

TWIN PEAKS TUNNEL OVERVIEW

PROFILE OF TWIN PEAKS TUNNEL

- Tunnel is 11,920 feet (2.27 miles) with a diameter of 25 feet.
- Dedicated in July 1917 and opened for service on February 3, 1918
- Inbound and outbound, two tracks providing service from West Portal to Castro for the K, M and L lines.
- Crossovers and switches at West Portal and near Castro Station.
- Approximately 247,000 trips per year operate through the tunnel - Every three minutes during peak period.
- Current average trip time is 18 minutes from West Portal to Embarcadero.
- Current speed is 35 MPH from West Portal to Eureka curves and 15 MPH from Eureka curves to Castro Station.

PHYSICAL CHARACTERISTICS OF THE TUNNEL

- Tunnel infrastructure built for significantly lighter rail cars (PCC 40,000 lbs. – Boeing 63,000 lbs. and Breda 78,000 lbs.)
- Heavier vehicle puts more stress on rail and it wears out faster.
- Tunnel location makes it susceptible to water intrusion
- Rail designed for lighter cars (PCC)
- Eureka curve wears faster than straight sections of tunnel track .
- Tunnel not flat – 3% grade impacts rail wear differently on inbound and outbound track.



WHAT IS PROPER OPERATING SPEED IN THE TWIN PEAKS TUNNEL?

- Current speed is 35 MPH except in Eureka curve to Castro Station
- Rail Tamping Project approximately three years ago replaced some track and transposed over 6,000 track feet of rail.
- Factors used in assessing risk and determining operating speed:
 - ☐ Physical conditions of rail, ties, ballast, special work (switches and frogs)
 - ☐ Track geometry and alignment profile (curve/grade/ elevation)
 - ☐ Rail car profile (weight of car, car specification, wear, rail interface)
 - ☐ Ride quality
 - ☐ Travel time benefits



FACTORS TO CONSIDER IN EVALUATING SPEED

- **Why don't you raise the speed to what it was before?**

Numerous key variables changed since tunnel opened.

- ☐ Wear and condition of sub-structure and track cumulative effect of approximately 247,000 trips per year.
- ☐ Ride quality checked at variety of speeds up to 50 mph and found much sway and instability.
- ☐ Minimal travel time benefits. Approximately one minute when speed raised in by 15 MPH.

RECOMMENDATIONS

- Leave speed at current level – no operational benefits.
- Replacement of rail and rail transportation at Castro and Eureka curves.
- Advance Track Replacement Project for Twin Peaks Tunnel.
- Accelerate other actions such as surface stop consolidation and enhanced traffic measures to reduce travel time on the K, L, and M lines.