

# Progress Update on the Bellevue Pedestrian & Bicycle Implementation Initiative

*City Council  
March 13, 2017*

*Paula Stevens  
Assistant Director*

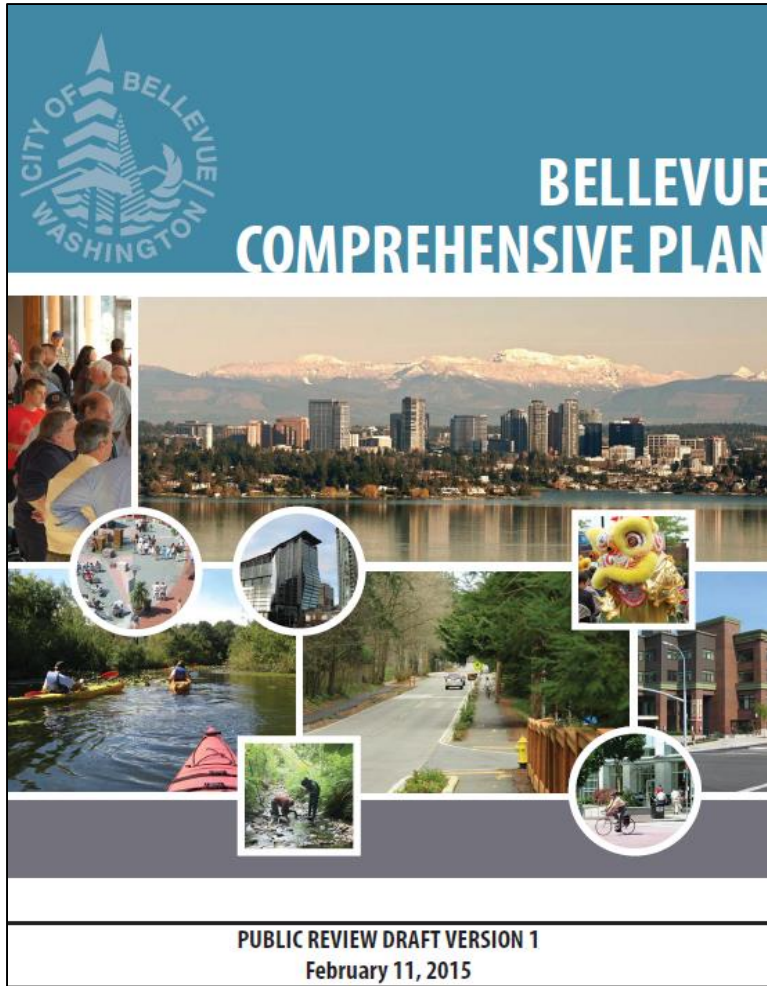
*Franz Loewenherz  
Principal Planner*



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**PEDESTRIAN  
& BICYCLE**  
IMPLEMENTATION INITIATIVE

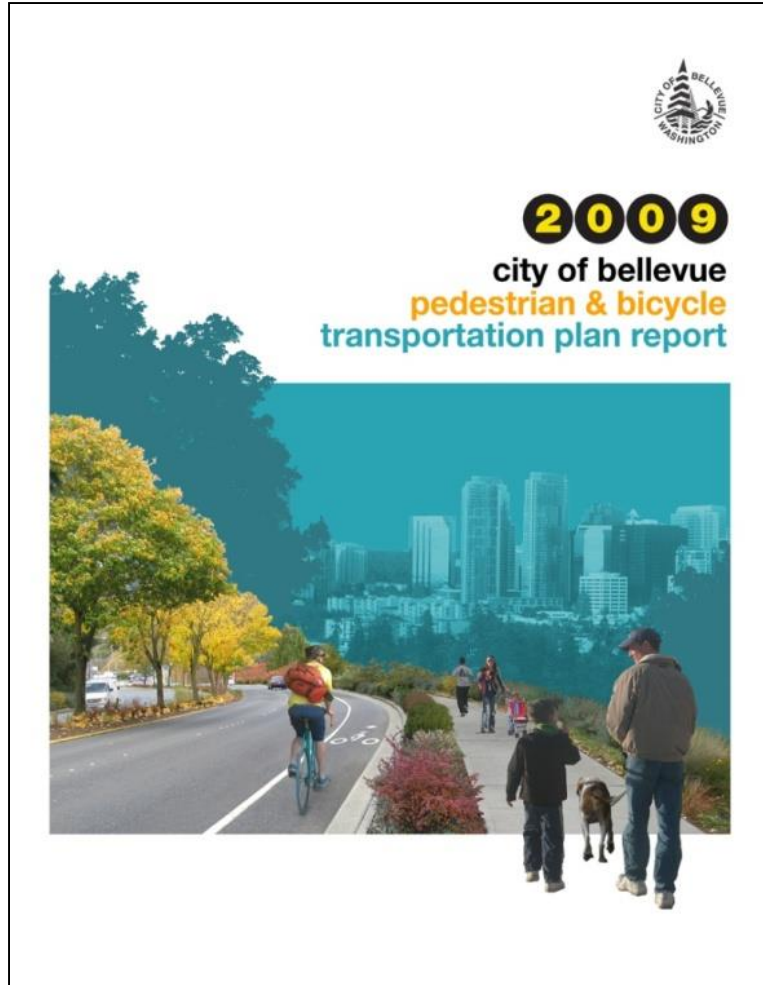
## Agenda:

- 1) *Program Overview*
- 2) *Status Report*
- 3) *Next Steps*



**“Building and maintaining a seamless network of walkways, bikeways, and off-street trails requires a coordinated effort that is documented in the Pedestrian and Bicycle Transportation Plan and the Pedestrian and Bicycle Implementation Initiative.”**

***- Transportation Element***

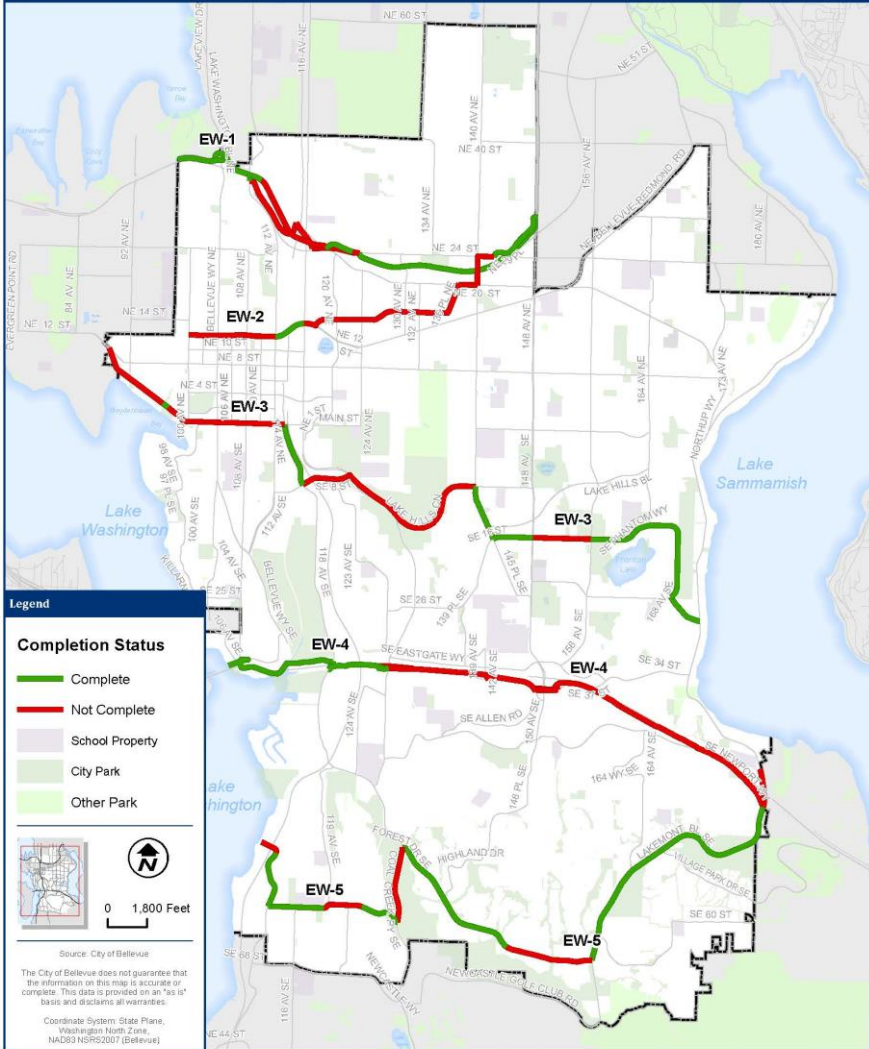


- Formulated vision, goals, objectives.
- Assessed gaps in the non-motorized network.
- Established performance targets.

*Ordinance No. 5861*

# E-W Priority Bicycle Corridors Completion Status

With Bicycle Projects completed 2009-2016



**Legend**

**Completion Status**

- Complete
- Not Complete
- School Property
- City Park
- Other Park

0 1,800 Feet

Source: City of Bellevue

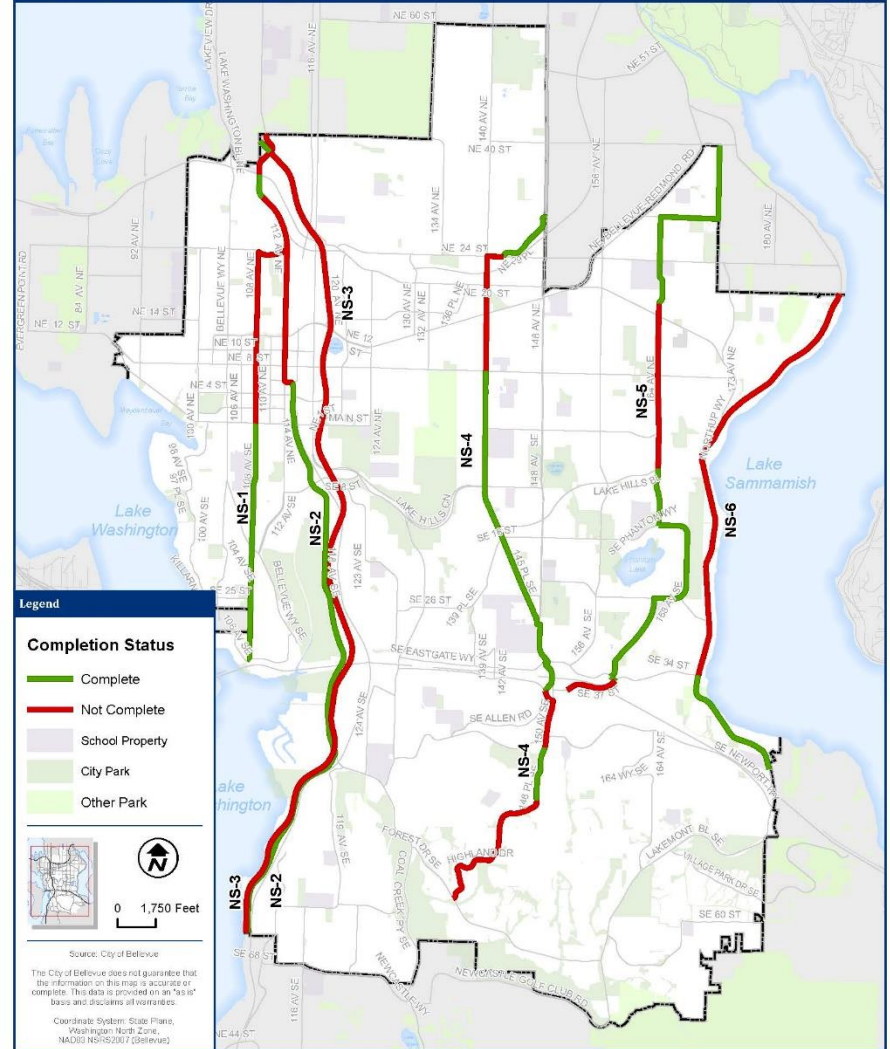
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Coordinate System: State Plane, Washington North Zone, NAD83 (NAD83) (Bellevue)

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# N-S Priority Bicycle Corridors Completion Status

With Bicycle Projects completed 2009-2016



**Legend**

**Completion Status**

- Complete
- Not Complete
- School Property
- City Park
- Other Park

0 1,750 Feet

Source: City of Bellevue

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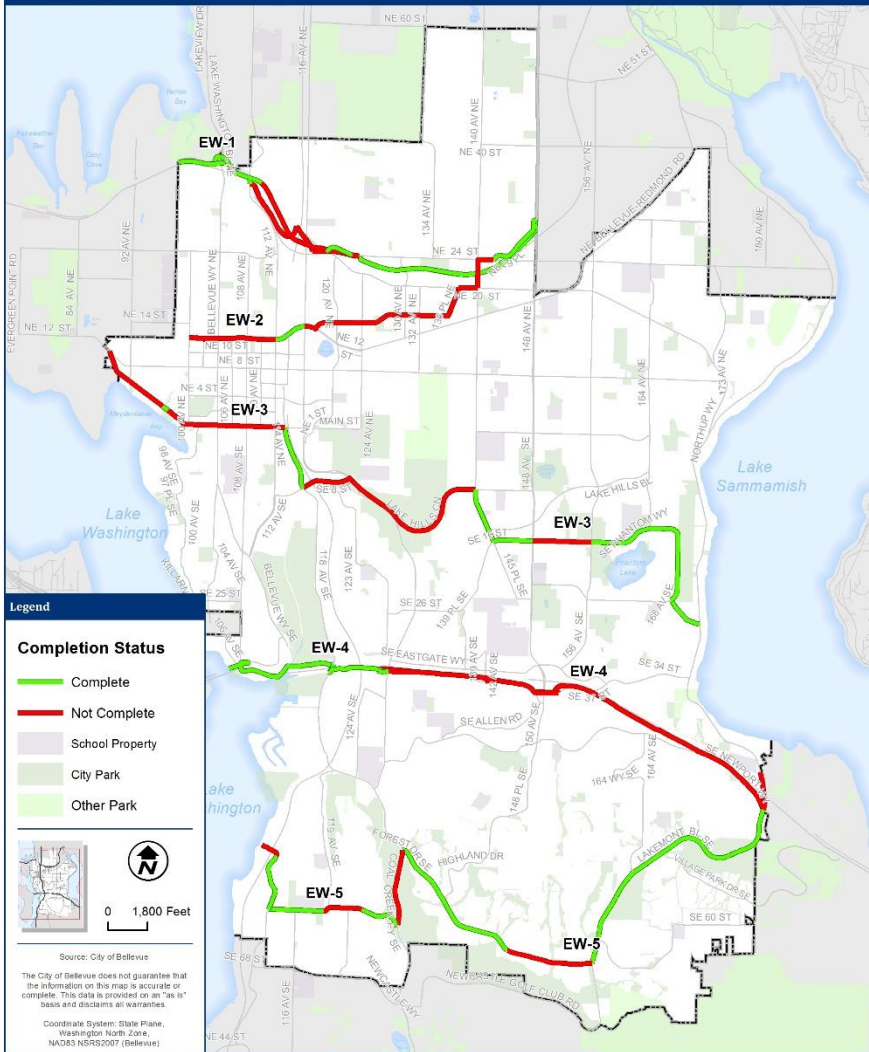


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# Priority Bicycle Corridors

# E-W Priority Bicycle Corridors Completion Status

With Bicycle Projects completed 2009-2016



**Legend**

**Completion Status**

- Complete (Green line)
- Not Complete (Red line)
- School Property (Light purple)
- City Park (Light green)
- Other Park (Light blue)

0 1,800 Feet

Source: City of Bellevue

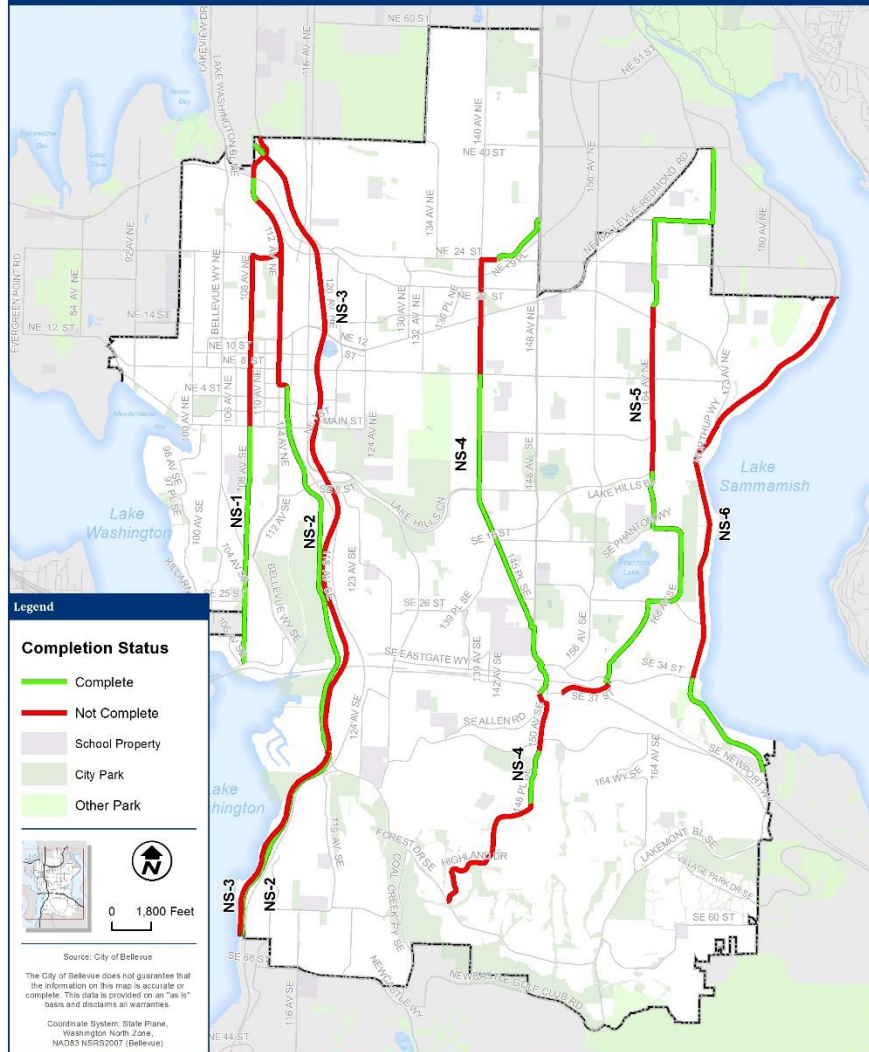
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# N-S Priority Bicycle Corridors Completion Status

With Bicycle Projects completed 2009-2016



**Legend**

**Completion Status**

- Complete (Green line)
- Not Complete (Red line)
- School Property (Light purple)
- City Park (Light green)
- Other Park (Light blue)

0 1,800 Feet

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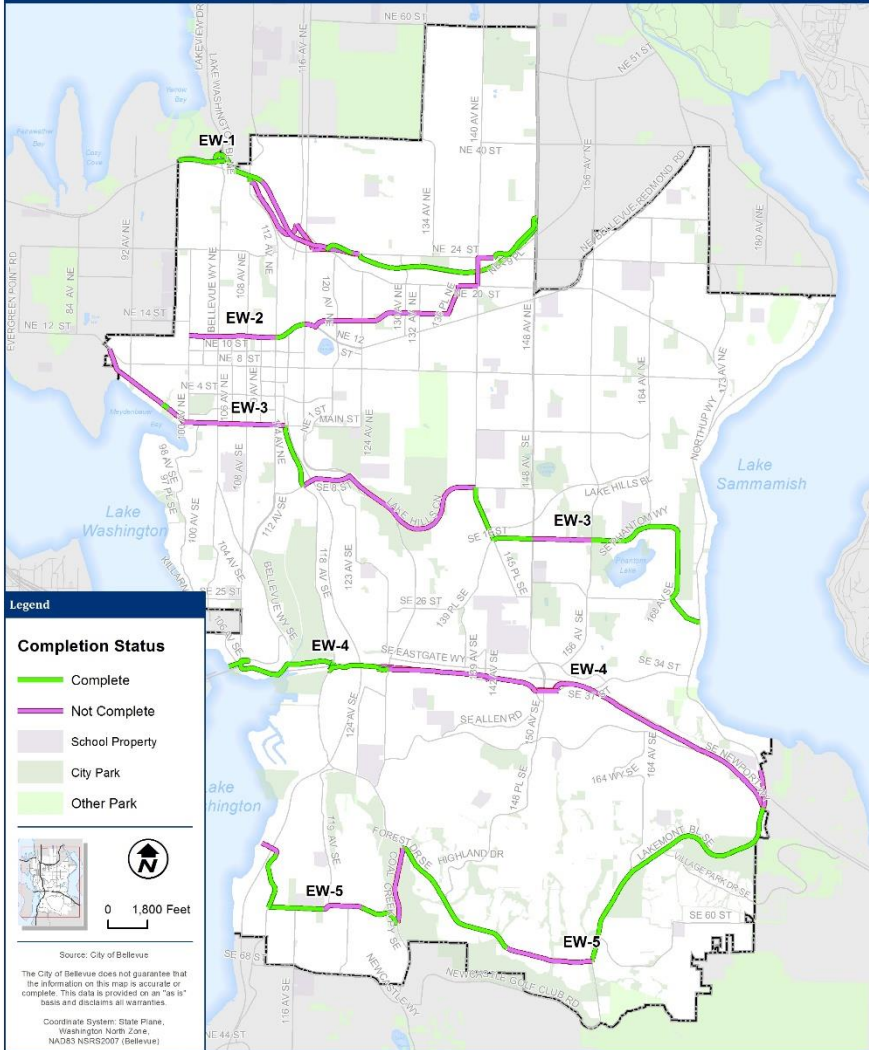


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# Priority Bicycle Corridors

# E-W Priority Bicycle Corridors Completion Status

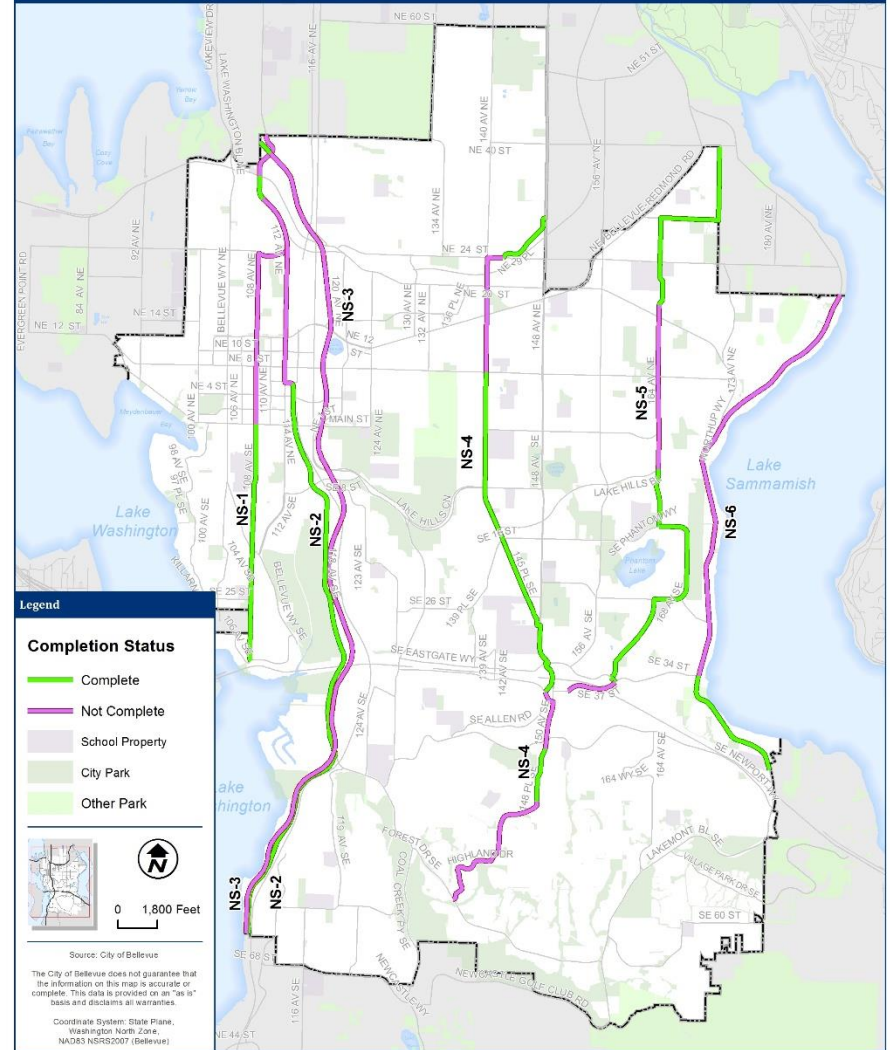
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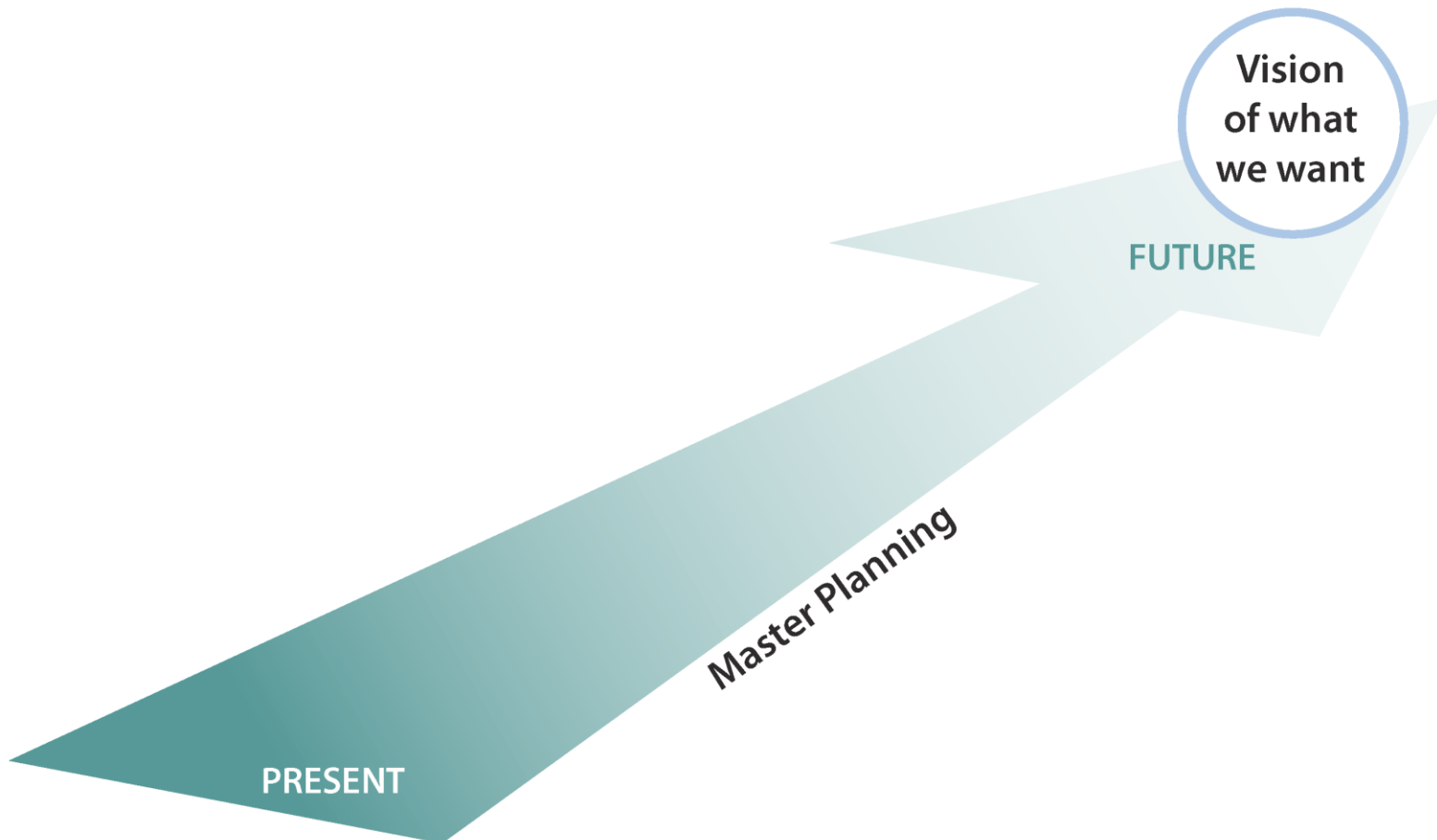


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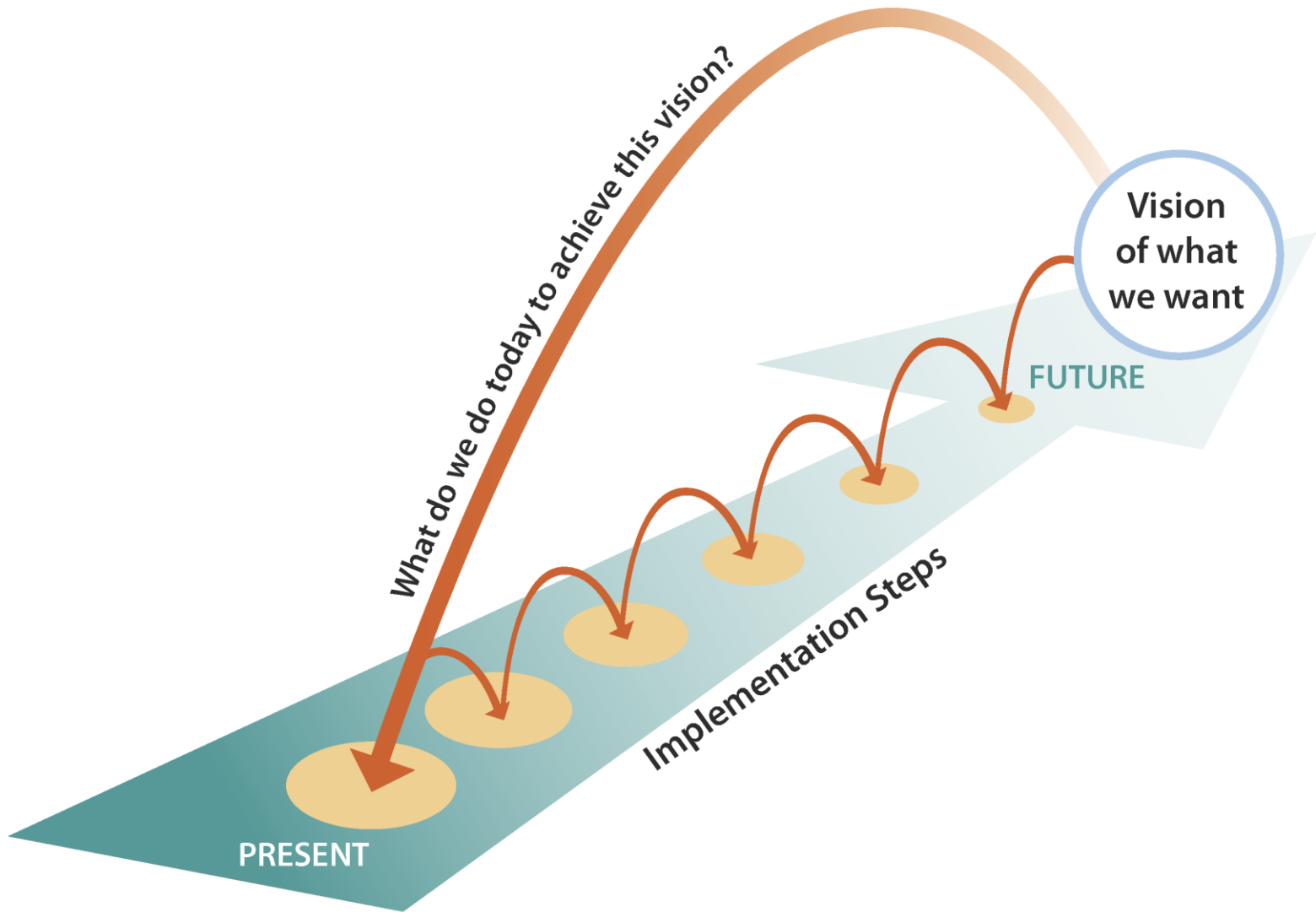


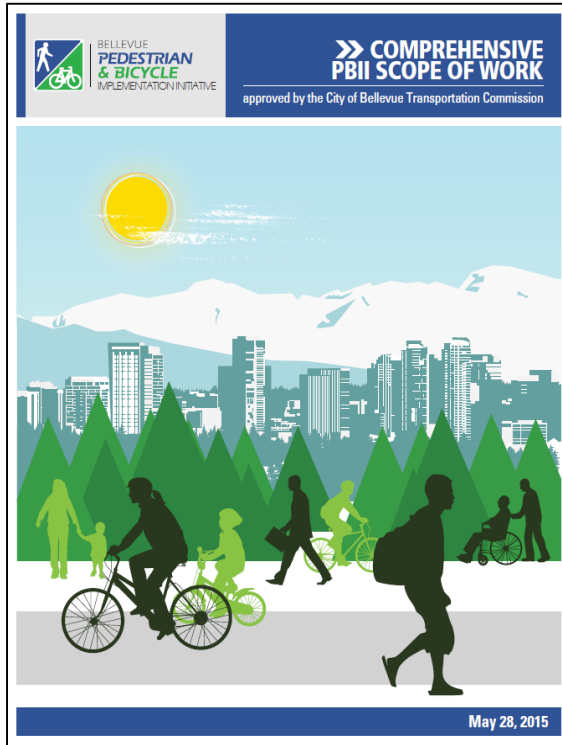
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# Priority Bicycle Corridors



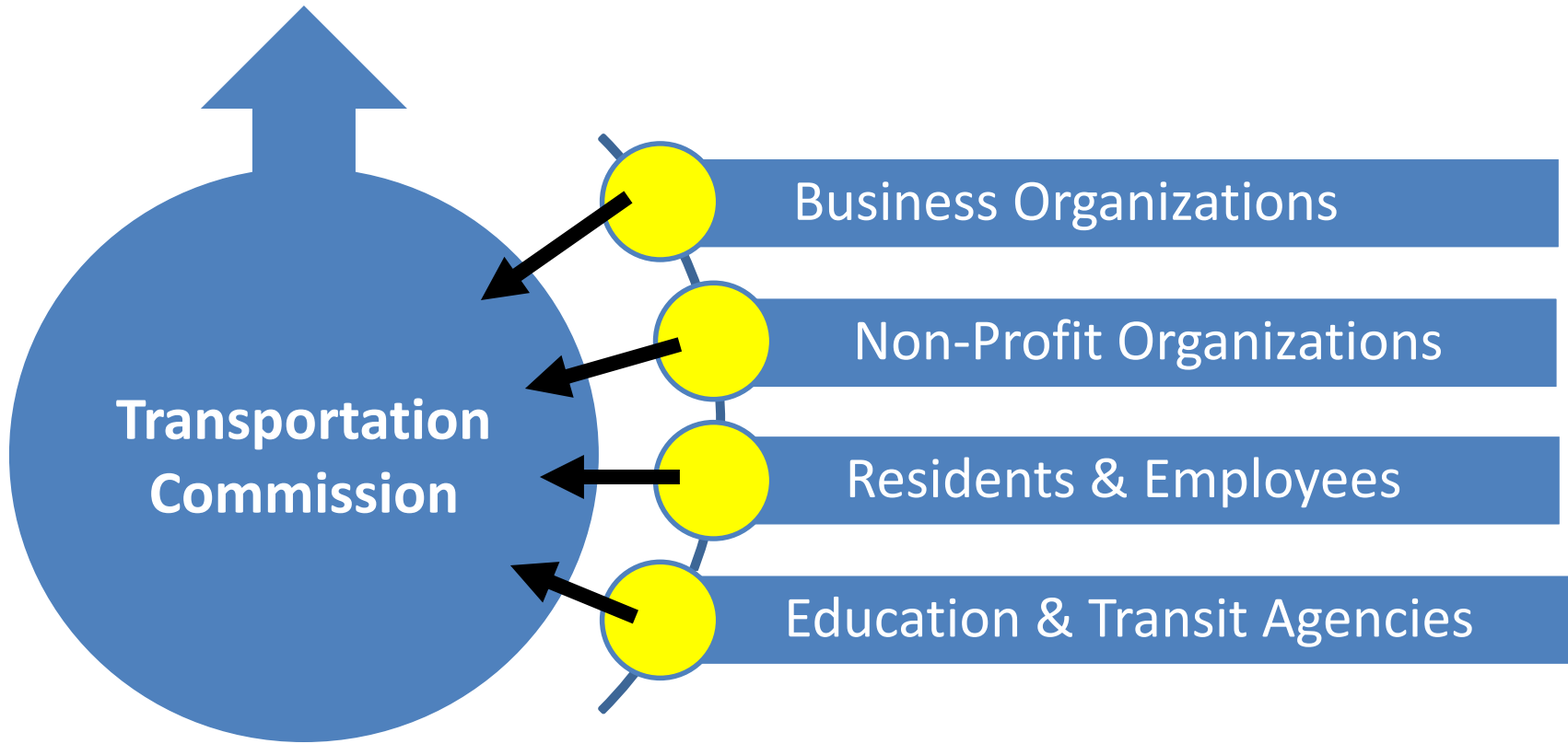






1. **Ped-Bike Safety Assessment Report**
2. **Bicycle Priority Corridor Design Report**
3. Transit Master Plan Integration Report
4. **Implementation/Funding Strategy Report**
5. **Ped-Bike Count Technology Report**
6. Bike-Share Feasibility Report
7. Performance Management Report

# Bellevue City Council

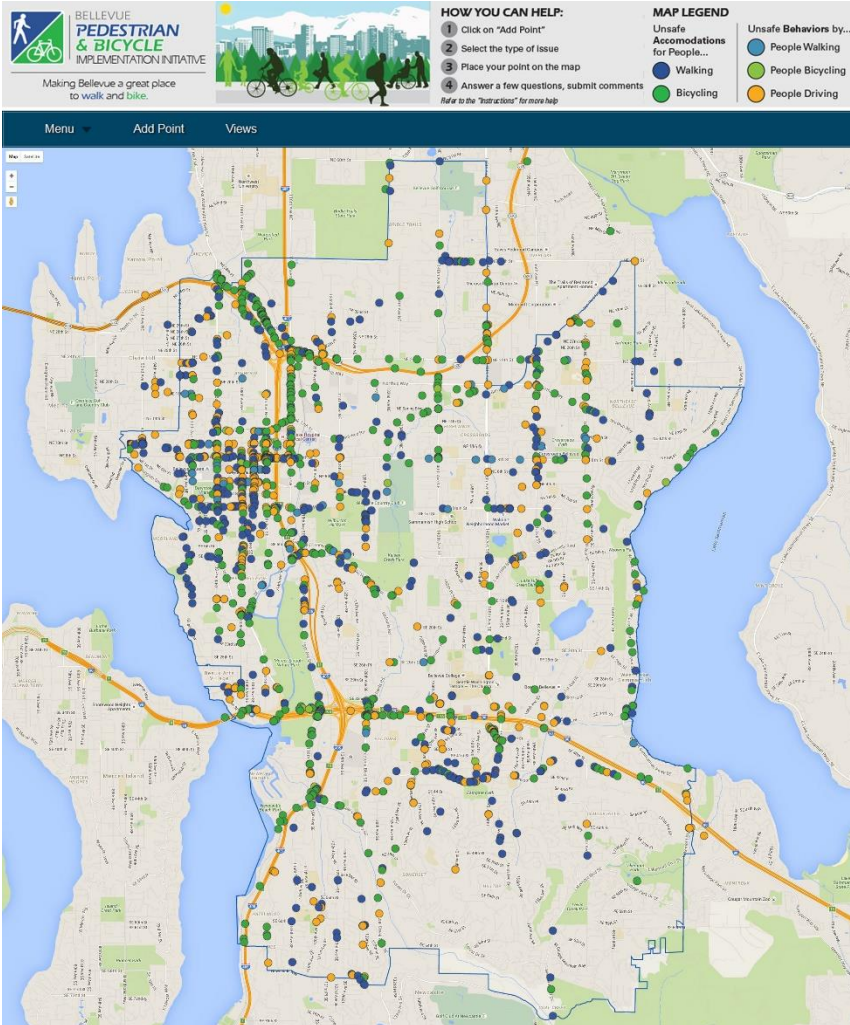




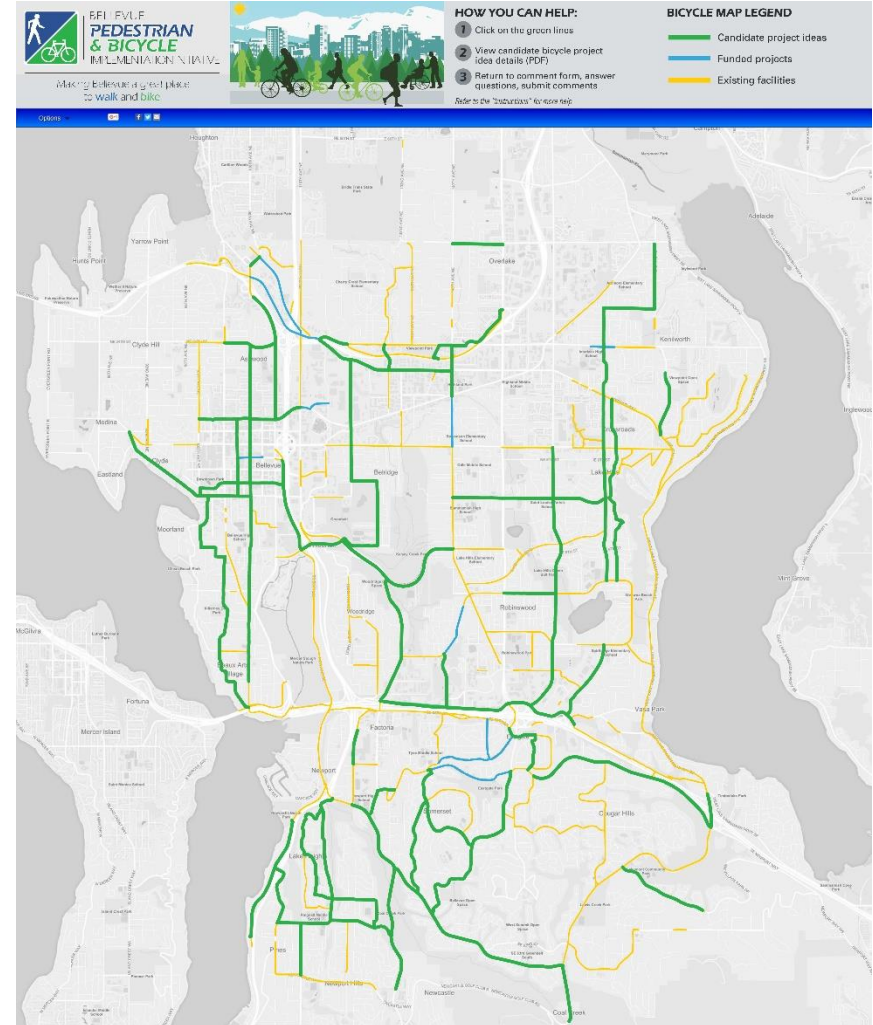
“The separated lane is very attractive for safety reasons. My greatest concern is the taking of scarce roadway space for a limited user base.”  
– Lampe



“Separating the biker from traffic is a given.... We provide it for cars to prevent accidents. We should provide it for bikers given the imbalance in protection.” – Barksdale



**Fall 2015: Locations that feel unsafe for people walking and bicycling.**

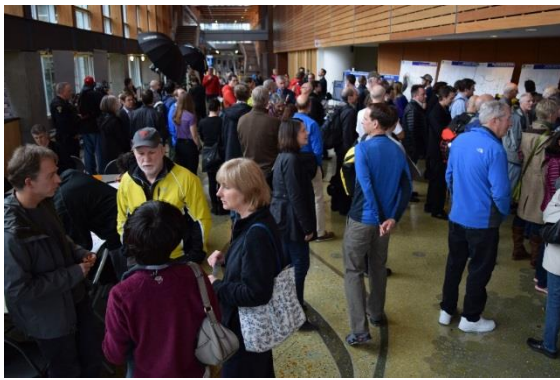


**Spring 2016: Comments on 52 BRIP project ideas.**

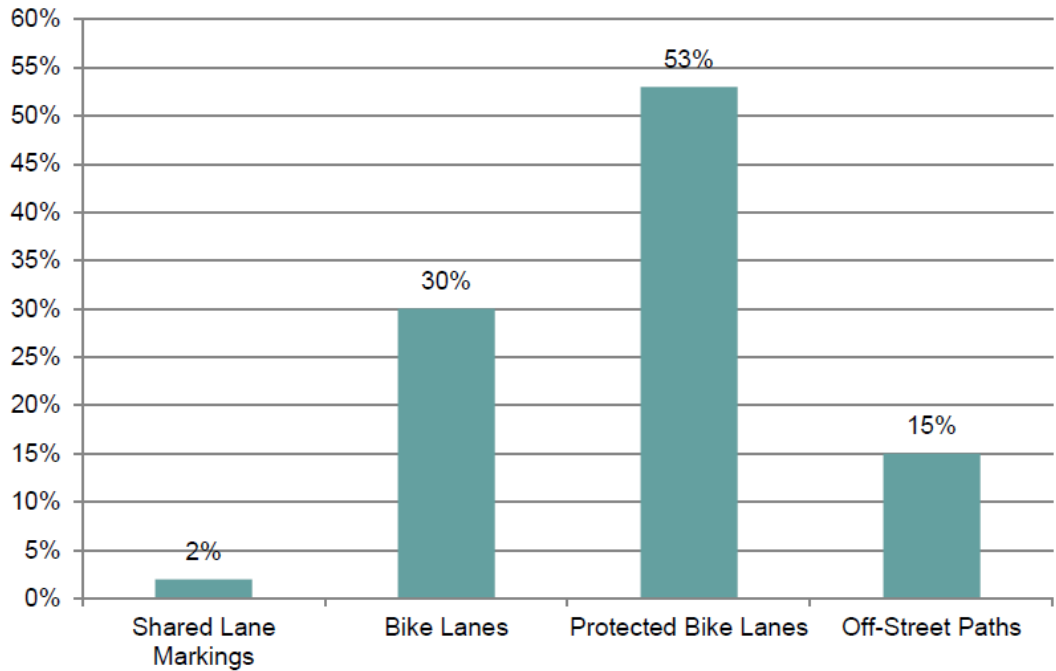


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## Stakeholder Photo Messages



Which of these types of facilities would encourage you to bicycle in Bellevue?	Responses	
	Percent	Count
Shared Lane Markings	2%	3
Bike Lanes	30%	37
Protected Bike Lanes	53%	66
Off-Street Paths	15%	18
Total		124





## Cascade Bicycle Club Bellevue Bike Network Policy Ride



### Policy Ride Map:



**Start:** Bellevue City Hall  
**Left (west)** on NE 6th St through Bellevue Transit Center  
**Right (north)** onto 108th Ave NE  
**Stop** at NE 10th St  
**Continue** north along 108th Ave NE  
**Right (east)** onto NE 24th St  
**Stop** at 112th Ave NE  
**Right (south)** onto 112th Ave NE  
**Stop** at NE 12th St  
**Right (west)** onto NE 12th St  
**Left (south)** onto 108th Ave NE  
**Stop** at NE 8th St  
**Left (east)** onto NE 2nd St  
**Left (north)** onto 114th Ave NE  
**Left (west)** onto NE 6th St  
**End:** Bellevue City Hall

### Potential Future Typical Street Sections:



### Comments:

These marked shared lanes...

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These conventional bike lanes...

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These conventional bike lanes...

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---



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This neighborhood bikeway...

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These separated bike lanes...

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Note: The above typical street sections refer to project ideas for Bellevue's Bicycle Rapid Implementation Program (BRIP), part of the Pedestrian & Bicycle Implementation Initiative. All project ideas are subject to change following additional community consultation and engineering design. As of May 2016, the BRIP and its associated project ideas have not yet been funded for implementation between 2016-2018.



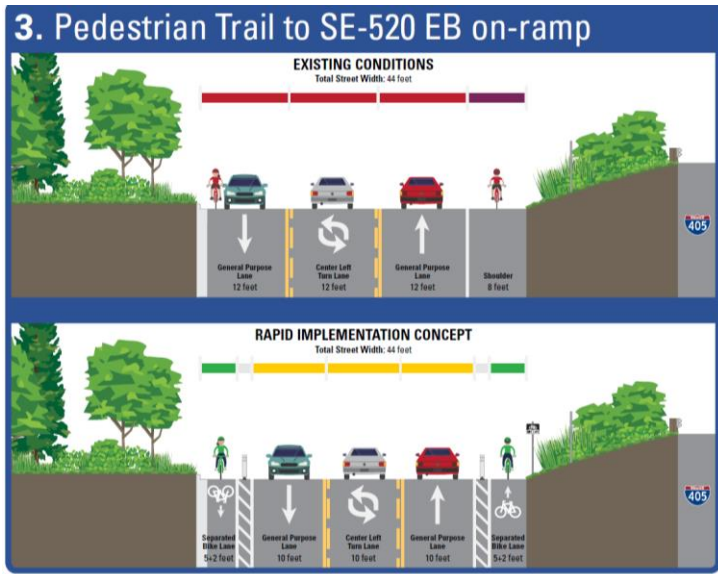
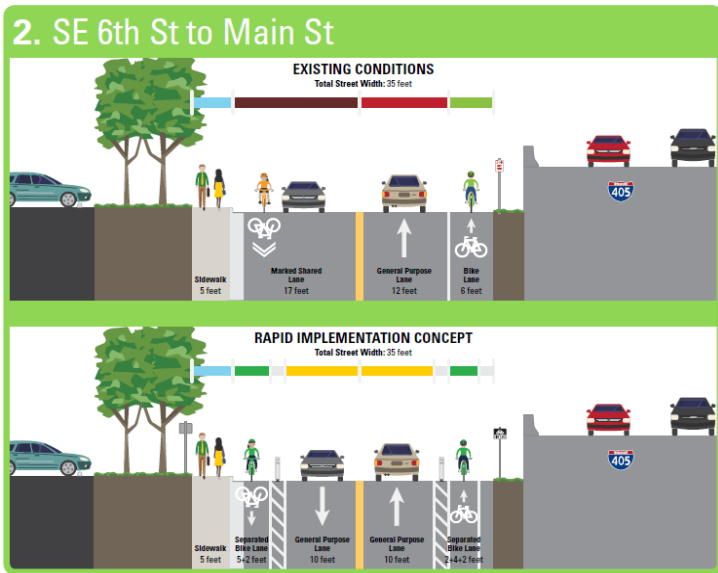
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# Policy Bike Ride





# Business Community



- 1. connected**, prioritizing a network that “fills the gaps” in lieu of piece-meal implementation,
- 2. protected**, promoting physically separated facilities to minimize conflicts between roadway users where possible, and
- 3. rapid**, leveraging early-win opportunities that can quickly advance project delivery.

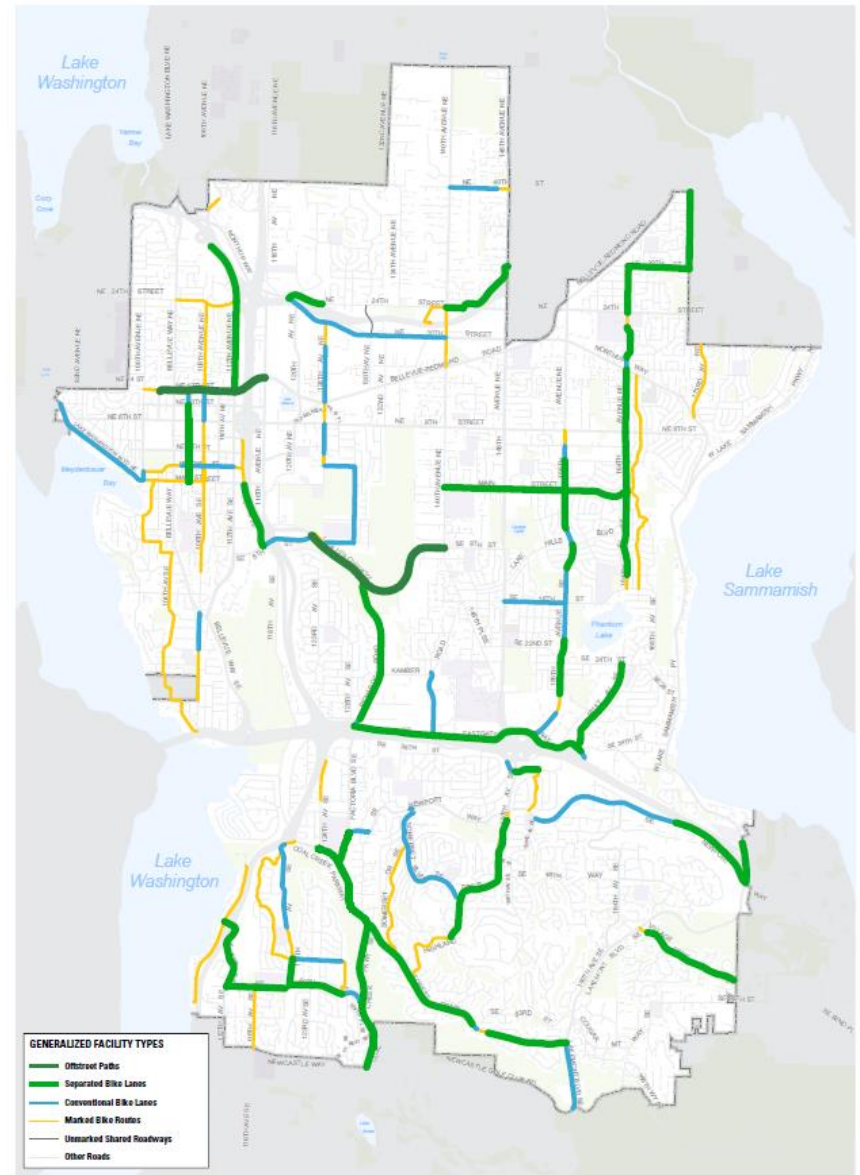
# » BICYCLE RAPID IMPLEMENTATION PROGRAM

project ideas and conceptual layouts

## DRAFT

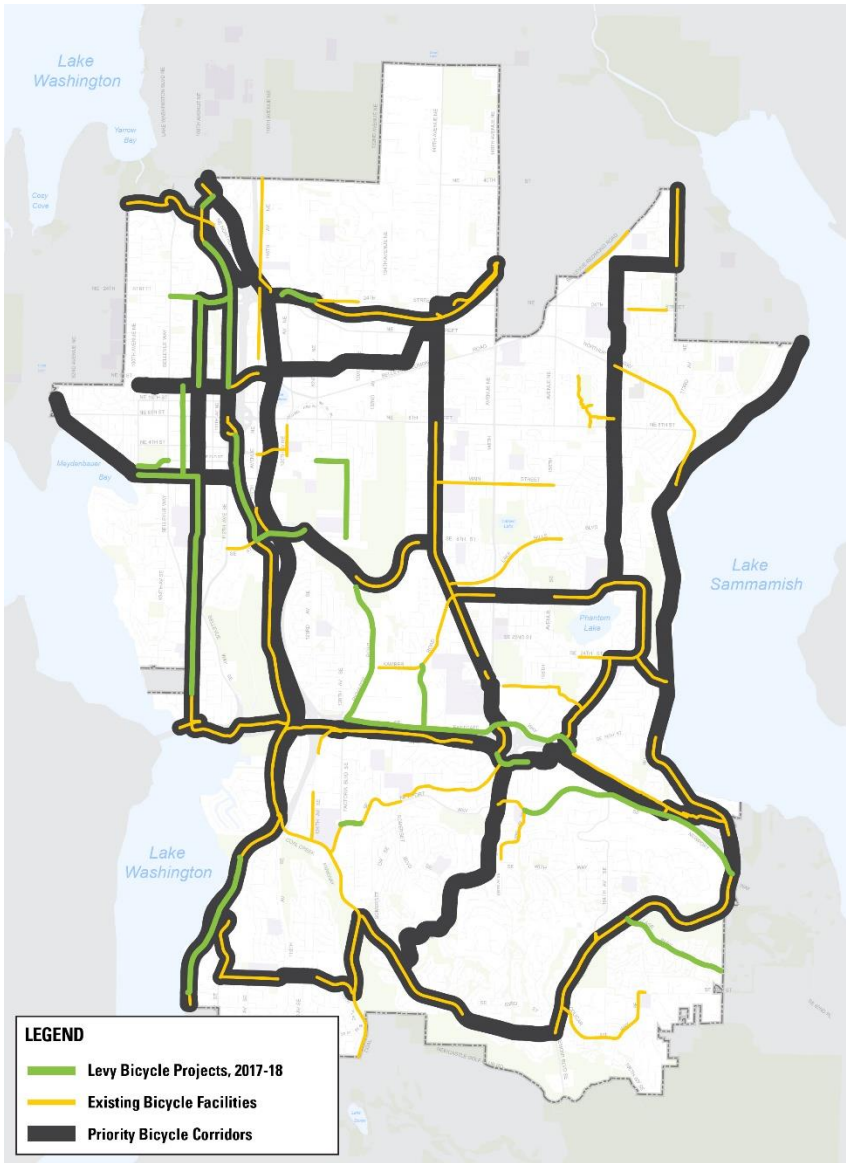


April 2016

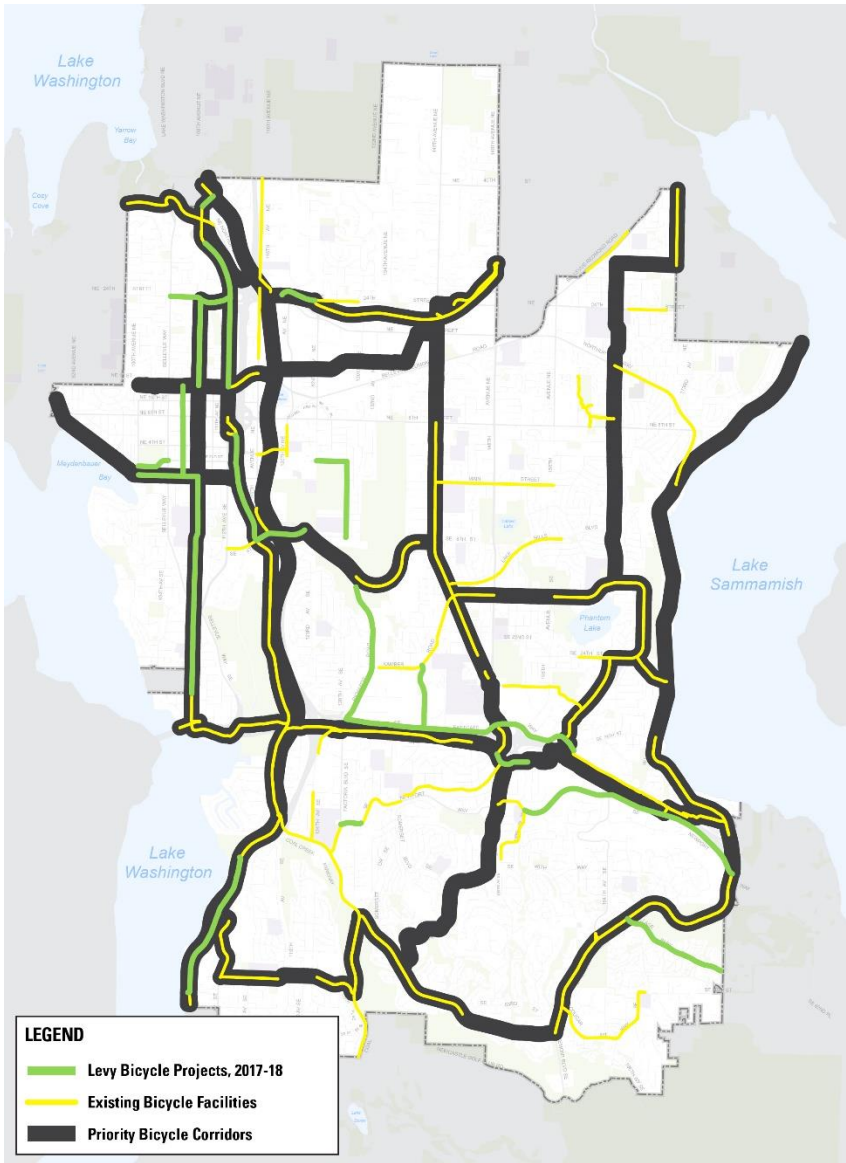


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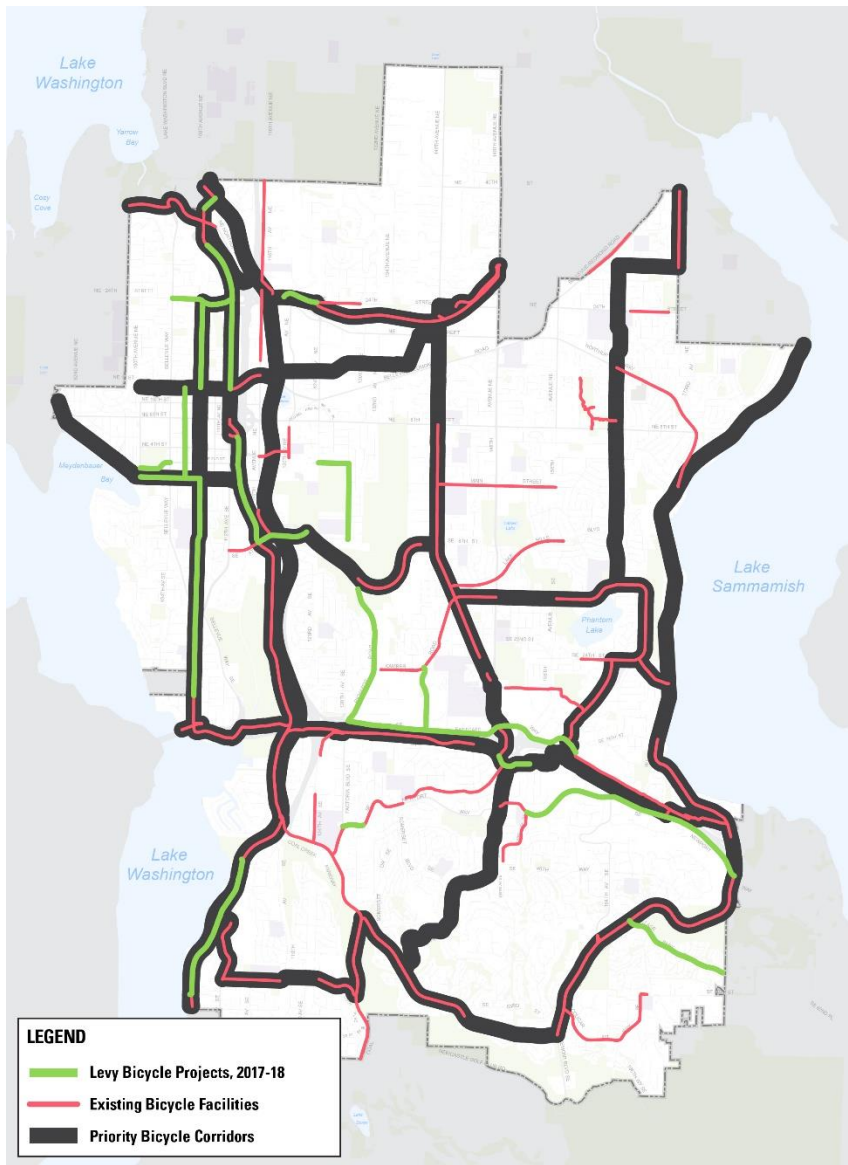
## BRIP Report (April 2016)



- Levy BRIP allocation (\$1.73M) in the 2017-2018 biennium.
- By 2019, 16.7 miles of new or upgraded facilities installed through levy contributions.
- By 2019, 1.8 miles of bicycle facilities implemented through other programs.
- Facility Type: OSP = 4% PBL = 43% CBL = 29% SLM = 24%
- By 2019, two N-S and two E-W Priority Bicycle Corridors implemented.



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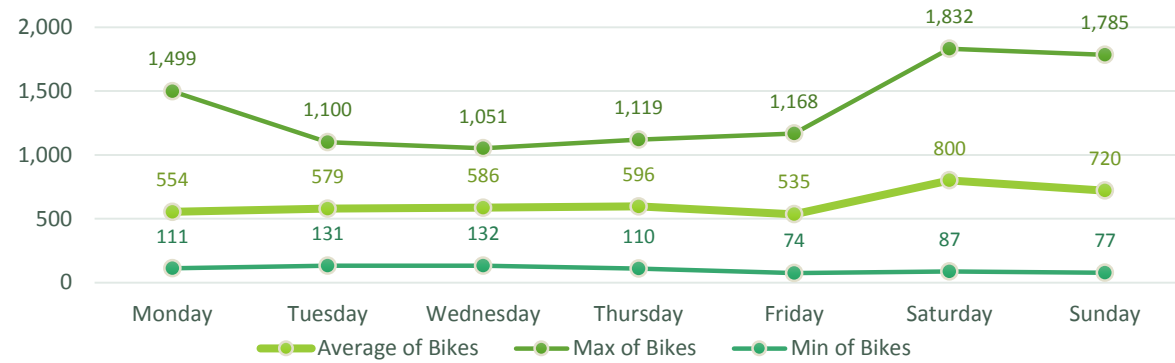


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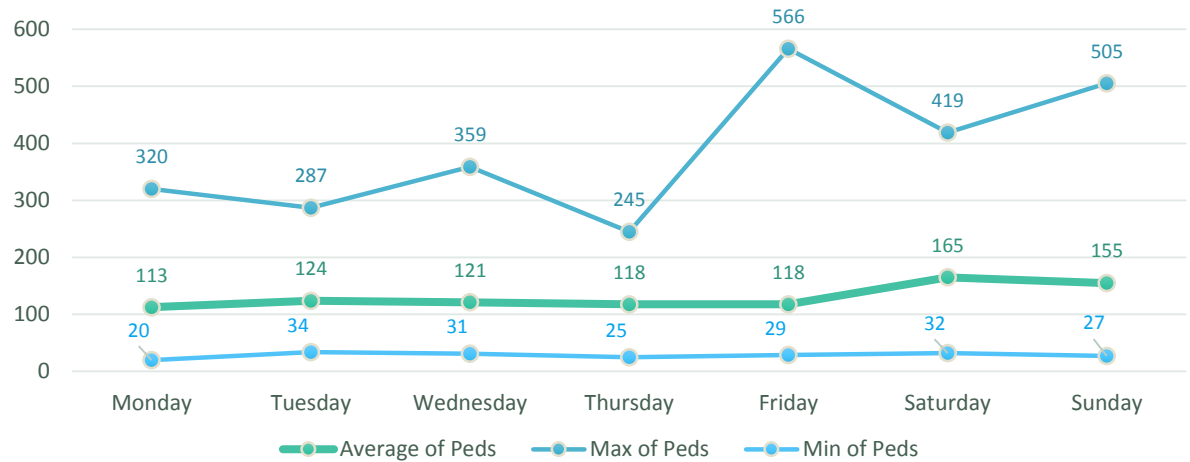
## I-90 Bicycle Volumes

(average, min and max daily values)



## I-90 Pedestrian Volumes

(average, min and max daily values)



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# Usage Data

Vision Zero | Bellevue

Vision Zero Homepage

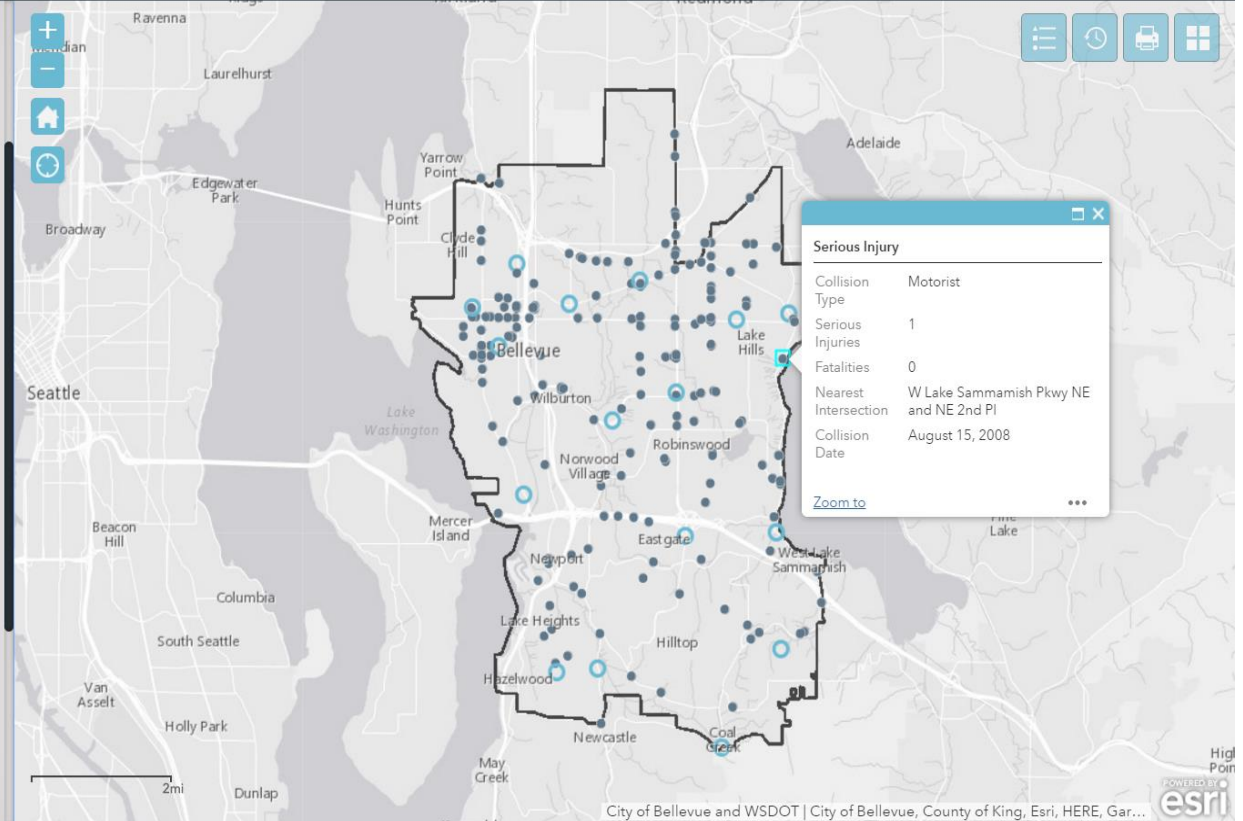


- All Modes
- Pedestrians
- Bicyclists
- Motorists

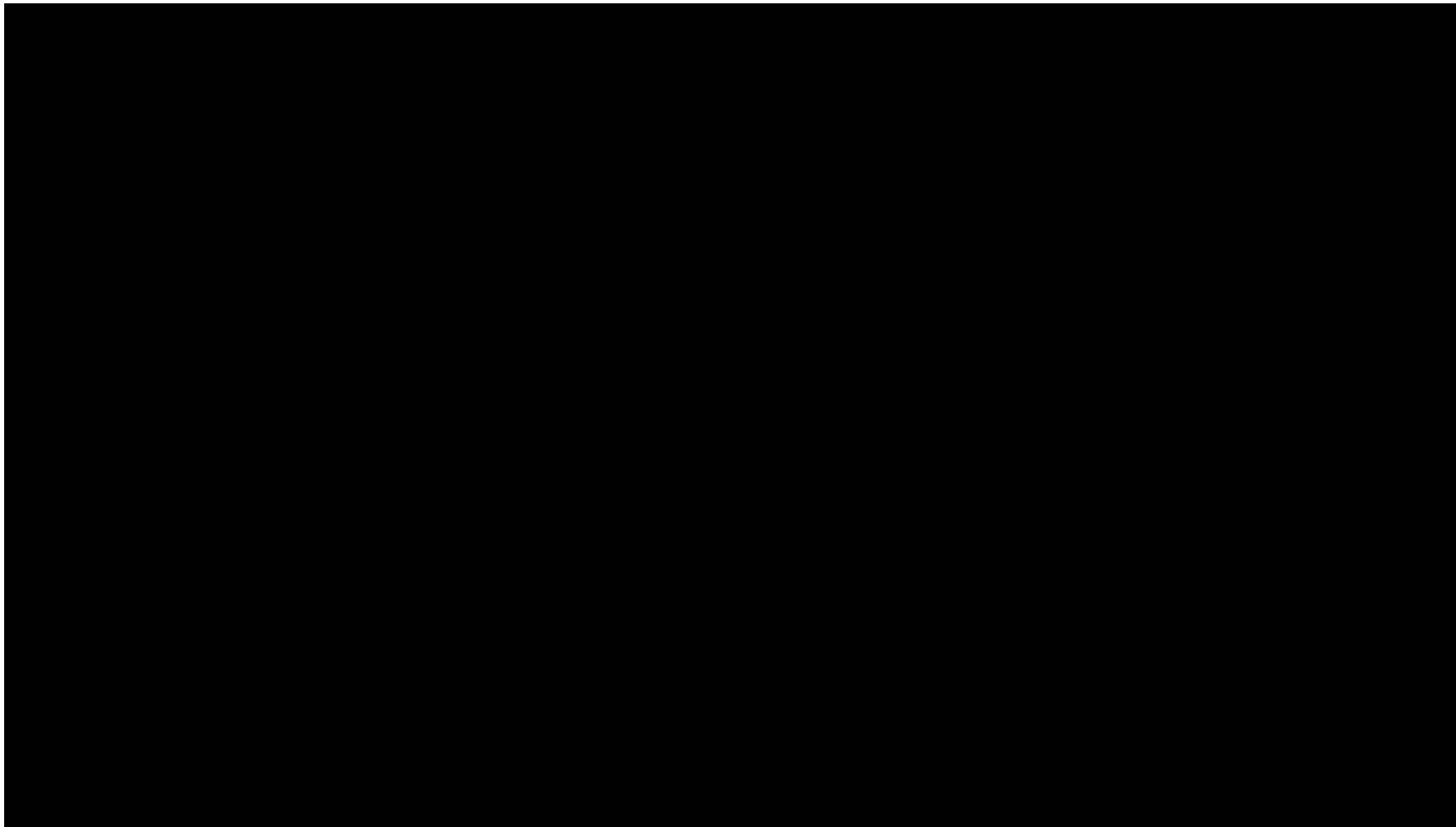
Welcome to Bellevue's Crash Map Portal

Bellevue's crash map portal is an interactive tool that enables the user to view collision experience citywide. This mapping tool identifies fatal and serious injury collisions using data provided by the Washington State Department of Transportation. Each mode of travel - pedestrian, bicycle, and motor vehicle, can be seen independently on the tabs above or viewed as a combined data set here. The information reflects data over the 10 year period from 2006 to 2015.

The following chart provides an overview of the yearly occurrence for fatal and serious injury collisions for all modes of travel on city streets.







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# Video Analytics Partnership



**Winner!**  
**Bellevue, Washington**

Bellevue, WA, pursued a range of data collection activities during the Mayors' Challenge to identify barriers to bicycling and walking, prioritize improvements, and guide investments. In February 2015, the Bellevue City Council introduced the Pedestrian and Bicycle Implementation Initiative (PBII) to improve safety for people of all ages and abilities who walk and bike in Bellevue. Using data collected from online sources, key-pad polling at public meetings, automated bicycle and pedestrian counters, and traffic camera videos, the PBII team identified barriers to walking and bicycling and developed a \$6.8M Bicycle Rapid Implementation Program (BRIP) budget proposal to guide citywide investments through 2019. The BRIP aims to expand the city's bicycle network from 42 miles to more than 70 miles of conventional bike lanes, separated lanes or off-street paths, and to complete four continuous, cross-city bicycle corridors.

**Demonstrated Successes**

**Innovative Data Collection Techniques Gather Real-Time and Long-Term Data with Public Input**  
Throughout the PBII process, Bellevue has

emphasized understanding long-term trends and gathering feedback from people who walk and bike. Bellevue's PBII team:

- Conducted a longitudinal assessment from 2006–2015 of non-motorized collisions using the USDOT's Pedestrian and Bicycle Crash Analysis Tool (PBCAT) system;
- Gathered input using key-pad polling and comment cards at 20 public meetings and an open house that attracted 140 attendees; and
- Used online surveys to solicit public input at two stages in the BRIP development process;
  - Over 700 people placed more than 1,600 points in the first online map to identify locations that they felt were unsafe for walking and bicycling;
  - Over 120 people submitted more than 400 comments on conceptual designs for 52 proposed projects to make the pedestrian and bicycle systems safer.



Pedestrian and Bicycle project manager Franz Loewenherz (foreground) and Councilmember Lynne Robinson (center) lead a policy ride with local bicycle advocates in Downtown Bellevue.

# Video Analytics Towards Vision Zero



BY FRANZ LOEWENHERZ, VICTOR BAHL, PH.D., AND YINHAİ WANG, PH.D.

For young people below the age of 35, motor vehicle crashes are the leading cause of death in the United States. In 2015, collisions resulted in 35,092 deaths and 2.4 million injuries. More than 1,100 children under the age of 15 were killed. The 7.2 percent increase in traffic fatalities from 2014 to 2015 represents the greatest percentage increase in nearly 50 years.<sup>1</sup> Yet despite the massive death toll, work to prevent traffic fatalities has been woefully lacking.

Many governmental agencies continue to rely on traditional traffic safety approaches. They intervene only after enough police crash reports are filed to trigger a High Crash Corridor designation. This reactive approach to preventing crash recurrence has well-documented limitations:

- At most locations, the number of crashes is very small and subject to chance variations;
- Not all crashes are reported and the level of reporting is uneven regarding the type of road users involved, the exact location, and the severity of injuries;
- Numerous "close calls" go undocumented; and
- Many years of crash data are typically required to develop an understanding of the situation.<sup>2</sup>

Given these trends, and the crash analysis tools presently employed, how will jurisdictions achieve what all of us want: zero fatalities and serious injuries on our roadways? That's the goal of Vision Zero, an international movement that responds to

what is one of the leading causes of death worldwide.<sup>3</sup> It calls on government agencies to be proactive, identify risks, and take steps to prevent injuries on our roadways. Vision Zero encourages us to imagine a future in which we do not need to wait for crashes to occur in order to prevent others from happening.<sup>4</sup>

**Solutions for a Safer World**

Although traffic collisions can happen anywhere, there are often early warning signals in the form of conflicts or near-collision events at specific locations. These are recurring instances where a car abruptly stops because a bicycle veered in front of it, a pedestrian steps into the path of a bicyclist, or one bicyclist or car passes by another or a static object at very close spacing. These surrogate warning indicators – observable non-crash traffic conflict events – provide insight into when, where, and why crashes are most likely to occur. Understanding the root causes for near-collision events could enable local governments to take proactive, corrective actions to reduce the potential for future crashes.<sup>5</sup>



## More information:

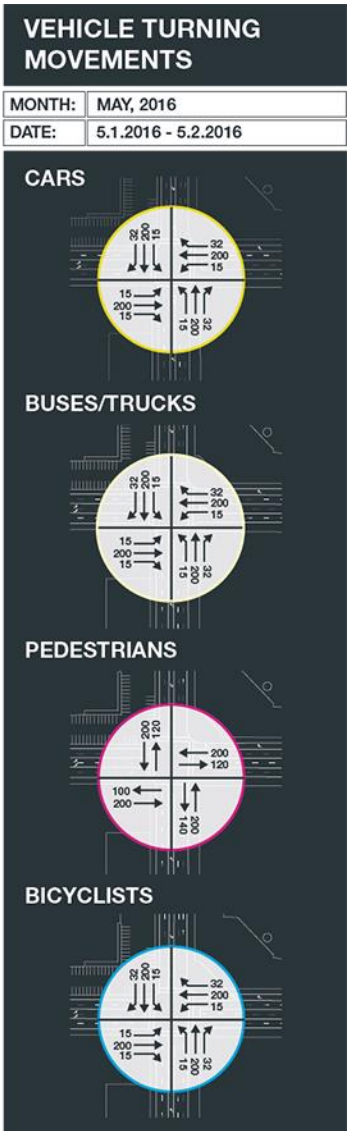
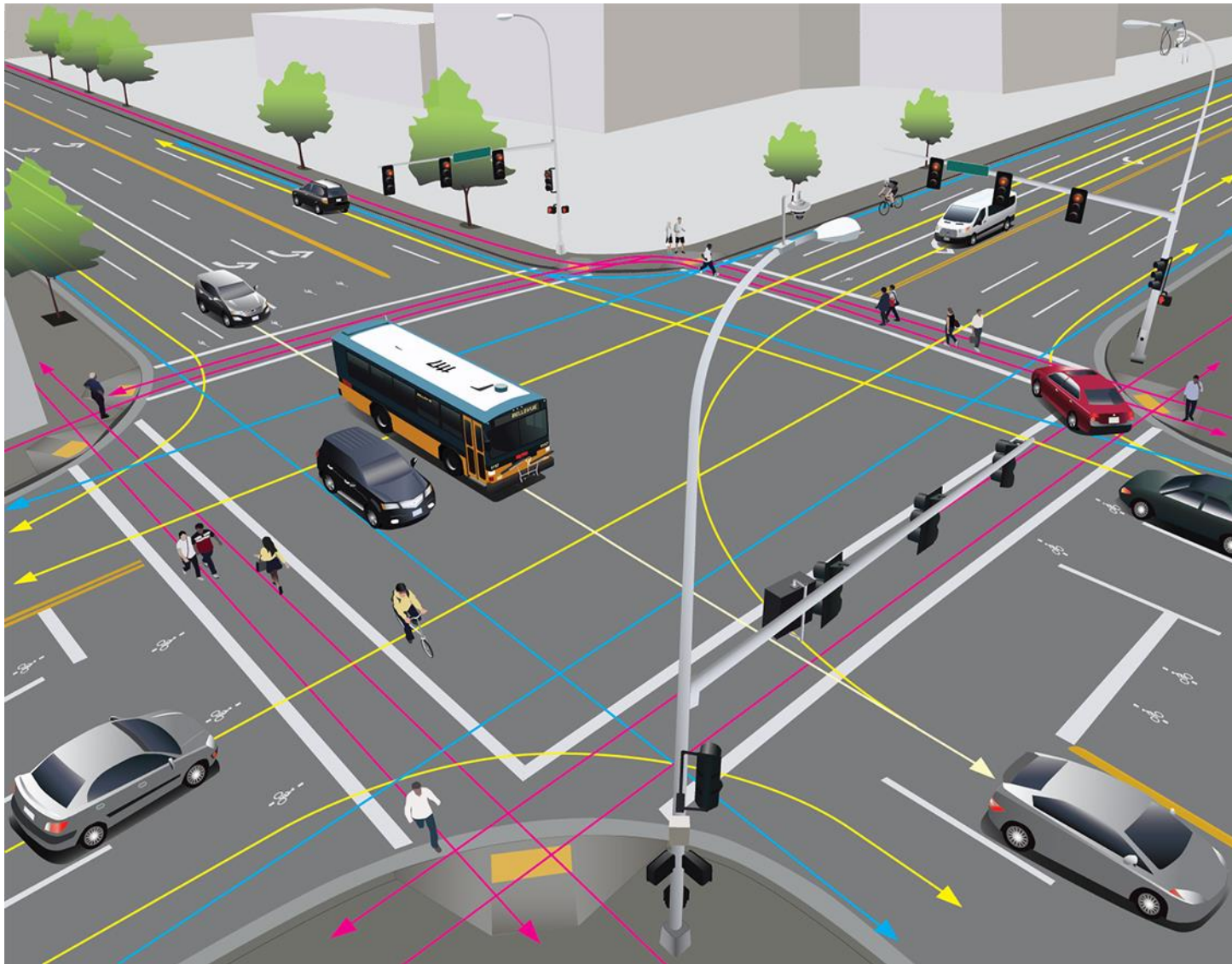
*Franz Loewenherz*

*Principal Planner*

*425-452-4077*

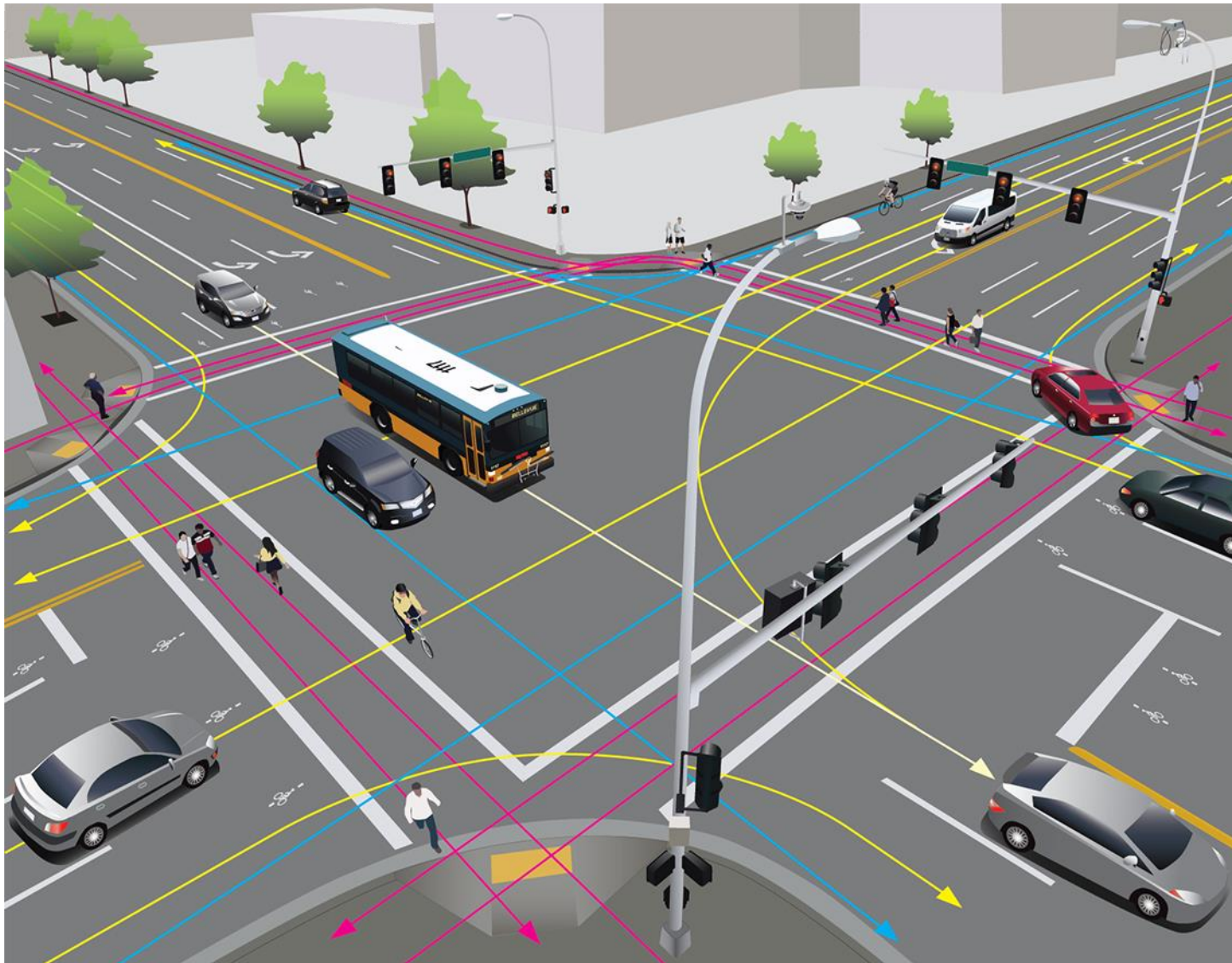
[floewenherz@bellevuewa.gov](mailto:floewenherz@bellevuewa.gov)

## **Additional Slides**



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# Turning Movement Counts



## VEHICLE DISTRIBUTION CHARTS BY TIME OF DAY

MONTH:	MAY, 2016
DATE:	5.1.2016 - 5.1.2016

### CARS



30,000 cars/day

### BUSES/TRUCKS



400 buses & trucks/day

### PEDESTRIANS

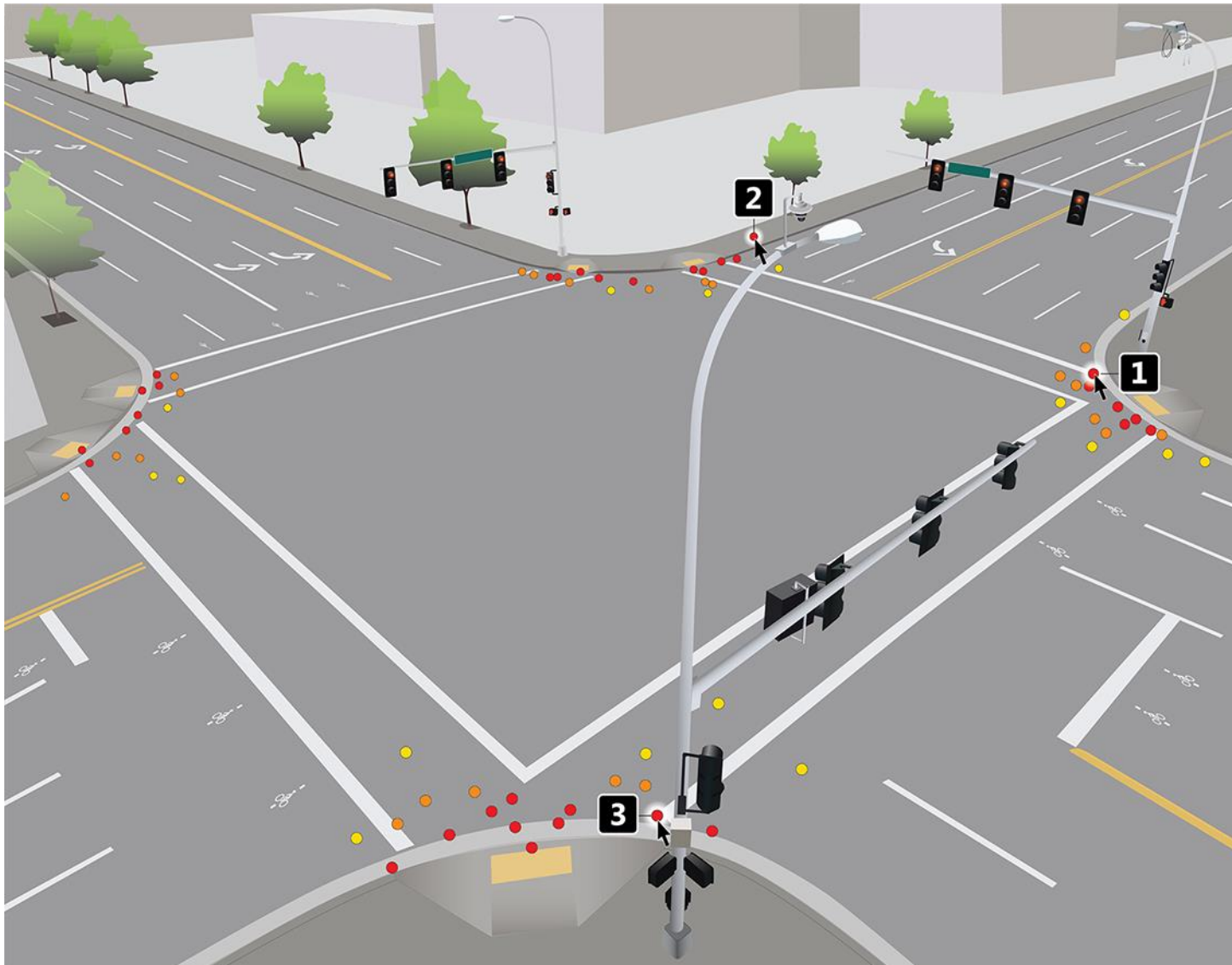


1,000 pedestrians/day

### BICYCLISTS



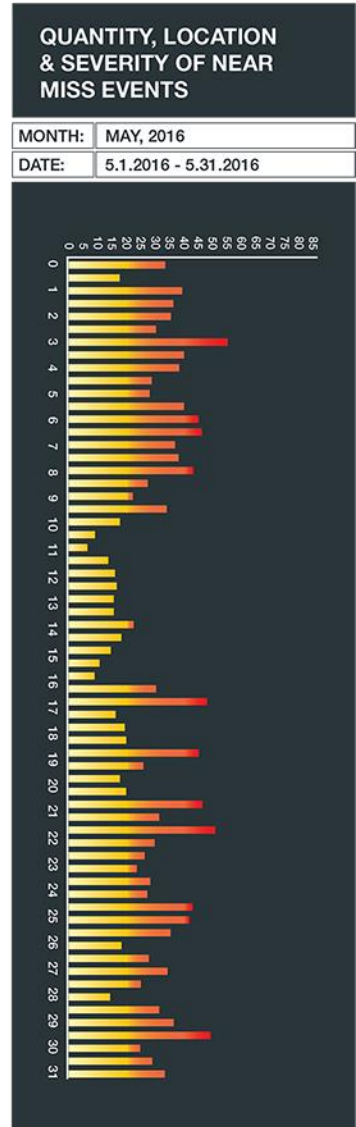
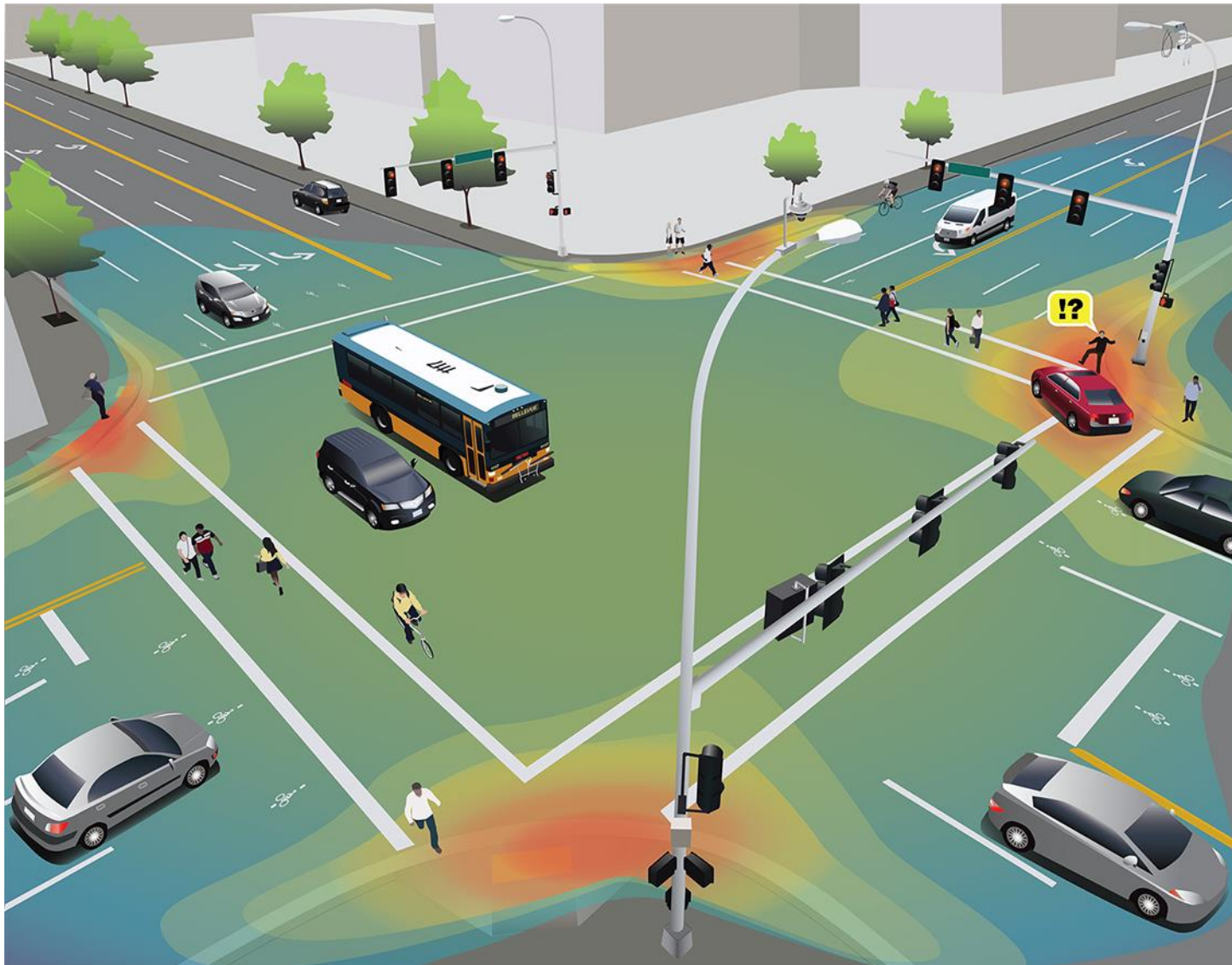
100 bikes/day



**QUANTITY, LOCATION  
& SEVERITY OF NEAR  
MISS EVENTS**

MONTH:	MAY, 2016
DATE:	5.1.2016 - 5.31.2016







OVERSIGHT



GOVERNMENT



RESEARCH



NON-PROFIT



# Video Analytics Partners

# Video Analytics towards Vision Zero

## Crowdsourcing to save lives

- ➔ Unique opportunity to help prevent traffic crashes while saving lives in the process
- ➔ "Teach" our computers how to recognize cars and people walking and bicycling
- ➔ Cities will be able to rapidly detect road conflicts and traffic engineers can then take preventative action to avoid crashes

## Worldwide problem demands big vision

- ➔ Worldwide, ~1.25 million people are killed in traffic crashes annually
- ➔ In the United States, more than 35,000 people died in 2015 and 2.5 million suffered serious injuries
- ➔ Crashes are preventable and we need not wait for someone to be killed or injured before we take action

[More info](#) ➔

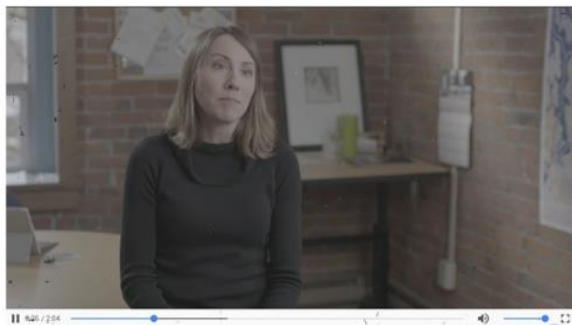
## How does it work?



## Get involved today.

- [Object Labeling Task](#) ➔
- [Car Counting](#) ➔
- [Lorem Ipsum Dolor](#) ➔
- [Lorem Ipsum Dolor](#) ➔

## Our Partnership with Microsoft Research



To help the video analytics system learn to detect road conflicts, Microsoft is collaborating with the following partners to promote this crowd-sourcing platform.



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# Public Facing Webpage