J Line

RapidRide J Line

Seattle Pedestrian Advisory Board

October 12, 2022

Seattle Neighborhoods

Seattle Office of Economic Development

King County METRO

Seattle Department of Transportation

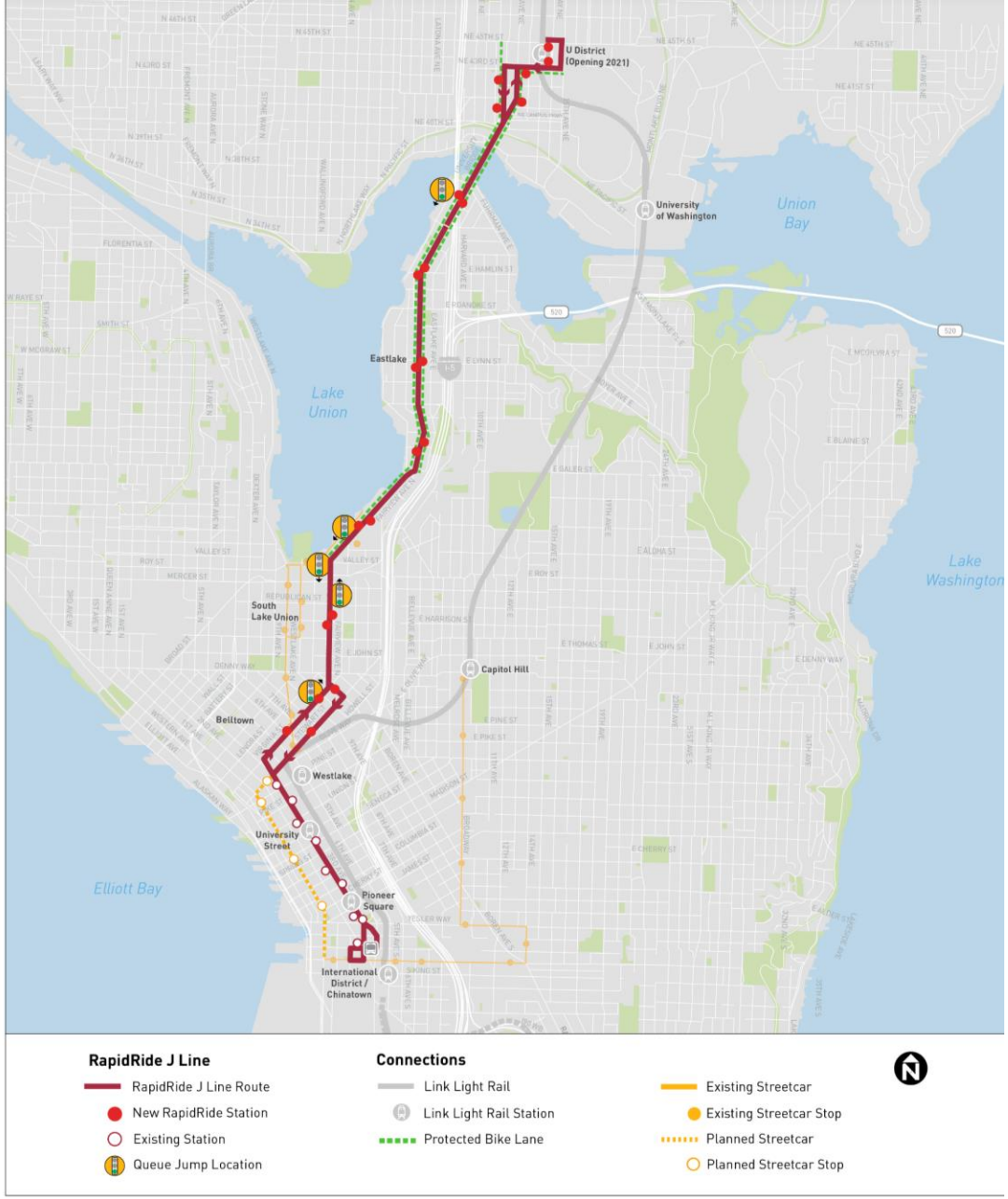
The Levy to MOVE SEATTLE

Agenda

- Welcome
- RapidRide J Line overview and history
- 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



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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

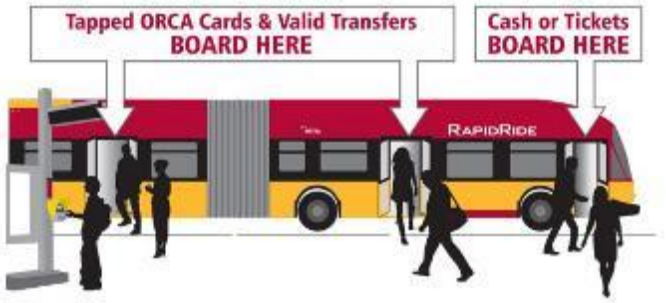
Safe and smart

- 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

Buses come so often, you don't need a schedule



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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

Pedestrian Improvements

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What are some of the improvements for pedestrians?

- **ADA ramps**
- **Transit connections**
- **Station Features**
- **Lighting**
- **Crosswalks**
- **Curb bulbs**
- **Sidewalks**

ADA ramps

- **130-150 curb ramps**

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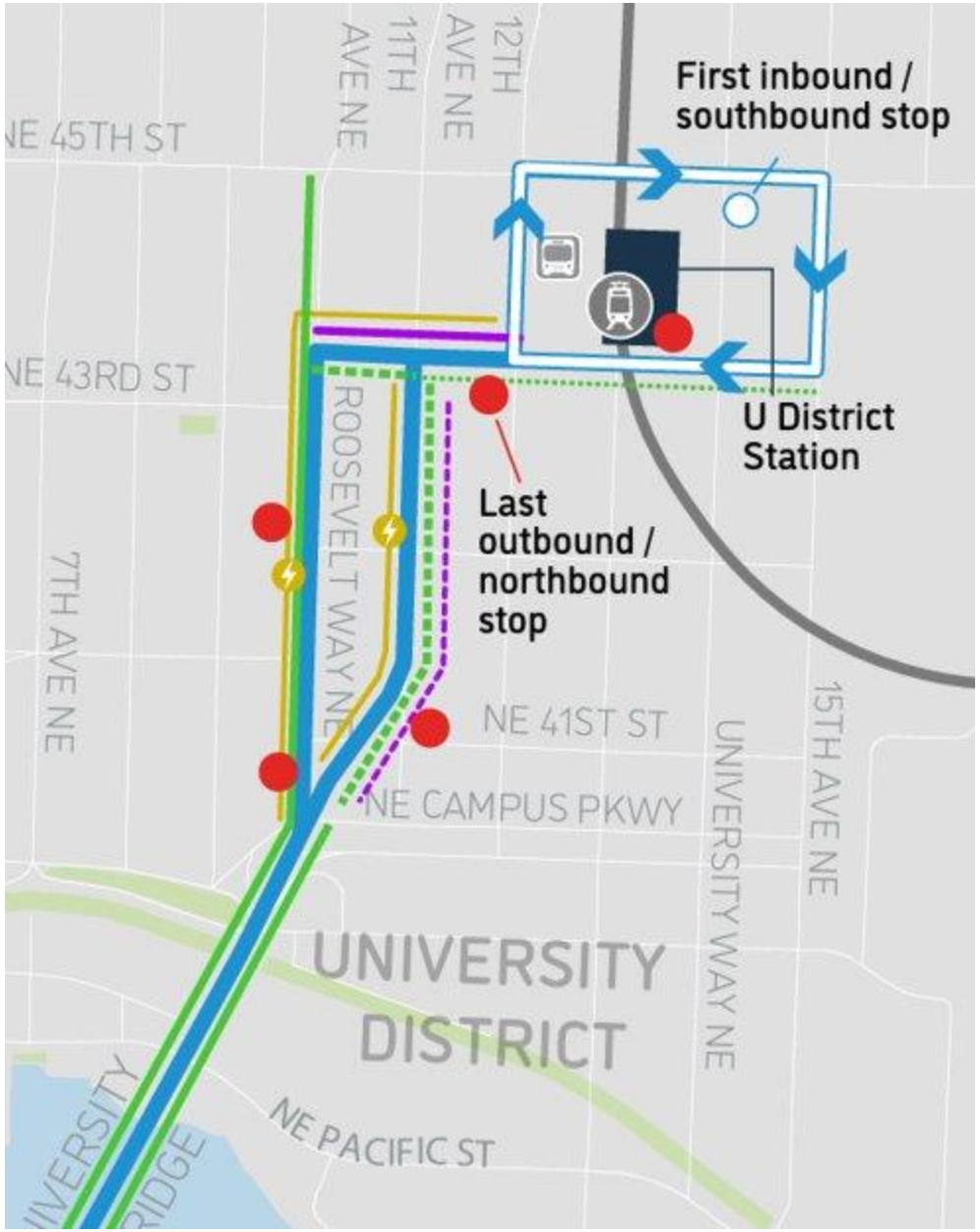
Improved transit connections

Figure 2-2. Simulation of U District Option Improvements Looking East along NE 43rd St from 11th Ave NE



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Station

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Pedestrian lighting at RapidRide stations

Option 1

Option 2

Option 3

Option 4

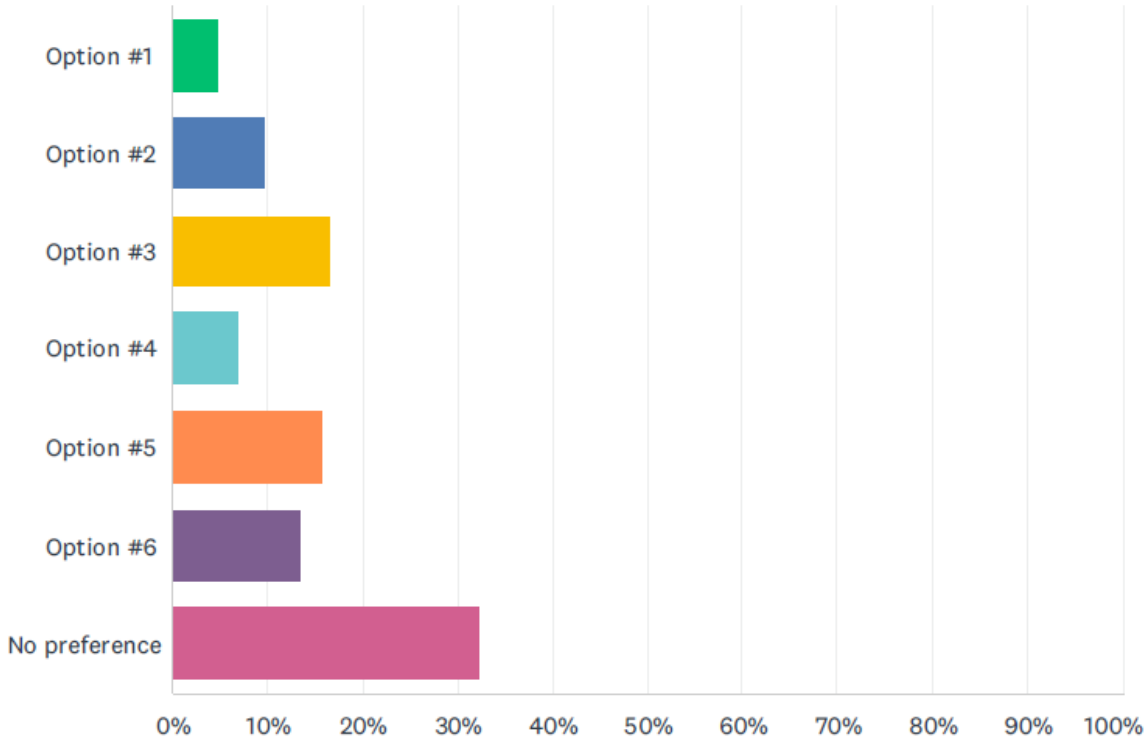
Option 5

Option 6

Pedestrian lighting options

Q1 The above images represent potential options to provide pedestrian lighting at RapidRide stations. Among these, which pedestrian-scale lighting option do you prefer?

Answered: 1,134 Skipped: 49



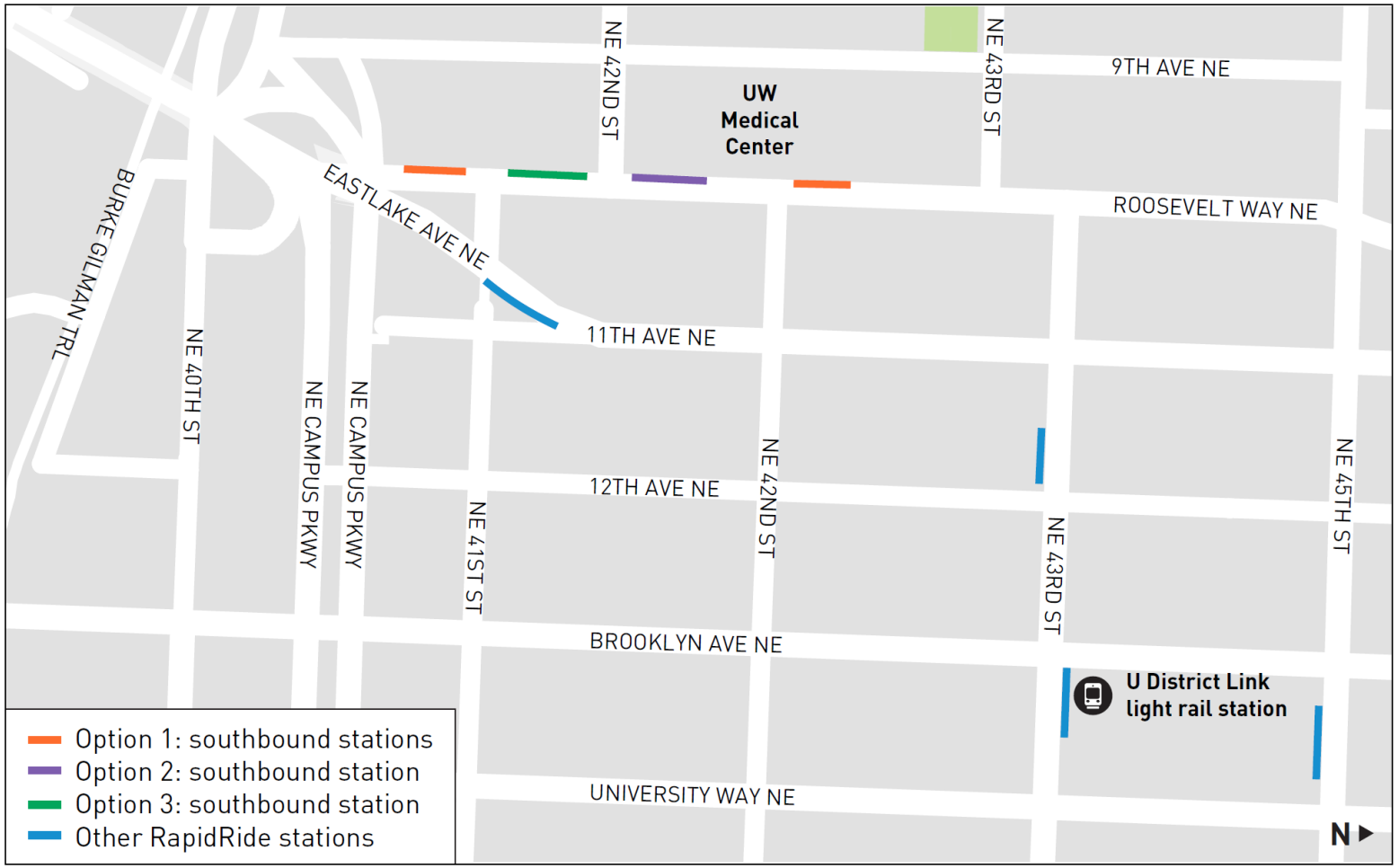
Southbound Station on Roosevelt Way NE - J Line RapidRide Station Options

Options shown reflect potential locations for the southbound RapidRide J Line station(s) on Roosevelt Way NE

Option 1: Two southbound Stations on Roosevelt Way NE, one at NE Campus Parkway and one at NE 42nd St

Option 2: Station at northwest corner of NE 42nd St

Option 3: Station at southwest corner of NE 42nd St



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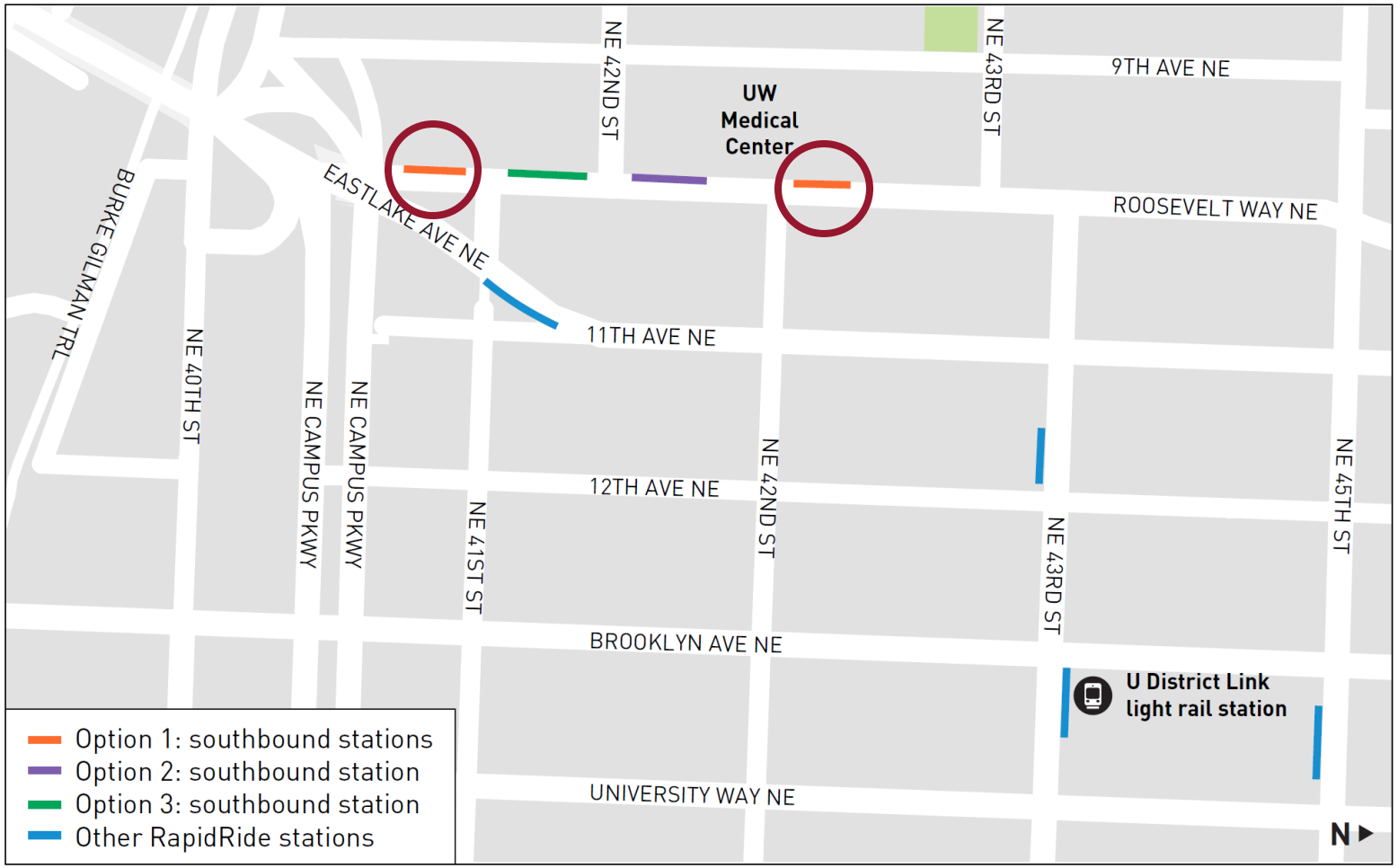
Southbound Station on Roosevelt Way NE - J Line RapidRide Station Options



Option 1: Stations at Roosevelt Way NE and NE Campus Parkway and NE 42nd St

Benefits

- Provides adjacent access to UW Medical Center
- Campus Parkway Station provides access to Burke-Gilman Trail
- Visibility to northbound station

Trade-offs

- Congested with buses
- Proximity of 2 stations reduces speed and reliability

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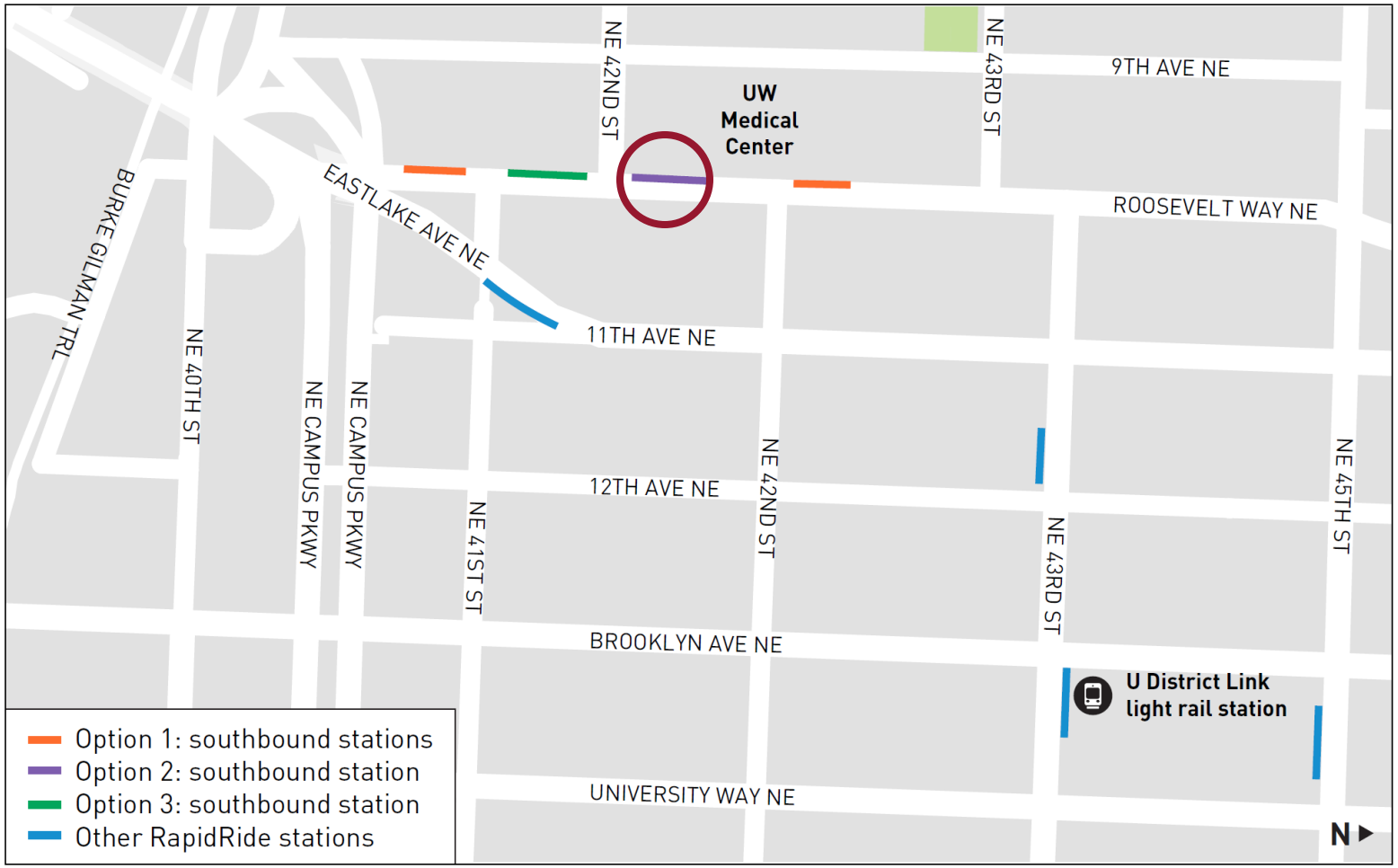
Southbound Station on Roosevelt Way NE - J Line RapidRide Station Options



Option 2: Station at northwest corner of NE 42nd St

Benefits

- Decreases congestion at UW Medical Center stop
- Cost effective to only build one station
- Better speed and reliability for J Line with only one stop on Roosevelt

Trade-offs

- Conflicts with southbound to westbound right-turning vehicles
- 1-block walk to UW Medical Center & Burke-Gilman Trail
- Lacks visibility to northbound station pair on 11th Ave NE
- Removes existing curb bulb on NE corner, increasing pedestrian crossing times.

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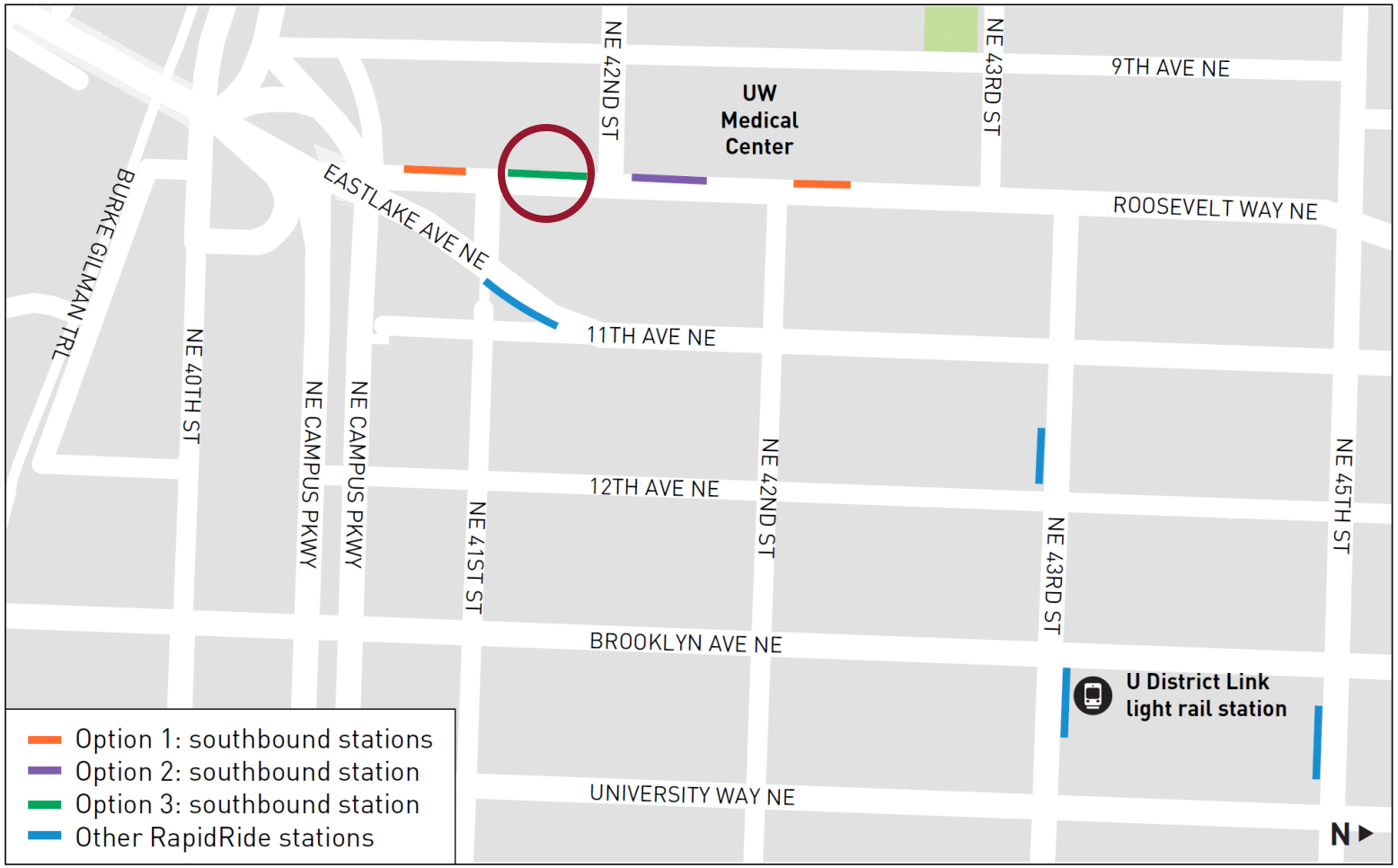
Southbound Station on Roosevelt Way NE - J Line RapidRide Station Options



Option 3: Station at southwest corner of NE 42nd St

Benefits

- Decreases congestion at UW Medical Center stop
- Cost effective to only build one station
- Best speed & reliability of J Line with one stop on Roosevelt and placed far side of the intersection
- Provides visibility to northbound station pair on 11th Ave NE
- Adjacent to proposed pedestrian crossing signals at 41st

Trade-offs

- 1½-block walk to UW Medical Center; ½-block walk to Burke-Gilman Trail

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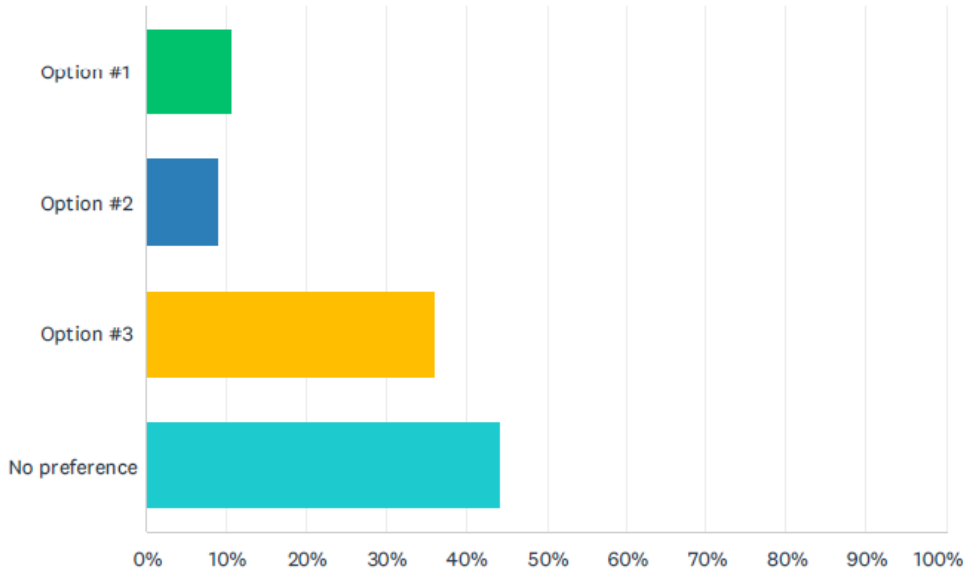
Southbound Station on Roosevelt Way NE - J Line RapidRide Station Options

Q7 The current project design provides two southbound RapidRide bus stations along Roosevelt Way NE, one at NE Campus Parkway and one at NE 42nd St. This is Option 1 in the above map. We've considered two other options: Option 2, which would be a single station at the northwest corner of NE 42nd St, and Option 3, which would be a single station at the southwest corner of NE 42nd St. Which RapidRide station location option do you prefer?

Answered: 1,063 Skipped: 120



Roosevelt Line

Protected Bike Lanes

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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

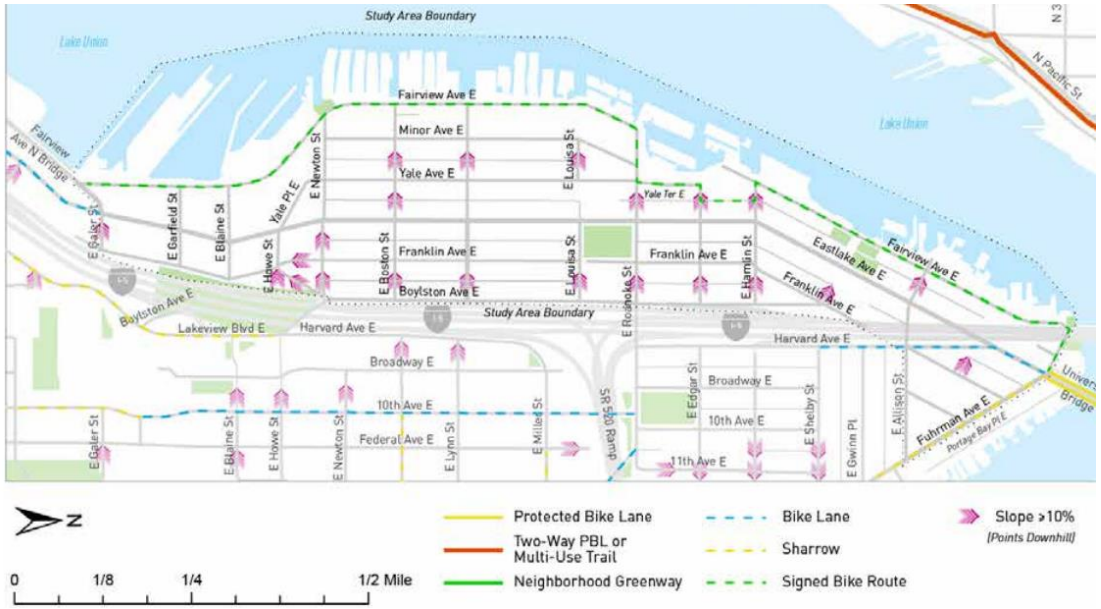
Why are Protected Bike Lanes needed on Eastlake Ave E?

- **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

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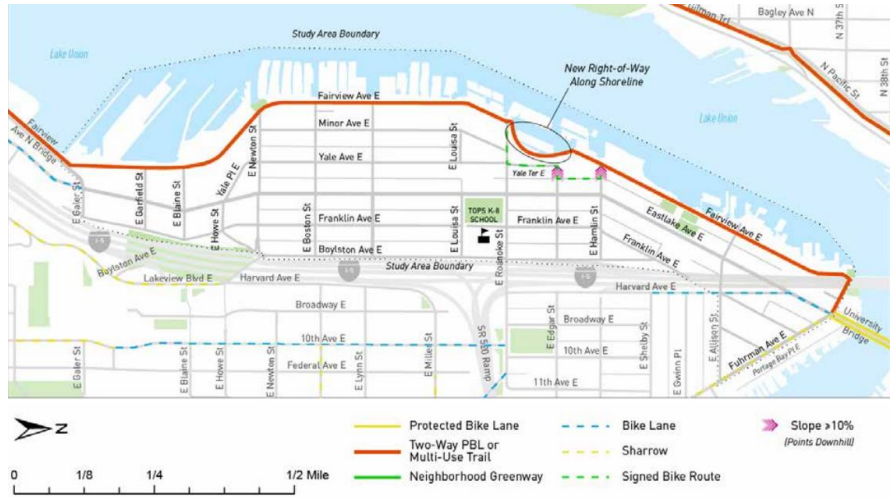
Why not bicycle facilities on Fairview?

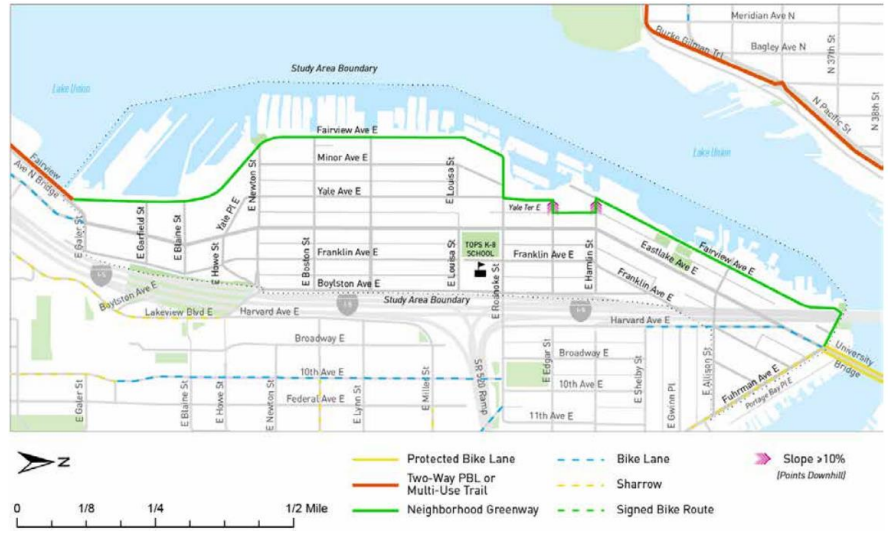
Option 6: Multi-use Trail on Fairview E

- 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)



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J Line

Project design update

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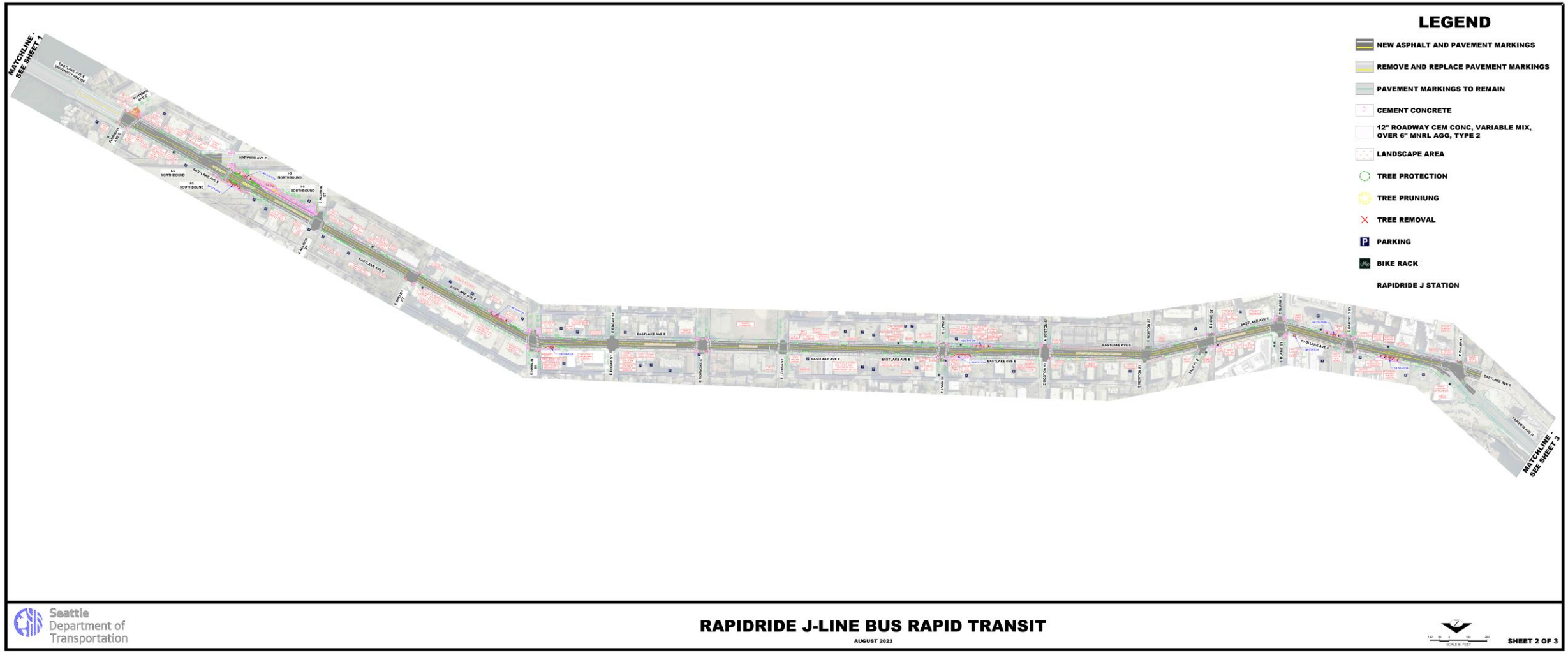
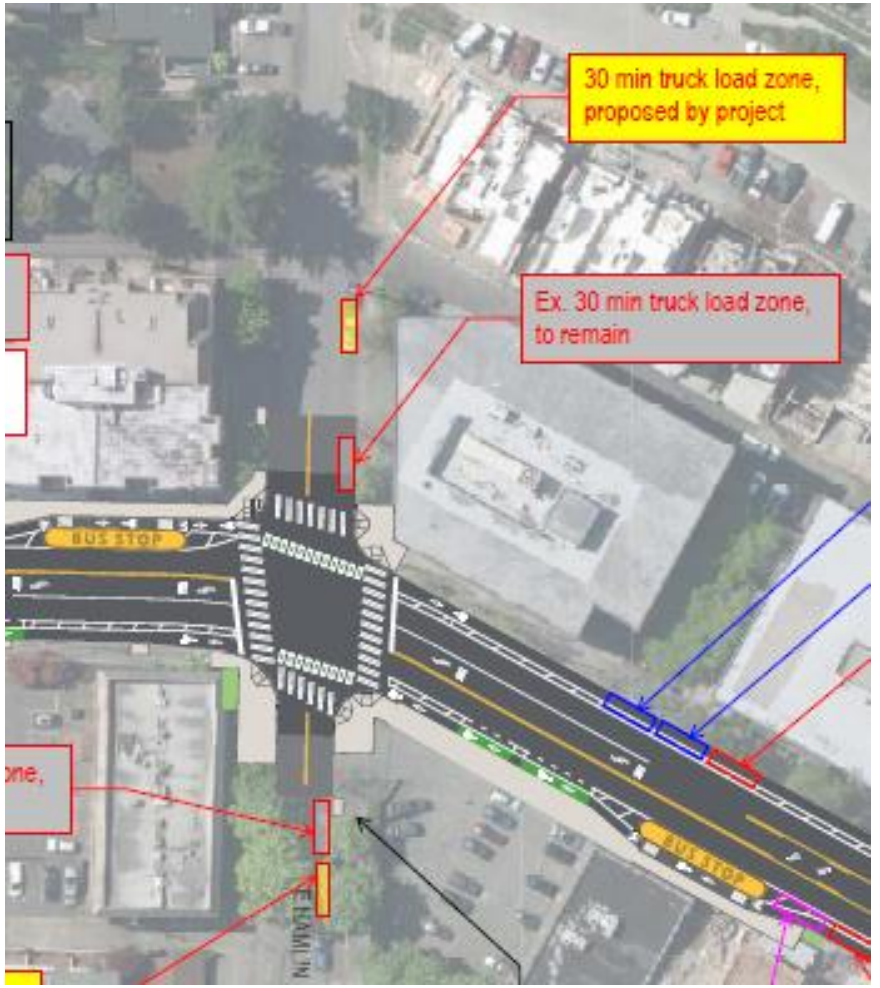
Roll plots


LEGEND
NEW ASPHALT AND PAVEMENT MARKINGS
REMOVE AND REPLACE PAVEMENT MARKINGS
PAVEMENT MARKINGS TO REMAIN
CEMENT CONCRETE
12" ROADWAY CEM CONC, VARIABLE MIX, OVER 6" MNRL AGG, TYPE 2
LANDSCAPE AREA
TREE PROTECTION
TREE PRUNIUNG
TREE REMOVAL
PARKING
BIKE RACK
RAPIDRIDE J STATION
MATCHLINE - SEE SHEET 1
MATCHLINE - SEE SHEET 3
Seattle Department of Transportation
RAPIDRIDE J-LINE BUS RAPID TRANSIT
AUGUST 2022
SHEET 2 OF 3

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



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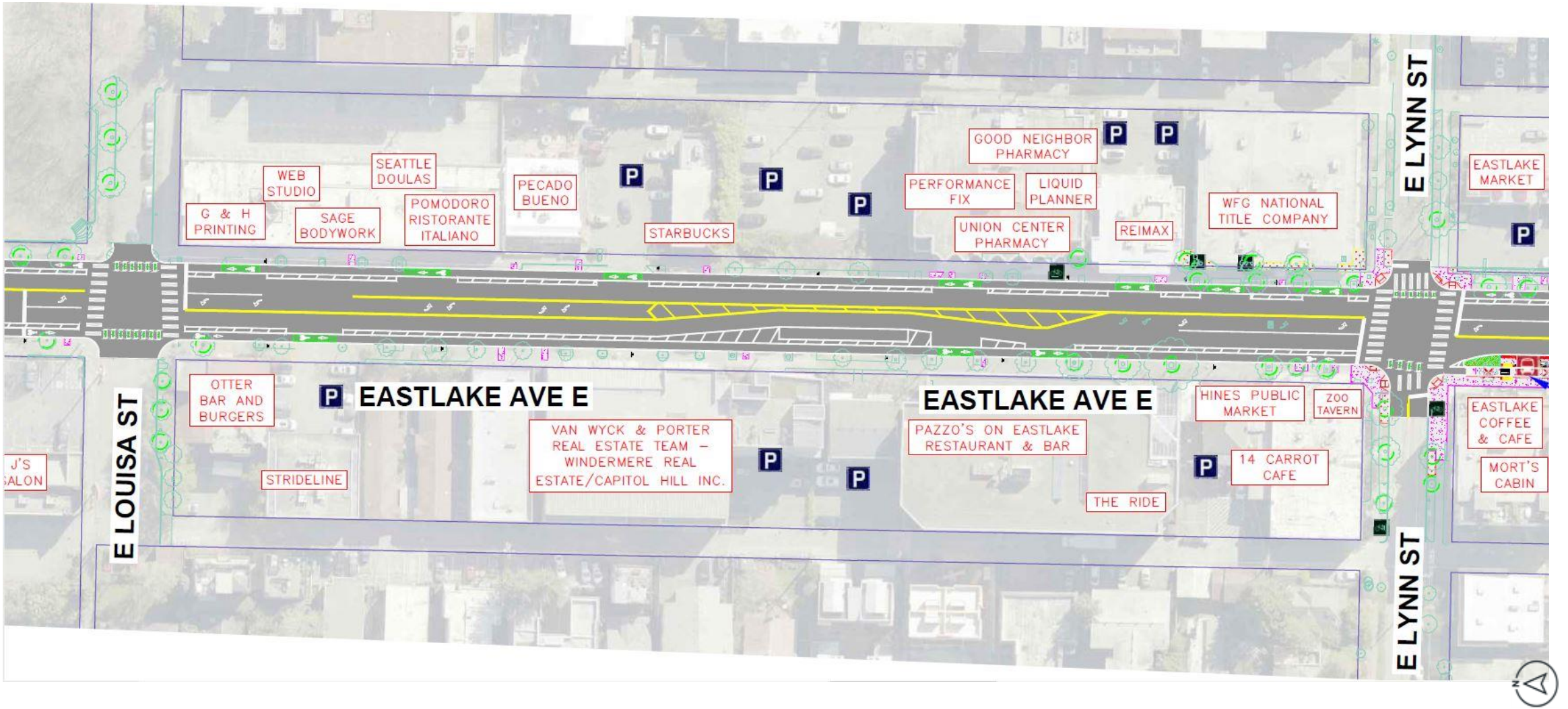
Operations – Project Configuration

- 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



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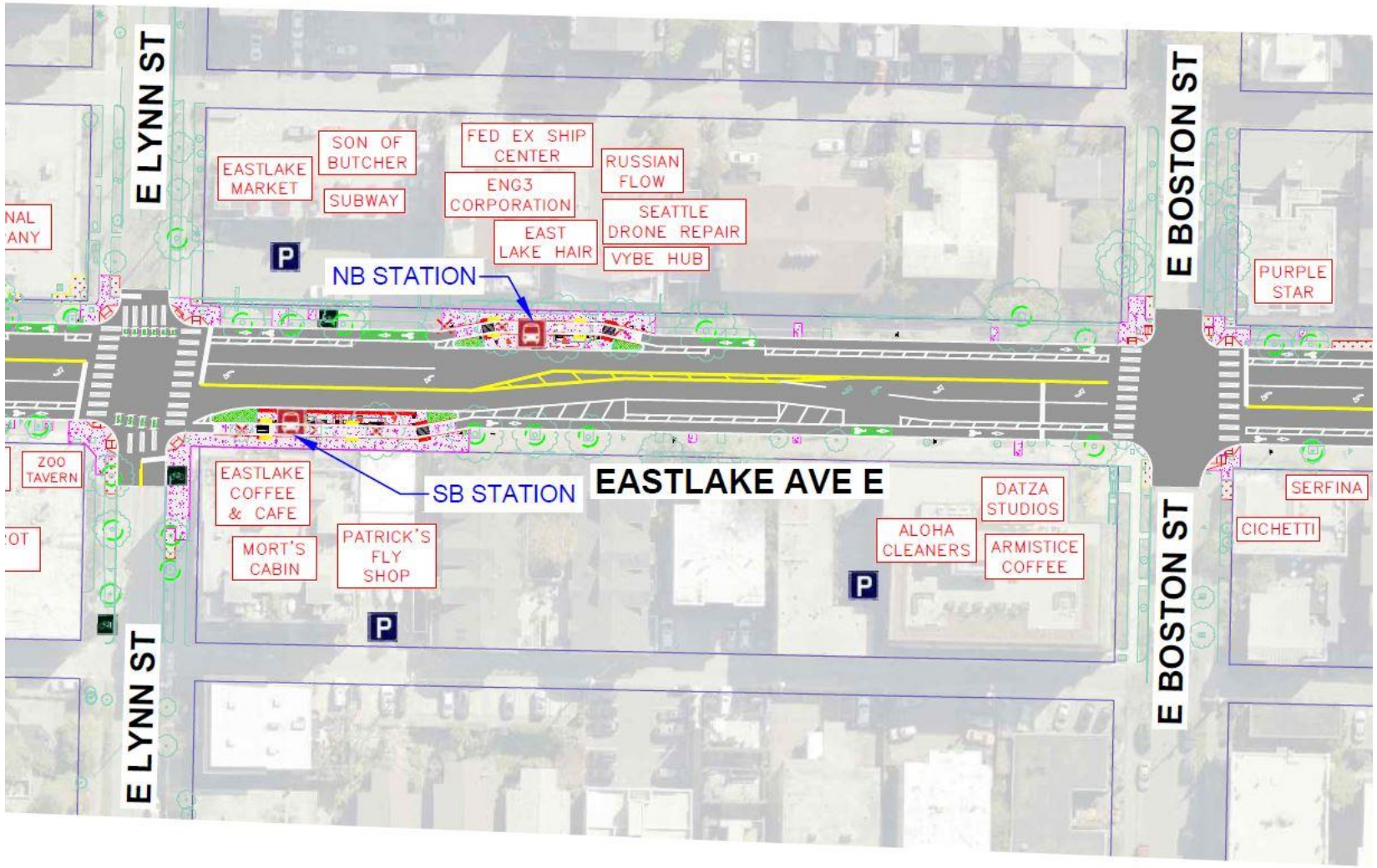
E Lynn St to E Boston St



J Line

Recent outreach

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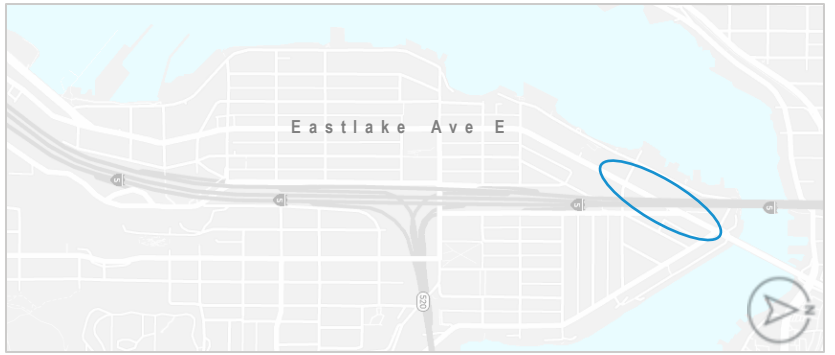
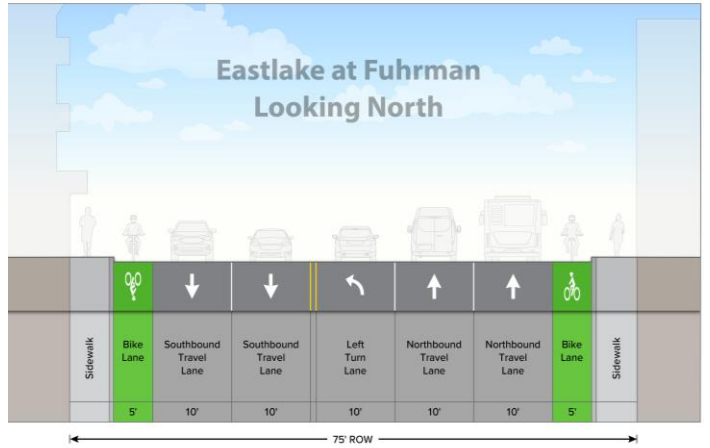
Channelization on Eastlake at Fuhrman



Option 1 – Standard bicycle lane



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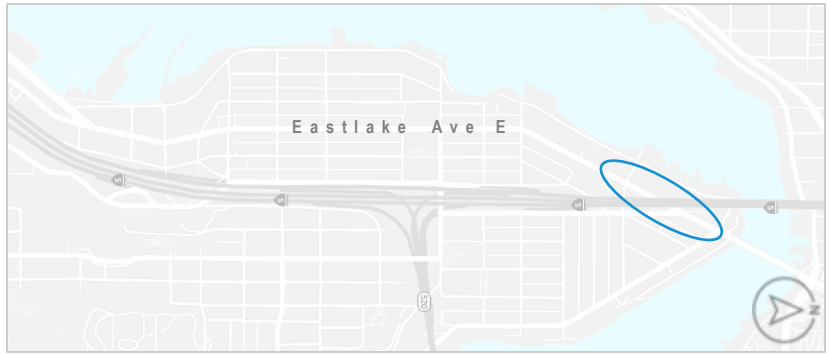
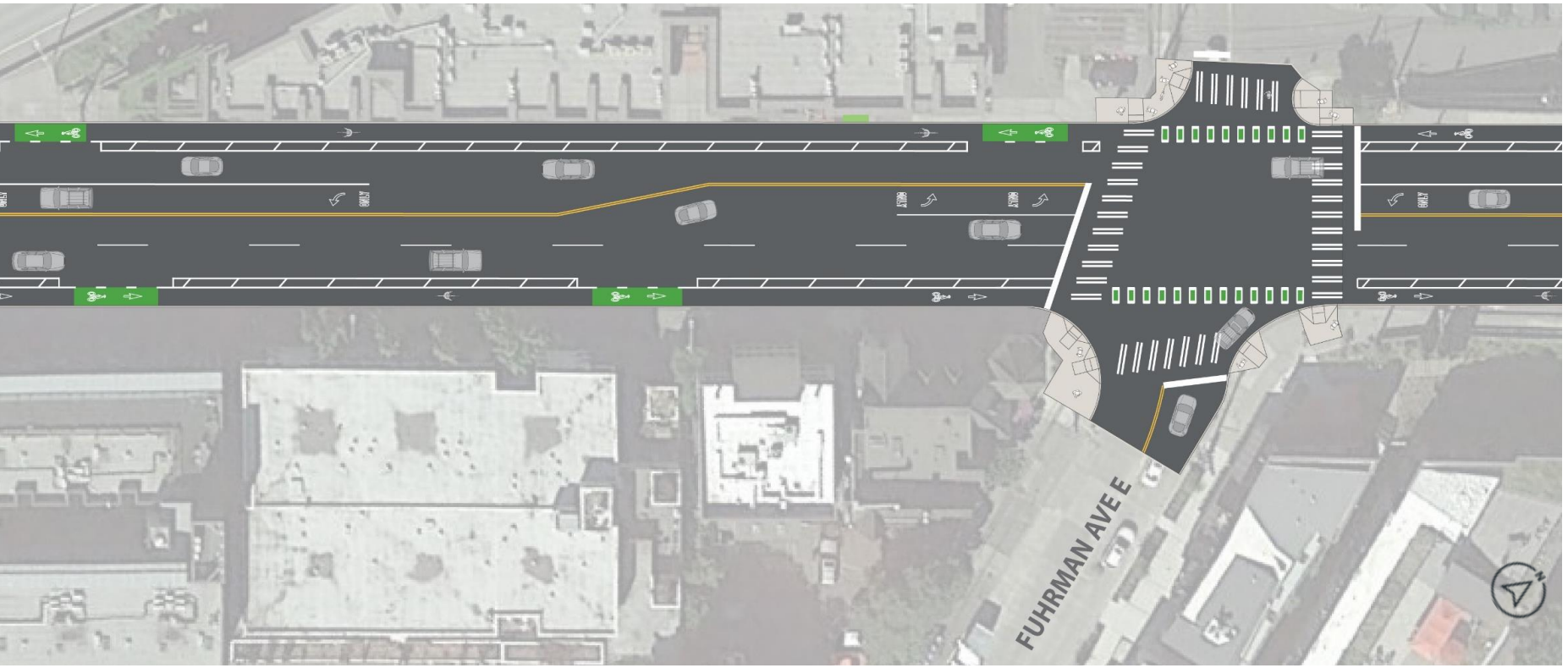
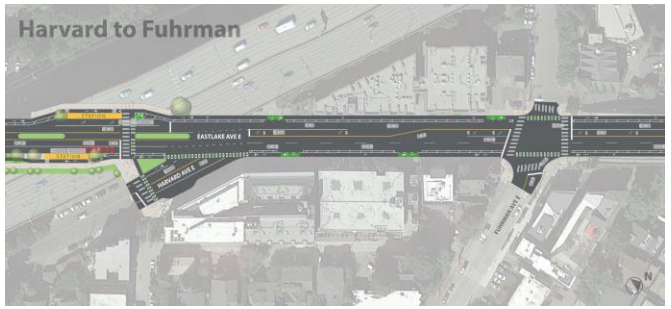
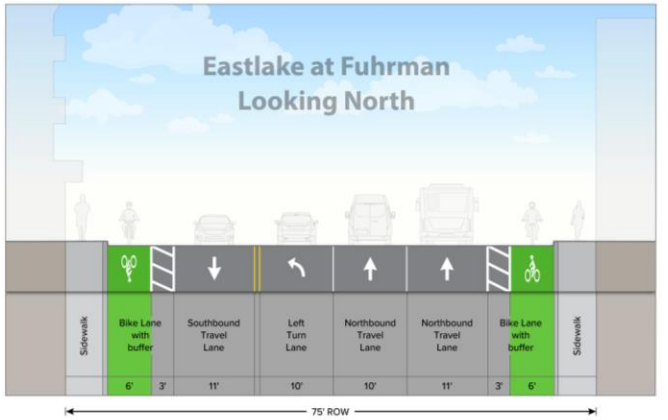
Channelization on Eastlake at Fuhrman



Option 2 – Buffered bicycle lane







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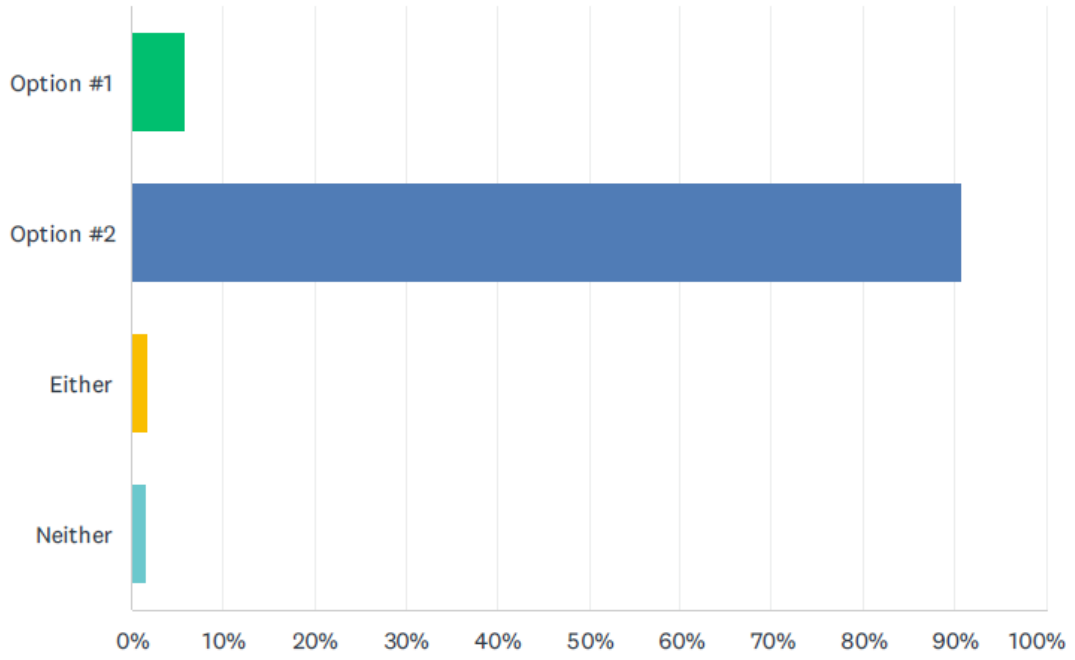
Channelization on Eastlake at Fuhrman

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?

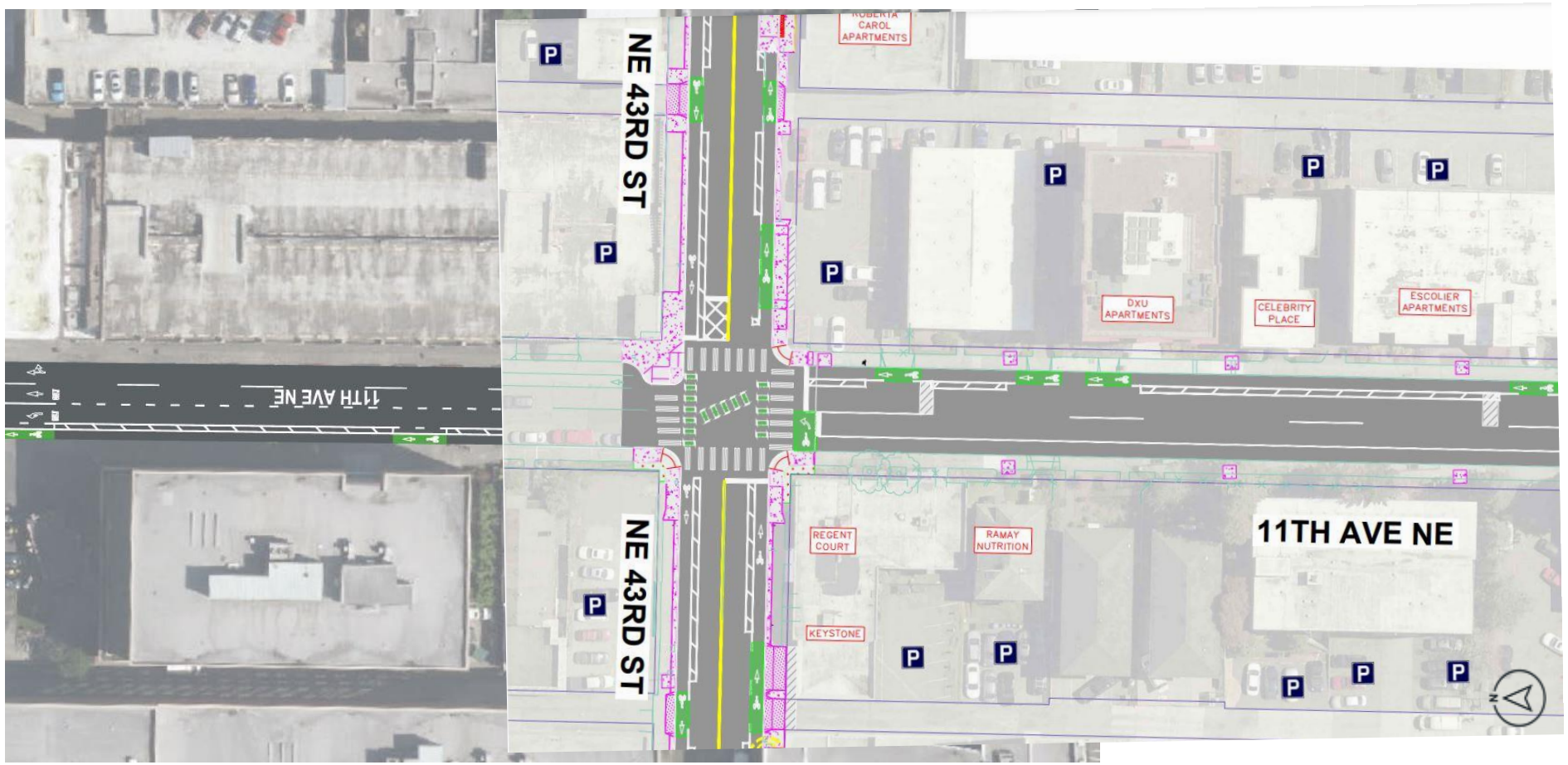
Answered: 1,162 Skipped: 21



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

Protected Bike Lane Crossing at 11th/43rd



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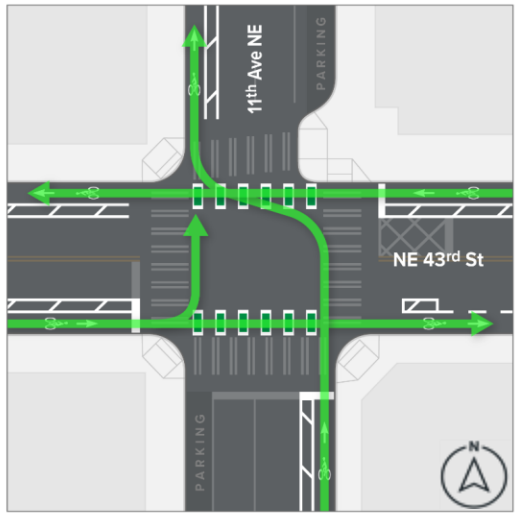
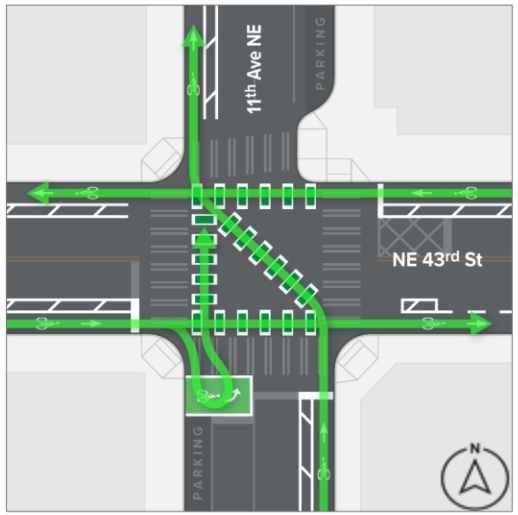
Protected Bike Lane Crossing at 11th/43rd

Option 1



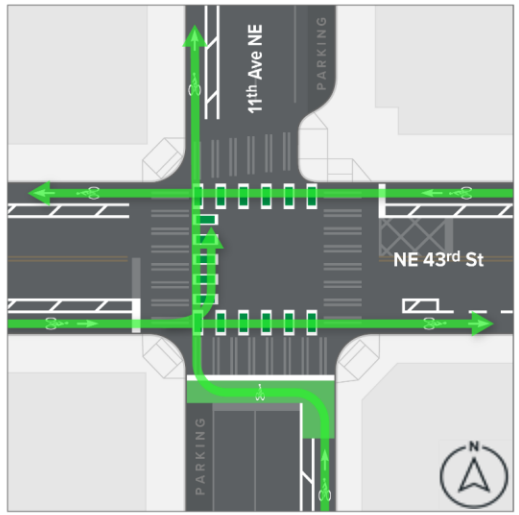
NO SPECIAL TREATMENT

Option 2



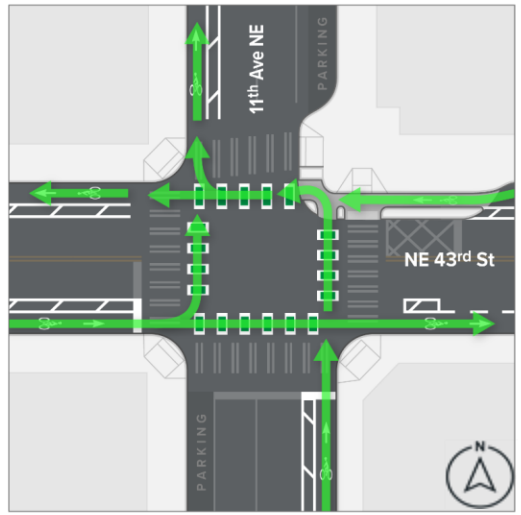
DIAGONAL BIKE CROSSING

Option 3



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

Option 4



CURB BULB EXTENSION

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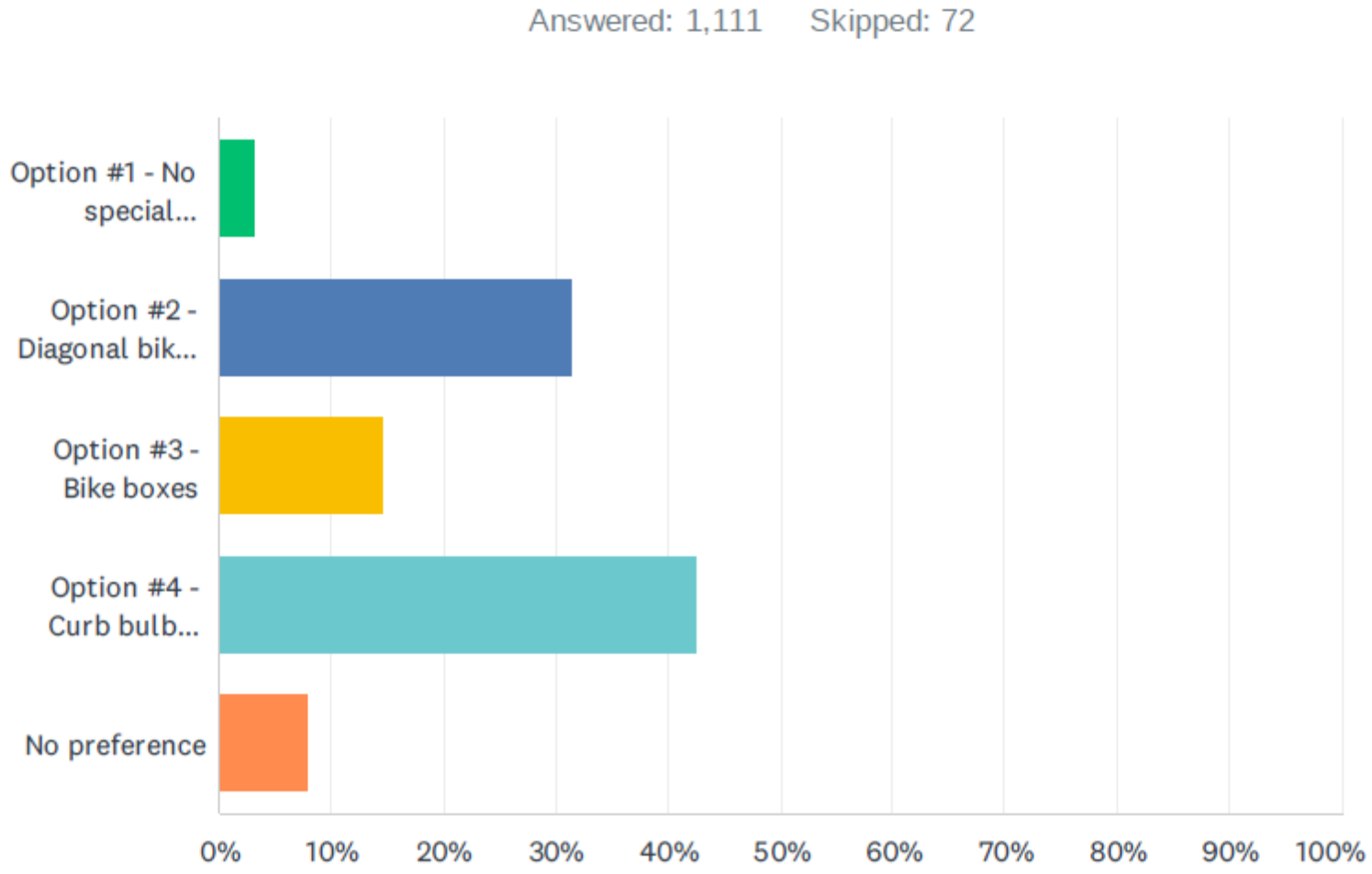
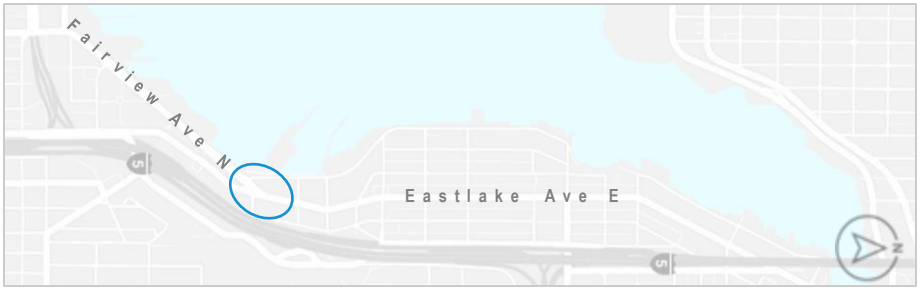
Protected Bike Lane Crossing at 11th/43rd

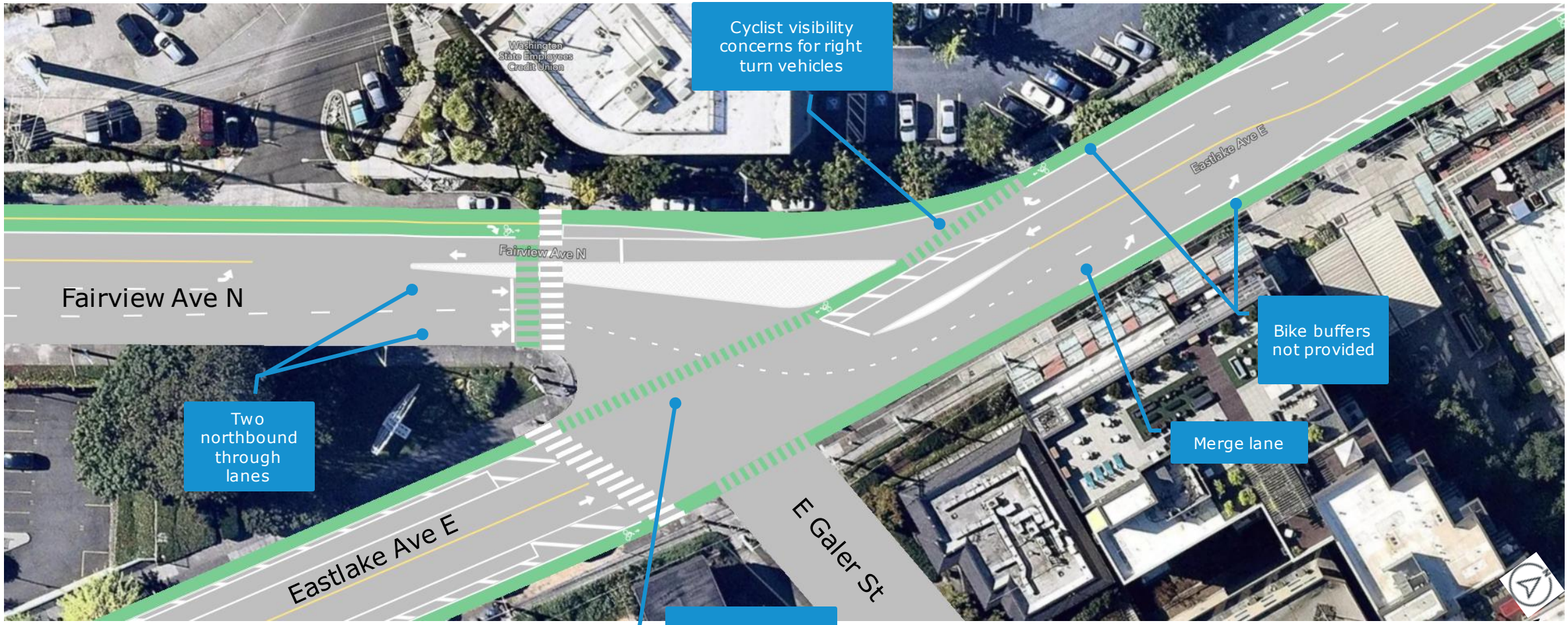
Options:

- #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



Fairview/Eastlake – Current Design





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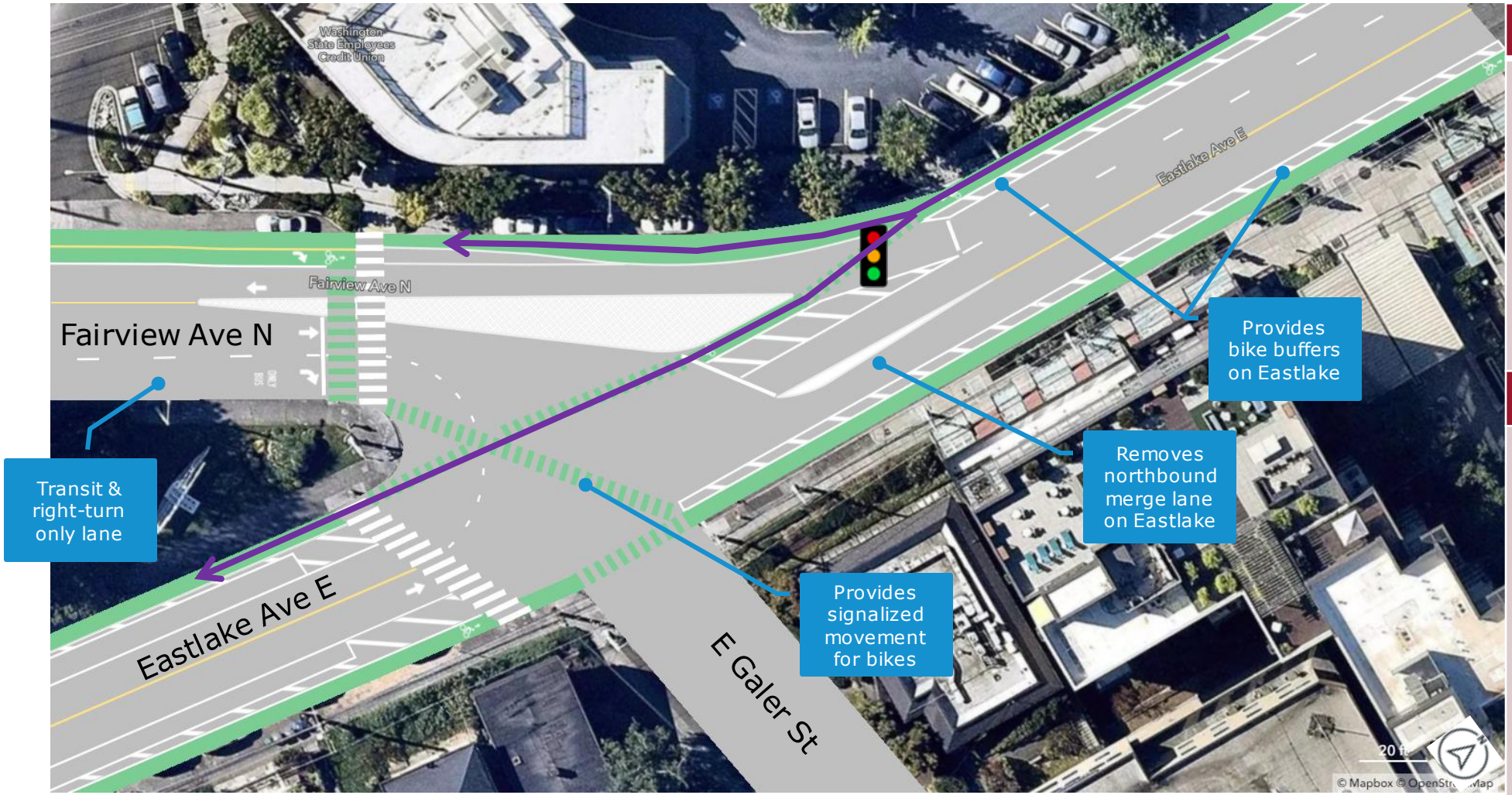
Fairview/Eastlake – Option 1



Benefits

- Mitigates southbound right turn vs southbound bike conflict
- Provides standard channelization widths

Trade-offs

- Need new signal infrastructure and coordination for southbound bikes vs. southbound right turns
- Potential trolley wire adjustments
- Impact to delay at intersection
- Bus operators may need to merge with northbound traffic on Fairview through intersection

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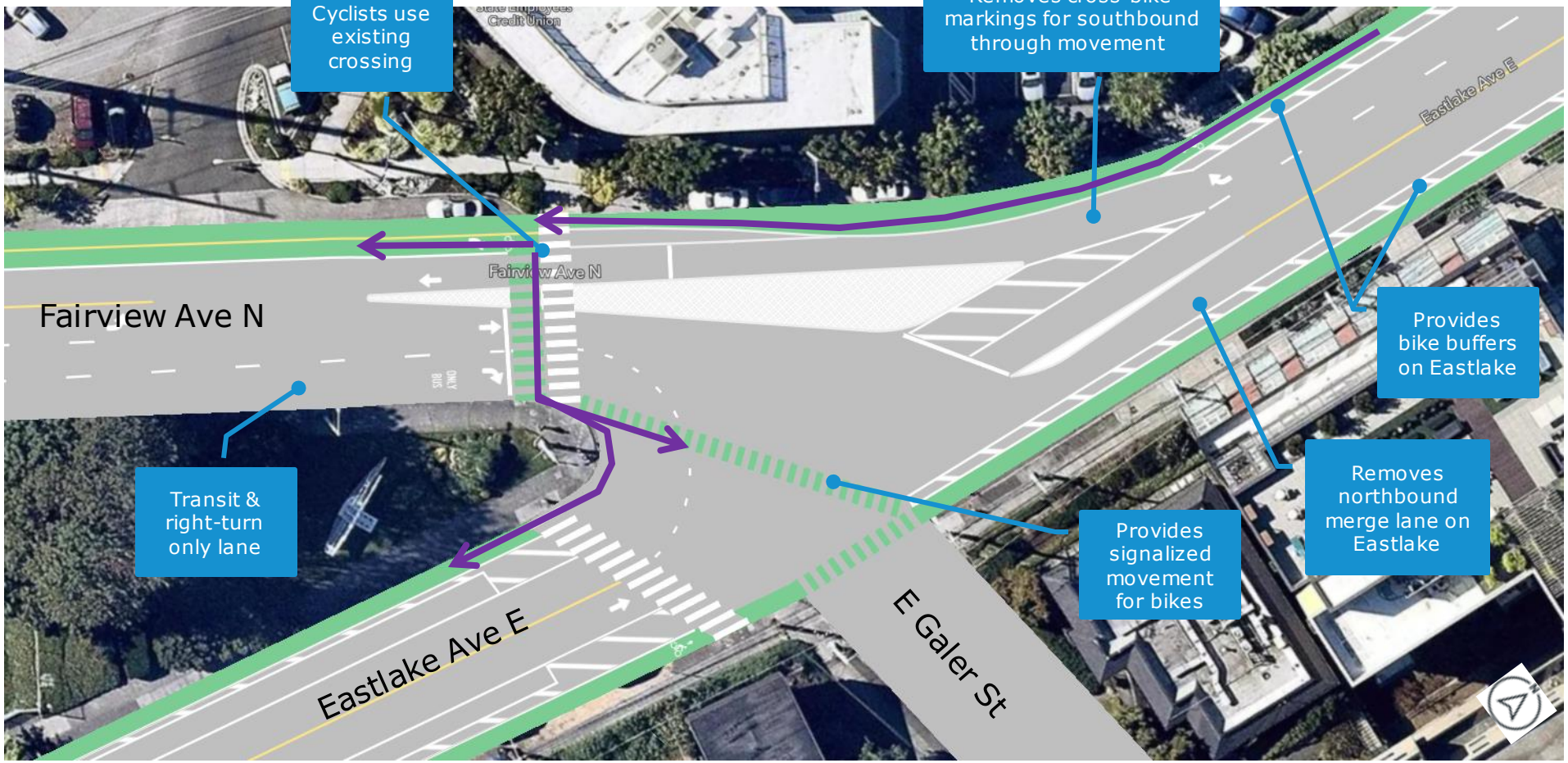
Fairview/Eastlake – Option 2



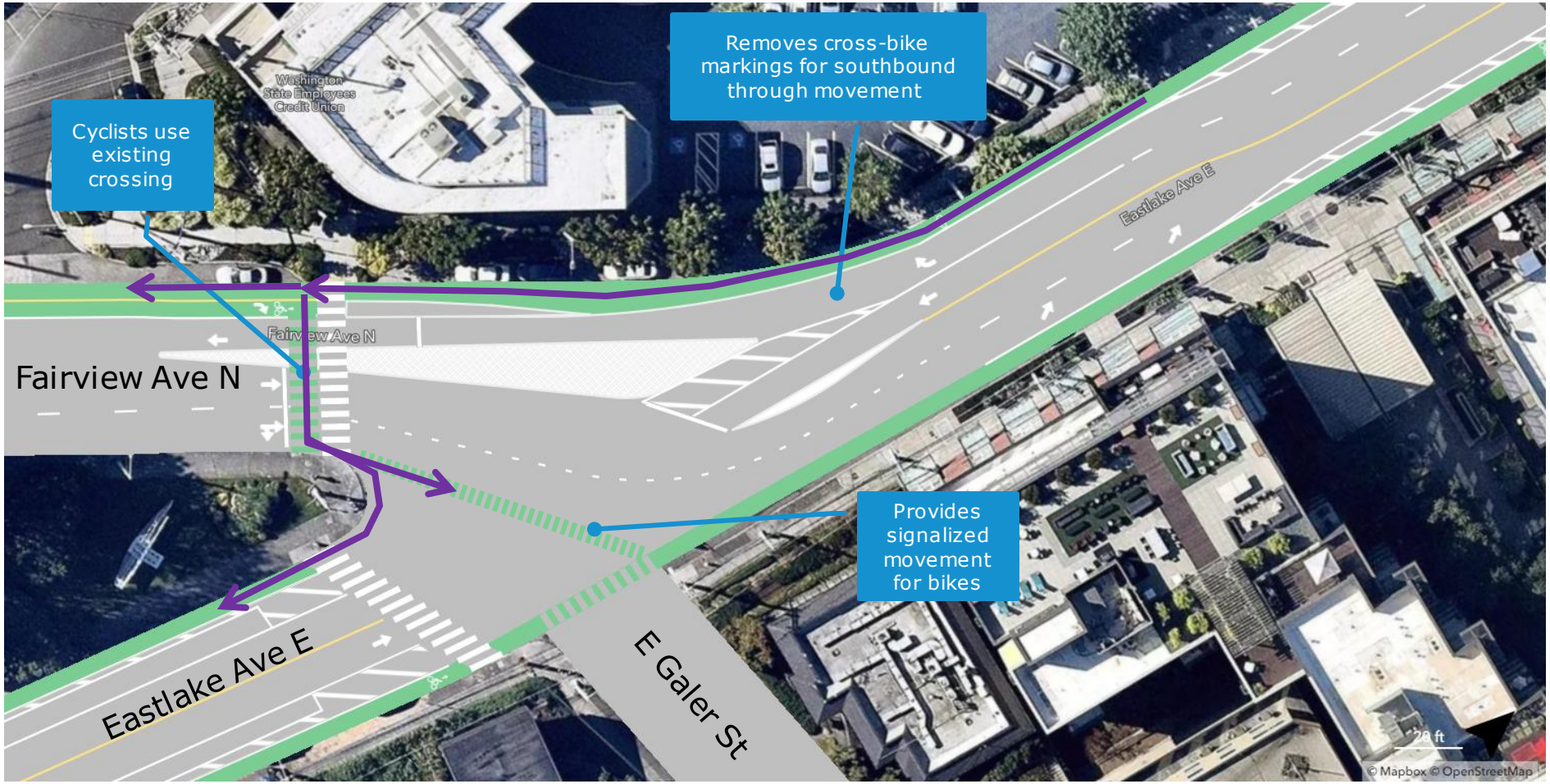
Benefits

- Removes southbound right turn vs southbound bike conflict
- Provides standard channelization widths

Trade-offs

- Circuitous route for cyclists may result in low compliance
- Impact to delay
- Bus operators may need to merge with northbound traffic on Fairview through intersection

Fairview/Eastlake – Option 3



Benefits

- Removes southbound right turn vs southbound bike conflict
- Low impact to project scope

Trade-offs

- Circuitous route for cyclists may result in low compliance
- Non-standard lane widths

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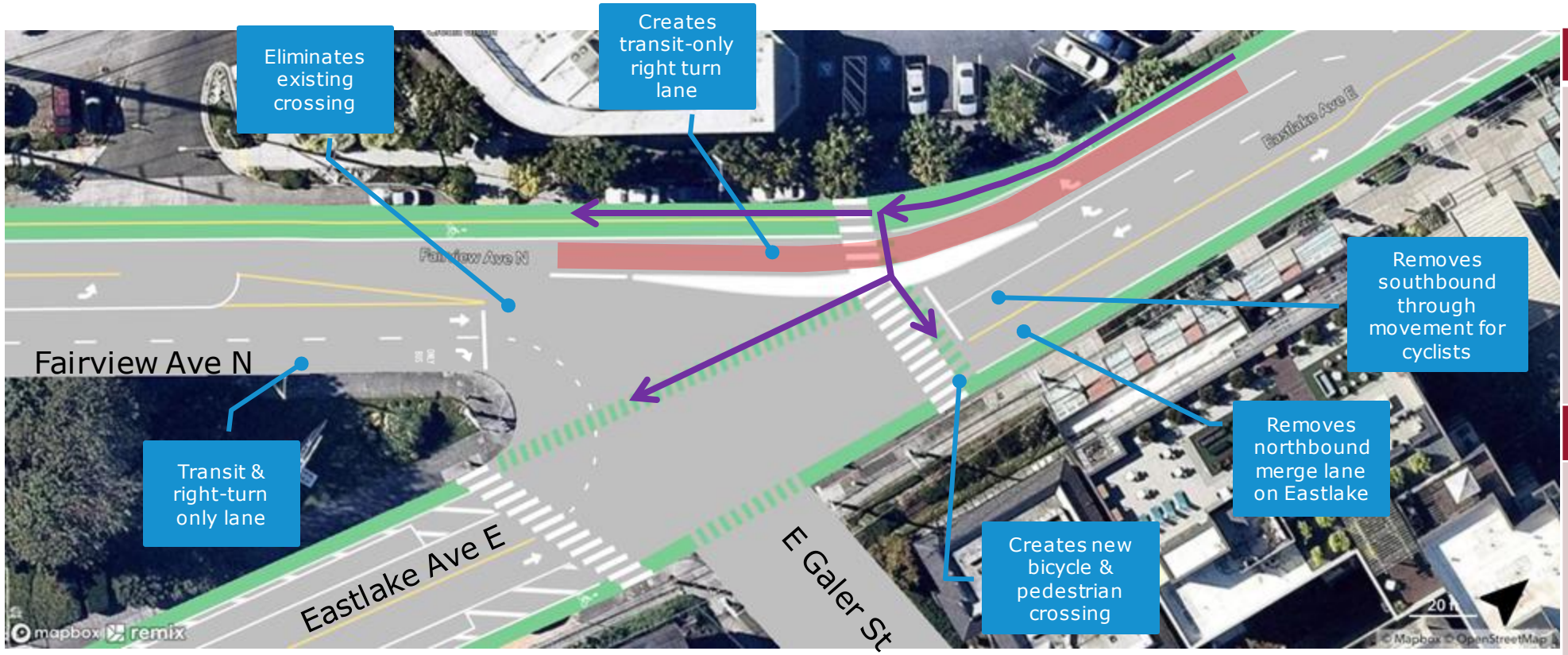
Fairview/Eastlake – Option 4



Benefits

- Provides signal for southbound vehicle and bicycle movements
- Expected to reduce southbound transit delay

Trade-offs

- Northbound impact to delay at intersection
- Bus operators may need to merge with northbound traffic on Fairview through intersection
- Additional infrastructure and cost
- Southbound right turn queue lengths may block southbound bus lane

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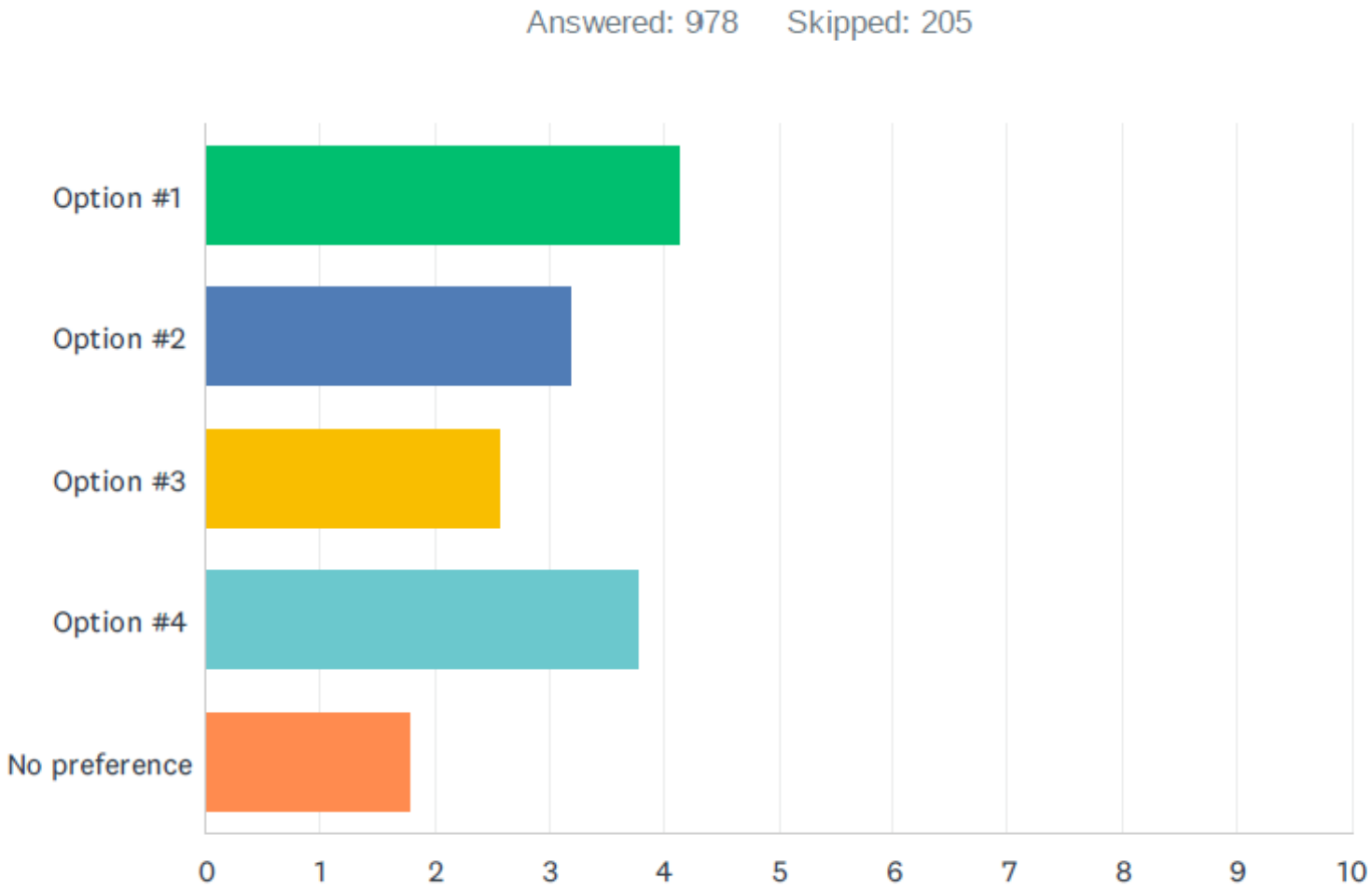
Fairview/Eastlake Intersection Configuration



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

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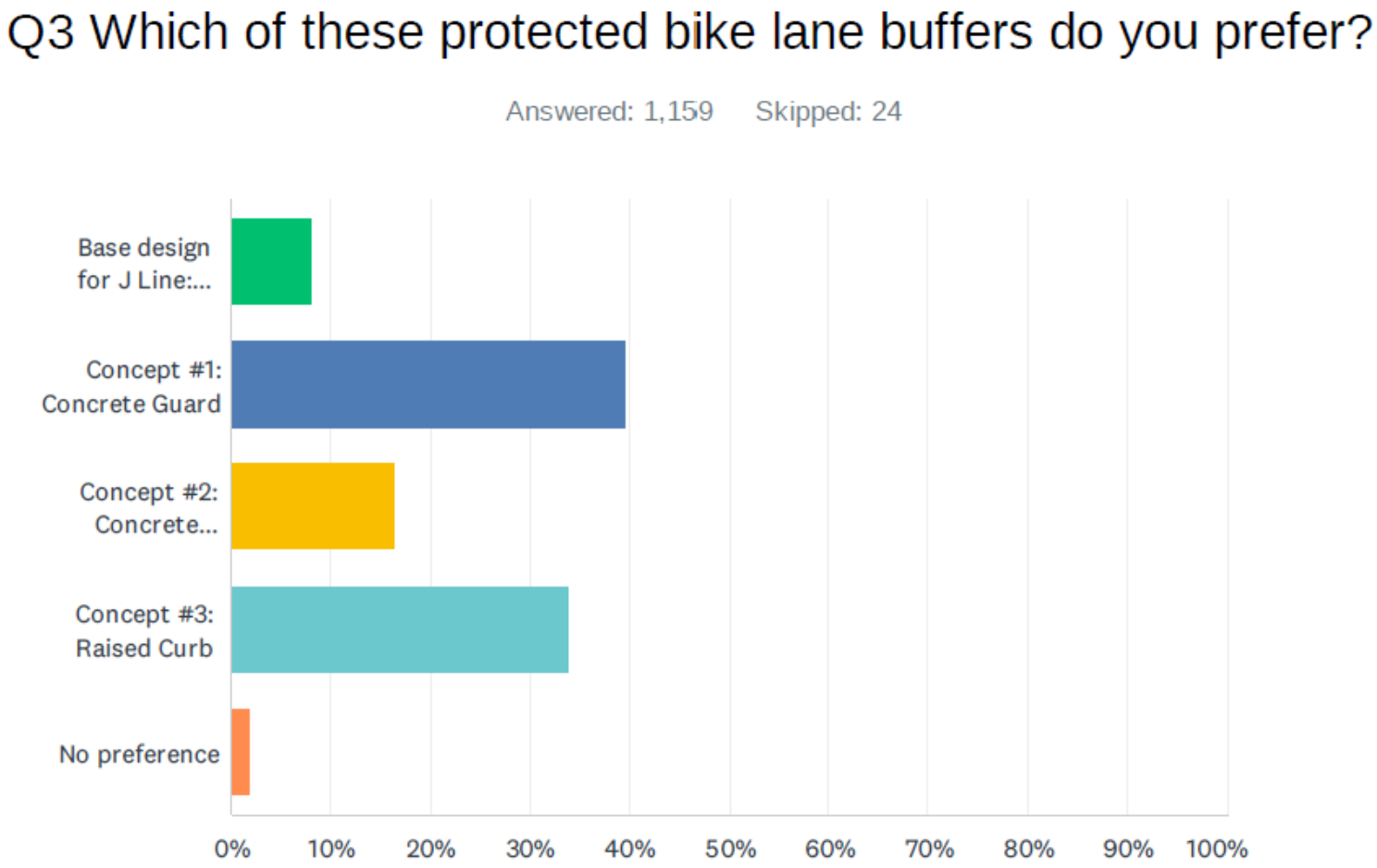
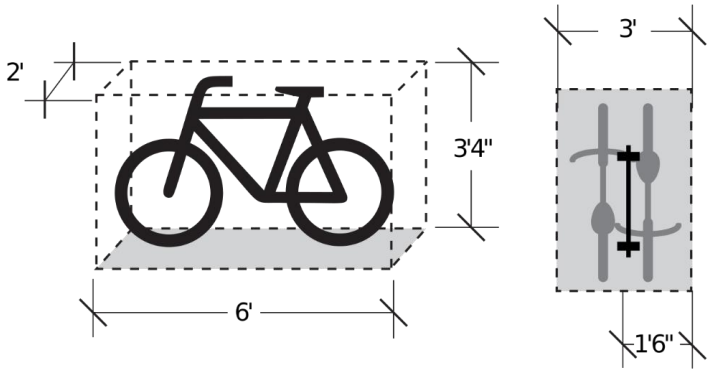


Bike Rack Locations

Typical bike rack dimensions



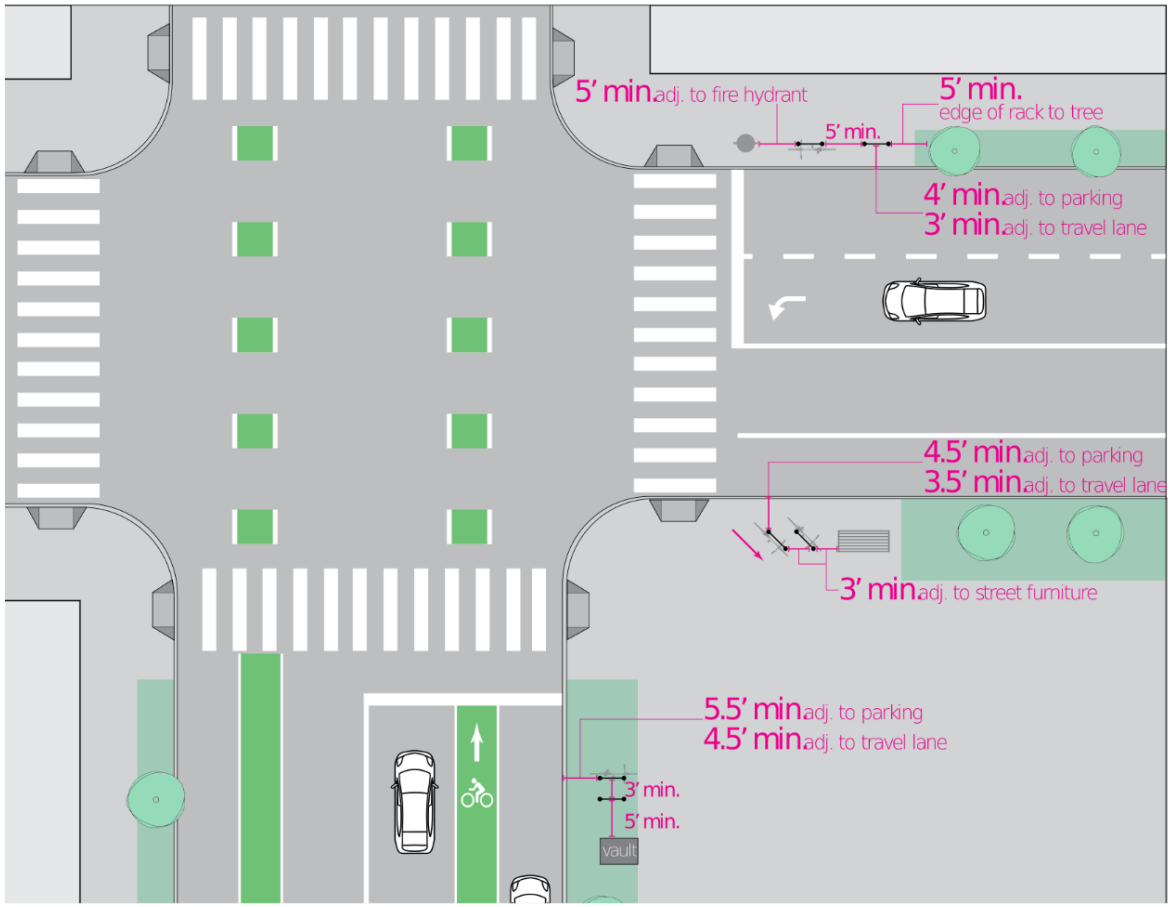
Typical Bike:
~2 feet wide by 6 feet long by 40 inches in height

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

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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, artisitic racks difficult to use

J Line

Next steps

King County METRO

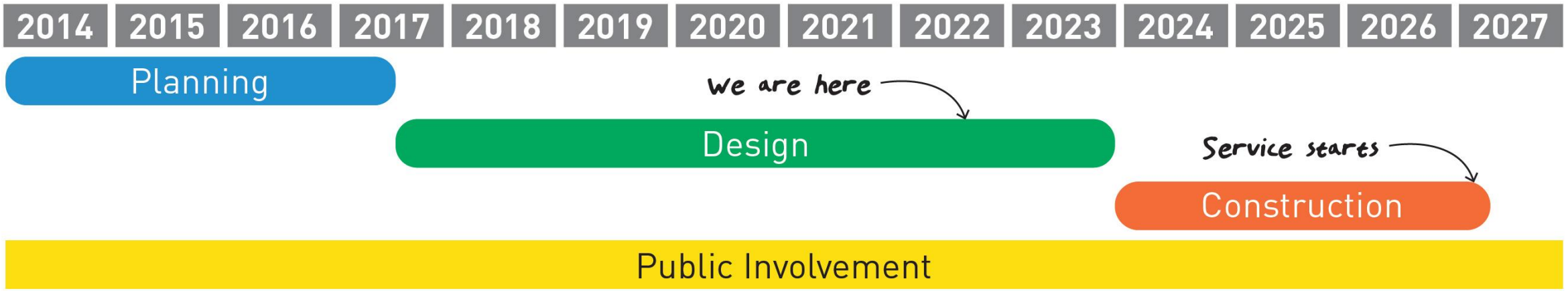
Seattle Department of Transportation

The Levy to MOVE SEATTLE

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

King County METRO

Seattle Department of Transportation

The Levy to MOVE SEATTLE

J Line

Addendum

King County METRO

Seattle Department of Transportation

The Levy to MOVE SEATTLE

Fairview/Eastlake Intersection Configuration

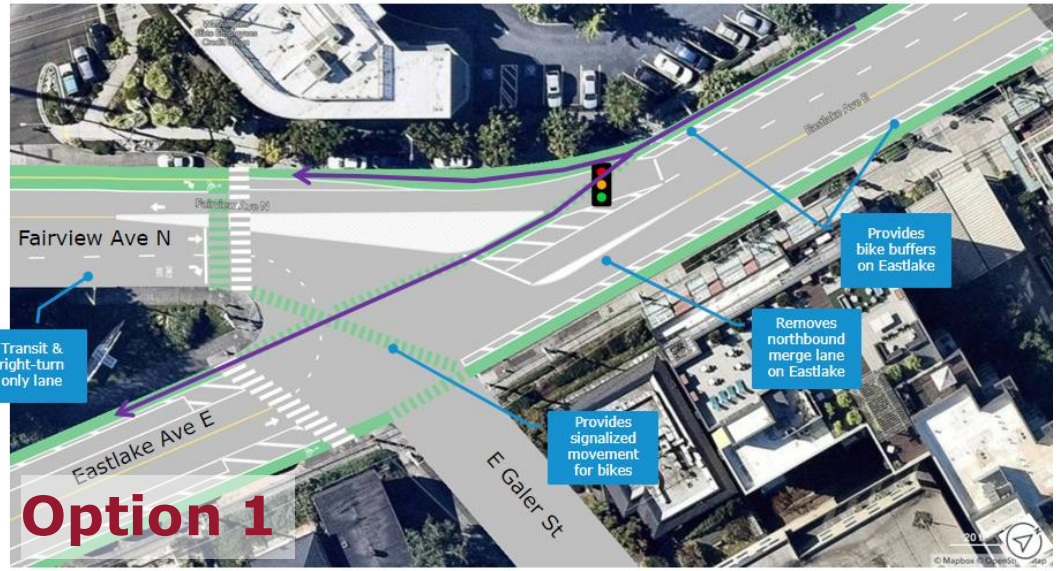
Option 1 adds a transit and right-turn only lane on Fairview Ave N, removes a merge lane on Eastlake Ave E, provides a signal for bikes, and adds bicycle buffers on Eastlake Ave E.

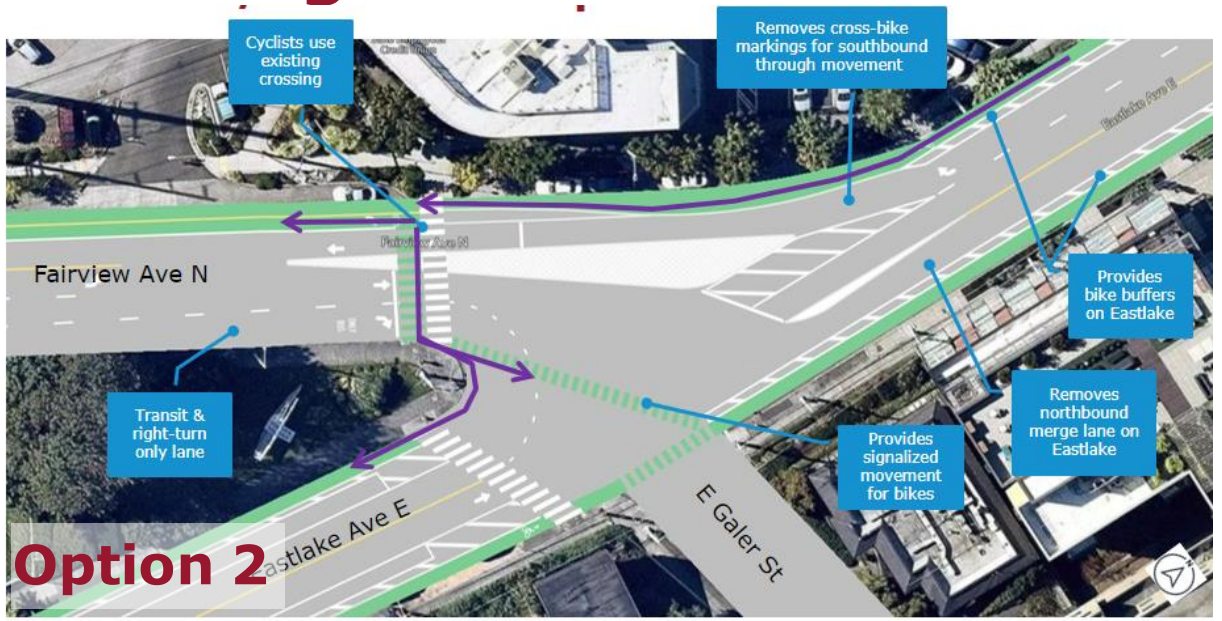
Option 2 also adds a transit and right-turn only lane on Fairview Ave N, removes cross-bike markings for southbound bicycle movements on Eastlake Ave E, removes a merge lane on Eastlake Ave E, and adds bicycle buffers on Eastlake Ave E.

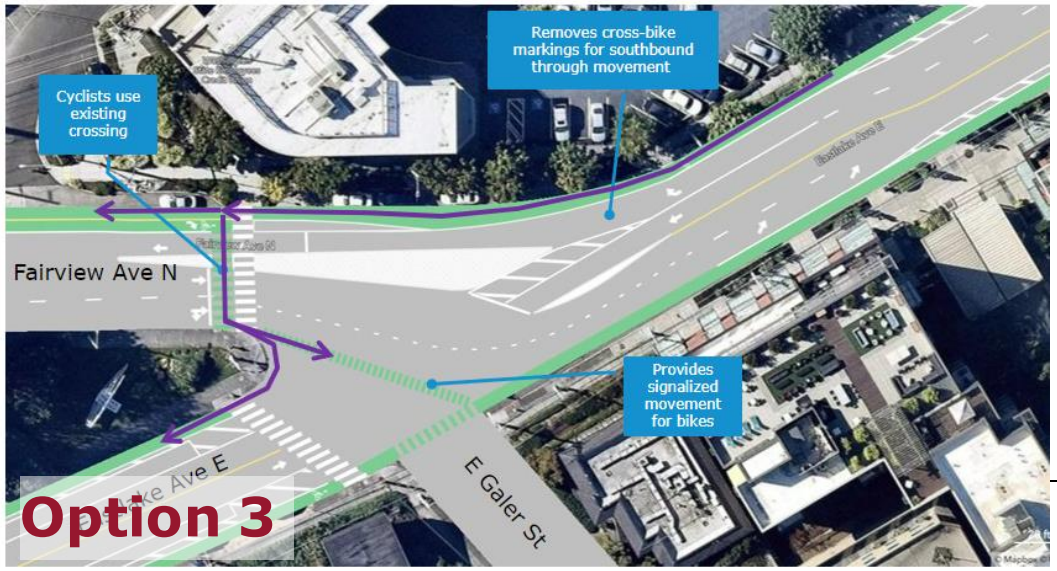
Option 3 removes cross-bike markings for southbound bicycle movements, adds bicycle buffers on Eastlake Ave E, and moves cyclists to use an existing crossing on Fairview Ave N.

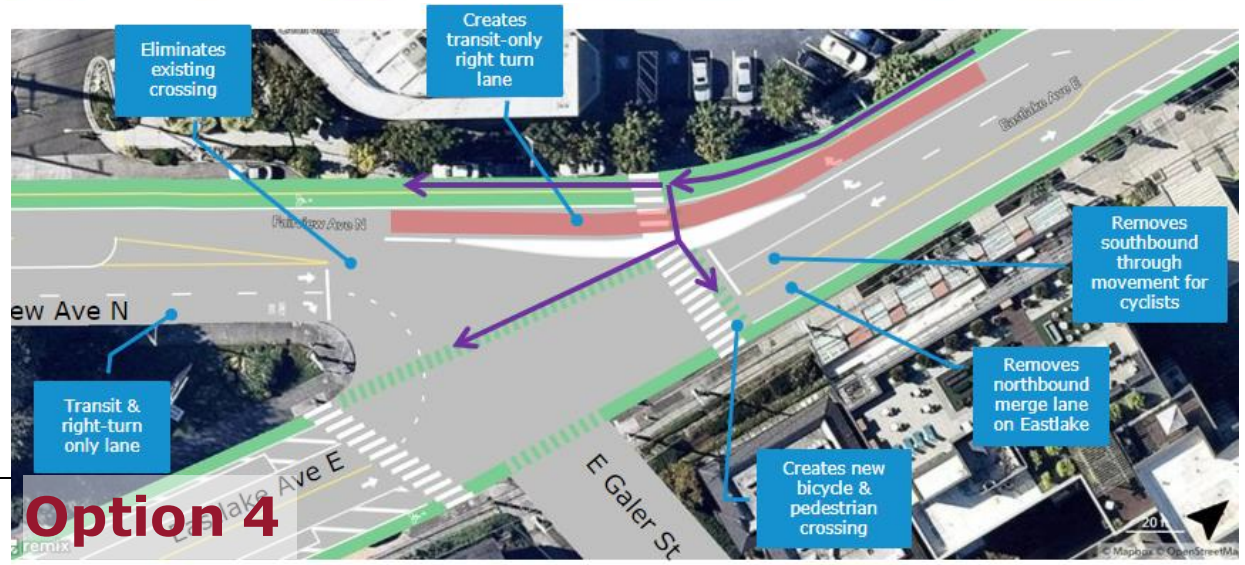
Option 4 creates a transit-only and right-turn lane from Eastlake Ave E to Fairview Ave N, removes a southbound through movement for cyclists on Eastlake Ave E, creates a new bicycle and pedestrian crossing across Eastlake Ave E, and eliminates an existing crossing on Fairview Ave N.

Fairview/Eastlake Intersection Design

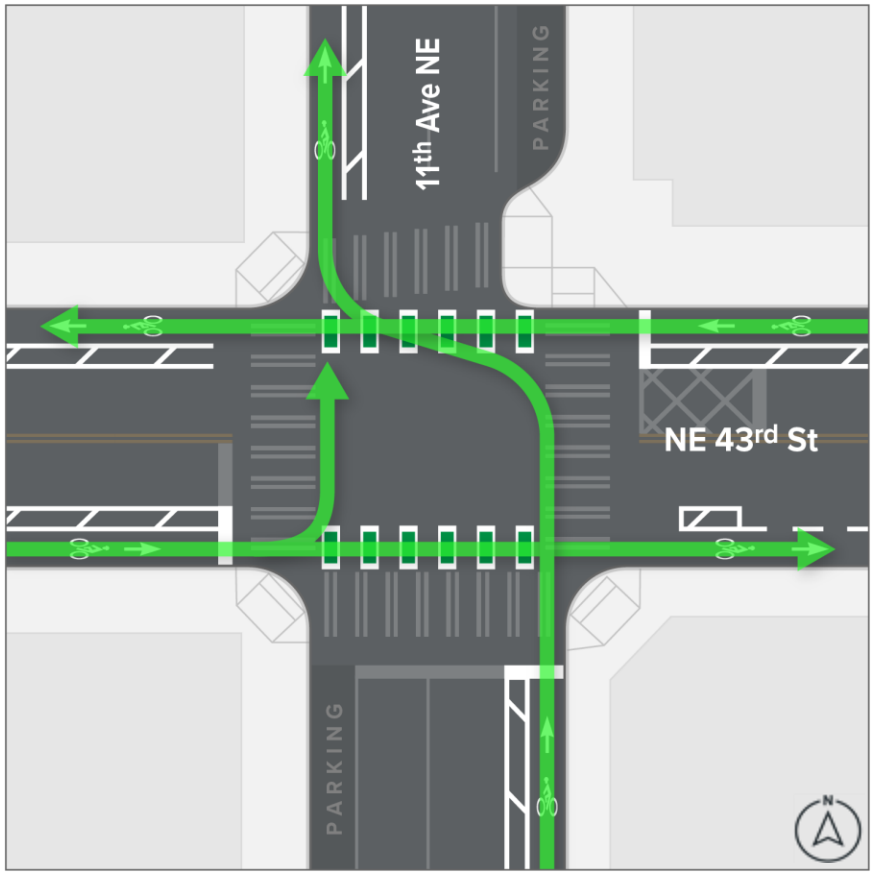








Protected Bike Lane Crossing at 11th/43rd



NO SPECIAL TREATMENT

Option 1: No Special Treatment

Details

- Bike crossing treatments are provided for eastbound and westbound cyclists
- Northbound cyclists use crosswalks and pedestrian sidewalk areas to continue through the intersection

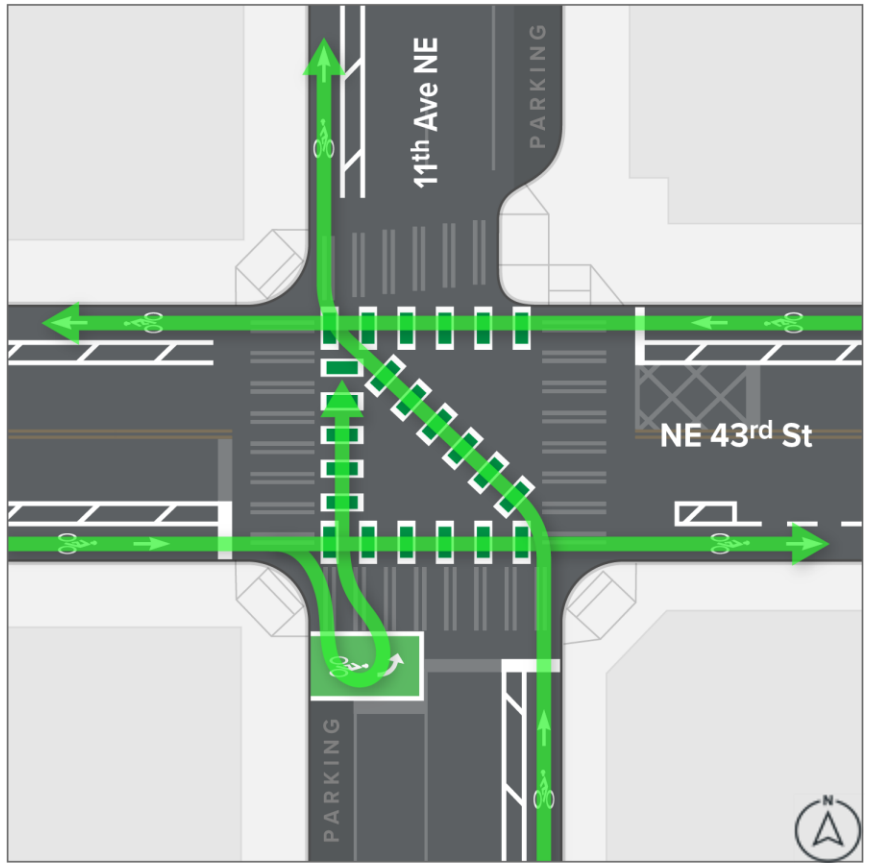
Benefits

- Provides basic marking treatment so that east/west movements are clearly covered

Trade-offs

- Northbound cyclists may have difficulty navigating intersection
- Cyclists making turns do not have space clear of the waiting area

Protected Bike Lane Crossing at 11th/43rd



DIAGONAL BIKE CROSSING

Option 2: Diagonal Bike Crossing

Details

- Adds diagonal bike crossing treatment through the intersection to transition northbound cyclists from right to left side of the road
- Eastbound cyclists are provided a bike box to queue prior to a left turn

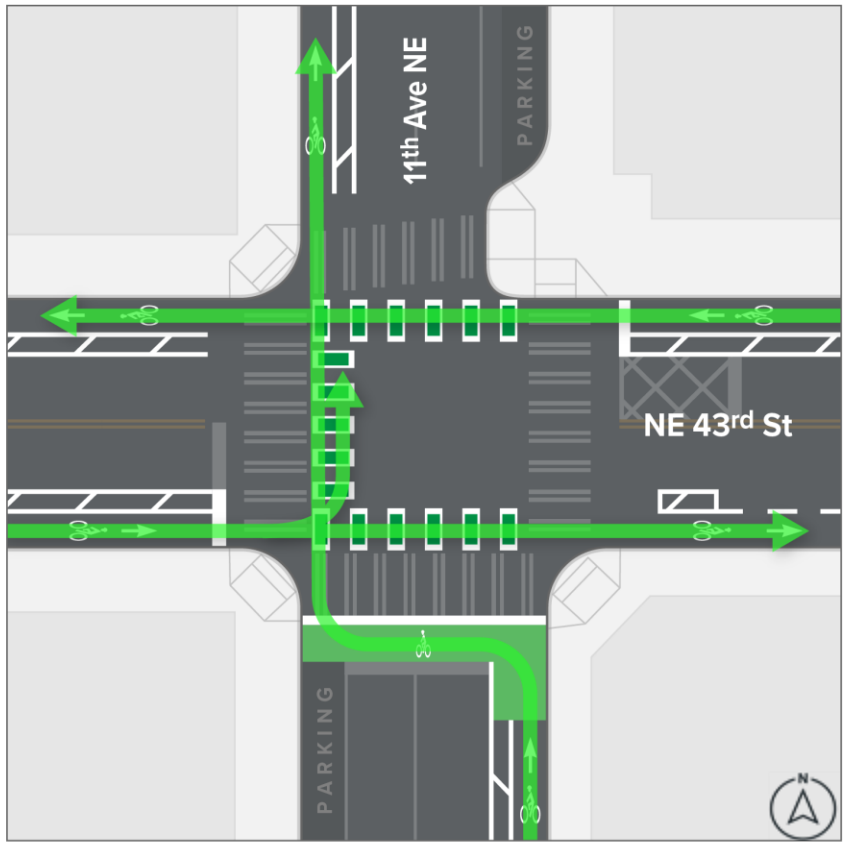
Benefits

- Provides basic marking treatment for east/west movements
- Provides markings for cyclists turning/traveling northbound
- Provides northbound cyclist crossing transition in single state
- Provides clear waiting area for eastbound cyclists turning northbound

Trade-offs

- Including both the diagonal bike crossing treatment and bike box behind the south crosswalk may lead to unexpected cyclist presence for drivers
- Some eastbound cyclists turning northbound may have difficulties accessing the bike box if high pedestrian volumes present
- Additional northbound bike-only signal phase may cause vehicle delays

Protected Bike Lane Crossing at 11th/43rd



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

Option 3: Bike Boxes

Details

- Northbound cyclists are provided a bike box behind the crosswalk on south leg to allow for transition from right to left side of the road

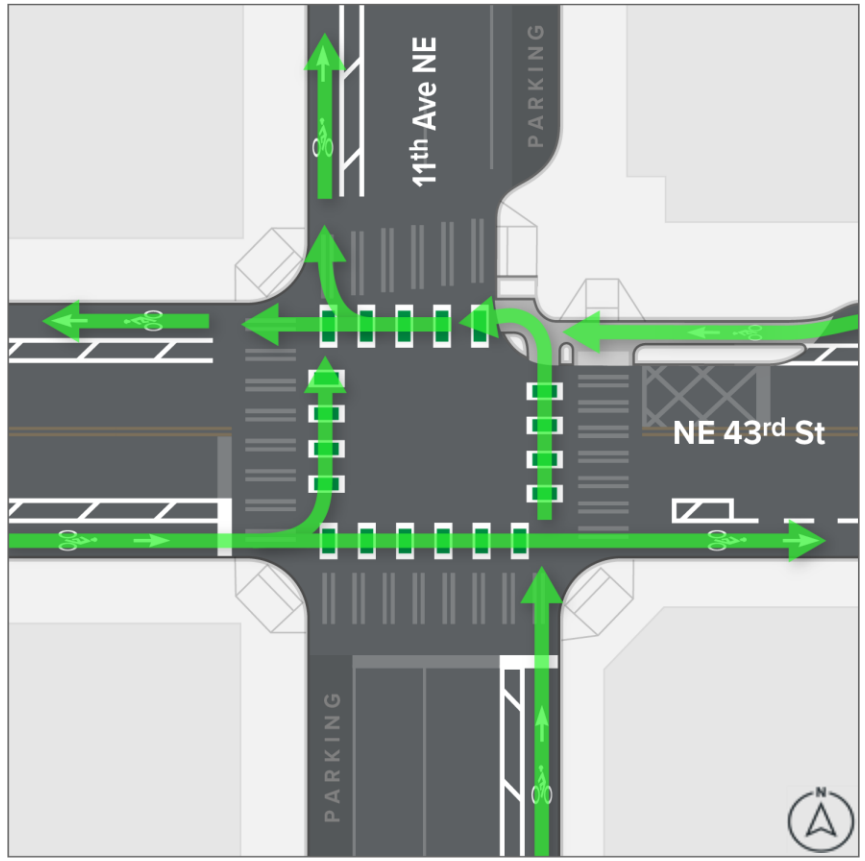
Benefits

- Provides basic marking treatment for east/west movements
- Allows northbound vehicles and cyclist to continue through the intersection at the same time
- Allows northbound cyclists to safely use bike box to cross to west side of 11th Ave NE

Trade-offs

- Some eastbound cyclists turning northbound may have difficulties accessing the bike box if high pedestrian volumes present

Protected Bike Lane Crossing at 11th/43rd



CURB BULB EXTENSION

Option 4: Curb bulb extension on NE Corner

Details

- Provision for protected intersection at NE corner

Benefits

- Provides basic marking treatment for east/west movements
- Clear routing of northbound cyclists via curb bulb provides protected space behind curb for two-stage crossing

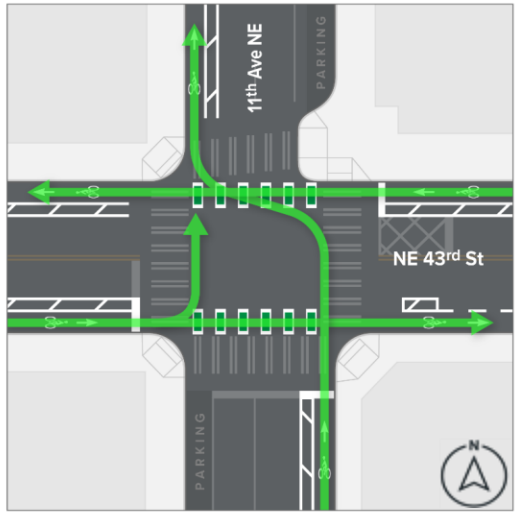
Trade-offs

- May require additional reconstruction at NE corner and modifications of crosswalk alignments

Your turn

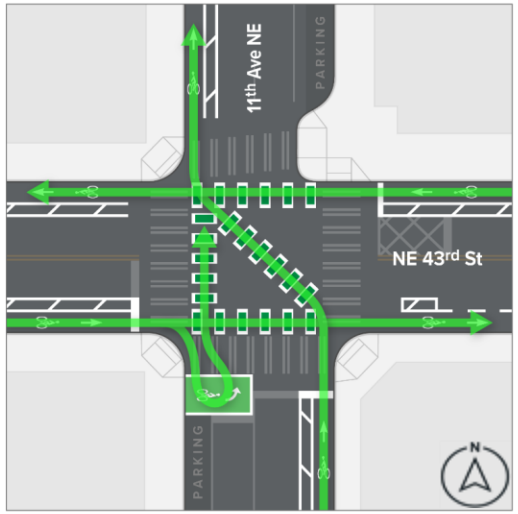
- Q1: Which option do you prefer?

Option 1



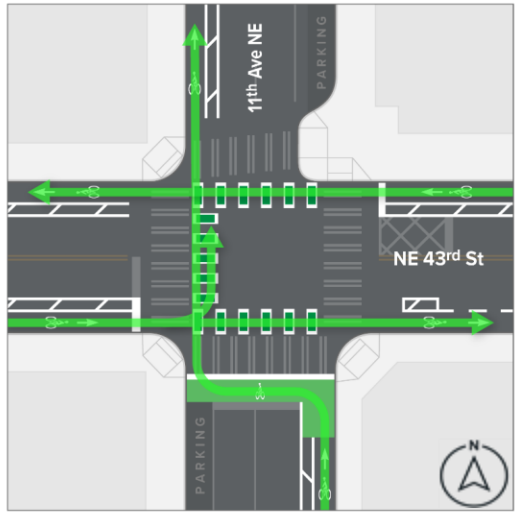
NO SPECIAL TREATMENT

Option 2



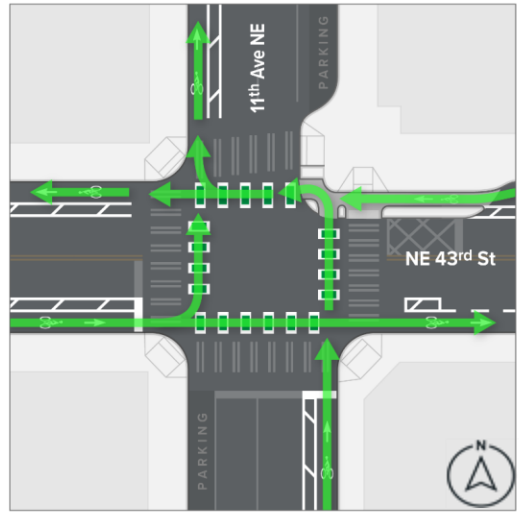
DIAGONAL BIKE CROSSING

Option 3



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

Option 4



CURB BULB EXTENSION

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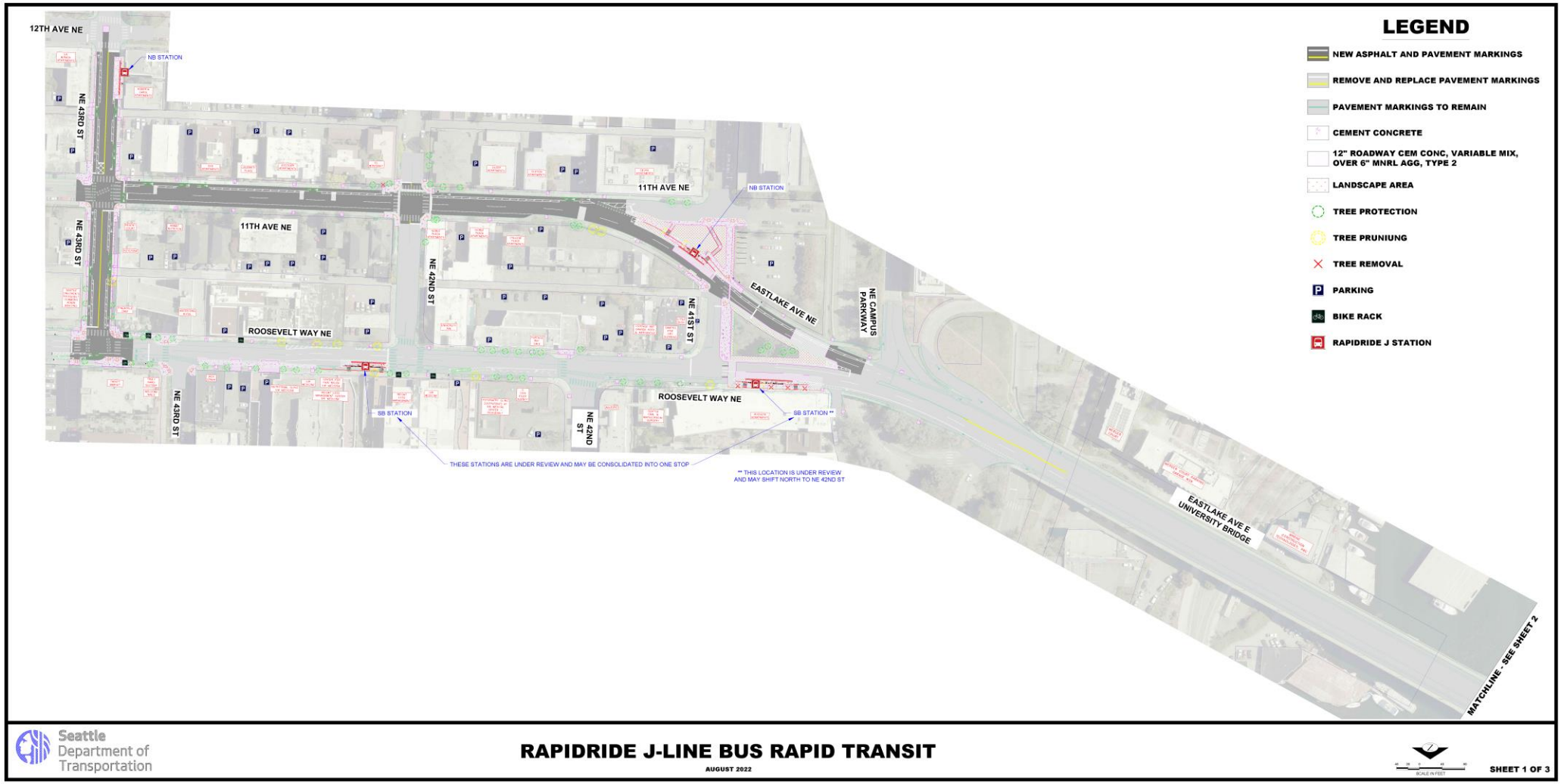
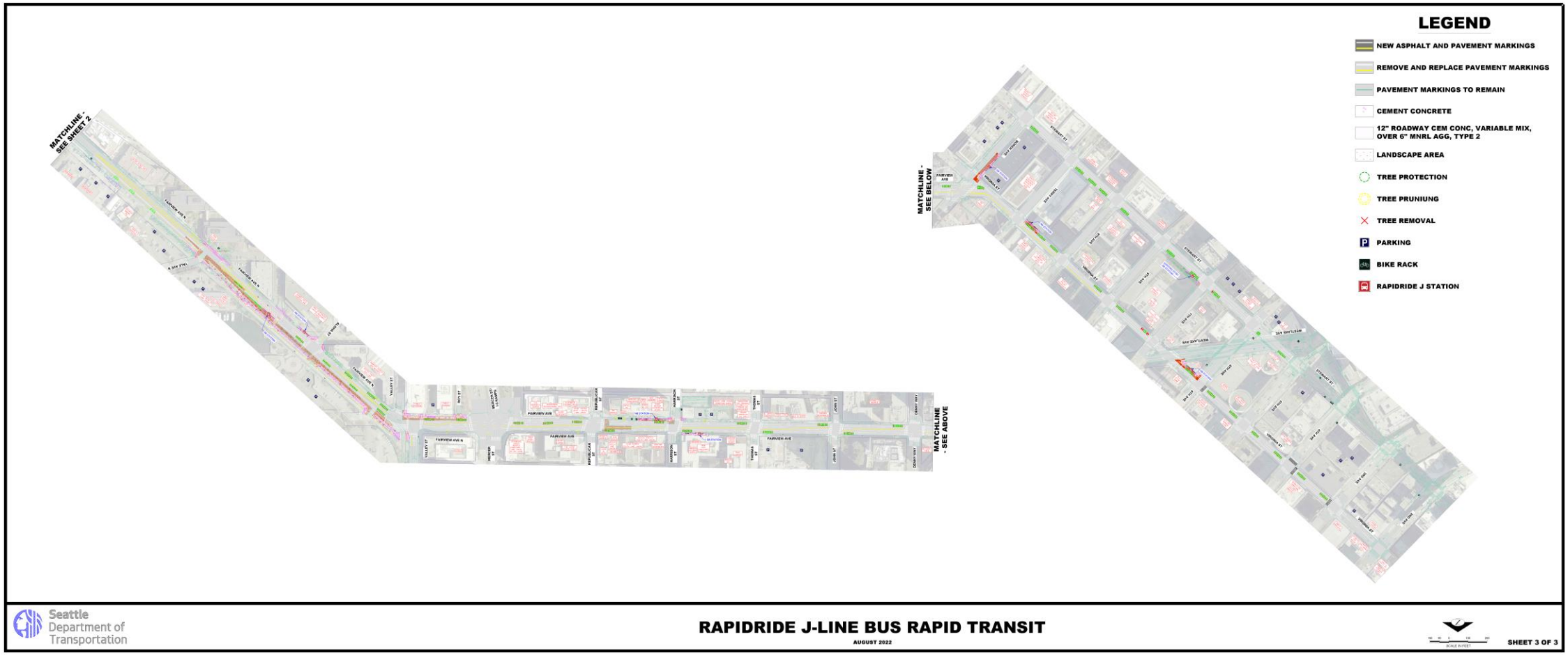
Roll plot – North of University Bridge



Roll plot – Eastlake and Belltown



Why are Protected Bike Lanes needed on Eastlake Ave E?

- **Safety:** 53 reported bicycle collisions on Eastlake Ave E from 2012-2022, nearly all resulting in injury (4 serious with broken bones). Only 28% of bike collisions happened at peak time.
  - 253 other collisions, 75 resulting in injury. Protected bike lanes helps "all users" manage their speeds, reducing the number and severity of collisions.
- **Equity:** Peak-time facilities may serve cyclists commuting to the office, but not students, blue collar and service workers, customers of Eastlake businesses, and others who need to travel outside the peak.

Keep in touch

Have Questions or Ideas?

- Email RapidRide@seattle.gov

Want to Stay Informed?

- Check out the latest project information
- Sign up for email updates

www.seattle.gov/Transportation/RapidRideJLine

Garth Merrill (SDOT)

Project Manager

(206) 684-5184

RapidRide@seattle.gov

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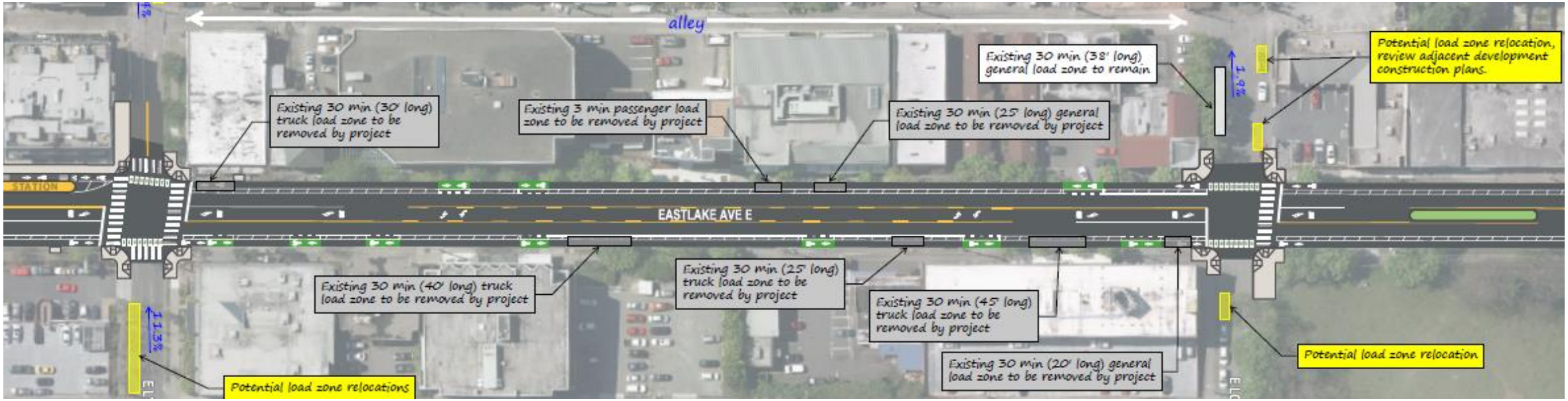
Load Zone Relocation

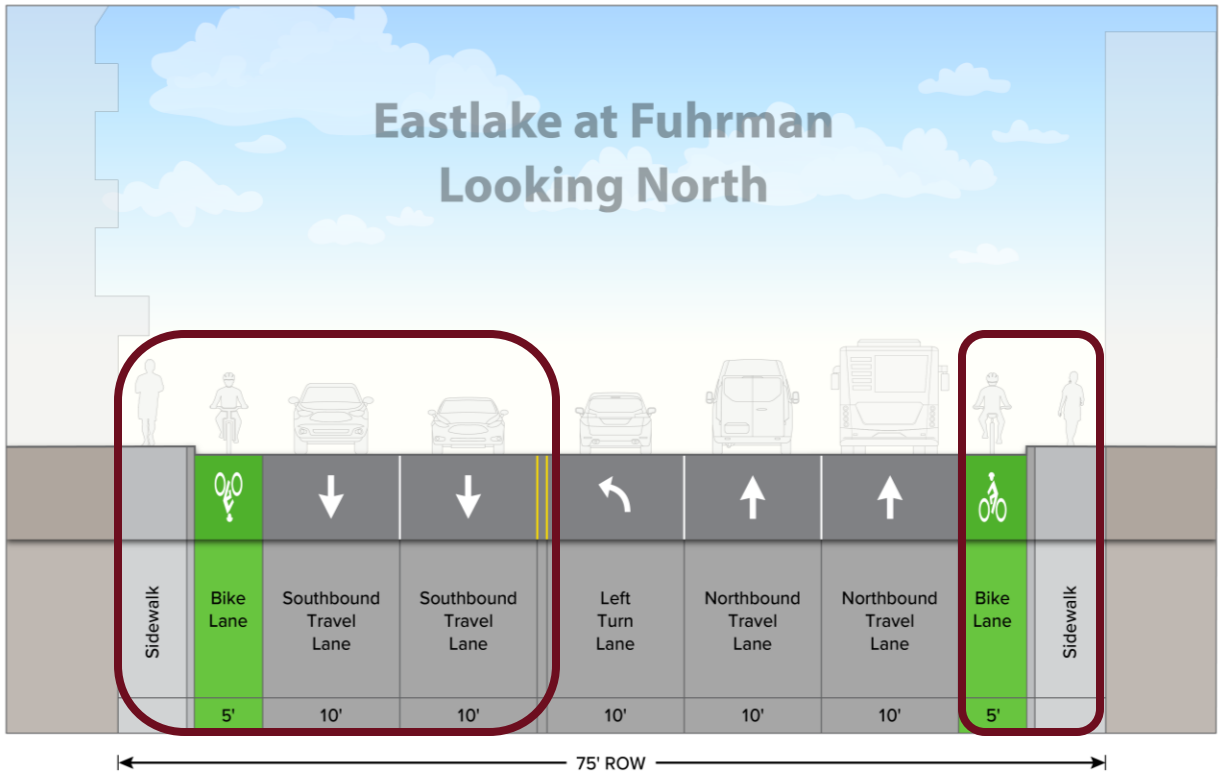
Load zones - Identification of new locations around the corner for impacted load zones

- Discussed new locations with businesses
- Prepping to move load zone signs prior to construction start

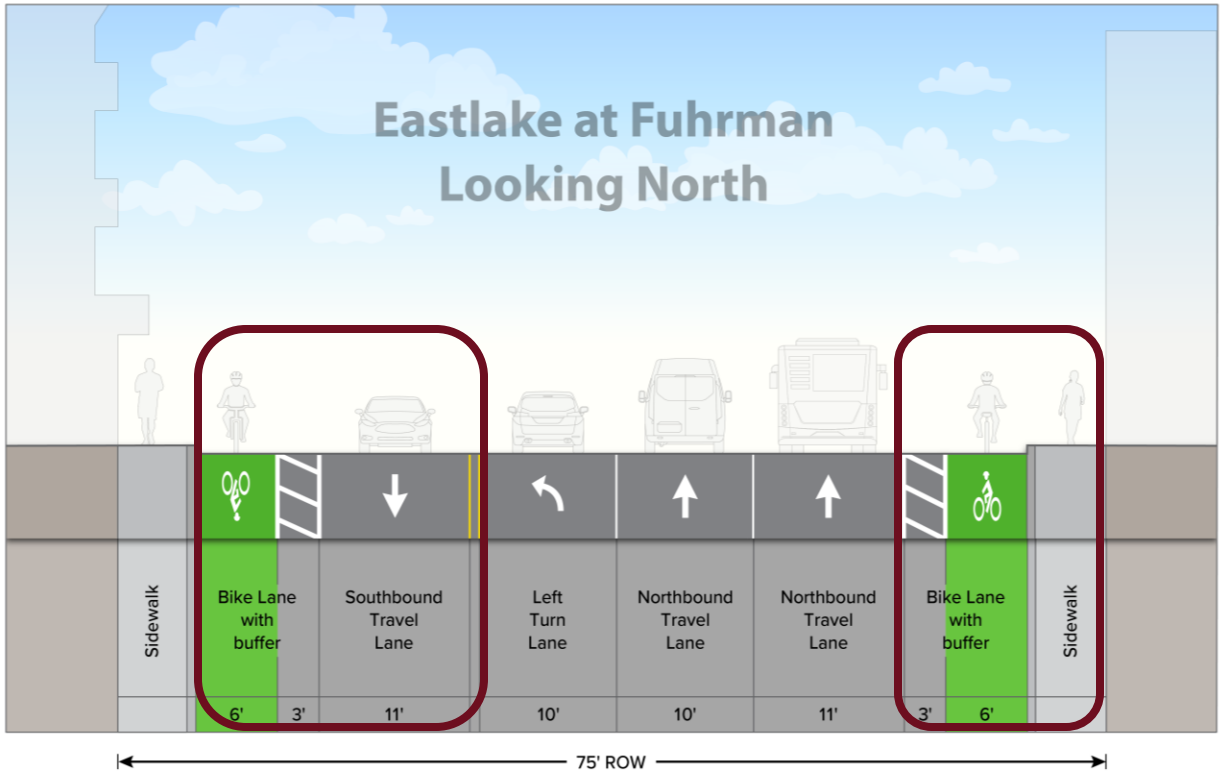


Channelization on Eastlake at Fuhrman

Option 1 – Standard bicycle lane



Option 2 – Buffered bicycle lane



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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)

RPZ 8 Adjustment

- RPZ 8 adjustment to provide access and balance the commercial and residential curb space needs
- SDOT doing a parking occupancy study to inform changes to RPZ
  - parking data collection
  - outreach
  - draft updates, legislation, public hearing
- Current RPZ installed in the early 1990s
  - Mostly permit-only daily 6pm to midnight
  - Mon-Sat 7 am – 6 pm with 2- or 4-hour parking without permit