Bicycle and Pedestrian Safety Analysis

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Seattle Department of Transportation

SEATTLE POLICE

VISION ZERO

SAFER STREETS FOR SEATTLE

Our mission, vision, and core values

Mission: deliver a high-quality transportation system for Seattle

Vision: connected people, places, and products

Committed to 5 core values to create a city that is:

- Safe
- Interconnected
- Affordable
- Vibrant
- Innovative

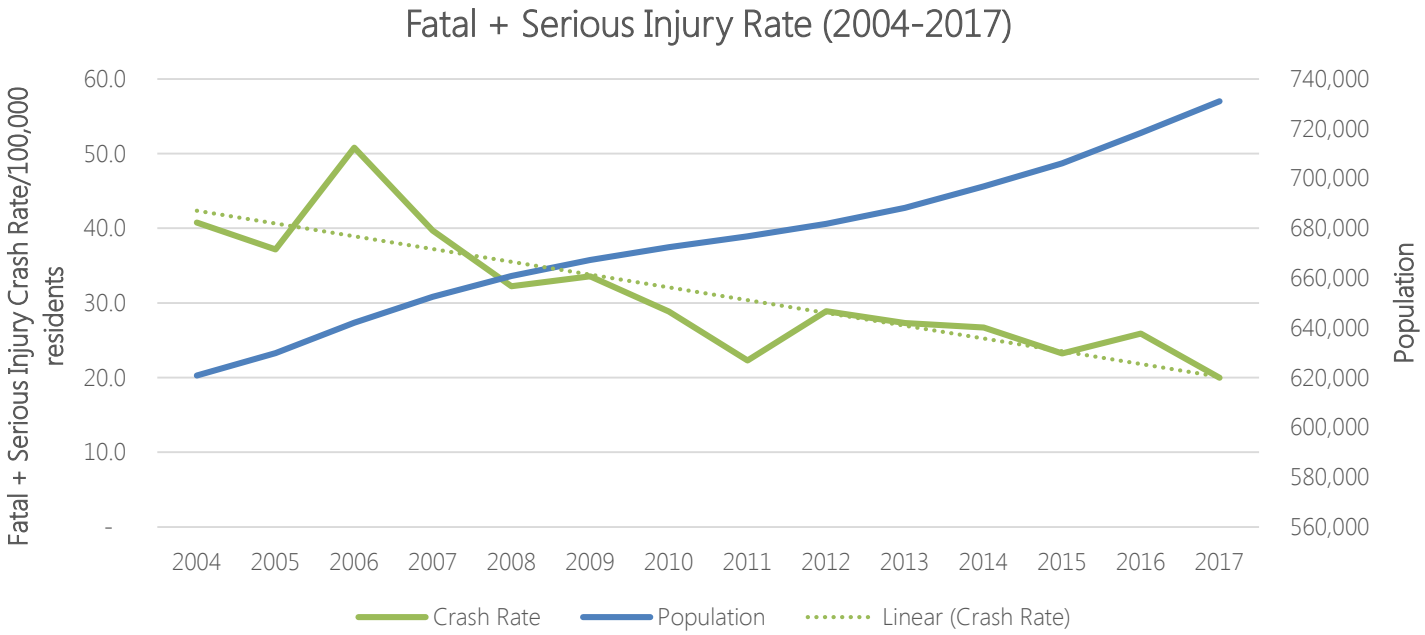
For **all**

Presentation overview

- Vision Zero update
- Bicycle and Pedestrian Safety Analysis
- Next steps

Vision Zero

- 20% reduction in serious crashes in 2017*
  - 19 fatalities
    - 11 pedestrians, 2 bicyclists
    - 4 motorcyclists
    - 2 drivers/passengers



Bicycle and Pedestrian Safety Analysis (BPSA)

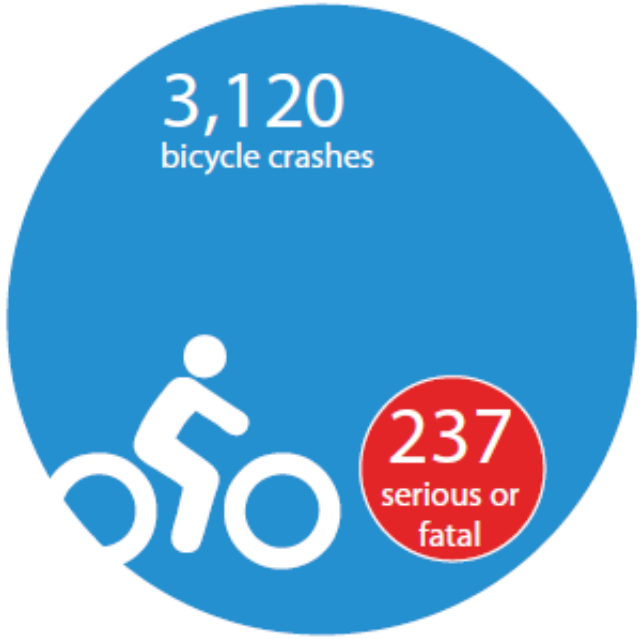
- Purpose
  - Better understand risk factors contributing to pedestrian and bicycle crashes
  - Proactively and systemically address risk factors
  - Advance Seattle's Vision Zero goal

BPSA process

- Review collision reports
- Exploratory analysis
  - Crash patterns and common characteristics
- Multivariate analysis
  - Assessing risk factors against exposure

Crash data

- Included all ped and bike crashes between 2007 - 2014



Exploratory analysis

CRASH DATA

ROADWAY CHARACTERISTICS

OTHER FACTORS

Ped Crash

Segment

Built Environment

Lighting

Signals

Bike Crash

Intersection

Demographic

Bike Facility

Bike Volume Data

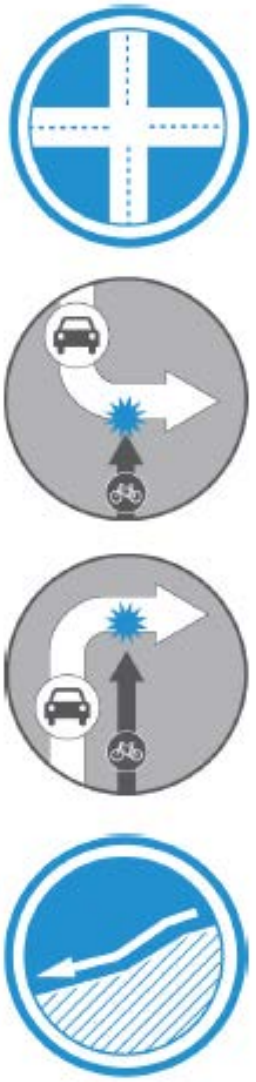
Transit

Slope

Ped Volume Data

Exploratory analysis

- Bicycle crashes
  - 62% at intersections
  - Driver turning left across path of bicyclists most common, severe
  - Right-hook common but less severe
  - Crashes more likely and more severe downhill



Exploratory analysis

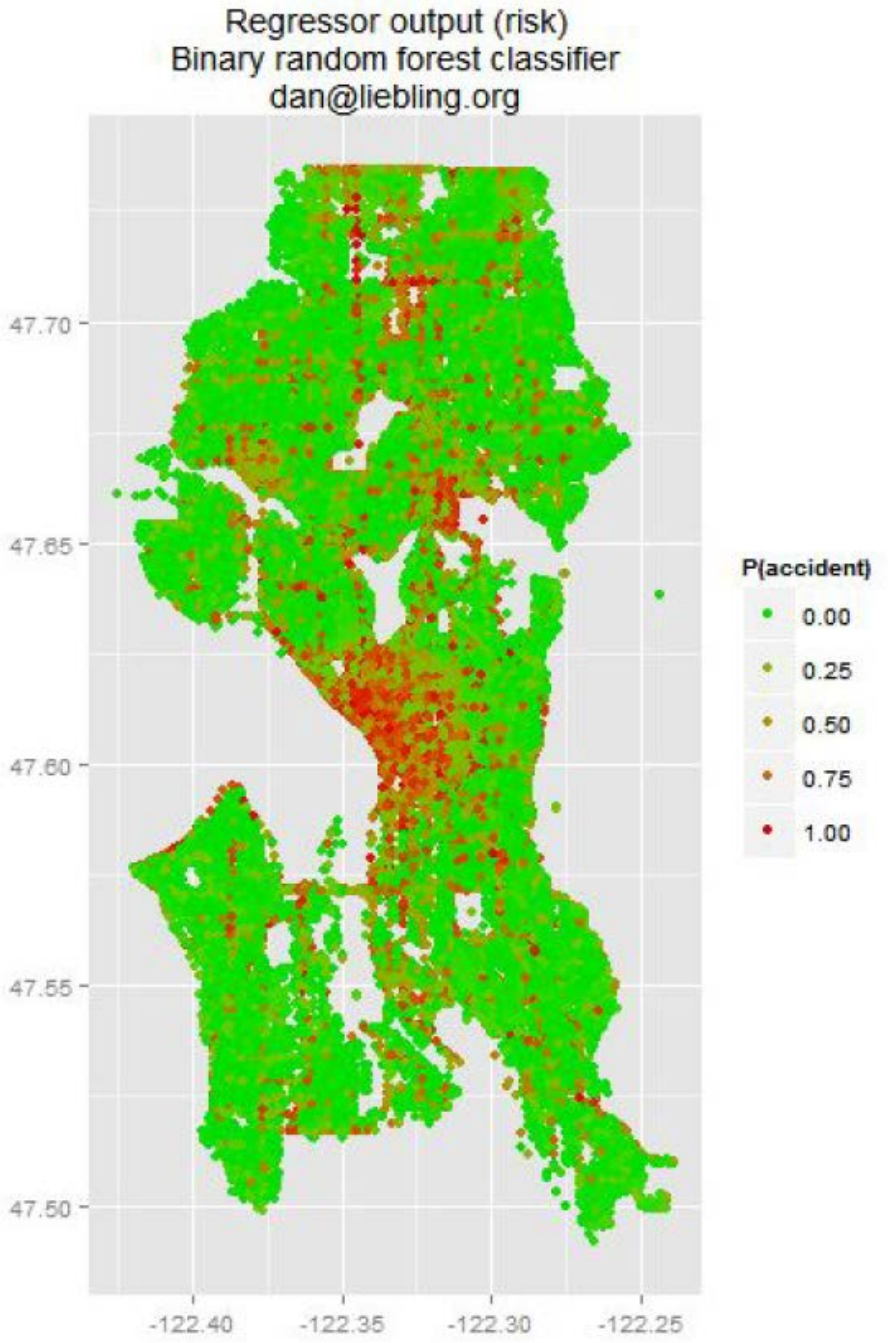
- Pedestrian crashes
  - 70% at intersections
  - Driver turning left at signalized crosswalk, common
  - Mid-block crashes with no crosswalk, most severe
  - Longer block lengths = higher proportion of severe crashes

Multivariate analysis

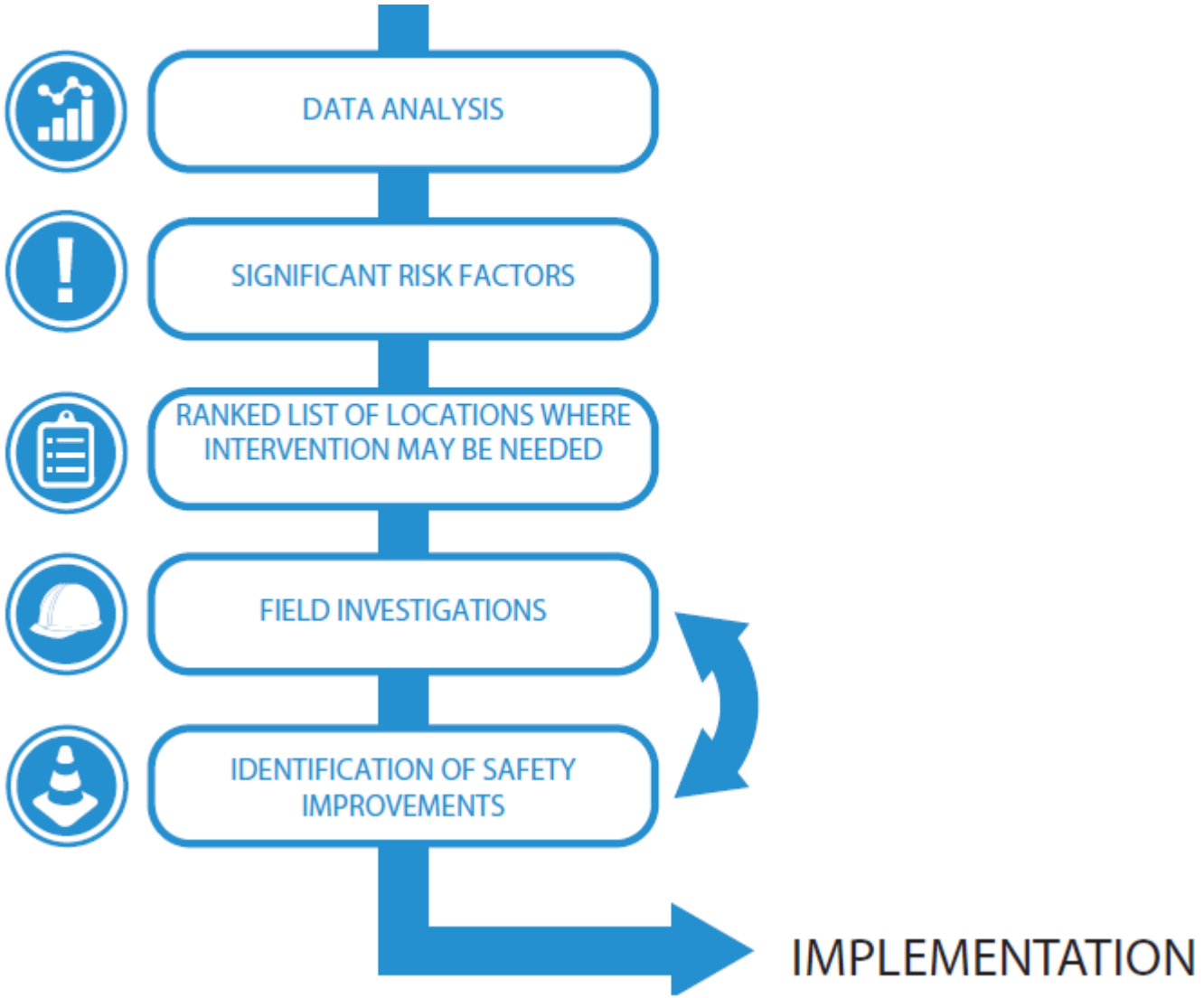
- Exposure data critical to understanding risk factors
- Exposure = volume of people walking and biking
- Estimates used for BPSA

DataKind and Microsoft

- Partnership to develop exposure models
- 27 models developed to refine BPSA

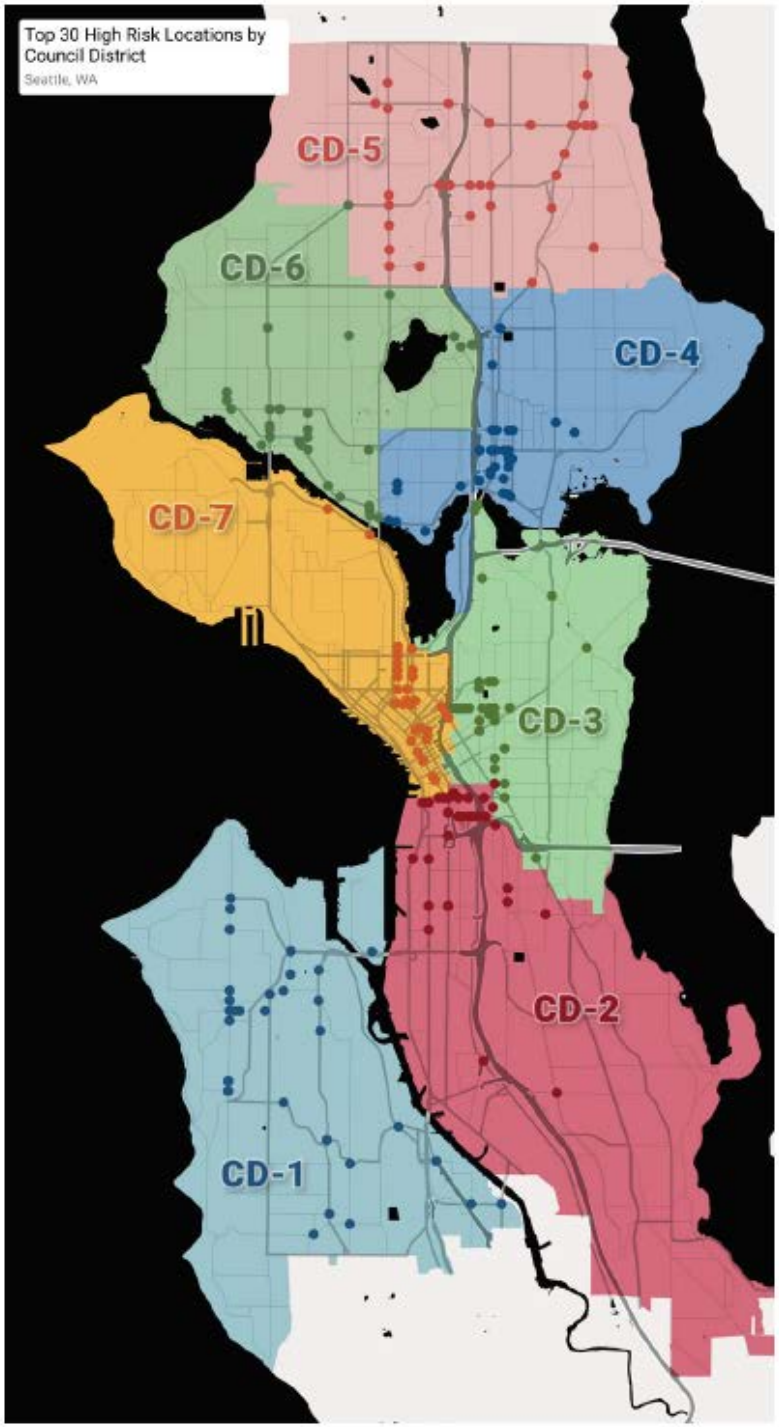


How will we use our findings?



How will we use our findings?

- Spot projects
- CBD signal changes
- Vision Zero Safety Corridors
- Inform capital projects



Sample projects

- 16th and Jackson painted curb bulbs
- Pine and Nagle cross-bike

Next steps

- Calibrate model with UW
- Refine exposure model
- Re-run BPSA with three additional years of data
- Evaluate three new crash types
- Evaluate signal phasing

Questions?

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www.seattle.gov/visionzero
www.seattle.gov/transportation




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