May Mobility and Funding Work Session
5.25.2023

Paths

Project Delivery Opportunities

Communicate roles, responsibilities, processes, and standards for **individual** projects.

Outcome: *Crossings Delivery Guide*

Program Strategy Development

Develop a shared, **corridor** vision with an incremental and implementable approach for regional benefits.

Balance vision with implementable action plan

Outcome: *Program Vision and Strategy*

Caltrain | Corridor Crossings STRATEGY

Timeline

Caltrain | Corridor Crossings STRATEGY

CSCG Mobility Work Session

- Discussed existing crossing conditions along the corridor
- Highlighted relationship of crossing treatments* with the circulation network
- Discussed tradeoffs/considerations of applying crossing treatments
- Jurisdictions collaborated to apply crossing treatments on corridor segment maps

**Grade separated, pedestrian/bicycle separated, and closures*

Caltrain | Corridor Crossings STRATEGY

Work Session Outcomes

- Identify corridor-wide assumptions to define a programmatic cost range
- Understand the relationship of crossing treatments and community circulation
- Discover tradeoffs and considerations of applying crossing treatments
- Identify opportunities and challenges created by the program approaches

Program Strategy Update

Caltrain | Corridor Crossings STRATEGY

Purpose

The Corridor Crossings Strategy is an effort to **define a systematic corridor-wide approach** to crossings.

The strategy aims to **align stakeholder ambitions into balance with an implementable program,** addressing:

- Funding
- Organization
- Program Delivery

Note: Active grade separation projects will continue in parallel

Caltrain | Corridor Crossings STRATEGY

Program Approach Spectrum

Approach A: Independent Projects

- Project-by-project approach/management
- Local funding plan
- Aspirational goal, but no timeline
- Current approach for Caltrain

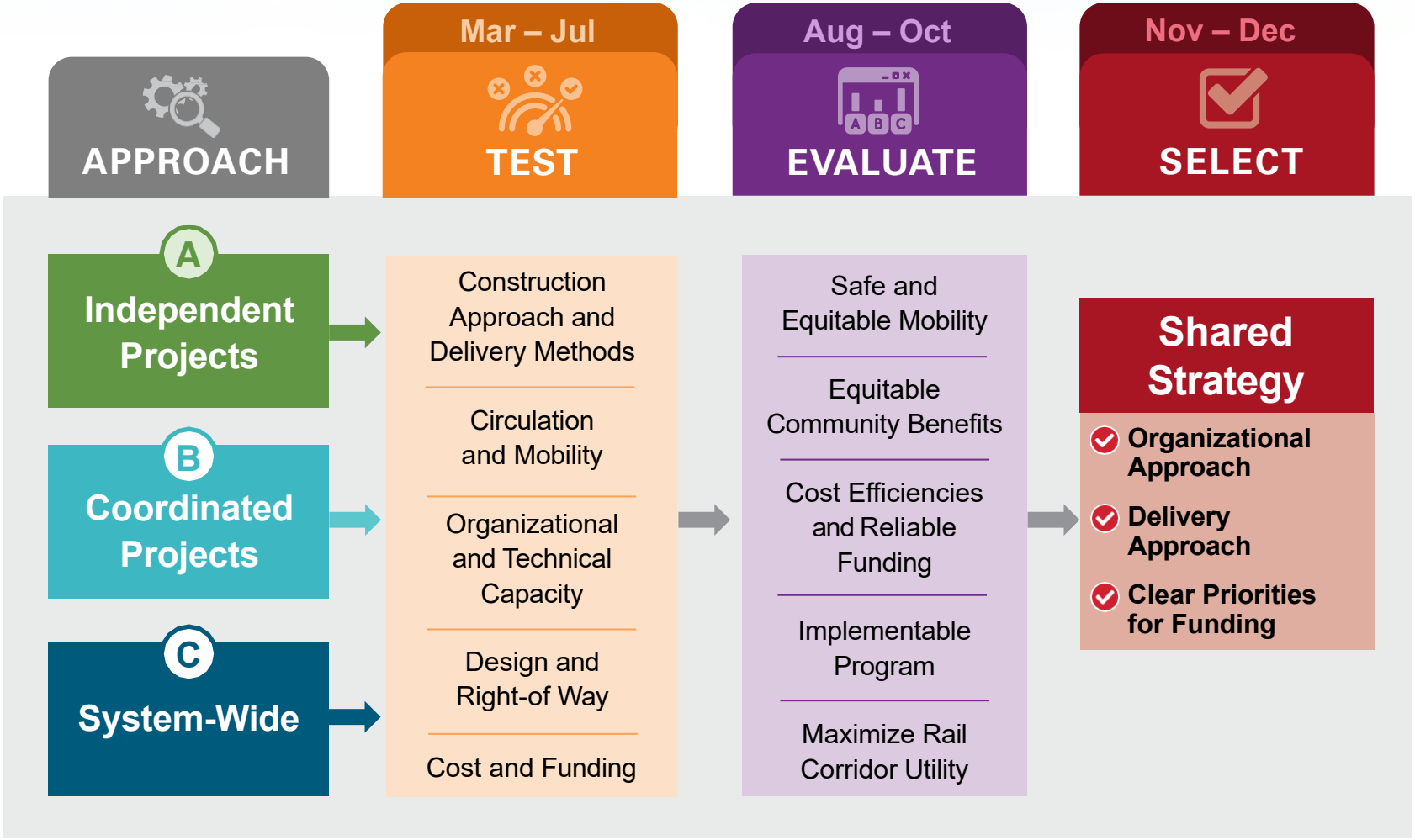
Approach B: Coordinated Projects

- Regionally coordinated approach to corridor funding
- Interjurisdictional communication about resources and schedule
- Coordinated corridor project delivery
- Aspirational goal with timeline

Approach C: System-wide

- Transparent and consistent methodology
- Robust and centralized project delivery
- Corridor-wide and regional funding
- Consistent project champion
- Aggressive goal with timeline

Program Strategy Process



Caltrain | Corridor Crossings STRATEGY

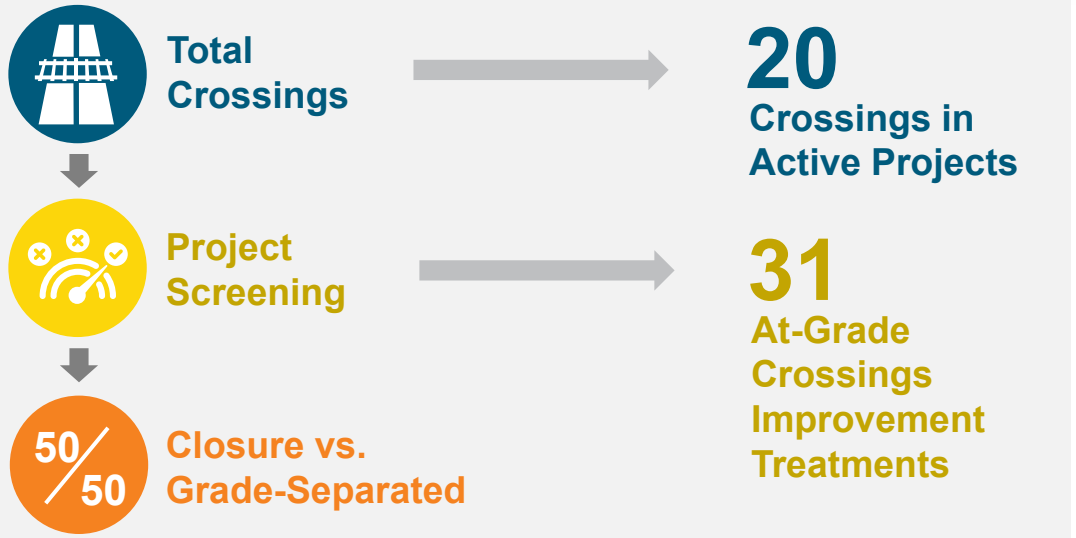
Cost Update and Funding Strategy

Caltrain | Corridor Crossings STRATEGY

Caltrain Business Plan Assumptions

Caltrain Business Plan estimate included:

- ✓ Information about active projects;
- ✓ Assumptions about improvements, closures, and grade separations



Cost estimates were developed at a program level using $2018

Table 7: Summary of Grade Crossing Cost Estimates (Medium Intensity Potential Investment Range)

Type	Baseline Growth	Moderate Growth	High Growth
Auto (JPB-Owned Corridor)	$6.8B	$7B	$8.3B
Auto (UP-owned Corridor)	$1.9B	$1.9B	$1.9B
Bike/Ped	$0.14B	$0.14B	$0.14B
Total	**$8.8B**	**$9B**	**$10.3B**

Caltrain | Corridor Crossings STRATEGY

Updating Caltrain Business Plan to Today

Since Caltrain Business Plan, conditions have changed:

- 11 more crossings in active projects
- Corridor Crossing Strategy will explore fully grade separated corridor

Caltrain Business Plan

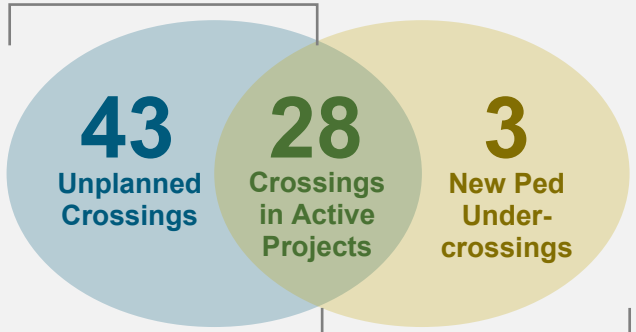
Total Crossings → **20** Crossings in Active Projects

Project Screening → **31** At-Grade Crossings Improvement Treatments

50/50 Closure vs. Grade-Separated

Current Status

71 Current Crossings



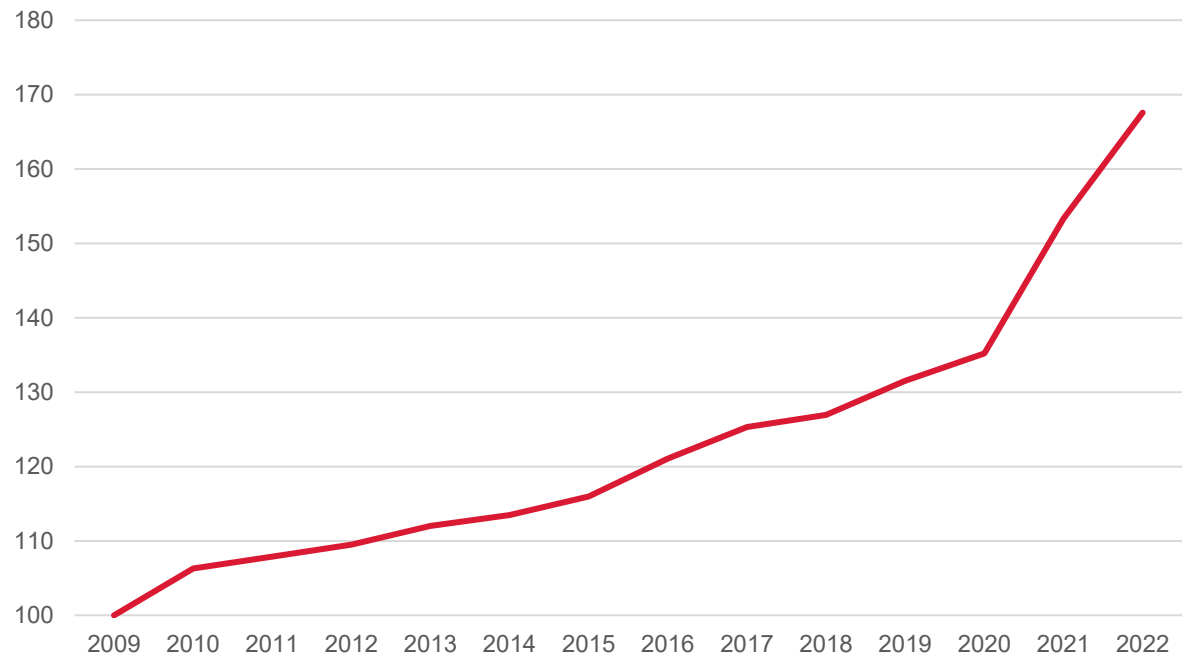
31 Crossings in Active Projects

Caltrain | Corridor Crossings STRATEGY

Updating Caltrain Business Plan to Today

Since Caltrain Business Plan, conditions have changed:

- *11 more crossings in active projects*
- *Corridor Crossing Strategy will explore fully grade separated corridor*
- Construction costs in California have increased



Based on data from the California Construction Cost Index (CCCI):

$100 in $2009 = $127 in $2018 = $168 in $2022

Updating Caltrain Business Plan to Today

Differences from Caltrain Business Plan

- More active projects for ambitious grade crossing removals
- Corridor Crossing Strategy is an opportunity to look in more detail at crossings.
- Vision to get to a fully separated corridor

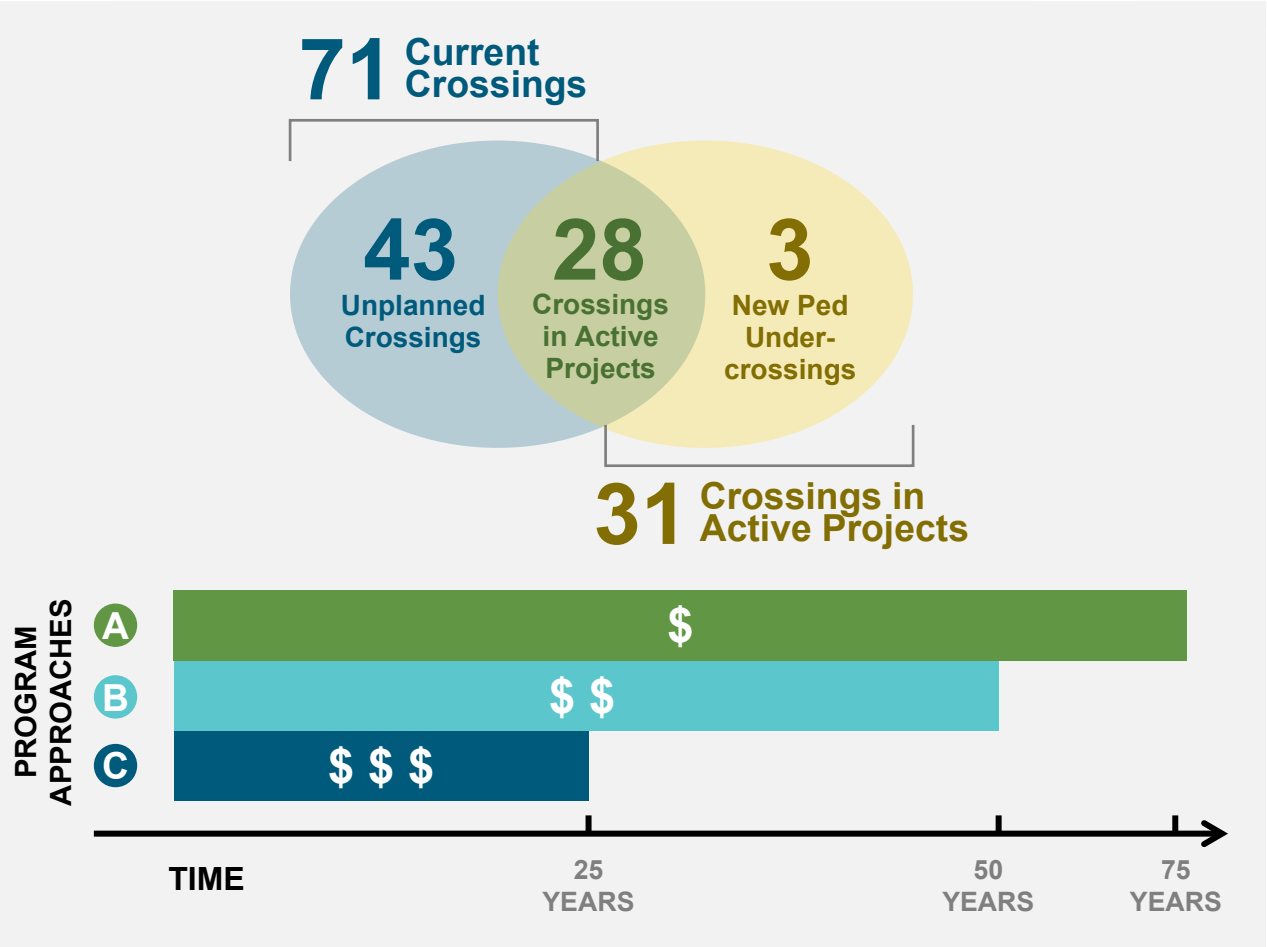
Inflation-only suggests an increase of approximately 30 percent since 2018.

Corridor-wide programmatic cost range will be discussed at the June meeting and depends on the discussion today.

Caltrain | Corridor Crossings STRATEGY

Next Steps on Cost & Funding

- Develop corridor-level cost range
- Coordinate with project sponsors
- Identify potential efficiencies
- Identify opportunities for funding
- Determine corridor program delivery capacity needs



Circulation and Mobility Workshop

Caltrain | Corridor Crossings STRATEGY

Workshop Objectives

The Corridor Today

How does the Caltrain Corridor, regional transportation network, and local communities interact **TODAY**?

Share Data

Corridor Crossings

Transportation Network

Key Destinations

Community Context

Is there anything else **YOU** would like to share with us about existing crossings in your community?

Materials: community fact sheet summaries, crossing data tables, travel shed access analysis

The Corridor in the Future

How could the Caltrain Corridor, regional transportation network, and local communities interact in the **FUTURE**?

Foster the Trade-off Discussion

How do **YOU** envision the Caltrain Corridor to function in the future?

Materials: scenario summaries, travel shed access analysis

Caltrain | Corridor Crossings STRATEGY

Workshop Outline

Discussion framework

- Why are circulation & mobility important for the corridor?
- Circulation and mobility goals and vision

Fully separated corridor

- Toolbox
- Benefits, challenges, and trade-offs

Access analysis

- Travel sheds

Scenarios

Breakout Exercise

Discuss key takeaways from breakout exercise

Why are Circulation and Mobility important for the corridor?

Social and Economic

Network of Crossings

Promotes Equitable Access

Housing and Development Opportunities

Regional Goals and Priorities

Circulation and Mobility Long-Term Vision

Long-Term Goals

- Safe and Reliable
- Multi-modal Options
- Access for Everyone

Analysis

- *Connectivity • Demand • Operations • Equity*
- Caltrain Crossings
- Local Network & Access

Caltrain | Corridor Crossings STRATEGY

Safe and Reliable Transportation Network

Safe

Eliminate incidents and collisions

Consider a “fully separated corridor” to help eliminate incidents and collisions

Reliable

Resilient network

Caltrain service and the transportation network are disrupted when incidents occur, impacting community mobility

Consider a “fully separated corridor” to help eliminate incidents and disruptions

Transportation Network

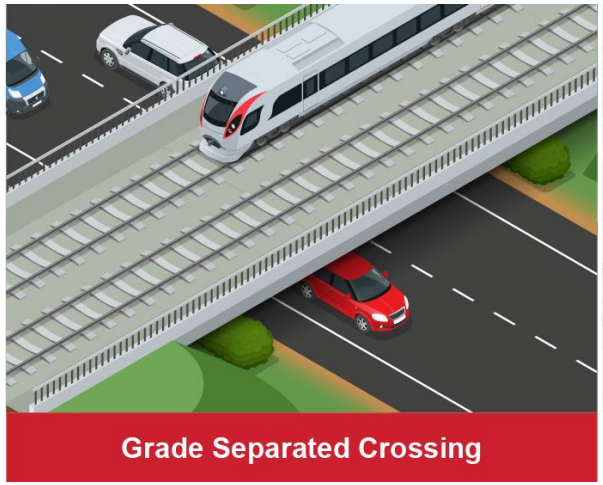
Each crossing is part of the larger community transportation network

Consider footprint, access, circulation, cost

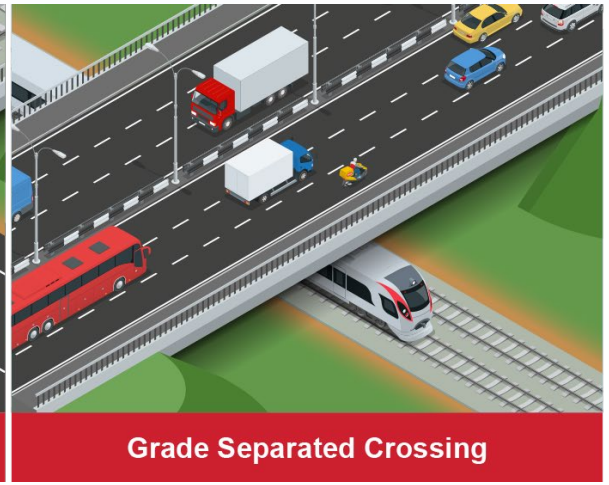
Fully Separated Corridor

At Grade Crossing

Long-term goal to eliminate all at-grade crossings



Grade Separated Crossing



Grade Separated Crossing

Closed Crossing

Bike/Pedestrian Crossing

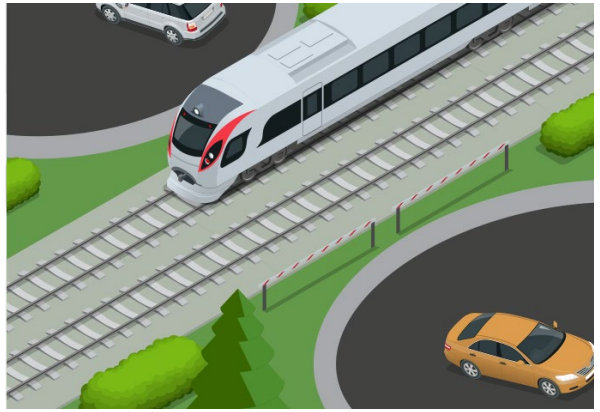
Caltrain | Corridor Crossings STRATEGY

Fully Separated Corridor Toolbox

	Full Grade Separation (GS)	Pedestrian/Bike Grade Separation (PBGS)	Closure
Cost	**$$$$$$**	**$$**	**$**
Footprint	Largest	Moderate	Smallest
Access	Access for all modes	Access for ped/bike	Requires alternate access routes
Emergency Access	Maintains existing emergency access	Requires alternate access routes	Requires alternate access routes

Spectrum of Options

Less Feasible — More Feasible — Less Feasible



Grade Separate Many Crossings

Benefits	Costs
• Maintains or improves existing levels of circulation across the corridor	• Expensive • Impacts access to adjacent parcels

Closing Many Crossings

Benefits	Costs
• Less expensive • Safety benefits	• Longer trips to cross the corridor • Impacts access along the corridor

Caltrain | Corridor Crossings STRATEGY

Fully Separated Corridor Tool: Closures

Cost Effective

Minimal Impact on Adjacent Land Uses

Minimize Access Disruption

Caltrain | Corridor Crossings STRATEGY

City of Mountain View

MOUNTAIN VIEW TRANSIT CENTER

PROJECT GOALS

ADDRESS SAFETY AND ACCESS NEEDS WITH CALTRAIN ELECTRIFICATION AND HIGH SPEED RAIL

HELP MEET MODE SHIFT GOALS TO MOUNTAIN VIEW EMPLOYMENT AREAS

SUPPORT DOWNTOWN ECONOMY AND VITALITY

City of Mountain View

INITIAL ALTERNATIVES

CASTRO VEHICLES UNDER TRACKS AND CENTRAL EXPRESSWAY

CASTRO VEHICLES UNDER TRACKS WITH CENTRAL EXPRESSWAY DEPRESSED

ELEVATING OR LOWERING OF TRACKS

CASTRO CLOSURE WITH PEDESTRIAN AND BICYCLE PROVISION; SHIFT TRAFFIC TO SHORELINE

INITIAL SCREENING RESULTS

KEY CONCLUSIONS

- ELIMINATED OPTIONS TO RAISE OR DEPRESS RAILROAD DUE TO PHYSICAL CONSTRAINTS – KEEP RAILROAD AT CURRENT GRADE
- IMPACT TO CENTRAL EXPRESSWAY SHOULD BE LIMITED – DO NOT DEPRESS
- VEHICLE DIVERSION TO SHORELINE BOULEVARD IS FEASIBLE
- PEDESTRIANS AND BICYCLISTS SHOULD BE PRIORITIZED

FINAL ALTERNATIVES

- ALTERNATIVE 1 – VEHICLE UNDERCROSSING
- ALTERNATIVE 4 – CLOSURE WITH VEHICLE DIVERSION

City of Mountain View

SELECTION OF CLOSURE ALTERNATIVE

RELATIVELY LOW CASTRO STREET VEHICLE TRAFFIC DEMAND WITH DIVERSION PLAN

IMPROVES CENTRAL EXPRESSWAY TRAFFIC OPERATIONS

BEST IMPROVEMENTS FOR PEDESTRIANS AND BICYCLES

ESTABLISHES WALKABLE DOWNTOWN GATEWAY

NO IMPACT TO ADJACENT PROPERTY AND BUSINESSES ON CASTRO AND MOFFETT

SHORTER CONSTRUCTION SCHEDULE

LOWEST COST (1/3 OF VEHICLE UNDERCROSSING)

COMMUNITY SUPPORT

City of Mountain View

LESSONS LEARNED

KEYS TO CONSENSUS

- LINK TO URBAN DEVELOPMENT PLANS
- REVIEW ALL POSSIBLE ALTERNATIVES AT HIGH LEVEL
- NARROW ALTERNATIVES – BUILDING CONSENSUS IN STEPS
- FOCUS ON SAFETY, URBAN DESIGN AND WALKABILITY, NOT JUST TRAFFIC IMPACTS

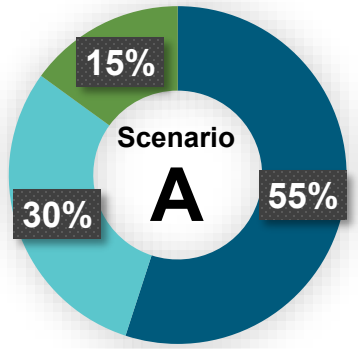
FACTORS SUPPORTING CLOSURE

- MODERATE TRAFFIC VOLUMES
- NEARBY GRADE SEPARATED ALTERNATIVE
- SUBSTANTIAL BUSINESS AND PROPERTY IMPACTS WITH VEHICLE SEPARATION
- PEDESTRIAN AND BICYCLE BENEFITS WITH CLOSURE
- OPPORTUNITY TO ENHANCE URBAN ENVIRONMENT AND WALKABILITY

Fully Separated Scenarios

Considered a range of hypothetical scenarios, with different mixes of the following:

- Fully Grade Separated (GS)
- Pedestrian/Bike Grade Separated (PBGS)
- Closure



Grade Separate Many Crossings

Closing Many Crossings

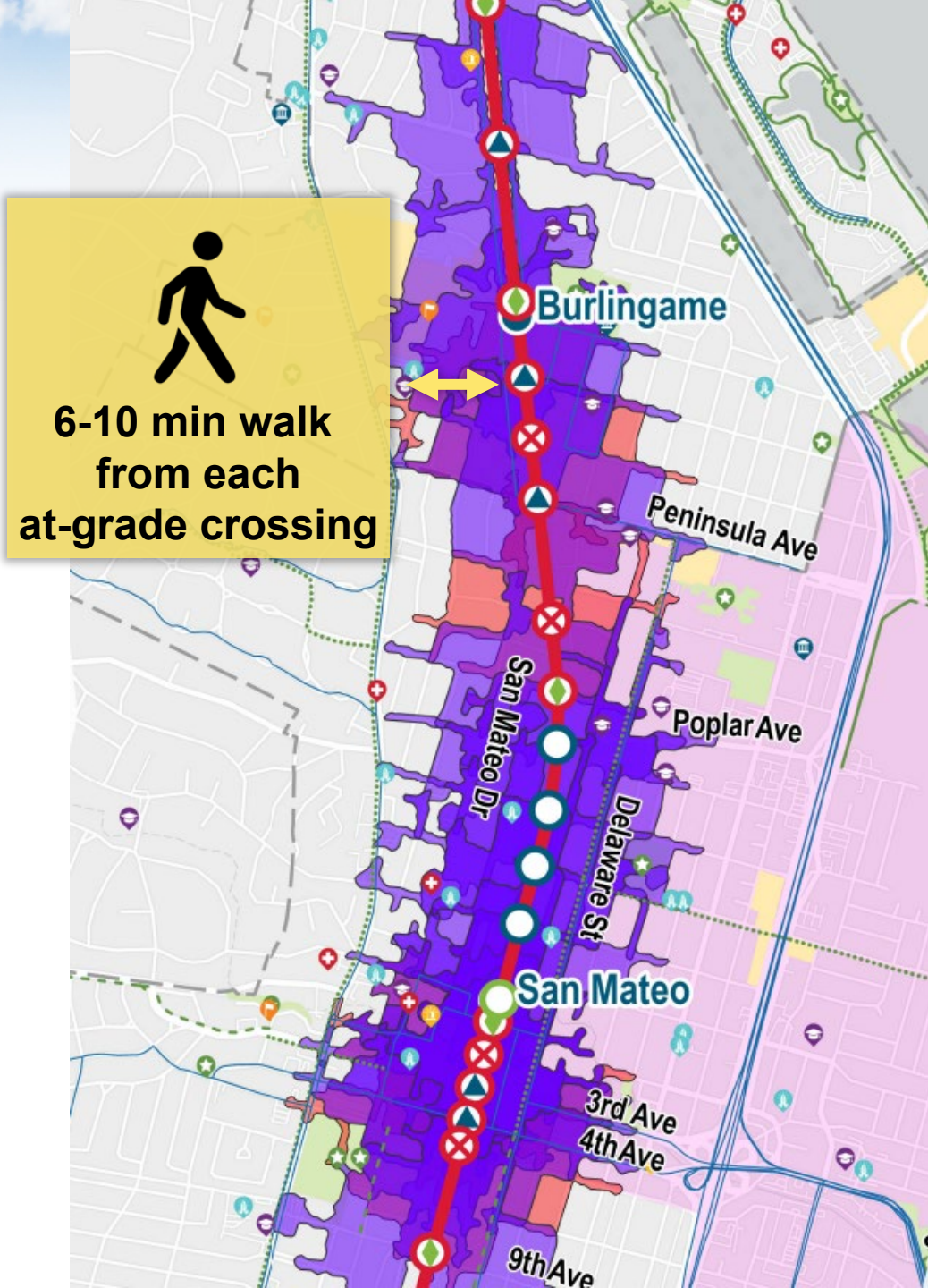
Less Feasible — **More Feasible** — **Less Feasible**

Hypothetical Scenario considered Locally Preferred Alternatives (LPA) for crossing improvements as part of active projects

Caltrain | Corridor Crossings STRATEGY

Access Analysis

- Crossings provide access to destinations and emergency services
- ***Travel sheds ...*** how far can you walk or drive from each crossing in 5-10 minutes?
- Analyze how access changes with scenarios
- How much can you still access in 5-10 minutes with closures?



Access Analysis Results

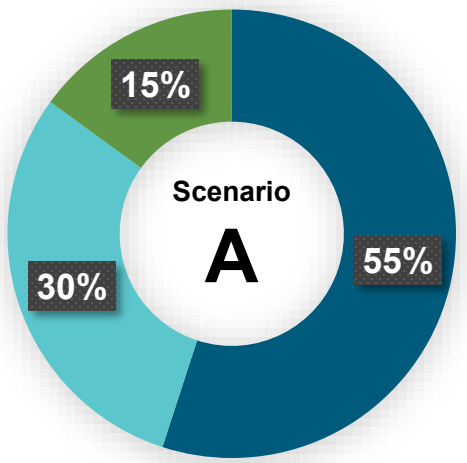
Takeaway:

Hypothetical scenario provides **comparable** multi-modal access to existing conditions

Hypothetical Scenario consists of the following at-grade crossing treatments:

- Fully Grade Separated (GS) – [$$$$$$]
- Pedestrian/Bike Grade Separated (PBGS) – [$$]
- Closure – [$]

Access Type	Existing Access Area (Square Miles)	Scenario A % Change in Area
Pedestrian Access (10-min walkshed)	13.4	-0.4%
Pedestrian Access (6-min walkshed)	4.5	-2.3%
Vehicular Access (3-min driveshed)	101.6	-0.9%



Breakout Exercise

Three Groups

- **Group 1 (LPMG):** San Francisco to Menlo Park Segment
- **Group 2 (LPMG):** Palo Alto to Gilroy Segment
- **Group 3 (Public):** Palo Alto to Gilroy Segment
- *Group Number provided on name tag*

Facilitators in each group

Come back together for exercise report out

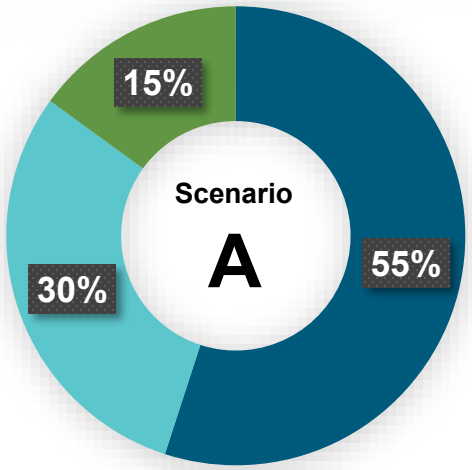
Materials

- Roll plots illustrating Scenario A walksheds and drivesheds
- Community Fact Sheets and Crossing Data Tables

Breakout Exercise

PART 1: Full Grade Separation Scenario

- Collaborate to foster a regional perspective
- Exercise to learn how your crossings function as part of the larger regional network
- Using the game pieces provided, discuss and refine the placement of crossing treatments for existing at-grade crossings



PART 2: Program Approach Opportunities

- Discuss the benefits and opportunities of the program approaches

No decisions are being made today

- Treat this as a living lab
- Goal is to better understand potential trade-offs and corridor context

Caltrain | Corridor Crossings STRATEGY

Report Out

- *Volunteer a Group Spokesperson*
- *Introduce Group Members*

PART 1: Full Grade Separation Scenario

- Discuss the trade offs/considerations of applying crossing treatments.
- What did you discover from this exercise?

PART 2: Program Approach Opportunities

- What are the tensions and challenges of each approach?
- What are the benefits and opportunities created by each approach?

What are the common themes across each group?

Caltrain | Corridor Crossings STRATEGY