



**J Line**



## RapidRide J Line

**Seattle Bicycle Advisory Board**

October 5, 2022

# Agenda

- Welcome
- RapidRide J Line overview and history
  - Protected bike lanes
- Project design update
- Recent outreach
- Next steps and schedule
- Q&A

# RapidRide J Line?



Provide transit service to support housing and employment growth



Improve transit travel time and reliability throughout the corridor



Reduce overcrowding of existing bus capacity



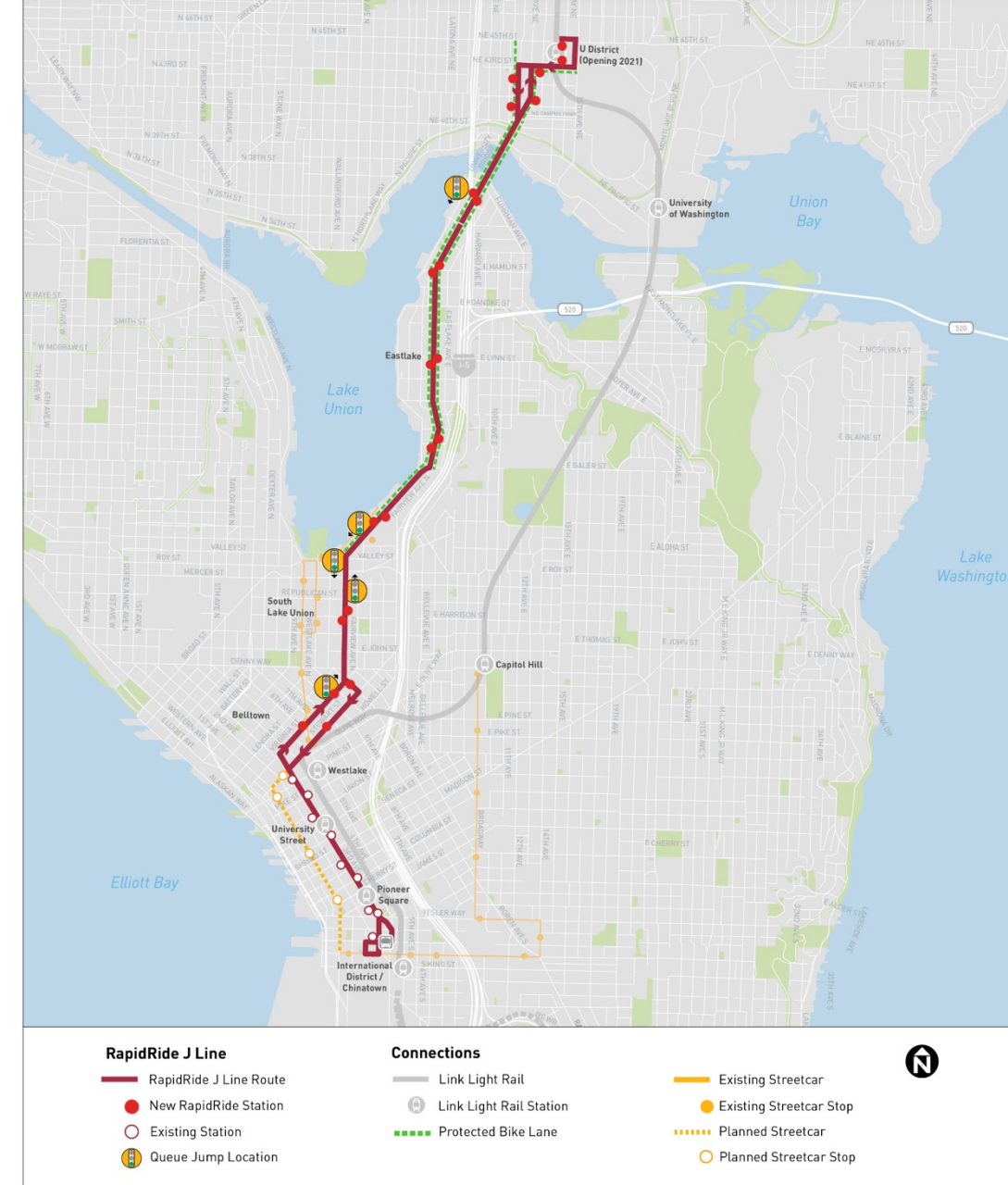
Provide neighborhood connections to future Link light rail, RapidRide Lines, and Seattle Streetcar



Improve pedestrian and bicycle safety and connections to transit with protected bike lanes



Reduce greenhouse gas emissions



# King County Metro RapidRide key features

## Convenient and easy to use

- Service starts early and runs late, every day
- Buses come at least every 10 minutes during busiest hours
- All-door boarding is available on all coaches
- Riders with mobility aids can secure themselves easily

## Safe and smart

- Stations have real-time arrival signs
- Transit signal priority synchronizes traffic lights with buses
- Shelters are well lit, and all buses have security cameras

## Move more, stop less

- Bus stop spacing helps speed up your ride
- Street and traffic improvements make it easier to get to/from the bus





# Project history & key decisions

- **2014-2016** Project development including preparation of Transit Master Plan and [Bike Master Plan](#)
- **2016** RapidRide Roosevelt bus rapid transit project partially funded by voter-approved Levy to Move Seattle
- **2017** Locally Preferred Alternative adopted with route ending at Roosevelt Link station
- **2018** Community-requested [evaluation](#) of 9 bicycle routes determined the protected bike lanes on Eastlake Ave E are the option that best meet evaluation criteria
- **2018** Full paving of Eastlake Ave E confirmed and included in project
- **2020** Submitted draft Environmental Assessment (EA) to Federal Transit Administration (FTA)
- **2021** Submitted supplemental environmental assessment for U District option.
- **2022** \$60.1M funding recommendation (FTA Small Starts) included in FY 2023 USDOT budget
- **2022** Finding of No Significant Impact (FONSI) by FTA
- **2022** Continue community engagement through final design phase



Roosevelt Line



## Protected Bike Lanes

# Why is putting in a protected bike lane beneficial?

## ■ **Benefits to Transit**

- Buses and cars won't be slowed by cyclists in a shared lane
- Reduces the number of lane changes by buses, thus improving safety for all users and reliability for transit
- Bicycling is an effective 'last mile' connector mode and the transit connection on the same route provides an alternative in bad weather

## ■ **Benefit to Pedestrians**

- Fewer cyclists would choose to ride on the sidewalk on Eastlake Ave E. thus making sidewalks safer for pedestrians and individuals with disabilities

## ■ **Benefits to Cyclists**

- Cyclists no longer need to dodge cars or buses on Eastlake Ave E.
- Can travel at a steady speed in a separated environment
- Facility will be all ages and abilities, not just for the most confident riders
- An all ages and abilities bike facility reduces cyclists stress level and encourages use

# Why are Protected Bike Lanes needed on Eastlake Ave E?

- **Funding:** Purpose and need for project includes pedestrian and bike connections, access to stops and improved safety
- **Planning:** Protected bicycle lanes on Eastlake Ave E included in *Seattle Bicycle Master Plan*
- **Operations:** 2,229 cyclists in 14-hour count (2018) at University bridge, 1,462 at Fairview Ave E; one of the highest volume corridors in city
- **Environment:**
  - Cycling reduces air pollution and road congestion
  - Transportation causes more than a quarter of greenhouse gasses
  - Choosing to bike for short commutes can help decrease carbon output

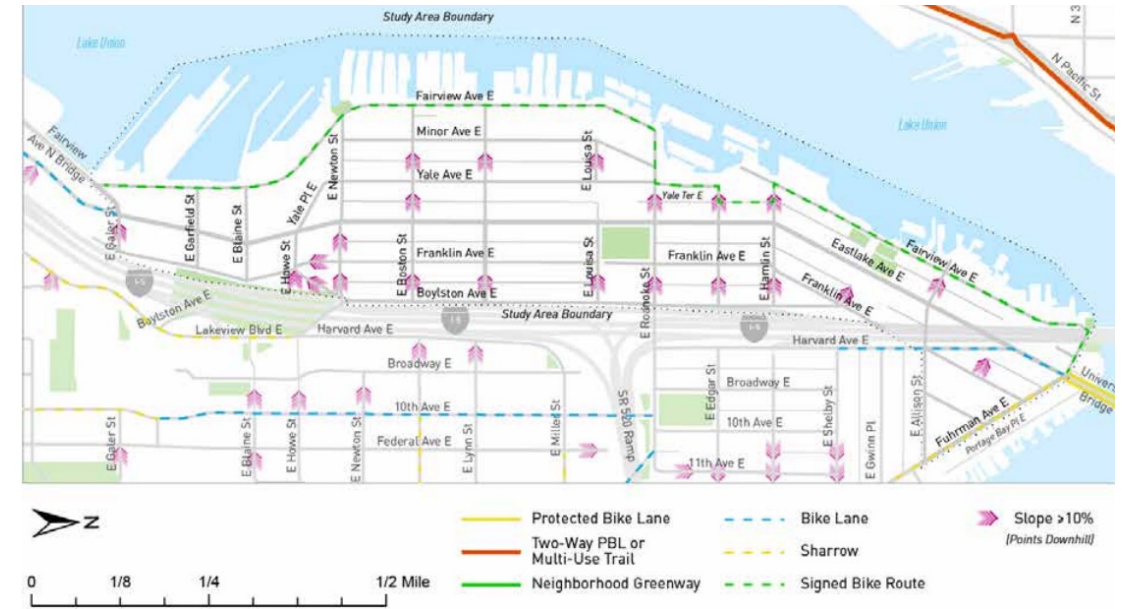
# Eastlake Bicycle Facility Evaluation

SDOT conducted extensive [Eastlake Bicycle Facility Evaluation \(2018\)](#)

- Included evaluation of **9 options** against 14 criterion
- ***Creating alternate bike routes would not restrict bikes on Eastlake and therefore not resolve bicycle and bus conflicts***

Found one-way PBL on Eastlake preferred because:

- Maximizes transit benefit – fewer conflicts
- Avoids several turns off Eastlake and steep grades that would deter use
- Fewest potential conflicts at intersections and driveways
- Access to all 8 RR stops and TOPS K-8 school
- Maintains planted median on Eastlake, which was a community priority

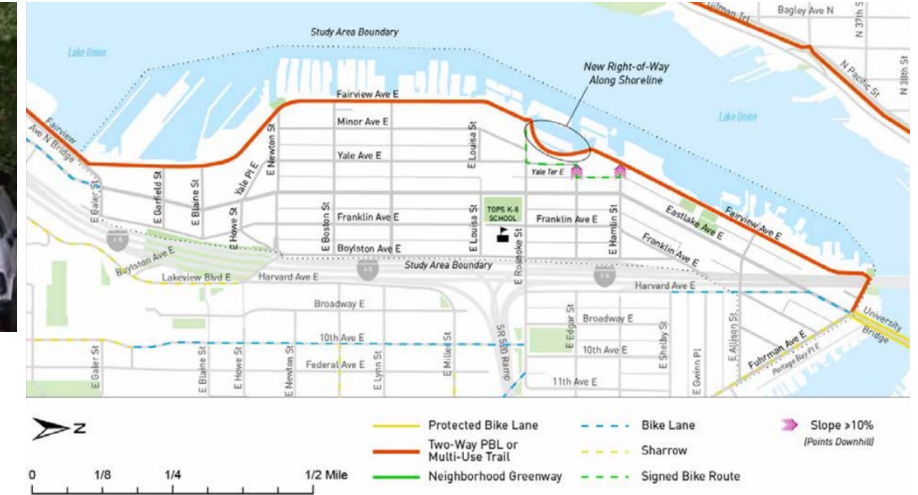




# Why not bicycle facilities on Fairview?

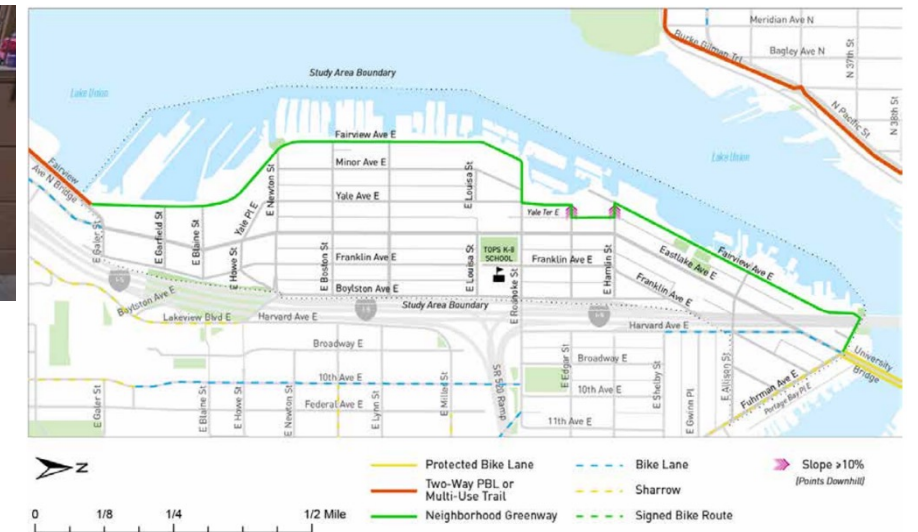
## Option 6: Multi-use Trail on Fairview E

- Doesn't meet Project Purpose and Need for improved access to transit for bicycles
- Requires property acquisition to connect between E. Hamlin St and E Roanoke St.



## Option 7: Greenway on Fairview E

- Provides safety improvements
- Doesn't meet Project Purpose and Need for improved access to transit for bicycles
- Does not meet Design Standards:
  - Steep hills
  - Constrained alley (insufficient space)



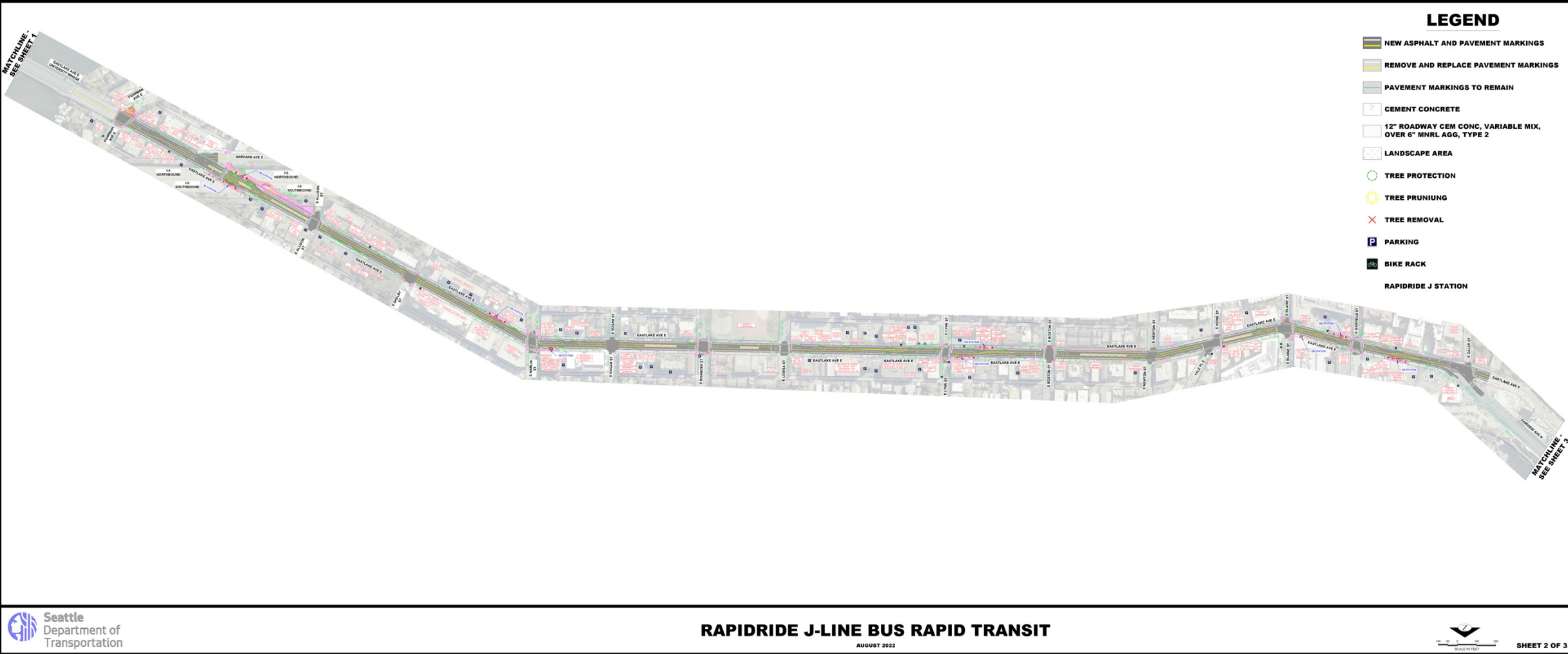


J Line



## Project design update

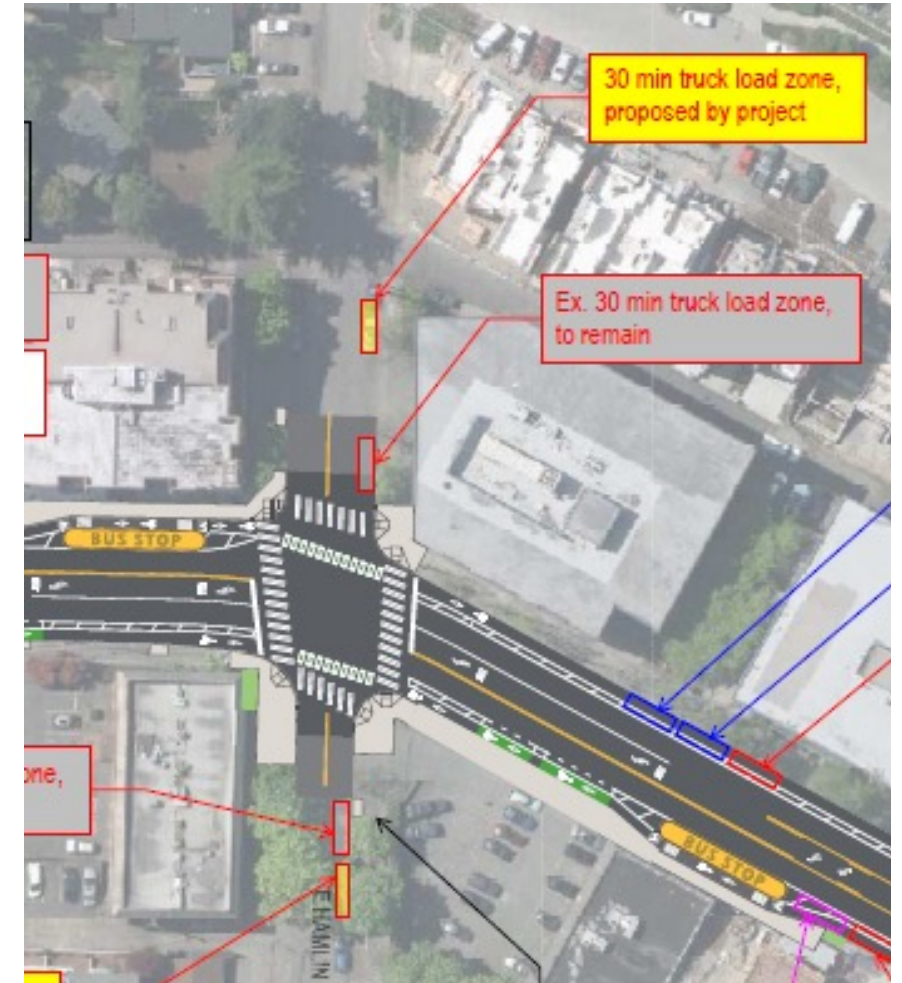
# Roll plots



# NEPA/FONSI Follow Up

## Commitments identified in **NEPA Finding of No Significant Impact** for Eastlake Neighborhood

- *Relocate Load Zones* where feasible
- *Shared-use parking* plan to identify and share off-street parking spaces
- *Restricted Parking Zone (RPZ) update* to balance and prioritize the needs of curb space users
- Identify opportunities to install additional loading zones, short-term parking, or a combination of these, on Eastlake Ave E or nearby streets





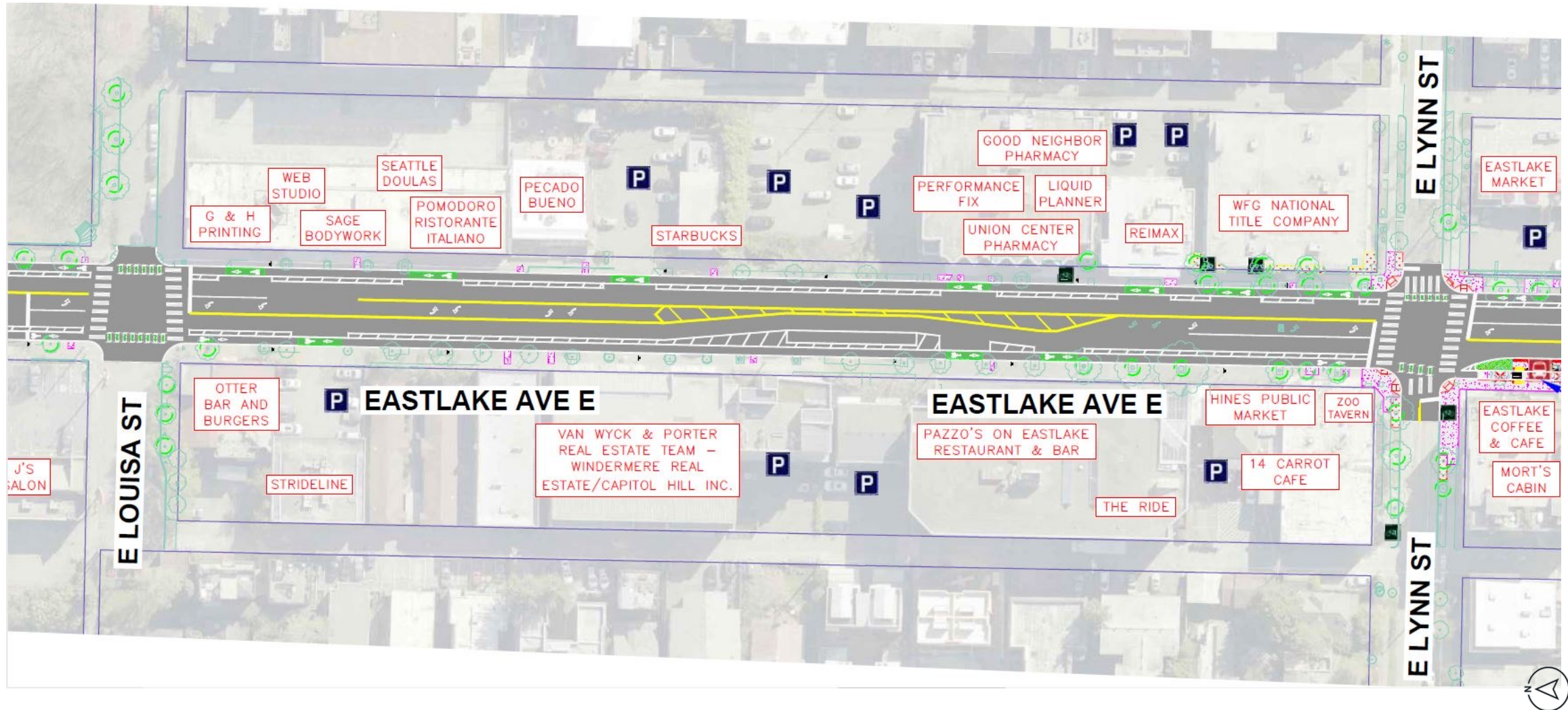
# Operations – Project Configuration

- Balancing and facilitating passenger vehicle access
  - Maintaining the left turn lanes and two-way left turn lanes
  - Operational benefit with turning vehicles out of the way of through movement
  - Ensures residential and business access will be maintained along Eastlake Ave E
- Signal timing and active management
  - Adding communications to all signals on Eastlake Ave E to allow active management
  - Will be able to provide traffic-responsive signal cycle length based on demand

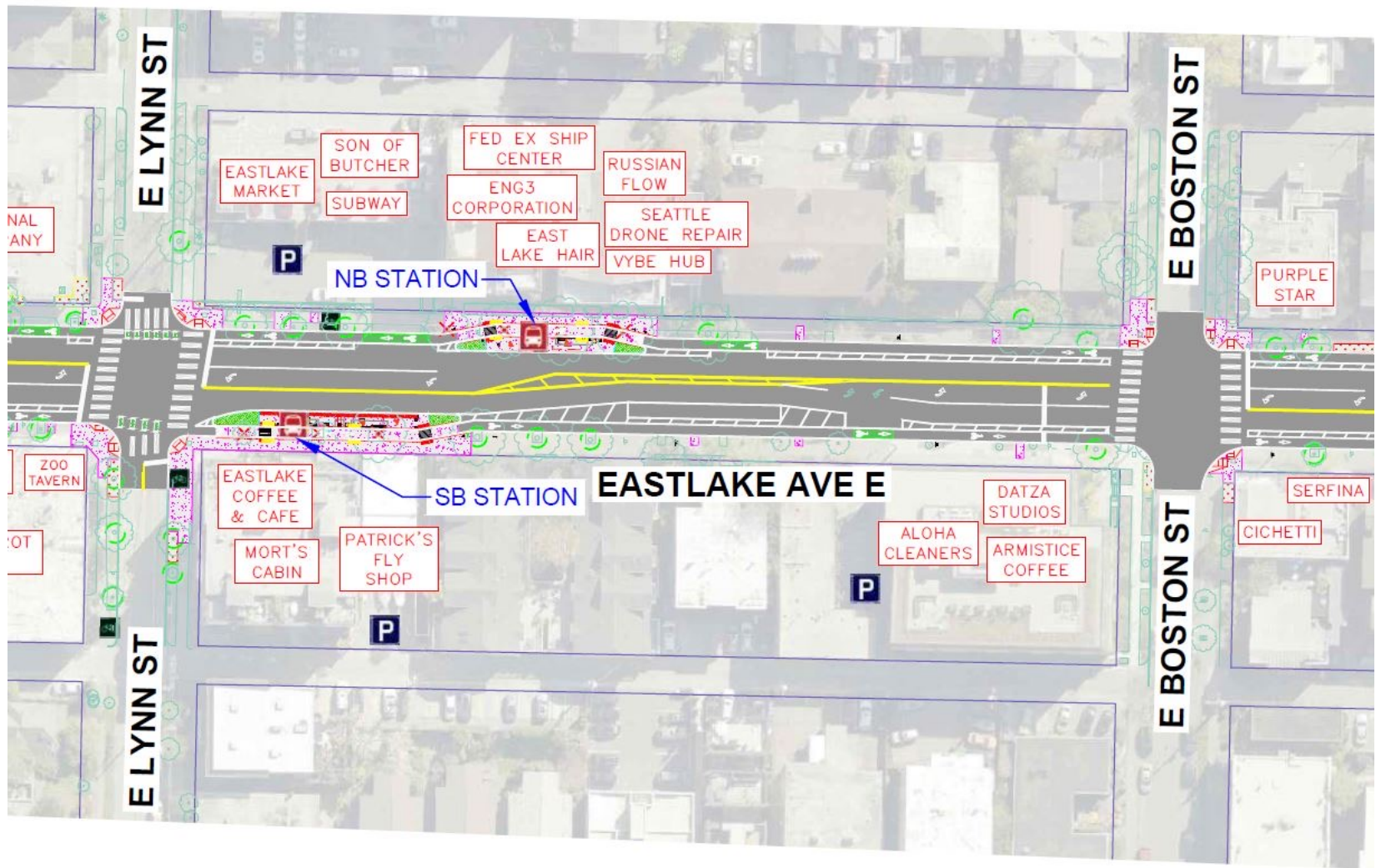




# E Lynn St to E Louisa St



# E Lynn St to E Boston St





J Line

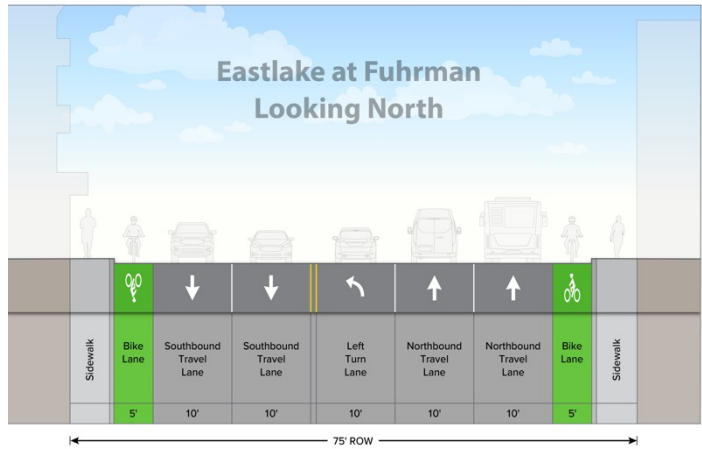
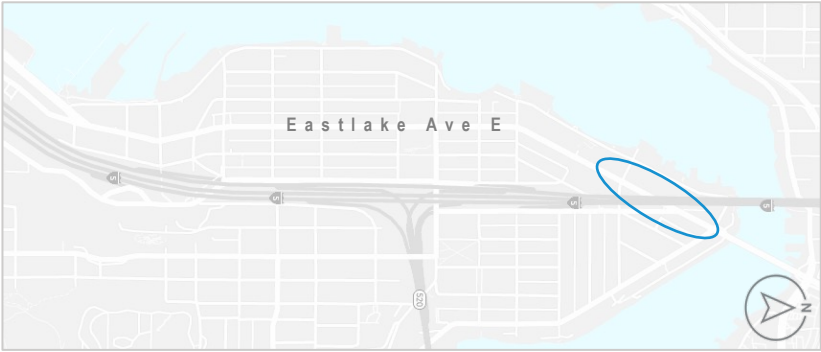


## Recent outreach



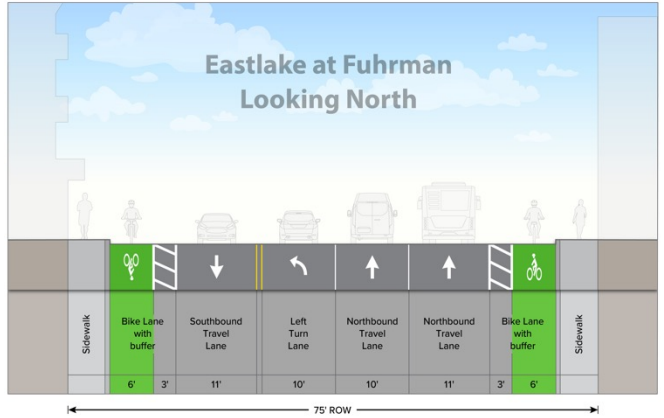
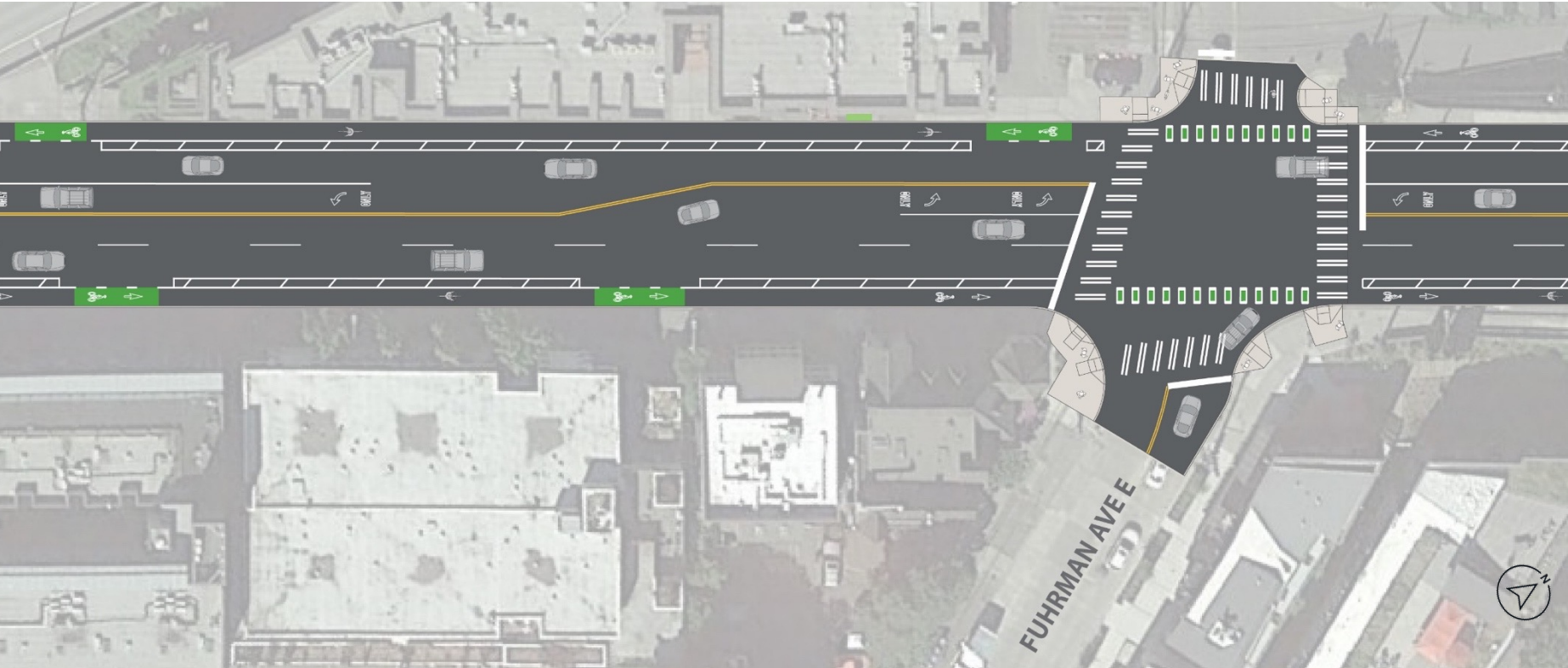
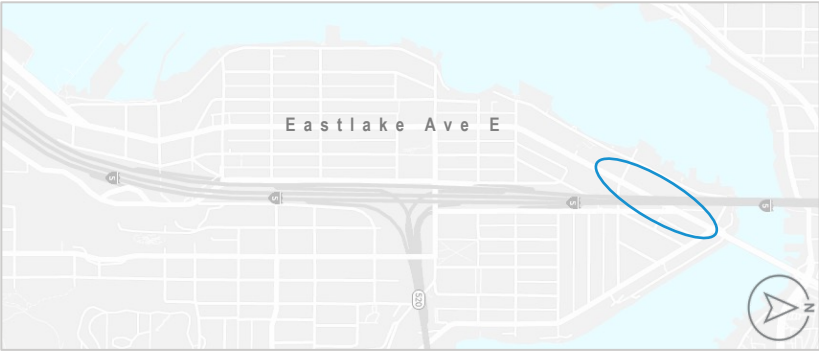
# Channelization on Eastlake at Fuhrman

Option 1 – Standard bicycle lane



# Channelization on Eastlake at Fuhrman

Option 2 – Buffered bicycle lane

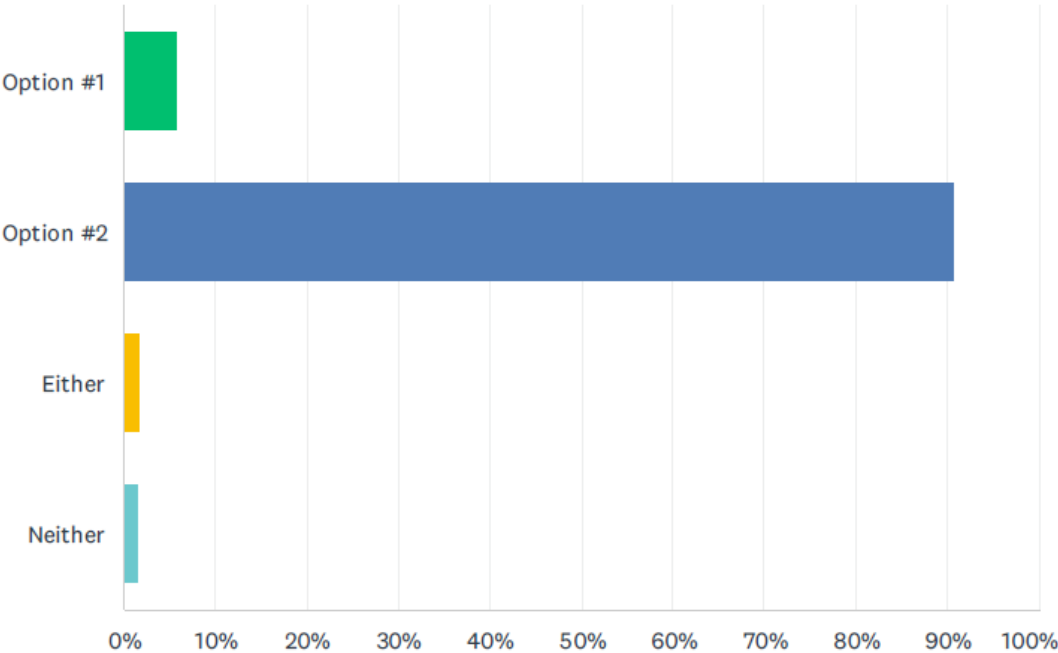




# Channelization on Eastlake at Fuhrman

Q5 We have considered two designs for Eastlake Ave E at the Harvard and Fuhrman intersection. Option 1 maintains two southbound travel lanes for vehicles, but does not provide a protective barrier for the bicycle lane. Option 2 removes a southbound travel lane, but provides space for a buffer and protected bicycle lane. Which option do you prefer?

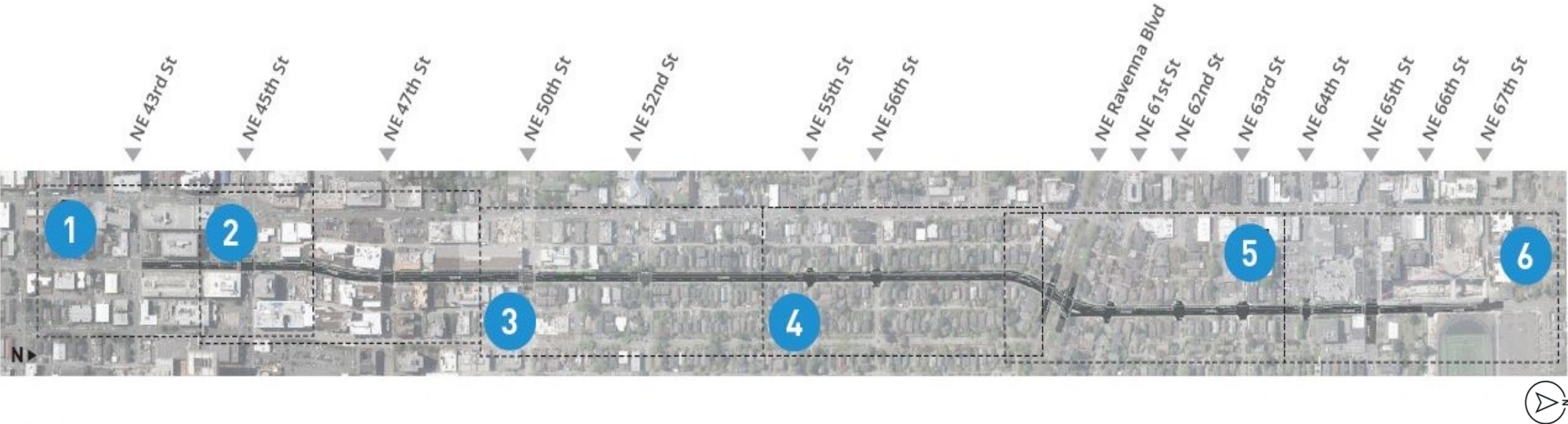
Answered: 1,162   Skipped: 21



# Why Transition to Left Side Protected Bike Lane on 11th Ave NE at NE 43rd St?

- Streets Illustrated
  - One-Way Street
  - Frequent Transit
- Safety
  - Bike/Bus/Pedestrian interface at Stations
  - Uphill bicyclists don't need to slow and lose momentum at transit station interfaces
  - Less conflict points with driveways/side streets than the right-side option.
- Why at NE 43rd?
  - Bike/Ped Friendly Street
  - Not a through Street (Roosevelt to 15th Ave NE)
  - Transit Only Brooklyn Ave NE to University Way NE
  - Connection to UW
- Where does it transition back?
  - NE 67th St – Roosevelt Link Station

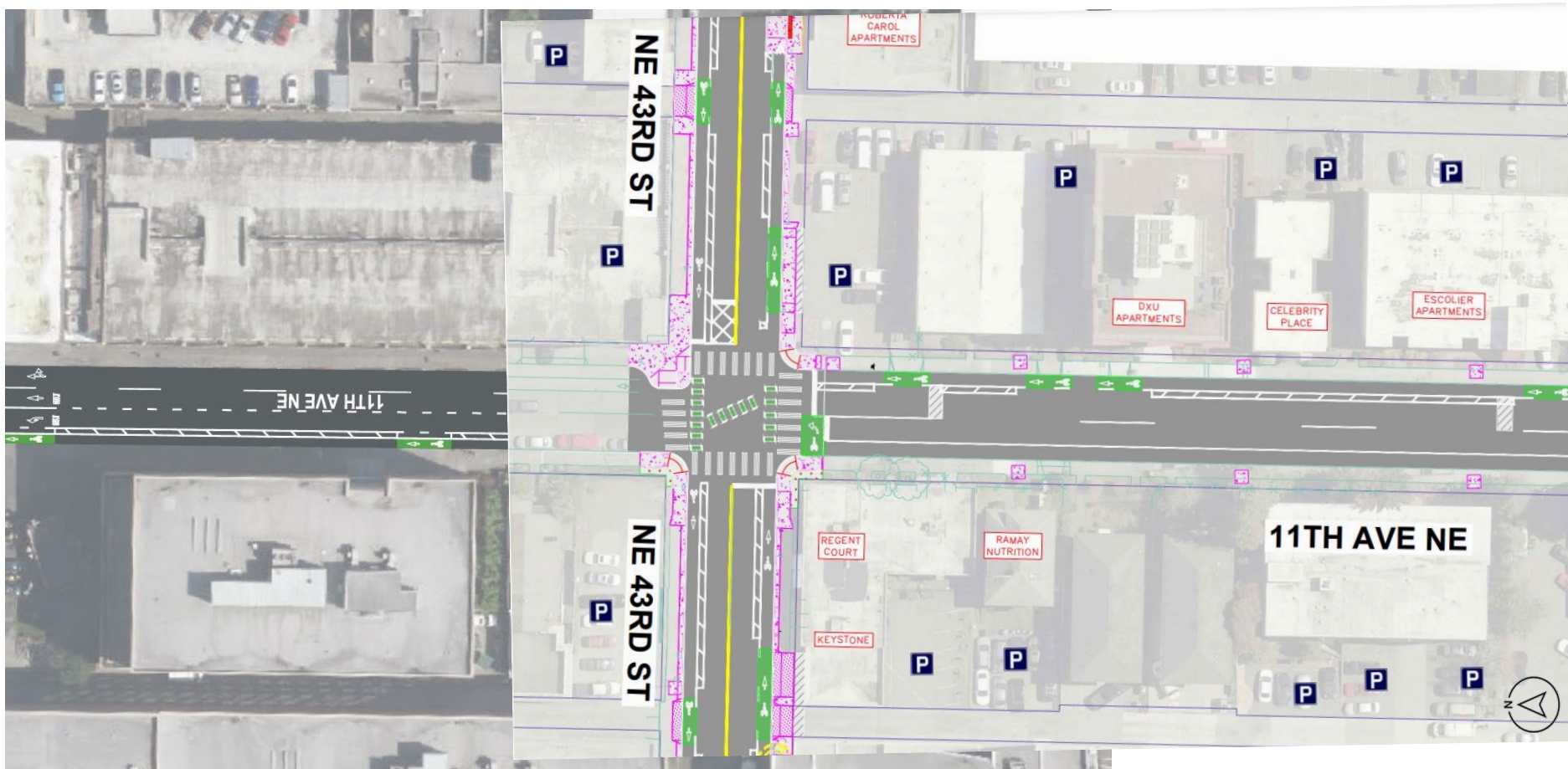
# 11th and 12th AAC



## Legend

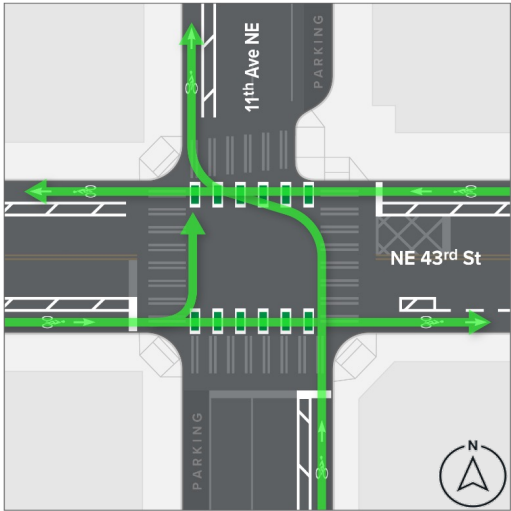
- |   |           |                         |                    |
|---|-----------|-------------------------|--------------------|
| Existing Pavement                             | Bike Lane | Bike Lane Driveway Zone | Signal Improvement |
| Pavement (Concrete or Mill & Overlay Asphalt) | Sidewalk  | Bike Lane Crosswalk     |                    |

# Protected Bike Lane Crossing at 11th/43rd



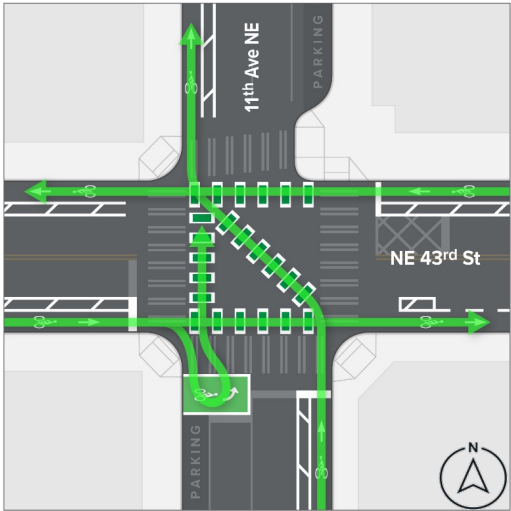
# Protected Bike Lane Crossing at 11th/43rd

**Option 1**



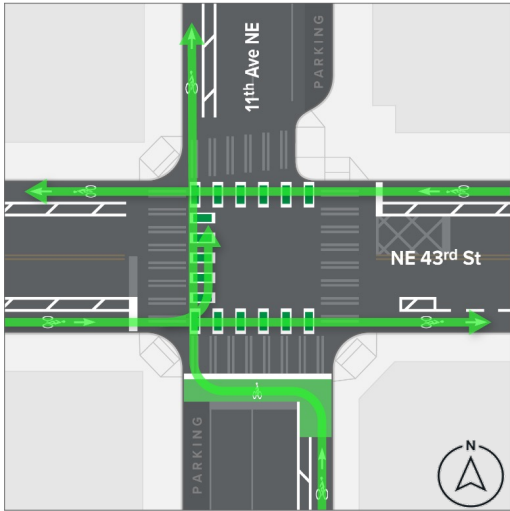
NO SPECIAL TREATMENT

**Option 2**



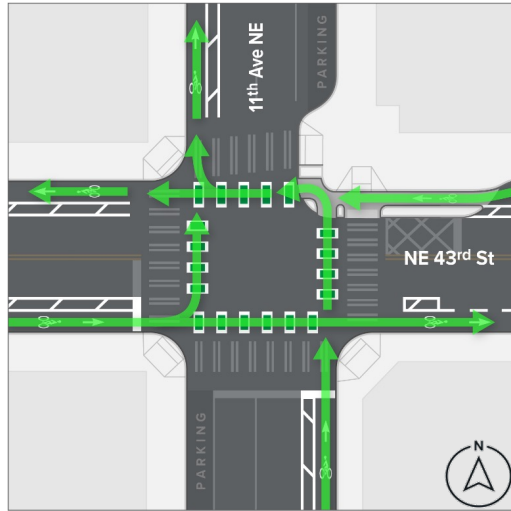
DIAGONAL BIKE CROSSING

**Option 3**



BIKE BOX ON EASTBOUND NE 43RD ST  
AND NORTHBOUND 11TH AVE NE

**Option 4**



CURB BULB EXTENSION

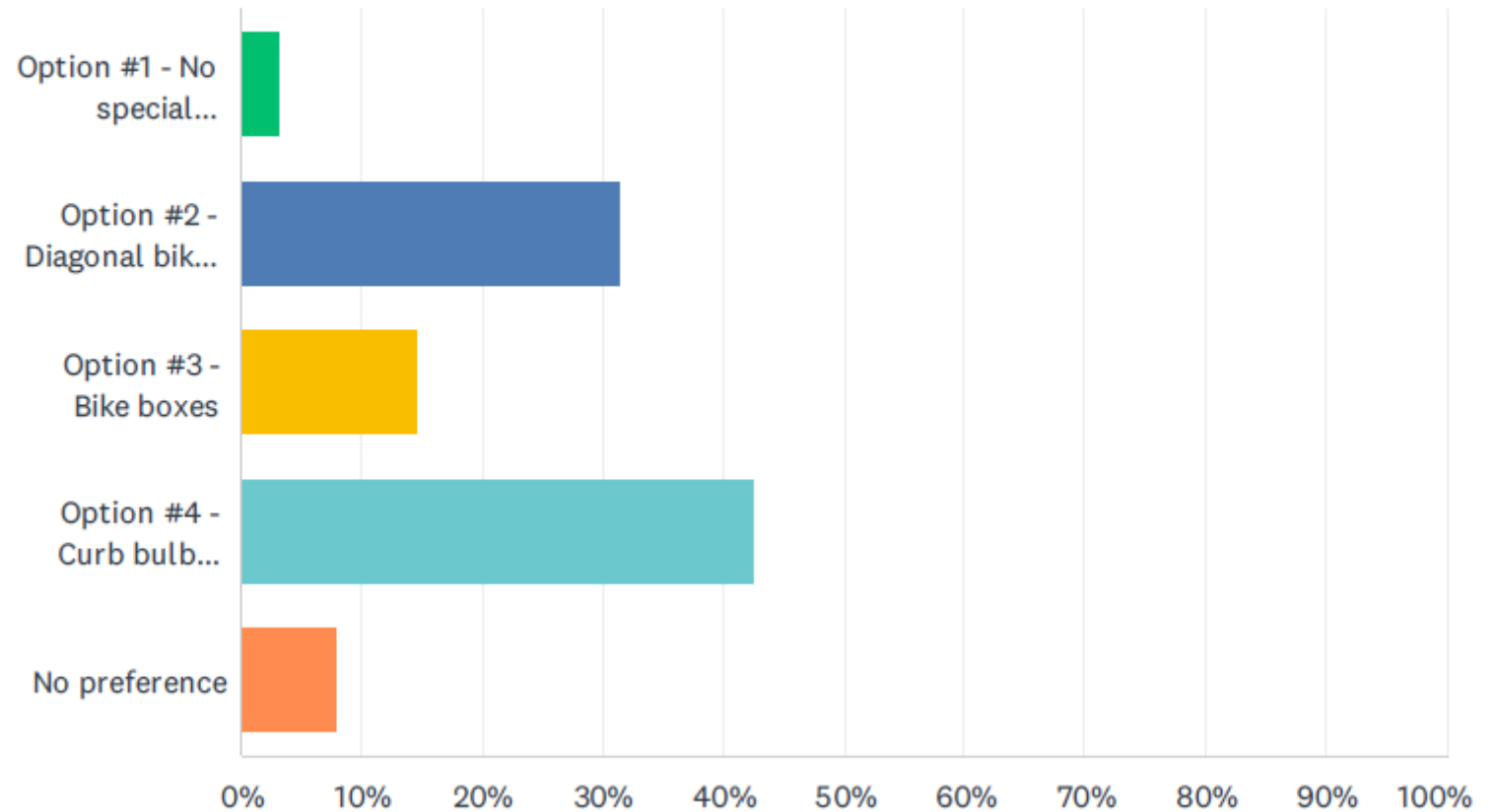


# Protected Bike Lane Crossing at 11th/43rd

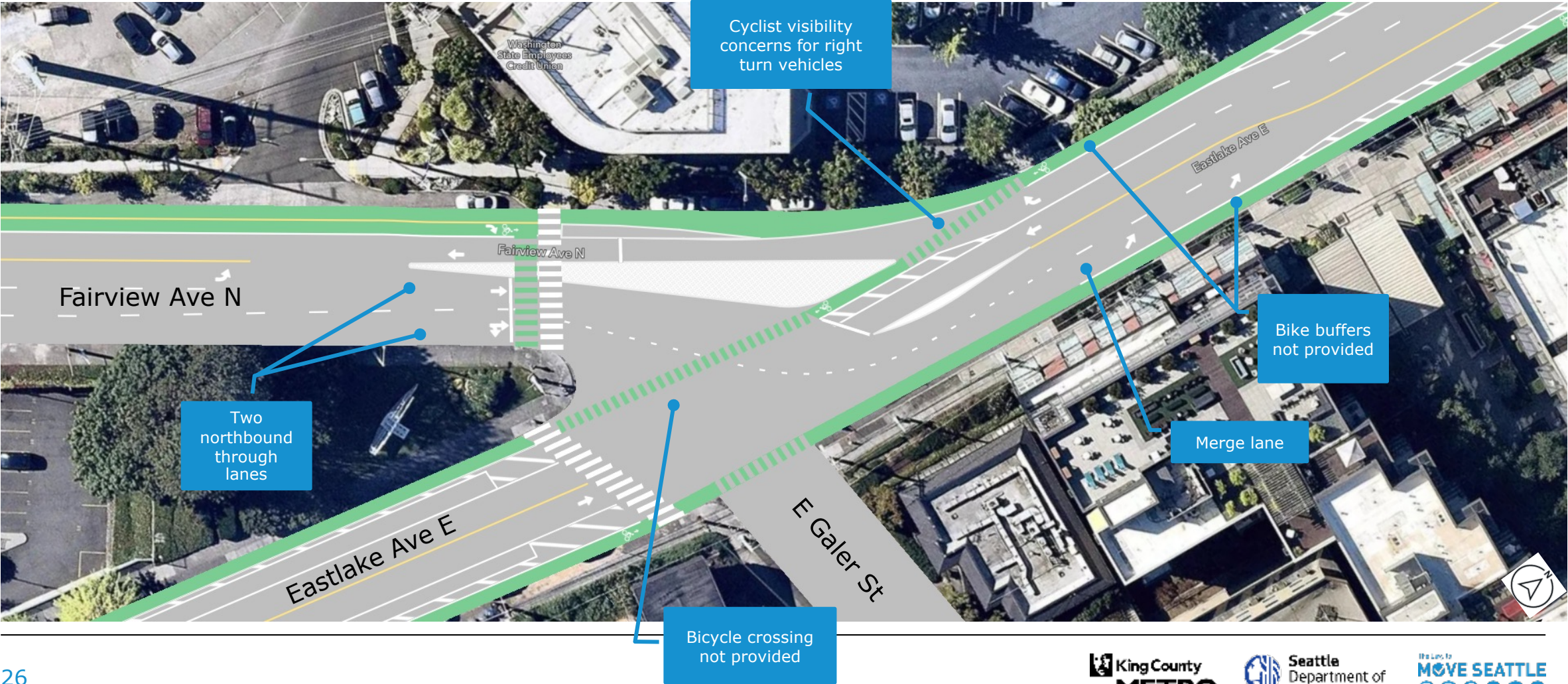
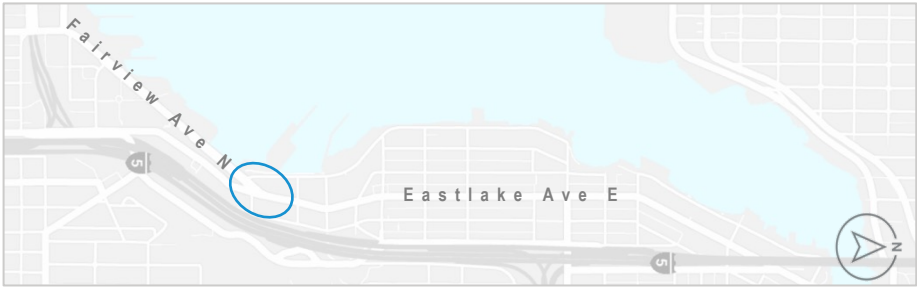
## Options:

- #1: Bike crossing treatments for WB and EB. NB use sidewalks
- #2: Diagonal crossing for NB cyclists to move right to left side of road
- #3: Bike box for NB cyclists
- #4: Protected intersection via NE corner curb bulb

Answered: 1,111 Skipped: 72

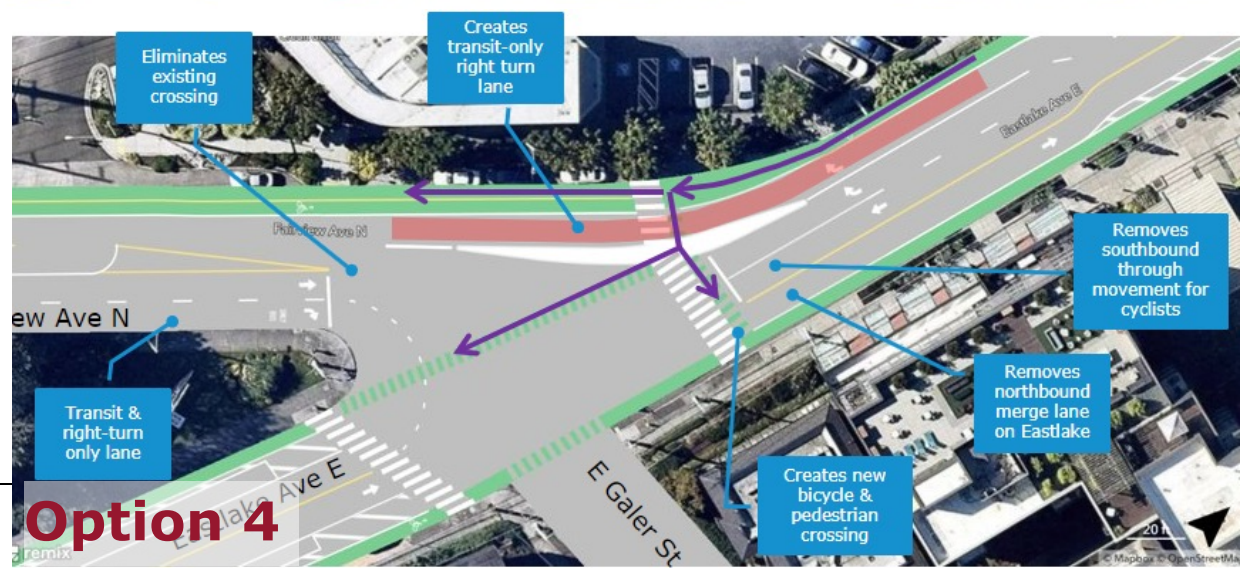
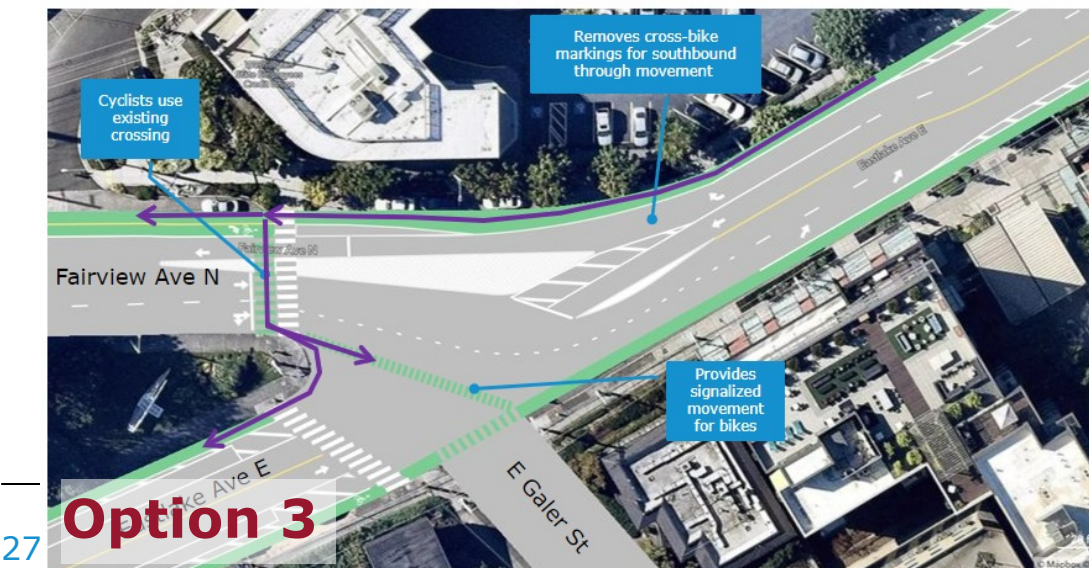
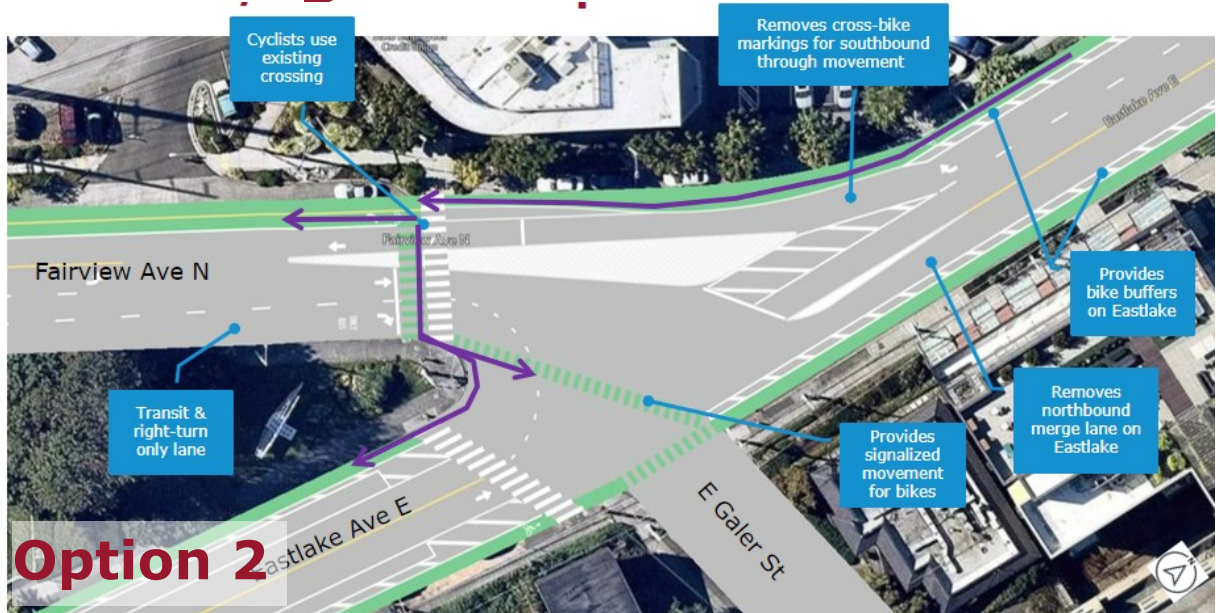
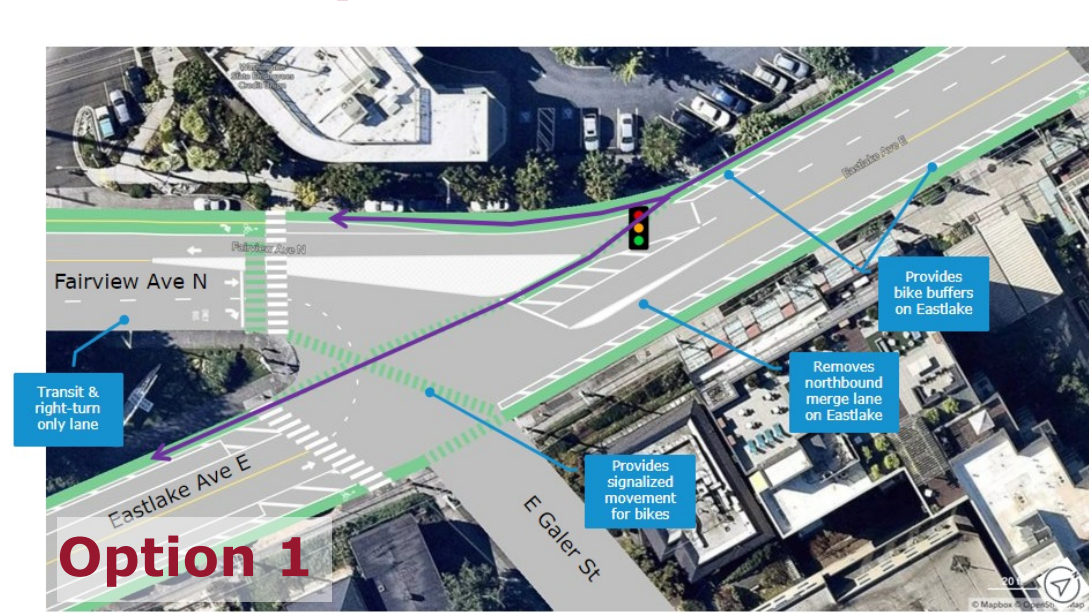


# Fairview/Eastlake – Current Design





# Fairview/Eastlake Intersection Design





# Fairview/Eastlake Intersection Configuration

**Option 1** adds a transit and right-turn only lane on Fairview Ave N, removes a merge lane on Eastlake Ave E, provides a signal for bikes, and adds bicycle buffers on Eastlake Ave E.

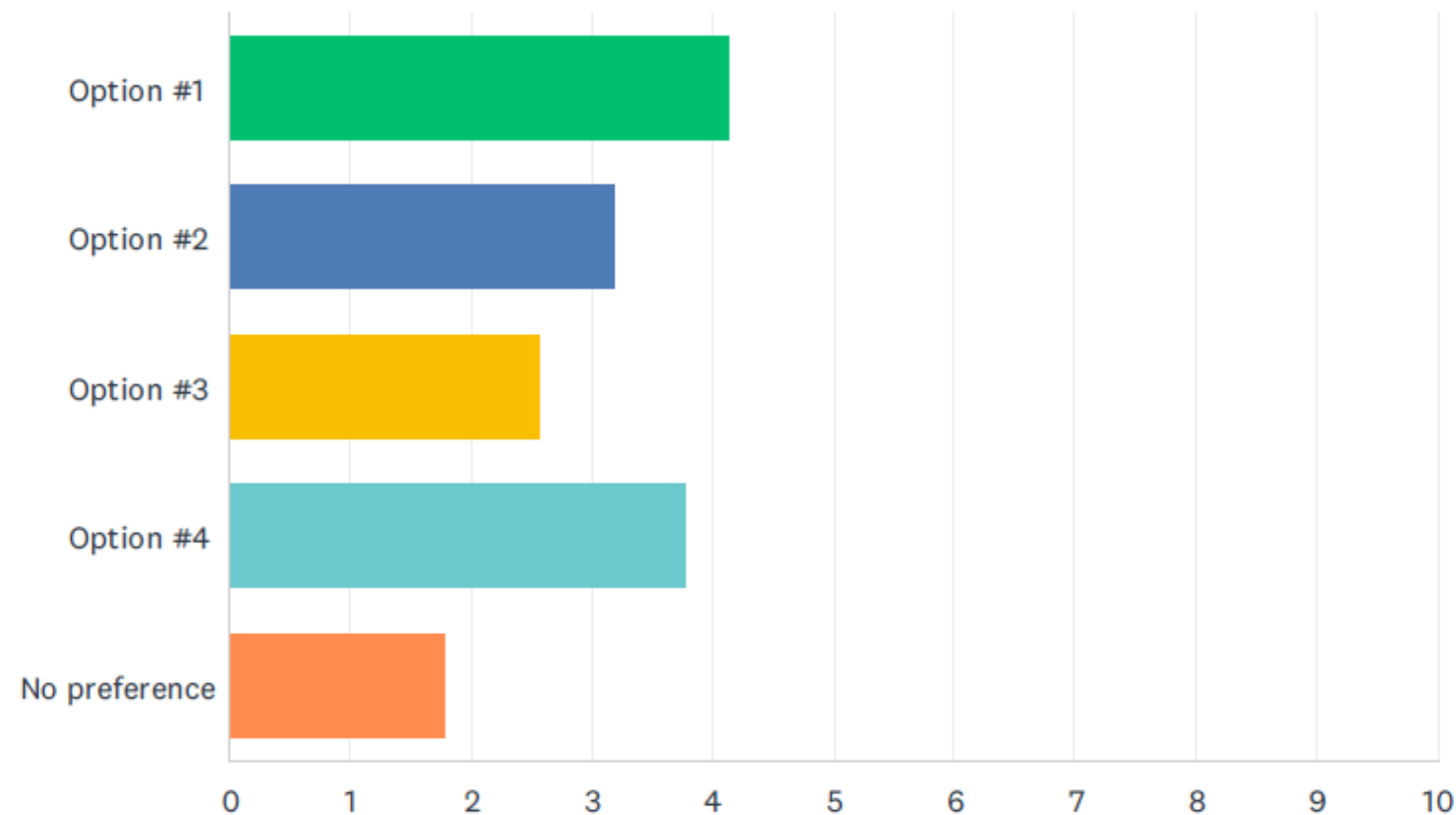
**Option 2** also adds a transit and right-turn only lane on Fairview Ave N, removes cross-bike markings for southbound bicycle movements on Eastlake Ave E, removes a merge lane on Eastlake Ave E, and adds bicycle buffers on Eastlake Ave E.

**Option 3** removes cross-bike markings for southbound bicycle movements, adds bicycle buffers on Eastlake Ave E, and moves cyclists to use an existing crossing on Fairview Ave N.

**Option 4** creates a transit-only and right-turn lane from Eastlake Ave E to Fairview Ave N, removes a southbound through movement for cyclists on Eastlake Ave E, creates a new bicycle and pedestrian crossing across Eastlake Ave E, and eliminates an existing crossing on Fairview Ave N.

# Fairview/Eastlake Intersection Configuration

Answered: 978    Skipped: 205



# Protected Bike Lane Buffer Types

Base design for J Line: Paint and Post

Project concepts:

- Concept #1: Concrete Guard
- Concept #2: Concrete Parking Stop
- Concept #3: Raised Curb



# Protected Bike Lane Buffer Types

## Base design for J Line: Paint and Post

### Benefits

- + Already included in project design
- + Quick installation that can be done by SDOT crews
- + Provides flexibility for emergency services
- + Very low purchase cost and widely available
- + Good for special uses such as pilot projects to evaluate a permanent design, on bridge decks with limited capacity for additional weight or holes

### Trade-offs:

- Post don't provide as much physical protection as other barriers
- Requires replacement much more frequently than other materials, incurring costs and adding to maintenance workloads
- Despite low installation costs, may have the highest overall lifecycle cost





# Protected Bike Lane Buffer Types

## Concept #1: Concrete Guard

### Benefits:

- + Concrete is a long-lasting material
- + The size and height of the concrete guard provides robust protection
- + Manufactured with built-in drainage feature
- + Easier to install than full-size concrete dividers
- + The surface area provides opportunities for public art and placemaking

### Trade-offs:

- Due to the weight and the precast nature of the concrete guard, it requires being forklifted into place
- Logistically difficult to build on a large scale due to the current lack of local suppliers, which may result in a slower project delivery
- The surface area, especially if left bare, is a tempting target for graffiti





# Protected Bike Lane Buffer Types

## Concept #2: Concrete Parking Stop

### Benefits:

- + The wide availability of parking stops makes them easier to build quickly
- + Ease of implementation helps contribute to timely project-delivery
- + The concrete material is long lasting and provides substantial protection

### Trade-offs:

- Less vertical height and therefore, less visible to drivers (This can be supplemented with the addition of plastic posts on top of the parking stops)
- Larger sized parking stop requires forklifts to install





# Protected Bike Lane Buffer Types

## Concept #3: Raised Curb

### Benefits:

- + Concrete is a long-lasting material
- + Can be molded in a variety of forms, curves, and heights accommodating turns, bump-outs, and other street features

### Trade-offs:

- Can be expensive for longer segments
- May be less durable at locations like curves
- Less vertical height and therefore, less visible to drivers (This can be supplemented with the addition of plastic posts at intersections)



# Protected Bike Lane Buffer Types

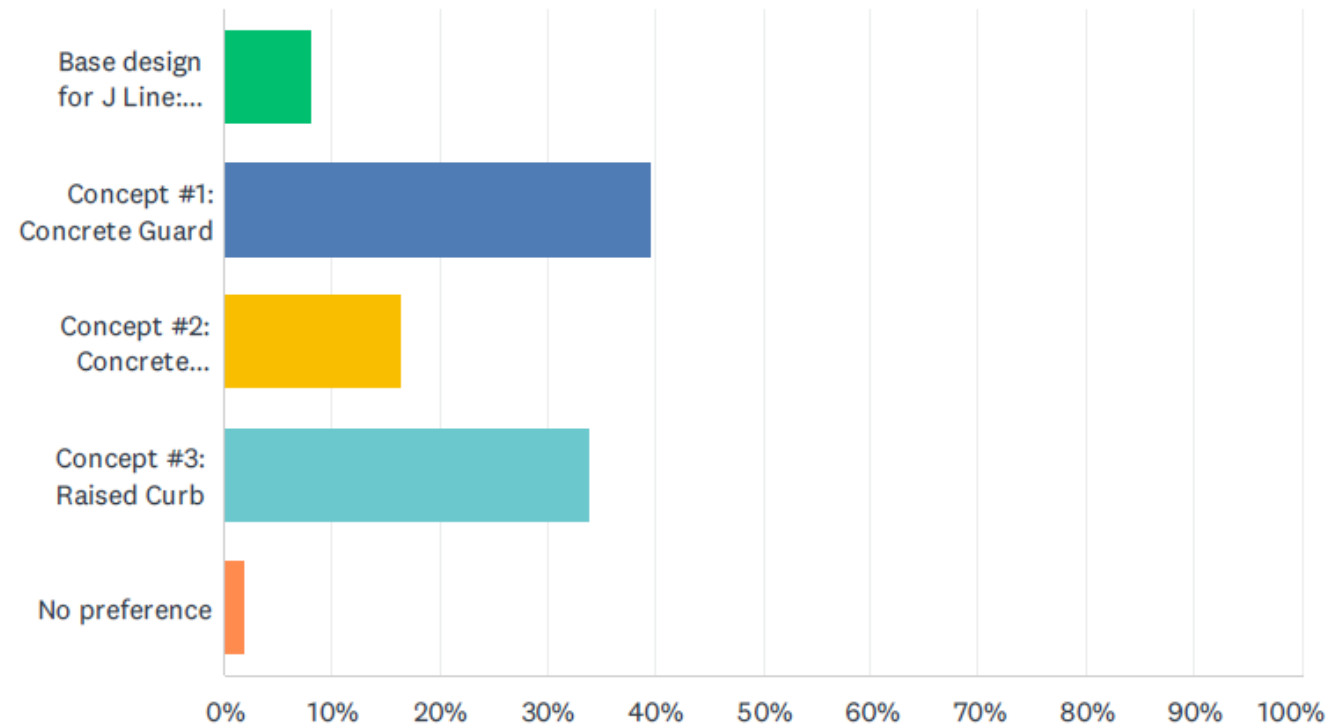
Q3 Which of these protected bike lane buffers do you prefer?

Answered: 1,159 Skipped: 24

Base design for J Line:  
Paint and Post

Project concepts:

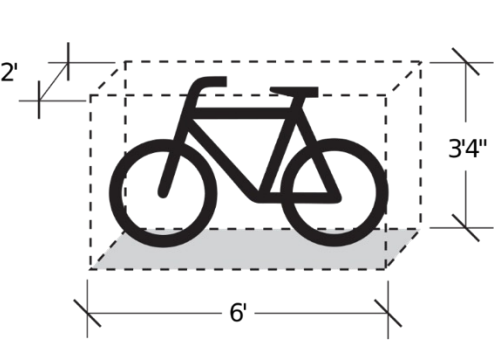
- Concept #1: Concrete Guard
- Concept #2: Concrete Parking Stop
- Concept #3: Raised Curb



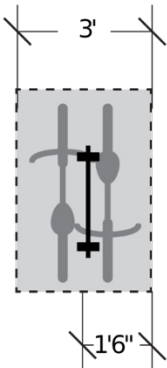


# Bike Rack Locations

## Typical bike rack dimensions



Typical Bike:  
~2 feet wide by 6 feet long by  
40 inches in height



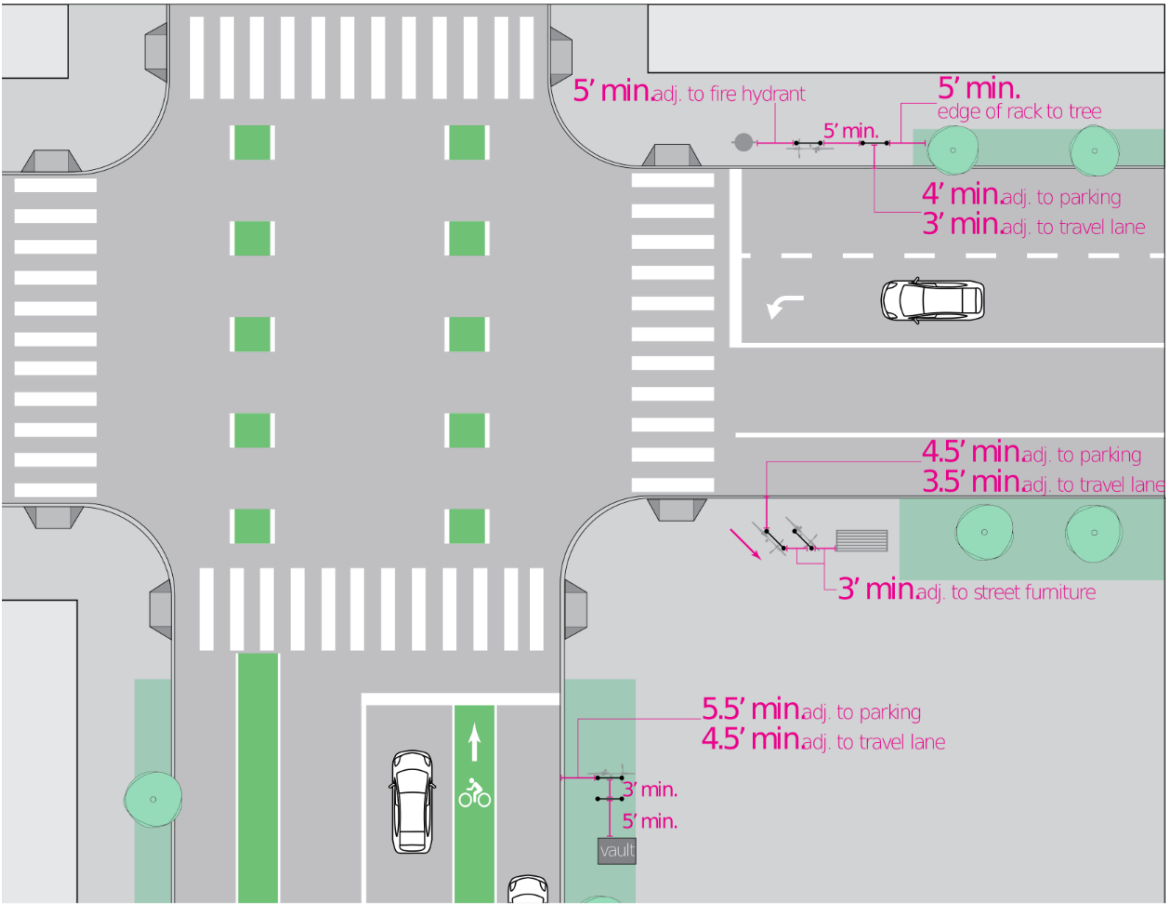
Typical Bike Rack Module:  
36 inches wide by 6 feet long



Typical Bike Rack

Bike racks are planned for RapidRide stations

## Bike rack siting considerations



Typical Sidewalk Zone Layout Considerations

# Bike Rack Locations

**Where in the corridor would you recommend SDOT install additional bike racks? Think about listing intersections, key businesses, key points of interest, etc.**

- 341 responses
- Some of what we've heard:
  - Wherever possible
  - In front of businesses, restaurants, shops and other key points of interest
  - For safety: grouped, well-lit, within sight
  - Anywhere on Eastlake between Louisa and Lynn
  - Preference for traditional style racks, artistic racks difficult to use



J Line

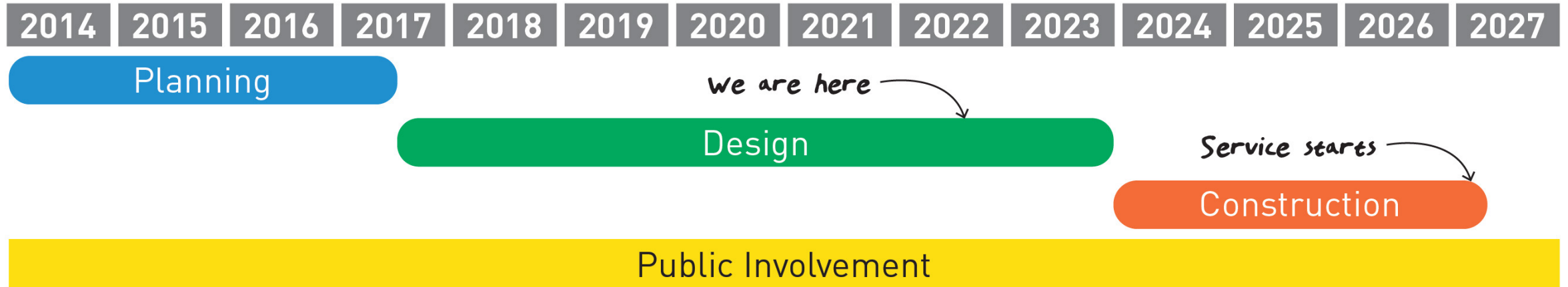


# Next steps

## Ongoing engagement opportunities

- Review answers to questions raised during 60% outreach
- Sign up for project email updates to be kept in the loop for next steps
- Stay tuned for information on future engagement opportunities

# Project timeline



- **Design:** 2017 – 2023
- **Construction starts:** 2023/2024
- **Service starts:** 2026/2027





J Line



# Q & A