

4.3 Newton Centre

Newton Centre, one of Newton's foremost pedestrian areas, presents many challenges that impact pedestrian traffic due to the number of shops, cafes, restaurants, and small businesses in the village. We studied the following intersections: Langley Road and Beacon Street, Beacon Street and Centre Street, and Centre Street and Bowen Street. Below, we discuss the challenges that we found and our recommendations for these intersections. A map outlining these challenges is shown in Figure 26.



Figure 1: Newton Centre Problems and Opportunities Map

At the Intersection of Langley Road and Beacon Street:

- 1. Inaccessible Walking Light Button Located on Median:** The median located where Langley Road begins to intersect with Beacon Street and Sumner Street currently has a cut-through so that pedestrians do not need to step on the median, while still separating them from vehicular traffic. Located on this median is a walking light, as shown in Figure 27. The challenge that pedestrians face here is

there are no curb cuts allowing access to the walking light; this prevents people from crossing this street safely. Our recommendations shown below for this challenge are two options that could be implemented:



Figure 2: Walking light located on top of an inaccessible median at the intersection of Langley Road and Beacon Street

Recommendation: Install a Curb Cut. We recommend installing a curb cut onto the median to allow access for everyone to use the walking light.

Recommendation: Relocate the walking light: We recommend relocating the walking light to the edge of the median so it is accessible to pedestrians traveling through the pre-existing cut-through.

- 2. Steep Slope of Curb Cut and Long Crosswalk:** When traveling east through this intersection, where Langley Road and Beacon Street begin to separate, there is a curb cut that has a sharp slope, shown in Figure 28. This impedes those with walking disabilities from accessing the sidewalks located on the respective streets, forcing many people to walk in the street instead of utilizing the crosswalk. At this intersection, we observed many people avoiding this curb cut. This is extremely unsafe as it is forcing pedestrians to interact with vehicles. Also located at the steep curb cut is a long crosswalk crossing Beacon Street on the east side. Long crosswalks present the challenge of crossing the street in enough time to avoid vehicular traffic.



Figure 3: Steep curb cut located at the intersection of Langley Road and Beacon Street

Recommendation: Implement a sidewalk extension into Beacon Street: We recommend implementing a sidewalk extension, known as a “bulb-out”, which would create a shorter distance for pedestrians to travel along the long crosswalk. Also, by creating a larger pedestrian facility, there may be enough room to design a more accessible curb cut in order for people to use the sidewalks in the area.

At the intersection of Beacon Street and Centre Street:

- 3. Dangerous Conditions caused by Right-on-Red:** One of the major challenges that pedestrians face in this intersection is competition with vehicles heading northbound on Centre Street attempting to take a right turn onto Beacon Street while having a red traffic signal, seen in Figure 29. We observed pedestrians attempting to cross with the walking signal however they were stopped by vehicles taking right-on-reds. The following recommendations represent alternatives for improvement.

Recommendation: Eliminate the right-on-red: We recommend eliminating right-on-reds. This will eliminate competition between pedestrians and vehicles and thus create a safer crossing for pedestrians.

Recommendation: Redesign the Corner. Another option would be creating a sharper corner where vehicles take a right-on-red. The corner should be well squared forcing motorists to slow down when taking the right turn, increasing the safety of pedestrians crossing.

Recommendation: Install a “No Turn on Red” traffic signal. A third option is the installation of a signal that will only be activated when pedestrian use the walking

light. This will allow a safe way for pedestrians to cross the street and eliminates all competition between pedestrians and vehicles.

Recommendation: Install “Leading Interval” traffic lights: Finally, we recommend the installation of *leading interval traffic lights* that are synchronized with the walking light. Once the walking signal is activated, the traffic signals will be red long enough to provide enough time for a pedestrian to travel half way across the street before letting vehicular traffic start again. This provides a safe way to cross the street and also prevents vehicular traffic congestion by allowing traffic to continue when the pedestrian is using the second half of the crosswalk.

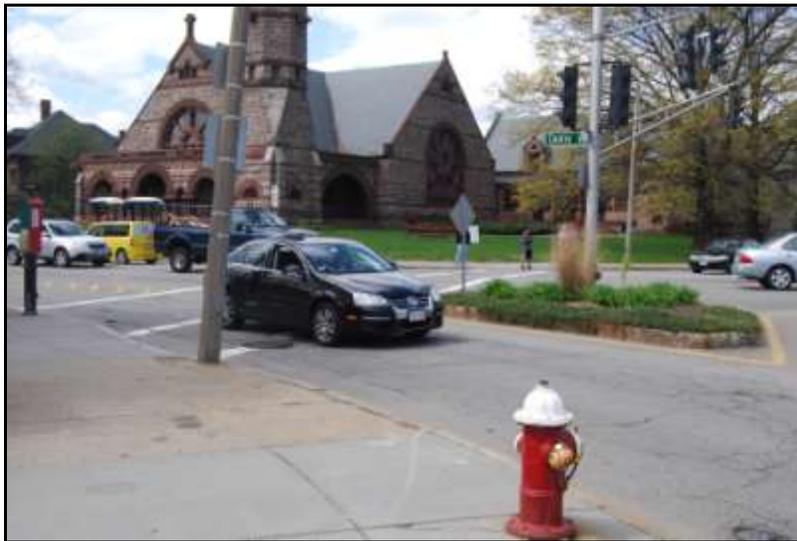


Figure 4: Car making a Right-on-Red at Centre Street and Beacon Street

At the intersection of Centre Street and Bowen Street:

- 4. Traffic Congestion on Crosswalk:** Centre Street experiences heavy northbound vehicular congestion during peak commuting times. At this particular intersection, cars stop on the crosswalk due to the heavy congestion. This presents challenges to pedestrians trying to cross using this crosswalk because it causes them to walk around the vehicle, increasing the interaction time with motorists and also affecting the visibility of pedestrians for those motorists traveling south on Centre Street.

Recommendation: Install signage: We recommend the installation of signage in the area notifying motorists to avoid stopping on pedestrian facilities. This can be done with traditional signs or patterns painted on the road to make motorists more aware of pedestrian zones in this area.

- 5. Appeal and Access to Newton Centre Playground:** Located at the corner of Centre Street and Bowen Street is Newton Centre Playground. This playground has no benches or bike racks and could be made more appealing to those walking

in the area. There is also a bus stop located at this corner which is not used frequently.

Recommendation: Install a Bus Shelter, Bike Racks, and Benches: We recommend installing a bus shelter, bike racks, and benches in the playground area and around the bus stop. These aesthetic improvements are intended to encourage people to walk within this area.

Pedestrian Beacon:

When conducting our study on improving pedestrian mobility in Newton Centre, we were also asked to determine if the installation of a new pedestrian beacon on Centre Street would be useful and if so, to determine which crosswalk would be most suitable for this beacon. We conducted a test of the effectiveness of an existing beacon at Langley Road and Langley Path by comparing safety at that crossing to that at Parker Street and Daniel Street, a similar location without a beacon, both shown in Figure 31. We found that at the crosswalk with the pedestrian beacon, 53% of cars stopped for pedestrians who had activated the beacon and stepped into the crosswalk. At the crosswalk with no beacon, only 12.5% of cars stopped for a pedestrian in the crosswalk under similar circumstances. We concluded that the beacon is useful for notifying motorists that a pedestrian is trying to use the crosswalk, prompting the motorists to yield for those attempting to cross.

During our observations of the candidate crosswalks in Newton Centre, we observed three times as many pedestrians crossing at Pleasant Street rather than Pelham Street. We also noted the crosswalk at Pelham Street provides a shorter travel distance. The crosswalk at Pleasant Street is at the top of a hill and pedestrians crossing may not be seen by motorists at the appropriate stopping sight distance.

Recommendation: Implement a Beacon at Pleasant Street: We recommend implementing a new pedestrian beacon at Pleasant Street. Implementing a beacon here would increase safety by increasing the awareness of pedestrians for motorists driving up the hill. It would also be beneficial to a large amount of pedestrians in this area.



Figure 5: Pedestrian Beacon at Langley Road and Langley Path

Summary of Newton Centre Recommendations

Location on Fig. 26	Recommendation	Cost	Impact
1	Install curb cut	Low	High
	Relocate the walking light	Low	High
2	Implement a sidewalk extension into Beacon Street	High	High
3	Eliminate the right-on-red	Low	High
	Redesign the corner	High	High
	Install a “No Turn on Red” traffic signal	Low	High
	Install “Leading Interval” traffic lights	High	High
4	Install signage	Low	Low
5	Install a bus shelter, bike racks, and benches	High	High
6	Install a pedestrian beacon at Pleasant Street	Low	High