



██████████
Project Representative
Jacobs

Crossrail Limited
5 Endeavour Square
London E20 1JN
T: 0343 222 0000
Helpdesk
T: 0345 602 3813
www.crossrail.co.uk

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Dear ██████████,

Re: Crossrail PRep Project Status Report 146 – Period 10

I am writing in response to the P10 PRep Sponsor Summary cover letter.

As noted in your letter dated 5 February 2021, encouraging progress was made in Period 10 with commissioning tests at Farringdon station, and testing starting at Custom House station. CRL also notes PRep's comment in relation to completed works during the Christmas blockade in readiness for the start of Trial Running and the recommencement of SIDT with initial validation of interface functionality issues. CRL continues to carry out the important testing and assurance work towards the opening of the Elizabeth line and would like to bring to the PRep's attention that Tottenham Court Road and Paddington stations have entered the final T-12 weeks countdown to full commissioning and handover to London Underground, and Farringdon has successfully passed its T-1 for this key bringing into use milestone.

CRL agrees with PRep's comments that mitigation measures continue to be refined to hold the start of Trial Running at ██████████. Further mitigations have been put in place that include Deep Dive reviews chaired jointly by CRL and RFLI to cover the Element Completion Handover Report and Railway Chapter Acceptance Case statuses. Subsequently, risk and impact assessments will follow on any outstanding items. The agreed assurance process in place, coupled with a planned joint strategic senior managers' meeting between CRL and ORR, further strengthens the Trial Running date being held at ██████████.

CRL agrees with PRep that risk mitigation management is an area that requires directed attention. Consequently, risk management has been revised and now tracked fortnightly as detailed within Response Point 2 below. There are little to no ADM works in Trial Running, hence, the development of the ADM strategy has no bearing on the start of Trial Running. The implementation of the ADM is developing, and the transition of scope to the ADM (particularly around the closure of EOWs) is a focus of the Executive periodic reviews. The programme has also recently funded the core people requirements of the Residual Works Team in London Underground who are tasked with managing part of the ADM scope.

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Three points have been identified as requiring further action or explanation. These cover emerging scope, demonstration on timely delivery of risk resolutions and a co-ordinated approach to completing the programme reflected in the Delivery Control Schedule, AFCDC, resource requirements, CRL's lessons learned legacy and close-out strategy. Responses to these points are listed below:

1. How is CRL accounting for, and reporting on, emerging additional scope?

Any emerging additional scope is subject to the recently revised Change Control process. The CRL Chief Executive Officer and Chief Finance Officer give authority to approve changes and financial commitments up to £125k with other authorities around the programme removed. All new changes and commitments above £125k require approval from the TfL Commissioner under the Commissioner's delegated authority. Outcomes are reported at the Elizabeth Line Delivery Group on a periodic basis. Additionally, a Programme Change Panel is being established that will provide challenge to new scope and changes.

2. How can CRL demonstrate its interventions are delivering timely resolution of risks to minimise exposure?

Level 1 risk interventions will now be tracked fortnightly at Executive Group meetings and a similar process of action tracking is being established for other categories of risk. Detailed cost reporting shows that risk is being retired as part of regular project management activity and this is offsetting cost pressures arising in other areas. It should be noted that the value of risk retired exceeds £100m as at Period 11.

3. How will completion of the Programme be reflected in the Delivery Control Schedule and AFCDC, including all resource requirements, realistic delivery assumptions, lessons learned and CRL's close-out strategy?

The Delivery Control Schedule is currently being refreshed to provide the same level of granularity to the activities post- commencement of Trial Running that have been fundamental in the run up to Trial Running; all updates will be captured in DCS1.2. Individual schedules will be closed out contractually when they reach completion of scope and close out accounts, resource planning is linked to key milestones such as SC3ROGS and the Assumptions Log for DCS1.1 is in place and currently under review to reflect its validity.

I hope that this response provides a useful summary of the measures that are in place to address the specific issues you have highlighted. A more substantive response focussed on the contents of the Sponsor Summary report will be issued as an Appendix to this letter.

Kind regards,



Mark Wild
CEO, Crossrail

Appendix – CRL Response to Period 10 PRep Report

Programme Response Category	PRep Period 10 Sponsor Summary Content	CRL Period 10 Response
Health & Safety	There were no significant health and safety incidents in Period 10 and the Safety Performance Indicator decreased slightly. With the Covid-19 'third wave' established, CRL remains vigilant and ensures delivery resilience through the safeguarding of key resources and critical operational assets.	The Project Representative's comments regarding Health and Safety performance in Period 10 are noted and agreed as accurate.
Recovery Plan and Schedule	<p>CRL continues to use the Period 4 DCS v1.1 [REDACTED] to measure Programme performance. An update to the Delivery Control Schedule (DCS v1.2) is expected in Period 1, and will include Stations commissioning plans, critical resource management inputs and software plans. T-Minus countdown meetings will be used to assess readiness for Trial Running.</p> <p>The Critical Path to Trial Running remains within the safety assurance process. Clearance of Dependencies, assisted by the StEJ process, is critical to the Central Operating Section SJ (COS SJ) acceptance by RAB(C). Completion of CRL's Element Completion Handover Reports (ECHR) is also critical to input to RfLI's RCAC/EAC assurance documents, which then leads to the Trial Running Railway Assurance Case (TRRAC) and the Crossrail Engineering Safety Assurance Case (CESAC). CRL is expected to reach agreement with the ORR next period on the final procedural steps for entry into Trial Running.</p>	<p>CRL agrees with PRep's comments. The outline of a Plan on a Page is now in place and planned workshops with key stakeholders are scheduled in Period 12 to ascertain overall impact.</p> <p>This is a correct description of the main assurance process required. It was agreed at a strategic meeting that took place between CRL and ORR that a senior manager readiness meeting with the ORR is required. The meeting is scheduled for 19 March 2021.</p>

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	<p>Tottenham Court Road, Liverpool Street and Woolwich Stations achieved SC3, and 4 of the 9 Stations achieved SC1 Enactment, in the period. Schedule adherence at Paddington Station dipped during work carried out over the Christmas break, due to poor forecasting. Consequently, achievement of SC1 Enactment and the T-12 date of mid-February 2021 is under pressure. Farringdon Station remains on target to achieve SC3 ROGS handover to RfLI in early March 2021.</p>	<p>All stations have now achieved SC1 Enactment. Farrington station is at T-1 and scheduled to achieve SC3ROGS on 5 March 2021. Tottenham Court Road station declared T-12 countdown to SC3ROGS on 11 February 2021 while at Paddington station – entry into the T-12 process was declared on 16 February 2021. Liverpool Street and Woolwich stations are well positioned to follow into the T-12 process as planned. Whitechapel station is gaining ground because of the lessons learned from preceding stations to be in good shape to meet its T-12 date. Canary Wharf and Bond Street stations are in the re-planning stages based on execution strategies as both are bespoke in the delivery and assurance processes. Both have challenges that are being worked through and tracked.</p>
<p>Handover Delivery and Assurance</p>	<p>Due to Asset Data issues, Plumstead Maintenance Depot handover is likely to slip to March 2021; the Sidings remain on schedule for handover on 22 January 2021.</p> <p>Completion of SC1 Enactment at all Stations is expected by mid-Period 11. Paddington Station is the last forecast to achieve SC1 Enactment, which may pose a threat to Trial Running. Commissioning of Stations and BIU dry-runs are progressing; the dry-run completed at Farringdon was regarded as successful, and the dry-run at Custom House is about to start, with Tottenham Court Road and Paddington Station to follow in Period 11. The risk of resource shortages for Stations and their commissioning works remains but is being addressed by CRL.</p>	<p>CRL notes PRep’s comments. Plumstead Sidings will now be handed over in March shortly before the ROGS date of 26 March 2021. Handover is pending the completion of the works to re-align the head shunt and disconnect the Old Coal Yard which does not commence until 15 March 2021.</p> <p>As commented on in the Recovery Plan and Schedule section above – all stations have now achieved SC1 Enactment.</p>

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	<p>The remaining [REDACTED] reports are targeted for submission to the Local Authorities by [REDACTED]. Woolwich West will require resolution of [REDACTED] ahead of Trial Operations but has now been de-linked as a requirement for Trial Running.</p>	
<p>SIDT, Dynamic Testing, Trial Running and Trial Operations</p>	<p>Weekly countdown meetings to Trial Running [REDACTED] [REDACTED] are planned with independent advisors at T-8, T-6 and T-4.</p> <p>The second SIDT period started on 13 January 2021 and is scheduled to run through to mid-March 2021. Early indications are that the tests carried out so far with software Point Release 6 have been successful.</p> <p>An important area of progress is the transition to Trial Operations and the requirements, readiness and structure for the Passenger Service Mobilisation Board that will oversee the Passenger Service Readiness Team. The Board will form on commencement of Trial Running.</p>	<p>This is an accurate statement. T-8 Trial Running readiness review meeting was held on 03 February 2021 with key stakeholders from both CRL and RFLI in attendance as well as Sponsors and LoD2 representatives. Outcome of the reviews and outstanding actions are monitored weekly with the accountable Executive owners.</p> <p>SIDT with 6x trains on Y0.6B41 is on-going with completion on target for 16 March 2021. Further testing and stress scenarios are planned during the remainder of SIDT running.</p> <p>CRL agrees with PRep regarding the importance in transition readiness to Trial Operations and the structure for the Passenger Service Mobilisation Board that will oversee the Passenger Service Readiness Team. Terms of Reference for the Passenger Service Mobilisation Board is currently in progress and will form, as PRep notes, at the start of Trial Running.</p>
<p>Stage 2B Operations</p>	<p>FLUs operating on the GWML have maintained an adequate performance, arising from fewer ETCS faults. The next software release remains on schedule for implementation by February 2021.</p>	<p>The Project Representative's comments regarding Stage 2B Operations in Period 10 are noted and agreed as accurate.</p>

Appendix – CRL Response to Period 10 PRep Report

<p>Organisation Transition</p>	<p>ELDG approval of the Project Authority commitment request allows the previously identified 164 roles to proceed; this includes roles within CRL, its supply chain and RfLI, and the extension of existing resource contracts from [REDACTED]. Executive management reviews are being held in early Period 11 and are expected to identify an updated strategy for the delivery model within the Workforce Plan, for the organisation through to Passenger Service and beyond; this is anticipated to yield a substantial reduction in the Indirect costs.</p>	<p>The ELDG approval has secured funding for all roles within CRL, its supply chain and RfLI to be able to extend contracts until [REDACTED] where appropriate and required. This is a further extension from the previous [REDACTED] end date. The Executive Team reviews of the Workforce Plan identified the specific roles required through Trial Running, Trial Operations to Passenger Service and beyond so as to retain key skills, knowledge and experience on the programme whilst ensuring there is a controlled ramp down of resources to gradually reduce indirect costs as the programme closes out.</p>
<p>Stage 3 – SIDT, Trial Running, Reliability Growth and Trial Operations</p>	<p>Given the complexity of the assurance process, Period 11 continues to be pivotal to CRL’s achievement of the [REDACTED] Trial Running date. There is significant tension in the process, particularly in the formation of the CESAC submission in mid-February 2021. This is attributed to CRL’s timely completion of its ECHR and supporting information impacting RfLI’s ability to complete its assurance work associated with RCAC/EAC. These activities, and Dependency closure, are requiring intense management focus. Management interventions will need to be successful, and RfLI’s must be in a position to process late information, to maintain the [REDACTED] date. Given the ongoing schedule pressures, CRL’s current [REDACTED] [REDACTED] appears optimistic, and Trial Running, as currently scoped, might start closer to [REDACTED].</p>	<p>The Project Representative’s assessment of the Trial Running start date is noted, as are the sources of pressure identified.</p> <p>As commented on previously, since P09, further mitigations have been put in place including Deep Dive reviews chaired by the CRL and RFLI to cover ECHR and RCAC status on the 12 February 2021 followed by risks and impact assessments on any outstanding items by 19 February 2021.</p>

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	<p>With two more blockades planned during the Trial Running period, maintaining reliability growth will be a key factor for determining entry into Trial Operations.</p> <p>Delivery of Bond Street Station to SC2 is the key schedule driver and is on the Critical Path to entering Trial Operations, with the completion of all station integration activities running close to the Critical Path. Initial indications suggest that CRL will push hard to deliver Trial Operations [REDACTED], to provide an opportunity to open Stage 3 by [REDACTED]. However, this is likely to need further interventions to address risk on outstanding works such as the TVS and may require the adoption of an SC2 configuration at certain stations, should further schedule slippage occur. CRL’s review of the assurance process for the ELR100 software configuration has enabled an improvement [REDACTED] in the period, to [REDACTED].</p>	<p>Blockades have now been factoring in the latest revision of the schedule to cater for multidiscipline works to be carried out such as ELR100 software drop and construction and commissioning outstanding works.</p> <p>DCS 1.2 will clarify the concerns raised by PRep in Period 10. Currently, only Bond Street station has SC2 although there is a potential to have SC2 at Whitechapel station should it be required. Bond Street station is on the Critical Path for Trial Operations and Revenue Service.</p>
<p>Stations Assurance and Commissioning for Trial Operations</p>	<p>Schedule adherence at Paddington, Tottenham Court Road, Custom House, Bond Street and Canary Wharf Stations has generally slipped in the period, in part due to poor forecasting. Consequently, intense pressure remains to achieve all Station SC1 Enactments necessary for Trial Running; Paddington is now forecast to be the last remaining Station to acquire this</p>	<p>All stations have now achieved SC1 Enactment. Farrington station is at T-1 and on plan to achieve SC3ROGS on 05 March 2021. Tottenham Court Road station declared T-12 countdown to SC3ROGS on 11 February 2021 while Paddington station has declared entry into the T-12 process on 16 February 2021. Liverpool Street and Woolwich stations are well positioned to</p>

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	<p>status in Period 11, and this is threatening the Critical Path for the start of Trial Running. As Paddington Station faces intense pressure to achieve its T-12 countdown date in mid-February 2021, and while testing and commissioning might be impacted, the likely additional costs will be managed through risk drawdown. Emerging scope continues to require management focus, in particular for Canary Wharf Station and Bond Street Station, where scope definition must be completed. Issues that threaten Stations assurance completion include Asset Data, Red Line Drawings, key resource departures and prolonged review periods.</p> <p>Activities to be undertaken during the Trial Running period, such as TVS modifications, PSD rectification and works to improve on times for isolations and possessions for maintenance periods, have yet to be instructed by CRL. These, as well as the time necessary to complete the Windows 10 upgrade, may have the potential to further impact the schedule for entry into Trial Operations.</p> <p>Completion of the delivery strategy for Bond Street Station is still due by end of Period 11. In the meantime, indications are that the date for SC2 completion is slipping and will require interventions.</p>	<p>follow into the T-12 process as planned. Whitechapel station is gaining ground as a result of the lessons learned from preceding stations to be in good shape to meet its T-12 target date. Canary Wharf and Bond Street stations are in the re-planning stages based on execution strategies as both are bespoke in the delivery and assurance processes. Both are experiencing challenges that are being tracked.</p>
<p>Commercial and Risk</p>	<p>The AFCDC reported for Period 10 at the EPPR was held at £15,885m; this exceeds current funding by [REDACTED]. We are concerned that there has been no change to CRL’s forecast over the past 4 periods, particularly since, at Period 9,</p>	<p>The AFCDC remains stable at £15,885m [REDACTED]. There have been underlying movements in terms of both pressures and opportunities which have been managed through Risk and Central Provisions. The Risk & Central</p>

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	<p>CRL reported a [REDACTED] cost pressure that resulted in an excess of unallocated allowances between [REDACTED] and [REDACTED]. At Period 10, this excluded cost pressure has now increased to a potential [REDACTED]; CRL is presently reviewing its cost pressure list.</p> <p>In Period 10, CRL released £20m of Prolongation Risk allowance. This is a consequence of CRL's increased confidence in achieving the start of Trial Running, and a corresponding reduction of Prolongation Risk of its mitigated [REDACTED]. This release of Prolongation Risk has been transferred to the CEO Reserve. CRL continues to identify emerging issues and to draw down risk and contingency, to offset AFCDC increases, putting pressure on the allocation from the CRL Reserve. Consequently, the threat of not completing the Elizabeth Line within the current funding threshold is increasing.</p>	<p>Provisions are primarily for identified items and many of the recent drawdowns have been against these known and identified items.</p> <p>It is not unexpected currently in the Programme to face pressures through emerging scope and activities arising during the complex testing and commissioning phases and mitigations to remain on [REDACTED] schedule. The programme is paying close attention to the rate at which new cost issues are emerging and the extent to which existing provision and risk budget is being consumed. In addition, the opportunities which exist in the programme to retire risk are being pursued with intensity.</p> <p>The Programme team are focussed on driving certainty into the estimates wherever possible, releasing risk funds not required, and learning lessons where possible about previous root cause issues such as supply chain alignment with estimates and optimism bias.</p> <p>There are several emerging cost pressures which could prove to be additional to the risk & provisions held. Whilst these continue to be reviewed, risk released through activities providing more certainty has been transferred to the CEO Reserve to maintain a level of provision to mitigate emerging pressures</p> <p>It is too early to be wholly confident that the programme risk and provisions will be sufficient.</p>
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<p>Organisation</p>	<p>Resource pressures continue on the Programme, as resources seek longer employment opportunities beyond [REDACTED]. The situation is compounded by the enforcement of new IR35 rules in April 2021, which are anticipated to impact CRL's supply chain. With works being pushed into the Trial Running period, and general prolongation of assurance activities, CRL must strike a difficult balance between extending resources beyond the previously extended end date of [REDACTED] and reducing headcount to manage its Indirect costs and AFCDC. This dichotomy is expected to remain for the coming periods until a streamlined organisation that can be fully implemented with a timing that does not conflict with Trial Operations.</p>	<p>As noted, and commented on above in the Organisation Transition section, The ELDG approval has secured funding for all roles within CRL, supply chain and RfLI to extend their contracts, where required and appropriate, until [REDACTED]. Specific verification work is underway to ensure that the right resources remain on the programme to complete any residual work in the Trial Running period and ensure a successful exit from Trial Running and entry into Trial Operations. The Executive team have identified a target organisation design for Trial Operations and Passenger Service, which includes opportunities to consolidate, transition and streamline existing teams to provide cost reductions as the programme progressively closes out. Trial Operations is the next milestone where a more significant change to the organisation profile will be required, and resources will gradually roll off the programme, in line with the DCS 1.1. key milestones as required until this point.</p>
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