



SAFE. COMFORTABLE. ENJOYABLE. ACCESSIBLE.

CITY OF BERKELEY PEDESTRIAN PLAN

JANUARY 26, 2021

City Council Meeting

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Transportation Division



Presentation Outline

Plan Overview

Public Engagement

Vision & Goals

High-Injury Street Identification & Prioritization

Recommendations

Cost Estimates

Plan Overview

- Regular updates required for grant eligibility
- Safety-focused, consistent with *Vision Zero* Policy
- Scope:
 - Vision and Goals
 - Existing Conditions & Needs Analysis
 - High-Injury Street Prioritization
 - Citywide Programs



Overview of Engagement Activities

In-Person

Community events

Public open houses

Transportation Commission

Pedestrian Subcommittee



Online

Project website

Interactive map

Public survey



In-Person Events

What we Heard

- ~880 unique comments
- Focus on crossings and sidewalk quality
- Streets mentioned most:
 - Shattuck, Martin Luther King, University, Ashby, San Pablo, Sacramento, Center, Dwight, Marin, Telegraph, Virginia, Adeline, Haste, Oxford

MLK & Addison uncontrolled xing
-add lights!

Acton & Carleton (or so) - what will happen here?

Hearst - bike lane/parked cars create visibility, issue

• issues for all modes, driver education needed

Construction impacts on Shattuck

• Sidewalk improvements during constr.

Bike bluds are uncontrolled - how do you cross?

Assume ped are present - no push button

- if button, immed. trigger signal change

- Design for expected behavior

btwn Elsworth & Shattuck

Crossing like (near Virginia) is challenging

Russell & Shattuck - no break to cross

btwn Elsworth & Shattuck

555 of Marin Ave

at rains

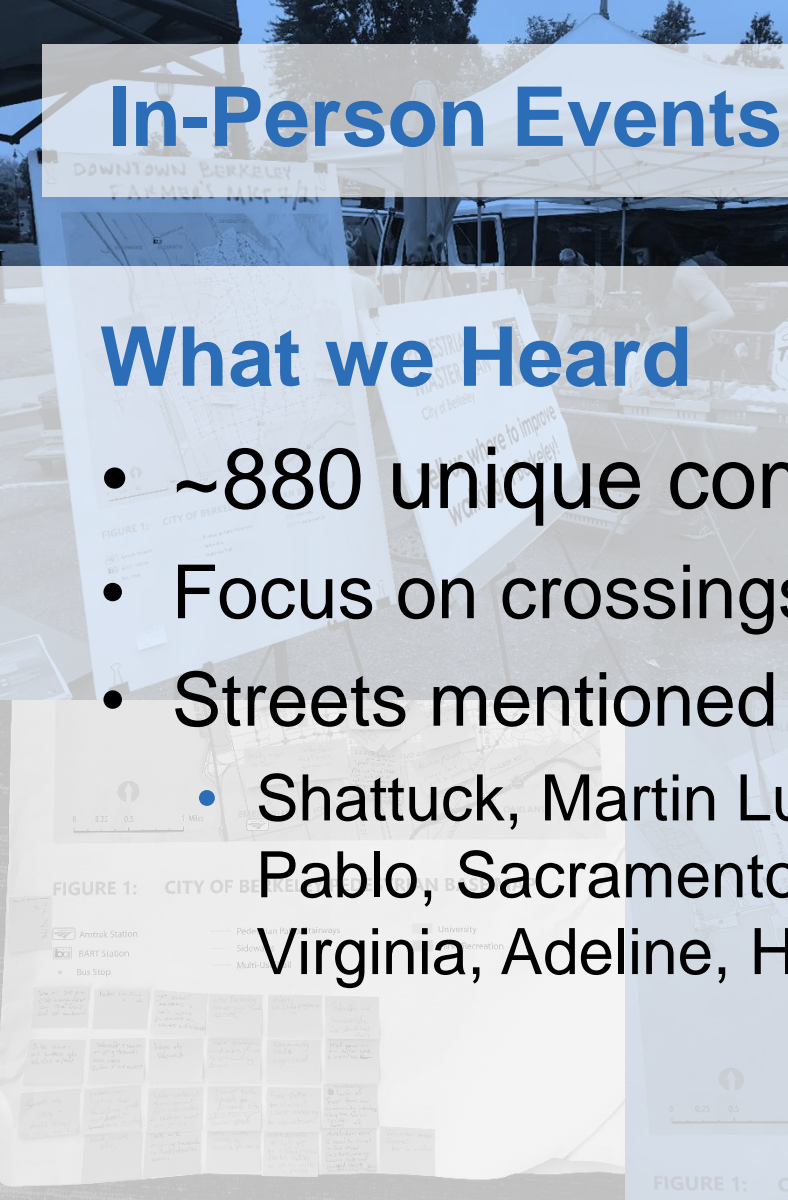


FIGURE 1: CITY OF BERKELEY PEDESTRIAN BASE MAP

Project Website Interactive Map

Use our interactive wikimap to show us where and why you walk in Berkeley.



- DRAW** your ideas by clicking "ADD POINT" or "ADD ROUTE" in the menu bar below.
- DESCRIBE** the POINT or ROUTE by answering a few questions.
- CLICK** on a POINT or ROUTE to "Agree/Disagree" with other users' suggestions or to **ADD PHOTOS** to existing points.

for detailed instructions, or to report a problem, see "About & Help" below

USER INPUT

- Routes I Like to Walk
- Routes that make me Uncomfortable or need improvement
- Great Street or Path
- Barriers
- Destinations

BASEMAP

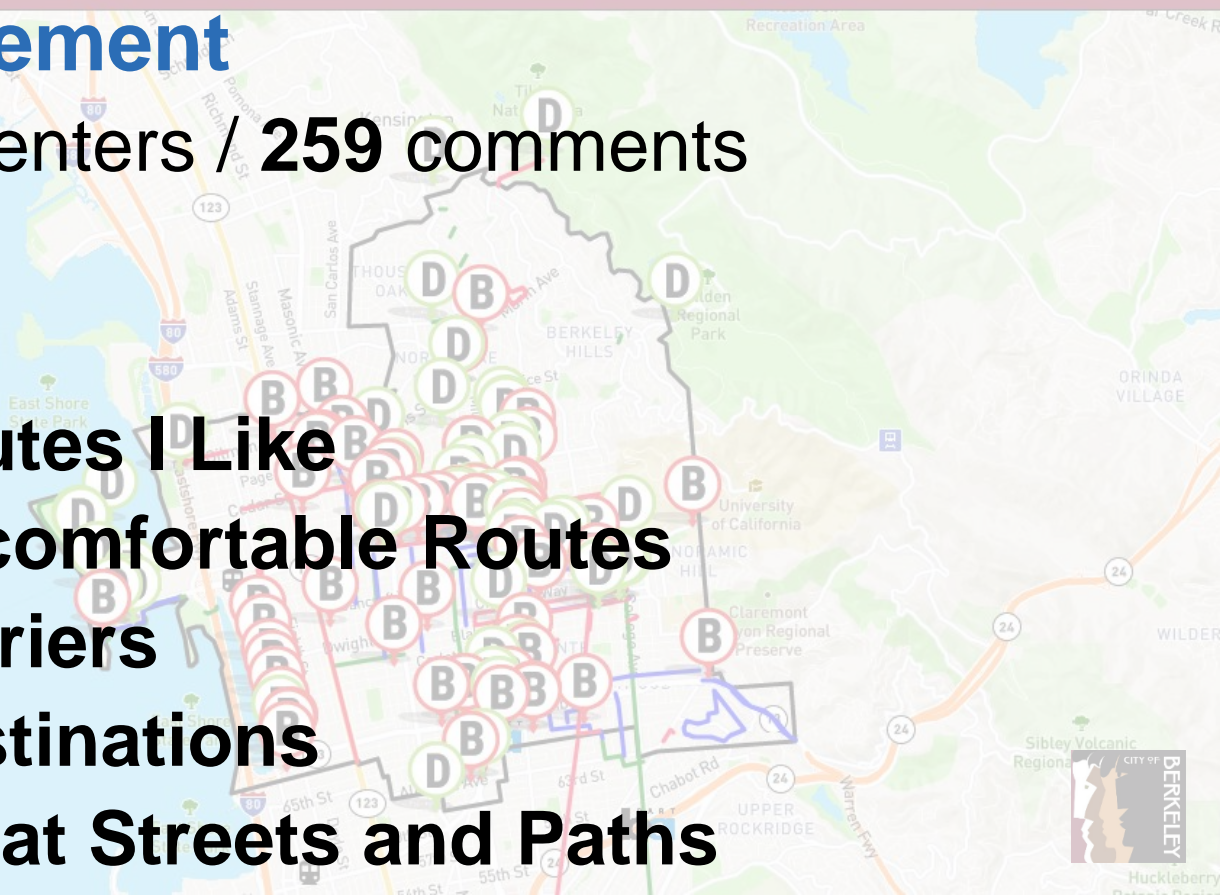
- BART Station
- Amtrak Station
- Bus Stop*

Level of Engagement

• **50** unique commenters / **259** comments

What we Heard

- **32** marks for **Routes I Like**
- **48** marks for **Uncomfortable Routes**
- **86** marks for **Barriers**
- **69** marks for **Destinations**
- **24** marks for **Great Streets and Paths**

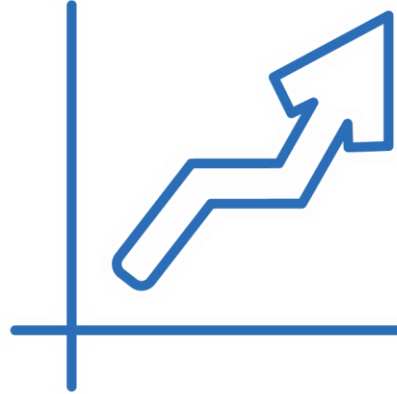


Proposed Vision

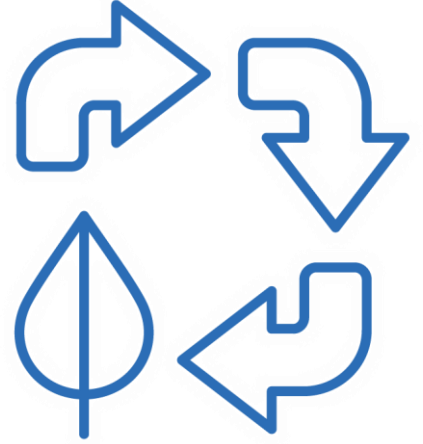
*Berkeley is a model **walkable city** where traveling on foot or with an assistive device is **safe, comfortable,** and **convenient** for people of all **races, ethnicities, incomes, ages and abilities***



**Safety &
Comfort**



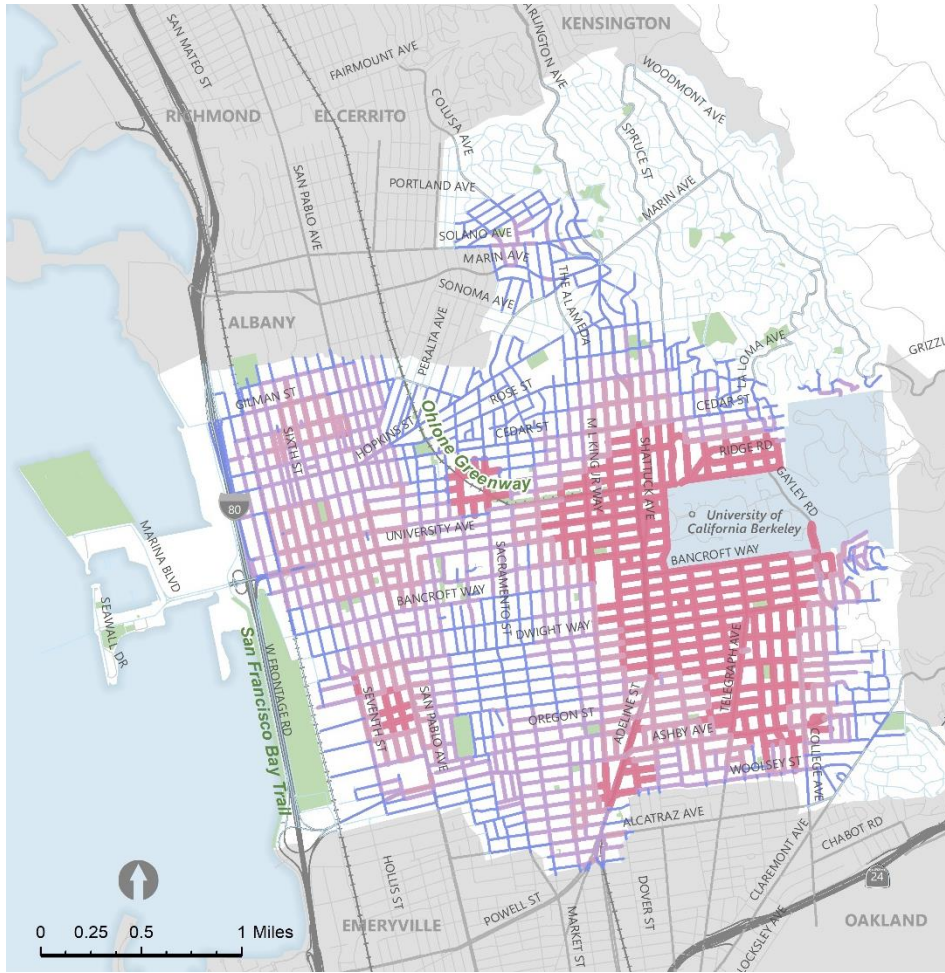
**Equity &
Choices**



**Public Health &
Environmental
Sustainability**

Proposed Goal Areas

Estimated Pedestrian Demand

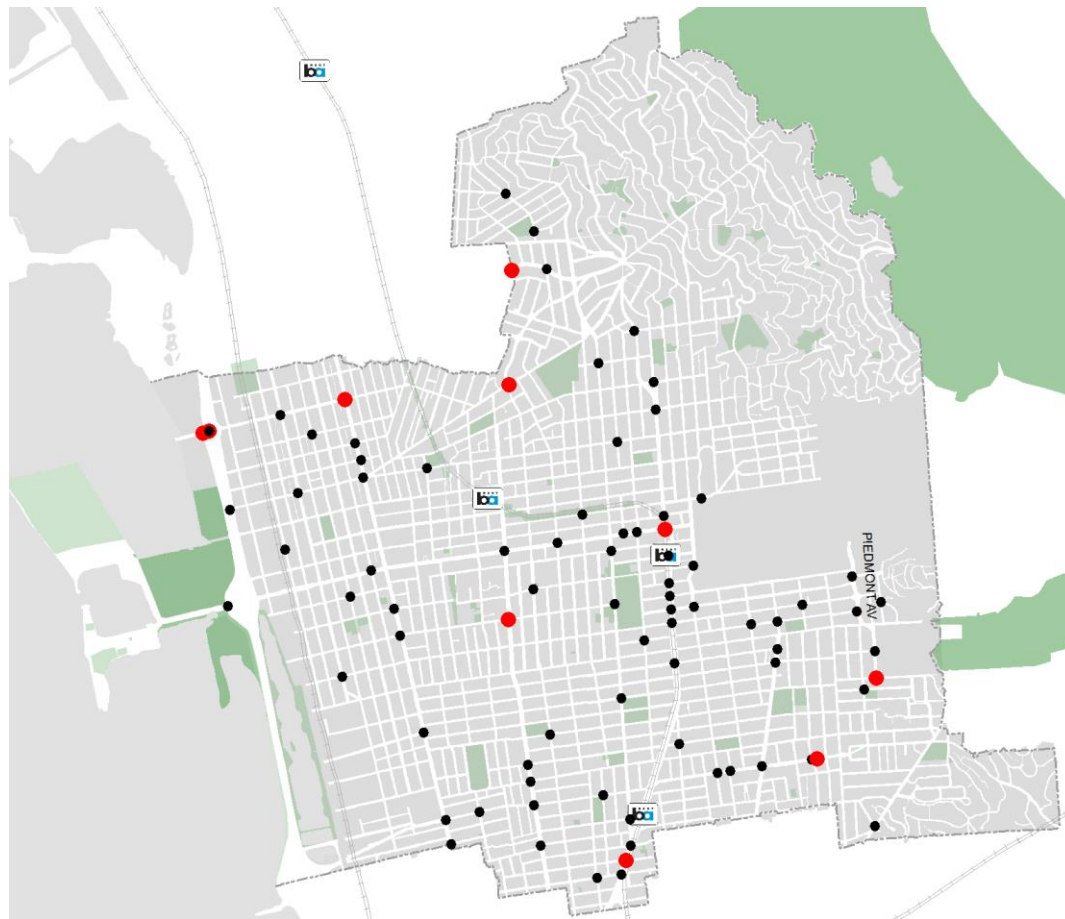


- Destination-choice model uses data from City of Berkeley, Alameda County, and Census
- Areas of highest demand are:
 - Downtown Berkeley BART
 - UC Berkeley campus
 - Commercial corridors and employment centers

Estimated Weekly Pedestrian Volumes



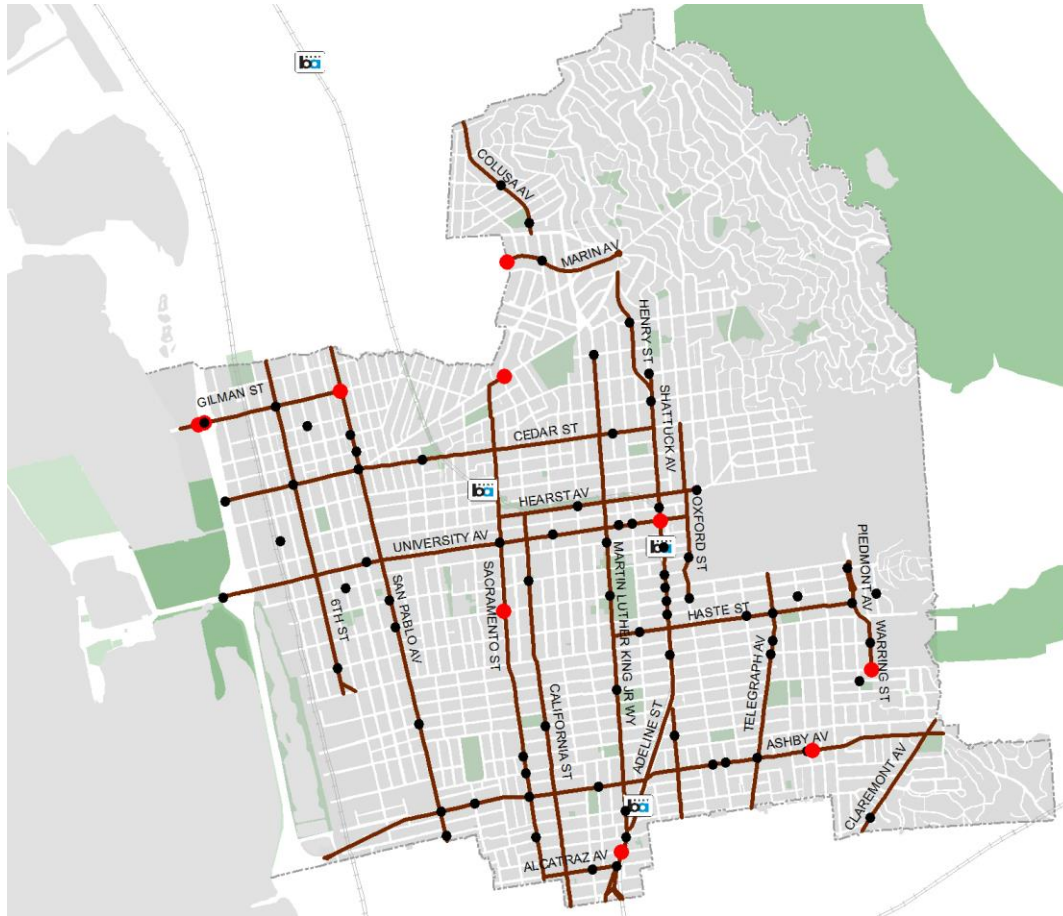
Focus on Severity – Consistent with *Vision Zero* Policy



Pedestrian Collisions, 2008-2017

- Fatalities
- Severe Injuries

Pedestrian High-Injury Streets



Pedestrian Collisions, 2008-2017

- Fatalities
- Severe Injuries
- High Injury Corridors

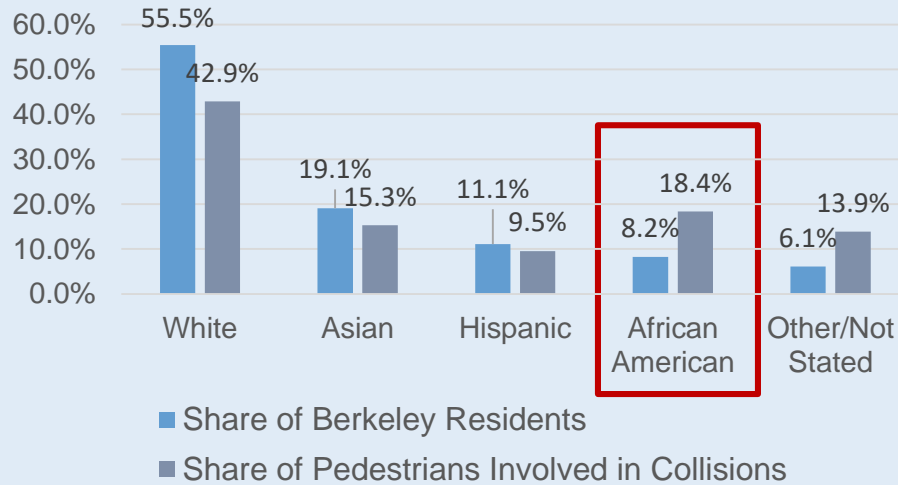
14% of Berkeley's street miles account for 93% of pedestrian fatalities & severe injuries.

10 year collision history

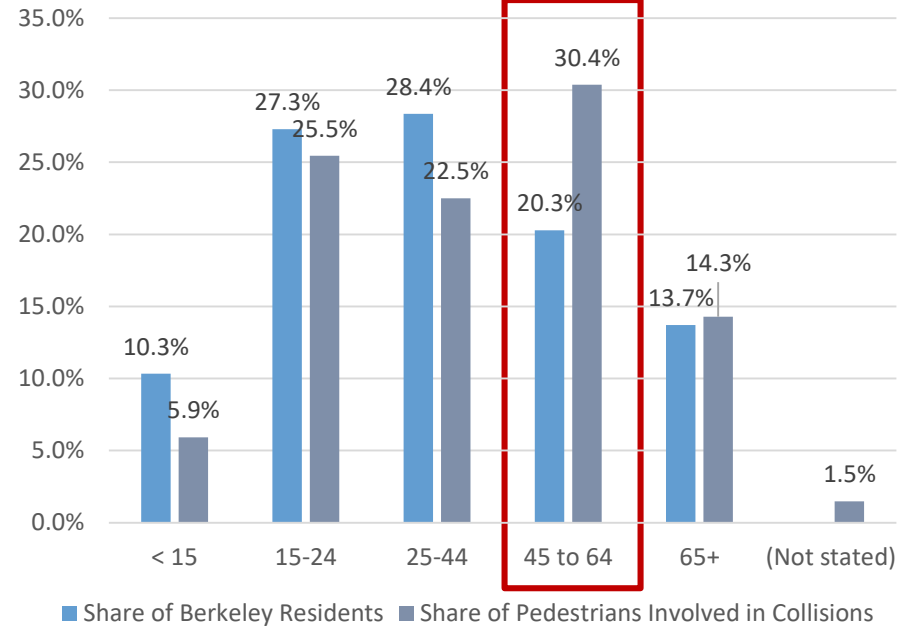
Who is Most Affected?

(SWITRS data 2012-2016)

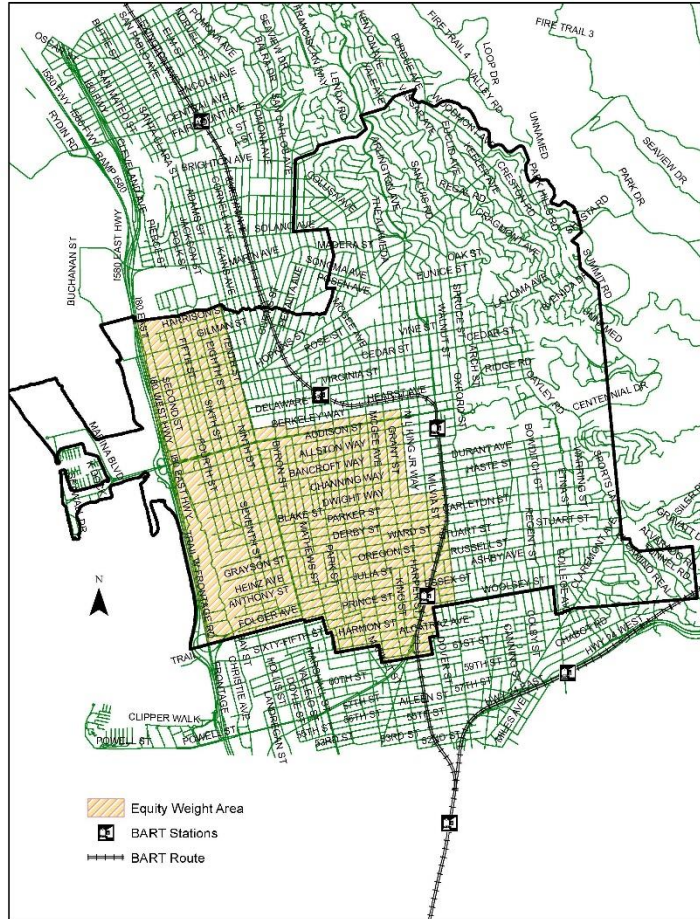
Pedestrian Race



Pedestrian Age







Equity: Historically Underserved Neighborhoods

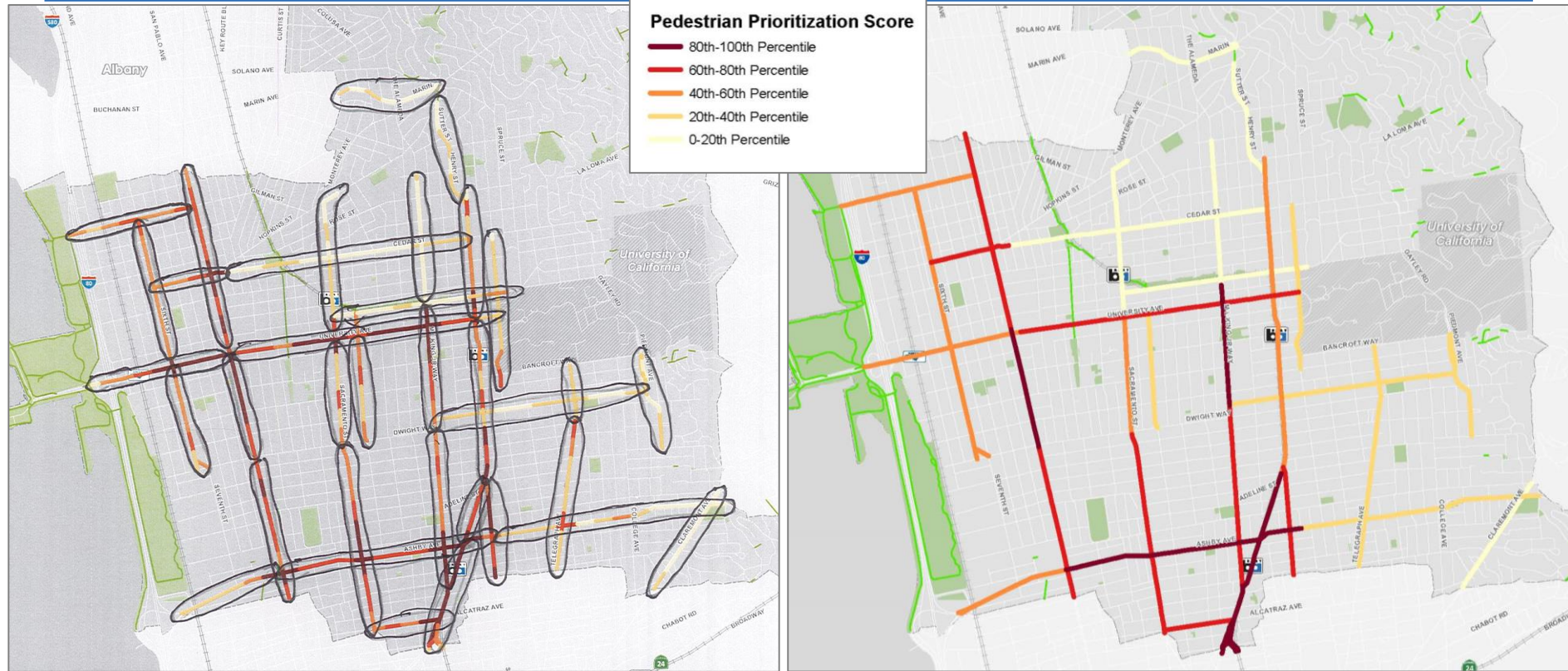


- Based on federal Home Owners' Loan Corporation (HOLC) redlining maps

Project Segments: Prioritization Factors

Factor (weight)		Criteria Description (scoring method)
	Safety (30%)	Location on high injury streets, Concentration of fatal and severe collisions (percentile)
	Equity (30%)	Within an historically underserved area (binary)
	Connectivity	
	<i>Walking Demand (13.5%)</i>	<i>Top 30% of intersections based on demand analysis (tiered with weighting)</i>
	<i>Transit (6.5%)</i>	<i>0.25-mi from AC Transit Major Corridors (binary)</i>
	Existing Plan (20%)	Within 0.10-mi of high priority location identified in 2010 Plan (binary)

Project Segments: Prioritization Screening



Initial Prioritization Screening Map with Segmentation

Prioritization – After Segmentation and Smoothing

Priority Project Segments

Rank	Segment	Segment Extents	Percentile
1	San Pablo Avenue	University to Dwight	80-100 th
2	MLK Jr Way	Hearst to Haste	80-100 th
3	Ashby Avenue	San Pablo to Shattuck	80-100 th
4	Adeline Street	Ashby to Southern City Limits	80-100 th
5	University Avenue	San Pablo to Oxford	60-80 th
6	Shattuck Avenue	Adeline to Southern City Limits	60-80 th
7	MLK Jr Way	Haste to Adeline	60-80 th
8	Alcatraz Avenue	Sacramento to Adeline	60-80 th
9	Cedar Street	Sixth to Stannage	60-80 th
10	Sacramento Street	Dwight to Southern City Limits	60-80 th

Project Segment Recommendations

(sample)



Cedar Street

Sixth Street to Stannage Avenue

SEGMENT CHARACTERISTICS

- The study segment, classified as a Collector Street, is a 2-lane roadway with a splitter island at Hopkins Street. There are 25 mph speed limit signs posted throughout the segment.
- There are 8 intersections (2 signals and 6 two-way stop-controlled intersections) in 0.4 mile.
- This segment is in a historically underserved area.



PEDESTRIAN COLLISIONS, 2008–2017

	Daylight	Dawn/Dusk/Night
Crossing in Crosswalk at Intersection	2	2
In Road, Including Shoulder	1	0

Severe Injury Collisions Other Injury Collisions

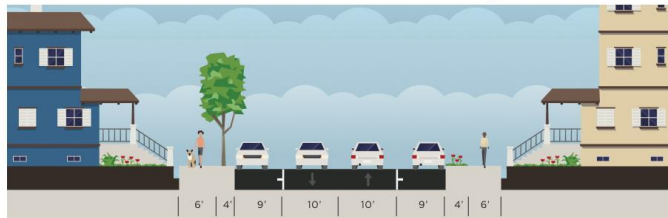


Extending the median on Cedar Street to reach San Pablo Avenue would provide a refuge area for pedestrians crossing the street.

Near-Term: \$XX,XXX

Long-Term: \$XX,XXX

EXISTING CROSS-SECTION Cedar Street – Sixth Street to Stannage Avenue



OBSERVATIONS

- Several intersections lack crosswalk striping or have faded transverse striping
- Seventh Street and Eighth Street should not receive curb cuts in order to maintain the adjacent fire station's operations
- There are no curb extensions for pedestrians looking to cross Cedar Street, except along the western crosswalk at the Cedar Street/Stannage Avenue intersection

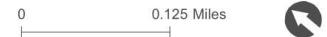
PROJECT ELEMENTS

- NEAR TERM**
- Leading pedestrian interval** gives pedestrians a 2-5 second head start to increase their visibility in the crosswalk.
 - Restrict right turns on red** to prevent right-turning vehicle movement conflicts with crossing pedestrians.
 - Improve sightlines at intersections** by providing red curb in advance of crosswalks to increase visibility of pedestrians and cross traffic.
 - Stripe high-visibility crosswalks** on all legs of the intersection to increase conspicuity of pedestrian crossing locations.
 - Narrow vehicle lanes** to make sufficient space for bicyclists and pedestrians, reduce crashes, and maintain vehicle capacity.
 - Install advance yield markings** and corresponding signage.
 - Overhead lighting of crosswalks** increases nighttime visibility of crossing pedestrians.
 - Install in-roadway pedestrian crossing signs** at crosswalks to draw driver attention to crossing pedestrians.
 - Temporary curb extensions** (aka "bulb-outs") using striping and a vertical feature (such as "armadillos") create safer crossing conditions for pedestrians and slow down turning traffic.

- LONG TERM**
- Curb extensions** (aka "bulb-outs") are widened sidewalks at crossings, shortening the crossing distance for pedestrians and slowing down turning traffic.
 - Median refuges** provide pedestrians the opportunity to cross in two stages and narrow the roadway cross section for speed management.
 - Add protected left-turn phasing** to reduce left-turning conflicts between vehicles and pedestrians. Include lane shift to add left-turn pocket where needed.
 - Widen sidewalk at bus stops** (aka "bus bulbs") to improve transit operations and pedestrian conditions without degrading vehicle capacity.



Severe Injury Collisions Other Injury Collisions



Project Segment Recommendations

- Pedestrian Hybrid Beacons for crossing arterial streets
- Rectangular Rapid Flashing Beacons for collector streets
 - Phased approach for bike boulevard crossings
- Bulb-outs to address right turns
- Pedestrian refuge islands for multi-lane crossings

Citywide Programs and Policies

Themes/topics

- Reducing conflicts
- Increasing visibility of pedestrians
- Implementing enhanced crossings



Consistency with Navigable Cities Framework

- Design curb ramps to align with the direction of the crosswalk where technically feasible.
- Develop a strategy to prioritize repaving crosswalks in the near term to eliminate tripping hazards, even if the street in question will be repaved farther in the future.
- Adopt the Caltrans *Temporary Pedestrian Access Routes Handbook* (2020) to minimize construction impacts on people with disabilities.
- Propose a property tax or other assessment to voters to create a stable funding stream for public sidewalk and public pathway maintenance.

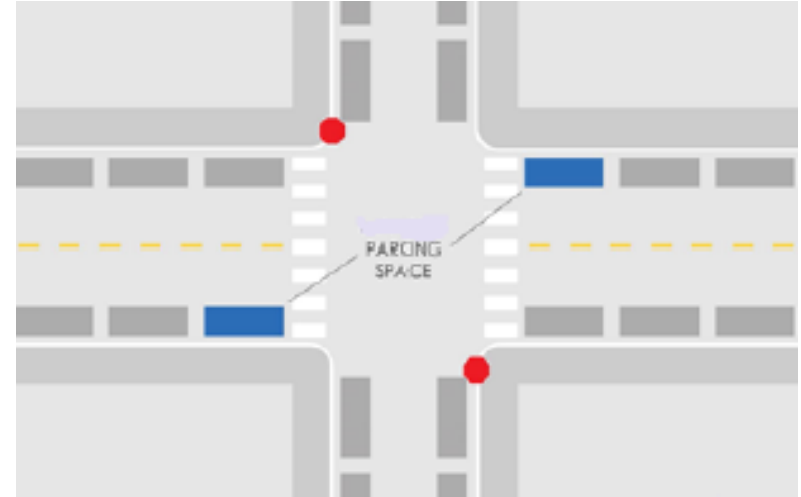
Citywide Programs: Reducing Conflicts

- At new or modified signalized intersections
 - Left-turn arrows
 - Leading Pedestrian Intervals (walk signal head-start)



Citywide Programs: Increasing Visibility

- Removing visual obstructions
 - Red curb at approaches to pedestrian crossings
- Lighting
 - Install solar-powered LED lighting at ped crossings lacking lighting
 - Lighting assessment in Appendix F



Citywide Programs: Enhanced Crossings

- **Crosswalk Policy**
 - Crosswalks on all legs where safe
 - High-visibility crosswalk markings at uncontrolled and major intersections
 - Advance yield lines before multilane uncontrolled pedestrian crossings
- **Pedestrian Signal Policy**
 - Automatic recall
 - Leading pedestrian intervals



Advance Yield Markings

Other Proposed Programs and Policies

- Sidewalks and public paths
 - Proposal to bring a maintenance assessment to voters
 - Already being implemented: proactive component, coordination with street rehab, “blitz” project
- Accessibility
 - Curb ramps directly facing crosswalks (standard design plan in Appendix B)
 - Develop strategy to prioritize crosswalk paving
 - Accessible pedestrian signals

Other Proposed Programs and Policies

- Speed Management
 - Advocate for State Legislation consistent with Vision Zero
 - “20 Is Plenty”: to set neighborhood street speed limits below 25 MPH
 - To set speed limits based on safety rather than existing prevailing (85th percentile) speed
 - Vertical deflection
 - Updated speed table design guidance (Appendix B)

Cost Estimates – Street Segments

Project	From	To	Cost Estimate
Adeline Street	Ashby Avenue	Southern City Limits	\$4,730,000
Alcatraz Avenue	Sacramento Street	Adeline Street	\$1,190,000
Ashby Avenue	San Pablo Avenue	Shattuck Avenue	\$5,250,000
Cedar Street	Sixth Street	Stannage Avenue	\$3,310,000
Martin Luther King Jr. Way (North)	Hearst Avenue	Dwight Way	\$8,980,000

Cost Estimates – Street Segments

Project	From	To	Cost Estimate
Martin Luther King Jr. Way (South)	Dwight Way	Adeline Street	\$6,350,000
Sacramento Street	Dwight Way	Southern City Limits	\$9,100,000
San Pablo Avenue	University Avenue	Dwight Way	\$4,085,000
Shattuck Avenue	Adeline Street	Southern City Limits	\$4,140,000
University Avenue	San Pablo Avenue	Oxford Street	\$12,630,000

Total for all 10 priority high-injury streets: \$59,765,000



Thank You!

Berkeley Staff Contacts

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Primary Collision Factor Summary (1 of 4)

- » Failure to Yield to Pedestrian Right of Way
 - 2 fatal, 34 severe, 552 total (51% of reported collisions)
 - Top locations
 - Oxford/Addison (9)
 - College/Ashby (8)
 - Hearst/Spruce (8)



Primary Collision Factor Summary (2 of 4)

» Pedestrian Violation

- 4 fatal, 18 severe, 200 total
- Top locations
 - San Pablo/University (5)
 - Ashby/MLK (4)
 - Bancroft/Telegraph (4)
 - Center/Shattuck (4)



Primary Collision Factor Summary (3 of 4)

» Unsafe Speed

- 0 fatal, 6 severe, 63 total
- Top locations
 - Bancroft/Shattuck (2)
 - Durant/Fulton (2)
 - San Pablo/University (2)



Primary Collision Factor Summary (4 of 4)

- » Improper Turning
 - 0 fatal, 0 severe, 33 total
- » Traffic Signs and Signals
 - 0 fatal, 1 severe, 25 total



In-Person Events

- » Sunday Streets, 6/3
- » Fourth of July, 7/4
- » South Farmer's Market, 7/10
- » North Farmer's Market, 7/12
- » Ashby Flea Market, 7/14
- » Dtown Farmer's Market, 7/21
- » Kite Festival, 7/28
- » Caltopia, 8/19
- » Open House at Frances Albrier Community Center, 12/1

