

# Route 44 Transit-Plus Multimodal Corridor

## Seattle Bicycle Advisory Board



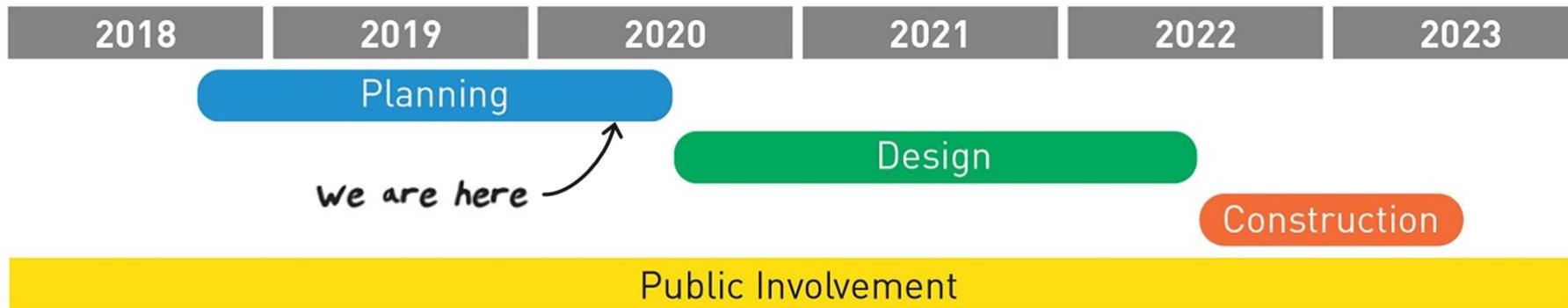
# Presentation Contents

- Project Overview
- Bike Master Plan Assessment
- 15<sup>th</sup> Avenue NE Recommendation
- Questions

# Project Background

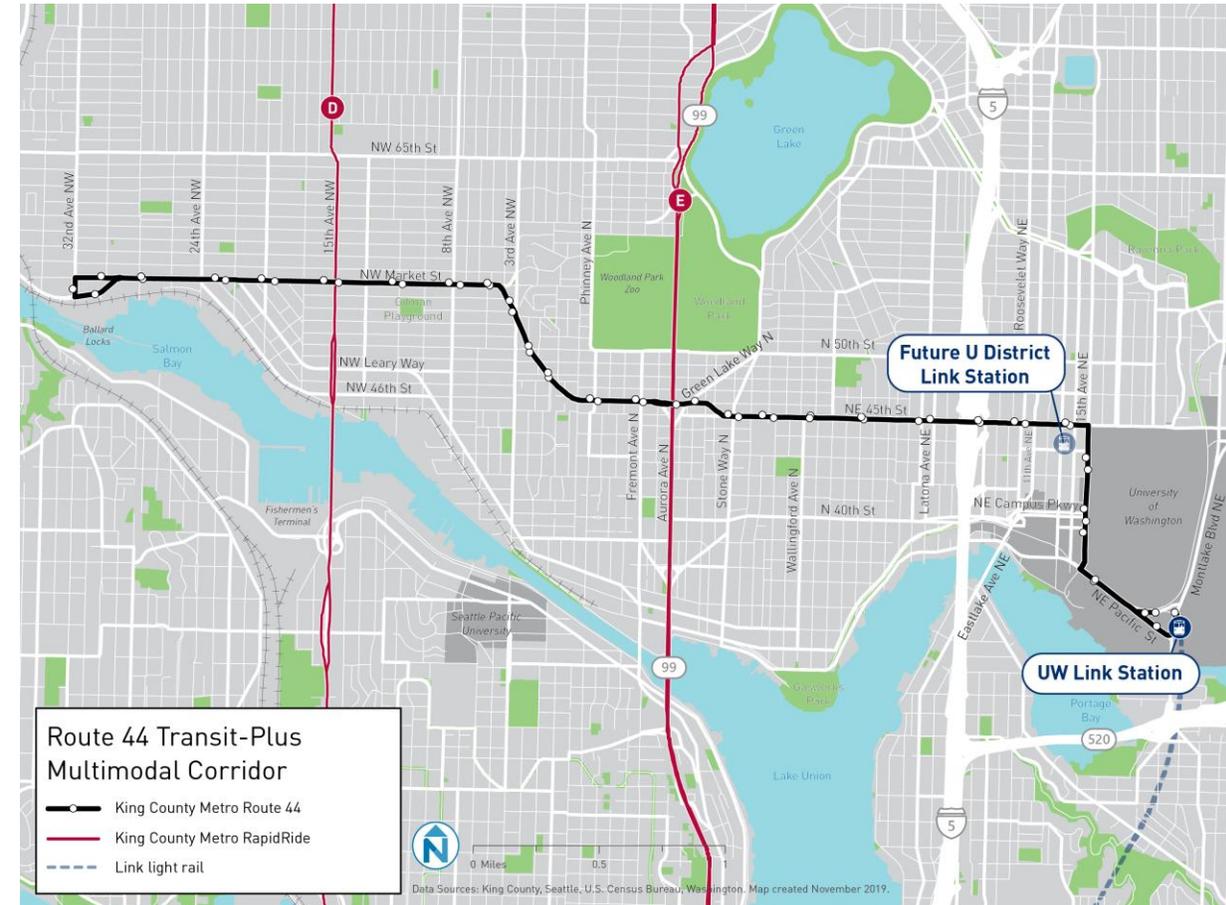
## Objectives

- Make bus trips faster and more reliable, now and in the future
- Make it safer and easier to get to and onto the bus
- Respond to community needs and priorities
- Fulfill Levy to Move Seattle commitments



# Project Area & Limits

- Route 44 serves Ballard, Wallingford, and the U District
- 10.7-mile east-west trolley route serving over 9,300 daily weekday riders
- Intersects with RapidRide routes D Line, E Line, and J Line (planned)
- Provides connections to LINK stations, UW and U District (2021)



# Bike Master Plan (BMP) Assessment

Recommendation/Need	Related Planned Project(s)	Route 44 TPMC Scope
Minor-separation facility on Market Street between 24 <sup>th</sup> Avenue NW and 28 <sup>th</sup> Avenue NW	Implemented as part of Ballard Multimodal Corridor Phase 1 (2021)	No additional scope
Multiple recommended Neighborhood Greenways intersect Route 44 corridor ( <i>11<sup>th</sup> Avenue NW prioritized – bus stop pair without marked crossing</i> )	Lincoln High School SRTS project to install NGW crossing at Interlaken Ave N and N 45 <sup>th</sup> St (2022)	Install pedestrian traffic signal with bike detection at 11 <sup>th</sup> Ave NW and NW Market St
Protected bike lanes on 15 <sup>th</sup> Avenue NE	None	Install signs to permit bicycles use in bus lanes; Evaluation details to follow

# 15<sup>th</sup> Avenue NE - Modal Plan Designations

## 2014 Bike Master Plan

- Protected Bicycle Lanes (PBLs)

## 2016 Transit Master Plan

- Future RapidRide Corridor
- Frequent Service Network

## 2016 Freight Master Plan

- Minor Truck Route

## 2017 Pedestrian Master Plan

- Priority Investment Network

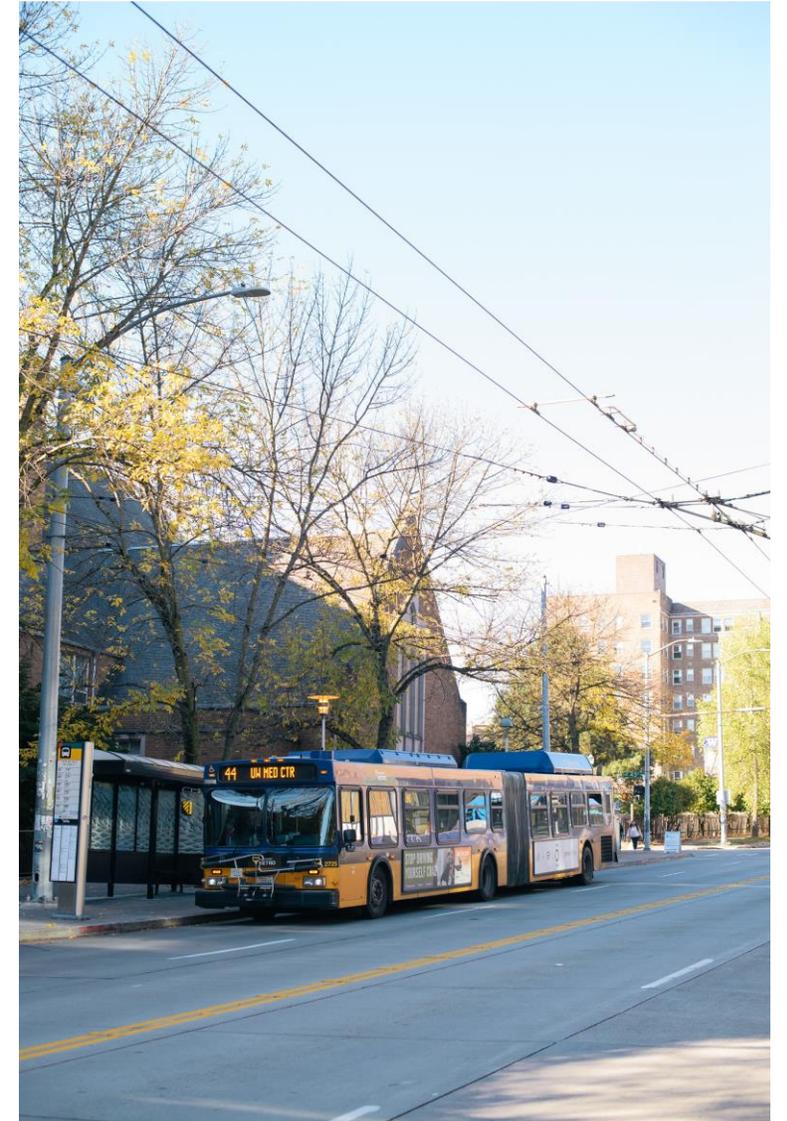


# 15<sup>th</sup> Avenue NE - Traffic Data

## During the PM peak hour:

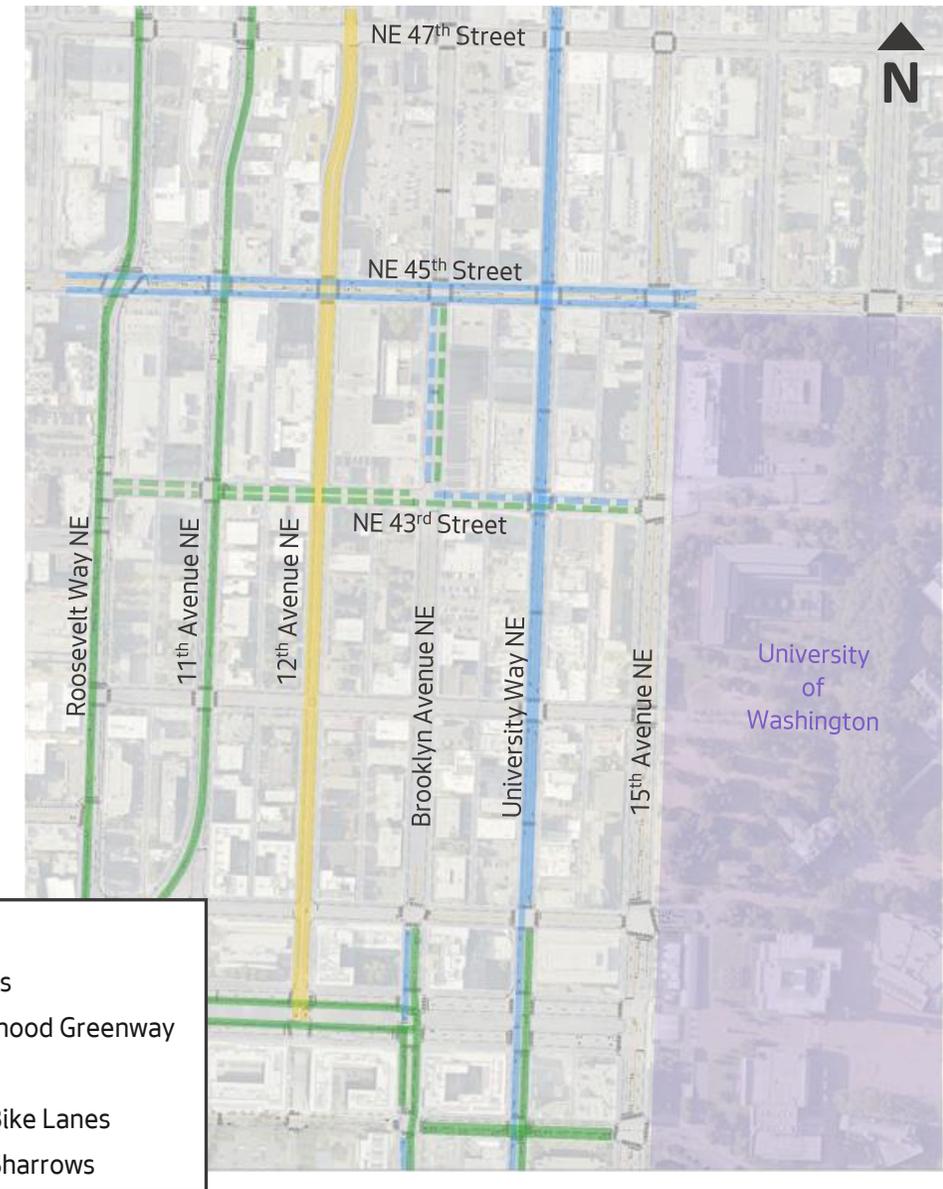
- Roughly 1,200 vehicles (both directions)\*
- Between 250 and 600 pedestrians crossing at each intersection\*
- Approximately 10 cyclists on the corridor\*
- Over 50 buses scheduled to arrive at each stop

*\*Turning movement count data collected on 10/29/2018, PM peak hour from 4:30p to 5:30p*



# Existing Bicycle Network in the U District

- Roosevelt Way NE: Southbound Protected Bike Lane
- 11<sup>th</sup> Avenue NE: Northbound Bike Lane  
*(being upgraded to Protected Bike Lane as part of J Line project)*
- 12<sup>th</sup> Avenue NE: Neighborhood Greenway
- University Way NE: Sharrows
- NE 45<sup>th</sup> Street: Sharrows
- NE Campus Parkway/NE 40<sup>th</sup> Street: Protected Bicycle Lanes



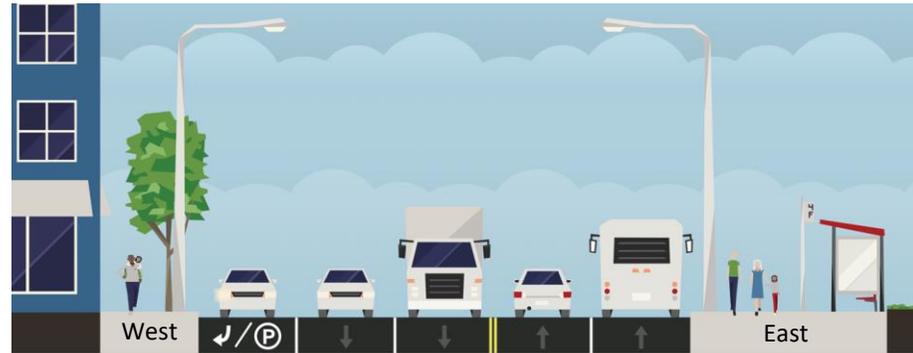
# 15<sup>th</sup> Avenue NE - Existing Conditions

## Typical Sections

**A: Center TWLT Lane (50.5'-52')**



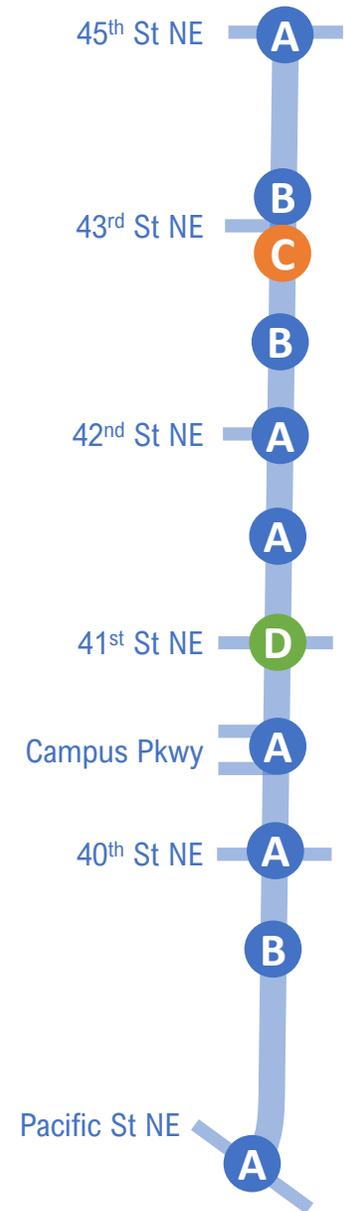
**B: SB RT Lane / Parking Lane (50.5')**



**C: Bus Boarding (44')**



**D: Center Turn Lane w/ NB RT Lane (62')**

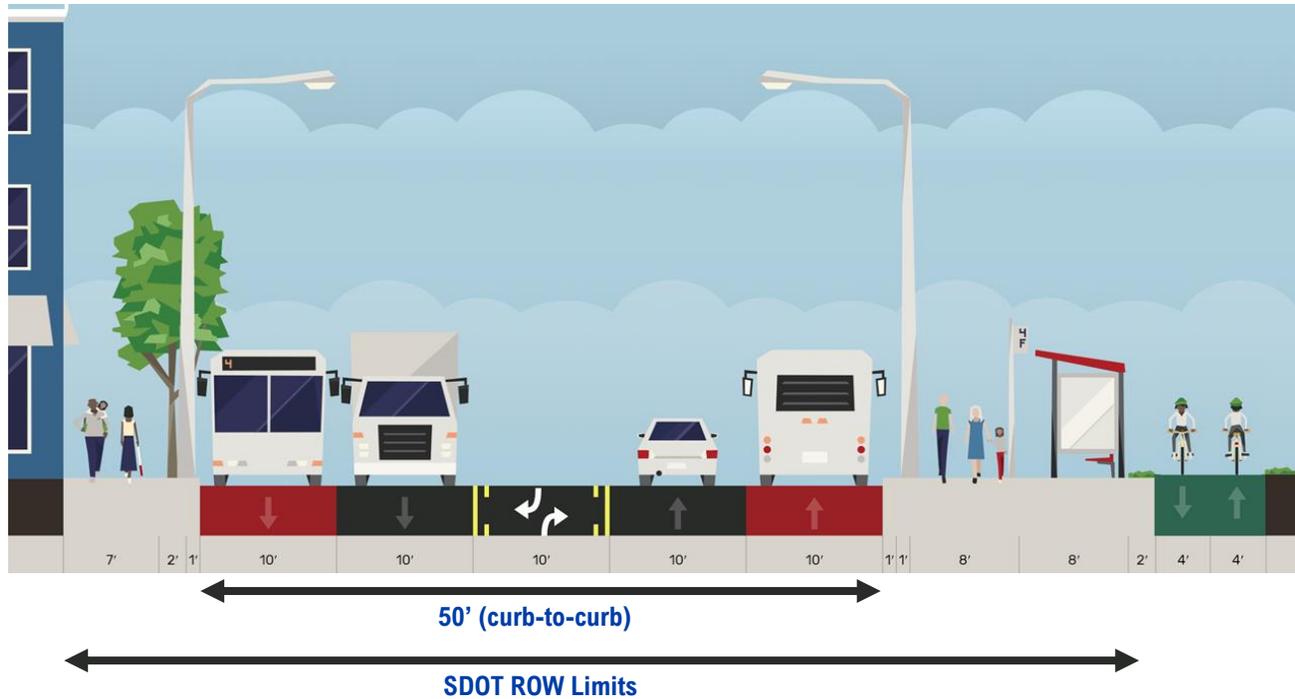


# Conceptual Design Options

1. Off-Street Two-Way Cycle Track
2. On-Street Two-Way Cycle Track
3. Protected Bicycle Lanes (PBLs)
4. BAT Lanes & Minor-Separation Bike Lanes
5. Business Access/Transit (BAT) Lanes & Bikes Allowed

# Option 1:

## Off-Street Two-Way Cycle Track



### Pros:

- Prioritizes transit and people throughput on the corridor
- Protected facility satisfies Bike Master Plan recommendation
- Maintains center turn lane, reducing congestion

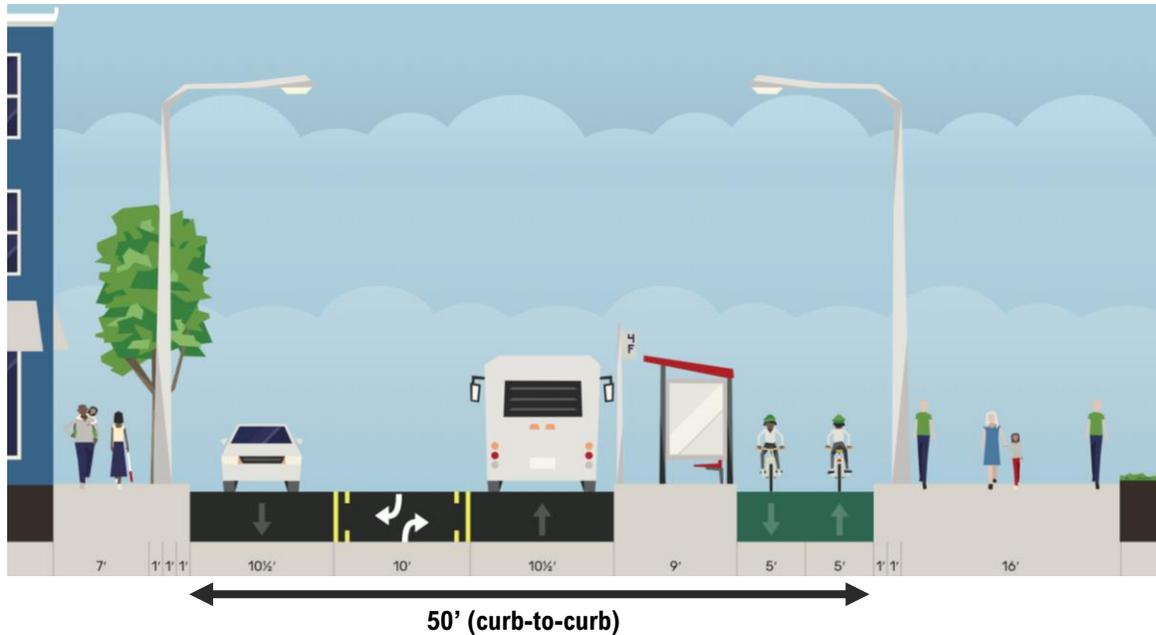
### Cons:

- Contingent on partnership with UW and/or requires right-of-way widening
- Conflicts to be resolved with existing structures (retaining wall, overpasses, stairs)
- Bus lanes are narrower than standard (11')

**Not compatible with Route 44 TPMC project**

# Option 2:

## On-Street Two-Way Cycle Track



### Pros:

- Protected facility satisfies Bike Master Plan recommendation
- Maintains center turn lane, reducing congestion
- Takes advantage of the edge treatment along campus
- Potential to provide parking in floating lane
- Reduces conflict between buses and bikes at stops
- Ability to provide wide passing lane at most bus stop locations to reduce blocking traffic

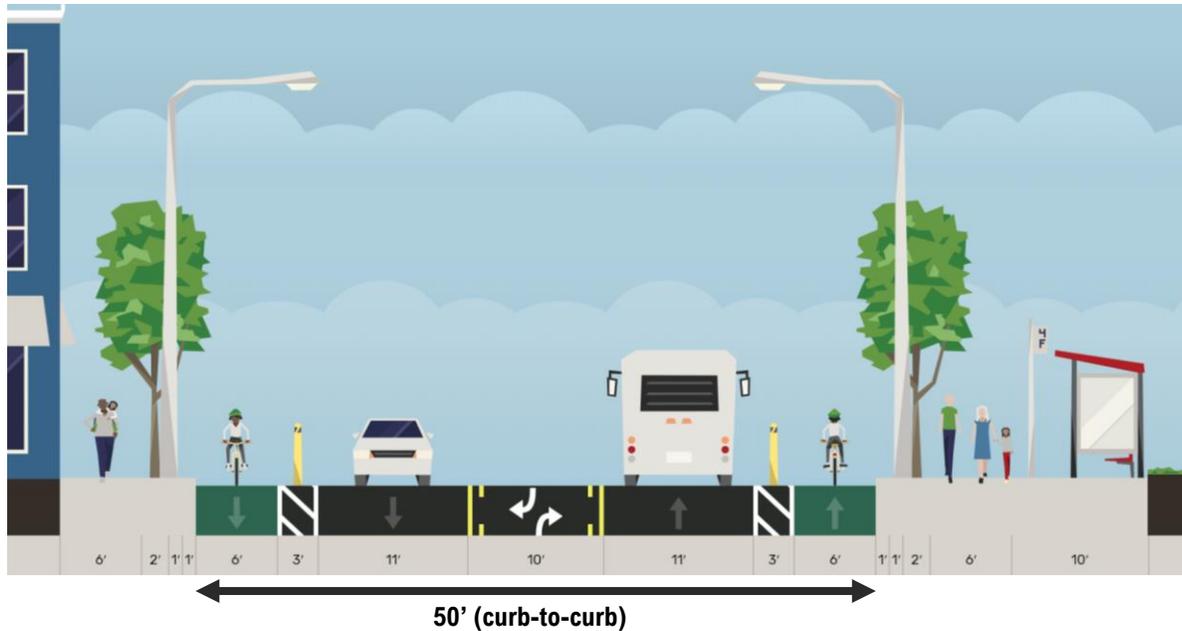
### Cons:

- Does not prioritize transit, negatively impacts transit travel times
- Signal upgrades for protected bicycle phases (41<sup>st</sup> St & Stevens Way)
- Where wide bypass lane is not feasible, buses stop in-lane and block through traffic
- Where wide bypass lane is feasible, buses would have to re-enter traffic
- Reduces general purpose capacity on the corridor
- Reduces redundancy in the north-south street network
- Conflict between pedestrians and cyclists bus stops
- Higher cost (bus boarding islands and signal infrastructure)
- Requires trolley wire relocation
- Travel lanes are narrower than standard bus lane (11')

**Not compatible with Route 44 TPMC project**

# Option 3:

## Protected Bike Lanes



### Pros:

- Maintains center turn lane, reducing congestion
- Protected facility satisfies Bike Master Plan recommendation
- Travel lane is standard bus lane width (11')
- Ability to provide wide passing lane at most bus stop locations to reduce blocking traffic

### Cons:

- Does not prioritize transit, negatively impacts transit travel times
- Where wide bypass lane is not feasible, buses stop in-lane and block through traffic
- Where wide bypass lane is feasible, buses would have to re-enter traffic
- Reduces general purpose capacity on the corridor
- Reduces redundancy in the north-south street network
- May require trolley wire relocation
- Conflicts between bikes, buses, and pedestrians at stop locations
- May require areas without protection for bike lanes (pinch points)

**Not compatible with Route 44 TPMC project**

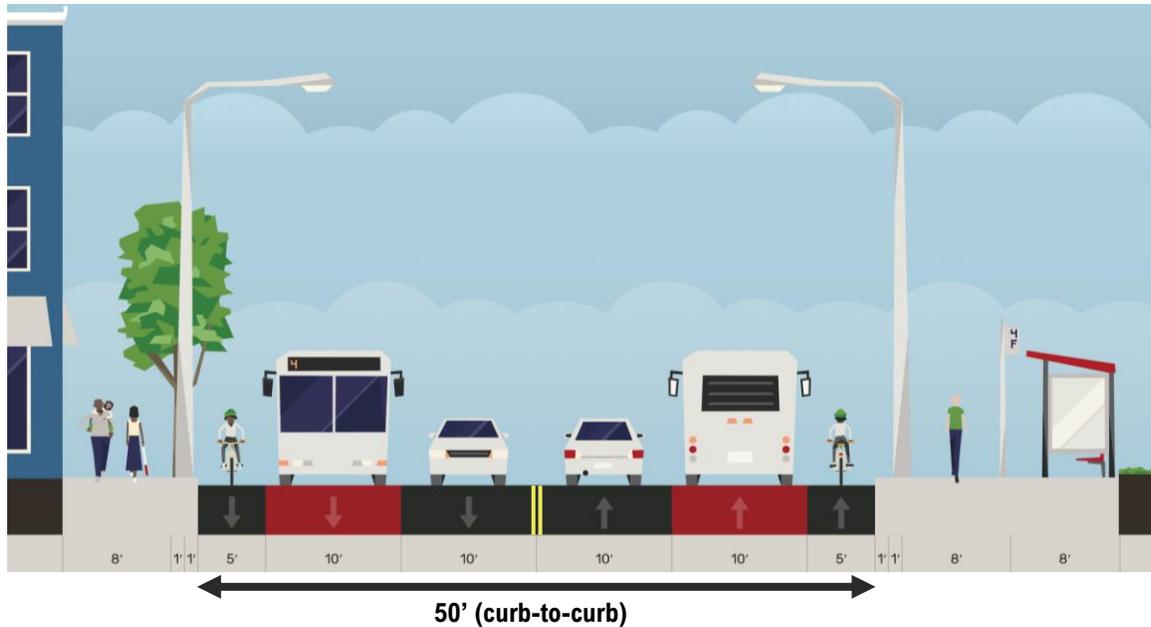
# Further Evaluation

- Where a pass-by lane can be provided, buses would experience up to 16 seconds additional delay related to exiting and entering traffic flow at each bus stop
- Accommodating protected bike lanes would significantly increase delay for all traffic at NE 45<sup>th</sup> Street and 15<sup>th</sup> Avenue NE intersection during the peak hour

Peak Hour	Average Intersection Delay at NE 15 <sup>th</sup> Ave & NE 45 <sup>th</sup> St		
	Existing	Protected Bike Lanes	% Change
AM	44 sec	82 sec	+ 97%
PM	66 sec	163 sec	+ 147%

# Option 4:

## BAT Lanes with Minor Separation Bike Lanes



### Pros:

- Prioritized transit and people throughput on the corridor
- Provides designated space for bicycles

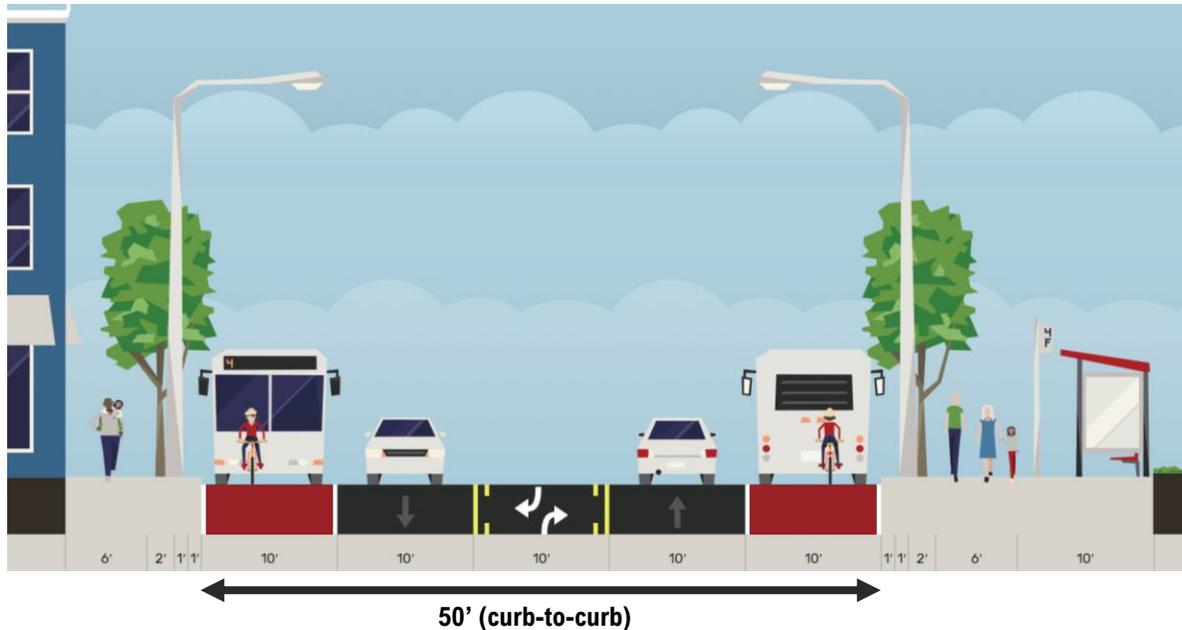
### Cons:

- Does not satisfy Bike Master Plan recommendation (not protected)
- Minor separation between bicycles and traffic, not suitable for all ages and abilities
- No center turn lane creates congestion on the corridor and/or requires left-turn bans (difficult at key access points to campus and major intersections/garages)
- Conflicts between pedestrians, bicycles, and buses at stops
- Pinch-point would be difficult to accommodate
- Bus lanes are narrower than standard (11')

**Not compatible with Route 44 TPMC project**

# Option 5:

## BAT Lanes & Bikes Allowed



### Pros:

- Prioritizes transit and people throughput on the corridor
- Maintains center turn lane, reducing congestion
- Accommodates cyclists in the bus lanes
- Does not preclude future bicycle facility improvements

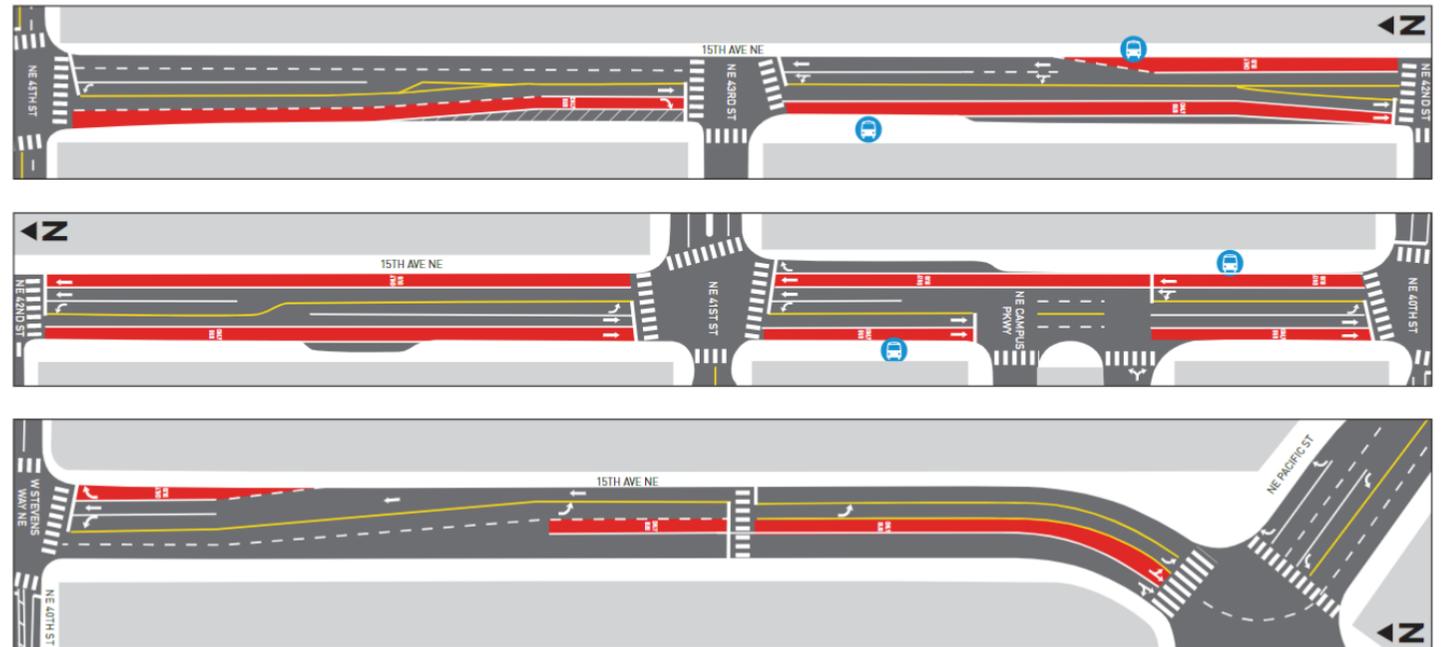
### Cons:

- Mix of bikes and buses on a frequent transit corridor could lead to weaving behavior for cyclists
- Does not satisfy the Bike Master Plan recommendation
- Not generally supported by the bike community (not protected)
- Bus lanes are narrower than standard (11')

Recommended for Route 44 TPMC project scope

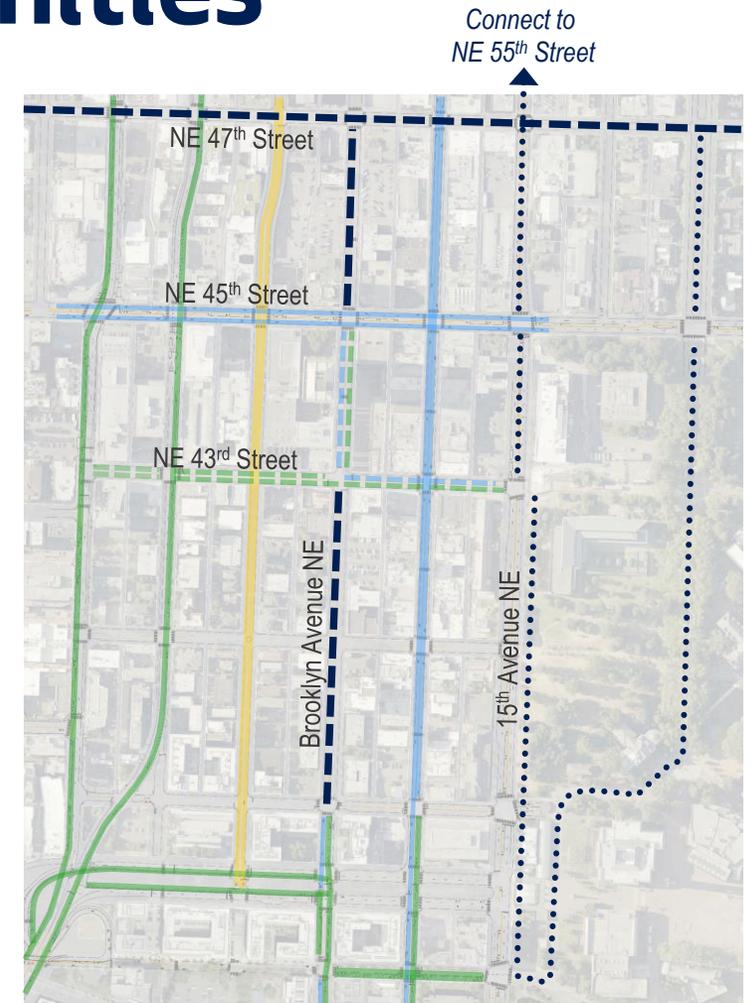
# 15<sup>th</sup> Avenue NE - Route 44 TPMC Recommendations

- Install BAT lanes on 15<sup>th</sup> Ave NE in both directions
- Install signage allowing bicycles to share the BAT lane
- Do not implement civil work that precludes the implementation of PBLs on 15th Ave NE in the future



# Future Bicycle Network Opportunities

- Prioritize implementation of NE 47<sup>th</sup> Street recommended Neighborhood Greenway
- Prioritizing implementation of bicycle facilities on Brooklyn Avenue NE, preferably protected (Green Streets Concept)
- Opportunity to connect to planned bike facilities on 15<sup>th</sup> Avenue NE north of NE 55<sup>th</sup> Street
- Partnership opportunities with UW to provide a bicycle facility outside of the public right-of-way



# Questions?

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[www.seattle.gov/transportation/Route44](http://www.seattle.gov/transportation/Route44)

