November 20, 2024

Fernside Boulevard Traffic Calming & Bikeways Project

Presentation to Transportation Commission

Parametrix | Parisi TRANSPORTATION CONSULTING

1.3 Mile Corridor Project

Project subsets:
- Design concept for full corridor
- Near-term upgrade with resurfacing west of High St

Project Phases

Transportation Commission Agenda

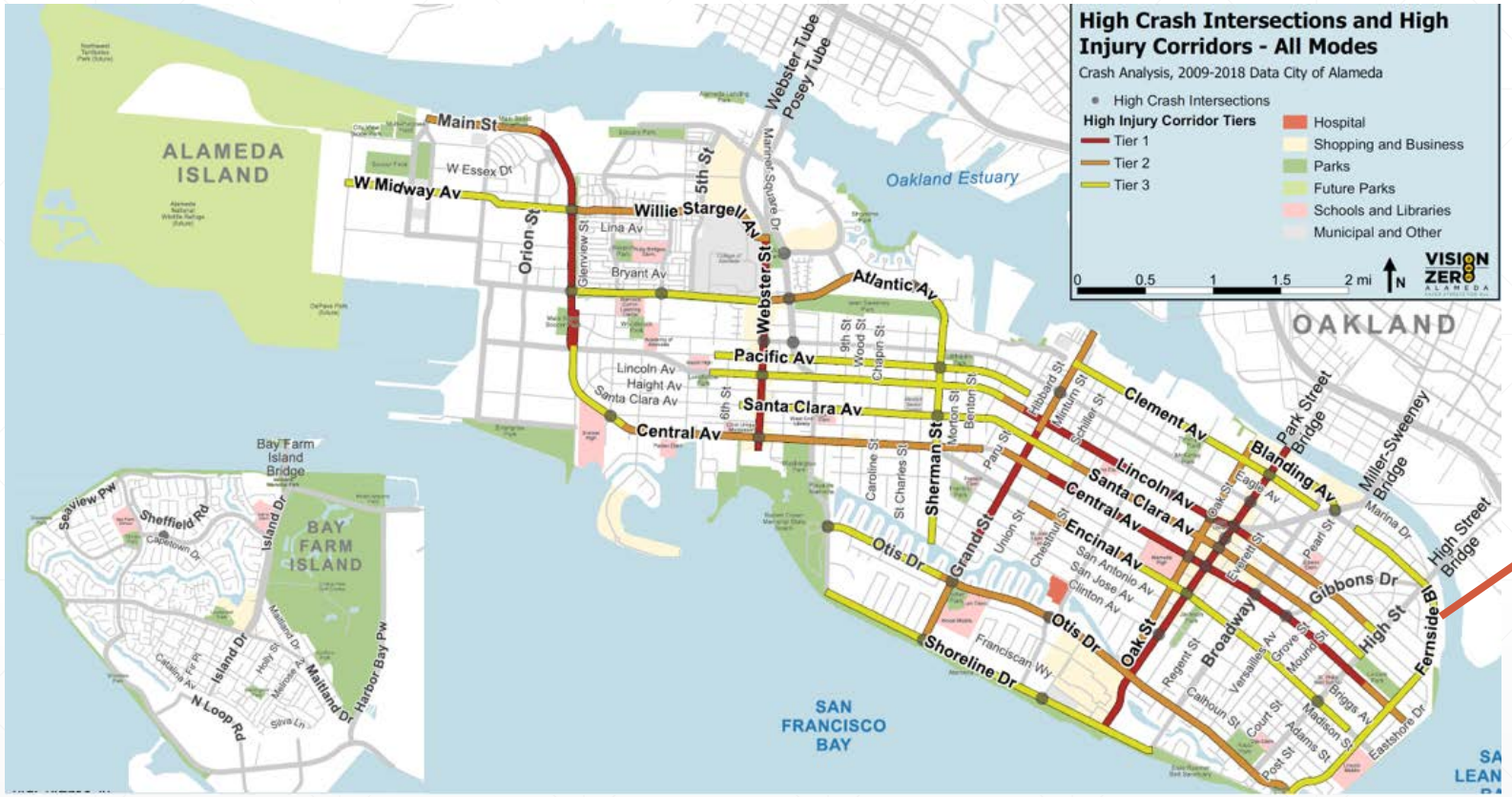
1. **Public outreach for existing conditions & initial input:** November 2023 -January 2024 — January 2024
2. **Public outreach for draft concept alternatives:** May-June 2024 — July 2024
3. **Public hearings for final design concept:** Winter 2024 Transportation Commission and City Council public hearings (including seeking City Council approval) — November 2024
4. **Resurfacing and restriping on Fernside Blvd west of High St:** 2026
5. **Construct full corridor project:** 2030 goal – timing depends on finding funding

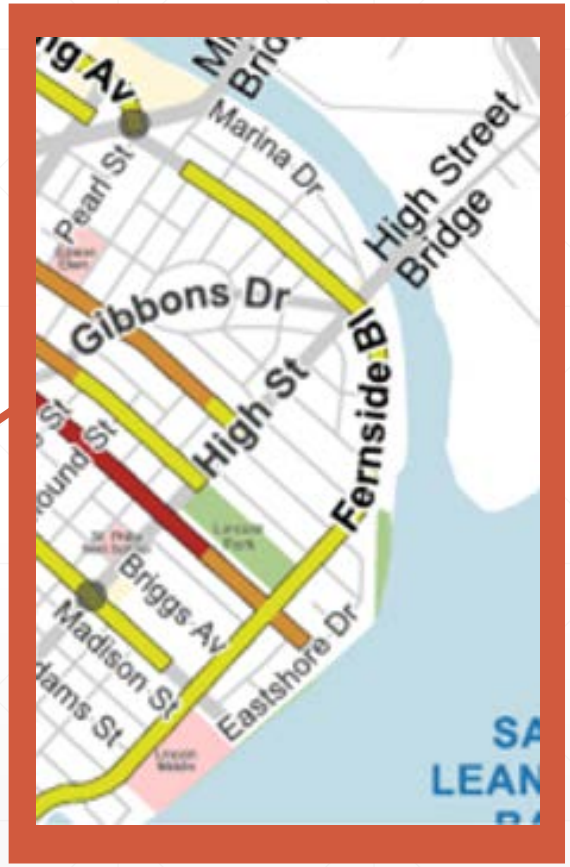
Why the Fernside Project?

Project goal: reduce traffic speeds and improve safety and mobility for all

- Coordinate with pavement resurfacing
- Implement plans and policies:
  - Vision Zero Action Plan
  - Active Transportation Plan
  - City Council Strategic Plan
  - San Francisco Bay Trail *(regional)*

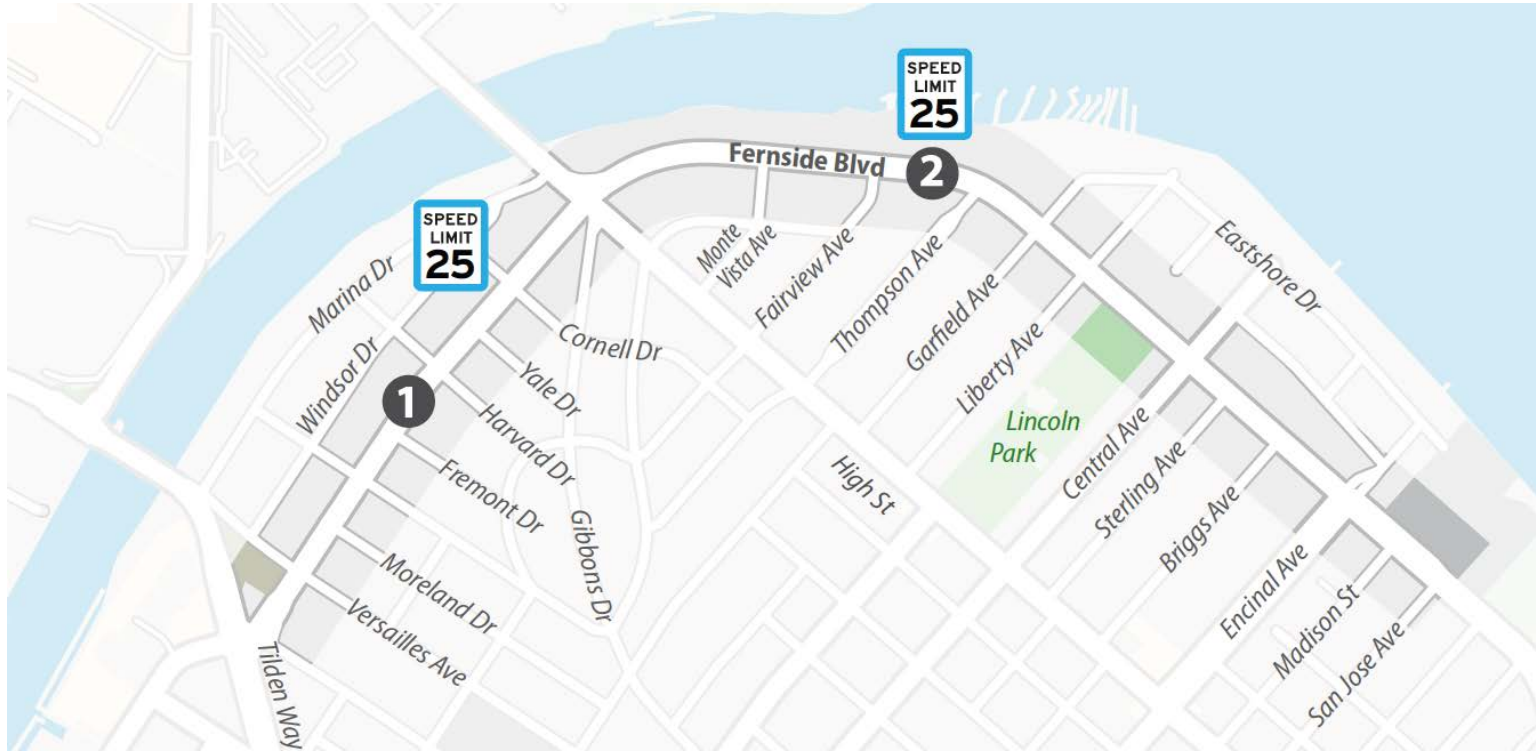
Fernside is a Tier 3 High Injury Corridor, All Modes





Existing Speed Limit is 25 mph, but Actual Vehicle Speeds are Higher

Average Speed: 30 mph
85th Percentile Speed: 35 mph
Highest speed recorded: 46 mph



Average Speed: 31 mph
85th Percentile Speed: 35 mph
Highest speed recorded: 44 mph

1

2

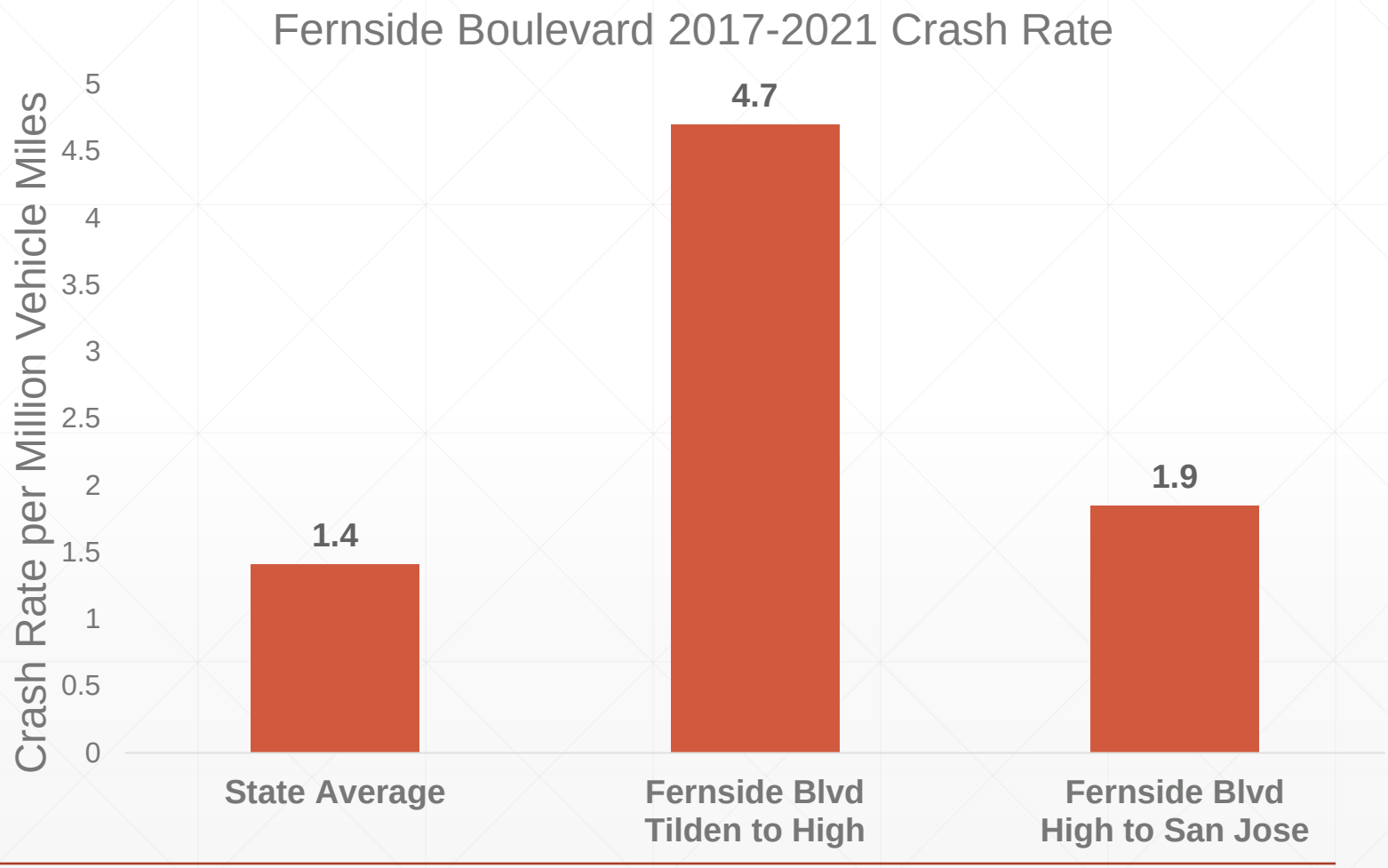
Speed survey conducted on 10/24/2023

High Crash Rate throughout the Corridor

64

crashes from 2017-2021

(including non-injury crashes)



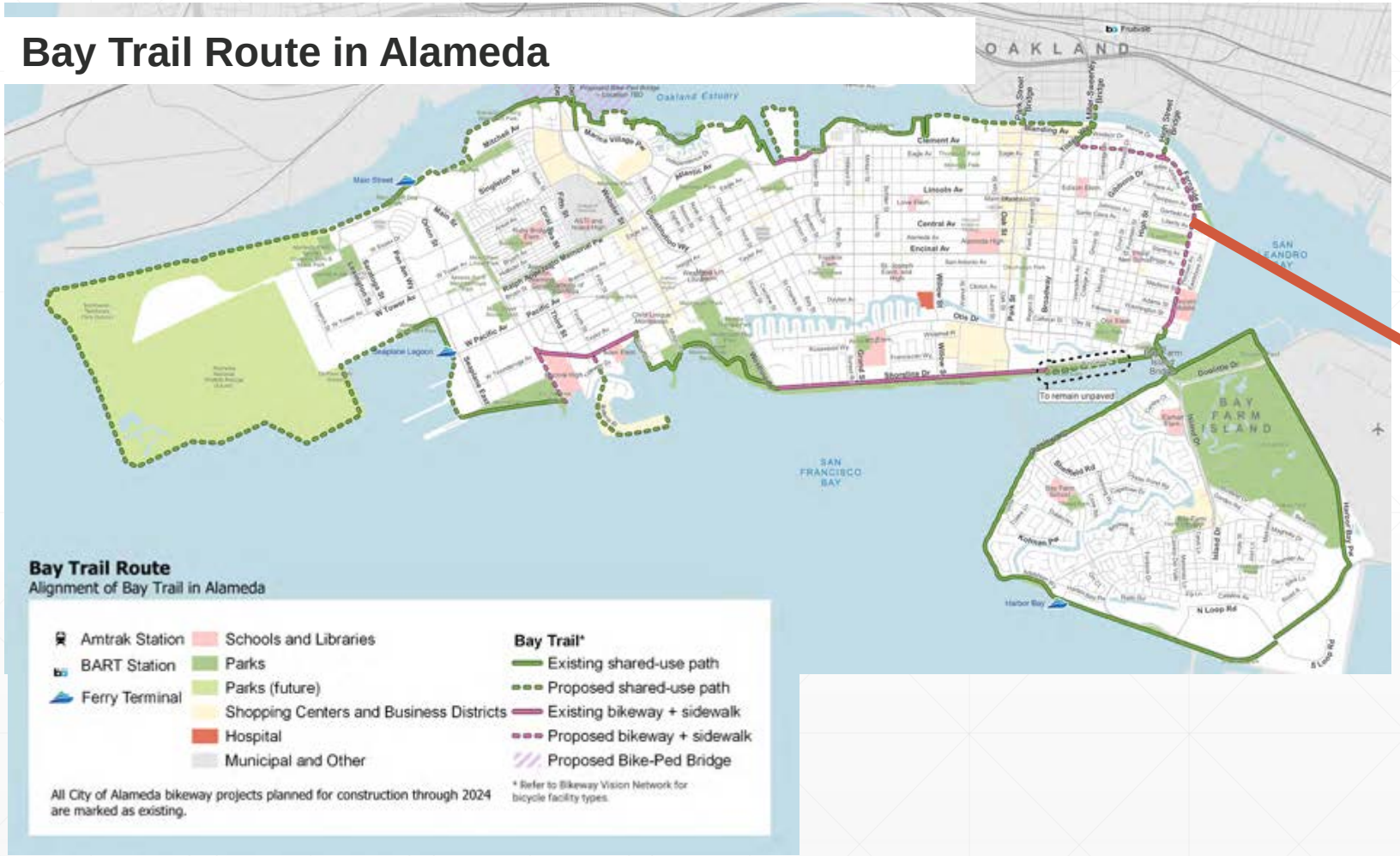
Active Transportation Plan: Low-Stress Bikeway + Ped Improvements

2030 Low-Stress Backbone Bikeway Network

- Adopted plan shows Fernside with a separated bike lane
- Key to the 2030 Low-Stress Backbone Network for all ages and abilities
- Part of regional San Francisco Bay Trail

San Francisco Bay Trail

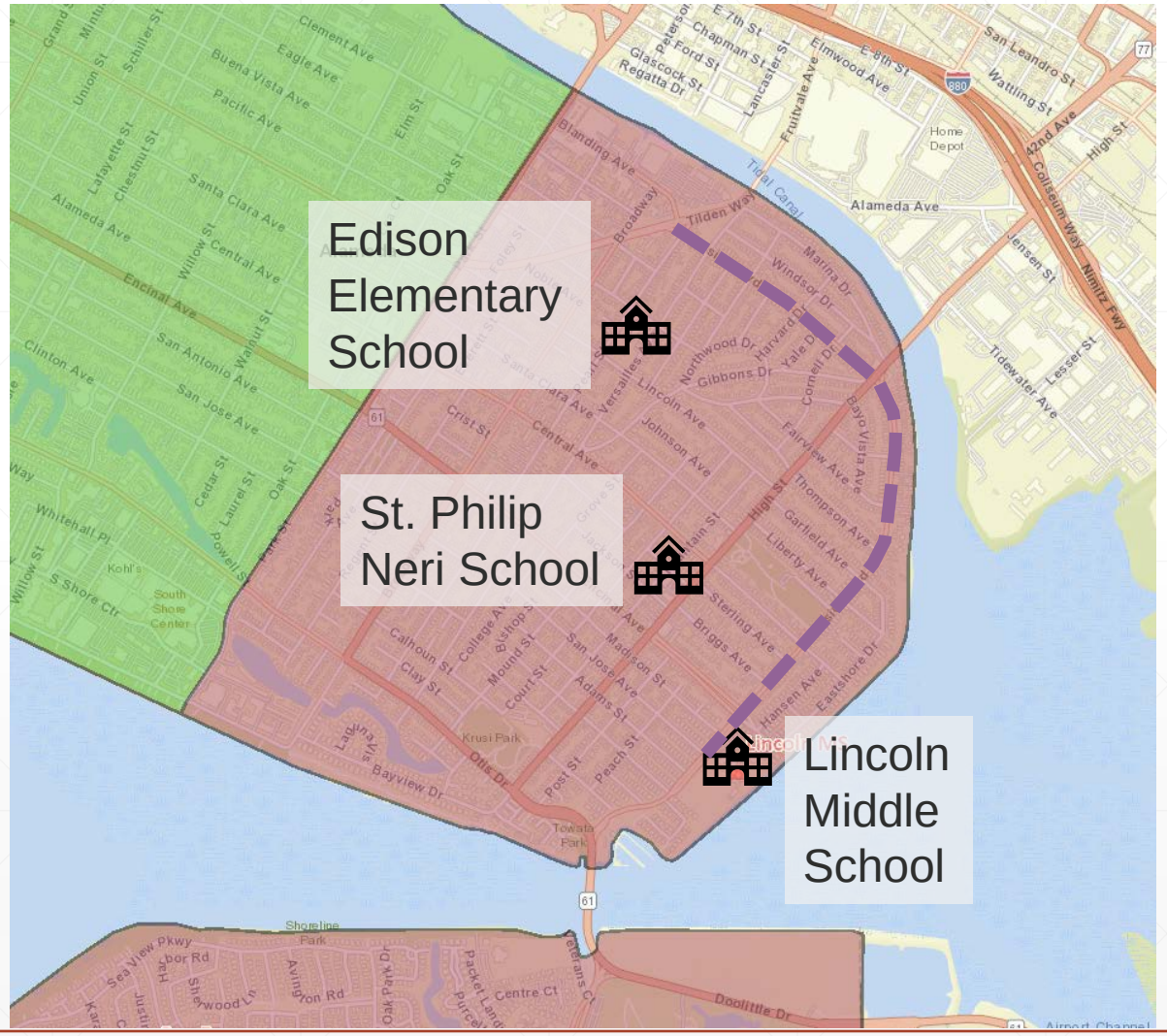
Bay Trail Route in Alameda



Fernside is a Key School Access Route

Approximately 30-40 pedestrians cross Fernside near Edison Elementary before and after school

Before and after school, bicycles comprise 10-15% of all traffic on Fernside near Lincoln Middle School



Map of AUSD middle school enrollment areas

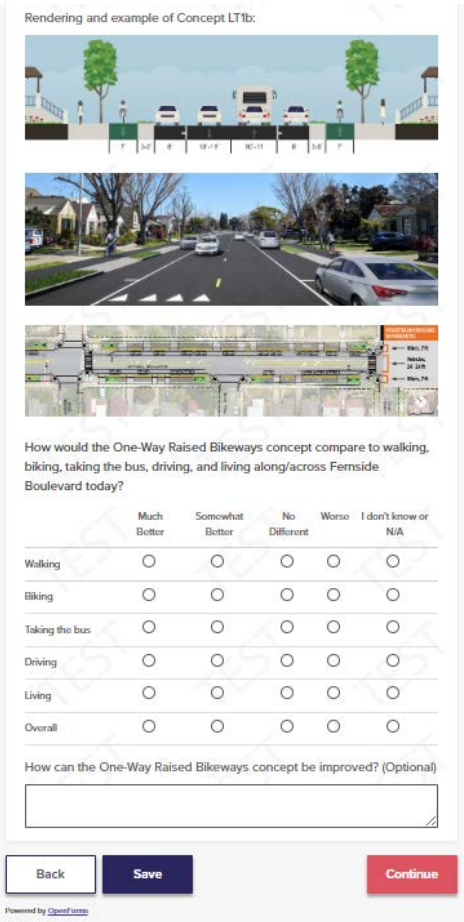
Fernside Project Public Outreach Numbers

Two phases of public outreach with a wide reach:

- **200** total attendance at 5 Fernside Project public workshops
- **3** public hearings at City commissions
- **1,115** total responses to 3 online surveys
- **1,950** total flyers sent in 3 postal mail notices
- **19** email bulletin mailings
- **4** news articles
- *Information boosted to homeowners' associations, schools, and other community groups*

Spring 2024 Community Engagement Participation

- **304** online survey participants
- **40** in-person community workshop attendees
- **13** virtual community workshop attendees

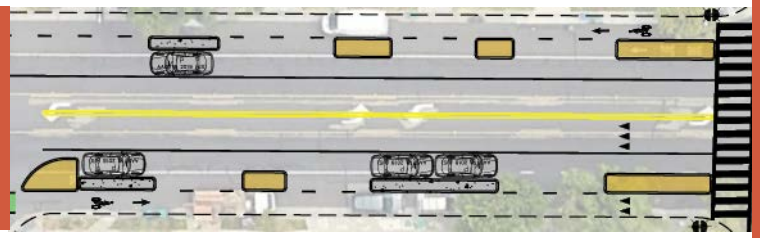


Long-Term Concept Recommendation

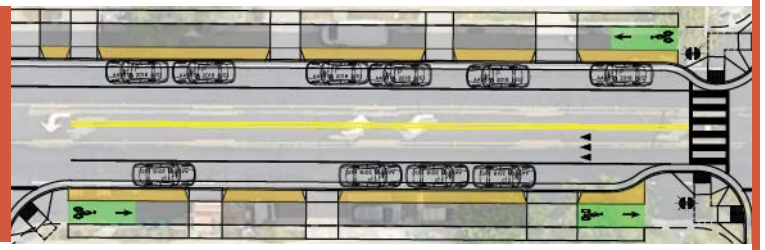
Concept Alternatives

Long-Term Concepts

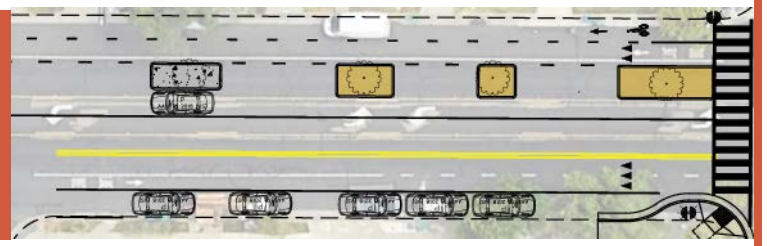
LT1a: One-Way Curb-Protected Bikeways



LT1b: One-Way Raised Bikeways



LT2a: Two-Way Curb-Protected Bikeway



LT2b: Two-Way Raised Bikeway

Long-Term Concept Input

How important is it to include these design aspects on Fernside Boulevard in the long term?									
	Narrower travel lanes to reduce speeds	Shorter pedestrian crossing distances	Additional marked crosswalks	Flashing beacons at crossings without stop signs	One-way bikeways so bicyclists travel the same direction as drivers	Two-way bikeway that provides a wider combined space for bicyclists	Bikeways that are raised to sidewalk level	Abundant on-street parking	Ease of entering / exiting driveways from the street
Extremely Important	45%	42%	48%	52%	33%	18%	17%	23%	35%
Important	25%	30%	36%	32%	23%	22%	19%	22%	29%
Neutral	9%	16%	12%	11%	24%	21%	23%	16%	18%
Less Important	7%	5%	2%	3%	7%	11%	12%	18%	11%
Not Important	14%	8%	2%	3%	13%	28%	29%	21%	7%

- **Pedestrian improvements** and **reducing vehicle speeds** were identified as long-term priorities
- Ease of driveway access was identified as **more important** than abundant on-street parking
- **One-way bikeways** identified as slightly more important than two-way

Long-Term Alternatives Comparison

Alternative:	Existing	LT1a	LT1b	LT2a	LT2b
		One-way		Two-way	
		Curb-protected	Raised	Curb-protected	Raised
Pedestrian Safety	Poor	Fair	Good	Good	Excellent
Bicyclist Safety & Level of Stress	Poor	Fair	Good	Good	Excellent
Traffic Calming	Poor	Good	Good	Good	Good
Transit Operations and ADA-Compliant Stops	Fair	Good	Good	Good	Good
Vehicle Operation	Good	Fair	Fair	Good	Good
Neighborhood Amenity	Poor	Fair	Fair	Excellent	Excellent
Potential for ADA Parking	Fair	Fair	Excellent	Fair	Good
Other Services (Garbage, Delivery, Maintenance)	Good	Fair	Good	Fair	Good
Estimated On-Street Parking Removal*	-	40-60%	25-45%	20-40%	15-30%
Estimated Construction Cost and Constructability	-	$16 MM	$23 MM	$15 MM	$21 MM

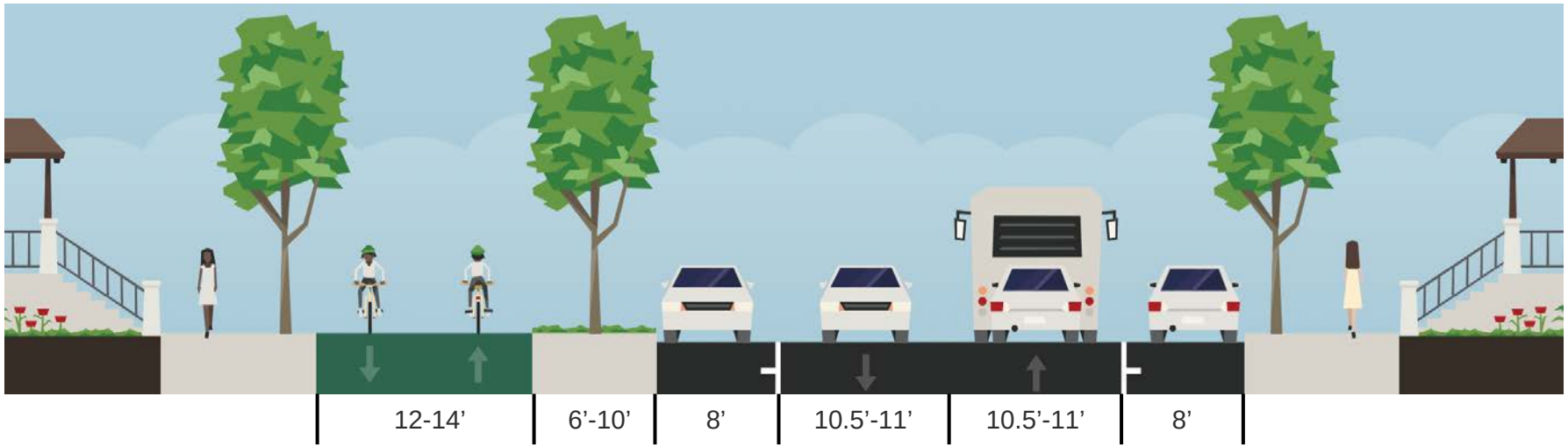
**Current peak parking occupancy 41-48%*

Recommended Long-Term Concept: Two-Way Protected Bikeway with Pedestrian Median Islands

Existing

Recommended (plus pedestrian medians)

Two-Way Protected Bikeway with Pedestrian Median Islands

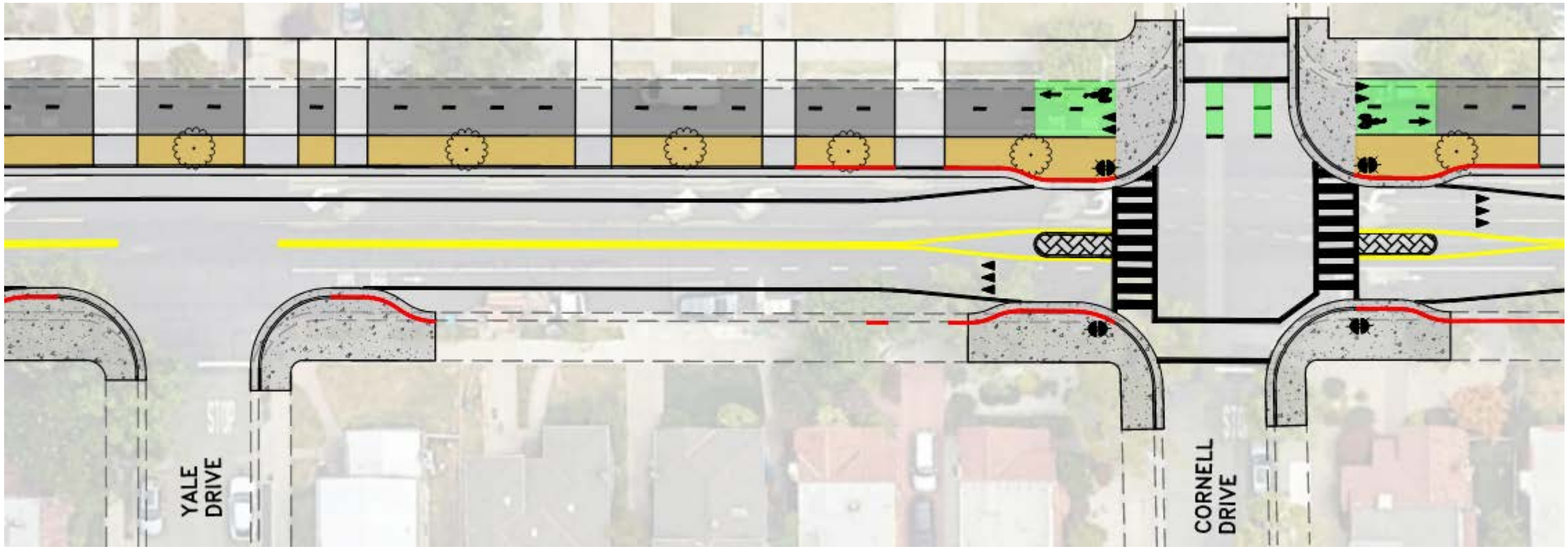


Improvements:

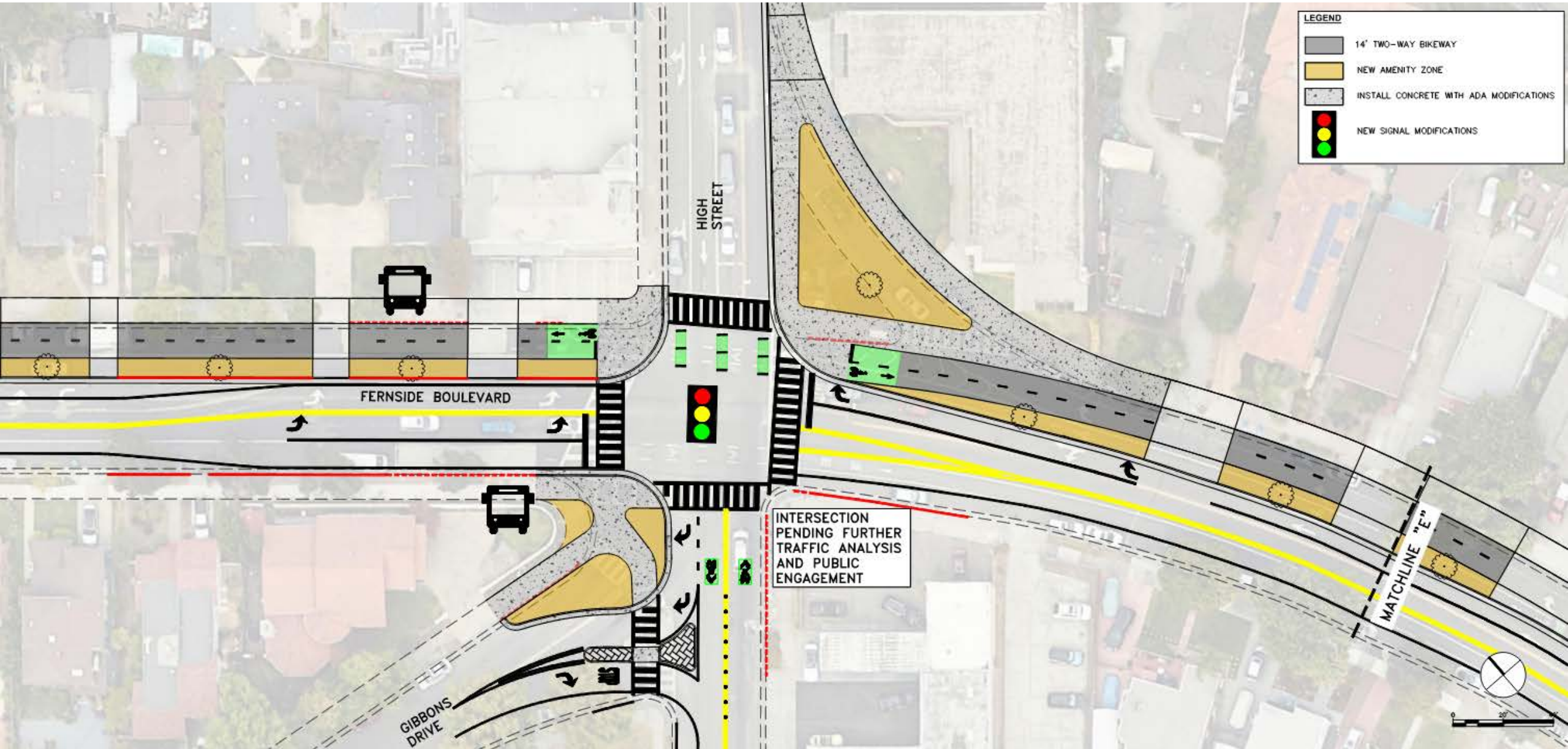
- Removal of center turn lane west of High Street, narrower vehicle lanes to reduce speeds
- Reduced crosswalk distance across the path of motor vehicles by over 50%
- Additional curb extensions, marked crosswalks, and flashing beacons
- Median islands at approach to 4-way intersections
- 2-way bikeway at sidewalk or roadway level, separated from travel lanes on north side of street
- New wider buffer strip can accommodate substantial landscaping, e.g. for planting trees

Two-Way Protected Bikeway with Pedestrian Median Islands

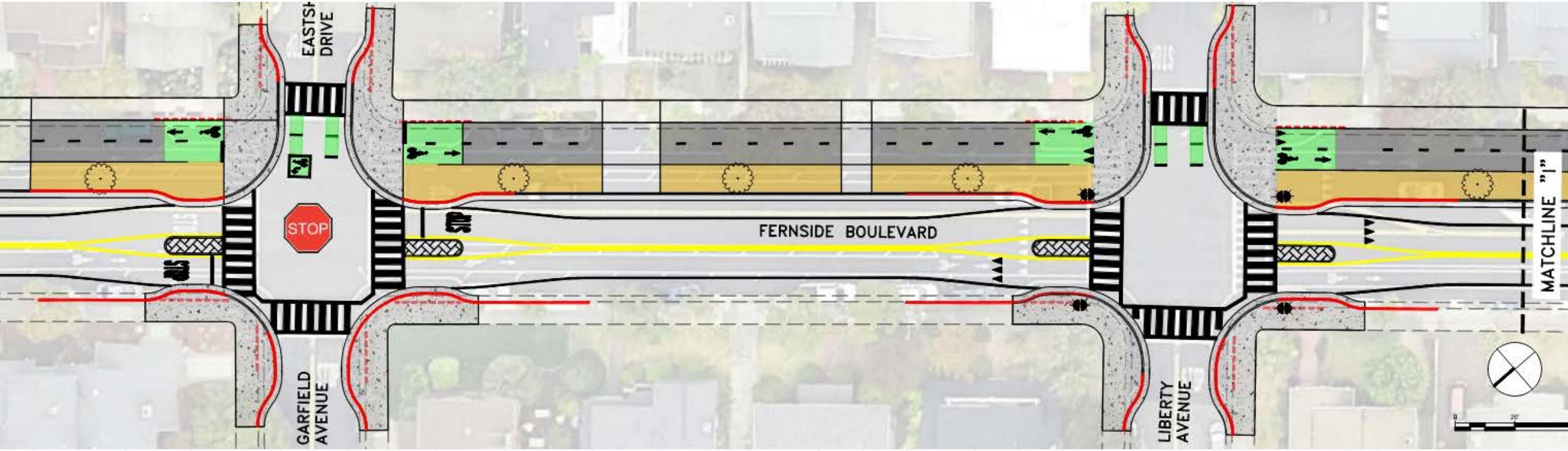
Estimated construction cost: $20.4 Million



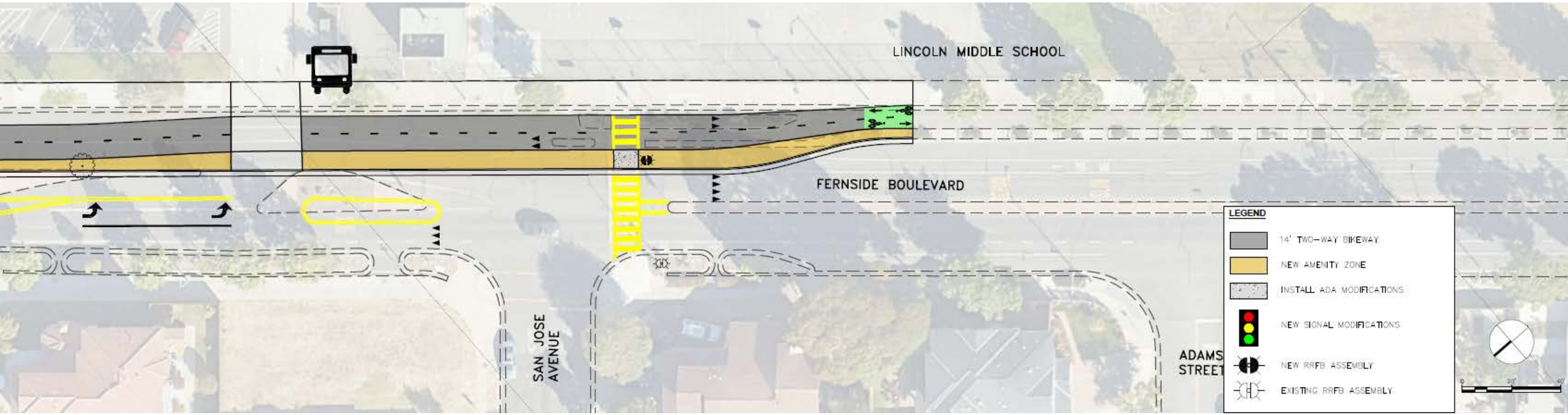
Two-Way Protected Bikeway with Pedestrian Median Islands



Two-Way Protected Bikeway with Pedestrian Median Islands

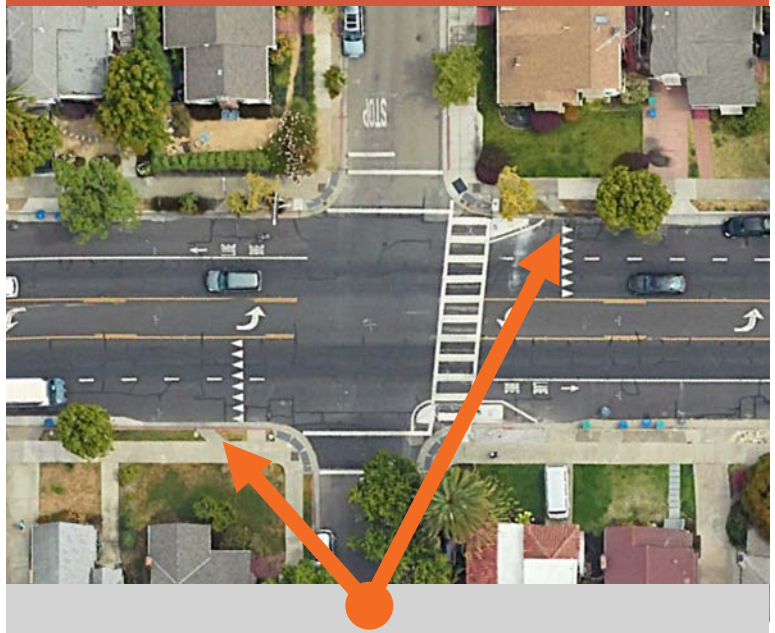


Two-Way Protected Bikeway with Pedestrian Median Islands



Long-Term Concepts: Transit Accessibility

Existing Conditions

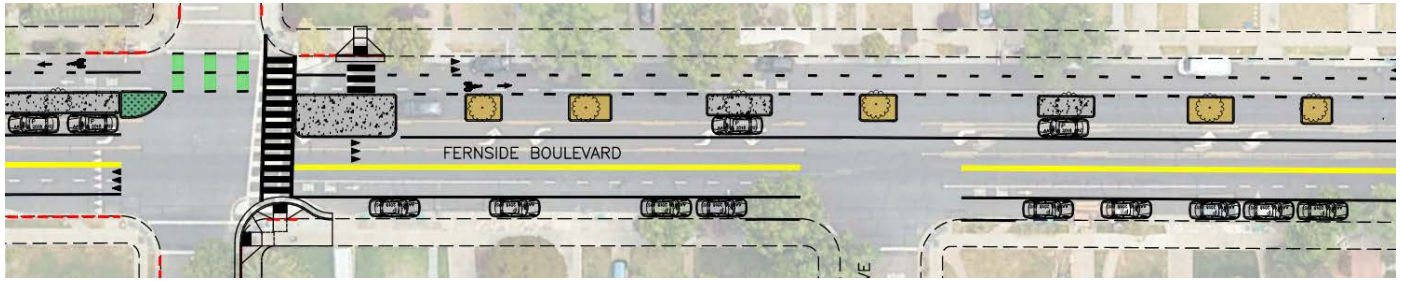


Bus stops against existing curb; <u>non-accessible</u> boarding location

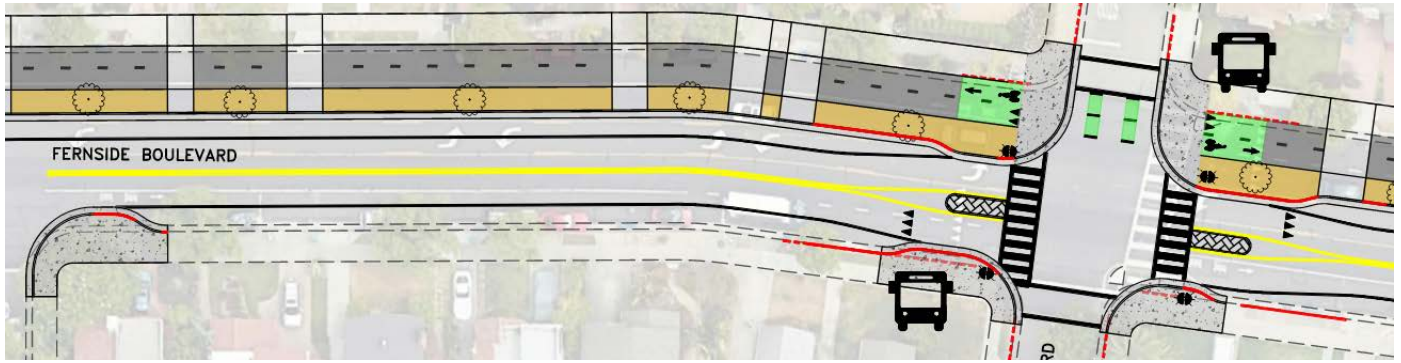
Buses must merge into travel lane

- **Fully accessible bus boarding islands**
- **In-lane bus stops**

Curb-Protected Bikeway: accessible ramp across bikeway to sidewalk



Raised Bikeway: level crossing across bikeway to sidewalk (easier access)



Two-Way Protected Bikeway with Pedestrian Median Islands

Considerations for detailed design:

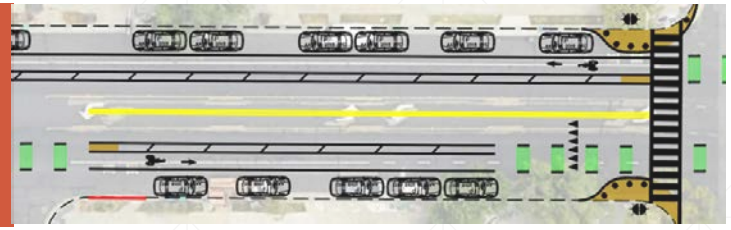
- Lane width: 10.5 ft vs. 11 ft
- Fernside/High/Gibbons: traffic analysis, public engagement
- Locations of curb-protected vs. raised bikeway
- Median island details at 4-way intersections
- Buffer strip design: landscaping, accessible loading, integration of trash staging/pickup, delivery vehicles
- Drainage
- Lighting

Near-Term Concept Recommendation

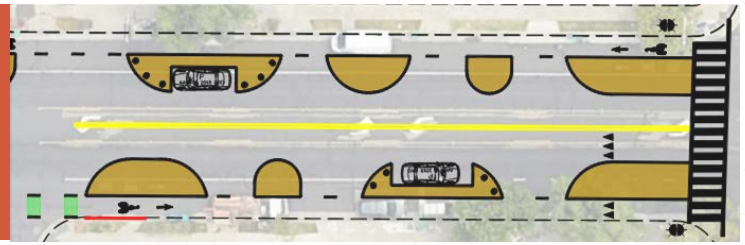
Near-Term Concept Alternatives (Tilden to High)

Near-Term Concepts

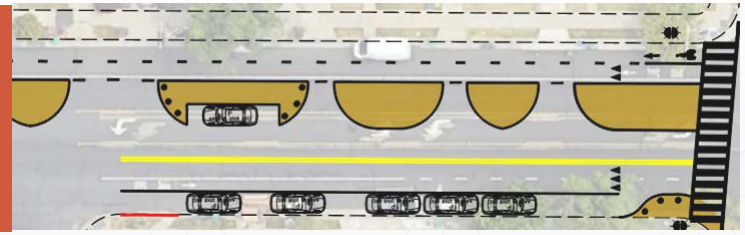
NT1: Buffered Bike Lanes



NT2: One-Way Separated Bikeways



NT3: Two-Way Separated Bikeway



Near-Term Concept Input

How would each near-term concept compare to walking, biking, taking the bus, driving, and living along/across Fernside Boulevard today?

NT1: Buffered Bike Lanes

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	31%	62%	9%	14%	38%	50%
No Different	55%	21%	51%	42%	34%	24%
Worse	10%	14%	12%	21%	15%	17%

NT2: One-Way Separated Bikeways

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	46%	67%	15%	20%	36%	44%
No Different	35%	8%	38%	21%	11%	7%
Worse	18%	20%	21%	44%	40%	38%

NT3: Two-Way Separated Bikeway

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	40%	60%	15%	19%	36%	41%
No Different	31%	7%	35%	21%	8%	7%
Worse	22%	26%	23%	44%	43%	41%

- Highest priorities based on input: Addressing **illegal vehicle passing maneuvers, reducing speeding, and pedestrian improvements**
- Separated Bikeways rated as **better for pedestrians and bicyclists** compared to Buffered Bike Lanes**,** *but*
- Separated Bikeways scored lower **for drivers, residents, and overall** compared to Buffered Bike Lanes.

Near-Term Alternatives Comparison

Alternative:	Existing	NT1	NT2	NT3
		Buffered Bike Lanes	One-Way Separated Bike Lanes	Two-Way Separated Bikeway
Pedestrian Safety	Poor	Fair	Good	Good
Bicyclist Safety & Level of Stress	Poor	Fair	Good	Good
Traffic Calming	Poor	Fair	Good	Good
Transit Operations and ADA-Compliant Stops	Fair	Fair	Good	Good
Vehicle Operation	Good	Good	Fair	Fair
Neighborhood Amenity	Poor	Fair	Fair	Fair
Potential for ADA Parking	Fair	Fair	Fair	Fair
Other Services (Garbage, Delivery, Maintenance, etc.)	Good	Good	Fair	Fair
Estimated On-Street Parking Removal*	-	20-30%	65-85%	45-65%
Estimated Construction Cost and Constructability	-	$1,000,000	$2,100,000	$2,000,000

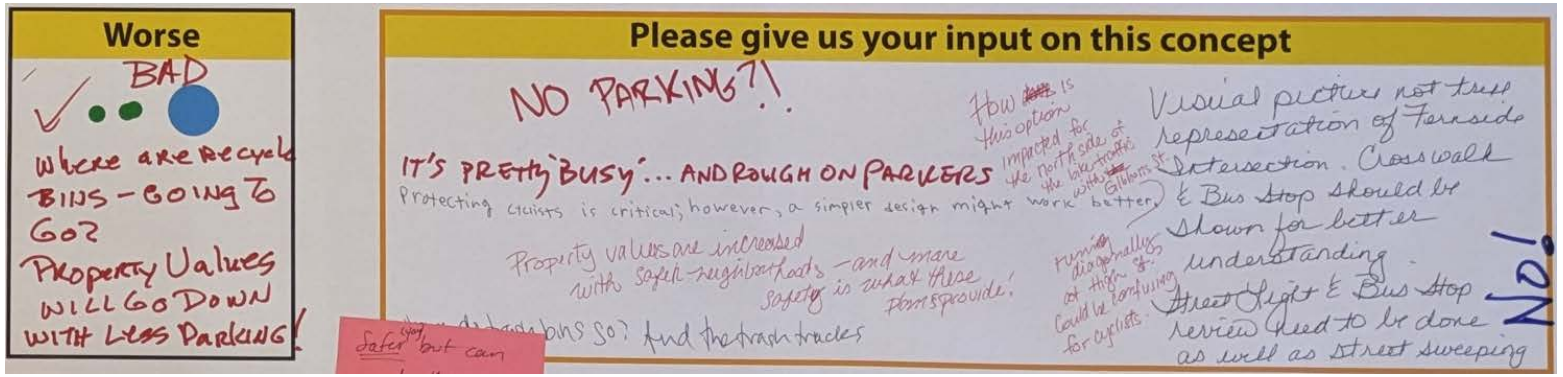
**Current peak parking occupancy 41-48%*

Near-Term Separated Bikeway Input

- Written comments widely mixed and **highly emphatic.**
- Survey responses for One-Way Separated Bikeways: **81 negative comments and 15 positive written comments.**
- Written **comment opposition to separated bikeways**: parking impacts (~20% of comments), visual clutter (~6%), driveway access (~4%), and others.
- Transportation Commission input urged prioritizing traffic calming and bike/ped safety.

"This is asking for people to complain"

"Don't have cars park "floating" in the middle of the street"



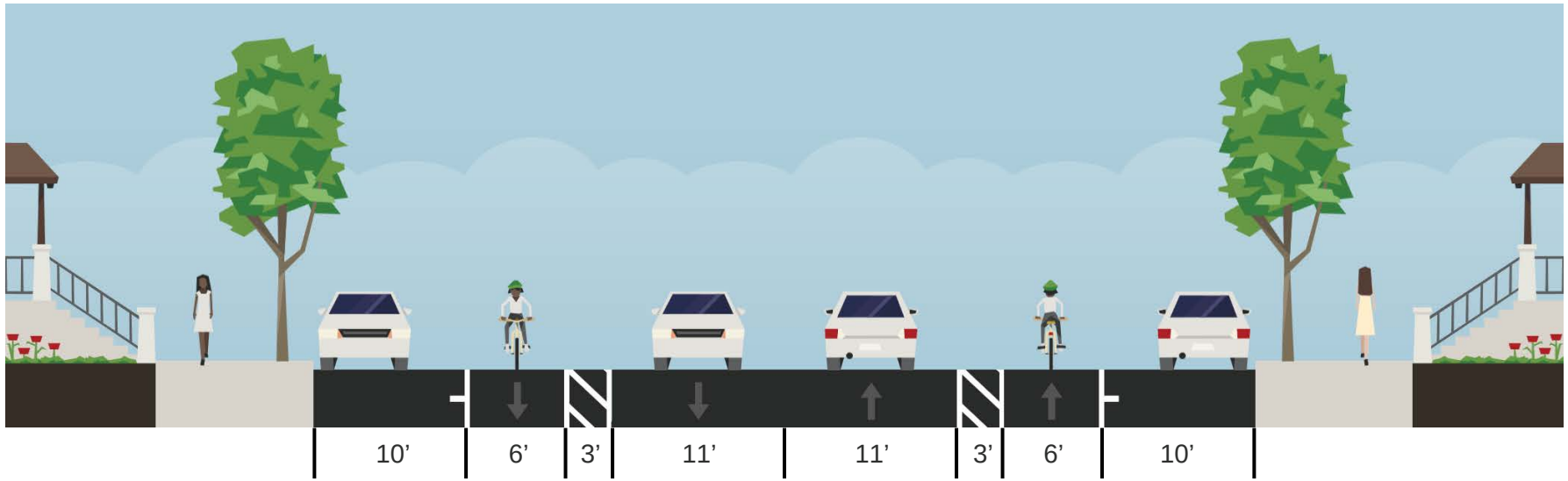
"This is insanity for drivers and people who live on Fernside"

"A foolish and needlessly complicated plan"

"This has to be someone's idea of a practical joke"

Recommended Near-Term Concept: Buffered Bike Lanes with Quick-Build Median Islands

Buffered Bike Lanes with Quick-Build Median Islands



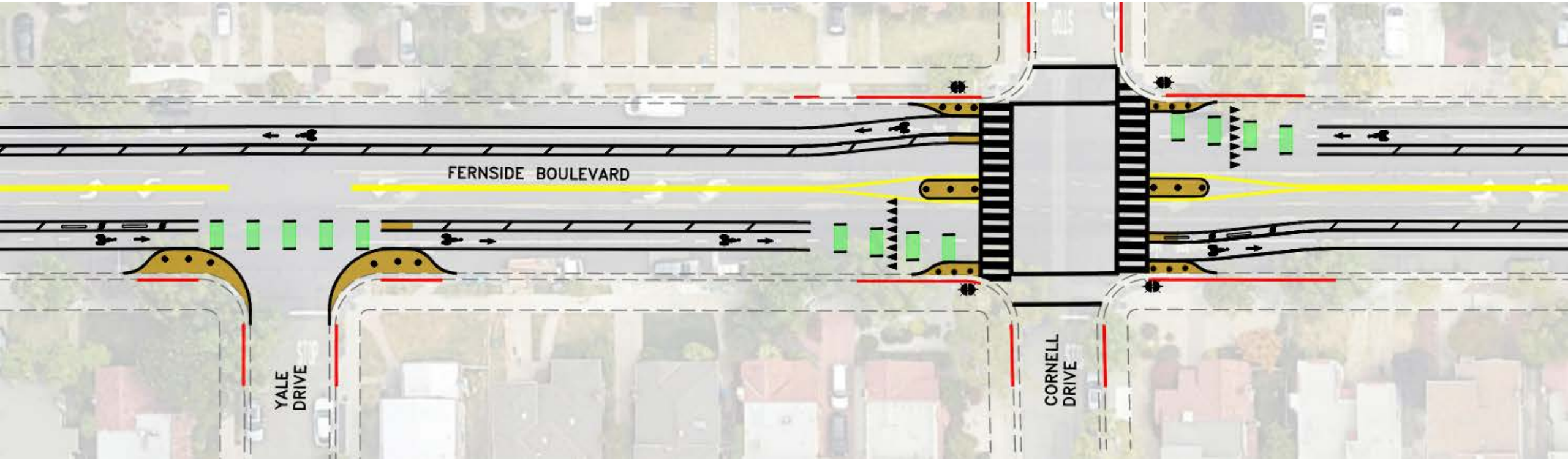
Improvements:

- Center turn lane removed, narrower vehicle travel lanes to reduce speeds
- Additional marked crosswalks *(and, if budget allows, additional flashing beacons*)
- Striped buffer between the bike lane and vehicle travel lane
- Median islands at approaches to 4-way intersections
- Additional delineation / buffer hardening where feasible

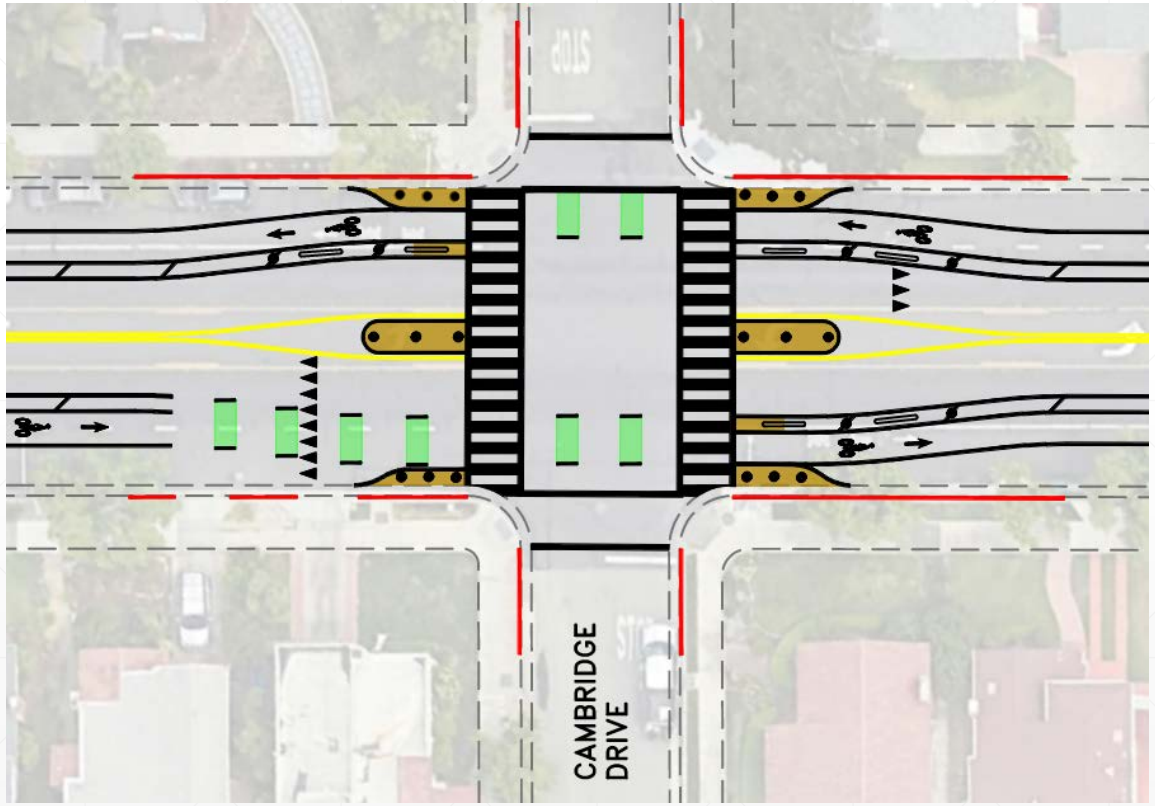
Buffered Bike Lanes with Quick-Build Median Islands

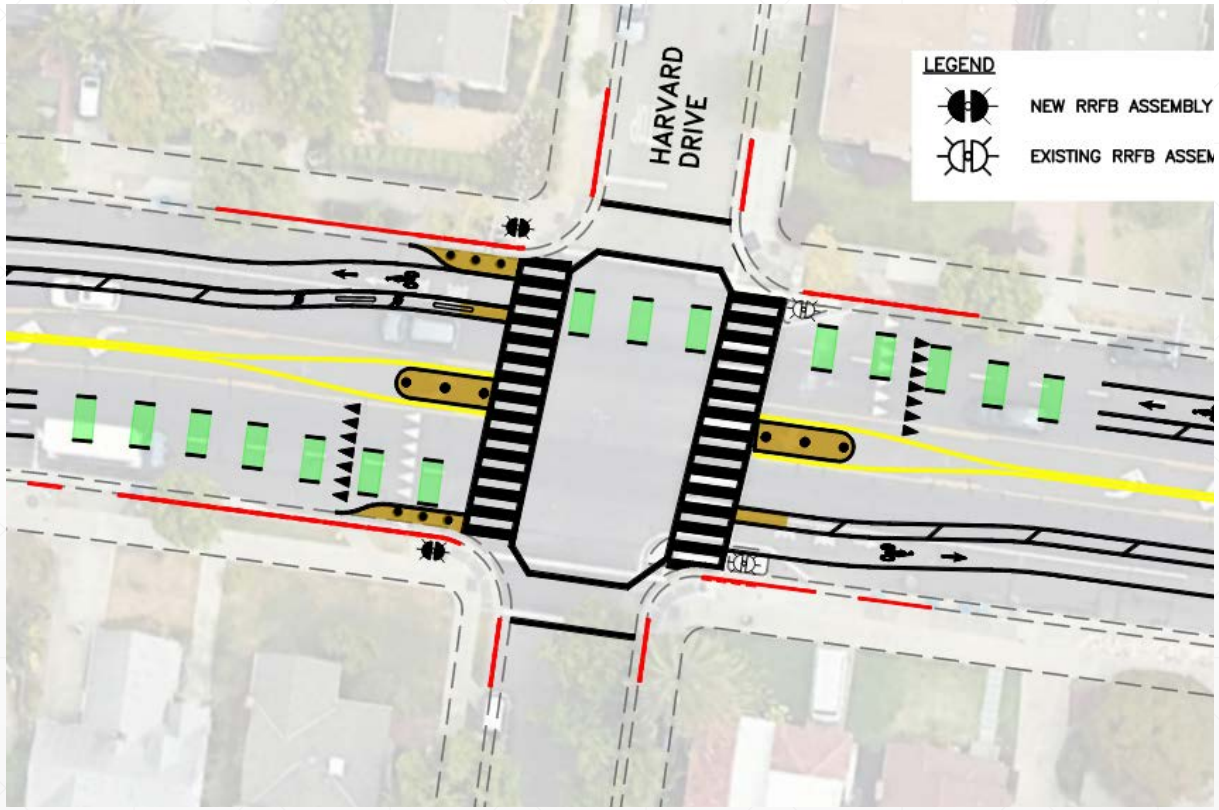
Buffered Bike Lanes with Median Islands

Estimated construction cost, including pavement: $1.45 million



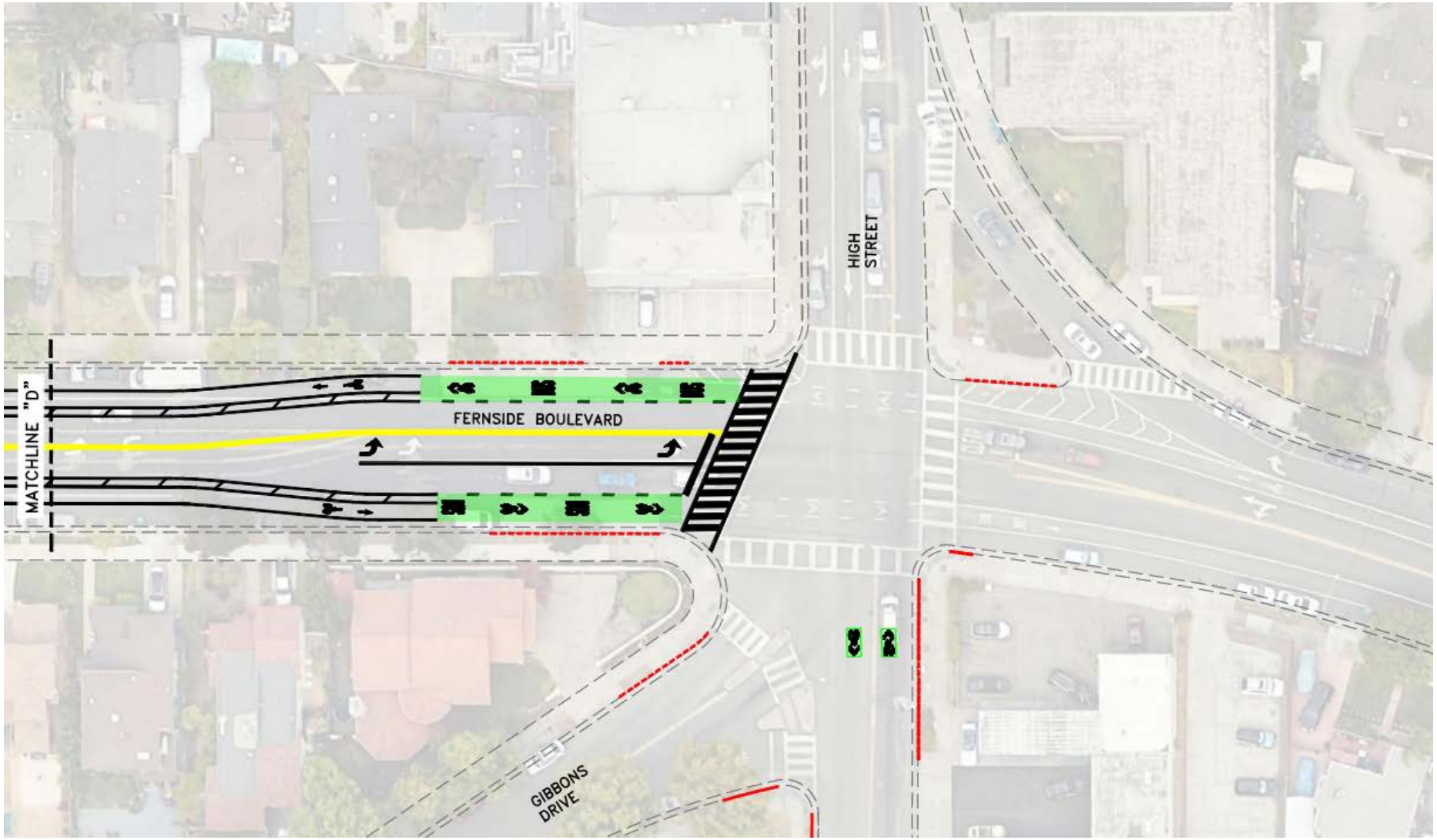
Quick-Build Pedestrian Median Islands & Vertical Hardening at Some Intersections





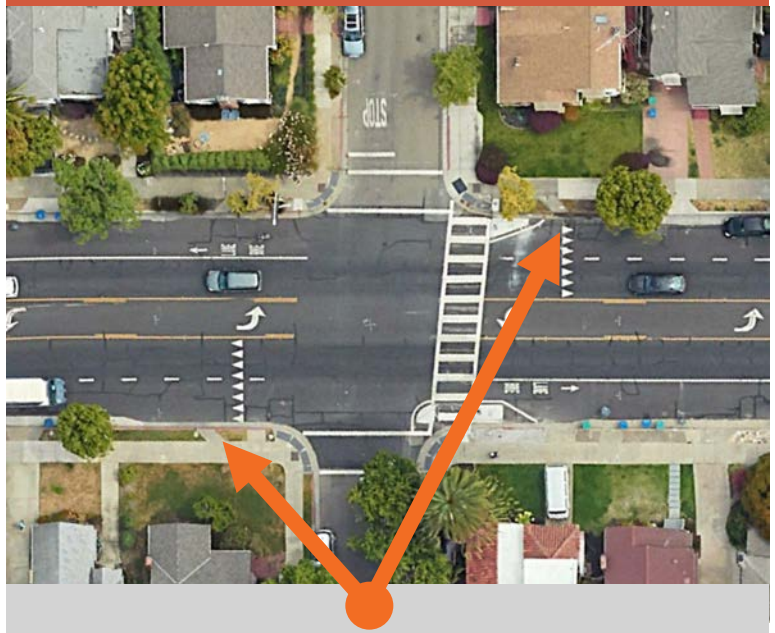
Buffered Bike Lanes with Quick-Build Median Islands

Buffered Bike Lanes with Quick-Build Median Islands



Near-Term Concepts: Transit Accessibility

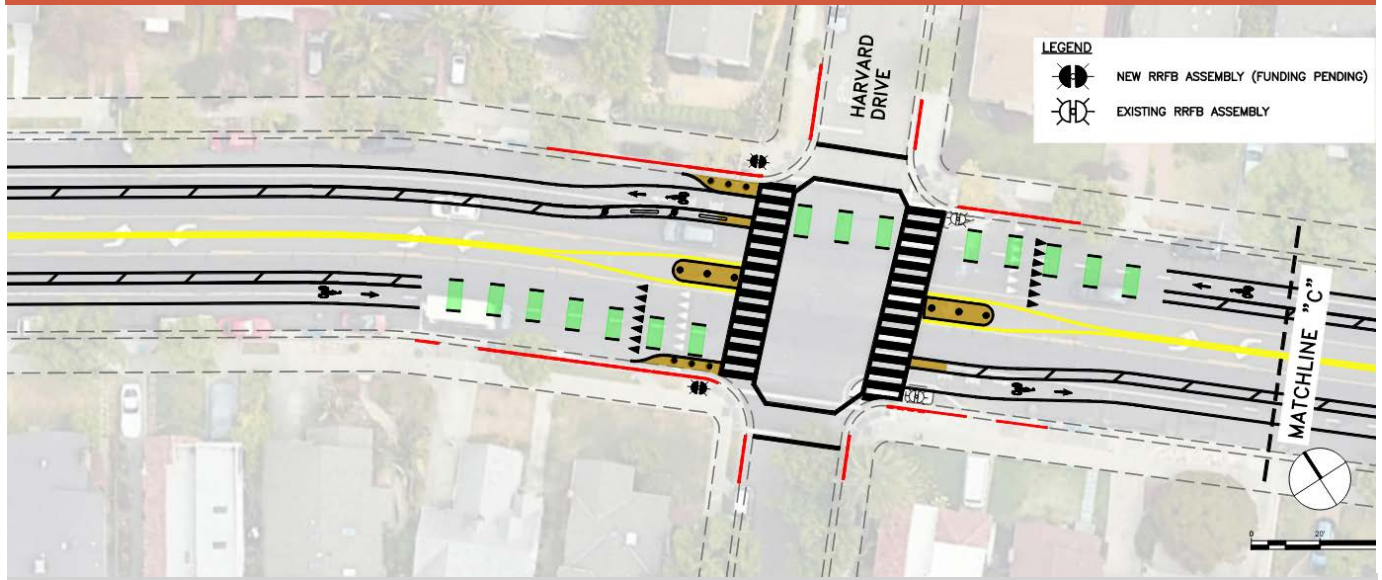
Existing Conditions



Bus stops against existing curb; non-accessible boarding location

Buses must merge into travel lane

Buffered Bike Lanes & Pedestrian Median Islands



Bus stop accessibility and transit operations not changed

Buffered Bike Lanes with Quick-Build Median Islands

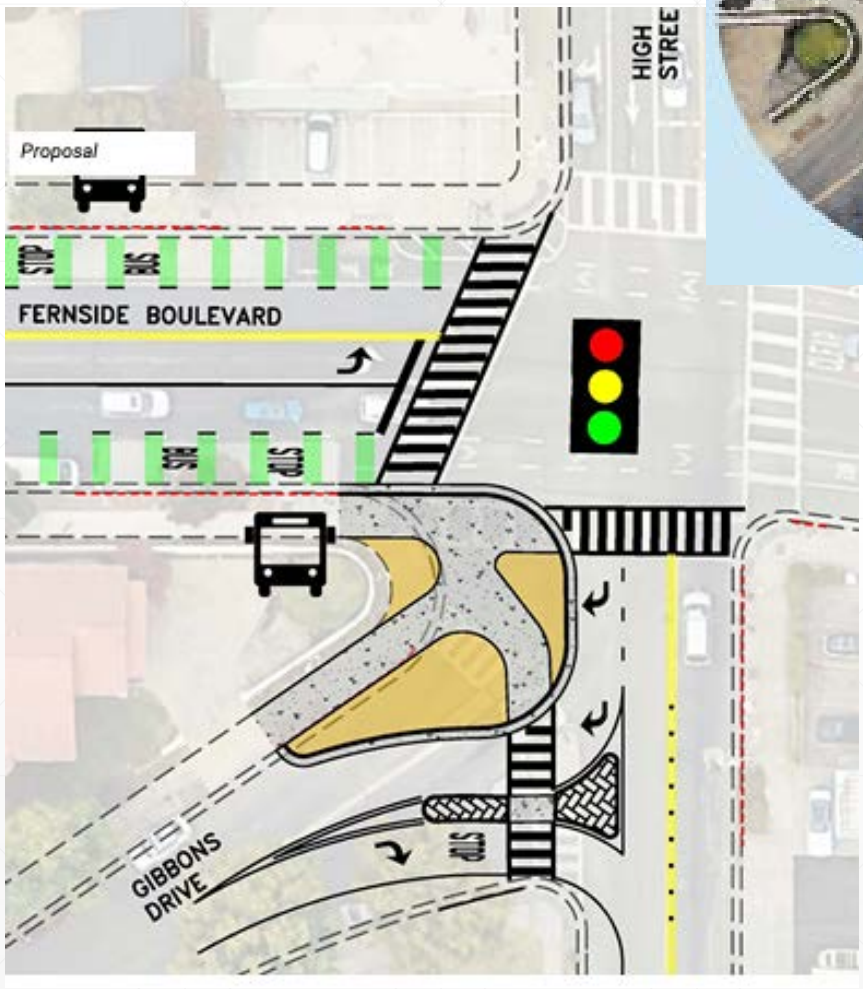
Considerations for detailed design:

- Design specifications for vertical elements
- Additional flashing beacon installations
- Gibbons/Fernside/High design details

High/Gibbons/Fernside Intersection

Fernside/High/Gibbons Intersection

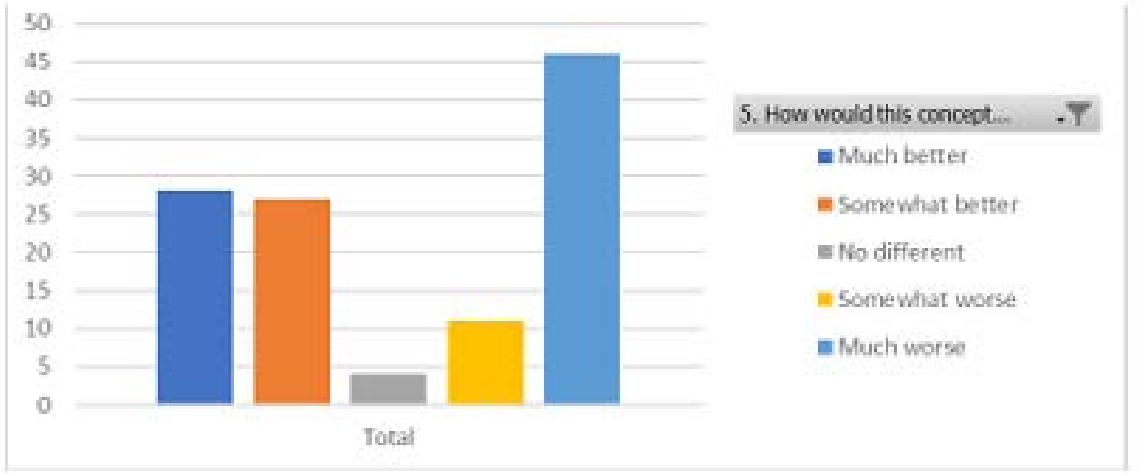
- **During design, concluded that the intersection needed more attention**
- **Proposed design to limit eastbound Gibbons Dr traffic to right-turn only onto High St**
  - Shorter pedestrian crossings
  - Simpler geometry
  - Shorter traffic signal wait times
  - Reduced speeds entering Gibbons
  - Less cut-through traffic on Gibbons
  - *More study needed to determine spillover onto nearby streets*



Fernside/High/Gibbons Intersection

- **Public feedback more negative than anticipated**
  - Major concerns about impacts to nearby neighborhood streets, like Bayo Vista and Cornell
- **Recommendation**
  - Not an opportunity for a streamlined public process
  - More traffic study and public engagement to determine a long-term intersection treatment
  - Include changes at Gibbons Dr and westbound Fernside slip lane in study and engagement
  - Endorse general Fernside concepts with assumption that this intersection treatment will be determined later

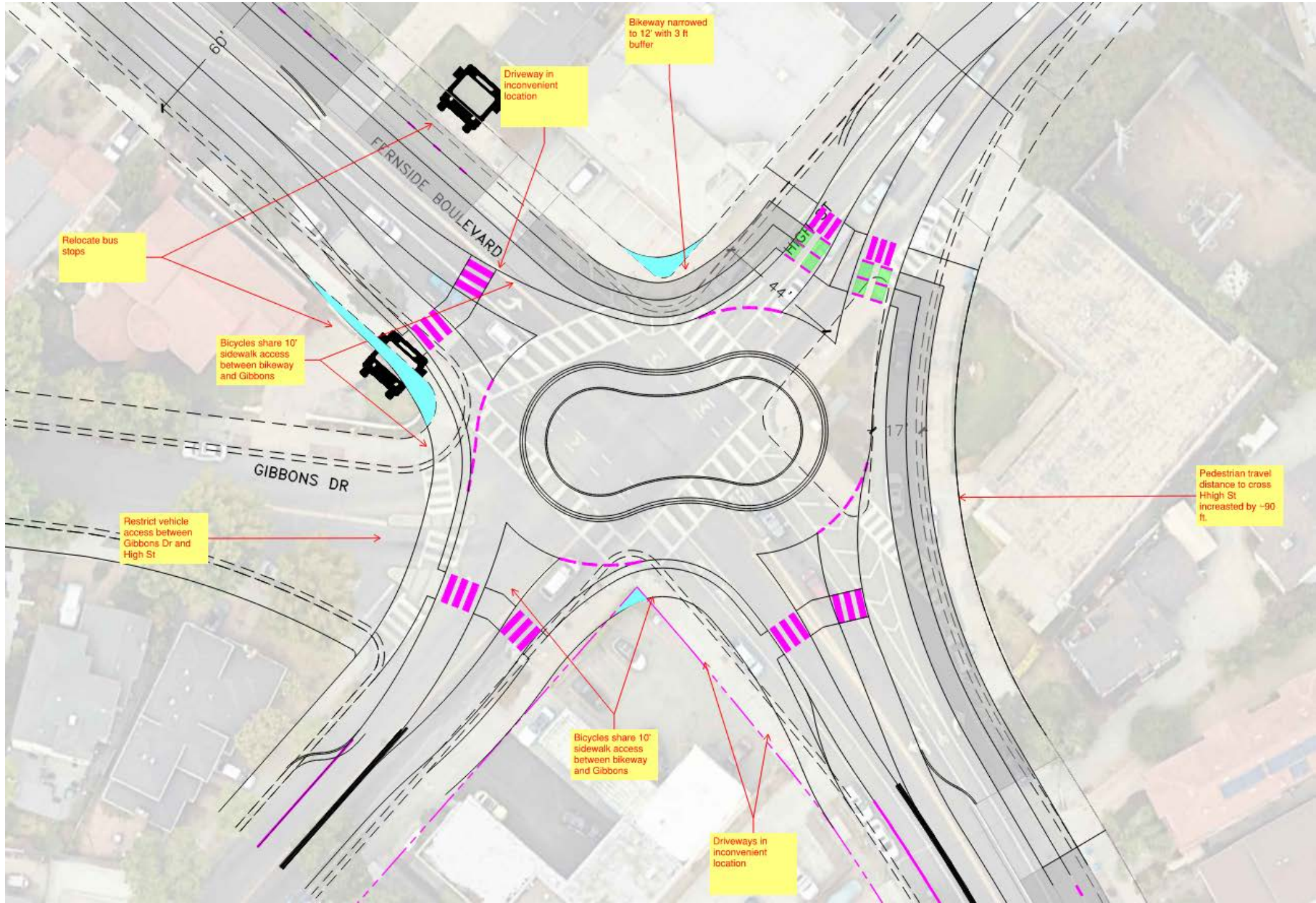
Figure 2: Q5 ANSWERS FROM 116 RESPONDENTS WHO REPORTED LIVING ON OR NEAR FERNSIDE BLVD



- *50 people at 11/9 pop-up*
- *210 survey responses as of 11/13*

Roundabout Not Recommended at Fernside/High

- Lengthened paths of pedestrian and bicycle travel
- Non-traditional travel lane configuration
- Driveways in inconvenient location
- Requires relocation of bus stops
- Right-of-way impacts
- Construction Cost
- (est. addl ~$3 million)



Next Steps

Project Phases

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5. **Construct full corridor project:** 2030 goal – timing depends on finding funding

Thoughts?

Feedback?

Backup Slides

Roundabout Feasibility Evaluation: Fernside/Encinal

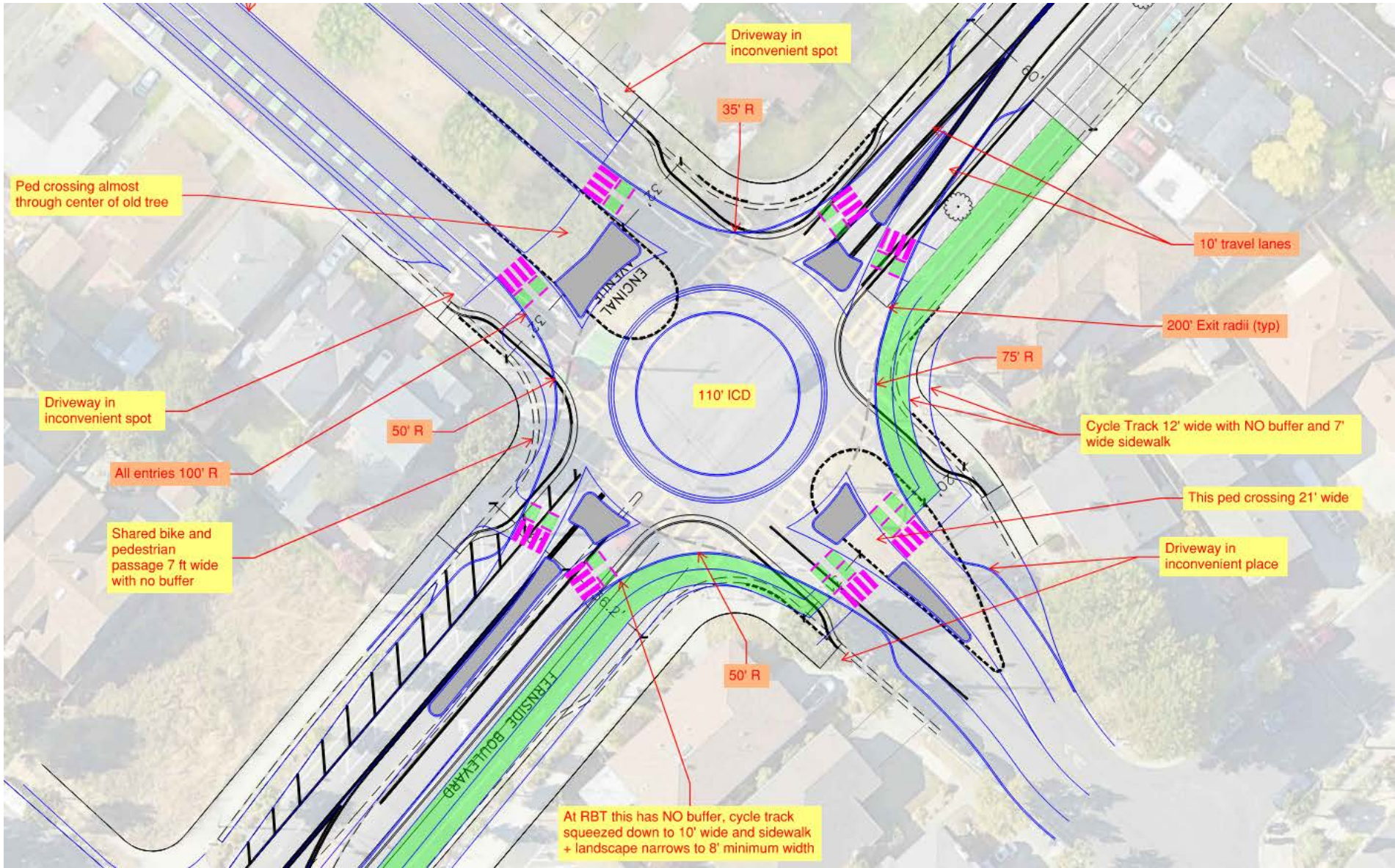
<u>Not recommended at this time</u>

Pros:

- Traffic calming influence near school
- Shortened crossing distances

Cons:

- Lengthened paths of pedestrian and bicycle travel
- Driveways in inconvenient location
- Median island details
- Construction cost (est. addl ~$2 million)



One-Way vs. Two-Way

One-Way Bikeways	Two-Way Bikeways
Easier for vehicles to cross driveways or side streets	Wider overall path of travel for bicycles enables passing
Simpler for pedestrians to cross the bikeway	On-street parking and driveway access only impacted on one side of street
Avoids oncoming bicyclist conflicts	More space for vehicles exiting driveways to wait before entering roadway
	Connects with existing two-way bikeway at Lincoln Middle School
	Wider buffer strip can accommodate more substantial landscaping

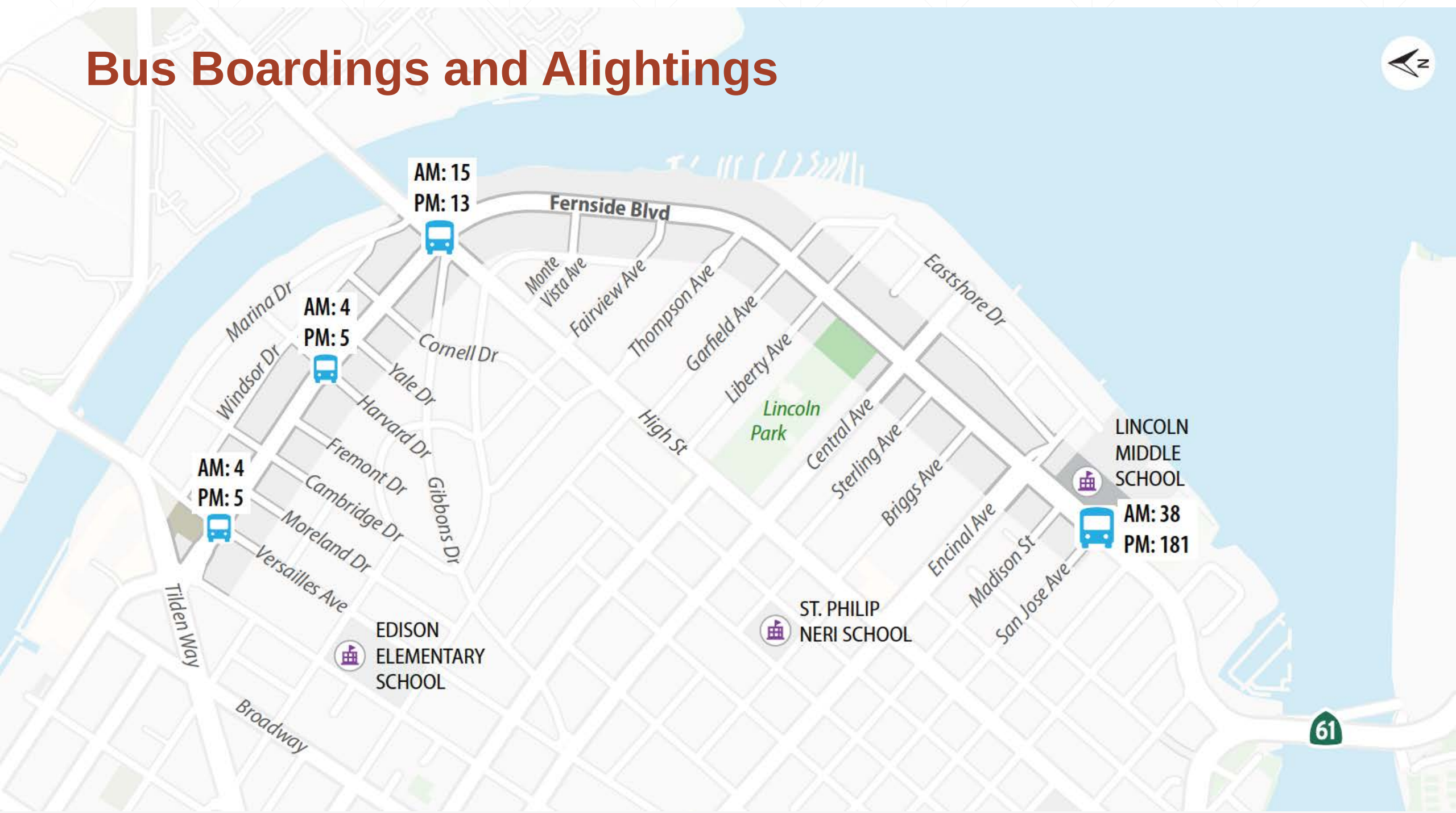
Raised vs. Curb-Protected

	Curb-Protected Bikeway	Raised Bikeway
Pedestrian Safety	More clearly separates bicycles from pedestrians (applicable at intersections)	Better pedestrian crossing improvement / integration with bulb-outs
Bicyclist Safety		Provides better bicyclist protection vs discontinuous median islands, provides better bicyclist visibility to motorists
Maintenance		Simpler to maintain bikeway/keep free of debris
Other Services		Better wheelchair loading accessibility, Simpler trash service integration
Construction	Simpler construction; retain existing flowlines	
On-Street Parking Removal*	More impacted	Less impacted
Construction Cost	Slightly lower	Slightly higher

**Current peak parking occupancy 41-48%*

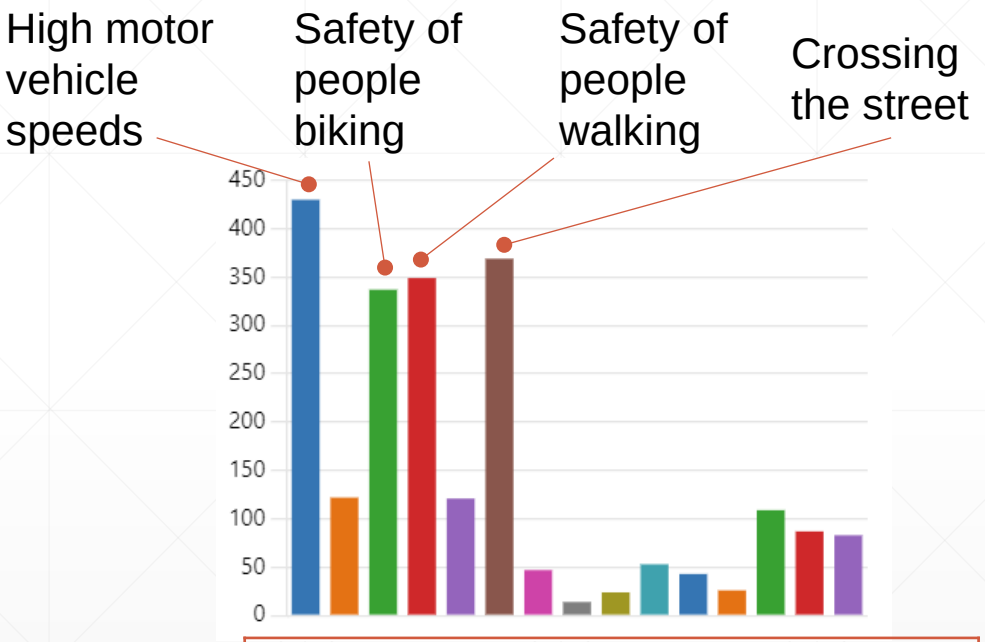
Project Background

Bus Boardings and Alightings



Winter 2023/2024 Community Engagement Participation

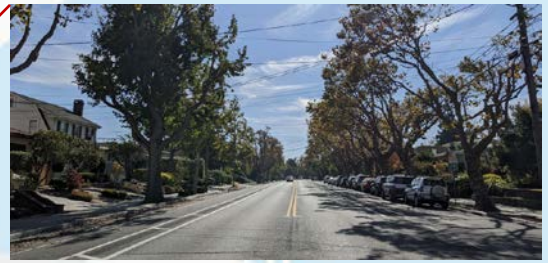
- **600** online survey participants
- **85** community workshop attendees
- **23** virtual community workshop attendees



“What do you find most challenging when using Fernside Blvd?”

About the project

Varied Segments



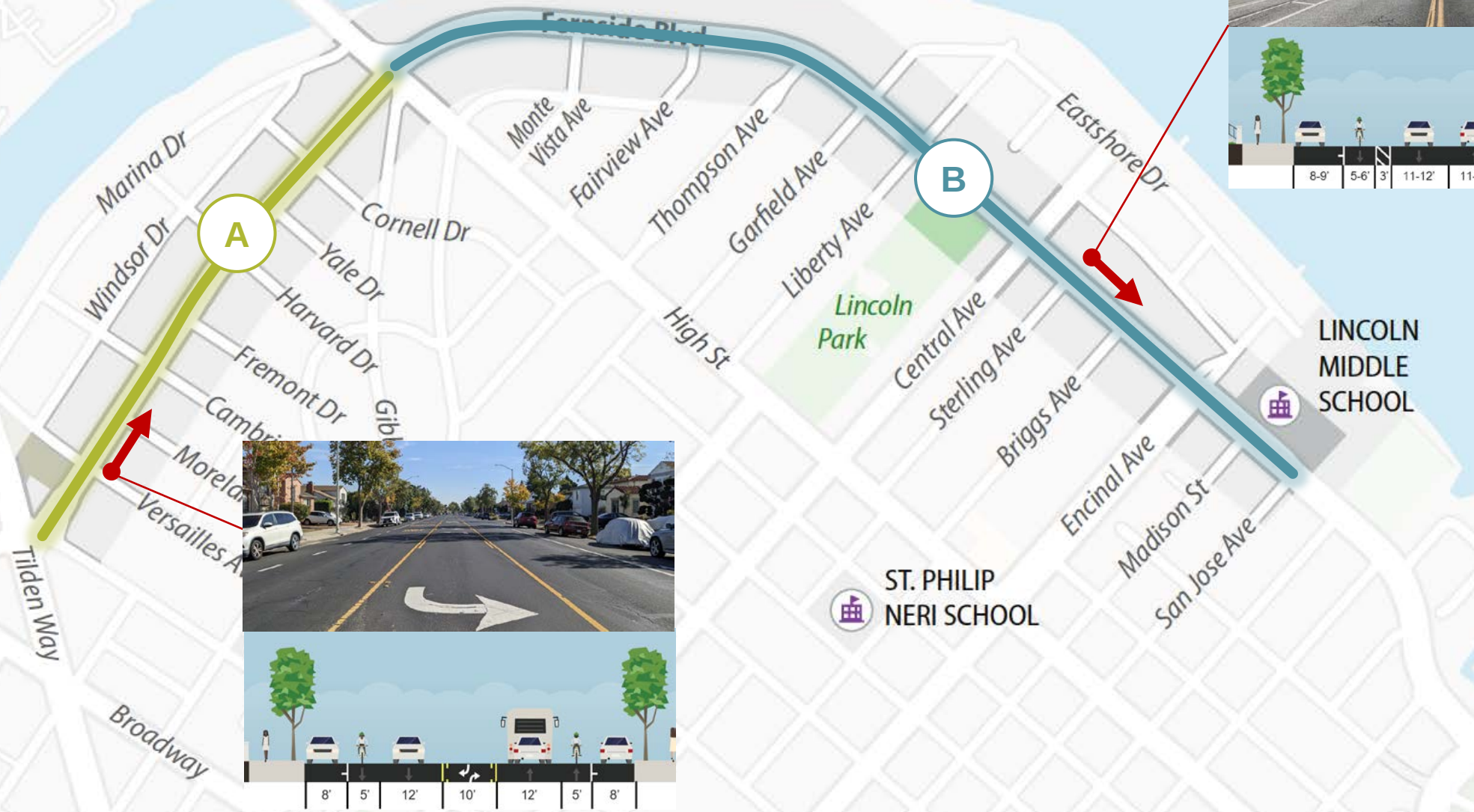
A
60’ road width
2 lanes + 1 two-way left turn lane
Parking-adjacent bike lanes

B
57’ road width
2 vehicle lanes
Buffered bike lanes

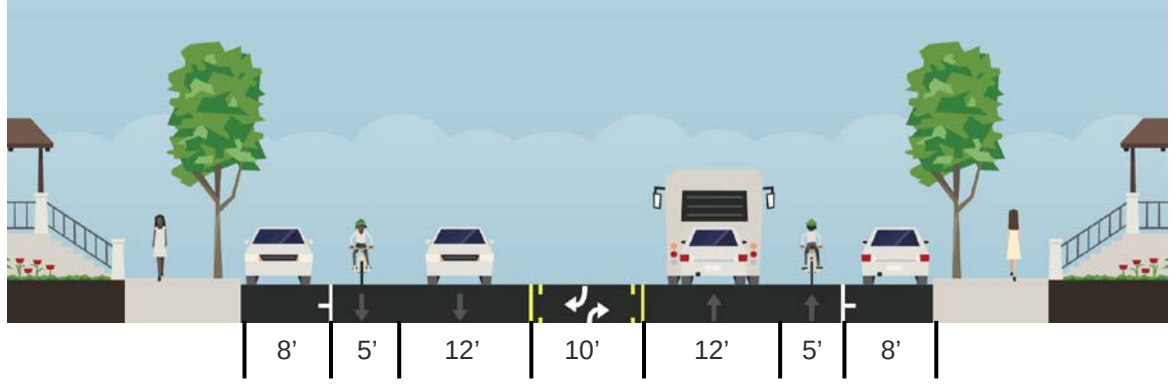
C
60’ road width
2 vehicle lanes
Buffered bike lanes

Project Segments

- Design concept for full corridor
- Near-term upgrade with resurfacing west of High St



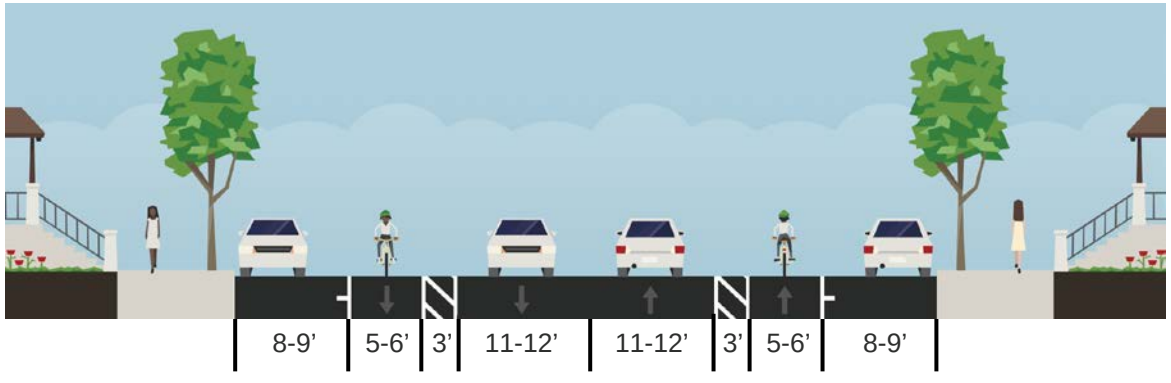
Fernside Boulevard Today: West of High St.

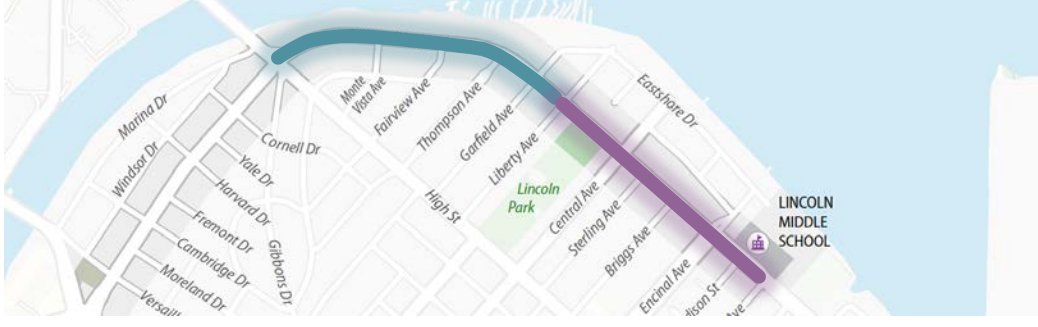


- Center vehicle turn lane
- Bike lanes adjacent to vehicle travel lanes
- ~1,000 feet between marked pedestrian crossings
- Flashing beacons at Versailles Ave. and Harvard Dr.

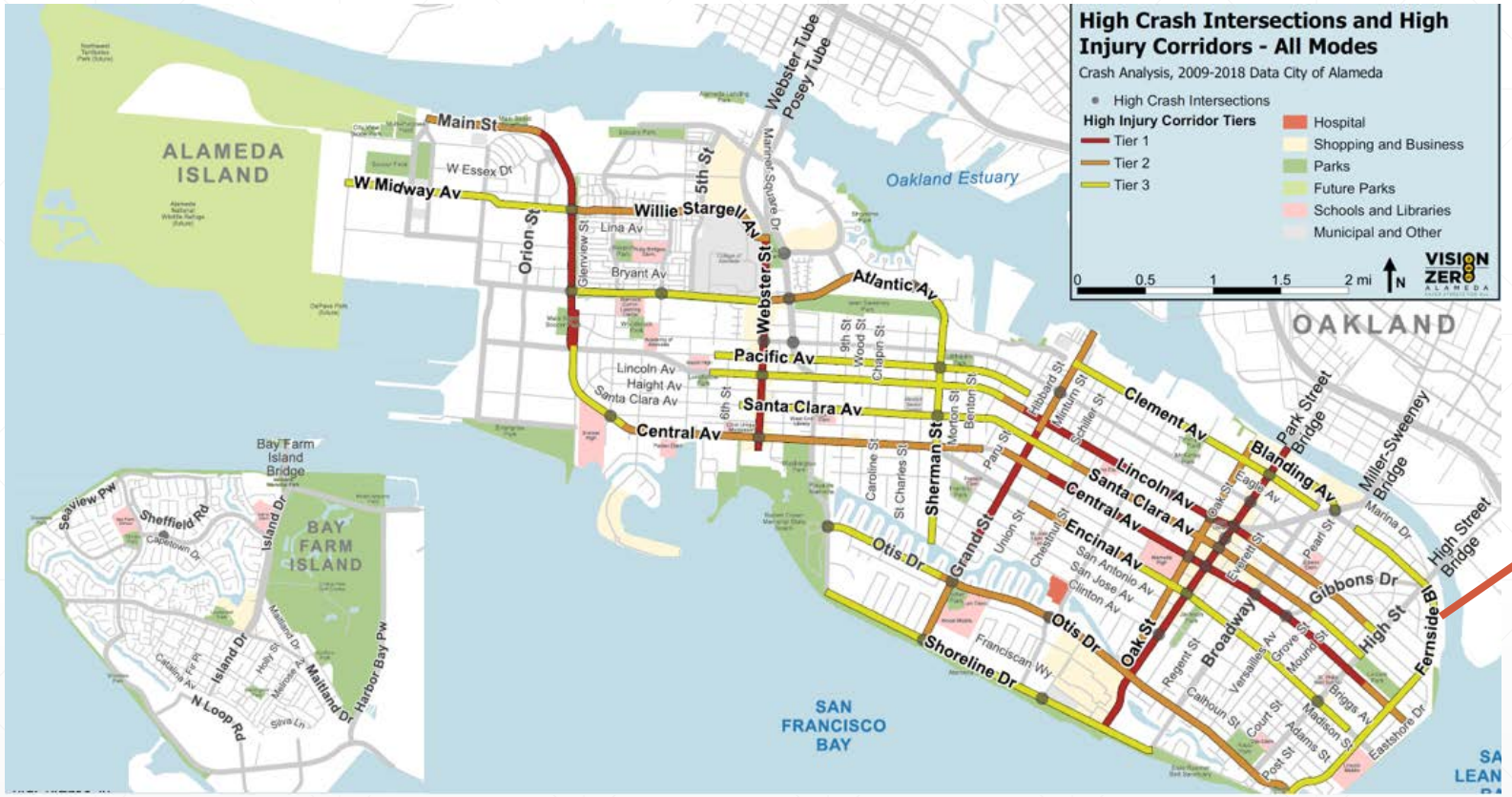
Fernside Boulevard Today: East of High St.

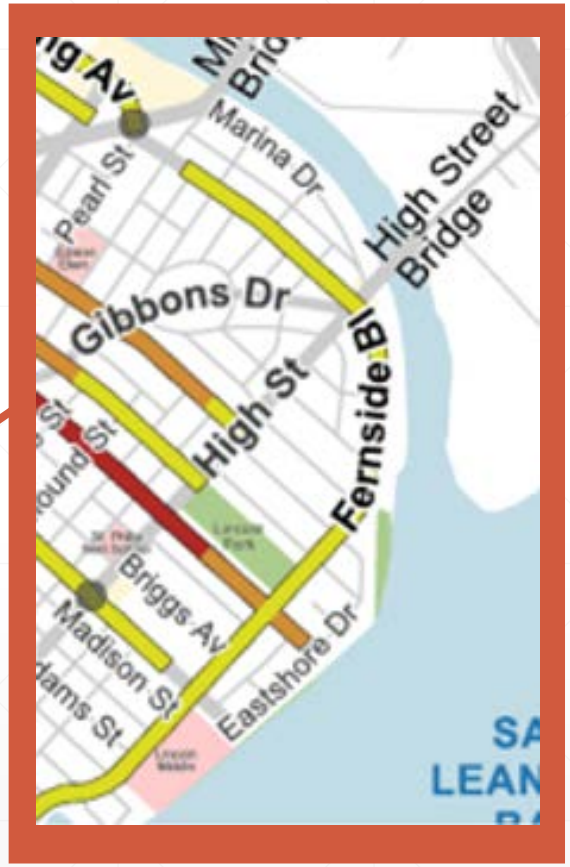
- No center vehicle turn lane
- Buffered bike lanes adjacent to vehicle travel lanes
- Over 2,000 feet between marked crossings at High St. and Garfield Ave.
- Flashing beacons at San Jose Ave.
- Stop control at Garfield Ave. and Central Ave.





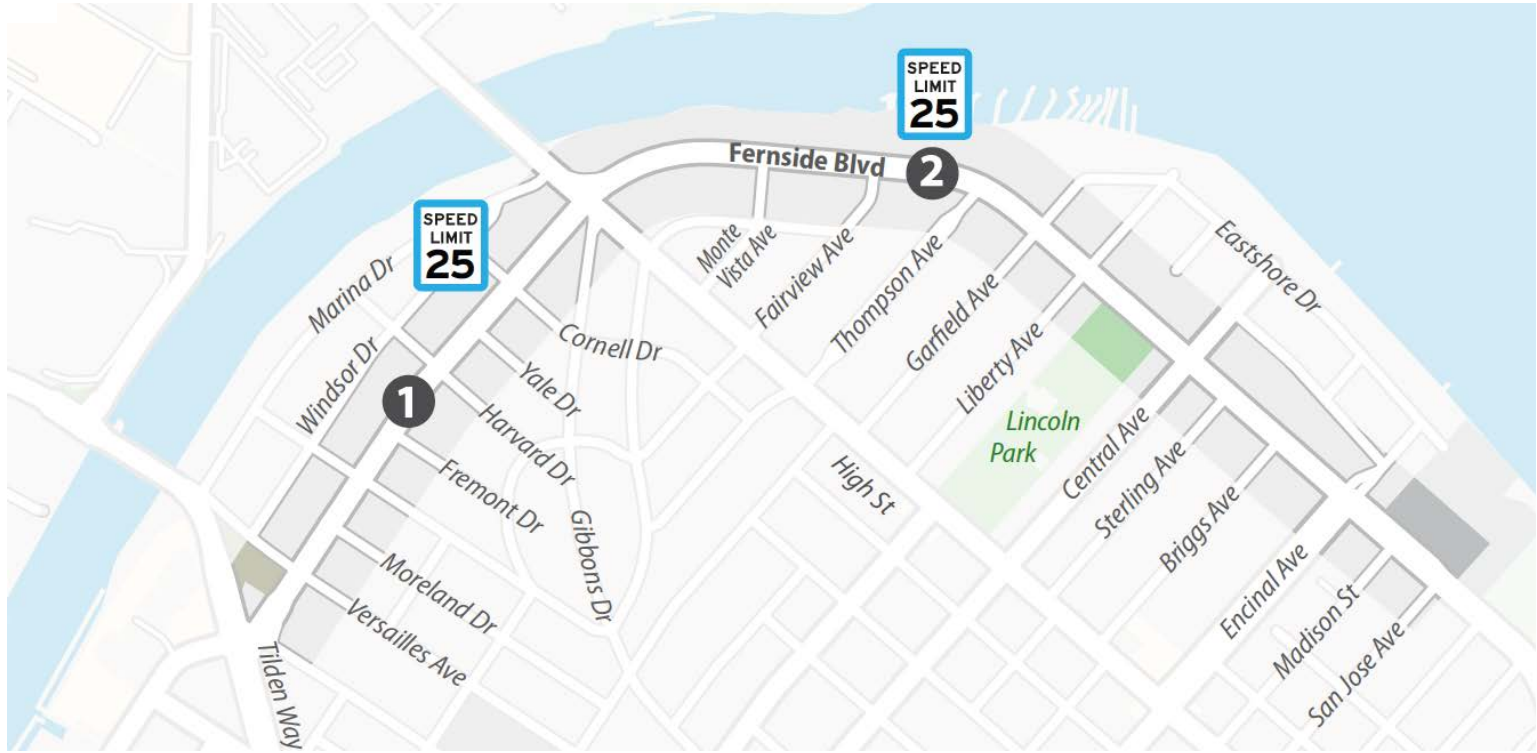
Fernside is a Tier 3 High Injury Corridor, All Modes





Existing Speed Limit is 25 mph, but Actual Vehicle Speeds are Higher

Average Speed: 30 mph
85th Percentile Speed: 35 mph
Highest speed recorded: 46 mph



Average Speed: 31 mph
85th Percentile Speed: 35 mph
Highest speed recorded: 44 mph

1

2

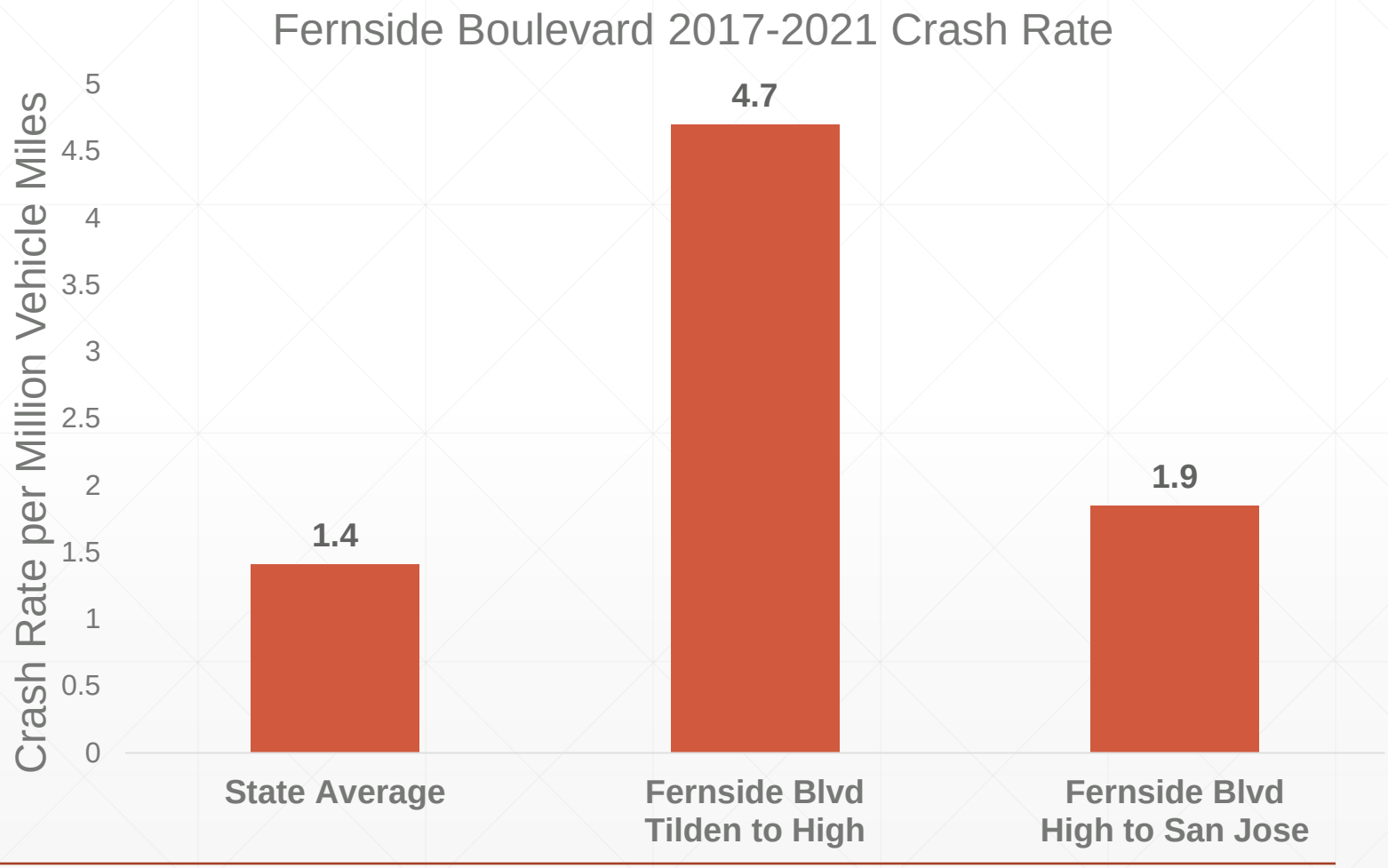
Speed survey conducted on 10/24/2023

High Crash Rate throughout the Corridor

64

crashes from 2017-2021

(including non-injury crashes)

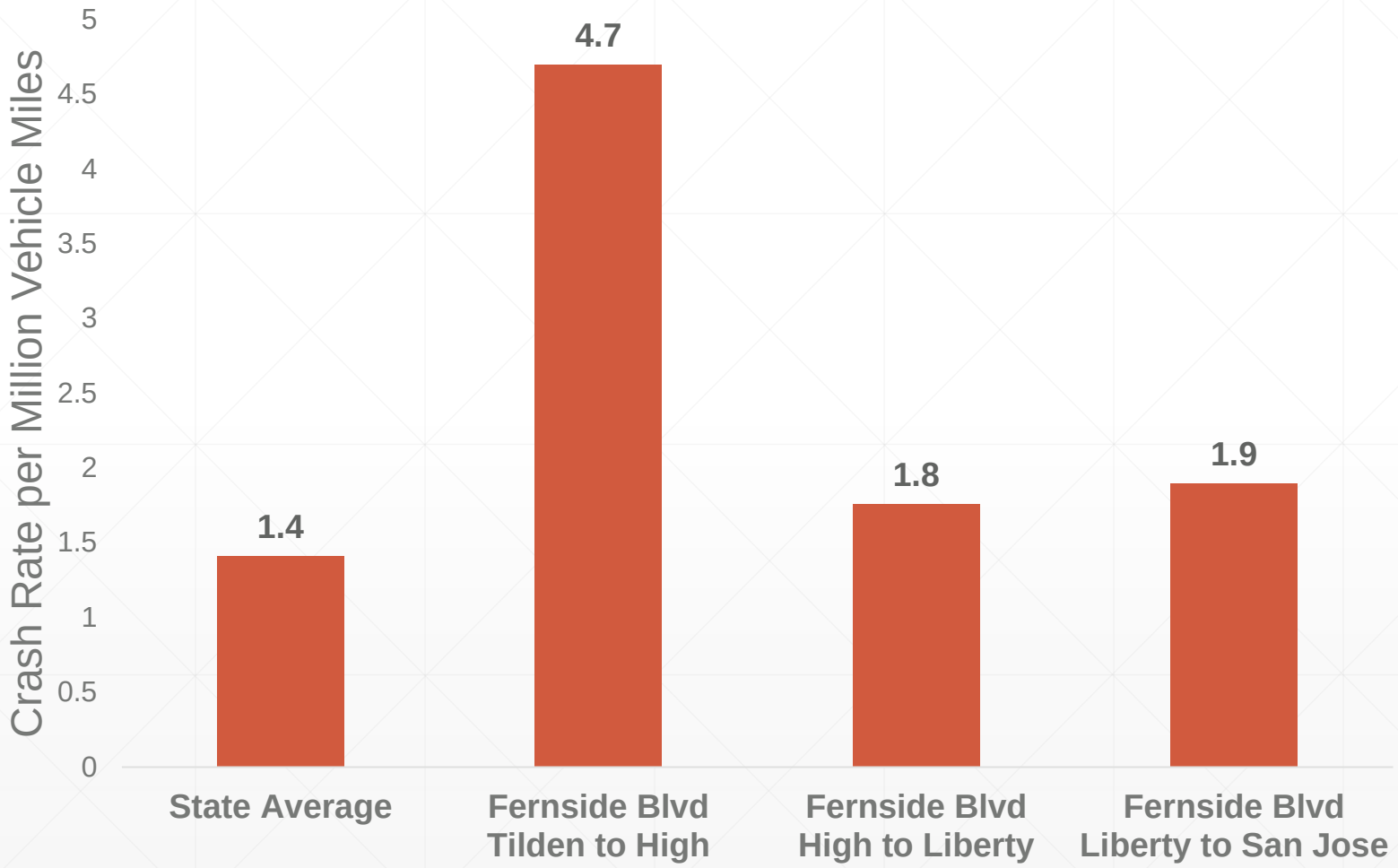


High Crash Rate throughout the Corridor

64

crashes from 2017-2021

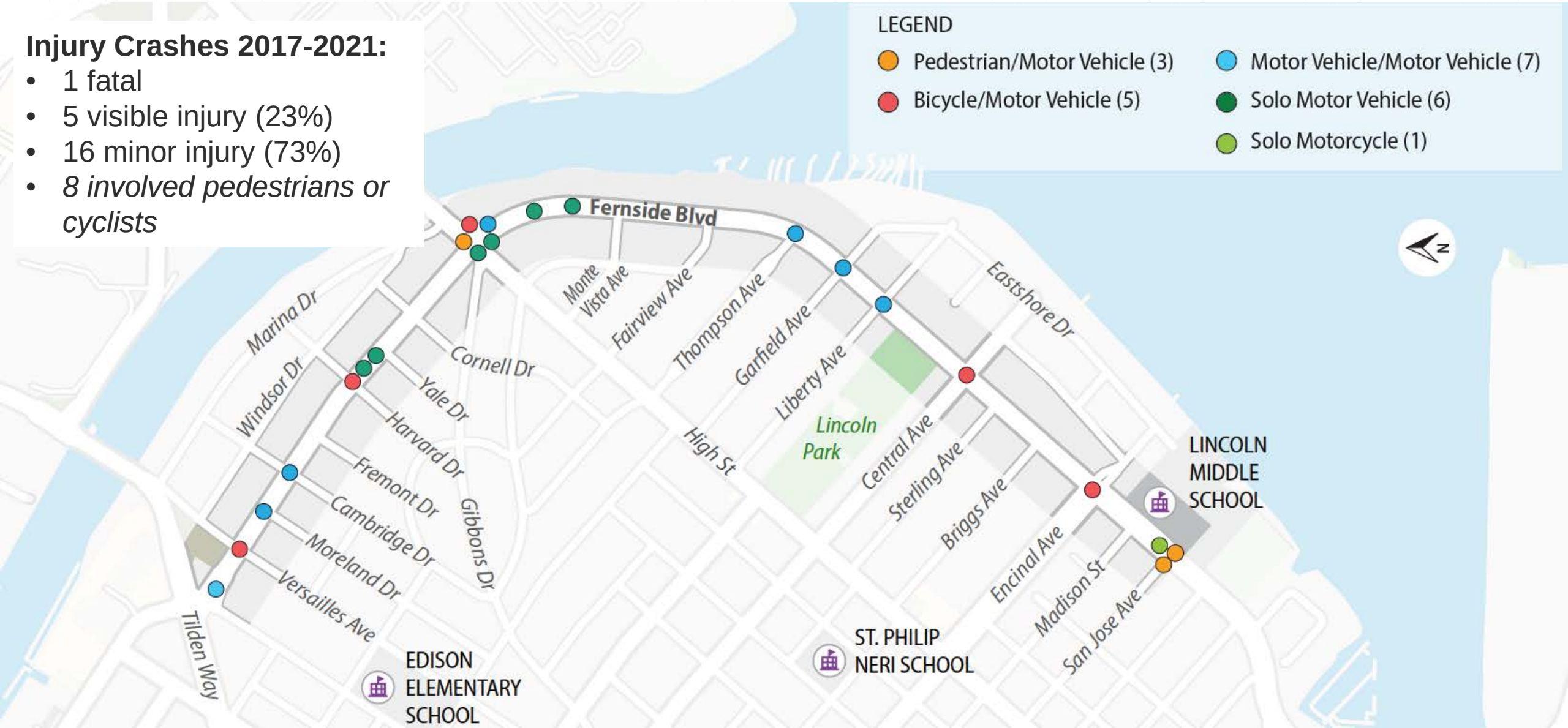
(including non-injury crashes)



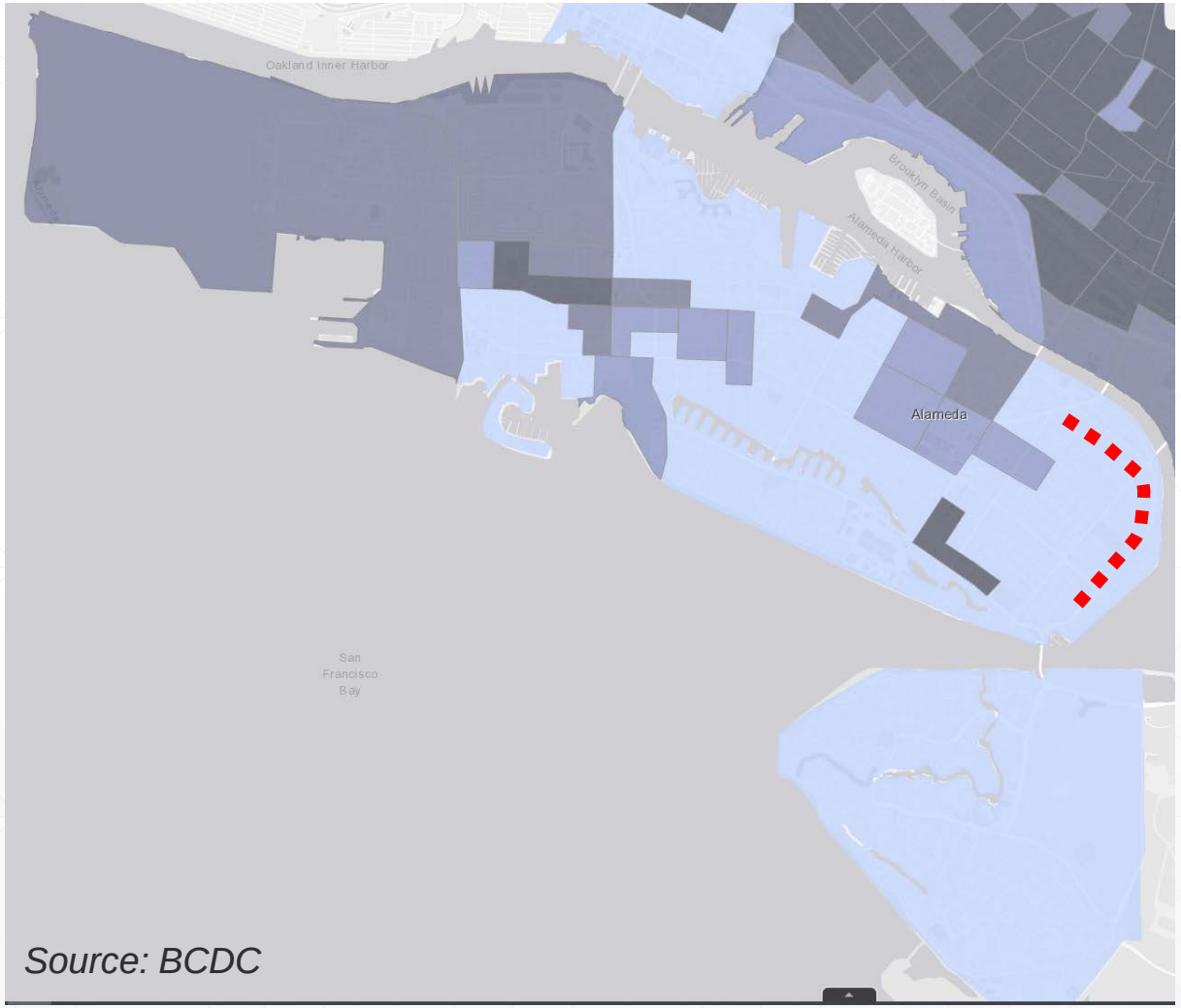
22 Injury Crashes from 2017-2021

Injury Crashes 2017-2021:

- 1 fatal
- 5 visible injury (23%)
- 16 minor injury (73%)
- *8 involved pedestrians or cyclists*



Fernside not in an Equity Priority Area



Highest social vulnerability

High social vulnerability

Moderate social vulnerability

Low social vulnerability

Source: BCDC

Active Transportation Plan: Low-Stress Bikeway + Ped Improvements

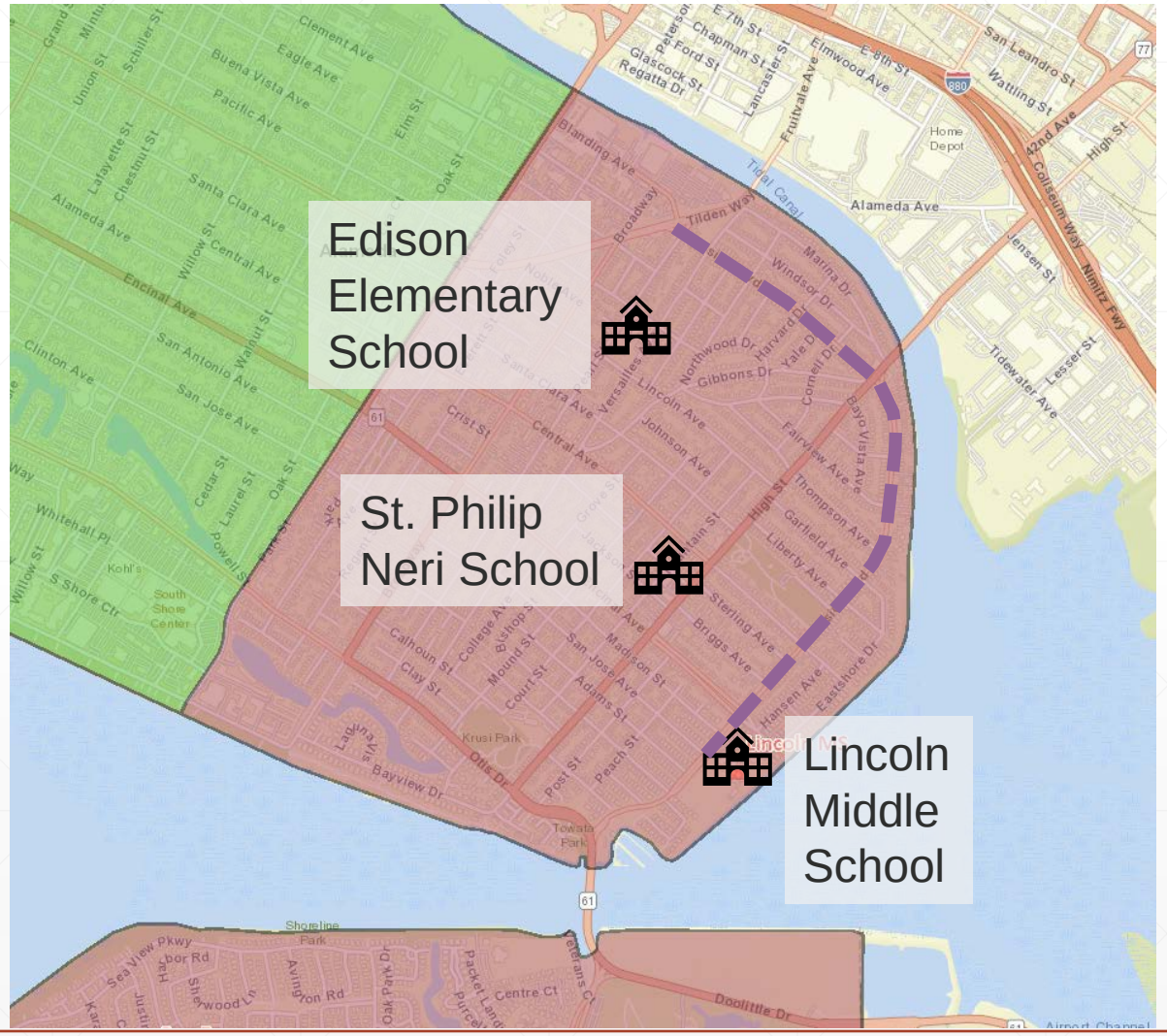
2030 Low-Stress Backbone Bikeway Network

- Adopted plan shows Fernside with a separated bike lane
- Key to the 2030 Low-Stress Backbone Network for all ages and abilities
- Part of regional San Francisco Bay Trail

Fernside is a Key School Access Route

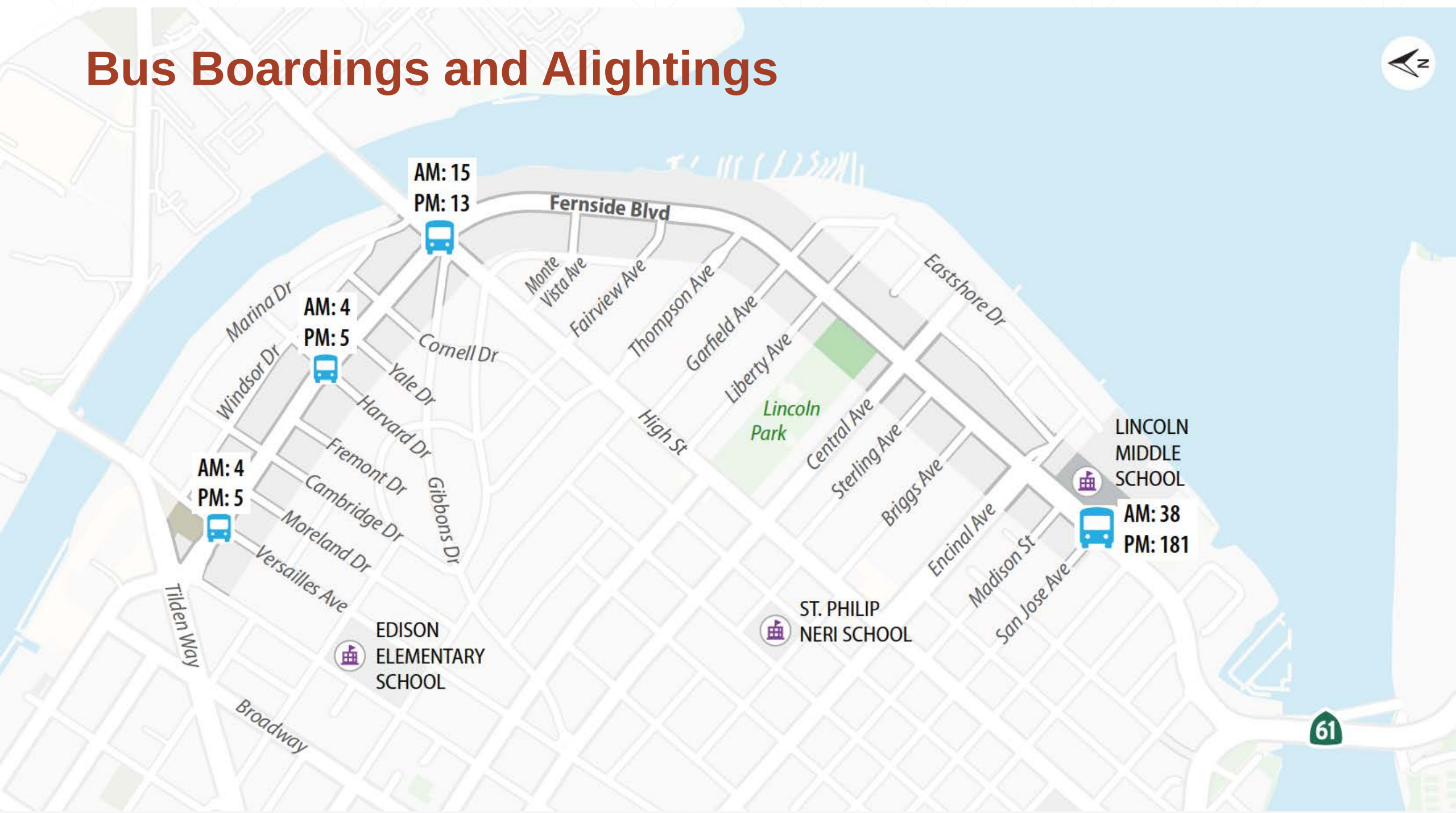
Approximately 30-40 pedestrians cross Fernside near Edison Elementary before and after school

Before and after school, bicycles comprise 10-15% of all traffic on Fernside near Lincoln Middle School

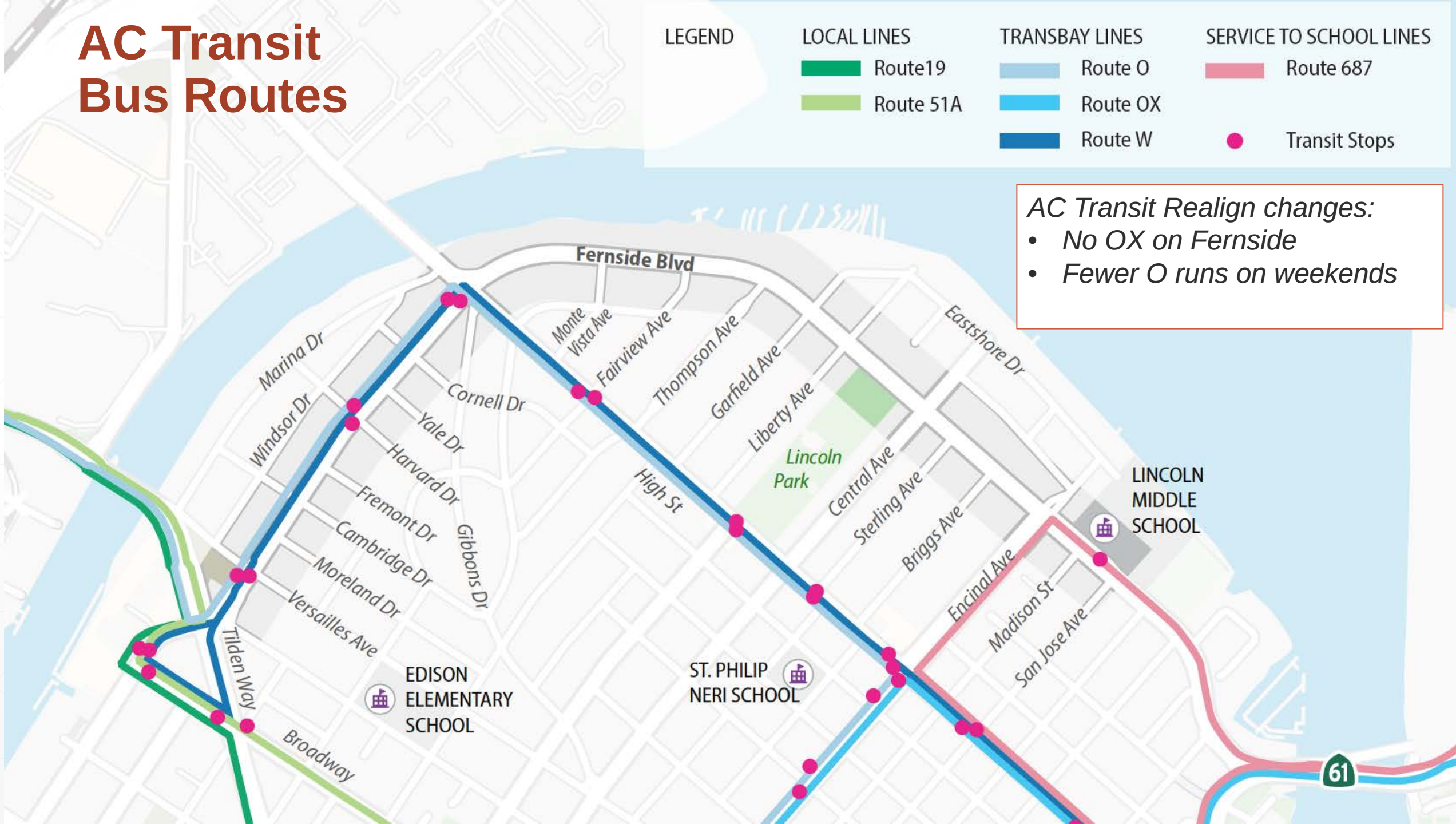


Map of AUSD middle school enrollment areas

Bus Boardings and Alightings



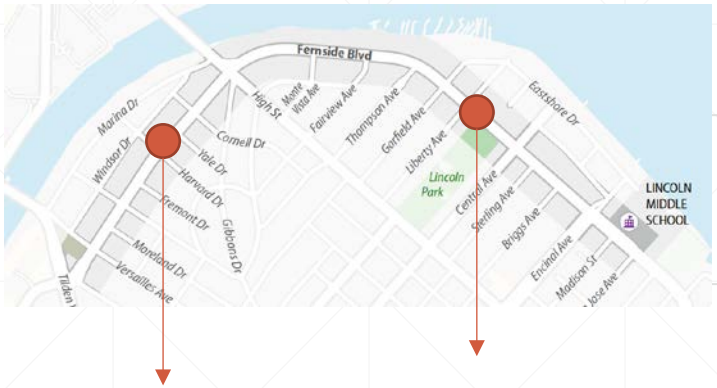
AC Transit Bus Routes



AC Transit Realign changes:

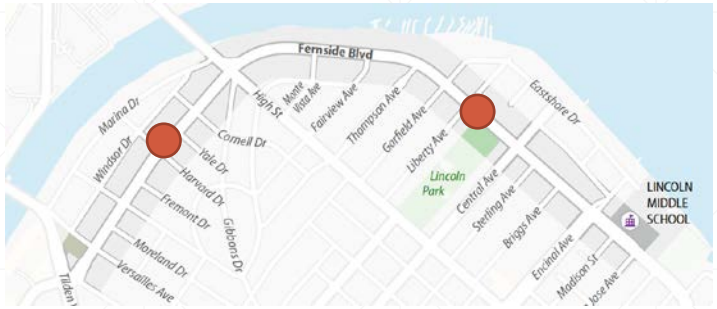
- *No OX on Fernside*
- *Fewer O runs on weekends*

Average Daily Traffic Compares to Similar Roadways

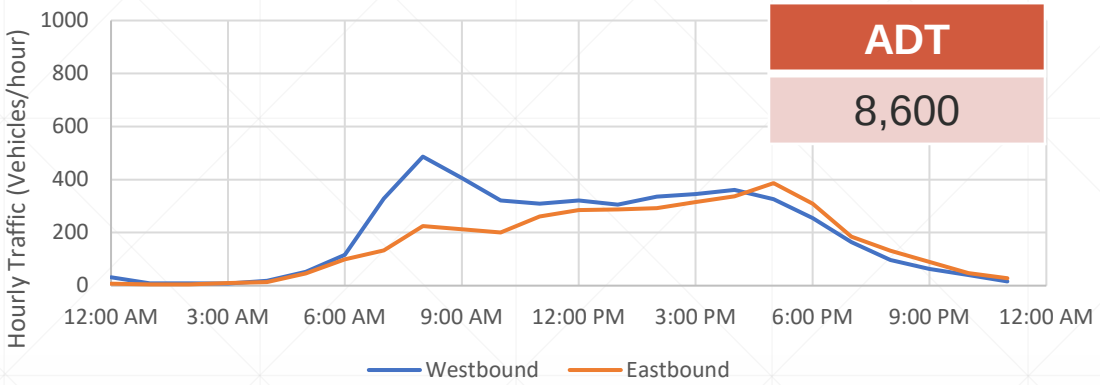


Traffic counts measured between 10/12/2023 and 10/18/2023

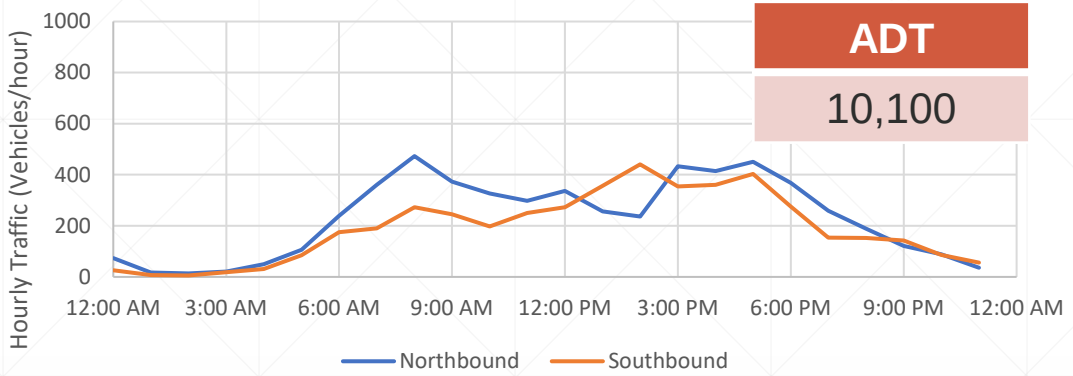
Fernside Carries 200 to 500 Vehicles per Hour in Each Direction



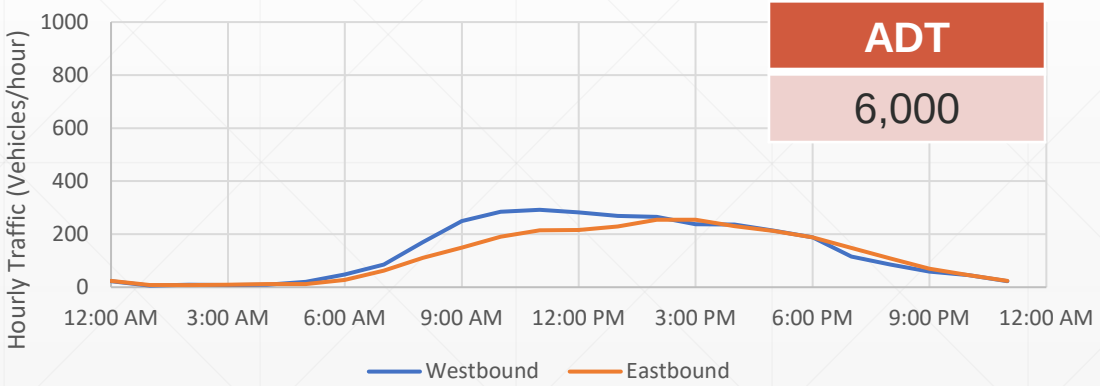
Fernside east of Harvard; Average T-Th



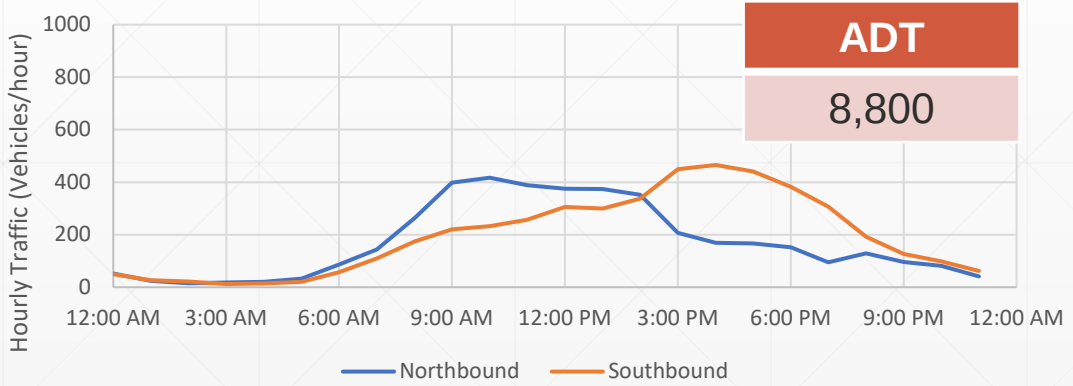
Fernside north of Central; Average T-Th



Fernside east of Harvard; Average Weekend

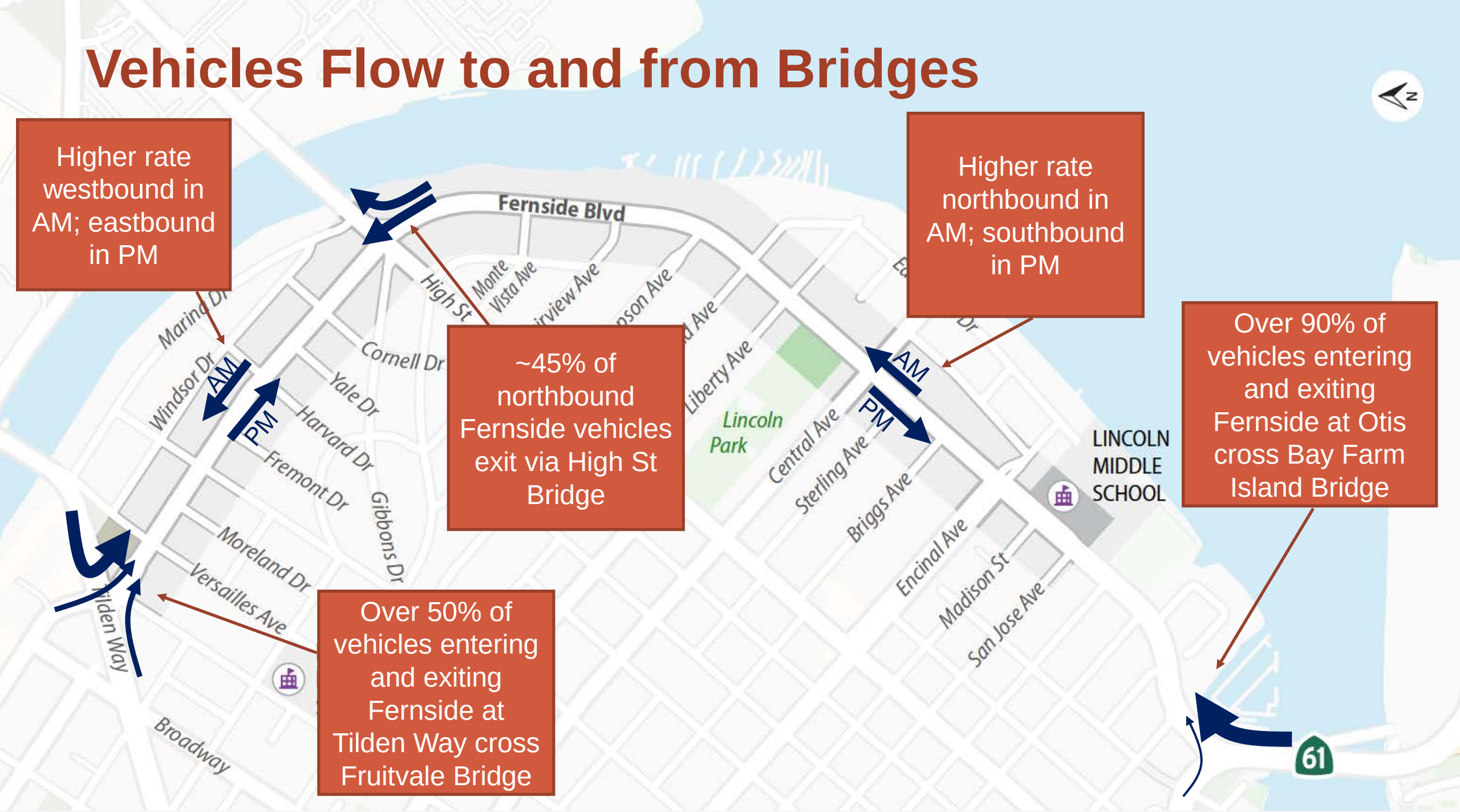


Fernside north of Central; Average Weekend

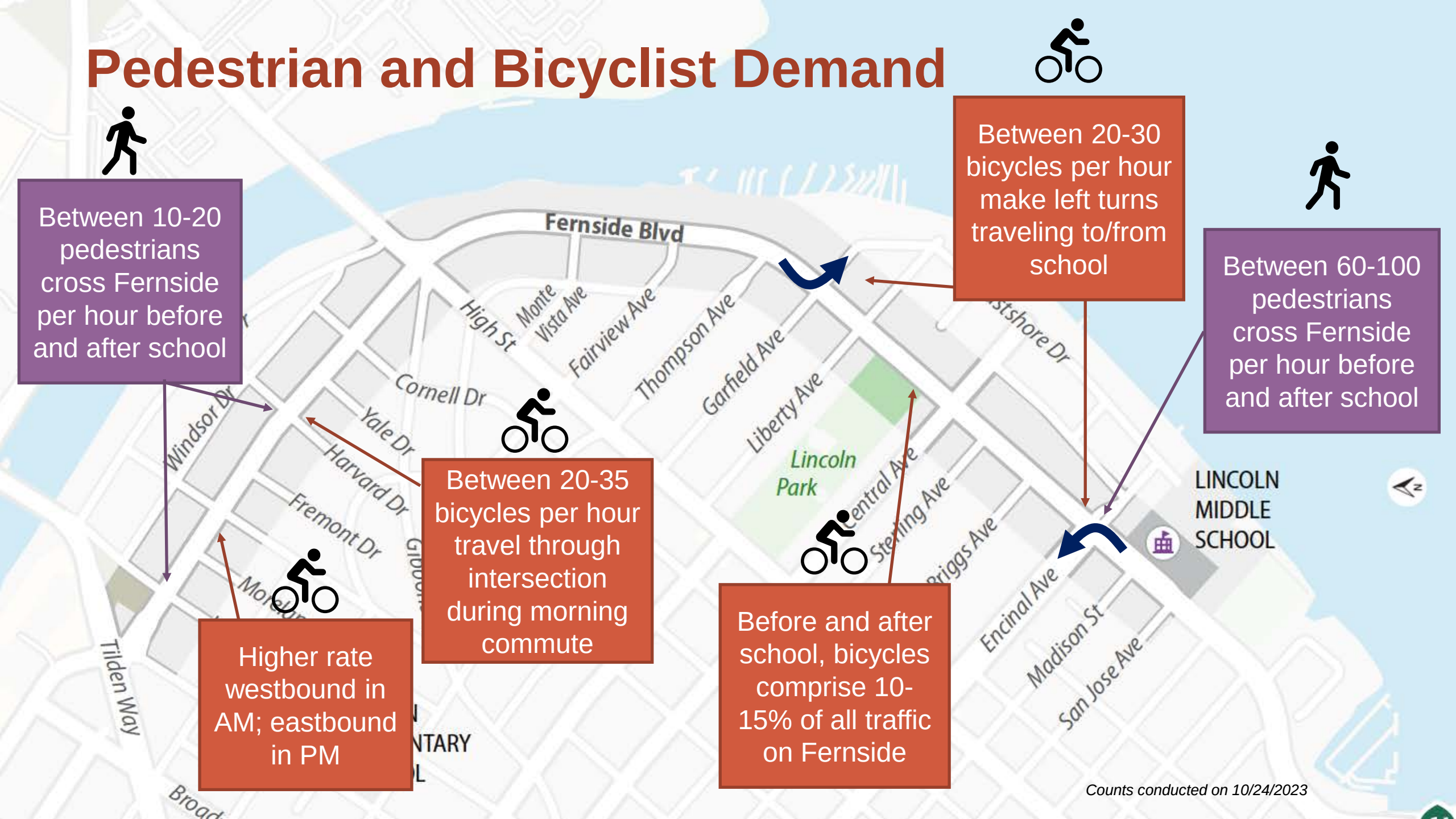


Traffic counts measured between 10/12/2023 and 10/18/2023

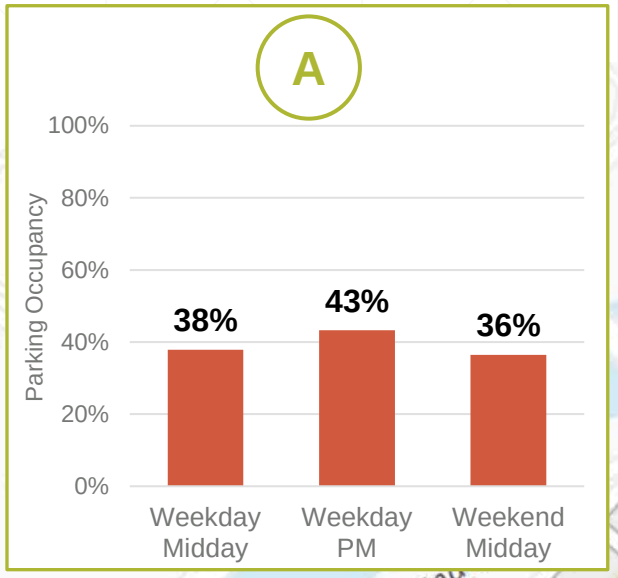
Vehicles Flow to and from Bridges

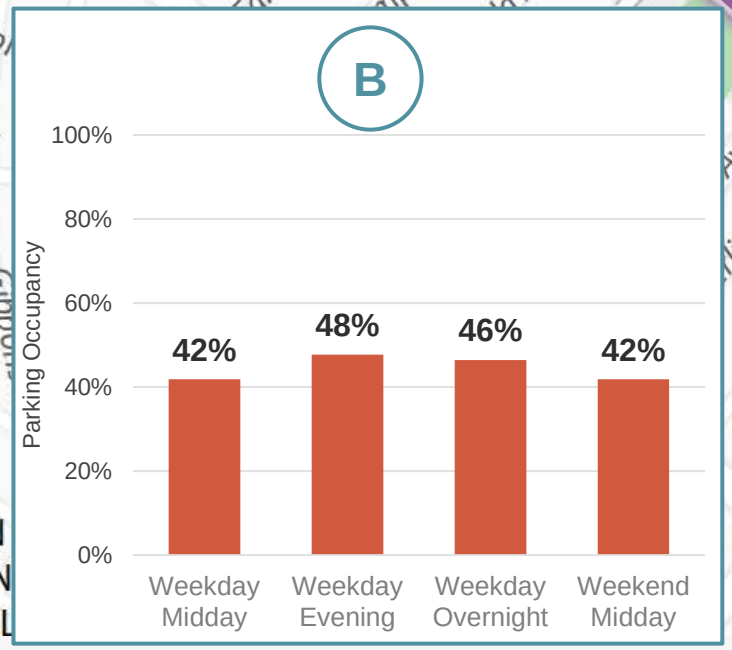


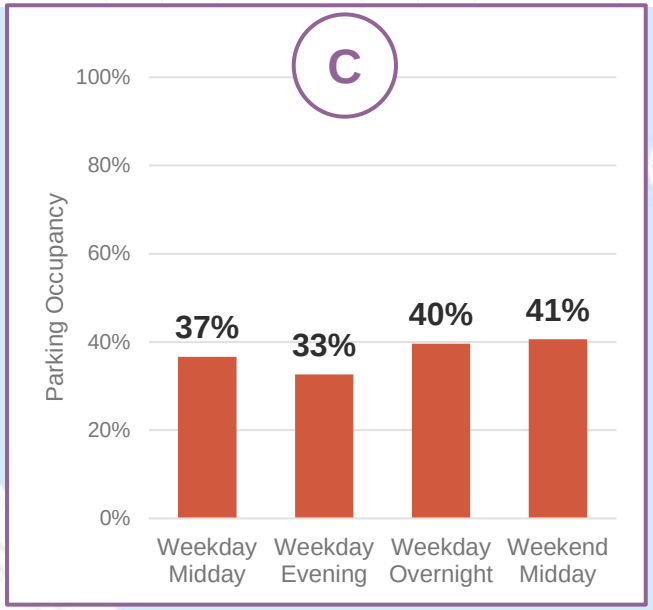
Pedestrian and Bicyclist Demand



On-Street Parking Less Than 50% Occupied





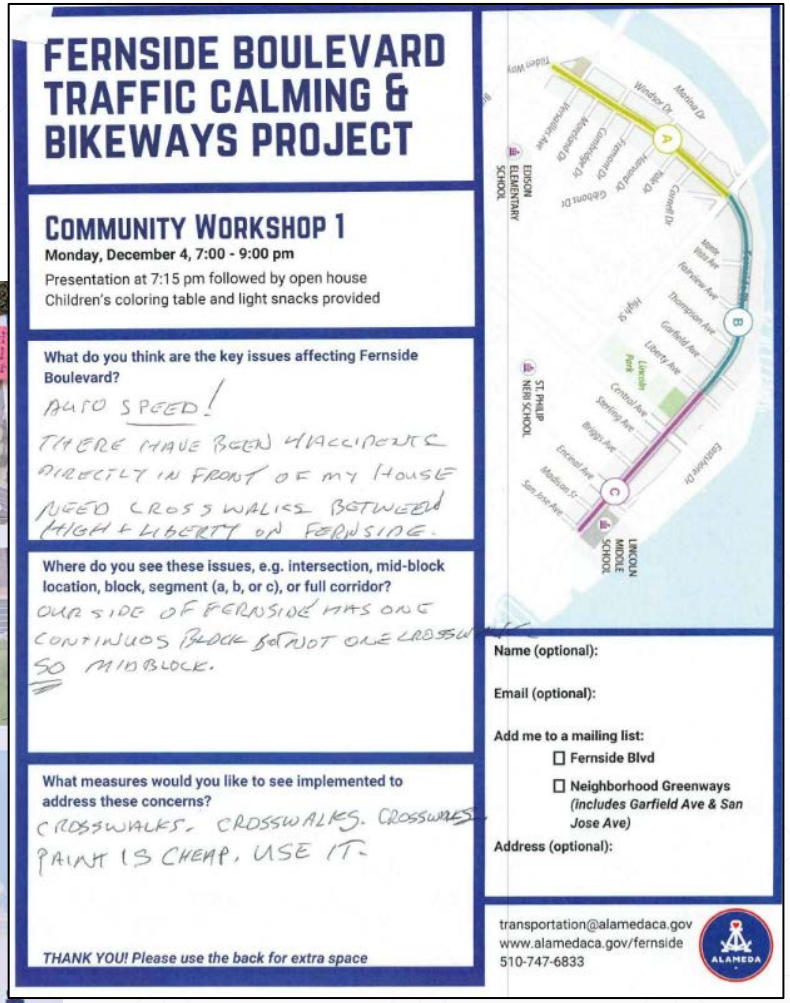


Parking occupancy counts conducted Oct. & Nov. 2023, and Aug. 2024
**Segment A was parking restricted for utility work in August-Nov 2024, and hence overnight values were not collected*
PM = evening

Winter 2023/2024 Community Engagement Participation

- 600 online survey participants
- 85 community workshop attendees
- 23 virtual community workshop attendees

Community Workshop Input



FERNSIDE BOULEVARD TRAFFIC CALMING & BIKEWAYS PROJECT

COMMUNITY WORKSHOP 1

Monday, December 4, 7:00 - 9:00 pm

Presentation at 7:15 pm followed by open house
Children's coloring table and light snacks provided

What do you think are the key issues affecting Fernside Boulevard?

AUTO SPEED!
THERE HAVE BEEN 4 ACCIDENTS DIRECTLY IN FRONT OF MY HOUSE
NEED CROSSWALKS BETWEEN HIGH + LIBERTY ON FERNSIDE.

Where do you see these issues, e.g. intersection, mid-block location, block, segment (a, b, or c), or full corridor?

OUR SIDE OF FERNSIDE HAS ONE CONTINUOS BLOCK BETWEEN ONE CROSSWALK SO MIDBLOCK.

What measures would you like to see implemented to address these concerns?

CROSSWALKS. CROSSWALKS. CROSSWALKS.
PAINT IS CHEAP, USE IT.

THANK YOU! Please use the back for extra space

Edison Elementary School
St. Philip Neri School
Lincoln Middle School

Name (optional):

Email (optional):

Add me to a mailing list:

☐ Fernside Blvd

☐ Neighborhood Greenways *(includes Garfield Ave & San Jose Ave)*

Address (optional):

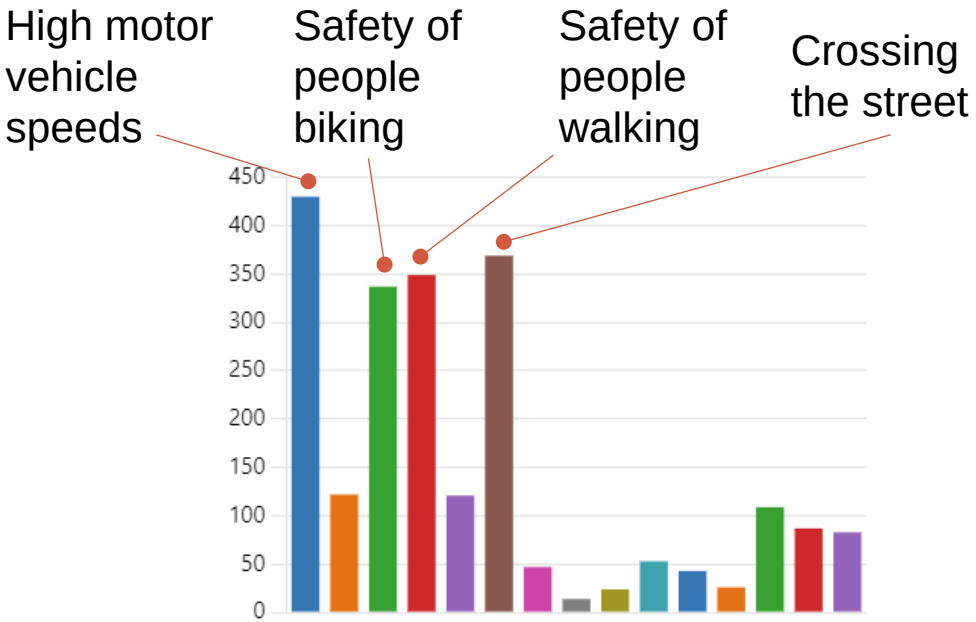
transportation@alamedaca.gov
www.alamedaca.gov/fernside
510-747-6833

ALAMEDA

155 individual map comments, 27 input forms collected

Online Survey

- 600 responses
- November 21 to December 17



“What do you find most challenging when using Fernside Blvd?”

“I would like to see more street trees”

“Crossing Fernside on foot is risky”

“Cars often speed through crosswalks”

“I would love more crosswalks”

“It’s difficult to get in or out of driveways”

“The intersection at High and Fernside is dangerous”

“Protected bike lanes would be great”

“The street is too wide”

“Cars are traveling way too fast”

“Its complicated to get to the two-way bike lane”

“Cars pass in the median”

Describe your challenges when using Fernside Blvd and desired improvements?

Winter 2023/2024 Community Engagement Summary

- Most common improvements suggested
  - Pedestrian safety (flashing beacons, marked crosswalks)
  - Bicycle facilities (protected, facilitate safe routes to school)
  - Other traffic calming (address illegal vehicle passing, vertical speed elements, intersection improvements)
  - Others: reduce travel lane width, visual enhancements, increased enforcement
- 5-10% of respondents do not desire improvements / are satisfied with existing conditions

Concept Alternatives

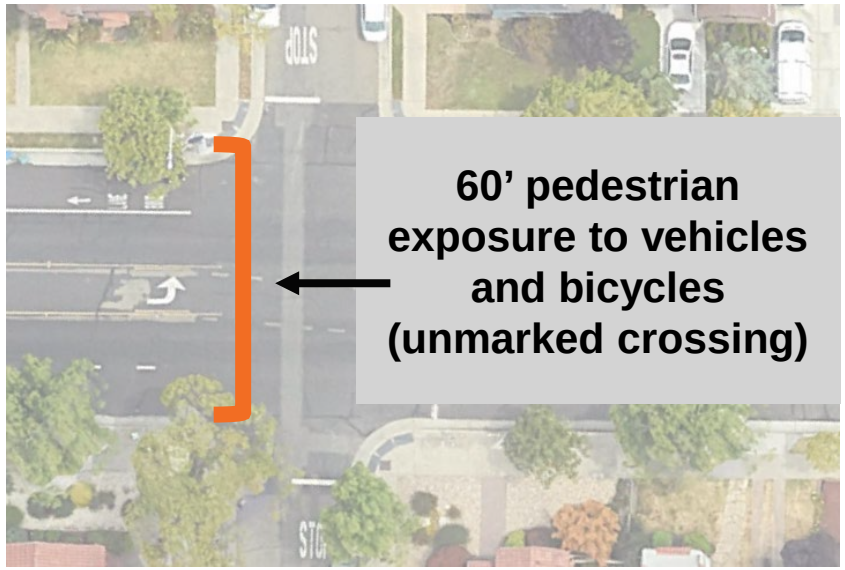
Concept Alternatives

- **Long-Term**
  - LT1a: One-Way Curb-Protected Bikeways
  - LT1b: One-Way Raised Bikeways
  - LT2a: Two-Way Curb-Protected Bikeway
  - LT2b: Two-Way Raised Bikeway

- **Near-Term (potential alignment with planned 2025 resurfacing)**
  - NT1: Buffered Bike Lanes
  - NT2: One-Way Separated Bikeways
  - NT3: Two-Way Separated Bikeway

Pedestrian Crossing Exposure Comparison

Existing Conditions

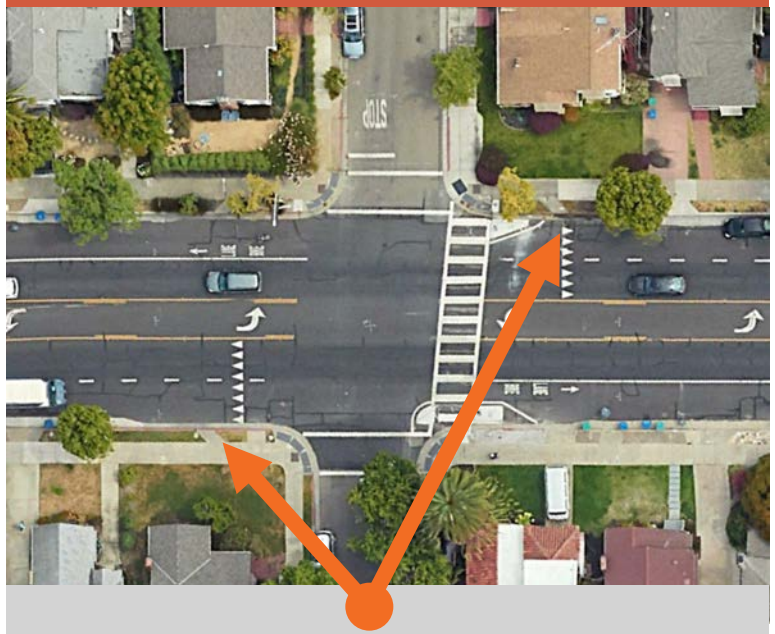


Long-Term Concepts

	PEDESTRIAN CROSSING EXPOSURE TO:
LT1a: One-Way Curb-Protected Bikeways	Bikes, 7 ft; Vehicles, 24–30 ft; Bikes, 7 ft
LT1b: One-Way Raised Bikeways	Bikes, 7 ft; Vehicles, 24–26 ft; Bikes, 7 ft
LT2a: Two-Way Curb-Protected Bikeway	Bikes, 14 ft; Vehicles, 24–28 ft
LT2b: Two-Way Raised Bikeway	Bikes, 14 ft; Vehicles, 24–26 ft

Transit Accessibility

Existing Conditions



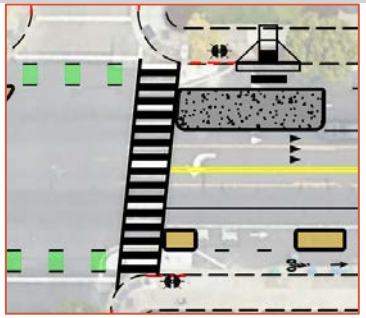
Bus stops against existing curb; non-accessible boarding location

Buses must merge into travel lane

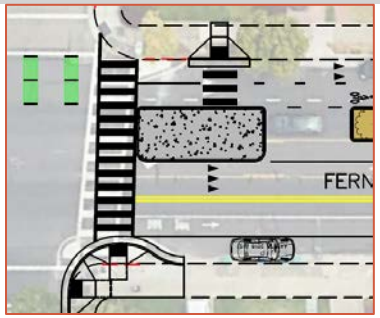
All Long-Term Concepts Include:

- Fully accessible bus boarding islands
- In-lane bus stops

Curb-Protected Concepts: accessible ramp across bikeway to sidewalk

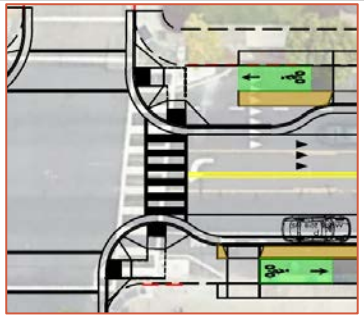


LT1a: One-Way Curb-Protected Bikeways

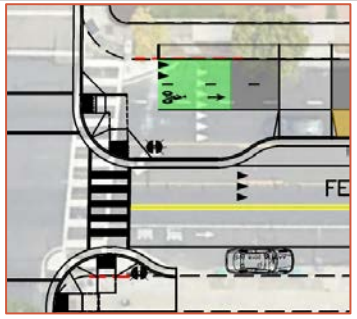


LT2a: Two-Way Curb-Protected Bikeway

Raised Concepts: level crossing across bikeway to sidewalk (easier access)

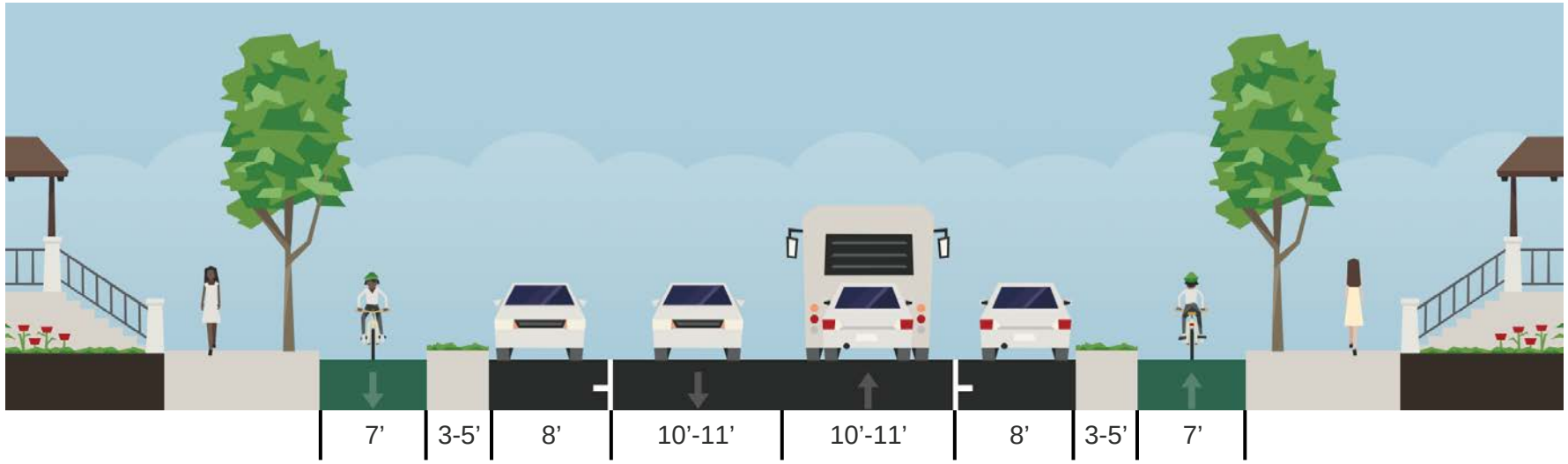


LT1b: One-Way Raised Bikeways



LT2b: Two-Way Raised Bikeway

LT1a: One-Way Curb-Protected Bikeways



All Long-Term options include:

- Removal of center turn lane west of High Street, narrower vehicle lanes to reduce speeds
- Reduced crosswalk distance across the path of motor vehicles by over 50%
- Additional curb extensions, marked crosswalks, and flashing beacons

Unique characteristics:

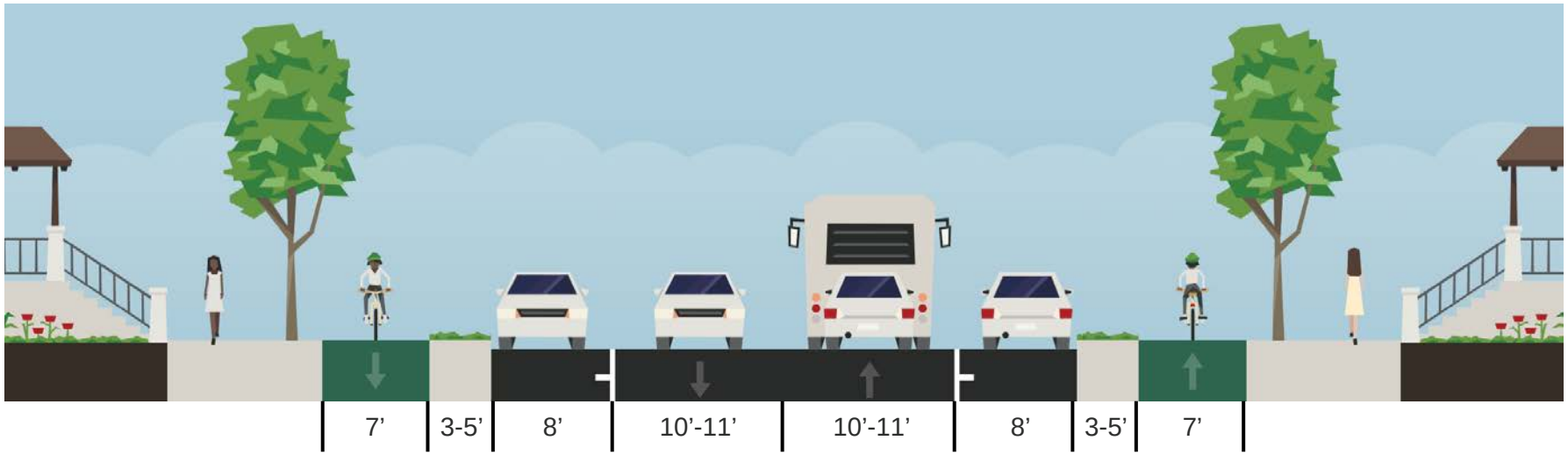
- Bikeways at roadway level, separated from vehicle lanes and located between curbs
- Vehicle parking lanes along new curb
- New narrow buffer strips that can be used as planting strips

LT1a: One-Way Curb-Protected Bikeways

Design Considerations:

- Facilitates simpler bikeway connections to side streets
- Driveway access crosses bikeway on both sides of street
- Utilize space in front of driveways for accessible loading zones
- More complex bikeway connection to existing 2-way bikeway south of Lincoln Middle School
- Removes 35-55% of vehicle parking (*current peak parking occupancy utilizes 41-48% of parking spaces*)

LT1b: One-Way Raised Bikeways



All Long-Term options include:

- Removal of center turn lane west of High Street, narrower vehicle lanes to reduce speeds
- Reduced crosswalk distance across the path of motor vehicles by over 50%
- Additional curb extensions, marked crosswalks, and flashing beacons

Unique characteristics

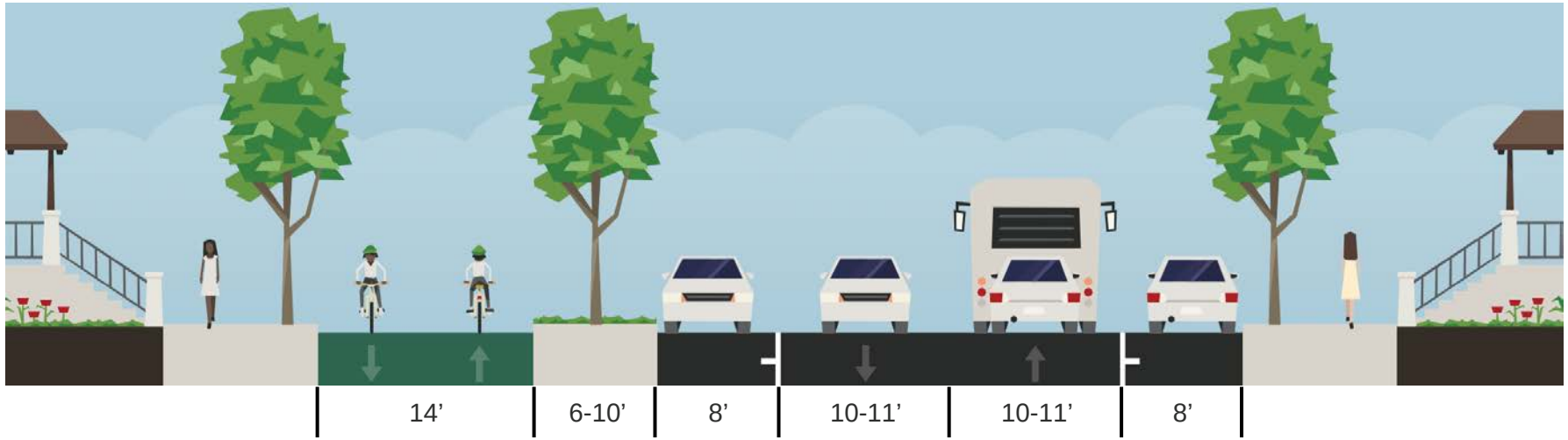
- Bikeways at sidewalk level, separated from vehicle travel lanes
- Vehicle parking along new curb
- New narrow buffer strips can be used as planting strips or accessible loading zones

LT1b: One-Way Raised Bikeways

Design Considerations:

- Facilitates simpler bikeway connections to side streets
- Driveway access crosses raised bikeway on both sides of street
- Can utilize new curb or space in front of driveways for accessible loading zones
- More complex bikeway connection to existing 2-way bikeway south of Lincoln Middle School
- Removes 20-40% of vehicle parking (*current peak parking occupancy utilizes 41-48% of parking spaces*)

LT2a: Two-Way Curb-Protected Bikeway



All Long-Term options include:

- Removal of center turn lane west of High Street, narrower vehicle lanes to reduce speeds
- Reduced crosswalk distance across the path of motor vehicles by over 50%
- Additional curb extensions, marked crosswalks, and flashing beacons

Unique characteristics

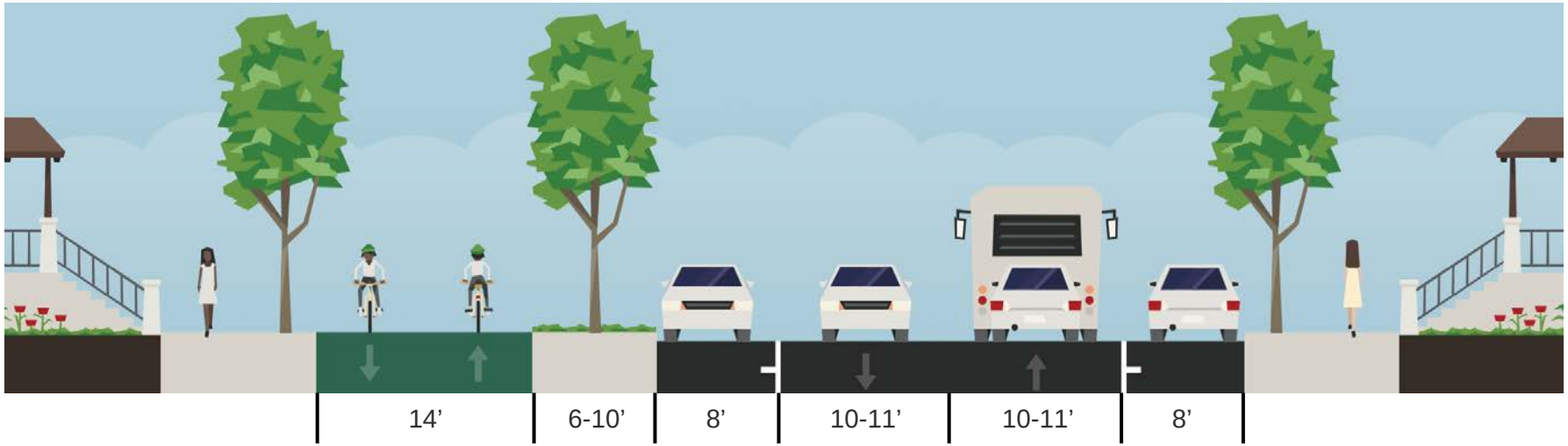
- 2-way bikeway at roadway level, separated from travel lanes, located between curbs on north side of street
- Vehicle parking lanes along new curb on north side of street
- New wider buffer strip can accommodate substantial landscaping, e.g. for planting trees

LT2a: Two-Way Curb-Protected Bikeway

Design Considerations:

- Bicyclists travel contra-flow at intersections
- Straightforward bikeway connection to existing 2-way bikeway south of Lincoln Middle School
- Utilize space in front of driveways for accessible loading zones
- Driveway access crosses bikeway on north side of street
- Removes 15-35% of vehicle parking, mostly from north (*current peak parking occupancy utilizes 41-48%*)

LT2b: Two-Way Raised Bikeway



All Long-Term options include:

- Removal of center turn lane west of High Street, narrower vehicle lanes to reduce speeds
- Reduced crosswalk distance across the path of motor vehicles by over 50%
- Additional curb extensions, marked crosswalks, and flashing beacons

Unique characteristics

- 2-way bikeway at sidewalk level, separated from travel lanes on north side of street
- Vehicle parking lanes along new curb on north side of street
- New wider buffer strip can accommodate substantial landscaping, e.g. for planting trees

LT2b: Two-Way Raised Bikeway

Design Considerations:

- Bicyclists travel contra-flow at intersections
- Straightforward bikeway connection to existing 2-way bikeway south of Lincoln Middle School
- Can utilize new curb or space in front of driveways for accessible loading zones
- Driveway access crosses bikeway on north side of street
- Removes 10-25% of corridor vehicle parking, mostly from north (*current peak parking 41-48%*)

Long-Term Alternatives Comparison

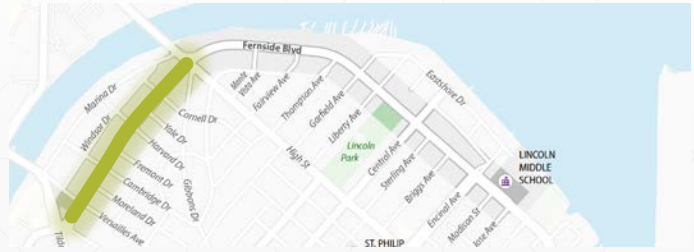
	LT1a	LT1b	LT2a	LT2b
	One-way		Two-way	
	Curb-protected	Raised	Curb-protected	Raised
Shorter pedestrian crossing distance	✓	✓	✓	✓
Additional marked crosswalks and flashing beacons	✓	✓	✓	✓
Vehicle speed reduction measures	✓	✓	✓	✓
Reduce vehicle illegal passing opportunities	✓	✓	✓	✓
Low stress, separated bikeways (alignment with adopted Active Transportation Plan)	✓	✓	✓	✓
Vehicle parking along the curb	✓	✓	✓	✓
Estimated on-street parking removal*	**35-55%**	20-40%	15-35%	10-25%
Estimated Construction Cost	**$15 MM**	**$22 MM**	**$14 MM**	**$20 MM**

**Current peak parking occupancy 41-48%*

Concept Alternatives

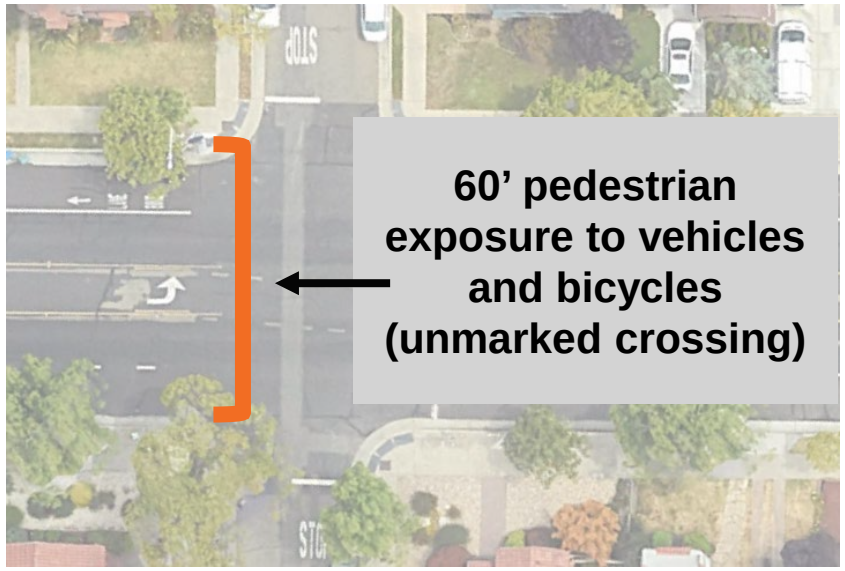
- **Long-Term**
  - LT1a: One-Way Curb-Protected Bikeways
  - LT1b: One-Way Raised Bikeways
  - LT2a: Two-Way Curb-Protected Bikeway
  - LT2b: Two-Way Raised Bikeway

- **Near-Term (potential alignment with 2025-2026 resurfacing)**
  - NT1: Buffered Bike Lanes
  - NT2: One-Way Separated Bikeways
  - NT3: Two-Way Separated Bikeway

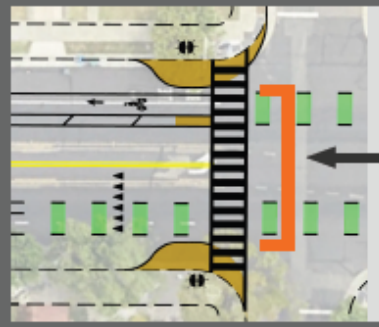


Near-Term Pedestrian Crossing Comparison

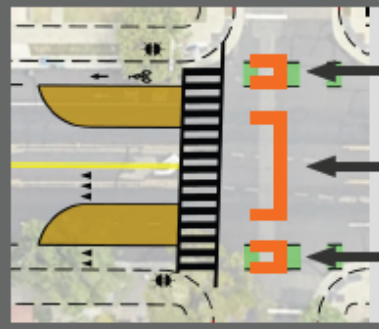
Existing Conditions



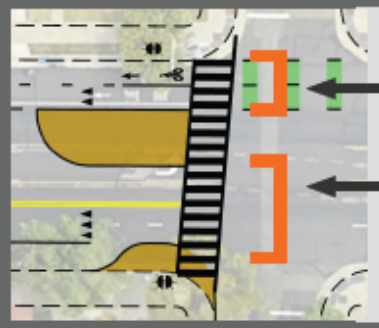
NT1: Buffered Bike Lanes



NT2: One-Way Separated Bikeways

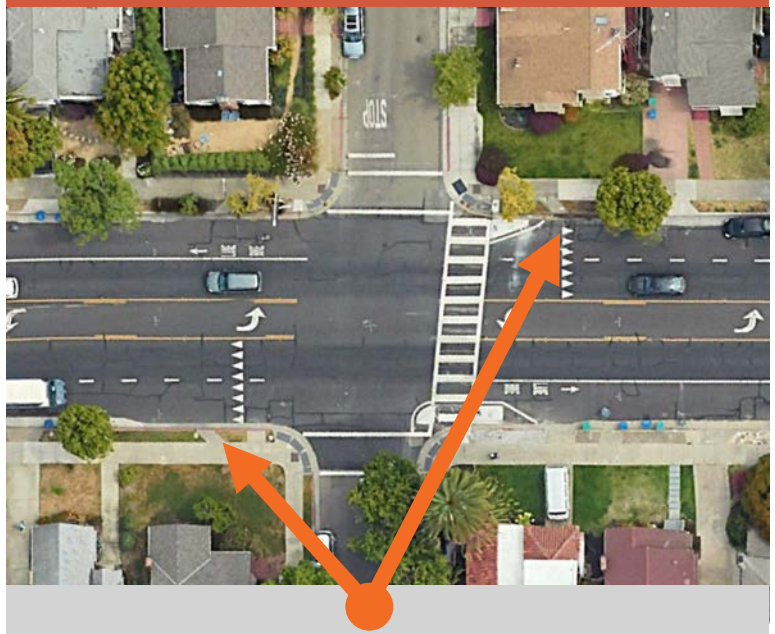


NT3: Two-Way Separated Bikeway



Near-Term Transit Accessibility

Existing Conditions

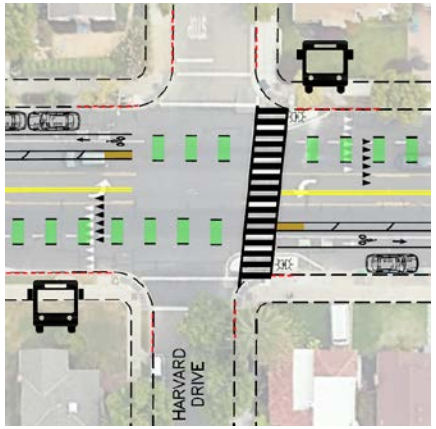


Bus stops against existing curb; non-accessible boarding location

Buses must merge into travel lane

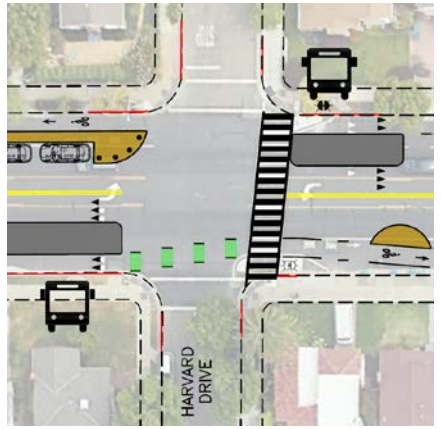
Near-Term Concepts:

NT1: Buffered Bike Lanes



Bus stop accessibility and transit operations not improved

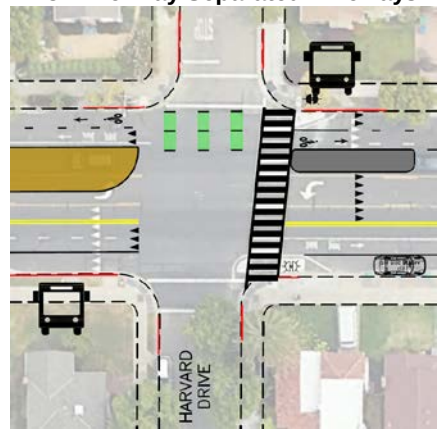
NT2: One-Way Separated Bikeways



Accessible bus boarding islands

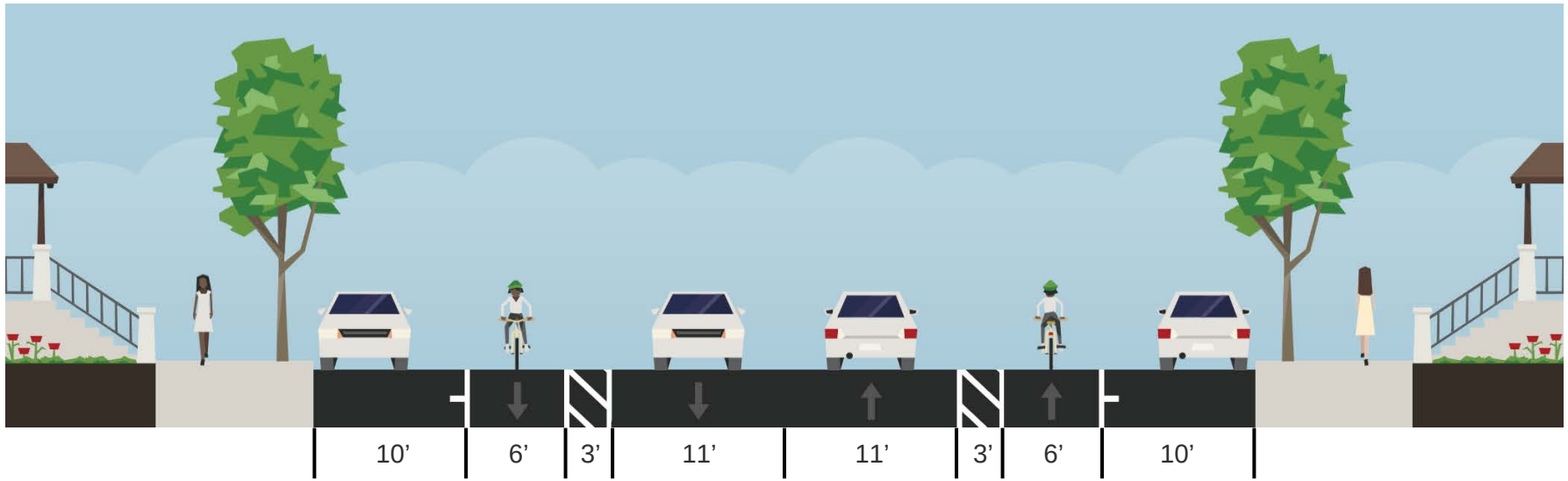
In-lane bus stops to improve transit operations

NT3: Two-Way Separated Bikeways



Bus stop accessibility and transit operations improved on north side only

NT1: Buffered Bike Lanes



Description:

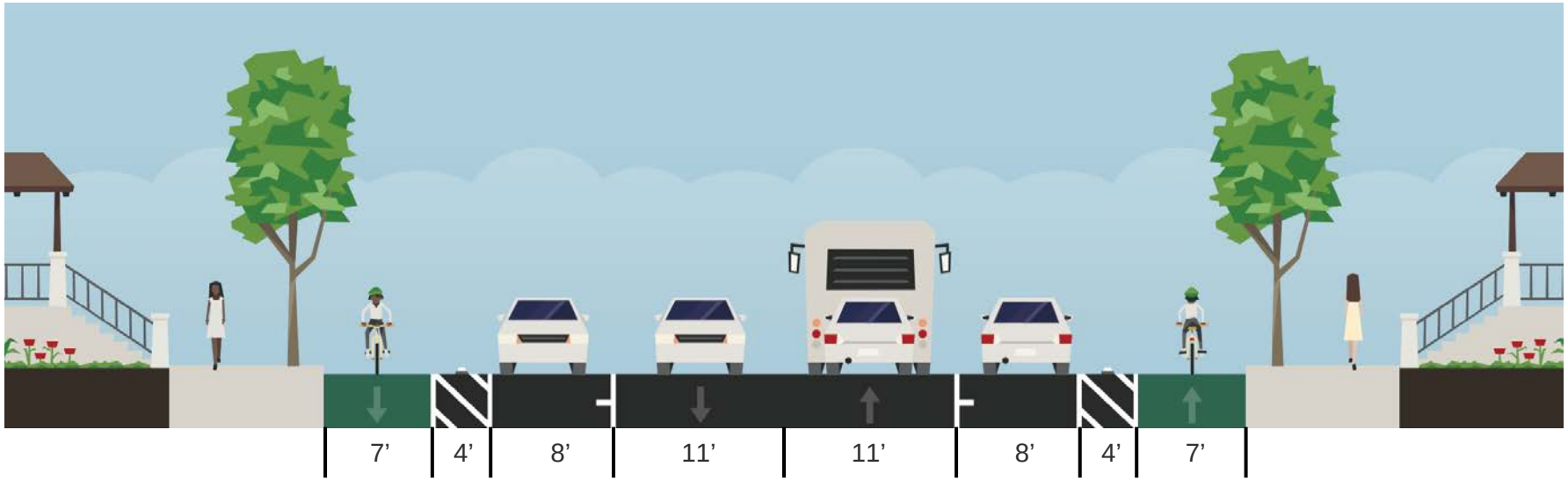
- Center turn lane removed, narrower vehicle travel lanes to reduce speeds
- Additional marked crosswalks *(and, if budget allows, additional flashing beacons*)
- Striped buffer between the bike lane and vehicle travel lane
- Vehicle parking along existing curb

NT1: Buffered Bike Lanes

Design Considerations:

- Does not provide physical separation between bicycles and vehicles
- Does not prevent illegal vehicle passing in bike lanes
- Utilize existing curb or space in front of driveways for accessible loading zones
- Continues existing buffered bike lanes from east of High Street
- Removes 10-20% of vehicle parking for standard intersection daylighting *(current peak parking occupancy utilizes 41-48% of parking spaces)*

NT2: One-Way Separated Bikeways



Description:

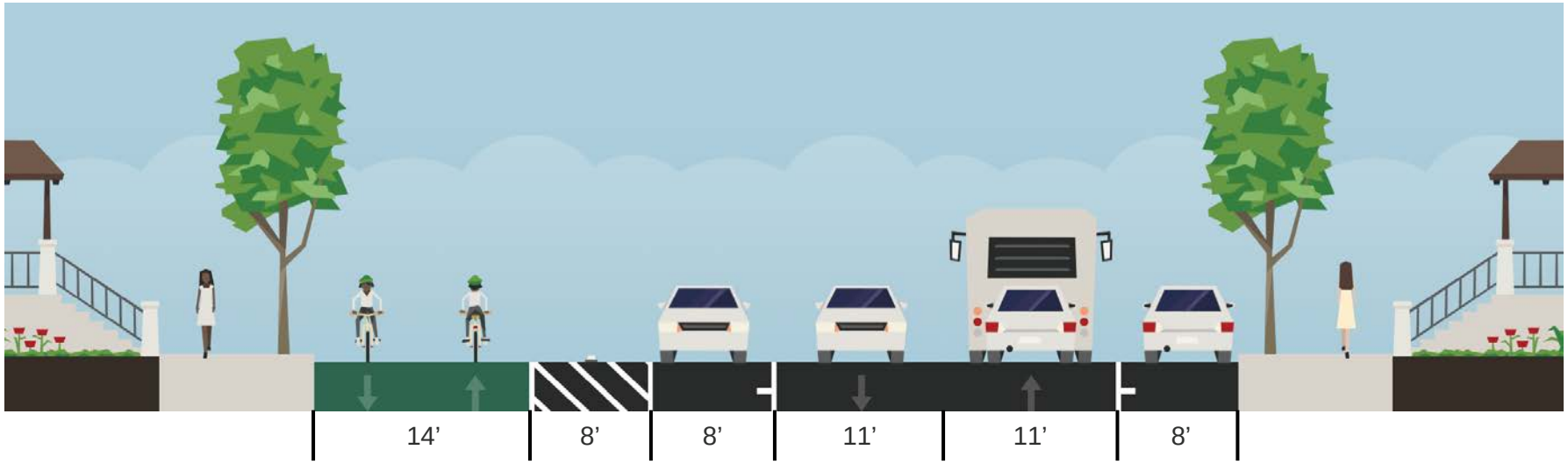
- Center turn lane removed, narrower vehicle travel lanes to reduce speeds
- Additional marked crosswalks (*and, if budget allows, additional flashing beacons*)
- Bikeways at roadway level, separated from vehicle travel lanes, between curb and parked vehicles
- Vehicle parking lanes shifted into roadway
- Narrow buffer strip can be used for planter boxes and other visual enhancements as budget allows

NT2: One-Way Separated Bikeways

Design Considerations:

- Provides physical separation between bicycles and vehicles
- Prevents drivers from illegally using the center turn lane or bike lane to pass other drivers
- Utilize parking spaces or space in front of driveways for accessible loading zones
- Straightforward bikeway connection to existing buffered bike lanes east of High Street
- Removes approximately 65-85% of vehicle parking *(current peak parking utilizes 41-48% of parking spaces)*
- Vehicle parking is not against the curb

NT3: Two-Way Separated Bikeway



Description:

- Center turn lane removed, narrower vehicle travel lanes to reduce speeds
- Additional marked crosswalks (*and, if budget allows, additional flashing beacons*)
- 2-way bikeway at roadway level, separated from vehicle travel lanes, between curb and parked vehicles
- Vehicle parking lane shifted into roadway on north side of street
- Wide buffer strip can be used for planter boxes and other visual enhancements as budget allows

NT3: Two-Way Separated Bikeway

Design Considerations:

- Provides physical separation between bicycles and vehicles
- Prevents drivers from illegally using the center turn lane or bike lane to pass other drivers
- Utilize parking spaces or space in front of driveways for accessible loading zones on north side; no roadway change on south side
- More complex bikeway connection to existing buffered bike lanes east of High Street
- Removes approximately 40-60% of vehicle parking *(current peak parking utilizes 41-48% of parking spaces)*
- Vehicle parking is not against the curb on north side of the street

Near-Term Alternatives Comparison

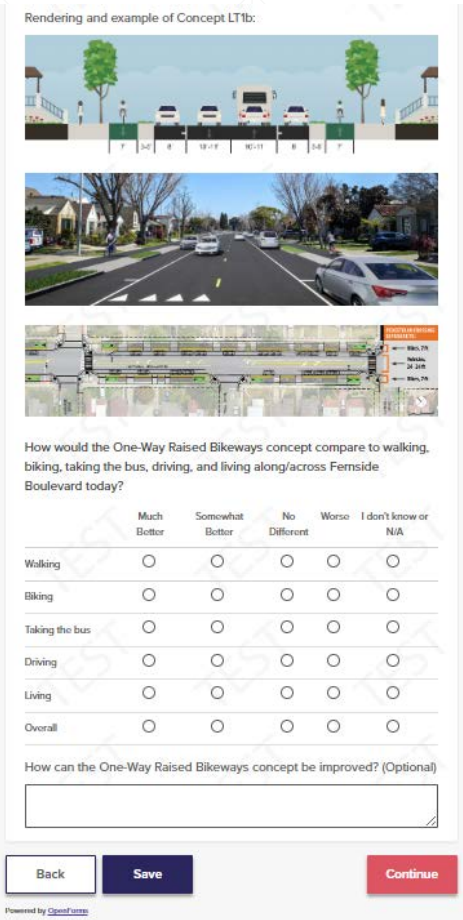
	NT1	NT2	NT3
		Separated Bikeways	
	Buffered Bike Lanes	One-Way	Two-Way
Shorter pedestrian crossing distance		✓	✓
Additional marked crosswalks and flashing beacons	✓	✓	✓
Vehicle speed reduction measures		✓	✓
Eliminate vehicle illegal passing opportunities		✓	✓
Low stress, separated bikeways (alignment with adopted bicycle plan network)		✓	✓
Vehicle parking along the curb	✓		
Estimated on-street parking removal*	10-20%	**65-85%**	**40-60%**
Construction Cost	$800,000	$1,800,000	$1,700,000

**Current peak parking occupancy 41-48%*

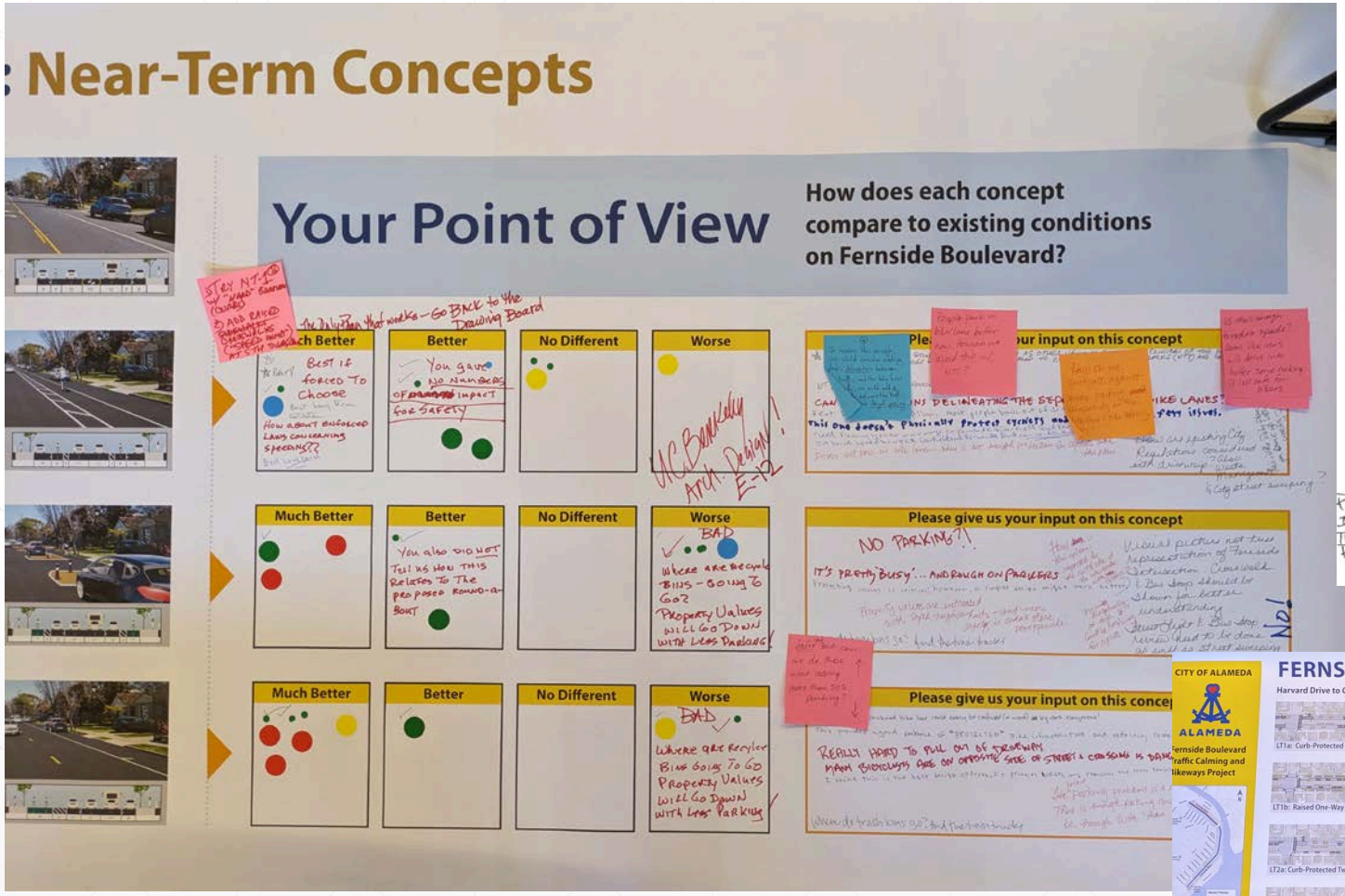
Community Input

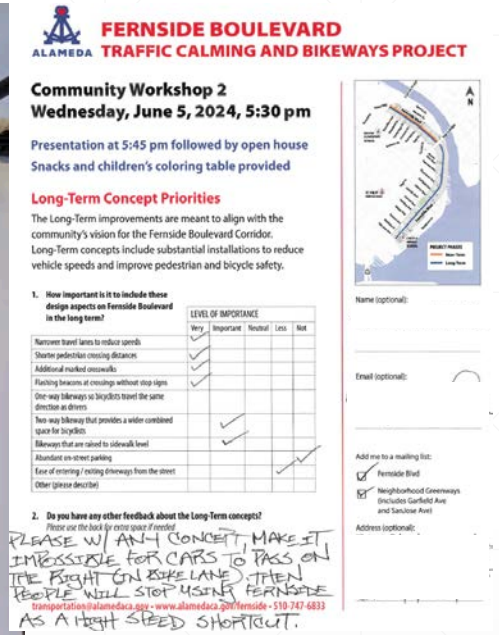
Spring 2024 Community Engagement Participation

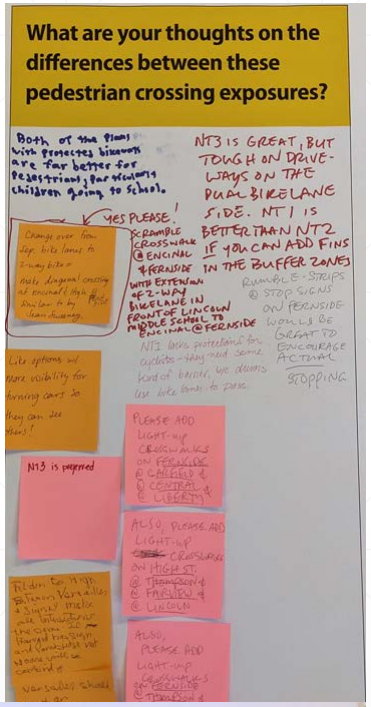
- **13** virtual community workshop attendees
- **40** in-person community workshop attendees
- **304** online survey participants



In-Person Community Workshop







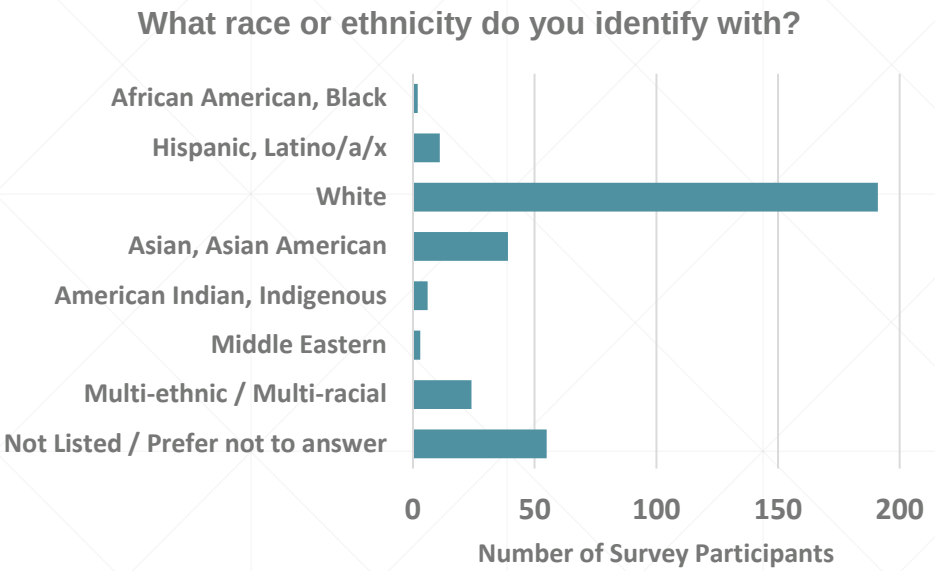
98 individual comments, **8** input forms collected

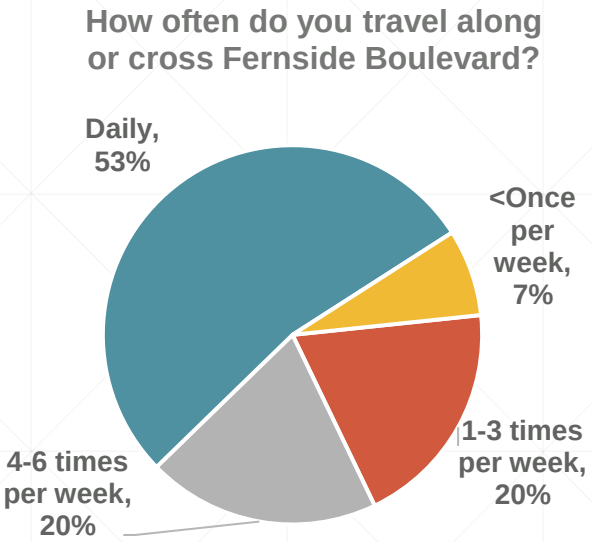
Online Survey

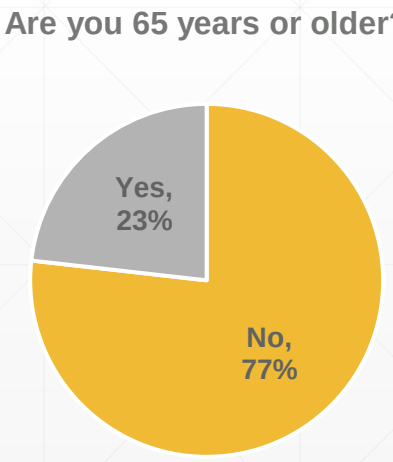
304 total responses

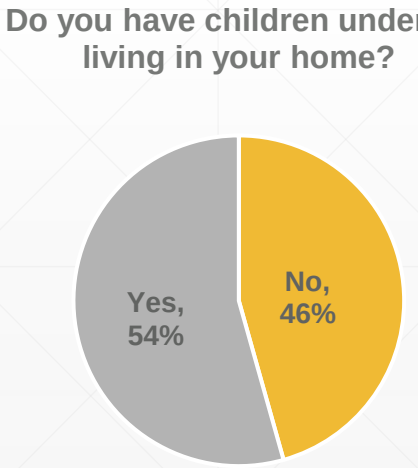
63% live within one block of Fernside

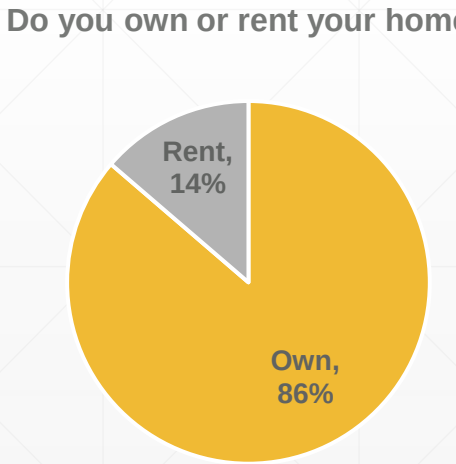
1,781 free response comments

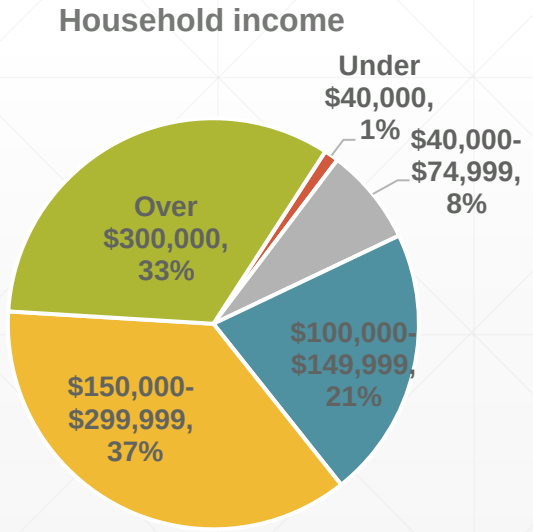






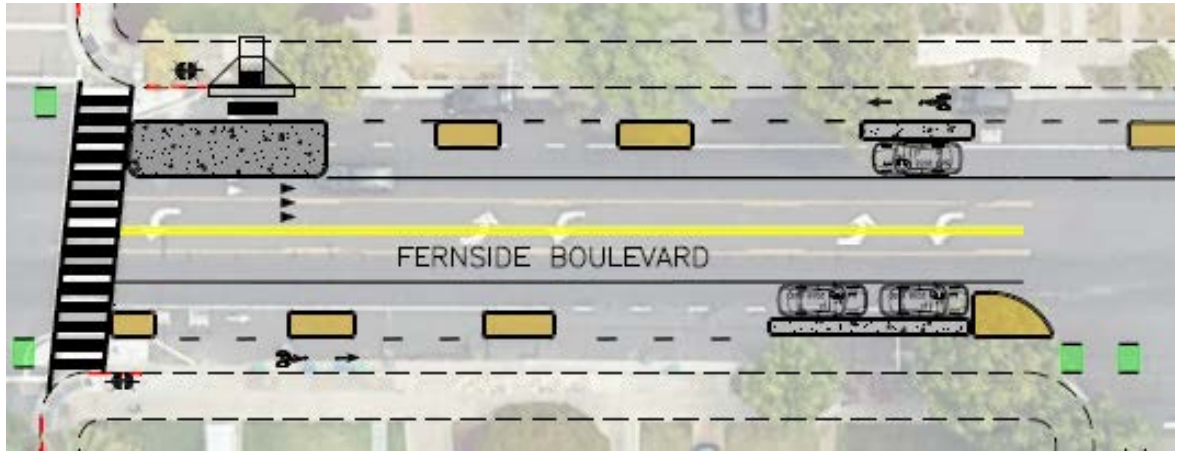


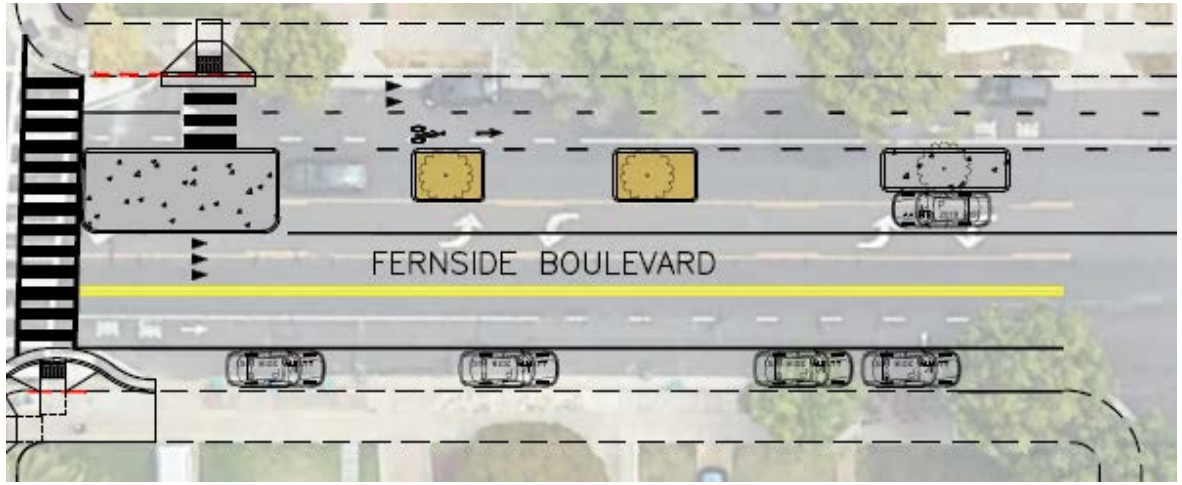




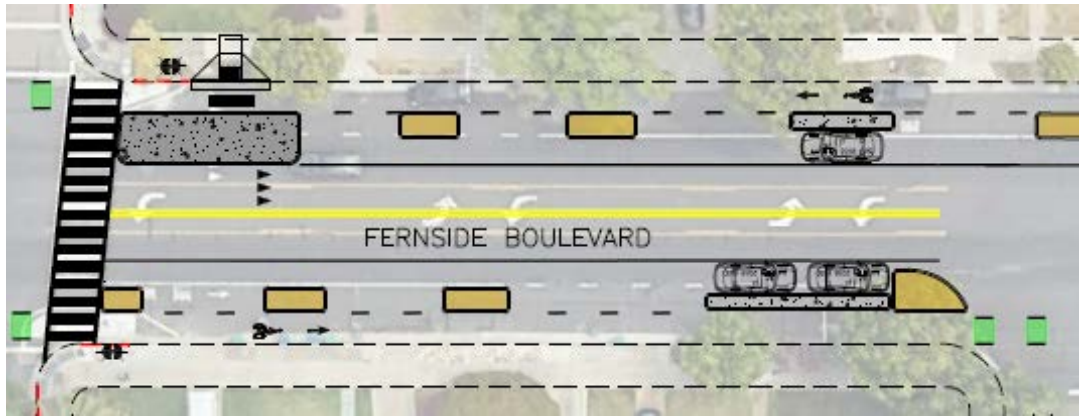
One-Way vs. Two-Way Bikeway Input

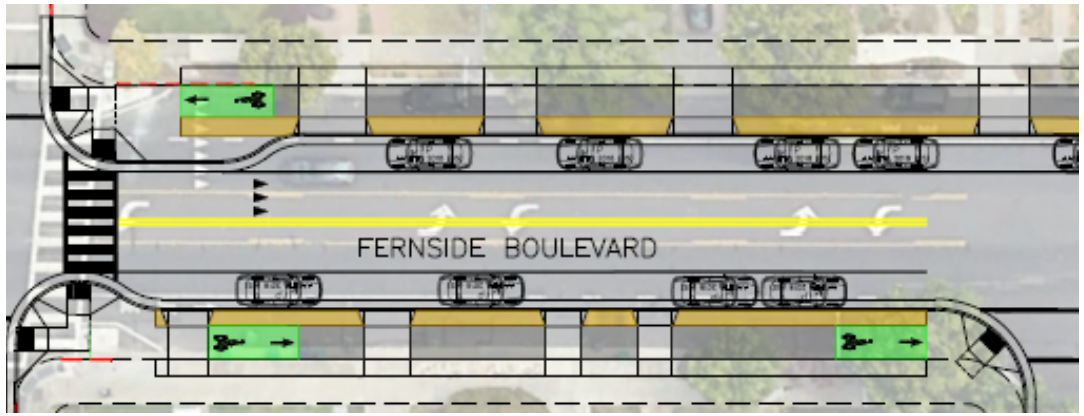
One-Way Bikeways	Two-Way Bikeways
Easier for vehicles to cross driveways or side streets	Wider overall path of travel for bicycles enables passing
Simpler for pedestrians to cross the bikeway	On-street parking and driveway access only impacted on one side of street
Simpler for bicycles to access side streets	More space for vehicles exiting driveways to wait before entering roadway
Avoids oncoming bicyclist conflicts	Connects with existing two-way bikeway at Lincoln Middle School
	Wider buffer strip can accommodate more substantial landscaping





Curb-Protected vs. Raised Bikeway Input





Curb-Protected Bikeways	Raised Bikeways
More clearly separates bicycles from pedestrians (applicable at intersections)	Better pedestrian crossing improvement / integration with bulb-outs
	Simpler to maintain bikeway/keep free of debris
	Not biking ‘in a gutter’
	Provides better bicyclist visibility to motorists
	Provides better bicyclist protection vs discontinuous median islands
	Simpler to integrate with trash service
	Retains more on-street parking

Long-Term Concept Input

How important is it to include these design aspects on Fernside Boulevard in the long term?									
	Narrower travel lanes to reduce speeds	Shorter pedestrian crossing distances	Additional marked crosswalks	Flashing beacons at crossings without stop signs	One-way bikeways so bicyclists travel the same direction as drivers	Two-way bikeway that provides a wider combined space for bicyclists	Bikeways that are raised to sidewalk level	Abundant on-street parking	Ease of entering / exiting driveways from the street
Extremely Important	45%	42%	48%	52%	33%	18%	17%	23%	35%
Important	25%	30%	36%	32%	23%	22%	19%	22%	29%
Neutral	9%	16%	12%	11%	24%	21%	23%	16%	18%
Less Important	7%	5%	2%	3%	7%	11%	12%	18%	11%
Not Important	14%	8%	2%	3%	13%	28%	29%	21%	7%

- **Pedestrian improvements** and **reducing vehicle speeds** were identified as long-term priorities
- Ease of driveway access was identified as **more important** than abundant on-street parking
- **One-way bikeways** identified as slightly more important than two-way

Long-Term Concept Input (cont.)

How would each long-term concept compare to walking, biking, taking the bus, driving, and living along/across Fernside Boulevard today?

LT1a: One-Way Curb-Protected Bikeways

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	52%	78%	17%	33%	48%	60%
No Different	32%	7%	35%	26%	8%	5%
Worse	12%	12%	16%	34%	28%	28%

LT1b: One-Way Raised Bikeways

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	54%	76%	19%	33%	50%	62%
No Different	26%	7%	35%	25%	10%	5%
Worse	14%	12%	16%	31%	27%	27%

LT2a: Two-Way Curb-Protected Bikeways

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	50%	68%	19%	28%	48%	57%
No Different	30%	7%	35%	27%	6%	6%
Worse	16%	20%	18%	33%	32%	31%

LT2b: Two-Way Raised Bikeways

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	52%	67%	19%	31%	46%	55%
No Different	26%	7%	34%	24%	9%	7%
Worse	16%	21%	17%	34%	31%	29%

- All concepts were recognized as improving walking and biking, and were **broadly supported overall**
- Respondents suggest **one-way bikeways** would be slightly better for bikers than two-way bikeways
- Little noticeable differentiation between concepts

Long-Term Concept Input (cont.)

- ~20% of participants indicate no support for any long-term concept
- Most free response comments highlight the increased pedestrian and bicyclist safety
- Many responses express concern over on-street parking, exiting driveways and side streets onto Fernside safely, and integration of other services such as trash pickup and delivery
- Over 50 responses request speed humps, another 50 comments request increased enforcement

Near-Term Concept Input

How important is it to include these design aspects on Fernside Boulevard in the near term?								
	Narrower travel lanes to reduce speeds	Eliminating illegal vehicle passing maneuvers	Painted bulb-outs at intersections	Additional marked crosswalk locations	Flashing beacons at marked crosswalks without stop signs	Bikeways separated from vehicle travel lanes by on-street parking	Abundant on-street parking	Ease of entering / exiting driveways from the street
Extremely Important	**45%**	**59%**	**32%**	**46%**	**48%**	**35%**	**27%**	**37%**
Important	**23%**	**22%**	**26%**	**35%**	**34%**	**20%**	**17%**	**26%**
Less Important	**6%**	**5%**	**10%**	**3%**	**2%**	**11%**	**17%**	**9%**
Neutral	**13%**	**9%**	**21%**	**12%**	**13%**	**15%**	**19%**	**20%**
Not Important	**12%**	**5%**	**11%**	**3%**	**3%**	**19%**	**21%**	**8%**

- Addressing **illegal vehicle passing maneuvers** identified as the most important near-term improvement
- **Pedestrian improvements** and **reducing vehicle speeds** also identified as near-term priorities
- **Flashing beacons** perceived as more important than painted bulb-outs
- **Separated bikeways** identified as **more important** than abundant on-street parking

Near-Term Concept Input (cont.)

How would each near-term concept compare to walking, biking, taking the bus, driving, and living along/across Fernside Boulevard today?

NT1: Buffered Bike Lanes

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	31%	62%	9%	14%	38%	50%
No Different	55%	21%	51%	42%	34%	24%
Worse	10%	14%	12%	21%	15%	17%

NT2: One-Way Separated Bikeways

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	46%	67%	15%	20%	36%	44%
No Different	35%	8%	38%	21%	11%	7%
Worse	18%	20%	21%	44%	40%	38%

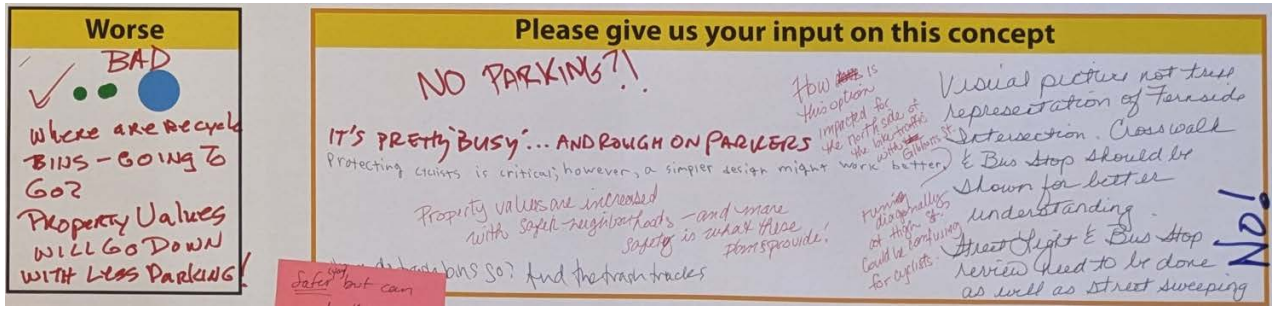
NT3: Two-Way Separated Bikeway

	Walking	Biking	Taking the bus	Driving	Living	Overall
Much Better / Better	40%	60%	15%	19%	36%	41%
No Different	31%	7%	35%	21%	8%	7%
Worse	22%	26%	23%	44%	43%	41%

- Separated Bikeways rated as **better for pedestrians and bicyclists** compared to Buffered Bike Lanes, *but*
- Separated Bikeways scored lower **for drivers, residents, and overall** compared to Buffered Bike Lanes.

Near-Term Separated Bikeway Input

- Written comments widely mixed and highly emphatic
- Survey responses for One-Way Separated Bikeways: **81 negative comments and 15 positive written comments**
- Written **comment opposition to separated bikeways**: parking impacts (~20% of comments), visual clutter (~6%), driveway access (~4%), and others
- Transportation Commission input urged prioritizing traffic calming and bike/ped safety



"This is insanity for drivers and people who live on Fernside"

"Hate this concept…just STOP it!"

"What the heck is the City thinking"

"A foolish and needlessly complicated plan"

"This is asking for people to complain"

"This has to be someone's idea of a practical joke"

"The design is absolute trash"

"Don't have cars park "floating" in the middle of the street"

Concept Engagement Summary

- Long-term
  - **Pedestrian Improvements and reducing vehicle speeds** were identified as the highest long-term priorities
  - All concepts were recognized as improving walking and biking, and were **broadly supported overall**, with minor response differentiation between concepts
  - Respondents suggest **one-way bikeways** would be slightly better for bikers than two-way bikeways
  - **Raised bikeways** appear to be better facilities for people walking and biking, but are also more expensive than curb-protected bikeways
- Near-term
  - The separated bikeway concepts received high levels of strong participant opposition compared with Buffered Bike Lanes. This input does not necessarily align with the identified priority to address illegal vehicle passing maneuvers.