

Crenshaw/LAX Transit Project

Budget/Schedule Presentation – March 25, 2021



Budget / Schedule

◆ BUDGET

	<u>Current</u>	<u>Forecast</u>
TOTAL COST	\$2,148M	\$2,148M

▲ SCHEDULE

	<u>Current</u>	<u>Forecast</u>
REVENUE OPERATION	May 2021	Winter 2021

- Overall Project Progress is 98% complete (progress from 96% - 98% completion achieved in a 7-month period)
- Contractor is not applying sufficient work force to complete their remaining work
- Metro continues to work with contractor to mitigate the schedule forecast; emphasizing safety and reliability in final acceptance of project elements and systems
- Remaining work is primarily communications system testing, especially in underground sections



Expo Station mezzanine level fare gates



UG3 - Start-up crew inspecting tunnel booster fans



Metro



On target



Possible problem



Significant Impact

*Contractor Substantial Completion

Life-of-Project Budget Status

- Project total commitments are 96.9% and expenses are 93.2% of the LOP Budget of \$2,148 million
- Past three months' professional services, including Metro staff, expenses are between \$3.5 - \$4 million per month
- \$26.5 million in unallocated contingency remains
- Budget does not include any potential claim settlement funding

Project Sequence of Completion

- Installation of Equipment (Contractor)
- Local Field Acceptance Tests – (LFAT) (Contractor)
- Systems Integration Tests – (SIT-1) (Contractor)
- Vehicle Software – (P3010) Metro (Carborne)/Contractor (Wayside)
- Systems integration Tests (SIT-2) - interface with Rail Operations Control (ROC) – Metro
- Training, Simulated Service, Emergency Drills - Metro
- Safety Certification – California Public Utility Commission
- Revenue Service



Schedule Status

- Contractor did not complete substantial completion by December 2020
- Progress monitoring indicates that this goal may be attained in 2021
- Schedule projections are dependent on number of variables - productivity, contractor resources, amount of re-work, testing success rate and complexity of work
- Contractor needs to make more progress in LFAT testing before a reliable estimate of completion can be made
- Consider strategies such as overlapping activities

WSSC Contract

Milestone Substantial Completion Forecast

- WSSC needs to make significant performance improvement by taking the following potential mitigation actions:
 - Add crews and resources to prepare/complete required prerequisites before conducting Local Field Acceptance Tests and System Integration Tests,
 - Double testing personnel and increase to two work shifts,
 - Double dedicated management and integration supervision to complement increased work force,
 - Develop a realistic plan to complete testing, and
 - Increase schedule measurement resource for real time tracking of progress.

Overall Systems Completion Status (as of 3/11/21)

Overall Project Completion Status				
Segment A (8+08.15 - 159+50)				
Systems	Traction Power	OCS /OCR	Train Control	Communication
Installation	100%	100%	100%	88%
LFAT Test	95%	99%	100%	65%
SIT-1 Test	10%	50%	30%	10%
Segment B1 (159+50 - 274+00)				
Systems	Traction Power	OCS /OCR	Train Control	Communication
Installation	100%	100%	100%	90%
LFAT Test	95%	99%	98%	60%
SIT-1 Test	10%	50%	15%	10%
Segment B2 (274+00 - 364+80)				
Systems	Traction Power	OCS /OCR	Train Control	Communication
Installation	100%	100%	100%	90%
LFAT Test	95%	99%	100%	40%
SIT-1 Test	N/A	50%	15%	10%
Segment C (364+80 - 448+34)				
Systems	Traction Power	OCS /OCR	Train Control	Communication
Installation	100%	100%	100%	70%
LFAT Test	95%	99%	100%	45%
SIT-1 Test	10%	50%	25%	0%



Systems Testing Progress (as of 3/10/21)

Monthly LFATs Outcome						
Month	Total Scheduled	Passed ¹	Passed % ²	Failed	Ongoing	Canceled/Rescheduled
Aug	77	32	42%	11	8	26
Sep	85	52	61%	4	12	17
Oct	59	35	59%	3	8	13
Nov	82	43	52%	9	3	27
Dec	90	44	49%	3	14	34
Jan	49	24		1	7	17
Feb	120	60	50%	22	16	22
Target per month		104				

Monthly SITs Outcome						
Month	Total Scheduled	Passed ¹	Passed % ²	Failed	Ongoing	Canceled
Aug	2	0	0%	2	0	0
Sep	1	0	0%	0	0	1
Oct	5	2	40%	3	0	0
Nov	13	4	31%	8	0	1
Dec	4	1	25%	2	0	1
Jan	15	8		2	0	2
Feb	9	1	11%	5	0	3
Target per month		43				

Schedule Considerations

- Current field team personnel (Metro, contractor, subcontractors) are experienced and committed to a successful start-up
- Equipment interfaces are very complex, but the technology is service proven
- The most recent tunneling project that Metro opened was a small section of the Eastside Extension, so there are systems project characteristics that are new to Metro projects as technology has advanced since then
- Metro working to remove pieces of scope from WSCC Contract. Most significant is agreement with the City of Los Angeles to perform paving work at Park Mesa Heights



Remaining Project Key Issues

These issues will determine the final completion dates:

- Significant amount of physical installation work that remains to be completed
- Volume of complex testing that remains to be done
- 330 (90%) LFATs remain as of February 19, 2021
- Subcontractor coordination and integration management
- Labor resources
- Design resources
- Ability to control schedule delays
- Amount of re-work

Conclusion

- Number of variables impact actual completion dates
- Metro continues to work with contractor to mitigate the schedule forecast
- Metro will continue to emphasize safety and reliability in final acceptance of Project elements and systems
- Remaining work is primarily communications system testing, especially in underground sections