# Clement Avenue/Tilden Way Project Transportation Commission

January 25, 2023

# Introduction

Clement Avenue Extension Alternatives at Tilden Way

#### **Project Team:**

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- 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

# Background

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







Clement Avenue & Tilden Way Existing Routes/Facilities by Mode

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Project Timeline	Early 2022	Existing Conditions Analysis Existing conditions and project outcomes
	Spring 2022	<b>Brainstorming Initial Ideas</b> Gather and compile stakeholder input
Project webpage: <u>www.alamedaca.gov/ClementTilden</u>	Late 2022/ Early 2023	<b>Project Development</b> Identify and refine preferred alternative
	2023	<b>Final Design</b> Begin final design for preferred alternative
5	2024	<b>Construction</b> Begin construction of preferred alternative

#### Public Input (2 rounds of outreach)

- Virtual Workshop
  1<sup>st</sup>: 31 attendees and 21 responses
  2<sup>nd</sup>: 32 attendees and 14 responses

# In-Person Open Houses • 1<sup>st</sup>: 19 attendees

- 2<sup>nd</sup>: 15 attendees

#### **Online Surveys**

- 1<sup>st</sup>: 175 respondents
- 2<sup>nd</sup>: 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







### **Traffic Operations**



# 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



# 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



Source: Caltrans Northern Alameda County Truck Access Study

# 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

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



#### Draft Concept Tilden/Blanding/Fernside Intersection





#### Draft Concept Broadway/Tilden Intersection

![](_page_14_Picture_1.jpeg)

#### **Design Details**

#### Raised Crosswalks

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

![](_page_15_Picture_5.jpeg)

### Overall Evaluation

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

![](_page_17_Figure_1.jpeg)

# Miller-Sweeney Bridge

Vehicle queues during bridge events (2022)

#### 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

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

![](_page_19_Picture_9.jpeg)

![](_page_19_Picture_10.jpeg)

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

![](_page_20_Picture_5.jpeg)

![](_page_20_Picture_6.jpeg)

# Anticipated queue lengths, Weekday PM Peak Hour Broadway/Tilden Tilden/Fruitvale/Fernside/Blanding Tilden Way Legend 2022, No Adjustment

Average Queue

95th Percentile Queue

Single Lane Roundabout

No Build

Project

![](_page_21_Picture_1.jpeg)

# Anticipated queue lengths, Weekday PM Peak Hour Broadway/Tilden Tilden/Fruitvale/Fernside/Blanding Legend 2022, Adjusted\* No Build Single Lane Roundabout Average Queue 95th Percentile Queue

![](_page_22_Picture_1.jpeg)

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

Project

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# 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

![](_page_23_Picture_5.jpeg)

![](_page_23_Picture_6.jpeg)

Source: FHWA

# Why Build Roundabouts?

#### Roundabout benefits include:

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

![](_page_24_Picture_8.jpeg)

# 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

![](_page_25_Figure_8.jpeg)

# 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

![](_page_26_Figure_7.jpeg)

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

![](_page_27_Picture_9.jpeg)

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

![](_page_28_Picture_8.jpeg)

![](_page_28_Picture_9.jpeg)

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### Separate Bike/Ped Options

![](_page_29_Figure_1.jpeg)

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Source: Massachusetts DOT Separated Bike Lane Planning and Design Guide

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# Roundabouts and Large Vehicles

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

![](_page_30_Picture_6.jpeg)

![](_page_30_Picture_7.jpeg)

# **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

![](_page_31_Figure_6.jpeg)

![](_page_31_Figure_7.jpeg)

Source: NCHRP Report 672, NCHRP Exhibit 3-19

# Next Steps

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

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![](_page_32_Picture_6.jpeg)