

# MONTHLY MONITORING REPORT

## **Crenshaw/LAX Transit Project**

Los Angeles County Metropolitan Transportation Authority (LACMTA)  
Los Angeles County, CA

*March 2021*

PMOC Contract Number: 69319519D000020  
Task Order Number: 69319520F300048  
Project Number: DC-27-5282  
OPs Referenced: 1, 25

---

**PMO Partnership JV, LLC**  
**50 Osgood Place, Suite 320**  
**San Francisco, CA 94133**

## TABLE OF CONTENTS

<b>1.0 EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>1.1. Project Description .....</b>	<b>3</b>
<b>1.2 Project Status .....</b>	<b>3</b>
<b>1.3 Major Issues and/or Concerns.....</b>	<b>5</b>
<b>1.4 Status of Key Indicators Dashboard (Post-Grant).....</b>	<b>6</b>
<b>1.5 Core Accountability Items.....</b>	<b>6</b>
<b>2.0 Body of Report (Observations and Findings).....</b>	<b>8</b>
<b>2.1 Summary of Monitoring Activities.....</b>	<b>8</b>
<b>2.2 Oversight Triggers.....</b>	<b>8</b>
<b>2.3 Project Management Plan (PMP) and Sub-Plans.....</b>	<b>8</b>
<b>2.4 Management Capacity and Capability .....</b>	<b>8</b>
<b>2.5 NEPA Process and Environment Mitigation.....</b>	<b>8</b>
<b>2.6 Project Delivery Method and Procurement .....</b>	<b>9</b>
<b>2.7 Design.....</b>	<b>9</b>
<b>2.8 Value Engineering and Constructability Reviews.....</b>	<b>9</b>
<b>2.9 Real Estate Acquisition and Relocation.....</b>	<b>9</b>
<b>2.10 Third Party Agreements and Utilities.....</b>	<b>9</b>
<b>2.11 Construction .....</b>	<b>9</b>
<b>2.12 Vehicle Technology and Procurement.....</b>	<b>10</b>
<b>2.13 Project Cost .....</b>	<b>10</b>
<b>2.14 Project Schedule.....</b>	<b>12</b>
<b>2.15 Project Risk .....</b>	<b>12</b>
<b>2.16 Quality Assurance / Quality Control.....</b>	<b>13</b>
<b>2.17 Safety and Security .....</b>	<b>13</b>
<b>2.18 Americans with Disabilities Act (ADA) .....</b>	<b>13</b>
<b>2.19 Buy America.....</b>	<b>13</b>

<b>2.20 Start-Up, Commissioning, Testing</b> .....	14
<b>2.21 Before-and-After Study Reporting</b> .....	14
<b>2.22 Lessons Learned</b> .....	14
<b>2.23 Action Items Table</b> .....	14

**3.0 APPENDICIES:**

**APPENDIX A: List of Acronyms**

**APPENDIX B: Safety and Security Checklist**

**APPENDIX C: Top Five Risks**

**APPENDIX D: Awarded Contracts**

**APPENDIX E: Rolling Stock Vehicle Status Report**

**APPENDIX F: Project Milestones / Key Events**

**APPENDIX G: Roadmap to Revenue Operations**

**APPENDIX H: Project Map**

## 1.0 EXECUTIVE SUMMARY

*This report includes the status for the Los Angeles County Metropolitan Transportation Authority's (LACMTA's) Crenshaw/Los Angeles International Airport (LAX) Transit Project (Project) for the month of March 2021. This report provides evaluation and status of critical items affecting the Project's scope, schedule, and cost over the last month.*

### 1.1 Project Description

The Crenshaw/LAX Transit Corridor Project is an 8.5-mile light rail transit (LRT) line extending from the intersection of Crenshaw and Exposition Boulevards allowing for transfer to the Metro Expo Light Rail Transit Line to a connection with the Metro Green Line at the Century Boulevard/LAX Station at Aviation Boulevard. The alignment comprises a double-tracked right-of-way (ROW) consisting of sections of at-grade in-street, at-grade within railroad ROW, aerial, and below grade guideway sections. The route has eight stations either below ground, at-grade, or aerial. A schematic of the alignment is shown in Appendix B.

Daily ridership for the initially anticipated Revenue Service Date (RSD) of December 2018 was estimated at 15,500 passengers. Ridership in 2030 (Horizon Year) is expected to reach 24,500 per day. To operate at an estimated headway of six minutes, 20 Light Rail Vehicles (LRVs) operating in two-car trains with two spare vehicles will be required. The current Life of Project (LOP) budget for the Project is \$2.138 billion.

### 1.2 Project Status

- *The PMOC forecast for the revenue service date (RSD) is November 1, 2022, based upon recent review of the LACMTA sponsored risk review and Monte Carlo analysis for schedule based on remaining work and current factors performed thru March 2021. This is a "go right date" in that the contractor must increase productivity in preliminary "Local Factory Acceptance Tests" (LFATs) so that certification and operation testing can commence. Hundreds of these tests remain (LACMTA reported 139 of 382). Passing ratio performance is below industry expectations and requires significant resources to follow up to restage the test and achieve passing grade.*
- *FTA/LACMTA/PMOC Pre-Monthly Meeting was held on March 16, 2021 in a virtual format.*
- *Coronavirus protective measures continue as work progresses for both above and below ground activities. The project continues to be deemed essential by the State of California, thus allowing the continuation of work. Mitigation measures are in place to protect both field and office workers, especially in confined space environments such as underground rooms and spaces without active ventilation.*
- *Cabling terminations for critical systems within tunnel trackways, cross passages, and into station control rooms continue. This activity is on the critical path, with Expo Station the most critical.*

- *Site improvements ongoing at the exterior of Expo, MLK, and Vernon Stations including respective entrance plazas. Exterior station site improvement ongoing are as follows: vicinity lighting, traffic signalization, pavers, and station area landscape.*
- *Mechanical, HVAC and plumbing systems start-up and commissioning ongoing within the underground stations and/or connecting tunnel segments.*
- *Track level improvements restored for MSE Wall 202L. Systems work virtually complete. A test train was run over the track. The vertical profile of the newly replaced rail will be closely monitored for any settlement.*
- *Median landscaping and street level improvements in punch list stage at Park Mesa station area.*
- *Slausen Station communication testing ongoing.*
- *Elevator installation continues at underground and Century stations.*
- *Escalator installation continues for underground and Century stations.*
- *Site work around station plazas, bus drop-offs, and surrounding streets continue.*
- *DBE Goals have been achieved for both design and construction.*
- *No significant safety issues were reported in March 2021. The project remains below industry averages for lost time incidents.*
- *Preparation for systems integration testing along Segment A and B ongoing. There was discussion of advancing testing and certification in Segment A.*
- *Signage and graphics installation continue within station interiors and exteriors.*
- *No reports of expediting work or additional crews. The contractor appears to be settled in with the current pace. Recent monthly billings remain in the \$2-3M range, although March 2021 billing was a bit larger at \$4.4M.*
- *Ceilings remain open in underground stations, which means that conduits are still being identified as missing or plugged requiring a new run.*
- *The overall contingency is \$25.7M.*
- *All environmental monitoring activities such as noise and vibration, stormwater protection complied with contractual requirements.*
- *SIT-1 Testing generally follows LFATs. 28 of 146 SIT-1 Tests are complete.*
- *Over \$1M was returned to contingency via closeout out contract items not fully spent or cost reduction change orders issued.*

### **1.3 Major Issues and/or Concerns**

- *Covid-19 remains a concern to all. State of California mandates, recommendations and guidelines are being implemented to minimize risk of exposure for workers.*
- *There are several hundred remaining LFAT (LACMTA reported 139 of 382) tests before thorough systems integration testing (SIT) can commence in earnest. The pass/fail rate for initial tests has been below 50% range which is abnormally low. The number of tests per week and acceptance need to increase dramatically to avoid significant schedule*

impacts.

- The potential magnitude of a global end of construction progress claim concerns the PMOC considering present budget.
- Fire, life, and safety panels for emergency management must be modified for the underground stations. This is disputed scope for work with contractor.
- SIT-1 Testing had limited progress in March 2020.
- SIT-2 Testing is where the contractor is to provide resources to assist LACMTA in its ' Metro based testing may be delayed if the overlap with SIT-1 Testing is too great.
- The concrete bearing surface for the direct fixation rail pads in Underground Structures Nos. 3 and 4 (UG-3 and UG-4) was placed out of bearing tolerance in many locations. When the pads were installed, it was identified that upwards of 8000 locations had a gap between bottom of pad and concrete surface thus requiring a high strength grout filler. Contractor has assigned up to 50-person crew to address the problem. One track direction complete.

#### 1.4 Status of Key Indicators Dashboard (Post-Grant)

KEY INDICATORS DASHBOARD (POST-GRANT STATUS)					
<b>Project Sponsor:</b>	Los Angeles County Metropolitan Transit Agency (LACMTA)				
<b>Project Name:</b>	Crenshaw/LAX Transit Project				
<b>Date:</b>	March 2021				
Project Detail					
<b>Oversight Frequency:</b>	(Monthly/Quarterly)				
Element	Status			Prior Status (G/Y/R)	Issue or Concern
	Green (G)	Yellow (Y)	Red (R)		
<b>PMP</b>	x				PMP revision is being reviewed by PMOC for compliance with OP-40
<b>MCC</b>	x				LACMTA is capable and has capacity to manage this Project
<b>Cost*</b>		x			Time delay construction claim is forthcoming which will likely increase budget
<b>Schedule</b>			x		TIFIA completion date of November 1, 2022 appears achievable, although three years or more past anticipated date at FFGA, thus the red rating.
<b>Quality</b>		x			Pass/fail rate of 50% for LFATs is worrisome when consider volume remaining.
<b>Safety</b>	x				Safety standards are within industry standards
<b>Risk</b>			x		Many higher risk items remain unresolved
Legend					
<b>Green</b>	Satisfactory: no Corrective Action necessary				
<b>Yellow</b>	Caution: Risk/Issues exist. Corrective Action may be necessary.				
<b>Red</b>	Elevated for immediate Corrective Action; significant risk to the health of the project				

\*Note: Regarding cost, the PMOC should indicate the following status: Yellow – forecast cost exceeds the project budget by up to 3% Red – forecast cost exceeds the project budget by more than 5%

#### 1.5 Core Accountability Items

##### CORE ACCOUNTABILITY ITEMS

		Original (Grant)	Current Forecast	PMOC Assessment of Current Forecast <sup>1</sup>
<b>Cost</b>	Capital Cost Estimate	\$1,749 M	\$2,138M	Unacceptable
	Unallocated Contingency	\$173.5M	\$25.7M	Unacceptable

<b>Contingency<sup>2</sup></b>	Allocated Contingency	\$40.4M	0	Acceptable
	Total Contingency	\$213.9M	\$25.7M	Unacceptable
<b>Schedule</b>	Revenue Service Date	October 30, 2019	November 1, 2022	Acceptable
<b>Project Progress</b>				
			<b>Amount (\$)</b>	<b>Percent of Total</b>
<b>Total Expenditures</b>	Actual cost of all eligible expenditures completed to date		\$2,013,640,860	94%
<b>Planned Value to Date<sup>3</sup></b>	Estimated value of work planned to date		\$2,138,000,000	100%
<b>Actual Value to Date<sup>3</sup></b>	Actual value of work completed to date		\$2,013,640,860	94%
<b>Contract Status</b>				
			<b>Amount (\$)</b>	<b>Percent</b>
<b>Total Contracts Awarded<sup>4</sup></b>			\$2,138,000,000	100%
<b>Construction Contracts Awarded</b>	Forecasts of construction contracts awarded; % of total construction value to be awarded		\$1,372,806,989	100%
<b>Physical Construction Completed</b>	Value of physical construction (infrastructure) completed; % of total construction value completed		\$1,324,140,670	94%
<b>Rolling Stock Vehicle Status</b>				
		<b>Date Awarded</b>	<b>No. Ordered</b>	<b>No. Delivered</b>
<i>(Crenshaw share of larger procurement)</i>		January 28, 2010	22	22
<b>Next Quarterly Review Meeting Date:</b>				
		July, 2021 (date tbd)		

<sup>1</sup>Indicate whether the PMOC concurs with the current forecast of the project – “Acceptable” or “Unacceptable”. If “Unacceptable”, the PMOC should provide detail for any disagreement within the Executive Summary and the Body of the Report.

<sup>2</sup>Report the balance of contingency remaining (current).

<sup>3</sup>In a footnote to the table, indicate basis for Value to Date (e.g., Earned Value, Weighted Value, Contract Value, accrued value, etc.).

<sup>4</sup>In attachment to the Project Monitoring Report, list the contracts comprising the total value awarded.

#### Grant Information

FAIN (Source)	Federal Funds Obligated	Federal Funds Disbursed	% Disbursed
CA-79-0001	\$13,903,535	\$13,903,535	100%
CA-2020-018	\$50,000,000	\$50,000,000	100%
CA-95-X256	\$82,213,840	\$82,213,840	100%
CA-04-0034	\$8,563,010	\$8,563,010	100%

## **2.0 Body of Report**

*The body of this report is consistent with the requirements of the revised OP-25 for PMOC periodic reporting. Suggestions/comments are welcomed.*

### **2.1 Summary of Monitoring Activities**

Covid-19 has restricted travel to Los Angeles to meet in person with FTA and LACMTA staff. However, virtual meetings have been effective to communicate project status and stay current with issues and concerns. The FTA/LACMTA/PMOC Pre-Monthly Meeting was held on January 19, 2021 in a virtual format. It was reported the City of Los Angeles is expanding the Covid-19 lockdown due to increase in rate of infection. Impacts will be evaluated and reported.

Separate meetings for risk and project status were convened. Topics included: Covid-19 update, rework, claims, construction progress status, community relations, DBE participation, safety, environmental, cost/budget, schedule, change orders, PMP update and risk. Meeting agendas vary monthly for current topics utilizing a base template common to FTA sponsored projects in Los Angeles.

Overall, the team has been able to maintain communication amongst the members via virtual meetings, supplemented with site photographs. This report is in large part based on findings and discussions from our virtual meetings and LACMTA supplied reports, minutes, reports, and the like.

### **2.2 Oversight Triggers**

The Project began with monthly PMOC oversight in 2013 based on PMOC oversight polices in place at that time for large capital projects. The Project has incurred delay and budget overruns that have required monthly PMOC oversight to remain in place.

### **2.3 Project Management Plan (PMP) and Sub-Plans**

*LACMTA revised its PMP to reflect changes in its organization and delegated responsibilities. PMOC is reviewing this revision and will provide comments by April 28, 2021. Sub-Plans have not been revised recently as no revisions have been determined necessary at this time.*

### **2.4 Management Capacity and Capability**

*LACMTA continues to demonstrate that it does have agency wide capability and capacity to manage the Project. It does maintain a significant consultant support team as well.*

### **2.5 NEPA Process and Environmental Mitigation**

LACMTA continues to monitor the NEPA requirements and implement mandated environmental mitigation measures. It reports monthly on oversight activities and takes pro-active measures to ensure compliance. More recently, with Covid-19 virus, LACMTA implemented State of



California and County of Los Angeles policies and procedures to ensure that the workplace environment is safe for staff and crews to continue work as the Project has been determined to be essential.

## **2.6 Project Delivery Method and Procurement**

The prime contract utilized the design-build construction method. LACMTA staffed the project support and assembled a field team to support the Contractor's needs and progress.

## **2.7 Design**

The bulk of design documents have been completed by the engineer of record, a consultant(s) to the prime contractor. However, as common in construction projects, a degree of design continues to address field changes and unforeseen conditions. LACMTA maintains a design support team during construction for review and approval of modified designs. Ultimately, the engineer of record will be required to certify that all work was performed in compliance with the approved design documents. This process is defined as part of final acceptance.

## **2.8 Value Engineering and Constructability Reviews**

At this stage of construction (94% complete), there are presently no ongoing value engineering activities reported. Heavy civil work is virtually complete. Systems installation and testing is ongoing.

## **2.9 Real Estate Acquisition and Relocation**

No activity to report for this month as both real estate acquisition and relocation activities are essentially complete.

## **2.10 Third-Party Agreements and Utilities**

LACMTA continues to work with affected third-party utilities under work orders unless license agreements dictate relocation by the utility company. LACMTA continues to work closely with all third parties, especially the City of Los Angeles Bureau of Engineering through completion and final acceptance. No reported delays this month related to third parties and utilities. *In addition, LACMTA reports regular interaction with State of California, Public Utilities Commission as part of the process to work towards revenue service.*

## **2.11 Construction**

- *Expo: Terminations for most systems installation ongoing within systems control rooms. Plaza level improvements ongoing. Devices being tested in the communications rooms. Station ceiling remains open for conduit installation or seismic bracing as needed.*
- *Tunneling: Contractor installing / testing wayside devices and terminating cables pulled into communications rooms.*

- *Subway box repairs UG-3 and UG-4: LACMTA reported that the concrete bearing surface to support the direct fixation rail pads did not provide even support as required by specification. Up to 8000 locations were identified as non-compliant. Contractor has 50-person crew to address this issue and completed tracks in one direction.*
- *Martin Luther King Jr. Station: Termination of cabling to equipment and testing continue in communications rooms. Civil improvements in plaza are ongoing. Elevator installation continues along with escalator installation. Ceiling remains open for conduit repair, install or bracing.*
- *Vernon Station: Terminations to equipment in systems room continue. Civil work at station entrance is ongoing. Systems. Elevator work continues. Ceiling remains open for conduit installation or seismic bracing.*
- *Park Mesa Area Street Level Improvements: Street level improvements in the punch list phase.*
- *Segment B2 Street Level (Area along Crenshaw Boulevard from Park Mesa to grade transition to UG-3): Various systems equipment testing ongoing.*
- *UG No. 3 (South end of Crenshaw Boulevard alignment): Systems testing ongoing. In addition, concrete plinths that support rail are being reworked to evenly support the direct fixation rail pads in compliance with the requirements of the contract documents.*
- *Slausen Station: Systems testing within the train control / communications room. Street level station improvements continue.*
- *La Brea Station – Pavilion work and site work ongoing. Communications testing continues.*
- *Segment B1 Track Way (Florence Avenue At-Grade Track Way): Landscaping and systems testing ongoing.*
- *Segment B1 Street Improvements (Florence Avenue Street Improvements): Street level improvements continue.*
- *Hindry Avenue Station: Station and site work ongoing.*
- *Segment A Track Way (From Green Line Transition Bridges at Imperial Highway then along Aviation Boulevard to over I-405 Freeway Bridge along Florence): Testing of systems and related items in communications room.*
- *Segment A Street Improvements: Street level activities continue.*
- *Century Boulevard Overcrossing and Station: Systems and communications work continue. Site work improvements ongoing around the perimeter of the station. Elevator install continues. Plaza area improvements ongoing.*
- *Southwestern Yard: Final closeout procedures ongoing.*

## **2.12 Vehicle Technology and Procurement**

*Of the 235 total vehicles delivered, 22 cars are anticipated to provide revenue service for the Crenshaw Line. All vehicles require rework to the passenger notification system, so final acceptance remains ongoing.*

## 2.13 Project Cost

The expenditures as shown in Table 2.13-1 (below) are for: Contract C0990, Advance Utility Relocations; Contract C0992, Concrete Ties; Contract C0992A, Running Rail and Bumping Posts; Contract C0988 D-B Alignment Contract, mobilization, design, and construction; LRV procurement (under P3010 Contract); ROW; Contract C0991 SW Yard; mobilization, design, and construction. Financials are based on the LACMTA Monthly Project Cost Report by Element to the PMOC dated March 30, 2021. Table 2.13-1 breaks down the costs into four categories, including the Original LOP Budget, Current Budget, Current Forecast, and Expenditure to Date. This information is presented in FTA SCC coding.

**Table 2.13-1: Base SCC Cost Estimate with Forecast (Units in \$ Millions) as of 03/30/21**

SCC	Original Budget	Current Budget	Current Forecast	Variance btwn Budget and Forecast
10 – Guideway & Trackwork	471.33	417.79	416.24	1.54
20 – Stations	153.91	308.07	307.85	0.22
30 – SW Yard	66.67	66.92	66.90	0.02
40 – Sitework & Special Cond.	235.58	404.95	406.40	1.45
50 – Systems	125.13	175.07	175.42	0.35
60 – ROW, Land & Improvements	132.29	133.86	136.02	2.16
70 – Vehicles	87.78	83.57	83.57	0
80 – Professional Services	273.15	495.71	493.94	(1.77)
90 – Unallocated Contingency	177.15	26.06	26.67	(0.39)
Planning and Environment Cost	26.00	26.00	26.00	0
<b>FTA Sponsored Project Total</b>	<b>\$1,749</b>	<b>\$2,138</b>	<b>\$2,138</b>	

Source: LACMTA March 2021

**Table 2.13-2 Cost Variance (Variances between Current Budget and Current Forecast) Expenditure Report by Element (Units in \$ Millions) As of March 30, 2021**

Phase	Original LOP Budget	Current Budget	Current Forecast	Expenditure to Date*	Variance Between Current Budget and Forecast
Professional Services*	299.1	521.7	519.9	459.1	(1.8)
Construction	1,052.6	1372.8	1372.8	1,324.1	0
Right-of-Way	132.3	133.9	136.0	133.9	2.2

Vehicles	87.8	83.6	83.6	81.8	0
Unallocated Contingency	177.2	26.1	25.7		0.4
<b>FTA Sponsored Project</b>	<b>1,749</b>	<b>2,138</b>	<b>2,138</b>	<b>2,006</b>	

## 2.14 Project Schedule

Milestone	Date
Approval for Entry to PE	October 2010
Approval for Entry to FD	N/A
FFGA signed (N/A)	N/A
NTP for first Major Construction Contract	September 10, 2013
40% of contracted value bid and contracted	September 10, 2013
20% construction	January 31, 2015
50% construction	June 30, 2016
75% construction	February 28, 2018
90% construction	July 31, 2019
Revenue Service Date (RSD TIFIA)	November 1, 2022

## 2.15 Project Risks

LACMTA updates its risk register monthly with FTA and the PMOC during a regularly scheduled meeting. The top five risks identified by the PMOC are as shown in Table 2.15-1 (see below)

**Table 2.15-1: Risks and Mitigation Measures March 2021**

Rank	Risk Description	LACMTA Risk Mitigation Strategy
1	<i>Extended overhead or productivity loss-based claims.</i>	<i>Timely response to all delay implications. Resolve time impacts at the same time as direct cost of change. Maintain critical items list.</i>
2	<i>Main Line and SWY pre-revenue testing may take longer than anticipated, thus potentially delay to RSD.</i>	<i>Develop detailed and timely testing and systems integration plans as completion, coupled with an adequate allowance of time for troubleshooting.</i>

3	<i>Schedule activities critical path to completion.</i>	<i>Prepare work around plans to mitigate delay, direct contractor on specific critical work, identify what can be completed after substantial completion.</i>
4	<i>Hundreds of LFATs must be performed on systems related items. Current progress below forecast to achieve RSD.</i>	<i>LFATs remaining are significant and need attention to detail. More resources by contractor and prepare for tests in advance. Achieve higher pass rate.</i>
5	<i>SIT-1 Testing: schedule and progress</i>	<i>Pace must increase significant. More resources, advance test preparation, complete LFATs timely. Identify in monthly and weekly progress schedules then make priority.</i>

## **2.16 Quality Assure/Quality Control (QA/QC)**

*Contractor and LACMTA field monitoring team continue to maintain a current non-compliance report (NCR) log as part of overall QA/QC program. Regular meetings are convened to discuss current issues and remediation measures to retire NCRs.*

*The most important deficiencies ongoing month were: (i) LFAT tests that did not pass contract requirements (ii) direct fixation track work in UG-3 and UG-4 in that rail support pads were out of tolerance at up to 8000 locations and require corrective measures with a 50-person crew.*

## **2.17 Safety and Security**

LACMTA issued an update on April 22, 2014 to the System Safety Program Plan (SSPP) which is generic to all rail extensions for the LACMTA. LACMTA issued the revised Safety and Security Management Plan in December 2014. As project nears substantial completion, check list will be managed for compliance.

## **2.18 American with Disabilities Act (ADA)**

The design requirements of the design-build contract invoked specific design criteria, mandate standards and the like for compliance with ADA. Approvals of ADA compliant designs were incorporated into design reviews by QA/QC Team and LACMTA staff. Final approvals will be reflected per as-built conditions.

*Wayfinding signage remains an ongoing process with the engineer of record and staff of LACMTA providing recommendations and approvals.*

## **2.19 Buy America**

No waiver requests are active. Compliance with requirements of the contract for Buy America are monitored by LACMTA and subject to field inspection of materials used to complete the work.

## 2.20 Start-up, Commissioning, Testing

LACMTA's Operations, Risk, and Engineering Departments have dedicated staff that attend Project progress meetings with FTA/PMOC to develop plans for start-up, commissioning, and testing processes. In addition, there is close coordination with the State of California Public Utilities Commission representatives towards the established RSD.

## 2.21 Before-and-After Study Reporting

No update this month.

## 2.22 Lessons Learned

Lessons Learned Table 2.22-1 provided below:

**Table 2.22-1: Lessons Learned for March 2021**

LL No.	Month	Project Stage	Topic	Specifics	Lesson Learned
77	March 2021	Construction	Test Plans: LFATs and RFIs	Reflect in schedule and come prepared for tests	Failure rates are counterproductive. Assembly of key staff is difficult enough, and high failure rates are a set back to schedule and morale. LFATs are likely on or near critical and should be incorporated into monthly and project schedules. Team needs to prepare in advance and not waste time of approvers when obviously not ready.

## 2.23 Action Items Table

Item No.	Status	Description	Responsible Agency	Responsible Staff	Due Date
None Active		None Active			

### 3.0 Appendix A: LIST OF ACRONYMS

<b>APM</b>	Automated People Mover
<b>BCE</b>	Base Cost Estimate
<b>CEQA</b>	California Environmental Quality Act
<b>COLA</b>	City of Los Angeles
<b>CPUC</b>	California Public Utilities Commission
<b>CSM</b>	Cement Soil Mix
<b>CSC</b>	Crenshaw Subway Coalition
<b>D-B</b>	Design-Build
<b>DBAC</b>	Design-Build Alignment Contractor
<b>DRB</b>	Dispute Review Board
<b>FD</b>	Final Design
<b>FTA</b>	Federal Transit Administration
<b>FTE</b>	Full Time Equivalent
<b>FY</b>	Fiscal Year
<b>IFB</b>	Issued for Bid
<b>LACMTA</b>	Los Angeles County Metropolitan Transportation Authority
<b>LADWP</b>	Los Angeles Department of Water and Power
<b>LAWA</b>	Los Angeles World Airports
<b>LAX</b>	Los Angeles International Airport
<b>LOP</b>	Life-of-Project
<b>LRT</b>	Light Rail Transit
<b>LRV</b>	Light Rail Vehicle
<b>MCA</b>	Master Cooperative Agreement
<b>MOU</b>	Memorandum of Understanding
<b>MPS</b>	Master Program Schedule
<b>MSE</b>	Mechanically Stabilized Earth
<b>NEPA</b>	National Environmental Policy Act
<b>NTP</b>	Notice to Proceed
<b>PE</b>	Preliminary Engineering
<b>PMOC</b>	Project Management Oversight Contractor
<b>PMP</b>	Project Management Plan
<b>PR</b>	LACMTA Public Relations
<b>RCMP</b>	Risk and Contingency Management Plan
<b>RFMP</b>	Rail Fleet Management Plan
<b>ROW</b>	Right-of-Way
<b>RSD</b>	Revenue Service Date
<b>SCC</b>	Standard Cost Category
<b>SCE</b>	Southern California Edison
<b>SOE</b>	Support of Excavation
<b>SSCP</b>	Safety and Security Certification Plan
<b>SSMP</b>	Safety and Security Management Plan
<b>SSPP</b>	System Safety Program Plan
<b>SWC</b>	SW Yard Contractor
<b>SWY</b>	Southwestern Storage Yard and Maintenance Facility
<b>TBM</b>	Tunnel Boring Machine
<b>UG</b>	Underground Structure
<b>WSSC</b>	Walsh/Shea Corridor Constructors





**Appendices to Monthly Monitoring Report for  
Crenshaw/LAX Transit Project  
March 2021**

*3.0 Appendix B: Safety and Security Check List*

**SAFETY AND SECURITY CHECKLIST**

<b>Project Overview</b>			
<b>Project Mode (Rail, Bus, BRT, Multimode)</b>	<b>Light Rail</b>		
<b>Project phase (PE, FD, Construction, or Start-up)</b>	<b>Construction</b>		
<b>Project Delivery Method (e.g., Design/Build)</b>	<b>Design/Build and Sealed Bids</b>		
<b>Project Plans</b>	<b>Version</b>	<b>Reviewed by FTA</b>	<b>Status</b>
<b>Safety and Security Management Plan</b>	<b>1.3</b>	<b>10/22/12</b>	<b>Compliant</b>
<b>Safety and Security Certification Plan</b>	<b>0</b>	<b>11/30/12</b>	<b>Compliant</b>
<b>System Safety Program Plan (SSPP)</b>	<b>10</b>	<b>12/13/13</b>	<b>Compliant</b>
<b>System Security Plan or Security and Emergency Preparedness Plan (SEPP)</b>			<b>Ongoing</b>
<b>Construction Safety and Security Plan</b>			<b>Ongoing</b>
<b>Safety and Security Authority</b>	<b>Y/N</b>		<b>Notes/Status</b>
<b>Is the Grantee subject to 49 CFR Part 659 state safety oversight requirements?</b>	<b>Yes</b>		<b>CPUC Reqmts.</b>
<b>Has the state designated an oversight agency as per Part 659.9?</b>	<b>Yes</b>		<b>CPUC</b>
<b>Has the oversight agency reviewed and approved the Grantee's SSPP as per Part 659.17?</b>	<b>Will verify</b>		<b>Will verify</b>
<b>Has the oversight agency reviewed and approved the Grantee's System Security Plan or SEPP as per Part 659.21?</b>	<b>Will verify</b>		<b>Will verify</b>
<b>Did the oversight agency participate in the last Quarterly Program Review Meeting?</b>	<b>Yes</b>		<b>Yes</b>
<b>Has the Grantee submitted its Safety Certification Plan to the oversight agency?</b>	<b>Yes</b>		<b>Completed</b>
<b>Has the Grantee implemented security directives issued by the Department Homeland Security, Transportation Security Administration?</b>	<b>Yes</b>		<b>Complete</b>
<b>SSMP Monitoring</b>			
<b>Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for the project?</b>	<b>Yes</b>		<b>Complete</b>
<b>Does the Grantee review the SSMP and related project plans to determine if updates are necessary?</b>	<b>Yes</b>		<b>Complete</b>

<b>Does the Grantee implement a process through which the Designated Function for Safety and for Security are integrated into the overall project management team? Describe.</b>	<b>Yes – Safety and Security Activities integrated throughout the various project phases.</b>	<b>Established S&amp;S Design Criteria for PE Phase</b>
<b>Does the Grantee maintain a regularly scheduled report on the status of safety and security activities?</b>	<b>Yes</b>	<b>Ongoing</b>
<b>Has the Grantee established staffing requirements, procedures and authority for safety and security activities throughout all project phases?</b>	<b>Yes</b>	<b>Ongoing</b>
<b>Does the Grantee update the Safety and Security Responsibility Matrix/Organizational Chart as necessary?</b>	<b>Yes</b>	<b>Ongoing</b>
<b>Has the Grantee allocated sufficient resources to oversee or carry out safety and security activities?</b>	<b>Yes</b>	<b>Have staffed Corporate Safety Organization.</b>
<b>Has the Grantee developed hazard and vulnerability analysis techniques, including specific types of analyses to be performed during different project phases?</b>	<b>Yes</b>	<b>Provided for in Southwestern Yard IFB Docs</b>
<b>Does the Grantee implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?</b>	<b>Yes</b>	<b>Provided for in the SSMP</b>
<b>Does the Grantee monitor the progress of safety and security activities throughout all project phases? Describe.</b>	<b>Yes</b>	<b>SSMP includes a Safety Respon. Matrix for each Project Phase</b>
<b>Does the Grantee ensure that preliminary hazard and vulnerability analyses are conducted? Specify the analyses conducted.</b>	<b>Yes</b>	<b>Will verify</b>
<b>Has the Grantee ensured the development of Security Design Criteria?</b>	<b>Yes</b>	<b>SSMP, Design Criteria</b>
<b>Has the Grantee ensured conformance with safety and security requirements in design?</b>	<b>Yes</b>	<b>Ongoing with plan and shop drawings reviews</b>
<b>Has the Grantee verified conformance with safety and security requirements in equipment and materials procurement?</b>	<b>Ongoing</b>	<b>Submittal reviews and approvals</b>
<b>Has the Grantee verified construction specification conformance?</b>	<b>Ongoing</b>	<b>Verification with DB contractor</b>

Has the Grantee identified safety and security critical tests to be performed prior to passenger operations?	Ongoing	Ongoing testing plan development with CPUC
Has the Grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	Ongoing	To date in compliance.
Does the Grantee evaluate change orders, design waivers, or test variances for potential hazards and/or vulnerabilities?	Yes	Ongoing until completion/acceptance.
Has the Grantee ensured the performance of safety and security analyses for proposed work-arounds?	Yes, during construction	Ongoing
Has the Grantee demonstrated through meetings, or other methods, the integration of safety and security in the following: <ul style="list-style-type: none"> <li>• Activation Plan and Procedures</li> <li>• Integrated Test Plan and Procedures</li> <li>• Operations and Maintenance Plan</li> <li>• Emergency Operations Plan</li> </ul>	Yes	Ongoing
Has the Grantee issued final the Safety and Security Certification?	No	Pending completion
Has the Grantee issued the final Safety and Security Verification Report?	No	Pending completion
<b>Construction Safety</b>		
Does the Grantee have a documented/implemented Contractor Safety Program with which it expects contractors to comply?	Yes	Program Wide
Does the Grantee's Contractor(s) have a documented company-wide Safety and Security Program Plan?	Yes	Living document
Does the Grantee's Contractor(s) have a site-specific Safety and Security Program Plan?	Yes	Living document
Provide the Grantee's OSHA statistics compared to the national average for the same type of work.	Yes	Favorable
If the comparison is not favorable, what actions are being taken by the Grantee to improve its safety record?	Favorable	Favorable
Does the Grantee conduct site audits of the Contractor's performance versus required safety/security procedures?	Yes	Regularly and is reported and ongoing
<b>Federal Railroad Administration</b>		
If shared track, has the Grantee submitted its waiver request application to FRA? Identify specific regulations for which waivers are being requested.	N/A	No FRA Reqmts.
If shared corridor, has the Grantee specified specific measures to address shared corridor safety concerns?	N/A	No FRA Reqmts.

<b>Is the Collision Hazard Analysis underway?</b>	<b>N/A</b>	<b>No FRA Reqmts.</b>
<b>Other FRA required Hazard Analysis (e.g., fencing)?</b>	<b>N/A</b>	<b>No FRA Reqmts.</b>
<b>Does the project have Quiet Zones?</b>	<b>N/A</b>	<b>No FRA Reqmts.</b>
<b>Does FRA attend the Quarterly Review Meetings?</b>	<b>N/A</b>	<b>No FRA Reqmts.</b>

### 3.0 Appendix C: Top Five Risks and Mitigation Measures

<b>Rank</b>	<b>Risk Description</b>	<b>LACMTA Risk Mitigation Strategy</b>
<b>1</b>	<b><i>Extended overhead or productivity loss- based claims.</i></b>	<b><i>Timely response to all delay implications. Resolve time impacts at the same time as direct cost of change. Maintain critical items list.</i></b>
<b>2</b>	<b><i>Main Line and SWY pre-revenue testing may take longer than anticipated, thus potentially delay to RSD.</i></b>	<b><i>Develop detailed and timely testing and systems integration plans as completion, coupled with an adequate allowance of time for troubleshooting.</i></b>
<b>3</b>	<b><i>Schedule activities critical path to completion.</i></b>	<b><i>Prepare work around plans to mitigate delay, direct contractor on specific critical work, identify what can be completed after substantial completion.</i></b>
<b>4</b>	<b><i>Hundreds of LFATs must be performed on systems related items. Current progress below forecast to achieve RSD.</i></b>	<b><i>LFATs remaining are significant and need attention to detail. More resources by contractor and prepare for tests in advance. Achieve higher pass rate.</i></b>
<b>5</b>	<b><i>SIT-1 Testing: schedule and progress</i></b>	<b><i>Pace must increase significant. More resources, advance test preparation, complete LFATs timely. Identify in monthly and weekly progress schedules and make priority.</i></b>

### 3.0 Appendix D: Awarded Contracts

#### APPENDIX D: AWARDED CONTRACTS

*Table D-1: Procurement and Contracts*

<b>Contract No.</b>	<b>Title of Contract</b>	<b>Notice to Proceed</b>	<b>Substantial Completion</b>	<b>Remarks</b>
<b>C0988</b>	<b>Civil, Trackwork, Stations, and Systems</b>	<b>09/10/13</b>	<b>12/11/19 per contract.</b>	<b>Established TIFIA date is November 1, 2022 for RSD</b>
<b>C0990</b>	<b>Advanced Utility Relocation</b>	<b>07/17/12</b>	<b>10/7/16 actual</b>	<b>Project closed</b>
<b>C0991</b>	<b>Southwestern Yard (SWY) and Storage Facility</b>	<b>06/29/15</b>	<b>01/30/19 actual</b>	<b>Final closeout nearly complete</b>
<b>C0992</b>	<b>Concrete Ties and Assembly Items</b>	<b>12/23/13</b>	<b>03/16 actual</b>	<b>Project Closed</b>
<b>C0992A</b>	<b>Running Rail and Bumping Posts</b>	<b>03/7/14</b>	<b>03/16 actual</b>	<b>Project Closed</b>

### 3.0 Appendix E: Rolling Stock Vehicle Status Report (March 2021 data upgraded on a quarterly basis)

#### Rolling Stock Vehicle Status Report: Highlights

---

- *Manufacturer/Model Year/Vehicle Model or Type/Propulsion: Kinkisharyo 235 total LRVs.*
- *Piggyback or Option*

*Base procurement was 78 LRVs. Options 1 and 4 added 97 LRVs and Option 2 and 3 added 60 LRVs for a total of 235 vehicles. All 235 delivered to date with the first 185 conditionally accepted. The last 50 vehicles were delivered to LACMTA had the On-Board Customer Signage issue to be resolved during LACMTA testing. LACMTA agreed to accept delivery of the cars, thus allowing Kinkisharyo closed the Palmdale plant reduce its overhead. Kinkisharyo must retrofit the On-Board Customer Signage for the first 185 vehicles that were delivered to LACMTA which did have reliability problems for this feature and the remaining 50 vehicles that were not conditionally accepted.*

- *Number of Vehicles: 235 Total when combining base and 4 Options.*
- *Contract Advertisement Date: January 28, 2010*
- *Contract Award Date: August 17, 2012*
- *Price per Vehicle (Initial Order) \$4.12M*
- *Planned Date of First Vehicle Delivery /Actual: October 20, 2014*
- *Initial Vehicle Order (Number of Vehicles and Configuration)*
- *78 LRVs*
- *Number of Option Vehicles Included in Contract: 4 Options implemented*
- *Buy America Domestic Content Percentage Required: Will provide*
- *Domestic Content Percentage per Pre-award Audit: Will provide*
- *Latest Domestic Content Percentage Reported and Date: Will provide*
- *Date of Pre-Award Audit: Will provide*
- *Pre-award Audit Report Date: Will provide*
- *Intermediate Buy America Audit Date (If Planned): Will provide*
- *Date of Post-Delivery Audit: Will provide*
- *Post-Deliver Audit Report Date: Will provide*

*P3010 LRV PROJECT OVERVIEW (Provided as Narrative to above requested information)  
Date Last Updated: March 2021 (Using the March 2021 Quarterly Meeting Highlights with spot recent information.)*

*Project Name: P3010 Light Rail Vehicle Project*

*Grantee: Los Angeles County Metropolitan Transportation Authority*

*FTA Regional Contact: Charlene Lee Lorenzo (213) 202-3952 –*

*[Charlene.LeeLorenzo@dot.gov](mailto:Charlene.LeeLorenzo@dot.gov)*



**FTA Headquarters Contact: Christopher Hudson; (202) 366-2574**  
[Christopher.Hudson@dot.gov](mailto:Christopher.Hudson@dot.gov)

### **Scope**

**Description: On January 28, 2010, the Los Angeles County Transportation Authority (LACMTA) Board approved the issuance of a competitively negotiated “Best Value” procurement for new six-axle articulated Light Rail Vehicles (LRVs). The procurement consisted of a base buy of 78 LRVs: 16 cars for the Expo Phase 1 project, 47 cars for the Expo Phase 2 project, and 15 cars for the Gold Line Foothill Extension project. The contract also included four options of 28, 39, 21, and 69 cars, respectively. The options are associated with transit projects included in the 30/10 initiative including the Crenshaw/LAX and Regional Connector projects. LACMTA estimated that the new vehicles, collectively known as the P3010 Series, would cost \$4.3 million per car. Using a best value approach, LACMTA received and evaluated three proposals received on April 11, 2011.**

**LACMTA interviewed all proposers in June 2011 and preformed site visits in July 2011. The final price and technical evaluation were completed February 9, 2012. Kinkisharyo International, LLC (KI) was ranked highest, offering the best overall proposal. KI, recently re-located to El Segundo, CA, is a wholly owned subsidiary of Kinki Sharyo Company, Ltd. (KSJ), headquartered in Osaka, Japan. KI’s proposed price of \$891,371,272 included 78 base LRVs and all four options (235 total LRVs). LACMTA requested Board Approval for the award of the first 78 LRV’s for \$299.1 million on April 30, 2012. LACMTA also established a LOP Budget of \$342.35 million. Project funding will be a combination of federal, state and local funds. Funding for the option vehicles will be identified through LACMTA’s 30/10 Initiative prior to exercising each option.**

**KI was subsequently provided a NTP on August 17, 2012. Deliveries of the first two pilot LRVs are estimated to be in October 2014. The initial 27 LRVs are scheduled to be delivered by December 2015 with all 78 base cars by January 2017.**

**On July 18, 2013 the LACMTA Board approved the increase of the LOP budget by \$396.65 million from \$342.35 million to a total of \$739.00 million. This allowed the Chief Executive Officer (CEO) to exercise Option 1 (22 vehicles for Crenshaw/LAX Transit Corridor Project and 6 for fleet replacement) and Option 4 (69 vehicles for fleet replacement) of the P3010 contract as previously authorized. KI was subsequently provided a contract modification (Contract Modification No. 2) effective August 16, 2013 for the award of Options 1 and 4. In April 2015, the LACMTA Board authorized the CEO to exercise Options 2 and 3. A prototype car was made and transported to Palmdale, CA, where it was fitted with US made components and delivered to LACMTA as Pilot Car No. 1 in October, 2014. Delivery of the remaining Prototype Car to Palmdale took place ahead of the January 2015 date.**

**In April 2015 the LACMTA Board approved an additional \$263 million to exercise Option 2 (4 vehicles for the Regional Connector Project; 20 vehicles for the service expansions; and 15 vehicles for the Foothill Phase 2B Project) and Option 3 (21 vehicles for the Eastside Extension Project). LACMTA issued a NTP for Options 2 and 3 NTP on August 11, 2015,**

**for the 60 additional vehicles, which makes the Project a procurement of a total of 235 light rail vehicles.**

**Schedule**

<b><i>Original Date</i></b>	<b><i>Milestone</i></b>	<b><i>Forecast Date</i></b>	<b><i>Status</i></b>
<i>8/17/12</i>	<i>NTP for Base Contract</i>	<i>August 17, 2012</i>	<i>Achieved</i>
<i>10/30/14</i>	<i>Two Pilot Cars Delivered</i>	<i>Pilot Car 1 - October 20, 2014 Pilot Car 2 – January 20, 2015</i>	<i>Achieved Achieved</i>
<i>12/30/15</i>	<i>27 Production Cars Delivered</i>	<i>April 30, 2016</i>	<i>Achieved</i>
<i>01/31/17</i>	<i>78 Base Cars Delivered</i>	<i>April 03, 2017</i>	<i>Achieved</i>
<i>08/31/17</i>	<i>28 Option 1 Cars Delivered</i>	<i>September 30, 2017</i>	<i>Achieved</i>
<i>02/06/19</i>	<i>69 Option 4 Cars Delivered</i>	<i>March 13, 2019</i>	<i>Achieved</i>
<i>01/30/20</i>	<i>39 Option 2 Cars Delivered</i>	<i>November 11, 2020</i>	<i>Delivered to LACMTA Property with non-full delivered status</i>
<i>08/24/20</i>	<i>21 Option 3 Cars Delivered</i>	<i>December 30, 2020</i>	<i>50 of 50 delivered with non-full delivered status</i>

**Total Project Cost (YOE \$)**

***\$ 30.00 M Support Consultant Services (current expenditures are \$25.35M)***

***\$321.03 M Base Order: 78 LRVs***

***\$387.97 M Options 1 and 4: 97 Additional LRVs***

***\$263.00 M Options 2 and 3: 60 Additional LRVs***

***\$1,002.00 M Amended Total Project (Base Order + Options 1, 2, 3 and 4)***

**Status as of March 2021 Procurement for 235 rail vehicles)**

***\$1,002M Total Project Cost (\$YOE based upon updated in-progress estimate)***

***\$799.38M Total Project Expenditures (79.71% complete earned value based.)***

**Total Percentage Project Complete (Time based as of March 2021):**

***173.55% for Base Order (all delivered.) Options 1 and 4 130.10% (all delivered.) Options 2 and 3 102.01% (two vehicles remaining for delivery.)***

**Status as of March 2021 (Base Option)**

***\$319M Total Base Cost with Expenditures at \$289.73M or 90.82% complete.***

**i. Status as of March 2021 (Options 1 and 4 Only)**

**\$393.80 M Total Option Cost (\$YOE based upon updated in-progress estimate)**

**\$366.50 M Total Option Expenditures (includes \$10.65 M of contingency)**

**\$ 13.78 M Total Option Contingency remaining (unallocated)**

**93.16% Total Percentage Option Complete (based on LOP budget above)  
Calculated as of March 2021**

**ii. Status as of March 2021 (Options 2 and 3 Only)**

**\$260.08 M Total Option Cost (\$YOE based upon updated in-progress estimate)**

**\$ 117.44M Total Option Expenditures (includes \$9.09 M of allocated contingency)**

**\$ 9.09M Total Option Contingency remaining (unallocated)**

**45.16% Total Percentage Option Complete (based on LOP budget above) Calculated  
with March 1, 2021 date.**

### 3.0 F: Project Milestones/Key Events

#### *Milestone Project Schedule (MPS)*

*Project established RSD is November 1, 2022 for TIFIA reporting. The total Project is 94% complete based on \$2.006B) against the revised LOP budget of \$2.138 billion. As of March 30, 2021, the DBAC elapsed 120% of the contract time allowed to the current substantial completion date of December 11, 2019. Table 3.0-F2 shows (next page) C0988 D-B Alignment Contract milestones.*

**Table 3.0-F1: Key Activities in Next 90 Days**

<b>Activity</b>	<b>Date</b>
<b>Meetings:</b>	
– FTA Pre-Monthly Meeting	April 20, 2021
– FTA Quarterly Meeting	July 2021
<b>Deliverables:</b>	
- Monthly Monitoring Report for March 2021 (MMR)	April 21, 2021
<b>Actions/Events:</b>	
– Monthly Update of the Risk Register	April 20, 2021

**Table 3.0-F2: Contract Milestones**

<b>Milestone Description</b>	<b>Original Contract</b>	<b>Current Contract</b>	<b>LACMTA Contractor Forecast</b>	<b>Calendar Day Variance</b>	<b>PMOC Forecast</b>
<b>Milestone 1 – Substantial Completion</b>	09/08/2018	12/11/2019	04/14/21	-523	02/01/22
<b>Milestone 2 – Universal Fare System Completion</b>	03/09/2018	11/01/2018	05/31/19	0	0
<b>Milestone 3 – Start Phase I System Integration Testing</b>	06/09/2018	02/01/2019	09/19/19	0	0
<b>Milestone 4 – Construction/Turnover Parcels SW-0101, 0102 &amp; 0103</b>	12/04/2015	03/04/2016	05/1/16 (A)	0	0
<b>Milestone 5 – Construction/Turnover Parcels SW-0002, 0003, 0004 &amp; 0104</b>	06/11/2017	06/11/2017	6/11/201 (A)	0	0
<b>Milestone 6 – Construction/Turnover Parcel SW-0001</b>	08/01/2017	08/01/2017	7/10/17 (A)	0	0
<b>Milestone 7- Provide Access for Division 16 Southwestern Yard D-B</b>	01/23/16	01/23/16	2/22/16(A)	0	0

### 3.0 G: Roadmap to Revenue Operations

#### Schedule

Milestone	Date
<i>Approval for Entry to PE</i>	<i>October 2010</i>
<i>Approval for Entry to FD</i>	<i>N/A</i>
<i>FFGA signed (N/A)</i>	<i>N/A</i>
<i>NTP for first Major Construction Contract</i>	<i>September 10, 2013</i>
<i>40% of contracted value bid and contracted</i>	<i>September 10, 2013</i>
<i>20% construction</i>	<i>January 31, 2015</i>
<i>50% construction</i>	<i>June 30, 2016</i>
<i>75% construction</i>	<i>February 28, 2018</i>
<i>90% construction</i>	<i>July 31, 2019</i>
<i>Revenue Service Date (RSD)</i>	<i>November 1, 2022</i>

#### Total Project Cost (\$YOE)

<i>\$1,749M</i>	<i>Approval for Entry to PE</i>
<i>N/A</i>	<i>Approval for Entry to FDS</i>
<i>N/A</i>	<i>FFGA Signed (N/A)</i>
<i>\$2,138M</i>	<i>LOP Budget (Increased by \$80M in May 2020 for first time.)</i>

#### Status as March 30, 2021 (Cost)

<i>\$2,138M</i>	<i>Total Project Cost</i>
<i>\$2,006M</i>	<i>Total Project Expenditures</i>
<i>\$25.7M</i>	<i>Total Project Contingency Remaining (Unallocated)</i>
<i>94%</i>	<i>Total Percentage Project Complete (Financial Based Determination)</i>
<i>December 2018</i>	<i>Estimated RSD at End of PE</i>
<i>129%</i>	<i>Total Project Time Expended (Entry into PE 10-20-2010 to RSD 10-30-2018 plus 15-months compared to PE 10-20-2010 to Present (03-31-21)</i>
<i>94%</i>	<i>Construction (Earned Value)</i>
<i>120%</i>	<i>Construction Time Expended (1st Major Const. Contract NTP 9-10-2013 to Substantial Completion 12-11-2019 plus 16 months past project substantial completion date)</i>

### 3.0 H Project Map

## Crenshaw/LAX Transit Project



*This page is intentional blank.*