Cobequid Rd and Glendale Ave

MicroTraffic Video Diagnostic Findings and Recommendations

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Contents

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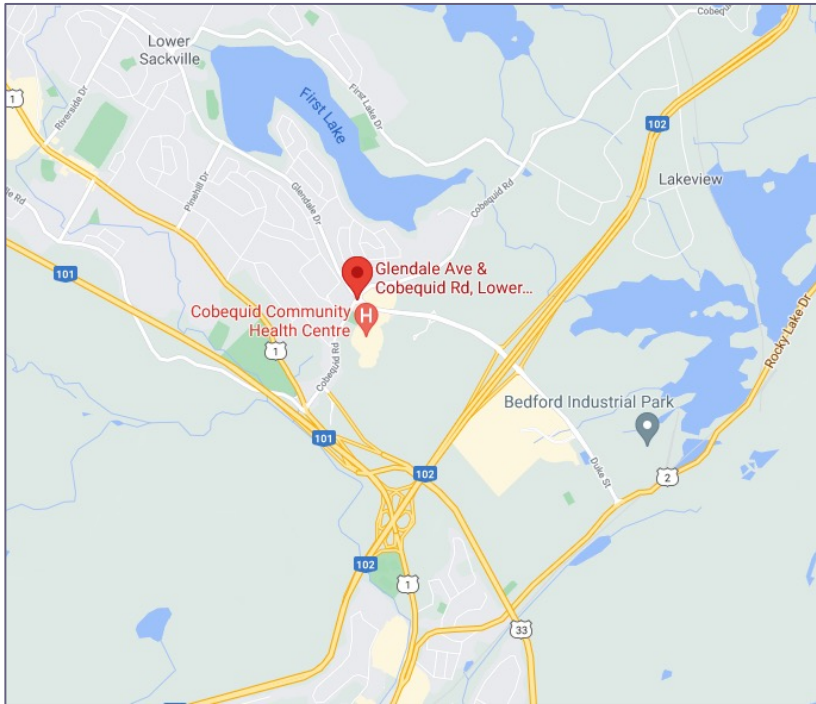
Intersection Overview

- Cobequid and Glendale is located in Lower Sackville, approximately 1 km away from Highways 102 and 101.
- The land use surrounding the intersection is mixed with commercial establishments, recreational fields (SW), a hospital (SW) and single-family residential homes.
- Cobequid Rd is considered North-South and Glendale Ave is considered West-East.
- Video analytics indicates that the intersection is used by approximately 4 cyclists, 190 pedestrians and 36,000 vehicles per day (from 5:00 – 24:00). Note that the counts were completed in December when VRU volumes may be depressed.



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Cobequid Rd. Features:

- Two through lanes and a left turn auxiliary lane
- Right turn channelization island for NBR
- 50 km/h posted speed limit
- Thee signal heads NB and SB (one nearside)
- Left turn signalization: protected/ permissive
- No reflective back plates on signals
- Sidewalks on both sides of the road to the north of the intersection, and west side only to the south of the intersection
- Accesses close to the intersection (convenience store, development group, etc.)

Cobequid Rd. Looking South

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Glendale Dr. Features:

- Two through lanes and a left turn auxiliary lane
- Right turn channelization island for WBR
- 60 km/h posted speed limit
- Three signal heads EB and WB (one nearside)
- Left turn signalization: protected/ permissive
- No reflective back plates on signals
- Sidewalks are discontinuous, one is located on the north side west of the intersection and the south side east of the intersection
- Accesses close to the intersection (convenience store, insurance shop, etc.)

Glendale Dr. Looking West

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Discontinuous sidewalks on Cobequid south of the intersection (top photo) and on Glendale west of the intersection (bottom photo). Based on the grass conditions, there is pedestrian desire for a sidewalk. Sidewalk connectivity improvements are also important for road users with mobility impairments.

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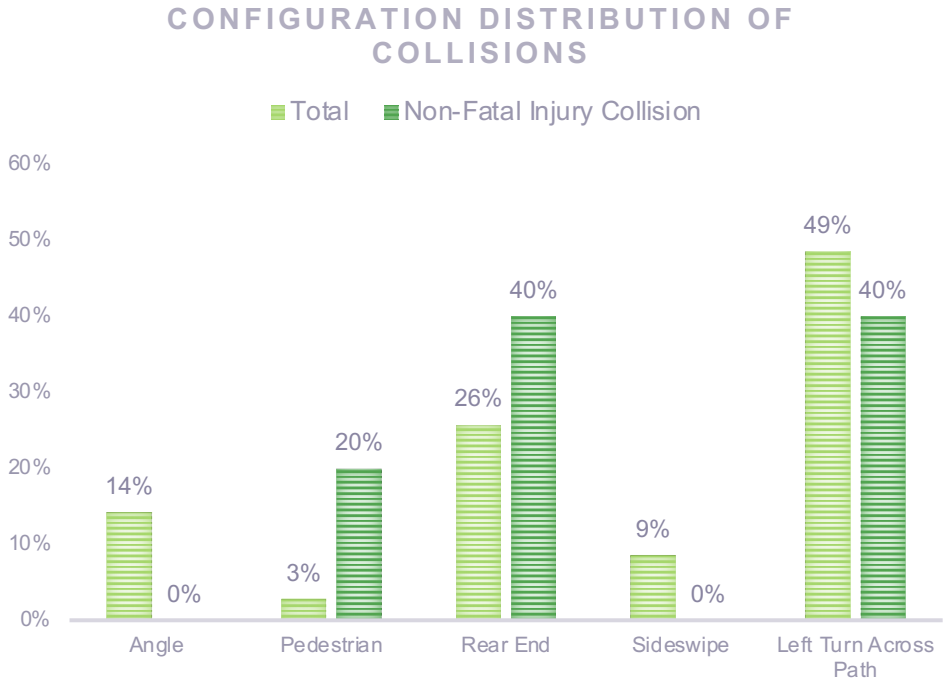
Collision Analysis

- The provided collision data included 35 collision records from January 1, 2018 to April 12, 2021. Of the 35 records, 14% were classified as non-fatal injury collisions and 86% as property damage only collisions.
- The collisions were classified into the general descriptions shown in the adjacent figure based on the initial impact type and provided directional information.



The collision data revealed the following key points:

- 1 pedestrian collision was recorded during the ~3 year period, which represents 20% of the non-fatal injury collisions. The pedestrian collision involved an eastbound-left turning vehicle.
- Left turn across path collisions represent 49% of total collisions and 40% of the non-fatal injury collisions. The direction distribution was 35%, 24%, 35% and 6% for Eastbound-left, Westbound-left, Southbound-left and Northbound-left respectively.
- Rear End collisions represent 26% of total collisions and 40% of the non-fatal injury collisions. Of the known directions, the distribution was 38%, 25%, 13% and 25% for Eastbound, Westbound, Southbound and Northbound respectively.

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Video Conflict Analysis – VEH-VEH

- 1 through vs through conflict was detected during the 73-hour analysis period (east-through vs south-through).
- 2 Left-Turning vs Through Vehicle from Left conflicts were detected (south-left vs west-through).
- These conflict types require a signal violation, which are typically infrequent events.

Signal Violation: south-through vs east-through

Signal Violation: south-left vs west-through

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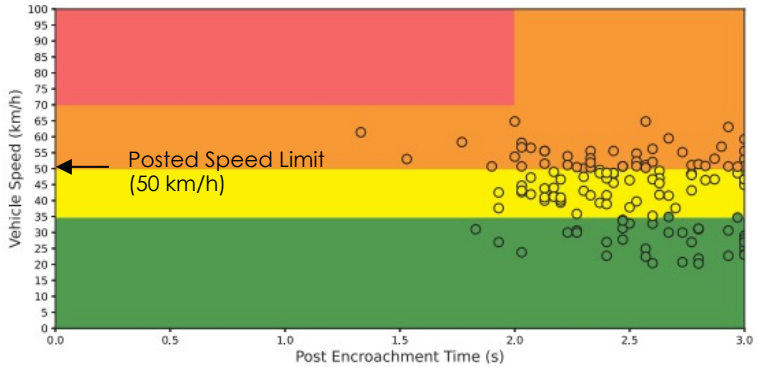
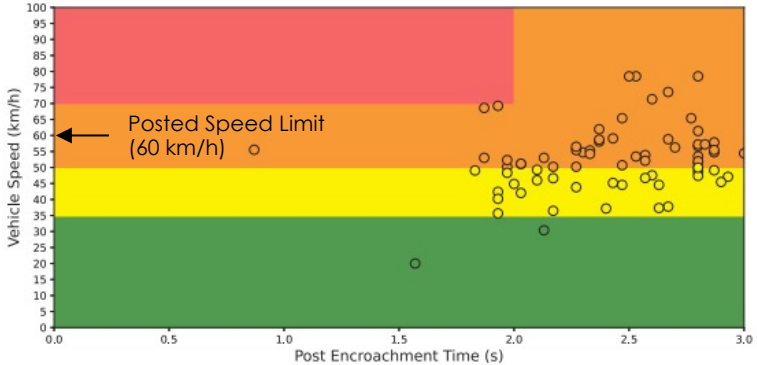
Video Conflict Analysis – VEH-VEH

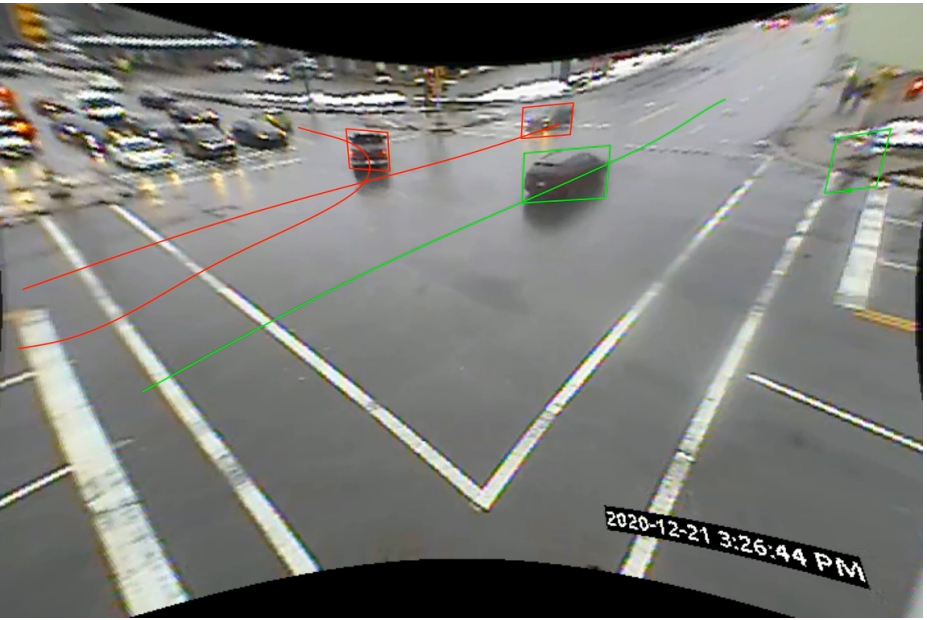
- Several left turn across path conflicts were detected during the 73-hour analysis period, as follows:
  - 88 North-Left vs South-Through conflicts
  - 136 South-Left vs North-Through conflicts
  - 73 East-Left vs West-Through conflicts
  - 149 West-Left vs East-Through conflicts
- The signalization is protected/permissive for left turn movements.
- These conflict events were distributed throughout the day, typically with highest frequencies between 12:00 and 16:00.
- On a per capita basis, the involvement rate in left turn conflicts is lower at this intersection that for similar intersections with protected-permissive phasing in North America.



The LTAP conflict data, for example South-left vs North-through (above) and East-Left vs West-through (below), shows several conflicts occurring with through vehicle speeds exceeding the posted speed limit (up to 80 km/h).

At impact speeds above 60 km/h, opposing drivers have a >65% chance of a severe injury (MAIS 3+), which increases to >95% at 80 km/h.





South-left vs North-through: PET = 2.0s, vehicle speed: 65 km/h

East-left vs West-through: PET = 0.9s, vehicle speed: 55 km/h

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Video Conflict Analysis – VEH-VRU

- Right hook conflicts in the right turn channels (NBR and WBR) and near-side conflicts were not measured due to camera placement and limited approach view.
- No cyclist conflicts were detected during the 73-hour analysis period. However, the video collection occurred in Nov/Dec and the 24-hour cyclist counts indicate a low volume of cyclists crossing the intersection.
- 1 low-risk pedestrian right-hook conflict was detected, this occurred in dark conditions and at low, controlled speeds.

Pedestrian South Right-Hook:
T2 = 2.9s, vehicle speed = 10 km/h

Key Issues and Recommendations

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Key Issue	Recommendation
Pedestrian Safety: • Although minimal pedestrian conflicts were detected during the 73-hour analysis period, nearly 200 pedestrians crossed the intersection in a 24-hour period. The West Crossing is the most commonly used crossing. • There appears to be a demand for sidewalk connectivity on E side of S leg and W side of N leg, connected to transit stops.	Connect and extend sidewalks Provide centreline hardening / left turn traffic calming. Reconstruct RT channels as smart rights.
Left Turn Across Path (LTAP): • LTAP collisions make up nearly 50% of all collisions • 446 LTAP conflicts were detected during the 73-hour analysis period, with several occurring at vehicle speeds exceeding posted speed limits • Permissive/protected signalization • The conflict frequency high. At the same time, the conflict rate is low. There are 3 injury collisions with left turns including 1 pedestrian.	Extend the protected portion of the phase, Convert to protected only operation, Reduce Glendale posted speed limit.
High Speeds: • 172 high-risk conflicts (impact vehicle speed >50 km/h) were detected during the 73-hour analysis period. The open cross section and arterial feel Westbound on Glendale may contribute to higher operating speeds • Speed moderation techniques should be considered along this corridor.	Glendale posted speed limit reduction to 50 km/h

Key Issues and Recommendations

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Key Issue	Recommendation
Angle Vehicle events: • 14% of collisions were for angle collisions and 3 conflict events were detected in the 73-hour analysis period. These events included vehicular signal violations. The secondary signal head is located at the far side of the intersection at a lower elevation and may not be easily visible to drivers.	Add reflective backplates to all signals. Upgrade and lenses <300mm to 300 mm. Consider increasing all-red clearance intervals; ensure technical guidance is followed at a minimum.

Note that the intersection recommendations have been looked at in isolation and will require further analysis by the municipality to determine complete network impacts.