliary lane (with conspicuity paint).

Cross-sections for study area corridors are included in **Appendix C** and more detailed plan drawings for key intersections are included in **Appendix D**.

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LEGEND
- EXISTING LEGAL LOTS BOUNDARY
- EXISTING BUILDING FOOTPRINT
- EXISTING ROAD CENTERLINE
- EXISTING EDGE OF PAVEMENT (EOP)
- ROW CENTERLINE (approx.)
- PROPOSED ROAD CENTERLINE
- PROPOSED EDGE OF PAVEMENT (CURB)
- PROPOSED LEGAL LOTS BOUNDARY
- EDGEMONT VILLAGE CORE

ISSUED FOR FINAL CONCEPT
April 22, 2015
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#	Date	Issue / Revision	App

District of North Vancouver

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Scale 0 10 1:1000 50m
(HALF SIZE)

Quality Control by	SM/JM
Designed by	SR
Drawn by	SR

EDGEMONT VILLAGE CENTRE
STREET NETWORK
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Sheet Number		A1 of A1
Project Number	Drawing Number	Revision
1333.0018.08	A1	----

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The concept design includes positioning of traffic signal poles which should be verified at the next stage of design. It is estimated that sufficient space to house a traffic signal controller would be available on the northwest corner of the intersection.

Should the property redevelop on the northeast corner of Edgemont & Ridgewood in future, the second driveway, located within the intersection, should be closed.

An operational analysis of the new configuration at Edgemont Boulevard and Ridgewood Drive in the 2030 horizon was completed using both existing (4-way stop) and improved (signal) conditions. The results of this analysis is shown in Table 6-1 and Table 6-2. The existing 4-way stop condition results in significant delays (LOS F) to the northbound, southbound and westbound approaches in the AM peak and the northbound approach in the PM peak.

Table 6-1: 2030 Horizon Performance at Edgemont / Ridgewood under Existing Conditions (4-Way STOP)

	AM PEAK PERIOD					PM PEAK PERIOD				
Movement	**V/C Ratio**	**Delay (s)**	**LOS**	**Synchro 95% Queue (m) ***	**SimTraffic 95% Queue (m)**	**V/C Ratio**	**Delay (s)**	**LOS**	**Synchro 95% Queue (m) ***	**SimTraffic 95% Queue (m)**
NBL	1.36	202.0	F		237.0	1.29	169.6	F		279.4
NBT	1.36	202.0	F		237.0	1.29	169.6	F		279.4
NBR	1.36	202.0	F		237.0	1.29	169.6	F		279.4
SBL	1.47	274.2	F		55.1	0.80	36.8	E		52.8
SBT	1.47	274.2	F		55.1	0.80	36.8	E		52.8
SBR	1.47	274.2	F		55.1	0.80	36.8	E		52.8
EBL	0.37	17.3	C		22.4	0.68	26.9	D		50.7
EBT	0.37	17.3	C		22.4	0.68	26.9	D		50.7
EBR	0.74	32.6	D		29.8	0.62	21.6	C		37.7
WBL	1.01	79.4	F		70.9	0.65	26.1	D		26.4
WBT	1.01	79.4	F		70.9	0.65	26.1	D		26.4
WBR	1.01	79.4	F		70.9	0.65	26.1	D		26.4

*Synchro cannot calculate queue lengths at 4-way stops, SimTraffic queues are reported instead

Table 6-2: 2030 Horizon Performance at Edgemont / Ridgewood with Signalization

	AM PEAK PERIOD					PM PEAK PERIOD				
Movement	**V/C Ratio**	**Delay (s)**	**LOS**	**Synchro 95% Queue (m)**	**SimTraffic 95% Queue (m)**	**V/C Ratio**	**Delay (s)**	**LOS**	**Synchro 95% Queue (m)**	**SimTraffic 95% Queue (m)**
NBL	0.62	21.1	C	#41.1	43.7	0.44	19.8	B	45.2	43.5
NBT	0.36	8.6	A	28.3	184.2	0.41	16.1	B	63.0	104.8
NBR	0.36	8.6	A	28.3	184.2	0.41	16.1	B	63.0	104.8
SBL	0.72	17.5	B	#82.9	58.3	0.42	16.9	B	62.4	52.1
SBT	0.72	17.5	B	#82.9	58.3	0.42	16.9	B	62.4	52.1
SBR	0.72	17.5	B	#82.9	58.3	0.42	16.9	B	62.4	52.1
EBL	0.25	9.8	A	13.9	20.8	0.40	14.1	B	38.6	42.7
EBT	0.25	9.8	A	13.9	20.8	0.40	14.1	B	38.6	42.7
EBR	0.46	5.6	A	14.4	21.4	0.36	2.8	A	10.9	32.3
WBL	0.66	13.0	B	32.4	49.0	0.38	10.9	B	31.3	28.3
WBT	0.66	13.0	B	32.4	49.0	0.38	10.9	B	31.3	28.3
WBR	0.66	13.0	B	32.4	49.0	0.38	10.9	B	31.3	28.3

- 95 percentile queue exceeds modelled capacity.

- Proposed signal timing:
  - Traffic signal timing accounted for heavy pedestrian volumes and a slow walking speed (0.8 metres per second) based on the number of senior citizens.

The signalization of Edgemont & Ridgewood is warranted, based on existing traffic volumes. A temporary signal is expected to be installed by Metro Vancouver as part of the Capilano water main project which provides an opportunity to evaluate a signalized intersection. The following table highlights the pros and cons of selecting a signal or maintaining 4-way stop control, using an improved intersection layout.

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Table 6-3: Comparison of Intersection Control Types at Edgemont & Ridgewood

	Signal	4-way Stop
Temporary Conditions	Provides opportunity to pilot traffic signal	Provides opportunity to pilot improved geometric design
Geometric Design/ Property Impacts	Need to add auxiliary lanes for most prominent directions (e.g. WBRT and NBLT) or queues would be too long. Property impacts: Land needed from SW corner for R-turn bay Need more queue storage NB Edgemont (NB approach would include NBL and NBT/R lanes) Additional sidewalk space on NW corner and space for westbound bike lane on Ridgewood	Can have one lane for all movements since stop processes each approach equally but Level of Service is poor: NB approach would only be 1 lane wide (lefts share with throughs/rights) – attached Scenario 1 *Also tested traffic simulation results under a modified future all-way stop condition, Scenario 2 (e.g. with new NBL auxiliary lane and NBTR lane – see attached PDF of results). Would be longer crossing distance for pedestrians
Level of Service/ Time of Day	Overall better Level of Service during peaks than stop control (B in AM peak and B in PM peak)	Overall poorer Level of Service during peaks than signals with scenarios 1 and 2 both reporting LOS F in the AM peak and LOS F and E in the PM peak, respectively.
	Best to accommodate AM and PM peak period flows	Some benefits for off-peak, low traffic conditions
Queuing (95th percentile)	Overall queuing of 4 -7 vehicles during PM peak period, except for northbound approach anticipated to reach up to 15 vehicles; queuing of 2 – 8 vehicles during the AM peak period, except for northbound approach anticipated to reach up to 26 vehicles. See performance results (above).	-For scenario 1, overall queuing of 4-40 vehicles during PM peak period (northbound queues longest at 40 vehicles) and 3-34 vehicles during AM peak period (northbound queues longest at 34 vehicles. -For scenario 2, overall queuing of 6-9 vehicles during PM peak period (northbound and southbound queues longest at 9 vehicles) and 5-12 vehicles during AM peak period (westbound queues longest at 12 vehicles. See performance results (above).
Pedestrians	Signal design used high number of pedestrian actuations and slow walking speed to calculate crossing time (0.8 metres/ second, well-suited to seniors/ children). Signals create more predictable crossing for pedestrians and offer opportunity to improve accessibility with pedestrian countdown timers and audible signals to assist people with visual or auditory disabilities cross the street	Driver behaviour/compliance may be poorer with stop control (as noted in Opus 2005 report) which may be worse for pedestrian crossing environment

Transit	Reduced delay to buses in accessing transit stop during peaks	Existing intersection configuration (Scenario 1) not recommended due to queuing and delay to transit
Cycling	Signals create more predictable crossing for cyclists and for drivers when a cyclist approaches intersection	Cyclist stop compliance may be poorer with stop control.
Other	Driveway on NE corner becomes a higher concern with signals and higher number of vehicles processed during green phase on Ridgewood. Placement of push button may be problematic vs. driveway curb depression	Driveway on NE corner is a lower concern with stop control due to lower number of vehicles processed with a stop
Temporary/ Pilot period	Temporary signals during Metro Vancouver watermain	Stop-control is a known factor within the study area construction can be tested and evaluated to determine whether they are beneficial or not

6.2 Edgemont Village Right-of-Way

The right-of-way needs for the Village as a whole incorporate multi-modal plans as outlined in previous work and confirmed through this assignment. Given the uncertainty of timing for redevelopment, options beyond the 2030 time frame are included to provide the District with a list of longer-term possibilities.

The right-of-way requirements are shown in Drawing B1.

MEMORANDUM

Date:	April 15, 2015
File:	1333.0018.08
Subject:	Edgemont Village Transportation Concepts
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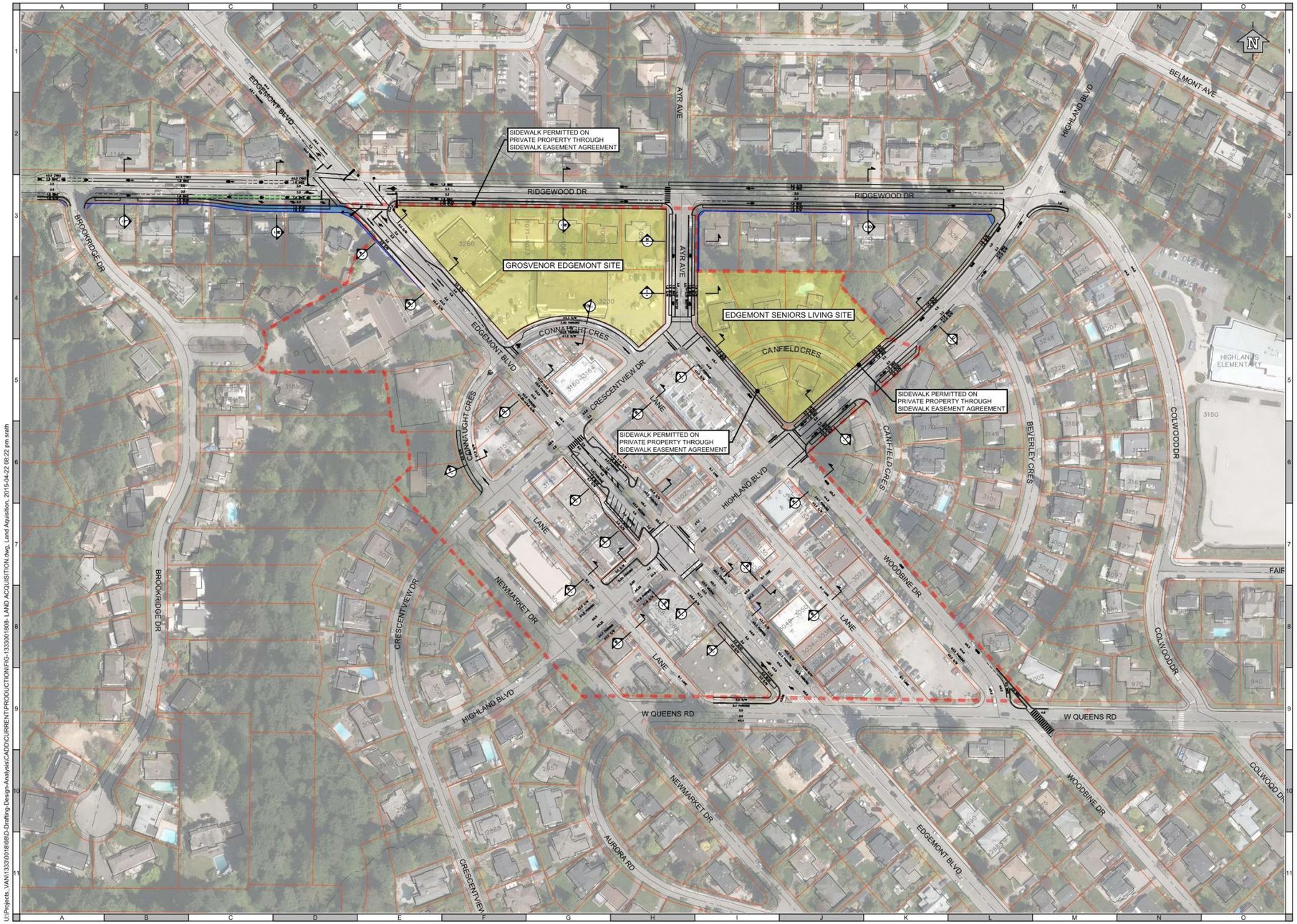

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LEGEND
- EXISTING LEGAL LOT BOUNDARY
- PROPOSED LEGAL LOT BOUNDARY
- PROPOSED DNV PROPERTY TO ACQUISITION
- PROPERTY TO BE DEVELOPED
- EDGEMONT VILLAGE CORE

ISSUED FOR FINAL CONCEPT
April 22, 2015
urbansystems.ca

#	Date	Issue / Revision	App

District of North Vancouver

URBAN systems

Scale 0 10 1:1000 50m
(HALF SIZE)

Quality Control by	SM/JM
Designed by	SR
Drawn by	SR

EDGEMONT VILLAGE CENTRE
LONG-TERM PROPERTY IMPACTS
--

Sheet Number		B1 of B1
Project Number	Drawing Number	Revision
1333.0018.08	B1	----

7. Recommendations

The following additional initiatives are recommended for planning and / or implementation in Edgemont Village based on the results of this study.

7.1 Pedestrian Needs

Near term:

- Include enhanced pedestrian crossing of West Queens at Colwood and construct multi-use path on east side of Colwood up to school property

7.2 Cycling Needs

Long-term options:

- Woodbine & West Queens: options to enhance pedestrian and cyclist crossing
- Highland: opportunity to shift alignment onto east side of right-of-way to accommodate cycling lanes in both directions

7.3 Transit & Goods Movement Needs

Long-term option:

- Move transit stop on Route 232 from Highlands, south of Woodbine to far side of Edgemont & Highland in order for northbound route 232 to mirror its southbound route, and stop in the heart of the Village.

7.4 Parking

It is suggested that parking time limits should be reviewed in order to optimize parking turn-over within the currently constrained supply of parking in the Village.

7.5 Right-of-Way Requirements

The right-of-way plan provided as part of this assignment was determined based on legal property lines since these are less likely to lead to interpretation errors. In some cases, developers provided line work based on curb face or pavement markings for centreline. The latter are not necessarily correct and the precision could be impacted depending on the projection used. It is recommended that developers provide offsets on their drawings that are based on legal line work and not the projection of where the curb or centreline appear to be.

8. Conclusion

The recommendations included in this memo will provide the District with appropriate tools to review upcoming development applications and ensure these match long-term, multi-modal objectives that match the vision for Edgemont Village.

Sincerely,

URBAN SYSTEMS LTD.

Stephanie McNeely, P. Eng.
Transportation Planning Engineer

/slm
Enclosure

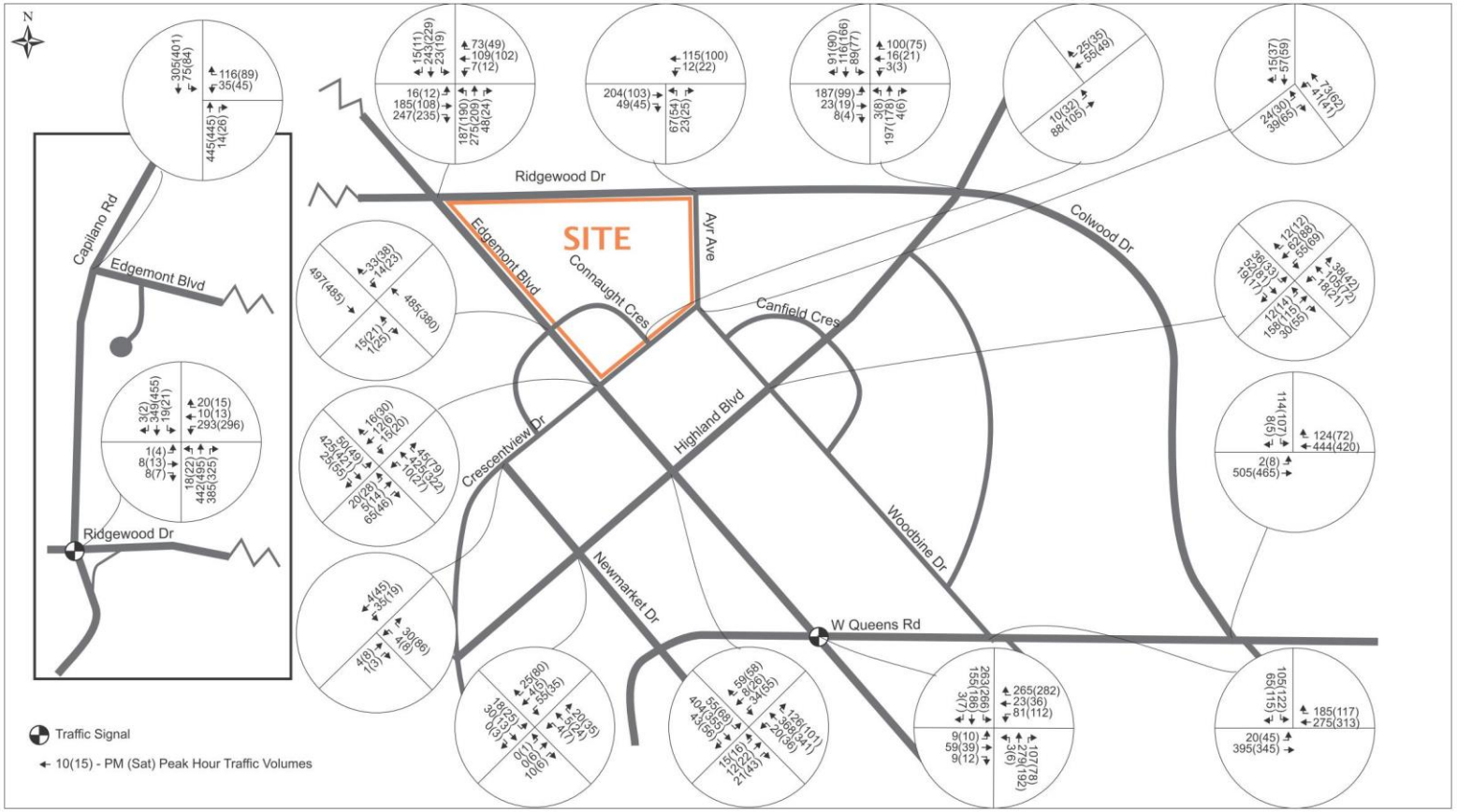
cc: Allison Clavelle, P.Eng.
Jayson Walker, P.Eng.
Marc Winer, P.Eng. MBA

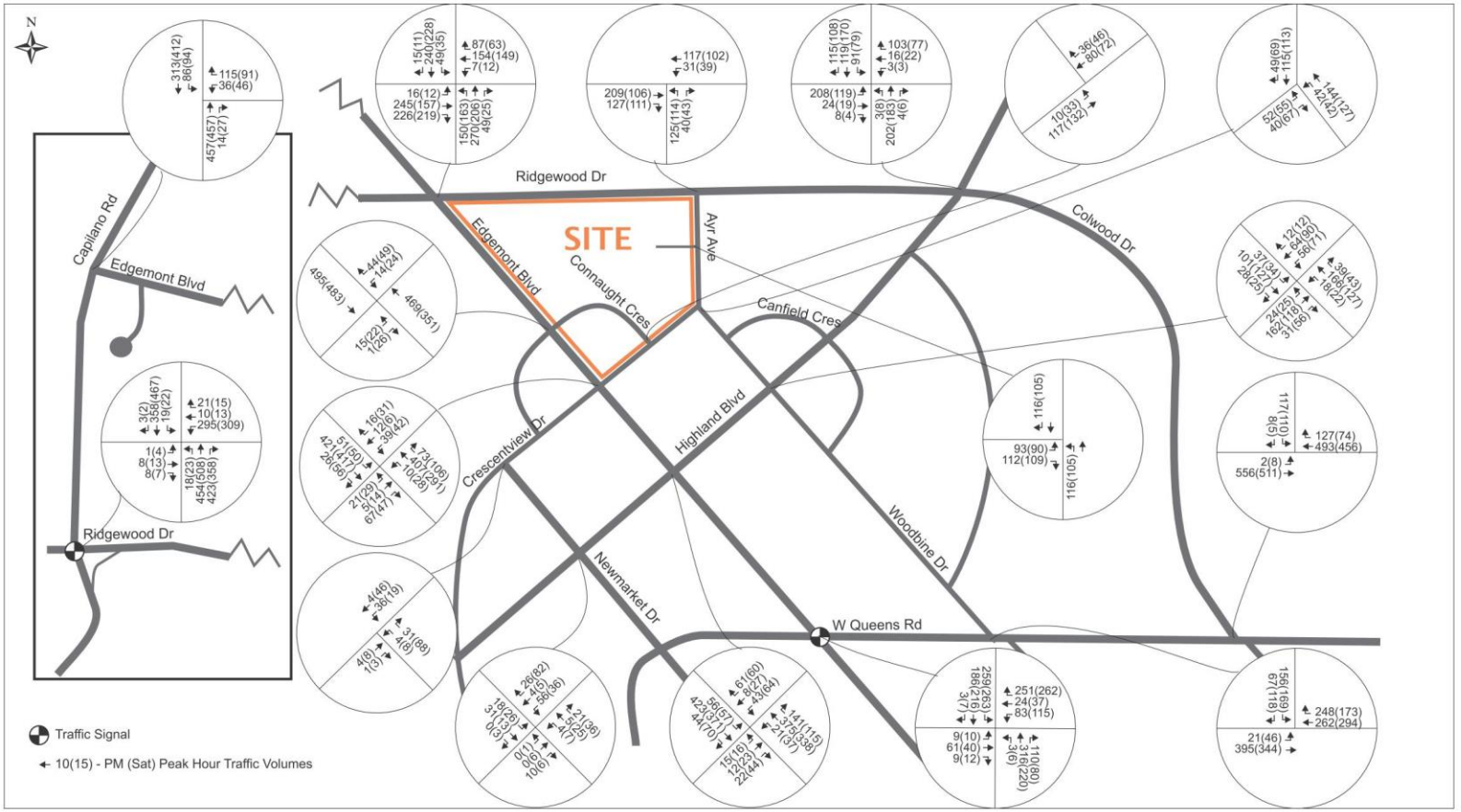
U:\Projects_VAN\1333\0018\08\R-Reports-Studies-Documents\2014-12-19 Edgemont Village Memo.docx

List of Appendices

Figure Error! No text of specified style in document.**-1**: Existing 2013 Peak Hour Traffic Volumes (Bunt, 2014)

Appendix A - Grosvenor TIA Traffic Volumes (Bunt, 2014)




N
SITE
Ridgewood Dr
Edgemont Blvd
Connaught Cres
Ayr Ave
Canfield Cres
Colwood Dr
Capilano Rd
Edgemont Blvd
Ridgewood Dr
Crescentview Dr
Highland Blvd
Woodbine Dr
Newmarket Dr
W Queens Rd
Traffic Signal
10(15) - PM (Sat) Peak Hour Traffic Volumes

Appendix B - Traffic Volume Memo

MEMORANDUM

URBAN systems

Date: November 17, 2014
To: Nicole Foth, District of North Vancouver
cc: Tyler Thomson, Bunt & Associates
From: Stephanie McNeely
File: 1333.0018.08
Subject: Edgemont Village

The purpose of this memo is to clarify past work carried out within the Edgemont Village study area in an effort to support current assignments, in particular those related to analysis and design of the intersection of Edgemont Boulevard & Ridgewood Drive.

Background/ Summary of Work to Date

Urban Systems was recently commissioned to undertake a traffic and parking study for Edgemont Village (*Edgemont Village Centre, Traffic and Parking Technical Report, January 2014)*. As part of this initial work, a combination of past studies and new data collection efforts were used for analysis, primarily to support traffic signal warrant[1] assessments.

The following information was incorporated into the analysis for Edgemont Village Centre:

Type of Data	Location	Date/ Source
Turning Movement Counts		*Edgemont Village Traffic Operations and Safety Review (Draft)*, Opus Hamilton, 2006) – see **Appendix A**
	• Edgemont Boulevard & Ridgewood Drive • All other study area junctions (including alleyways)	• February 2005 by District staff • May 2006 by Opus Hamilton staff
	• Edgemont Boulevard and Highland Boulevard • Edgemont Boulevard and W. Queens Road • Colwood Drive and W. Queens Road • Highland Boulevard and Ridgewood Drive	• September 2008 by District staff • September 2008 by District staff • April 2007 by District staff • March 2011 by District staff
Automatic Traffic Recorder (ATR) screenline counts (24-hours)	• Edgemont Boulevard, south of Ridgewood Drive • Highland Boulevard, east of Edgemont Boulevard	Wednesday, October 16, 2013 midday to early morning on Friday, October 18, 2013 by Creative Transportation Solutions

[1] Transportation Association of Canada guidelines require that 6 hours' worth of traffic data be collected for peak periods.

	• West Queens Road, between Edgemont Boulevard and Woodbine Drive • Woodbine Drive, north of West Queens Road • Colwood Drive, north of West Queens Road	– see **Figure 1**

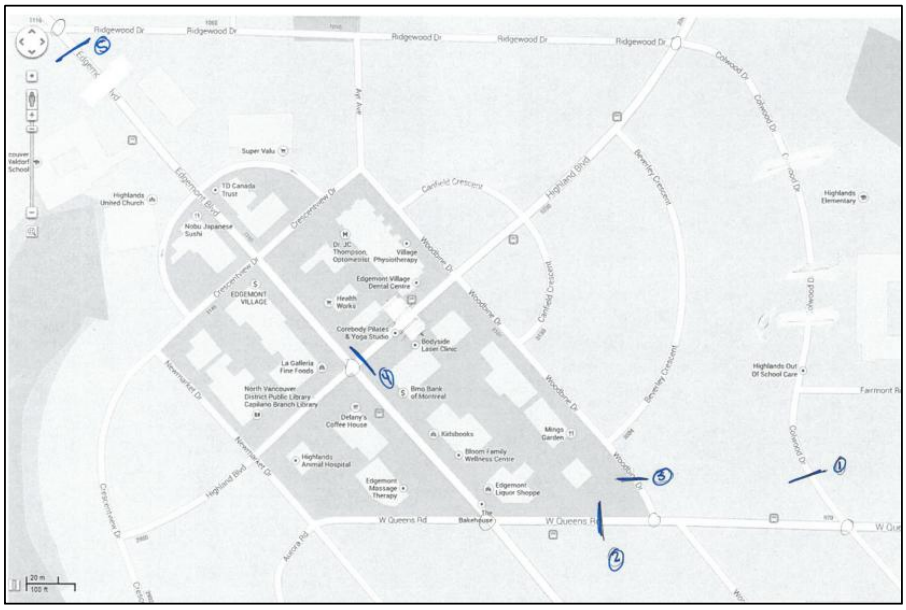


Figure 1: 2013 Screenline Count Locations

Recently, traffic calming measures were installed on Colwood Drive. The 2013 screenline counts show these to have been effective at diverting traffic along Colwood Drive (volumes are down by about 15% based on comparison with older traffic data). Traffic reductions along Colwood appear to have led to traffic volume increases on other corridors which is not uncommon. The 2013 screenline counts show that, during some time periods, traffic volumes increased along Edgemont Boulevard and Highland Boulevard.

Data for Edgemont Boulevard & Ridgewood Drive

At the time the Traffic and Parking study was undertaken, one of the primary objectives was to determine whether traffic signals would be warranted at key locations. Based on available data, and for the purpose of establishing a consistent and conservative set of traffic volumes for a baseline year of 2013, the following growth rates were applied:

- Edgemont Boulevard: +3% growth per annum
- Ridgewood Drive: +3% growth per annum at Edgemont and -4% at Highlands
- Colwood Drive: -4% growth per annum
- 0% growth assumed along Woodbine Drive and West Queens Road

The growth rate used to forecast 2013 conditions for Edgemont Boulevard & Ridgewood Drive was based on the 2005 turning movement counts and actual growth rates may be different. In fact, more recent traffic counts have been undertaken at this location to support area development plans. These new counts suggest that the actual growth of traffic between 2005 and 2014 was indeed lower than forecast in the Traffic and Parking study.

Recommendations

Due to data limitations for the intersection of Edgemont Boulevard & Ridgewood Drive, it is recommended that more recent turning movement traffic counts be considered for any subsequent analysis, subject to verifying data validity. Recent traffic counts were commissioned by Bunt & Associates to support two area developments (Seniors Living Development on Woodbine Avenue and the Grosvenor development on Edgemont Boulevard). In addition, MMM Group carried out traffic counts within Edgemont Village, in support of watermain replacement work for Metro Vancouver (counts carried out in February 2013 and April 2014). These new counts produce traffic volumes for the PM peak hour that are within a consistent range. As such, it is recommended that they be used for subsequent analysis of the intersection of Edgemont Boulevard & Ridgewood Drive.

APPENDIX A

URBAN systems

OPUS HAMILTON

INSURANCE CORPORATION OF BRITISH COLUMBIA
DISTRICT OF NORTH VANCOUVER

EDGEMONT VILLAGE TRAFFIC OPERATIONS AND SAFETY REVIEW

NORTH VANCOUVER, BRITISH COLUMBIA

DRAFT

Opus Hamilton Consultants Ltd.

Prepared by:

James Jenkins
Transportation Analyst

Reviewed by:

Kanny Chow, M.Eng., P.Eng., PTOE
Senior Transportation Engineer

December 2006

H-08127.00

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Canada, V6E 3T5

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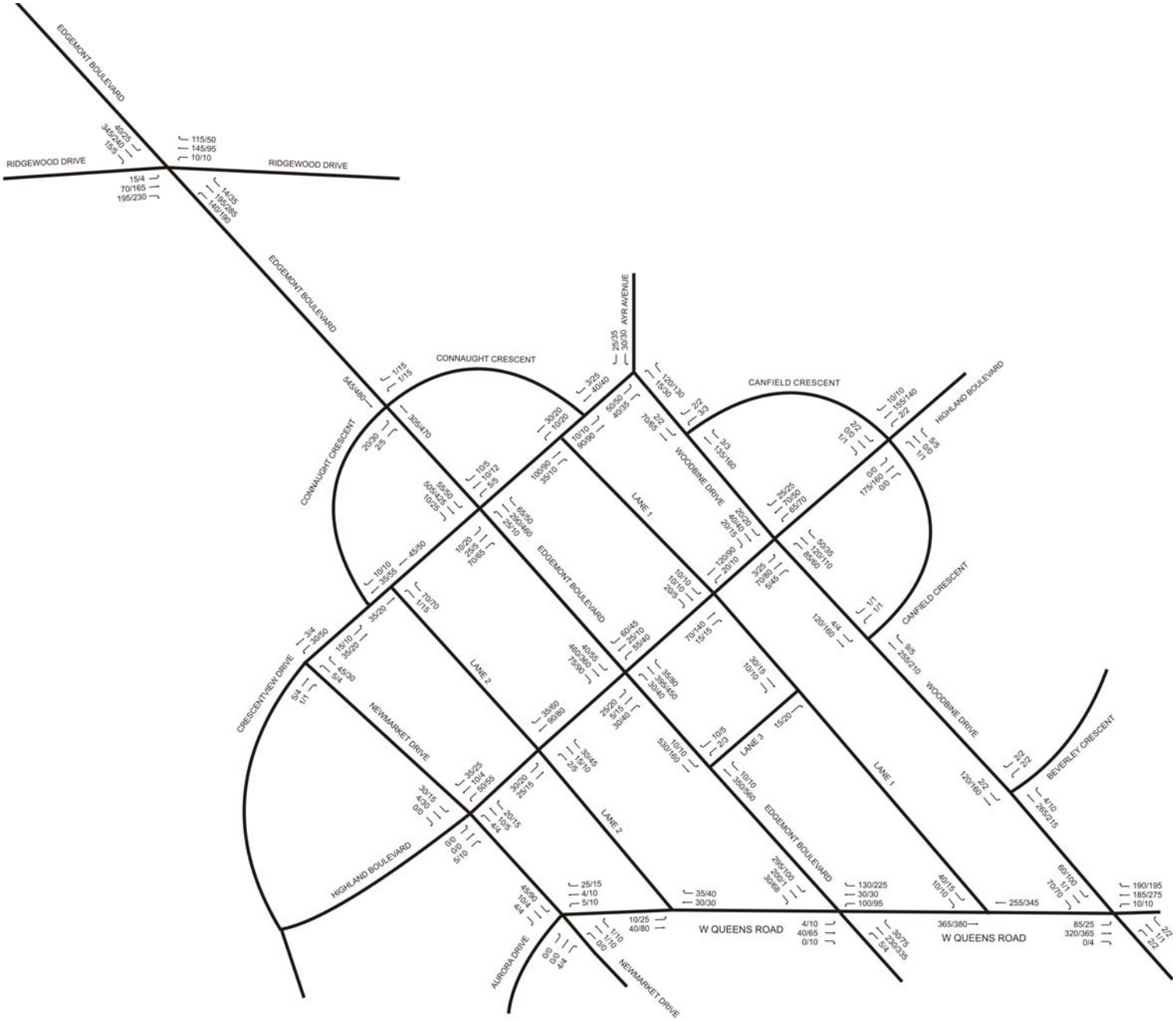


FIGURE 2.4 TURNING MOVEMENT VOLUMES

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

Location: Edgemont Blvd at W. Queens Rd
Counted By: P. Bishop
Weather: Overcast
Date: Thurs, September 18, 2008

File Name : Edgemont @ Queens
Site Code : 00000000
Start Date : 9/18/2008
Page No : 1

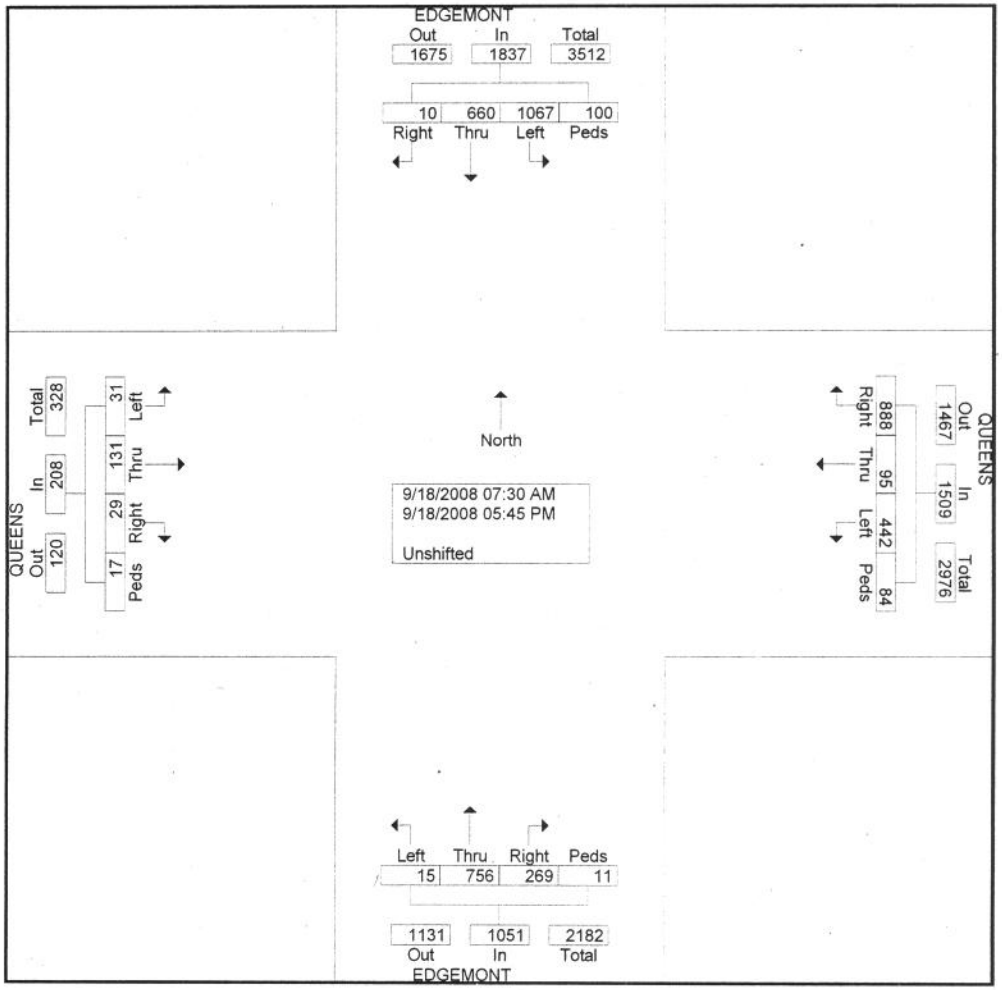
Groups Printed- Unshifted

	EDGEMONT From North					QUEENS From East					EDGEMONT From South					QUEENS From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	0	34	45	0	79	34	4	18	0	56	7	15	1	0	23	0	1	1	0	2	160
07:45 AM	0	51	61	2	114	40	7	23	4	74	3	20	0	1	24	3	5	0	2	10	222
Total	0	85	106	2	193	74	11	41	4	130	10	35	1	1	47	3	6	1	2	12	382
08:00 AM	1	50	60	2	113	53	7	32	4	96	7	42	0	0	49	1	5	5	2	13	271
08:15 AM	2	64	72	2	140	58	8	44	8	118	10	39	1	0	50	2	4	2	0	8	316
08:30 AM	1	40	99	4	144	57	5	35	3	100	13	45	0	0	58	1	8	3	0	12	314
08:45 AM	1	51	76	8	136	43	5	56	12	116	12	22	2	0	36	3	5	2	1	11	299
Total	5	205	307	16	533	211	25	167	27	430	42	148	3	0	193	7	22	12	3	44	1200
09:00 AM	1	47	69	4	121	54	7	57	3	121	6	18	0	1	25	2	4	2	0	8	275
09:15 AM	0	29	61	6	96	33	7	16	1	57	5	24	3	3	35	3	10	1	5	19	207
Total	1	76	130	10	217	87	14	73	4	178	11	42	3	4	60	5	14	3	5	27	482
04:00 PM	1	33	66	5	105	46	6	18	7	77	21	47	3	0	71	0	8	3	0	11	264
04:15 PM	0	36	59	10	105	67	8	14	5	94	23	67	2	1	93	1	7	0	1	9	301
04:30 PM	1	35	58	18	112	73	9	30	9	121	30	51	1	0	82	1	12	1	0	14	329
04:45 PM	2	39	55	6	102	59	6	20	6	91	29	88	2	3	122	3	12	3	2	20	335
Total	4	143	238	39	424	245	29	82	27	383	103	253	8	4	368	5	39	7	3	54	1229
05:00 PM	0	24	63	11	98	72	4	12	9	97	19	74	0	0	93	3	12	4	2	21	309
05:15 PM	0	40	87	6	133	71	4	19	3	97	29	66	0	2	97	2	23	1	1	27	354
05:30 PM	0	40	77	15	132	45	5	24	5	79	27	65	0	0	92	3	11	1	1	16	319
05:45 PM	0	47	59	1	107	83	3	24	5	115	28	73	0	0	101	1	4	2	0	7	330
Total	0	151	286	33	470	271	16	79	22	388	103	278	0	2	383	9	50	8	4	71	1312
Grand Total	10	660	1067	100	1837	888	95	442	84	1509	269	756	15	11	1051	29	131	31	17	208	4605
Apprch %	0.5	35.9	58.1	5.4		58.8	6.3	29.3	5.6		25.6	71.9	1.4	1		13.9	63	14.9	8.2		
Total %	0.2	14.3	23.2	2.2	39.9	19.3	2.1	9.6	1.8	32.8	5.8	16.4	0.3	0.2	22.8	0.6	2.8	0.7	0.4	4.5	

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Edgemont @ Queens
Site Code : 00000000
Start Date : 9/18/2008
Page No : 2



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

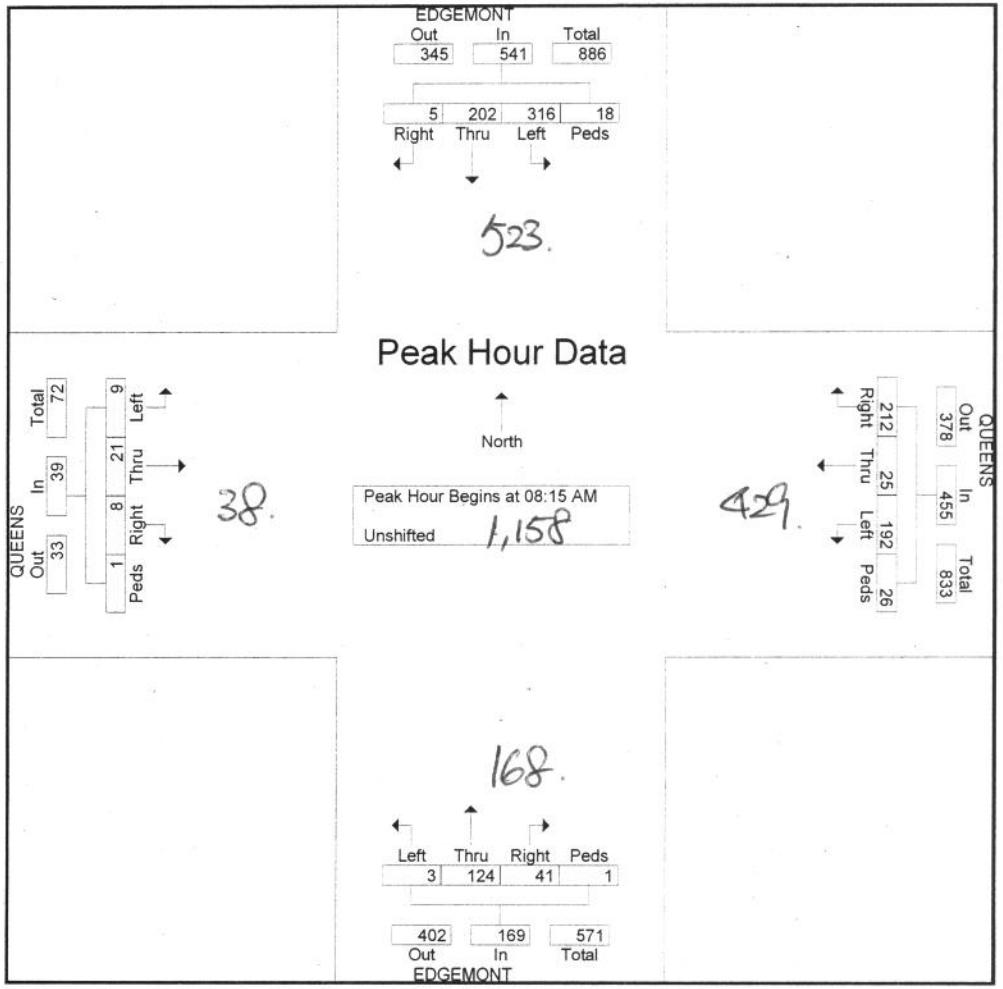
File Name : Edgemont @ Queens
Site Code : 00000000
Start Date : 9/18/2008
Page No : 3

	EDGEMONT From North					QUEENS From East					EDGEMONT From South					QUEENS From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	**2**	**64**	72	2	140	**58**	**8**	44	8	118	10	39	1	0	50	2	4	2	0	8	**316**
08:30 AM	1	40	**99**	4	**144**	57	5	35	3	100	**13**	**45**	0	0	**58**	1	**8**	**3**	0	**12**	314
08:45 AM	1	51	76	**8**	136	43	5	56	**12**	116	12	22	**2**	0	36	**3**	5	2	**1**	11	299
09:00 AM	1	47	69	4	121	54	7	**57**	3	**121**	6	18	0	**1**	25	2	4	2	0	8	275
Total Volume	5	202	316	18	541	212	25	192	26	455	41	124	3	1	169	8	21	9	1	39	1204
% App. Total	0.9	37.3	58.4	3.3		46.6	5.5	42.2	5.7		24.3	73.4	1.8	0.6		20.5	53.8	23.1	2.6		
PHF	.625	.789	.798	.563	.939	.914	.781	.842	.542	.940	.788	.689	.375	.250	.728	.667	.656	.750	.250	.813	.953

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Edgemont @ Queens
Site Code : 00000000
Start Date : 9/18/2008
Page No : 4



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

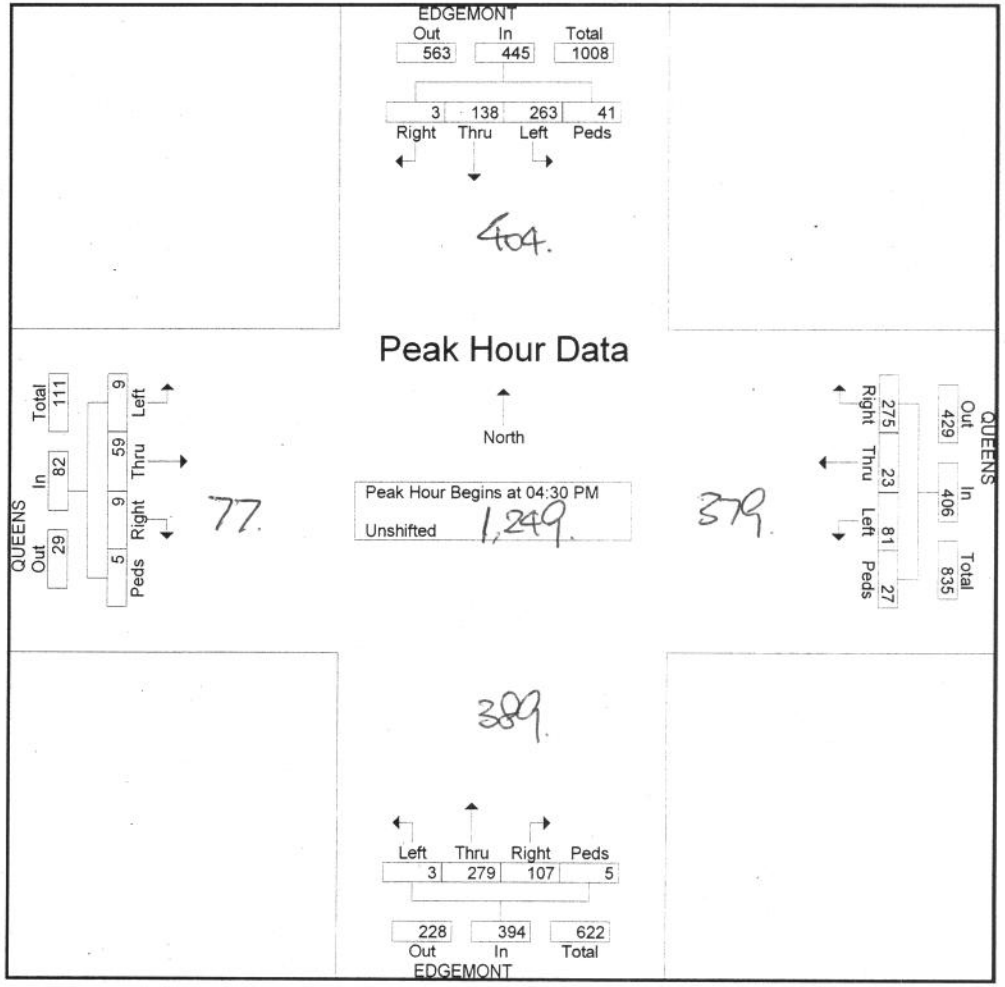
File Name : Edgemont @ Queens
Site Code : 00000000
Start Date : 9/18/2008
Page No : 5

	EDGEMONT From North					QUEENS From East					EDGEMONT From South					QUEENS From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	35	58	**18**	112	**73**	**9**	**30**	**9**	**121**	**30**	51	1	0	82	1	12	1	0	14	329
04:45 PM	**2**	39	55	6	102	59	6	20	6	91	29	**88**	**2**	**3**	**122**	**3**	12	3	**2**	20	335
05:00 PM	0	24	63	11	98	72	4	12	9	97	19	74	0	0	93	3	12	**4**	2	21	309
05:15 PM	0	**40**	**87**	6	**133**	71	4	19	3	97	29	66	0	2	97	2	**23**	1	1	**27**	**354**
Total Volume	3	138	263	41	445	275	23	81	27	406	107	279	3	5	394	9	59	9	5	82	1327
% App. Total	0.7	31	59.1	9.2		67.7	5.7	20	6.7		27.2	70.8	0.8	1.3		11	72	11	6.1		
PHF	.375	.863	.756	.569	.836	.942	.639	.675	.750	.839	.892	.793	.375	.417	.807	.750	.641	.563	.625	.759	.937

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Edgemont @ Queens
Site Code : 00000000
Start Date : 9/18/2008
Page No : 6



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

Location: Edgemont Blvd at Highland Blvd
Counted By: P. Bishop
Weather: Sunny
Date: Wed, September 17, 2008

File Name : Highland @ Edgemont
Site Code : 00000000
Start Date : 9/17/2008
Page No : 1

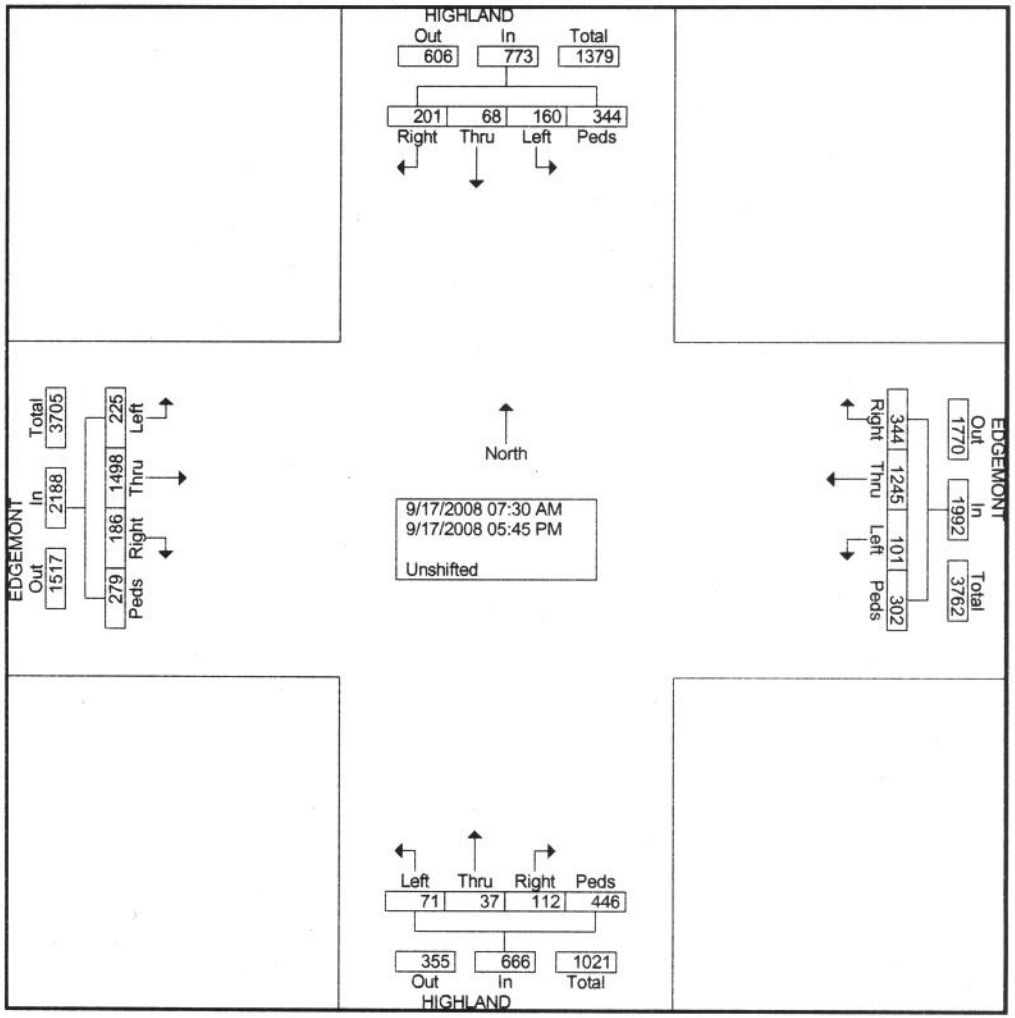
Groups Printed- Unshifted

	HIGHLAND From North					EDGEMONT From East					HIGHLAND From South					EDGEMONT From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	6	1	8	7	22	7	36	4	4	51	4	2	1	7	14	4	49	14	5	72	159
07:45 AM	8	13	12	1	34	5	39	8	6	58	8	1	1	8	18	10	88	8	3	109	219
Total	14	14	20	8	56	12	75	12	10	109	12	3	2	15	32	14	137	22	8	181	378
08:00 AM	16	5	14	7	42	7	58	6	4	75	11	1	7	17	36	6	75	11	4	96	249
08:15 AM	12	4	11	12	39	12	73	9	10	104	5	2	6	27	40	12	93	7	10	122	305
08:30 AM	12	8	14	19	53	12	73	11	9	105	9	3	5	19	36	11	101	12	12	136	330
08:45 AM	17	9	14	13	53	9	76	8	20	113	4	2	3	13	22	10	122	9	21	162	350
Total	57	26	53	51	187	40	280	34	43	397	29	8	21	76	134	39	391	39	47	516	1234
09:00 AM	21	6	11	25	63	9	91	8	28	136	7	3	4	24	38	26	114	20	13	173	410
09:15 AM	12	7	11	27	57	12	88	9	29	138	11	0	7	36	54	21	111	11	24	167	416
Total	33	13	22	52	120	21	179	17	57	274	18	3	11	60	92	47	225	31	37	340	826
04:00 PM	12	5	4	35	56	31	68	6	27	132	1	3	3	53	60	9	87	16	16	128	376
04:15 PM	14	2	7	38	61	29	81	6	32	148	9	2	3	40	54	15	74	16	28	133	396
04:30 PM	14	0	8	32	54	24	82	2	28	136	5	3	4	48	60	12	89	21	36	158	408
04:45 PM	9	1	8	26	44	34	98	5	26	163	4	5	6	42	57	14	95	16	26	151	415
Total	49	8	27	131	215	118	329	19	113	579	19	13	16	183	231	50	345	69	106	570	1595
05:00 PM	13	3	8	25	49	42	97	6	20	165	16	2	5	24	47	8	89	17	21	135	396
05:15 PM	8	1	9	28	46	33	106	4	25	168	6	0	6	37	49	8	107	13	19	147	410
05:30 PM	16	0	7	27	50	43	84	7	16	150	7	6	5	28	46	9	95	17	25	146	392
05:45 PM	11	3	14	22	50	35	95	2	18	150	5	2	5	23	35	11	109	17	16	153	388
Total	48	7	38	102	195	153	382	19	79	633	34	10	21	112	177	36	400	64	81	581	1586
Grand Total	201	68	160	344	773	344	1245	101	302	1992	112	37	71	446	666	186	1498	225	279	2188	5619
Apprch %	26	8.8	20.7	44.5		17.3	62.5	5.1	15.2		16.8	5.6	10.7	67		8.5	68.5	10.3	12.8		
Total %	3.6	1.2	2.8	6.1	13.8	6.1	22.2	1.8	5.4	35.5	2	0.7	1.3	7.9	11.9	3.3	26.7	4	5	38.9	

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Highland @ Edgemont
Site Code : 00000000
Start Date : 9/17/2008
Page No : 2



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

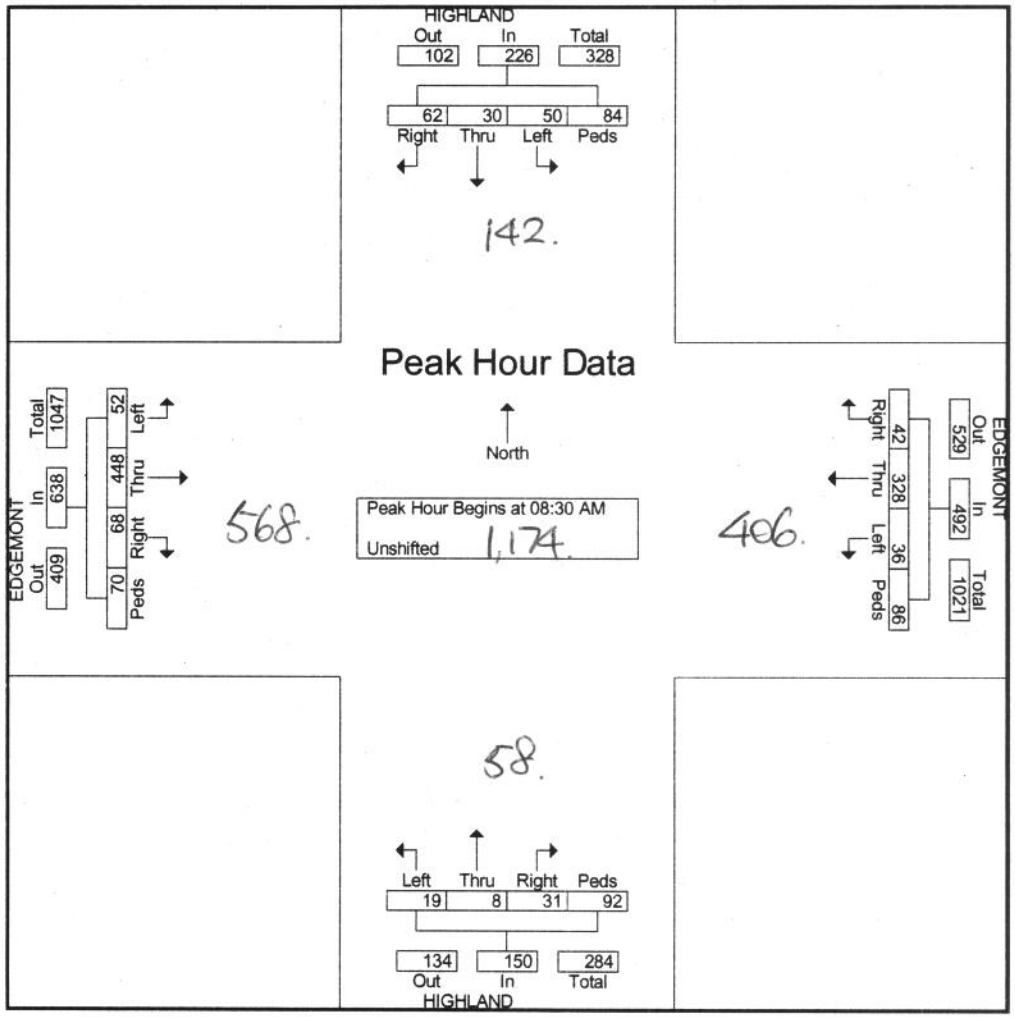
File Name : Highland @ Edgemont
Site Code : 00000000
Start Date : 9/17/2008
Page No : 3

	HIGHLAND From North					EDGEMONT From East					HIGHLAND From South					EDGEMONT From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 11:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	12	8	**14**	19	53	**12**	73	**11**	9	105	9	**3**	5	19	36	11	101	12	12	136	330
08:45 AM	17	**9**	14	13	53	9	76	8	20	113	4	2	3	13	22	10	**122**	9	21	162	350
09:00 AM	**21**	6	11	25	**63**	9	**91**	8	28	136	7	3	4	24	38	**26**	114	**20**	13	**173**	410
09:15 AM	12	7	11	**27**	57	12	88	9	**29**	**138**	**11**	0	**7**	**36**	**54**	21	111	11	**24**	167	**416**
Total Volume	62	30	50	84	226	42	328	36	86	492	31	8	19	92	150	68	448	52	70	638	1506
% App. Total	27.4	13.3	22.1	37.2		8.5	66.7	7.3	17.5		20.7	5.3	12.7	61.3		10.7	70.2	8.2	11		
PHF	.738	.833	.893	.778	.897	.875	.901	.818	.741	.891	.705	.667	.679	.639	.694	.654	.918	.650	.729	.922	.905

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Highland @ Edgemont
Site Code : 00000000
Start Date : 9/17/2008
Page No : 4



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

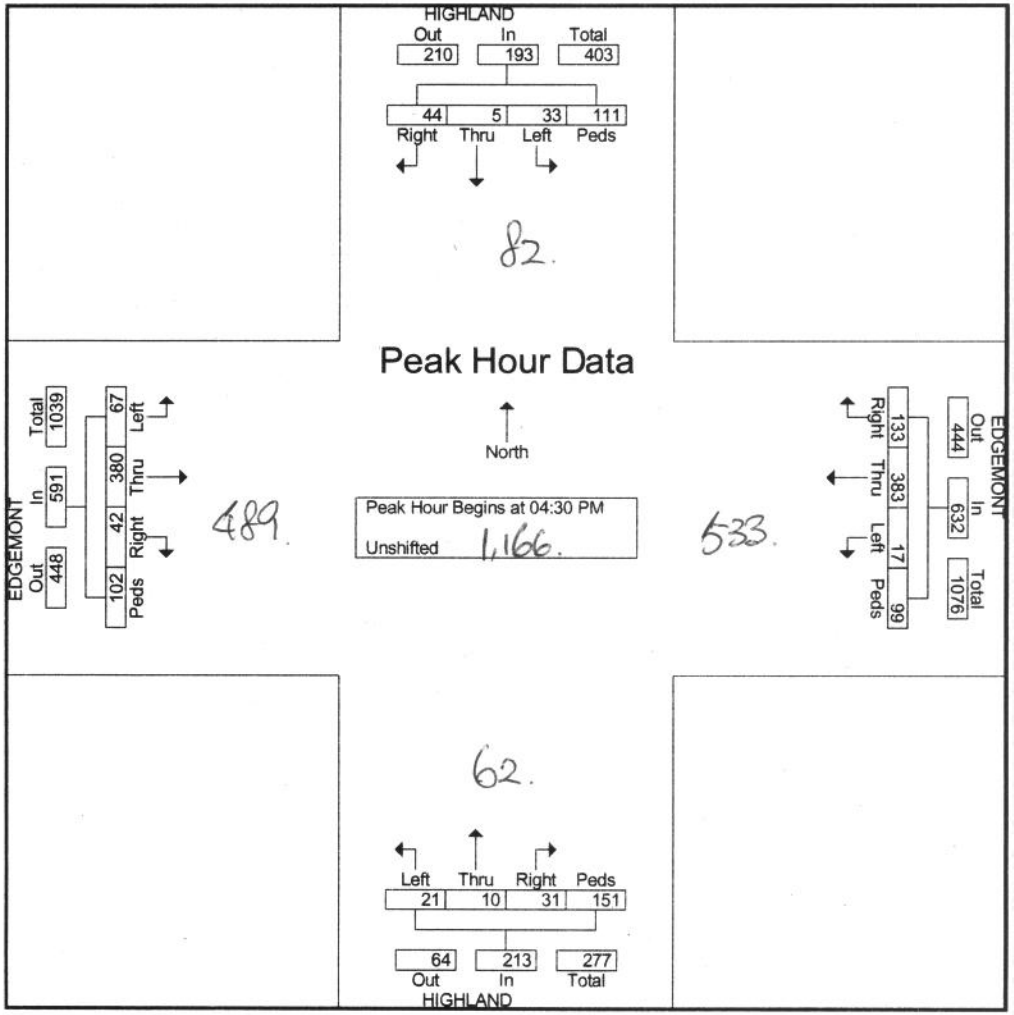
File Name : Highland @ Edgemont
Site Code : 00000000
Start Date : 9/17/2008
Page No : 5

	HIGHLAND From North					EDGEMONT From East					HIGHLAND From South					EDGEMONT From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**14**	0	8	**32**	**54**	24	82	2	**28**	136	5	3	4	**48**	**60**	12	89	**21**	**36**	**158**	408
04:45 PM	9	1	8	26	44	34	98	5	26	163	4	**5**	**6**	42	57	**14**	95	16	26	151	**415**
05:00 PM	13	**3**	8	25	49	**42**	97	**6**	20	165	**16**	2	5	24	47	8	89	17	21	135	396
05:15 PM	8	1	**9**	28	46	33	**106**	4	25	**168**	6	0	6	37	49	8	**107**	13	19	147	410
Total Volume	44	5	33	111	193	133	383	17	99	632	31	10	21	151	213	42	380	67	102	591	1629
% App. Total	22.8	2.6	17.1	57.5		21	60.6	2.7	15.7		14.6	4.7	9.9	70.9		7.1	64.3	11.3	17.3		
PHF	.786	.417	.917	.867	.894	.792	.903	.708	.884	.940	.484	.500	.875	.786	.888	.750	.888	.798	.708	.935	.981

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Highland @ Edgemont
Site Code : 00000000
Start Date : 9/17/2008
Page No : 6



District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5

Location: Colwood Dr at Highland Blvd
Counted By: P. Bishop
Weather: Rainy (am) / Overcast (pm)
Date: Wednesday, March 30, 2011

Turning Movement Count

File Name : Highland @ Colwood
Site Code : 00000000
Start Date : 3/30/2011
Page No : 1

Groups Printed- Unshifted - Bank 2

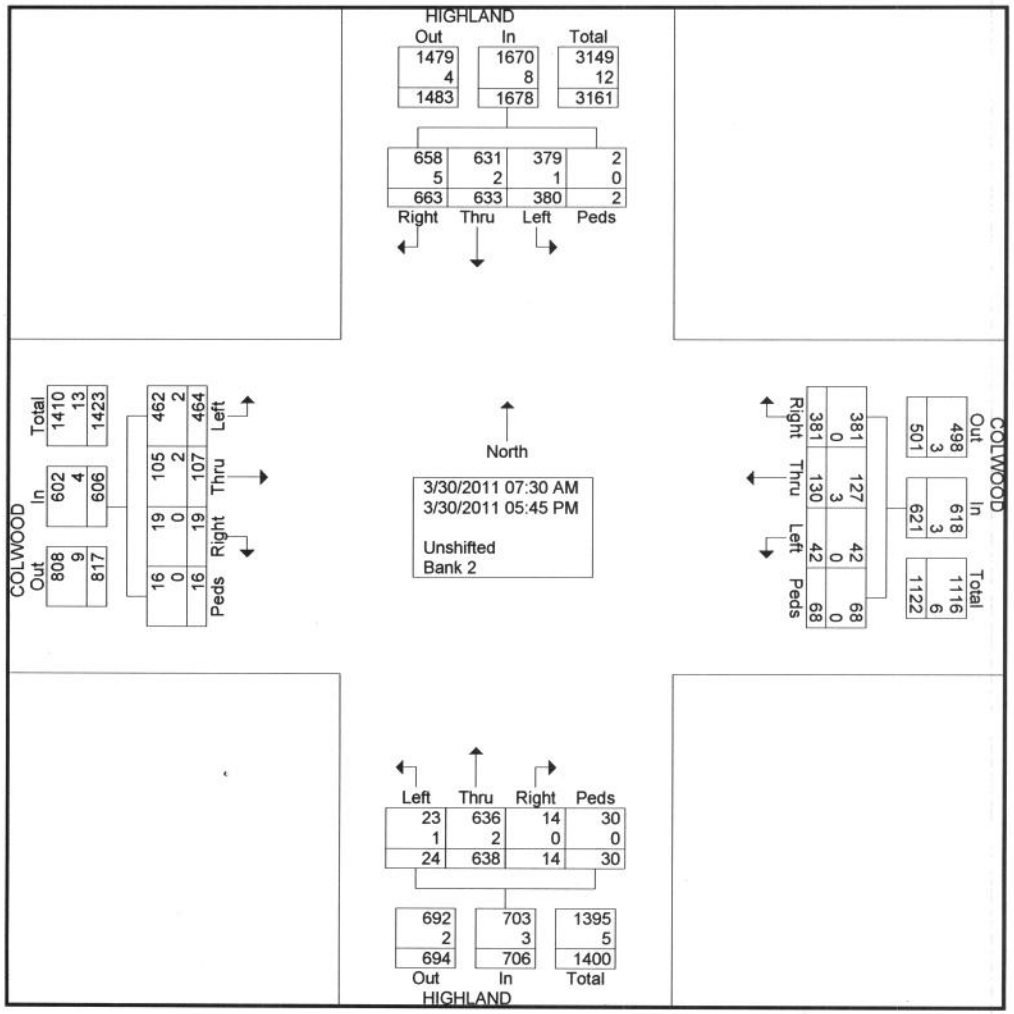
	HIGHLAND From North					COLWOOD From East					HIGHLAND From South					COLWOOD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	49	27	14	0	90	11	3	0	2	16	0	5	2	1	8	0	1	8	1	10	124
07:45 AM	51	33	25	0	109	15	7	0	1	23	1	15	1	0	17	1	6	8	0	15	164
Total	100	60	39	0	199	26	10	0	3	39	1	20	3	1	25	1	7	16	1	25	288
08:00 AM	68	39	20	0	127	14	11	0	4	29	0	12	5	2	19	1	8	11	2	22	197
08:15 AM	62	66	32	0	160	12	7	0	1	20	1	25	3	1	30	1	8	20	1	30	240
08:30 AM	83	63	40	0	186	16	17	9	18	60	2	48	3	13	66	1	19	25	1	46	358
08:45 AM	58	64	28	0	150	30	42	22	8	102	1	22	0	2	25	2	22	21	1	46	323
Total	271	232	120	0	623	72	77	31	31	211	4	107	11	18	140	5	57	77	5	144	1118
09:00 AM	28	29	19	0	76	26	10	3	5	44	0	22	0	0	22	0	4	24	0	28	170
09:15 AM	37	39	18	0	94	14	6	1	1	22	1	19	2	1	23	1	4	14	0	19	158
Total	65	68	37	0	170	40	16	4	6	66	1	41	2	1	45	1	8	38	0	47	328
04:00 PM	22	40	23	1	86	13	3	2	2	20	0	60	1	0	61	3	7	34	0	44	211
04:15 PM	34	28	26	0	88	27	4	0	5	36	1	50	0	2	53	0	2	30	3	35	212
04:30 PM	36	41	19	0	96	29	3	1	4	37	0	56	1	2	59	2	6	41	2	51	243
04:45 PM	20	28	17	0	65	36	3	0	2	41	0	54	1	1	56	1	4	33	0	38	200
Total	112	137	85	1	335	105	13	3	13	134	1	220	3	5	229	6	19	138	5	168	866
05:00 PM	31	26	17	1	75	33	2	0	3	38	3	62	1	3	69	3	3	58	2	66	248
05:15 PM	38	25	28	0	91	33	4	2	1	40	2	70	2	0	74	0	6	42	0	48	253
05:30 PM	21	34	23	0	78	43	2	1	3	49	2	60	1	2	65	1	3	41	1	46	238
05:45 PM	25	51	31	0	107	29	6	1	8	44	0	58	1	0	59	2	4	54	2	62	272
Total	115	136	99	1	351	138	14	4	15	171	7	250	5	5	267	6	16	195	5	222	1011
Grand Total	663	633	380	2	1678	381	130	42	68	621	14	638	24	30	706	19	107	464	16	606	3611
Apprch %	39.5	37.7	22.6	0.1		61.4	20.9	6.8	11		2	90.4	3.4	4.2		3.1	17.7	76.6	2.6		
Total %	18.4	17.5	10.5	0.1	46.5	10.6	3.6	1.2	1.9	17.2	0.4	17.7	0.7	0.8	19.6	0.5	3	12.8	0.4	16.8	
Unshifted	658	631	379	2	1670	381	127	42	68	618	14	636	23	30	703	19	105	462	16	602	3593
% Unshifted	99.2	99.7	99.7	100	99.5	100	97.7	100	100	99.5	100	99.7	95.8	100	99.6	100	98.1	99.6	100	99.3	99.5
Bank 2	5	2	1	0	8	0	3	0	0	3	0	2	1	0	3	0	2	2	0	4	18
% Bank 2	0.8	0.3	0.3	0	0.5	0	2.3	0	0	0.5	0	0.3	4.2	0	0.4	0	1.9	0.4	0	0.7	0.5

District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5

Turning Movement Count

File Name : Highland @ Colwood
Site Code : 00000000
Start Date : 3/30/2011
Page No : 2



District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5

Turning Movement Count

File Name : Highland @ Colwood
Site Code : 00000000
Start Date : 3/30/2011
Page No : 3

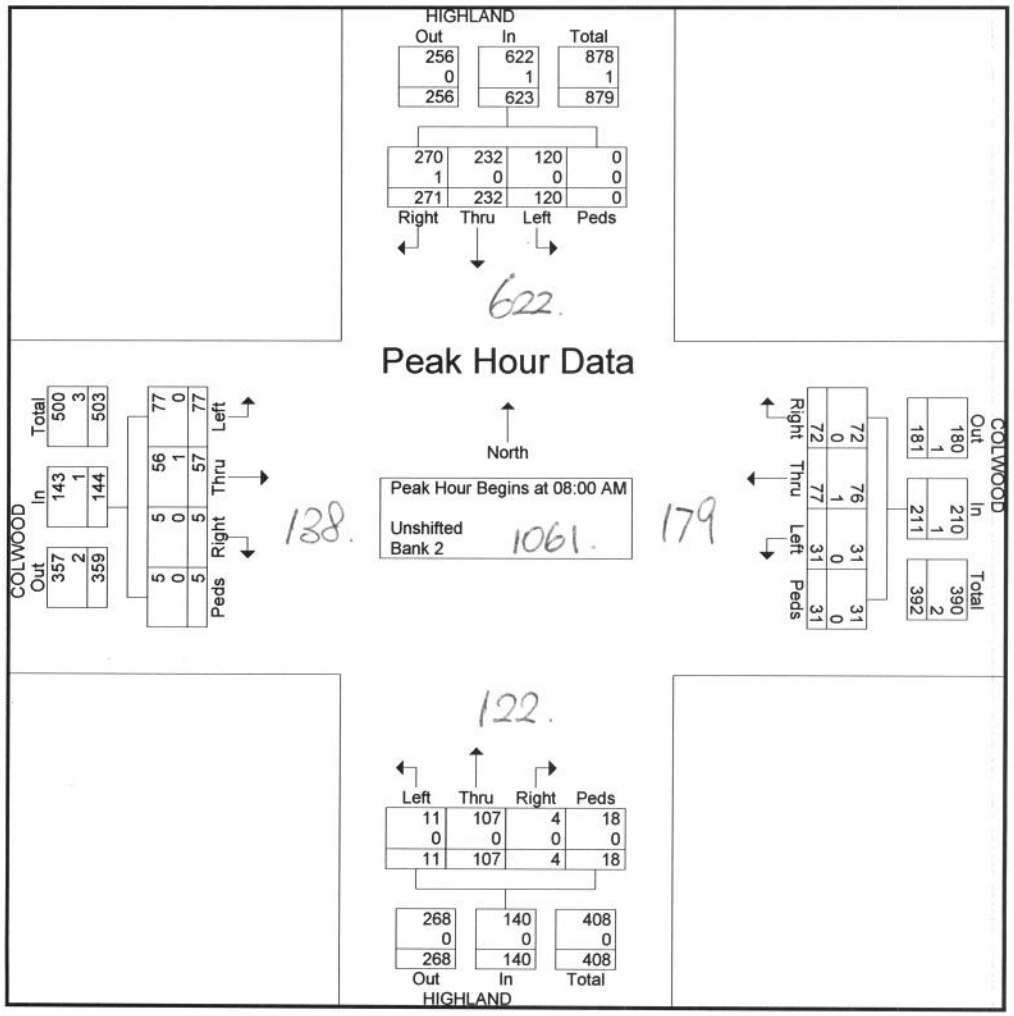
	HIGHLAND From North					COLWOOD From East					HIGHLAND From South					COLWOOD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	68	39	20	0	127	**14**	11	0	**4**	29	0	12	**5**						**2**		
08:15 AM	62	**66**	32	0	160	12	7	0	1	20	1	25	3	1	30	1	8	20	1	30	240
08:30 AM	**83**	63	**40**	0	**186**	16	17	9	**18**	60	**2**	**48**	3	**13**	**66**	1	19	**25**	1	**46**	**358**
08:45 AM	58	64	28	0	150	**30**	**42**	**22**	8	**102**	1	22	0	2	25	**2**	**22**	21	1	46	323
Total Volume	271	232	120	0	623	72	77	31	31	211	4	107	11	18	140	5	57	77	5	144	1118
% App. Total	43.5	37.2	19.3	0		34.1	36.5	14.7	14.7		2.9	76.4	7.9	12.9		3.5	39.6	53.5	3.5		
PHF	.816	.879	.750	.000	.837	.600	.458	.352	.431	.517	.500	.557	.550	.346	.530	.625	.648	.770	.625	.783	.781
Unshifted	270	232	120	0	622	72	76	31	31	210	4	107	11	18	140	5	56	77	5	143	1115
% Unshifted	99.6	100	100	0	99.8	100	98.7	100	100	99.5	100	100	100	100	100	100	98.2	100	100	99.3	99.7
Bank 2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
% Bank 2	0.4	0	0	0	0.2	0	1.3	0	0	0.5	0	0	0	0	0	0	1.8	0	0	0.7	0.3

District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5

Turning Movement Count

File Name : Highland @ Colwood
Site Code : 00000000
Start Date : 3/30/2011
Page No : 4



District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5

Turning Movement Count

File Name : Highland @ Colwood
Site Code : 00000000
Start Date : 3/30/2011
Page No : 5

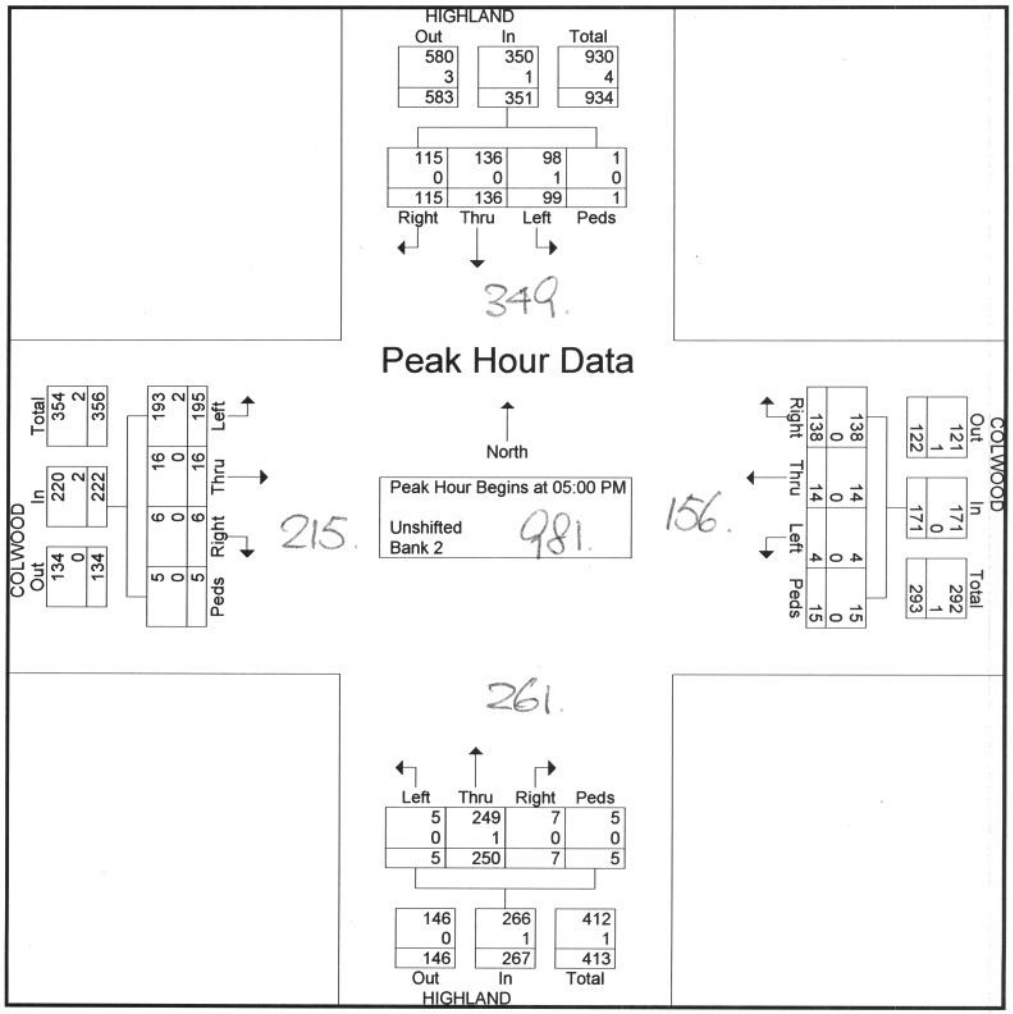
	HIGHLAND From North					COLWOOD From East					HIGHLAND From South					COLWOOD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	31	26	17	**1**							**3**			**3**		**3**		**58**	**2**	**66**	
05:15 PM	**38**	25	28	0	91	33	4	**2**	1	40	2	**70**	**2**	0	**74**	0	**6**	42	0	48	253
05:30 PM	21	34	23	0	78	**43**	2	1	3	**49**	2	60	1	2	65	1	3	41	1	46	238
05:45 PM	25	**51**	**31**	0	**107**	29	**6**	1	**8**	44	0	58	1	0	59	2	4	54	2	62	**272**
Total Volume	115	136	99	1	351	138	14	4	15	171	7	250	5	5	267	6	16	195	5	222	1011
% App. Total	32.8	38.7	28.2	0.3		80.7	8.2	2.3	8.8		2.6	93.6	1.9	1.9		2.7	7.2	87.8	2.3		
PHF	.757	.667	.798	.250	.820	.802	.583	.500	.469	.872	.583	.893	.625	.417	.902	.500	.667	.841	.625	.841	.929
Unshifted	115	136	98	1	350	138	14	4	15	171	7	249	5	5	266	6	16	193	5	220	1007
% Unshifted	100	100	99.0	100	99.7	100	100	100	100	100	100	99.6	100	100	99.6	100	100	99.0	100	99.1	99.6
Bank 2	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4
% Bank 2	0	0	1.0	0	0.3	0	0	0	0	0	0	0.4	0	0	0.4	0	0	1.0	0	0.9	0.4

District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5

Turning Movement Count

File Name : Highland @ Colwood
Site Code : 00000000
Start Date : 3/30/2011
Page No : 6



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

Location: Colwood Dr at W. Queens Rd
Counted By:
Weather:
Date: Thursday, April 19, 2007

File Name : Colwood @ Queens
Site Code : 00000000
Start Date : 4/19/2007
Page No : 1

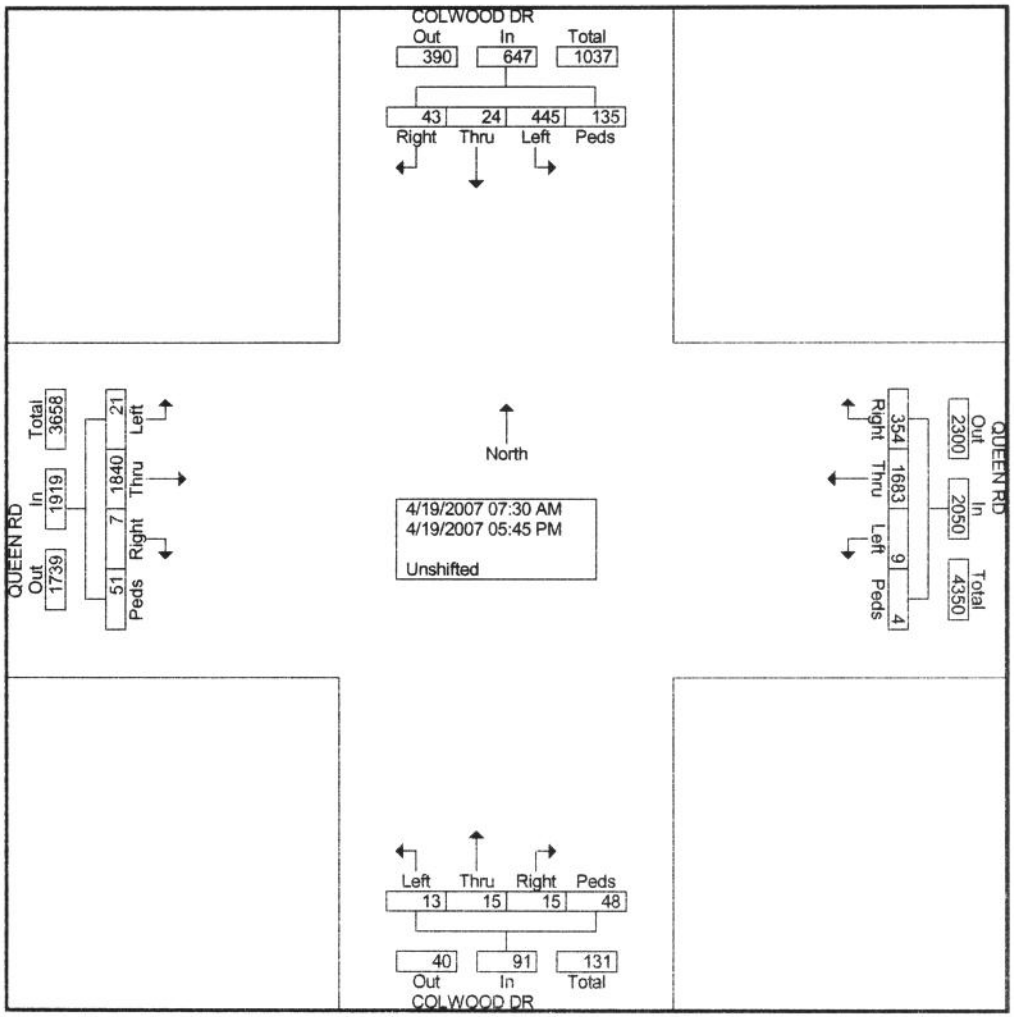
Groups Printed- Unshifted

	COLWOOD DR From North					QUEEN RD From East					COLWOOD DR From South					QUEEN RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	6	12	31	2	51	12	65	1	1	79	2	8	1	1	12	0	57	1	0	58	200
07:45 AM	0	1	23	2	26	12	66	1	0	79	2	0	0	3	5	1	86	0	1	88	198
Total	6	13	54	4	77	24	131	2	1	158	4	8	1	4	17	1	143	1	1	146	398
08:00 AM	0	0	27	2	29	20	103	0	0	123	0	0	1	2	3	0	85	0	0	85	240
08:15 AM	1	0	30	9	40	21	110	0	0	131	1	0	2	2	5	0	113	0	7	120	296
08:30 AM	0	1	25	17	43	25	115	0	0	140	1	0	1	2	4	0	138	3	8	149	336
08:45 AM	16	2	23	29	70	27	160	0	0	187	1	1	0	7	9	0	151	8	16	175	441
Total	17	3	105	57	182	93	488	0	0	581	3	1	4	13	21	0	487	11	31	529	1313
09:00 AM	6	2	24	7	39	15	116	0	0	131	1	0	0	3	4	0	98	0	0	98	272
09:15 AM	0	2	20	7	29	10	80	0	0	90	0	0	1	1	2	0	87	3	5	95	216
Total	6	4	44	14	68	25	196	0	0	221	1	0	1	4	6	0	185	3	5	193	488
04:00 PM	2	1	33	8	44	9	117	1	2	129	0	1	2	1	4	0	120	1	1	122	299
04:15 PM	0	0	31	6	37	30	108	0	0	138	3	0	1	5	9	1	119	0	2	122	306
04:30 PM	2	1	34	12	49	27	123	1	0	151	1	1	0	3	5	0	133	0	1	134	339
04:45 PM	4	0	27	4	35	17	110	2	1	130	1	0	1	4	6	0	113	1	1	115	286
Total	8	2	125	30	165	83	458	4	3	548	5	2	4	13	24	1	485	2	5	493	1230
05:00 PM	1	0	22	6	29	39	90	1	0	130	1	1	0	5	7	1	131	0	2	134	300
05:15 PM	1	1	31	7	40	41	121	1	0	163	0	2	1	4	7	1	149	1	2	153	363
05:30 PM	2	1	27	12	42	26	99	1	0	126	0	1	1	4	6	1	126	3	4	134	308
05:45 PM	2	0	37	5	44	23	100	0	0	123	1	0	1	1	3	2	134	0	1	137	307
Total	6	2	117	30	155	129	410	3	0	542	2	4	3	14	23	5	540	4	9	558	1278
Grand Total	43	24	445	135	647	354	1683	9	4	2050	15	15	13	48	91	7	1840	21	51	1919	4707
Apprch %	6.6	3.7	68.8	20.9		17.3	82.1	0.4	0.2		16.5	16.5	14.3	52.7		0.4	95.9	1.1	2.7		
Total %	0.9	0.5	9.5	2.9	13.7	7.5	35.8	0.2	0.1	43.6	0.3	0.3	0.3	1	1.9	0.1	39.1	0.4	1.1	40.8	

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Colwood @ Queens
Site Code : 00000000
Start Date : 4/19/2007
Page No : 2



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

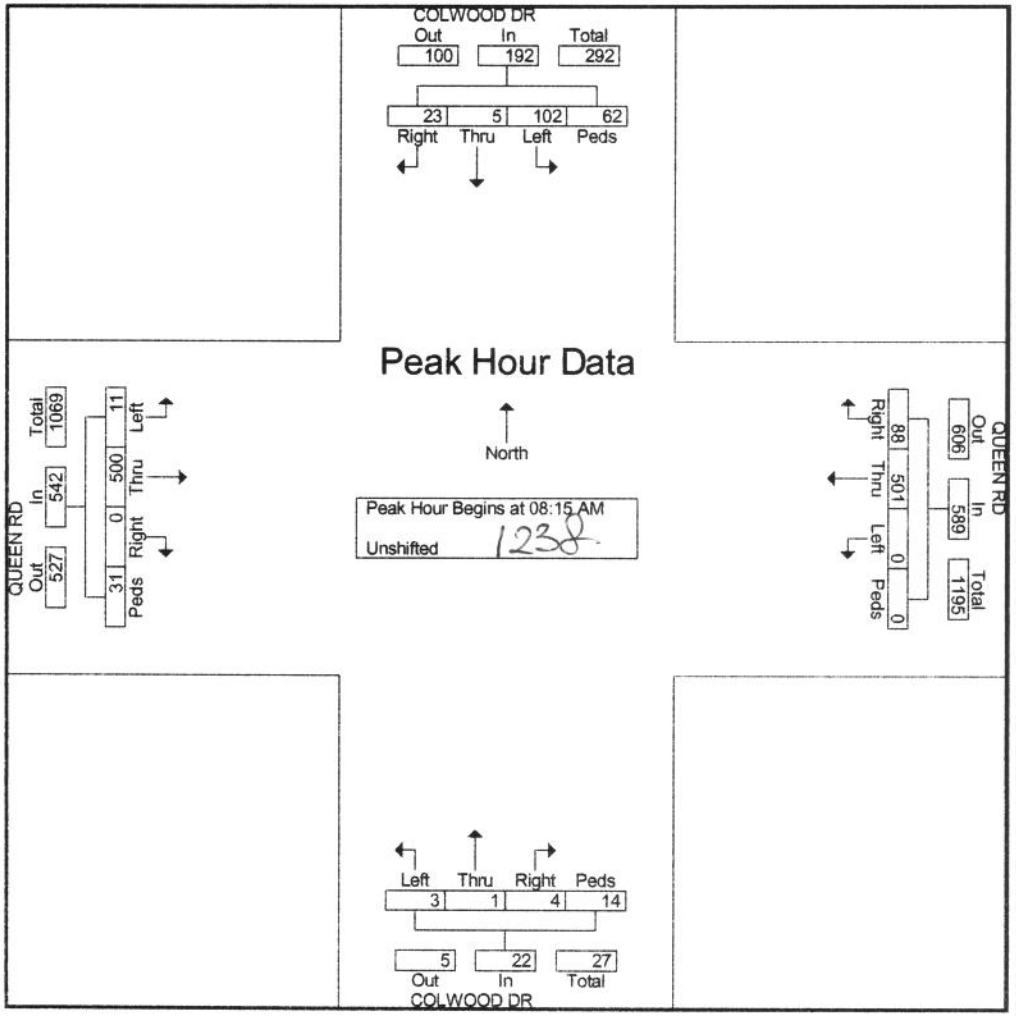
File Name : Colwood @ Queens
Site Code : 00000000
Start Date : 4/19/2007
Page No : 3

	COLWOOD DR From North					QUEEN RD From East					COLWOOD DR From South					QUEEN RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	1	0	**30**	9	40	21	110	0	0	131	**1**	0	**2**	2	5	0	113	0	7	120	296
08:30 AM	0	1	25	17	43	25	115	0	0	140	1	0	1	2	4	0	138	3	8	149	336
08:45 AM	**16**	**2**	23	**29**	**70**	**27**	**160**	0	0	**187**	1	**1**	0	**7**	**9**	0	**151**	**8**	**16**	**175**	**441**
09:00 AM	6	2	24	7	39	15	116	0	0	131	1	0	0	3	4	0	98	0	0	98	272
Total Volume	23	5	102	62	192	88	501	0	0	589	4	1	3	14	22	0	500	11	31	542	1345
% App. Total	12	2.6	53.1	32.3		14.9	85.1	0	0		18.2	4.5	13.6	63.6		0	92.3	2	5.7		
PHF	.359	.625	.850	.534	.686	.815	.783	.000	.000	.787	1.000	.250	.375	.500	.611	.000	.828	.344	.484	.774	.762

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Colwood @ Queens
Site Code : 00000000
Start Date : 4/19/2007
Page No : 4



The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

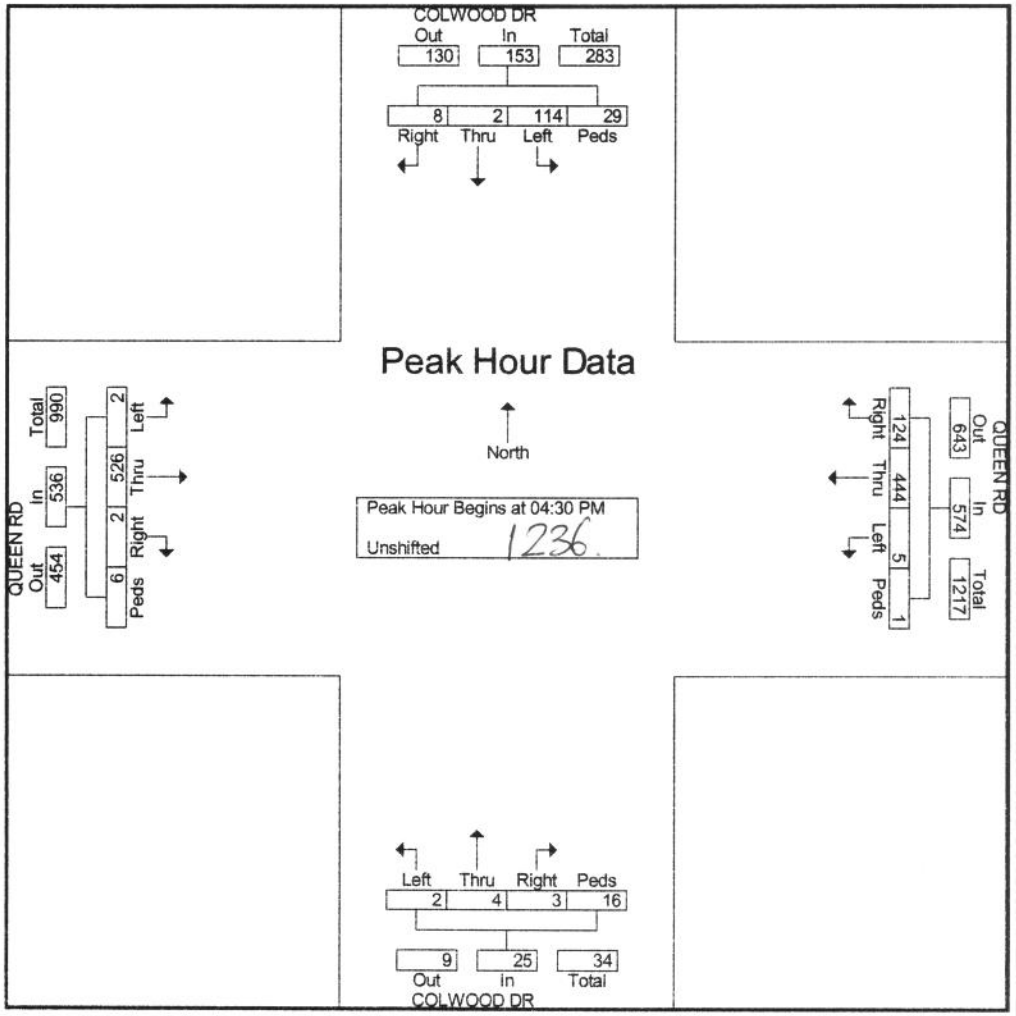
File Name : Colwood @ Queens
Site Code : 00000000
Start Date : 4/19/2007
Page No : 5

	COLWOOD DR From North					QUEEN RD From East					COLWOOD DR From South					QUEEN RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	**1**	**34**	**12**	**49**	27	**123**	1	0	151	**1**	1	0	3	5	0	133	0	1	134	339
04:45 PM	**4**	0	27	4	35	17	110	**2**	**1**	130	1	0	**1**	4	6	0	113	**1**	1	115	286
05:00 PM	1	0	22	6	29	39	90	1	0	130	1	1	0	**5**	**7**	**1**	131	0	**2**	134	300
05:15 PM	1	1	31	7	40	**41**	121	1	0	**163**	0	**2**	1	4	7	1	**149**	1	2	**153**	**363**
Total Volume	8	2	114	29	153	124	444	5	1	574	3	4	2	16	25	2	526	2	6	536	1288
% App. Total	5.2	1.3	74.5	19		21.6	77.4	0.9	0.2		12	16	8	64		0.4	98.1	0.4	1.1		
PHF	.500	.500	.838	.604	.781	.756	.902	.625	.250	.880	.750	.500	.500	.800	.893	.500	.883	.500	.750	.876	.887

The District of North Vancouver

355 West Queens Road
North Vancouver, BC V7N 4N5
Turning Movement Count

File Name : Colwood @ Queens
Site Code : 00000000
Start Date : 4/19/2007
Page No : 6



Appendix C - Edgemont / Ridgewood Analysis

Table 1 - Comparison of Intersection Control Types at Edgemont & Ridgewood

	Signal	4-way Stop
Geometric Design/ Property Impacts	- Need to add auxiliary lanes for most prominent directions (e.g. WBRT and NBLT) or queues would be too long. Property impacts: o Land needed from SW corner for R-turn bay o Need more queue storage NB Edgemont (NB approach would include NBL and NBT/R lanes) o Additional sidewalk space on NW corner (could add far side bike lane on Ridgewood)	- Can have one lane for all movements since stop processes each approach equally but LOS is poor: o NB approach would only be 1 lane wide (lefts share with throughs/rights) – attached Scenario 1 *Also tested traffic simulation results under a modified future all-way stop condition, Scenario 2 (e.g. with new NBL auxiliary lane and NBTR lane – *see attached PDF of results). Would be longer crossing distance for pedestrians*
LOS/ Time of Day	Overall better LOS during peaks than stop control	Overall poorer LOS during peaks than signals
	Best to accommodate AM and PM peak period flows	Some benefits for off-peak, low traffic
Queuing (95th percentile)	*see attached PDF of results for three scenarios*	*see attached PDF of results for three scenarios*
Pedestrians	• Signal design used high number of pedestrian actuations and slow walking speed to calculate crossing time (0.8 metres/ second, well-suited to seniors/ children). • Signals create more predictable crossing for pedestrians and offer opportunity to improve accessibility with pedestrian countdown timers and audible signals to assist people with visual or auditory disabilities cross the street	Driver behaviour/compliance may be poorer with stop control (as noted in Opus 2005 report) which may be worse for pedestrian crossing environment
Transit	Reduced delay to buses in accessing transit stop during peaks	Existing intersection configuration (Scenario 1) not recommended due to queuing and delay to transit
Cycling	Provides opportunity to include bike box SB on Edgemont, and bike lane WB on Ridgewood	No dedicated facilities for cyclists
Other	Driveway on NE corner becomes a higher concern with signals and higher number of vehicles processed during green phase on Ridgewood. Placement of push button may be problematic vs. driveway curb depression	Driveway on NE corner is a lower concern with stop control due to lower number of vehicles processed with a stop
Temporary/ Pilot period	Temporary signals during Metro Vancouver watermain	Stop-control is a known factor within the study area construction can be tested and evaluated to determine whether they are beneficial or not

Edgemont/Ridgewood Options Analysis

2030 Horizon / Full Development Volumes

Scenario 1: 4-Way Stop (Existing Conditions)

	AM PEAK PERIOD					PM PEAK PERIOD				
Movement	V/C Ratio	Delay (s)	LOS	Synchro 95% Queue (m)	SimTraffic 95% Queue (m)	V/C Ratio	Delay (s)	LOS	Synchro 95% Queue (m)	SimTraffic 95% Queue (m)
NBL	1.36	202.0	F		237.0	1.29	169.6	F		279.4
NBT	1.36	202.0	F		237.0	1.29	169.6	F		279.4
NBR	1.36	202.0	F		237.0	1.29	169.6	F		279.4
SBL	1.47	274.2	F		55.1	0.80	36.8	E		52.8
SBT	1.47	274.2	F		55.1	0.80	36.8	E		52.8
SBR	1.47	274.2	F		55.1	0.80	36.8	E		52.8
EBL	0.37	17.3	C		22.4	0.68	26.9	D		50.7
EBT	0.37	17.3	C		22.4	0.68	26.9	D		50.7
EBR	0.74	32.6	D		29.8	0.62	21.6	C		37.7
WBL	1.01	79.4	F		70.9	0.65	26.1	D		26.4
WBT	1.01	79.4	F		70.9	0.65	26.1	D		26.4
WBR	1.01	79.4	F		70.9	0.65	26.1	D		26.4

*Synchro cannot calculate queue lengths at 4-way stops

Scenario 2: 4-Way Stop with Minor Geometric Improvements (new NBL; eliminate channelized NBR)

	AM PEAK PERIOD					PM PEAK PERIOD				
Movement	V/C Ratio	Delay (s)	LOS	Synchro 95% Queue (m)	SimTraffic 95% Queue (m)	V/C Ratio	Delay (s)	LOS	Synchro 95% Queue (m)	SimTraffic 95% Queue (m)
NBL	0.61	25.9	D		36.9	0.54	21.5	C		42.4
NBT	0.78	37.2	E		45.6	0.87	47.3	E		65.4
NBR	0.78	37.2	E		45.6	0.87	47.3	E		65.4
SBL	1.5	261.4	F		54.9	0.87	49.1	E		58.8
SBT	1.5	261.4	F		54.9	0.87	49.1	E		58.8
SBR	1.5	261.4	F		54.9	0.87	49.1	E		58.8
EBL	0.37	16.7	C		37.6	0.71	29.6	D		47.8
EBT	0.37	16.7	C		35.2	0.71	29.6	D		47.8
EBR	0.72	30.3	D		35.2	0.64	23.4	C		40.6
WBL	1.03	83.0	F		80.6	0.70	31.4	D		38.8
WBT	1.03	83.0	F		80.6	0.70	31.4	D		38.8
WBR	1.03	83.0	F		80.6	0.70	31.4	D		38.8

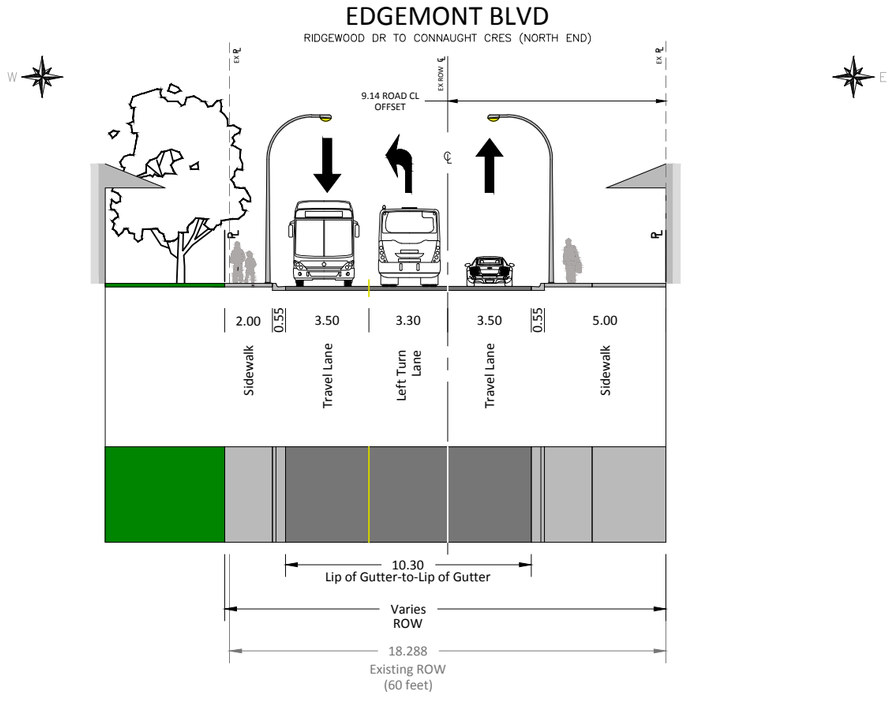
*Synchro cannot calculate queue lengths at 4-way stops

Scenario 3: Signal with Minor Geometric Improvements (new NBL; eliminate channelized NBR)

	AM PEAK PERIOD					PM PEAK PERIOD				
Movement	V/C Ratio	Delay (s)	LOS	Synchro 95% Queue (m)	SimTraffic 95% Queue (m)	V/C Ratio	Delay (s)	LOS	Synchro 95% Queue (m)	SimTraffic 95% Queue (m)
NBL	0.62	21.1	C	#41.1	43.7	0.44	19.8	B	45.2	43.5
NBT	0.36	8.6	A	28.3	184.2	0.41	16.1	B	63.0	104.8
NBR	0.36	8.6	A	28.3	184.2	0.41	16.1	B	63.0	104.8
SBL	0.72	17.5	B	#82.9	58.3	0.42	16.9	B	62.4	52.1
SBT	0.72	17.5	B	#82.9	58.3	0.42	16.9	B	62.4	52.1
SBR	0.72	17.5	B	#82.9	58.3	0.42	16.9	B	62.4	52.1
EBL	0.25	9.8	A	13.9	20.8	0.40	14.1	B	38.6	42.7
EBT	0.25	9.8	A	13.9	20.8	0.40	14.1	B	38.6	42.7
EBR	0.46	5.6	A	14.4	21.4	0.36	2.8	A	10.9	32.3
WBL	0.66	13.0	B	32.4	49.0	0.38	10.9	B	31.3	28.3
WBT	0.66	13.0	B	32.4	49.0	0.38	10.9	B	31.3	28.3
WBR	0.66	13.0	B	32.4	49.0	0.38	10.9	B	31.3	28.3

Appendix D - Cross-sections

A



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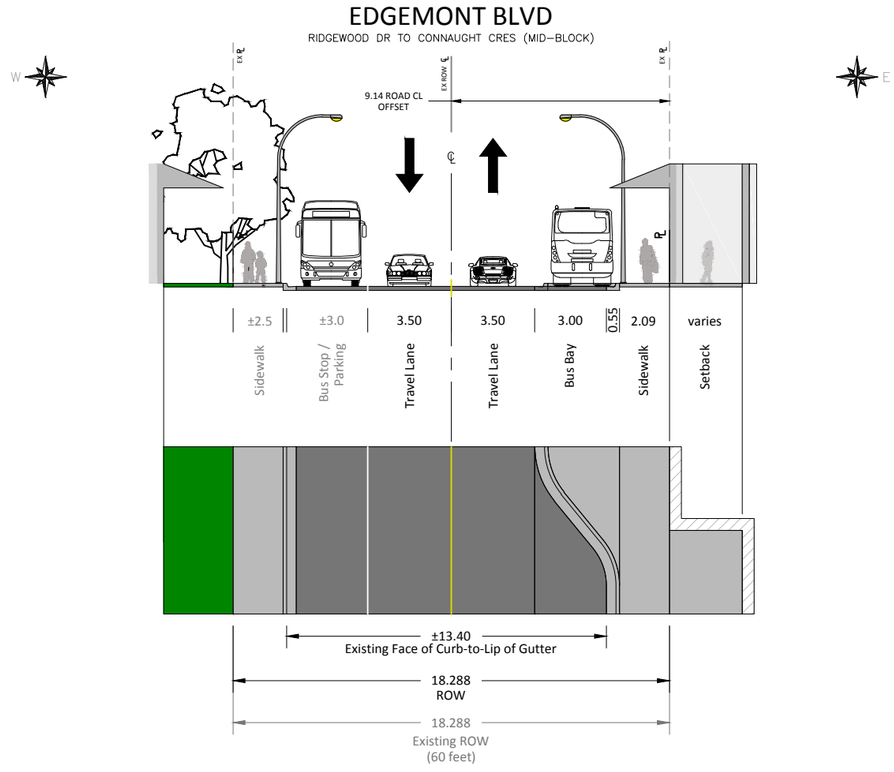

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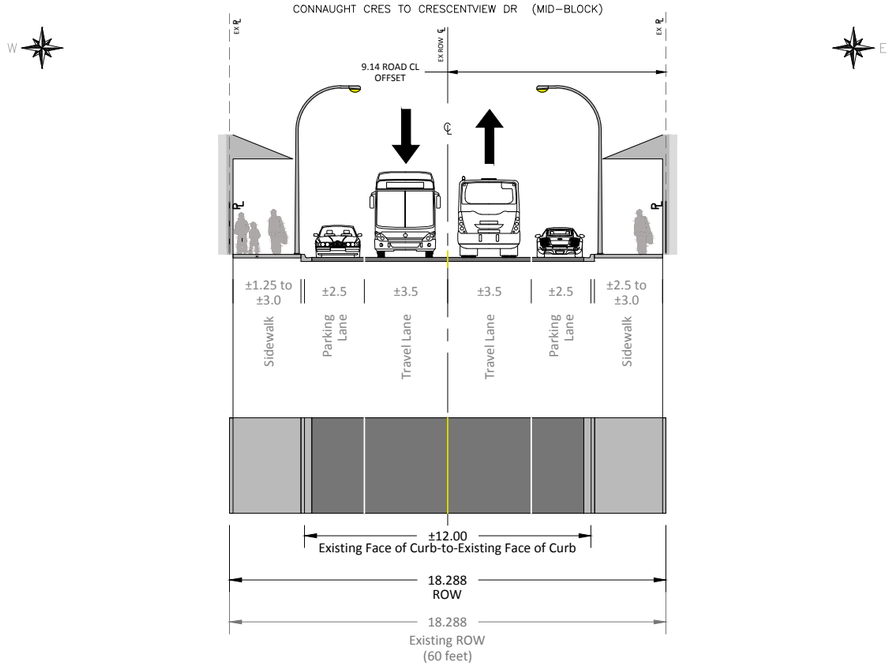
Scale	Date	Figure
nts	April 21, 2015	C1
1333.0018.08		Title

EDGEMONT BLVD

C

EDGEMONT BLVD

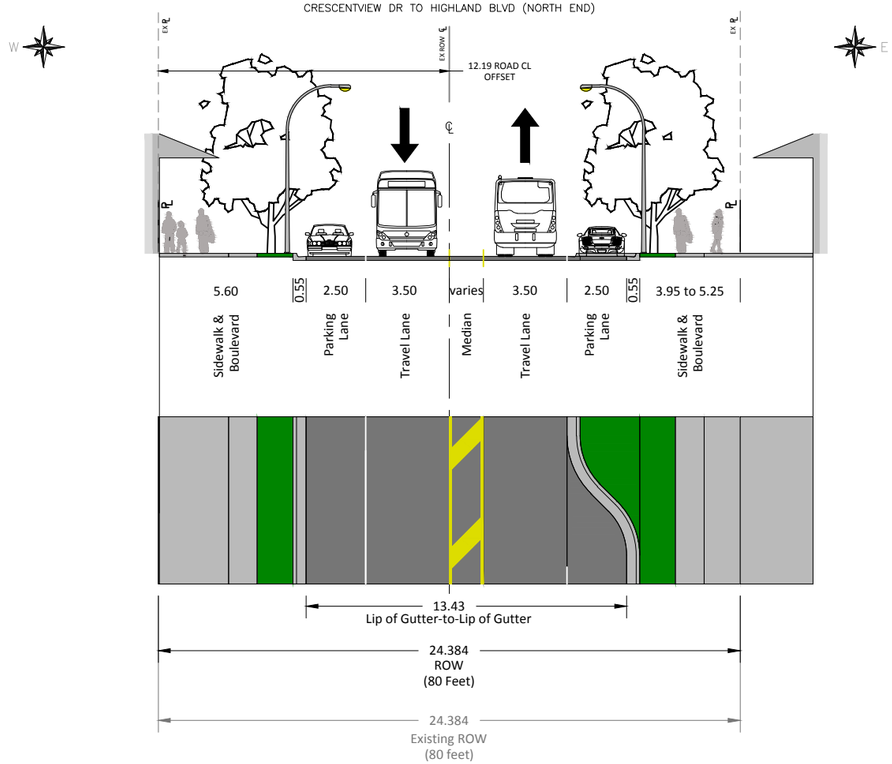
CONNAUGHT CRES TO CRESCENTVIEW DR (MID–BLOCK)



D

EDGEMONT BLVD

CRESCENTVIEW DR TO HIGHLAND BLVD (NORTH END)



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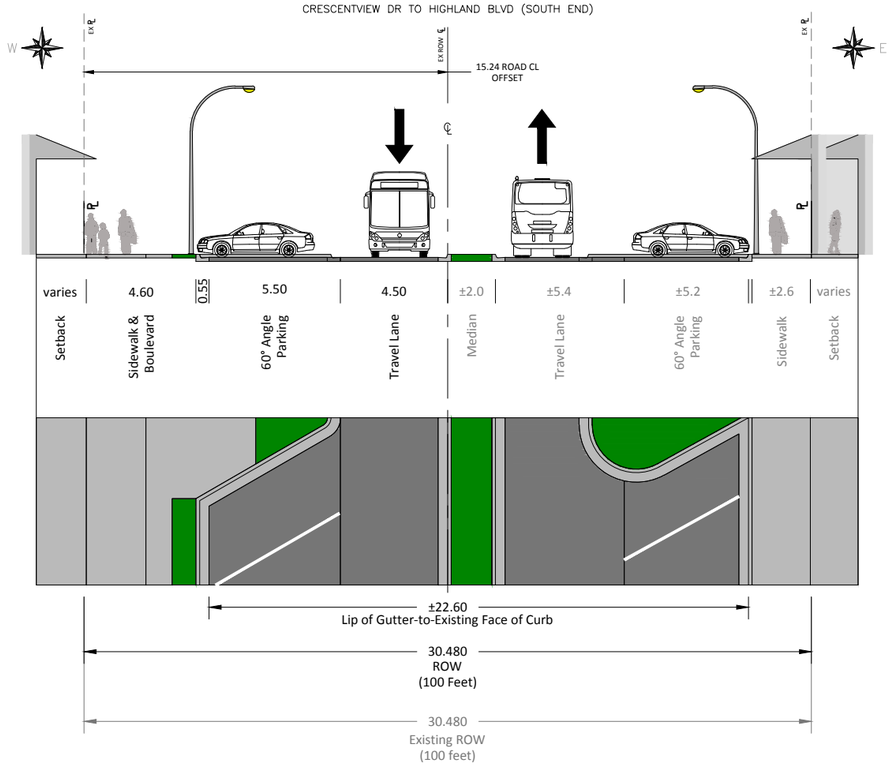
1333.0018.08		Title

EDGEMONT BLVD

E

EDGEMONT BLVD

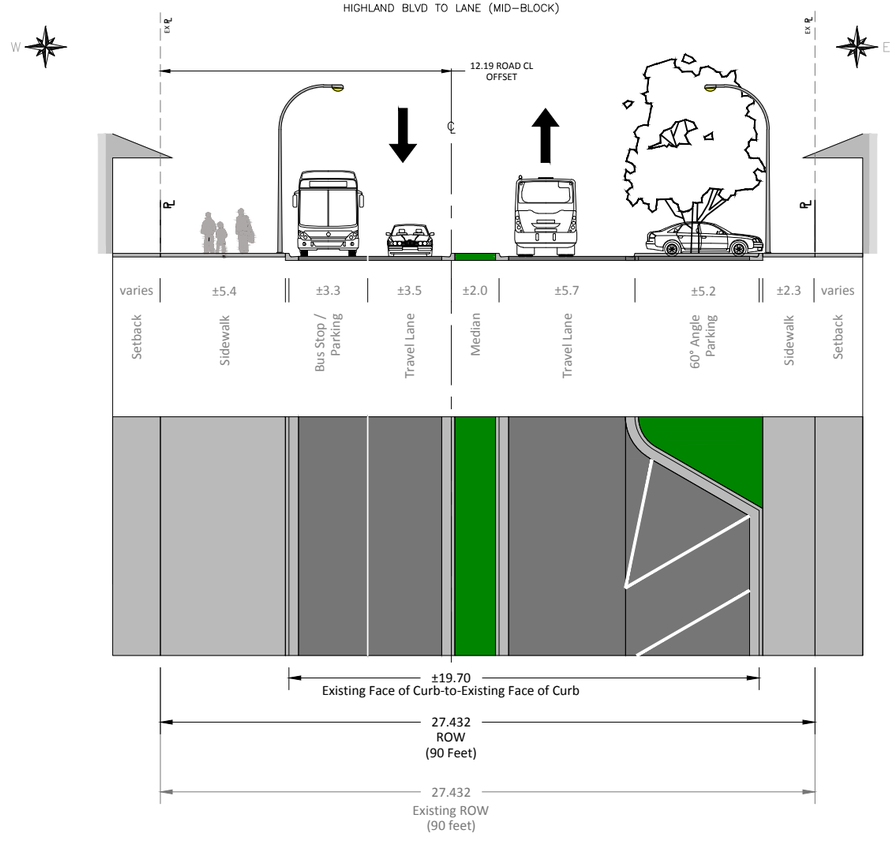
CRESCENTVIEW DR TO HIGHLAND BLVD (SOUTH END)



F

EDGEMONT BLVD

HIGHLAND BLVD TO LANE (MID–BLOCK)



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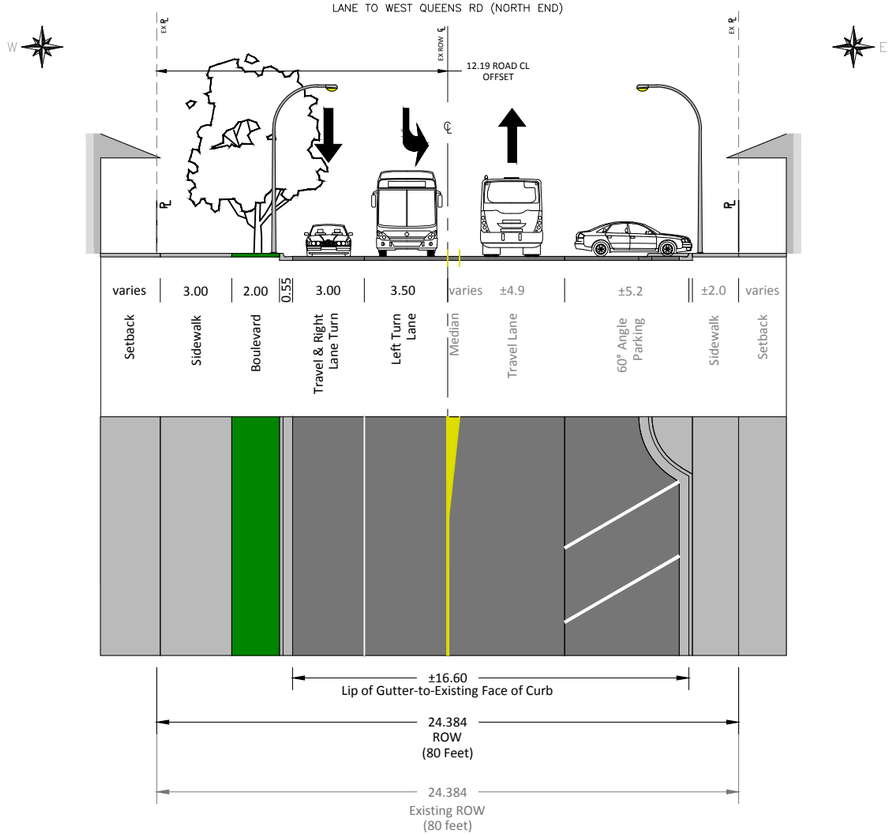
1333.0018.08		Title

EDGEMONT BLVD

G

EDGEMONT BLVD

LANE TO WEST QUEENS RD (NORTH END)



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EDGEMONT BLVD

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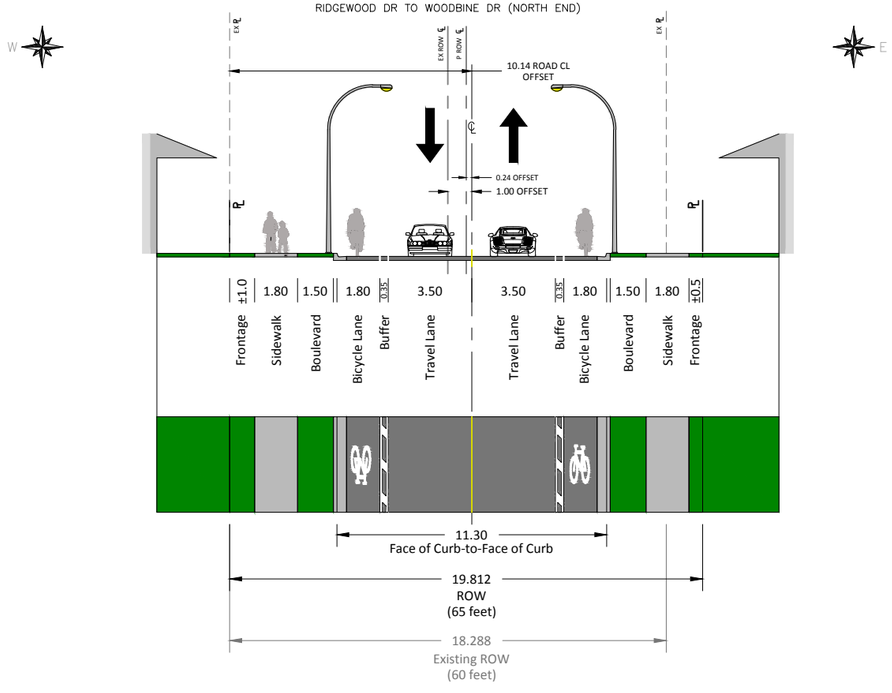
H

AYR AVENUE

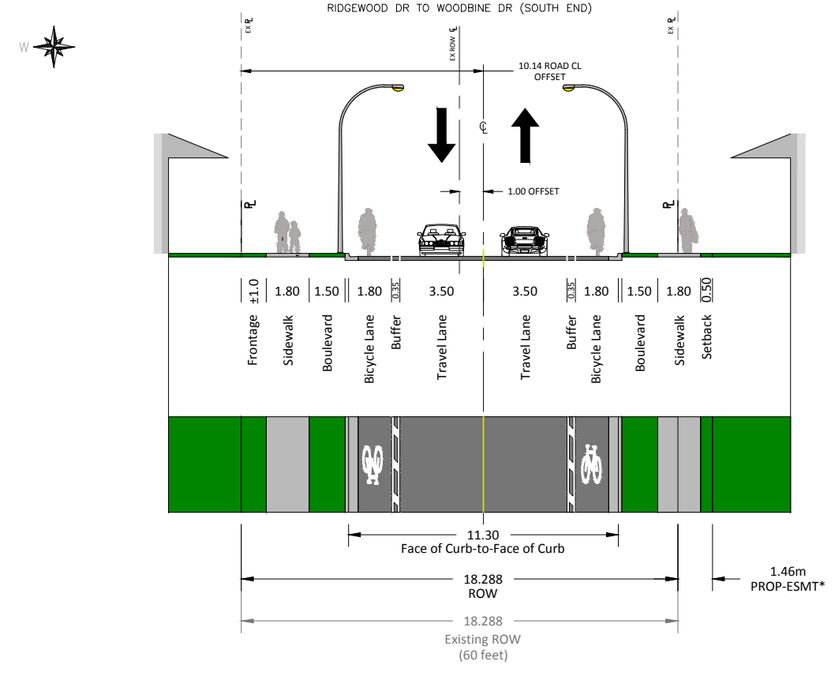
RIDGEWOOD DR TO WOODBINE DR (NORTH END)



I

AYR AVENUE

RIDGEWOOD DR TO WOODBINE DR (SOUTH END)



* PROPERTY LINE TO BE DETERMINED. SIDEWALK MAY BE PERMITTED ON PRIVATE PROPERTY.

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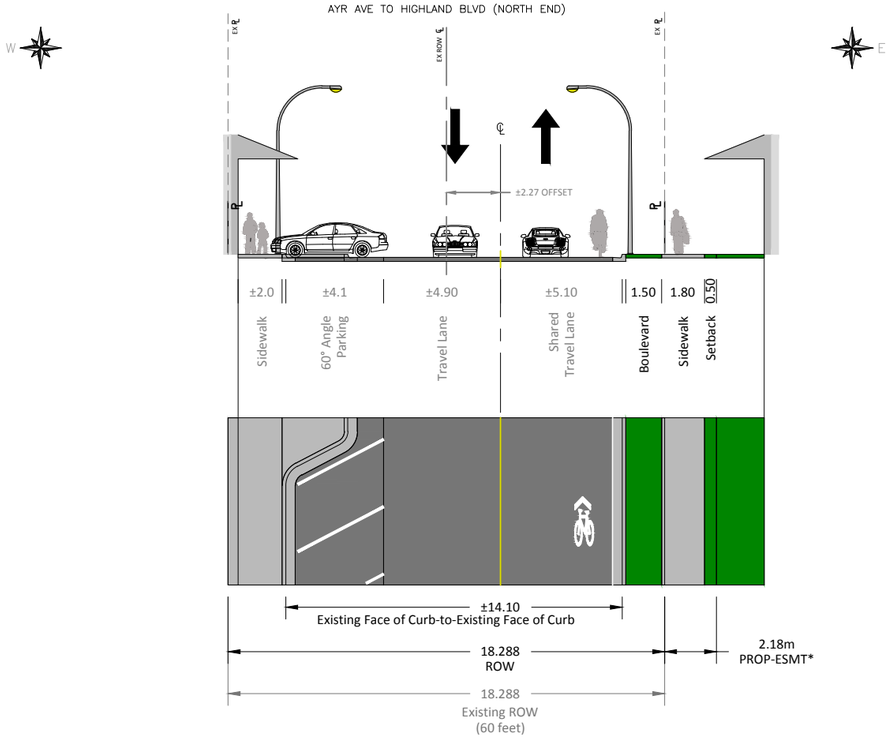
nts	April 21, 2015	C5
1333.0018.08		Title

AYR AVE

J

WOODBINE DR

AYR AVE TO HIGHLAND BLVD (NORTH END)

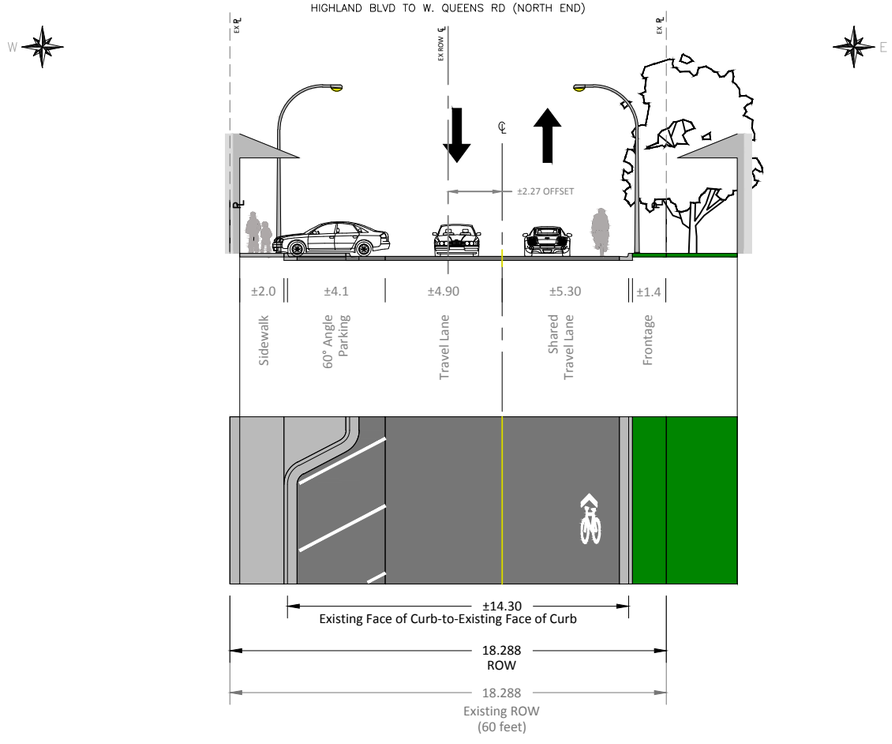


* PROPERTY LINE TO BE DETERMINED. SIDEWALK MAY BE PERMITTED ON PRIVATE PROPERTY.

K

WOODBINE DR (Interim)

HIGHLAND BLVD TO W. QUEENS RD (NORTH END)



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WOODBINE DR

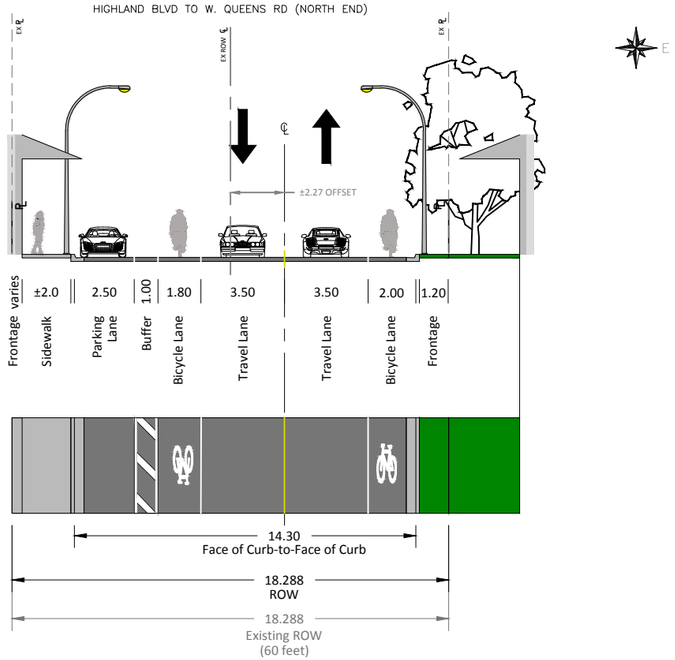
K

WOODBINE DR (Long-Term)

HIGHLAND BLVD TO W. QUEENS RD (NORTH END)

W

E



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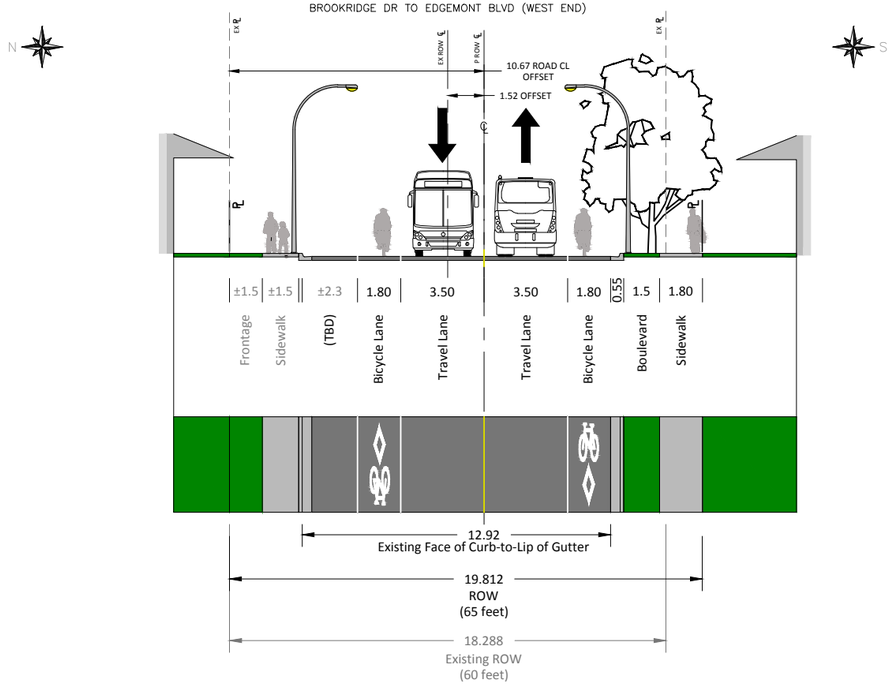
nts	April 21, 2015	C7
1333.0018.08		Title

WOODBINE DR

L

RIDGEWOOD DR

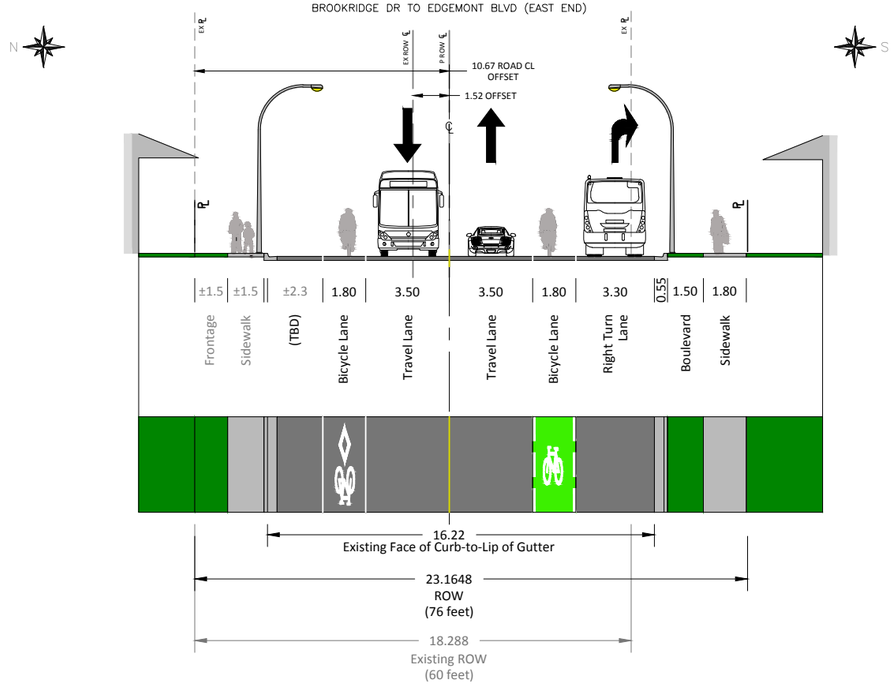
BROOKRIDGE DR TO EDGEMONT BLVD (WEST END)



M

RIDGEWOOD DR

BROOKRIDGE DR TO EDGEMONT BLVD (EAST END)



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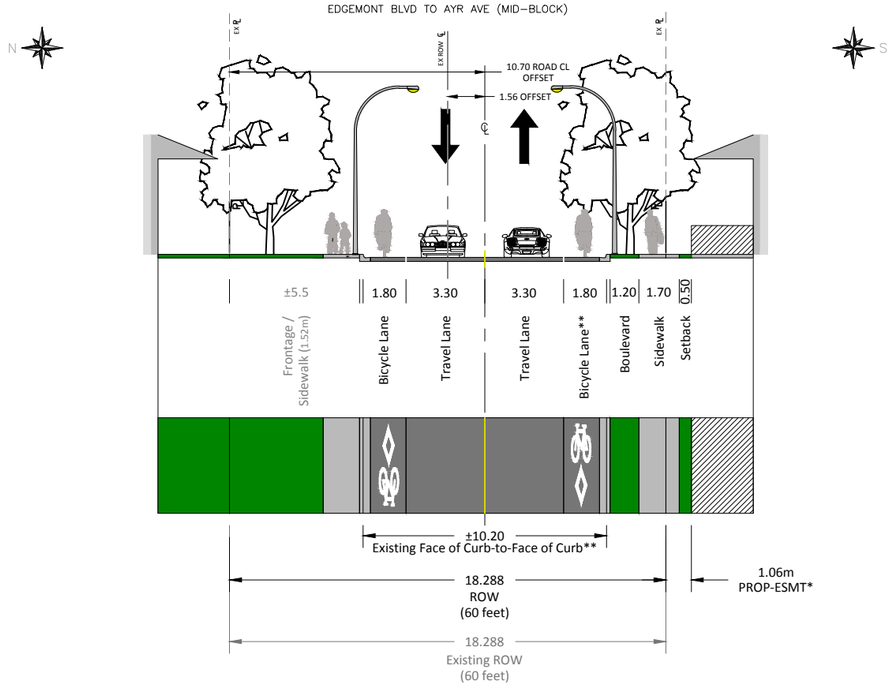
nts	April 21, 2015	C8
1333.0018.08		Title

RIDGEWOOD DR

N

RIDGEWOOD DR

EDGEMONT BLVD TO AYR AVE (MID–BLOCK)

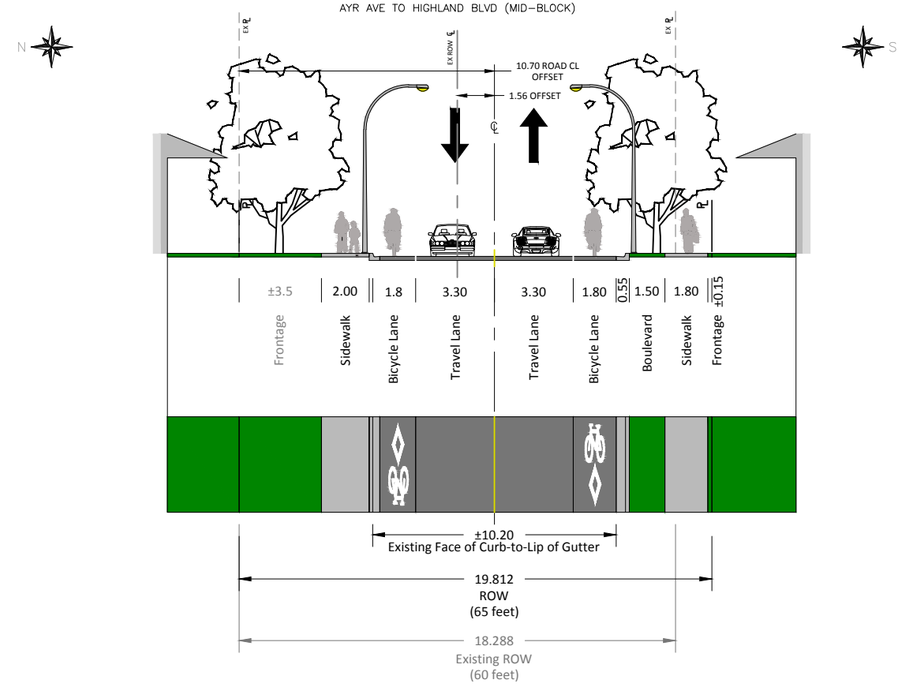


* PROPERTY LINE TO BE DETERMINED. SIDEWALK MAY BE PERMITTED ON PRIVATE PROPERTY.
** PROPOSED CONCRETE CURBS – NARROW BASE (AS PER MMCD STD. C4)

O

RIDGEWOOD DR

AYR AVE TO HIGHLAND BLVD (MID–BLOCK)



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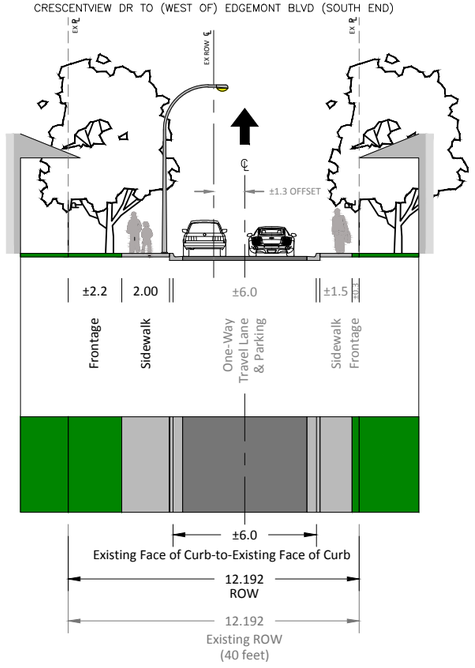
1333.0018.08		Title

RIDGEWOOD DR

P

CONNAUGHT CRES

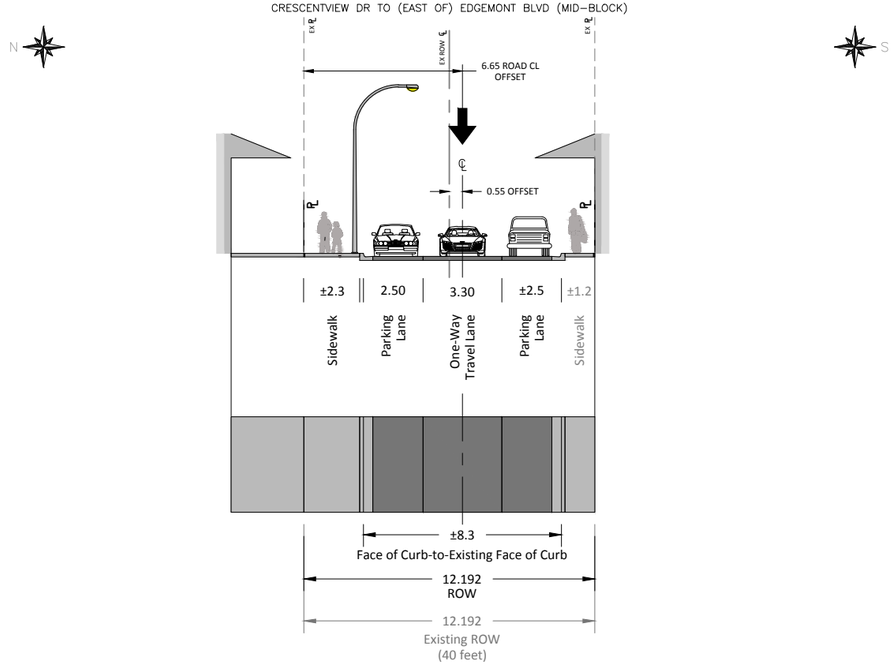
CRESCENTVIEW DR TO (WEST OF) EDGEMONT BLVD (SOUTH END)



Q

CONNAUGHT CRES

CRESCENTVIEW DR TO (EAST OF) EDGEMONT BLVD (MID-BLOCK)



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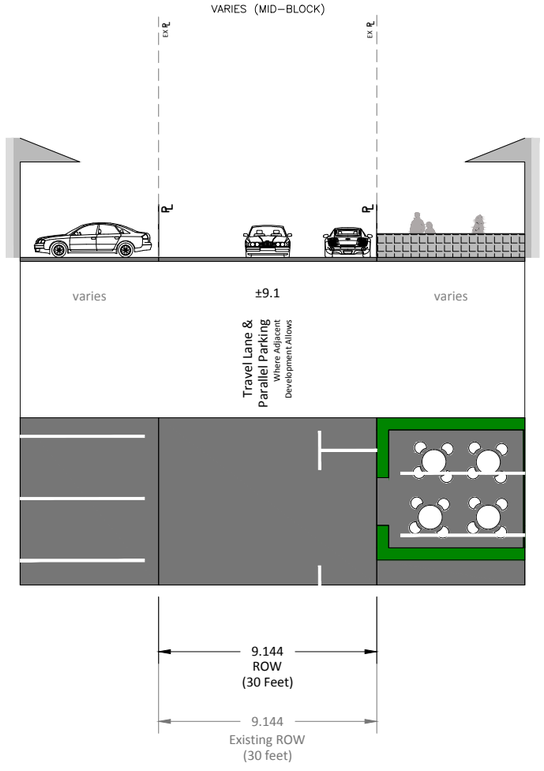
Scale	Date	Figure
nts	April 21, 2015	C10
1333.0018.08		Title

CONNAUGHT CRES

R

LANE

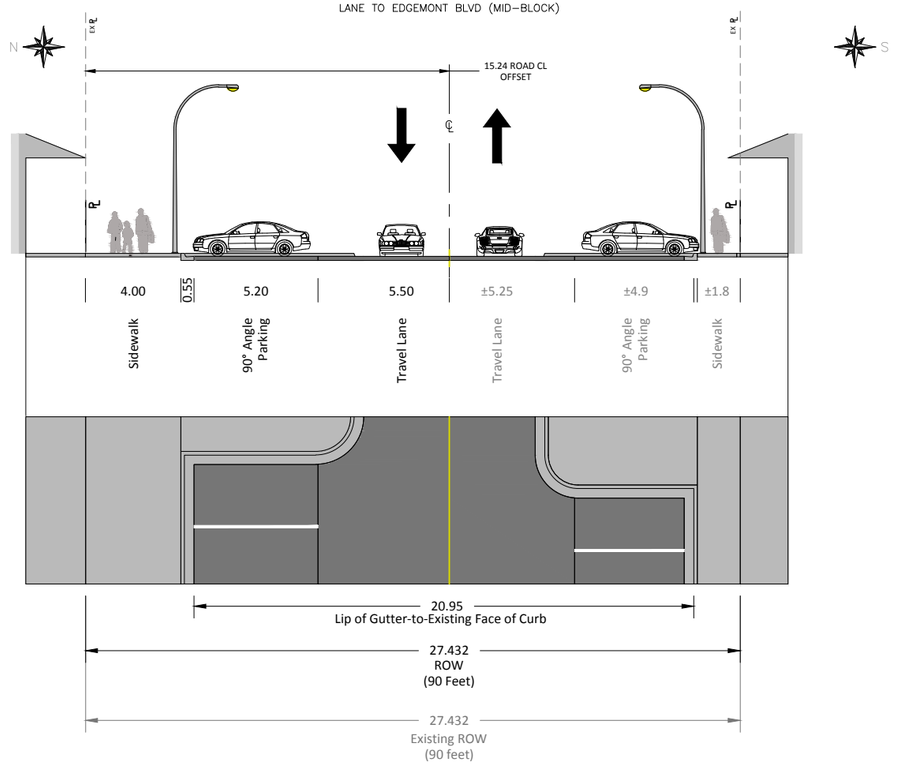
VARIES (MID–BLOCK)



S

HIGHLAND BLVD

LANE TO EDGEMONT BLVD (MID–BLOCK)



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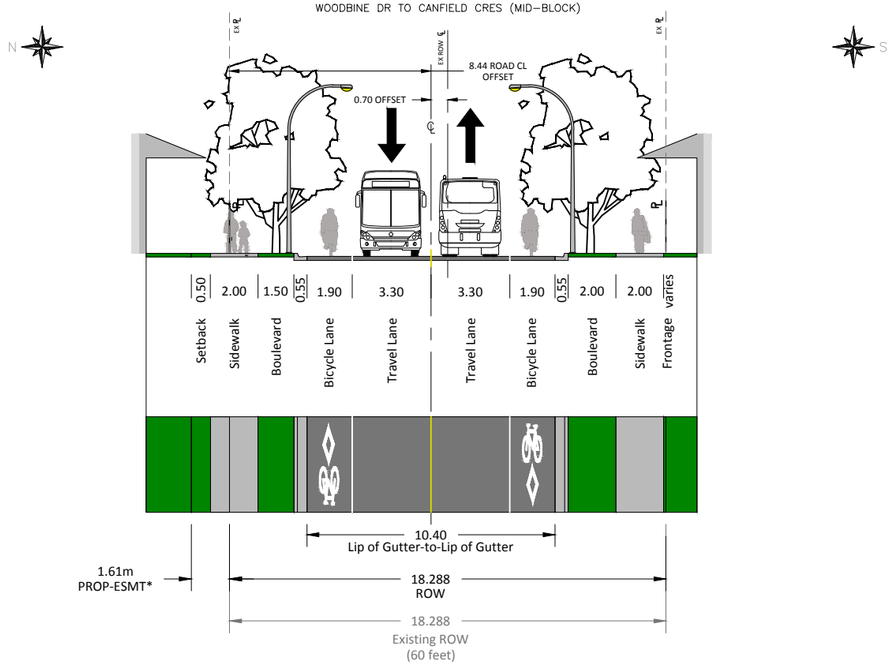
Scale	Date	Figure
nts	April 21, 2015	C11
1333.0018.08		Title

LANE - HIGHLAND BLVD

T

HIGHLAND BLVD

WOODBINE DR TO CANFIELD CRES (MID–BLOCK)

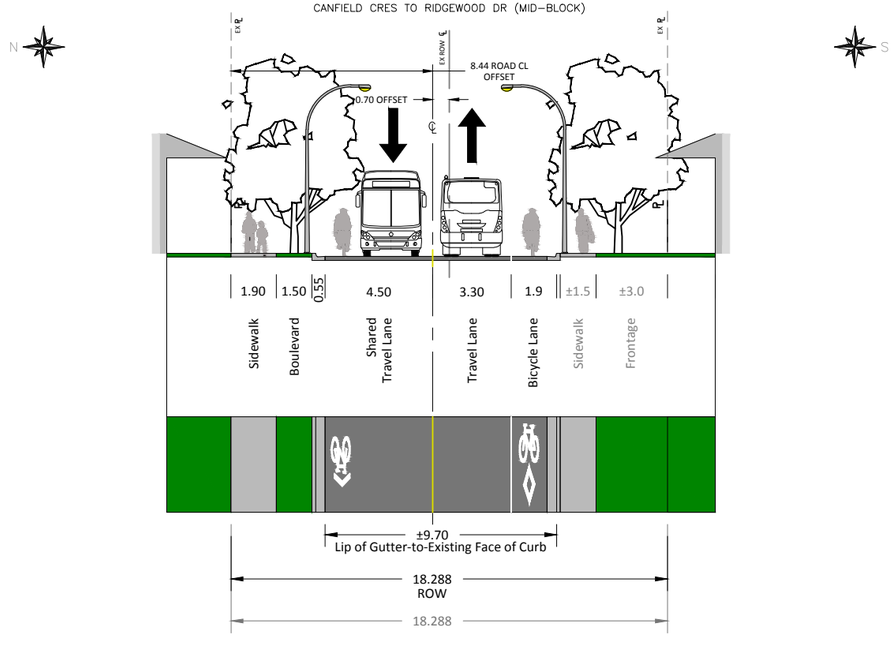


* PROPERTY LINE TO BE DETERMINED. SIDEWALK MAY BE PERMITTED ON PRIVATE PROPERTY.

U

HIGHLAND BLVD

CANFIELD CRES TO RIDGEWOOD DR (MID–BLOCK)



LONG TERM: BICYCLE LANES ENVISIONED TO BE ON BOTH SIDES OF STREET BY UTILIZING ADDITIONAL RIGHT–OF–WAY ON EAST SIDE OF STREET.

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Scale	Date	Figure
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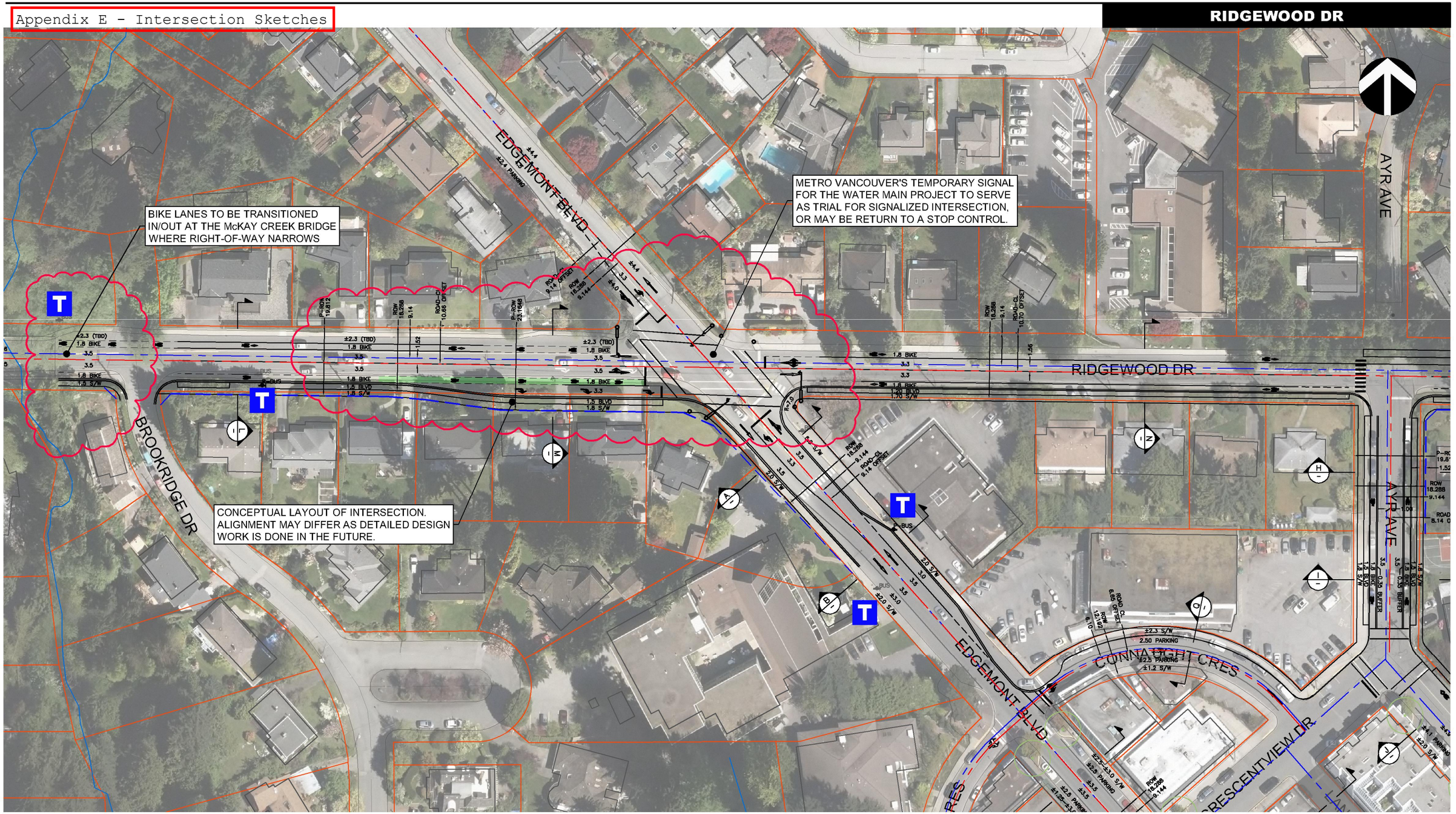
1333.0018.08		Title

HIGHLAND BLVD

Appendix E - Intersection Sketches



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- EXISTING LEGAL LOTS BOUNDARY
- EXISTING BUILDING FOOTPRINT
- EXISTING EDGE OF PAVEMENT (EOP)
- EXISTING SIDEWALK
- EXISTING ROAD CENTERLINE
- DES- ROW CENTERLINE (approx.)
- DES- ROW (approx.)
- PROPOSED LEGAL LOTS BOUNDARY
- PROPOSED ROAD CENTERLINE
- PROPOSED EDGE OF PAVEMENT (CURB & GUTTER)

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10m 0 10 20 30

Client/Project		
District of North Vancouver EDGEMONT VILLAGE CENTRE		
Scale	Date	Figure
1:1000	April 22, 2015	SKT-A1
1333.0018.08		Title

RIDGEWOOD DR BETWEEN BROOKRIDGE DR TO AYR AVE

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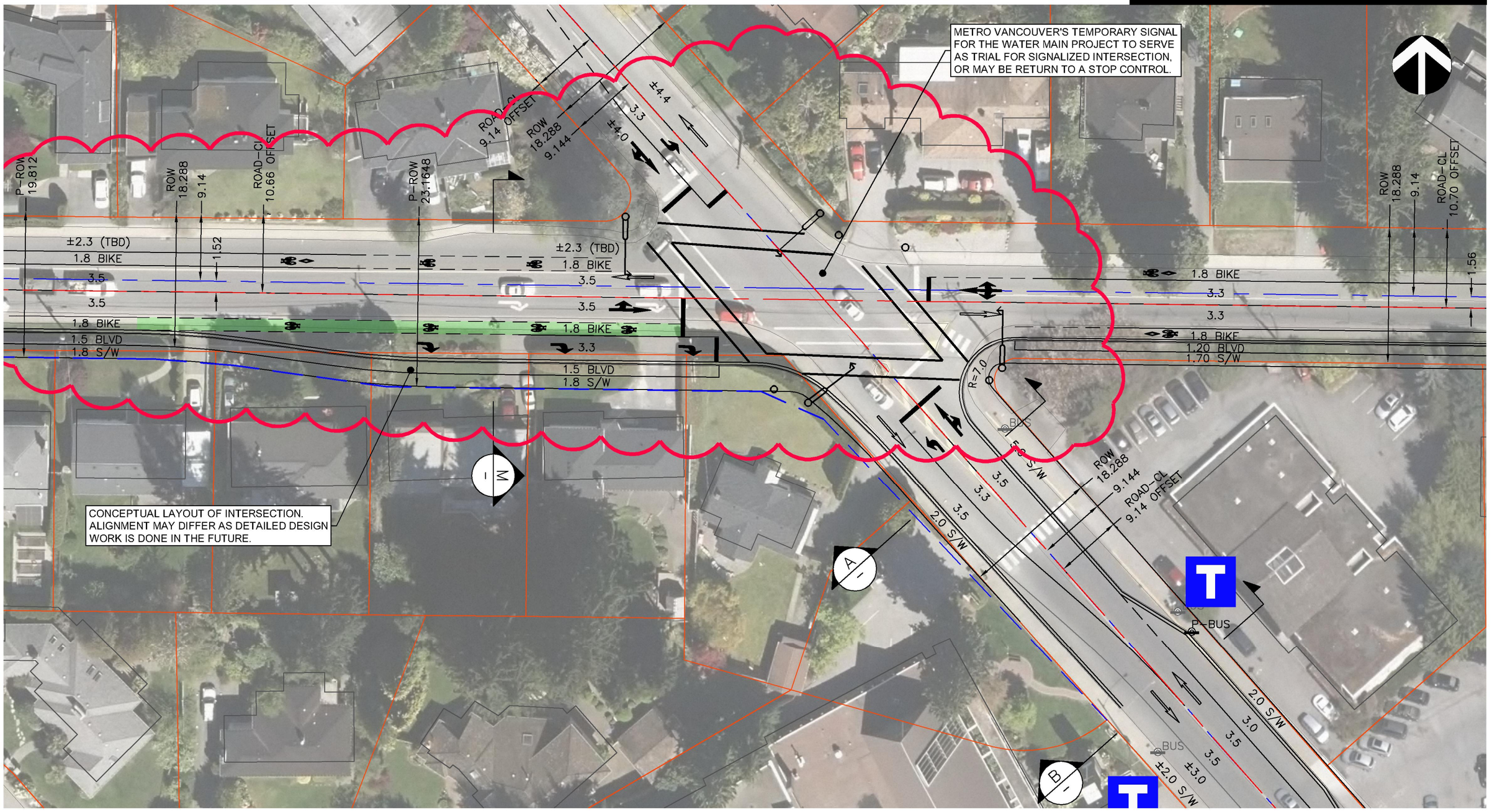
RIDGEWOOD DR & EDGEMONT BLVD



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- EXISTING LEGAL LOTS BOUNDARY
- EXISTING BUILDING FOOTPRINT
- EXISTING EDGE OF PAVEMENT (EOP)
- EXISTING SIDEWALK
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EDGEMONT VILLAGE CENTRE

Scale	Date	Figure
1:500	April 22, 2015	SKT-A2
1333.0018.08		**Title**

RIDGEWOOD DR & EDGEMONT BLVD INTERSECTION

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EDGEMONT BLVD

CONNAUGHT CRES

ROW 12.192
6.096
3.1 S/W
2.0 S/W

±2.5 PARKING
±1.25–±3.0 S/W
±3.5
±3.5 PARKING
±3.0 S/W
ROW 18.288
9.144
±3.5
3.5
±6.4
±6.0
6.0
±3.5
3.5
ROW 24.384
12.192
2.45–3.75 S/W
1.5 BLVD
2.5 PARKING
3.5
vary
3.5
2.5 PARKING
1.5 BLVD
4.1 S/W
ROW 9.144
ROW 30.480
15.24
±2.6 S/W
±5.2 PARKING
±5.4
±2.0 MEDIAN
4.5
2.5 PARKING
1.0 BLVD
3.6 S/W
3.5
STOP
±7.1
±4.0
9.1 LANE
BUS
ROW 9.144
ROAD–C OFFSET
2.4
ROW 27.432
15.24
STOP
±2.3
4.0 S/W
PARKING
LANE

C/-
R/-
P/-
D/-
E/-
R/-

LONG-TERM:
INCREASE BULB OUT TO SHORTEN PEDESTRIAN CROSSING

POTENTIAL OPTION:
CONSIDER IF SITE ON BLOCK REDEVELOPS TO PROVIDE A BULB OUT WITH WIDE SIDEWALK, AND FAR SIDE BUS STOP FOR ROUTE 232 (RELOCATED FROM HIGHLANDS BLVD), RELOCATE PARKING

NEW
4-WAY STOP

LONG-TERM:
INCREASE BULB OUT TO SHORTEN PEDESTRIAN CROSSING, TAPER CURB INTO BUS STOP AREA

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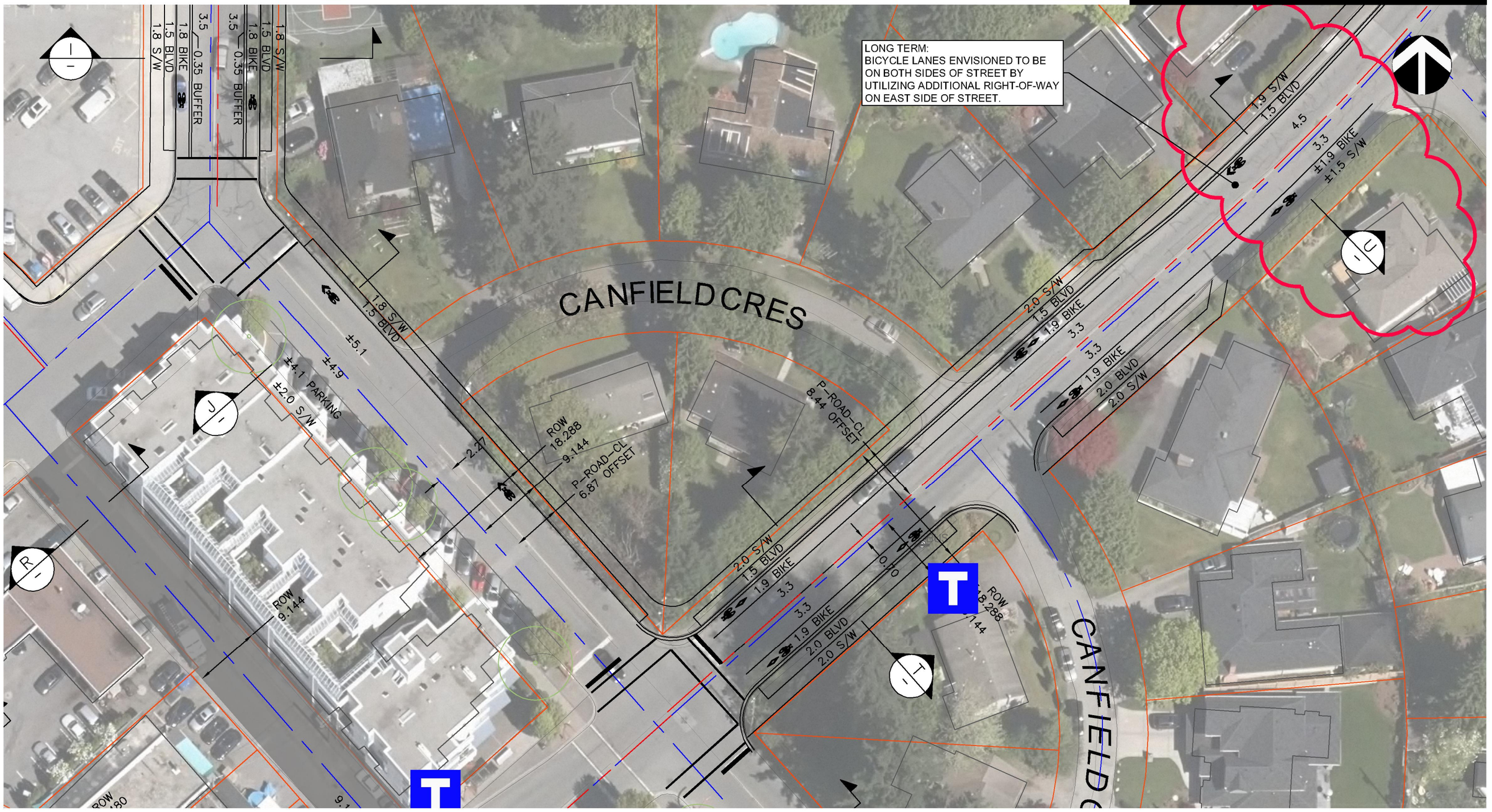
EDGEMONT VILLAGE CENTRE

Scale	Date	Figure
1:500	April 22, 2015	SKT-E1
1333.0018.08		Title

EDGEMONT BLVD
FROM CRESCENTVIEW DR TO HIGHLAND BLVD

HIGHLAND BLVD



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Scale	**Date**	**Figure**
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HIGHLAND BLVD
BETWEEN WOODBINE DR TO RIDGEWOOD DR

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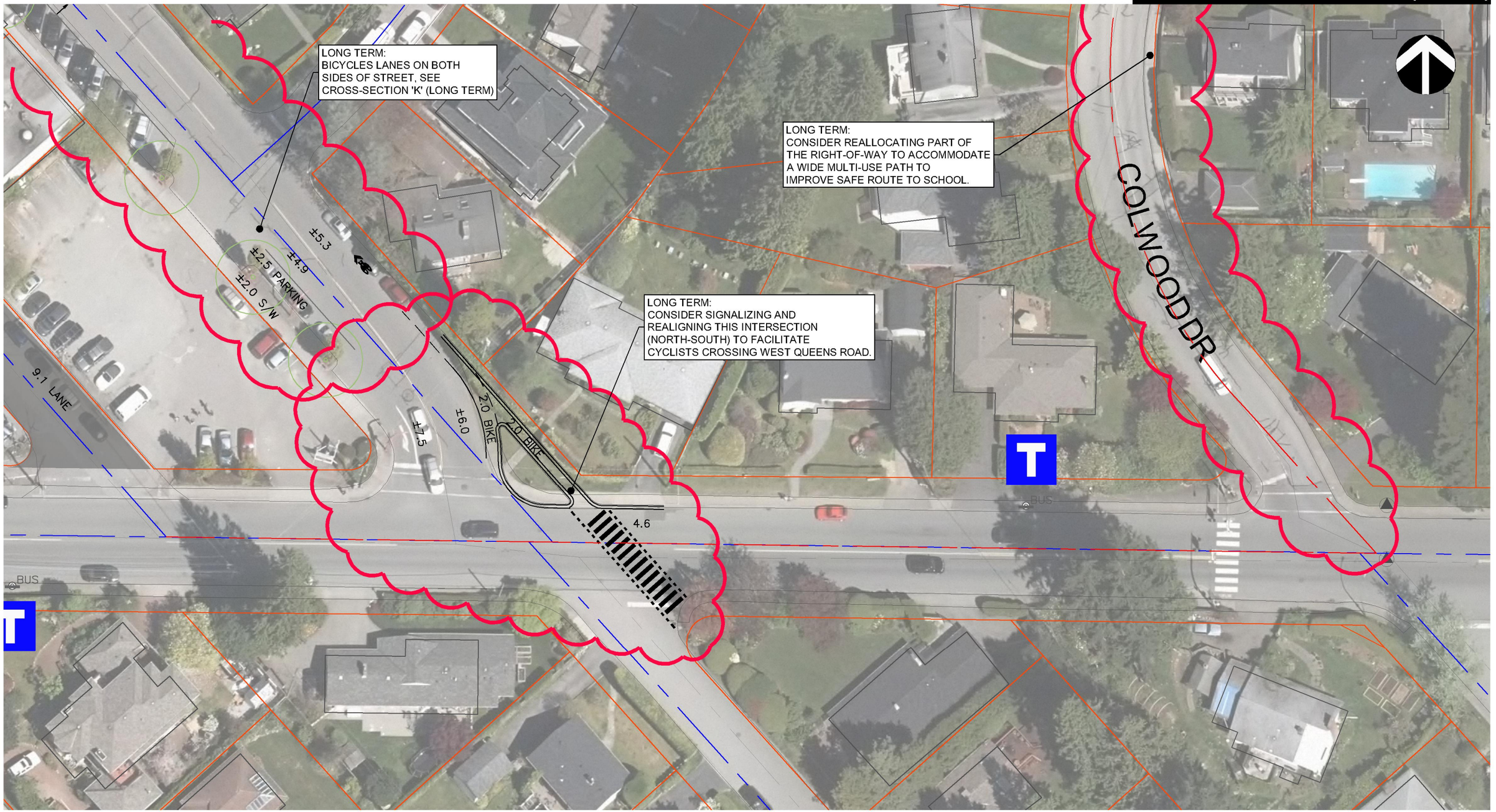
WOODBINE DR & W QUEENS RD (INTERM)



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1333.0018.08		**Title**

WOODBINE DR & W QUEENS RD (INTERM)
INTERSECTION

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