Why we are here

• Discuss service we can provide with available fleet as we complete the light rail system to Lynnwood, Redmond and Federal Way

• Discuss forecast crowding levels

• Briefing only, no action required
June briefing recap

• Light rail fleet is capped at 214 LRVs until early 2030s when more fleet and base capacity become available
• There are not enough LRVs to support originally planned service levels as the ST2 extensions are completed
• We committed to come back with impacts and options for the Board to consider
• We committed to use the latest ridership estimates that account for post-pandemic changes in travel behavior
Updated ridership forecasts

• Ridership estimates updated in late 2022, as a range
  • High estimate: trends towards pre-pandemic demand and patterns
  • Low estimate: assumes of more working from home and recent changes in trip patterns continue
• Current Link ridership is trending toward high estimate
• There is day to day variability within the range
Key analysis questions

• What service levels can be operated as ST2 extensions open?

• What will passenger loading/crowding conditions look like?
  • PM peak hour, when highest demand and service levels occur

• If there are projected overloads, are there mitigation options that could provide more capacity and alleviate crowding?
How we think about crowding

- Link is designed as high capacity transit to efficiently carry large numbers of riders
- Service levels are designed & evaluated based on riders per LRV

One LRV carries up to **200 riders** with about **74 seats** and **~120 spaces for standing**

Exact total varies based on how close riders stand, luggage, bikes, etc.

4 car train can carry about **800 riders**.

Total capacity determined by number of LRVs per train.
How we think about crowding

At a car-level

● = one rider

Very crowded, may not be room to board.

74 seats full + more than 120 riders standing

Challenges getting on and off.

74 seats full + 74 - 120 riders standing

People standing, but you can still get on.

74 seats full + up to 74 riders standing

Everyone has a seat.

Less than 74 seats full, few people standing

Board adopted crowding standard

Illustrative only, not to scale
2024

1 Line Angle Lake to Lynnwood
2 Line Downtown Redmond to South Bellevue
Peak service with available fleet

1. **Lynnwood to Angle Lake**
   - **Planned**: 8 min, 4 cars
   - **Now possible**: 10 min, 3-4 cars

2. **Redmond Technology to Lynnwood**
   - **Planned**: 8 min, 4 cars

3. **Redmond Technology to South Bellevue**
   - **Planned**: 10 min, 2 cars

**Under construction**

**2024**
Very crowded, may not be room to board

Challenges getting on and off

People standing but you can still get on

Everyone has a seat

Significant crowding and risk of riders left at platform Westlake to 145th

* average weekday PM peak hour, events and disruptions will increase crowding
Southbound 1 Line crowding*

Very crowded, may not be room to board

Challenges getting on and off

People standing but you can still get on

Everyone has a seat

Train direction

Lynnwood Downtown Seattle Angle Lake

High Estimate

Low Estimate

Trains every 10 mins, 4 car trains

74 seats & 120 standing

74 seats & 74 standing

74 Seats

* average weekday PM peak hour, events and disruptions will increase crowding
2024

**Strategy: Improve fleet availability**

- Series 2 (Siemens) fleet availability below 85% standard
- Working to fix warranty and preventative maintenance issues
- Target 80% everyday availability by Q1 2024, 85% by Q3 2024, ahead of Lynnwood Link opening

*OOS = Out of Service, WA = Warranty repair, CM = Corrective Maintenance, PM = Preventive Maintenance.*
2024

**Strategy: Augment Lynnwood Link with ST Express**

- Temporarily postpone Lynnwood Link ST Express restructure
- Continue some service to downtown Seattle to provide additional capacity
- Range of options of how far north to operate parallel bus service
- Shorter route = more capacity, fewer direct destinations (Options 1-2)
- Longer route = more destination directly served, lower capacity (Options 3-4)
- Further evaluation needed
2026

1 Line Lynnwood to Federal Way
2 Line Downtown Redmond to Lynnwood

ST2 light rail extensions complete
2026 Peak service with available fleet

1 & 2 Combined service Lynnwood to IDS

<table>
<thead>
<tr>
<th></th>
<th>Planned</th>
<th>4 min</th>
<th>4 cars</th>
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<td></td>
<td><strong>Now possible</strong></td>
<td>5 min</td>
<td>3-4 cars</td>
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1 Lynnwood to Federal Way

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<th>8 min</th>
<th>4 cars</th>
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<tbody>
<tr>
<td></td>
<td><strong>Now possible</strong></td>
<td>10 min</td>
<td>4 cars</td>
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2 Lynnwood to Downtown Redmond

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<th>Planned</th>
<th>8 min</th>
<th>4 cars</th>
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<tr>
<td></td>
<td><strong>Now possible</strong></td>
<td>10 min</td>
<td>3 cars</td>
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Extending 1 Line to Federal Way requires reducing 2 Line to 3 car trains
Northbound 1 Line crowding*

- **Very crowded, may not be room to board**
  - Challenges getting on and off
  - People standing but you can still get on
  - Everyone has a seat

High Estimate
- Combined 1&2 Line
  - Lynnwood: 74 seats & 74 standing
  - Downtown Seattle: 148
  - Angle Lake: 194
  - Federal Way: 74 seats & 120 standing

Low Estimate
- **Combined 1&2 Line**

*average weekday PM peak hour, events and disruptions will increase crowding
Southbound 1 Line crowding*

- **Very crowded, may not be room to board**
- **Challenges getting on and off**
- **People standing but you can still get on**
- **Everyone has a seat**

**Combined 1&2 Line**
- **Train direction**
  - Lynnwood to IDS combined every 5 mins, 3 & 4 car trains

**High Estimate**
- 194 passengers
  - 74 seats & 120 standing

**Low Estimate**
- 148 passengers
  - 74 seats & 74 standing

- **Train direction**
  - Trains every 10 mins, 4 car trains
  - Trains every 10 mins, 3 car trains

*average weekday PM peak hour, events and disruptions will increase crowding
Eastbound 2 Line crowding*

1. Trains every 10 mins, 4 car trains
2. Trains every 10 mins, 3 car trains

Lynnwood to IDS combined every 5 mins, 3 & 4 car trains

- Very crowded, may not be room to board
- Challenges getting on and off
- People standing but you can still get on
- Everyone has a seat

High Estimate:
- Lynnwood: 194
- Downtown Seattle: 194
- Mercer Is.: 194
- Bellevue: 194
- Redmond: 194

Low Estimate:
- Lynnwood: 148
- Downtown Seattle: 148
- Mercer Is.: 148
- Bellevue: 148
- Redmond: 148

Combined 1&2 Line

* average weekday PM peak hour, events and disruptions will increase crowding
Next steps

- October: ST2 options
- October: Adopt a 2024 Rail Service Plan
- November: ST3 light rail service and passenger experience
- January or February: ST3 options & program affordability
- Early 2024: Propose 2024 Bus Service Plan
- Later in 2024: Seek Board direction on long-term service and capital priorities
Thank you.