

Leading Pedestrian Interval

A Step Toward Vision Zero

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LPI

Definition

- A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given green indication.
- The concept is that pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left.
- This definition is from the United States Department of Transportation.

Benefits

LPIs provide the following benefits:

- Increased visibility of crossing pedestrians.
- Reduced conflicts between pedestrians and vehicles.
- Increased likelihood of of motorists yielding to pedestrians.
- Enhanced safety for pedestrians who may be slower to start into the intersection.

The Greater Toronto Area

Application and Consideration of LPIs

- At present the city of Toronto and the city of Mississauga have implemented the use of LPIs.
- I found other municipalities, like Richmond Hill, have included it, in staff reports, as a recommended treatment for intersections in their jurisdictions.

Surrey, British Columbia

Adoption With Regard To Vision Zero

- The city of Surrey, British Columbia adopted LPIs specifically as part of their Vision Zero strategy, for the following reasons:
- LPIs have been shown to reduce vehicle-pedestrian crashes by up to 60 percent.
- LPIs were deemed to be extremely low cost with a high safety benefit.
- Surrey has since identified and programmed almost 100 intersections with LPI compliant cross walk signals.

Cost.

Installing a LPI system at intersections.

- The cost for adopting the LPI system is minimal, because there is generally no computer management hardware or software needed.
- Almost all modern traffic light management, on site systems, can be programmed, at source, to include an LPI.
- The LPI timing can be tailored, also at source, for a specific amount of time.
- Consequently, the cost of introducing this in our city would purely be labour related. First identifying intersections, and then an on site reprogramming.

Calculations

Why LPIs are calculated between 3 to 7 seconds.

- Intersection traffic signals are timed with regard to user speed and distances to clear.
- The City of Brampton uses an assumed pedestrian speed of 1.0 metre per second. If the intersection is a crossing guard location, or the intersection is adjacent to a seniors facility, that speed assumption drops to .9 metres per second.
- Brampton has decided to adopt a slower pedestrian speed assumption, as the national speed assumption is 1.2 metres per second.
- The LPI does not increase intersection pedestrian clearance time, but is calculated based on size of intersection, to maintain maximum visibility.

Conclusion.

Recommendation.

- The implementation of Leading Pedestrian Interval at intersections appears to be a low cost method of working toward a Vision Zero goal, which the City of Brampton and the Region of Peel have committed to.
- Studies also recommended, that with intersections that include a cross ride, the cyclists should also be given the benefit of a leading interval.



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