

DATE: January 23, 2024

TO: Honorable Mayor and City Council

FROM: Joy Houghton, Senior Civil Engineer
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Director/City Engineer
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VIA: Kimbra McCarthy, City Manager

TITLE: **Caltrain Grade Separation Projects**



STUDY SESSION MEMO

PURPOSE

The purpose of this Study Session is to provide an update on the status and cost estimates for the Castro Street (Transit Center) and Rengstorff Avenue Caltrain Grade Separation Projects and obtain Council direction on priorities and funding for the projects.

BACKGROUND

The Peninsula Corridor Joint Powers Board (JPB) is the owner and operator of Caltrain, a commuter service, which provides transportation for communities on the Peninsula between San Francisco and Gilroy. Caltrain currently operates 104 trains per weekday, resulting in 20 minutes and 17 minutes of gate downtime per peak hour at Castro Street and Rengstorff Avenue, respectively. The number of trains is anticipated to increase when the electrification of the corridor is completed through the Peninsula Corridor Electrification Project in 2024. In addition, the California high-speed rail project will be using the Caltrain tracks through Mountain View, further increasing the frequency of trains when it begins operations.

The at-grade crossings of the Caltrain railway are a barrier to convenient pedestrian and bicycle travel and contribute to significant delays to adjacent streets. Grade-separating Castro Street and Rengstorff Avenue from the railroad crossing has been a long-term City goal and will improve traffic safety, pedestrian and bicycle safety and access, traffic flow, railroad operational safety, and traffic movement along all the adjacent streets and intersections surrounding the crossings.

Delivery of the grade separation projects is a partnership between the following agencies:

- Caltrain—Lead agency for designing and constructing the projects;
- Santa Clara Valley Transportation Authority (VTA)—Funding partner providing Measure B Grade Separation Program funds and technical oversight; and
- City of Mountain View—Project sponsor responsible for coordinating with Caltrain, acquiring any right-of-way needed, conducting community outreach, and providing a minimum 10% match in non-Measure B funds toward the full project costs. The City also determines the scope of the project and, therefore, is responsible for ensuring the project is fully funded, including securing any additional funding needed to close a funding gap and funding the public art included in the project.

Castro Street Grade Separation Project

The Castro Street Grade Separation Project (Castro Project) includes elimination of vehicular access at the railroad crossing at Castro Street by rerouting vehicles through a new Evelyn Avenue ramp to Shoreline Boulevard, construction of a bicycle and pedestrian undercrossing of the railroad tracks and Central Expressway, and realignment of Evelyn Avenue at Castro Street (Figures 1 and 2).

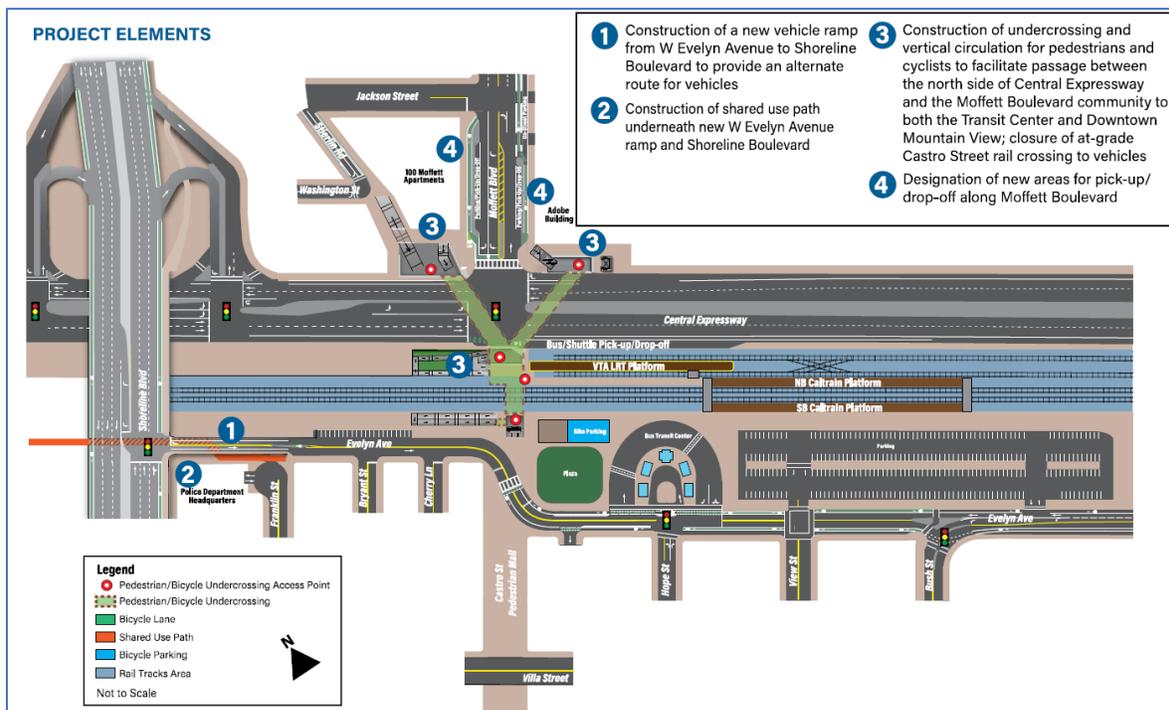


Figure 1: Castro Street Grade Separation Project Layout and Elements



Figure 2: Castro Street Grade Separation Project Renderings

The design concept for the grade separation was included in the Transit Center Master Plan, approved by the City Council in May 2017. The project is currently in the 65% design phase. Table 1 provides the history of City Council actions and recent milestones for the project.

Table 1: Castro Street Grade Separation Project History and Milestones

Date	Action/Milestone
<u>November 10, 2015</u>	City Council authorized development of Transit Center Master Plan.
<u>May 23, 2017</u>	Council approved the Master Plan following analysis of alternative concepts and several community and stakeholder meetings. The Master Plan included preferred concept for the grade separation of the current at-grade railroad crossing and better access to downtown and the Transit Center.
<u>February 13, 2018</u>	Council supported the concept of dividing the implementation of the Master Plan into two elements: (1) Grade Separation Project; and (2) Redevelopment of the Transit Center, including reconfiguration of and expansion of bus/shuttle circulation area and Centennial Plaza. Council also awarded a contract to Kimley-Horn and Associates for the Grade Separation Project preliminary engineering (35% design) and environmental clearance.
<u>March 19, 2019</u>	Key design elements were considered at a Council Study Session. Direction was provided allowing for preparation of the environmental document and additional progress on project design.
<u>December 10, 2019</u>	Council approved a California Environmental Quality Act (CEQA) Mitigated Negative Declaration for the project.
<u>April 21, 2020</u>	Council approved a contract amendment with Kimley-Horn for additional preliminary engineering (35% augmentation) requested by Caltrain to comply with their engineering standards. This work was completed in February 2021.
<u>June 9, 2020</u>	Council authorized execution of a Cooperative Agreement with Caltrain and VTA for final design of the project. The Agreement included roles and responsibilities and a commitment of \$10 million in VTA Measure B funding. The agreement was executed on April 6, 2021. It was amended in September 2023 to increase the VTA Measure B contribution to \$17 million.

Date	Action/Milestone
2021 to June 2023	Caltrain executed contracts with HNTB for final design and with Stacy & Witbeck and Meyers & Sons (SWM), a joint venture, to serve as the Construction Manager/General Contractor for the preconstruction design phase. ¹ The 65% design plans were submitted for agency review in June 2023.
<u>April 10, 2023</u>	Council Transportation Committee (CTC) received update on final design status, project delivery method, schedule, and funding.
Summer/Fall 2023	SWM started collaboration with the project team to provide design feedback and a construction cost estimate for the 65% design plans.
<u>November 28, 2023</u>	CTC received a report on a new cost estimate, available funding, and potential cost-reduction options and provided direction to staff for Council consideration. CTC also received a report on the status of the Public Art selection process for the project.

Rengstorff Avenue Grade Separation

The Rengstorff Avenue Grade Separation Project (Rengstorff Project) will depress the intersection at Rengstorff Avenue and Central Expressway below grade and leave the Caltrain tracks at existing grade (Figures 3 and 4). With the change in elevation of Rengstorff Avenue, Crisanto Avenue will end in a cul-de-sac, and Leland Avenue’s connection to Rengstorff Avenue will be moved further south and will be signalized. A bicycle/pedestrian bridge across Rengstorff Avenue parallel to the train track bridge will connect Crisanto Avenue and Leland Avenue.

¹ The Construction Manager/General Contractor project delivery method allows the contractor to collaborate with the design team during the preconstruction design phase before the start of construction to incorporate its preferred means and methods, deliver early work, and include its construction phases approach into the final design solution.



**Figure 3: View from Northeast
of the Rengstorff Avenue and Central Expressway Intersection**



**Figure 4: View from Southwest
of the Rengstorff Avenue and Central Expressway Intersection**

The design concept for the Rengstorff Avenue Grade Separation Project was selected by the City Council in 2004. It was further refined in 2014 with a focus on pedestrian and bicycle access and connectivity, transitions to adjacent land uses, including residential, commercial, and community facilities, such as the Rengstorff Park and Aquatics Center, and incorporating guidance from the City’s Pedestrian Master Plan, the Rengstorff Park Master Plan, and General Plan objectives. The project has completed preliminary engineering (35% design) and obtained both CEQA and National Environmental Policy Act (NEPA) clearance. Table 2 provides the history of City Council actions and recent milestones for the project.

Table 2: Rengstorff Avenue Grade Separation Project History and Milestones

Date	Action/Milestone
<u>November 5, 2004</u>	City completed the Rengstorff Avenue Underpass and Grade Separation Final Feasibility Study (2004 Study) that evaluated alternatives for a grade-separated crossing. The City Council supported the design concept currently under development.
<u>May 8, 2012</u>	Council directed staff to refine the Council-endorsed alternative from the 2004 Study to better address urban design considerations and pedestrian and bicycle use.
<u>February 11, 2014</u>	Council reviewed the Rengstorff Avenue Grade Separation Design Concepts Final Report (2014 Report) in a Study Session and recommitted support for depressing Rengstorff Avenue and Central Expressway while maintaining the train tracks at its existing elevation. Council also supported bicycle and pedestrian enhancements, including a bicycle and pedestrian overcrossing of Rengstorff Avenue to maintain connectivity on both sides of Rengstorff Avenue.
<u>November 27, 2018</u>	Council approved notifying Caltrain of the City’s grade separation concept preference and authorized execution of a Memorandum of Understanding (MOU) with Caltrain for the preliminary engineering and environmental clearance of the Rengstorff Avenue Grade Separation Project. The MOU identified Caltrain as the lead agency responsible for performing all preliminary engineering and environmental studies and clearance activities and the City as the project sponsor responsible for funding this work and for community outreach and stakeholder engagement.
2019-2022	The MOU was executed on June 10, 2019, and the Preliminary Engineering and Environmental Clearance phase was completed in October 2022.

Date	Action/Milestone
November 1, 2022	Council authorized execution of a Cooperative Agreement with Caltrain and VTA for Final Design and Right-of-Way Acquisition for the project. The agreement included roles and responsibilities and a commitment of \$42 million in VTA Measure B funding. The agreement was executed in August 2023.
December 7, 2023	The JPB Board of Directors approved awarding a contract to AECOM to provide final design services for the Rengstorff Avenue Grade Separation. The final design phase of the project and selection of the CMGC will commence in early 2024.

Project Cost Estimates and Funding

Castro Street Grade Separation Project

In November 2022, Caltrain’s third-party project cost estimator estimated a total cost for the Castro Street Grade Separation Project of \$136 million based on the 35% design plans. The City had identified approximately \$132.7 million in secured and planned funding for the project, and the project was considered fully funded at this stage (Table 3).

Table 3: Castro Project Cost at 35% Design and Funding Sources

Funding Source	Amount (millions \$)	Status
<i>Preliminary Engineering Phase—\$2.5 million cost</i>		
City Funds (CIP Reserve, Transportation Reserve, Construction/Conveyance Tax, North Bayshore Public Benefit)	2.5	Fully Expended
<i>Final Design and Preconstruction Phase—\$18.2 million cost</i>		
City Funds (Transportation Reserve)	1.2	Partially Expended
VTA Measure B	17.0	Partially Expended
<i>Construction Phase—\$115.3 million cost</i>		
City Funds (Transportation Reserve)	5.0	Committed
VTA Measure B	77.0	Planned

Funding Source	Amount (millions \$)	Status
State SB-1 Local Partnership Program (LPP) Competitive Grant	25.0	Awarded
CPUC Grade Separation Program Grant	5.0	Planned
Total Estimated Cost	136.0	
Total Funding Secured/Planned	132.7	
Funding Shortfall (Rounded Up)	4.0	

In September 2023, Stacy & Witbeck and Meyers & Sons (SWM), the project’s Construction Manager/General Contractor (CMGC), submitted a construction cost estimate for the 65% design plans, increasing the construction cost from \$90 million to \$216 million, which resulted in increasing the total project cost to \$271 million (Table 4).

While some of the project cost increase can be attributed to labor, material, and equipment cost escalation due to inflation and supply-chain challenges, this does not fully account for a doubling of the cost estimate from \$136 million to \$271 million in just one year. It appears the construction costs for some elements of the project may have been significantly underestimated by the third-party project cost estimator, in particular the undercrossing structures and vertical circulation elements. Caltrain is continuing to verify this new cost estimate through a new third-party estimator experienced in constructing projects similar to this one and some of the costs are fees that may be able to be negotiated down. However, any cost savings identified are not expected to significantly reduce the estimated funding shortfall of \$138 million.

Table 4: Castro Project Cost Estimate Increase

PROJECT PHASE	ESTIMATED COST (Millions \$)	
	35% Design (Nov. 2022)	65% Design (Sept. 2023)
Preliminary Engineering Phase	\$2.5	\$2.5
Final Design and Preconstruction Phase	18.2	18.2
Construction Cost	90.0	216.0
Construction Phase Soft Costs	14.0	17.0
Project Contingency	11.0	17.0
Total Project Cost (Rounded Up)	\$136.0	\$271.0
Funding Shortfall (Rounded Up)	\$4.0	\$138.0

Rengstorff Avenue Grade Separation Project

In October 2022, Caltrain’s design consultant estimated a total cost for the Rengstorff Avenue Grade Separation Project of \$262 million based on the 35% design plans. An updated cost estimate that takes into account rising construction costs and CMGC input will not be available from Caltrain until fall 2024. The Rengstorff Project does not involve tunneling work, which may reduce one risk factor that contributed to the significant cost estimate increase for the Castro Project. Staff has applied a 31% increase in construction cost to the October 2022 estimate consistent with the current bid environment in California, providing a new total estimated project cost of \$325 million. The City had identified approximately \$217 million in secured and planned funding for the Rengstorff Project, leaving a \$108 million shortfall (Table 5).

**Table 5: Rengstorff Project Cost at 35% Design and Funding Sources
 (with 31% construction cost escalation)**

Funding Source	Amount (millions \$)	Status
<i>Preliminary Engineering Phase—\$4 million cost</i>		
City Funds (Construction/Conveyance Tax, San Antonio Public Benefit)	4.0	Fully Expended
<i>Final Design, Right-of-Way, and Preconstruction Phase—\$50 million cost</i>		
City Funds (Transportation Reserve, Shoreline Fund, San Antonio Public Benefit)	8.0	Committed
VTA Measure B	42.0	Committed
<i>Construction Phase—\$271 million cost</i>		
City Funds (Transportation Impact Fee, Shoreline Fund)	40.0	Planned
VTA Measure B	98.0	Planned
California State Transportation Agency Transit and Intercity Rail Capital Program (TIRCP)	20.0	Awarded
CPUC Grade Separation Program Grant	5.0	Planned
Total Estimated Cost	\$325.0	
Total Funding Secured/Planned	\$217.0	
Funding Shortfall (Rounded Up)	\$108.0	

Overview of Funding Sources

The funding plans for the grade separation projects utilize various funding sources, including City funds, VTA’s 2016 Measure B program funds, and grant programs, as summarized in Tables 3 and 5.

City Funds

The City funds include unrestricted Capital Improvement Program (CIP) funds, such as the CIP Reserve and Construction/Conveyance Tax Fund as well as Transportation Reserve funds. Both grade separation projects are eligible to receive some funding from the City’s Transportation Impact Fee imposed on new development and from the Shoreline Fund due to the benefits of the projects in improving access into the North Bayshore Area and relieving the Shoreline Boulevard gateway. The Rengstorff Project has also received San Antonio Public Benefit funds and the Castro Project has received North Bayshore Public Benefit funds.

VTA 2016 Measure B Grade Separation Program

The primary funding source for the two grade separation projects is VTA’s Measure B Grade Separation Program. In 2016, the VTA Measure B Program sales tax was approved by Santa Clara County voters. Under this program, a set percentage of the Measure B 2016 sales tax is allocated toward eight grade separation projects, which consists of four in Palo Alto, two in Sunnyvale, and two in Mountain View (Castro and Rengstorff). Mountain View is to receive 25% of the Measure B Grade Separation funding since it has 25% of the grade separation locations. The current estimate from VTA on the City’s share is \$234 million. **The City is allowed to allocate its share of the Measure B funding between the two locations at its discretion.** Table 6 below provides the current Measure B allocation plan.

Table 6: Measure B Grade Separation Funding Allocation

Grade Separation Project	Phase	Amount (millions \$)	Status
Castro Street	Final Design/Preconstruction	\$17.0	Nearly Fully Expended
	Construction	77.0	Planned
Castro Total		\$94.0	
Rengstorff Avenue	Final Design/Right-of-Way	42.0	Partially Expended
	Construction	98.0	Planned
Rengstorff Total		\$140.0	

Grant Funding Programs

The City's two grade separation projects are eligible for California Public Utilities Commission (CPUC) Section 190 Grade Separation Program funds that can be used for project construction. Staff anticipates funding of \$5 million for each project.

In addition, the two grade separation projects have been awarded a total of \$45 million in State grant funding. **These grants are currently at risk due to the funding shortfalls and potential delays in project delivery.**

- Senate Bill 1 (SB-1) Competitive Local Partnership Program (LPP)—The Castro Street Grade Separation Project has been awarded a \$25 million grant. However, the terms of the grant award include provisions that the State must be informed if there are any changes to the project scope or cost, with the possibility of the grant being rescinded. The State is aware of the significant cost increase for the Castro Project and the possibility that certain project elements may be deferred to lower the costs. The VTA and City staff have met with Caltrans and California Transportation Commission staff. They have agreed to wait until after the City Council's Study Session on January 23, 2024, to make a determination of whether the grant will be rescinded due to changes in the project scope and/or lack of full funding. They also indicated that the Castro Project was a high-scoring project and would likely do well if the City reapplied in the future when the project's funding shortfall is resolved.
- California State Transportation Agency (CalSTA) Transit and Intercity Rail Capital Program (TIRCP)—In February 2023, the City, in partnership with Caltrain and VTA, submitted a \$25 million TIRCP grant application. The grant application indicated that \$20 million would be for the Rengstorff Avenue Grade Separation Project and \$5 million for the Castro Street Grade Separation Project. In July 2023, CalSTA announced the award of \$20 million in TIRCP funding to Mountain View. The CalSTA staff strongly recommended that the City use the full \$20 million to position the Rengstorff Avenue Grade Separation Project to compete for Federal funding, but also indicated that the City could decide to put some of the funding toward the Castro Street Grade Separation Project. On [October 24, 2023](#), the City Council approved allocation of the \$20 million from the grant towards the Rengstorff Avenue Grade Separation Project.

Staff continues to look for grant funding opportunities for both projects. A Notice of Funding Opportunity for the Federal Railroad Administration's Railroad Crossing Elimination (RCE) Program is expected to be released shortly. In the last round for RCE grants, a \$60 million grant application for the Rengstorff Avenue Grade Separation Project was unsuccessful. Staff noted that the successful projects requested grant funding in the range of \$1 million to around \$40 million. Staff can reapply for the Rengstorff Project; however, it will only be competitive if the funding shortfall to be filled by the grant is \$40 million or lower. The Castro Street Grade

Separation Project is also a potential RCE grant candidate; however, it does not currently have NEPA clearance, putting it at a disadvantage.

DISCUSSION

Based on the project cost estimates received in 2022 and the successful State grant awards, it appeared that both grade separation projects were on track to begin construction in the next one to three years. The Castro Project was considered fully funded and the Rengstorff Project was short around \$40 million, but also had opportunities to pursue Federal grants. However, the new cost estimates indicate that both projects now have significant shortfalls: Castro Project—\$138 million; and Rengstorff Project—\$108 million.

Staff has developed the following two strategies for Council consideration at the Study Session:

1. Cost-reduction options for the Castro Street Grade Separation Project; and
2. Project delivery alternatives based on prioritizing the grade separation projects and reallocating Measure B funding to the higher-priority location.

Castro Street Grade Separation Project Cost-Reduction Options

Since receiving the updated project cost for the Castro Project in September 2023, project design has been suspended to focus on identifying options for reducing costs through value engineering. The options were grouped into the following three categories of savings:

1. Construction Methods and Sequence—These cost-reduction options do not change the project design.
2. Design Modifications—These cost reductions will change some of the design details for the undercrossing.
3. Project Phasing—This strategy will defer some of the project elements to be constructed by the City separately at a later date.

The potential cost savings associated with each category are summarized in Table 7.

Table 7: Cost-Reduction Strategy Potential Savings

CATEGORY	SAVINGS (MILLIONS \$)
Construction Methods and Sequence	\$34.0-\$37.5
Design Modifications	5.3-5.9
Project Phasing	19.4-21.3
TOTAL POTENTIAL SAVINGS	\$58.7-\$64.7

On [November 28, 2023](#), staff presented the cost-reduction options to the CTC for feedback. Attachment 1 is the CTC memo, which describes each cost-saving option in detail.

Construction Methods and Sequence

The CTC supported the cost savings related to construction methods and sequence, which reduces costs by providing for a more efficient and faster project delivery without changing the project design.

Design Modifications

The CTC was not supportive of the design modification cost-saving options. These modifications cumulatively produced relatively little cost savings but would impact the aesthetics and feel of the bicycle/pedestrian undercrossing. This undercrossing serves as a gateway to the Castro Street downtown area and the Mountain View Transit Center and will provide a vital connection for extending the downtown along Moffett Boulevard.

Project Phasing

The CTC supported the proposed project phasing, which provides cost savings by deferring project elements that are outside the Caltrain right-of-way and constructing the core grade separation elements. These core elements (shown in blue in Figure 5) are focused on providing the undercrossing of the train tracks and Central Expressway for bicycles and pedestrians and related adjacent improvements. They include the following:

- Castro Street grand staircase;
- The main undercrossing under the Caltrain tracks;

- The two tunnels (Stierlin Road and Adobe Building) under Central Expressway;
- Pedestrian stairs and access ramps for access to the Caltrain platforms and at the Stierlin entrance;
- Pedestrian stairs and an elevator at the Adobe corner;
- Interim Evelyn Avenue connection, between Blossom Lane and Wild Cherry Lane across Castro Street, as a single lane westbound-only road with bicycle accommodations to support egress from the Transit Center; and
- Modifying the Moffett Boulevard/Central Expressway to operate as a T-intersection.

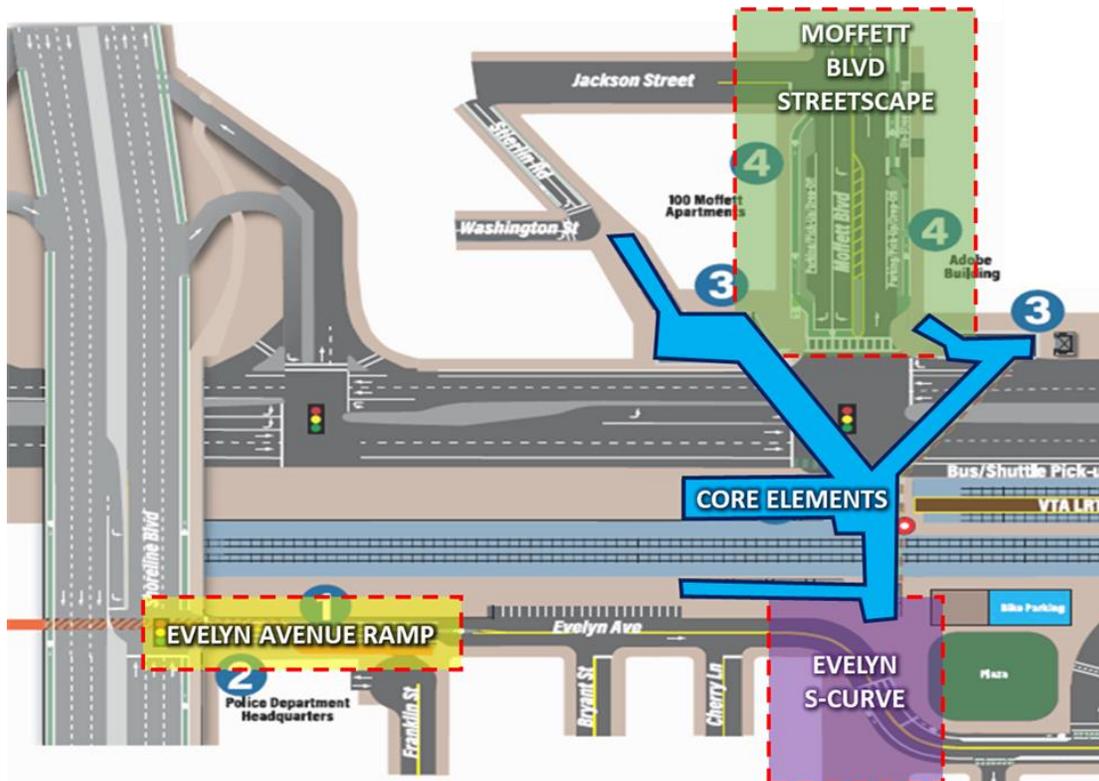


Figure 5: Castro Grade Separation Elements

The remainder of the access improvements could be constructed by the City in future phases. These improvements include:

- Evelyn Avenue ramp to Shoreline Boulevard with the bicycle/pedestrian pathway on Evelyn Avenue from Franklin Street to west of Shoreline Boulevard (shown in yellow in Figure 5);
- Evelyn Avenue S-curve at Castro Street (shown in purple in Figure 5); and
- Moffett Boulevard Streetscape Improvements (shown in green in Figure 5).

The advantages of deferring these elements include both cost savings for the grade separation project and opportunities to develop the Moffett Boulevard Streetscape as part of the Moffett Boulevard Precise Plan and integrate the Evelyn Avenue S-curve into the design of the permanent Castro Street Pedestrian Mall. Deferring the Evelyn Avenue Ramp to Shoreline Boulevard and the bidirectional Evelyn Avenue S-curve will affect traffic patterns, including potentially increasing traffic volumes on Villa Street, Franklin Street, Bryant Street, Hope Street, and View Street.

Additional Project Phasing Options

Staff also presented two additional scope-reduction options to the CTC: (1) deferring the Adobe tunnel under Central Expressway; and (2) deferring both tunnels (Adobe Building and Stierlin Road) under Central Expressway and only constructing the undercrossing of the train tracks. The CTC did not support deferring both tunnels under Central Expressway but was open to considering deferring the Adobe undercrossing.

Should Council provide direction to defer the Adobe undercrossing, it could provide an additional cost savings of approximately \$27 million; however, staff has significant concerns with deferring this tunnel under Central Expressway and does not recommend it. Bicyclists and pedestrians approaching the intersection from east of Moffett Boulevard may choose to cross Central Expressway at grade rather than cross Moffett Boulevard to access the Stierlin Road entrance to the undercrossing; therefore, the project will likely have to continue to provide an at-grade crossing of Central Expressway on the east side. Staff is also not optimistic that the Adobe Building undercrossing would be constructed as a separate project in the future due to the magnitude of the costs and complexity of the work effort involved.

Recommended Cost-Saving Options

Staff recommends that Council support the cost-saving options for construction methods and sequence and project phasing, which reduces the scope of the Castro project to the core bike/pedestrian undercrossing improvements (including both tunnels under Central

Expressway). This could provide approximately \$56 million in savings, reducing the project's funding shortfall to \$82 million.

Question No. 1:

Does Council support the recommendation to reduce the scope of the Castro Project to the core bike/pedestrian undercrossing improvements or have other feedback about the scope?

Grade Separation Project Delivery

To date, the City has equally prioritized the Castro Street Grade Separation and the Rengstorff Avenue Grade Separation Projects, and they are being delivered concurrently. Both projects are fully funded through final design, including right-of-way acquisition for Rengstorff. However, both projects have significant funding shortfalls for the construction phase: Castro Project—\$82 million with cost reduction measures; and Rengstorff Project—\$108 million. This level of funding shortfall for both projects significantly impacts project delivery as follows:

- **Competitiveness for additional grant funding**—While the City will continue to seek new funding opportunities for both projects, it is very unlikely that \$190 million in grant funding could be available by the time both projects have completed final design and are ready to start construction. Most grant sources provide only \$5 million to \$30 million, and the grantors expect the project will be fully funded and delivered in a timely fashion. The amount of funding shortfall for a project will affect its success in grant competitions.
- **Third-party utility relocations**—The first phase of construction for infrastructure projects involves third-party utility owners relocating their utilities that conflict with the project improvements. The owners of these utilities include PG&E and telecom companies who are required under franchise agreements to fund, design, and construct the relocations. To keep a project on schedule, the design of the utility relocations needs to begin while the project is in final design; however, third-party utility owners will not be willing to commit their own staffing and funding for the relocations if the construction phase is not fully funded providing certainty that the project is moving forward as soon as final design is completed.
- **Right-of-way acquisition**—Right-of-way acquisition, including temporary construction easements, must be completed prior to commencing construction and can be a lengthy process for appraisals and negotiations. The Rengstorff Avenue Grade Separation Project requires several property acquisitions and temporary construction easements. Property acquisition from willing sellers can occur at any time; however, should a property owner not be willing to accept the City's offer and eminent domain is needed, acquisition will have to wait until the project is fully funded and will be moving forward into construction in a timely manner.

Staff recommends that Council select a project delivery approach that keeps both projects moving forward as quickly as possible but prioritizes the projects for purposes of the grant applications, working with third-party utility owners, and right-of-way acquisition.

Table 8 provides data and factors comparing the two grade separation projects that can help inform Council deliberations on prioritizing the projects. In general:

- Castro Street is a critical gateway to the Mountain View Transit Center and downtown, providing multi-modal access to the regional transportation network for the City’s residents and a key transfer point for employees in Mountain View and the greater Silicon Valley area. The crossing is heavily used by pedestrians and bicycles. The Castro Grade Separation Project will eliminate the Caltrain vehicle at-grade crossing at Castro Street and provide bicyclists and pedestrians with a safer crossing of the rail corridor and Central Expressway through undercrossings of the railroad tracks, and Central Expressway and will improve access to the Transit Center and downtown.
- Rengstorff Avenue is a major north-south arterial and is one of the gateways to the City’s North Bayshore Area, which is home to many technology companies and planned for significant housing growth. The Rengstorff Grade Separation Project will eliminate the Caltrain at-grade crossing at Rengstorff Avenue by depressing the intersection of Rengstorff Avenue and Central Expressway while maintaining the rail corridor at its existing elevation. Bicyclists and pedestrians will no longer need to cross the existing rail tracks. Safety for all road users will improve as well as connectivity to public spaces and commercial areas. Residents, especially low-income residents on both sides of Rengstorff Avenue, will experience the benefits as active transportation safety and connectivity are improved.

Table 8: Castro Street and Rengstorff Avenue Projects Comparison

	Castro Street	Rengstorff Avenue
Project Readiness		
Design Status	65% Design Complete	35% Design Complete
Environmental Clearance	CEQA	CEQA + NEPA
Train Operations		
Number of Daily Trains—2023	104	104
Gate Downtime (Per Peak Hour—2023)	20 minutes	17 minutes
Projected Gate Downtime (Per Peak Hour—2040)	40 minutes	25 minutes

	Castro Street	Rengstorff Avenue
Track Crossing Volumes		
Average Daily Vehicle Volume (2023)	2,569	16,215
Average Daily Bicycle Volume (2023)	443	253
Average Daily Pedestrian Volume (2023)	1,974	374
Central Expressway Intersection Volumes		
PM Peak Hour Vehicle Volume	3,657 (2018) 3,081 (2022)	3,568 (2018) 3,399 (2022)
PM Peak Hour Bicycle Volume	71 (2018) 20 (2022)	46 (2018) 34 (2022)
PM Peak Hour Pedestrian Volume	474 (2018) 263 (2022)	78 (2018) 81 (2022)
Accident History and Safety Factors		
Federal Railroad Administration (FRA) Accident History at Rail Crossing (Last 10 Years)	Accidents—4 Injuries—1 Fatalities—1	Accidents—3 Injuries—0 Fatalities—3 (1 suicide)
2018-2023 Collisions (County and City)	11 Total Collisions (8 Injury Collisions)	12 Total Collisions (8 Injury Collisions)
Bicycle and Pedestrian Crash Data at Central Expressway Intersection (2013-2022)	Bikes—3 Peds—2	Bikes—9 Peds—2
Bicycle Level of Stress (4 = most stressful)	Castro—2 Moffett—3 Central Expressway—4	Rengstorff—3 Central Expressway—4
Active Transportation Plan Challenging Spots Citywide	<ul style="list-style-type: none"> • Second most challenging spot for walking, biking, and rolling • Third most challenging bike route (Central Expressway) 	<ul style="list-style-type: none"> • First most challenging spot for walking, biking, and rolling. • Third most challenging bike route (Central Expressway) • Fifth most challenging bike route (Rengstorff Avenue)

	Castro Street	Rengstorff Avenue
Community Context		
Nearby Amenities/Destinations	<ul style="list-style-type: none"> • Downtown • Transit Center • Adobe Building • City Hall • Center for the Performing Arts • Library 	<ul style="list-style-type: none"> • Rengstorff Park • Magical Bridge Playground • Community Center • Aquatics Center • Skate Park • Senior Center • The View Teen Center
Transit Customers Served	<ul style="list-style-type: none"> • Caltrain, VTA light rail • Community Shuttle, MVgo Shuttle • VTA Bus Lines 21, 40, 51, and 52 	<ul style="list-style-type: none"> • Community Shuttle • VTA Bus Line 40
Mountain View Whisman School District School Bus Route	No	Yes
On a Suggested Route to School	No	Yes Los Altos High School
Communities Impacted by Crossing Gate Traffic Back Ups	<ul style="list-style-type: none"> • Transit Center with northbound Castro Street still open across tracks 	<ul style="list-style-type: none"> • Residents north and south of Central Expressway • Rengstorff Park and Community Center visitors • Lower-income neighborhoods along Rengstorff Avenue corridor
Distance to other Grade Separated Crossings (as alternate routes)	<ul style="list-style-type: none"> • 0.25 mile (Shoreline Boulevard) • 0.9 mile (Whisman Road) 	<ul style="list-style-type: none"> • 0.7 mile (San Antonio Road) • 0.95 mile (Shoreline Boulevard)

	Castro Street	Rengstorff Avenue
Project Delivery Factors		
Awarded Grant Funding	\$25 million (SB1 LPP)	\$20 million (TIRCP)
Phasing Opportunities to Lower Costs	Defer following elements: <ul style="list-style-type: none"> • Moffett Boulevard improvements • Evelyn Avenue ramp to Shoreline Boulevard • Bicycle/pedestrian pathway on Evelyn Avenue (Franklin Street to west side of Shoreline Boulevard) • Evelyn Avenue S-curve realignment 	Defer bicycle and pedestrian overcrossing of Rengstorff Avenue
Interim Options to Address Track and Central Expressway Crossing Challenges	<ul style="list-style-type: none"> • Could fully close vehicle crossing of tracks to eliminate signal preemption • Bikes/pedestrians still cross Central Expressway and tracks at grade but with less delay 	<ul style="list-style-type: none"> • May be able to improve bike/pedestrian safety with crossing gate changes • No options to improve access or reduce bike/pedestrian/vehicle delays due to gate downtimes

Project Delivery Alternatives

Staff has developed two project delivery alternatives: Alternative A prioritizes the Castro Project and Alternative B prioritizes the Rengstorff Project. Both alternatives are based on the following assumptions:

- **Both projects will continue to proceed with final design** and, for Rengstorff Avenue, right-of-way acquisition. With final design expected to take another year for the Castro Project and two years for the Rengstorff Project, this provides time to see if new funding becomes available that allows the second priority project to move into construction as quickly as possible.
- **Concurrently with final design, staff will continue to pursue grant and other funding opportunities.**

- **The Castro Street Grade Separation Project’s scope will be limited to the pedestrian and bicyclist undercrossing of the train tracks and Central Expressway.** This will also include related improvements at the Central Expressway/Moffett Boulevard intersection and for Evelyn Avenue at Castro Street. The other project elements (Moffett Boulevard streetscape, Evelyn Avenue ramp to Shoreline Boulevard, bike/pedestrian path on Evelyn Avenue from Franklin Street to west of Shoreline Boulevard, and Evelyn Avenue S-curve at Castro Street) will be delivered as separate projects by the City at a later date.
- **The City’s project to relocate a water main out of the Central Expressway/Moffett Boulevard intersection will proceed into construction in 2024.** The water main is in conflict with the planned bicycle/pedestrian undercrossing. This utility project is nearly fully designed and will be ready to advertise for bids this spring. Even if the bicycle/pedestrian undercrossing is delayed, staff recommends proceeding with the water main relocation now to avoid continued cost escalation.

Alternative A—Prioritize Castro Street Grade Separation Project

Alternative A prioritizes Castro Street over the Rengstorff Avenue Grade Separation Project and is shown on the following page. It includes project delivery next steps, adjusted schedules, and funding reallocations for both grade separation locations. Under Alternative A, the Castro Street bicycle and pedestrian undercrossings would proceed into construction as soon as final design is completed. Construction and final right-of-way acquisition for the Rengstorff Avenue Grade Separation would be deferred after final design is completed until full funding for construction is secured.

Alternative A—Prioritize Castro Street Grade Separation Project

Project Delivery

Castro Street	Rengstorff Avenue
<ul style="list-style-type: none"> • Complete final design for bike/pedestrian undercrossing • Construct City utility relocation project for Central Expressway/Moffett Boulevard intersection • Construct bike/pedestrian undercrossing 	<ul style="list-style-type: none"> • Complete final design • Complete right-of-way acquisition to extent feasible • Construct when funding available

Schedule

		2024				2025				2026				2027				2028			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Castro	Undercrossing Final Design and continue to pursue grants/funding					Undercrossing Construction															
	City Utility Project Construction																				
Rengstorff	Final Design and Right-of-Way Acquisition									Construction—On hold until funding available											
	Pursue grants/funding for construction																				

Funding

	Castro	Rengstorff	Notes
Estimated Project Cost ¹	\$215	\$325	1. Dollars (\$) in millions, rounded.
Funding Secured/Planned ²	133	217	2. See Tables 3 and 5 for funding sources.
Original Funding Shortfall	\$82	\$108	3. Total Measure B construction funding: Castro = \$155 million; Rengstorff = \$20 million.
Move Measure B Construction Funding ³	+78	-78	4. May be able to move \$5 million of the \$20M in TIRCP funding from Rengstorff Avenue to Castro Street; however, remaining \$15M in TIRCP may be lost.
Change in State Grant Funding ^{4, 5}	+5	-20	
New Funding Shortfall	\$--	\$206⁶	

- Assumes State will approve scope change for Castro Project and allow the project to keep the SB-1 LPP \$25 million grant. If not, additional Measure B funding would have to be moved from the Rengstorff Project to Castro Project, increasing the Rengstorff Project's shortfall.
- Shortfall based on 2023 cost estimates—will increase with each year of delay.

Alternative B—Prioritize Rengstorff Avenue Grade Separation Project (*Staff Recommendation*)

Alternative B prioritizes Rengstorff Avenue over the Castro Street Grade Separation and is shown on the following page. It includes project delivery next steps, adjusted schedules, and funding reallocations for both grade separation locations. Under Alternative B, the Rengstorff project will proceed into construction upon completion of design and right-of-way acquisition with the assumption that approximately \$31 million in additional funding can be secured. Construction of the Castro Street undercrossings would be deferred until full funding is secured.

With an unknown timeline for construction of the Castro undercrossings, Alternative B would also include interim improvements to the Castro Street/Moffett Boulevard/Central Expressway intersection. The interim improvements would permanently close the rail crossing to vehicles while retaining an at-grade track crossing for pedestrians and bicycles. These interim improvements would include the following:

- Remove crossing gates and railroad signals on Castro Street and install a decorative fence along the train tracks for safety;
- Modify Moffett Boulevard/Central Expressway to operate as a T-intersection and eliminate signal elements related to railroad preemption;
- Add pavement treatments and/or planters to enhance the area and channelize pedestrian and bicyclists to the at-grade crossing; and
- Provide interim Evelyn Avenue connection, between Blossom Lane and Wild Cherry Lane across Castro Street, as a single-lane, westbound-only road with bicycle accommodations.

The closure of vehicular traffic at the rail crossing would result in the Moffett Boulevard and Central Expressway intersection operating as a T-intersection, which will reduce vehicle conflicts for bicycles and pedestrians at Central Expressway. It will also allow the elimination of the railroad crossing traffic signal preemption for Central Expressway, reducing pedestrian and bicyclists wait times to cross Central Expressway.

Alternative B—Prioritize Rengstorff Street Grade Separation Project (Staff Recommendation)

Project Delivery

Castro Street	Rengstorff Avenue
<ul style="list-style-type: none"> • Complete final design for bike/pedestrian undercrossing • Obtain NEPA clearance for Federal grant eligibility • Construct City utility relocation project • Implement interim vehicle crossing closure; improve at-grade bike/pedestrian crossings • Construct undercrossing when funding available 	<ul style="list-style-type: none"> • Complete final design • Complete right-of-way acquisition • Consider value engineering options to reduce remaining funding shortfall • Construct grade separation

Schedule

		2024				2025				2026				2027				2028			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Castro	Undercrossing Final Design	Undercrossing construction—on hold until funding available																			
	NEPA clearance and pursue grants/funding for Undercrossing construction																				
	City Utility Project Construction	Interim vehicle crossing closure with at-grade bike/ped crossing improvements																			
Rengstorff	Final Design and Right-of-Way Acquisition Continue to pursue grants/funding	Construction																			

Funding

	Castro	Rengstorff
Estimated Project Cost ¹	\$215	\$325
Funding Secured/Planned ^{2, 7}	133	217
Original Funding Shortfall	\$82	\$108
Move Measure B Construction Funding ³	-77	+77
Change in State Grant Funding ⁴	-25	--
New Funding Shortfall	\$184⁵	\$31⁶

Notes

1. \$ millions, rounded.
2. See Tables 3 and 5 for Funding Sources.
3. Total Measure B construction funding: Castro = \$0; Rengstorff = \$175 million.
4. Castro loses SB 1 LPP grant award due to project delays; can reapply in future.
5. Shortfall based on 2023 cost estimates will increase with each year of delay.

6. Options to close Rengstorff shortfall: New grant/funding sources; Defer bike/ped bridge over Rengstorff Avenue; Construction Methods Value Engineering.

7. Reallocate Castro Street’s \$5 million in City Construction Funds to Interim Crossing Closure improvements.

Evaluation of Alternatives

Tables 9 and 10 provide a comparison of the advantages and disadvantages or risks for each alternative.

**Table 9: Alternative A – Prioritize Castro Project
 Advantages and Disadvantages/Risks**

ADVANTAGES	DISADVANTAGES/RISKS
Castro Project	
<ul style="list-style-type: none"> • Reduced scope of project can be fully funded, assuming no new major cost increases. • Project may remain eligible for the \$25 million SB-1 LPP grant, pending State approval of modified scope. • Third-party utility relocations will proceed. • Provides finished bicycle/pedestrian connectivity north of Central Expressway to downtown and Transit Center in preparation for the permanent Pedestrian Mall, Moffett Precise Plan, and redevelopment of Transit Center. 	<ul style="list-style-type: none"> • State may not agree to City using \$5 million of awarded TIRCP grant for Castro with loss of the \$15 million for Rengstorff.
Rengstorff Project	
<ul style="list-style-type: none"> • Final design continues, providing updated cost estimates, value engineering options to reduce costs, and opportunity for project to proceed as soon as funding is secured. • Continues with right-of-way acquisition on a voluntary basis. 	<ul style="list-style-type: none"> • There are no interim improvements to reduce pedestrian, bicyclist, and vehicle delay due to gate downtimes. • City may lose \$15-\$20 million of the \$20 million awarded TIRCP grant. • Funding shortfall over \$200 million too high for grant opportunities.

ADVANTAGES	DISADVANTAGES/RISKS
	<ul style="list-style-type: none"> • City may only pursue right-of-way through parties selling voluntarily, resulting in higher acquisition costs as land values increase. • Third-party utility relocations delayed until construction is funded. • Construction delayed for an unknown number of years. • Construction costs will increase with each year of delay, and project may need redesign if construction delayed too long.

**Table 10: Alternative B—Prioritize Rengstorff Project (*Staff Recommendation*)
 Advantages and Disadvantages/Risks**

ADVANTAGES	DISADVANTAGES/RISKS
Castro Project	
<ul style="list-style-type: none"> • An interim plan is available to improve bicycle/pedestrian crossings. • Can take advantage of the delay to pursue NEPA clearance to be eligible for Federal funding. • Final design continues providing opportunity for project to proceed as soon as funding is secured. 	<ul style="list-style-type: none"> • City will lose \$25 million SB-1 LPP grant, although can reapply in future. • Funding shortfall over \$180 million too high for grant opportunities. • Third-party utility relocations delayed until construction is funded. • Construction delayed for an unknown number of years. • Construction costs will increase with each year of delay and project may need redesign if construction delayed too long.

ADVANTAGES	DISADVANTAGES/RISKS
Rengstorff Project	
<ul style="list-style-type: none"> • Funding shortfall is reduced to \$31 million improving grant opportunities, assuming no new major cost increases. • Full right-of-way acquisition may continue. • Third-party utility relocations will proceed. • Improves bike/pedestrian access to several community amenities. 	<ul style="list-style-type: none"> • New cost estimate based on 65% design not available, providing risk of higher cost than used in current estimate.

Staff recommends Alternative B—Prioritize Rengstorff Avenue Grade Separation Project for the following reasons:

- For Castro Street, there is an interim solution available to reduce bicycle/pedestrian delay and improve access across Central Expressway; however, there are no interim solutions for the delays and backups on Rengstorff Avenue.
- A Notice of Funding Opportunity for Federal Railroad Crossing Elimination grant program is expected to be released shortly and reducing the Rengstorff Project shortfall to \$31 million will make it more competitive for the grant.
- While the Castro Street/Moffett Boulevard/Central Expressway intersection and train crossing has a higher number of bicycle and pedestrian crossings, Rengstorff Avenue/Central Expressway intersection and train crossing have experienced a higher number of bicycle/pedestrian collisions and fatalities. In addition, the Rengstorff Project’s bicycle improvements on Rengstorff Avenue will be an essential element for any plans to improve Rengstorff Avenue as a bicycle corridor from El Camino Real to U.S. 101.
- Staff can return to Council in fall 2024 with an update on cost estimates for both grade separation projects, results of grant applications, and any new information available. By this time, the Castro Project will be nearly complete with final design and the Rengstorff Project will be ready to move into 95% design. Council could at that time reconsider the prioritization of the grade separations based on this updated information.

Question No.2: Which project priority alternative does Council want implemented, and does Council have any feedback on the alternatives?

- **Alternative A—Prioritize Castro Street Grade Separation; or**
- **Alternative B—Prioritize Rengstorff Avenue Grade Separation (*Staff Recommendation*).**

Question No.3: Does Council have any other feedback or direction for the Caltrain Grade Separation Projects?

RECOMMENDATION

In this Study Session memo, staff has made the following recommendations:

- For the Castro Street Grade Separation Project, reduce the project scope to the core bike/pedestrian undercrossing improvements and defer the Moffett Boulevard, Castro Street S-curve, and Evelyn Avenue Ramp and bicycle/pedestrian path to be completed as separate City projects in the future;
- Select Alternative B for the project delivery strategy, which prioritizes the Rengstorff Avenue Grade Separation Project and includes an interim plan for the Castro Street crossing of the train tracks and Central Expressway. It also includes continuing with final design and seeking grant and other funding opportunities for both projects; and
- Return to Council in fall 2024 with an update on cost estimates for both grade separation projects, results of grant applications, and any new information available, giving the Council an opportunity to reprioritize the grade separation projects.

Staff seeks the following direction and input from Council:

Question No. 1: Does Council support the recommendation to reduce the scope of the Castro Project to the core bike/pedestrian undercrossing improvements or have other feedback about the scope?

Question No. 2: Which project priority alternative does Council want implemented, and does Council have any feedback on the alternatives?

- **Alternative A—Prioritize Castro Street Grade Separation; or**
- **Alternative B—Prioritize Rengstorff Avenue Grade Separation (*Staff Recommendation*).**

Question No. 3: Does Council have any other feedback or direction for the Caltrain Grade Separation Projects?

NEXT STEPS

Based on Council direction, staff will continue to work with VTA and Caltrain on the design of the Castro Street and Rengstorff Avenue Grade Separation Projects. Staff will also continue to look for additional funding opportunities for both projects. Staff will return to Council in fall 2024, when additional information is available as both projects progress in the final design phase.

PUBLIC NOTICING

In addition to the City's standard agenda and posting requirements, notices were distributed to persons who have signed up for project updates and information, previous business and/or community meeting attendees, representatives of VTA, Caltrain, and other interested parties.

JH-RG-EA-DSC/LL/1/CAM
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203571

Attachment: 1. Council Transportation Committee Memo

cc: PWD, APWD—Arango, APWD—Skinner, PCE—Gonzales, SCE—Houghton