

# How Did We Develop the Full Subway Alternative?

Engineering Study focused south of Winston Drive

## Bridge over Junipero Serra Blvd.

**The Issue:** In the Feasibility Study, a light rail bridge over Junipero Serra Blvd. was proposed as a way to connect the M Ocean View's new route in Parkmerced to its existing route in Ocean View without having to be interrupted by vehicle traffic. The challenges of building a bridge needed to be further studied to understand the pros and cons.

**The Goal:** Evaluate the pros and cons of the bridge design.

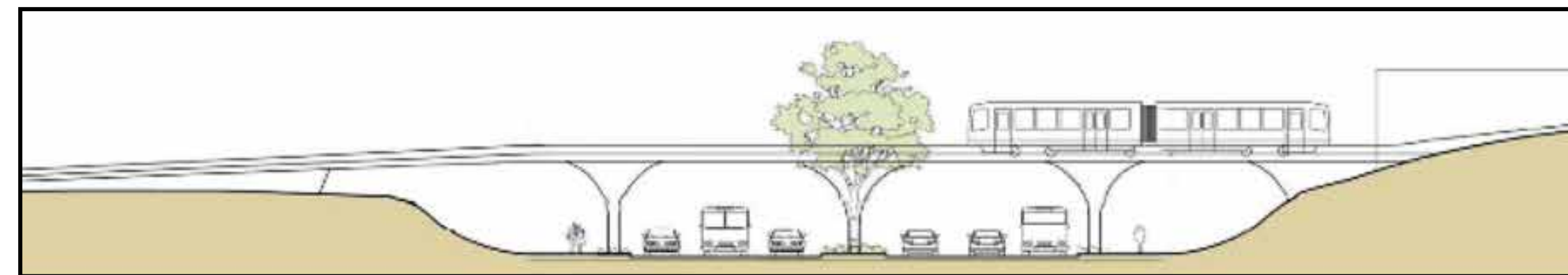
**The Constraints:**

- The bridge landing on Randolph St is in a narrow right of way, which would have potential visual, property and noise impacts for homes along Randolph St.
- 19th Avenue is State Route 1, and constructing a bridge over the roadway would add significant costs and likely create major traffic impacts.

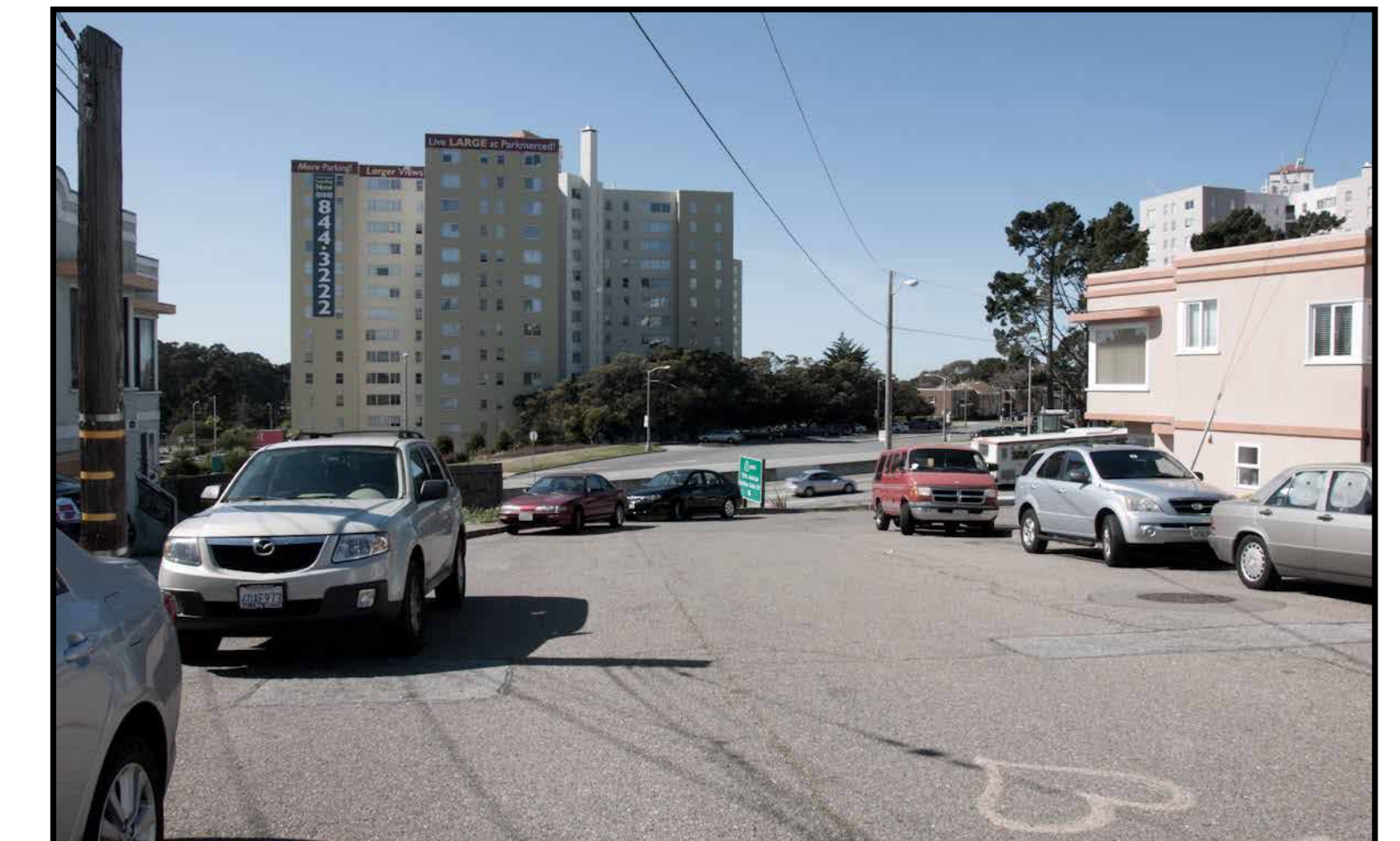
**Conclusion:** The bridge was not a viable option due to the challenges of building on a state highway and the potential visual, property and noise impacts on homes along Randolph Street.



View of Randolph Street looking east



Light rail bridge over Junipero Serra Blvd. proposed in Feasibility Study. The bridge would require lowering Junipero Serra (State Route 1) by 15-20 ft.



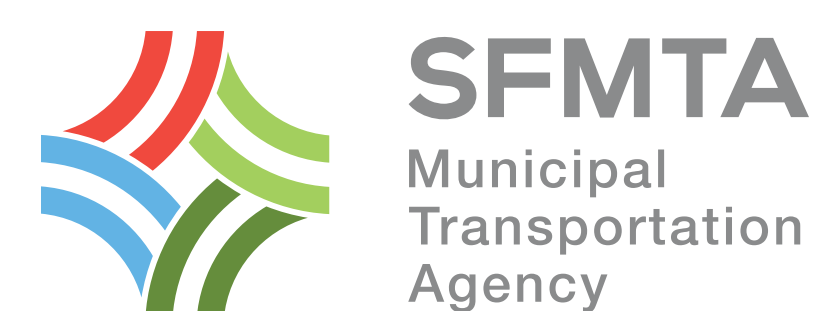
View of Randolph Street looking west

## 19th Avenue/M Ocean View Project

All aspects of the proposed project presented are preliminary and subject to refinement. Next steps would include environmental review, project approvals by regulatory agencies, identifying full funding, detailed design and others. Any potential construction activities would not happen for many years in the future.

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# How Did We Develop the Full Subway Alternative?

Engineering Study focused north of St. Francis Circle

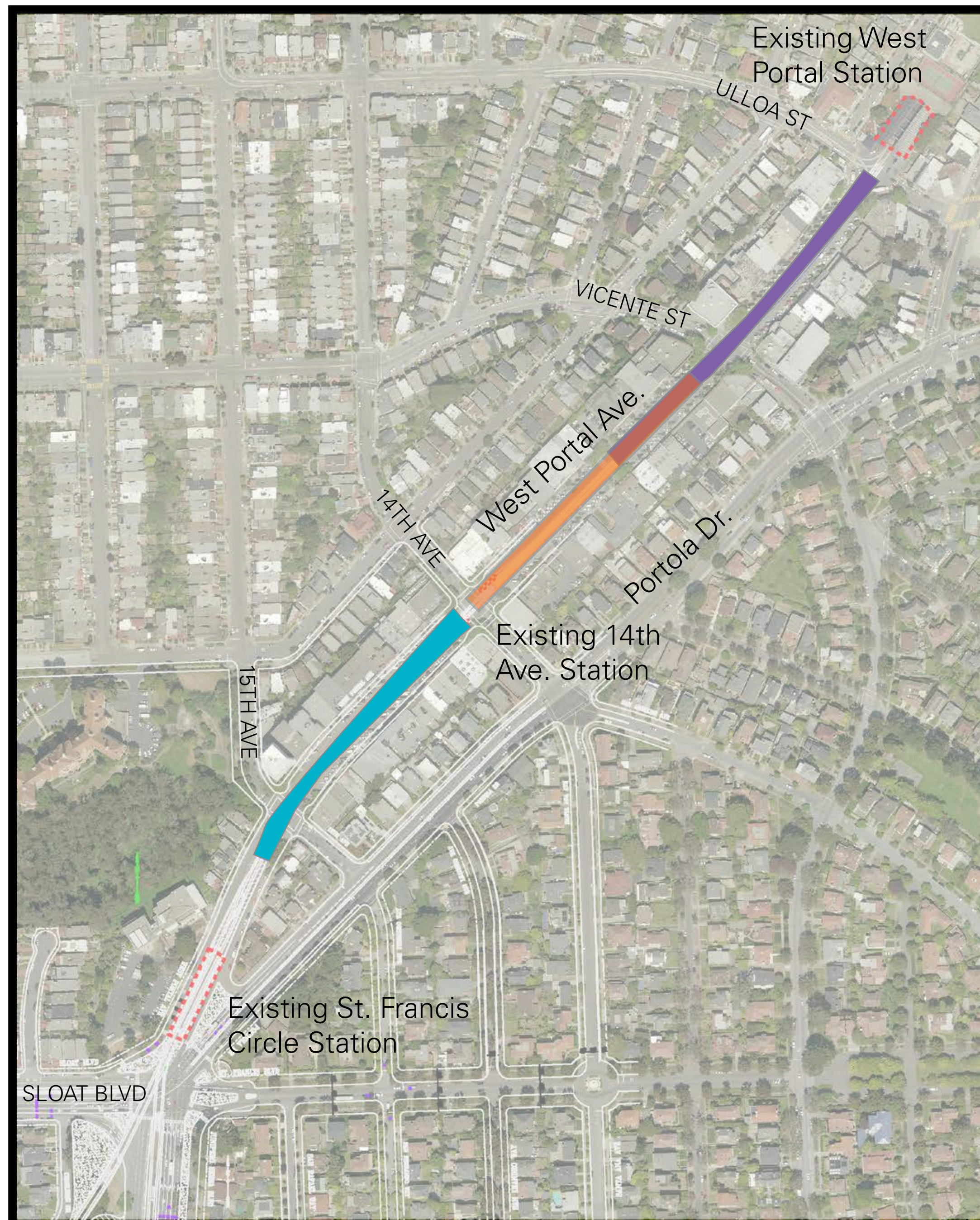
**The Issue:** The multi-legged St. Francis Circle intersection has many conflicts between automobiles and light rail vehicles, creating delays for all road users.

**The Goal:** Identify a location where an underground tunnel could surface north of St. Francis Circle in a portal.

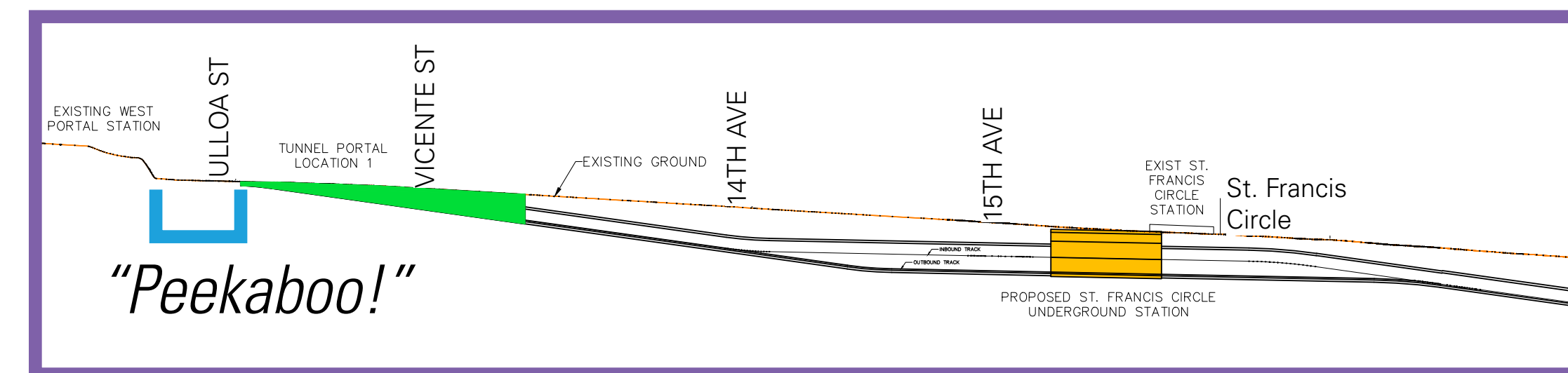
**Conclusion:** Undergrounding at St. Francis Circle not prudent without full undergrounding of West Portal.

**The Constraints:** Design should include an underground station at St. Francis Circle and a crossover track to turn around trains.

*As a result, the project team developed the Full Subway Alternative that avoids these challenges.*



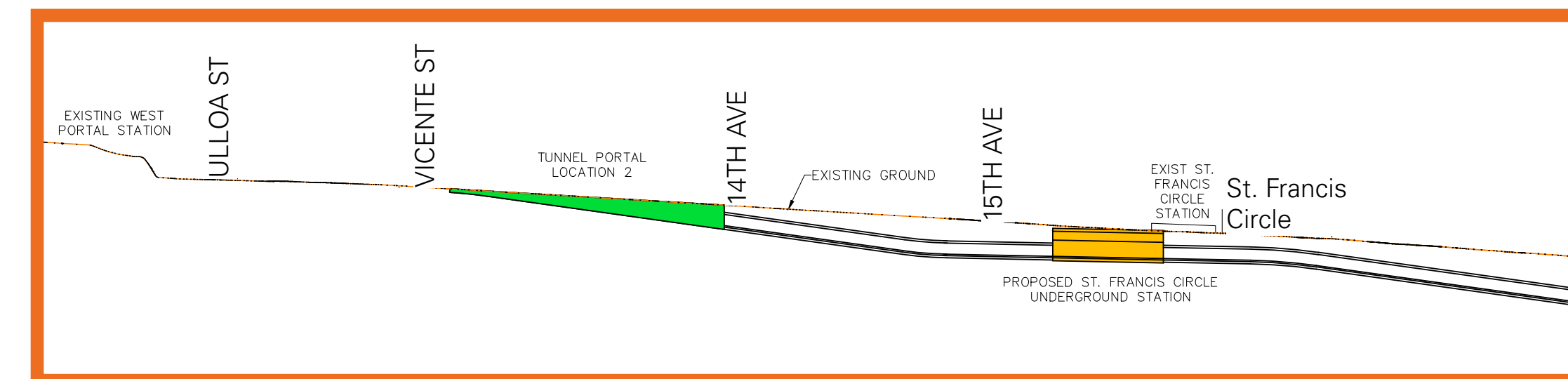
## Tunnel Portal Location 1



UNDERGROUND STATION? YES  
CROSSOVER TRACK? YES

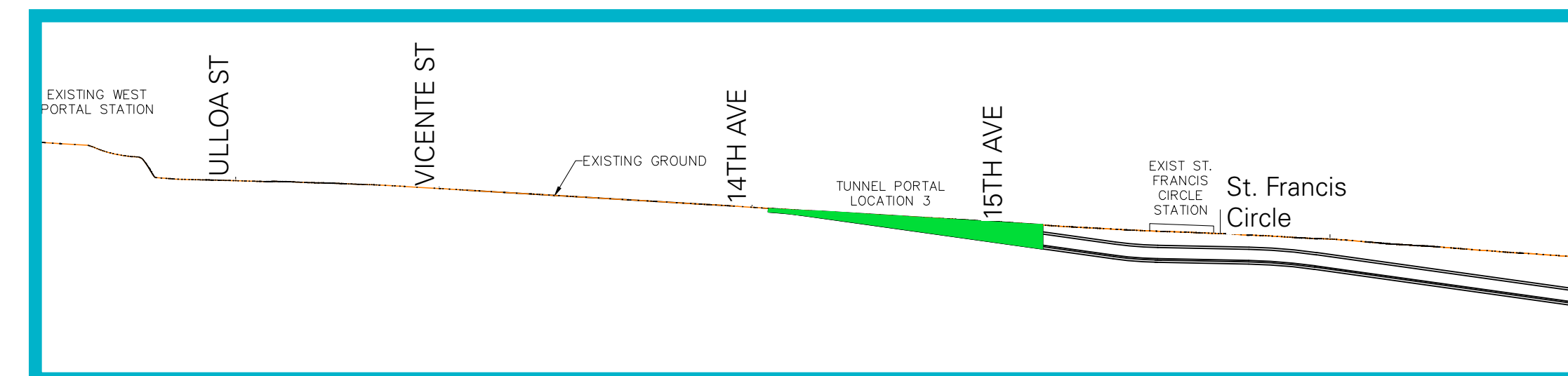
*"Peekaboo" condition is undesirable*

## Tunnel Portal Location 2



UNDERGROUND STATION? YES  
CROSSOVER TRACK? NO

## Tunnel Portal Location 3



UNDERGROUND STATION? NO  
CROSSOVER TRACK? NO

 = Portal for transition from underground to surface       = Underground station

### WHY DO WE CALL IT A "PEEKABOO"?

The location that met all of our design requirements was so close to West Portal station that the train would surface for only a short distance before going back underground.

### WHY IS A CROSSOVER TRACK IMPORTANT?

A crossover track is a feature to turn both inbound and outbound light rail vehicles around in a given location. It provides operational flexibility to deal with both emergency and planned turnaround situations.

### OTHER CONSIDERATIONS

Constructing a portal in the middle of West Portal Avenue, where the neighborhood commercial district is located, would change the look and feel of this street.

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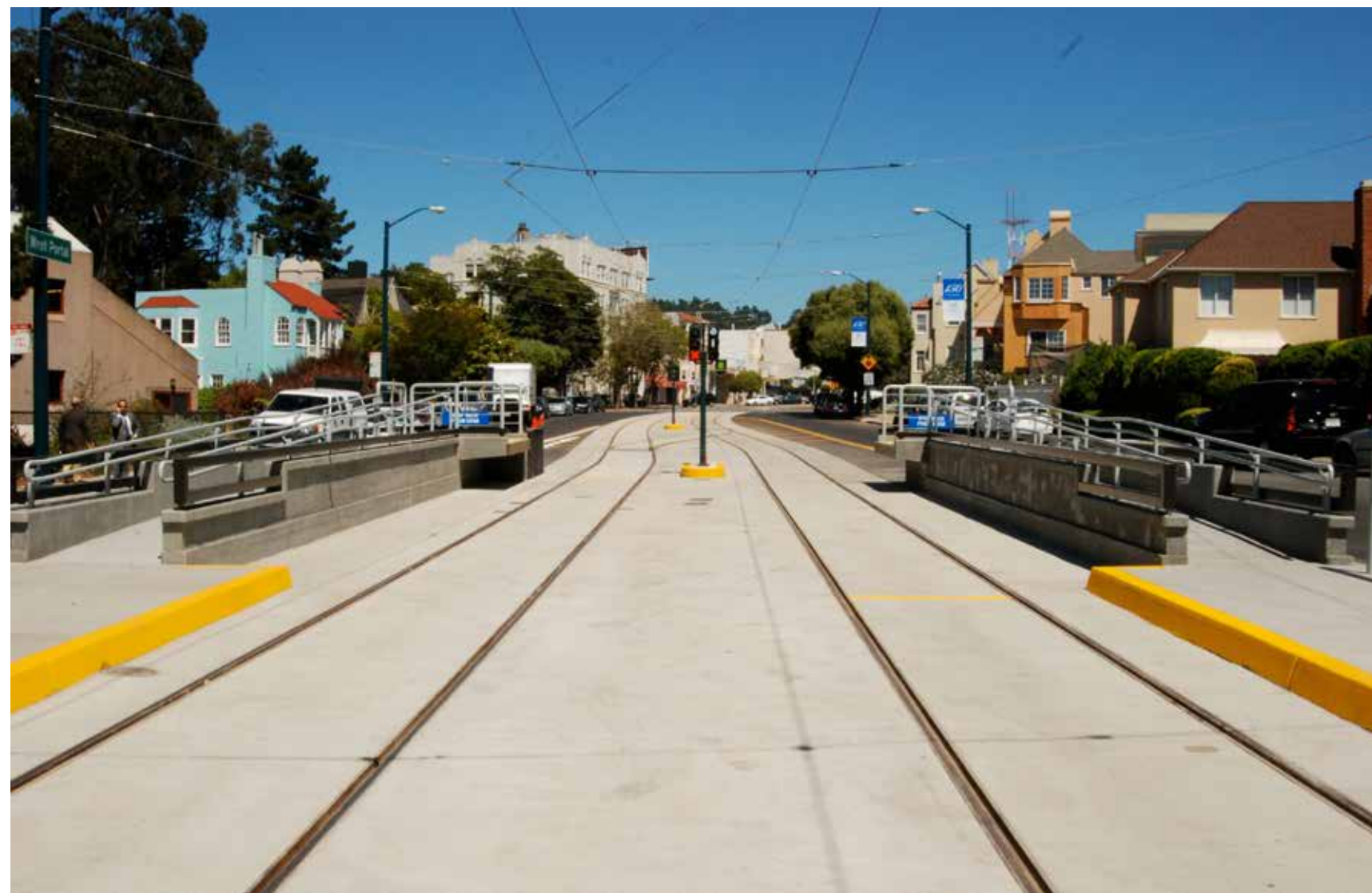
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# Community Design Areas

We have identified a few areas where more focused hands-on community design processes would be merited due to the opportunities presented by the Full Subway alternative.

## West Portal streetscape

- The center two lanes of West Portal are currently used by the K and M-lines. If the trains were undergrounded in this location, there would be an opportunity to re-design the street.
- A community design process could identify priorities for the re-designed street such as trees, seating, signage, or public art.



West Portal Avenue, St. Francis Circle Station

## St. Francis Circle and Lakeside private right-of-way

- Undergrounding the M-line in the Lakeside, and both the K-line and M-line through St. Francis Circle, would vacate a lot of space that could be re-used in a variety of different ways.
- A community design process could help identify new uses for the space.



St Francis Circle

## Ocean View portal

Portal: the location where a train transitions from subway to surface

- Portal on 19th Avenue between Sargent Street and Byxbee Street would change the look and feel of this street.
- A community design process could help identify design elements of the portal and improvements to the surrounding street such as landscaping and beautification.



Example: Muni Portal at Embarcadero and Folsom Street



West Portal Avenue between 14th Avenue and Vicente Street



Lakeside private-right-of-way



Conceptual Illustration of proposed Muni Portal between Sargent Street and Byxbee Street.

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