

RESPONSE TO THE CROSSRAIL SPONSORS ON THE PROJECT REPRESENTATIVE SPONSOR SUMMARY REPORT – PERIOD 5 REPORT

Date of Issue (this paper): 12 January 2021

Issued to: Simon Adams, Head of Elizabeth Line Sponsor Team - Transport for London

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Approved by: Mark Wild, Chief Executive Officer – Crossrail

1. Purpose

- 1.1. The purpose of this paper is to provide the Crossrail Sponsors with CRL's response to the PRep Sponsor Summary report. It has been produced in consultation with CRL's Subject Matter Experts. A list of consultees is attached as Appendix 1.
- 1.2. The report responded to in this paper is the Period 8 FY2020-21 (18 October 2020 – 14 November 2020) report, issued and received on 13 November 2020.

2. Health & Safety (H&S)

- 2.1 Crossrail acknowledges the Project Representative's comments regarding performance in Period 8. In Period 9, there were two High Potential Near Misses (HPNMs) and two Lost Time Cases (LTCs), of which one was reportable. Performance in Period 10 so far (22 days of data) shows a strong performance of no HPNMs and no LTCs during a period of time that included a construction blockade.

3. EOWL Closeout

- 3.1. Close-out of Element Outstanding Work Lists (EOWLs) with evidence relating to the August blockade has been addressed through more rigorous linkage and sign off in the November blockade. As part of the Element handover process, outstanding EOWLs have been identified and a plan for completion has been agreed with the Crossrail Chief Engineer and the Infrastructure Manager, bearing in mind that EOWLs are required to be closed out at different stages. The timely close out is monitored and discussed as part of the overall ECHR process and forms part of the critical path schedule. A blockade at Christmas was undertaken with 98% productivity and continued in the close out of EOWLs. The [REDACTED] [REDACTED] will be reported as per the normal reporting processes.

4. Recovery Plan and Schedule

- 4.1 The CRL Executive consider the Period 4 DCS1.1 schedule sufficiently assured to form an acceptable baseline against which to measure progress. Should schedule delays be forecast, it is agile enough for new plans and interventions to be developed to mitigate the reported delay. For example, in Period 9 the programme developed and ratified a technical assurance 'firebreak' in February 2021. This firebreak takes advantage of the 3-week schedule saving in removing the ORR LoNo (Letter of No Objection) requirement and introduces robustness into the tail-end assurance programme.

4.2 It is important to note that the DCS 1.1, including the Critical Path, is updated regularly and discussed at senior periodic and executive meetings such as the Schedule Integration Review, Integrated Programme Review, Executive Programme Performance Review, and the Elizabeth Line Delivery Group. Period 9 shows the forecast recovery for transfer into ROGS and commencement of Trial Running to the DCS1.1 [REDACTED]. Changes to the Critical Path to Trial Running have been achieved by compressing the final approval of Trial Running Railway Acceptance Case (TRRAC) to two weeks from four weeks; tying Platform Train Interface Safety Justification acceptance into the final Crossrail Engineering Safety Assurance Case (CESAC); Railway Chapter Assurance Case (RCAC) and Safety Justification (SJ) concurrent acceptance; and introduction of final Structured Engineering Judgements (StEJ) on 15 January 2021.

4.3 As at 23 December 2020, the SJ submission programme has largely held with all Routeway chapters achieving acceptance or endorsement by RAB-C. CRL is currently working on the closeout of outstanding dependencies to translate all endorsements to acceptances. Alongside this is the need to support RfLI, the Infrastructure Manager, with their submission of the RCAC documentation for the RfLI acceptance case. While the interaction between Crossrail's and RfLI's assurance processes has, up to now, introduced a two-week time pressure into the programme, the Trial Running date has been brought back [REDACTED] through the deployment of the following interventions:

- Rationalisation of the RCAC documentation from requiring one for each routeway chapter to one overarching Routeway Element for RCAC.
- Deployment of StEJ to close out the remaining dependencies between the CRL and the RfLI.
- Removal of the need for formal submission, review and receipt of a Letter of No Objection from the ORR and replacement with the DoCoR (Declaration of Control of Risks) process, reducing the Critical Path by three weeks.
- Introduction of a two-week firebreak between completion of the remaining SJs and the submission of the CESAC and supporting SJs to introduce robustness into the remaining assurance programme.

4.4 It should be noted that all shafts were successfully handed over as targeted prior to the Christmas break. Plumstead Depot is now forecast for handover on 22 January 2021.

4.5 A pragmatic approach to the handover of signalling asset data and completion of the 29 new 'L Classes' has been achieved. Both CRL and RfLI are working collaboratively to achieve the revised dates for submission. It has been agreed that this approach will not prevent Trial Running from commencing as per the [REDACTED] schedule.

4.6 Regarding the Project Representative's comments on the impacts of resourcing on the delivery of the DCS1.1, the CRL executive team are conducting detailed review of the organisation and associated cost profiles in mid-January. Once these reviews are completed, the programme will be able to provide a clear profile of personnel required until the end of the programme and have a clear view of the associated costs. The programme will therefore aim to have a final organisational structure and cost profile for the remainder of the programme communicated by the end of January. With respect to the specific comment regarding the station commissioning teams, authorisation for additional resource requirements through to September 2021 has been sought in January.

5. Stage 2B Operations

- 5.1. The software release has yielded the forecast reduction improvement in European Train Control System (ETCS) resets per operating hour, and Full-Length Units (FLUs) have replaced all Reduced Length Unit (RLU) services on the Great Western MainLine (GWML) allowing the RLU to FLU conversion programme to start on 22 December 2020.
- 5.2. The next software release, in January 2021, is forecast to improve the ETCS reset rate further, significantly on the Level 2 ETCS section of the Heathrow Route from the Airport Junction to the Terminals.

6. SIDT, Trial Running and Reliability Growth

- 6.1. Systems Integration Dynamic Testing (SIDT) has always been an opportunity taken to run trains in a timetabled environment to build mileage while the technical assurance activity was being completed. It should be noted that SIDT is not of itself a prerequisite for Trial Running. It is within the gift of the programme to remove periods of SIDT in order to complete any required Dynamic Testing or construction on a risk or as needed basis. As a result, SIDT may be removed in order to introduce more robustness into the Trial Running period by completing more testing or construction before Trial Running commences.
- 6.2. The Central Operating Section Safety Justification (COS SJ) and Crossrail Engineering Safety and Assurance Case (CESAC) are forecast to be on course for completion to achieve the [REDACTED] Trial Running forecast for [REDACTED]. However, it should be noted that the [REDACTED].
- 6.3. The finalisation of scope within the Trial Running period is being addressed through the completion and sign off of the Trial Running and Trial Operations Configuration System Descriptions, the resolution of the remaining critical Trial Operations issues, the development of mitigation plans for the reduced functionality, and the setup of the CRL/RfLI readiness delivery group.
- 6.4. As Trial Running approaches, the Trial Running Mobilisation Board (TRMB) will change to a Passenger Services Mobilisation Group (PSMG) to capture the monitoring and achievement of the entry into Trial Operations criteria. A Configuration Change Management Plan has been agreed and signed off between CRL and RfLI.

7. Stations Assurance and Commissioning for Trial Operations

- 7.1. Recent progress reviews of stations' completion have resulted in bringing forward Woolwich station over Canary Wharf station. All other stations are holding programme.
- 7.2. With respect to concerns on Bond Street's productivity, the station enacted its SC1 state (ready and assured for Trial Running) on 23 December 2020, and the emerging Period 10 forecast shows its SC2 (readiness to support Trial Operations) and SC3 (construction works complete) dates maintaining their caseline positions.

- 7.3. In response to the Project Representative's concern at Custom House station, CRL handed over the station to RfL in June 2020. RfL have sole control of access to the site (albeit with consultation with others in certain circumstances) and coordination of any activities taking place within the station. However, CRL do assist RfL by ensuring that works are coordinated before RfL coordinate and/or carry out any planned maintenance activities, of which CRL are not sighted. To do this "pre-coordination", CRL employ a Project Manager to oversee the remaining delivery of Custom House station as an entire facility, working with PMs from other contracts such as Communications and Controls (C660) and High Voltage Power (C610/C650) to ensure adequate coordination of CRL works and those of SIDT. In addition, where applicable due to impacts on others, work activities may require approval through the Delivery Planning Centre.
- 7.4. The period between the start of Trial Running and Trial Operations commencing is under review with a revised access strategy being developed in order to facilitate the completion of any remaining works at the stations that are affecting the trace. This is likely to result in a blockade in the new plan being proposed in late August 2021 in order to complete any remaining trace affecting station works before Trial Operations. As a result, the [REDACTED] can be completed with minimum disruption, and the period between completion of Trial Running and Trial Operations can be used to close out any emerging issues either on Routeway systems or in Stations.
- 7.5. The majority of Stations' works to go are non-trace affecting, thus away from the trace.
- 7.6. The Plateau 2 team continues to commission the pilot stations in accordance with commissioning plans and deploy learning outcomes across the programme. To date the station integration testing has gone well. Plans are well developed for the other stations. The resource issue has been escalated and resources are being recruited to bolster the Plateau 2 team. It should be noted that senior experienced system integration resources have already been seconded.
- 7.7. While the lack of resource is a concern, the subsequent stations have more time to plan and execute their commissioning strategies. Furthermore, experienced resources demobilised from the pilot stations are being redeployed across the remaining stations. For example, Farringdon station's Project Manager is now coordinating across all other stations. Additionally, as noted earlier in this response, authority has been sought for the necessary roles through to September 2021.

8. Organisation and People

- 8.1. Adequate resources to fulfil Trial Running requirements has been further analysed. Majority of the 164 vacancies will be filled by supply chain resources or by extension of current resources identified in the Workforce Plan. Ten new resources have been identified mainly in Safety and IT. The implementation of these requirements and resources is in train pending financial review. The TfL Talent Process and its implementation in Crossrail is underway and will be formally reviewed at Executive level in January/February 2021.
- 8.2. The Project Representative's comments on the timeliness of decision making are noted. The programme has taken collaborative steps with TfL and within its own programme management to address this. The existing Weekly Performance Review, which is Executive-level, is now attended by the Managing Director of London Underground and other senior leaders from TfL. Its core focus is now on the resolution of escalated issues from the Trial Running Mobilisation Board.

9. Cost and Risk

- 9.1. Following the funding agreement between TfL, GLA and HM Government, Crossrail has had a submission to ELDG in January to drawdown a first tranche authorised. This drawdown covers the costs through to Trial Running [REDACTED]. The selection of these dates was a decision to maximise the focus on delivering the programme [REDACTED].
- 9.2. In Period 8, there was a gross increase of [REDACTED] largely driven by the increase in Indirects ([REDACTED]) due to updating the forecast for the August Workforce Plan. The remaining increase stems primarily from productivity challenges at Paddington and Woolwich stations as well as additional emergency lighting scope at Canary Wharf station.
- 9.3. At the time of setting the DCS1.1 Budget it was known that there would be further increases in Indirect costs based upon the maturity of the Workforce Plan at that time. A provision was made of [REDACTED] to cover such events. The increase in Indirects costs seen in Period 8 is partially offset by the release of the overlay. The remaining increase is covered through a draw on the Chief Executive's reserve ([REDACTED]).
- 9.4. Period 8 saw a net [REDACTED] reduction to Programme & Prolongation risk. This is primarily driven by a reassessment of the risks associated with a second wave of the COVID-19 pandemic where the likelihood of a second safe stop is now deemed unlikely and a reassessment of blockade risks where we have progressed works with minimal risk events.
- 9.5. Subsequently, Crossrail also increased the programme overlay ([REDACTED]) to account for the two-week unmitigated schedule movement to Trial Running.
- 9.6. While there have been several significant draws on programme risk and reserves and further material pressures are known and will likely draw upon this further, Crossrail continues to hold [REDACTED] in risk and reserves as at Period 8. It should be noted that [REDACTED] of this relates to [REDACTED] and delivering to [REDACTED] remains a significant opportunity in releasing risk provision.

10. Key Observations in Period

- 10.1. The Project Representative raises a key concern regarding over-optimism in delivery of the programme. Crossrail's programme leadership team are deploying the following to ensure the programme is fully developed and over-optimism does not prevail:
- Appropriate and robust weekly and periodic reporting identifying programme pressures and issues, escalating these up to Executive level and Elizabeth Line Delivery Group.
 - Periodic risk reviews, reporting on QCRA and QSRA data for Trial Running, Trial Operations and [REDACTED], [REDACTED] and [REDACTED] dates up to Commissioner level.
 - Weekly focused reviews on critical upcoming milestones e.g. TRMB, weekly CEO and Commissioner meetings.
 - The development and publication of strategic execution plans, pulling together execution and management plans into one integrated whole.

- The deployment of a joint CRL/RFLI readiness Delivery team, focussed on identifying critical cross programme issues and interventions required to achieve critical milestones.
- The development and signoff of configuration state documents to lockdown configuration states at key phase transitions.
- The involvement of LoD2, PRep and independent experienced personnel in all the key strategic meetings in order to provide independent challenge and advice.

10.2 In response to PRep seeking assurance that active steps are being taken to protect utilisation of risk monies, the programme has recently introduced new leadership in Finance and Programme Controls with a clear remit to arrest cost escalation and protect utilisation of risk monies. Strict limits have been introduced on approval of unbudgeted change. The Programme Controls team is in the process of introducing a new change control process within the governance structure; adopting principles of senior level ownership and best practice processes from TfL.

10.3 The Project Representative raises a key observation regarding Crossrail's timeline in fulfilling resource requirements. Crossrail has a very detailed workforce and Resource Plan in place, which is frequently reviewed. The programme has started to join the in-programme/supply chain resource requirements with the overall Workforce Plan; although there is still some work to be done. Recruitment is working effectively, with the aim to source as many resources from within TfL/Crossrail as possible. However, it is important that funding for the remainder of the programme is available to provide clarity and certainty to individuals that the phase of the programme, or Cardinal Milestone, to which they are allocated is funded. This needs to be approved and communicated as soon as possible in 2021 to ensure the correct resources are available and retained.

END

APPENDIX 1 – LIST OF CONTRIBUTORS

RESPONSE TO THE CROSSRAIL SPONSORS ON THE PROJECT REPRESENTATIVE SPONSOR SUMMARY REPORT

Period 8 FY2020-21 (18 October 2020 – 14 November 2020) report, issued and received on 11 December 2020.

Chief Finance Officer
Chief of Staff
Chief People Officer
Chief Programme Officer
Communications Director
Crossrail Operations Business Manager
Deputy Programme Controls Director
Head of Finance
Head of Risk
Lead Reliability Engineer
Operations Business Manager
Programme Integration Director
Reporting and Governance Support Manager