Appendix 5 of Staff Report SRPI.23.016

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 or 375 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 or 150 units per hour (all vehicles plus pedestrians wishing to enter the intersection) for each of the same four hours as the total volume (for local and collectors roads, respectively); **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.

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

Warrant Type	Baynards Lane/Theobalds Circle at Regent Street	Kingshill Road at Routledge Drive
Minimum Volume	Total vehicle volume is 74% of the minimum requirement.	Total vehicle volume is 38% of the minimum requirement.
Collision	0 collisions	0 collisions
Visibility	**Warrant Met.** Limited departure sight distance due to horizontal curve	**Warrant Met.** Limited departure sight distance due to vertical & horizontal curve + parked vehicles

While the intersection of **Baynards Lane/Theobalds Circle at Regent Street** does not meet the volume or collision warrants, the available sight distance on the southbound direction when looking east is limited due to the horizontal curve (required distance is 105 m, while available is 56 m). Given the proximity of this intersection to another intersection with a permanently installed traffic control device (Baynards Lane / Ellery Drive at Regent Street (approximately 86 m west), an operational analysis was completed to estimate potential queues along Regent Street caused by the implementation of the AWSC. Results indicated that Regent Street is expected to operate under capacity, with volume to capacity ratios not exceeding 0.60; average delays not exceeding 15 seconds (Level of Service 'B'); and 95th percentile queues not exceeding 26 metres (equivalent to four passenger car lengths).

While the intersection of **Kingshill Road at Routledge Drive** does not meet the volume or collision warrants, the available sight distance on the northbound direction when looking east is limited due to the horizontal/vertical curve and parked vehicles (required distance is 105 m, while available is 88 m clear of all driveways; visibility can be further reduced with the presence of vehicles parked on driveways or driveway aprons). An operational analysis was completed to investigate potential negative operational impacts along Kingshill Road caused by the implementation of the AWSC. Results indicated that Kingshill Road is expected to operate under capacity, with volume to capacity ratios not exceeding 0.27; average delays not exceeding 9 seconds (Level of Service 'A'); and 95th percentile queues not exceeding 22 metres (equivalent to three passenger car lengths).