CITY OF MARTINEZ **CITY COUNCIL AGENDA**
February 6, 2013

TO: Mayor and City Council

FROM: Tim Tucker, City Engineer

SUBJECT: Martinez Waterfront Alternative Access Study – Council Workshop

DATE: January 31, 2013

RECOMMENDATION:

Provide direction to staff on preferred alternative access for detailed analysis.

BACKGROUND:

The Martinez Waterfront is a major destination point attracting hundreds of thousands of visitors each year. There currently is only one access road for vehicles traveling to and from the Waterfront. Ferry Street provides this access across an "at grade" railroad track crossing. From time to time this crossing has been blocked for extended periods of time, severely hindering emergency vehicle and other access during these times.

The "Court Street Overcrossing" is a project placed in the Contra Costa Transportation Authority's (CCTA) Strategic Plan at the request of the City of Martinez to provide an alternative access to the Waterfront. Funds were allocated by CCTA to Martinez to conduct a preliminary study of the overcrossing. The Martinez City Council awarded a contract to Arup to conduct the study and directed staff to look at various alternative crossing locations as a part of the work.

The final report will document the investigations carried out and the selection process by which a limited number of viable options have been selected for further consideration by the City Authorities.

The City staff and Arup team held two public workshops with downtown stakeholders and other interested people to developed several alternatives for accessing the Waterfront. The list of alternatives was narrowed to three to be presented to the Martinez City Council.

Alternative Selected	Rationale for Further Study
Alternative B	Provides link to Embarcadero if Berrellesa crossing closed; needed for Amtrak parking in the interim.
Alternative F – Court St.	Centrally located, grades at Escobar Streets require elevating 5 feet.
Alternative G1 – Pine St.	Minimal impacts on adjacent properties.

Eliminated Alternatives	
Alternative A + B	Berrellesa Street
Alternative A1	Berrellesa to North Parcel
Alternative C	Amtrak Parking Lot
Alternative D	Estudillo Street
Alternative E	Ferry Street
Alternative E-1	Ferry Street Underpass
Alternative F-1	Court Street Grade Crossing
Alternative G	Pine Street
Alternative I	East of Waterfront Park
Alternative J	Trenching the Railroad

FISCAL IMPACT:

None

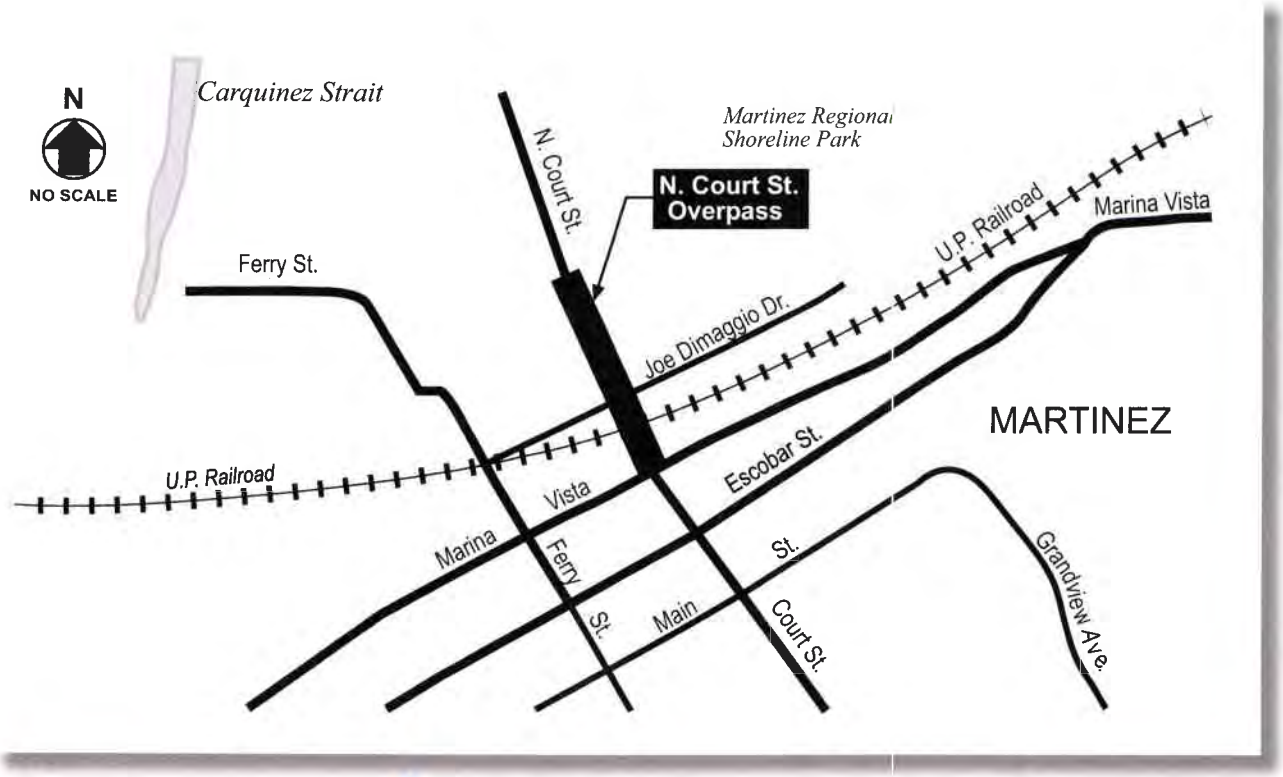
ACTION:

Provide direction to staff on preferred alternative access for detailed analysis.

Attachments:
CCTA Strategic Plan
Alternatives

APPROVED BY:
City Manager

Court Street Overcrossing – Phase 1



Project Number

24005

Project Sponsor

City of Martinez

Project Type

- Transit
- Highway
- Local Streets
- Major Arterial
- Bike/Pedestrian
- Other

Project Scope

Construct a 19-foot wide bicycle, pedestrian, and emergency vehicle overcrossing to span Joe DiMaggio Drive, the four tracks of the Union Pacific Railroad and Marina Vista to connect North Court Street, within the Martinez Waterfront Park, with Court Street at Escobar Street. Design the elevated structure to touchdown approximately 540 feet north, paralleling North Court Street. Add needed pavement transitions from the overcrossing to North Court Street and the existing pathways in the East Bay Regional Park.

Funding Sources ($ in million)

Total	**20.2**
Measure J Transportation Sales Tax[1]	10.2
Other (TBD)	10.0

[1]Measure J funds shown in escalated dollars. Actual commitment is in 2004 dollars as shown in Appendix A.

Court Street Overcrossing – Phase 1 (cont.)

Need/Purpose

The construction of this overcrossing provides a grade-separated crossing of the Union Pacific Railroad, improving safety and reducing congestion for pedestrian and bicycle traffic accessing the Martinez Waterfront. Current access to both the Park (Martinez Waterfront and Martinez Regional Shoreline) and the future Ferry Terminal is from Ferry Street, which crosses over the railroad at a gated at-grade crossing. Heavy train activity, consisting of mainline passenger, mainline freight and Ozol switching yard access leads to significant delay and congestion along Ferry Street. This facility also provides for an unobstructed emergency vehicle access linking downtown Martinez to the Park and future Ferry Terminal, and also functions as part of the San Francisco Bay Trail.

Project Location

Possible Segmentation

This project is considered the first phase of a two phase project. The second phase includes a parallel 28-foot wide two lane overcrossing that would carry vehicular traffic over Marina Vista, the Union Pacific Railroad and Joe DiMaggio Drive.

Issues

Negotiations with the East Bay Regional Park District will be necessary to determine mitigation and restoration activities for Waterfront Park.

Access to existing parking lots will need to be coordinated with the East Bay Regional Park District.

Approvals/permits will be required from PG&E, the California Public Utilities Commission (CPUC) and the Union Pacific Railroad (UPRR) for the relocation of a 60KV Overhead Transmission Line

Current Status

Conceptual engineering has been completed.

Project Schedule

Memorandum

2.1 Alternative A & B – Berrellessa Street/Creek Crossing

Description: Alternative A & B would connect the west end of downtown from Berrellessa Street across the tracks and the Alhambra Creek to the future Amtrak parking lot on the north side of the tracks.

Pros: Since Berrellessa Street is on the west end of the downtown, a crossing located there would minimize the impact to downtown businesses and historic resources. Comparatively, this option would have a lower cost because the City owns several of the parcels that would be impacted and there would be minimal disturbance of existing land uses.

Cons: This location is not ideal because it is not centrally located to the downtown and does not provide improved connection to the future ferry terminal. Compared to other alternatives, emergency responders will have a slightly longer distance to access Waterfront Park, which could increase response time. This location would also be very disruptive to the residents of Berrellesa Street and additional right of way may be required.

Figure 1: Map of Alternative A&B on Berrellessa

Figure 2: Street crossing the railroad tracks and creek; Photo of Berrellessa Street looking north across the tracks

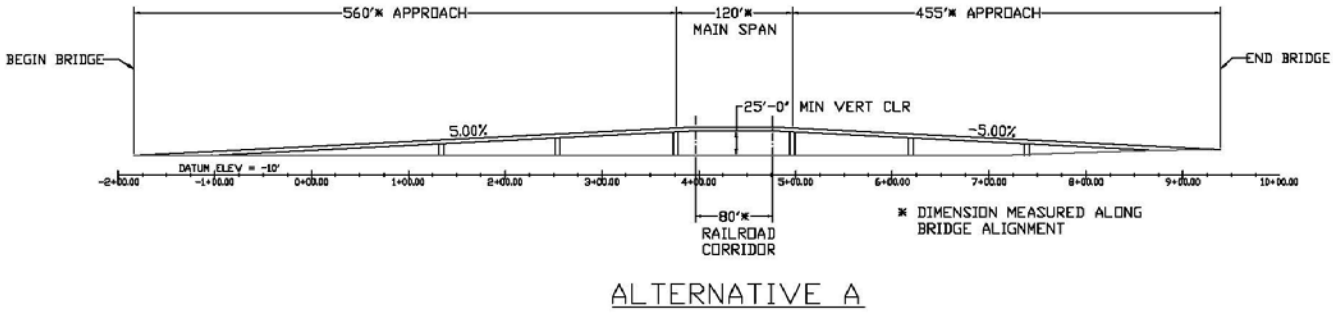


Table 1: Evaluation of Alternative A&B

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
A & B Berrellessa Street	N	N	N	Y	N	N	Y	Y

2.2 Alternative A-1

Description: Alternative A-1 would connect the west end of downtown from Berrellessa Street across the Alhambra Creek south of the railroad tracks and will cross the tracks to the future Amtrak parking lot on the north side of the tracks.

Pros: This alternative is similar to Alternative A & B in terms of the benefits. However, unlike Alternative A & B, it will not adversely impact the properties on Berrelessa Street north of the tracks.

Cons: Same as Alternative A & B, except that the impact to properties on Berrelessa north of the tracks would be minimal. Acquisition of private property at the south side of the railroad is required.

Figure 3: Map of Alternative A-1 on Berrellessa Street crossing the railroad tracks and creek

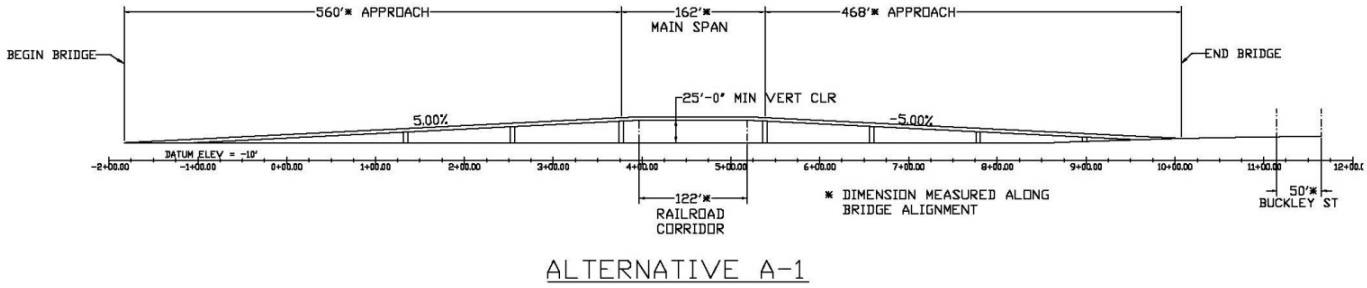


Table 2: Evaluation of Alternative A-1

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
A-1 Berrellessa Street (2)	N	N	N	Y	Y	N	Y	N

2.3 Alternative B Only

Description: Alternative B would provide the connection from the future Amtrak parking lot on the north side of the tracks to Berrellessa, but would not include the Berrellessa overcrossing.

Pros: Eventually the parking lot will require additional exiting/access, and this bridge could provide that access. Conversely, should a new overcrossing be considered elsewhere, this new bridge across the creek to the north side of Berrellessa could provide access to those property owners and residents and allow the existing Berrellessa crossing to be completely closed. When combined with Alternative A, the Alternative B bridge would need to be located in the same alignment as the current EBRPD pedestrian bridge. When Alternative B is independent, then the bridge could be located closer to the railroad.

Cons: Same as Alternative A & B

Figure 4: Map of Alternative B Only on Berrellessa Street crossing the railroad tracks and creek; Photo of Berrellessa Street looking north across the tracks

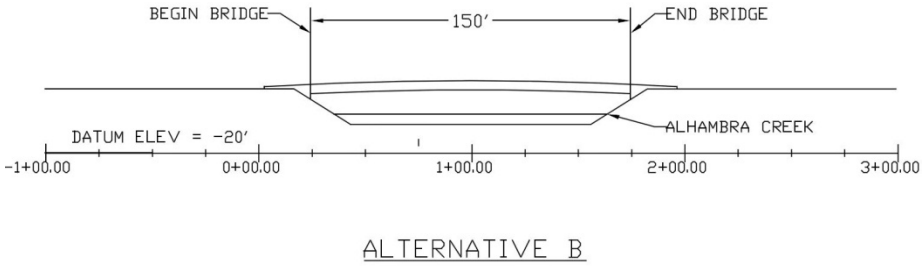


Table 3: Evaluation of Alternative B Only

	Alternative	Applicability to Objectives: Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
B	Alternative B Only	N	N	N	Y	Y	N	Y	N

2.4 Alternative C – Amtrak Parking Lot

Description: Alternative C would connect the far end of the Amtrak parking lot across the railroad tracks to the Amtrak parking lot on the north side of the tracks.

Pros: This alternative is attractive because it provides a safe crossing at the railroad tracks. It also minimizes impact to downtown businesses and historic resources due to its location on the west end of the downtown.

Cons: This alternative fails to meet other objectives such as reducing congestion and providing uninterrupted emergency services to the Martinez Waterfront Park. Since this alternative is located away from the downtown center, it is likely that people will choose to cross at other at-grade crossings rather than walk or bike the additional distance to the bridge. Since it is located on the far west end of the park, this location is less desirable for emergency responders since it does not provide as direct of a route as some of the other alternatives. Moreover, this alternative is likely to have significant and unavoidable environmental impacts to the creek due to the long run required for the 5% grade. Based on preliminary concepts, the ramp required to cross the railroad will need to follow the creek alignment and then turn back across towards the track and the north parking lot. This ramp would impose a significant impact on the creek and on the train station.

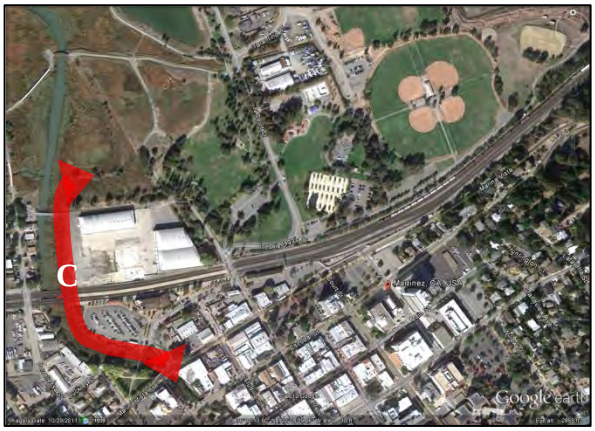


Figure 5: Map of Alternative C showing the Amtrak parking lots north and south of the railroad tracks

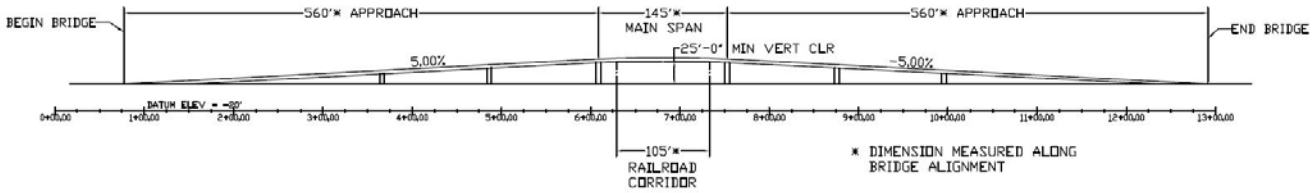


Table 4: Evaluation of Alternative C

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
C Amtrak Parking Lot	Y	N	Y	Y	Y	N	Y	Y

2.5 Alternative D – Estudillo Street

Description: Alternative D would connect Estudillo Street across the train tracks to Ferry Street.

Pros: This location provides good access from the Amtrak station and the downtown core to the west end of the Martinez Waterfront Park and the future ferry terminal site. It also meets most of the other objectives of the project.

Cons: This location is not feasible because there is not enough run available to the south of the railroad tracks to cross over the tracks at an acceptable grade. Another option would be to increase the ramping distance by extending the ramp to Escobar, but that would have significant impacts on adjacent properties. This alternative would present an unreasonable impact to surrounding businesses and would aesthetically impact the Amtrak station. In addition, the ramp would not be ADA compliant because of the steeper grade.

Figure 6: Map of Alternative D from Estudillo Street to Ferry Street north of the railroad tracks

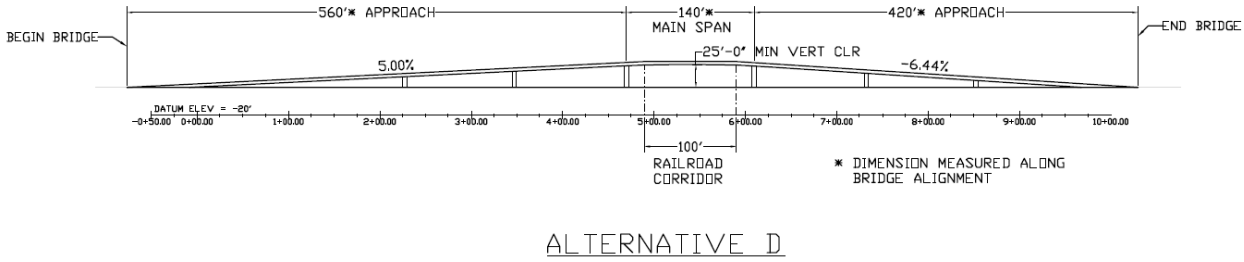


Table 5: Evaluation of Alternative D

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
D Estudillo Street	Y	Y	Y	Y	N	Y	Y	Y

2.6 Alternative E – Ferry Street

Description: This alternative would provide access across the railroad tracks from Ferry Street to the south to Joe Di Maggio Drive to the north.

Pros: This option would provide excellent access from the downtown core to the west end of the Martinez Waterfront Park and the future ferry terminal site. Due to the central location, the bridge would be convenient to use, which will help to improve safety and reduce delays. A central location of the bridge would also significantly reduce emergency response time to the park.

Cons: Since this location is centrally located, there would be major impacts to downtown businesses and historic resources. Some of these impacts could include demolition, driveway closures or reorientation of building fronts.

Figure 7: Map of Ferry Street Alternative E showing Ferry Street across the railroad tracks to Joe Di Maggio Drive

Figure 8: Photo of railroad tracks near Joe Di Maggio Drive facing south towards Ferry Street

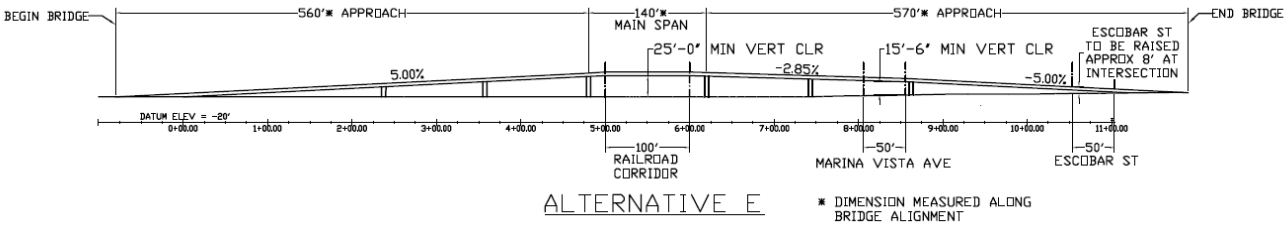


Table 6: Evaluation of Ferry Street Alternative E

Alternative	Applicability to Objectives: Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
E Ferry Street	Y	Y	Y	Y	N	Y	Y	Y

2.7 Alternative E-1 Ferry Street Underpass Alternative

Description: This alternative would provide access under the railroad tracks from Ferry Street to the south to Joe Di Maggio Drive to the north.

Pros: Like the Ferry Street alternative, this option would also provide excellent access from the downtown core to the west end of the Martinez Waterfront Park and the future ferry terminal site. Due to the central location, the underpass would be convenient to use, which will help to improve safety and reduce delays. A central location of the underpass would also significantly reduce emergency response time to the park. Compared to an overcrossing, an underpass requires less clearance and run as trains would not be passing underneath.

Cons: Due to the ramping of the structure, there could be major impacts to downtown businesses and historic resources during construction and afterwards as access is impaired to Ferry Street businesses. Since this alternative requires construction underground, the cost of the project would be significantly more; and its underground construction and operation would require dewatering, which could become worse with sea level rise.

Figure 9: Map of Alternative E-1 Ferry Street Underpass Alternative showing Ferry Street across the railroad tracks to Joe Di Maggio Drive

Figure 10: Photo of railroad tracks near Joe Di Maggio Drive looking south to Ferry Street

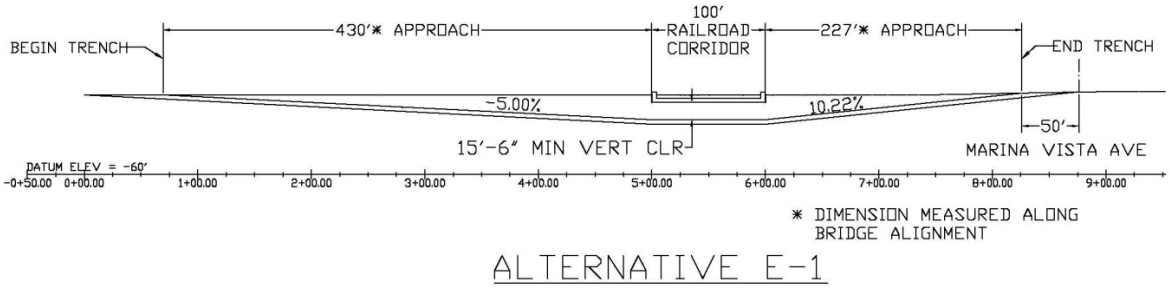


Table 7: Evaluation of Alternative E-1 Ferry Street Underpass Alternative

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
E-1 Ferry Street Underpass	Y	Y	Y	Y	N	N	Y	Y

2.8 Alternative F – Court Street Overcrossing

Description: Alternative F would connect the downtown core from Court Street across the railroad tracks to Joe DiMaggio Drive.

Pros: Similarly to the Ferry Street Alternative, this alternative would also provide good access from the downtown core to the west end of the Martinez Waterfront Park and the future ferry terminal site. It would also be highly convenient to use and would improve safety, reduce delays and improve emergency response time due to the central location; the alternative also supports and reinforces the central business district since the connection is adjacent to downtown businesses. The physical impact of the overcrossing is likely to be less comparatively due to the high exiting grade at Court Street and Escobar, which is 10 feet higher than the railroad. This allows a bridge to launch from a natural high-point, allowing for a more natural look to be achieved.

Cons: However, even with the natural grade, an additional 5 ft. of elevation would be required, which presents a challenge. In addition, traffic would likely divert from Ferry Street to Court Street, causing some traffic impact.

Figure 11: Map of Alternative F showing Court Street across the railroad tracks to Joe Di Maggio Drive

Figure 12: Photo from north of railroad tracks looking south to Court Street

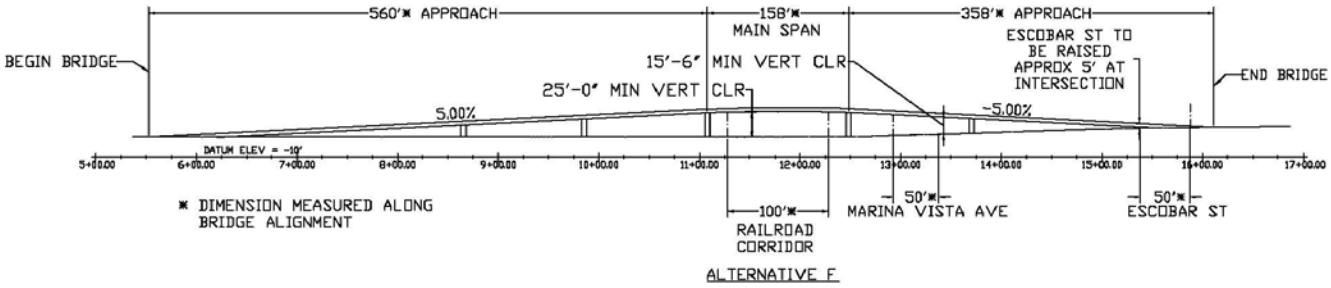


Table 8: Evaluation of Alternative F

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
F Court Street	Y	Y	Y	Y	N	N	Y	N

2.9 Alternative F-1 – Court Street Grade Crossing

Description: Alternative F-1 provides the connection from Court Street to the Martinez Waterfront via a new grade crossing. This alternative was suggested by community members.

Pros: The central location makes this alternative convenient to use.

Cons: While the alternative is centrally located and provides a direct connection into the park, the concept is fatally flawed because it still requires a conflict between trains and pedestrians and vehicles, subjects emergency responders to delay, and provides little improvement over the current Ferry Street grade crossing.

Figure 13: Map of Alternative F-1 showing Court Street across the railroad tracks to Joe Di Maggio Drive;

Figure 14: Photo from north of railroad tracks looking south to Court Street

Table 9: Evaluation of Alternative F-1

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
F-1 Court St. Grade Crossing	N	N	Y	N	Y	N	N	Y

2.10 Alternative G – Pine Street

Description: Alternative G would create a connection from Pine Street to Joe Di Maggio Drive through the parking lot between Court Street and Pine Street.

Pros: This alternative is similar to Alternative F in terms of the benefits. An overcrossing at this location would create a convenient connection from the downtown core to the Martinez Waterfront Park and future ferry terminal. It would improve safety, reduce delays and improve emergency response time to the park. Furthermore, impact to downtown businesses and historic resources would be minimal since Pine Street is bordered by parking lots between Marina Vista Avenue and Escobar Street.

Cons: Depending on the alignment for this alternative, there may be an impact on a historic resource because the ramp will be constructed in front of the Martinez Museum.

Figure 15: Map of Alternative G showing Pine Street across the railroad tracks to Joe Di Maggio Drive;

Figure 16: Photo from north of railroad tracks looking south to Pine Street

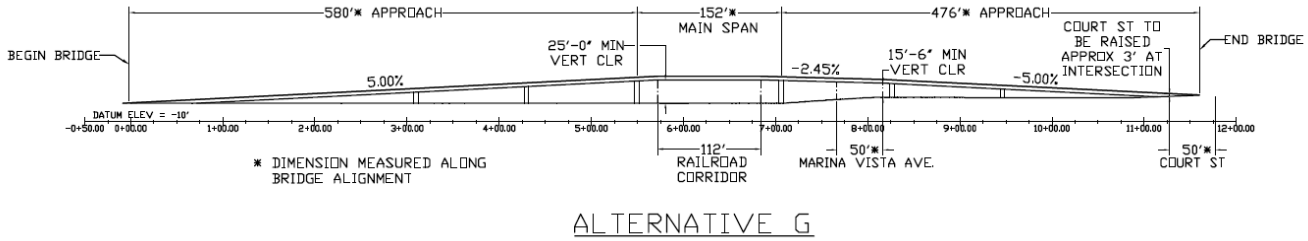


Table 10: Evaluation of Alternative G

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
G Pine Street	Y	Y	Y	Y	Y	M	Y	N

2.11 Alternative G-1 – Pine Street

Description: Alternative G would create a connection from Pine Street to Joe Di Maggio Drive through the parking lot between Court Street and Pine Street.

Pros: This alternative is similar to Alternative G in terms of the benefits. An overcrossing at this location would create a convenient connection from the downtown core to the Martinez Waterfront Park and future ferry terminal. It would improve safety, reduce delays and improve emergency response time to the park. Furthermore, impact to downtown businesses and historic resources would be minimal since Pine Street is bordered by parking lots between Marina Vista Avenue and Escobar Street. However, unlike Alternative G, it should not have an impact on the Martinez Museum because of the alternative alighnment.

Cons: Depending on the alignment for this alternative, there may be an impact on the surrounding buildings on Pine Street such as the Contra Costa County Sheriff and Contra Costa County Counsel office buildings, especially if additional elevation is required.

Figure 17: Map of Alternative G-1 showing Pine Street across the railroad tracks to Joe Di Maggio Drive;

Figure 18: Photo from north of railroad tracks looking south to Pine Street

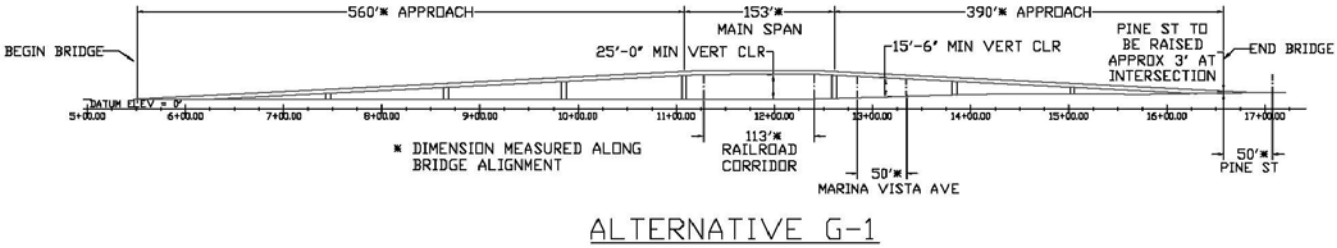


Table 11: Evaluation of Alternative G-1

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
G-1 Pine Street (2)	Y	Y	Y	Y	M	N	Y	N

2.12 Alternative H – East of Pine Street

Description: Alternative H would connect the downtown core to the Martinez Waterfront Park just west of the softball fields through constructing an overpass on a property leased by the City and owned the County.

Pros: This alternative would meet the objectives of providing safer crossing conditions, reducing congestion and delays, improving connections to the future ferry terminal and improving response time for emergency service.

Cons: This alternative is not a centrally located as the other options. In addition, some property acquisitions may be required, along with demolition of some structures.

Figure 19: Map of Alternative H showing the location east of Pine Street across the railroad tracks to Joe Di Maggio Drive;

Figure 20: Photo from north of railroad tracks looking south to Pine Street

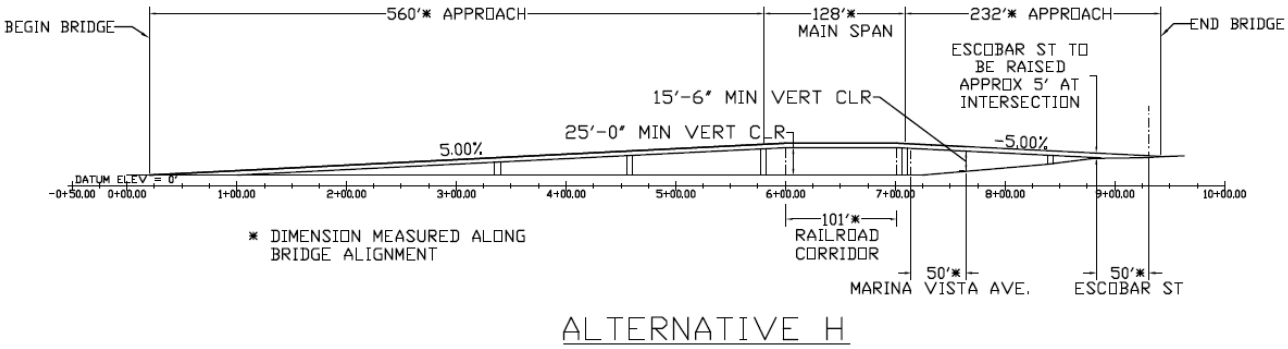


Table 12: Evaluation of Alternative H

Alternative	Applicability to Objectives: Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
H East of Pine Street	Y	Y	Y	Y	N	N	Y	N

2.13 Alternative I – East of Waterfront Park

Description: Alternative I would connect the eastern portion of the downtown to the east side of the Martinez Waterfront Park.

Pros: This alternative would minimize the impact to the downtown businesses and historic resources since it is located far from the downtown core. An overcrossing located east of the park would provide improved emergency response to the softball fields.

Cons: Since the bridge site requires a 1,200 foot transit from downtown and has a rise of approximately 40 feet, it is unlikely that many pedestrians and bicyclists would use it to access the park from the downtown. Instead, they might opt to continue to cross at the at-grade crossings which would not help to improve safety nor congestion and delays. Since this crossing would be located on the eastside of the downtown, it would not provide improved access to the future ferry terminal. This alternative is fatally flawed because it does not meet the purpose of the bridge to serve pedestrians and bicyclists due to the remote location from the downtown core.

Figure 21: Map of Alternative I showing the crossing from Escobar Street across the railroad to east of Joe Di Maggio Dr.

Figure 22: Photo from south of railroad tracks looking north toward the Martinez Waterfront Park

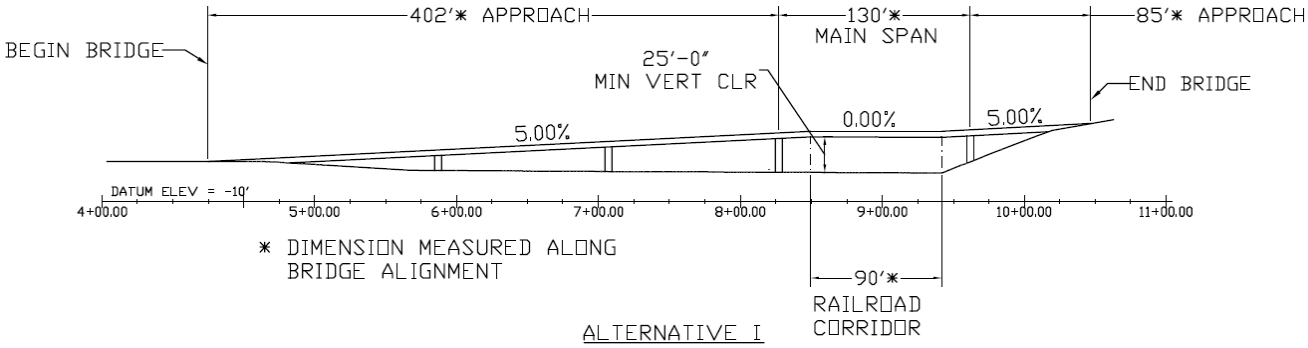


Table 13: Evaluation of Alternative I

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
I East of Waterfront Park	N	N	N	M	Y	N	Y	Y

2.14 Alternative J – Trenching the Rail Road

Description: Alternative J would create a below-grade trench for the Union Pacific Railroad that would transition from the Shell refinery and then regain street grade west of Berrellessa Street.

Pros: This alternative provides safe, seamless crossing opportunities to the park and future ferry terminal for all modes of transportation. The alternative would eliminate delays for trains, automobiles, bikes pedestrians, and emergency vehicles.

Cons: This alternative would involve major construction, causing major disruption to downtown businesses. Desired railroad grades are about one percent, and as a result this option would impact a minimum of 2,500 ft. of the downtown along the railroad tracks. Trenching the railroad would also put the railroad under the bay level since Ferry Street is at a 10 foot elevation, under current, pre-sea level rise surveys. This complicates the design and adds to the cost of the project. This alternative is cost prohibitive and would require continuous coordination of all parties associated with the railroad. Note that construction staging would be highly complex and would require the relocation of fuel, oil and other utility pipelines.

Figure 23: Map of Alternative J – Railroad Trenching Alternative from Shell to the Martinez Waterfront Park

Table 14: Evaluation of Trenching the Rail Road Alternative

	Applicability to Objectives							
Alternative	Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
J Trenching the RR	Y	Y	Y	Y	N	N	N	Y

Memorandum

3.0 Summary

3.1 Rejected Alternatives

Based on the above evaluation, it is clear that several alternatives are not feasible because of cost, lack of space, environmental impacts, or unreasonable impacts to existing downtown businesses.

We recommend eliminating the following Alternatives:

Alternative Eliminated	Rationale for Elimination
Alternative A & B	Adverse impacts to adjacent properties.
Alternative C – Amtrak Lot	Adverse Impacts to creek and to Amtrak station
Alternative D – Estudillo	Inability to gain sufficient rise to cross railroad; alternatively, impacts on properties
Alternative E – Ferry Street	Impacts on adjacent properties
Alternative E-1 – Ferry Street Underpass	Impacts on adjacent properties; construction/operational impacts due to high water table.
Alternative F-1 – Court Street Grade Crossing	Does not meet projects criteria to improve safety and pedestrian conditions.
Alternative I – East of Waterfront Park	Outside of downtown area, limiting use. Requires large and visible structure to make connection to park.
Alternative J – Trenching Railroad	High cost, large construction impacts, requires significant construction staging, and conflicts with sea level rise constraints.

3.2 Alternatives for Further Study

We recommend further study on the following Alternatives:

Alternative Selected	Rationale for Further Study
Alternative A-1	Provides good crossing connection at edge of downtown.
Alternative B	Could be used with other options to link to Embarcadero if Berrellessa crossing closed – needed for Amtrak parking in the interim.
Alternative F – Court Street	Centrally located, grades work well for seamless bridge connection.
Alternative G – Pine Street	Centrally located, minimal impacts on adjacent properties.
Alternative G-1 – Pine Street	Centrally located, minimal impacts on adjacent properties.
Alternative H – East of Pine	Good connection with downtown, minimal impacts on business and property.

These five alternatives offer the city and the public the best mix of utility, safety and function with the least adverse impacts on adjacent businesses and properties.

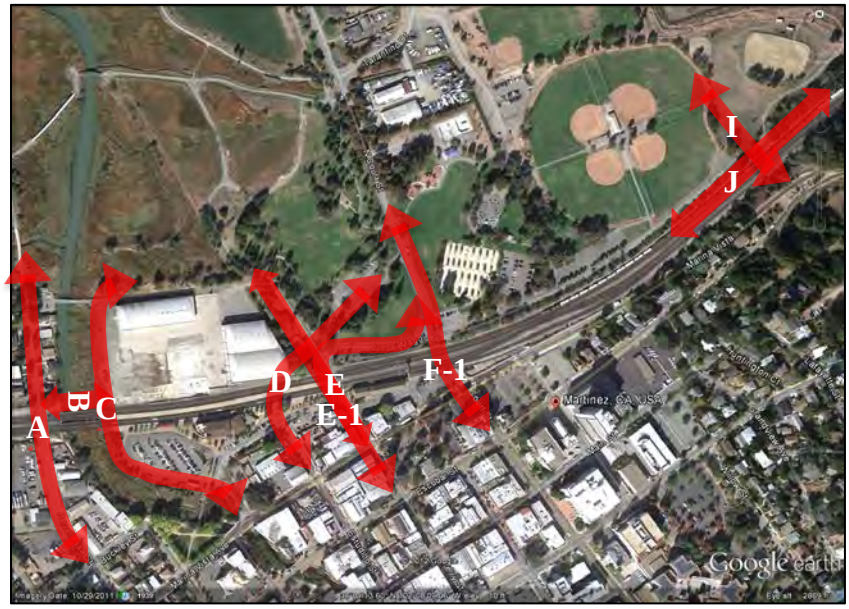


Figure 24: Map of Alternatives to eliminate

Figure 25: Map of Alternatives for further study

Memorandum

Table 15: Evaluation of all alternatives

Applicability to Objectives

Alternatives		Provide safer crossing conditions	Reduce congestion and delays	Improve connections to the future ferry terminal	Provide uninterrupted emergency services to the Martinez Waterfront Park	Minimize impact to downtown business and residents	Impact to historic resources	Design a crossing that is competitive for additional and outside funding	Fatal flaws
A & B	Berrellessa Street	N	N	N	Y	N	N	Y	Y
A-1	Berrellessa Street (2)	N	N	N	Y	Y	N	Y	N
B	Alternative B Only	N	N	N	Y	Y	N	Y	N
C	Amtrak Parking Lot	Y	N	Y	Y	Y	N	Y	Y
D	Estudillo Street	Y	Y	Y	Y	N	Y	Y	Y
E	Ferry Street	Y	Y	Y	Y	N	Y	Y	Y
E-1	Ferry Street Underpass	Y	Y	Y	Y	N	N	Y	Y
F	Court Street	Y	Y	Y	Y	N	N	Y	N
F-1	Court St. Grade Crossing	N	N	Y	N	Y	N	N	Y
G	Pine Street	Y	Y	Y	Y	Y	M	Y	N
G-1	Pine Street (2)	Y	Y	Y	Y	M	N	Y	N
H	East of Pine Street	Y	Y	Y	Y	N	N	Y	N
I	East of Waterfront Park	N	N	N	M	Y	N	Y	Y
J	Trenching the RR	Y	Y	Y	Y	N	N	N	Y