

Appendix 5 of Staff Report SRIES.23.003

The most recent version of OTM Book 5 (December, 2021), provides three different all-way stop warrants for local and collectors roads:

- **Minimum Volume Warrant:** all-way stop control may be considered on minor or local roads where the following conditions are met:
 - The total vehicle volume on all intersection approaches exceeds 200 vehicles per hour for each of the highest four hours of the day (for local and collectors roads, respectively); **and,**
 - The combined vehicle and pedestrian volume on the minor street exceeds 75 units per hour (all vehicles plus pedestrians wishing to enter the intersection) for each of the same four hours as the total volume; **and,**
 - The volume split does not exceed 70/30 (that is the minor street must not be less than 30% of the total volume entering the intersection) as measured over the entire four-hour count period. Volume on the major street is defined as vehicles only. Volume on the minor street includes all vehicles plus any pedestrians wishing to cross the major roadway. For three-legged intersections a volume split of 75/25 is permissible.

- **Collision Warrant:** all-way stop control may be warranted on a local road or collector road if there are 9 or more right-angle or turning type collisions over a 36-month period.

- **Visibility Warrant:** Under some circumstances, sufficient sight distance is not available for traffic exiting the stop-controlled approaches of a two-way stop intersection, based on geometric design requirements. If all efforts to improve the sight distance have been exhausted and the sight distance cannot be brought up to the guidelines, conversion of the intersection to all-way stop operation may be considered.

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The following table provides details of the analysis for each intersection reviewed:

Warrant Type	Aikenhead Avenue/Shallot Court Colesbrook Road	Estate Garden Drive at Snowy Meadow Avenue	Lucas Street at Trayborn Drive
Minimum Volume	Total vehicle volume is 51% of the minimum requirement.	Total vehicle volume is 72% of the minimum requirement.	Total vehicle volume is 110% of the minimum requirement.
Collision	0	0	1
Visibility	Warrant Met. Limited departure sight distance due to vertical & horizontal curve	Warrant Met. Limited departure sight distance due to uphill slope and parked vehicles.	Warrant Not Met. Sight distance is adequate

The City retained a consultant, HDR to conduct an AWSC assessment at the intersection of **Aikenhead Avenue / Shallot Court and Colesbrook Road**. While the intersection does not meet the volume or collision warrants, HDR found that the available sight distance on the eastbound direction when looking left is limited due to the presence of an uphill slope. The required distance is 105 m, while only 85.8m is available. The available distance can also be severely worsened by the presence of parked vehicles.

The intersection of **Estate Garden Drive and Snowy Meadow Avenue** does not meet the volume or collision warrants. However, a field investigation revealed that the available sight distance on the northbound direction when looking left is limited due to the horizontal/vertical curve. The required distance is 105 m, while only 47m is available.

The intersection of **Lucas Street and Trayborn Drive** meets the volume warrant as the 3 of the 4 highest hours of the day, each exceed 200 vehicles. Our data revealed that the 4th hour had 199 vehicles, thus staff used ~~used~~ engineering judgement to move forward with AWSC implementation, ~~made a technical~~ as volumes are likely to increase overtime. Furthermore, the other 3 hours were well in excess of 200 vehicles, thus resulting in 110% of the minimum volume warrant. This location did not meet the collision warrant and a site investigation revealed that the sight distance is adequate.