



Clement Avenue/Tilden Way Project

Transportation Commission

January 25, 2023

Introduction

Clement Avenue Extension Alternatives at Tilden Way

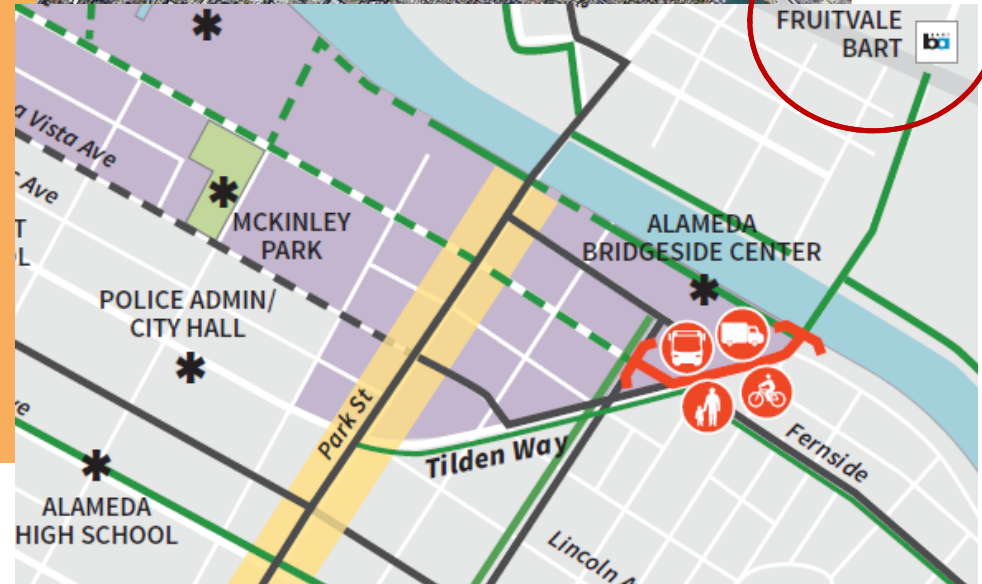
Project Team:

- City of Alameda
- Kittelson & Associates, Inc
- Stakeholder Participants:

City, AC Transit, Alameda Housing Authority, BART, Bike Walk Alameda, County, DABA, Edison School, Bay Trail, BCDC, Bridgeside Shopping Center, City of Oakland, Commission on Persons with Disabilities, Greer Mortuary, Unity Council in Oakland, Members of the Public

Engagement and Outreach Update:

- Letter to adjacent properties
- Outreach via social media, emails and sandwich boards
- Website: www.alamedaca.gov/ClementTilden



Project Goals and Intended Outcomes

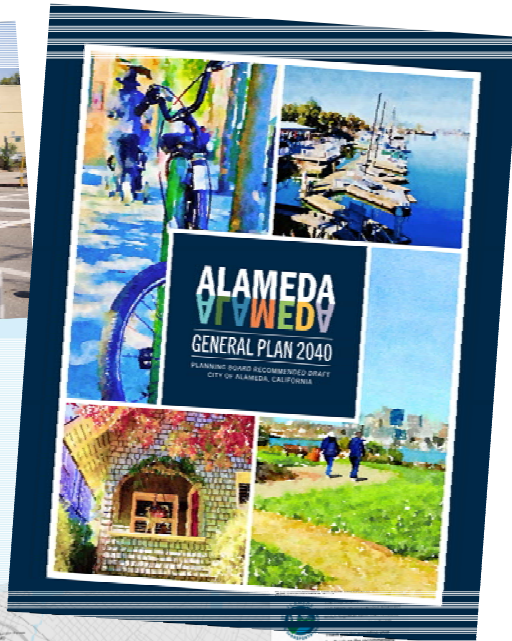
- Prioritize **safety**
- Improve **mobility** for all roadway users
- Improve **bicycle and pedestrian** access
- Provide **flood reduction** and **landscaping** opportunities
- **Reduce greenhouse gas** emissions
- **Comply** with City plans and policies



Alameda
Vision Zero Action Plan

VISION
ZERO
ALAMEDA
SAFER STREETS FOR ALL

November 9, 2021



ALAMEDA
GENERAL PLAN 2040
PLANNING BUREAU RECOMMENDED DRAFT
CITY OF ALAMEDA, CALIFORNIA



Active Transportation
Plan Draft Bicycle
Network

Background

- Measure BB grant for \$10 million
- Union Pacific property acquisition
- Environmental clean-up
- Fill gap in active transportation and truck network



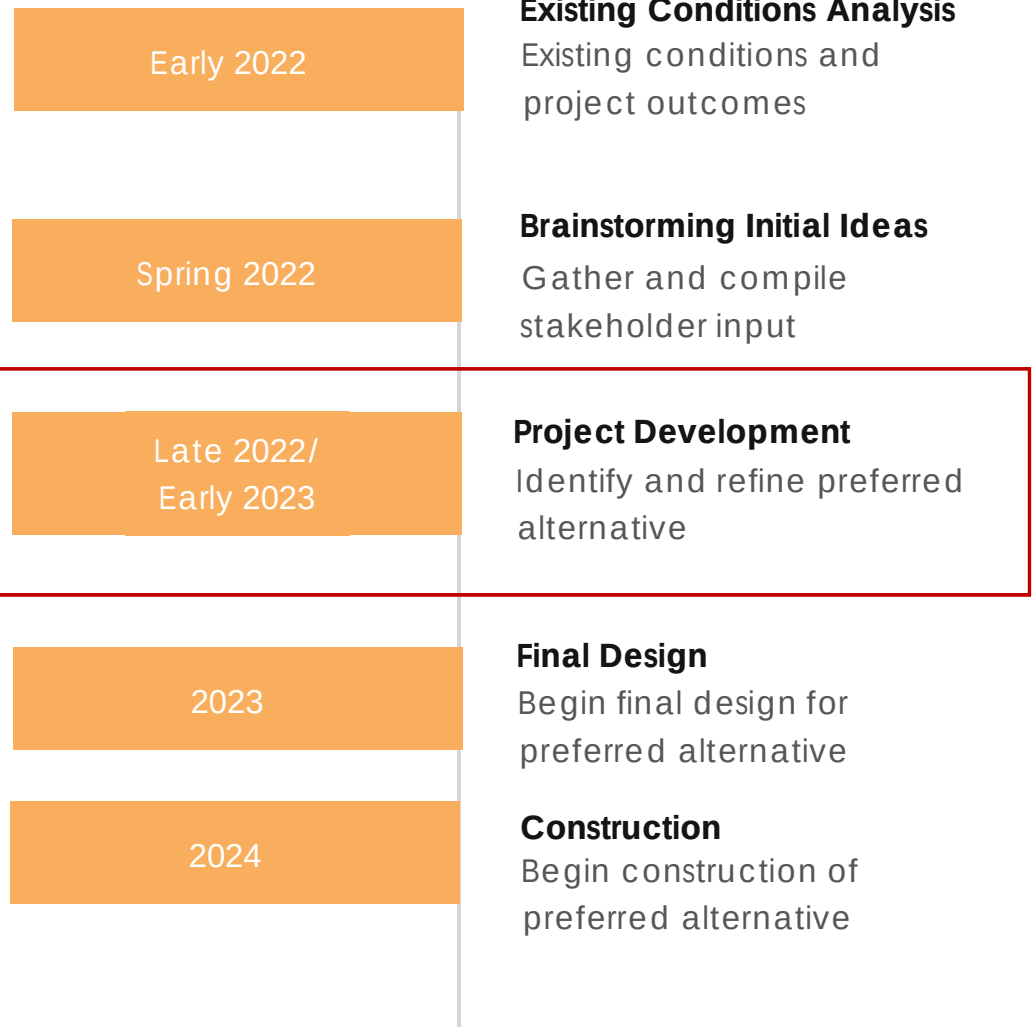
MODES

Bus Route	Bus Stop
Truck Route	Proposed Truck Route
Existing Bike Lane or Path	Proposed Bike Lane or Path

**Clement Avenue & Tilden Way
Existing Routes/Facilities by Mode**

Project Timeline

Project webpage:
www.alamedaca.gov/ClementTilden



Public Input

(2 rounds of outreach)

Virtual Workshop

- 1st: 31 attendees and 21 responses
- 2nd: 32 attendees and 14 responses

In-Person Open Houses

- 1st: 19 attendees
- 2nd: 15 attendees

Online Surveys

- 1st: 175 respondents
- 2nd: 116 respondents

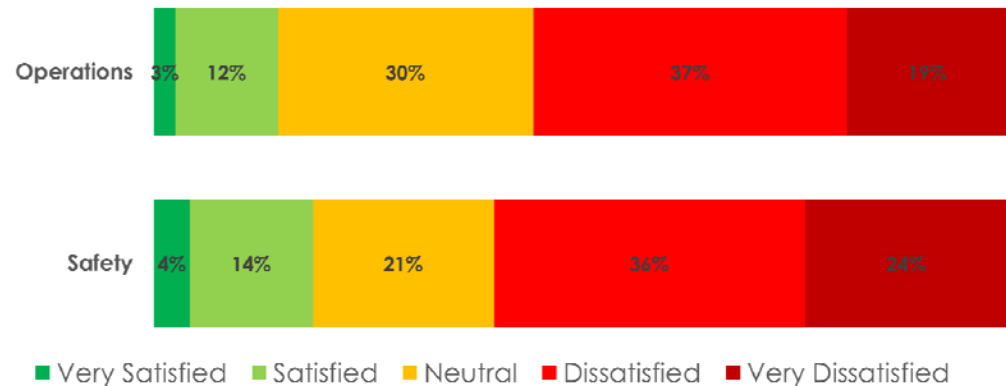
Desires:

- Safety and slower speeds
- Connectivity for bicyclists
- Safer pedestrian crossings
- More greenery, open space and dog park

Concerns:

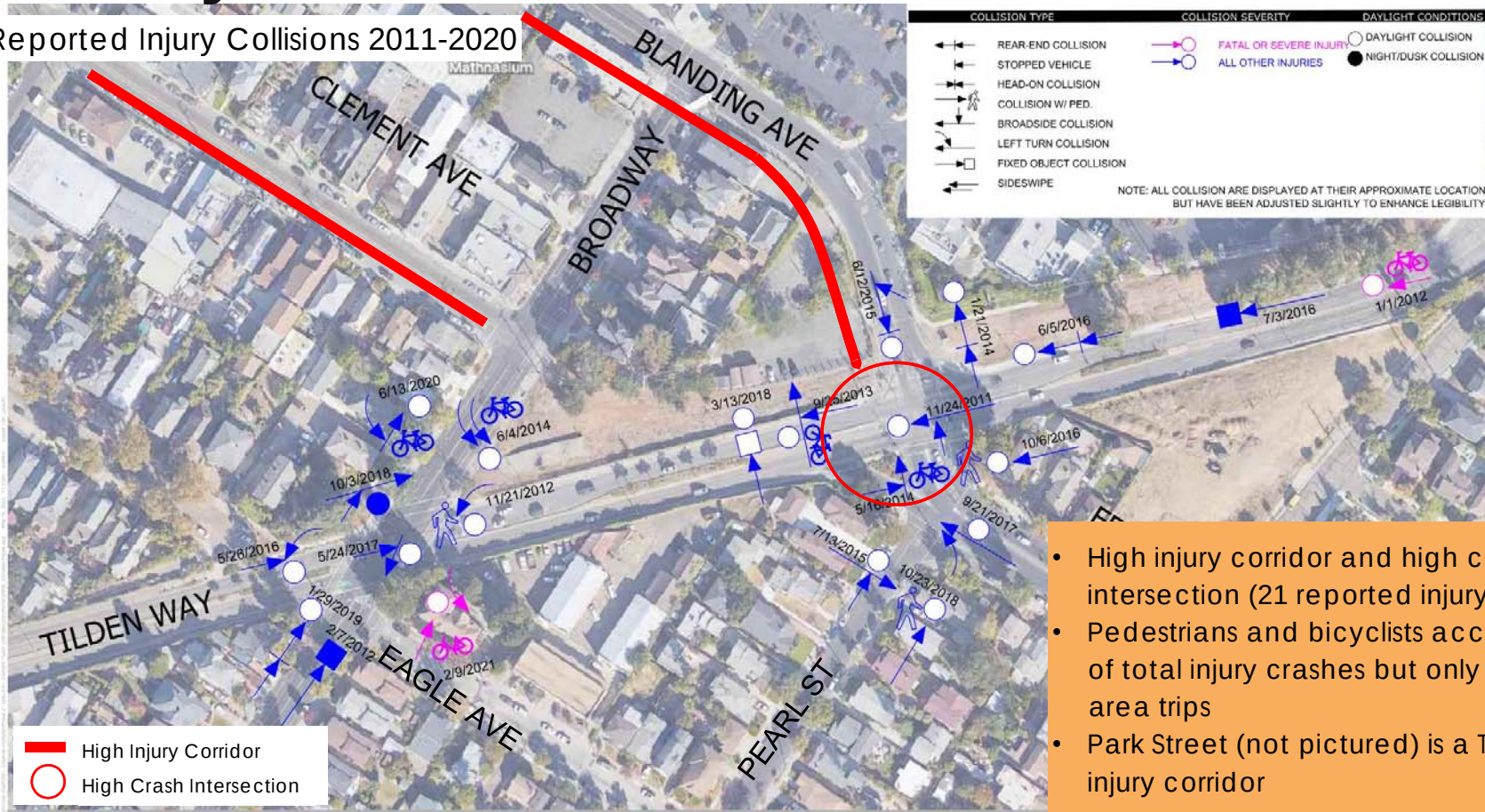
- Through traffic and speeding on Clement Ave.
- Increase of truck traffic with extension
- Drivers' unfamiliarity with roundabouts
- Speeding along Pearl St and Fernside Blvd

How satisfied are you with the Clement/Tilden project area?



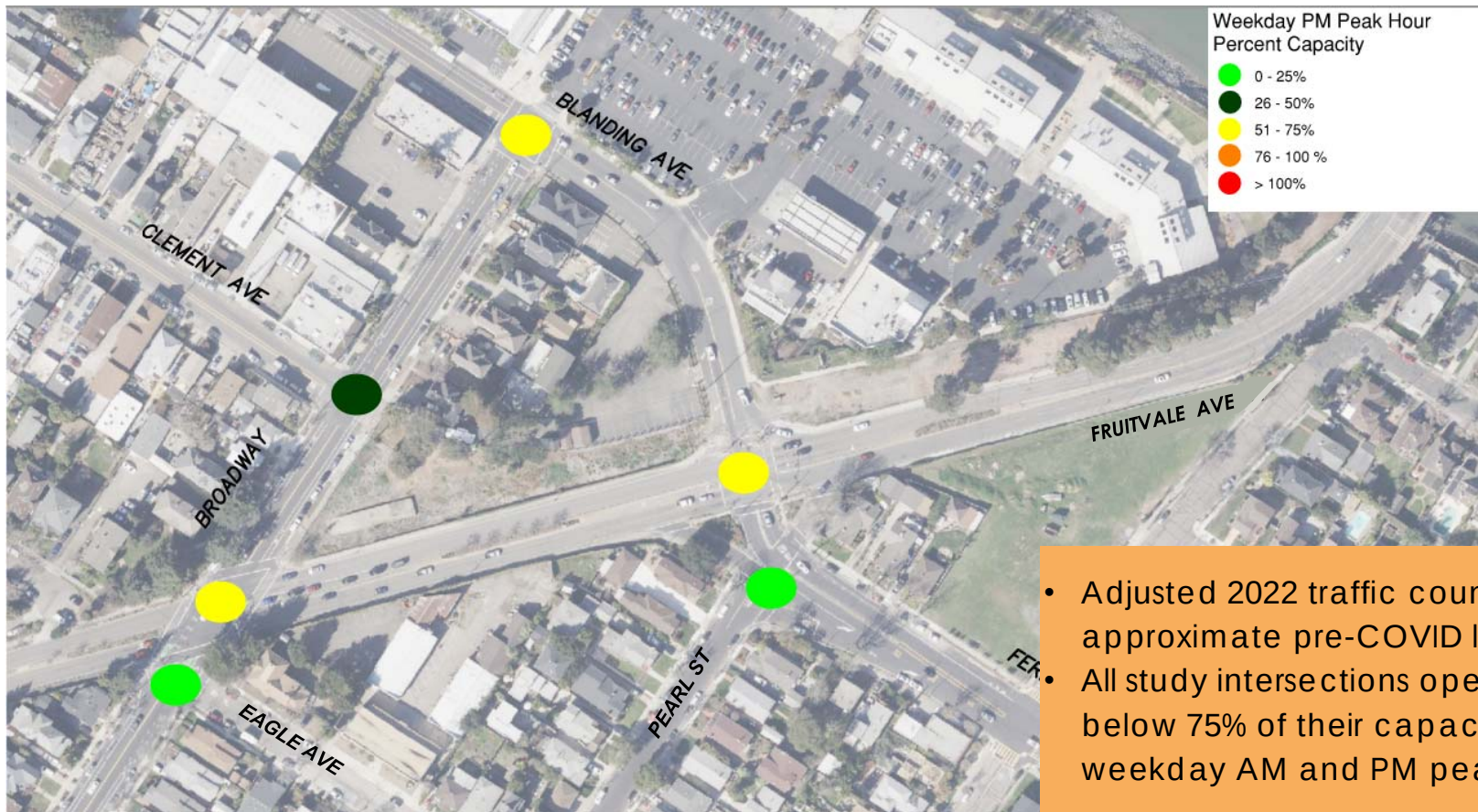
Safety

Reported Injury Collisions 2011-2020



- High injury corridor and high crash intersection (21 reported injury crashes)
- Pedestrians and bicyclists account for 38% of total injury crashes but only 9% of study area trips
- Park Street (not pictured) is a Tier 1 high injury corridor

Traffic Operations

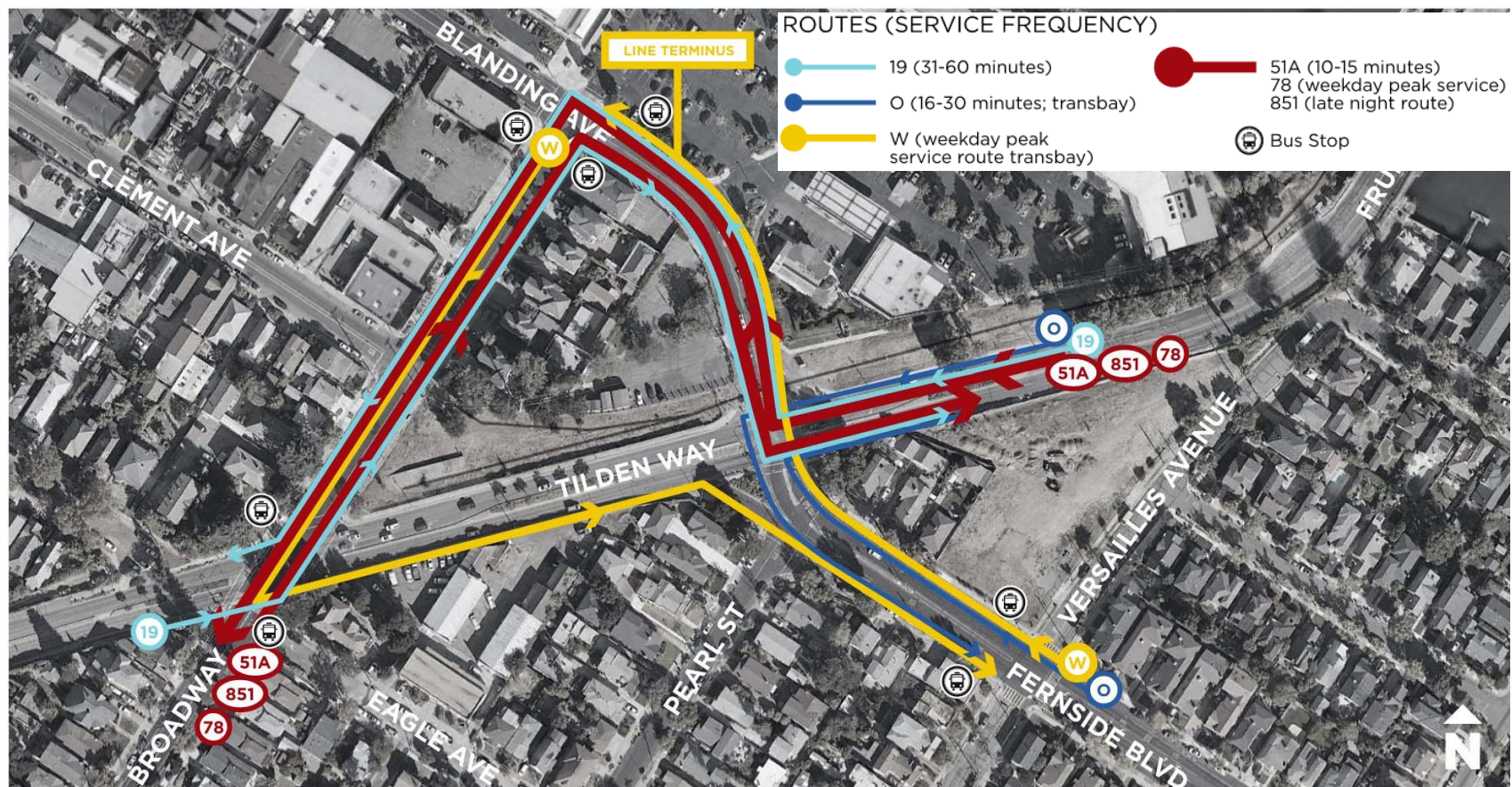


- Adjusted 2022 traffic counts to approximate pre-COVID levels
- All study intersections operate at or below 75% of their capacity during the weekday AM and PM peak hour

Study Area: Cross Alameda Trail



Study Area AC Transit Bus Service



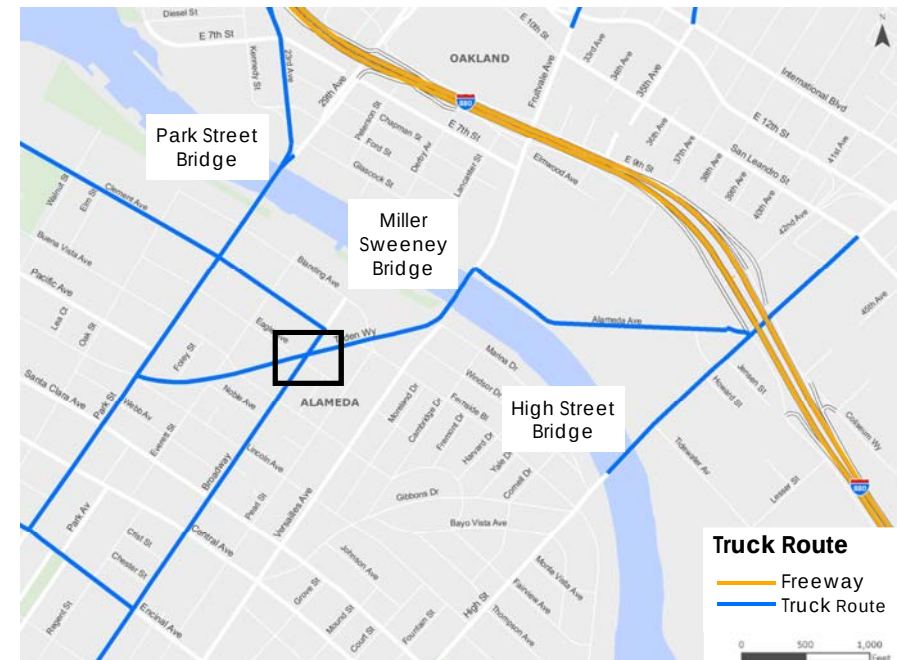
Truck Connections

Designated Truck Routes

- Alameda: Park St. Bridge and Miller-Sweeney Bridge
- Oakland: Park St. Bridge, Miller-Sweeney Bridge, and High St. Bridge

Truck Usage

- Trucks east of Broadway are funneled to Miller-Sweeney Bridge
- Trucks west of Broadway use Park Street (heavy truck usage on Park St)
- Clement eastbound truck extension may be redundant



Note: Sharp right turn from Tilden to Broadway is on designated truck route.

Truck Volumes

Truck Travel Patterns

- 4-5x the truck activity on Park Street Bridge compared to Miller-Sweeney Bridge
- Broadway and Park are main N-S corridors
- Central and Otis are primary E-W corridors

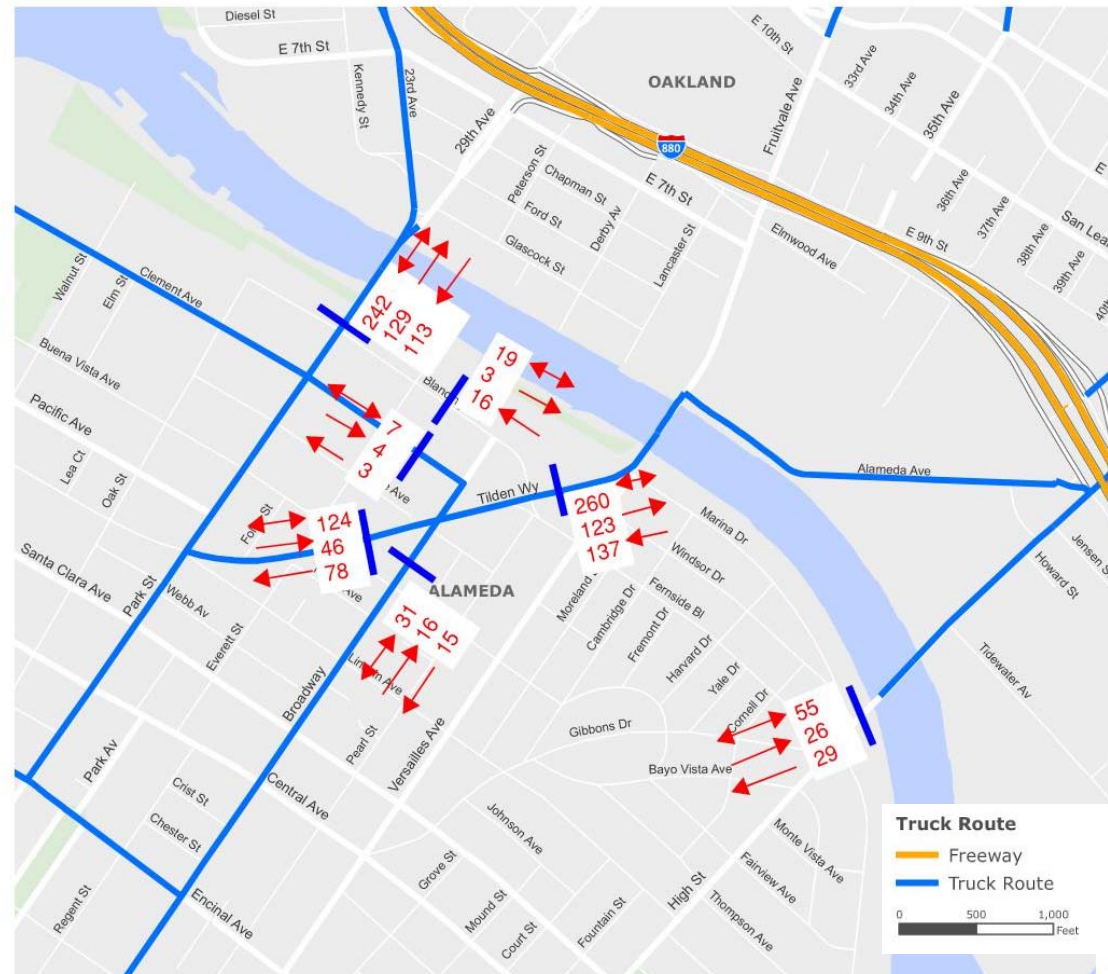


Truck Volumes

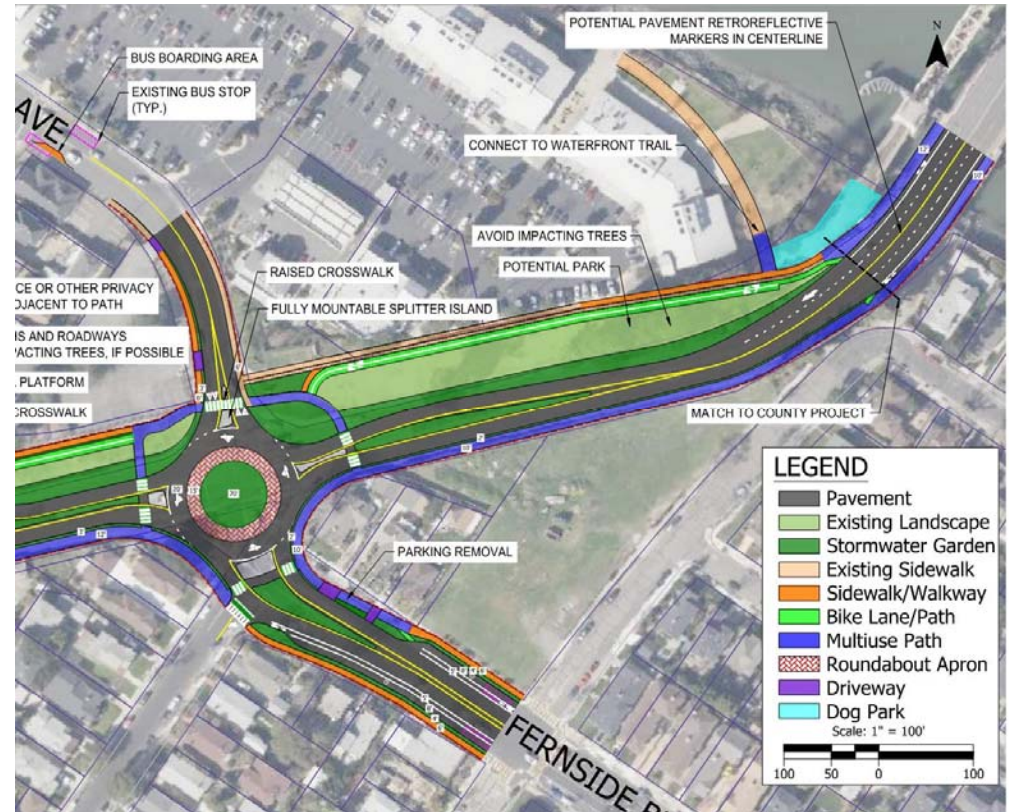
Miller-Sweeney Bridge 2022 Truck Volumes

- Trucks account for 2 - 5% of daily traffic on Fruitvale Avenue to/from Oakland
- Balanced truck volumes to/from Oakland all day
- Higher truck volumes on Blanding than Clement
- **The project should continue to provide truck access to/from Nob Hill shopping center.**
- **Trips to Oakland appear to be served better by Park Street Bridge**

All-day Counts, Trucks with Trailers (December 2022)



Draft Concept Tilden/Blanding/Fernside Intersection



Draft Concept Broadway/Tilden Intersection



Design Details

Raised Crosswalks

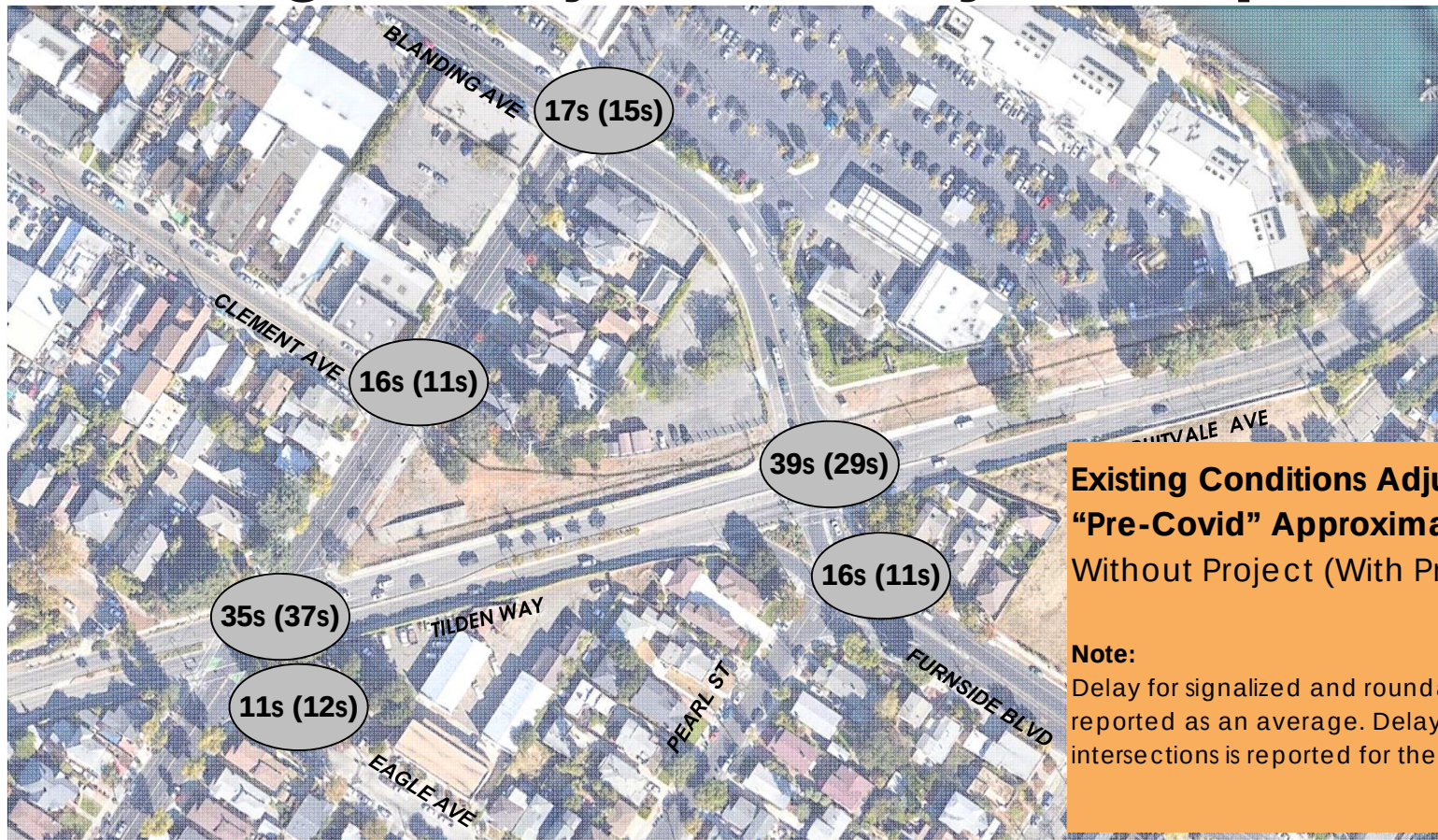
- Design can be adapted to roundabouts
- Compatible with large vehicles
- Research and design guidance informs the design



Overall Evaluation

Project Intended Outcome	Benefits
• Prioritize safety	• Improvements for all modes at roundabout and Broadway/Tilden • Reduce speeds • Adding sidewalks and crossings • Restricting high-conflict movements • Reduces truck volumes along Park Street (High Injury corridor) • Trucks connecting to Clement extension not cross over CAT
• Improve mobility for all roadway users • Improve bicycle and pedestrian access • Reduce greenhouse gas emissions	• Improved biking/walking connections • Improved bus access • Direct truck and motor vehicle access to Clement • Improved walking and biking conditions encourages mode shift
• Provide flood reduction and landscaping opportunities	• New park and bioretention areas
• Comply with City plans and policies	• Completes General Plan truck network

2022 Volumes with COVID adjustment Existing / Project Delay Comparison



**Existing Conditions Adjusted Upwards for
“Pre-Covid” Approximation Delays**
Without Project (With Project)

Note:

Delay for signalized and roundabout intersections is reported as an average. Delay for stop-controlled intersections is reported for the worst movement

Miller-Sweeney Bridge

Bridge Events

- Average 80 times a month (2-3 times/day)
- Typical 5-10 minute event (depends on vessel)
- Typically avoid AM and PM peak hours
- Similar to a rail crossing

Vehicle queues during bridge events (2022)



Example Roundabout near rail crossing in Kennewick, Washington

Emergency/Evacuation Scenarios

Unmanaged scenario

- Lose some capacity (2 lanes to 1) for about 1/3 mile
- Fruitvale Avenue in Oakland becomes bottleneck (2 lanes to 1)

Managed Scenario

- Can run the roundabout eastbound only (“contraflow”)
- Can use one of the two multi-use paths for emergency vehicles
- Maintains two lanes outbound
- Lose capacity for 1/3 mile to Fruitvale Avenue in Oakland



Conceptual Managed Scenario

Dealing with future volumes

Managed Scenario

- The roundabout shows to be below capacity even with conservative adjustments.
- If future volumes grow, a roundabout can be **metered** to manage delays and queues.
- Example shown from Columbia Park Trail, Richland, Washington



Anticipated queue lengths, Weekday PM Peak Hour



Anticipated queue lengths, Weekday PM Peak Hour



Legend

- No Build
- Project
- Single Lane Roundabout
- Average Queue
- 95th Percentile Queue

2022, Adjusted*

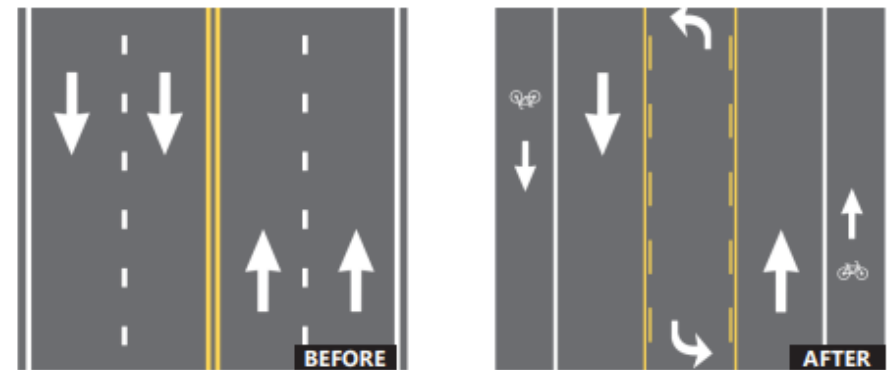
KITTELSON
& ASSOCIATES

*2022 volumes were adjusted to approximate pre-pandemic levels by increasing volumes to and from Alameda by 20%.

Lane Reduction

Reduce number of travel lanes (commonly called “Road Diet”)

- Lower speeds
- 19 – 47% crash reduction (right-angle, turning, rear end crashes)
- Shorter pedestrian crossings



Source: FHWA

Why Build Roundabouts?

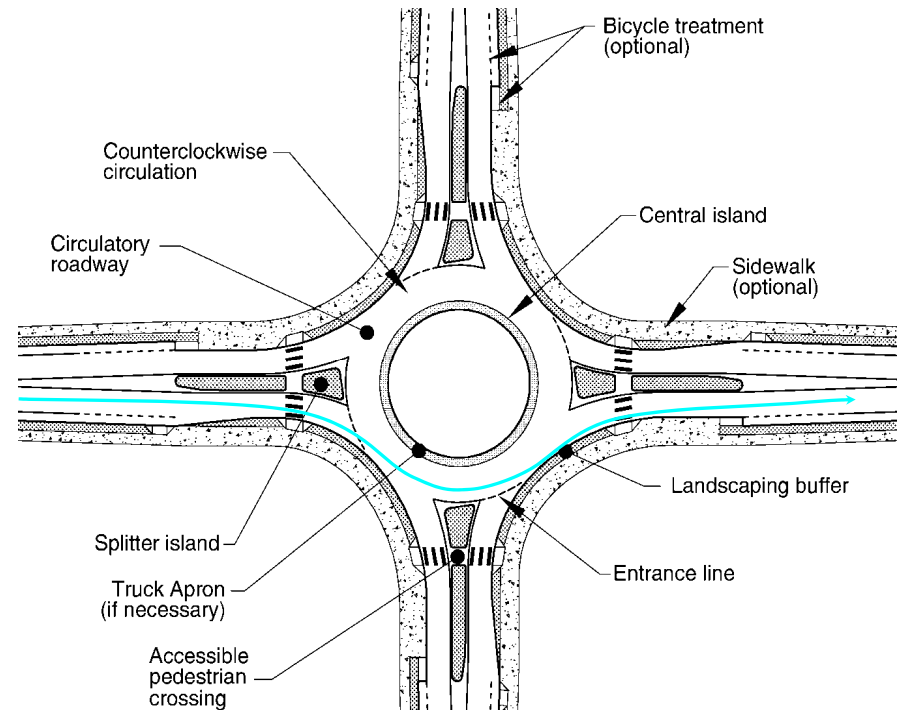
Roundabout benefits include:

- Safety performance
- Lower delay
- Environmental benefits (emissions, fuel savings)
- Access management
- Operations and maintenance costs
- Aesthetics



Vehicle Speeds: Reduced

- Geometry controls speeds
 - Max entry speed:
 - 25 mph for single-lane
 - 30 mph for two-lane
 - Circulating speeds 10 to 12mph
- Increased time for driver reaction
- Decreased chance for injury or fatality

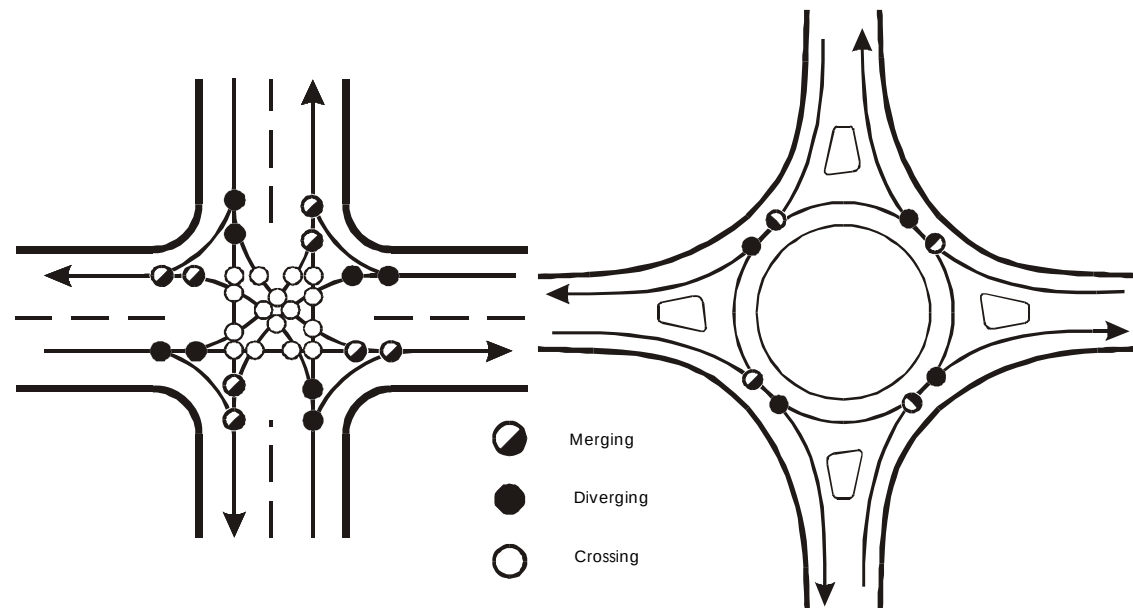


Safety Performance

Safety Statistics

- 90-100% reduction in fatalities
- 75% reduction in injuries
- 35% reduction in total crashes
- Lack of pedestrian and bicyclist crash frequency
- Reduction in conflict number and speeds

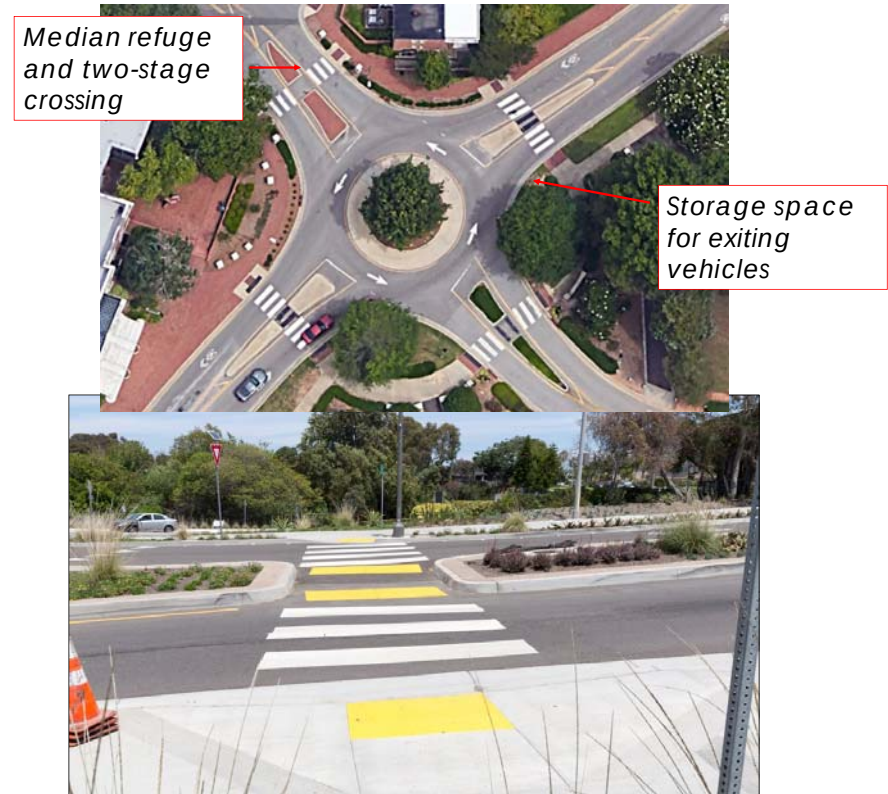
Roundabouts reduce conflict point number and severity



Source: NCHRP Report 572, NCHRP Report 672

Roundabouts and Pedestrians

- Benefits:
 - Slow vehicle speeds
 - Two-stage crossing
- Considerations:
 - Crosswalk alignment
 - Width of splitter island
 - Space for exiting vehicles to yield to pedestrians
 - Yield-controlled crossings



Sources: Google Earth; Kittelson

Roundabouts and Accessibility

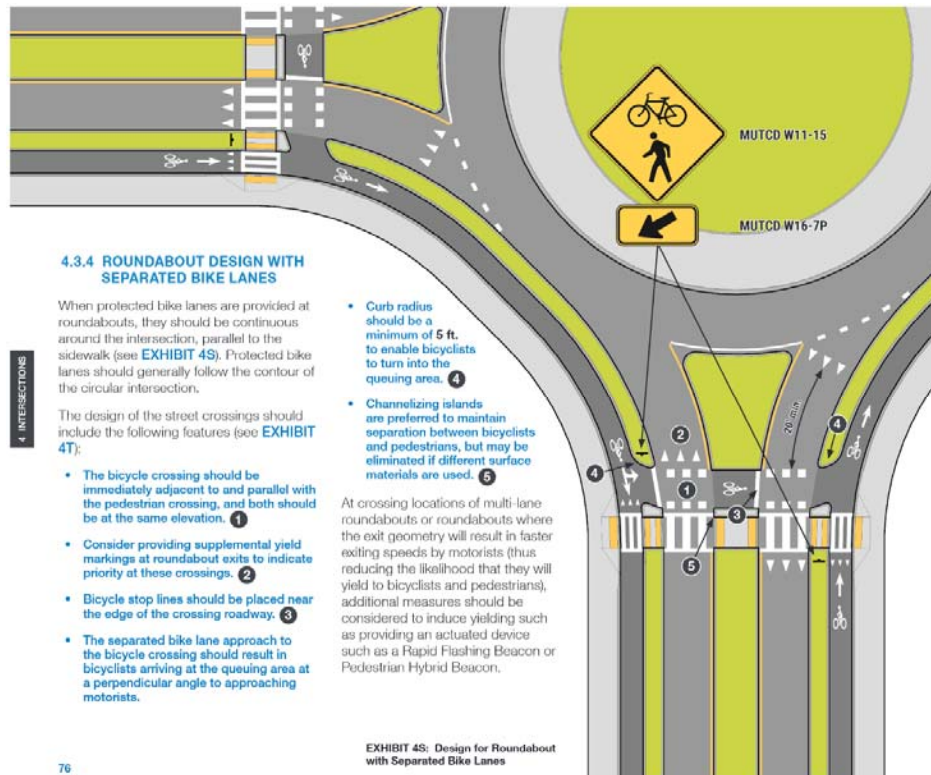
Considerations for Visually Impaired:

1. Well defined walkway edges
2. Separated walkways
3. Aligned detectable warnings
4. Perpendicular crossings
5. Contrasting crosswalk markings

Performance assessment detailed in NCHRP Report 834



Separate Bike/Ped Options



San Luis Obispo, California
Source: Brian Ray

Source: Massachusetts DOT *Separated Bike Lane Planning and Design Guide*

Roundabouts and Large Vehicles

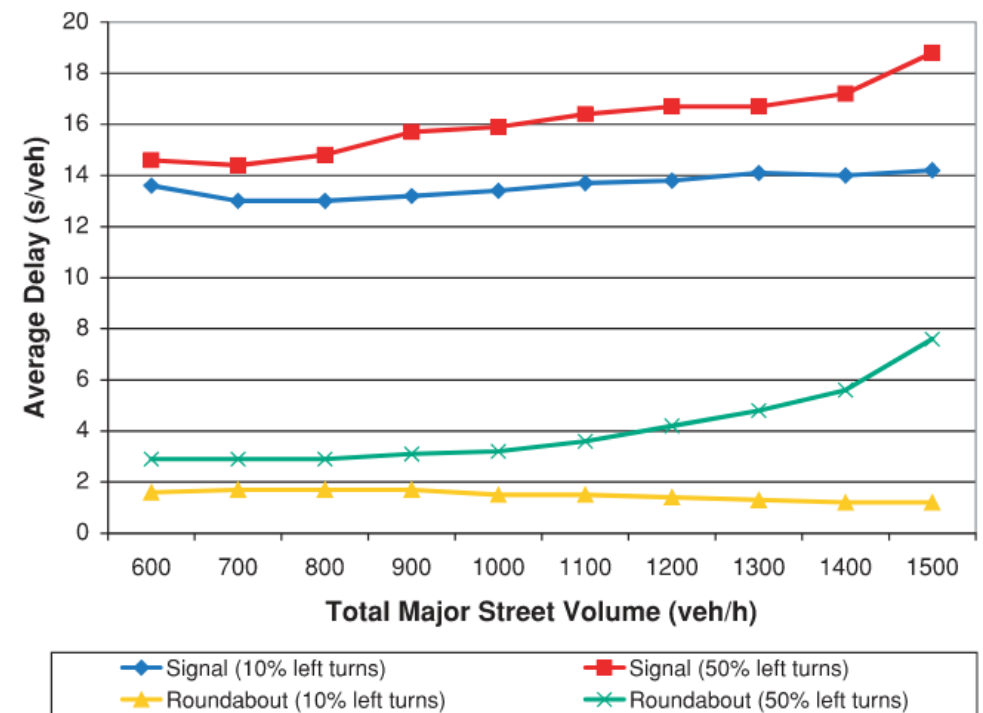
- “Design” versus “accommodate” larger vehicles
- Accommodations include:
 - Truck aprons
 - Placement of landscaping
 - Reinforced curbs



Reduced Travel Delay

- May solve existing or projected operational problem
 - Heavy delay on minor road
 - Large traffic signal delays
 - Heavy left-turning traffic
 - Stop control with large delays

Comparative Delay, Signal versus Roundabout
Intersection that meets Signal Warrants



Source: NCHRP Report 672, NCHRP Exhibit 3-19

Next Steps

- o City Council: Tues, March 7
- o 2023: Design
- o 2024: Construction
- o Project webpage:
www.alamedaca.gov/ClementTilden

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