Seattle
Department of
Transportation

SDOT Policy Memorandum

To: Mark Bandy, Transportation Operations Division Director

Thru: Dongho Chang, City Traffic Engineer

From: Bradley Topol, SDOT Vision Zero Program

Date: April 4, 2019

Subject: SDOT Policy for Leading Pedestrian Intervals

Statement of Intent

To establish a policy on pedestrian signal phasing for leading pedestrian intervals. This policy applies to the selection of locations and implementation of leading pedestrian intervals within the public right of way and within the jurisdiction of the City of Seattle.

Background & Purpose

A leading pedestrian interval (LPI) is a tool to reduce conflicts at signalized intersections between vehicular turning traffic and pedestrians crossing the street. A leading pedestrian interval functions by displaying the WALK signal at a crosswalk for 3 to 7 seconds while a red signal continues to be displayed for parallel through and/or turning vehicular traffic. After the initial 3 to 7 seconds of the WALK signal, parallel traffic is shown a green signal. This treatment allows pedestrians to establish themselves in the crosswalk ahead of right or left turning traffic, increasing their visibility and encouraging drivers to yield the right of way.

LPI's are listed as one of the Federal Highway Administration's proven safety countermeasures and can reduce pedestrian-vehicle collisions at intersections by up to 60%. At the same time leading pedestrian intervals can be one of the most inexpensive safety treatments that can be implemented to reduce pedestrian-vehicle collisions.

In Seattle, turning crashes account for 75% of all pedestrian crashes at signalized intersections (2010-2017). LPI's are listed in the Seattle Pedestrian Master Plan (PMP) as an action to reduce turning movement conflicts at intersections (PMP Strategy 2.4). Leading pedestrian intervals have the benefit of increased visibility of crossing pedestrians, increased likelihood of motorists yielding to pedestrians, reduced conflicts between pedestrians and vehicles, and enhanced safety for pedestrians who may be slower to start into the intersection.

Prioritization and Implementation

The recommended implementation of leading pedestrian intervals is as follows:

Selection Criteria

- Evaluate LPI's at all signalized intersections:
  - Within urban villages and urban centers
  - That are listed within the top 5% of citywide intersections ranked for pedestrian safety in the most recent Bike and Pedestrian Safety Analysis (BPSA)
  - Where a serious injury or fatal pedestrian crash occurred within the last three years
  - Near public and private schools within Seattle
  - Near access points to parks and community centers
- Consider LPI's at all new signalized locations or at signals that are modified from a half (pedestrian) signal to a full signal

Schedule

- Evaluate feasibility of leading pedestrian intervals every time a corridor is retimed for signal optimization or any time a signal controller is upgraded
- Grant funding is secured to implement 144 LPI locations from 2019 to 2021

Design Guidelines

- LPI's are to range from 3 to 7 seconds but may exceed 7 seconds at large or complicated intersections
- Assess LPI's for all pedestrian crossings
- Evaluated LPI's may not be installed if:
  - Existing leading protected/permissive left-turn phasing does not warrant being converted to lagging protected/permissive phasing
  - Other treatments exist such as protected turns, restricted turns, or all-way walk
  - Implementation of LPI requires increasing the signal cycle length

Dongho Chang, City Traffic Engineer — Date: 4/4/19

Mark Bandy, Transportation Operations Division Director — Date: 4/4/19