

Subject: Update on Pedestrian Safety When Crossing Pelham Street at Church Hill?**Recommendation:**

BE IT RESOLVED THAT Council receive Report #2020-0100-Public Works entitled "Update on Pedestrian Safety When Crossing Pelham Street at Church Hill" for information purposes

Background:

The pedestrian crossing signal at Church Hill and Pelham Street continues to be a safety concern, as no solution has yet been approved for implementation.

Trans-Plan were engaged to study the intersection, its pedestrian and vehicle traffic, sightlines, past reports, and to make recommendations on improving safety, especially related to Council suggestions of a 3-way stop.

2018 Consultant's Traffic Review at Church Hill and Pelham Street:

Key items to note from the Trans-Plan 2018 review:

1. The Trans-Plan review noted previous important recommendations from a former Fonthill Traffic Study (R&R, 2009):

Historical and recent spot speed surveys suggested that drivers on these roads generally disregard speed limits, endangering pedestrians. The study noted that installing traffic signals would help to slow traffic and likely reduce the probability and severity of collisions involving right of way conflicts, as well as improving safety conditions for pedestrians. Future modifications for the existing 45 on-street parking spaces on Pelham Street should be reviewed and analyzed in order improve sightlines at the cross streets of Pelham Town Square, Church Hill, and Regional Road 20.

2. The Trans-Plan review also noted observations from a 2017 intersection review (Rusit & Associates, 2017):

A signalized intersection at Church Hill would be below the minimum separation distance to the northerly existing signalized intersection at Highway 20. The intersection spacing is 179m, which is below the minimum of spacing requirement of 215m between signalized intersections (in urban settings). The findings also indicate that installing new traffic signals at the intersection would improve left turn movements from Pelham Town Square to Pelham Road. It was also noted from field observations that southbound vehicle queues on Pelham Road extend approximately 150m from the Church Hill intersection, as far as the Highway 20 intersection.

3. 91 pedestrians crossed Pelham Street in an 8-hour test duration. Due to the comparatively higher number of retail and commercial uses located to the north of the intersection, compared to the south of the intersection, the pedestrian crossing volumes at or near the north leg are generally higher. For the full 8-hour period, excluding midblock crossings, 27 pedestrians complied with the PPS and 13 pedestrians did not, resulting in a compliance of 67.5 percent.

4. During the study, two near-misses were observed by the consultant: A woman crossing the street with infant at the PPS (during walk phase) was almost struck by a vehicle exiting from an on-street parking space located within the intersection, and a Senior crossing street at the PPS (during walk phase) was almost struck by a southbound vehicle making U-turn within the intersection.

5. The on-street parking bay conflicts with vehicle and pedestrian movements within the intersection. There is adequate visibility from the approach at Church Hill to see vehicles travelling in the northbound and southbound directions along Pelham Street; however, when vehicles are parked along the west side of Pelham Street, the visibility becomes limited.

6. Regarding vehicle queuing, all vehicles tend to clear the intersection after each cycle (of the PPS). No vehicles were observed to experience lengthy delays at Church Hill when making eastbound left and right turns at the intersection. During afternoon hours, southbound vehicles stacked up to 63m while the PPS was activated. This stacking is anticipated to be 35m should a 3-way stop be implemented under future conditions, and 33m for a signalized intersection.

7. There has only been one collision reported within the past three years at the Pelham Street and Church Hill intersection. Therefore, no further vehicle collision analyses were conducted.

8. Both methods of intersection control (3-way stop or traffic signals) would operate acceptably (under current or future conditions); however, from our warrant analysis (using OTM guidelines), neither control type is warranted due to low pedestrian crossing volumes and due to comparatively low volumes of traffic entering the intersection from Church Hill. Despite the traffic signal warrant analysis not being met according to the provisions of OTM, there are very rare cases where the engineer's study finds no satisfaction of numerical warrants, but finds other special conditions that result in a conclusion that a signal is the best solution compared to other possible alternatives. According to the conditions of the intersection, the OTM indicates "should not" rather than a "shall not" for the very reasons discussed above. It is important to note that a politically dictated unwarranted signal installation (or all-way stop installation) may not be the best recommended solution.

9. Based on the investigation, and the unwarranted traffic signal or 3-way stop conditions and guidance from Book 5 of the Ontario Traffic Manual, the consultant has recommended the following:

Remove on-street public parking within a minimum of 10m from the intersection (and within the intersection),

and Introduce a raised crosswalk to enhance the PPS crossing location and improve pedestrian safety.

Analysis:

Although staff recognizes that both recommendations made by the consultant would help improve safety at the intersection, the analysis completed by staff identifies the poor visibility of the traffic signals, especially from Church Hill, as one of the root causes of safety concerns. As noted during the consultant's study, two near misses were witnessed when the PPS was activated, one with a driver leaving an on-street parking stall, and one with a driver making a U-turn on Pelham St.

Financial Considerations:

In consultation with the Region's transportation safety staff, converting the signals to the newer 'PXO' (pedestrian crossover) style is possible. The PXO style involves rapid flashing lights mounted on the poles, not the overhead arms, visible from all directions. The crossover also requires specific signs and pavement markings. Legislation about these crossovers changed in January 2016, and resulted in the improved crossing design, seen most recently in the area in West Lincoln. This would likely improve drivers being able to see the activated lights, at a reasonably low cost, since the lights would be mounted on both the east and west poles, rather than on the overhead arms. New PXO installations are estimated at \$12-\$15K, but since hydro, poles, arms and other hardware are already present at this intersection, some of this cost could be reduced. The Region has secured a small amount of funding for driver education regarding the new PXOs, that could also be beneficial in education both drivers and pedestrians in Pelham. In the latest PXO installation in West Lincoln, the Niagara Regional Police were also requested to educate and monitor compliance for the first few days of use, which also proved successful.

The approximate costs for installation of the raised crosswalk is roughly estimated at \$30,000, and for removal of the on-street parking stalls at \$3,000. The raised crosswalk, parking stall removal and PXO conversion would be considered in the 2021 budget request.

Alternatives Reviewed:

Both methods of intersection control (3-way stop or traffic signals) would operate acceptably (under current or future conditions); however, from our warrant analysis (using OTM guidelines), neither control type is warranted due to low pedestrian crossing volumes and due to comparatively low volumes of traffic entering the intersection from Church Hill.

Strategic Plan Relationship: Risk Management

Success of these improvements could be measured through PATC endorsement, reports of near-misses. This will also provide a benchmark for the redesign (or relocation) of the other signalized pedestrian cross walks on Pelham Street, namely at Pancake Lane and Bacon Lane, with a future one in front of 1145 Pelham Street. See Appendix A for locations.

Other Pertinent Reports/Attachments:

Appendix A – Signalized Cross Walk Location Plan

Consultation:

Trans-Plan Transportation Engineering – Traffic & Safety Review of Pedestrian Priority Signal, Pelham Street and Church Hill

Legal Consultation, If Applicable:

N/A

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