

Actualizing Safer Signals for Walking & Biking



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Permissive left turn conflicts



Leading Pedestrian Interval (LPI)



Enter the LPI

Reduces vehicle-ped crashes & conflicts

Crash Modification Factor (CMF) 0.55 - 0.63

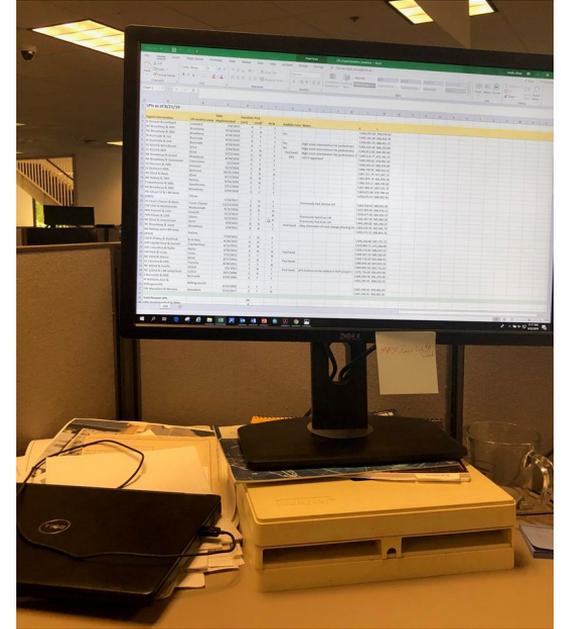
Trivial delays



	Is the pedestrian crossing at a T-intersection (crossing to parallel to a road that ends at the intersection)?	Are there issues such as safety concerns verified by staff or visibility issues due to features such as irregular intersection geometry, wide turning radius, crosswalk placement, obstructions such as buildings, signs, etc.?	4 for total (1)	Vehicle impact identified?	Crashes involving pedestrians in nearest 500 feet of road? (CROSS TO data)	Now for the location from the nearest elements to the road? (CROSS TO data)	Total
Monitor	** any? **	Is the pedestrian crossing parallel to a one-way road?	0 to 2	0 to 2	McCain MODEL 2000035	0 to 2	
Score alternative bids	Yes = 2 No = 2	Yes = 1 No = 0	Yes (between 1 to 3 issues) = 1 No = 0	Overall Impact = C C+ - 1 if < 8,000 -2 if < 4,000 and < 10,000	None = 0 1 to 2 3 to 4 5 to 6 7 to 8 9 to 10	None = 0 1 to 2 3 to 4 5 to 6 7 to 8 9 to 10	



IMPLEMENT



DOCUMENT

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EVALUATE

City Directive

LPIs will become our default practice at new/upgraded traffic signals on High Crash Network streets... PBOT will add at least ten LPIs/year to existing signals.

Protected left turns will become default practice at new/upgraded signals on High Crash Network streets. We will install 3+ protected left turns/year at existing signals.

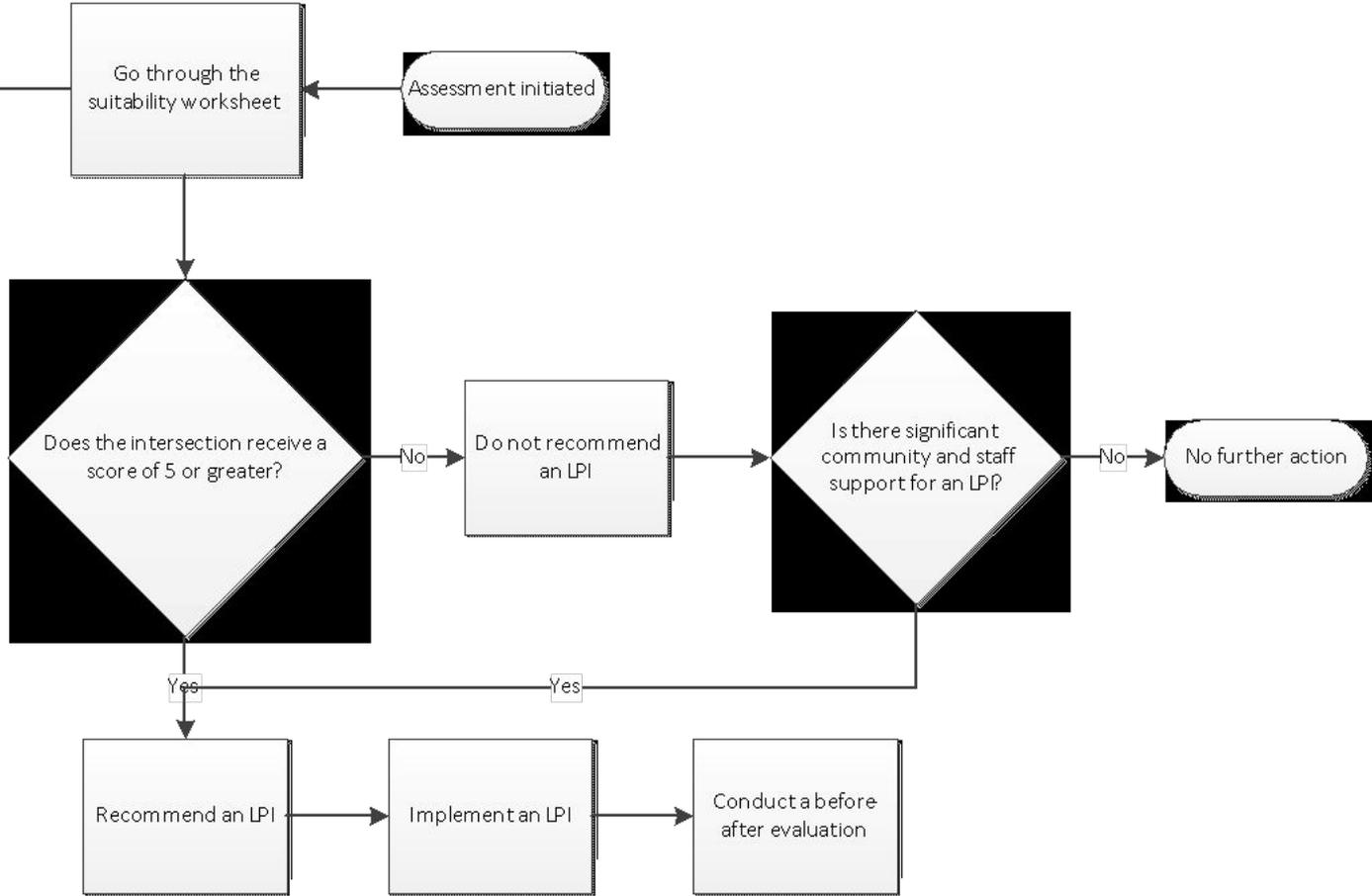
High ped crash locations



When?

- Ped crossing layout
- Safety concerns
- Ped counts
- Vehicle volumes, including turns
- Crash history
- Presence of schools

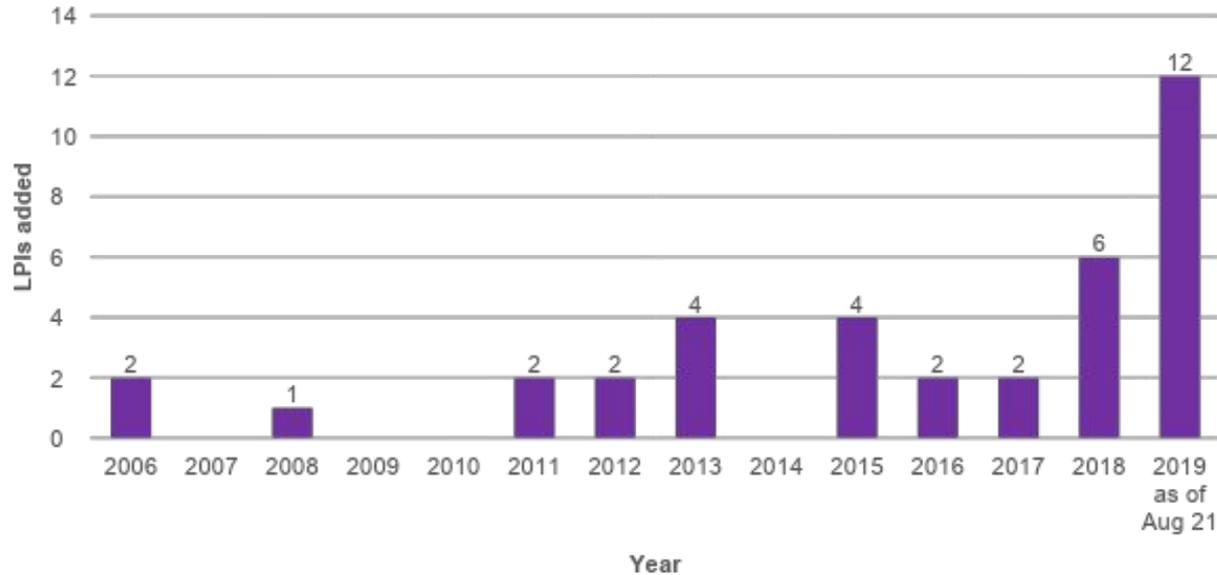
- T-intersection or one way (0 or 2)
- Visibility concerns (0 to 2)
- Pedestrian volumes (0 to 2)
- Impact on vehicles (0 to -6)
- Pedestrian collision rate (0 to 2)
- Pedestrian-vehicle conflict rate (0 to 2)
- Proximity to elementary schools (0 to 2)
- Level of senior activity (0 to 2)



Guidelines

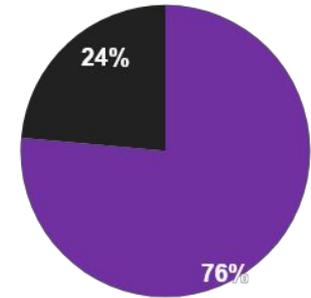
Timeline

Annual LPI additions, 2006 to present



Part of High Crash Network

■ HCN (n=26) ■ Not HCN (n=8)

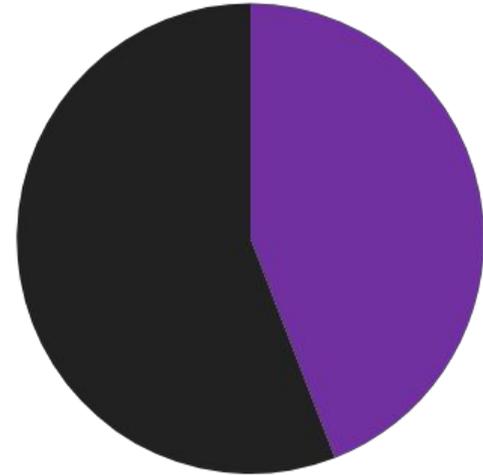


Push Button Considerations



Ped recall vs. actuation at LPIs (n=34)

■ Recalled ■ Actuated



Presence of LPI to prioritize APS installation

- Pedestrian crashes
- Near school & transit center
- T-intersection

YEP!



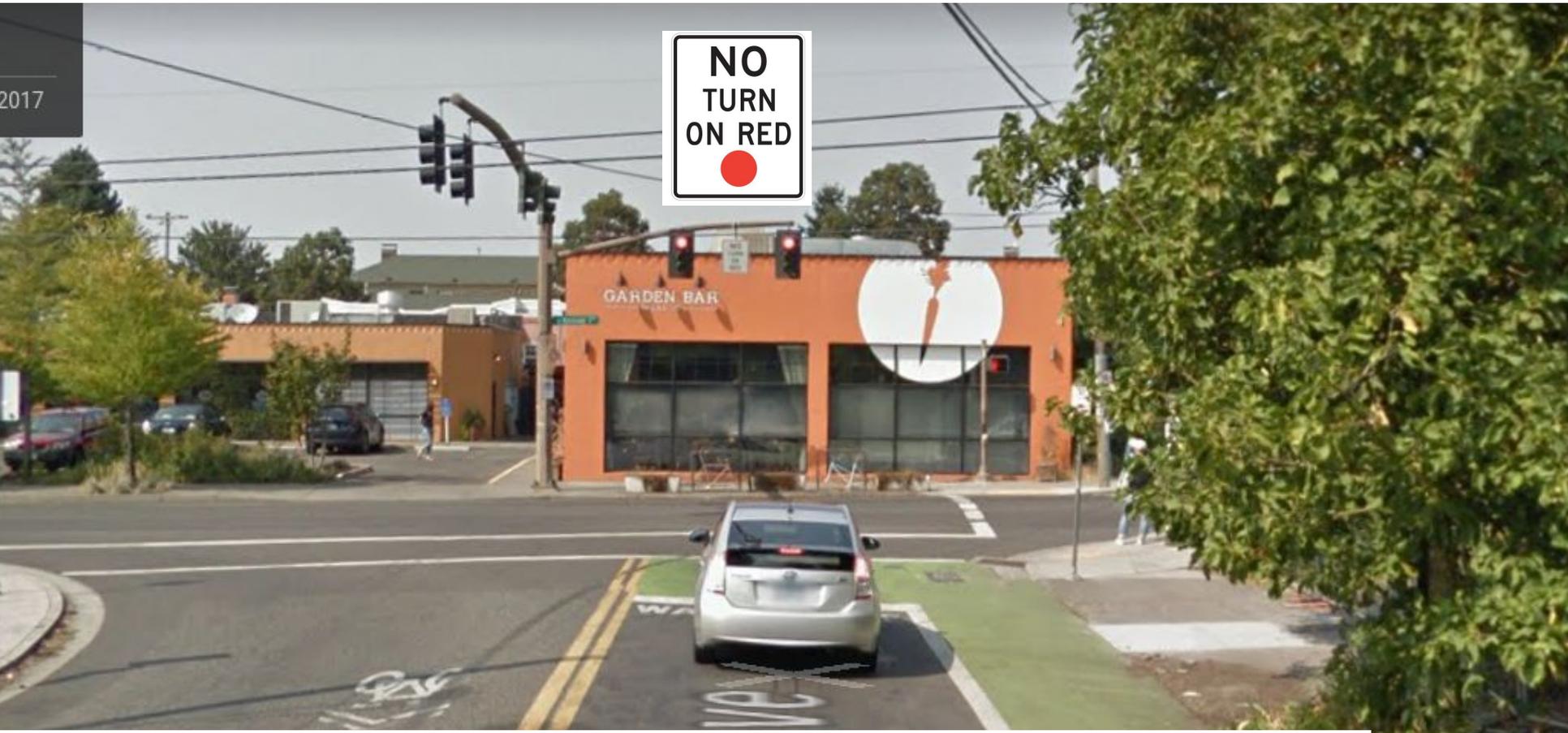


- Has protected left turns
- Two intersecting major streets
NOPE!

LPIs or Protected Lefts?



2017



Or No Turn on Red

Monitoring

No PDX study

Working with PSU's Sirisha's NCHRP 17-87 (describe)

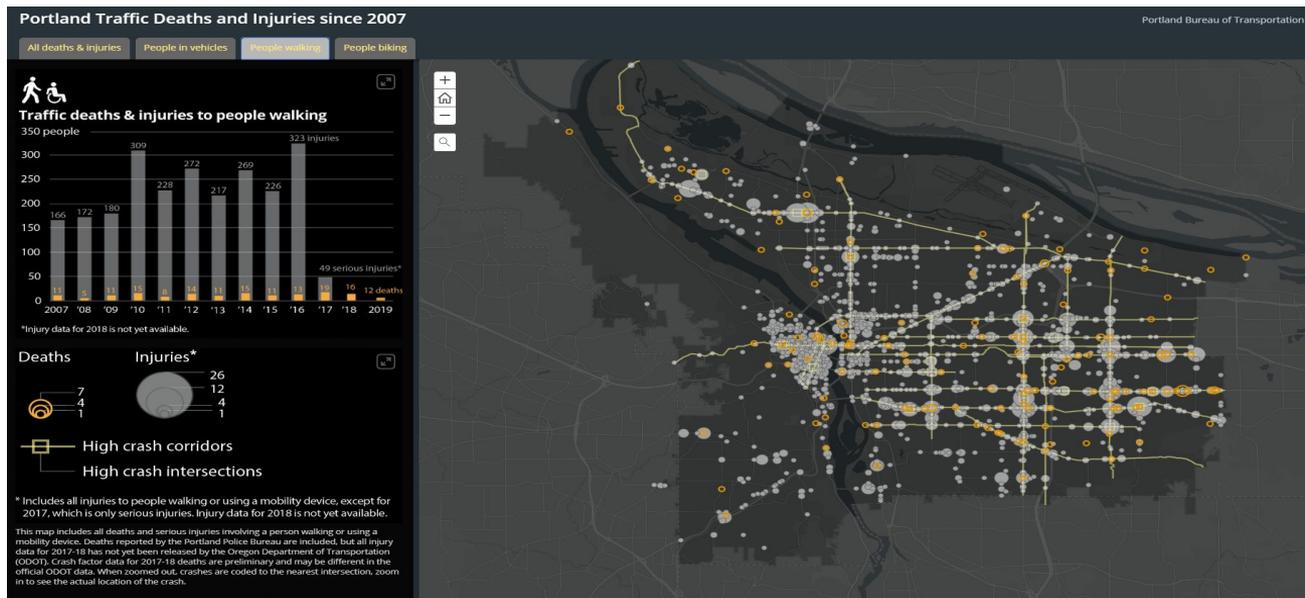
Grateful for work others have done
NYC, CHI, Charlotte



A movement

Next steps - High priority locations

- Outside schools
- SRTS (safe routes to school)
- High crash corridors, esp. where the sidestreet volumes are low
- Pedestrian districts
- Dual left turns



Bikes though?

People just do it...

NYC passed bill in May 2019



Questions

- Equity concerns?
- What % of our signals are low-hanging fruit? Goal #?
- At what point do people walking expect them at signals?
- Corridor by corridor approach vs. dispersed?
- Clarify bike use of LPs?

Conclusion

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