

Improving ST2 light rail passenger experience

*Rider Experience and Operations Committee
10/05/23*

Why we are here

What we've discussed so far

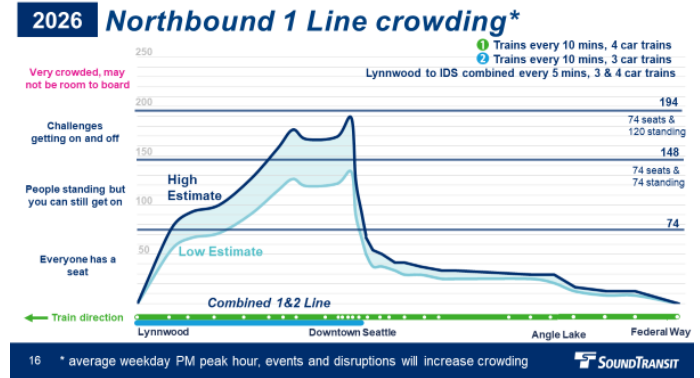
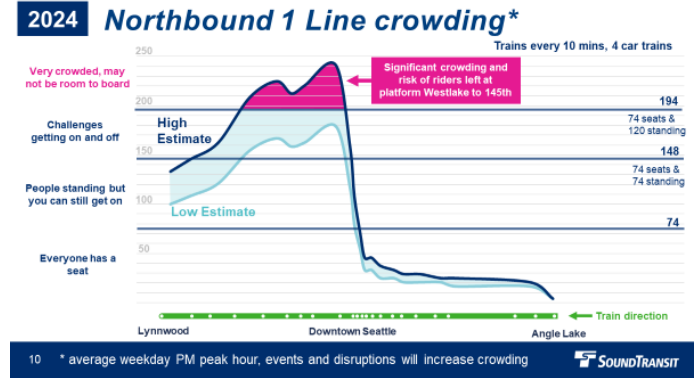
- April: Vehicle storage shortage & Lynnwood service
- June: Long-term light rail fleet & storage challenges
- September: ST2 light rail service & passenger experience

Today's agenda

- Present four strategies to address crowding as we complete the light rail system to Lynnwood, Redmond and Federal Way
- Hear Board feedback about which to pursue
- Briefing only, no action required

September briefing recap

- Light rail service levels will be constrained by limited fleet until the early 2030s
- Significant peak period crowding is forecast as we extend the 1 Line to Lynnwood in 2024
 - *To relieve crowding, improve fleet availability and continue some ST Express service temporarily*
- There will be further relief when the 2 Line is extended to Lynnwood in 2025
- Some renewed crowding is forecast as we extend to Federal Way in 2026 and through the early 2030s



2026 – early 2030s

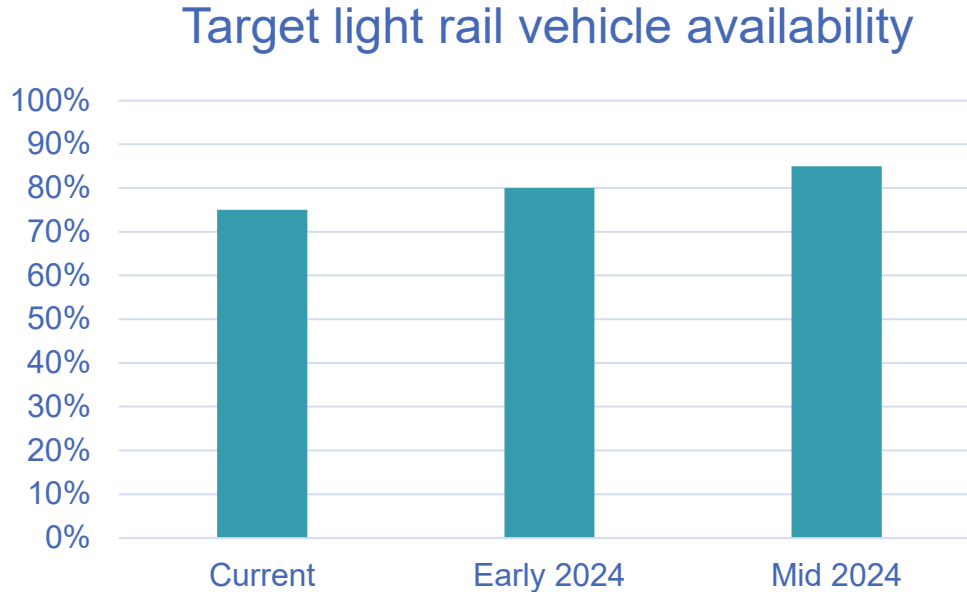
1 Line Lynnwood to Federal Way

2 Line Downtown Redmond to Lynnwood

Strategies to address crowding

Strategy 1: Improve fleet availability

Continue to put more Series 2 LRVs into service



Takeaways

- More 4-car trains = more capacity & less crowding
- Improves operational flexibility

Strategy 2: Augment Link with STX

- As system expands in ST3, Link & BRT completely or partially replace ST Express routes
- To address crowding and capacity challenges, temporarily postpone some ST Express restructures
- This could include continuing some service to downtown Seattle from I-5 North and from I-5 South until enough fleet is available to provide sufficient capacity
- Requires further analysis

Strategy 3: Northgate peak turn-back service

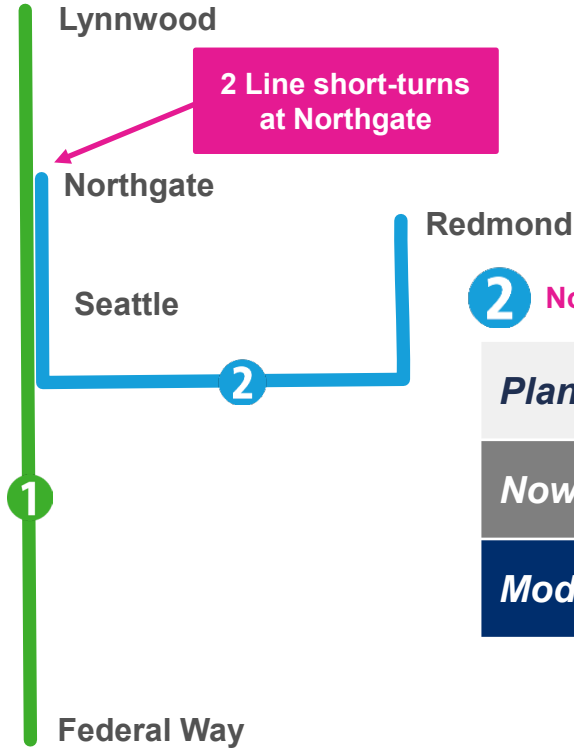
1 & 2

Combined service
Northgate to IDS

Planned	4 min	4 cars
Now possible	5 min	3-4 cars
Modified	5 min	4 cars

1 Lynnwood to Federal Way

Planned	8 min	4 cars
Now possible	10 min	4 cars
Modified	10 min	4 cars



2 Northgate to Downtown Redmond

Planned	8 min	4 cars
Now possible	10 min	3 cars
Modified	10 min	4 cars

Northgate turnback takeaways

Pros	Cons
Increases capacity by ~14% between Northgate and Chinatown International District by consistently providing 4-car trains on both the 1 & 2 Lines	Reduces peak service between Lynnwood & Northgate from 4 minutes to 8 minutes
Likely to address majority of average crowding above our standard, except for a short stretch in downtown Seattle	Train loads may be uneven as passengers pick their train, and some station platforms may get overcrowded
	Increases operational complexity and risk of system delays
	Requires additional operators to turn trains quickly
	Requires additional security officers to ensure passengers have disembarked short turning trains
	Eliminates use of Northgate pocket track for trains that need to come out of service

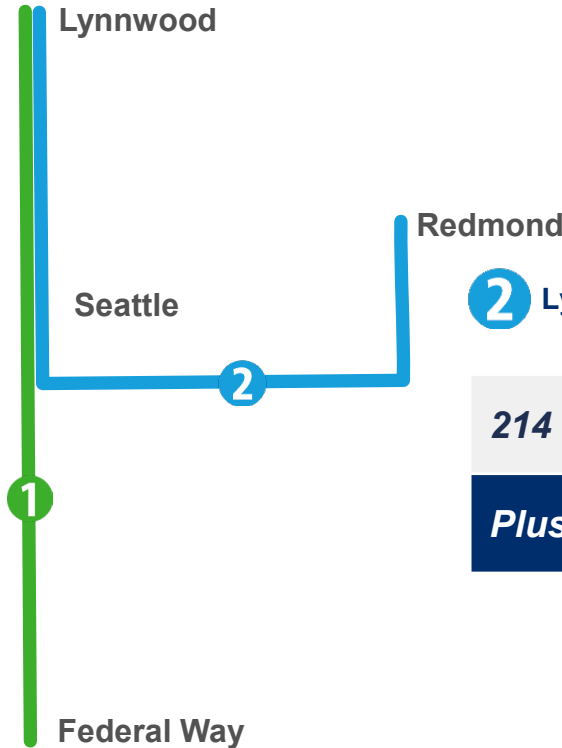
Strategy 4: Purchase 10 more Series 2 LRVs

1 & 2 Combined service
Lynnwood to IDS

214 LRV fleet	4-5 min	3-4 cars
Plus 10 LRV	4-5 min	3-4 cars

1 Lynnwood to Federal Way

214 LRV fleet	8-10 min	4 cars
Plus 10 LRV	8-10 min	4 cars



2 Lynnwood to Downtown Redmond

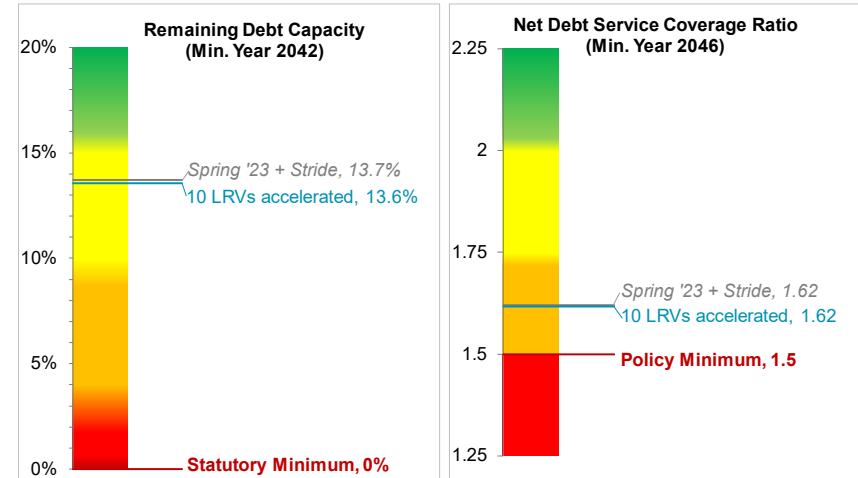
214 LRV fleet	8-10 min	3 cars
Plus 10 LRV	8-10 min	3-4 cars

More 4 car trains
on 2 Line

Added LRVs takeaways

Impact of 10 more Series 2 LRVs

- Accelerates 10 LRVs from Series 3 to Series 2
- Increases fleet to 224 until Series 3 LRVs are available in the early 2030s
- Supports more 4-car trains
- Storage options being assessed
- Assumes lower cost / LRV than Series 3
- Results in a small decrease in financial capacity and coverage due to earlier spending
- Grant funding possible, but not assumed



PRELIMINARY

Staff recommendations

DO

- Continue to improve fleet availability
- Consider buying 10 more Series 2 LRVs
- Analyze augmenting Link with ST Express capacity in the South and North corridors

DO NOT

- Modify service to turn back peak period 2-Line trains at Northgate

Board feedback?

Schedule & next steps

2023

- April: vehicle storage shortage & Lynnwood service
 - June: long-term light rail fleet & storage challenges
 - September: ST2 light rail service & passenger experience
 - October: improving ST2 light rail passenger experience
 - November: ST3 light rail service and passenger experience
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2024

- February: improving ST3 passenger experience + program affordability considerations
- March: seek Board direction about service and capital priorities
- Following Board direction: update long-range service plan, agency financial plan, rail fleet management plan, annual program review

Thank you.



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