

DATE: September 2, 2025

TO: Council Transportation Committee

FROM: Joy Houghton, Senior Civil Engineer
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VIA: Jennifer Ng, Public Works Director

SUBJECT: Rengstorff Avenue Grade Separation Project—Cost-Reduction Measures

RECOMMENDATION

That the City Council approve staff's recommendations for cost-reduction measures for the Rengstorff Avenue Grade Separation Project.

BACKGROUND

The Peninsula Corridor Joint Powers Board (JPB) is the owner and operator of Caltrain, a commuter rail service, which provides transportation for communities on the Peninsula between San Francisco and Gilroy. Caltrain currently operates 104 trains per weekday, resulting in 17 minutes of gate downtime per peak hour at Rengstorff Avenue and significant backups on Rengstorff Avenue. These backups directly impact community access to schools, services, Rengstorff Park, the Community Center, and other facilities along Rengstorff Avenue. Gate downtimes are expected to increase as service levels increase over time.

Grade-separating Rengstorff Avenue from the Caltrain tracks has several benefits which include increasing accessibility for pedestrians and bicyclists crossing the tracks, increasing operational efficiency for the train system as well as drivers, improving traffic safety and traffic flow, and eliminating the need for the trains to sound their horns as a warning system.

Delivery of the Rengstorff Avenue Grade Separation Project (Project) is a partnership between the following agencies:

- Caltrain—Lead agency for designing and constructing the Project;
- 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 additional funding needed to close a funding gap and funding the public art included in the project.

On January 23, 2024, the City Council received an update on the status and cost estimates for both the Castro Street and Rengstorff Avenue grade-separation projects. Due to increased costs of both projects and limited budget, Council selected to prioritize the Rengstorff Project and move forward with the Castro Interim Improvements Project. At that time, the estimated funding gap was \$31 million for the Rengstorff Project with the City's unexpended allocation of VTA Measure B funding moved from the Castro Project to the Rengstorff Project.

Rengstorff Avenue Grade-Separation Project Scope

The Rengstorff Project will depress the intersection at Rengstorff Avenue and Central Expressway below grade and leave the Caltrain tracks at existing grade (Figures 1 and 2). 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 rail lines will connect Crisanto Avenue and Leland Avenue.



Figure 1: View from Northeast of the Rengstorff Avenue and Central Expressway Intersection



Figure 2: View from Southwest of the Rengstorff Avenue and Central Expressway Intersection

The design concept for the 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 Rengstorff Park and the 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 California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) clearance and is progressing through 65% design. Table 1 provides additional history of City Council actions and recent milestones for the project.

Table 1: Rengstorff Avenue Grade Separation Project History and Milestones

Date	Action/Milestone
<u>November 5, 2004</u>	The 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 to 2022	The MOU was executed on June 10, 2019, and the Preliminary Engineering and Environmental Clearance phase was completed in October 2022.
<u>November 1, 2022</u>	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.
<u>December 7, 2023</u>	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 Construction Manager/General Contractor (CMGC) commenced in early 2024.

Date	Action/Milestone
<u>January 23, 2024</u>	Council received a report on the status and cost estimates for the Castro Street (Transit Center) and Rengstorff Avenue Caltrain Grade Separation Projects and directed staff to prioritize the Rengstorff Avenue Grade Separation Project.
August 2024	Caltrain executed contract with Atkinson and Clark, a joint venture, to serve as the CMGC for the preconstruction design phase. ¹
October 2024	Atkinson and Clark started collaboration with the project team to provide design feedback and an updated construction cost estimate based on the 35% design plans.

DISCUSSION

Project Cost Estimates

At the January 2024 Council Study Session, staff shared a total project cost estimate of \$325 million for design and construction of the Project. This estimate included \$242 million for the construction costs and was an escalated estimate based on the construction market conditions in 2023 and the 35% design plans. With a total cost of \$325 million, the Project was anticipated to have a funding shortfall of \$31 million, which staff believed could be closed by pursuing federal funding opportunities.

In October 2024, the City received updated construction cost estimates for the Project based on the 35% design plans from Atkinson and Clark and a third-party cost estimator. These updates increased the estimated construction cost of \$242 million provided to Council in January 2024 to a range between \$280 million and \$312 million. Coupled with modest increases to other phases, the anticipated funding shortfall increased from \$31 million to as high as \$159 million (see Table 2). Staff's analysis revealed that the earlier estimate severely underestimated the construction costs and did not include necessary contingencies.

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 the contractor's preferred means and methods, deliver early work, and include the contractor's construction phases approach into the final design solution.

Table 2: Rengstorff Avenue Grade-Separation Project Cost Estimate

PROJECT PHASE	JANUARY 2024 ESTIMATED COST (dollar in millions)	OCTOBER 2024 ESTIMATED COST (dollar in millions)
Preliminary Engineering Phase	4	4
Final Design and Preconstruction	20	24
Right-of-Way	30	35
Construction	242	312
Construction Soft Cost	29	24
Project Contingency		54
Total Project Cost	325	453
Funding Shortfall	31	159

Upon receiving the updated project cost, the project team paused progressing the design from 35% to 65% to focus on verifying the assumptions and methodology used for generating the cost estimate to determine if overestimation was occurring. There were no significant overestimates identified. Therefore, the project team turned its attention to identifying alternatives for reducing costs through value engineering while proceeding with 65% design for elements not affected by the value engineering cost-saving measures discussed in this report.

Cost-Reduction Measures

The project team has conducted extensive evaluation of potential cost-reduction measures through the value engineering process. The results of this evaluation and staff's recommendations are discussed below. The cost reduction measures are based on the following three categories of savings:

1. Construction Methods and Sequence—These cost-reduction measures do not change the project design.
2. Design Modifications—These cost-reduction measures will change some of the design details.
3. Eliminating/Deferring Project Elements—These cost-reduction measures will change some of the design details.

The estimated cost savings for each option is “order of magnitude” and will continue to be refined as the design progresses.

Construction Methods and Sequence

Table 3 lists construction methods and sequence options that could provide cost savings. These are discussed further below.

Table 3: Construction Methods and Sequence Potential Cost Savings

Cost-Saving Alternative	Savings (dollar in millions)	Notes	Recommended
Construction staging	12.0	Reduces construction duration.	Yes
Roadway pavement section	1.5	Reduces pavement section and excavation depth using alternative materials.	Yes, pending approval of Santa Clara County
Sanitary sewer relocation	0.5	Reduces pipeline length.	Yes, pending confirmation of utility analysis results
Single-track shoofly	4.4	Reduces construction duration but increases Caltrain operations impacts.	No
Total Potential Savings	18.4		
Recommended Savings	14.0		

- Construction Staging—The project team has evaluated various modifications to the construction staging developed during the 35% design phase, including minimizing lane widths and shoulder widths to increase available area for construction activities. These modifications result in reduced construction duration and construction cost by approximately \$12 million.
- Roadway Pavement—Use of alternative materials for the roadway pavement section was also evaluated. These materials will result in reduced pavement section thickness and roadway excavation, thereby reducing the project cost by approximately \$1.5 million if also applied on Central Expressway, a Santa Clara County roadway.
- Sanitary Sewer Relocation—Another cost-saving alternative is the relocation of the City sanitary sewer pipeline. Modifications to the pipeline realignment reduces the overall length and minimizes impact to private properties, resulting in a cost saving of \$0.5 million.

- **Single-Track Shoofly**—A shoofly is a pair of temporary rail lines built to bypass a construction site, allowing trains to continue operating while the main track is being repaired or replaced. A shoofly maintains continued normal operations in both directions. A single-track shoofly is only one rail line for both directions, allowing only one direction to proceed at a time, temporarily affecting service and potentially ridership. This alternative required a modeling report describing assumptions, methodology, and results of a single-track analysis of the Caltrain line at Rengstorff Avenue and potential impacts to the passenger service schedules and operations. Several scenarios were analyzed by Caltrain for safety, construction cost, operational cost, and ridership impacts. None of the scenarios were found feasible by Caltrain primarily due to unacceptable operational impacts and other concerns; therefore, it is not a recommended cost-saving measure.

The total potential cost savings from this category of modifications is approximately \$18.4 million. However, as the single-track shoofly was found infeasible by Caltrain, **the total potential cost savings that can be realized in this category is approximately \$14 million.**

Design Modifications

Several design alternatives have been evaluated to determine potential cost savings. Staff reviewed the community impact of these design modifications and found there were various benefits in addition to the cost savings for the measures recommended. Table 4 lists the alternatives, which are described more fully below.

Table 4: Design Modifications Potential Cost Savings

Cost-Saving Alternative	Savings (dollar in millions)	Notes	Recommended
Eliminate meandering pedestrian pathway at Rengstorff Park	0.8	Replace pathway from Rengstorff Avenue to Rengstorff Park with a retaining wall and preserve park space.	Yes
Replace retaining wall adjacent to Central Expressway with sloped embankments	4.0	Eliminates high retaining walls, which improves aesthetics, sight lines, and better integrates the rail corridor and the expressway.	Yes
Total Potential Savings	4.8		

- **Meandering Pathway at Rengstorff Park**—The 35% design included a meandering pathway (see magenta area in Figure 3) connecting Rengstorff Park and Crisanto Avenue on the east side of Rengstorff Avenue to the lowered Rengstorff Avenue. As there is an existing pathway connecting Crisanto Avenue to the lowered Rengstorff Avenue, elimination of the meandering pathway from Crisanto Avenue is a practical cost-saving alternative that avoids losing park space, has fewer tree impacts, and is less disruptive to the park. The alternative

pathway would use the existing pathway going through the park and provide a new connection to the north side of Rengstorff Avenue (see purple in Figure 4). Elimination of this design element allows Rengstorff Park to retain the portion of the park between the skate park and Rengstorff Avenue, installs a retaining wall along Rengstorff Avenue, and results in a cost savings of approximately \$0.8 million.



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



Figure 4: Existing Pathway Connection to Rengstorff Avenue

- Retaining Wall Adjacent to Central Expressway—The 35% design included retaining walls up to 22' high along the Caltrain right-of-way and Central Expressway (shown in orange in Figure 5). The retaining walls had been included to provide space initially expected to be needed for additional rail lines for a future double tracking by Caltrain. Caltrain determined that planning for future double tracking is no longer required for Rengstorff Avenue. Due to this, the retaining walls along Central Expressway can be modified to slopes and would result in potential cost savings of approximately \$4 million. Sloped embankments with landscaping will be more aesthetically pleasing, enhance the corridor experience, and will better integrate the rail corridor with the expressway.



Figure 5: View from Northwest of the Rengstorff Avenue and Central Expressway Intersection

The potential cost savings from this category of measures is approximately \$4.8 million.

Eliminating or Deferring Scope Elements

Further near-term cost reductions can be realized by reducing the project scope and deferring elements that could be constructed in the future. Table 5 lists the cost savings from these alternatives, which are more fully discussed below.

Table 5: Eliminate/Defer Project Elements Potential Cost Savings

Cost-Saving Alternative	Savings (dollar in millions)	Notes	Recommended
Retaining wall at Shell gas station	1.3	Reduces height of retaining walls and eliminates need for stairs.	Yes
Bicycle/pedestrian bridge	2.0	Defer bicycle/pedestrian bridge and eliminate stairs.	No
Total Potential Cost Savings	3.3		
Recommended Savings	1.3		

- Retaining Wall at Shell Gas Station—The 35% design included retaining walls and stairs around the Shell gas station (shown in yellow in Figure 6). As it is infeasible for the gas station to remain with the proposed lowering of the Rengstorff Avenue and Central Expressway intersection, this property will need to be acquired for the project. Use for this parcel remains undetermined, and deferring the construction of walls and stairs at this property can result in potential cost savings of \$1.3 million. Regrading and potential retaining walls can be designed and constructed as part of any future development of the site.
- Bicycle/Pedestrian Bridge—The 35% design included a bicycle/pedestrian bridge connecting Crisanto Avenue and Rengstorff Park to La Plaza Market and the neighborhood on the west side of Rengstorff Avenue (shown in blue in Figure 6). Deferring the bicycle/pedestrian bridge and eliminating the stairway can result in cost savings of approximately \$2 million. However, the bike and pedestrian bridge maintains connectivity to Rengstorff Park amenities and La Plaza market, providing value to the community and encouraging active transportation. Staff does not recommend moving forward with this measure given the marginal cost savings and substantial community benefits.



Figure 6: View from Northwest of the Rengstorff Avenue and Central Expressway Intersection

The total potential savings for the recommended measures in this category is \$1.3 million.

Construction Duration, Indirect Costs, Contingencies and Fees

During the value engineering efforts, staff also worked with Caltrain to review the Project construction schedule to determine if the construction phase duration can be condensed. This resulted in reducing the construction duration from 3 years (36 months) to 2.5 years (30 months), which also reduces the indirect costs associated with construction duration such as contractor staffing, field office, yards and shops, vehicle costs and safety related costs. In addition, contingencies and fees have been adjusted to reflect their proportional relationship to the total construction cost. Approximately \$38.0 million in cost savings were identified and included into the revised costs. **There is no action needed by the Council Transportation Committee (CTC) or Council to realize these savings.**

Revised Project Cost and Funding Shortfall

The recommended cost-reduction measures will provide a total of \$58.1 million in savings as summarized in Table 6.

Table 6: Recommended Cost-Reduction Measures and Caltrain Cost Savings

Category	Savings (dollar in millions)
Construction Methods and Sequence	14.0
Design Modifications	4.8
Eliminate/Defer Project Elements	1.3
Construction Duration, Indirect Costs, Contingencies and Fees	38.0
Total Potential Cost Savings	58.1

These savings result in a project cost estimate reduced from \$453 million to \$395 million. A total of \$296 million in funding has been secured or is anticipated resulting in a new project funding shortfall of \$99 million if the City Council approves the recommended cost-reduction measures (Table 7). To fill the funding gap, staff will continue to pursue regional, state, and federal grants as opportunities arise. In addition, staff is monitoring discussions about potential new regional transportation revenue measures and will identify if there are opportunities for the City to advocate for the Rengstorff Project to receive funding.

Table 7: Rengstorff Project Cost at 35% Design and Funding Sources (Updated)

Funding Source	Amount (dollar in millions)	Status
Preliminary Engineering Phase—\$4.0 million		
City Funds (Construction/Conveyance Tax, San Antonio Public Benefit)	4.0	Fully Expended
Final Design, Right-of-Way Acquisition, and Preconstruction—\$59 million		
City Funds (Transportation Reserve, Shoreline Regional Park Community (SRPC), San Antonio Public Benefit)	10	Committed
VTA Measure B	46	Committed
Construction—\$289 million		
City Funds (Transportation Impact Fee, SRPC, Transportation Reserve)	30	Planned
VTA Measure B	171	Planned
California State Transportation Agency Transit and Intercity Rail Capital Program (TIRCP)	20	Awarded
CPUC Grade Separation Program Grant	15	Planned
Project Contingency—\$43 million		
Total Estimated Project Cost	395	
Total Funding Secured/Planned	296	
Funding Shortfall (Rounded Up)	99	

Strategies to Minimize Further Cost Increases

The greatest risk of additional significant increases in project costs is delay. The current estimate of \$395 million assumes the project will begin full construction by 2027. It is estimated that costs will increase between \$9 million and \$14 million for each year construction is delayed beyond this.

Final design and right-of-way acquisition are fully funded and will take 18 to 24 months to complete. The City can minimize the impact of cost escalation by completing the design and right-of-way phases while continuing to identify additional funding. In addition, there is enough funding available to construct certain early delivery phases, such as the utility relocations and the relocation of Leland Avenue, in advance of the full construction. Early delivery will minimize the

impact of escalation for these phases and continue to position the project to be constructed as quickly as possible once there is enough funding for full construction.

NEXT STEPS

Staff will continue to work with the Rengstorff Avenue Grade Separation project team to identify and pursue any additional value engineering as a component of design development through final design. Staff will bring the recommended cost-reduction measures to Council for Council consideration and, if supported, proceed with completing 65% design to avoid further delays and cost escalation.

As the project proceeds into final design, the project team will schedule outreach events to keep the community informed about the project.

Staff will proceed with final design and right-of-way acquisition as well as seek out opportunities for delivery of early works packages to minimize future cost escalation.

CONCLUSION

The City is faced with difficult and time-sensitive decisions regarding the Rengstorff Avenue Grade-Separation project. Since receipt of the updated construction cost estimate based on the 35% design in October 2024, the project team has focused on value engineering and been able to progress portions of the project toward 65% design. Meanwhile, staff has identified potential measures to reduce costs through construction methods and sequence, design modifications, and phasing project elements that require consideration from the CTC and recommendations for Council. Staff will continue to explore options to fill the funding gap, such as grant opportunities and potential new revenue measures.

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, representatives of VTA, Caltrain, and other interested parties.

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cc: PWD, APWD—Arango, APWD—Boyer, CTE, PCE—Gonzales, SCE—Houghton