Both the Partial Subway and Bridge and Full Subway options address SFMTA’s desire to improve travel time and safety, but the Full Subway provides superior transit performance.

**How Do the Alternatives Compare?**

**Default Parkmerced Plan (all surface)**
- Designs new stations to serve 3-car trains
- Adds new terminal in Parkmerced, which improves operations flexibility
- Adds two more intersection crossings for the M-line which would negatively affect on-time performance and reliability
- Adds a sharp turn to the M route, which would slow travel time and wears out the train tracks more quickly

**Partial Subway and Bridge**
- Places the M-line in its own subway tunnel from south of St. Francis Circle to Junipero Serra Blvd
- Designs new stations to serve 4-car trains
- Includes a new M-terminal in Parkmerced to improve operating flexibility
- Remaining surface crossings on West Portal Avenue continue to limit reliability and capacity

**Full Subway**
- Places the M-line and part of the K-line in a subway from West Portal station to Parkmerced
- Designs new stations to serve 4-car trains
- Includes a new M-terminal in Parkmerced to improve operating flexibility
- Maximizes subway reliability and capacity for the entire system

**Stop/Station**
- Supports Parkmerced Vision Plan and SF State Campus Master Plan
- Creates new underground stations at Stonestown, SF State and Parkmerced. New stations on 19th Avenue would have multiple entrances on both sides of the street.
- Takes the M-line underground allows for a re-design of 19th Avenue to include wider sidewalks, new two way bike path and a landscaped median
- Removes at-grade crossings near Rosmoor Dr and at Junipero Serra Blvd which addresses some factors of 19th Avenue delay

**Track Configuration**
- Surface
- Subway
- Bridge
- Tail Track
- Stop/Station

**Transit Performance**
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**Transit Access**
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**Safety and Walk/Bike Comfort**
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**Accomodate Planned Developments**
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**19th Avenue Traffic Operations**
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DISCLAIMER: This assessment is preliminary based on qualitative assessment and conceptual engineering. More rigorous analysis of quantified benefits and impacts would occur during the environmental review phase.
### Implementation Considerations

Full Subway avoids major potential constructability and property impacts that the Partial Subway and Bridge would likely create. Because the Full Subway entails a longer tunnel and more subway stations, it would cost more than twice as much as the Partial Subway and Bridge.

#### Capital Costs

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Default Parkmerced Plan (all surface)</td>
</tr>
<tr>
<td>2014-2015</td>
<td>Partial Subway and Bridge</td>
</tr>
<tr>
<td>2016</td>
<td>Full Subway</td>
</tr>
</tbody>
</table>

- To be designed and constructed by Parkmerced, an investment valued at $70 million
- $1-1.25 billion (in 2016 dollars), could utilize Parkmerced funding but would require substantial additional funding from federal, state, regional, local and other private sources
- $2.5-3 billion (in 2016 dollars), could utilize Parkmerced funding but would require substantial additional funding from federal, state, regional, local and other private sources

#### Operating & Maintenance Cost

- Increase in operating cost expected due to increase in M-line travel time created by re-alignment
- Increase in rail vehicle wear and tear anticipated due to sharp curve

- Operating costs expected to decrease as a result of decrease in rail vehicle travel time, but are likely to increase as a result of new station operation/maintenance, and tunnel maintenance needs

#### Constructability

- Impacts predominantly within Parkmerced site
- Short-term disruptions to SR1 to demolish the existing Muni tracks and re-build new lanes
- Lowering of Junipero Serra for bridge between Font and Randolph would be a major challenge to navigate with 72,000 vehicles per day on SR 1. This would cause the bridge to be far more expensive than a similar bridge in a simpler construction environment.
- Good candidate for tunnel boring, minimizing surface interruption
- Good candidate for tunnel boring, minimizing surface interruption
- Tie-in to existing Twin Peaks tunnel likely to be implemented through short-term temporary service disruptions

#### Adjacent Property Impacts

- Sharp curve in Parkmerced likely to create noise in surrounding area
- Major issues (during both construction and operation) with noise, visual, and property impacts surrounding bridge landing on Randolph Street
- Portal on West Portal Avenue would change the look and feel of the street
- Portal on 19th Avenue between Sargent Street and Byxbee Street would change the look and feel of the street

#### On-Street Parking

- No change
- Proposes removal of on-street parking on 19th Avenue between Eucalyptus Drive and Holloway Avenue
- Proposes removal of on-street parking on 19th Avenue between Eucalyptus Drive and Holloway Avenue and between Sargent Street and Byxbee Street

**DISCLAIMER:** This assessment is preliminary based on qualitative assessment and conceptual engineering. More rigorous analysis of quantified benefits and impacts would occur during the environmental review phase.
Improvements Coming in the Next Two Years

While the 19th/M-line project is a long-term effort, SFMTA and partner agencies are moving forward with many near-term improvements that will bring incremental improvements to transportation conditions.

- **WEST PORTAL AVE. & QUINTARA ST. WATER MAIN, SEWER & PAVING PROJECT (In Progress)**
  - Fall 2015 - Summer 2016 | West Portal Ave. from Ulloa St. to 15th Ave.
  - This multi-agency project includes water and sewer main replacements, street repaving, and pedestrian safety elements, such as bulbouts and curb ramps.

- **WEST PORTAL AVE. TRANSIT & PLACEMAKING PROJECT**
  - 2016 | West Portal Ave. from Ulloa St. to St. Francis Circle
  - This project is intended to improve Muni Metro performance along West Portal Avenue and improve the public realm in the short term. Public meetings to share improvement options and seek input will be held prior to project implementation.

- **19th AVE. / JUNIPERO SERRA BLVD. IMPROVEMENTS**
  - Spring 2016 - Summer 2016 | 19th Ave. at Junipero Serra Blvd.
  - This project will bring much-needed safety, transit, and accessibility improvements to the intersection by modifying the north crosswalk to include a pedestrian refuge area adjacent to the light rail tracks. In order to minimize transit delays caused by vehicle blockages and intrusion, transit signal priority will be installed and the entrance to the trackway will be treated with red paint and speed bumps.

- **TWIN PEAKS TUNNEL TRACKWAY IMPROVEMENTS**
  - Summer 2016 - Fall 2017 | West Portal Station to Castro Station
  - Aging light rail tracks will be replaced along the entirety of the Twin Peaks Tunnel. To avoid future impacts to transit and the surrounding neighborhoods, additional work to the tunnel’s infrastructure will take place at the same time as the track replacement. These projects include seismic upgrades, repairs to concrete reinforcements, and cleaning and repairing the tunnel drainage system.

- **M OCEAN VIEW TRACK REPLACEMENT PROJECT**
  - Fall 2016 - Summer 2017 | 19th Ave. from Rossmoor Dr. to Winston Dr.
  - Aging light rail tracks will be replaced from the north side of the Winston Drive platform through the Rossmoor Drive Intersection. The Rossmoor Drive approach will be signalized with priority for transit vehicles, helping minimize blockages and conflicts between M Ocean View trains crossing 19th Avenue and vehicles using the corridor.

- **28 19th AVE. RAPID PROJECT**
  - 2016 - 2018 | 19th Ave. from Junipero Serra Blvd. to Lincoln Way
  - 19th Avenue will receive pedestrian and transit improvements at every intersection between Lincoln Way and Junipero Serra Blvd., helping make the corridor—which saw about 400 collisions during a recent five-year period—safer for all users. The project will be coordinated with water and sewer upgrades and Caltrans repaving.