

Bringing a Bike Share to Bellevue, WA

Surveying Interest in and Barriers to Bellevue Residents'
Participation in a Bike Sharing Program

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Overview

Will the residents of Bellevue, WA likely utilize a bike-sharing program?

If yes, what changes to policy and infrastructure need to be addressed prior to implementation?



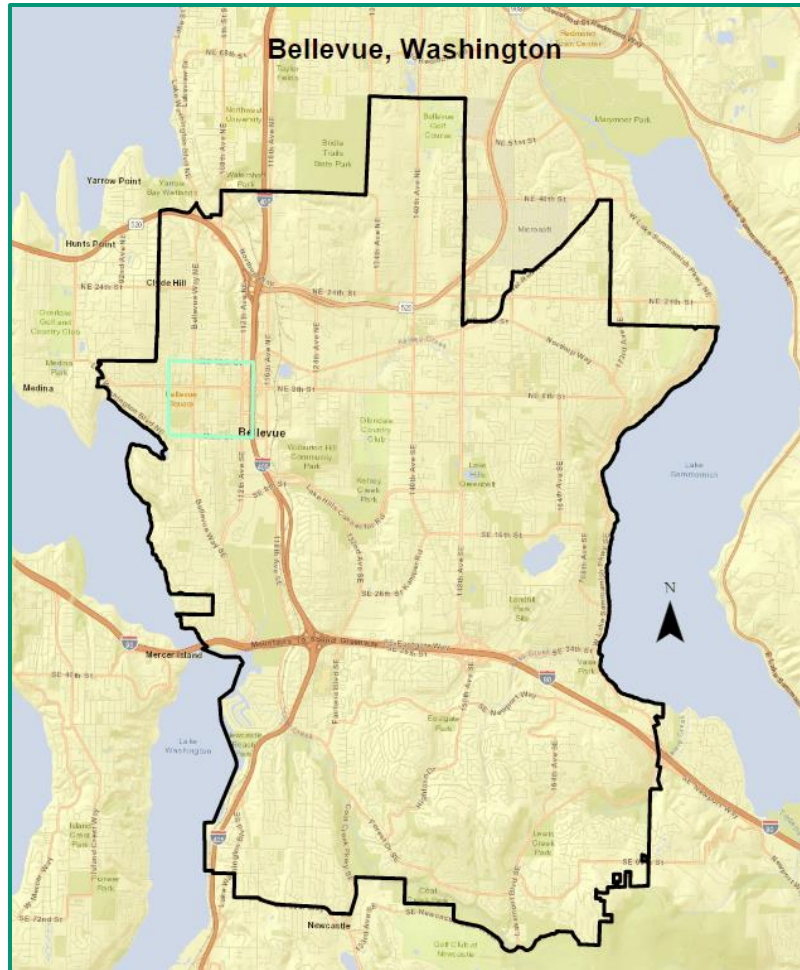
Photo Source: <https://www.capitalbikeshare.com/>

Bike-shares provide many benefits:

- Congestion reduction
- Low-cost transit options
- Physical activity
- Decreased air pollution.¹

¹Kisner, C. *Integrating Bike Share Programs into a Sustainable Transportation System*. League of Cities – CityPractice Brief (2011). Available at <https://www.scribd.com/document/173027730/Integrating-Bike-Share-Programs-Into-Sustainable-Transportation-System-Cpb-Feb11>

Bellevue Map



Bellevue is the 3rd Largest City in the Seattle Metropolitan Area

Population Total: 136,718¹

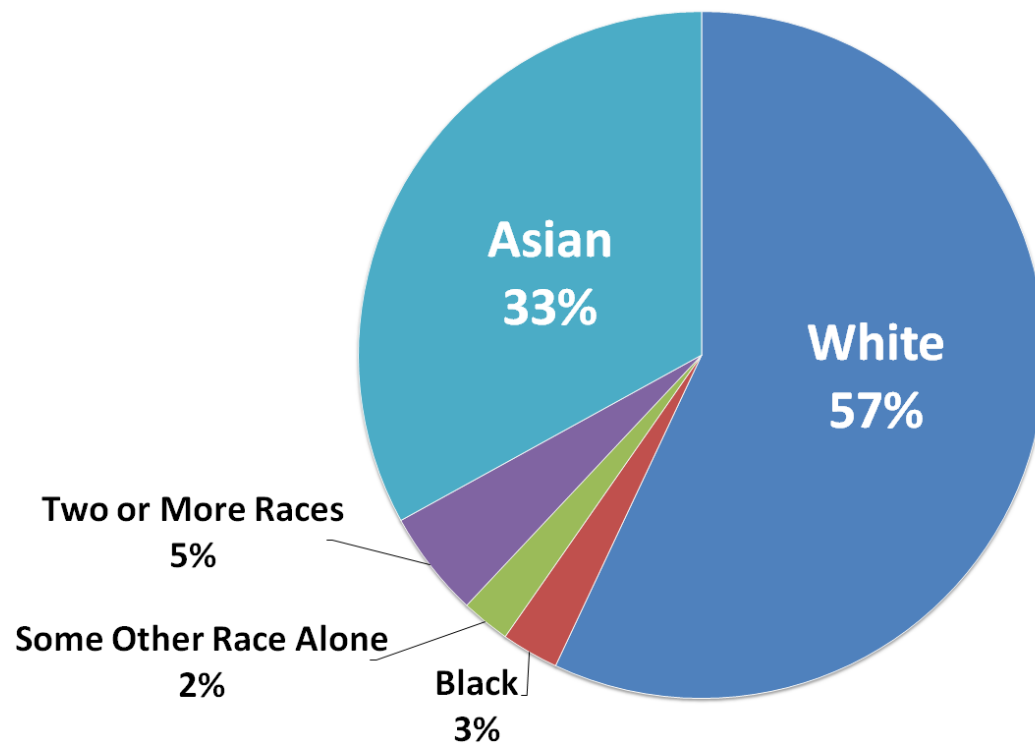
**Large employment hub:
~140,000 workers²**

¹All Data on Slide (except Employment Hub) from : US Census Bureau, 2012-2016 American Community Survey 5 Year Estimates

²Bellevue City Website, Available online, <https://transportation.bellevuewa.gov/transportation-options>

Bellevue Demographic Data

Bellevue Population by Race



Median Household Income: \$94,638¹

Transportation to Work Mode:

- Fewer Cars (74.2% vs. US 85.7%)
- More Public Transportation: (12.6% vs. US 5.1%)
- Fewer Bikes: (0.4 vs. US 0.6%)

Survey Methodology

- **Sampling Frame:** *Anyone who has access to the city website*
- **Sampling Method:** *Online via city website & in person*
- **Survey Distribution:** *September 8 - October 30, 2017*
- **Number of Respondents:** *816*
- **Response Rate:** *Unknown*
- **Potential Non-Response Bias:** *People not interested in biking*



Analysis Methodology



Survey Respondent Sample Size: 816

Grouped responses by trends:

- *Personal interest in bike share*
- *Currently a cyclist*
- *Perceptions of safety*
- *Previous experience with bike shares*

No Demographic Data except:

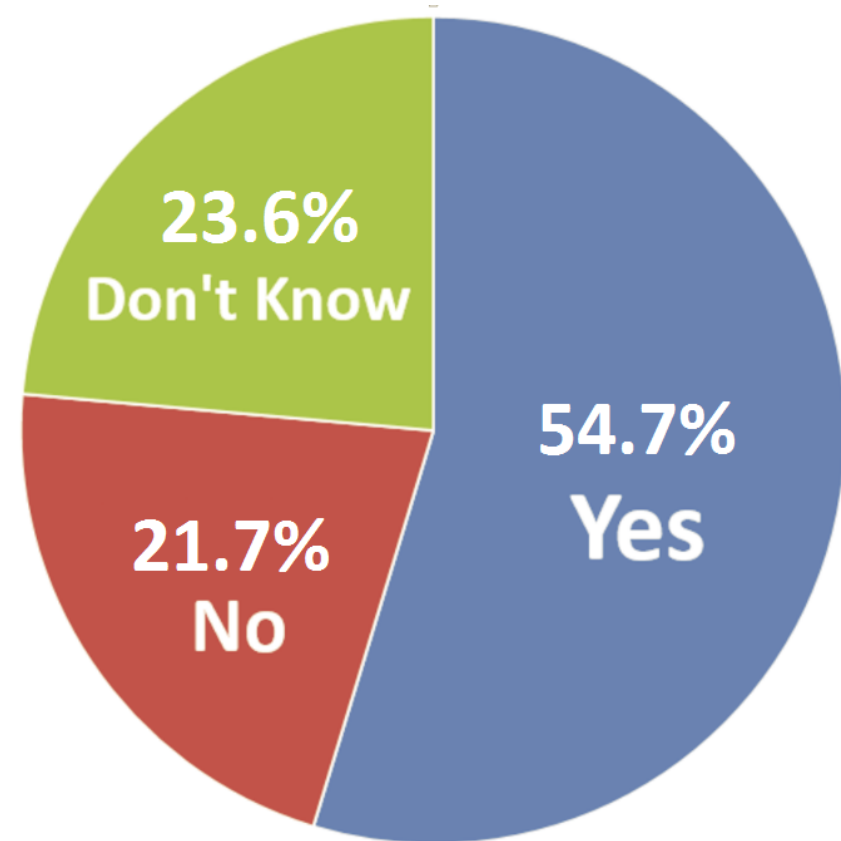
- *52% of respondents live in Bellevue*
- *Most non-residents live in Seattle*

Survey Results

Respondents are interested in using a bike share

Question 9:

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



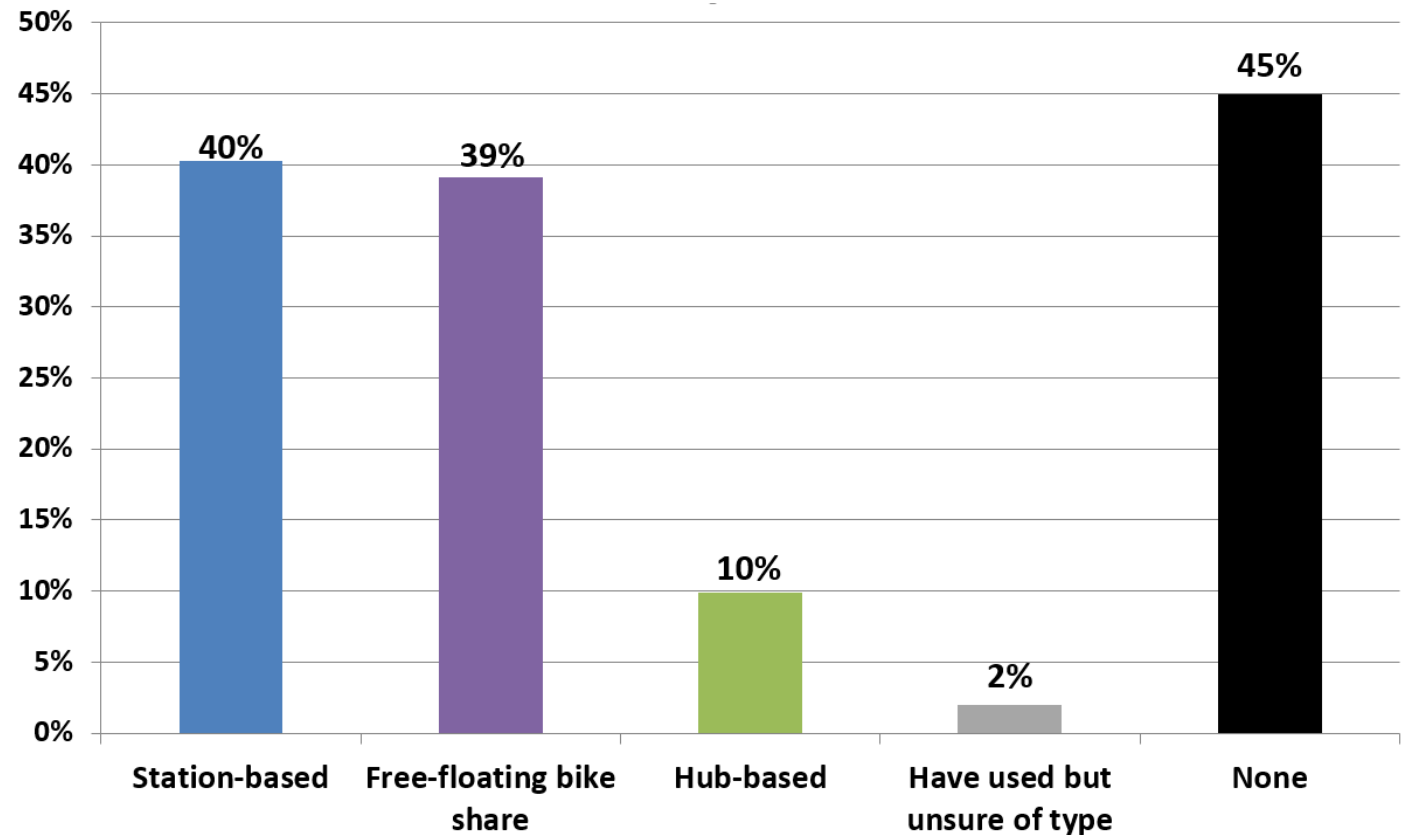
Survey Results

Respondents have some previous experience with bike share

Question 7:

*Have you used any of the following
types of bike share programs in
other cities?*

Select all that apply.

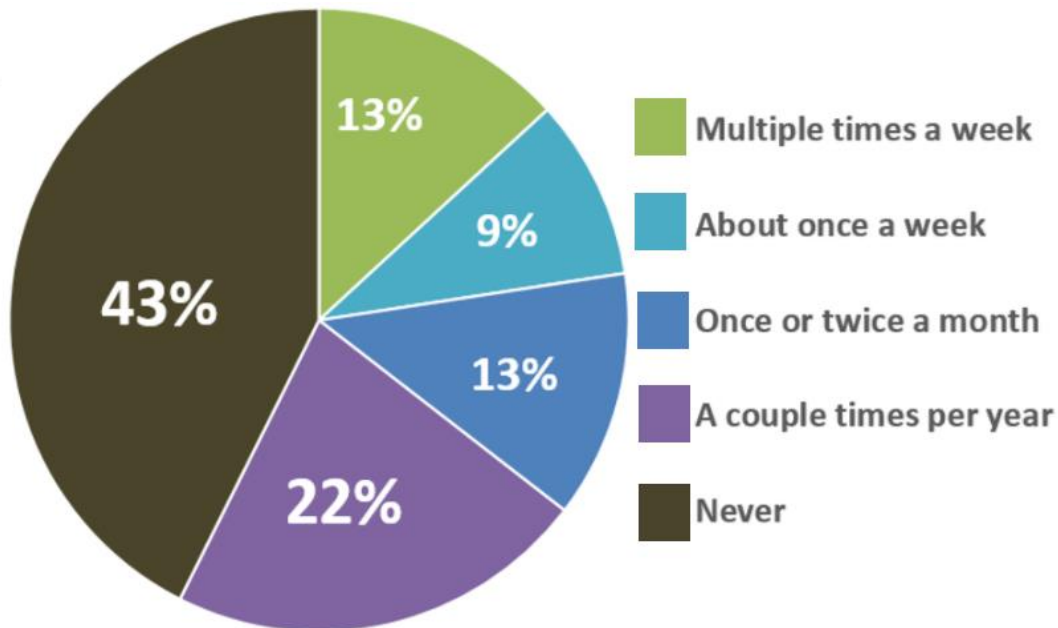


Survey Results

A bike share could increase Downtown Bellevue ridership

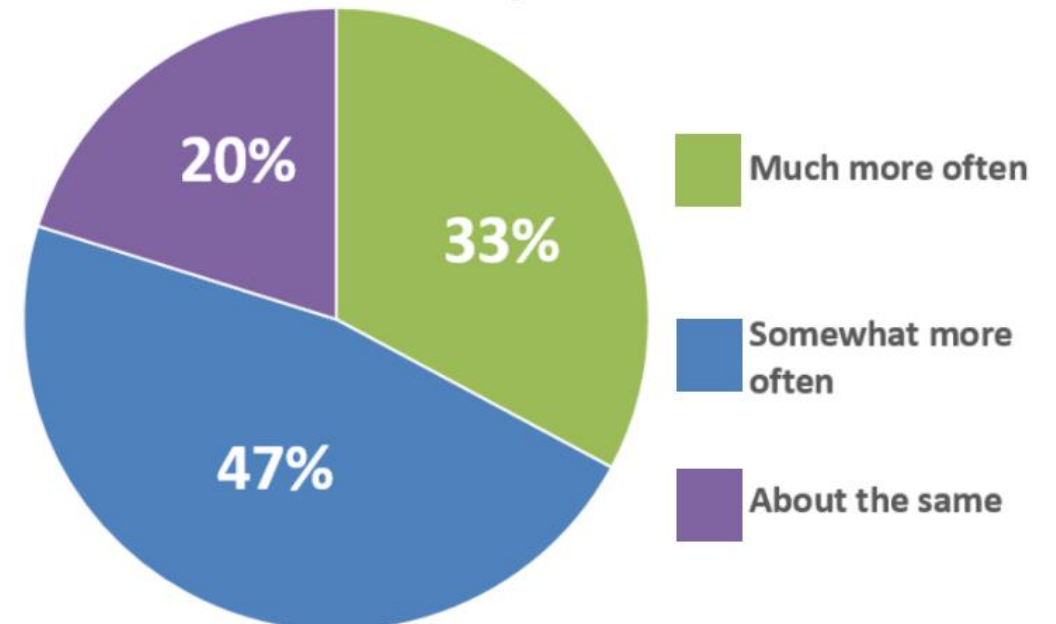
Question 2:

How often do you typically ride a bike in Downtown Bellevue?



Question 11:

If a bike share service was available in Downtown Bellevue today, how much more often would you ride a bike in Downtown Bellevue than you do now?

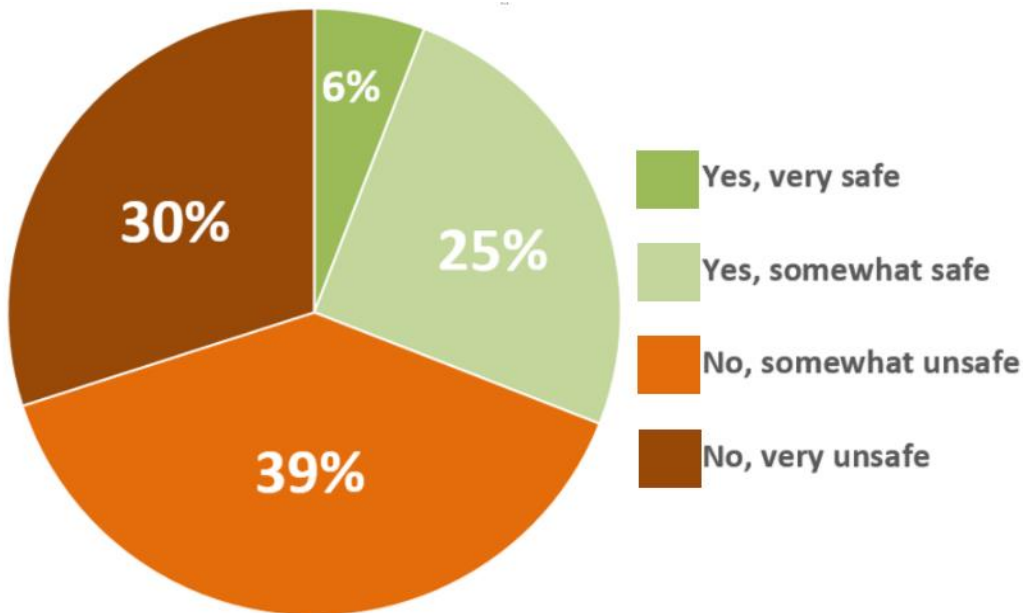


Survey Results

Respondents feel unsafe biking in Downtown Bellevue

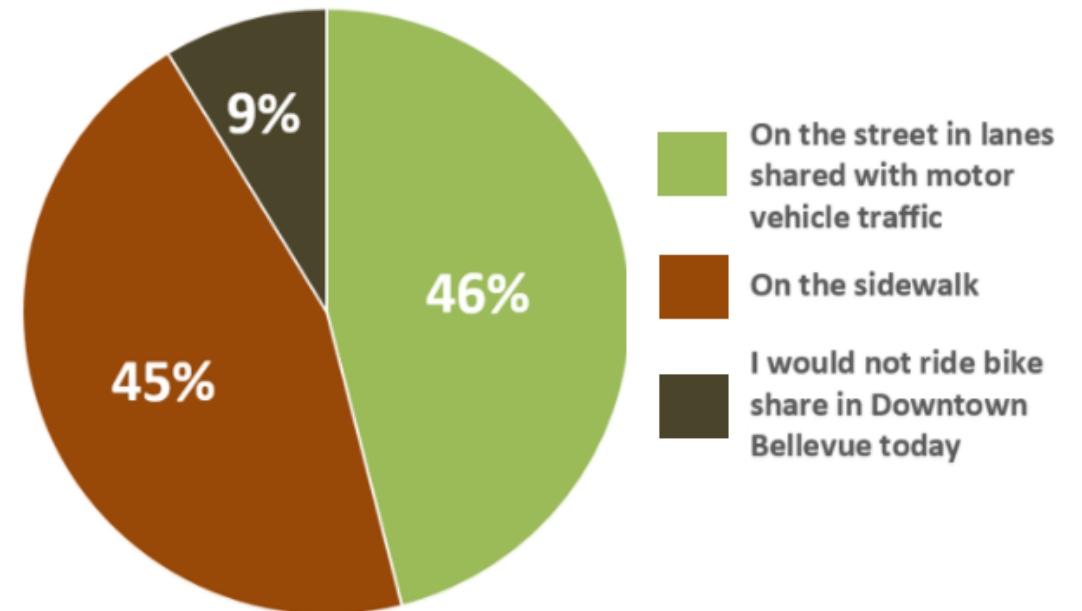
Question 4:

Do you feel that Downtown Bellevue is a safe place to ride a bike today?



Question 12:

If a bike share service was available in Downtown Bellevue today, where would you typically ride?

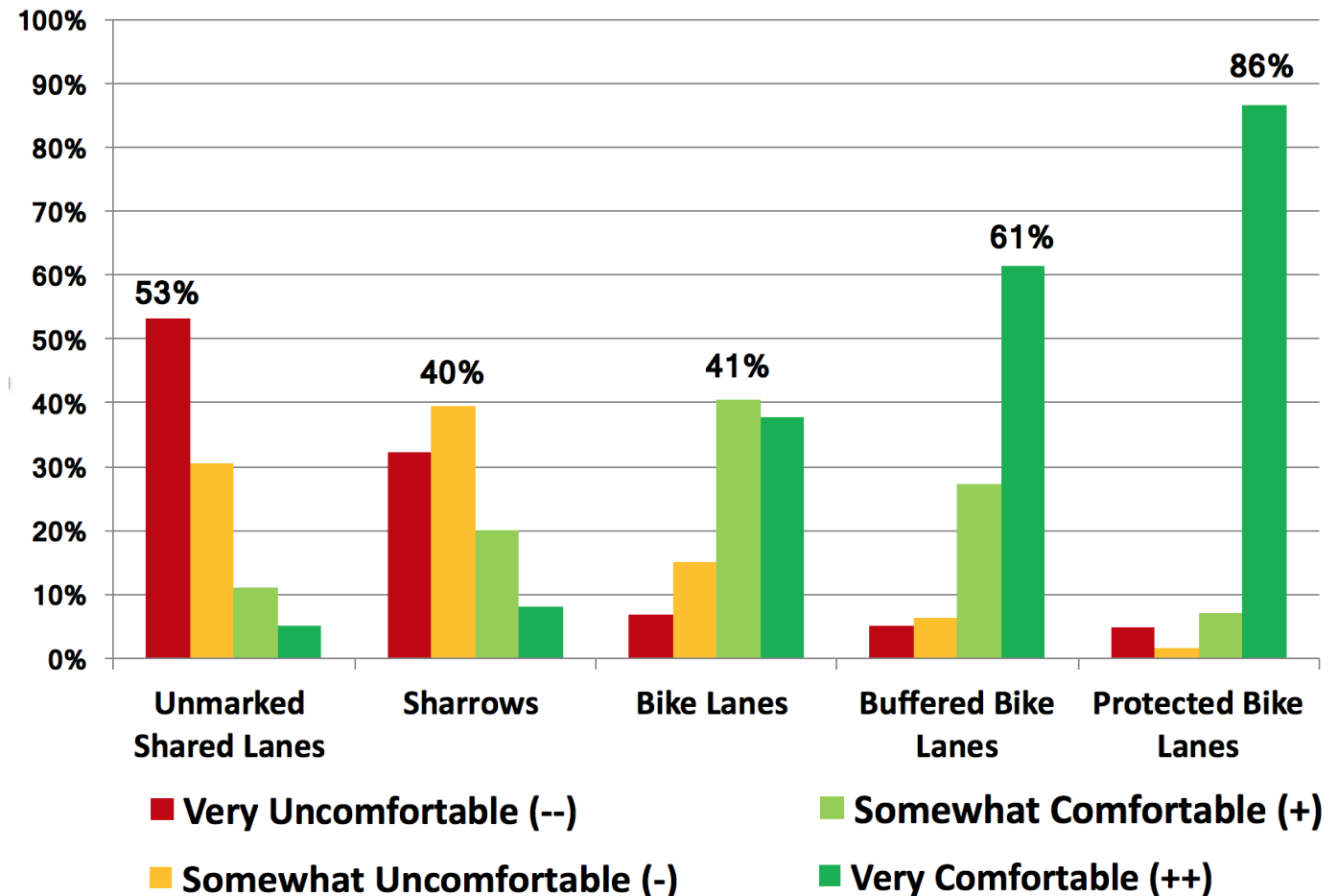


Survey Results

Increased bike infrastructure makes respondents feel safer

Question 6:

On a typical street in Downtown Bellevue, what would be your level of comfort with riding on each of the following types of bike facilities?



Survey Results Summary

- Positive Interest in a bike share
- A bike share could increase Downtown ridership
- Downtown feels unsafe for biking
- Better bike infrastructure makes people feel safer



Photo Source: <http://fox6now.com/2016/07/04/bublr-bikes-offering-free-rides-to-thank-you-for-your-patronage-this-fourth-of-july-weekend/>

Survey Limitations



No Demographic Data Queried

Could not weight responses for:

- Age
- Income
- Race
- Ability

Distribution Bias

Survey limited to people with Internet Access and those attending Bike Share Vendor Fair

Bike Share System Types

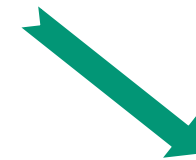
Capital investment required depends on system type



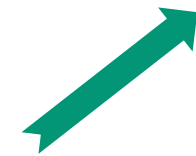
Photo Source: <https://www.smartsign.com/blog/bike-share-programs-2013/bike-share-docking-station/>

Station-Based:

- Fixed Location
- Pick-up/return bikes to any station location



Hub-Based System = Hybrid



Free-Floating:

- No fixed stations
- Pick-up/return bikes to anywhere in city
- Users find bikes by smart phone app



Photo Source: <http://www.themiamibikescene.com/2017/06/key-biscayne-dockless-bike-sharing.html>

Funding Options

Planning & Design Funding

- Federal Transit Authority Grants
- EPA Smart Growth Grants

Operation Funding

- Public-Private Cost-Sharing Schemes - Milwaukee
- Fully Privatized – New York City

Recommendation – Partner with Bellevue's Tech Companies



**Federal Transit
Administration**



Research Highlights - Infrastructure



Institute for Transportation & Development Policy's Bike Share Planning Guide

Comprehensive guide to planning & implementation

- Benefits and History of Bike Shares
- Conducting Feasibility Studies
- Planning and Design
- Infrastructure
- Business & Financial Models
- Implementation

Research Highlights – Infrastructure Cost



“The Societal Costs and Benefits of Commuter Bicycling”, 2014

Investment in better bike infrastructure:

- Yields benefits 10-25 times greater than costs
- Optimize benefits of bicycling
- Cost-effect minimizing of any negative consequences

Research Highlights - Equity

2016 Capital Bikeshare Member Survey Report

Capital Bikeshare Members Mostly:

- White Males
- Young adults
- Employed
- Affluent
- Educated
- Cyclists

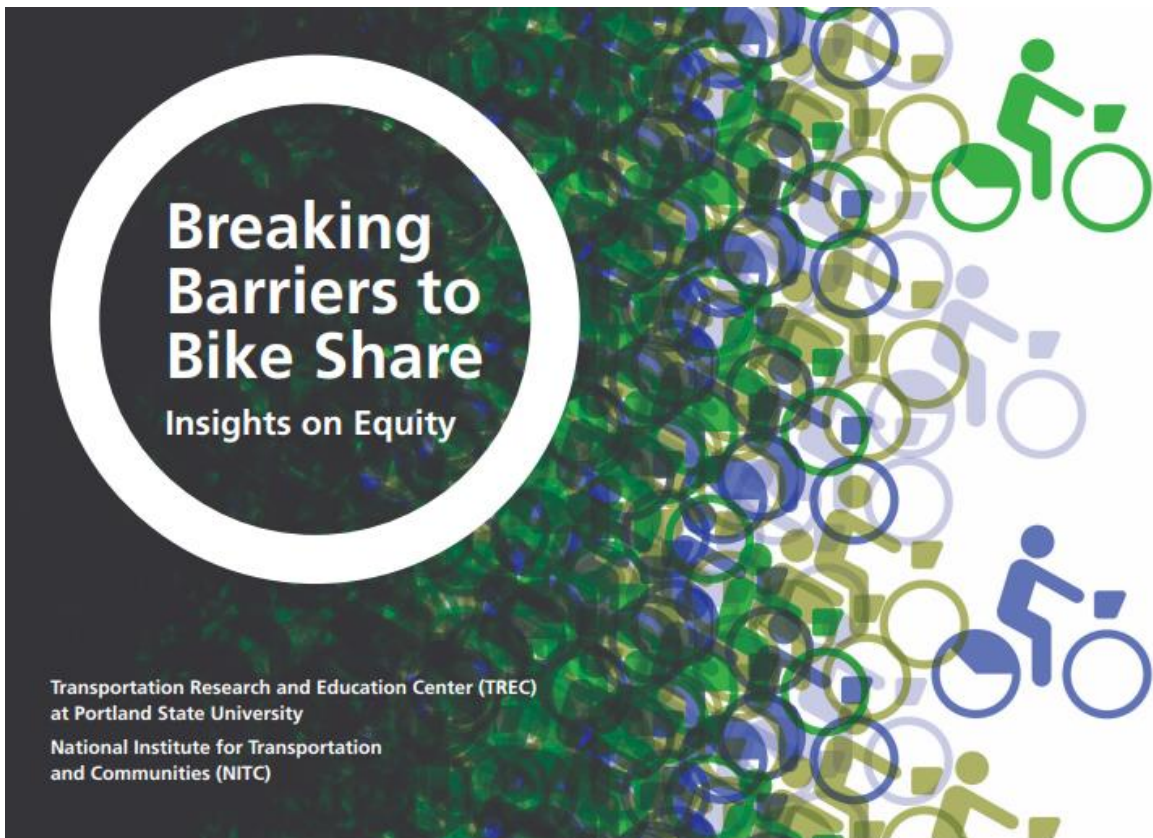
Bikeshare benefits not evenly distributed



Photo & Study Source: https://d21xlh2maitm24.cloudfront.net/wdc/Capital-Bikeshare_2016MemberSurvey_Final-Report.pdf?mtime=20170303165531

Research Highlights - Equity

Transportation Research & Education Center (TREC) at Portland State University "Breaking Barriers to Bike Share: Insights on Equity", 2017



Ridership Barriers for Low-Income and/or Minority Residents:

Operators perceived:

- *Cost*

Residents perceived:

- *Poor bike infrastructure*
- *Personal safety*

Less than 25% of bike shares had equity policies

Pedestrian and Bicycle Plan Goals



2009

city of bellevue
pedestrian & bicycle
transportation plan report



Public Health

“Improve health and fitness”
“Reduce air and noise pollution”

Equity

“Ensure that those who cannot drive due to age, income, or disability have options”

Safety

“Provide a safe & accessible street environment”

Welfare

“Support economic development”

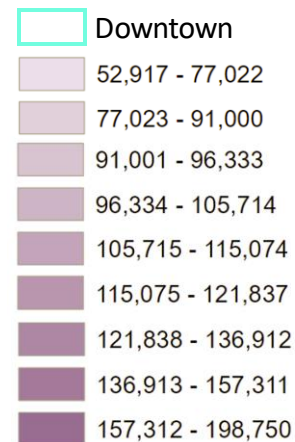
Income Disparity & Race

Black & other minorities only make **60%** of the Asian & White household income

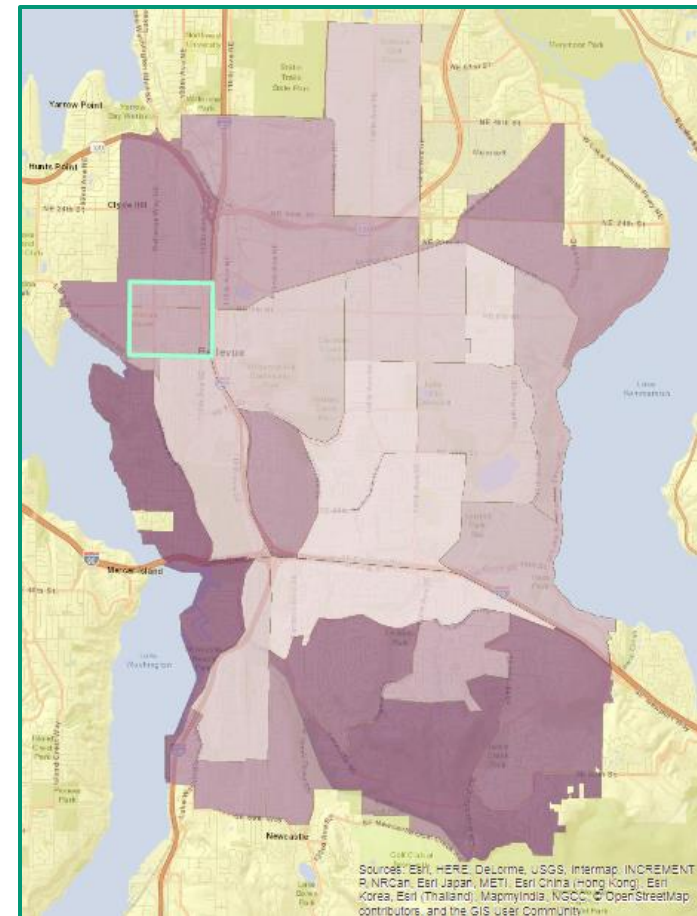
Median Income by Race

- **Asian: \$105,809**
- **White: \$100,639**
- **Black: \$60,741**
- **All Other: \$60,104**

Legend



Median Household Income 12 Months*



*2016 ACS 5YR Median Household Income 12 Months, Table S1903

Recommendations

Focus on Equity During Planning & Design Stages

Benefits to City & Residents

- *Extends* bike share benefits to broad range of citizens
- *Engages* Bellevue's minority & low-income citizens
- *Advances* Bellevue Bike & Ped Plan 'Equity' Goal
- *Complies* with NABSA Equity 'Code of Conduct'¹

Makes equity a *forethought*, not an afterthought



Photo by Mitchell Leff, Source: <http://betterbikeshare.org/2016/12/07/bike-share-can-winter-community-engagement-tool/>

¹Source: <http://nabsa.net/wp-content/uploads/2017/04/NABSACodeofConduct.pdf>

Recommendations

Focus on Equity During Planning & Design Stages



Learn from other cities' successes/failures

Bed-Stuy, NY:

- Minority Residents felt Bike Shares were *“not for people like me”*
- Neighborhood Ambassador Program changed perception

Recommendations

Focus on Equity During Planning & Design Stages

Action Items

- Survey residents for potential ridership barriers
- Form neighborhood partnerships to meet needs
- Develop long-term plan for siting & improving infrastructure

Funding

- Better Bike Share Equity Research Grant



peopleforbikesTM

Recommendations



Integrate Bike Share with King County Metro

- Increases funding opportunities
- Encourage commuters to leave cars at home
- Reduces downtown congestion



Recommendations

Improve Downtown Bellevue Bike Infrastructure by Adding Protected Bike Lanes

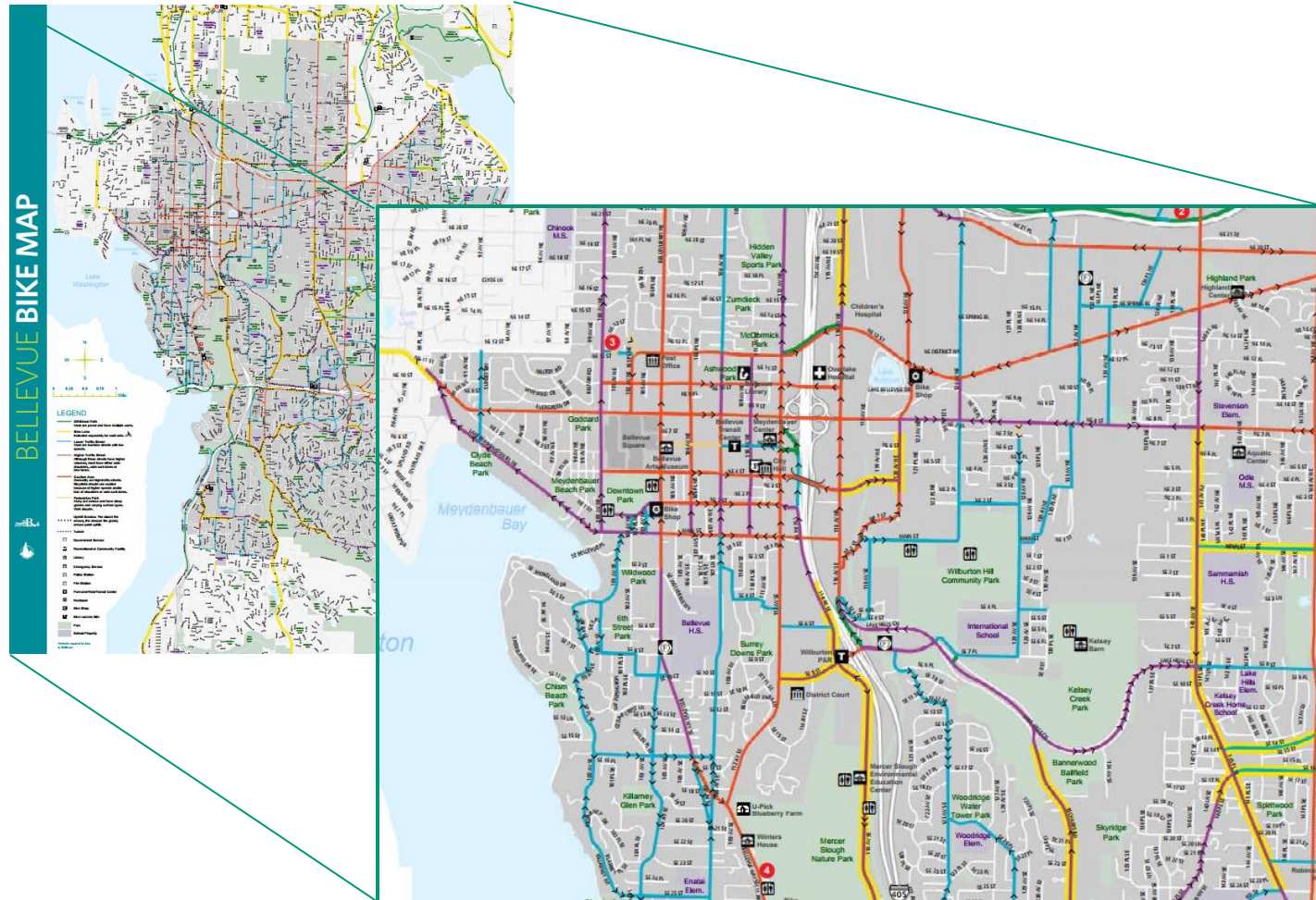
- Address respondents' safety concerns
- Increase bike ridership
- Improve air quality
- Improve health
- Reduces system pressure
- Cost-saving over the long-term




¹Baumgaertner, Emily. "Bike-Sharing Is Flourishing in Washington. Can the City Handle It?" *New York Times*. Available online, www.nytimes.com/2017/10/01/us/politics/washington-bike-share.html, Oct 1, 2017.

Photo source: <https://momentummag.com/wp-content/uploads/2015/01/lajnsf.jpg>

Bellevue Bike Map, 2015



LEGEND

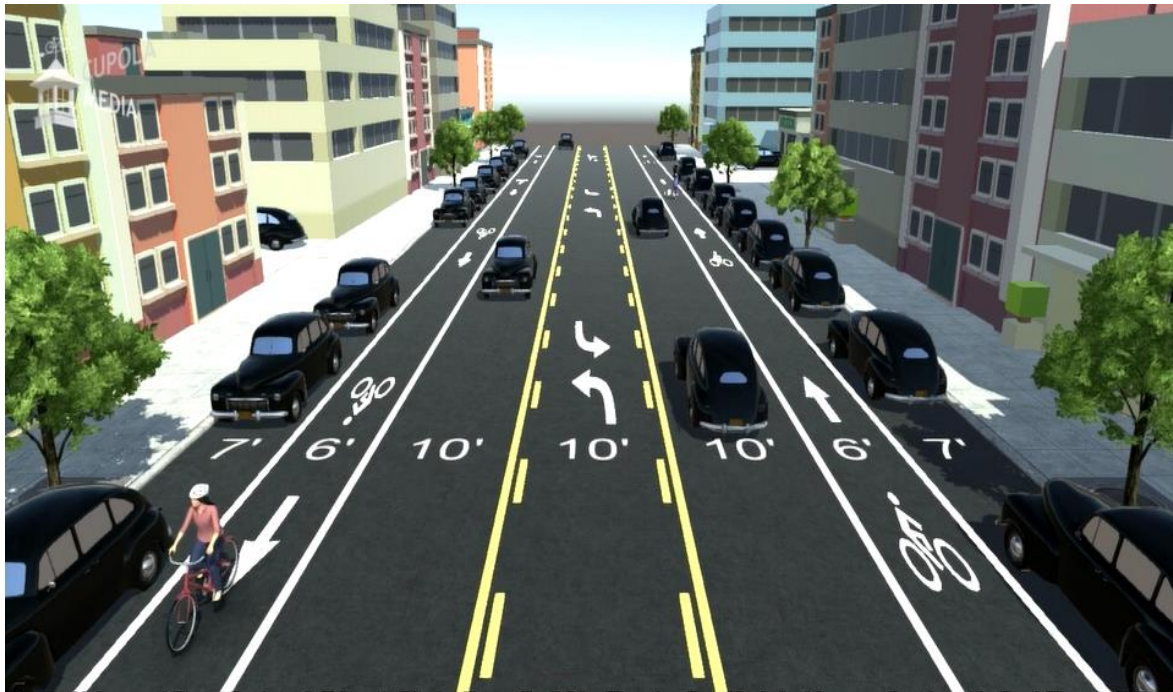
- Off-Street Path**
Most are paved and have multiple users.
- Bike Lane**
Indicated separately for each side. 
- Lower Traffic Street**
Most are two-lane streets with low speeds.
- Higher Traffic Street**
Although these streets have higher volumes, most have either wide shoulders, wide curb lanes or bike lanes.
- Caution Area**
Generally are high-traffic streets. Bicyclists should use caution because of higher speeds and/or lack of shoulders or wide curb lanes.
- Pedestrian Path**
Many are narrow and have steep grades and varying surface types. Walk bicycle.
- Uphill Grades:** The closer the > > > > arrows, the steeper the grade; arrows point uphill.

Recommendations

Improve Downtown Bellevue Bike Infrastructure by Adding Protected Bike Lanes

Parking Protected Bike Lanes

Similar Existing
Bike Lane Patterns in Downtown Bellevue



Improved
Bike Lanes With No Car Lanes Lost

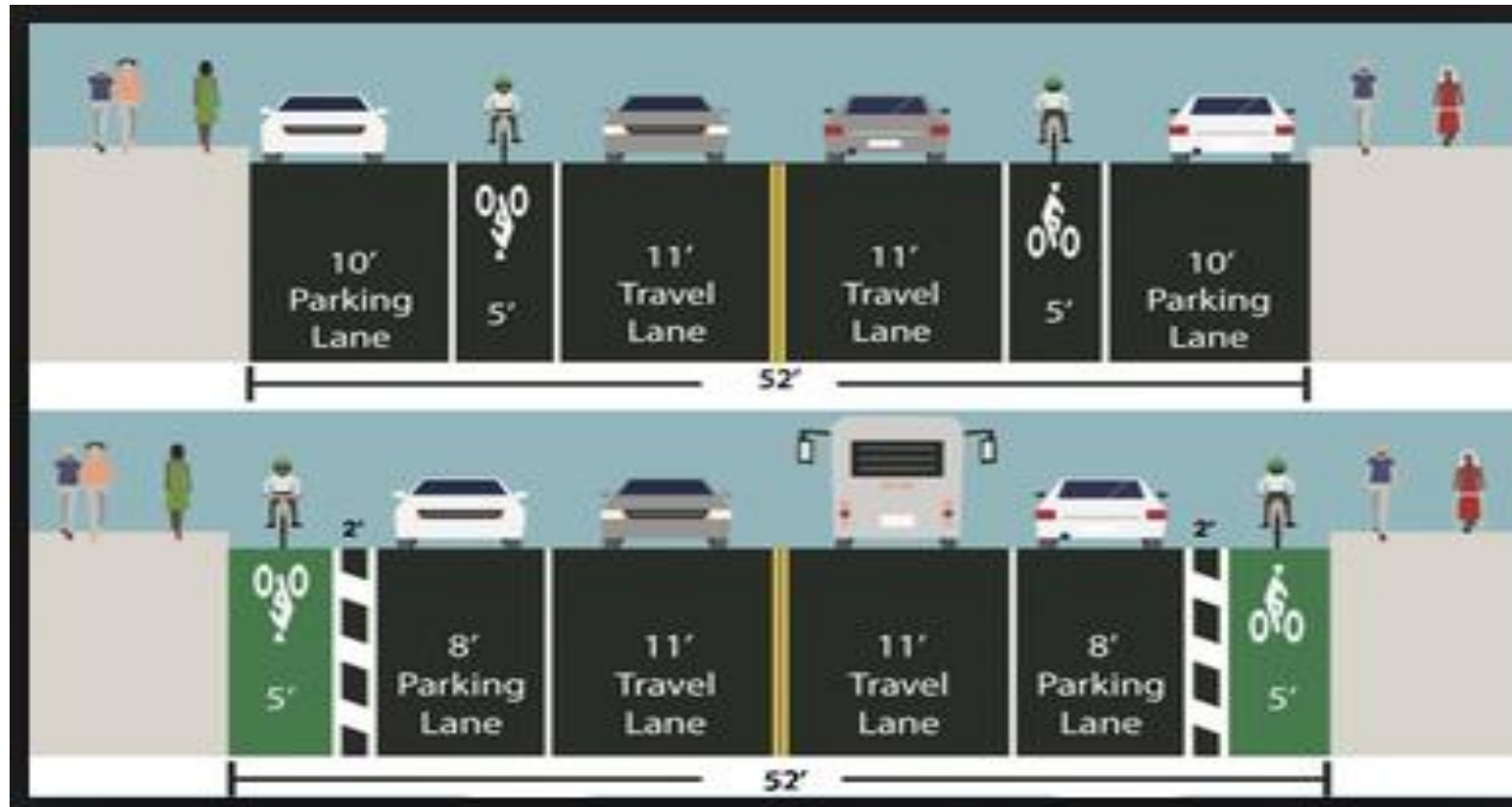


Photo source: Jeff Speck: Four Road Diets. @ <https://vimeo.com/136672997>

Recommendations

Improve Downtown Bellevue Bike Infrastructure by Adding Protected Bike Lanes Parking Protected Bike Lanes (Road Dissection)

Before

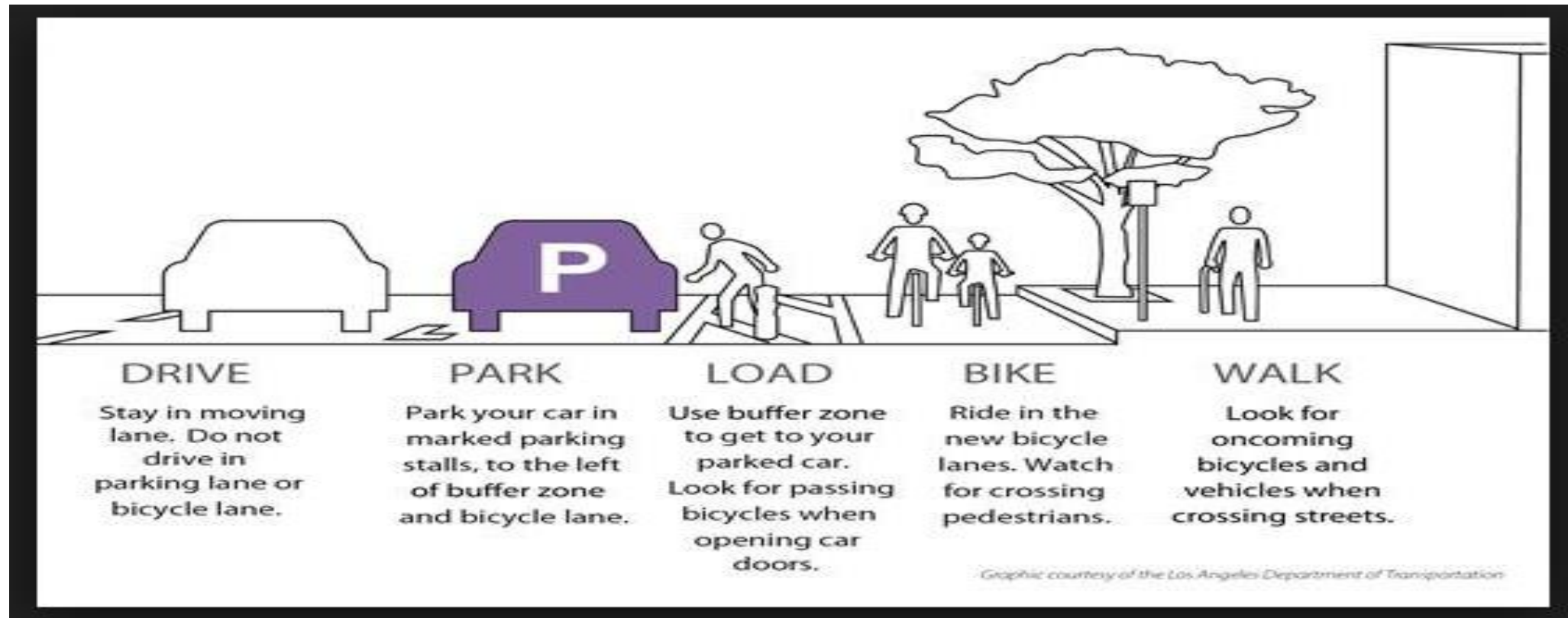


After

Recommendations

Improve Downtown Bellevue Bike Infrastructure by Adding Protected Bike Lanes

Parking Protected Bike Lanes



Questions?