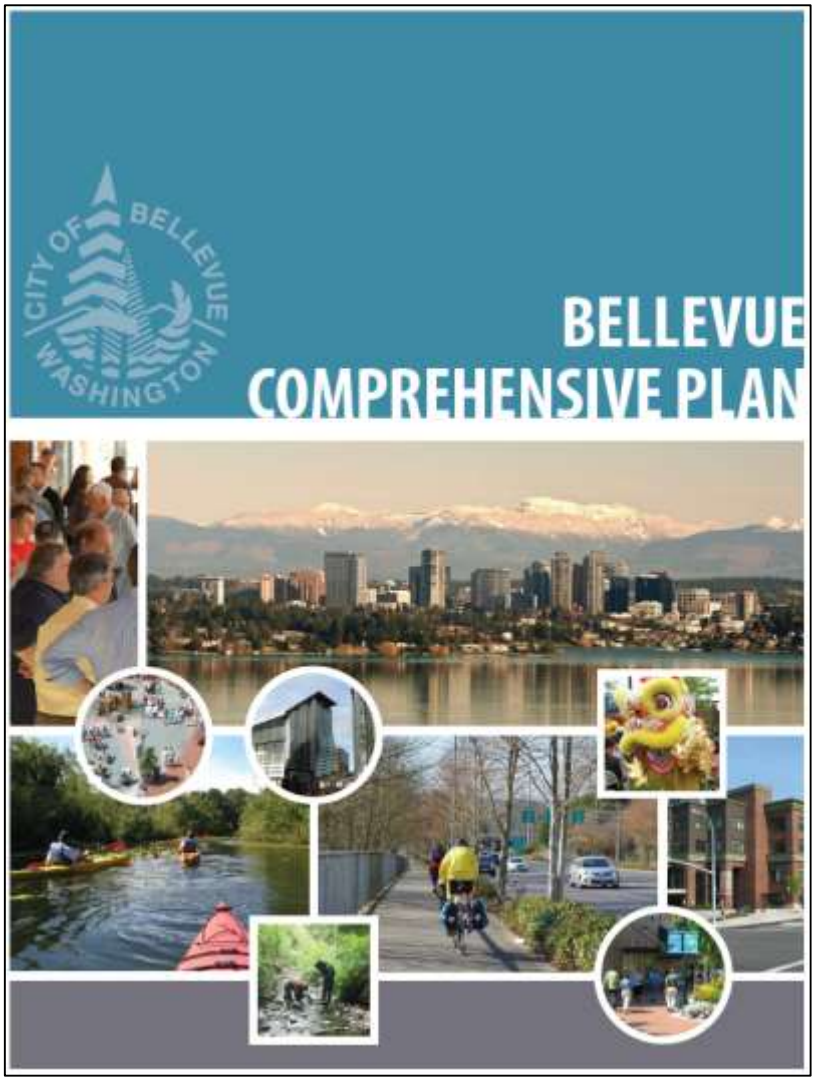
PBII & Vision Zero Overview
Human Services Commission – February 6, 2018

Franz Loewenherz
Principal Planner
Transportation Department

PBII Briefing

- **Policy context**
- **Downtown demonstration bikeway project**
- **Citywide bike share pilot program**

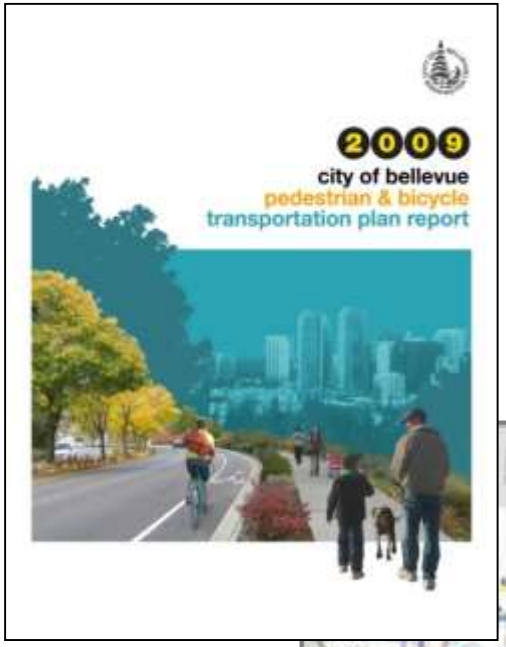
PBII | Policy Context



"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

2019 Target | Citywide Corridors

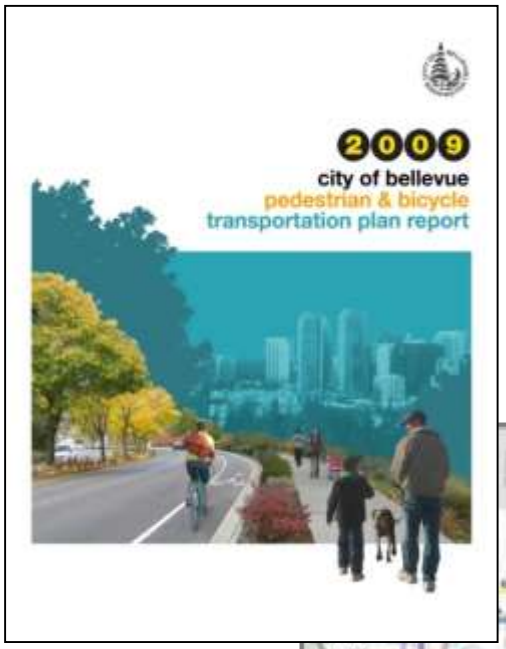


Ordinance No. 5861 (2/17/2009)

"Within 10 years, implement at least two completed, connected, and integrated north-south and at least two east-west bicycle routes that connects the boundaries of the city limits, and connects to the broader regional bicycle system."

- 2009 Pedestrian & Bicycle Transportation Plan

2014 Target | Downtown Corridors

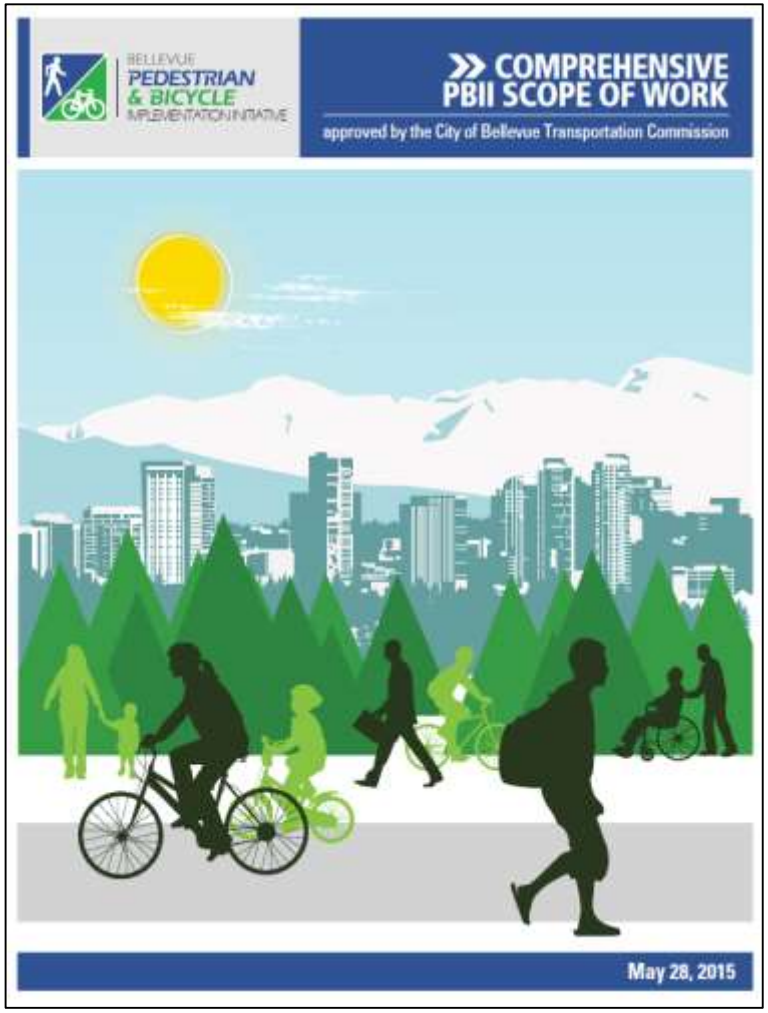


Ordinance No. 5861 (2/17/2009)

"Within 5 years, implement at least one completed and connected east-west and north-south bicycle route through Downtown Bellevue."

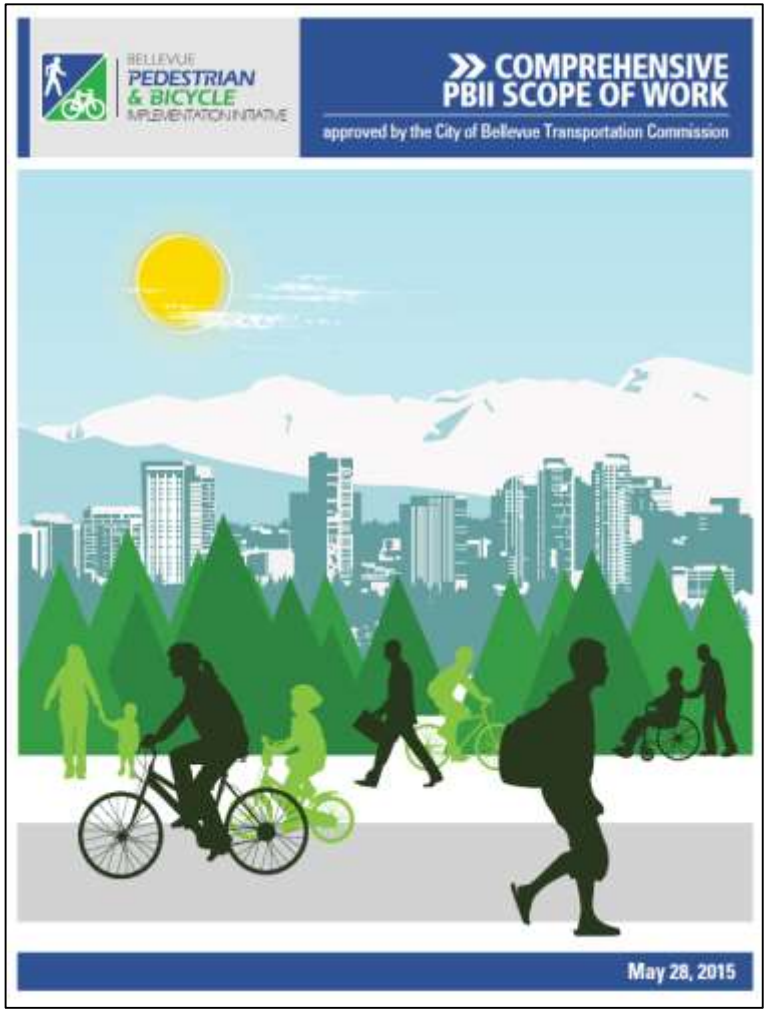
- 2009 Pedestrian & Bicycle Transportation Plan

PBII Council Direction



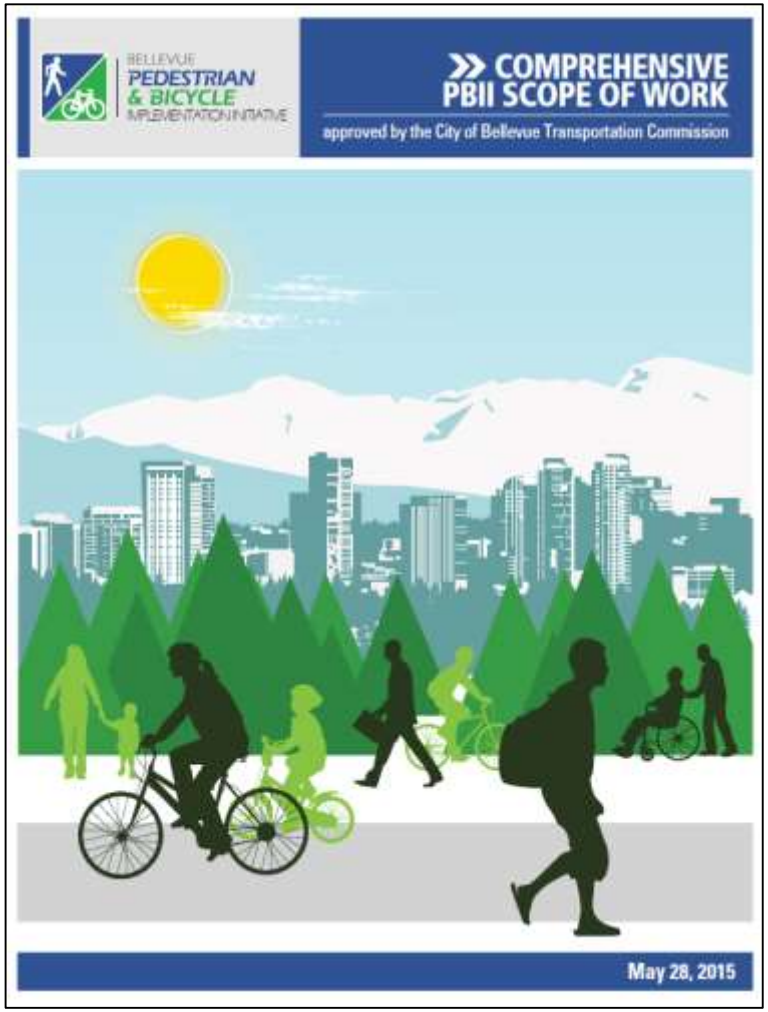
- Links planning with implementation
- Promotes coordinated solutions (5Es)
- Advances a “Complete Streets” philosophy
- Considers creative & affordable strategies
- Leverages best practices and innovative tools
- Investigates “Vision Zero” techniques
- Advances demonstration projects
- Identifies early-win opportunities
- Balances the needs of various roadway users
- Maximizes construction efficiencies
- Promotes physically separated facilities
- Prioritizes “filling the gaps”
- Engages stakeholders early

PBII Scope of Work



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

PBII Scope of Work



1. Ped-Bike Safety Assessment Report
2. **Bicycle Priority Corridor Design Report**
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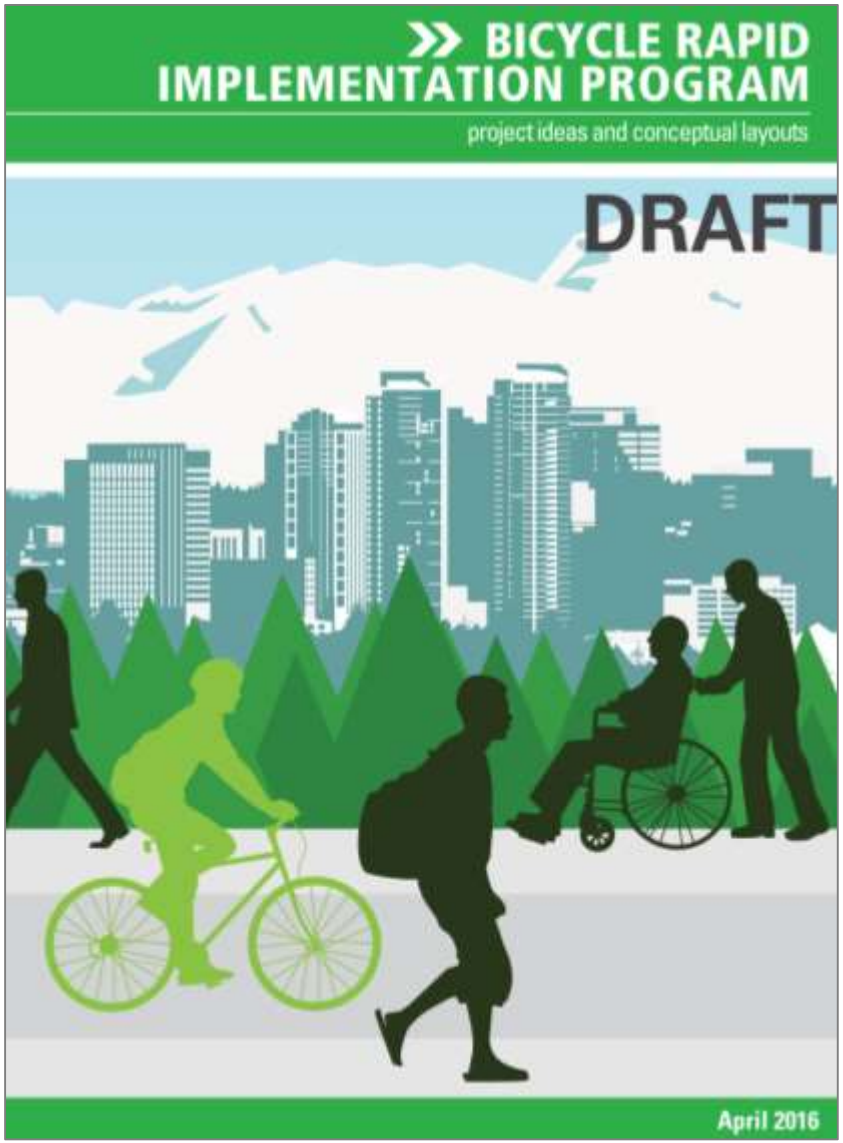
BRIP | Connected + Protected + Rapid

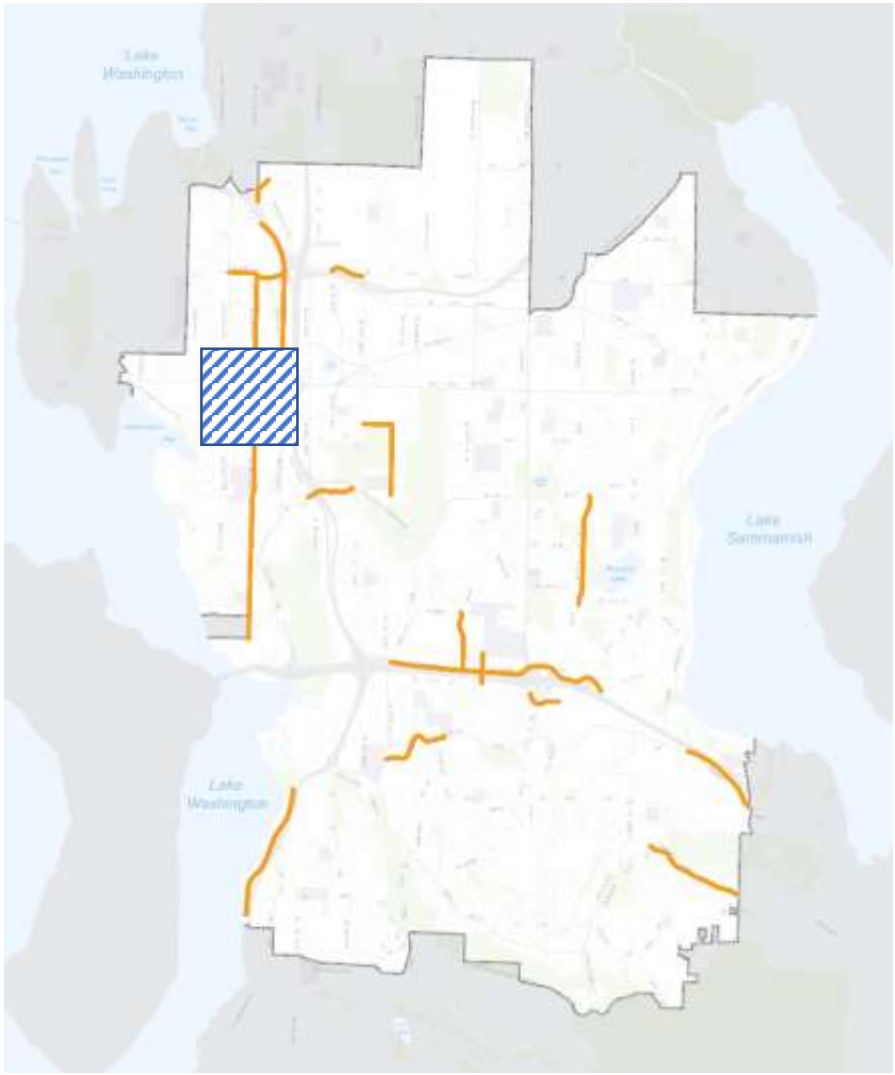


2017-2018 Bicycle Projects

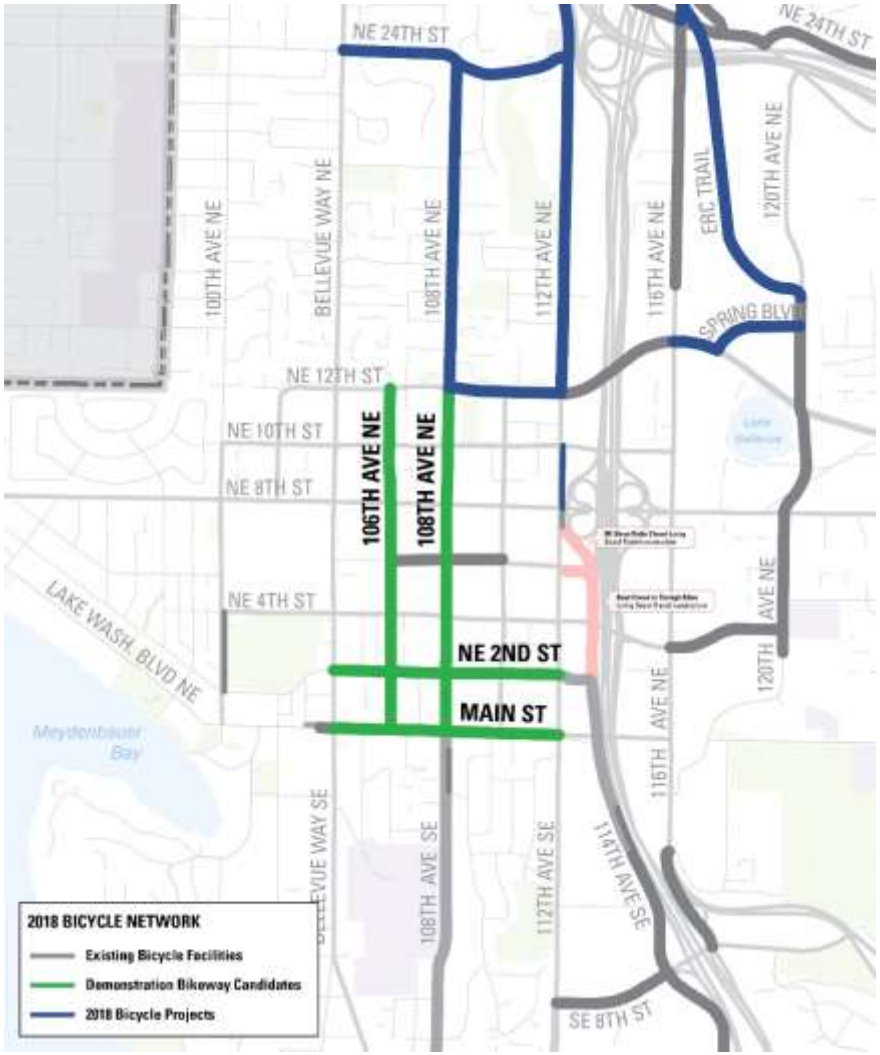
NEIGHBORHOOD LEVY PROJECT

TRANSPORTATION

In 2017-2018, the BRIP program will leverage roughly $1.7M of funding from the Transportation Levy.

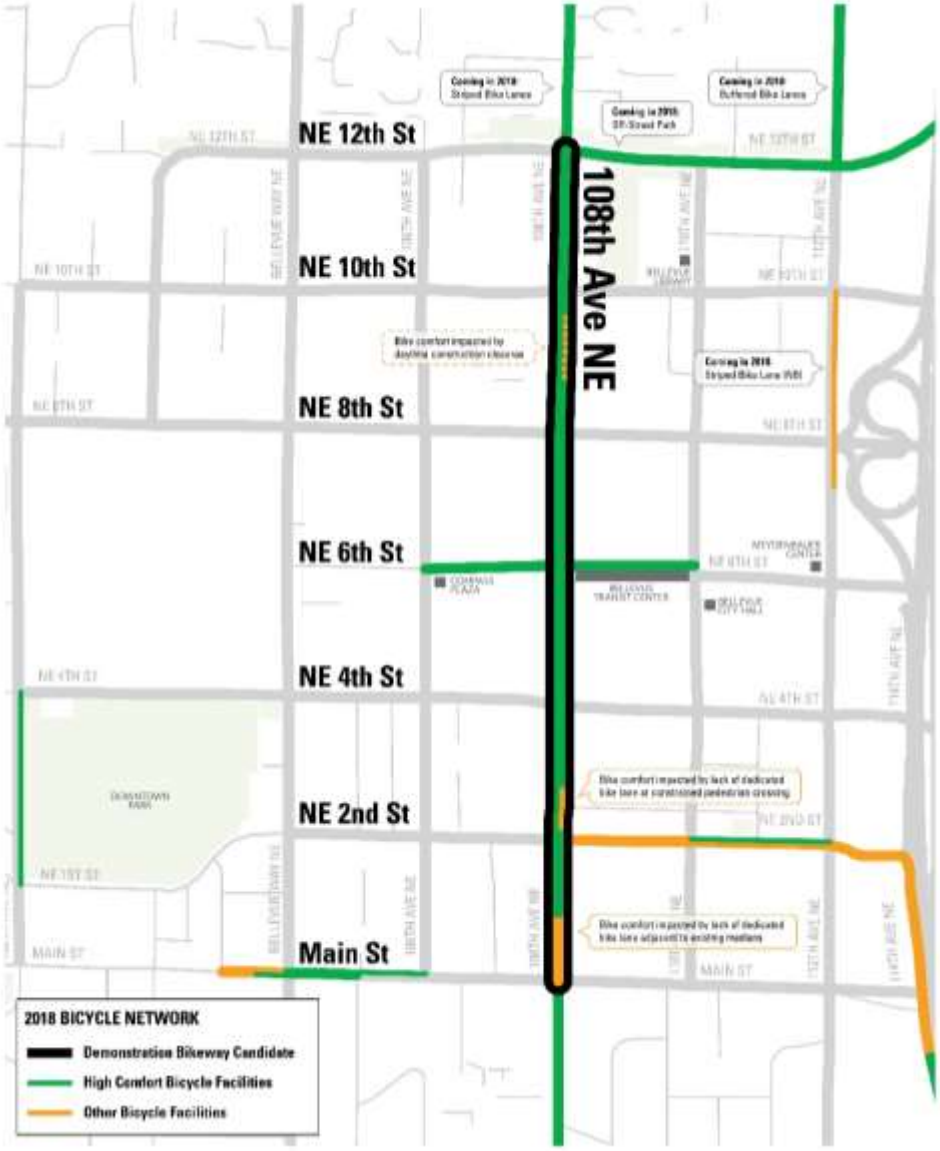


Downtown Bicycle Network Candidate Corridors



- **108th Ave NE**
  Main St to NE 12th St
- **Main St**
  105th Ave to 112th Ave
- **NE 2nd St**
  Bellevue Way NE to 110th Ave NE
- **106th Ave NE**
  Main St to NE 12th St

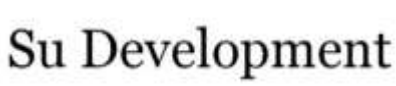
108th Avenue NE (Main Street to NE 12th Street)



CONCEPT AT NE 6TH ST (BELLEVUE TRANSIT CENTER), LOOKING NORTH

CONCEPT AT MAIN ST, LOOKING NORTH

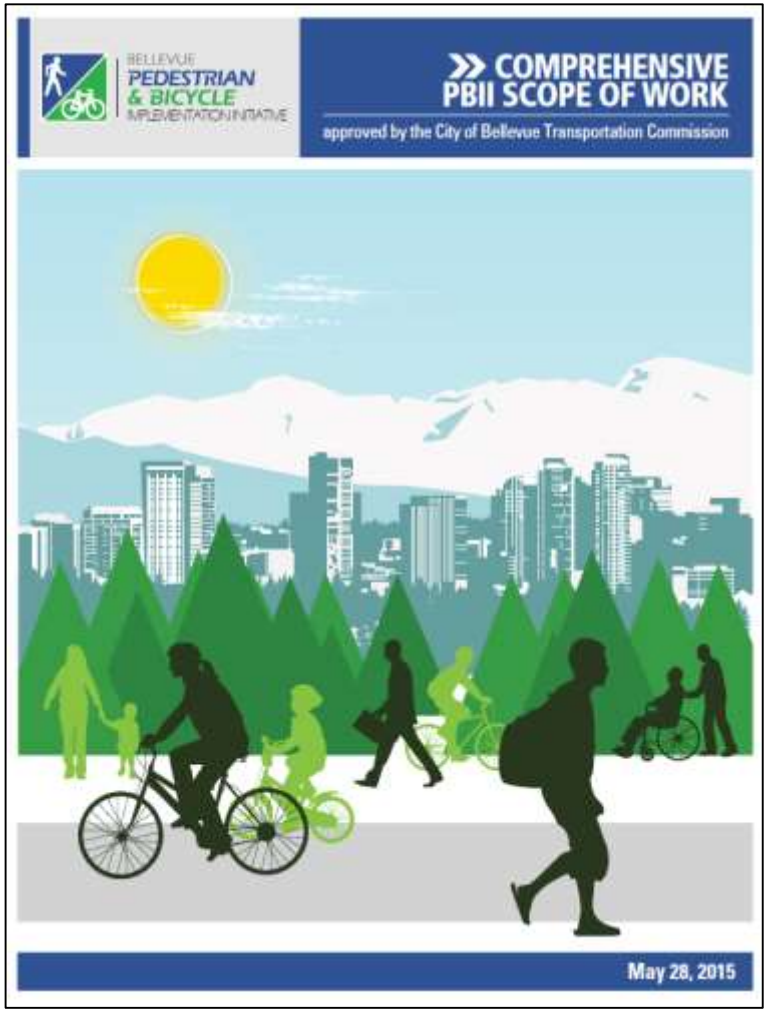
Business Support



108th Avenue NE Demonstration Bikeway Project

On January 11 the Transportation Commission voted five in favor and two opposed in proceeding with implementing the downtown demonstration bikeway project.

PBII Scope of Work



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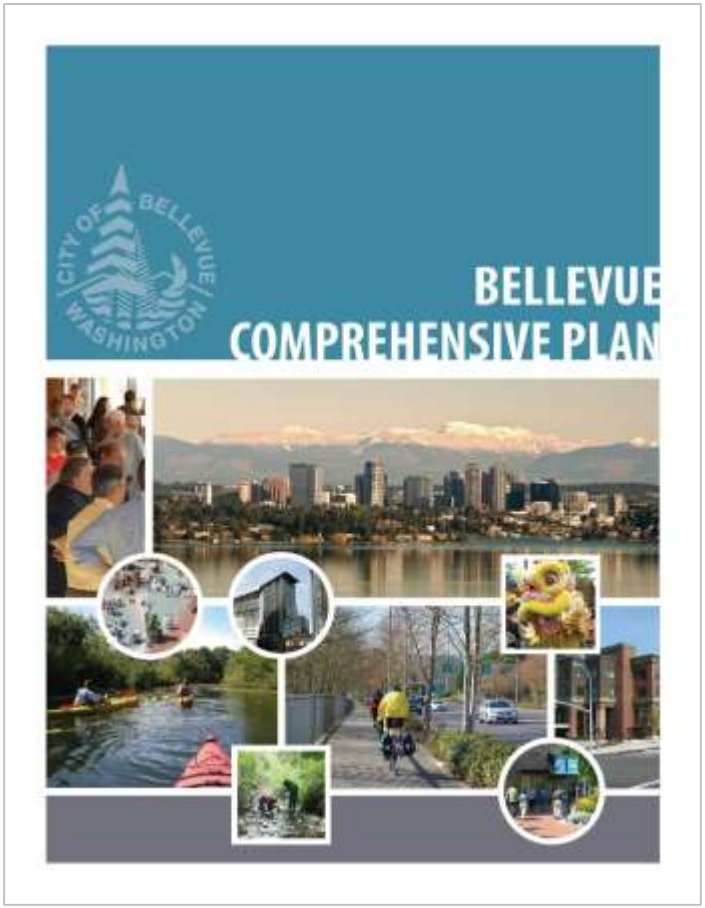
3. Transit Master Plan Integration Report
4. Implementation/Funding Strategy Report
5. Count Technology Report
6. **Bike-Share Implementation Report**
7. Performance Management Report

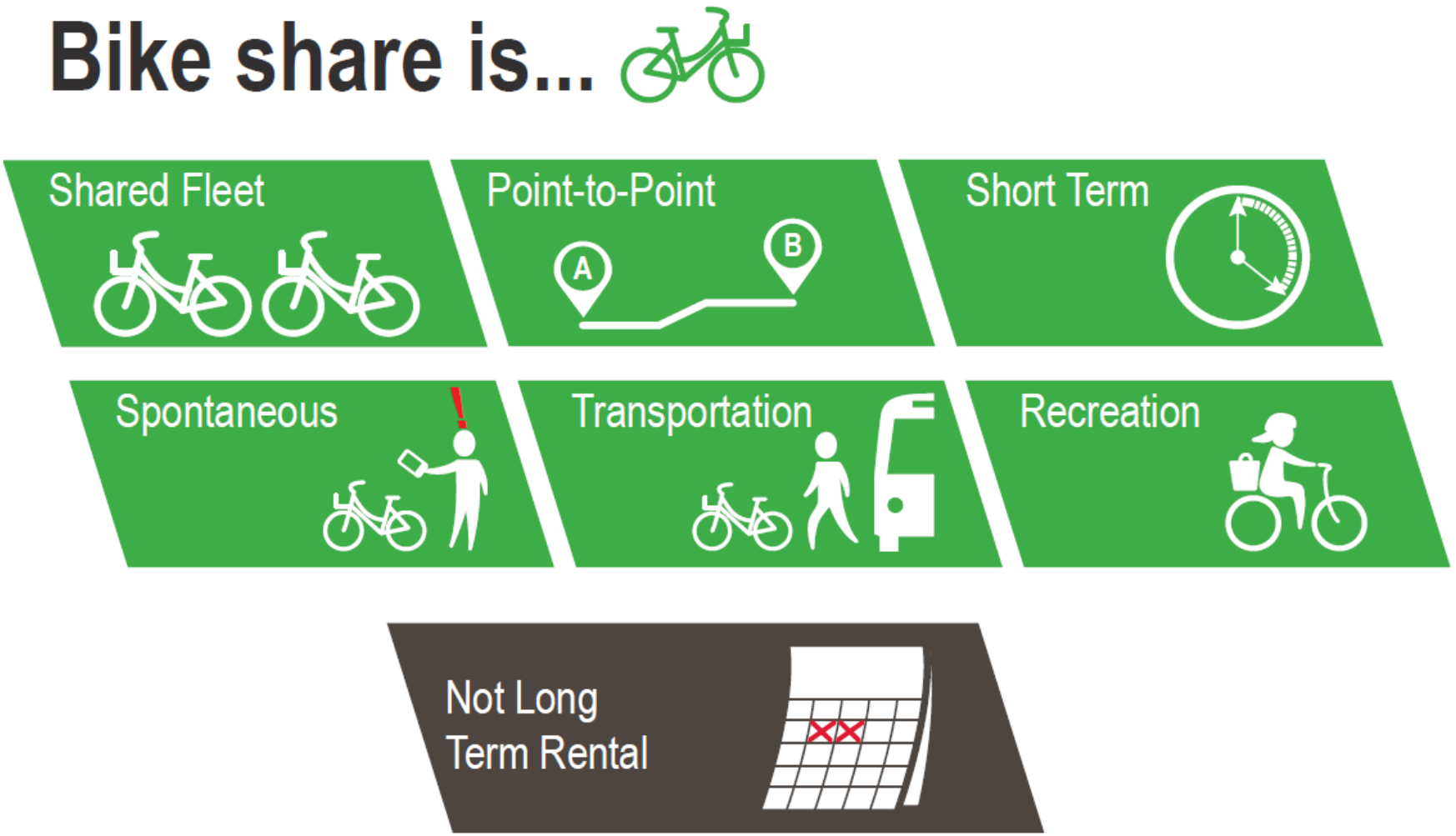
Bike Share | Policy Context



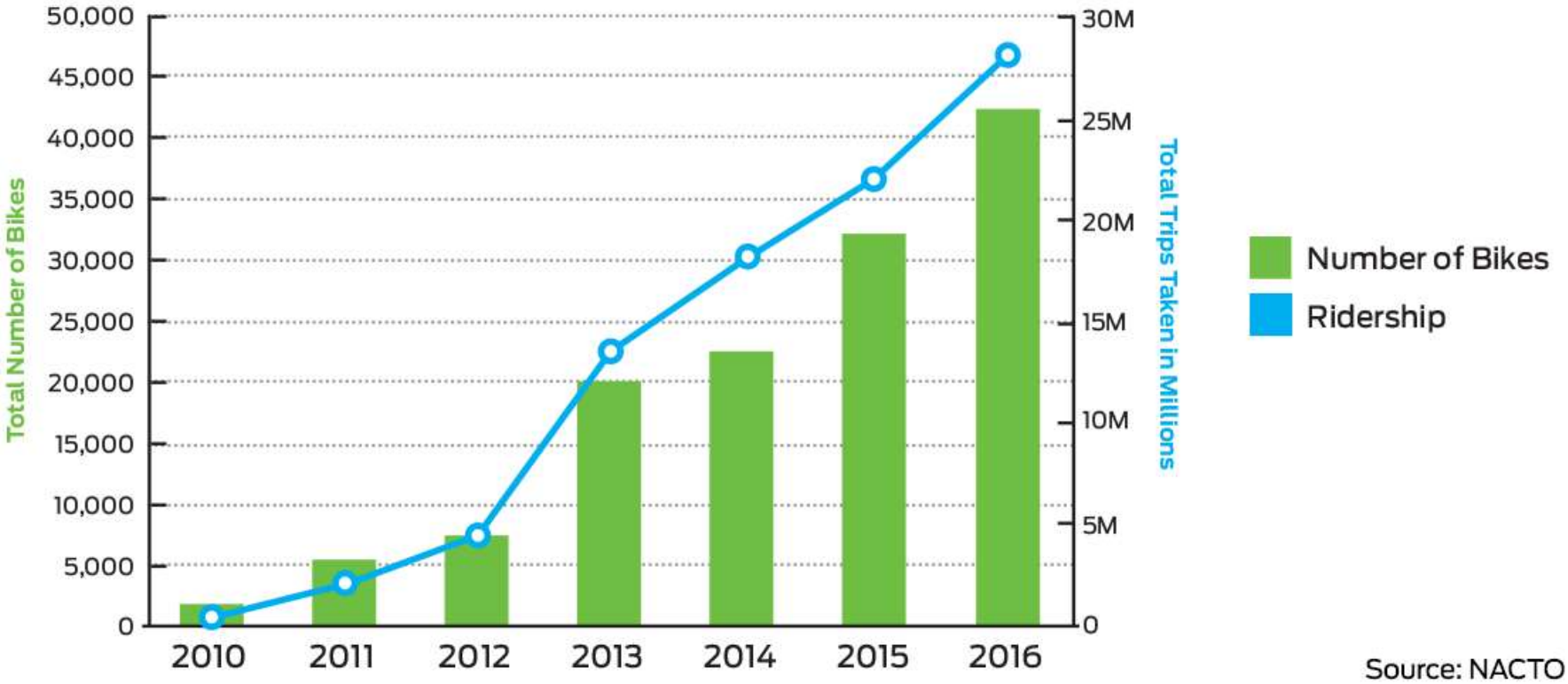
TR-16. Evaluate and facilitate car-sharing and bike sharing programs.

TR-115. Support establishment and operation of a bicycle sharing program in Bellevue.

Bike Share 101

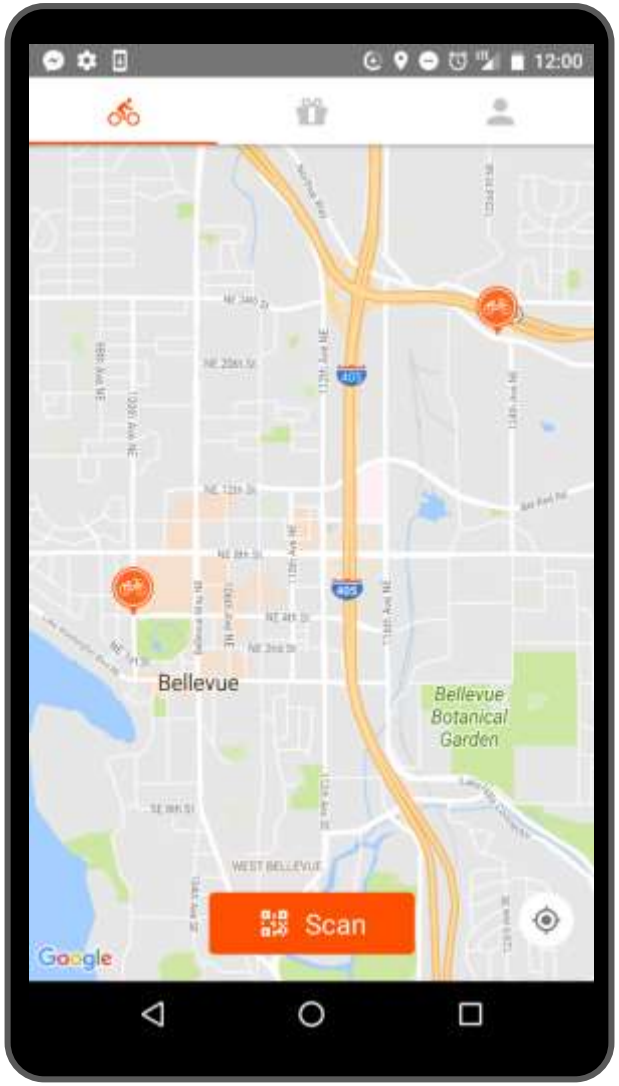


Bike Share Growth in the US



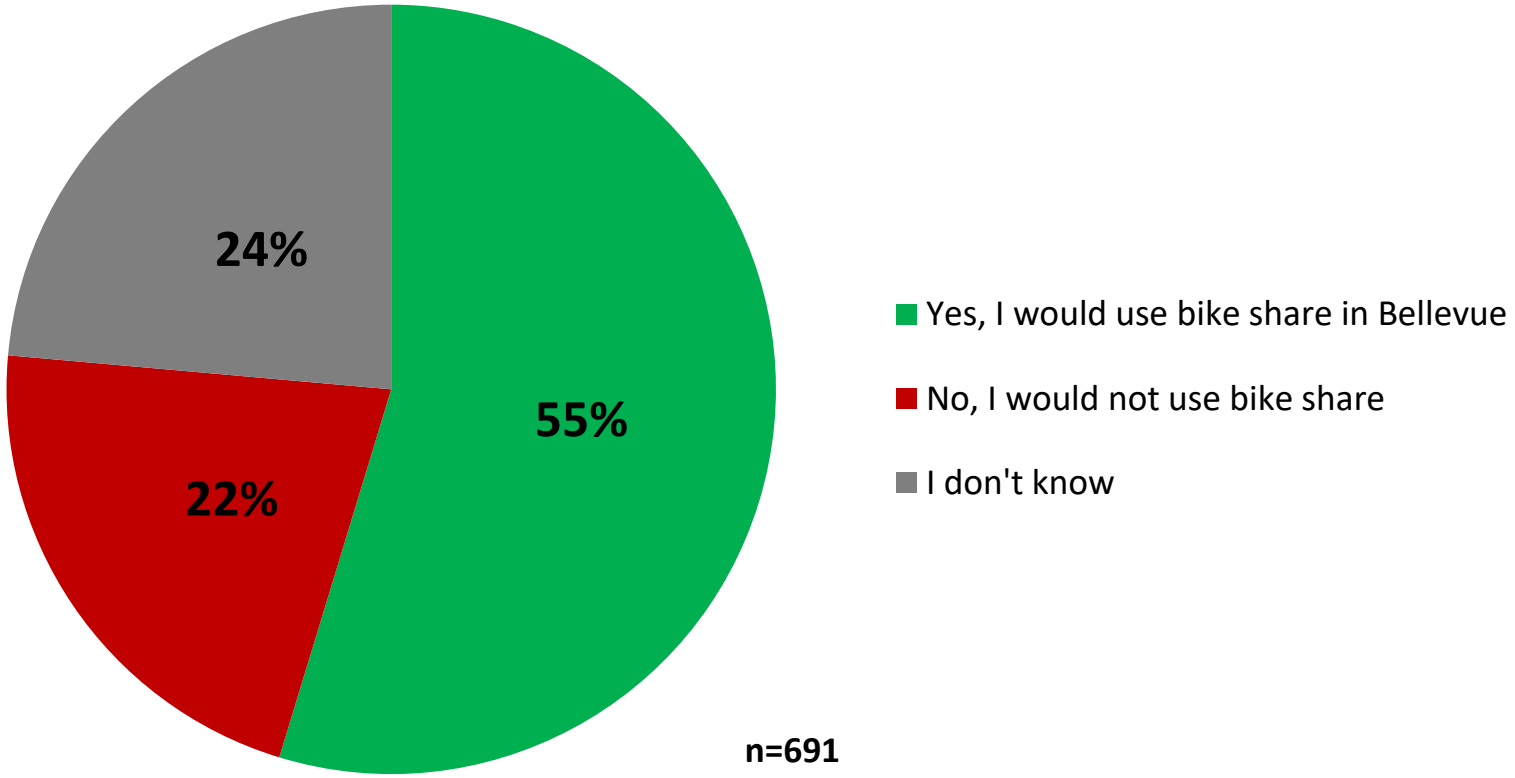
Source: NACTO

Bike Share in Bellevue



Bike Share Survey Results

If a bike share service was available in Bellevue today, would you use bike share in Bellevue?



n=691

Citywide Bike Share Pilot Program

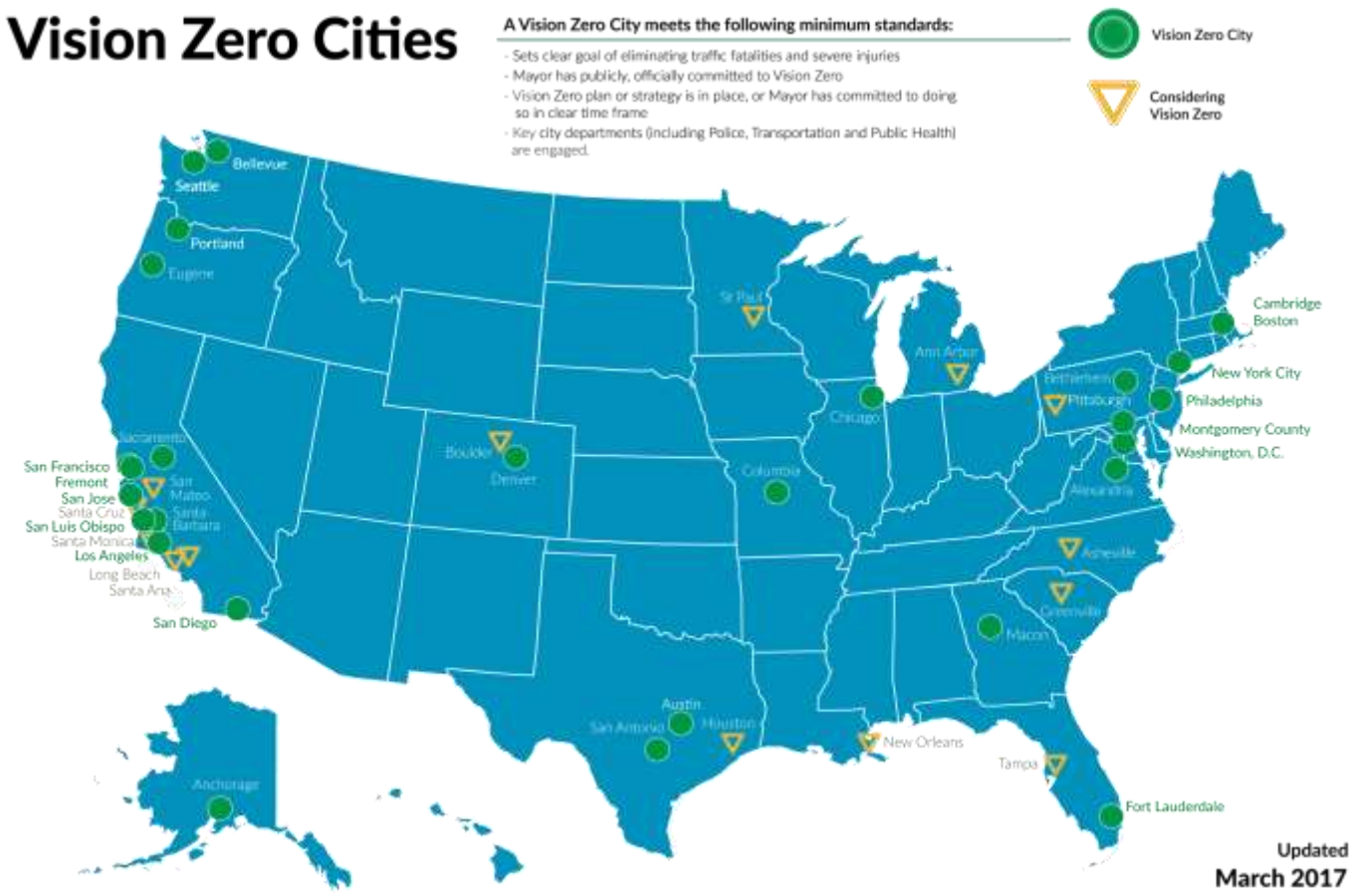
On March 8 the Transportation Commission will consider the implementation of a citywide bike share pilot program.

Project Timeline

Vision Zero

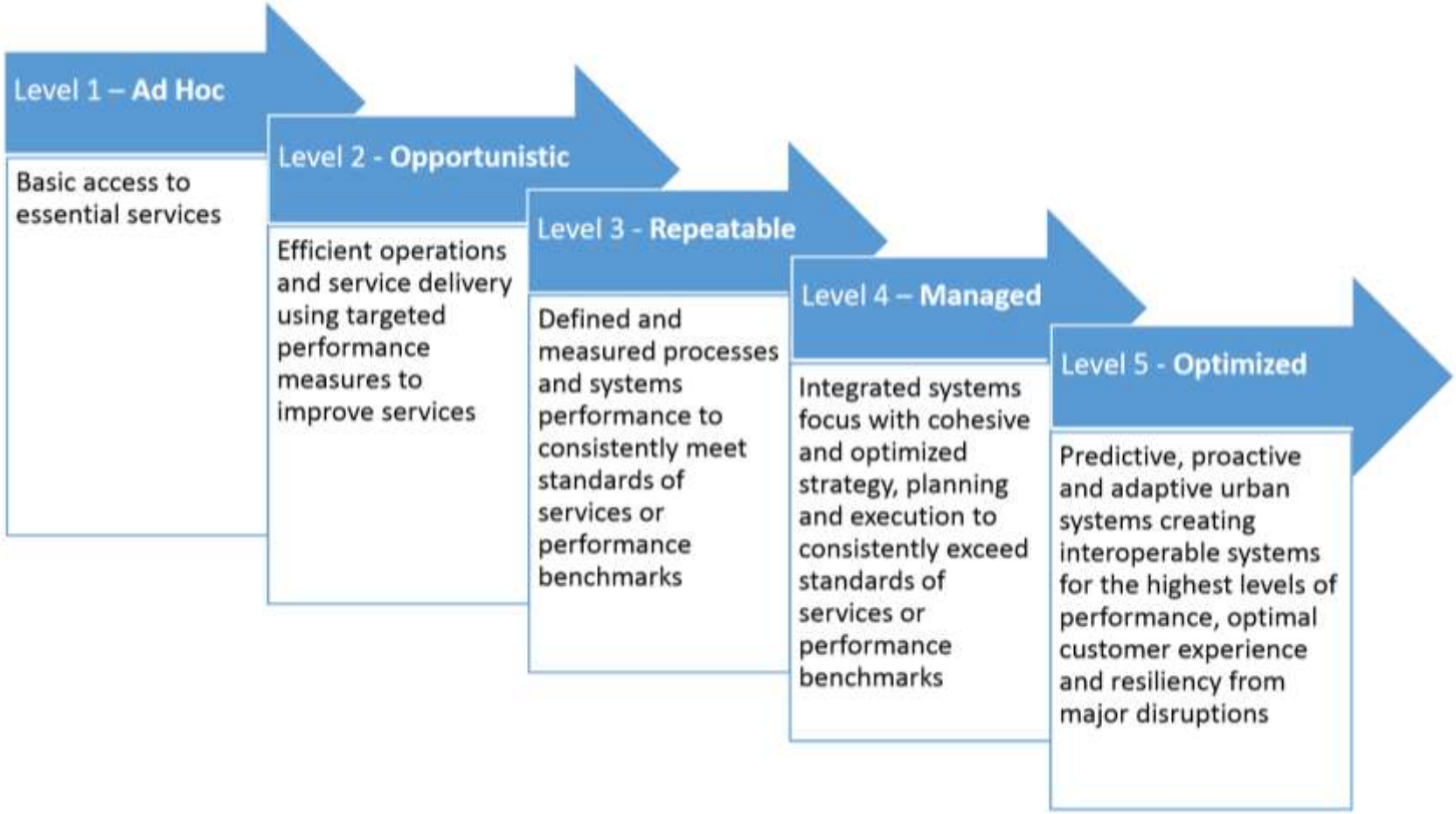
- **Policy context**
- **Video Analytics Partnership**

Bellevue | A Vision Zero City

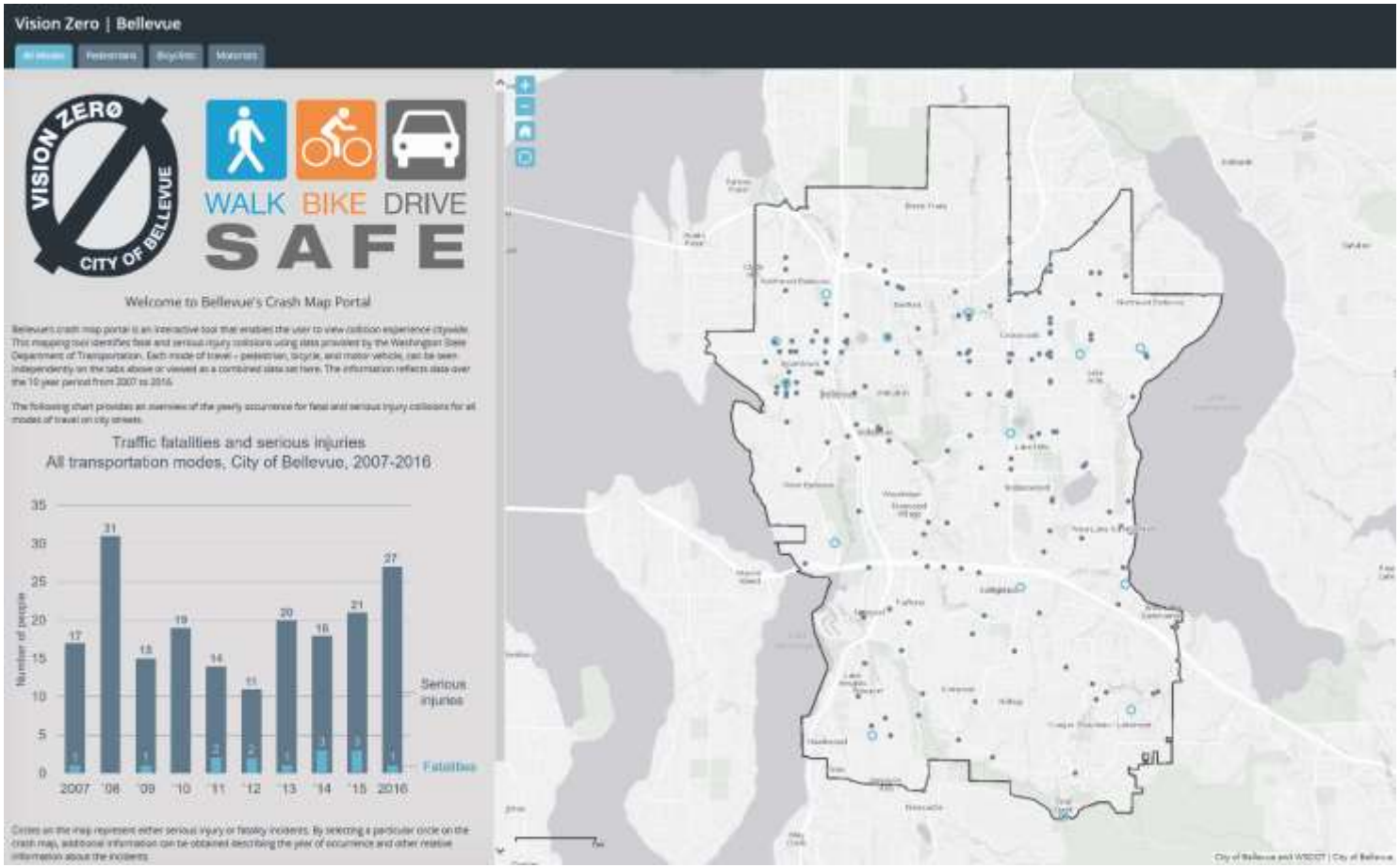


Source: Vision Zero Network

Bellevue | A Smart City



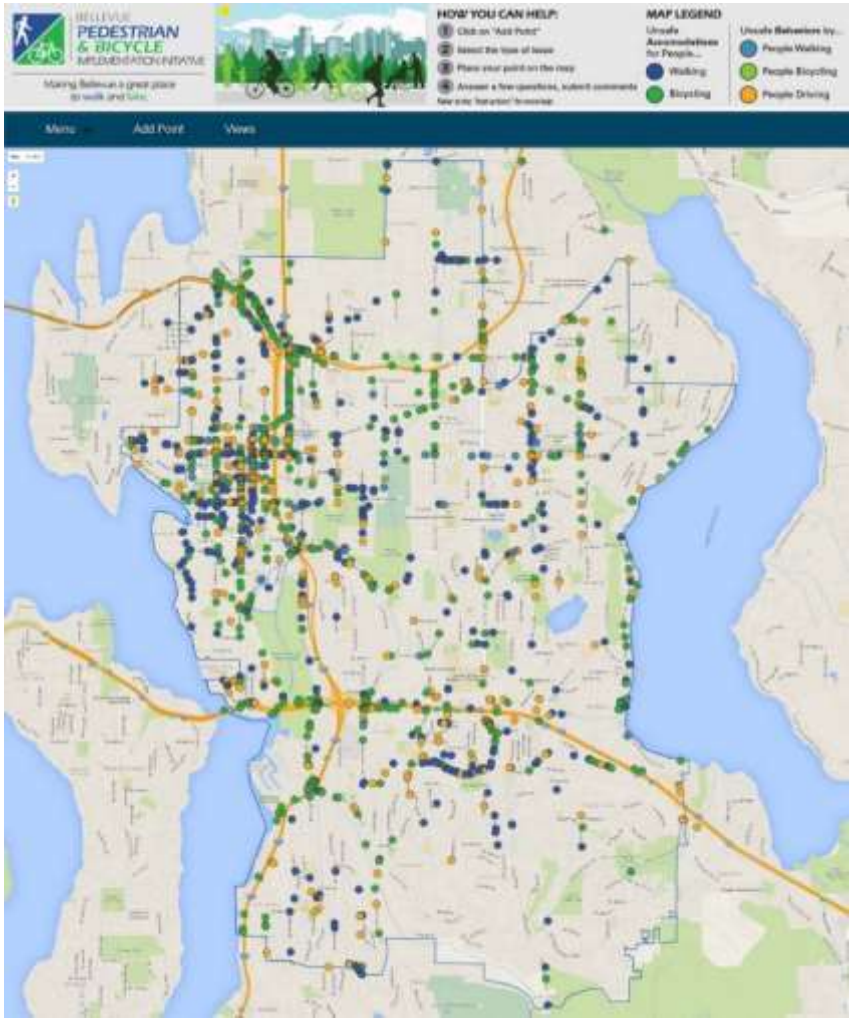
Bellevue | Traffic Fatalities & Injuries



In 2016, there were 433 traffic collisions in Bellevue involving injuries, 39 bicycle crashes, and 47 involving people walking, including one fatality.

https://cobgis.maps.arcgis.com/apps/MapSeries/index.html?appid=8964b232b8ec4a0180e0b56b1c29071d

Bellevue | Road Safety Concerns



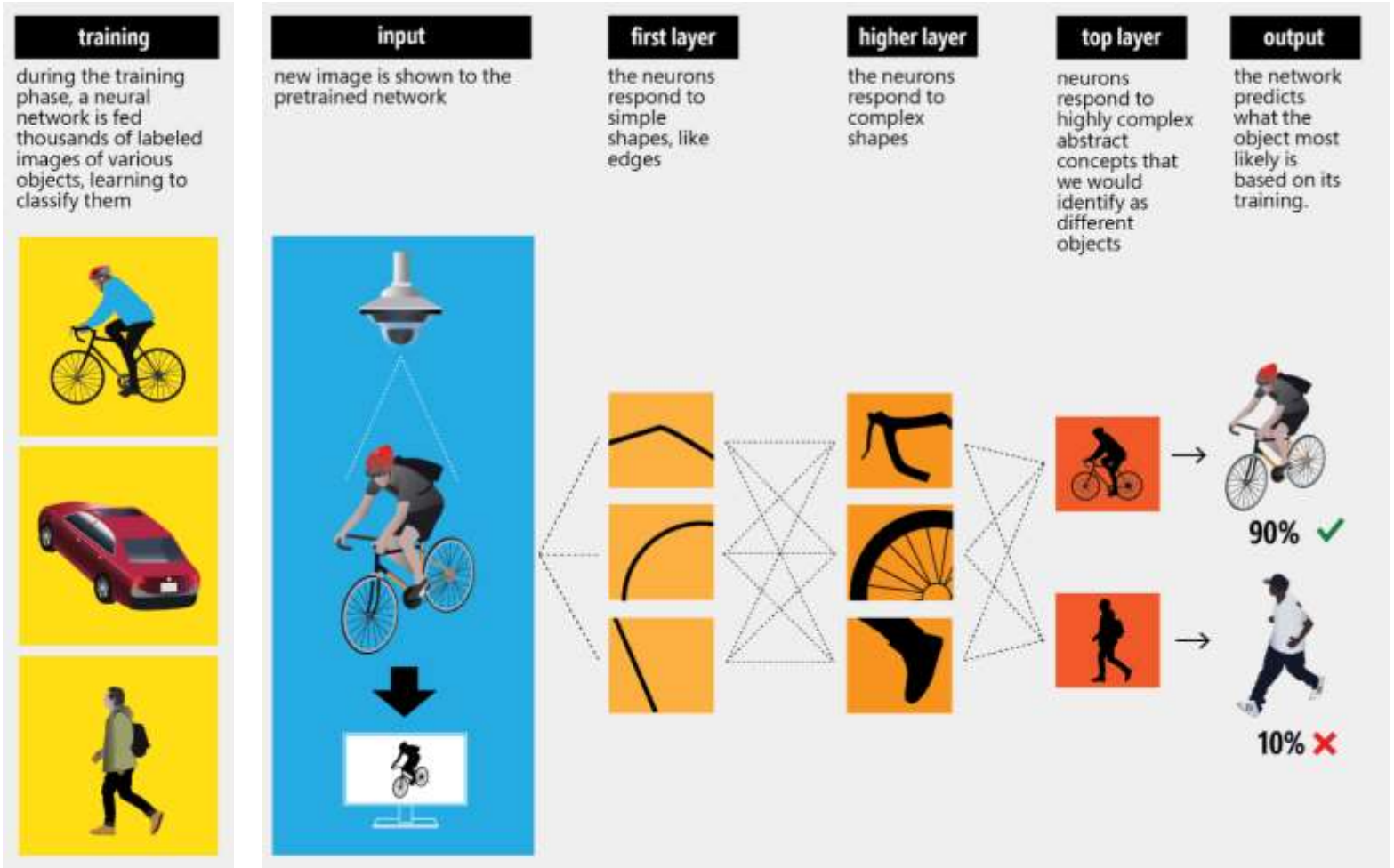
	Total Points Placed	
Ped Facilities	514	32%
Bike Facilities	573	35%
Ped Behaviors	57	4%
Bike Behaviors	22	1%
Car Behaviors	452	28%
Total	1618	

Video Analytics Platform

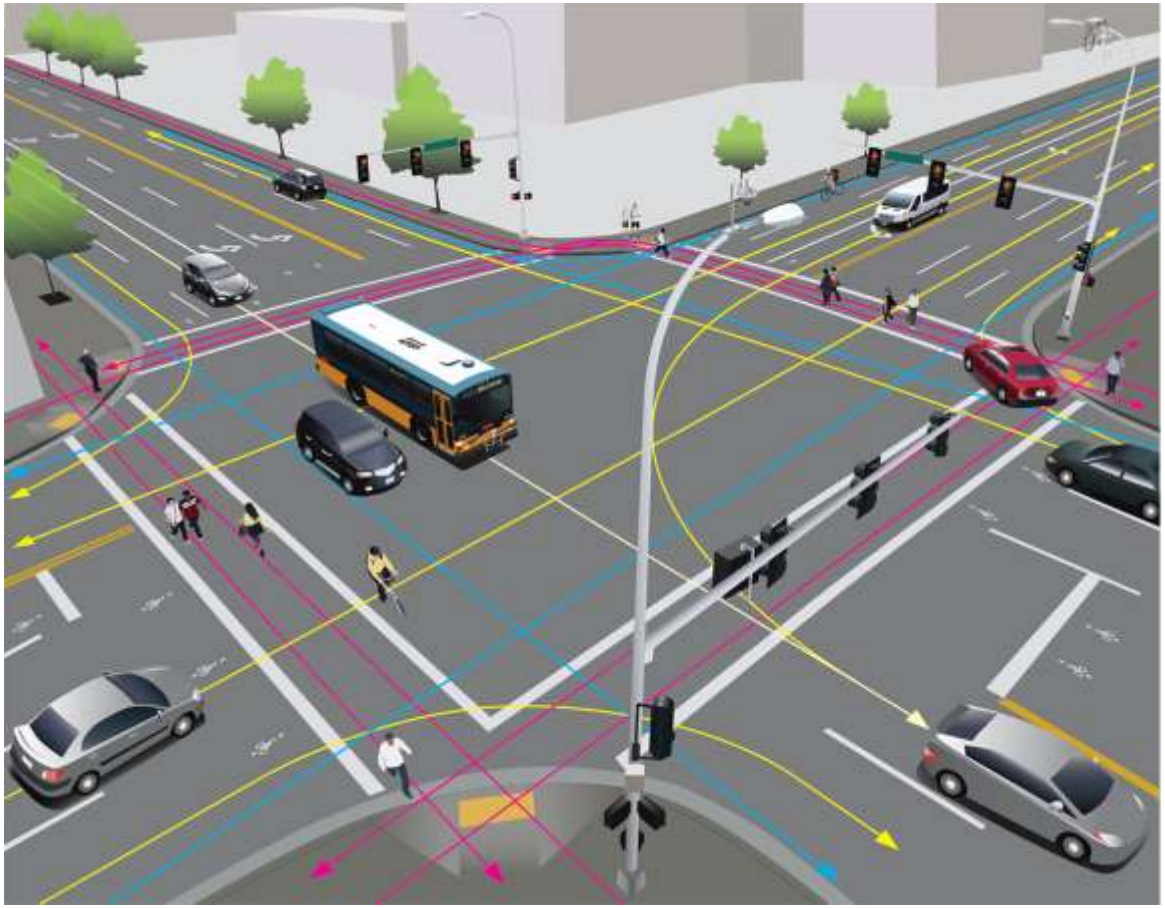
Leverage a city's existing traffic camera system to simultaneously:

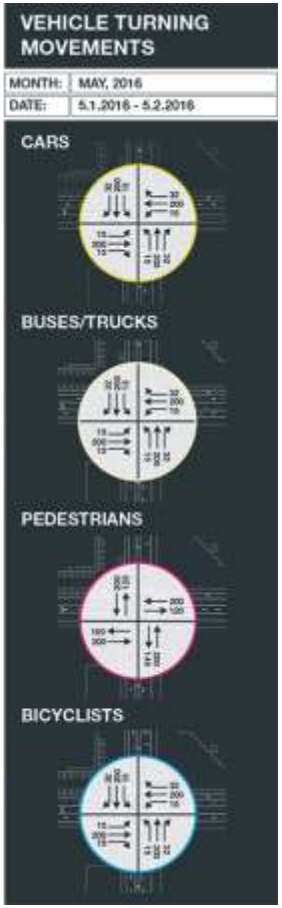
- **monitor counts and travel speed of all road user groups (vehicle, pedestrian, and bicycle);**
- **document the directional volume of all road user groups as they move through an intersection; and,**
- **assess unsafe "near-miss" trajectories and interactions between all road user groups.**

Neural Network Architecture



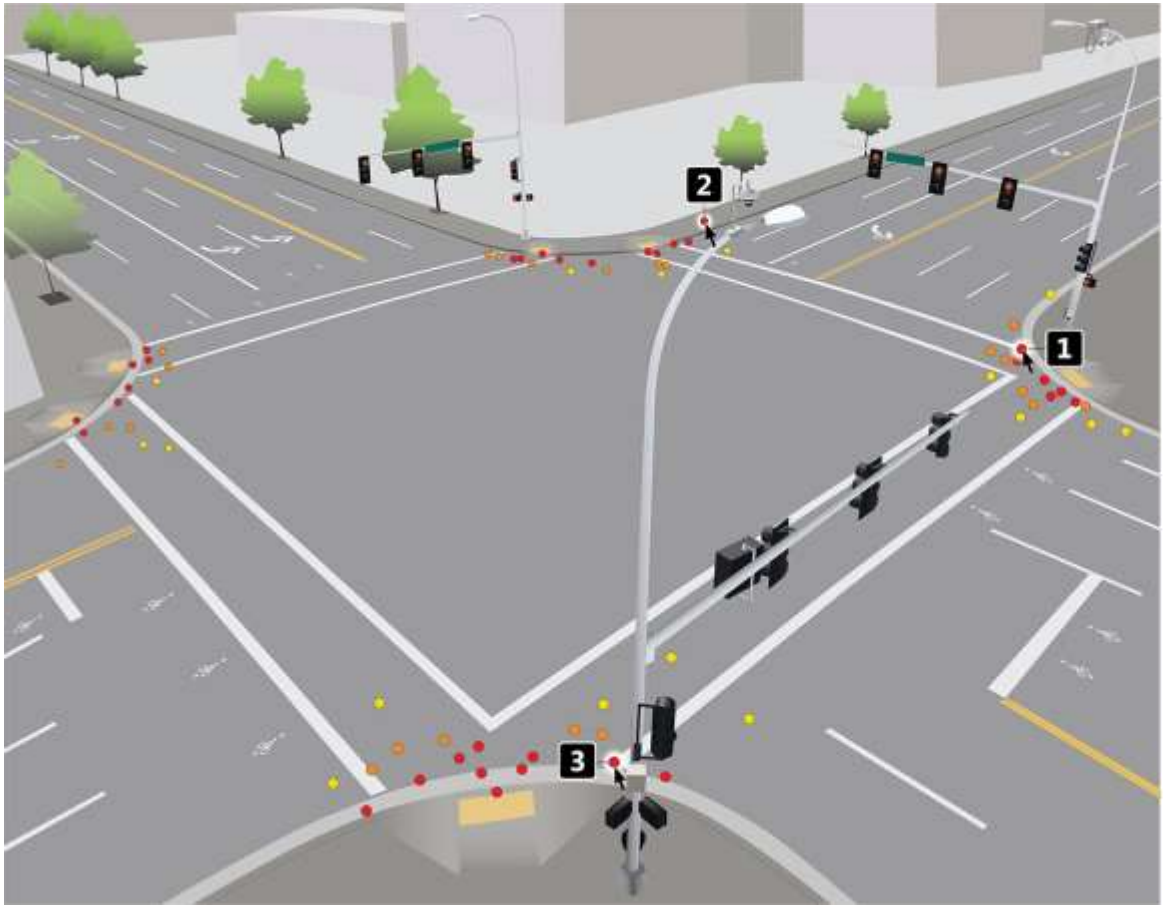
Turning Movements



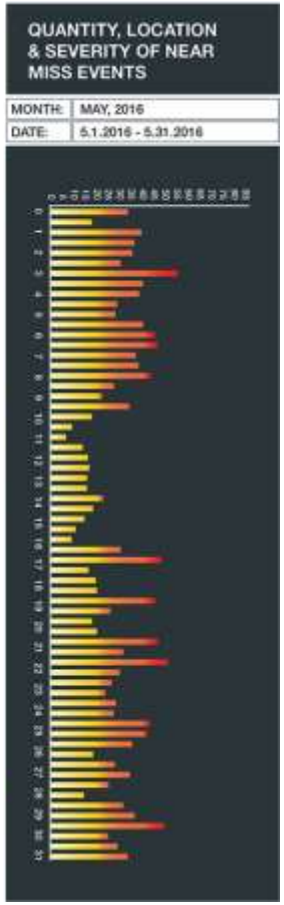


Volume Charts

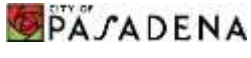
Traffic Conflict Detection

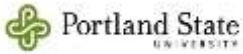


Traffic Conflict Detection

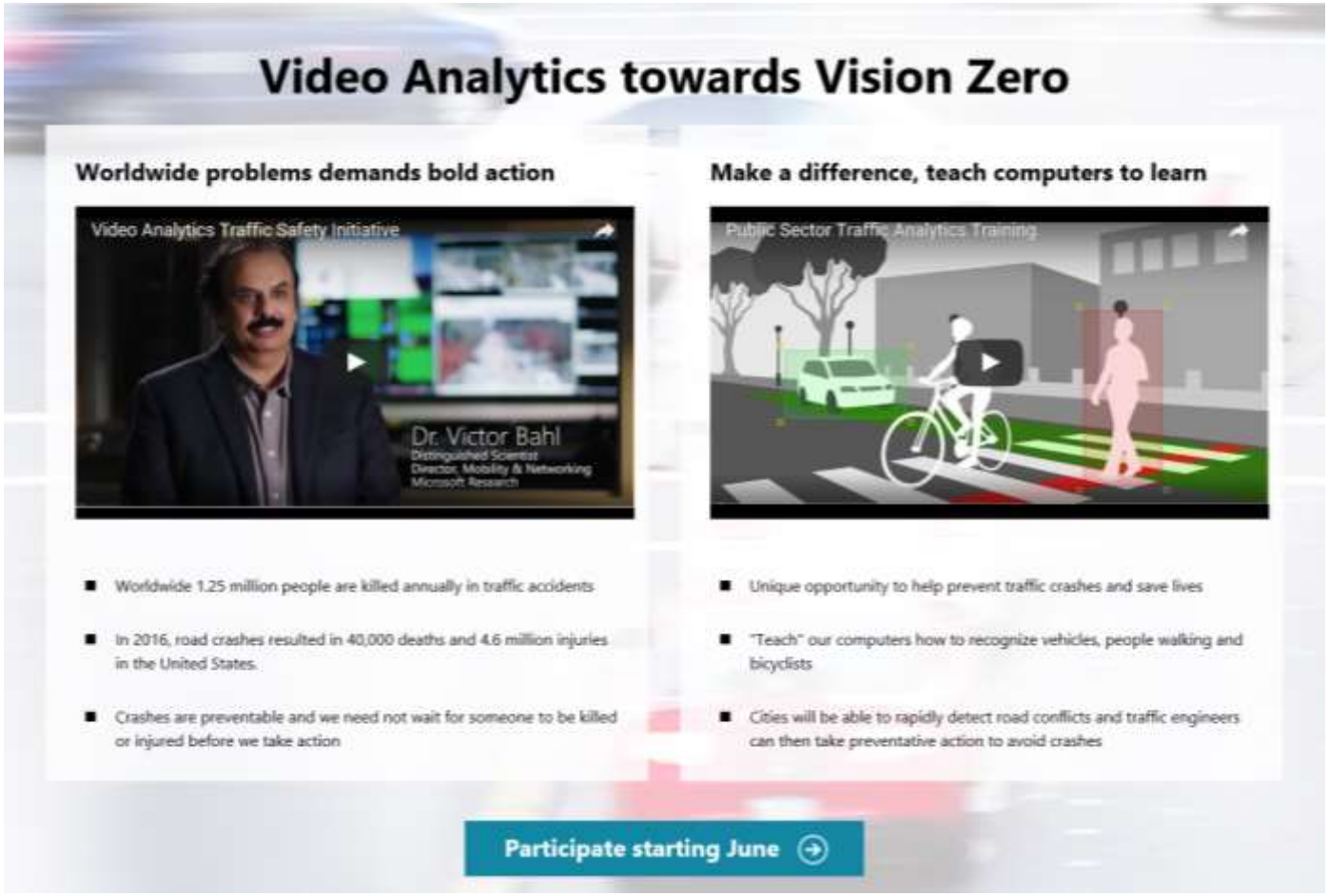


Partnership Momentum





Crowdsourcing Initiative

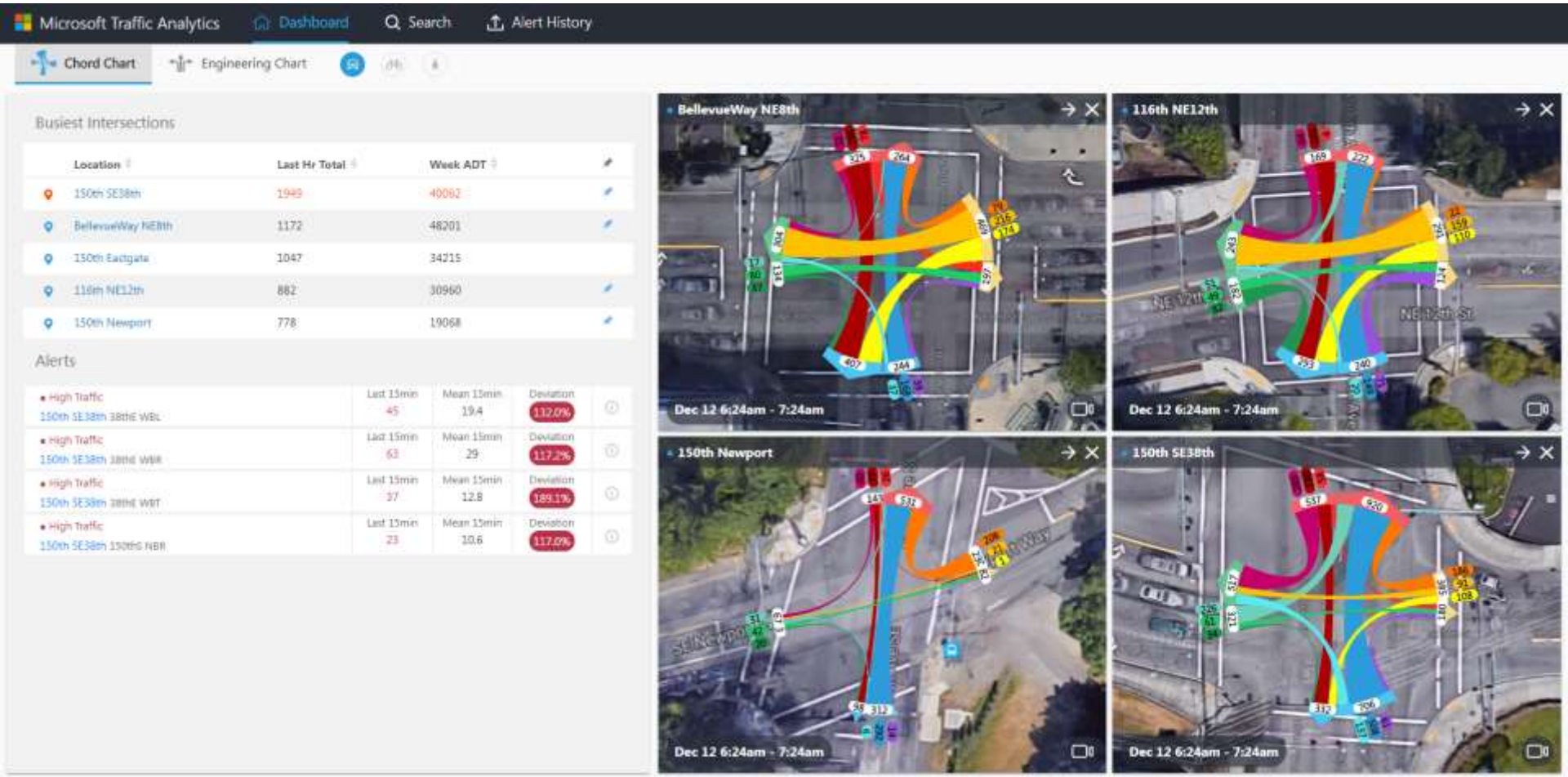


http://www.ite.org/visionzero/videoanalytics/

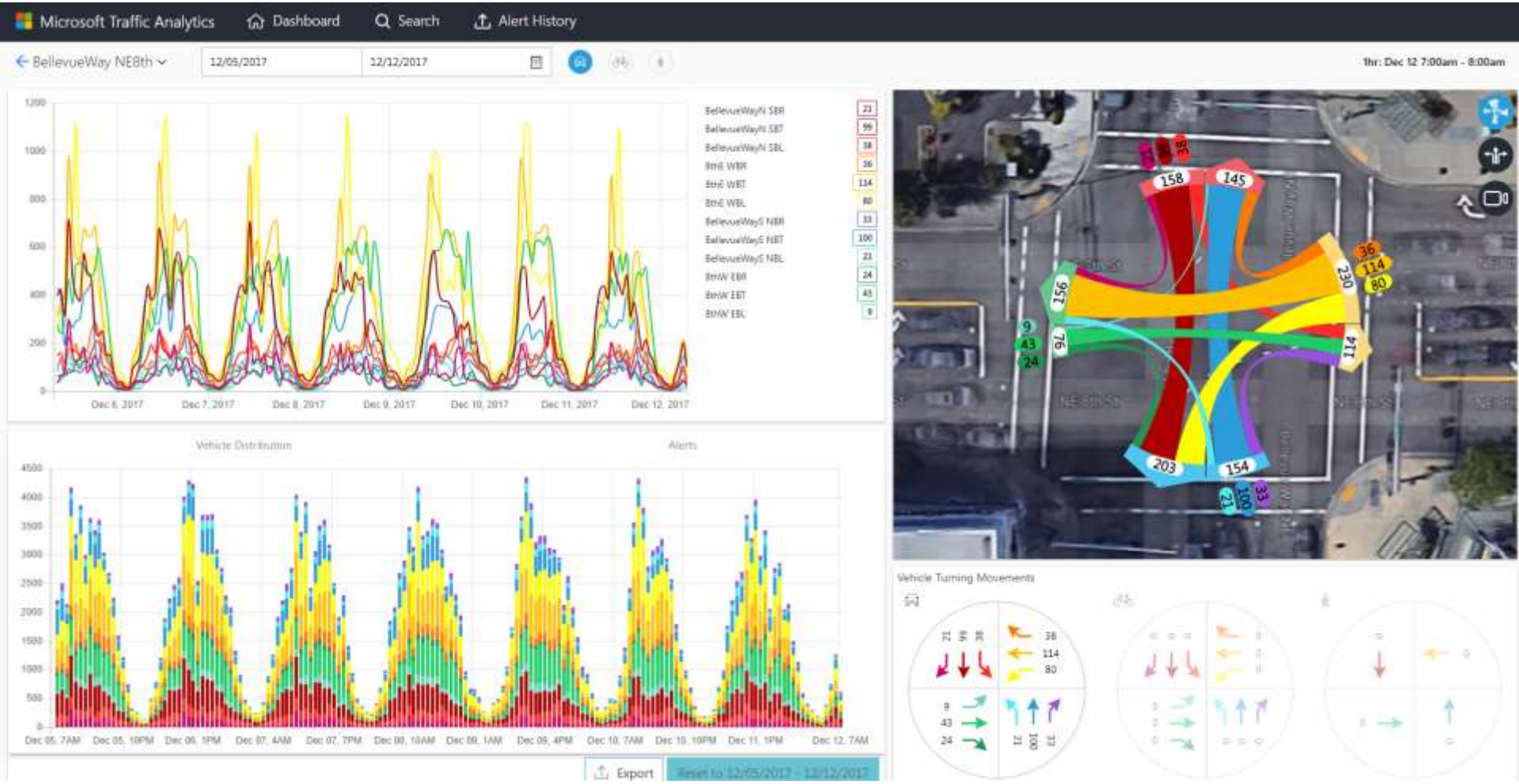
Crowdsourcing Initiative

Media Coverage

Traffic Analytics Dashboard



Traffic Analytics Dashboard (Bellevue Way & NE 8th)



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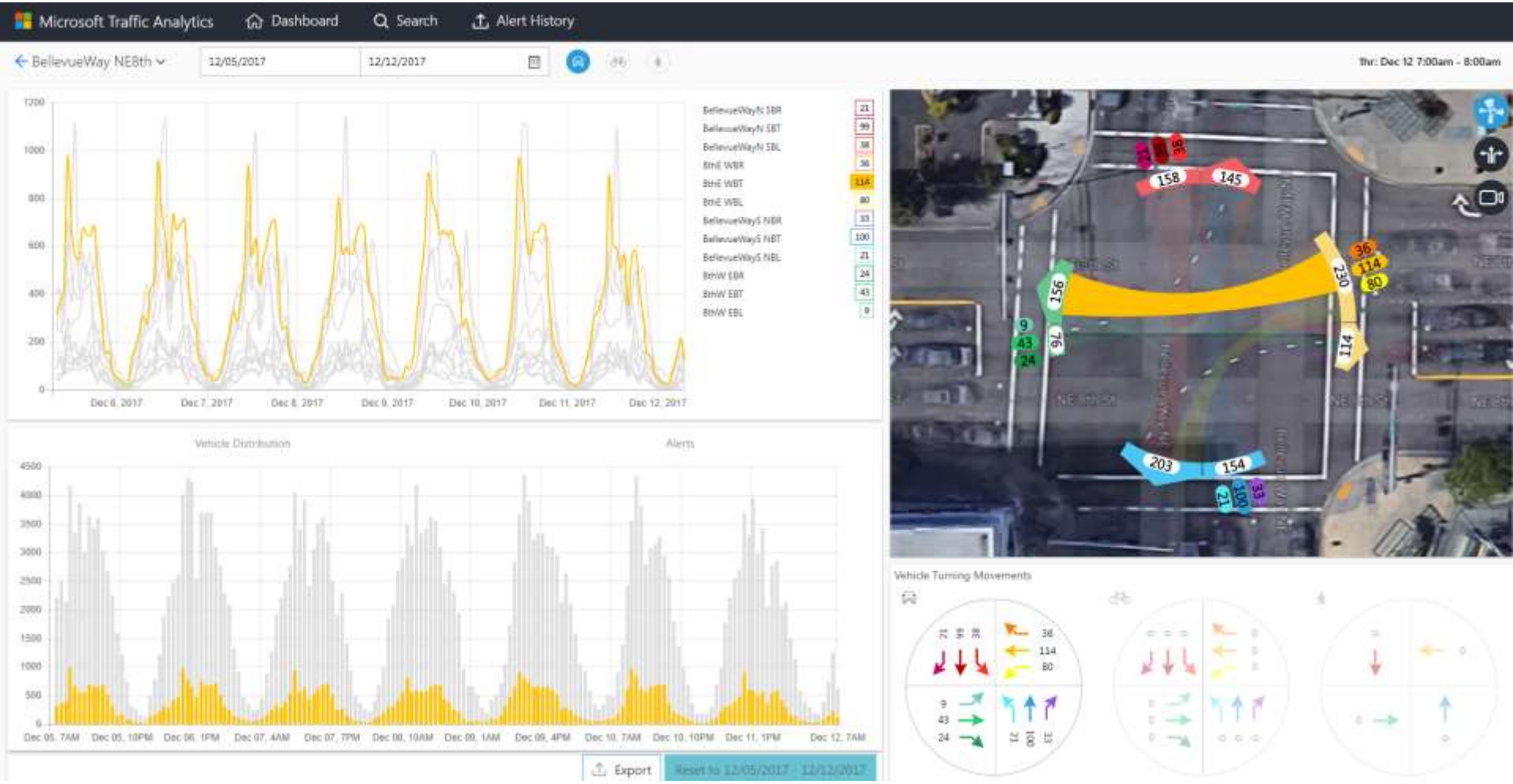

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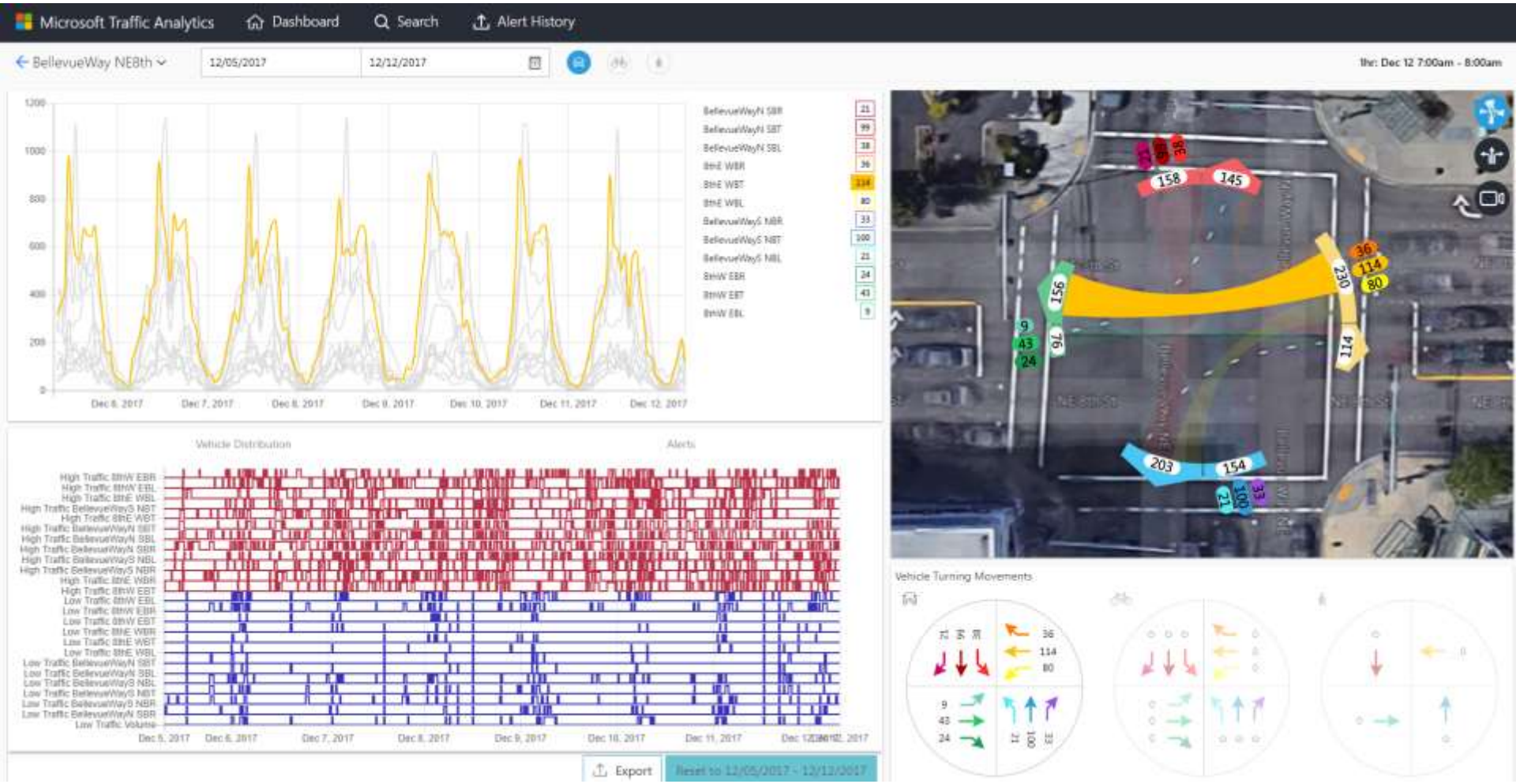
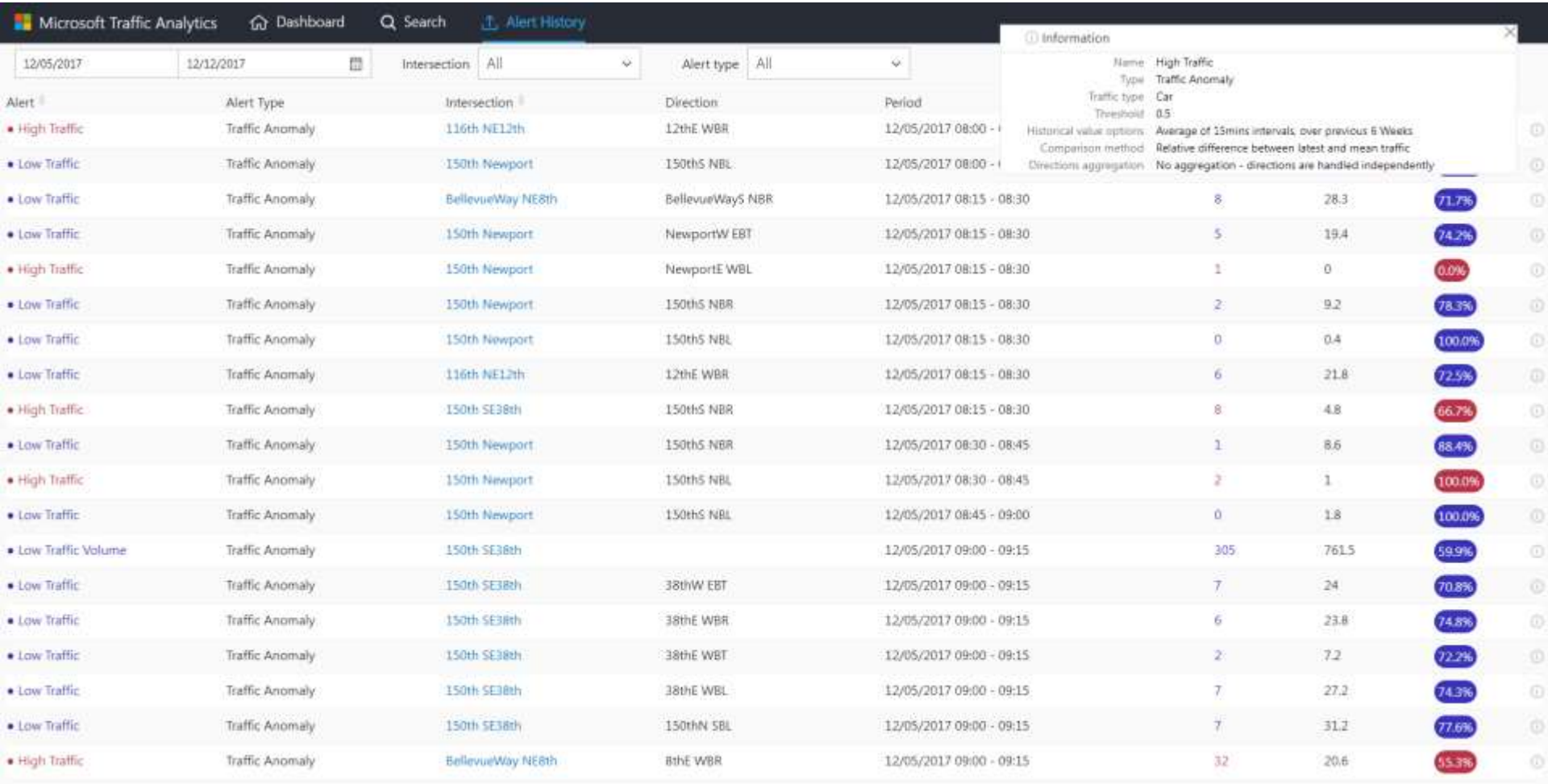


Traffic Analytics Dashboard (Alerts)



Alert	Alert Type	Intersection	Direction	Period			
High Traffic	Traffic Anomaly	116th NE12th	12thE WBR	12/05/2017 08:00 -			
Low Traffic	Traffic Anomaly	150th Newport	150thS NBL	12/05/2017 08:00 -			
Low Traffic	Traffic Anomaly	BellevueWay NE8th	BellevueWayS NBR	12/05/2017 08:15 - 08:30	8	28.3	71.7%
Low Traffic	Traffic Anomaly	150th Newport	NewportW EBT	12/05/2017 08:15 - 08:30	5	19.4	74.2%
High Traffic	Traffic Anomaly	150th Newport	NewportE WBL	12/05/2017 08:15 - 08:30	1	0	0.0%
Low Traffic	Traffic Anomaly	150th Newport	150thS NBR	12/05/2017 08:15 - 08:30	2	9.2	78.3%
Low Traffic	Traffic Anomaly	150th Newport	150thS NBL	12/05/2017 08:15 - 08:30	0	0.4	100.0%
Low Traffic	Traffic Anomaly	116th NE12th	12thE WBR	12/05/2017 08:15 - 08:30	6	21.8	72.5%
High Traffic	Traffic Anomaly	150th SE38th	150thS NBR	12/05/2017 08:15 - 08:30	8	4.8	66.7%
Low Traffic	Traffic Anomaly	150th Newport	150thS NBR	12/05/2017 08:30 - 08:45	1	8.6	88.4%
High Traffic	Traffic Anomaly	150th Newport	150thS NBL	12/05/2017 08:30 - 08:45	2	1	100.0%
Low Traffic	Traffic Anomaly	150th Newport	150thS NBL	12/05/2017 08:45 - 09:00	0	1.8	100.0%
Low Traffic Volume	Traffic Anomaly	150th SE38th		12/05/2017 09:00 - 09:15	305	761.5	59.9%
Low Traffic	Traffic Anomaly	150th SE38th	38thW EBT	12/05/2017 09:00 - 09:15	7	24	70.8%
Low Traffic	Traffic Anomaly	150th SE38th	38thE WBR	12/05/2017 09:00 - 09:15	6	23.8	74.8%
Low Traffic	Traffic Anomaly	150th SE38th	38thE WBT	12/05/2017 09:00 - 09:15	2	7.2	72.2%
Low Traffic	Traffic Anomaly	150th SE38th	38thE WBL	12/05/2017 09:00 - 09:15	7	27.2	74.3%
Low Traffic	Traffic Anomaly	150th SE38th	150thN SBL	12/05/2017 09:00 - 09:15	7	31.2	77.6%
High Traffic	Traffic Anomaly	BellevueWay NE8th	8thE WBR	12/05/2017 09:00 - 09:15	32	20.6	55.3%

Enhancing Pedestrian & Bicycle Accuracy

unity

UAB
Universitat Autònoma de Barcelona

CVC
Centre de Visió per Computador

https://youtu.be/I0UmWQJiiN8

2017 Transportation Achievement Award for Safety

Institute of Transportation Engineers Inc.
1627 Eye Street, NW, Suite 600, Washington, DC 20006 USA | Tel: 202.785.0060 | Fax: 202.785.0609 | www.ite.org

Marianne Sagian
Communications and Media Senior Director
202.785.0060 ext. 123

NEWS

VIDEO ANALYTICS TOWARDS VISION ZERO PARTNERSHIP RECEIVES THE TRANSPORTATION ACHIEVEMENT AWARD FOR SAFETY FROM THE INSTITUTE OF TRANSPORTATION ENGINEERS

Toronto, ON, Canada— Video Analytics Towards Vision Zero Partnership, City of Bellevue, Washington USA received the Transportation Achievement Award for Safety at the Institute of Transportation Engineers (ITE) 2017 Annual Meeting & Exhibit, held July 30 – August 2, in Toronto, ON, Canada.

Consistent with its Vision Zero policies, the City of Bellevue, Washington is committed to generating better data on travel behavior, patterns, crashes, and conflicts and developing collaborations with others in the public and private sector to make our intersections smarter and safer. In recognition of the opportunities to enhance traffic operations and public safety, the City of Bellevue entered into a technology development partnership with Microsoft and the University of Washington.

The video analytics platform that was developed leverages cloud computing and machine learning systems to convert raw video footage from the City of Bellevue's existing camera network into useful data that can be searched, managed, and used to provide detailed information on traffic flow and allow a more rapid response to non-crash traffic conflicts.

The Transportation Achievement Awards are awarded annually for excellence in the advancement of transportation to meet human needs, by entities concerned with transportation such as governmental agencies, legislative bodies, consulting firms, industry, and other organizations. Awards are presented in the categories of planning, design, operations, and safety.

Founded in 1930, ITE is a community of transportation professionals including, but not limited to transportation engineers, transportation planners, consultants, educators, and researchers. Through meetings, seminars, publications, and a network of more than 13,000 members, working in more than 90 countries, ITE is your source for expertise, knowledge, and ideas.

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For More Information

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