ALAMEDA COUNTY TRANSPORTATION COMMISSION

Bikeways Academy

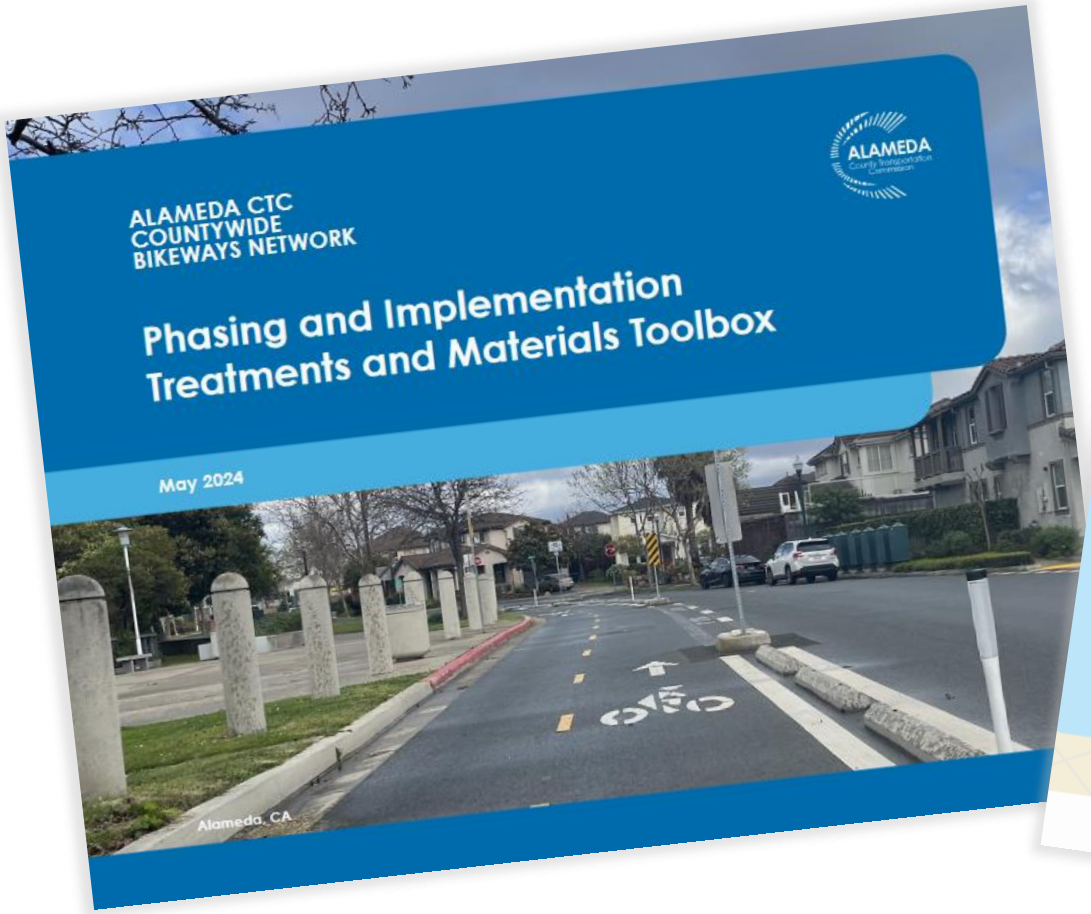
Multimodal Corridor Planning & Implementation

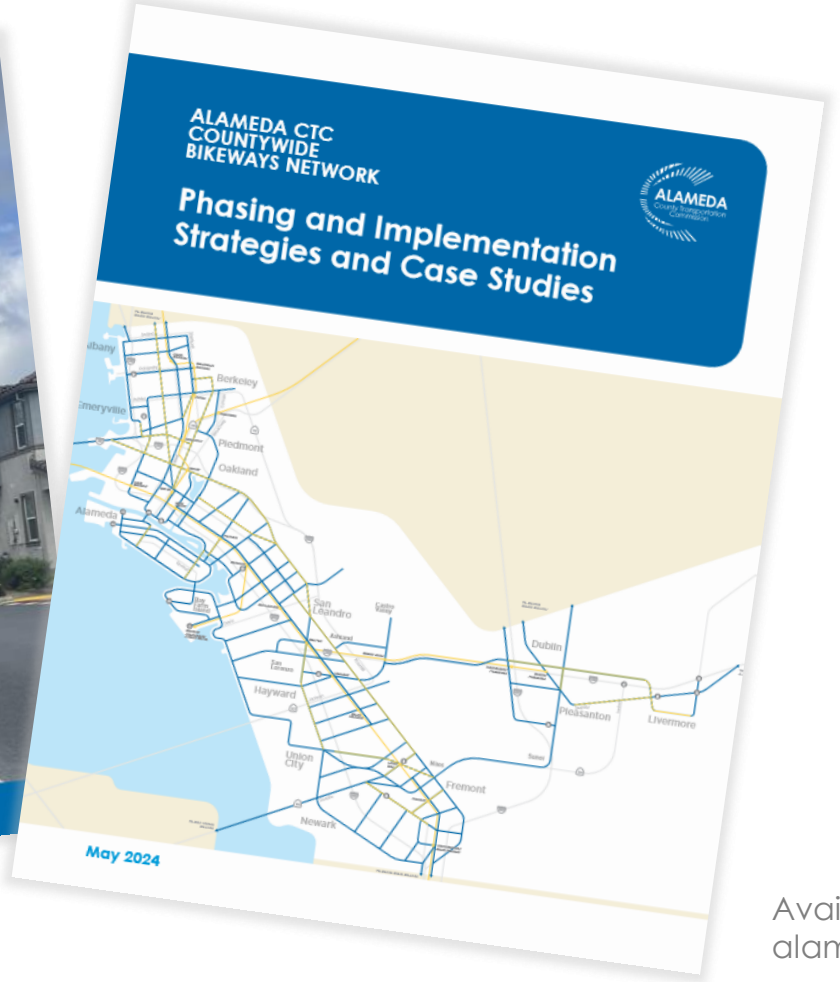
Panel Discussion

About the Bikeways Academy

- Aimed at Local Jurisdictions and Agency Staff
- Support the Countywide Bikeways Network and All Ages and Abilities Policy

Bikeways Academy White Papers





Available from
alamedactc.org/bikeways

Treatments and Materials Toolbox

Implementation Considerations

Implementation considerations are based on case study interviews and built examples. These should be reviewed when deciding your preferred buffer treatment.

BUFFER TREATMENT SPACING

- Start with 10'-20' spacing on-center for urban arterials.
- Consider tighter spacing closer to intersections or driveways and in areas with high parking demand, where auto encroachment may be more prevalent.
- Consult with engineering staff on drainage and maintenance considerations for closely spaced buffer treatments.
- Consider the design speed of the corridor when determining treatment spacing. Larger spacing between treatments may be appropriate on higher speed roadways.

COMBINING TREATMENTS

- Consider combining low-profile treatments with taller treatments. Longitudinal, low-profile treatments may be more durable and feel more impactful to vehicles, and taller treatment, such as flex posts, may increase visibility but are easier to knock down.

MAINTENANCE

- Consider more durable or reinforced treatments at locations where high-impact collisions with the buffer treatments are more likely, such as at intersections, to minimize ongoing maintenance costs.
- Pair low treatments like curb stops with object markers or reflective devices for enhanced visibility.
- Consider ordering 20%-50% extra product for ongoing maintenance, depending on the durability of the treatment.
- Work with pavement overlay and resurfacing contractor, city crew, or project manager to develop ways to resurface or overlay roadways while minimizing remove/replacement/reinstallation for the various separation devices. Additional buffer striping/separation devices can result in significant higher percentages of total project construction cost that are not pavement-related.
- Coordinate with maintenance staff to ensure bikeway design and placement of treatments maximize ease of street cleaning and maintenance.

ADA CONSIDERATIONS

- Provide a 5' buffer for parking-protected bike lanes where street width allows so that buffer space can be used as an access aisle from ADA parking spaces.
- Consider the potential tripping hazards for visually impaired pedestrians.
- Do not continue treatments through crosswalks or bus boarding islands to aide in navigability for users who require mobility devices.

4

Zipper

Modular, retro-reflective configurable barrier system.

Key Considerations

MINIMUM INSTALLATION WIDTH NEEDED
2 feet

ESTIMATED COST
LOW MED HIGH

AESTHETICS
LOW MED HIGH

BIKE COMFORT
LOW MED HIGH

DURABILITY
LOW MED HIGH

REFLECTIVITY
LOW MED HIGH

MAINTENANCE NEED
LOW MED HIGH

Technical Specifications

MANUFACTURED BY
Zicla

WEIGHT
Curved piece: 7lb 11oz
Full square: 11lb 7 oz

DIMENSIONS
Modular: 11" L x 11" W x 4.9" H (can have curved edge)

MATERIAL
100% recycled plastic

ANCHORING
4 anchor points per middle piece
3 per corner piece

Additional Notes

BIKE COMFORT
Elevated profile on outer side prevents motorists from entering bike lane. Sloped profile on inner side provides gradual redirection warning for cyclists.

REFLECTIVITY
50% reflective surface (top)

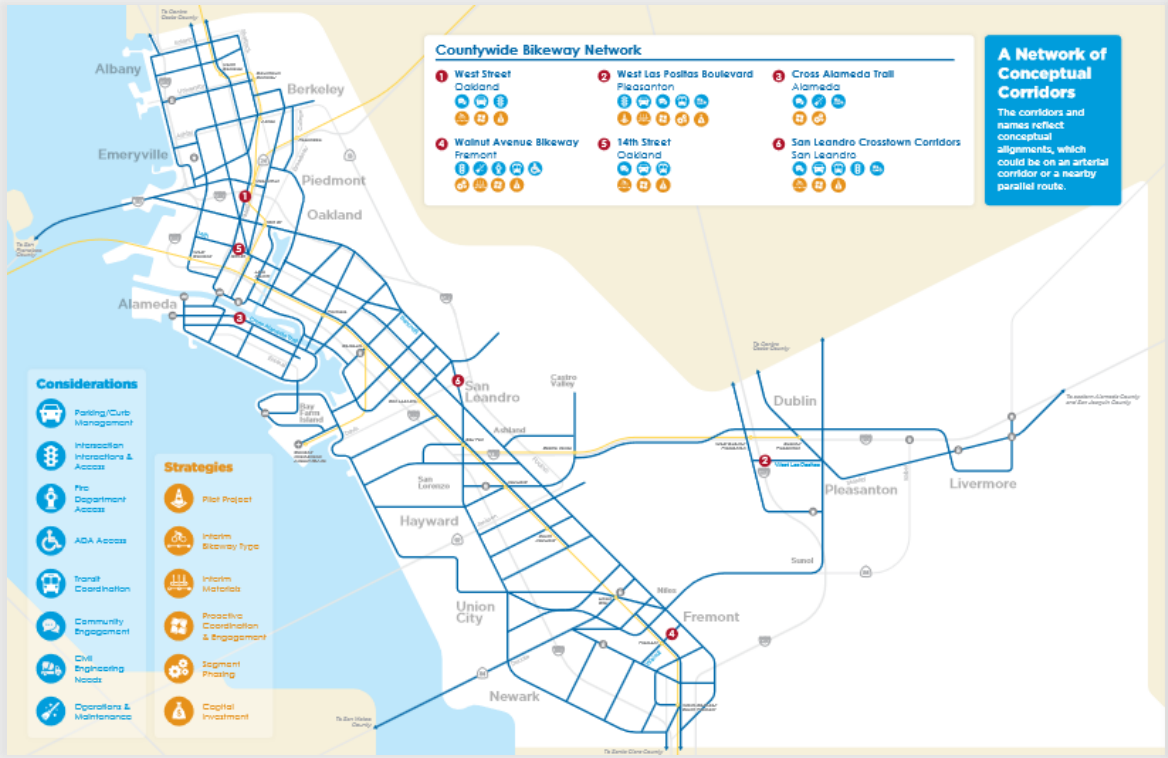
RECOMMENDED APPLICATION
Enhances buffered or separated bikeway at intersections and locations without parking or high curb activity.

CITIES WITH THE PRODUCT INSTALLED
Bentonville, AR; New York City, NY

SPEED AND VOLUME GUIDANCE
Medium-high speed and volume

6

Phasing and Implementation Strategies



10 | Alameda Countywide Bikeways White Paper

WEST STREET ROAD DIET

CITY OF OAKLAND

Leveraging repaving to advance safer design and All Ages and Abilities bikeways

Project Overview

West Street is a collector roadway running north-south that connects West Oakland and North Oakland. The corridor is parallel to two major arterials—Market Street and Martin Luther King, Jr. Way—and has served as a bikeway corridor since 1997 when the City of Oakland first installed bike lanes from MacArthur Boulevard to West Grand Avenue (extended north to 52nd St in 2007).

With routine paving coming up for the segment from 52nd Street to West Grand Avenue, the project team developed a design that includes traffic-calming, pedestrian safety enhancements, upgraded buffered bicycle lanes, and protected intersections for connectivity with the bikeway network.

Pedestrian Safety Island at West Street & 33rd Street

Design Considerations

- Existing bike lanes
- 2 lane road
- 30 MPH speed limit
- 25 MPH school zone
- 3,650 Average Daily Traffic
- 8 KSI crash history (2012-2021)

Prior to project implementation, West Street had two travel lanes, bike lanes, and a two-way center turn lane. While the existing bike lanes served an important function for connectivity, feedback from the community and City data collection indicated that speeding was a barrier to achieving an All Ages and Abilities bikeway.

COMMUNITY ENGAGEMENT
Community Engagement

While traffic volumes on West Street are very low, community advocates have long voiced concerns about speeding and stop sign running on the corridor. Because speeding and pedestrian safety were the central issues for the community, it was important for the City to develop a responsive solution focused on multimodal safety while also paying attention to the bikeway type and quality.

PARKING/CURB MANAGEMENT
Parking and Driveways

West Street is a residential street with a significant number of driveways and relatively high parking demand. When evaluating a potential separated bikeway, there was concern that design details and potential parking removal at driveways would require a longer project timeline for additional outreach and design.

MULTIMODAL INTERSECTION INTERACTIONS AND ACCESS
Intersection Needs

Many intersections along West Street had non-ADA compliant curb ramps and unmarked crosswalks. West Street intersections also connect bikeway corridors going east-west, including Grand Avenue, 27th Street, MacArthur Boulevard, 42nd Street, and the 52nd Street connection to the Genoa Street bikeway. These intersections needed supportive infrastructure for bike network connectivity along with multimodal safety improvements and pedestrian enhancements.

Design Strategies

With high speeds, the design team needed to either provide a separated bikeway or significantly lower speeds in order to meet NACTO All Ages and Abilities guidance.

Close coordination and engagement with community members helped the design team understand that the two-way center turn lane provided excessive space for speeding and unsafe passing.

As a result, the team elected to remove the two-way center turn lane, install bikeway buffers, median refuge islands, and also incorporate additional traffic calming elements through a series of raised intersections and speed cushions. The additional measures were selected to fit into the scope and budget of the existing paving project, and located to address conditions identified through outreach.

Instead of a longer project schedule for a separated bikeway, the team has pursued an All Ages and Abilities buffered bike lane with traffic calming given concerns about speeding, parking, the existing low traffic volumes, and scope of the resurfacing project.

Along with speed calming, two protected intersections were installed at 27th Street and West MacArthur Boulevard to fully separate bicyclists and enable easy connections with intersecting bikeways. This **capital investment** at key intersections with paving will support bicycle turn movements and help prepare the network for future All Ages and Abilities bikeway upgrades on intersecting corridors.

Before/after evaluation was done to monitor speed reductions: 85th percentile speeds dropped by six MPH 12 months after installation. Ongoing speed, volume, and safety evaluation will be critical in understanding whether the buffered bike lane with traffic calming will be sufficient, or if additional traffic calming or separated bikeway upgrades would be necessary to meet All Ages and Abilities guidelines.

Protected intersection at West St & W MacArthur Blvd

Timeline

1997 – Initial Bike Lanes
West St (from W Grand Ave to W MacArthur Blvd) received the City's second bike lanes as part of a 4-3 lane road diet.

2007 – Bike Lanes Extended
West St bike lanes were extended north to 52nd St.

2016 – Prioritized in the Capital Improvement Program
Due to poor pavement conditions, the segment from West St to W MacArthur Blvd is prioritized for paving and bikeway improvements.

2017 - 19 – Plan Updates Completed
OakDOT is formed and Oakland completes updates to its Pedestrian Plan and Bicycle Plan. West St up to 52nd St was included in the 2019 Paving Plan.

2020 - 21 – Studies and Outreach
City staff completes the Feasibility Study and engage with residents and stakeholders along West Street.

2021 - 22 – Construction
The resurfacing project is completed in 2022.

Today's Case Studies

Pennsylvania Avenue SE

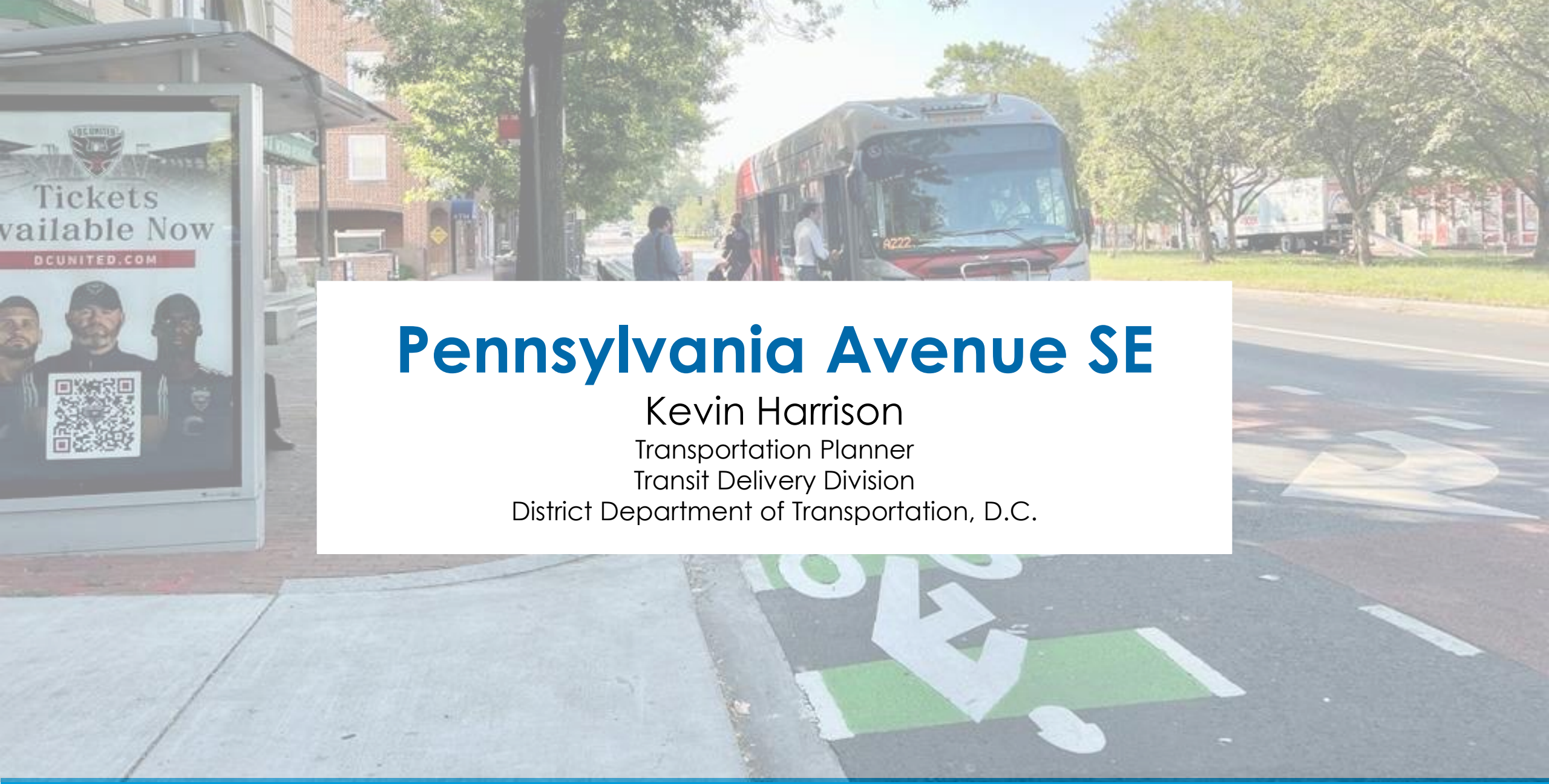
Washington, D.C.

Venice Boulevard

Los Angeles, CA

San Pablo Avenue

Alameda County, CA



Pennsylvania Avenue SE

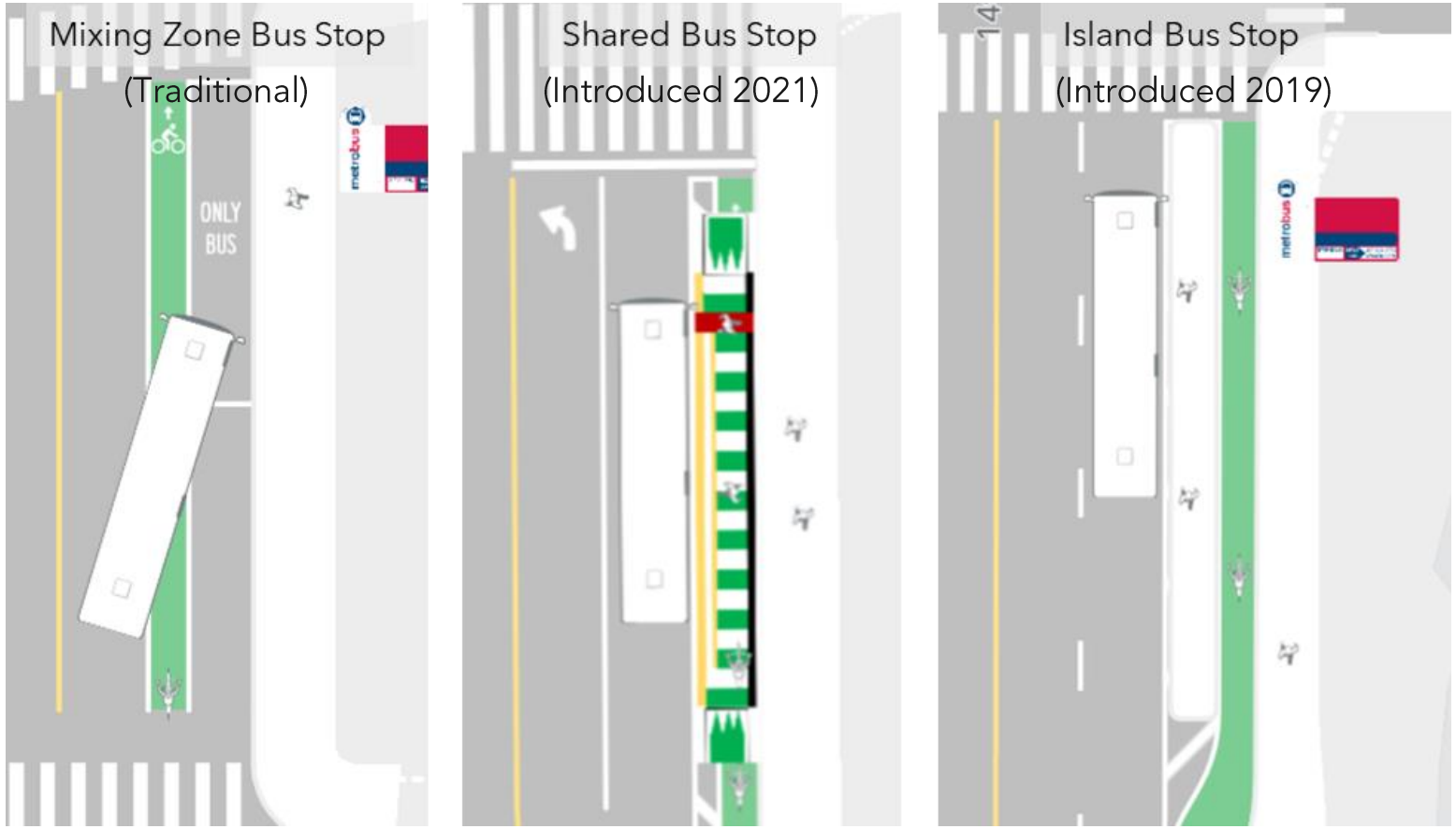
Kevin Harrison
Transportation Planner
Transit Delivery Division
District Department of Transportation, D.C.

Bike Lanes and Bus Boarding Areas

January 2022

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

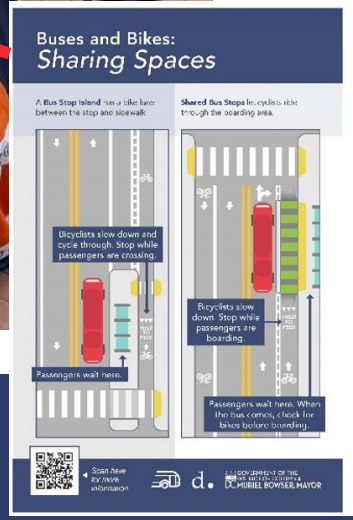
DDOT's Typical Bus Stop Configurations



DDOT Outreach

- Collaborate with Washington Metropolitan Area Transit Authority (WMATA) staff on project design
- Consulted with the US Access Board regarding ADA compliance
- Annual check-in meeting with WMATA's Accessibility Advisory Committee Bus and Rail Subcommittee to solicit feedback on existing and upcoming bus island and shared stop designs
- Surveying bus riders and cyclists on their experience using shared bus stops
- Educational outreach to inform cyclists and bus riders how the bus stops work
- Observations at all 38 bus stop islands and shared bus stops to document behavior and risks

Ongoing Outreach

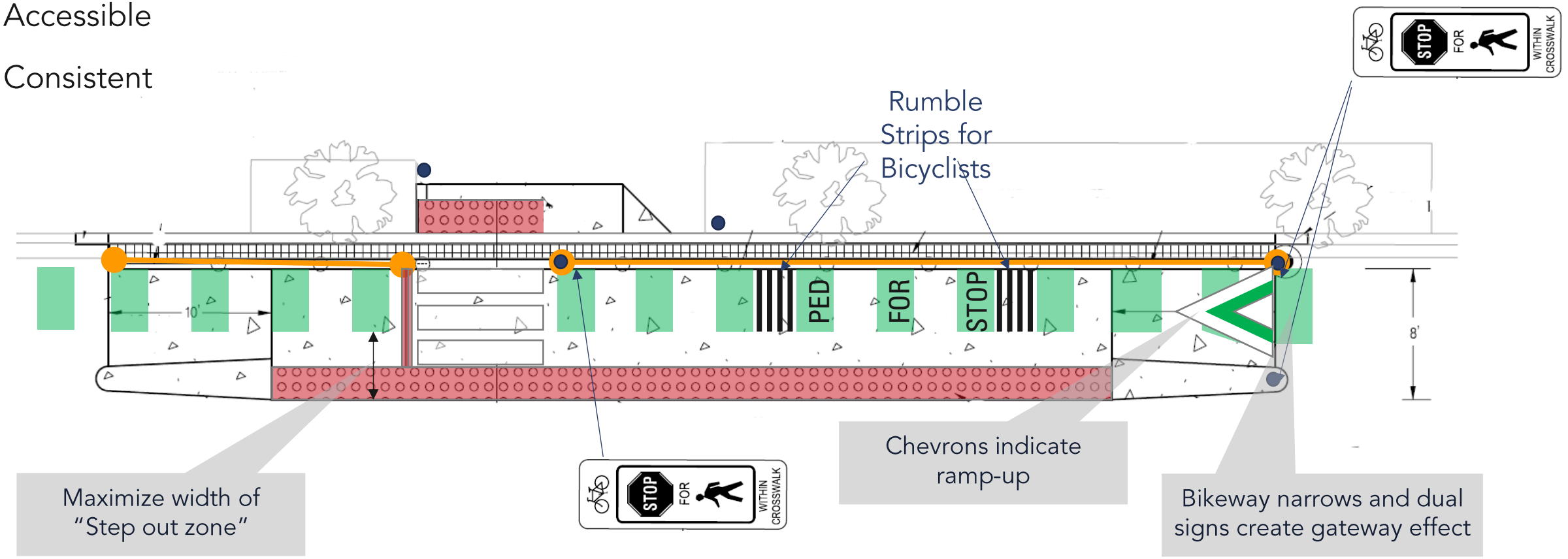


GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Pennsylvania Ave SE Typical Shared Stop Design

Design goals:

- Safe
- Accessible
- Consistent



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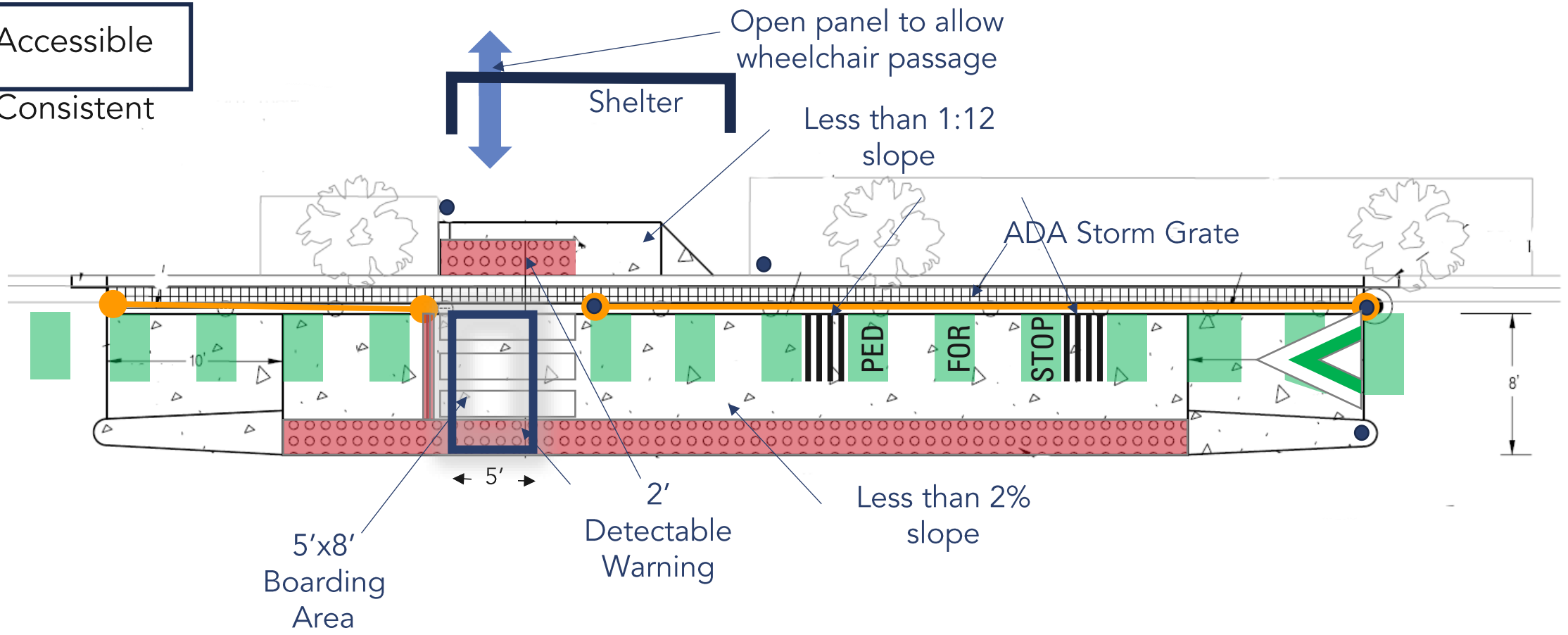

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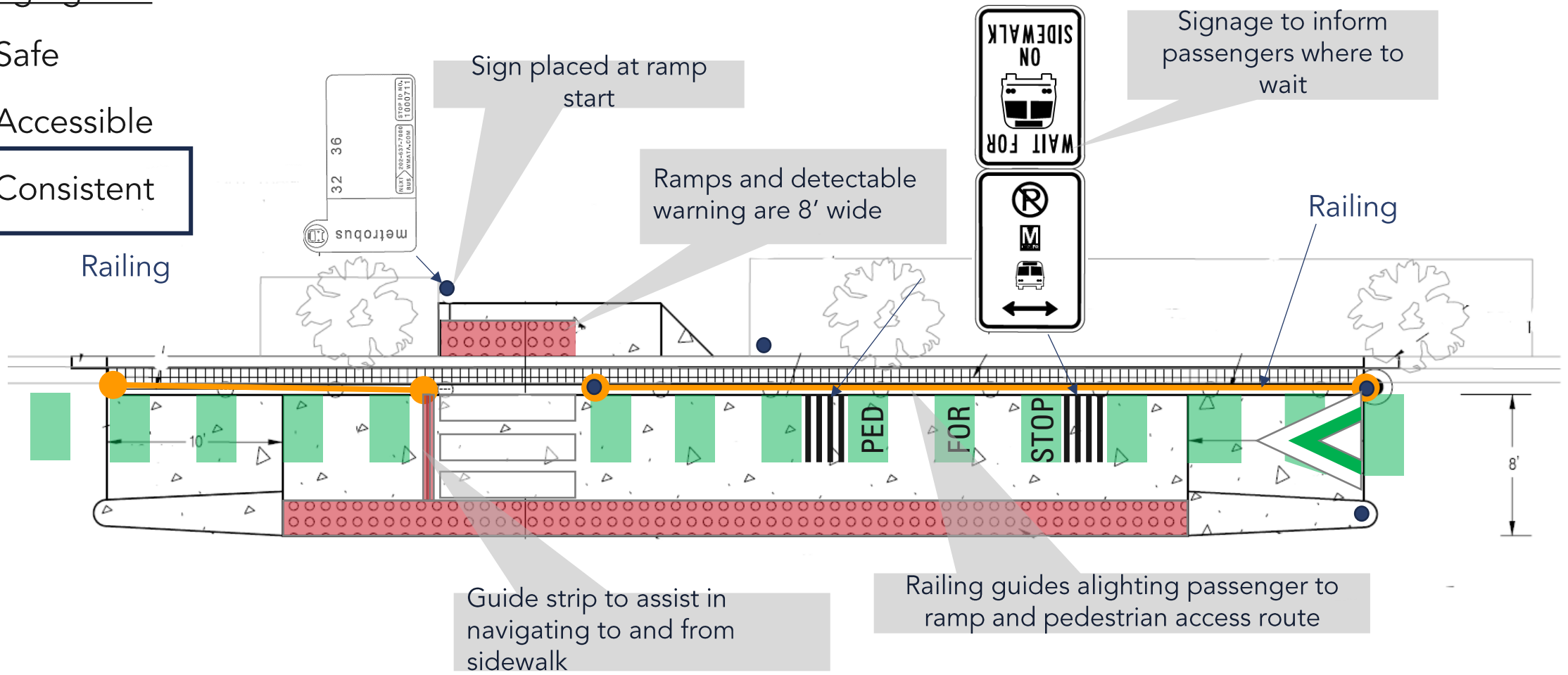


Venice Boulevard

Babak Dorji

Transportation Planning Associate II

Active Transportation Division,

Los Angeles Department of Transportation (LADOT), CA

Venice Blvd.

Safety and Mobility Project

LADOT

PALMS NEIGHBORHOOD COUNCIL

Metro

MIKE BONIN
Getting Things Done for Our Neighborhoods
Councilmember, 11th District

Paul Koretz
Councilmember • 5th District • City of Los Angeles

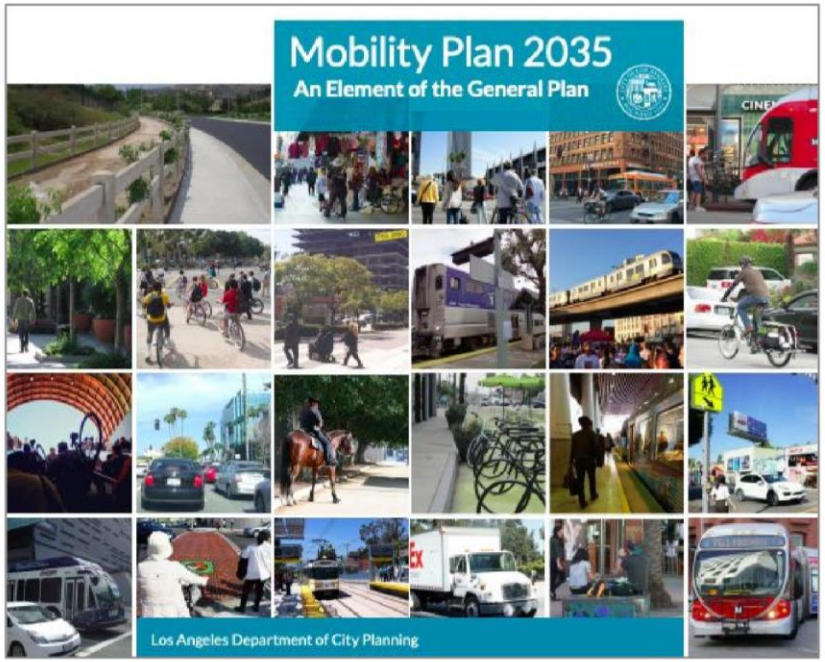
Alameda CTC - Bikeways Academy

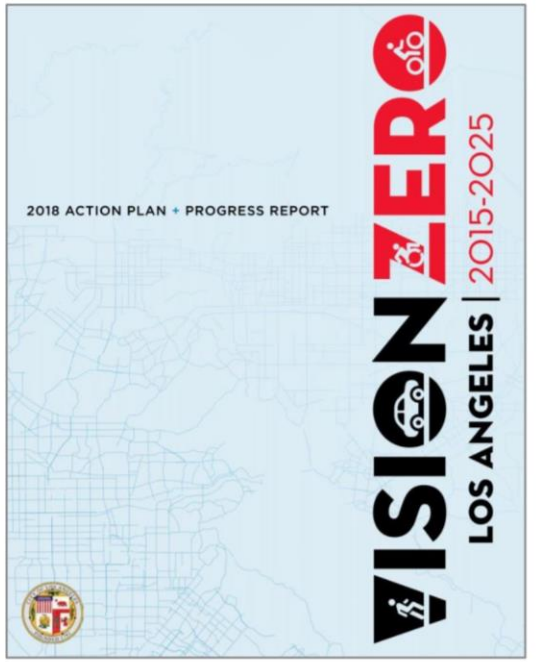
Multimodal Corridor Planning and Multidisciplinary Coordination

November 14, 2024

Venice Blvd.
Safety and Mobility Project

Why Venice?





Venice Blvd.
Safety and Mobility Project

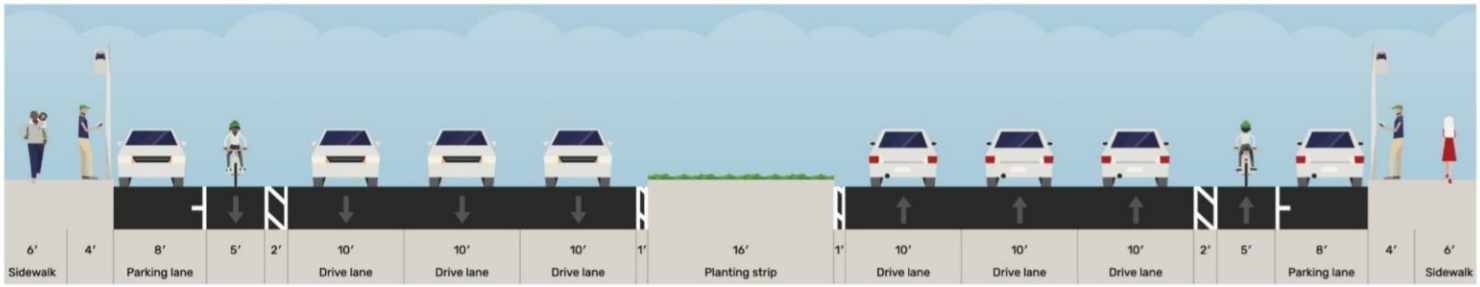
Goals & Opportunities

- Improve traffic safety. Reduce fatalities and severe injuries.
- Enhance access to jobs, social services, transit and community resources.
- Provide mobility options (bike, walk, roll, transit).
- Improve bus reliability and travel times
- Increase access to Metro E-Line.

Venice Blvd.
Safety and Mobility Project

Existing Conditions

- Within a 5 min walk from Venice Blvd
  - 47,000 residents
  - 36 schools
  - 55% of all trips under 3 miles
- Mix of commercial and multi-family
- Volumes: 25k - 35k AADT
- Bus: 20k daily weekday boardings
- Safety (10 year data):
  - 1200 collision
  - 25% were walking or biking
  - 58 people killed or severely injured

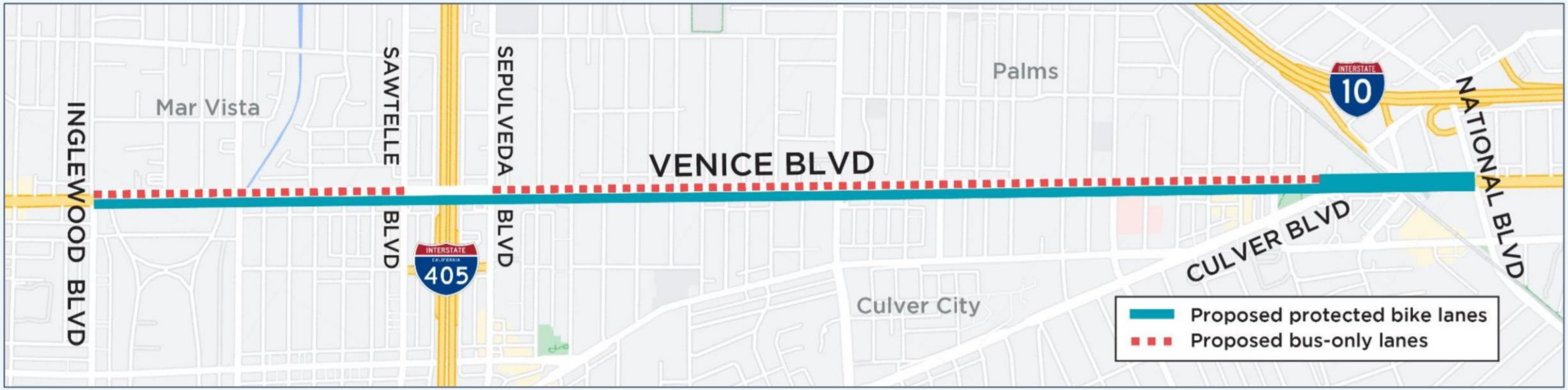


LADOT PALMS NEIGHBORHOOD COUNCIL MIKE BONIN Paul Koretz Metro

Venice Blvd.
Safety and Mobility Project

Project Scope

- Converted one travel lane to 2.3 miles of bus only lane
- Upgrade 2.8 miles of standard bike lane to protected bike lane



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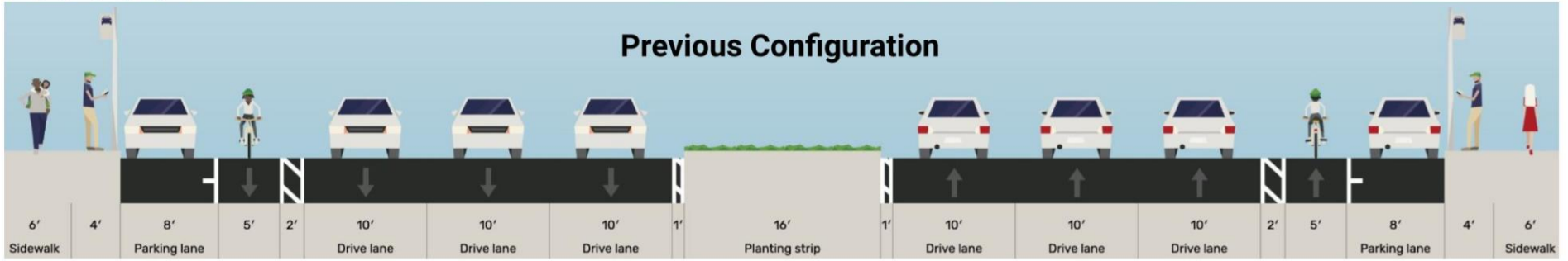
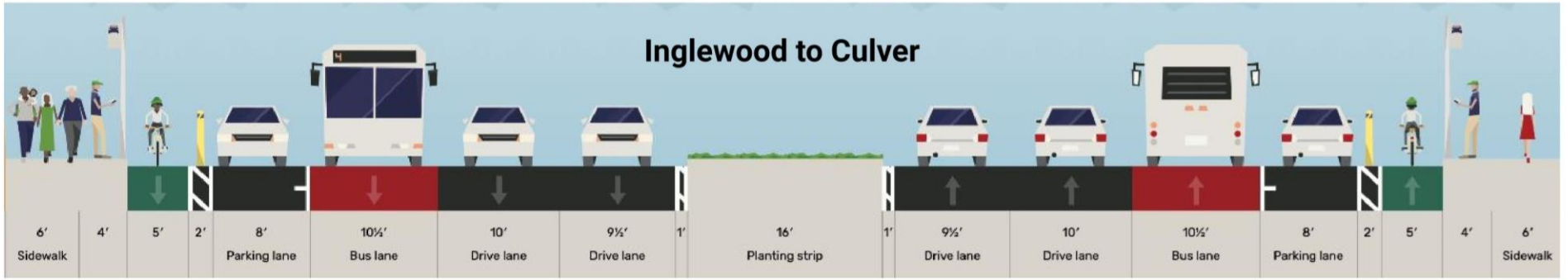
Venice Blvd.
Safety and Mobility Project

Proposed Street Design

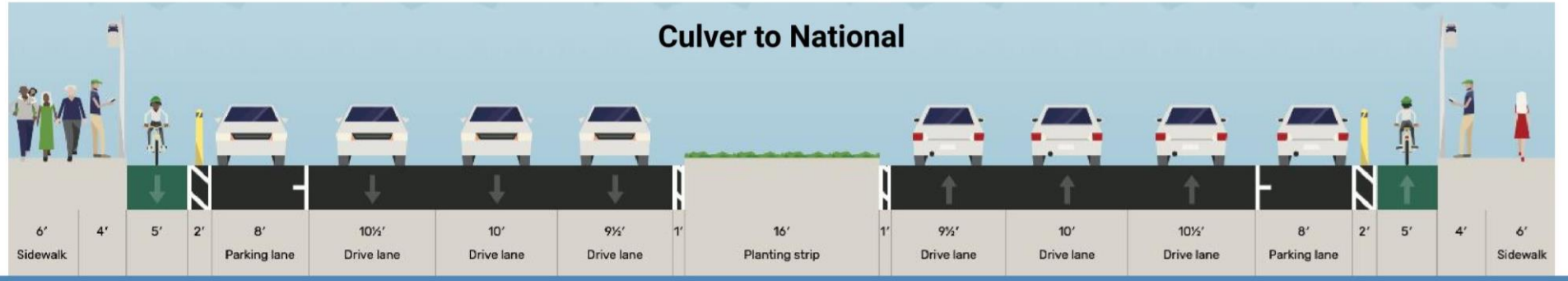
Previous Configuration



Inglewood to Culver



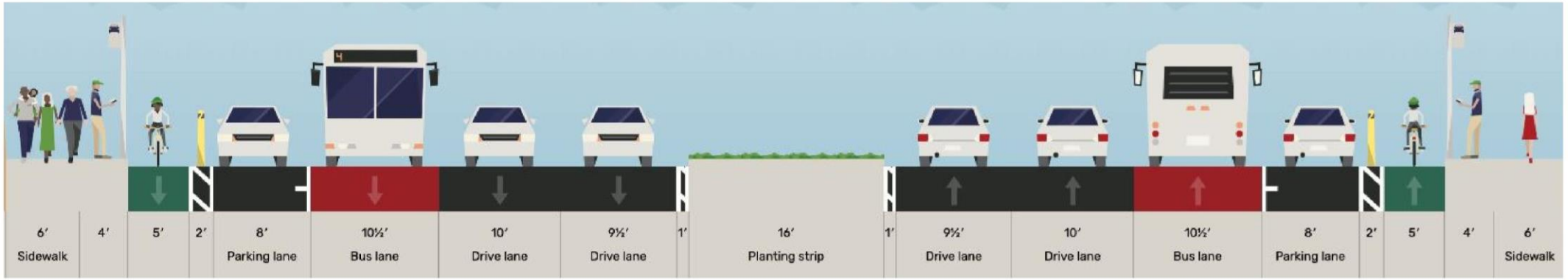
Culver to National



LADOT · Palms Neighborhood Council · Mike Bonin · Paul Koretz · Metro

Venice Blvd.
Safety and Mobility Project

Bike and Bus Lane Considerations



- Protects bicyclist from moving traffic
- Buffers pedestrians from moving traffic
- Improves travel time for transit users
- Reduces vehicle lanes pedestrians must cross
- Traffic-calming and safety benefits
- Maintains parking and loading lane for businesses

- Some increase to travel time for vehicles
- Some loss of parking for visibility at driveways (1-2 parking spaces per block)

LADOT PALMS NEIGHBORHOOD COUNCIL MIKE BONIN Paul Koretz Metro

Venice Blvd.
Safety and Mobility Project

Safety Features

Parking-protected bike lanes, bollards, ADA parking stalls

94% Crash Reduction Factor[1]

Upgraded high-visibility continental crosswalks

40% Crash Reduction Factor[2]

Green paint for improved visibility

10% Crash Reduction Factor[3]

Signal timing that prioritizes pedestrians

13% Crash Reduction Factor[4]

1. CMF Clearinghouse. Cycle-tracks, bicycle lanes, & on-street cycling in Montreal
2. Federal Highway Administration: Proven Safety Countermeasures:
3. Colored Bike Facilities, National Association of City Transportation Officials
4. Federal Highway Administration: Proven Safety Countermeasures:

Venice Blvd.

Safety and Mobility Project

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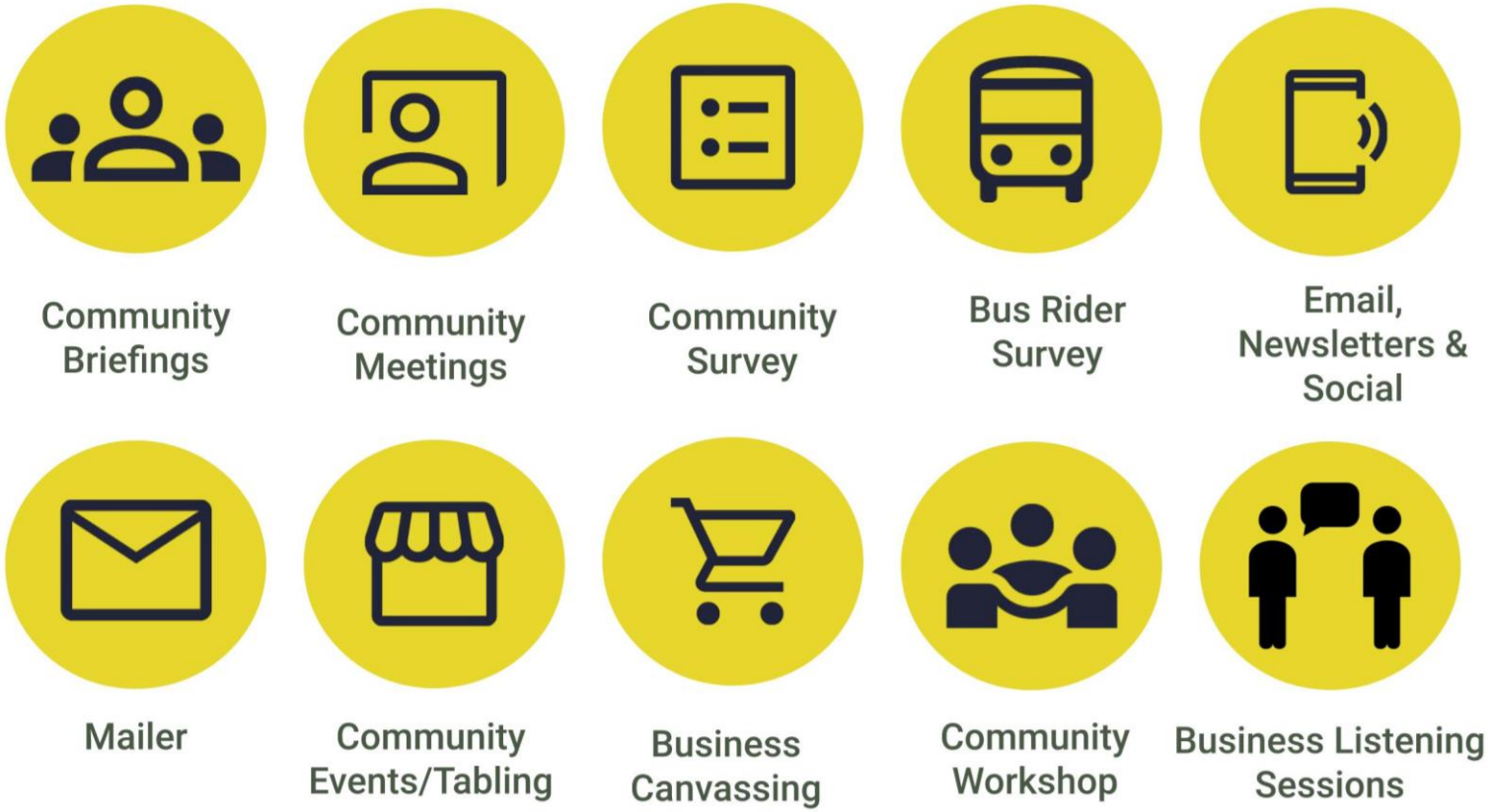
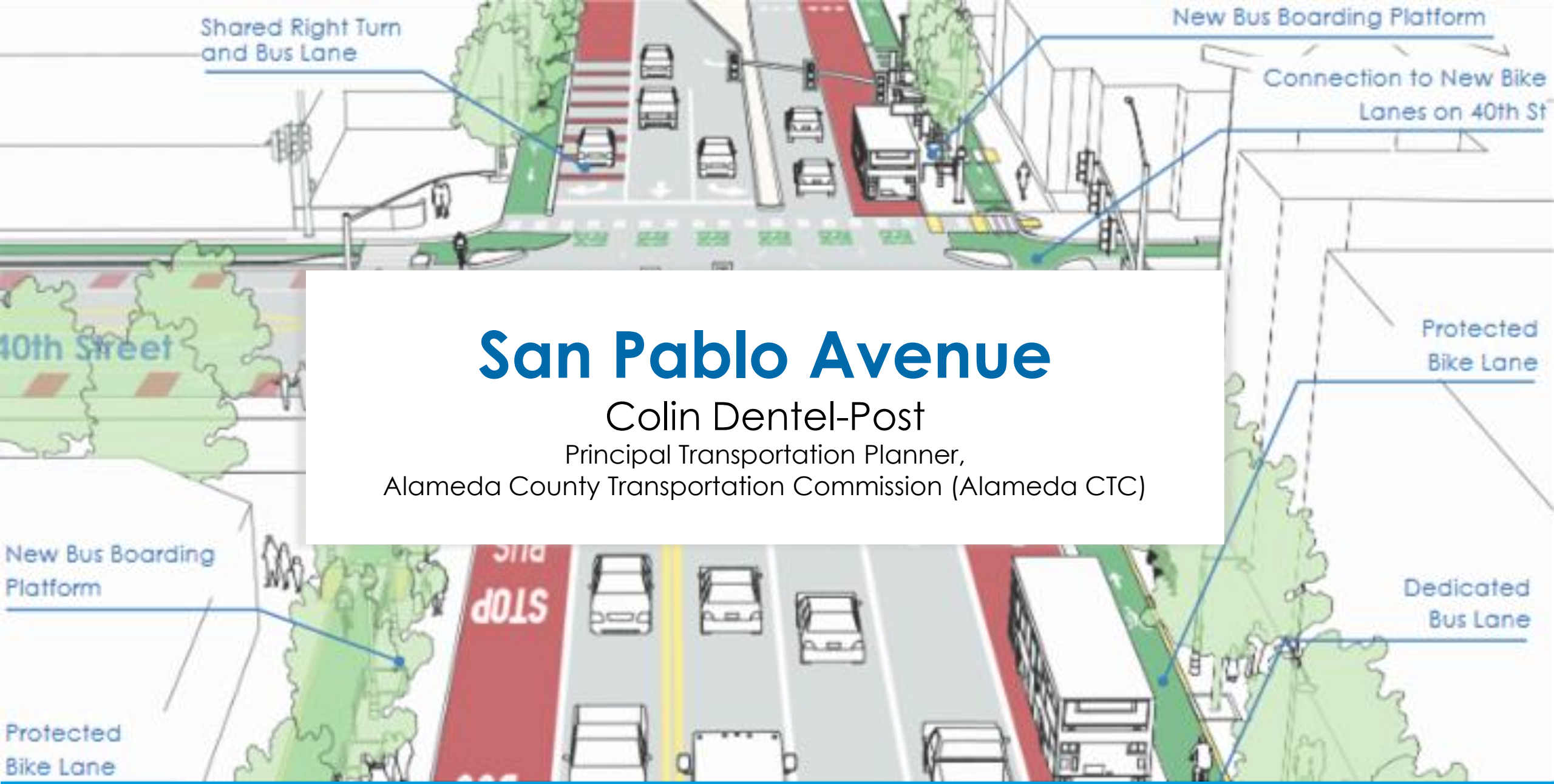
Community Engagement Strategies



THANK YOU!

- Project website: ladotlivablestreets.org/projects/venice
- Email: Babak.Dorji@lacity.org
- Follow us @ladotlivable



San Pablo Avenue

Colin Dentel-Post
Principal Transportation Planner,
Alameda County Transportation Commission (Alameda CTC)

ALAMEDA
County Transportation Commission

San Pablo Avenue Bus and Bike Lanes Project

Oakland, Emeryville, South Berkeley

Colin Dentel-Post, Alameda CTC

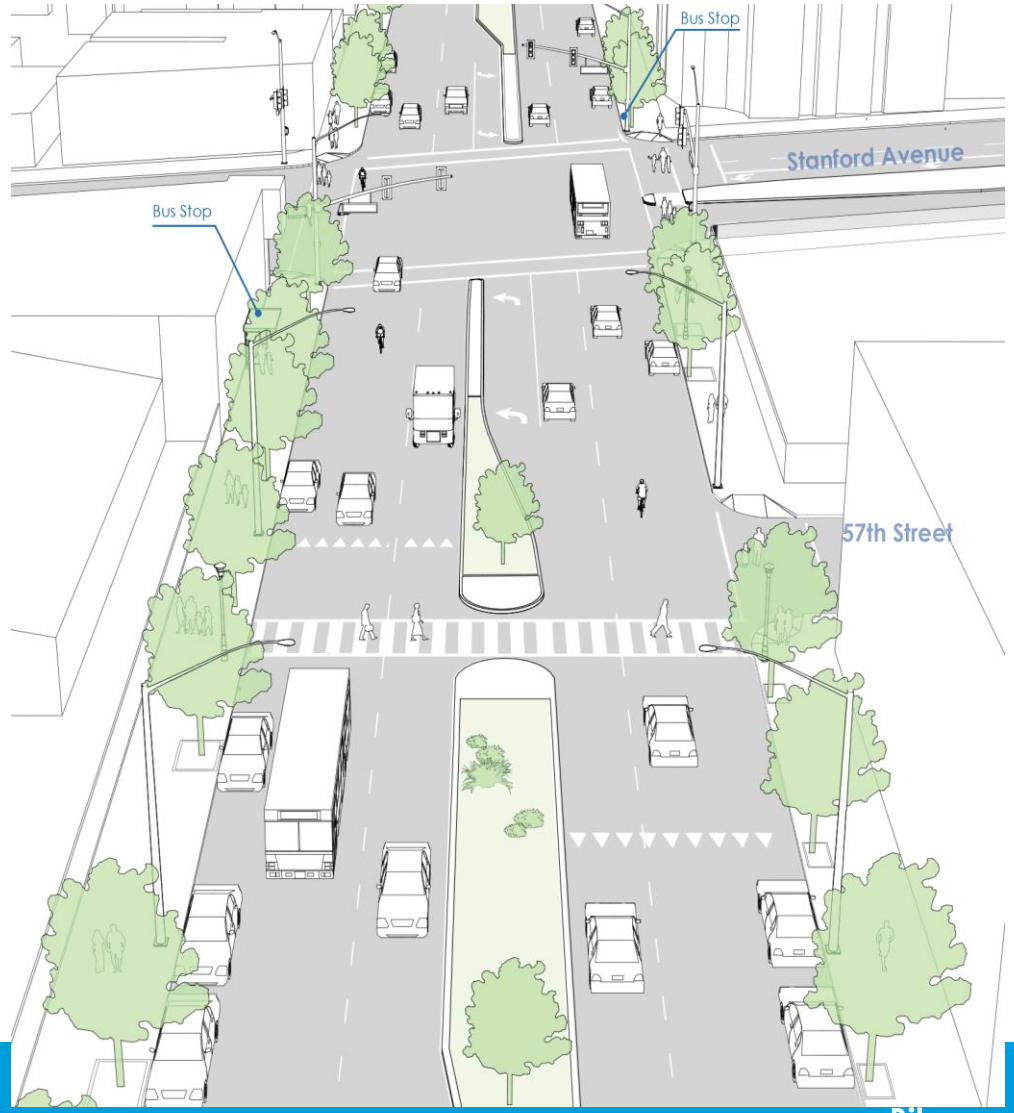
Project Overview Map

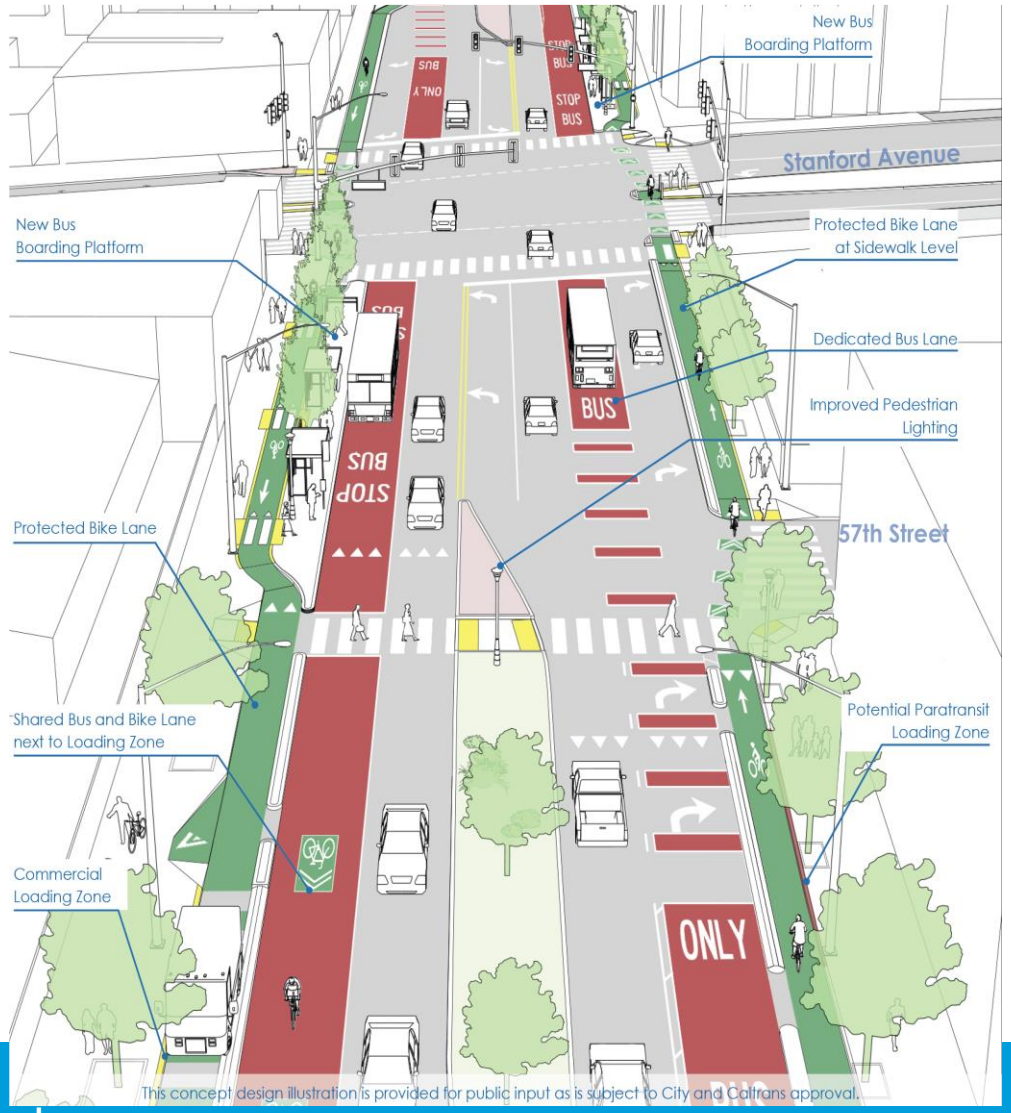
Bus Lanes & Bike Lanes Project Safety Improvements

- Pedestrian beacons at crosswalks
- High-visibility crosswalks and bikeway crossings
- Curb-protected bike lanes
- Curb extensions and median refuges shorten crossings at intersections
- ADA ramp and signal upgrades
- Better lighting along San Pablo and side streets

Existing Conditions and Proposed Project

Looking north toward Stanford Avenue, North Oakland



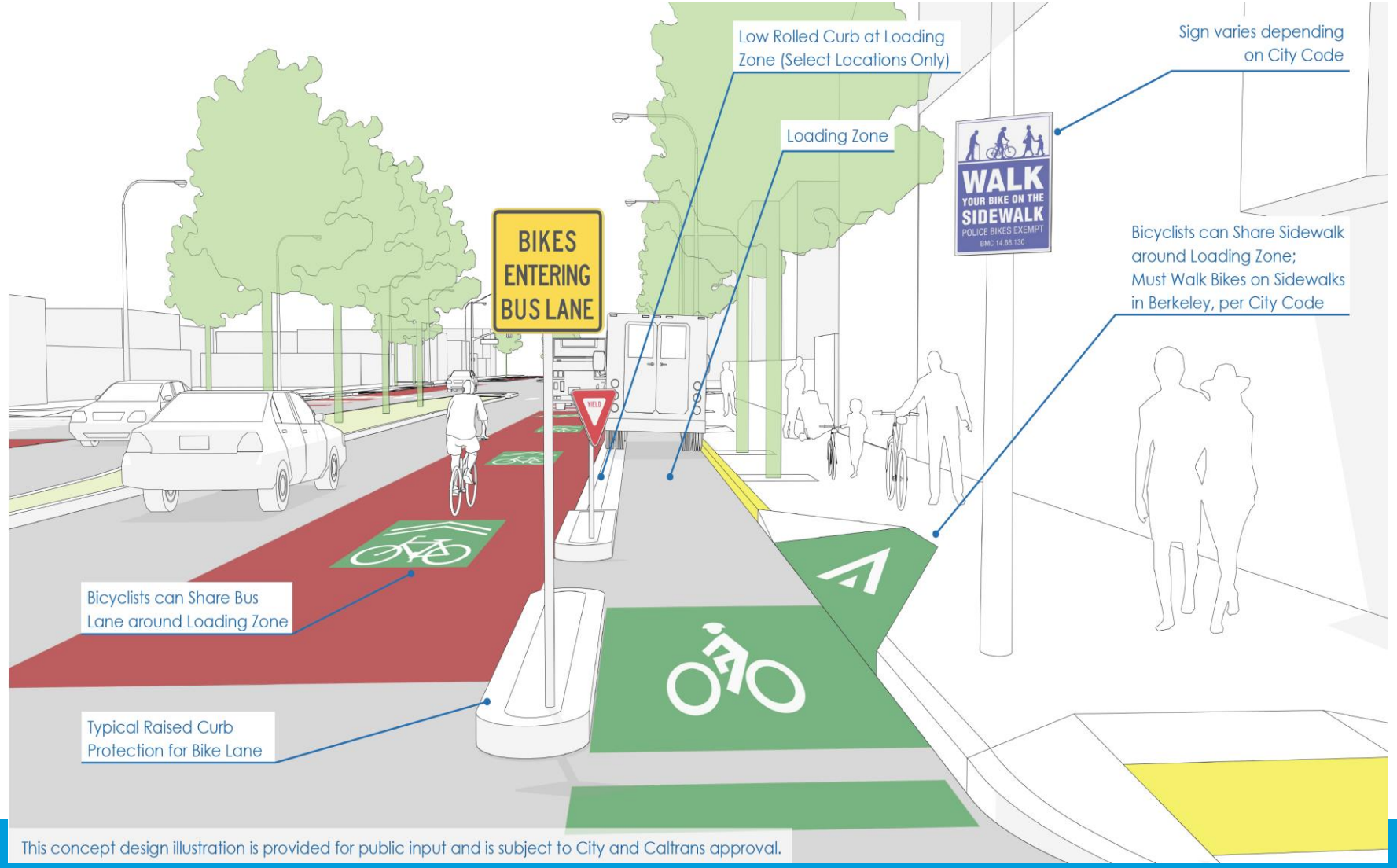


Existing

Bikeways Academy

Proposed

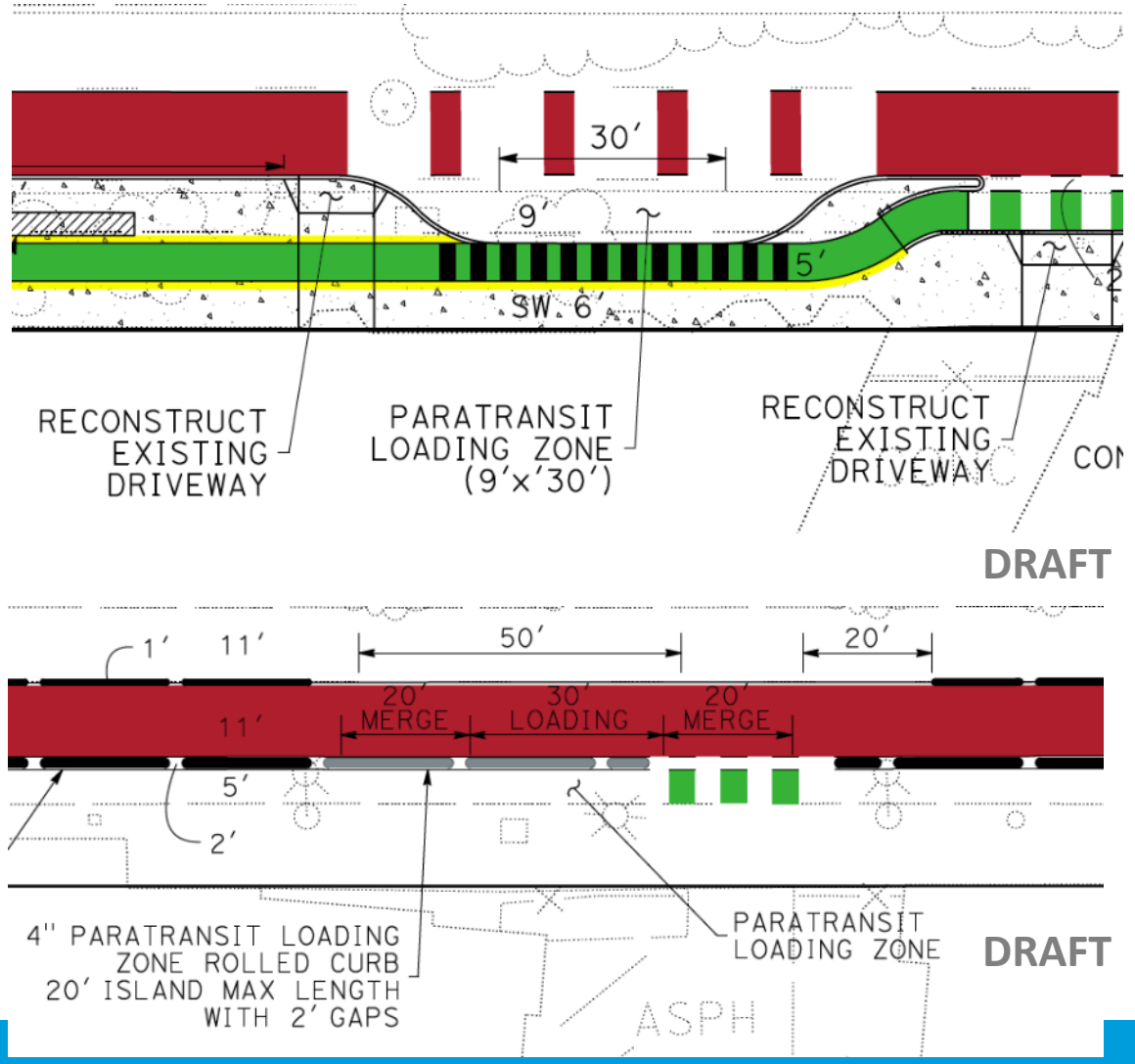
Example Loading Zone (limited locations)



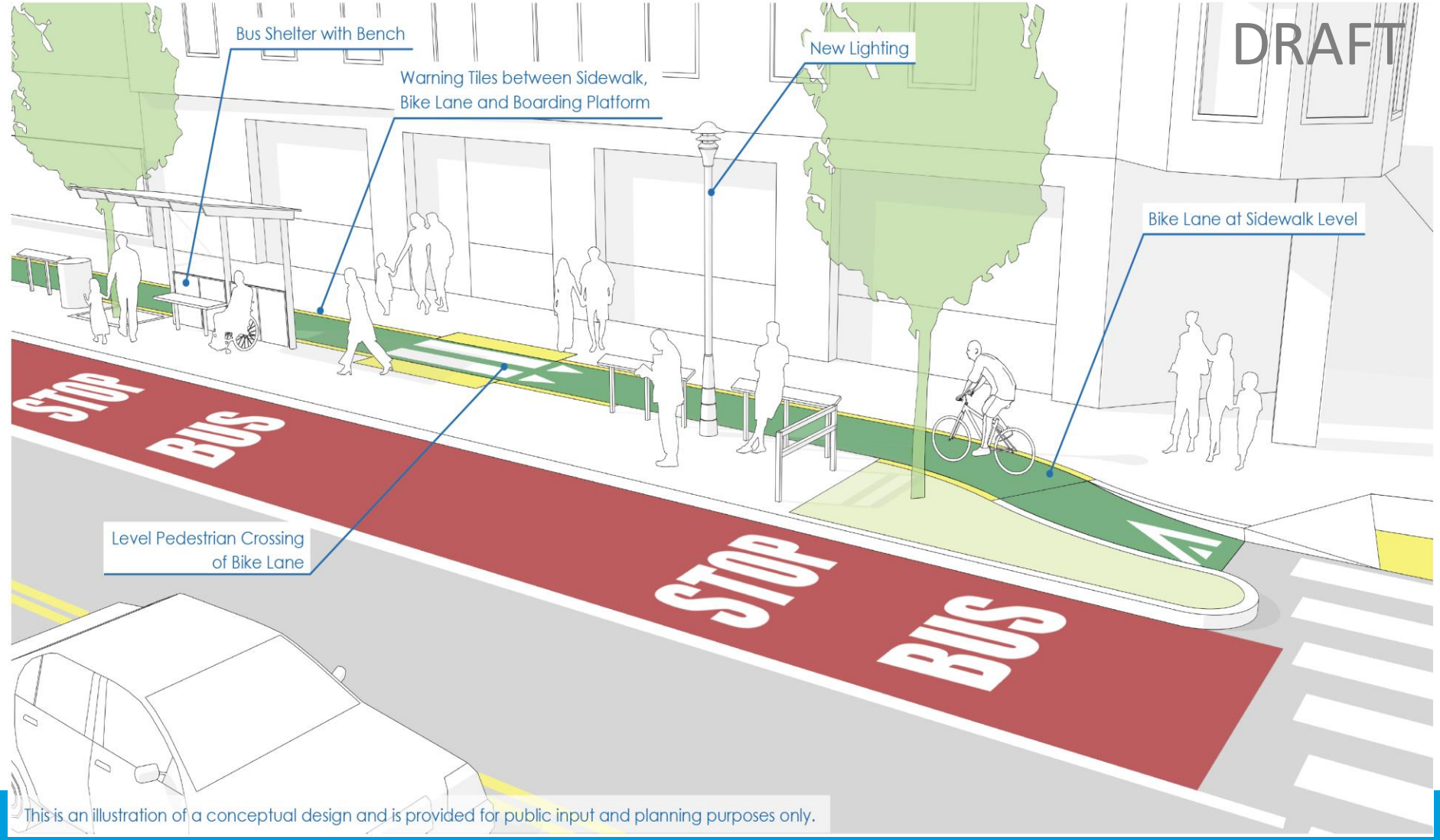
Typical Paratransit Loading

- High-Activity Locations:
  - Provide loading zones on blocks with 10+ EBPT trips/year (11+ blocks)

- Low-Activity Locations:
  - Lower mountable curb (4") segment on blocks without loading zone



Example Bus Boarding Platform



Thank You

Website: alamedactc.org/sanpablo

Email: sanpabloave@alamedactc.org

Thank You!

Bikeways Academy Contacts

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