



## Memorandum

### AGENDA ITEM 3

**DATE:** June 22, 2021

**TO:** Transportation Authority Board: Commissioners Mandelman (Chair), Chan, Haney, Mar, Melgar, Peskin, Preston, Ronen, Safai, Stefani, and Walton

**FROM:** Tilly Chang – Executive Director

**SUBJECT:** 06/22/21 Board Meeting: Executive Director's Report – **INFORMATION**

### REGIONAL, STATE AND FEDERAL ISSUES

#### **Federal Transportation Bill - Senate Committee on Commerce, Science, and Technology**

**Releases Spending Proposal:** The House and Senate continue to work on the reauthorization of the federal transportation bill, which expires on September 30, 2021. On June 16, the Senate Committee on Commerce, Science, and Technology published its section of the transportation reauthorization bill. This is the second section to be approved by the Senate and deals with projects of national significance, interstate rail, and freight programs. Similar to the Senate Committee on Environment and Public Works' streets and highways section, it also was approved with bipartisan support. The bill includes \$78 billion over five years, including \$1.5 billion annually for projects of national significance (formerly known as TIGER, BUILD, and RAISE programs), \$1.2 billion a year for the INFRA freight program, and a new \$1 billion Safe Streets and Roads for All grant program to develop and carry out Vision Zero initiatives. The Senate Banking and Finance Committees have yet to release their portions of the bill, which deal with public transit funding, as well as how to pay for the overall bill. We continue to work with regional, state, and federal partners, including the Metropolitan Transportation Commission (MTC) and ITS America, to review the bills and identify where we can advocate for improvements.

#### **State Budget - Legislature Approves Additional Transportation Programs in the FY 2021/22**

**Annual Budget:** On June 14, the state Legislature approved its FY 2021/22 budget and submitted it to the Governor for approval. There is a \$25.5 billion budget surplus, which has allowed inclusion of one-time infrastructure spending packages for transportation, climate, and many other state priorities such as education, affordable housing, and homelessness. Among other things, the budget includes \$5.4 billion for a transportation infrastructure plan, with \$2 billion for streets, roads and highways; \$1 billion for critical projects; \$1 billion for transit and rail projects; \$500 million for active transportation; \$500 million for safety improvements; and \$400 million for a state and local transportation adaptation program. It also includes a climate investment package with \$3.7 billion over three years for resiliency investments and \$3.9 billion over three years for zero-emission vehicles. Governor Newsom's office will continue to negotiate with the Legislature over budget details. With respect to transportation, we anticipate the largest issue would be addressing the Governor's request for \$4.2 billion for high speed rail.



**California Public Utilities Commission (Commission) TNC Access for All (AFA) Program - Transportation Authority Continues to Advocate for Policy and Guideline Revisions:** The Commission created the TNC Access for All (AFA) Program to implement Senate Bill 1376, which directed the Commission to establish a program relating to accessibility for persons with disabilities, including wheelchair users who need a wheelchair-accessible vehicle (WAV). The Commission authorized "Local Access Fund Administrators" (LAFAs) to develop annual local WAV programs, using Access Fund moneys collected by the Commission. LAFAs are required to procure and distribute program funds for wheelchair services from wheelchair access providers, and to report on local implementation progress. In consultation with Chair Mandelman, we elected not to pursue the role of Local Access Fund Administrator for San Francisco County this year because all San Francisco WAV taxi providers were precluded by the Commission from receiving AFA funds because they are not regulated by the Commission. In addition, the structure of the proposed program creates significant financial uncertainty and risks for LAFAs, while imposing burdensome administrative and reporting requirements. Finally, there was insufficient time to review the LAFA program guidelines, and Commission staff were not responsive to our and other potential LAFAs' questions by the application due date of 6/1. We continue to be interested in serving as LAFA for San Francisco County in future years, contingent upon revisions to the Commission's policies and guidelines for program administration.

**Draft Plan Bay Area 2050 Now Available for Public Review - Public Comment Period Extends Through July 20:** After a multi-year planning effort, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments have published the Draft Plan Bay Area 2050, including its Implementation Plan and the draft Environmental Impact Report. Plan Bay Area is the regional transportation plan and sustainable communities strategy for the nine Bay Area County region. Plan documents and information on public comment opportunities are available at [planbayarea.org](http://planbayarea.org), including two upcoming opportunities: a virtual public hearing being held tonight at 5:30 PM covering the draft Plan and Draft EIR and a virtual public workshop to be held on June 28 at 5 PM with a West Bay - San Francisco and Marin - focus. We are interested in tracking San Francisco public input to the Plan as our next phase of ConnectSF will be the update of our countywide transportation plan, known as the San Francisco Transportation Plan or SFTP, which will be consistent with and further detail Plan Bay Area 2050 within San Francisco.

**The California Transportation Foundation has established a Santa Clara County Valley Transportation Authority (VTA) Memorial Fund:** On May 26, 2021, nine VTA employees were tragically killed in a horrific attack, leaving family, friends, and the transportation community devastated. The California Transportation Foundation or CTF will be matching donations up to \$7,500 for each employee and are working closely with the VTA to ensure their employees and community are made aware of the fund. CTF also plans to issue \$2,500 Fallen Worker Grants to the employees' families to assist with funeral costs. To make a donation go to <https://transportationfoundation.org/workers-assistance-and-memorial-fund/>.

## **LOCAL ISSUES**

**Essential Worker Ride Home - SF Environment Rolls Out Debit Card System as City Re-Opens:** The San Francisco Department of the Environment, or SF Environment, started the Essential Worker Ride Home program last spring, with Prop K and Transportation Fund for Clean Air funding from the Transportation Authority, to provide taxi rides home for essential workers whose normal transit rides had been paused or eliminated due to the pandemic. The



program has been labor intensive to administer, so SF Environment has collaborated with the San Francisco Municipal Transportation Agency or SFMTA to introduce a debit card that will automate many administrative aspects of the program and will allow SF Environment to open up enrollment to at least 150 additional essential workers from the current 300. As the city re-opens, essential workers who are interested in joining the program are encouraged to apply via SF Environment's website <https://sfenvironment.org/essential-worker-ride-home>. New participants will be added to the current waitlist.

**SFMTA Award for Prop K funded Bayview Community Based Transportation Plan (Bayview CBTP):** Congratulations to the SFMTA's Bayview CBTP team on receiving the American Planning Association's 2021 National Planning Excellence Award on June 10. Since the plan's adoption, the SFMTA has worked to implement several recommended projects, including advancing Quick Build projects funded by the Transportation Authority, restoring the 15 Bayview Hunters Point Express, and providing Transit Assistants to help diffuse conflicts. The Transportation Authority Board approved approximately \$3 million in Prop K funds for the Caltrans Sustainable Transportation Planning Grant local match and capital investments identified in the CBTP, in addition to the Transit Assistants through the MTC's Lifeline Transportation Program. Special thank you to Commissioner Walton and previous Commissioner Cohen for their support through the planning process and MTC for providing \$600,000 to fund projects selected through D10 Participatory Budgeting.

## **PROJECT DELIVERY**

**Gough Corridor Signal Upgrade at 17 Locations Complete - Sales Tax and Vehicle Registration Fee Support Safety Improvements:** On April 7, 2021 SFMTA's Signal Shop finished installing a total of 80 accessible (audible) pedestrian signals at the final 10 of 17 intersections along Gough Street between Broadway and Page Street. This completes the scope of the traffic signal upgrade project, funded by \$3.3 million in Prop K transportation sales tax and Prop AA vehicle registration fee funds. In addition to the audible pedestrian signals, upgrades included new poles, controllers, pedestrian countdown signals, underground conduit and wiring, as well as mast arms and larger signal heads for better visibility.

**Balboa Park Station - Loading Zone Changes During Upper Yard Housing Construction Starting June 24:** BART is shifting the location of loading zones at Balboa Park station to make room for construction activities for the 131-unit Upper Yard affordable housing development. The new loading zone locations are on Ocean Avenue and San Jose Avenue, while shuttles will drop passengers off on Geneva Avenue. We are very excited that this new transit-oriented affordable housing project is underway and congratulate Commissioner Safai, the Mayor's Office of Housing, and community members on this milestone. The Transportation Authority's commitment of support for the project, including funding design of a new plaza at the station, helped the project team successfully pursue over \$33 million in State housing and infrastructure grants.

**Siemens Light Rail Vehicle (LRV4) - Update on Performance Issues:** We have worked with SFMTA staff and our TY Lin Project Management Oversight consultant to put together the attached status update on issues affecting the performance of the first tranche of 68 Siemens light rail vehicles (LRV4s) that SFMTA placed into service between 2017 and 2020 as Phase 1 of its LRV4 fleet procurement effort. As a reminder, these issues were identified by early 2019



in advance of Board consideration of SFMTA's request for additional Prop K funds for Phase 2. The principal issues of concern were:

1. LRV4 Availability
2. Mean Distance Between Failure (MDBF)
3. Wheel Flats
4. Door Safeguards
5. Couplers
6. Pantographs
7. Auxiliary Power Supply
8. Cameras and Monitors
9. Hydraulic Power Unit
10. Seating design

Of the ten issues, SFMTA considers five resolved, four partially resolved (on the way to being resolved), and one unresolved. The latter relates to LRV4 availability and cannot be assessed as resolved until service levels have recovered from the COVID-19 pandemic.

**Southgate Realignment Project Update - Construction Progressing; Reconstruction of Bike/Ped Path Connection to Begin:** The Transportation Authority administered I-80/Southgate Realignment construction project is approximately 50% complete and progressing satisfactorily on time and within budget. The project is scheduled for completion by the summer of 2022. Over the next three months, starting on July 6, 2021 thru Oct. 3 2021, we will reconstruct the bike/ped path connection from the Vista Point landing atop Yerba Buena Island to Macalla Road intersection to meet ADA standards. During this 3-month timeframe there will be restricted access beyond YBI Vista Point, and during the month of September we will need to temporarily close access to YBI Vista Point to complete the reconstruction in this area. Please check our website at [www.sfcta.org/projects/southgate-road-realignment](http://www.sfcta.org/projects/southgate-road-realignment) for more details as the work progresses.

## **MANAGEMENT AND ADMINISTRATION**

**COVID Impacts - April Sales Tax Receipts:** Sales tax revenues of \$6.6 million received for April 2021 are about 18% lower compared to pre-pandemic April revenues in Fiscal Year (FY) 18 and FY19. Although April revenues are 21% lower than previous month of March 2021, FY21 sales tax revenues received to date are in line with projected collections in our FY21 Budget Amendment. We continue to closely monitor revenue streams and are optimistic that sales tax revenues will rise with the increasing vaccination rates and reopening of the economy.

# Attachment 1

## Siemens Light Rail Vehicle Performance Issues

### Status Update May 2021

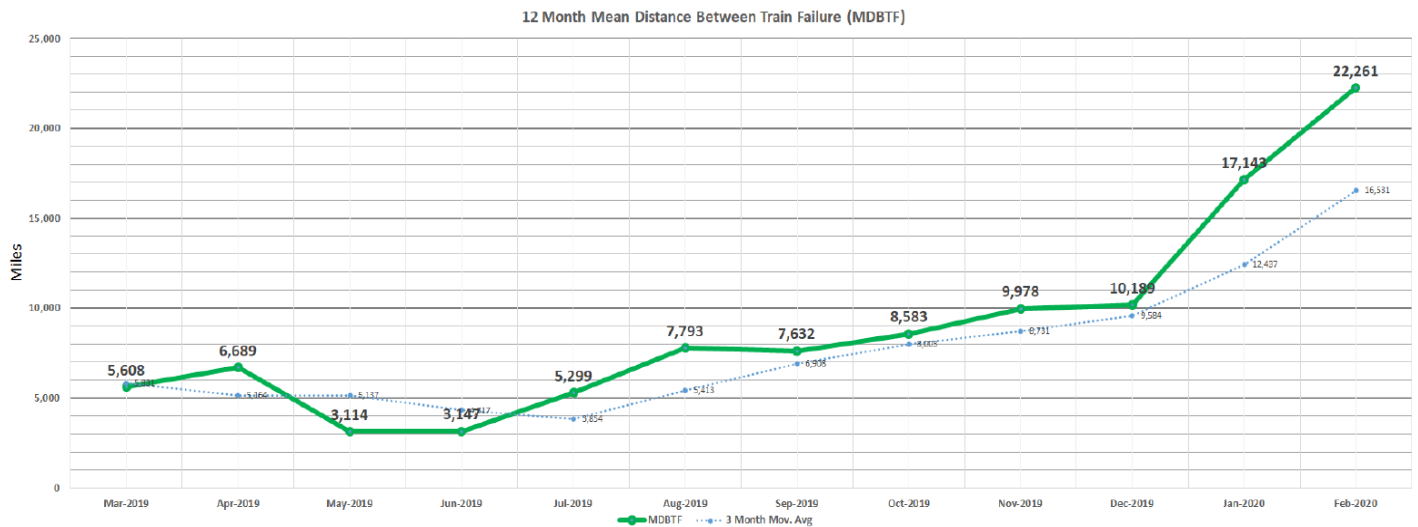
#### Issue descriptions and status

1. **LRV4 availability** refers to the portion of the new vehicles available for dispatch (on average, within a specified period) vs. the portion withdrawn from service for repairs or upgrades necessitated by a subsystem failure or required scheduled maintenance, including flattened wheels.

Status: **UNRESOLVED**. Because of the COVID-19 pandemic current availability data is not comparable to that from early 2019. However, the MDBF improvements prior to the pandemic (see below) indicate that once it can be assessed, LRV4 availability will likely have improved.

2. **Mean Distance Between Failures (MDBF)** is a performance measure used in SFMTA's original contract with Siemens, which specified a minimum average of 25,000 miles between vehicle failures for six consecutive months. Prior to the outbreak of COVID-19 the SFMTA was targeting achievement of this level of performance by mid-2020. LRV4 MDBF started at about 6,000 miles in December 2018, dropping under 4,000 in June 2019 after a series of component failures.

Status: **PARTIALLY RESOLVED**. By February 2020, after initiation of a series of warranty repair campaigns, the MDBF improved to just over 22,000 miles, exceeding Siemens' projection (see chart below).



As with vehicle availability, current MDBF data cannot be compared with pre-pandemic levels. SFMTA will resume MDBF reporting once daily service mileage is sufficient for meaningful analysis. SFMTA continues to retain funds from Siemens until the contractual requirement for MDBF is met.

3. **Wheel Flats** – The tires (mounted to the wheel perimeters) on the first tranche of Siemens LRV4s were developing flat spots when the wheels locked during use of the emergency braking system. Flat spots cause unacceptable wheel noise, necessitating removal of the vehicle from revenue service and impacting maintenance costs, vehicle availability and rider comfort. SFMTA maintenance staff must correct the shape of the tire by removing material from it on a “truing” machine. Tires that have been repeatedly flattened must be replaced. Vehicle availability and MDBF were substantially reduced as LRV4s awaited truing and replacement of tires. Wheel flats increased maintenance costs because of the shop time involved, cost of replacement tires, and wear on the truing machines.

**Attachment 1**  
**Siemens Light Rail Vehicle Performance Issues**  
**Status Update May 2021**

Status: **RESOLVED**. All 68 Phase 1 LRV4s have been retrofitted with additional track brakes that engage when the emergency braking system is activated. The new system greatly reduces the incidence of wheel-lock and wheel-flattening. Specifications for the 151 Phase 2 LRV4s, now in manufacture, have been revised to include the additional track brakes. SFMTA has approved a modification of the Siemens contract to increase the amount to cover the cost increment of the re-designed system.

4. **Door Safeguards** – The Siemens LRV4s were designed with one sensitive edge strip installed on the frame of each door as a safeguard. The door is intended to retract if it encounters an obstruction. However, there were multiple incidents in which the doors did not detect obstructions, posing serious safety hazards and impacting operational efficiency.

Status: **PARTIALLY RESOLVED**. In June 2019 Siemens completed an interim solution, installing (under warranty) two additional sensitive edges on each individual door. This solution performs as intended, but SFMTA has determined that it is not the 25-year solution needed to last through the expected useful lives of the vehicles. Siemens and SFMTA have developed a design for a permanent solution, which is currently being tested. If it meets safety standards and other design criteria Siemens will implement the new solution on both the Phase 1 and Phase 2 LRV4s at no additional cost to SFMTA.

5. **Couplers** – In April 2019 a key component of the coupler system, the shear pin, broke in service without a collision occurring. SFMTA temporarily moved to single-car trains while the incident was investigated. The failure was initially attributed to insufficient clearance between bump stops on the coupler and the vehicle undercarriage. Two-car operations resumed after Siemens removed the coupler “bump stops,” initiated their redesign, and replaced (under warranty) all shear pins in the fleet. In December 2019 shear pins again broke in service without a collision occurring. Siemens initiated a 90-day replacement cycle for the shear pins while a second investigation began. Test couplers were fitted with sensors for range of motion and metallurgical stress as a train was driven on all the light rail routes. The data collected through this study informed a re-design of the shear pins to accommodate the sharp changes in the vertical pitch in San Francisco’s hilly rights of way. The new design was validated with lab tests, including over a million cycles of fatigue testing. Re-designed shear pins instrumented with strain gauges were field tested first on a non-revenue train and then on six two-car trains.

Status: **RESOLVED**. Six sets of new shear pins have accumulated ever-increasing mileage and been verified through magnetic particle testing to have no crack formation. Long-term performance will continue to be monitored with an additional shear pin swap and magnetic particle tests conducted at 12,000 and 24,000 miles. Approval for the use of the new shear pin design in revenue service was granted at the March 5, 2021 LRV4 Safety Certification Committee. CPUC staff were in attendance and concurred with the decision. Siemens has installed the re-designed components under warranty on all Phase 1 LRV4s. Phase 2 LRV4s are being constructed with the re-designed couplers. Given the unique operating environment of San Francisco, the coupler system continues to be an area of focus and scrutiny for the SFMTA’s LRV4 team.

6. **Pantographs** – A pantograph is the arm located on top of each LRV4 that collects power from the catenary wires (overhead contact system (OCS)) and transmits the energy to the traction motors. A failure occurred on a train passing through a tunnel when the pantograph’s slide plate, which makes contact with the OCS, came partially unfastened. This caused an interruption in service and posed a risk of damage to the vehicle and the OCS as well as a substantial safety risk.

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Status: **RESOLVED**. SFMTA worked with Siemens to modify the design of the pantograph collector heads, to which the slide plate is mounted. Siemens retrofitted the Phase 1 LRV4s with the new design under warranty and is constructing the Phase 2 LRV4s with the new specification.

7. An **Auxiliary Power Supply (APS)** is housed in a compartment on the roof of each LRV4. A number of APS units failed during the rainy season because water captured in the compartment was not properly draining out. Each APS failure caused an LRV4 to be removed from service.

Status: **RESOLVED**. Siemens redesigned the APS mounts inside the compartments to allow clearance for sufficient drainage and implemented the changes under warranty on all Phase 1 LRV4s. The Phase 2 LRV4s are being manufactured with the new design.

8. **Cameras and Monitors** – In place of side-view mirrors, LRV4s are equipped with exterior cameras that transmit video to a monitor in the driver's compartment and to a video recorder. Problems with water leakage into the cameras (including leakage from the vehicle wash stations at the LRV storage facility) have been corrected by Siemens under warranty. A second set of issues concern user satisfaction. Feedback from SFMTA's expert operators who took part in the testing phase was positive, and the system was approved by the SFMTA Safety and Security Committee and the CPUC. However, after the Phase 1 LRV4s entered revenue service, some operators expressed dissatisfaction with the view afforded by the cameras, the size of the monitors, the image quality of the monitors, and compatibility of the monitors with the use of polarized sunglasses.

Status: **PARTIALLY RESOLVED**. SFMTA has identified different cameras and larger monitors and is currently testing them on three LRV4s. If SFMTA, after further coordination with operators, decides to go forward with the new equipment, the changes will be considered an upgrade rather than a warranty issue. Modifications to the cameras or monitors will also likely require review and approval by the SFMTA Safety Committee.

9. **Hydraulic Power Units (HPUs)** are part of the hydraulic brake system. HPUs are designed to lock when placed in "safe mode" when an LRV4 is parked. Failures occurred when the HPUs would not unlock when the vehicle was taken out of safe mode. This failure occurred at unacceptable rates, contributing to lower MDBF and vehicle availability.

Status: **RESOLVED**. Siemens reengineered three system components and retrofitted all Phase 1 LRV4s under warranty. The Phase 2 LRV4s are being manufactured with the new HPU specifications.

10. **Seating** – After Phase 1 LRV4s entered revenue service SFMTA conducted additional public outreach in response to negative feedback regarding the interior seating layout. These efforts revealed a preference for forward-facing seats ("transverse") over lateral-facing seats. Public feedback also showed a preference for sculpted seats to prevent sliding.

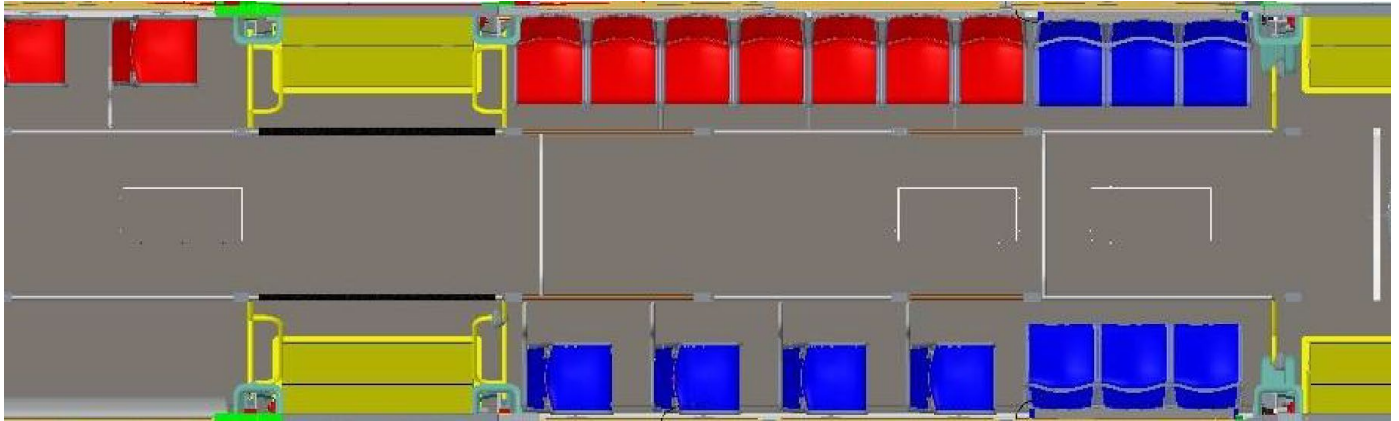
Status: **PARTIALLY RESOLVED**. SFMTA worked with Siemens to revise the LRV4 seating configurations to include more transverse seating. Re-design took more time and was more complicated than anticipated because it required substantial redesign, analysis, testing and production for the different types of seats as well as structural modifications to the carshell necessary to support the added forces from cantilevered double-width transverse seats. SFMTA modified its contract with Siemens to retrofit the Phase 1 LRV4s with single-width transverse seating along one side, to construct 50 of the Phase 2 LRV4s with single-width transverse seating along one side, and to construct 101 of the Phase 2 LRV4s with double-width transverse seating along one side. One Phase 1 LRV4 has been retrofitted. Each retrofit will take two weeks, and retrofits will continue through mid-2022, which may have



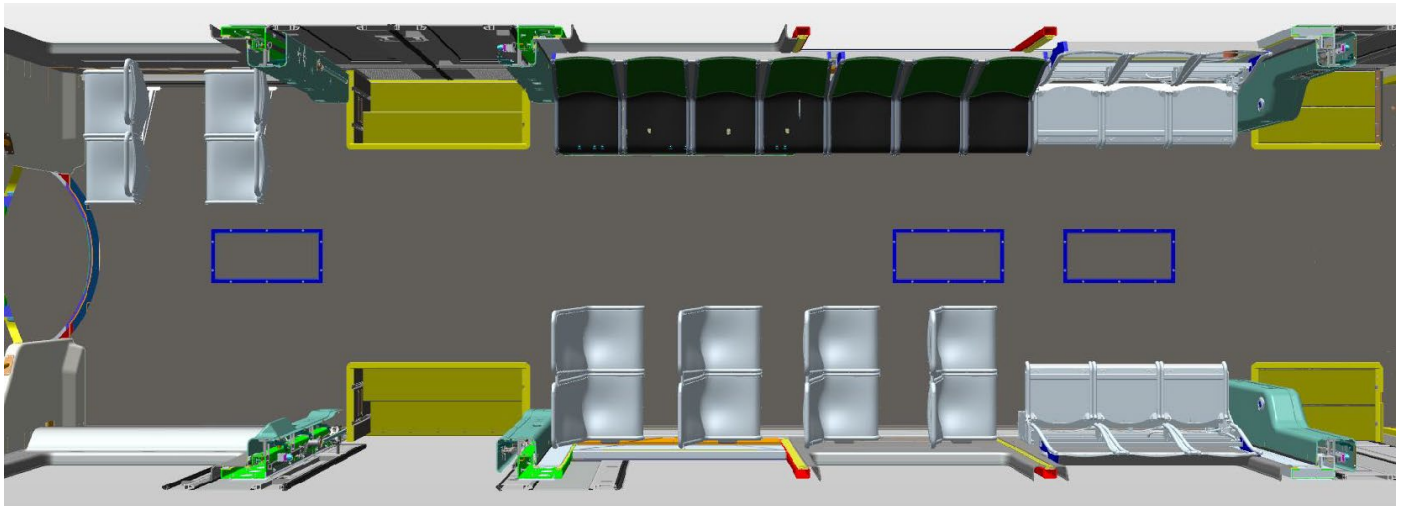
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some impact on vehicle availability. See diagrams below. SFMTA has approved a modification of the Siemens contract to increase the amount to cover the cost of the retrofitted seating on the Phase 1 LRV4s and the cost increment for the re-designed seating on the Phase 2 LRV4s.

**Single-Width Transverse Seating**



**Double-Width Transverse Seating**





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**More seating reserved for seniors and people with disabilities (blue) – based on customer feedback**

