

Link Light Rail

Series 3 LRV Update

Rider Experience and Operations Committee

9/4/2025



Why we are Here

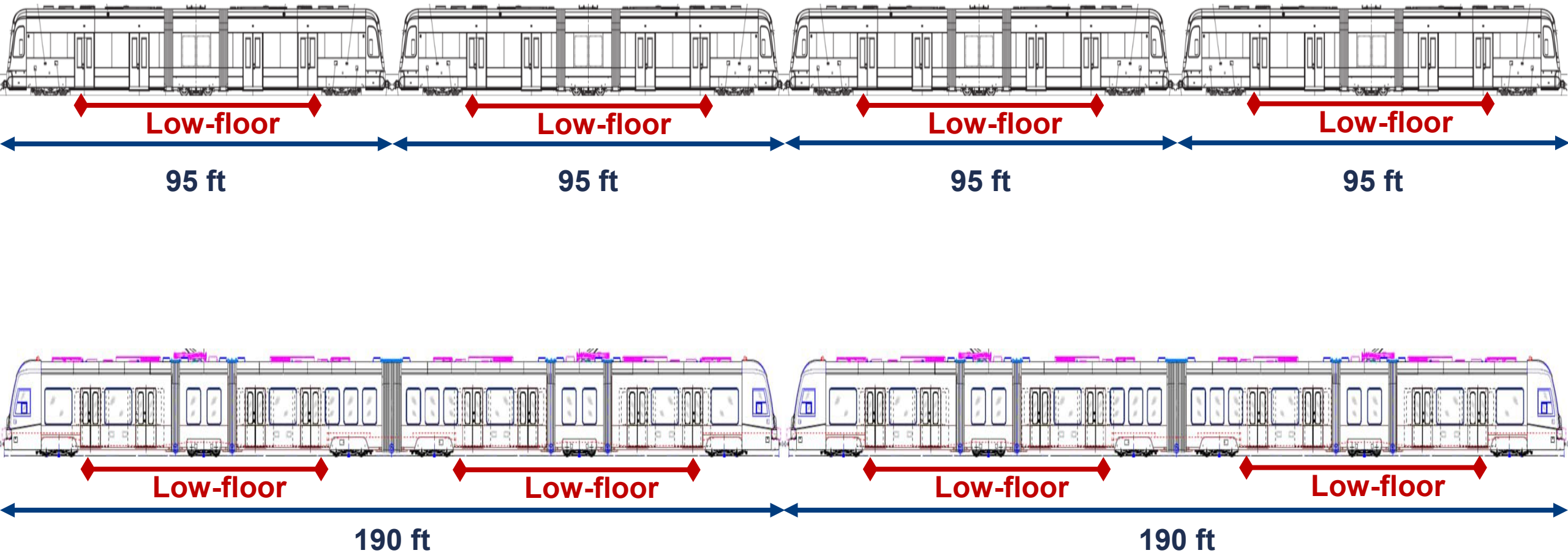
- Brief the board on Series 3 LRV Procurement status.
- Key new features in LRV design requirements and procurement strategy.
- Draft procurement schedule.
- Cost Risks for Series 3 LRVs.
- Coordination with Enterprise Initiative.

Update only, no Board action requested

Series 3 LRV Design: What's New?

- Longer individual LRVs: 190ft Long LRVs = Double the length of Series 2 LRVs
 - Improve passenger capacity by 5-12% (Most likely ~8%)
 - Reduce LRV capital cost (~10%) and maintenance cost
 - Enhance passenger experience
- Design for maintainability, use of advanced sensors, and data analytics for predictive maintenance
- Use of virtual reality tools during design for stakeholder inputs/feedback
- Custom-build newer OMFs (OMFS & OMFN) for Series 3 LRVs.

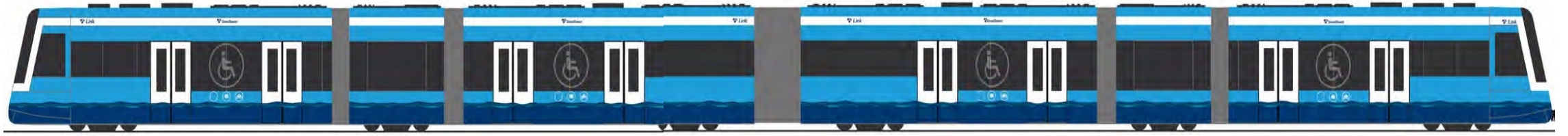
Series 3 LRV Length (Longer LRVs)



Design Guidance (Draft) Example



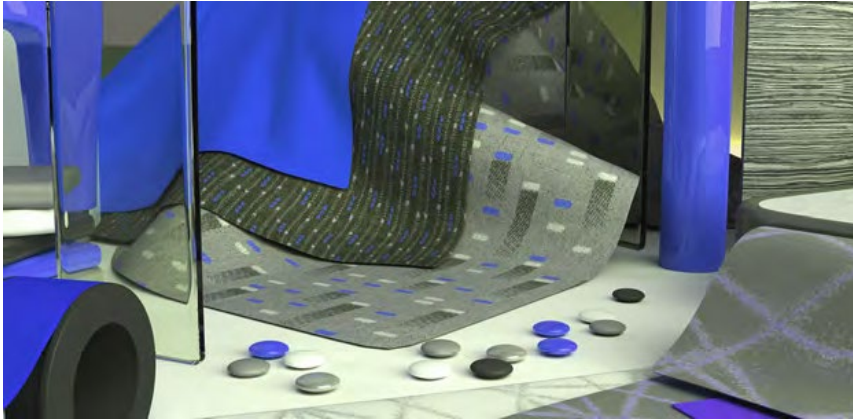
Series 3 LRV Rendering (Draft Concepts)



190 ft



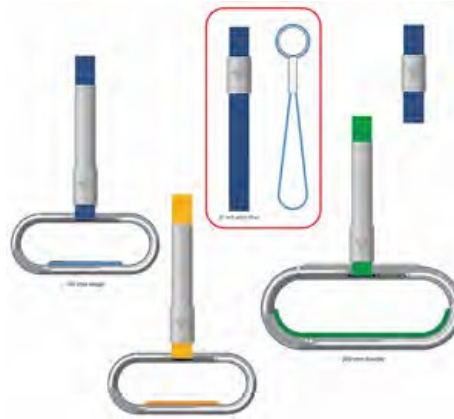
Passenger & User Experience Expectations



Color Material & Finishes



Seat Mock-up



Handholds & Stanchions



1:1 Interior Mock-up

- Car builder needs to design with user experience in mind.
- Needs to develop an integrated approach to the human factors development in all aspects of the vehicle design.

Series 3 LRV Rendering (Draft Concepts)



Series 3 LRV Rendering (Draft Concepts)



Design Guidance (Draft) Example



Open & bright interior



Safe & easy crew access



Integrated PIS & CCTV

What's New in Procurement Strategy?

- **Partnership and Risk Sharing:** Creating an environment of partnership and innovation by distinguishing ESSENTIAL and DESIRABLE requirements, adding incentives in milestones and sharing risk through price indices.
- **Best Value Selection:** Series 3 LRV procurement strategy encourages the car builder to propose & execute a good quality product that aligns with ST's vision.
- **Prototype LRVs with additional time for design:** Additional time in design and testing with prototype LRVs intended to optimize LRV design for reliability, maintainability, and total cost of ownership.
- **Future-proofing System Capacity and Obsolescence:** Series 3 LRV to be future proofed for CBTC (advanced train control technology).
- **Total Cost of Ownership:** Minimum contract targets for LRV reliability & daily availability and long-term services & spares supply arrangement is considered.

Early Industry Engagement (2023-2025)

- **Early Design Concepts were solicited and evaluated from qualified car builders in 2023 to understand the risks and viability of 190-ft long LRV.**
- Several RFIs were issued to cover topics such as general market conditions & price indices, and long-term technical support and spare part supply agreement contract.
- Two iterations of Independent peer reviews and two iterations of value workshop were conducted on draft RFP.
- One round of industry review was completed in early 2025. Another one planned in early Q4 2025.

Series 3 LRV Draft Procurement Schedule

- Draft RFP Industry Review#1 – Dec 2024
- Draft RFP Industry Review#2 – Q4 2025
- **RFP Publication – Q4 2025 (Goal)**
- **Car builder Tech Proposal – Q2 2026**
- **Car builders Detailed Cost Proposal – Q4 2026**
- Car builder NTP – Q2 2027
- Prototype car dynamic testing – Q4 2030 – Q3 2031
- Qualification LRV onsite arrival to start commissioning tests – Q1 2032
(Qualification LRV = 1st LRV for Passenger Service)
- LRV potentially supporting CBTC greenfield tests ~ 2032
- **Initial fleet entering revenue service ~ Q3 2033**
- **Delivery rate assumed by ST – ~18 LRVs/year**

Relevant Past LRV Board Action

LRV Series	Status	Original Plan	Accelerated Approach
1 - Kinkisharyo	In service	62	62
2 - Siemens	In service / In delivery thru 2025	152	162
Subtotal (fleet available until Series 3 cars are available)		214	224
3 - TBD	To be procured 2030+	246	236
Total (planned fleet to support ST3 buildout)		460	460

- In March 2024, the Board approved 78M to modify the contract with Siemens Industries Inc to purchase 10 additional Series 2 LRVs and additional spare parts.
- The 10 LRV purchase DID NOT increase the overall size of already funded long-term fleet but just ACCELERATED purchase of 10 LRVs from Series 3 to Series 2 project. It was intended to make them available to carry passengers 4-5 years ahead of Series 3 LRVs.
- After the 10 additional LRV purchase, the fleet size in the financial plan is 236 LRVs (or **118 longer LRVs**)

Series 3 LRV Cost Drivers/Risks

- We are anticipating that we'd need 118-140 longer Series 3 LRVs.
- External Market Factors
 - COVID-related cost increases ~**30%**
 - 2025 Tariffs ~20%
- Optional Scaling up to 140 LRVs (from 118 LRVs) based on Service Design decisions (when Enterprise Initiative is completed)
 - Potential additional vehicles 0-20%

Total Potential Cost Increase: 30-70%

Coordination with Enterprise Initiative

- We are anticipating that we'd need 118-140 longer Series 3 LRVs.
- RFP is planning to include a **base order of 70 LRVs Plus Options for up to 80 LRVs** (Total = 150 LRVs)
 - *Good economy of volume for the base order would stimulate competitive pricing.*
 - *Base order would closely match the estimated OMFS capacity (72 longer LRVs).*
 - *Price range can be locked for maximum number of option LRVs to cover various service design choices and decisions in the future post-Enterprise Initiative work.*

Thank you.



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