

# Agenda

**Meeting: Elizabeth Line Committee**

**Date: Friday 29 January 2021**

**Time: 9.30am**

**Place: Teams Virtual Meeting**

## Members

Heidi Alexander (Chair)

Anne McMeel (Vice-Chair)

Sarah Atkins

Kathryn Cearns OBE

(Department for Transport Observer)

Prof Greg Clark CBE

Dr Nelson Ogunshakin OBE

Mark Phillips

Copies of the papers and any attachments are available on [tfl.gov.uk How We Are Governed](https://tfl.gov.uk/How-We-Are-Governed).

To maintain social distancing in the current circumstances, the meeting will be held by videoconference or teleconference. The meeting remains open to the public, except for where exempt information is being discussed as noted on the agenda, as it will be webcast live on the [TfL YouTube channel](#).

A guide for the press and public on attending and reporting meetings of local government bodies, including the use of film, photography, social media and other means is available on [www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf](https://www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf).

## Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Sue Riley; [sueriley@tfl.gov.uk](mailto:sueriley@tfl.gov.uk); Funmi Amusu; [FunmiAmusu@crossrail.tfl.gov.uk](mailto:FunmiAmusu@crossrail.tfl.gov.uk).

For media enquiries please contact the TfL Press Office; telephone: 0343 222 4141; email: [PressOffice@tfl.gov.uk](mailto:PressOffice@tfl.gov.uk)

Howard Carter, General Counsel  
Thursday 21 January 2021

**Agenda  
Elizabeth Line Committee  
Friday 29 January 2021**

**1 Apologies for Absence and Chair's Announcements**

**2 Declarations of Interest**

General Counsel

**Members are reminded that any interests in a matter under discussion must be declared at the start of the meeting, or at the commencement of the item of business.**

**Members must not take any part in any discussion or decision on such a matter and, depending on the nature of the interest, may be asked to leave the room during the discussion.**

**3 Minutes of the Meeting of the Committee Held on 26 November 2020 (Pages 1 - 8)**

General Counsel

**The Committee is asked to approve the minutes of the meeting of the Committee held on 26 November 2020 and authorise the Chair to sign them.**

**4 Matters Arising, Actions List and Use of Delegated Authority (Pages 9 - 12)**

General Counsel

**The Committee is asked to note the updated actions list.**

**5 Safety Update (Pages 13 - 16)**

Managing Director, London Underground and TfL Engineering and Chief Executive Officer, Crossrail

**The Committee is asked to note the paper.**

**6 Project Status Update** (Pages 17 - 20)

Chief Executive Officer, Crossrail

**The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda.**

**7 Elizabeth Line Readiness** (Pages 21 - 24)

Managing Director, London Underground and TfL Engineering

**The Committee is asked to note the paper.**

**8 Finance Update** (Pages 25 - 26)

Chief Finance Officer, Crossrail and Divisional Finance Director, London Underground.

**The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda.**

**9 Elizabeth Line Risk Management** (Pages 27 - 30)

Chief Finance Officer, Crossrail and Divisional Finance Director, London Underground

**The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda.**

**10 Project Representative Report** (Pages 31 - 32)

Chief Executive Officer, Crossrail

**The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda.**

**11 Crossrail Programme Assurance** (Pages 33 - 36)

Chief Finance Officer, Crossrail and Divisional Finance Director, London Underground

**The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda.**

**12 Audit and Assurance Update** (Pages 37 - 48)

General Counsel and Director of Risk and Assurance

**The Committee is asked to note the paper and to approve the Terms of Reference of Independent Investment Programme Advisory Group's Crossrail Sub-Group.**

**13 Members' Suggestions for Future Discussion Items** (Pages 49 - 52)

General Counsel

**The Committee is asked to note the forward programme and is invited to raise any suggestions for future discussion items for the forward programme and for informal briefings.**

**14 Any Other Business the Chair Considers Urgent**

**The Chair will state the reason for urgency of any item taken.**

**15 Date of Next Meeting**

Thursday 18 March 2021 at 1.30pm.

**16 Exclusion of Press and Public**

**The Committee is recommended to agree to exclude the press and public from the meeting, in accordance with paragraph 3 of Schedule 12A to the Local Government Act 1972 (as amended), in order to consider the following items of business.**

**Agenda Part 2**

**17 Project Status Update** (Pages 53 - 64)

**Exempt supplemental information relating to the item on Part 1.**

**18 Finance Update** (Pages 65 - 68)

**Exempt supplemental information relating to the item on Part 1.**

**19 Elizabeth Line Risk Management** (Pages 69 - 80)

**Exempt supplemental information relating to the item on Part 1.**

**20 Project Representative Report** (Pages 81 - 200)

**Exempt supplemental information relating to the item on Part 1.**

**21 Crossrail Programme Assurance** (Pages 201 - 208)

**Exempt supplemental information relating to the item on Part 1.**

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## Transport for London

### Minutes of the Elizabeth Line Committee

#### Teams Virtual Meeting 1.00pm, Thursday 26 November 2020

##### Members

Heidi Alexander (Chair)  
Anne McMeel (Vice-Chair)  
Sarah Atkins (non-voting Member)  
Professor Greg Clark CBE (for part)  
Dr Nelson Ogunshakin OBE  
Mark Phillips

##### Government Representative

Kathryn Cearns OBE (for part)

##### Board Members in Attendance

Cllr Julian Bell

##### Executive Committee

Andy Byford	Commissioner
Howard Carter	General Counsel
Simon Kilonback	Chief Finance Officer
Andy Lord	Managing Director, London Underground and TfL Engineering
Mark Wild	Chief Executive Officer, Crossrail

##### Also in attendance

Project Representative	Jacobs
Matthew Lodge	Department for Transport (from Minute 06/11/20)

##### Staff

Carole Bardell-Wise	HSQE Director, Crossrail
Susan Beadles	General Counsel, Crossrail
Rachel McLean	Chief Finance Officer, Crossrail and Divisional Finance Director, London Underground
Clive Walker	Director of Risk and Assurance
Funmi Amusu	Head of Secretariat, Crossrail
Sue Riley	Secretariat Officer

#### 01/11/20 Apologies for Absence and Chair's Announcements

The Chair welcomed Members to the first meeting of the Committee, including Sarah Atkins, who joined as a non-voting Member of the Committee, and Kathryn Cearns OBE, Government representative. Sarah Atkins and Kathryn Cearns OBE, along with Anne McMeel and Dr Nelson Ogunshakin OBE, were previously Members of the Crossrail Limited Board.

The meeting was broadcast live on YouTube, except for the discussion of the information on Part 2 of the agenda, which was exempt from publication.

There were no apologies for absence. Professor Greg Clark CBE had given apologies for lateness and Kathryn Cearns OBE had indicated that she would need to leave the meeting early.

The Chair highlighted that there was a specific agenda item on safety which would be the first item considered at the meeting and invited Members to raise any safety issues either under the specific agenda item or with the appropriate member of the Executive Committee after the meeting.

## **02/11/20 Declarations of Interests**

Members on the TfL Board confirmed that their declarations of interests, as published on [tfl.gov.uk](http://tfl.gov.uk), were up to date. Members Sarah Atkins and Kathryn Cearns OBE confirmed there were no additional interests that related specifically to items on the agenda.

## **03/11/20 Governance Transition Arrangements**

The Chair thanked the previous Chair and Deputy Chair of the Crossrail Limited Board, Tony Meggs CBE and Nick Raynsford, for their hard work during their tenure, and also thanked the staff of Crossrail, TfL and the Department for Transport who had worked collaboratively to ensure the effective transition of governance to TfL on 1 October 2020.

Howard Carter introduced the paper, which provided an overview of the new governance arrangements for the Crossrail project and the Terms of Reference for the Committee. The arrangements meant responsibility for the Crossrail project were now directly with TfL to ensure seamless and fully aligned decision-making during the critical final phases of the project. The governance transition plans were approved by the TfL Board and the Department for Transport.

The initial phase of the transition was focused on changes to top level governance to simplify decision-making and allow TfL greater control over its risk exposure. This included the establishment of the Elizabeth Line Committee as a new special purpose Committee of the TfL Board; and the Elizabeth Line Delivery Group chaired by the Commissioner. Safety, transparency and a smooth decision-making process were key priorities.

The Project Representative continued to provide independent oversight on behalf of the Committee.

**The Committee noted the paper.**



## **04/11/20 Safety Update**

Mark Wild introduced the paper which provided an update on safety on the Crossrail project. Health and safety remained the top priority and overall performance was kept under constant scrutiny.

There were no significant operational safety incidents during the periods covered by the report and performance remained stable although there had been an increase in incidents involving slips, trips and falls. There had been High Potential Near Misses involving secure doors being left unlocked and designated rules not being followed on site. All incidents had been investigated by the contractor and client teams and lessons learnt were shared at the Safety and Health Leadership Team meetings attended by partners and suppliers, and at the Learning Forum attended by the construction leadership team.

There was a prioritised focus on safe working at height, electrical safety, method statements and risk assessments.

Future focus was on ensuring the resilience of the plans for continued safe working on the project during the coronavirus pandemic. Campaigns counting down to readiness for safely commencing trial running were being promoted and lessons learned from Dynamic Testing would be used to inform the safe commencement of trial running.

Robust plans were in place to manage cases of coronavirus and self-isolation. All incidents of infection had been contained and productivity remained unaffected

Committee Members supported the proposal to engage Members with Crossrail safety performance through the allocation of Crossrail stations to individual Committee Members, and Mark Phillips would be the safety champion of the Committee. **[Action: Carole Bardell-Wise]**

Information on the management of safety related interface risks between operational and construction teams would be incorporated into future reports to the Committee, including lessons learned by London Underground.

**[Action: Mark Wild/ Andy Lord/ Carole Bardell-Wise]**

**The Committee noted the paper.**

## **05/11/20 Project Status Update**

Mark Wild introduced the paper which provided an update on the status of the Crossrail project. The team were committed to ensuring that there was no further slippage of the schedule or further recourse to public funds beyond what had been identified and had taken on the challenge of safely improving on cost and budget.

Additional specialist resources had been recruited to apply expertise in progressing the work to finish the stations. Lessons learned from attaining a Staged Completion 3 at Farringdon station would also be applied to the remaining stations.

A 'sweep up' blockade was ongoing, to address any issues left over from the initial

construction blockade. Productivity was progressing well at 92 per cent.

Eight of the 10 shafts and portals had been fully handed over, with the remaining two scheduled to be handed over by 26 December 2020.

TfL Rail services continued to deliver a very high performance, with over 96 percent of trains meeting the reliability target. There was a focus on improving the reliability of the trains prior to full-time running and critical software drops were due to take place in December 2020 and January 2021.

Network Rail was making progress with infrastructure upgrades on the west and east sections, including the delivery of step-free access and changes to improve the ambience of stations and passenger experience.

The assurance of documentation remained ongoing with a focus on safety.

An alternative delivery model for completing non-essential and non-safety critical items was being reviewed. Works that could be assigned to the alternative delivery model were being identified and a costs and benefits analysis was being undertaken to determine the most cost-effective route for delivering the works.

Staff welfare, especially during the sustained period of working remotely from home, was regularly considered and staff were encouraged to monitor their mental health and wellbeing. Staff retention was being impacted by the financial uncertainty with some staff joining the High Speed 2 project. It was agreed that the timing of staff moving between projects would be raised with the Department for Transport.

**[Action: Kathryn Cearns OBE]**

The Committee agreed that the weekly Crossrail Dashboard be circulated to Members for information.

**[Action: Mark Wild/ Secretariat]**

**The Committee noted the paper.**

## **06/11/20 Finance Update**

Simon Kilonback presented the paper, which provided an update on the financing of the Crossrail project. A new funding package was being negotiated, following a review of the current cost and schedule forecast. The additional costs were estimated to be £1.1bn higher than the additional £2.15bn financing package agreed in December 2018. Discussions were ongoing with the Department for Transport and the Greater London Authority on how funding of the additional costs would be resolved.

The delay in reaching a decision on a funding arrangement was having an adverse effect on productivity and the retention and recruitment of critical skills; the management of contracts with suppliers and making future commitments; and software funding commitments.

**The Committee noted the paper.**

## **07/11/20 Elizabeth Line Readiness**

The Committee noted the update on the performance of the TfL Rail operational service and the readiness of the Infrastructure Managers for the operations and maintenance of the railway after handover from Crossrail.

**The Committee noted the paper.**

## **08/11/20 Crossrail Programme Partner Incentive**

Mark Wild introduced the paper and the supplementary information on Part 2 of the agenda. The paper proposed a revision to the current incentive scheme in the Programme Partner (PP) Services Contract with a new incentive scheme that would better support the delivery of the close out of the Crossrail project.

The proposed changes to the PP contract were supported by the Department for Transport and were in line with the behaviour incentive mechanism also deployed with the Project Delivery Partner Services Contract, which was approved by the Programmes and Investment Committee on 17 July 2019.

At the request of Committee Members, further information on the background to the proposals would be circulated and a decision would be taken by Chair's Action and reported to the next meeting of the Committee. **[Action: Mark Wild/Secretariat]**

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda.**

## **09/11/20 Project Representative Report**

Mark Wild introduced the paper and the supplementary information on Part 2 of the agenda. The paper presented the periodic reports from the Project Representative (P-Rep) on the Crossrail project for periods 2, 3, 4, 5 and 6 and the management responses to these reports. In line with the commitments made by the Mayor for greater transparency on the Crossrail project, copies of the reports were available on the TfL website, with the commercially sensitive material redacted.

The key areas of concern highlighted by the P-Rep were in relation to the strategy for addressing resource shortfalls; the need for a definitive baseline scope from which to manage station works; the need for a functioning change management process for all scope and costs to be change controlled against the baseline; and the need for effective management of interdependencies. All these areas were being addressed by Crossrail.

The Committee requested that the P-Rep reports be more succinct and greater alignment between the issues raised and the management response, including performance data and highlighted areas for improvement.

**[Action: P-Rep/ Hannah Quince]**

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda.**

## **10/11/20 TfL Audit and Assurance**

Howard Carter presented the paper, which provided an overview of the role of the Internal Audit team in relation to the Crossrail project; the activities planned to be carried out in 2020/21; and proposals for delivery of third line project assurance activities going forward.

Discussions were ongoing on the Integrated Assurance Plan which would be presented at the next meeting of the Committee. **[Action: Howard Carter]**

The Committee agreed the proposal that the current TfL Independent Investment Programme Advisory Group undertake third line assurance for the Crossrail project and requested more visibility of the second line assurance activities which were being provided to the Elizabeth Line Delivery Group.

**[Action: Howard Carter/Rachel McLean]**

**The Committee noted the paper.**

## **11/11/20 Enterprise Risk Update – Opening of the Elizabeth Line (ER14)**

The Committee noted the update on the risks to opening the Elizabeth line and the controls and mitigations for these risks.

A separate document, the Elizabeth Line Risk Landscape, described the key risks associated with bringing the railway into operation and how these were owned and managed by Crossrail and other TfL subsidiaries. Following the transition of governance of Crossrail into TfL, the Risk Landscape was being updated and would be presented to the next meeting of the Committee.

**[Action: Helen Ramsden/ Rob Halstead]**

**The Committee noted the paper.**

## **12/11/20 Members' Suggestions for Future Discussion Items**

Howard Carter introduced the item and the Committee's forward plan. All the suggested future agenda items captured during the meeting would be included on the forward plan.

**[Action: Secretariat]**

**The Committee noted the forward plan.**

## **13/11/20 Any Other Business the Chair Considers Urgent**

There was no other urgent business.

## **14/11/20 Date of Next Meeting**

The next scheduled meeting of the Committee would be held on Friday 29 January 2021 at 9.30am.

## **15/11/20 Exclusion of the Press and Public**

The Committee agreed to exclude the press and public from the meeting, in accordance with paragraph 3 of Schedule 12A to the Local Government Act 1972 (as amended), when it considered the exempt information in relation to the items on: Crossrail Programme Partner Incentive Scheme; and Project Representative Report.

The meeting closed at 3.47pm.

Chair: \_\_\_\_\_

Date: \_\_\_\_\_

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**Elizabeth Line Committee**



**Date: 29 January 2021**

**Item: Matters Arising, Actions List and Use of Delegated Authority**

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**This paper will be considered in public**

## **1 Summary**

- 1.1 This paper informs the Committee of progress against actions agreed at previous meetings.
- 1.2 There is an outstanding Chair's Action from the previous meeting, which is currently being progressed and will be reported to the next meeting.

## **2 Recommendation**

- 2.1 **The Committee is asked to note the Actions List.**

### **List of appendices to this report:**

Appendix 1: Actions List

### **List of Background Papers:**

Minutes of previous meetings of the Elizabeth Line Committee.

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## Elizabeth Line Committee Actions List (to be reported to the meeting on 29 January 2021)

### Actions from the meeting held on 26 November 2020

Minute No.	Item/ Description	Action By	Target Date	Status/ Note
04/11/20	<p><b>Safety Update</b> Allocation of Crossrail stations to individual Committee Members and engagement with Mark Phillips as the safety champion of the Committee.</p>	Carole Bardell-Wise	Following the meeting.	In progress. Mark Phillips is nominated Safety Champion and has been briefed on that role. Arrangements for other Members to visit sites will be made as soon as it is appropriate for these to take place in the light of Covid-19 restrictions.
	<p>Information on the management of safety related interface risks between operational and construction teams to be incorporated into future reports to the Committee, including lessons learned by London Underground.</p>	Andy Lord/ Mark Wild/ Carole Bardell-Wise	29 January 2021 meeting.	Changes incorporated into the report on agenda. Complete.
05/11/20	<p><b>Project Status Update</b> The timing of staff moving between Crossrail and High Speed 2 projects be raised with the Department for Transport.</p>	Kathryn Cearns OBE	Following the meeting.	Oral update to be provided at the meeting. Complete.
	<p>Weekly Crossrail Dashboard to be circulated to Committee Members for information.</p>	Mark Wild/ Secretariat	Following the meeting.	Information being circulated. Complete.
08/11/20	<p><b>Crossrail Programme Partner Incentive</b> Further information on the background to the proposals would be circulated and a decision would be taken by Chair's Action and reported to the next meeting of the Committee.</p>	Mark Wild/ Secretariat	Following the meeting.	In progress. Oral update to be provided at the meeting.

Minute No.	Item/ Description	Action By	Target Date	Status/ Note
09/11/20	<b>Project Representative (P-Rep) Report</b> The P-Rep reports to be more succinct and greater alignment between the issues raised and the management response, including performance data and highlighted areas for improvement.	P-Rep/ Hannah Quince	29 January 2021 meeting.	Changes reflected in report on agenda. Complete.
10/11/20	<b>TfL Audit and Assurance</b> Discussions were ongoing on the Integrated Assurance Plan which would be presented at the next meeting of the Committee.	Howard Carter	29 January 2021 meeting.	Item on agenda. Complete.
	The Committee requested more visibility of the second line assurance activities which were being provided to the Elizabeth Line Delivery Group.	Howard Carter/ Rachel McLean	January 2021	Complete.
11/11/20	<b>Enterprise Risk Update – Opening of the Elizabeth Line (ER14)</b> Following the transition of governance of Crossrail into TfL, the Risk Landscape was being updated and would be presented to the next meeting of the Committee.	Helen Ramsden/ Rob Halstead	29 January 2021 meeting.	Item on agenda. Complete.
12/11/20	<b>Members' Suggestions for Future Discussion Items</b> Suggested future agenda items captured during the meeting to be included on the forward plan.	Secretariat	29 January 2021 meeting.	Items added to the forward plan. Complete.

## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Safety Update

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### **This paper will be considered in public**

#### **1 Summary**

1.1 This paper provides an update on safety.

#### **2 Recommendation**

**2.1 The Committee is asked to note the paper.**

#### **3 Safety Update**

3.1 This paper includes a performance update primarily for the Crossrail Project and TfL Rail (MTR EL) and for infrastructure manager, Rail for London Infrastructure (RFLI), where necessary.

3.2 In pursuit of Target Zero and the belief that all harm is preventable, there was a good improvement in 2020 with the achievement of 27 green weeks compared with 11 in 2019. Green weeks are when there has been zero reportable or lost time injury accidents or High Potential Near Miss (HPNM) events for the working week.

3.3 Health and Safety performance has remained stable for the last two periods. There were no safety related incidents during the construction blockade over the new year. So far in Period 10 there have been no accidents or incidents.

3.4 In Period 8:

(a) there were no reportable or lost time accidents on the Crossrail Programme;

(b) there were no RFLI employee and contractor incidents;

(c) there were 12 minor passenger injury accidents on TfL Rail; and

(d) Beyond the Central Operating Section, ten injuries occurred on the Eastern route (to Heathrow/ Reading) and two on the Western route (to Shenfield). Most of these accidents were as a result of slips, trips and falls.

3.5 In Period 9:

(a) there was one reportable and one lost time injury accident on the Crossrail Programme. At Bond Street, an operative trapped his hand between building cladding and the handle of the piece of small plant he was using, a concrete planer. He sustained injuries to the fingers on his left hand. At the

Whitechapel, an operative was working when his knee locked up requiring medical attention and some time off to rest; and

(b) there were no RFLI employee and contractor accidents or incidents.

- 3.6 In response, all accidents have been thoroughly investigated and the learning shared by the principal contractors through the Safety and Health Executive Leadership Team and the Crossrail Learning Forum. The Crossrail team also consider matters of compliance, improvement and HSE performance following the introduction of the new periodic client review meetings. In addition, a member of the Crossrail Executive Group sponsors the investigation in support of the Project Client and Principal Contractor team.
- 3.7 In Crossrail, a HPNM event is any incident that could have been an accident and has the potential to have been significantly more serious than the actual outcome. It is an assessment and judgement between the parties involved as to whether an incident should be designated as a HPNM event.
- 3.8 There were five HPNM events in Period 8 and 9. Most recently, at the Plumstead maintenance facility, a sleeper being used to protect one of the sidings was repositioned incorrectly foul of the adjacent line. The issue was observed and reported and is subject to investigation. At Paddington, while removing firestopping, which is material installed to seal and fill voids and gaps, an operative cut into the casing of a cable causing the circuit breaker to activate. At Whitechapel, a tunnel telephone was damaged and a team were also found working without authority in a restricted area. At Bond Street, a moped driver was struck by the site gate when it was opened for a departing vehicle. He was riding on the pavement at the time.
- 3.9 There has been an improvement relating to operational (railway) HPNM events - an area commanding heightened focus and review.
- 3.10 Since the last report, the Accident Frequency Rate (AFR) has remained at 0.10. The Lost Time Index has remained at 0.15. The HPNM rate has decreased from 0.25 to 0.23. The frequency rates are calculated over a rolling 13 periods.
- 3.11 We continue to manage the Covid-19 response in our established Gold, Silver and Bronze command structure. This structure has been stood up and maintained since the start of the crisis and is fully aligned with Government, Public Health England and TFL policies. The command structure includes all parts of "Team Crossrail"; from the delivery units right through to the operator and maintenance teams.
- 3.12 Additional measures have been initiated in response to the third national lockdown which include the suspension of all non-essential visits to project sites and the elimination of multi-site visits where possible. Weekly communications have been issued to all staff and to the supply chain to ensure the critical messages are being regularly reinforced. The pandemic secure site arrangements are audited weekly, with special emphasis on the 'Golden Assets' e.g. the Romford Control Centre, Tunnelling and Underground Construction Academy, Plumstead. The priority remains safely to deliver the construction activity in support of Trial Running.

- 3.13 In pursuit of Target Zero (our green weeks) a workshop was held in December 2020 to draw together the improvement plan for 2021. This will be available in January 2021 and shared with Committee Members. It collates strategic principles and milestones to ensure the safe completion of the Programme.
- 3.14 In Period 9 the allocation of health and safety leadership engagement has been updated and announced. The Crossrail Executive Group is providing oversight across several sites alongside leaders that have been selected to provide support to specific sites, as sponsors including Committee Members. This will remain remote sponsorship at this time.
- 3.15 The management of safety related interface risks between operational and construction environments has been mitigated by the overall phasing of the Programme. The intentional design of Dynamic Testing, System Integration Testing, dedicated construction blockades before the critical phases of Trial Running and Trial Operations have deliberately considered how a controlled safe handover is achieved.
- 3.16 The continual review of the interface management arrangements is considered by the Crossrail, Operations and Maintenance teams at the Client Compliance and HSE Performance review meetings held every period. The programme of extensive ‘Day in the Life Of’ scenario testing and exercises also considers this risk in practical detail.
- 3.17 The Crossrail Construction Design and Management strategy and associated plans and procedures are being refreshed to reflect the ways of working and arrangements for duty holders when the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGs) apply, at commencement of Trial Running. At this point Crossrail is still accountable for managing Trial Running with the difference being RFLI operational rules rather than the construction commissioning rule book.
- 3.18 The key risk areas are maintaining our very high standards on the basics of occupational safety, while we also focus on the transition to ROGs and Trial Running therefore the composition of Safety and Health Leadership Team (SHELT) through 2021 is being reviewed given the changes and greater emphasis on an operational railway. The CRL Programme Director and Chief Operations Director will jointly chair this critical leadership team through 2021.

**List of Appendices:**

None

**List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Project Status Update

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the status of the Crossrail project.
- 1.2 Following the initial phase of transition, the Elizabeth Line Delivery Group (ELDG) was formed to ensure appropriate oversight of the delivery of the Elizabeth line by Crossrail and TfL Executive. The ELDG is chaired by the Commissioner. In line with the commitments made by the Mayor for greater transparency of the Crossrail project, the minutes and actions from ELDG are available on our website<sup>1</sup>. Available reports will be uploaded to correspond to the meeting of this Committee.
- 1.3 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the supplementary paper on Part 2 of the agenda.**

#### **3 Crossrail Update**

- 3.1 Good progress has continued across the project in line with our plan (the Delivery Control Schedule, DCS) to enter Trial Running at the earliest opportunity in 2021 and open the Elizabeth line in the first half of 2022, if not sooner.
- 3.2 There are two critical paths to opening the railway. The first is Trial Running, which is a period of intensive operational testing of the railway and is a pivotal milestone for the programme. Once it begins it will provide the project with further certainty around the opening of the central section. The second critical path is the handover of stations to the Infrastructure Manager. The formal handover is taking place on a staged basis to take account of the challenges presented in handing over and commissioning these huge and complex assets.
- 3.3 The progression of assurance documentation required for entry into the Trial Running stage remains a priority for the programme. The assurance process for

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<sup>1</sup> <https://tfl.gov.uk/corporate/publications-and-reports/elizabeth-line-delivery-group>

the Elizabeth line is complex and requires the integration of individual railway assets which must undergo a series of safety checks before each one is issued with a safety document. Around 200,000 documents need to be completed as part of the assurance and handover and safety certification for the Elizabeth line.

- 3.4 There is significant work to do to close out outstanding assurance work for the routeway, but progress has been made in making the assurance process as efficient as possible to ensure that it can accommodate the remaining assurance work. This includes agreements between Crossrail and RfLi on the processes and timescales for approvals. A protection mechanism has also been inserted into the schedule in the form of a two-week 'firebreak' that could be used to hold the Trial Running date, should the assurance for the Central Operating System Safety Justification be delayed.
- 3.5 All shafts and portals have now reached full handover and are in control of the the Infrastructure Manager. Limmo Shaft achieved this status on 8 December and Stepney Green Shaft on 17 December 2020. Shafts and portals are integral parts of the railway's infrastructure; the former house drainage, ventilation fans and emergency access and egress if required. The latter act as entrances and exits to the tunnelled sections of the Elizabeth line. Handing over all ten of these assets is an important and vital step towards entering intensive operational testing.
- 3.6 Eight of the nine central section stations are now in a configuration to support Trial Running and Paddington station will be in this configuration by the end of January.
- 3.7 Dynamic Testing of the signalling and train systems, required for Trial Running is at a very advanced state of completion. This enabled the commencement of Systems Integration Dynamic Testing (SIDT) on 3 December 2020.
- 3.8 SIDT provides a valuable opportunity to test the complex systems in operational-like scenarios and begin to understand the reliability and software performance of the railway. It also marks the incorporation of the Route Control Centre into the testing process. For the first time in the history of the project eight trains were in operation together in the Central Operating Section. The full length unit trains were timetabled to run in groups at five-minute headways, replicating the close running that will be seen in 12 trains per hour operation when the central section opens.
- 3.9 Early indications demonstrate a positive performance of SIDT with over 20,000 miles being achieved during Period 9, providing greater mileage than previously achieved in the project's test operations. Overall, the railway has performed as expected and nothing has arisen that would be a barrier for entry into Trial Running. There are a number of signalling and train software issues to resolve, many of which have been seen before, with fixes scheduled for release or being developed; others are being discussed with Siemens and Bombardier. After a pause over the festive period to allow for construction blockade work and further functional dynamic testing, SIDT resumed on 13 January 2021, using upgraded software. A small number of tests are scheduled in the coming weeks to complete the software configuration for full Trial Running.



- 3.10 A third construction blockade was undertaken over the festive period to complete residual works on the routeway. A significant amount of asset labelling was undertaken, alongside Canary Wharf station works on its low voltage power system, key maintenance works on overhead line equipment, testing of radio systems and portal cameras, Network Rail fringe works, closing out snagging and defect works, and asset data across Plumstead Maintenance Facility and the South East spur. The blockade achieved 98 per cent productivity against the plan, a similarly high level of productivity to the two preceding blockades, and has helped recover significant time lost as a result of the coronavirus pandemic.
- 3.11 A countdown mentality to Trial Running is being applied across the programme to ensure that there is clarity of what is needed to be in place and by when, as well as to ensure readiness on the part of both Crossrail and the operator. Crossrail and the IM are jointly preparing for the classification of the central operating section as an operational railway, under the Railways and Other Guided Transport Systems (Safety) Regulations 2006. At the commencement of Trial Running this will mark the transition of rules from a construction programme to an operational railway. A number of activities are being implemented to support this through the training of the supply chain on operating under the new rules, provision of documentation to the operator and closing of the safety assurance of infrastructure with independent assurance panel and key duty holders.
- 3.12 Farringdon is our most advanced central London station and has reached an important milestone with the construction works being sufficiently finished for testing and commissioning activities to start. Farringdon is the first of the central London stations to reach the T-12 landmark. This means the station is considered to be 12 weeks away from being ready for handover to TfL. Work at the station is now primarily focused on the extensive testing and commissioning of systems ahead of the Elizabeth line opening. Reaching this important milestone allows the contractor to commence demobilisation across the site and enables Crossrail to commence the process of handing the station over to TfL. It is expected that the station will be formally handed over to TfL in Q1 2021 and we are still on target to achieve this.
- 3.13 Good progress continues at stations across the central section. Paddington, Tottenham Court Road, Liverpool Street and Woolwich stations have all now achieved Staged Completion 3 (SC3) status, which is the step before entering the testing and commissioning phase once all of the physical works are complete leading to the T-12 landmark. These stations will be followed by a number of the central London station sites achieving SC3 status over the coming months.
- 3.14 There still remains considerable amount of work to achieve at Bond Street station. An execution plan for the completion is in place and there is a clear path for it being able to support Trial Operations, with associated work at the station due to be completed in the summer of 2021.
- 3.15 Network Rail's major upgrade works to surface stations on the eastern and western section of the railway continue to progress, with step-free access being prioritised where possible. Acton Main Line and West Ealing will become step-free in early 2021 and will be followed by Ealing Broadway, Southall, Hayes and Harlington, West Drayton, Romford and Ilford in intervals over the next 12 months.

**List of Appendices:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda

**List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 29 January 2020

**Item:** Elizabeth Line Readiness

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the performance of the TfL Rail operational service and the status of the readiness of the Infrastructure Managers for the operations and maintenance of the railway after handover from Crossrail.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper.**

#### **3 Performance of Operational Service**

- 3.1 TfL Rail services continue to deliver excellent performance, with 96.4 per cent of trains meeting the reliability target in period 10, the four-week period between 14 December 2020 and 9 January 2021. This continues the trend of service performance above target for the year, although services in period 9 (94.1 per cent) were impacted by infrastructure incidents on Network Rail's Great Western and Anglia routes.
- 3.2 We continue to focus on mitigating software related failures in the European Train Control System signalling system. New software is being introduced in January and February 2021 to improve reliability. From 22 December 2020 the nine-car class 345 trains were re-introduced out of Paddington and have so far performed in line with expectations and a further software update is on course to be delivered and brought into use at the beginning of February 2021.

#### **4 Central Section Reliability**

- 4.1 Crossrail's plans for reliability growth include Dynamic Testing in the central operating section with up to four trains followed by a period of Systems Integration Dynamic Testing (SIDT) with up to eight trains running. This is followed by Trial Running (TR) – the point at which the central operating section is classified as an operational railway.
- 4.2 SIDT commenced on 3rd December 2020 and has provided significantly more mileage with 20,403 miles during Period 9; this is over three times the total mileage achieved during previous testing. Full length unit mileage is currently projected to be 141k at entry into TR and 929k at entry into Trial Operations.

4.3 Overall SIDT performance was as expected and only two significant new issues were identified. The programme to TR and in TR remains subject to change, with additional tests and construction activities needing to be accommodated.

4.4 During SIDT, TfL personnel gained experience managing the train operations from the Route Control Centre.

## **5 Operational Readiness**

5.1 Recruitment and training continue, albeit in line with the safe systems of work in place in response to the coronavirus pandemic. Coronavirus continues to be the main risk to training delivery e.g. through absence of specialist trainers, trainees, or lack of access to training locations.

5.2 Progress is positive, however, with the minimum number of maintenance colleagues required for TR now in post. The training requirement for operations includes the completion of all courses, including Refresher, Update and New courses, by 19 March 2021. By the start of TR ramp up, 16 Traffic Managers are expected to have fully completed the necessary training with the remaining eight completing in the first four weeks of TR.

5.3 The majority of London Underground (LU) maintenance training has already been completed for Farringdon, Tottenham Court Road, Liverpool Street and Whitechapel, and familiarisation tours are being carried out on a station and system basis.

5.4 The train operator, MTREL's, control centre and station team recruitment and training is on programme.

5.5 The current focus of readiness activity continues to include the review and acceptance of asset data, drawings and operational and maintenance manuals. This is a large and complex area critical to safe handover, and we continue to work collaboratively to complete this process to the necessary standard.

5.6 On 27 November 2020, Farringdon station passed its go/no-go milestone, enabling LU commercial and maintenance managers to begin the process of varying internal and external maintenance contracts, reflecting the process of handover from Crossrail to LU.

5.7 In addition, London Underground has secured 95 per cent of its critical spares and there is continued dialogue with the supply chain to mitigate any supply risks in the current period

5.8 We continue to develop the detailed functionality and commissioning of the Route Control Centre in Romford. Any further commissioning activities required during the period of Trial Running will be incorporated into the plan.

5.9 We have now accepted and are responsible for care and maintenance of all the shafts and portals.

## **6 Residual Works Programme**

- 6.1 We continue to work collaboratively to identify residual works (post revenue service scope) and how they can best be delivered. We have agreed the principles for how these works can be taken forward and are finalising scope and the necessary organisational and commercial arrangements to enable this.

### **List of Appendices:**

None

### **List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Finance Update

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### This paper will be considered in public

#### **1 Summary**

- 1.1 This paper provides an update on the financial performance at Period 9 2020/21.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL and other parties. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda.**

#### **3 Funding**

- 3.1 In December 2020, a funding and financing agreement was reached between TfL, GLA and the Government providing £825m of additional funding for the Crossrail Programme.
- 3.2 The additional funding came with obligations relating to the remaining funding shortfall, efficiencies and options for Bond Street station. The programme remains on track to meet these obligations.
- 3.3 Following the TfL Boards approval of Programme and Project Authority, Crossrail has drawn down the first tranche of Programme and Project Authority for the costs through to Trial Running.
- 3.4 To accompany this drawdown of Programme and Project Authority, new and tighter financial controls are being implemented in line with the 9 December 2020 TfL Board approval. This new financial and change control process is aligned with the Financial Commitment and Oversight Group controls embedded across TfL. The commitment approval limits are currently set at £125k above which approval will be requested from the Commissioner through the Elizabeth Line Delivery Group.

## **4 Financial Performance**

- 4.1 Spend in Period 9 was £56m and is £525m in the year to date.
- 4.2 The number of Full Time Employees are 881.
- 4.3 The current Anticipated Final Crossrail Direct Cost remains stable, with higher risk scenarios continuing to show that up to £1.1bn of additional funding could be required to complete the works. However, Crossrail continues to work towards managing the costs as closely as possible to the additional available funding of £825m.

### **List of appendices to this report:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda.

### **List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Elizabeth Line Risk Management

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the risk management approach in Crossrail.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information that is commercially sensitive. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the supplementary information in Part 2 of the agenda.**

#### **3 Risk Management Process**

- 3.1 Crossrail manages risk at a number of discrete levels, in order to structure the large volume of risk information produced on the programme and ensure that all levels of management are able to engage with the process of identification, assessment, mitigation and intervention at an appropriate level. Those levels are:
  - (a) Programme Level 1 risks are the top programme risks owned and managed by a member of the Executive Team;
  - (b) Programme Level 2 risks are risks to modules of Crossrail's delivery strategy (the Recovery Execution Plan originally produced in June 2020) which are owned by Heads of Function and Delivery Directors; and
  - (c) Project Risks are risks to delivery of project scope which are owned and managed by Project Managers and their teams.
- 3.2 All risks are owned by accountable managers in functional or delivery roles, reviewed on a regular (mostly periodic) basis and recorded in the risk management database.
- 3.3 Risks are assessed against a common set of criteria, taking into account probability and impact (in terms of cost, schedule and stakeholder impact) at both pre- and post-mitigation levels.

- 3.4 Risks are escalated from Project to Programme level through core governance meetings and a through a dedicated periodic Programme Risk Review chaired by the Programme Director.
- 3.5 A number of process developments are currently being progressed, in order to respond to emerging challenges. These include:
- (a) increased focus on assessment of the post-mitigation position and the delivery of the actions and interventions required to achieve this with the objective of reducing the risk component of schedule and cost forecasts; and
  - (b) closer working with TfL Enterprise Risk team to improve the level of assurance around control effectiveness, particularly with reference to the multi-party risks identified on the Elizabeth Line Risk Landscape (the analysis of key risks associated with bringing the railway into operation which is included as an Appendix to Paper 2).

## **4 Assessment of Risk Impacts**

- 4.1 One of the key outputs of the risk management process is the assessment of impact of risk on the programme's schedule and cost forecasts.
- 4.2 Quantified Schedule Risk Assessment (QSRA) is a process which applies identified risks to the logic linked DCS (Delivery Control Schedule) and reports risk adjusted dates of key stakeholder milestones at P50 and P80 levels<sup>1</sup>. P50 dates included in schedule forecasts are calculated on the basis of pre-mitigation assessments.
- 4.3 The Anticipated Final Crossrail Direct Cost (AFCDC) includes a number of components to account for uncertainty, risk and additional commitments over and above Direct (e.g. contractor costs) and Indirect costs (e.g. staffing costs). Of those components:
- (a) risk exposure is calculated through a Quantified Cost Risk Assessment (QCRA) process and reported at P50 and P80 levels. It includes the following components:
    - (i) project risk;
    - (ii) prolongation cost risk informed by outputs of the QSRA; and
    - (iii) programme risk informed by 'level 2' programme risks. P50 cost risk included in AFCDC is calculated on the basis of pre-mitigation assessments; and
  - (b) central provisions are included to cover a number of cost headings which are likely to impact and where the inclusion in the risk assessment process is not appropriate.

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<sup>1</sup> QSRA and QCRA employ a statistical technique known as Monte Carlo analysis: in this process, P50 is the point within which 50 per cent confidence is achieved, P80 is the point within which 80 per cent confidence is achieved.

## 5 Key Risk Outputs

- 5.1 This paper focusses on the highest-level risks, further detail on which is set out in the paper in Part 2 of the agenda:
- (a) key programme risks and associated interventions;
  - (b) a multi-party risk assessment – the Elizabeth Line Risk Landscape; and
  - (c) key areas of shared risk between Crossrail and TfL.
- 5.2 The key programme risks are those Programme Level 1 risks against which critical interventions have been identified. These risks have qualitative assessments at pre and post-mitigation levels. Progress against these interventions is reviewed as part of the periodic reporting cycle.
- 5.3 The Elizabeth Line Risk Landscape outlines the key risks associated with introduction of the railway into operation which are owned and managed by each of the key stakeholders. This includes the significant risks for Crossrail as detailed above. The document has been updated to reflect changes to programme governance, key people and the updated funding position agreed with Sponsors. Risks are ordered into key themes to allow comparison of the roles and responsibilities of different parties, common risks and alignment of perspectives.
- 5.4 The risks summarised in the Elizabeth Line Risk Landscape can be summarised into three groups:
- (a) risks relating to purely the delivery of the railway that are owned and managed by Crossrail (summarised in key programme risks above);
  - (b) risks relating purely to the operation of the railway that are owned and managed by the operational organisation within TfL; and
  - (c) risks relating to the area between construction, transfer and maintenance of assets and then transition to operation which are shared between both organisations.
- 5.5 Items in the third group are regarded as being the highest risk as there are multiple parties involved and changes in responsibilities and procedures during the transition between construction and operation.
- 5.6 The key shared areas of risk are identified as:
- (a) health and safety process and people management at the point at which The Railways and Other Guided Transport Systems (Safety) Regulations 2006 apply ;
  - (b) achieving functional exit from Trial Running/entry into Trial Operations;

- (c) performance and reliability growth to be ready for customer service;
- (d) people and organisational readiness for transition through staged railway;
- (e) residual work management; and
- (f) financial control and optimising the financial outcome across revenue, capital expenditure and operating expenditure.

5.7 The leadership of Crossrail, TfL (including Rail for London Limited, Rail for London (Infrastructure) Limited and London Underground Limited), is progressing a regular and collaborative dialogue on these shared areas of risk to identify joint interventions which will mitigate adverse impact on the opening of the railway.

**List of appendices to this report:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda

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## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Project Representative Report

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper provides an update on the periodic reports from the Project Representative (P-Rep) on Crossrail for Periods 7 and 8.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the report and the supplementary paper on Part 2 of the agenda.**

#### **3 Project Representative**

- 3.1 The P-Rep is in place to provide the Sponsors, TfL and the Department for Transport, with oversight of project delivery, advise and raise points of challenge to the Sponsors and scrutinise progress.
- 3.2 In line with the commitments made by the Mayor for greater transparency of the Crossrail project, the most recent P-Rep reports are included as part of the regular update to the Committee and are available on our website<sup>1</sup>.
- 3.3 As with all the P-Rep reports, it has been necessary to make some redactions to the reports prior to publication to protect commercially sensitive material. We have sought to keep such redactions to a minimum. Unredacted versions of the P-Rep reports have been included in the paper on Part 2 of the agenda.
- 3.4 In the latest P-Rep report, the P-Rep highlighted the following key areas of concern:
  - (a) what measures are Crossrail Leadership taking to ensure the Programme's position is fully developed, and a culture of over-optimism does not prevail?;
  - (b) what evidence can Crossrail demonstrate for the active steps it is taking to protect utilisation of risk monies?; and

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<sup>1</sup> <https://tfl.gov.uk/corporate/publications-and-reports/crossrail-project-updates>

(c) what is Crossrail's timeline for fulfilling all resource requirements and finalising the associated costs?

- 3.5 The P-Rep observations are shared with Crossrail and are discussed in detail by Crossrail, P-Rep and the Commissioner at the regular meetings of the Elizabeth Line Delivery Group. Crossrail also produces a written response to the P-Rep report that is included with the P-Rep reports on our website (with an unredacted version being included in the paper on Part 2 of the agenda).

**List of Appendices:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda

**List of Background Papers:**

None

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## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Crossrail Programme Assurance

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper reports on progress with Crossrail Programme Assurance activity, including updates to the Crossrail Integrated Assurance Framework (three Lines of Defence) arrangements.
- 1.2 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the supplementary information in Part 2 of the agenda.**

#### **3 Background**

- 3.1 The Crossrail Integrated Assurance Framework was established in June 2019 based on a Three Lines of Defence (3LoD) model comprising:
  - (a) Line 1 – Crossrail management controls functions;
  - (b) Line 2 – Crossrail’s Project Programme Assurance (PPA) team; and
  - (c) Line 3 – TfL Internal Audit and (as of January 2020) Independent Investment Programme Advisory Group (IIPAG) Sub-Group.
- 3.2 At Line 2, the Crossrail PPA team is responsible for delivering Line 2 assurance and for coordinating assurance activity across all three Lines of Defence:
  - (a) Crossrail Programme Assurance Group (CPAG) held on a periodic basis is attended by all assurance functions including the Project-Representative; and
  - (b) coordination and planning across assurance functions is documented in the Integrated Audit and Assurance Plan.

Since the transfer of Crossrail governance to TfL, assurance activity has been augmented by a number of senior specialist assurance advisers and the introduction of a new IIPAG CRL Sub-Group at LoD3.

## **4 Line 2 Assurance Findings**

### **LoD2 Assurance Overview**

- 4.1 Based upon our Period 9 assessment, it is the opinion of the LoD2 Assurance team that the schedule and cost for completing Crossrail are under significant pressure but the publicised opening timeframe of mid-2022 currently remains intact.
- 4.2 Key factors impacting Crossrail programme performance are listed below but generally relate to the certification of completed works, critical resources and systems integration challenges both identified and anticipated.
- 4.3 The last period saw significant positive developments in progress towards completion, including commencement of elevated levels of operational train, routeway and stations testing. This progress is particularly significant because, as anticipated, it is revealing (and permitting the resolution of) a higher level of technical systems integration issues on the path to Trial Running.
- 4.4 The immediate programme priority, correct in the view of the LoD2 Assurance team, is to achieve readiness to commence Trial Running at the earliest possible opportunity because it is only through Trial Running that the true maturity of the routeway infrastructure, systems and operational organisation may be representatively tested and understood.
- 4.5 We estimate that the key interim target milestones for commencement of Trial Running and Trial Operations will each see delays against earliest 'target' dates, but the forecast (risk-factored) dates remain on-track toward the overall mid-2022 Central Section opening timeframe.

### **Assurance Concerns**

- 4.6 Delivery Control Schedule (DCS) Assurance – Progress has been made with incorporating station systems integration detail and stations productivity metrics into the DCS, key to schedule robustness.
- 4.7 DCS Performance – General performance to plan (milestone adherence) has further improved to around 73 per cent and from recent demonstrable success in recovering slipped milestones the DCS continues to mature as a tool for predicting progress.
- 4.8 Infrastructure Projects Authority (IPA) Review – The IPA review took place 16-18 November and the Final Report was issued 25 November 2020, identifying seven recommendations. It is recommended that the Crossrail Executive considers the IPA report and determine a response plan.
- 4.9 Trial Running Readiness – Crossrail is currently on a trajectory to commence Trial Running within the timeline to achieve mid-2022 Central Section opening but later than Crossrail has targeted. There is potential opportunity to achieve earlier commencement of Trial Running by mitigation, operational workarounds and restrictions, provided a minimum acceptable safety case is met. Learning benefits of commencing Trial Running at the earliest reasonable point in time will outweigh the potential disbenefits of consequential operational restrictions.



**List of Appendices:**

Exempt supplemental information is contained in a paper on Part 2 of the agenda

**List of Background Papers:**

None

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## Elizabeth Line Committee



Date: 29 January 2021

Item: Audit and Assurance Update

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### This paper will be considered in public

#### 1 Summary

- 1.1 This paper provides an overview of the second and third line audit assurance activity in relation to the Elizabeth line during Q3 of 2020/21.

#### 2 Recommendation

- 2.1 **The Committee is asked to note the paper and to approve the Terms of Reference of Independent Investment Programme Advisory Group's Crossrail Sub-Group.**

#### 3 Background

- 3.1 Assurance over the Elizabeth line is delivered in accordance with the three lines of defence model as follows:

- (a) First line of defence – control and monitoring arrangements carried out by the functions responsible for managing the risks/ controls;
- (b) Second line of defence – typically audit and inspection regimes carried out by teams separate from those responsible for managing the risks/controls, but reporting through the Crossrail management hierarchy; and
- (c) Third line of defence – fully independent audit and review activities. Typically, activities will have a strategic focus, with reporting to the Audit and Assurance Committee, and the Committee as appropriate.

- 3.2 Third line assurance over the Elizabeth line is provided by TfL's Internal Audit function. The Independent Investment Programme Advisory Group (IIPAG) will provide third line assurance over the programme delivery. A summary of the work of these teams during Q3 is set out below.

- 3.3 The Projects and Programme Assurance team (Crossrail Assurance) provides second line assurance over programme delivery. A summary of the work of the Crossrail Assurance team is included in a separate paper on this agenda. In future, it is intended that the work of the Crossrail Assurance team will be incorporated into this paper.

- 3.4 The Crossrail sponsors receive assurance on delivery of the Crossrail Programme from Jacobs UK Ltd in its role as Project Representative (P-Rep). A report on the work of the P-Rep can be found elsewhere on this agenda.

#### **4 Third Line Assurance – Internal Audit**

- 4.1 The Crossrail Internal Audit Plan for 2020/21 was approved by the Crossrail Audit and Assurance Committee in March 2020 and formed part of the TfL Integrated Assurance Plan approved by the TfL Audit and Assurance Committee. Some minor changes to the Crossrail Internal Audit Plan were reported to both the Crossrail and TfL Audit and Assurance Committees in September 2020. The current plan was presented to the Elizabeth Line Committee at the last meeting on 26 November 2020.
- 4.2 We meet periodically with Crossrail Assurance, the P-Rep and the Crossrail risk team to share assurance information and ensure that assurance activity is co-ordinated and duplication of effort is avoided.

##### **Audit delivery**

- 4.3 During the quarter we issued two memorandums (memos) and three audit reports, all of which were concluded as requires improvement. The two memos related to the Crossrail Complaints Commissioner Accounts for 2018/19 (delayed due to furlough of the auditee) and 2019/20, which are annual audits. The three reports were for audits carried forward from the 2019/20 plan and delayed due to furlough. Summarised findings were as follows:
- (a) Consents Compliance: The audit identified that consents registers are not kept up to date and Serious Incident Reports are not completed in a timely manner;
  - (b) Culture Change: Crossrail is operating without an agreed framework for assessing, managing and monitoring organisational culture. There is no guidance around expected behaviours and best practice at the corporate, directorate and project levels; and
  - (c) Adequacy of the Supply Chain Assurance Framework: Terms of reference and RACI (Responsible, Accountable, Consulted, Informed) matrices for the Visualisation Board meetings have not been defined. Forecast due dates for actions were not being updated and they were not being discussed in order of severity.
- 4.4 Details of the audit reports issued during Q3 are included in Appendix 1. Work in progress at the end of Q3 is set out in Appendix 2. Audits planned to start during Q4 are set out in Appendix 3.

##### **Management Actions**

- 4.5 Currently there are six actions overdue but no actions overdue by more than 60 days.

## **Changes to the Plan**

- 4.6 We regularly review and update the plan throughout the year, in liaison with management, to reflect changing business priorities. There were no changes to the plan in Q3.

## **5 Third Line Programme Assurance - IIPAG**

- 5.1 The Committee approved, at its meeting on 26 November 2020, a proposal that IIPAG carry out third line programme assurance activity on the Crossrail Programme. IIPAG's Terms of Reference have been updated to reflect that change.
- 5.2 IIPAG intends to set up a sub-group to oversee the Crossrail assurance activities and work is in progress to appoint a chair and representatives to that committee. The current members of the sub-group, Alison Munro, IIPAG Chair and Kenny Laird met on 12 January 2021 to finalise their Terms of Reference. These are attached as Appendix 4 for approval at this meeting so they can be approved at the next meeting of the Audit and Assurance Committee of 17 March 2021.
- 5.3 An IIPAG review of the effectiveness of first and second line assurance in Crossrail has also begun.
- 5.4 IIPAG recently attended the deep dive briefing held for Members of the Committee. They have also had discussions on operational readiness with TfL. They are working with the Crossrail Assurance team to understand the status of assurance on the Delivery Control Schedule. IIPAG will be looking at preparedness for Trial Running and the safety assurance associated with it. IIPAG are also awaiting the outcome from P-Rep's review of risk allowances so they can review that output.
- 5.5 For the next meeting of this Committee, a fuller quarterly work plan of IIPAG activities will be developed.

### **List of Appendices:**

- Appendix 1 – Reports issued in Q3  
Appendix 2 – Work in progress at the end of Q3  
Appendix 3 – Work due to start in Q4  
Appendix 4 – IIPAG Sub-committee Terms of Reference

### **List of Background Papers:**

None

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# Elizabeth Line Committee

## Internal audit reports issued in Q3

## Appendix 1

- There were five reports issued

Enterprise risk	Directorate	Audit title	Summary of Findings	Conclusion	H	M	L
FC3- Crossrail may not be able to demonstrate sufficient commercial and/or financial control.	Crossrail	Consents Compliance Governance	<ul style="list-style-type: none"> <li>Consents registers were not up to date</li> <li>Serious Incident Event Review (SIER) reports were not completed in a timely manner</li> </ul>	Requires Improvement	2	0	1
		Crossrail Complaints Commissioner Accounts 18/19	<ul style="list-style-type: none"> <li>Accounts of the Crossrail Complaints Commissioner, in all material aspects, accurately reflect the receipts and payments during the financial period ended 31 March 2019</li> <li>In addition, in all material aspects, the accounts comply with the Accounts Directions issued on behalf of the Crossrail High Level Forum</li> <li>This review and report were delayed due to the Covid 19 pandemic</li> </ul>	Memo	0	0	0
		Crossrail Complaints Commissioner Accounts 19/20	<ul style="list-style-type: none"> <li>Accounts of the Crossrail Complaints Commissioner, in all material aspects, accurately reflect the receipts and payments during the financial period ended 31 March 2020</li> <li>In addition, in all material aspects, the accounts comply with the Accounts Directions issued on behalf of the Crossrail High Level Forum</li> </ul>	Memo	0	0	0

## Elizabeth Line Committee

Enterprise risk	Directorate	Audit title	Summary of Findings	Conclusion	H	M	L
OC3-Crossrail fails to retain key competence and leadership to complete the programme.	Crossrail	Culture Change	<ul style="list-style-type: none"> <li>• Crossrail is operating without an agreed framework for assessing, managing and monitoring organisational culture.</li> <li>• Values statements should be expanded to provide guidance around expected behaviours and best practice at the corporate, directorate and project levels.</li> </ul>	Requires Improvement	2	2	0
FC3 -Crossrail may not be able to demonstrate sufficient commercial and/or financial control		Adequacy of the Supply Chain Assurance Framework	<ul style="list-style-type: none"> <li>• Terms of reference and RACI matrices for the Vis Board meetings have not been defined</li> <li>• Forecast due dates for actions were not being updated and they were not being discussed in order of severity.</li> </ul>	Requires Improvement	2	2	0



## Work in progress at end of Q3

## Appendix 2

### Grouped by Enterprise Risk

- Six audits were in progress at the end of Q3

Enterprise risk	Audit title	Objective	Current status
OC1 Crossrail and TfL may fail to deliver on the transition plan to complete the programme.	Governance and Organisational Effectiveness	To provide assurance over the adequacy and effectiveness of arrangements designed to ensure timely project delivery	In Reporting
	Transfer of CRL programme to TfL	To provide assurance on the effectiveness of controls around the transfer of the Crossrail programme to TfL	In Progress
FC3-Crossrail may not be able to demonstrate sufficient commercial and/or financial control.	Risk Management	To provide assurance over adequacy and effectiveness of risk management in Crossrail.	In Progress
	Management of Staff costs	To provide assurance that the Contractual Appointments process is being approached and managed in a transparent and effective manner.	In Reporting
HS4 Safety performance could be impacted by changing from the Crossrail programme rules to the IM operational rules.	CRL HSE framework	To provide assurance over the adequacy and effectiveness of the HSE framework	In Progress
SC4 -Volume of residual works may impact operation and safety of the railway (ADM)	Alternative Delivery Model Strategy	To provide assurance that the alternative delivery model strategy is adequate	In Progress

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## Elizabeth Line Committee

### Work planned to start in Q4 2020/21

### Appendix 3

#### Grouped by Strategic risk

- There are six audits planned to start during the quarter 4

Strategic risk	Directorate	Audit title	Objective	Planned Period
E07-Delivering a safe, operable and maintainable railway to enter Trial Running according to the plan	Crossrail	Readiness for Trial Running	To provide assurance over the operational readiness of the operators to commence Trial Running	12
SC4-Volume of residual works may impact operation and safety of the railway (ADM)		Alternative Delivery Model Strategy	To provide assurance that the alternative delivery model strategy is adequate	11
SC3-Tier 1 close out not aligned with the programme demobilisation dates		Demobilisation of Tier 1 contractors	To provide assurance that the controls around Tier 1 contractor demobilisation are adequate and effective.	12
OC1-Crossrail and TfL may fail to delivery on the transition plan to complete the programme.		Transfer of CRL programme to TfL	To provide assurance on the effectiveness of controls around the transfer of the Crossrail programme to TfL	10
FC3-Crossrail may not be able to demonstrate sufficient commercial and/or financial control.		Management of Indirect Costs	To provide assurance that the Crossrail organisation is managing indirect costs in line with Programme requirements	11
		Management of AFC	To provide assurance over the effectiveness of controls for management of AFC	12

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## Appendix 4

### Terms of Reference for the Independent Investment Programme Advisory Group Crossrail Sub-Group to provide LoD3 Assurance to the Crossrail / Elizabeth Line Programme

#### Purpose

The Independent Investment Programme Advisory Group Crossrail Sub-Group (IIPAG(CRL)) will provide independent assurance and expert advice to the Elizabeth Line Committee (ELC), the Elizabeth Line Delivery Group (ELDG), TfL Audit and Assurance Committee (A&AC), and the Crossrail Executive. IIPAG will ensure that their work is complementary to that of other assurance providers in Crossrail.

#### Membership and Appointment

There will initially be four members of IIPAG(CRL) which can be increased by agreement of Chair of ELC who will appoint the members. A Chair of IIPAG(CRL) will be appointed and report to the Chair of TfL IIPAG. Members will be appointed on the basis of a two-year tenure with the option for TfL to extend in line with the end of the Crossrail project. A pool of experts may be established to support IIPAG(CRL) in its activities. Should IIPAG CRL feel it beneficial these can be drawn from the existing Crossrail Panel of Experts subject to appropriate obligations relating to confidentiality and conflicts of interest. The pool of experts will advise IIPAG(CRL) but will not be members themselves.

#### Frequency of Meetings

IIPAG(CRL) will meet each period. In addition to attendance at ELC, the Chair of IIPAG(CRL) and other members may be required to attend relevant meetings of the TfL Board and A&AC as requested by the Chairs of those committees.

#### Terms of Reference

1. IIPAG(CRL) will provide independent assurance and advice to the TfL Board, the ELC, the ELDG, the A&AC and the Crossrail Executive with regard to:

- (a) The work still to be completed including installation, testing and commissioning and the commercial strategy, schedule, risks, resources and finance that underpins this.
- (b) the adequacy of planning and delivery of the safety assurance process via Railway and Assurance Board - Crossrail and the Office of Road and Rail.
- (c) the preparedness of TfL for transition into the Elizabeth Line as an operational railway (via trial operations and trial running into revenue service) including the organisation structure, rolling stock, infrastructure and operational controls.
- (d) the interfaces and interdependencies between Network Rail, TfL and Mass Transit Railway (MTR) Crossrail to ensure that end-to-end maintenance plan, capability and arrangements (contractual and commercial) required are in place.
- (e) The effectiveness of the first and second lines of assurance.

IIPAG(CRL) will provide a strategic view of the above matters and undertake deep dives as appropriate.

2. IIPAG(CRL) will consult with TfL and propose a 6 month workplan to the ELC and the A&AC for approval. The plan will be produced to align with the Crossrail / Elizabeth Line strategic milestones. The workplan will be reviewed quarterly by the ELC and any changes will be reported to the A&AC, as required.

3. IIPAG (CRL) budget will be agreed with the CRL CFO annually.

4. IIPAG(CRL) work will be reported to ELC and A&AC.

5. IIPAG(CRL) will provide:

- a. input into the Crossrail Programme Assurance Group (CPAG) forum of second and third line assurance providers (periodically).
- b. their workbank to be incorporated into the Integrated Audit and Assurance Plan (IAAP) which is maintained by the second line assurers (periodically).

6. TfL IIPAG and IIPAG(CRL) will share information between TfL and Crossrail to ensure good practice is transferred between them

7. IIPAG(CRL) will maintain the confidentiality of information provided to them and will follow the agreed procedures for dealing with confidential, legally privileged and other sensitive information.

9. Reports produced by IIPAG(CRL) are subject to the Freedom of Information Act 2000.

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## Elizabeth Line Committee



**Date:** 29 January 2021

**Item:** Members' Suggestions for Future Discussion Items

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**This paper will be considered in public.**

### **1 Summary**

- 1.1 This paper presents the current forward programme for the Committee and explains how this is put together. Members are invited to suggest additional future discussion items.

### **2 Recommendation**

- 2.1 **The Committee is asked to note the forward programme and is invited to raise any suggestions for future discussion items.**

### **3 Forward Plan Development**

- 3.1 The Board and its Committees and Panels have forward plans. The content of the plans arises from a number of sources:
- (a) standing items for each meeting: minutes; matters arising and actions list; and any regular reports, including the Project Representative report;
  - (b) regular items which are for review and approval or noting;
  - (c) matters reserved for approval or review; and
  - (d) items requested by Members: The Chair of the Committee will regularly review the forward plan and may suggest items. Other items will arise out of actions from previous meetings (including meetings of the Board or other Committees and Panels) and any issues suggested under this agenda item.

### **4 Current Plan**

- 4.1 The current list of standing items is attached at Appendix 1. Once future meeting dates have been agreed these will be added to the plan. Like all plans, it is a snapshot in time and items may be added, removed or deferred to a later date.

#### **List of appendices to this report:**

Appendix 1: Elizabeth Line Committee Forward Plan

#### **List of Background Papers:**

None

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**Membership:** Heidi Alexander (Chair), Anne McMeel (Vice-Chair), Professor Greg Clark CBE, Dr Nelson Ogunshakin OBE, Mark Phillips, Sarah Atkins, Kathryn Cairns OBE (Department for Transport Representative)

<b>Standing Items</b>		
Safety Update	Commissioner	
Project Status Update	Crossrail Chief Executive	
Elizabeth Line Readiness	Commissioner	
Finance Update	Chief Finance Officer, Crossrail	
Project Representative Report	Crossrail Chief Executive	
Crossrail Project Assurance	Chief Finance Officer, Crossrail	
TfL Audit and Assurance	Director of Risk and Assurance	
<b>18 March 2021 (1.30pm)</b>		
Alternative Delivery Mode	Commissioner	
Target Zero Improvement Plan	Health, Safety and Quality Director	

**Dates of Future Meetings**

- 20 May 2021 (10.00am)
- 15 July 2021 (2pm)
- 30 September 2021 (10am)
- 25 November 2021 (2pm)
- 26 January 2022 (10am)
- 23 March 2022 (10am)

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