



Rainier Avenue South Road Safety Corridor

Design Alternative Meetings
Project Manager Jim Curtin
February 26 and March 3, 2015

SDOT's mission & vision

Mission: delivering a high-quality transportation system for Seattle.



Vision: a vibrant Seattle with connected people, places, and products.

Our core values

Through transportation, we contribute to a city that is:

- **Safe** – we eliminate serious and fatal crashes
- **Affordable** – we give all people high-quality, low-cost travel options
- **Vibrant** – we use our streets and sidewalks to improve health, prosperity, and happiness
- **Interconnected** – we provide an easy-to-use, reliable system that gives you the options you want when you need them
- **Innovative** – we understand and plan for the changes of tomorrow, while delivering great service today

Presentation overview

- Meeting purpose
- Project review
- Design process and alternatives
- General Q & A
- Feedback session



Meeting purpose

- Present design alternatives
- Gather community input

Background

- Safety improvements requested by local community
- Issue Identification Meetings – November 2014
- Hundreds of public comments



Project goals

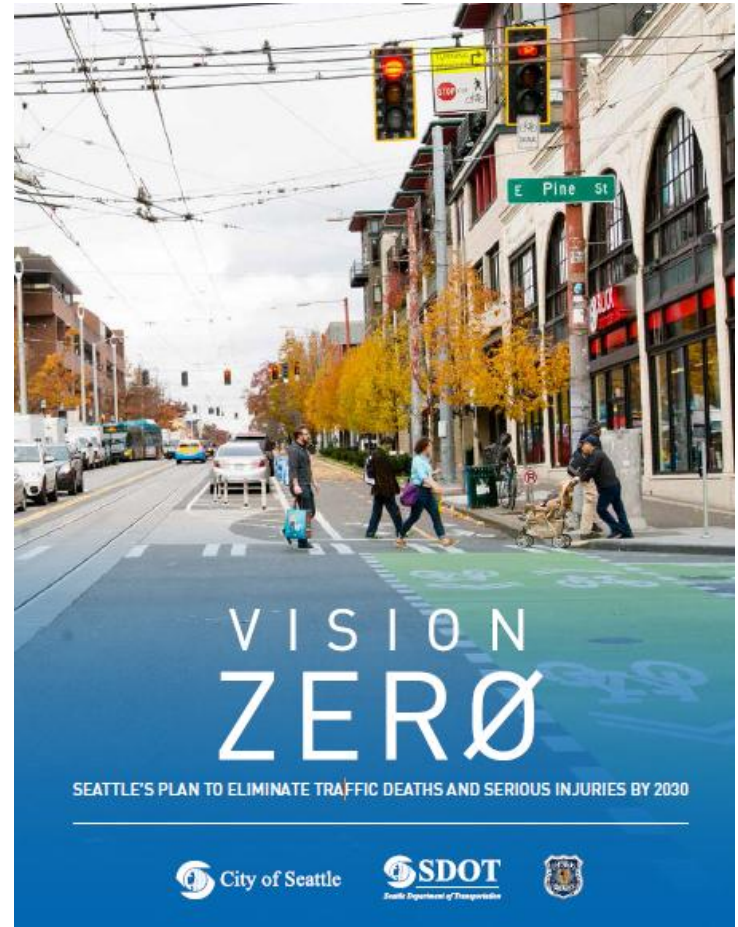
Make Rainier Avenue South safer for everyone

- Reduce speeds
- Provide new and enhance existing pedestrian crossings
- Maintain efficient transit service
- Improve intersection safety
- Reduce injuries

Vision Zero

Seattle's plan to eliminate traffic deaths and serious injuries

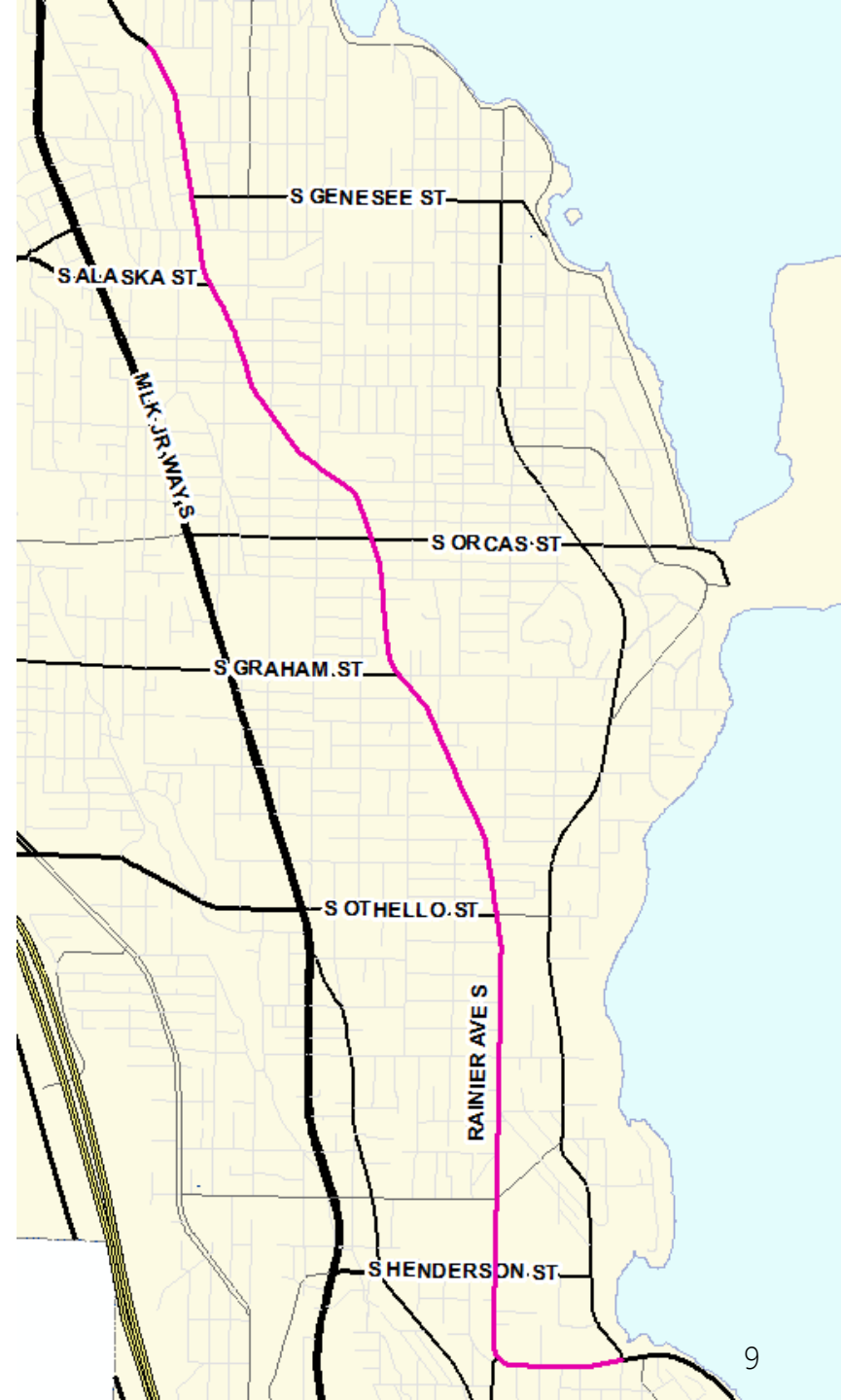
- Street designs that prioritize safety
- Public education and engagement
- Targeted enforcement patrols



www.seattle.gov/visionzero

Project area

Rainier Avenue S, between
Letitia Avenue S and
Seward Park Avenue S



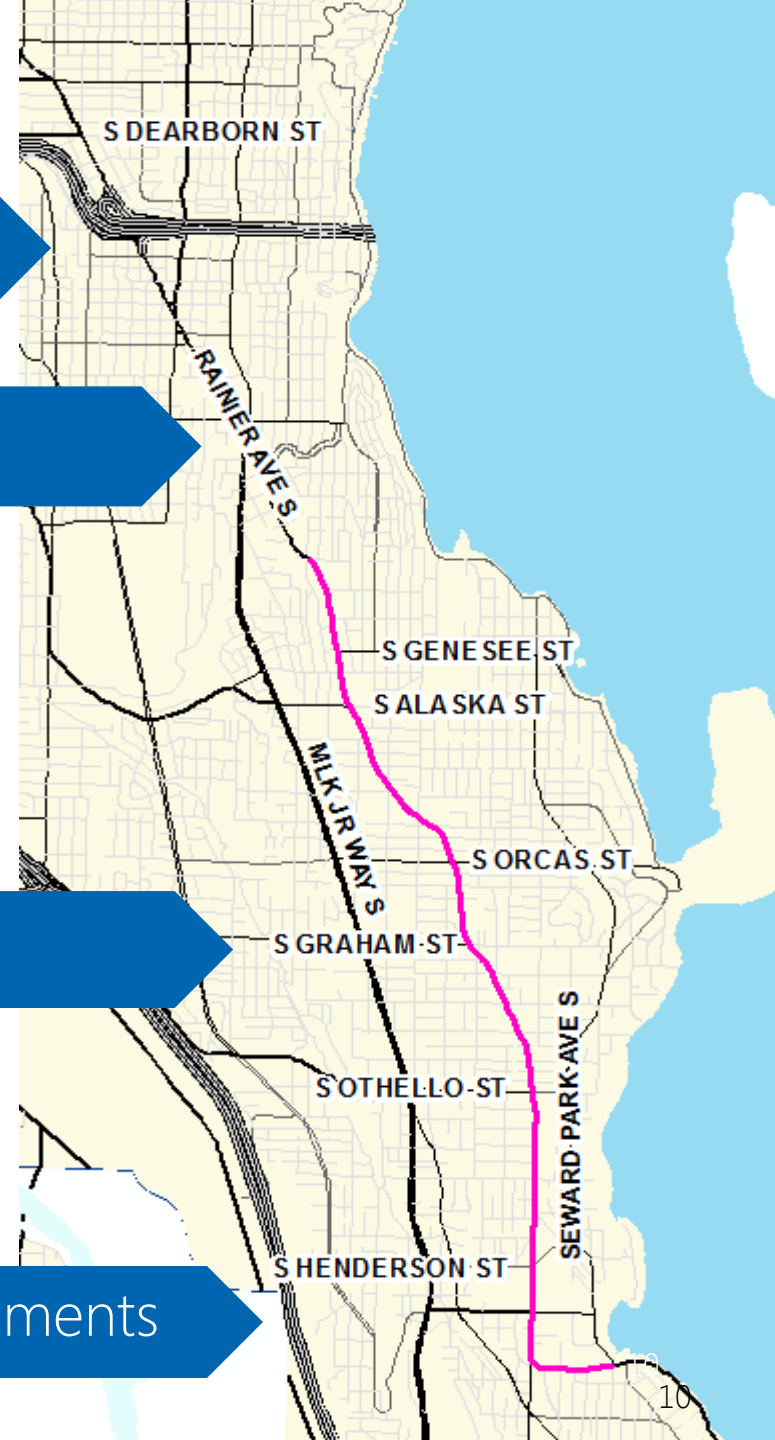
Other SDOT projects

Rainier & Dearborn Safety Improvements

Accessible Mt. Baker

Rainier Ave S Road Safety Corridor

Rainier Beach Safety Improvements



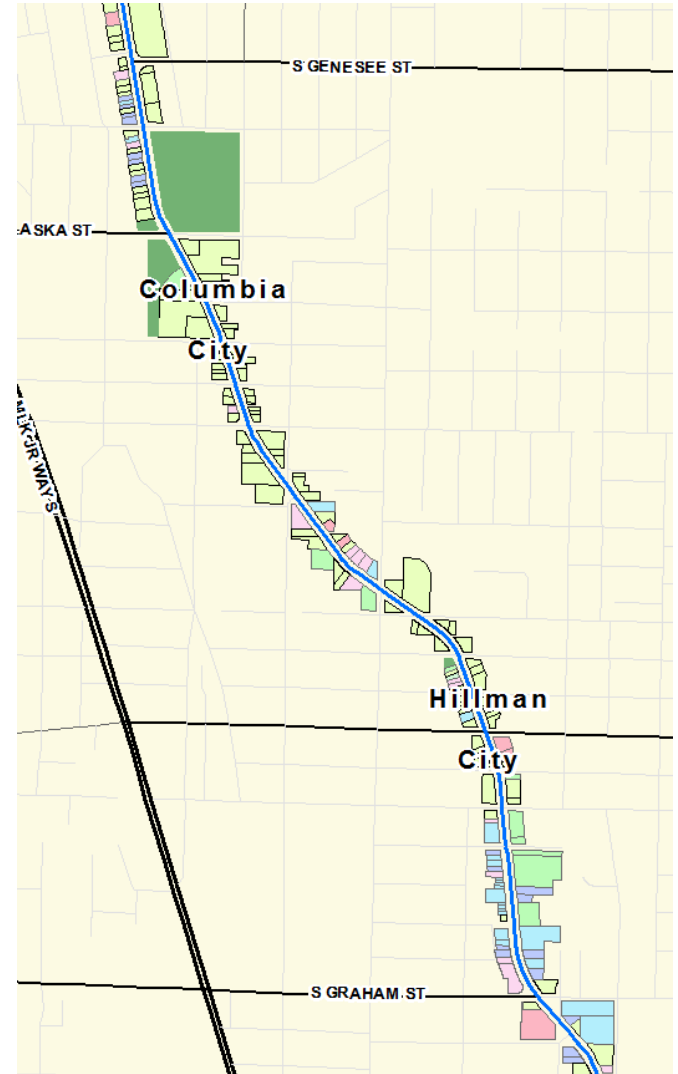
Along Rainier

People

- More than 70,000 live in zip codes 98118 and 98144
- 15 percent of households car-less

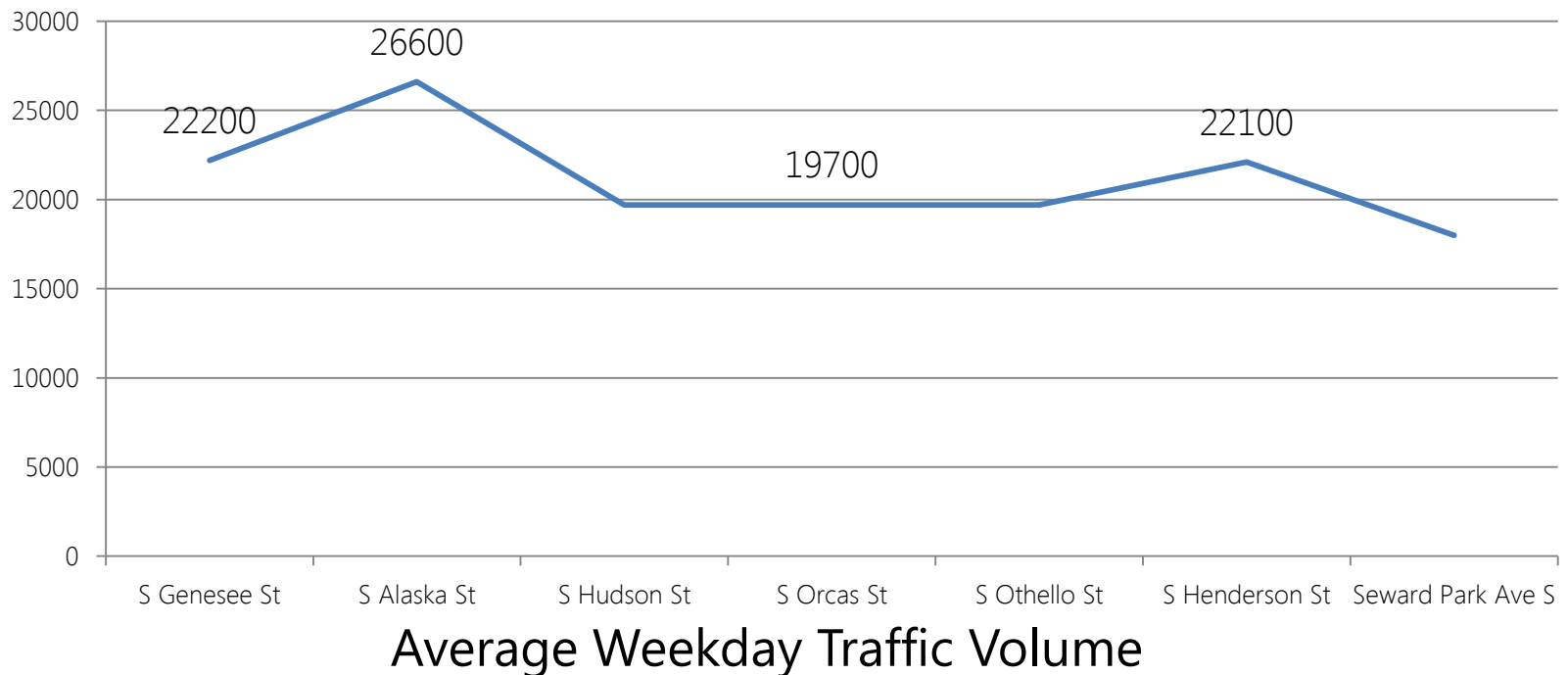
Land uses

- 431 parcels
 - 45% Commercial/Mixed Use (195)
 - 30% Single/Multi-Family (128)
 - 16% Vacant (70)
- 18 major institutions
- 10+ schools and daycare centers within three blocks
- 10 industrial uses
- 5 parks
- Senior housing and community centers
- 2 libraries



Traffic data

- 19,700 to 26,600 vehicles per weekday
- More than 11,000 daily transit trips, transit service every 10 minutes
- Thousands of pedestrian crossings daily
- Primary emergency response route
- Commercial vehicle route



Current street design

Rainier Avenue South

- Principal arterial
- 4 to 5 lanes
- 50-54 feet wide
- Curves and skewed intersections



Collision data

Average of 1 crash/day on Rainier

Last 3 years

- 1243 total collisions
- 630 injuries
- 2 fatalities

Last 10 years

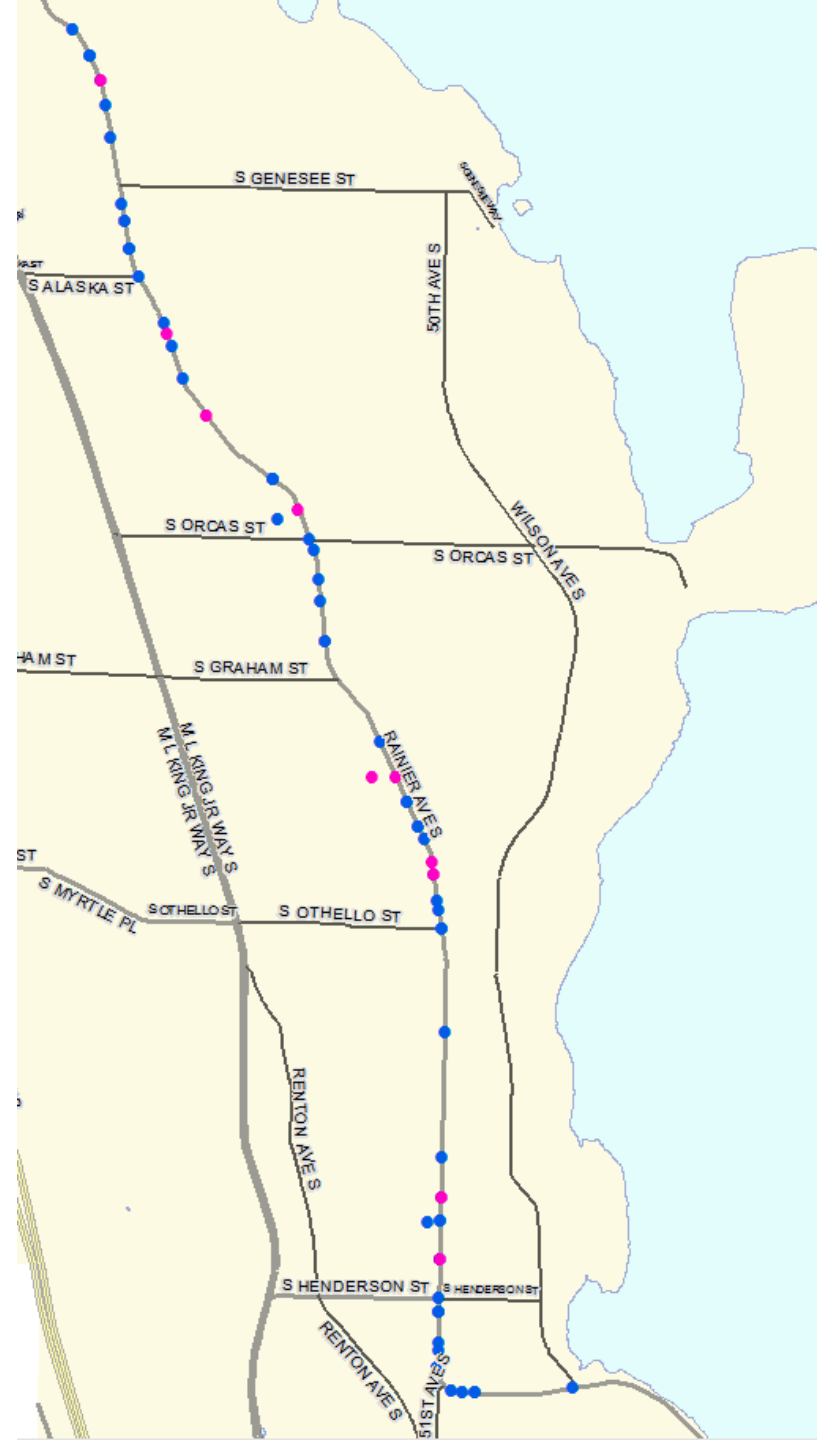
- Nearly 3600 total collisions
- 1700+ injuries
- 11 fatalities



Collision data

Fatal and serious injury crashes Last 10 years within project area

- Fatal collisions
- Serious injury collisions



Collision data

Pedestrian and bicycle collisions last 3 years:

- 46 pedestrian-vehicle
- 10 bicycle-vehicle

Last 10 years:

- 165 pedestrian-vehicle
- 30 bicycle-vehicle

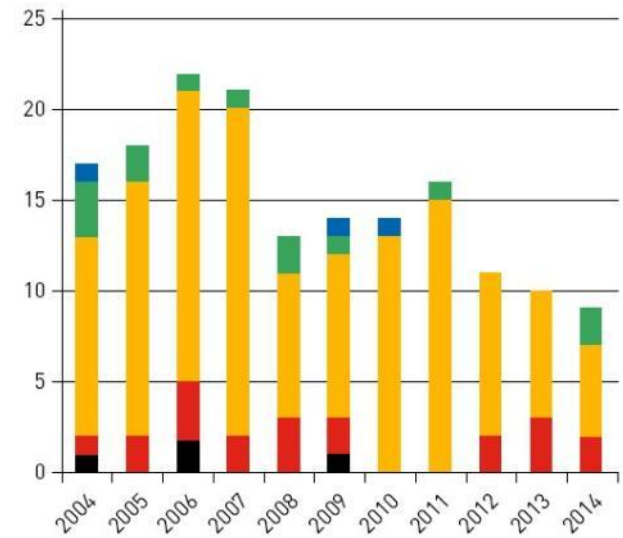
Unknown

Property Damage Only Collision

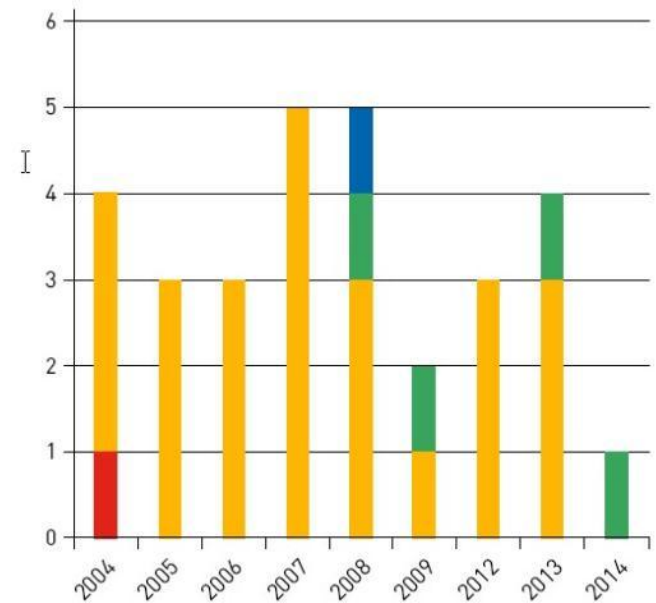
Possible or Evident Injury Collision

Serious Injury Collision

Fatality Collision

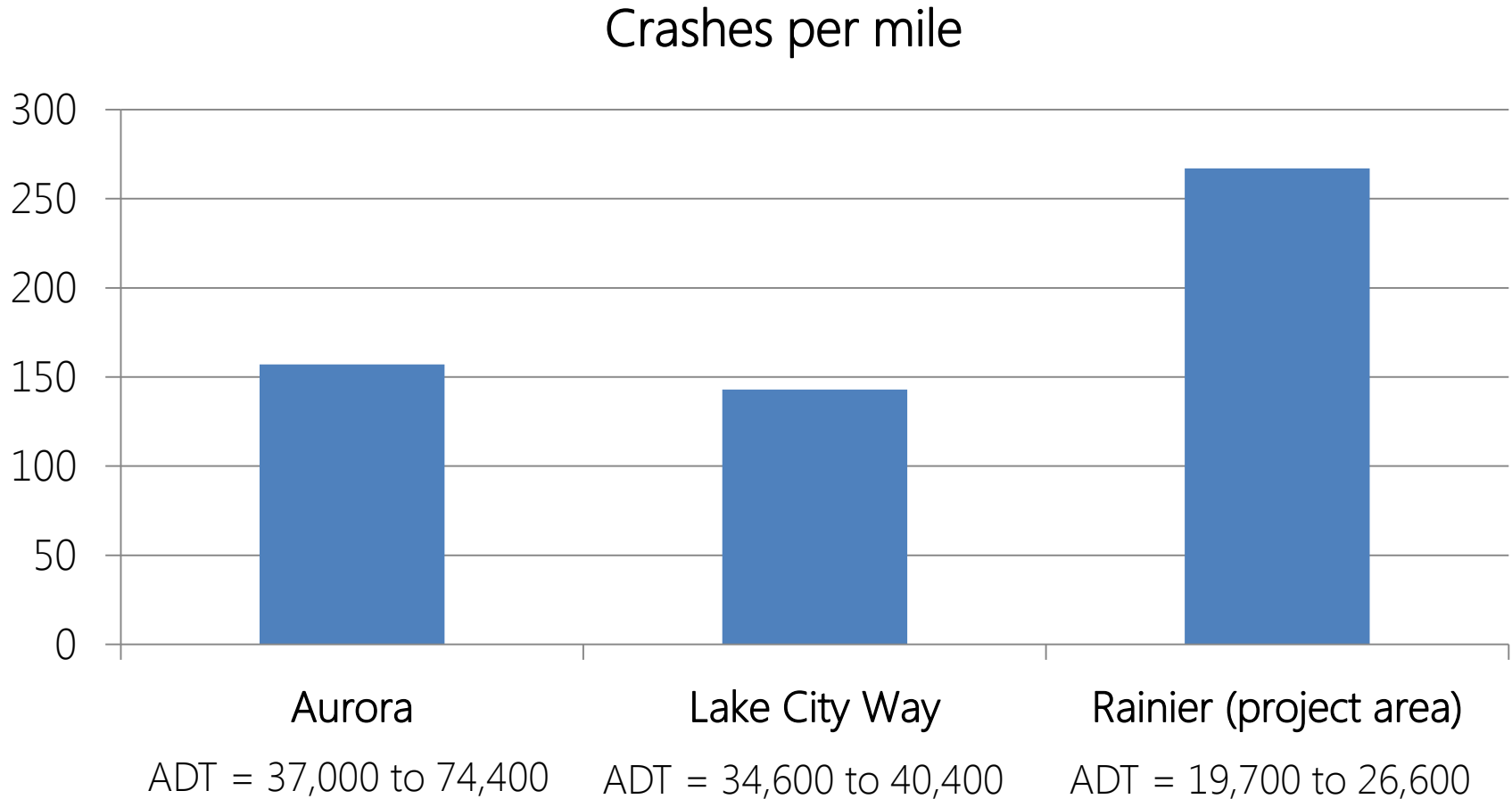


Annual Pedestrian Collisions



Annual Bicycle Collisions

Collision data



Recent speed studies

Posted speed limit is 30 miles per hour

Location	85th Percentile Speed	Percent Speeding (3+ mph over the speed limit)	Average number of high-end speeders per weekday
S Hudson Street	35 mph	20%	611/day
42nd Avenue South	38 mph	55%	1812/day
S Holly Street	37 mph	56%	1083/day
S Cloverdale Street	36 mph	38%	1083/day

High-end speeders = 10+ miles per hour over the speed limit

Design process

Design options developed to:

- Balance the need to move people and goods with the function of the nearby land uses
- Eliminate correctable collision patterns

Modeling:

- Synchro 8 and SimTraffic 8
- Vissim
- Full report at Spring meeting



Design process

Performance monitoring:

- Collect baseline data and update traffic data regularly for locations on nearby streets including:
 - Seward Park
 - Lake Washington Blvd
 - MLK
- Vehicle and transit travel times
- Business tracking



Design process

Implementation

- Signal and signage improvements Spring 2015
- Additional work in summer 2015 and 2016



Design process

S Charlestown Street to S Alaska Street

Data

- 51 crashes,
24 injuries last
three years
- Collision types:
 - 14 angle/
driveway
related
 - 11 rear end
 - 8 sideswipe
- 26,600
vehicles/day



Design process

Rainier and Orcas

- 38 crashes last three years
- 25 left turn collisions
- 25 injuries
- 4 pedestrian-vehicle collisions
 - 1 serious injury

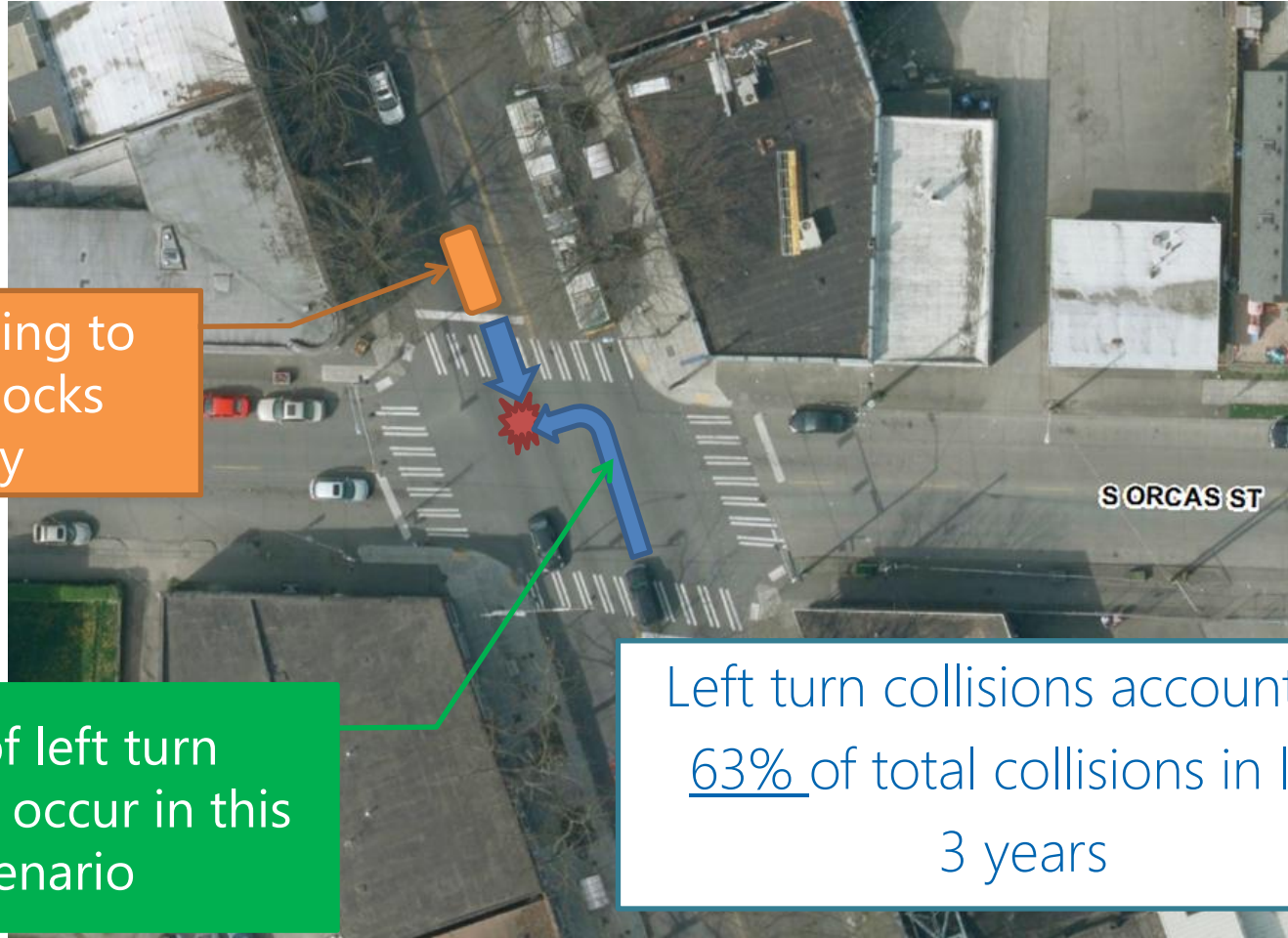
Similar conditions at:

- S Edmunds St
- S Ferdinand St



Design process

Rainier and Orcas



Vehicle waiting to
turn left blocks
visibility

47% of left turn
collisions occur in this
scenario

Left turn collisions account for
63% of total collisions in last
3 years

Design process

Rainier and Holly

- 18 crashes, 18 injuries last three years
- 9 **left turn** collisions



Design process

Rainier and Graham

- 15 crashes, 10 injuries last three years
- 6 **angle crashes** related to speeding and disobeying signal



Design alternatives

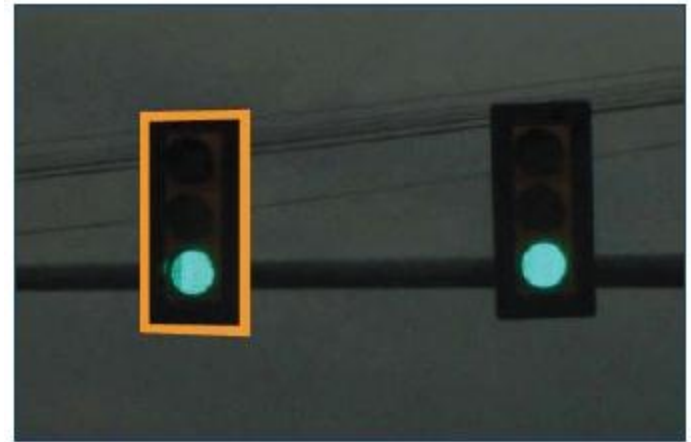
Lower speed limit

- S Alaska Street to S Kenny Street
(Columbia City to Hillman City)
- 30 mph to 25 mph
- 0.9 miles



Design alternatives

- Signal improvements
 - Longer pedestrian crossing times
 - Reflectorized signals at:
 - Charleston
 - Andover
 - Genesee
 - Oregon
 - 51st Ave S
- Lane line markers (buttons) throughout the corridor
- Rainer Valley Neighborhood Greenway



Design alternatives

Enforcement

- Grant funds secured for extra patrols
- Data-driven deployment
- Pedestrian safety emphasis

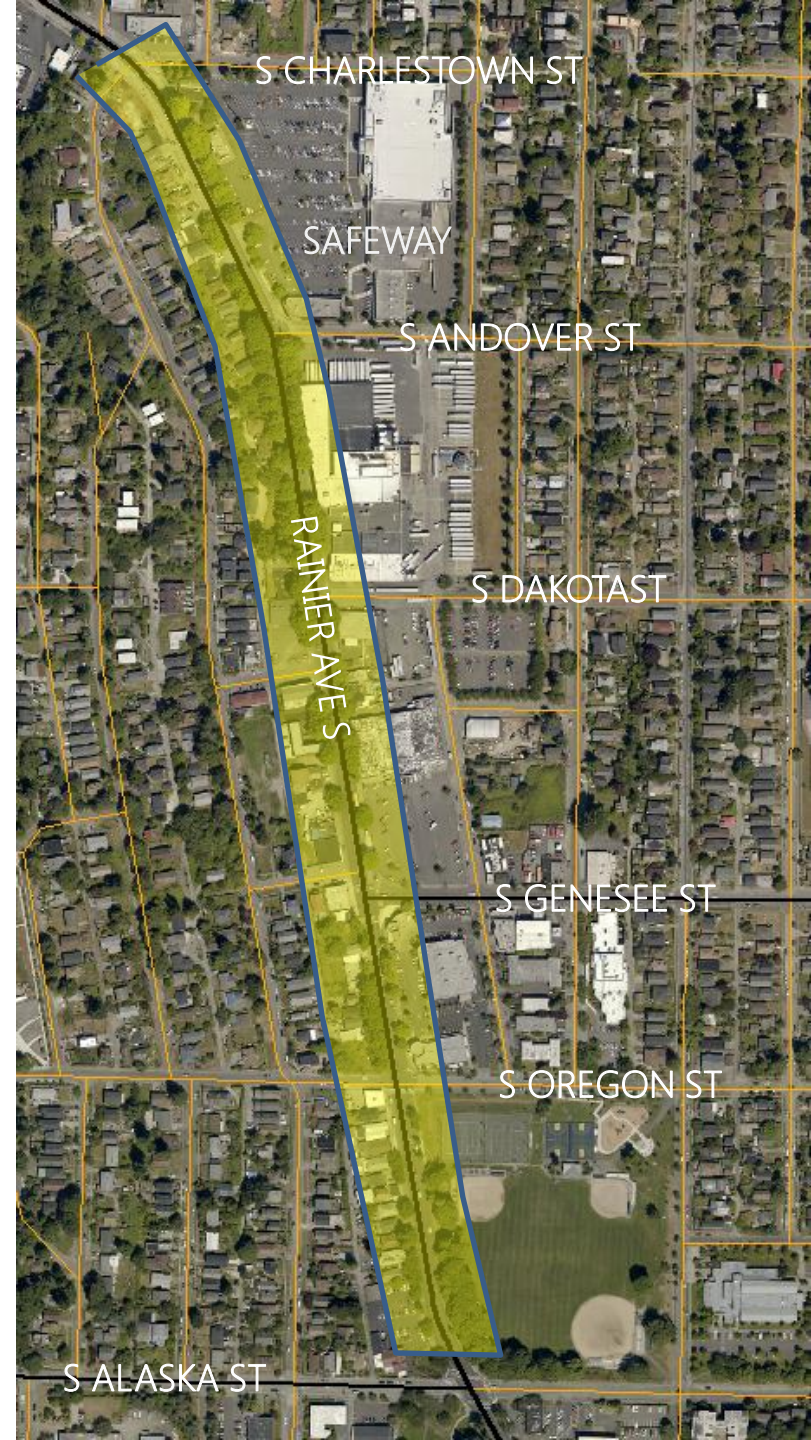
Public engagement

- Travel demand management (TDM)
- Impairment-related programs and outreach

Design alternatives

S Charlestown St to S Alaska St

- Access management
 - Incremental implementation
 - Signs → physical changes
- Pedestrian safety emphasis patrols



Design alternatives

Option 1a: S Alaska St to S Henderson St Rechannelization

- 4 lanes to 3 lanes
- 2 general purpose lanes
- Center left turn lane

Key features

- Reduce top collision types (left turns, sideswipe, parked car)
- Lower vehicle speeds
- Better conditions for people walking
- Opportunities for new crossings
- Improved efficiency
- Easier turning movements – especially for large vehicles

Limitations

- Initial modeling shows vehicle delays of +/- 2 minutes during peak hour traffic



Design alternatives

Option 1b: S Alaska St to S Henderson St Rechannelization with protected bike lanes

- 2 general purpose lanes
- Center left turn lane
- Protected bike lanes from S Alaska Street to S Kenny Street (Columbia City to Hillman City)

Key features

- Same benefits as Option 1b
- Significantly improved environment for people biking

Limitations

- Initial modeling shows vehicle delays of +/- 2 minutes during peak hour traffic
- Design challenges for protected bike lanes



Design alternatives

Option 2: S Alaska St to S Henderson St Hybrid design

- 2 general purpose lanes
- Center left turn lane
- Intermittent transit lanes

Key Features

- Improves transit performance
- Fewer collisions
- Lower vehicular speeds

Limitations

- Some parking removal likely
- Some delay during peak hour traffic (+/- 2 min)



Design alternatives

Safety benefits

- Lower speeds, less severe crashes
- Less exposure for vulnerable users
- Reduction in crash frequency
- Easier turning movements


Street	Collisions	85% speed	10+ mph speeders	Volume change
Nickerson St	-23%	-21%	-94%	-1%
Fauntleroy Way SW	-31%	-1%	-13%	+0.3%
NE 125 th St	-10%	-8%	-69%	+4%
NE 75 th St	-50%	-13%	-90%	+0.3%

Design alternatives

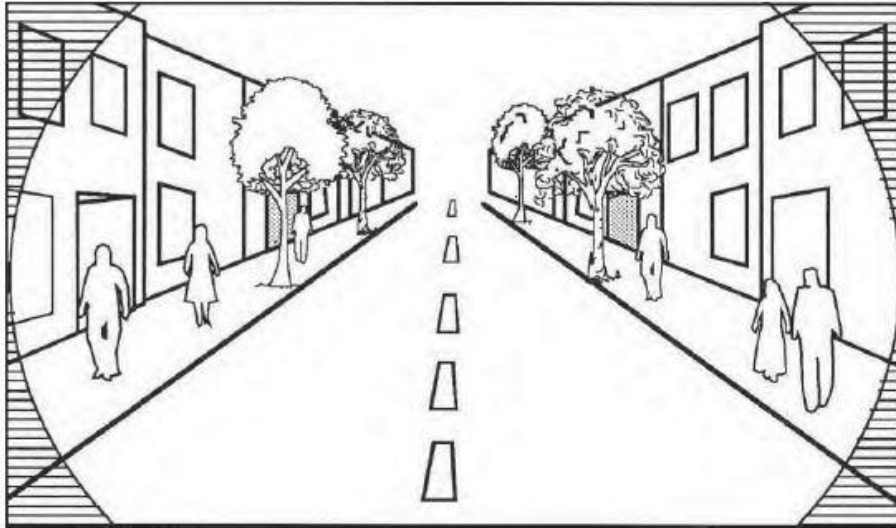
Safety benefits

- Lower speeds, less severe crashes
- Less exposure for vulnerable users
- Reduction in crash frequency
- Easier turning movements

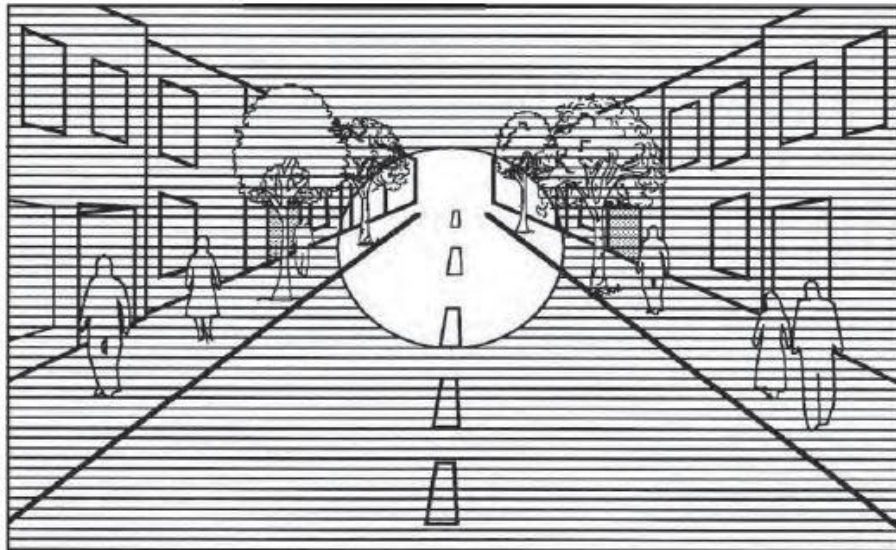
Street	Collisions	85% speed	10+ mph speeders	Volume change
Nickerson St	-23%	-21%	-94%	-1%
Fauntleroy Way SW	-31%	-1%	-13%	+0.3%
NE 125 th St	-10%	-8%	-69%	+4%
NE 75 th St	-50%	-13%	-90%	+0.3%



Why speed matters

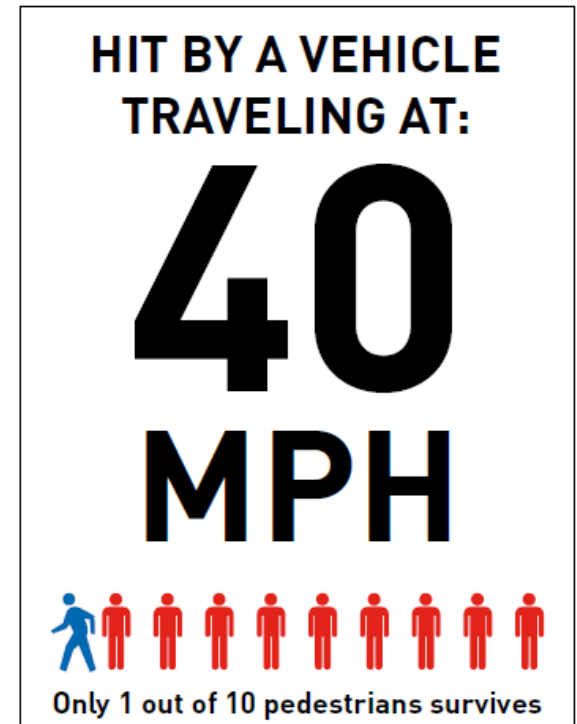
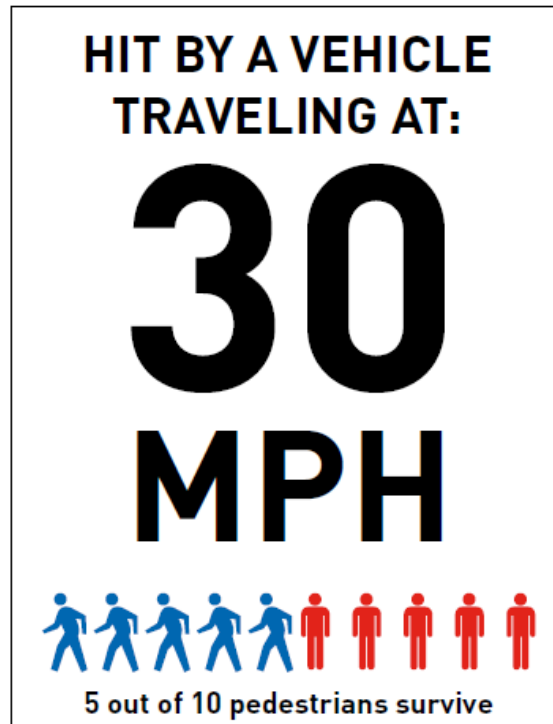
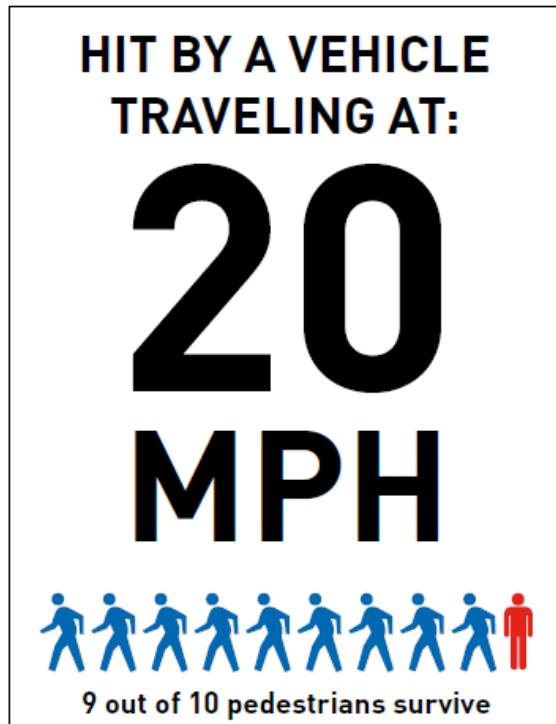


Drivers' Field of Vision
15 mph



Drivers' Field of Vision
30 mph

Why speed matters



Next steps

November 18 4:30 – 6:30 PM	Issue Identification Meeting 2 Ethiopian Community Center 8323 Rainier Ave S
November through January	Outreach and conceptual designs
February 26 March 3	Design Alternatives Review Meetings
April/May 2015	Final meeting featuring recommended alternatives, modeling results and timeline
Spring/Summer 2015	Implementation begins

Questions?

jim.curtin@seattle.gov | (206) 684-8874

<http://www.seattle.gov/transportation/rainieraves.htm>

<http://www.seattle.gov/transportation>

