

Pedestrian Considerations at Traffic Signals



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Intersection Safety Considerations

- Traffic safety for all road users is our main objective.
- Balance the needs of car and truck traffic, cyclists and pedestrians.
- Special consideration is given to users with exceptionalities (visually impaired, wheelchair users, scooters).



Traffic Signal Design and Operating Standards

- Niagara Region currently maintains all 460 signalized intersections in the Region.
- Over 270 owned by the Region, 140 by local municipalities, 41 by MTO
- Strive to maintain consistency throughout the Region regardless of signal ownership.



Traffic Signal Design Considerations

Determine operational requirements of the intersection

- Advanced Greens
- Type of Vehicle Detection
- Pedestrian Facilities
- Intelligent Transportation Devices (cameras, electronic signs)
- Communication link back to HQ
- Pre-Emption requirements (bridge, rail, emergency vehicle)



Pedestrian Signals

- Pedestrian indications are made up of Walk and Don't Walk intervals.
- Timings are calculated based on pedestrian walking speed and crosswalk length.
- Follow Ministry guidelines for pedestrian walking speeds and calculations.

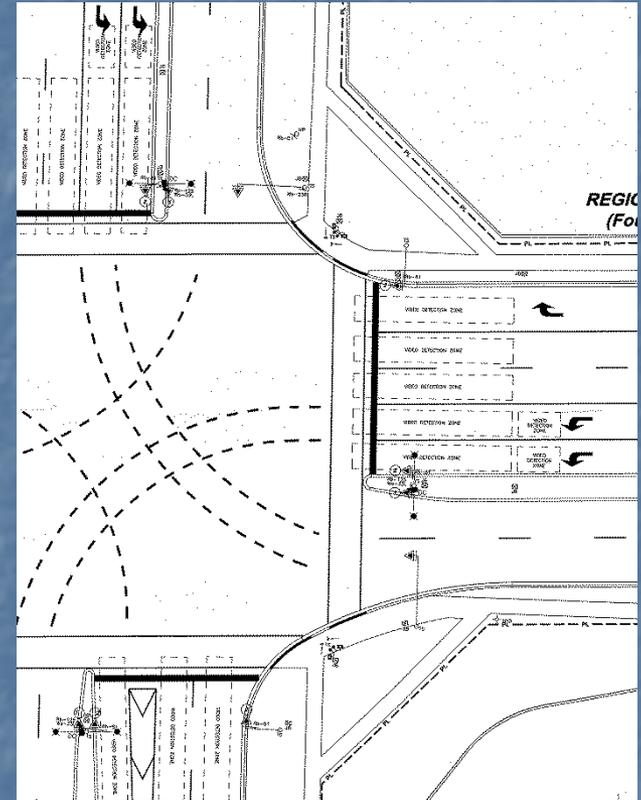


Pedestrian Timing Calculations

- WALK interval is calculated to allow the pedestrian to get $\frac{1}{2}$ the distance across the crosswalk.

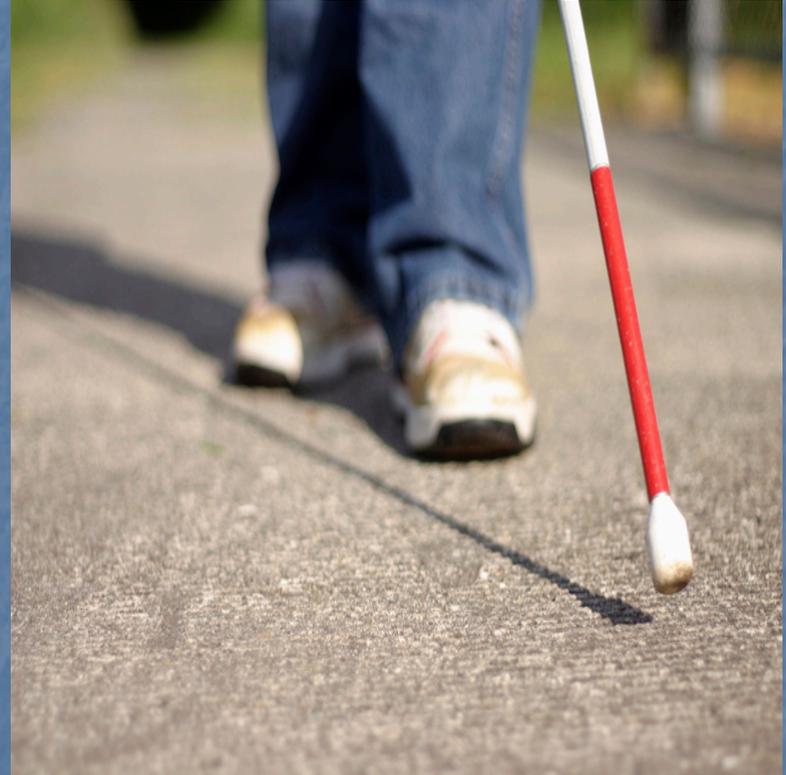


- FLASHING DON'T WALK interval is calculated for the FULL crossing distance of the crosswalk.



Accessible Pedestrian Signals or APS

- Designed to make crosswalks on intersections more accessible for all pedestrians and especially the visually impaired.
- APS units are provided with numerous features and options.
- Individual settings can vary in different jurisdictions.



Accessible Pedestrian Signal or APS

- Provide information at signalized intersections for all pedestrians.
- Provide it in multiple formats to allow pedestrians to make good decisions on when to start crossing the road and what to do once in the crosswalk.



APS Installations in Niagara

- Formalized APS installation program began in 2004.
- Worked closely with CNIB on prioritizing where APS were required.
- Adopted AODA standards in 2015 and included APS units and tactile warning plates on any new project.



APS Operation

- Locator tone is heard usually within 2 to 4 meters from the pushbutton.
- This helps the visually impaired pedestrian find the APS.
- Volume of the tone will change with ambient noise levels and increase as the background noise increases.



LOCATOR TONE



Pedestrian Walk Signal

- To activate the audible portions of the APS the pedestrian must push and hold the button for 5 seconds.
- The arrow push button will vibrate and beep to confirm that the call has been placed.
- The WALK signal is illuminated and the audible CUCKOO for north-south crossing or CHIRP for east-west crossing is played.



CUCKOO



CHIRP



Pedestrian Clearance (Flashing Hand)

- Once the Walk Signal terminates, the FLASHING HAND is displayed along with a visual countdown timer.
- A verbal countdown of the time remaining to cross is played by the APS unit.
- It alternates between the corner the pedestrian started crossing from and the corner he is walking to.



Pedestrian Clearance Countdown



Solid Don't Walk

- After the countdown timer reaches zero, the Solid Don't Walk is displayed and the APS returns to the Locator Tone being played.



Current APS Installations

| Municipality | Total Signals | Total APS installations |
|----------------|---------------|-------------------------|
| Fort Erie | 26 | 4 |
| Grimsby | 21 | 9 |
| Lincoln | 14 | 2 |
| Niagara Falls | 110 | 26 |
| N-o-t-L | 14 | 5 |
| Pelham | 16 | 5 |
| Port Colborne | 18 | 5 |
| St. Catharines | 152 | 30 |
| Thorold | 15 | 2 |
| Wainfleet | 1 | 0 |
| Welland | 70 | 15 |
| West Lincoln | 3 | 1 |
| Total | 460 | 104 |



Questions or Comments?

