



## *Corridor Crossings*

STRATEGY



*Local Policy Maker Group (LPMG)*

6.22.2023





# AGENDA

- **May Workshops** Recap
- **Program Approach** Tracker
- ***DRAFT* Program Cost** Range
- **Funding** Overview
- **Look** Ahead

# 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*





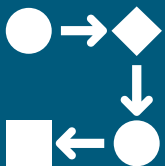
# Purpose

As an outcome of the **Business Plan**, 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:

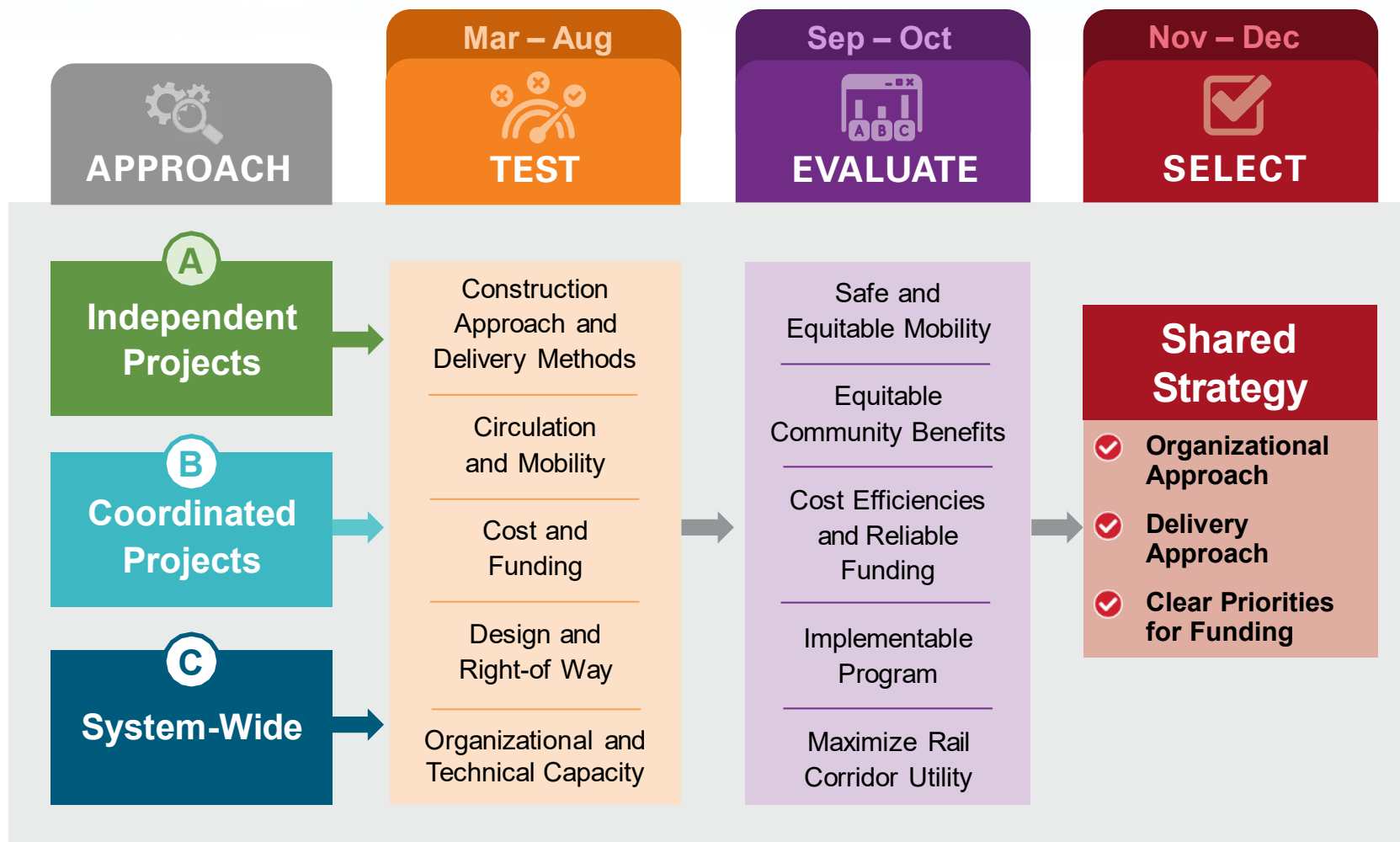
- Funding
- Organization
- Program Delivery

***Note: Active grade separation projects will continue in parallel***





# Program Strategy Process





# Meeting Goals and Outcomes



**Review of May  
Workshops  
Takeaways**



**Feedback on  
Cost + Funding  
Strategy**



This icon represents additional information provided in the Appendix for your reference.



This icon represents feedback is requested on content. However, questions and feedback are encouraged throughout presentation.





# May Workshop Recap



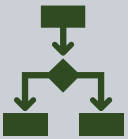
**Corridor Crossings**  
STRATEGY



# Mobility & Funding Workshop Purpose



**Understanding of relationship** between crossing treatments and community circulation.



**Discover tradeoffs and considerations** of applying crossing treatments.



**Identify opportunities and challenges** created by the program delivery approaches.



**Identify corridor-wide assumptions** for crossing treatments to inform a programmatic cost range.







# Mobility & Funding Workshop Recap

## Presentations:

- Current and potential future interactions between Caltrain corridor, regional transportation network, and jurisdictions
- City of Mountain View Transit Center project
  - ✓ *Highlighted considerations and opportunities of Castro Street at-grade crossing closure while maintaining ped/bike connectivity*

## Breakout Exercise:

- Participants collaborated on determining crossing treatments for at-grade crossings
  - ✓ *Considerations and takeaways of crossing treatments*
  - ✓ *Benefits and challenges of program delivery approaches*

### CSCG/PPG Workshop

26



17



### LPMG Workshop

24



15





# Common Takeaways



## Values:

- **In-person, workshop format** to determine shared priorities and discuss the corridor-wide vision

## Acknowledgement:

- **Benefits of a corridor-wide approach** but also understand the tensions of jurisdictional ambitions and priorities
- **Complexity and volume of issues, information, and data** to inform a corridor-wide approach
  - *Need for significant data on future conditions to inform the decisions and any prioritization process*





# Varying Takeaways

## CSCG/PPG

- ✓ Understood the **individual project lens doesn't leverage corridor-wide solutions**
  - Benefits of a corridor-wide approach could be worth the potential jurisdictional tradeoffs
- ✓ Idea of a **largely separated corridor is a newer concept**
  - Multiple participants expressed the importance of community support for this idea
- ✓ **Desire to collaborate** from a regional perspective for funding competitiveness and project coordination

## LPMG

- ✓ **Hesitancy on a fully separated corridor** concept, specifically from a funding and resources-constrained environment
- ✓ **Diversity of opinion** on a fully separated corridor was dependent on a community's prior involvement in grade separation projects and different jurisdictional characteristics





# Key Topic Discussion: Future Corridor Conditions

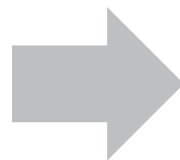
## Adopted 2040 Service Vision

### *Moderate Growth Scenario*

- 8 Caltrain trains
- 4 High-Speed Rail trains

### *High Growth Scenario*

- 12 Caltrain trains
- 4 High-Speed Rail trains



## Implications of increased service for at-grade crossings

- More frequent transit service
- Increased gate down time
- Disruption of circulation and increased delay for all modes
- Increased risk of interactions for all modes

Diversity of opinion on solutions for addressing at-grade crossings based on community context and ambitions:



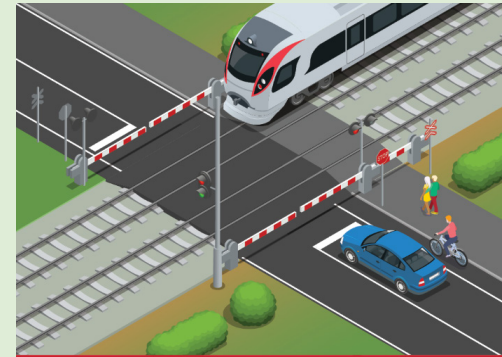
Grade Separated Crossing



Bike/Pedestrian Crossing



Closed Crossing



At Grade Crossing w/Safety Improvements



# Program Approach Tracker





# 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



Long Island Rail Road

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

## Approach C: System-wide



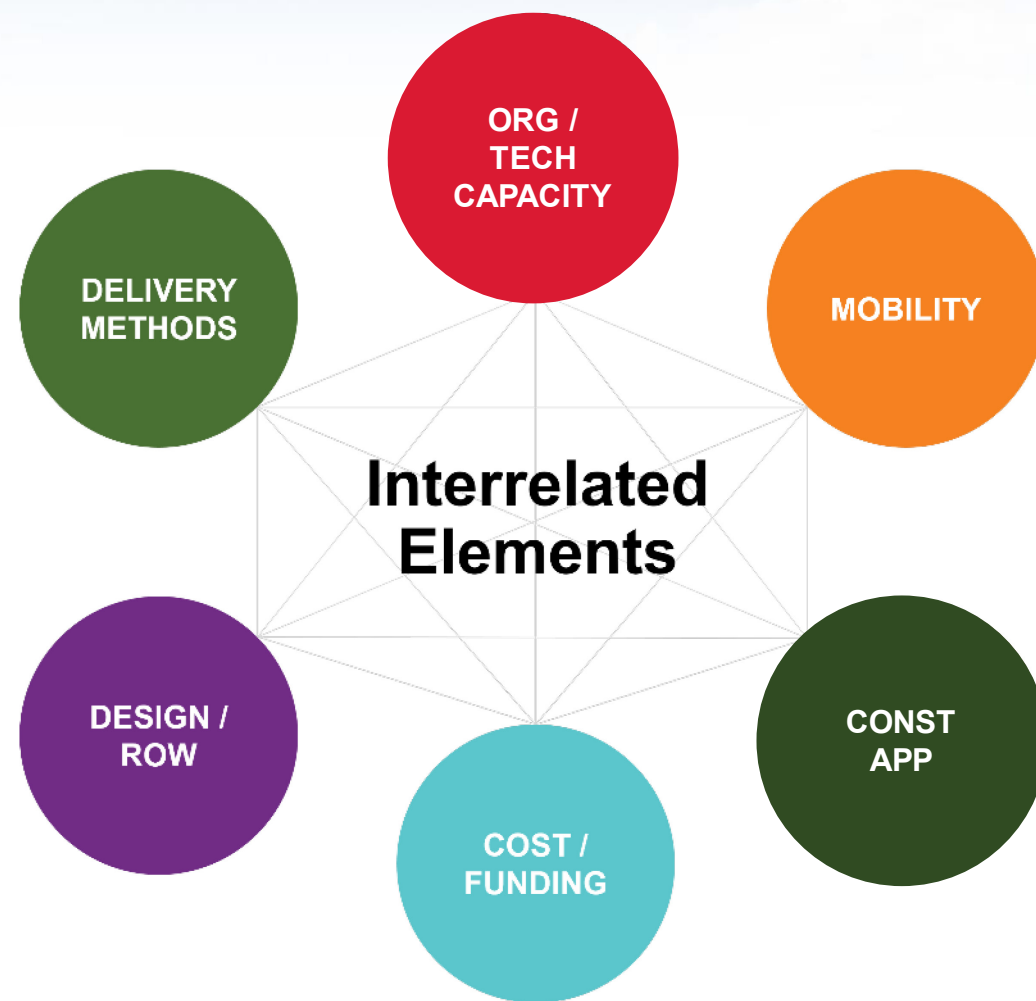
- Transparent and consistent methodology
- Robust and centralized project delivery
- Corridor-wide and regional funding
- Consistent project champion
- Aggressive goal with timeline





# Program Approach Tracker

- ✓ **Approach Tracker** helps visualize the feedback received for each topic and lead to a recommended program delivery approach
- ✓ **Ultimate Goal:** Identify recommended program delivery approach
- ✓ Interrelated topics evaluated through the lens of three delivery approaches





# Program Approach Tracker

Approach A:  
Independent Projects

Approach B:  
Coordinated Projects

Approach C:  
System-wide

	Approach A: Independent Projects	Approach B: Coordinated Projects	Approach C: System-wide
Construction Approach + Delivery Methods			
Circulation + Mobility			
Organizational + Technical Capacity			
Cost + Funding			
Design + ROW			

*Based on feedback from stakeholders, which approach seems best aligned to deliver the corridor's vision?*



# *DRAFT* Program Cost Range







# DRAFT Program Cost Purpose and Assumptions

## PURPOSE

*Develop understanding of corridor-wide cost range to inform:*

1. Approach to program delivery
2. Scale of funding need

## ASSUMPTIONS



- Fully separated corridor  
→ Largest potential scale of program
- Current active projects + other existing grade crossings
- Cost range to be reported in \$2022  
→ Uncertain timing of projects



# Active Projects

15 active grade separation, closure, and undercrossing projects (*displayed in table*)

*\*Castro Street: Crossing Closure and Construction of New Bike/Ped Undercrossing*

*\*\*Middle Avenue: New Bike/Ped Only Undercrossing*

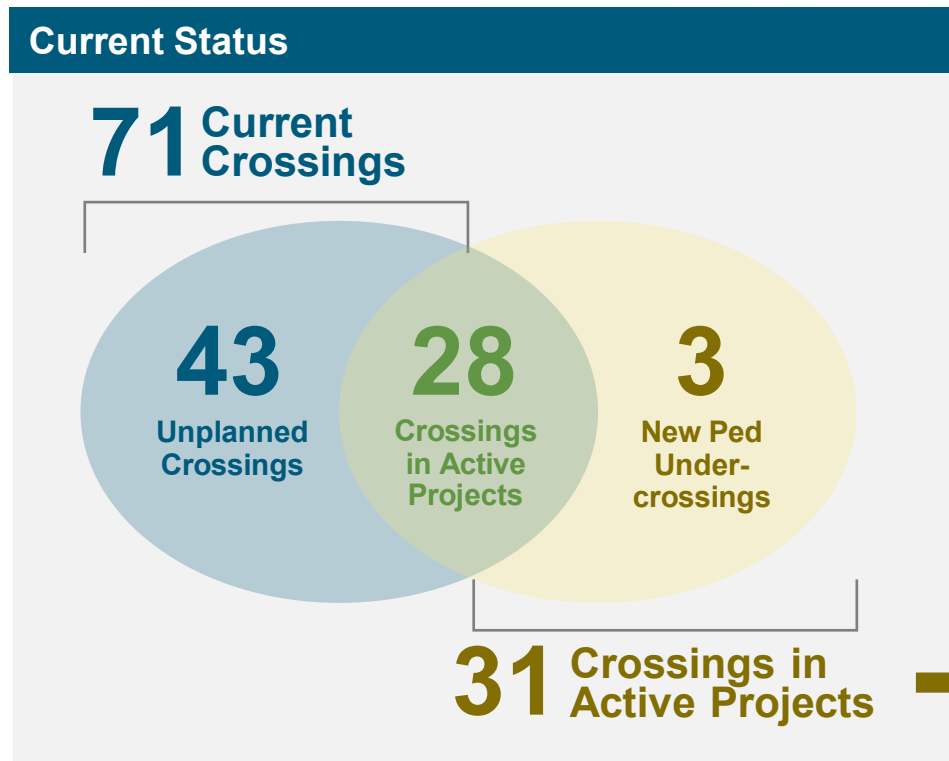
*\*\*Bernardo Avenue: New Bike/Ped Only Undercrossing*

COUNTY	PROJECT NAME	CROSSING STREET	PROJECT STAGE			
			PLANNING	ENVIRONMENTAL	DESIGN	CONSTRUCTION
San Francisco	Pennsylvania Avenue Extension	<ul style="list-style-type: none"> <li>Mission Bay Dr</li> <li>16th St At 7th</li> </ul>	✓			
San Mateo	South Linden Avenue and Scott Street Grade Separation	<ul style="list-style-type: none"> <li>S Linden Ave</li> <li>Scott St</li> </ul>			✓	
	Burlingame Broadway Grade Separation	<ul style="list-style-type: none"> <li>Broadway</li> </ul>			✓	
	Redwood City Grade Separation Study	<ul style="list-style-type: none"> <li>Whipple Ave</li> <li>Brewster Ave</li> <li>Broadway</li> <li>Maple St</li> <li>Main St</li> <li>Chestnut St</li> </ul>	✓			
	North Fair Oaks Bicycle and Pedestrian Railroad Crossing and Community Connections Study	<ul style="list-style-type: none"> <li>Under Evaluation</li> </ul>	✓			
	Menlo Park Grade Separation Project	<ul style="list-style-type: none"> <li>Encinal Ave</li> <li>Glenwood Ave</li> <li>Oak Grove Ave</li> <li>Ravenswood Ave</li> </ul>	✓			
	Middle Avenue Undercrossing**	<ul style="list-style-type: none"> <li>Middle Ave</li> </ul>			✓	
Santa Clara	Connecting Palo Alto	<ul style="list-style-type: none"> <li>Palo Alto Ave</li> <li>Churchill Ave</li> <li>Meadow Dr</li> <li>Charleston Rd</li> </ul>	✓			
	Rengstorff Grade Separation	<ul style="list-style-type: none"> <li>Rengstorff Ave</li> </ul>			✓	
	Mountain View Transit Center and Grade Separation*	<ul style="list-style-type: none"> <li>Castro St</li> </ul>			✓	
	Bernardo Avenue Undercrossing**	<ul style="list-style-type: none"> <li>Bernardo Ave</li> </ul>	✓			
	Mary Avenue Grade Separation	<ul style="list-style-type: none"> <li>N Mary Ave</li> </ul>	✓			
	Sunnyvale Avenue Grade Separation	<ul style="list-style-type: none"> <li>N Sunnyvale Ave</li> </ul>	✓			
	Diridon Integrated Station Concept Plan	<ul style="list-style-type: none"> <li>Auzerais Ave</li> <li>West Virginia St</li> </ul>	✓			
	Southern San José Grade Separations Project (Union Pacific Rail Road)	<ul style="list-style-type: none"> <li>Skyway Dr</li> <li>Branham Ln</li> <li>Chynoweth Ave</li> </ul>	✓			

\*Crossing Closure and Construct Bike/Pedestrian Only Crossings \*\*Bike/Pedestrian Only Crossings



# DRAFT Program Cost Assumptions



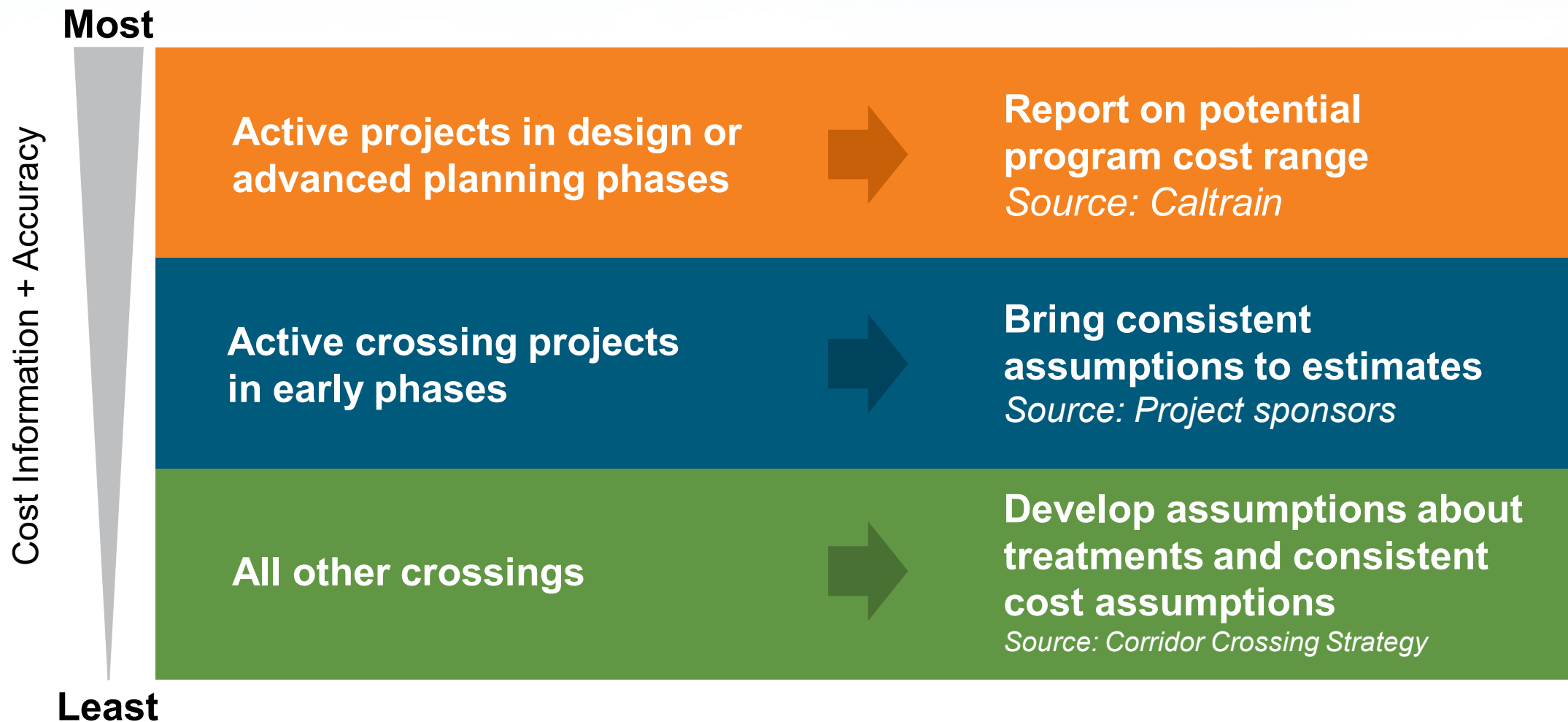
9 in Advanced Planning or Design stages

20 in Active Projects in early planning stages



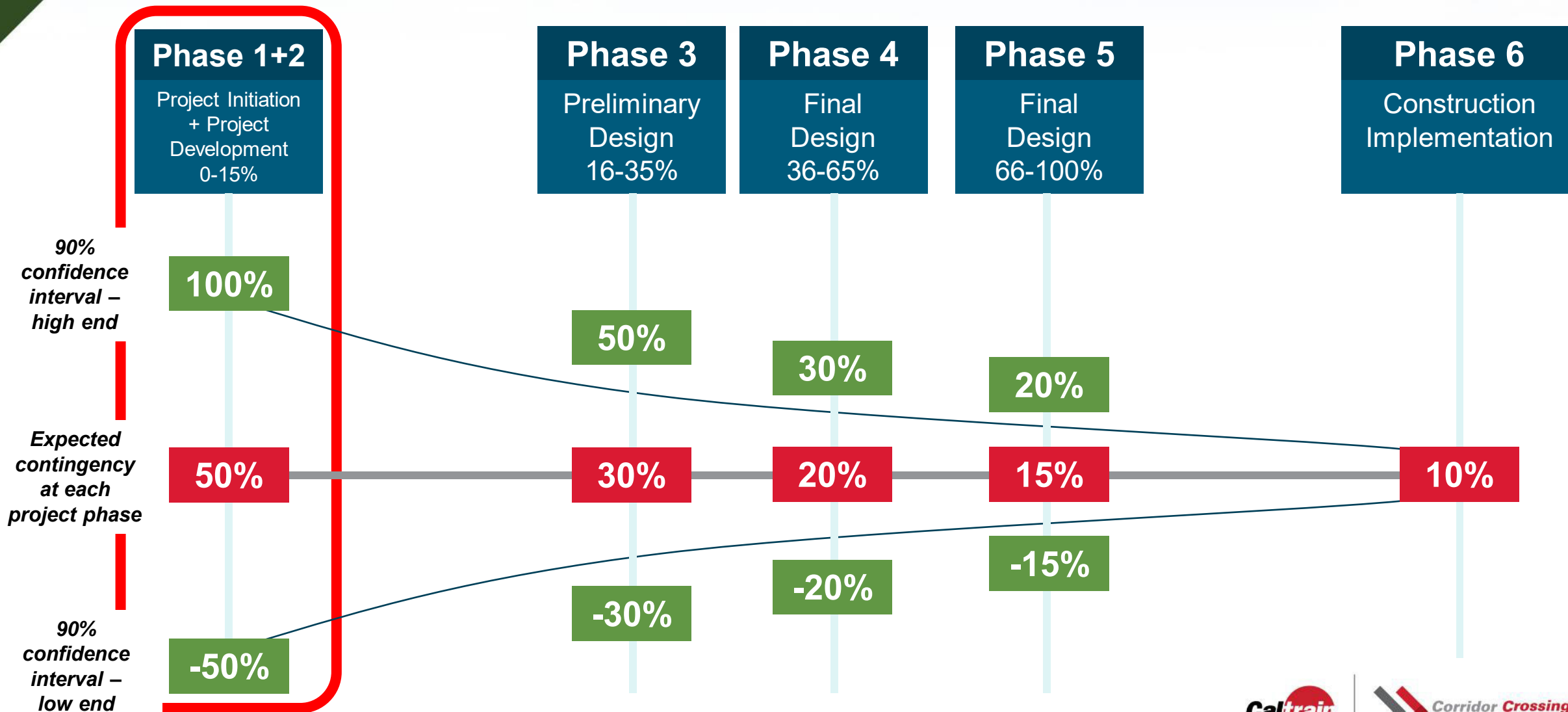


# Developing *DRAFT* Program Cost Range





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# Developing *DRAFT* Program Cost Range

**All program costs are preliminary  
and subject to change**

## **Why is it challenging to be precise now?**

- Most projects don't have LPA's – scope is still unknown
- Implementation timing is uncertain. Program costs based on \$2022 will increase – funding strategy will need to keep pace
- Long-term vision for corridor still needs to be defined
- Scale of program still needs to be determined



*Align stakeholder ambitions  
into balance with an  
implementable program*



*Implications for Organization  
and Technical Capacity*



*Updated program cost range  
used as a base to develop  
funding strategy*





# Developing *DRAFT* Program Cost Range

## 9

### Crossings in active projects in design or advanced planning phases

- 7 existing grade crossings removed;
- 2 new bike/ped grade-separate crossings created  
*(project designs create opportunity for 2 additional grade-separated crossings)*
- Reflect best understanding of current project status
- Consistent contingencies are included

#### Projects in this category:

- South Linden Ave and Scott Street Grade Separation
- Burlingame Broadway Grade Separation
- Middle Ave Undercrossing
- Rengstorff Grade Separation
- Mountain View Transit Center and Grade Separation
- Bernardo Avenue Undercrossing
- Mary Avenue Grade Separation

**Program Cost Range: \$0.9B - \$2.2B**



# Developing *DRAFT* Program Cost Range

## 20

### Crossings addressed in projects in early phases

- 19 existing grade crossings removed;
- 1 new bike/ped grade-separated crossing created; project designs may create additional separated connection opportunities
- Reflect best understanding of current project status
- Project costs inflated to \$2022

#### Projects in this category:

- Pennsylvania Avenue Extension (PAX)
- Redwood City Grade Separation
- North Fair Oaks Bicycle and Pedestrian Railroad Crossing
- Menlo Park Grade Separation Project
- Connecting Palo Alto
- Sunnyvale Avenue Grade Separation
- Diridon Integrated Station Concept (DISC)
- Southern San Jose Grade Separation Project

**Program Cost Range: \$2.0B - \$8.1B**

*Note: ~50% of costs in this category come from PAX and DISC*

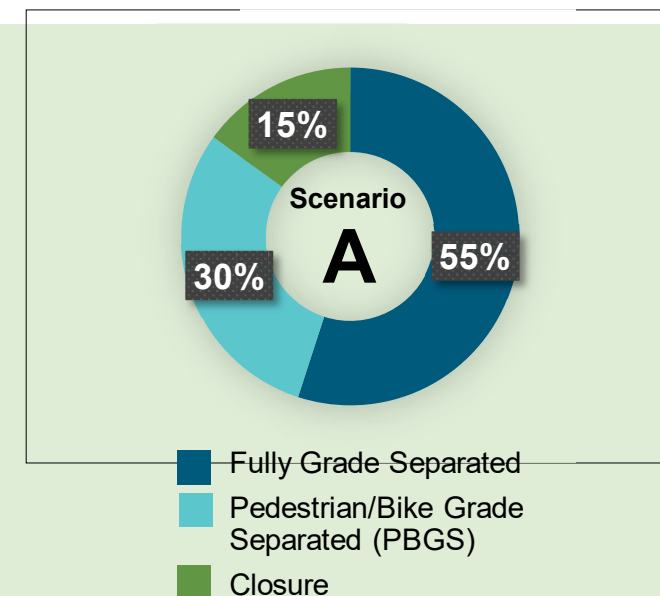


# Developing *DRAFT* Program Cost Range

## 45

### Crossings not planned in active projects

- Mobility + Circulation Scenarios provide a framework for estimating range of crossing treatments
- Cost assumptions based on recent/ongoing project cost estimates (not location specific)

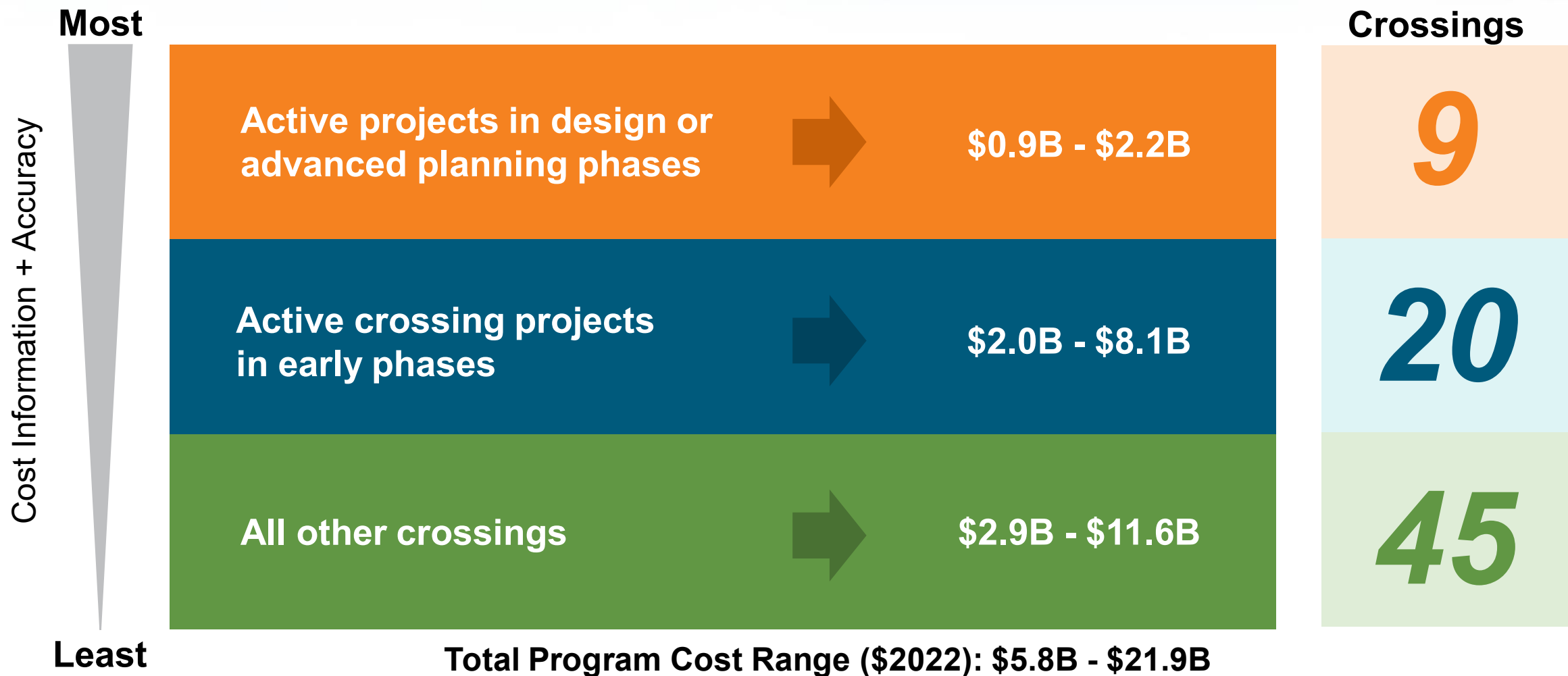


**Program Cost Range: \$2.9B - \$11.6B**



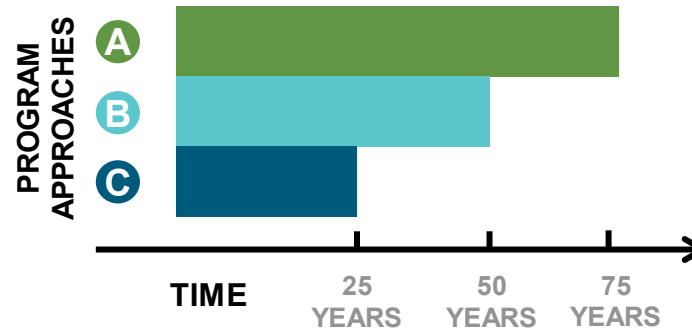


# Developing *DRAFT* Program Cost Range





# Implications for Organization and Technical Capacity



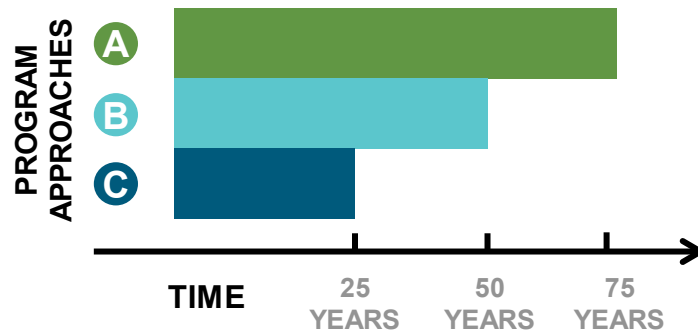
## Program Delivery Approach

## Potential Timeline

APPROACH A: Independent Projects	75 Years
APPROACH B: Coordinated Projects	50 Years
APPROACH C: System-Wide	25 Years



# Implications for Organization and Technical Capacity

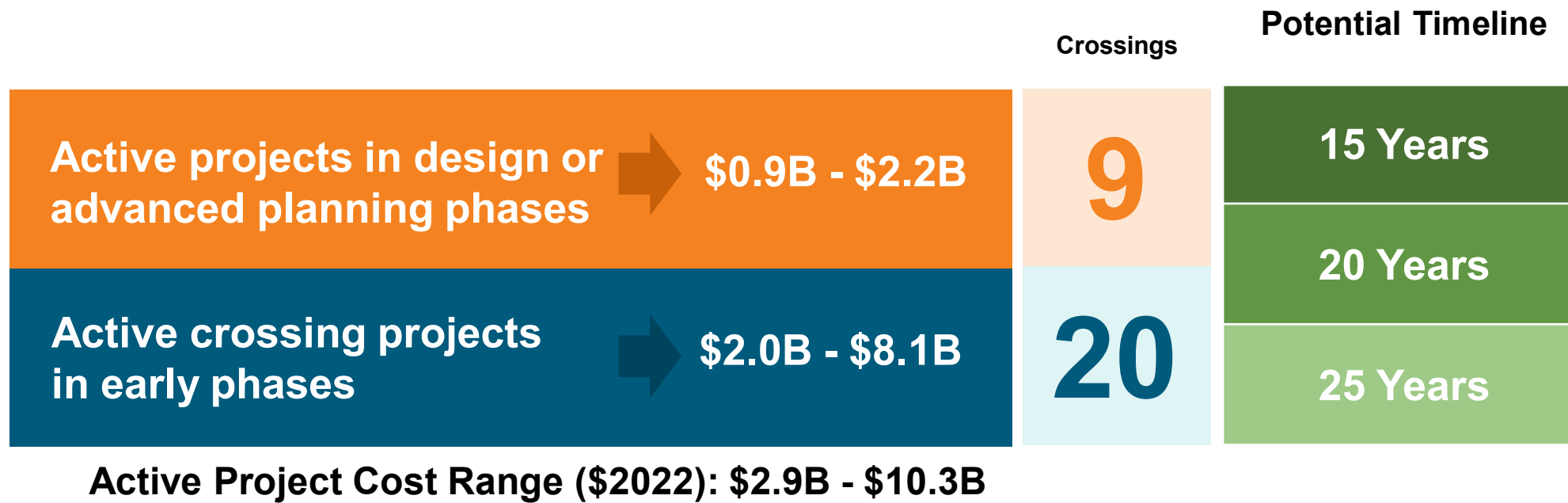


Program Delivery Approach	Potential Timeline	Projected Annual Expenditure by Program Approach (\$2022)	Roughly Comparable Program
APPROACH A: Independent Projects	75 Years	\$150M/year	1 crossing removed/year
APPROACH B: Coordinated Projects	50 Years	\$224M/year	~ Caltrain Annual Operating Budget
APPROACH C: System-Wide	25 Years	\$449M/year	~ PCEP program





# Active Projects Only (37% of current grade crossings)





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		Crossings	Potential Timeline	Projected Annual Expenditure (\$2022)
Active projects in design or advanced planning phases → \$0.9B - \$2.2B		9	15 Years	\$362M/year
			20 Years	\$271M/year
Active crossing projects in early phases → \$2.0B - \$8.1B		20	25 Years	\$217M/year

**Active Project Cost Range (\$2022): \$2.9B - \$10.3B**



# Funding Overview





# Funding: Current Committed Funds

**Active Project Cost Range: \$2.9B – \$10.3B**

County Measures	\$884M
Local Funds	\$29M
Discretionary Grants	\$31M
<b>Total</b>	<b>\$944M</b>

**Funding Gap for Active Projects: \$2.0 – 9.4B**





# Funding: Recent / Pending Discretionary Grants

City	Project	At-Grade Crossings	Funding Grants	Anticipated Award Notification
<b>South SF San Bruno</b>	South Linden Avenue and Scott Street Grade Separation	S. Linden Avenue Scott Street	TIRCP	TBD
<b>Burlingame</b>	Burlingame Broadway Grade Separation	Broadway	TIRCP <del>RCE</del>	TBD <del>June</del>
<b>San Mateo</b>	San Mateo Downtown Grade Crossings (Planning Phase)	Multiple	<del>RCE</del>	<del>June</del>
<b>Palo Alto</b>	Connecting Palo Alto	Churchill Avenue Meadow Drive Charleston Road	CRISI TIRCP <b>RCE</b>	June TBD <b>June</b>
<b>Mountain View</b>	Mountain View Transit Center and Grade Separation	Castro Street	TIRCP <b>LPP</b>	TBD <b>June</b>
<b>Mountain View</b>	Rengstorff Grade Separation	Rengstorff Avenue	CRISI TIRCP <del>RCE</del>	June TBD <del>June</del>
<b>Sunnyvale</b>	Mary Avenue Grade Separation	Mary Avenue	OBAG	November



# RCE Funding Case Studies

## Planning study for LA County (California)

- Rail crossing elimination master plan – study will identify all railroad crossings and corridors within unincorporated areas of LAC (Up to \$600 K)

## Broward MPO (Florida)

- **Final design and construction for enhancements to 21 grade crossings along Florida East Coast Railway (freight corridor shared with Brightline's intercity passenger rail). This corridor project includes Broward MPO and six local municipalities (Up to \$15.4 M)**

## Redevelopment Authority of the County of Berks (Pennsylvania)

- Project development, final design, ROW acquisition, and construction for 10 crossings. Improvements set to eliminate one at-grade crossing, and improve several other unprotected at-grade crossings, and eliminate severe clearance and sight-line issues by raising three bridges. (Up to \$16 M)



## Cost + Funding: Next Steps

- ✓ Develop strategy for a coordinated funding effort
- ✓ Work with corridor communities to develop a more fine-grained funding approach
- ✓ Discuss program delivery approach, including organizational capacity and funding strategy in October workshop

# Look Ahead





# Upcoming Stakeholder Engagement

Stakeholder Group	Name	Timeframe	Content
PPG	Project Partner Group	NO JULY MEETINGS	 Program Update
CSCG	City/County Staff Coordinating Group		
LPMG	Local Policy Makers Group		
SAT	Stakeholder Awareness Team	July	
AMP	Advocacy and Major Projects (JPB Subcommittee)	September	
JPB	Joint Powers Board	October	

# Website Updates and Contact Information

- Website is regularly updated with new deliverables:
  - *Program Overview brochure*
  - *Funding Opportunities brochure*
  - *Community Fact Sheets*
  - *Caltrain CCS Program Strategy Report, Part 1*

## Program Website:

<https://www.caltrain.com/CCS>



Contact Email:  
[CCS@caltrain.com](mailto:CCS@caltrain.com)