MAX Red Line Improvement Project

Type 1 LRV Replacement Program

CAT - November 15, 2017
Red Line: two goals

• Improve system-wide reliability; reduce delays

• Add service in Beaverton and Hillsboro; reduce crowding
MAX Red Line Improvement Project

Improves on-time performance on all five MAX lines and extends MAX Red Line to ten stations in Beaverton and Hillsboro.

As reflected in the Westside Service Enhancement Plan, riders west of Beaverton Transit Center have been requesting Red Line service for many years. Improving track and switches, and adding signals and an operator break facility at Fair Complex/Hillsboro Airport MAX Station will allow Red Line trains to serve this station and the nine others to the east. This will improve MAX frequency at these stations and reduce overcrowding on the Blue Line.

MAX Red Line has two single-track sections, near Gateway/NE 99th Ave and Portland International Airport MAX stations, which result in inbound and outbound trains having to wait for each other. If any train is off schedule, these wait times can impact the entire MAX system. Adding a second set of tracks in these areas will reduce delays for all riders.

New Red Line Stations:
- Fair Complex/Hillsboro Airport
- Hawthorn Farm
- Orenco
- Quatama
- Willow Creek/SW 185th Transit Center
- Elmonica/SW 170th
- Merlo/SW 158th
- Beaverton Creek
- Millikan Way
- Beaverton Central

To accommodate the increased frequency, TriMet will purchase up to eight new light rail vehicles and expand the Ruby Junction maintenance facility in Gresham.

Timeline

<table>
<thead>
<tr>
<th>Design</th>
<th>Construction*</th>
<th>Opening*</th>
</tr>
</thead>
</table>

*Dependent on future budgets and federal funding
Improve system-wide reliability; reduce delays

- Single-track: Gateway, PDX
- Trains wait for each other; worst delays in the system; cascades to other lines
- Only 60-70% of p.m. peaks are trips on time
Eliminate single-track at Portland Airport and Gateway

Add second track
Airport: existing single-track
Gateway: existing single-track

- 498 trains per day in all directions
- Two options to add second Red Line track
Gateway Option: Bridge + 99th Ave

- Slower travel time for westbound Red Line
- Shorter walk for westbound Red Line transfer
- Trains and crossings on 99th Ave, Pacific St
- On-street parking, driveway impacts
- More construction impacts
Gateway Option: Bridge + New Platform

- Faster travel time for westbound Red Line
- Longer walk for westbound Red Line transfer
- Less frequency on existing westbound platform
- Less conflict with people walking, biking, driving
- More private property impact (parking)
Add service in Beaverton and Hillsboro; reduce crowding

- Priority from Westside SEP
- Crowded Blue Line trains
Extend Red Line

Switches, signals and operator break facility

Red Line service at 10 additional stations
Additional vehicles to serve longer line

- Eight LRVs
- Procurement packaged with Type 1 Replacement program
- New storage track at Ruby Junction
Red Line Timeline

Spring 2018: Confirm Gateway option
2018-2019: Design
2020-2021: Construction
2022: Opening
Type 1 Replacement

- 26 LRVs (18% of today’s fleet) purchased for original Blue Line
- 1986 accessibility standards
- Near end of life despite maintenance, overhauls
### Vehicle Procurement Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Solicitation*</td>
</tr>
<tr>
<td>2019-2021</td>
<td>Design, manufacture</td>
</tr>
<tr>
<td>2021-2022</td>
<td>Commissioning, training</td>
</tr>
<tr>
<td>2022-2023</td>
<td>New vehicles in service</td>
</tr>
</tbody>
</table>

*CAT input for solicitation in 2017*
New LRV specs: base on Type 5
Other considerations?