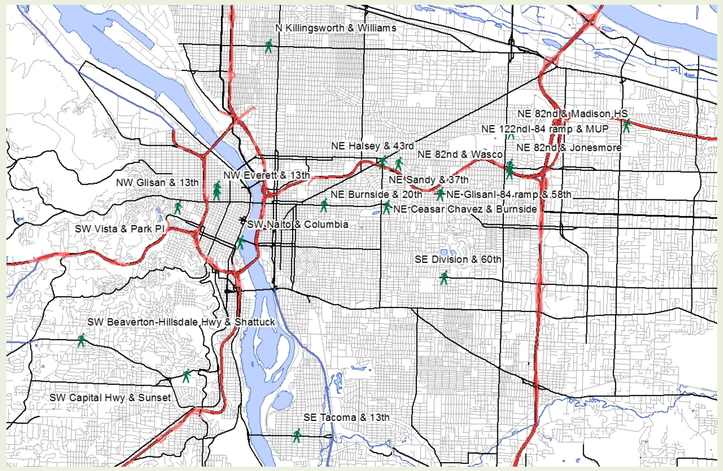
Evaluating the Suitability of Leading Pedestrian Intervals

Safety
- High speed left and right turns
- Drivers' obscured visibility
- Collisions, non-yields, & near-misses

Policy
- Limited guidelines for application (MUTCD & NACTO)
- Uncertainty about where to implement
- Difficulty communicating decisions to public & staff
- Uncertainty about appropriate length of LPI
- No protocol for measuring effectiveness

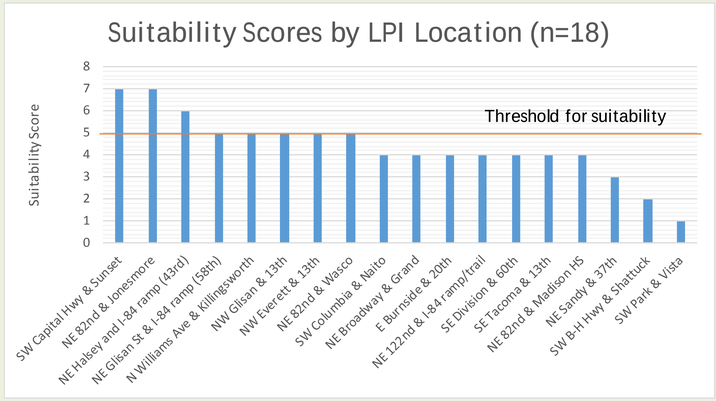


Signals with LPIs in Portland (n=18)

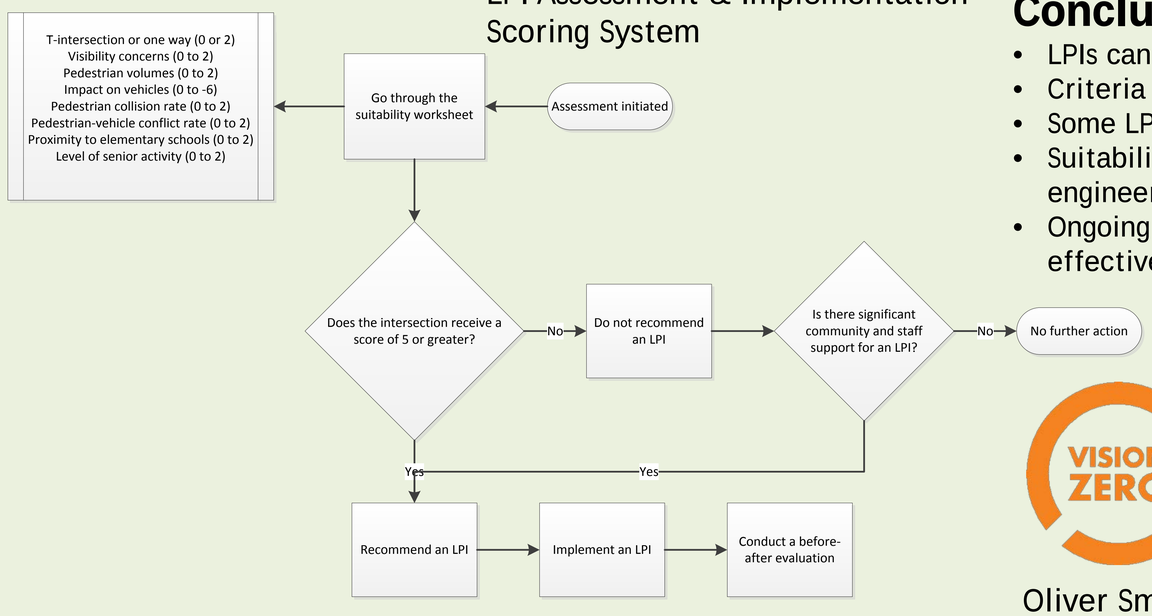
Benefits
- Give pedestrians a conflict-free head start
- Reductions in collisions
- Decreases in non-yields & near-misses from vehicles turning too close in front of/behind people crossing
- Crash Modification Factor of 0.55 to 0.63

Timing of phases for pedestrians & drivers in one cycle

Key Factors*
- Drivers turning left without yielding to oncoming traffic
- Visibility issues
- Crossing volumes for people walking
- Rate of collisions between people walking and turning vehicles or observed non-yield/near-miss
- Proximity to elementary schools
- Level of activity by elderly residents
- Impact on vehicular traffic



LPI Assessment & Implementation Scoring System



Conclusions
- LPIs can help address Portland's Vision Zero goals
- Criteria presented in Toronto guidelines valuable
- Some LPIs more suitable than others
- Suitability scores confirmed by PBOT signals engineers' assessments
- Ongoing evaluation needed to determine LPIs' effectiveness

*Saneinejad, S., et al., 2014. City of Toronto Leading Pedestrian Interval (LPI) Assessment and Implementation Guidelines

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