

An aerial view of a city map with a river, overlaid with a green tint. Several people are walking across the map, appearing as small figures. The text is centered on the map.

Crossrail: Light at the end of the tunnel?

Transport Committee

LONDON ASSEMBLY

Transport Committee

The Transport Committee holds the Mayor and Transport for London to account for their work delivering the capital's transport network. The Committee examines all aspects of the transport network and presses for improvements on behalf of Londoners.



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Foreword



Dr Alison Moore AM
Chair of the Transport Committee

Crossrail is now in its final phase of delivery. The project has been a huge undertaking, set to vastly speed up travel times, boost accessibility and build connectivity to central London. The line will run from Reading and Heathrow in the west to Abbey Wood and Shenfield in the east.

Yet Crossrail has been victim to delays and overspend since it broke ground in 2009. The scheme is now four years behind schedule for opening its doors.

The Transport Committee is no stranger to scrutinising Crossrail. In 2019 we published a major report on the project calling for more transparency, accountability and stronger leadership from the management team in place at the time.

This report comes at a key time in the railway's evolution. On 1 October 2020, management and governance of the project transferred from Crossrail Limited to Transport for London (TfL). With the scheme in new hands, and almost a year into the pandemic, the London Assembly has sought answers over whether the Elizabeth line would be opened for Londoners in time to meet its revised deadline on budget.

The recommendations laid out in this report dissect the direction of travel set by the Commissioner's commitment to open the Elizabeth line in early 2022. It explores five themes that need deeper attention now that Crossrail has been handed over to the Mayor and TfL.

It is vital that the new management adopts a determinedly forensic focus to make sure that no aspect of delivering the project on time and on budget is missed. In particular, this report proposes keeping a tight grasp on the effectiveness of leadership structures and maintaining

financial stability. There is an opportunity to build on the management and governance structures to benefit the project with clearer timeline planning, learn lessons from the project, and have the space to evaluate risks like new waves of the pandemic.

COVID-19 puts increased financial and staff pressures on the opening of the Elizabeth line. That should not be underestimated and TfL needs to mitigate against this. However, there are aspects to delivering the project such as supporting employees' workloads and better forecasting project delays that can deal with both the impacts of the pandemic and any other challenges.

When the lockdowns are over and London starts to return to some form of normality, it is imperative that the Elizabeth line is up and running as soon as possible so that the economic benefits to Londoners and London can be realised.

Londoners now need assurance that they will be no further out of pocket and that Crossrail's final stage will run smoothly, benefiting from the new governance and management structure under TfL. It is now time for TfL and the Mayor to develop their forensic focus, share Crossrail's project timelines publicly and showcase lessons learned, so that the train will be on the track by summer next year.

Executive Summary

Crossrail is one of Europe's largest and most complex infrastructure projects. Once completed, it will bring huge benefits to Londoners and the wider South East of England. 1.5 million more people will be able to travel into central London within 45 minutes. The Elizabeth line will link Reading and Heathrow in the west with Shenfield and Abbey Wood in the east, through new 21-kilometre tunnels under central London. The line will deliver significant transport benefits for the region, by increasing London's rail capacity and cutting passenger journey times across the city. It will also generate wider benefits to the region, by unlocking development, encouraging regeneration and creating new employment opportunities.

With numerous setbacks, several significant changes have taken place in the project since the Transport Committee last investigated Crossrail in 2019. Originally due to open in December 2018, the project has now reached a pivotal point in its lifecycle, as it transitions from construction to operational delivery as a new railway, over three years later than expected. It is now not due to open until the first half of 2022. New governance arrangements have transferred responsibility for the project to Transport for London (TfL), which give the Deputy Mayor for Transport, Heidi Alexander, and the TfL Commissioner, Andy Byford, greater oversight and control of the project. TfL will play a crucial role in ensuring the transition to a fully operational railway happens smoothly and effectively.

Despite these changes, the Committee is concerned that project risks are not being managed as effectively as they could be. At this stage, it is not yet clear whether the new governance structure will promote a more proactive approach to risk management, particularly the way in which senior leaders engage with the Project Representative.

At the same time, Crossrail has faced unique challenges posed by COVID-19, with inevitable disruptions to the project. The pandemic continues to present uncertainty, particularly in the context of recent increased infection rates and London's third lockdown. Crossrail's senior leaders will need to work to minimise any further disruption this may cause to the project.

Crossrail's latest funding deal, announced in December 2020, will enable TfL and Crossrail Limited to complete the final, critical phase of the project. The deal underlines the need to achieve a firm grip on the management of the project, so that there is no further delay or overspend. It is crucial that there is a clearer overview of the future project timeline, key milestones and underpinning assumptions affecting the project. To date, the project is expected to overspend by up to an additional £825 million.

There will be complexities and challenges in the final phase of the project. It is key, therefore, that the Transport Committee continues to seek to understand and scrutinise the management and delivery of the project for Londoners, by holding TfL to account in its new role and ensuring that past mistakes are not repeated. The most recent funding deal also underlines the importance of independent scrutiny of the project as Londoners will face increased indirect costs to see the Elizabeth line become a fully operational railway.

The transition of the project to TfL, coupled with the events of the last year, presented a natural and timely opportunity for the Transport Committee to revisit Crossrail. The report highlights the steps that need to be taken to learn lessons from the project and ensure that it is delivered within the new, revised timescale and budget.

Recommendations

Recommendation 1

The Crossrail Chief Executive should share Crossrail's high-level project timeline, including any underpinning assumptions affecting the timeline, in the monthly Crossrail updates to the Transport Committee.

Recommendation 2

The TfL Commissioner should review progress against filling project-critical vacancies at the weekly countdown meeting, with a clear action plan to fill the roles. In parallel, TfL should update its workforce strategy within the next three months to identify and manage the long-term resourcing requirements on the project.

Recommendation 3

TfL should prioritise its support for staff in areas of the project where there are the most significant resource pressures. TfL must monitor the impacts of resourcing shortages on staff wellbeing and ensure mitigating actions are put in place to prevent burnout in the final phase of the project.

Recommendation 4

TfL should undertake a comprehensive lessons-learned exercise, incorporating the Committee's 2019 *'Derailed: Getting Crossrail back on track'* Report and Crossrail's Sponsor Review, to inform its new governance structure. The exercise should take place no later than March 2021 so that the structure can be flexed whilst it is still bedding down.

Recommendation 5

TfL should commission an independent review of its new governance structure within six months and include the findings in the Crossrail Chief Executive's updates to the Transport Committee. The review will enable TfL to adapt its structure as the project continues to evolve and transition to a fully operational line.

Recommendation 6

TfL should revisit its approach to the involvement of the Project Representative (P-Rep) in the final phase of the project to ensure that its independent scrutiny role is materially stronger under the new structure. Specifically, TfL should share with the Committee more confidential information contained in the P-Rep's advice that is otherwise redacted from the public.

Recommendation 7

TfL should enhance the role of Network Rail in the new governance structure so that its voice is heard in key decision-making forums. Specifically, TfL should invite Network Rail to the Elizabeth Line Delivery Group (ELDG).

Chapter one: Delivering the final phase of the project

Key Findings

- **The timeline of key milestones in the final project phase remains high-level. It will require a continual assessment of the underpinning project assumptions throughout 2021 to ensure that Crossrail remains on time and on budget.**
- **The Committee is concerned that there may not be enough resources or the right level of expertise in Crossrail to complete the technically demanding aspects of the final project phase: specifically, delivering critical safety assurance activities and technical processes.**
- **A prolonged period of financial uncertainty, particularly during Autumn 2020, has created challenges for the project in maintaining resource and staffing stability. This will need to be managed carefully to ensure there are no further project delays or overspends.**
- **The COVID-19 pandemic has exacerbated resource constraints and there are indications of possible staff burnout in the project.**

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Recommendation 2

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staff wellbeing and ensure mitigating actions are put in place to prevent burnout in the final phase of the project.

Background

Over the last few years, project management of Crossrail has been a key area of focus for the Committee. There have been some significant delays to the project, about which the Committee has raised numerous concerns in the past. In particular, our 2019 Committee report *'Derailed'* raised a number of issues with Crossrail's project management and set out recommendations to avoid further delays.

Completing the remaining project milestones

Based on current assumptions, senior leaders at Crossrail have identified a revised delivery timeframe of the first half of 2022, but have an aspiration to finish the project in advance of this deadline.¹ However, this will depend on their ability to meet more immediate project milestones, such as trial running. No one should be complacent in the final phase of the project, as there are still multiple challenges and complexities to overcome in transitioning to a fully operational line.

At the 1 December 2020 Transport Committee meeting, key leaders in TfL and Crossrail referenced the challenges posed by the final phase of the project. Mark Wild, Crossrail's Chief Executive indicated that *"we are set up for a good finish to this project but there are plenty of challenges ahead and complexities"*.² Similarly, Heidi Alexander, the Deputy Mayor for Transport stated: *"I think everyone acknowledges that even before the pandemic hit there were some pressures in the programme. Those pressures remain because this is not a straightforward thing to be doing over the next year to 18 months."*³

The Committee recognises that, given the complex nature of the work, it is difficult to pinpoint precise dates for remaining project milestones. However, as each key milestone is delivered, it will become increasingly possible to specify dates in the timeline. It is important that, throughout, Londoners have clear sight of the key milestones and the wider timeline to deliver the project so that they know when the line will be open to the public.

In moving to the final phase of the project, Crossrail has begun a period between testing and completion of the central section of the Elizabeth line, which is the central London area between Paddington and Abbey Wood stations. Crossrail needs to complete two critical project paths: 'trial running' and linking up stations. The two critical paths enable Crossrail to identify the most important tasks required to complete the project. The paths are explained overleaf:

¹ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

² London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

³ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

Explainer: What is Critical Path 1?

Critical path 1: intensive operational testing, also known as 'trial running'

The path includes:

Pre-trial running: This stage occurs prior to trial running, and involves the system integration dynamic testing, a form of system testing with trains emulating timetabled passenger service.⁴

Safety assurance activities: There are many safety checks which must be completed prior to trial running. The Office for Rail and Road (ORR) must award a safety certification before trial running can begin.

Trial running⁵: Running intensive trials to simulate the full railway service. This process will enable Crossrail to test the line over several months. The Office for Rail and Road (ORR) must award a safety certification before this stage can begin.

Explainer: What is Critical Path 2?

Critical path 2: Linking up of the following stations in the central section:

Custom House

Farringdon

Paddington

Tottenham Court Road

Woolwich

Abbey Wood

Liverpool Street

Canary Wharf

Whitechapel

Bond Street

⁴ Crossrail, [The Build: Testing and Commissioning](#)

⁵ Crossrail, [The Build: Testing and Commissioning](#)

The path includes:

Linking up stations⁶:

- Complete a dry-run of the Central Management System (CMS) and Station Management System (SMS)
- Complete a dry-run of station Fire Alarm and Emergency Systems
- Complete 50 hours of dry-runs and fault free running of mechanical and electrical plants
- Complete a final 100 hours of fault-free running of systems required for safe operation of the station
- Communications stress testing which are to be undertaken at Liverpool Street and Woolwich to test fall-back system operation
- Bringing Into Use (BIU) – this phase marks the handover milestone of the station to the operator. The process involves passenger alarm and voice alarm testing; fire alarm system final verification (London Underground stations); and operator take over.

Once trial running starts, we understand that the remaining work will take between nine and twelve months, before the Elizabeth line is fully operational.⁷ Therefore, successfully launching trial running will be a critical milestone for the project.

In order to launch trial running, Crossrail needs to complete pre-trial running activity, known as system integration dynamic testing (SIDT), which is designed to test how well the railway system integrates within the network.⁸ As a digitally controlled line, SIDT is a particularly complex and critical project milestone to the project. However, at the 1 December 2020 Transport Committee meeting, the Committee heard that it was unclear how long this work would take.

⁶ London Assembly, Letter from Deputy Mayor for Transport to Transport Committee, 12 January 2021 (see appendix 4)

⁷ London Assembly, [17 December 2019 Transport Committee](#), 17 December 2019

⁸ Crossrail, [The Build: Testing and Commissioning](#)

“The actual step up into trial running, though, is still a variable activity. It is variable because we have to complete some quite detailed technical safety assurance. We are in a position where the safety argument has been made, which is a big step forward on this project. The question is now dotting the Is and crossing the Ts and all of those sorts of activities. We do not quite know how long that will take because we are finalising the testing over the next four to six weeks.”⁹

Mark Wild
CEO, Crossrail Limited

On 12 January 2021, Heidi Alexander wrote to the Committee to confirm that the first phase of SIDT took place between 3 and 17 December 2020. According to the letter, the operation ran the equivalent of 33,300 train miles, with up to eight trains operating at once. It was indicated that the next phase of SIDT, which was due to launch on 13 January 2021, will use “an upgraded version of the software” to run the operation.¹⁰

In Crossrail’s January 2021 project update to the Transport Committee, it was indicated that the team were prioritising the order of station handovers to TfL “to take account of the challenges presented in handing over and commissioning these complex assets.” The order is: Farringdon, Paddington, Tottenham Court Road, Woolwich, Abbey Wood, Liverpool Street, Canary Wharf, Whitechapel, Bond Street.¹¹ The 29 January 2021 Elizabeth Line Committee meeting agenda papers indicate that “there still remains a considerable amount of work to achieve at Bond Street station”, which reflects historical contractor issues and has influenced its position in the current order of handover.¹²

The Committee welcomes the indication that lessons learned will be applied throughout this phase, as stations are completed and handed over to TfL.

To date, the Committee understands that the first phase of testing has not affected the wider project delivery timeline, but the operation has identified “a number of signalling and train software issues”, which will need to be addressed quickly to avoid disruption later in the project.

⁹ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

¹⁰ London Assembly, Letter from Deputy Mayor for Transport to Transport Committee, 12 January 2021 (see appendix 4)

¹¹ Crossrail, [January 2021 Project Update](#), 18 January 2021

¹² TfL, [29 January 2021 Elizabeth Line Committee](#), 21 January 2021

Impact of COVID-19

COVID-19 caused disruption to the project in 2020, with key activity paused in response to the pandemic, specifically the level of infections and the first lockdown. As the pandemic evolves, new challenges may arise placing increased pressure on the project schedule. In Crossrail's January 2021 project update, it was confirmed that there had been "several occurrences of confirmed and suspected [COVID-19] cases at sites", which will need rigorous monitoring and workplace management. It is therefore critical that those working on the project remain resilient and adaptable to these challenges.

The Committee welcomes the steps taken to address the challenges that arose during the first lockdown, and the secure working arrangements put in place to ensure compliance in the future. In particular, we commend the monitoring work carried out to track where patterns of infection were most frequently occurring, which allowed the team to identify that staff travelling together in private vehicles was a key source of infection amongst workers. Equally, we recognise the hygiene standards and cleaning practices implemented across all sites will have helped to keep the infection rates low.

"I can tell you today [1 December 2020] we have 33 people who have presently had the infection and we have 40 people self-isolating. That is in a workforce of nearly 3,000."¹³

**Mark Wild, CEO
Crossrail Limited**

At the same meeting, Mark Wild indicated that the financial implications of COVID-19 were being accounted for in the project.

COVID-19 continues to present uncertainty and the third lockdown, prompted by a recent escalation in infections across London, highlights the need for Crossrail to remain agile to new risks posed by the pandemic. According to Crossrail, tight COVID-19 secure working practices have been established across the project, which have resulted in minimal infections to date. Whilst the Committee welcomes this outcome, it is clear that recent COVID-19 events exacerbate the risks facing the project.

In the final phase of the project, there will be new activities to undertake within a safe COVID-19 working environment, which may present additional challenges. For example, during in-cab driver training, social distancing will be challenging to maintain. In Crossrail's January 2021 project update, it was confirmed that "distanced learning and classroom / simulator facilities" were being used to support vital officer training.¹⁴ This may be the case for several other new activities. In addition, new risks may emerge that pose a threat to

¹³ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

¹⁴ Crossrail, [January 2021 Project Update](#), 18 January 2021

staffing and productivity levels on the project. Therefore, the need for testing and sharing planning assumptions will become even more important in order to assess any impacts on the wider project timeline.

Role of Network Rail

Network Rail is an essential delivery partner in the project and is responsible for the design, development and delivery of the sections of the line that are located on the existing network, running above ground through outer London, Berkshire and Essex.

To date, Network Rail has been responsible for several crucial elements of the Crossrail project, which include:

- **Station upgrades and enhancements:** step-free access including lifts and footbridges, ticket halls, platform extensions and better signage.
- **System upgrades:** upgrades to 70 kilometres of track and signalling systems.
- **New trains:** enabling the introduction of two new trains – Great Western Railway Electrostar trains (Class 387s) and the new Elizabeth line trains (Class 345s).

At the 1 December 2020 Transport Committee, the Committee heard that station enhancements, such as step free access, were ongoing. In Crossrail's January 2021 project update, it was indicated that Acton Main Line and West Ealing stations would become step-free in early 2021 and Ealing Broadway, Southall, Hayes and Harlington, West Drayton, Romford and Ilford stations "in intervals over the next 12 months".¹⁵ It is critical that this work is completed prior to the opening of the line.

Learning lessons from previous approaches

As Crossrail embarks on a new, critical phase in its project lifecycle, this is a timely opportunity for those involved in Crossrail to reflect on previous approaches to managing the project and to learn lessons.

The Committee believes that understanding the lessons from past approaches will be of significant benefit to the current project team, by ensuring that they remain alert to the future challenges posed by the final phase.

At the 1 December 2020 Transport Committee meeting, the Committee welcomed candid reflections from Tony Meggs, Crossrail's outgoing Chair, regarding previous project delays. Specifically, the Committee heard that factors leading to the delays included a lack of appreciation of the complexity and scale of the remaining tasks.

¹⁵ Crossrail, [January 2021 Project Update](#), 18 January 2021

“The second thing is really the station handover. We were shocked, I suppose you could say. “Shocked” is the wrong word, but we were very disappointed with the slow progress that we were able to achieve on the handing over of the shafts and portals. That work is done now but it has been extraordinarily challenging. We thought that they were simple. We were wrong. They were actually incredibly complex. There were lots of lessons learned from that but we are now talking about eight massive stations that need to be integrated into the system. It is about focusing hard on that progress and understanding if there are delays and what can be done about them.”¹⁶

**Tony Meggs CB, Former Chair
Crossrail Limited**

In considering the final phase of the project, Tony Meggs emphasised the importance of testing planning assumptions continuously in order to assess the rate of progress and identify the remaining work needed to meet the 2022 deadline.

“They do not need my advice but I would be continuously testing the planning assumptions and making sure that you can see a straight line between the current rate of performance and what is needed for the future.”¹⁷

**Tony Meggs CB, Former Chair
Crossrail Limited**

The Committee supports wholeheartedly the suggested approach to continually test underlying assumptions in the project timeline. As Crossrail’s senior leadership team embarks on the final phase of the project, there is a natural opportunity to agree a better approach to project management than the one taken to date. By continually testing and challenging assumptions underpinning the project timeline, Crossrail will be better equipped to avoid significant delays.

In addition, underlying assumptions about the key project activity and timeline should be communicated clearly, openly and frequently. In previous Committee investigations, we have highlighted an issue of over-optimism in communicating progress in the project. We will explore this issue further in Chapter two, but there are obvious opportunities to embed

¹⁶ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

¹⁷ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

a more transparent approach to the communication of delivery milestones in the final phase of the project.

The importance of effective project management has been underlined by the latest Crossrail funding deal. The deal, announced by TfL and the Government in December 2020, means TfL will fund the remaining works through borrowing against both Business Rate Supplement (BRS) and the Mayoral Community Infrastructure Levy (MCIL).¹⁸ At the 1 December 2020

Transport Committee meeting, Andy Byford, TfL's Commissioner, stated a clear commitment to deliver the project within the latest funding envelope.

"We will do everything possible to contain the additional cost to the £825 million, knowing that within the Crossrail budget we do have a hefty chunk of contingency, and rightly so at this stage with so many unknowns to go."¹⁹

**Andy Byford, TfL Commissioner
Transport for London**

Despite this assurance, the 29 January 2021 Elizabeth Line Committee agenda papers indicate that the project could cost in excess of £825 million. The papers state: "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."²⁰

Whilst the Committee welcomes the Commissioner's commitment to contain the additional costs, it is clear that this is still a risk to the project and inadequate project management will lead to overspends, as the Committee highlighted in its 2019 Committee report.²¹ It is increasingly important that the project does not go over budget any further, particularly in the context of further constrained funding options available to TfL.

Workforce and skillsets

Resourcing

The Committee has concerns about the lack of sufficient resource and specialist skills to complete the final phase of the project. Specifically, there is a resourcing and skills gap in

¹⁸ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

¹⁹ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

²⁰ TfL, [29 January 2021 Elizabeth Line Committee](#), 21 January 2021

²¹ London Assembly, [Derailed: Getting Crossrail Back On Track](#), April 2019

the new activities, such as testing of the lines and signalling systems, safety assurance activities and linking up digital assets.²² It is natural that a complex project, such as Crossrail, will pose challenges to its workforce as it evolves from construction-focused activity to system integration. However, it is not clear that the TfL and senior project leaders have a robust plan to fill the resource and skills gaps.

As early as its Period 6 report (23 August 2020 to 19 September 2020), the Project Representative highlighted that there had been a low take-up to fill vacancies, which were expected to be filled by TfL resources.²³ In addition, the report indicated that a number of critical programme areas were suffering with resource availability, namely the technical and safety assurance teams.²⁴ At the 1 December 2020 Transport Committee meeting, we heard that these roles are particularly challenging to fill due to the required specialist skills.

“In the specifics of safety assurance, we have a handful of vacancies that we work really hard with TfL to fill. These are very, very specialist resources though and are not easy to fill.”²⁵

Mark Wild, CEO Crossrail Limited

At the same meeting, we heard that contract insecurity, coupled with other infrastructure project opportunities, were key factors that contributed to a high rate of staff leaving and vacancies left unfilled. In particular, the precarious funding arrangements leading up to Crossrail’s December 2020 funding deal left TfL with “no financial authority” to renew contracts.²⁶

“Obviously we still look to try to fill some vacancies but, being frank, it is always difficult towards the end of a project because people have a choice, “Do I go to HS2 and have a five-year contract or do I come to Crossrail, which in theory has about one more year to go?” Therefore, it becomes increasingly difficult to recruit.”²⁷

Andy Byford, Commissioner Transport for London

²² Crossrail, [The Build: Testing and Commissioning](#)

²³ Jacobs, [Project Status Report 142](#), 15 October 2020

²⁴ Jacobs, [Project Status Report 142](#), 15 October 2020

²⁵ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

²⁷ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

On 12 January 2021, Heidi Alexander wrote to the Committee to confirm that, as of the date of writing, there were 17 vacancies across the project, including project-critical roles, such as *Head of Programme Change, Assurance Health and Safety Specialist and System Safety Engineer*.²⁸

The Committee is concerned that the resourcing and skills issue has been exacerbated by the prolonged funding uncertainty and, although the recent funding deal is welcome, much of the damage has already been done. It is also concerning that over the longer term, resourcing and skills gaps will become a dominant feature of the final phase of the project.

As responsibility for the project transfers to TfL, the Committee is keen to understand how and when TfL will fill all of the critical vacancies, by borrowing resource from within the organisation to fill the resource requirements.²⁹ Over the longer term, the Committee expects TfL to develop a comprehensive plan to respond to and mitigate any risks associated with a lack of resources and specialist skills, particularly through its wider workforce management strategy.

Staff wellbeing

In addition to risks posed to the project timeline, resource and skills shortages risk creating undue pressure on existing teams. In its Period 6 report, the P-Rep stated that there was a risk of “burn-out” and fatigue in critical technical and assurance teams.

“A number of programme areas appear to be suffering with resource availability, particularly in the technical and assurance teams. With pressure on the assurance teams to recover slippage and maintain dates, we are concerned that resources are working excessive hours, with a risk of burn-out, fatigue and sickness. This is unsustainable and, if not rectified, will have further schedule consequences.”³⁰

Project Representative Period 6, (23 August 2020 to 19 September 2020)

At the 1 December 2020 Transport Committee meeting, the Committee heard that steps had been taken to alleviate pressures from existing staff by rationalising assurance processes and implementing collaborative working practices to reduce pressures.³¹ Whilst

²⁷ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

²⁸ London Assembly, Letter from Deputy Mayor for Transport to Transport Committee, 12 January 2021 (see appendix 4)

²⁹ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

³⁰ Jacobs, [Project Status Report 142](#), 15 October 2020

³¹ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

the Committee recognises the steps being taken by Crossrail's senior leaders, it is concerning that this issue may have worsened, as COVID-19 and the third lockdown are likely to have presented new challenges to the delivery of the project and critical roles remain vacant.

Whilst the Committee recognises the need to maintain confidence in and momentum across the project, Crossrail's senior leaders must guard against the optimism bias that was evident in previous phases of the project.

Chapter two: Transitioning to a new structure

Key Findings

- **A number of significant changes to Crossrail's governance arrangements have taken place, which should provide TfL with the right level of oversight on the final phase of the project.**
- **The new structure has not had time to bed down, so it is difficult to identify its impact at this stage. It will be crucial for TfL to regularly review the structure as the project evolves.**
- **It is not clear whether the Project Representative's role will materially change under the new structure; and it is concerning that, in practice, this will mean their views are not considered at every stage of the project.**
- **Network Rail will play a crucial role in the final phase of the project, but the new structure does not reflect its importance.**

Recommendation 4

TfL should undertake a comprehensive lessons-learned exercise, incorporating the Committee's 2019 'Derailed' Report and Crossrail's Sponsor Review, to inform its new governance structure. The exercise should take place no later than March 2021 so that the structure can be flexed whilst it is still bedding down.

Recommendation 5

TfL should commission an independent review of its new governance structure within six months and include the findings in the Crossrail Chief Executive's updates to the Transport Committee. The review will enable TfL to adapt its structure as the project continues to evolve and transition to a fully operational line.

Recommendation 6

TfL should revisit its approach to the involvement of the Project Representative (P-Rep) in the final phase of the project to ensure that its independent scrutiny role is materially stronger under the new structure. Specifically, TfL should share with the Committee more

confidential information contained in the P-Rep's advice that is otherwise redacted from the public.

Recommendation 7

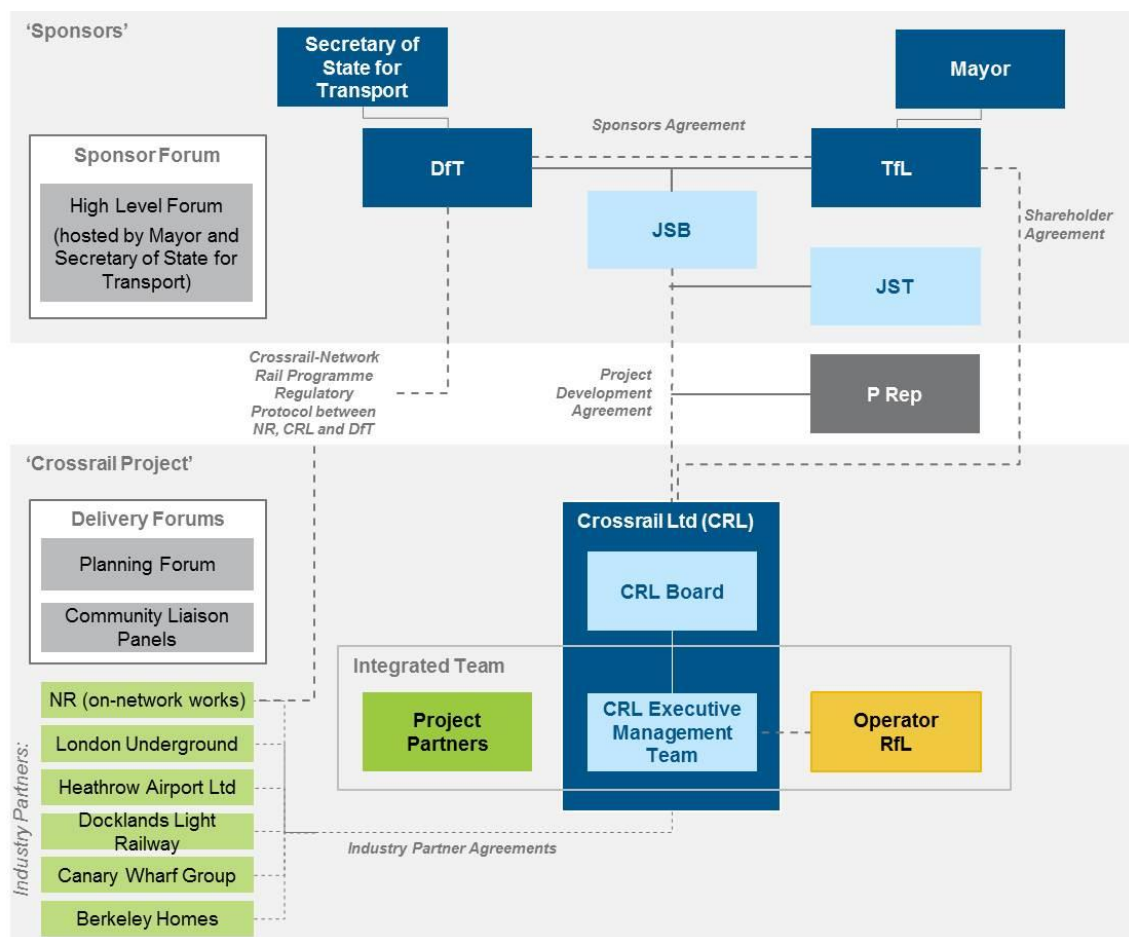
TfL should enhance the role of Network Rail in the new governance structure so that its voice is heard in key decision-making forums. Specifically, TfL should invite Network Rail to the Elizabeth Line Delivery Group (ELDG).

Background

Previously, Crossrail Limited, a company wholly-owned by TfL, had sole responsibility for management and delivery of the project. Both the project sponsors (Department for Transport and TfL) had oversight of the company through the appointment of non-executive directors to the Crossrail Board. Oversight of the governance and scrutiny of performance was delivered through a Sponsor Board. The Crossrail Board attended the Sponsor Board, though they did not formally report to the Sponsor Board. The Mayor provided input and oversight through meetings with the

TfL Commissioner every six weeks. Similarly, the Deputy Mayor for Transport and the Mayor’s Chief of Staff met Crossrail’s Chair and Chief Executive on a fortnightly basis.

Figure 1: Illustration of Previous Crossrail Governance Structure



It is well documented that the way in which Crossrail had been governed and structured had been instrumental in previous project issues and delays. Crossrail’s governance arrangements were a significant feature of our 2019 report, ‘Derailed’, which highlighted

that there was poor scrutiny of the Crossrail Board by the Sponsors.³² For example, in 2019, it was identified that issues were not being communicated to, and between, the Sponsors and the Crossrail Board, with Heidi Alexander, the Deputy Mayor for Transport, informing the Committee on 9 January 2019 that *“the joint sponsors who are seen to be responsible have very limited powers of influence and intervention”*.³³ More generally, some of the main findings of the Committee’s 2019 report were that the project team had “suffered from optimism bias” and that project risks were “downplayed” to the Mayor, rather than communicated as soon as possible, which exacerbated the problems caused by project delays.

At the 1 December 2020 Transport Committee meeting, the Committee heard from Tony Meggs, former Crossrail Chair, about some of the particular lessons learned from the way in which the project was structured. Specifically, it was indicated there was a constant battle to balance the need to maintain a level of optimism of progress on the project with the need to remain aware of the risks to delivery.³⁴

“We really wanted to avoid the real problem of 2018, which was shocking people at the last minute. What happens when you do that is that the rope breaks, the balloon bursts and all the energy and tension in the project dissipates. The project was in real disarray for a number of months. To be frank with you, it took the bulk of 2019 to rebuild that tension into the system. There was big learning.”³⁵

**Tony Meggs CB, Former Chair
Crossrail Limited**

Upon taking the role, Andy Byford, the TfL Commissioner, expressed a desire to take far greater control of the project. Andy Byford repeatedly spoke about the benefits that a new structure would bring to the project, citing clearer lines of accountability and management.

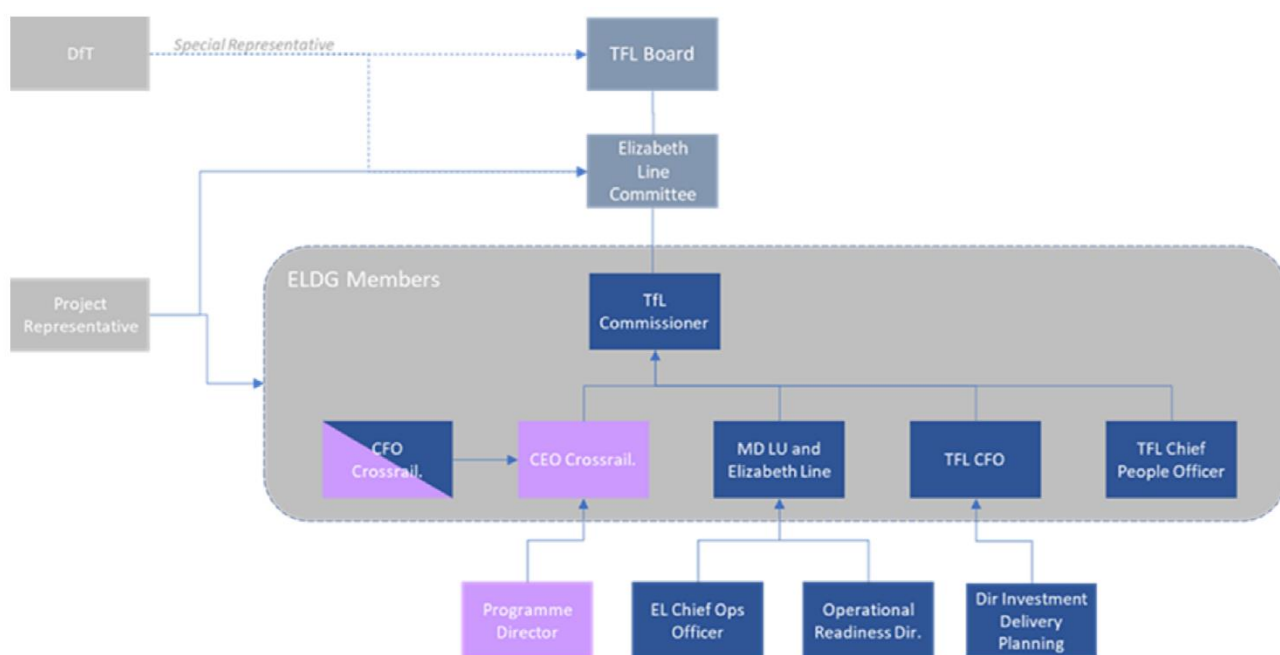
“There is a need for a single-point accountability to direct and drive that project to completion. I am prepared to take on that accountability. That is my job.”³⁶

**Andy Byford, Commissioner
Transport for London**

New structure

On the face of it, the new governance structure announced at the end of 2020 represents a sizeable shift in the leadership, management and organisation of the project. As Crossrail transitions from a construction-focused project to the integration and delivery of a fully operational railway, TfL, the maintainer and operator of the railway, has taken on formal responsibility for the project.³⁷ The Committee welcomes this decision, as it is a natural next step in the evolution of the project. Crucially, it allows TfL to set a new baseline to manage project management and performance more effectively.

Figure 2: Illustration of New Crossrail Governance Structure



Under the new structure, the Elizabeth Line Committee (ELC) replaces the Crossrail Board as the forum responsible for the strategic oversight of the project. Crucially, the ELC is chaired by Heidi Alexander, the Deputy Mayor for Transport, which should support TfL’s responsibility in managing the final phase of the project.

³² London Assembly, [9 January 2019 Transport Committee](#), 9 January 2019

³³ London Assembly, [9 January 2019 Transport Committee](#), 9 January 2019

³⁴ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

³⁵ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

³⁶ London Assembly, [8 October 2020 Transport Committee](#), 8 October 2020

³⁷ TfL, [Governance of the Crossrail programme transfers to TfL](#), 1 October 2020

Elizabeth Line Committee (ELC):

This Committee has been established to provide “high-level oversight” of the project.³⁸ The Committee will meet at least six times a year in public, similar to the approach taken in other TfL meetings. Previously, Crossrail Board meetings were held in private.

The initial membership will be: Heidi Alexander as Chair; Anne McMeel as Deputy Chair; It was also confirmed that DfT had appointed Kathryn Cearn OBE as a Special Representative to attend the Committee. As part of the new structure, the Government’s Special Representative will also have quarterly meetings with the Mayor and Deputy Mayor.

According to TfL, it is anticipated that the ELC’s remit and membership will change over time as the project reaches subsequent stages of transition. However, under the revised Sponsors’ Agreement, any proposed change to the core purpose of the Committee will require the approval of DfT.³⁹

An operational-focused forum, known as the Elizabeth Line Delivery Group (ELDG) sits under the ELC. The ELDG is comprised of key members of the relevant organisations involved in the project (TfL, London Underground and Crossrail), and is chaired by Andy Byford, the TfL Commissioner.⁴⁰ As Chair, Andy Byford will take on responsibility for the cross-cutting decisions arising from the project, which reflects a fundamental shift in the role of the TfL Commissioner in the project.

It is anticipated that the TfL Commissioner will play a crucial role in ensuring that the Mayor has greater oversight of the project through TfL’s management, and ensuring that the project is aligned with TfL’s wider business plan.

Under the new arrangements, the Commissioner will report progress on the project to the Mayor on a fortnightly basis and Mark Wild, Crossrail’s Chief Executive, will report directly to Andy Byford.

38 TfL, [Governance of the Crossrail programme transfers to TfL](#), 1 October 2020

39 TfL, [Elizabeth Line Committee](#), 26 November 2020

40 TfL, [Governance of the Crossrail programme transfers to TfL](#), 1 October 2020

Elizabeth Line Delivery group (ELDG):

The ELDG will be chaired by the TfL Commissioner and attended by Mark Wild, Crossrail's Chief Executive; Simon Kilonback, TfL's Chief Financial Officer; and Andy Lord, Managing Director of London Underground. The ELDG will be an internal TfL meeting, accountable to the TfL Board for the safe opening of the line; and will meet every four weeks.⁴¹

The new arrangements suggest that the DfT will have limited oversight on the governance of the project, other than through the attendance of its Special Representative at ELC meetings.⁴² This change in emphasis makes sense as the financial and project responsibility shifts to TfL.

It is unclear how Network Rail will fit in to the new structure, as it does not feature in TfL's new Crossrail organogram (Figure 2). According to the new organogram, the Managing Director for London Underground will sit on the ELDG but there will be no representative from Network Rail, despite it playing a critical role in those sections of the Elizabeth line outside of London. It is important that, where possible, TfL enhances the role of Network Rail in the new structure so that its voice is heard in key decision-making forums.

We have also learned that new working arrangements have been adopted to reflect the new lines of accountability. For example, the TfL Commissioner has cited the introduction of a "weekly countdown meeting" as a key way for he, the Crossrail Chief Executive and the Managing Director for London Underground to manage Crossrail and address any emerging project issues.⁴³

"The second [action the TfL Commissioner is taking to ensure that all milestones are met] is the fact that we also have the countdown meetings, to which I referred earlier, which are a very early warning mechanism. At any hint of trouble or any hint of problems, every seven days, again, we can of course correct."⁴⁴

**Andy Byford, Commissioner
Transport for London**

⁴¹ A full version of the response can be found in Appendix 1.

⁴² See Figure 2.

⁴³ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

⁴⁴ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

On 12 January 2021, the Deputy Mayor for Transport wrote to the Committee to confirm that the meeting is a key forum to “discuss issues that could put pressure on the schedule or suggestions to streamline the path to opening,” specifically relating to critical project milestones. It was also indicated that the TfL Commissioner had used recent “countdown meetings” to “challenge the project” to ensure the teams responsible for project-critical assurance and health and safety work receive the “appropriate support”.⁴⁵

Impact of the new structure

Londoners rightly need a governance structure that promotes transparency and openness at every phase of the project, particularly in the context of previous delays. For example, the structure should enable outside parties to scrutinise Crossrail’s senior leadership on its delivery of key milestones.

Throughout our investigation, Crossrail’s leadership has been keen to stress the benefits of the new structure. We have heard that the new structure will improve transparency and accountability and enable more effective decision-making.

“There are myriad reasons why we wanted to make this new governance transition. It just means it is streamlined and it is even more transparent. Tony did a great job on transparency, but it is even more transparent with Heidi’s [the Deputy Mayor for Transport] Committee and with my Delivery Group. It really is the way to drive this thing across the line.”⁴⁶

Andy Byford, Commissioner Transport for London

We recognise that the new structure represents a shift in emphasis of the management of the project. It makes sense that new governance arrangements are developed and adopted as Crossrail faces new, distinct challenges in the final phase of the project.

However, whilst accepting that the tasks facing Crossrail in the final phase are new, the Committee is concerned that Crossrail’s senior leadership’s current focus on delivery risks overlooking the need to learn lessons from previous approaches. We welcome the indication that the 2020 Crossrail Board Review informed the development of the new structure, but we are keen to see more progress in Crossrail Sponsors’ review, which was referenced at the last meeting of the Crossrail Board.⁴⁷ At the meeting, it was confirmed that the review would “provide immediate output that can be fed and incorporated into the

⁴⁵ London Assembly, Letter from Deputy Mayor for Transport to Transport Committee, 12 January, 2021 (see appendix 4)

⁴⁶ London Assembly, [1 December 2020 Transport Committee](#), 1 December 2020

⁴⁷ TfL, [Crossrail Sponsor Board Meeting No. 123A](#), 25 September 2020

new Crossrail governance structure” and would provide a more comprehensive overview of lessons learned of the joint governance approach taken to date.

On 12 January 2021, Heidi Alexander wrote to the Committee to confirm that TfL was “in the process of developing the terms of reference of the review” and “once agreed it [TfL] will discuss with the Department for Transport the best approach to commission the review.”⁴⁸

In addition to incorporating any relevant lessons learned, Crossrail’s senior leaders must ensure that the new structure prevents a culture of optimism bias that led to previous project delays. The new structure must keep this risk in check.

It is concerning that the most recently published P-Rep report, covering the period of the 18 October 2020 to 4 November 2020, highlighted issues with the organisation and governance of the project. The report stated: “We observe across the Programme that timely decision-making has been poor and the processing of information to completion is taking a considerable time.”⁴⁹ Whilst it is accepted that these concerns were identified under the first few months of the new structure, it underlines the need to review the arrangements to ensure they remain fit for purpose as the project progresses.

More generally, there has been very little time for the new structure to bed in, so it is difficult for the Committee to determine, for certain, how it will impact on the management, oversight and delivery of the project. The Committee understands that further phases of transition will take place as the project becomes a fully integrated part of TfL. Therefore, it is crucial that TfL makes every effort to urgently learn lessons from previous approaches, to ensure that the new structure is fit for purpose.

Embracing independent scrutiny: the role of Project Representative

Under the new structure, it is fundamental that independent scrutiny is fully embraced. The Project Representative (P-Rep) plays a crucial role in its scrutiny and challenge to the Crossrail senior leadership.

The Committee has consistently advised that the P-Rep should play an integral part in the development of the project. The Committee has also highlighted the need to adopt a more transparent approach to the way Crossrail uses the P-Rep’s findings and advice. In response to the Committee’s 2019 report, which highlighted concerns about a lack of engagement with the P-Rep, the Mayor stated that the role had been “*greatly enhanced*”, with additional

⁴⁸ London Assembly, Letter from Deputy Mayor for Transport to Transport Committee, 12 January 2021 (see appendix 4)

⁴⁹ Jacobs, [Project Status Report 144](#), 11 December 2020

resources for monitoring risk, the project schedule, and whether the right technical expertise were in place.⁵⁰

The Committee welcomes the increased recognition of the important role that the P-Rep plays in the project. However, at the 1 December 2020 Transport Committee meeting, the Committee raised concerns that the new structure risks not materially changing the role and influence of the P-Rep amongst Crossrail's senior leaders. For example, the P-Rep was only invited to speak at the private part of the first Elizabeth Line Committee (ELC). Following the Committee meeting, the Deputy Mayor for Transport wrote to the Committee to confirm that the P-Rep would be invited to participate in both parts of future ELC meetings. Given the ELC is a crucial strategic decision-making forum for the project, it is vital that TfL maximises every opportunity to use the P-Rep in the critical final phase of the project.

⁵⁰ Mayor of London, [Reply from Mayor to Crossrail report](#), 4 July 2019

Conclusion

The next twelve months will present unique challenges for the delivery of Crossrail. Therefore, the Transport Committee's investigation provides a key opportunity to set a baseline against which to scrutinise progress of the project, under new management and with a change in emphasis.

The Committee will continue to hold TfL to account in its new role and ensuring that all relevant lessons are learned from previous mistakes. The effective management and delivery of Crossrail is of the utmost importance to Londoners, who will face increased indirect costs to see the Elizabeth line become a fully operational railway.

By implementing the Committee's recommendations, TfL can build on the welcome changes it has made to Crossrail, strengthen its new structure and embody the commitments to transparency and openness in the final phase of the project.

Appendices

Appendix 1: Letter from the Chair of the Transport Committee to TfL (Crossrail), 29 October 2020



Dr Alison Moore AM
Chair of the Transport Committee

Heidi Alexander

Deputy Mayor for Transport
Transport for London
(Sent by email)

Andy Byford

Commissioner
Transport for London

29 October 2020

Dear Deputy Mayor and Commissioner,

8 October Transport Committee Meeting – Crossrail Questions

At the 8 October Transport Committee meeting, we welcomed the opportunity to ask questions to the Commissioner regarding Crossrail. As you know, the Committee will be holding a dedicated meeting on 1 December to discuss the progress to date and next steps for Crossrail. I understand both of you are able to attend the meeting, which the Committee welcomes.

The Committee notes the publication of a Crossrail Governance Transition discussion paper and, more recently, the publication of the Elizabeth Line Committee's 29 October meeting agenda pack. Both papers provide useful information relating to the key issues facing Crossrail.

However, in order to best assist the Committee's next Crossrail meeting, we would like to follow up on some of the issues raised at the 8 October meeting.

The Committee would like to ask the following questions:

1. Please can you outline the key aspects of the new governance arrangements for Crossrail?
2. Please can you provide a new organogram detailing the new governance structure, reporting lines, key decision-making forums and escalation routes?
3. Please can you explain the rationale for the changes to Crossrail's governance arrangements?
4. How have the experiences of the previous governance arrangements informed the development of the new arrangements?
5. Please can you outline the key ways in which you believe that the new governance structure will improve the project management of Crossrail?
6. How will the new arrangements improve the transparency and openness of the project? Please give specific examples if possible.

I appreciate there are still a number of ongoing developments affecting the project, but it is integral to the effective scrutiny of Crossrail that the Committee understands fully the current state of Crossrail's governance and funding arrangements, as part of its new relationship with TfL.

I would be grateful if you could respond to the questions by Monday 23 November.

If you have any questions, please contact Luke Rigg, the Committee's Senior Policy Adviser, (luke.rigg@london.gov.uk).

Yours sincerely,

A handwritten signature in black ink that reads "Alison Moore". The signature is written in a cursive, slightly slanted style.

Dr Alison Moore AM
Chair of the Transport Committee

Appendix 2: Letter from TfL to the Chair of the Transport Committee (Crossrail), 25 November 2020

Dr Alison Moore AM

Ref: MGLA291020-8806

Chair of the Transport Committee
London Assembly
City Hall

Date: 25 November 2020

The Queen's Walk
London SE1 2AA
By email: Alison.Moore@london.gov.uk

Dear Alison

Thank you for your letter of 29 October 2020 in advance of our meeting with the Transport Committee on 1 December. Please consider this letter a response from me and the TfL Commissioner, Andy Byford, who I understand you also wrote to.

Please find below the relevant information as requested. As there is some overlap in each area, my responses will cover some of your questions together.

Question 1: Please can you outline the key aspects of the new governance arrangements for Crossrail?

Question 3: Please can you explain the rationale for the changes to Crossrail's governance arrangements?

Status and rationale

As you know, the delivery of the Elizabeth line is now in its complex final stages with a focus on the remaining construction and systems integration, followed by intensive operational testing. Given this, it was right for responsibility for the Crossrail project to be handed over to TfL on 1 October 2020 as the operator and maintainer of the railway. This handover to TfL, which included all governance arrangements, was always part of the planned process to complete the railway.

The new arrangements will ensure that decision-making is seamless and fully aligned during the critical final phases of the programme as operational testing is undertaken, and the remaining parts of the railway are completed and transferred to operational teams. The

governance transition plans were approved by the TfL Board and Department for Transport (DfT).

In developing proposals for the transition, we worked to a number of objectives, including:

- No interruption to the “Target Zero” world class safety management system;
- Minimising the cost of governance transition by completing it as early as possible, with minimal disruption to existing processes;
- Crossrail Limited (CRL), as a programme team, remains focused on the delivery of the Elizabeth Line and is not distracted by governance changes;
- CRL continues to fulfil its statutory and contractual obligations;
- To take control of the risk to TfL’s Business Plan from the completion of the Elizabeth line;
- To allow rapid decisions to be made on a whole-life and pan-TfL basis; and
- To enable a “One TfL” culture by removing potential barriers between CRL and TfL.

New arrangements

The new governance arrangements for the Crossrail project, following the initial phase of transition, are outlined below:

- CRL has been retained as a corporate entity with an officer level board to meet Companies Act requirements, consistent with TfL’s other subsidiary entities;
- The Elizabeth Line Committee (ELC), has been established as a new special purpose Committee of the Board to address the Crossrail project and bring the Elizabeth line into full passenger service;
- The CRL Remuneration, Investment and Audit Committees have been stood down and those functions have been adopted by the relevant TfL Committees, with corresponding changes made to their terms of reference;
- The Elizabeth Line Readiness Group has been re-formed as the Elizabeth Line Delivery Group (ELDG), chaired by the Commissioner to ensure appropriate oversight of the delivery of the Elizabeth line by the Crossrail project team and TfL Executive;
- Amendments have been made to TfL’s Standing Orders to ensure that appropriate delegations and authorities apply to CRL;
- The Sponsor Board has been stood down and any matters reserved to DfT alone or to both Sponsors will be referred to DfT as required;
- The Project Representative (P-Rep) continues to provide independent oversight on behalf of this Committee and its members (including DfT) and is invited to present its views to both the Committee and ELDG. A government representative will also attend the ELC.

Elizabeth Line Committee

The ELC is a special purpose Committee of the TfL Board. It will simplify decision-making and provide assurance and oversight for the Board on the completion and close-out of the Crossrail project and the opening of the Elizabeth line. The Committee will receive regular update reports and assurance on the progress of the Crossrail project including, without limitation, reports and assurance on safety aspects.

It will be a public meeting, in the same way other TfL committee meetings are, which will supersede the Crossrail Board meetings which were held monthly.

The ELC will meet at least six times a year, or at such greater frequency as determined by the Chair. The first meeting will take place on 26 November.

The initial membership of the Committee is: Heidi Alexander (Chair); Anne McMeel (Deputy Chair), Dr Nelson Ogunshakin OBE; Prof. Greg Clark CBE; and Mark Phillips, all of whom are currently Board members, together with Sarah Atkins who was a TfL-nominated non-executive director on the CRL Board.

DfT has appointed Kathryn Cearns OBE as a Special Representative to attend the meetings of the Committee, as a non-member. Kathryn was a DfT-nominated non-executive director on the CRL Board.

The Project Representative (P-Rep) reports will be submitted to the Committee in the same way it has been submitted to the Programmes and Investment Committee and redacted versions will continue to be published on TfL's website.

As the project reaches its later stages, it is anticipated that the remit and membership of the Committee will change and, eventually, when steady state operations are reached, the Elizabeth line's activities will be governed in the same way as TfL's other operational activities, without the need for a separate committee.

Elizabeth Line Delivery Group

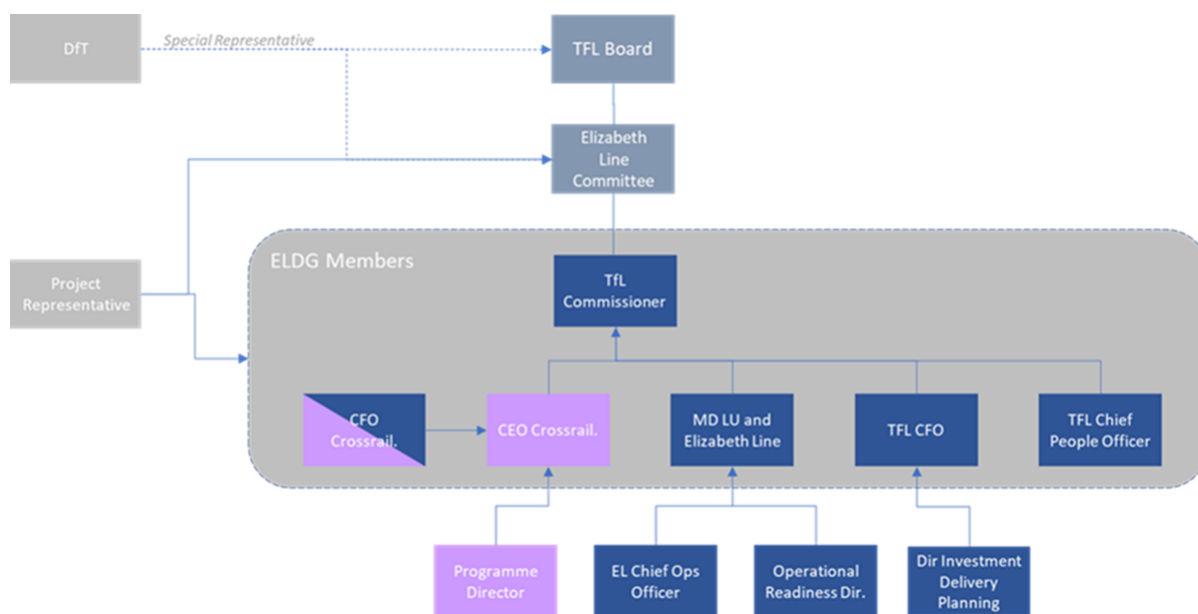
The ELDG has been established as the principal decision-making forum for matters not delegated to the project team or reserved to the TfL Board. It is accountable to the TfL Board for the safe opening of the Elizabeth line, as quickly and as cost effectively as possible. It will meet every four weeks and will be an internal TfL meeting.

The meeting will be chaired by Commissioner Andy Byford and attended by Mark Wild, Chief Executive of CRL, Simon Kilonback, Chief Finance Officer of TfL, and Andy Lord, Managing Director of London Underground. Other senior officials from across TfL and the Crossrail project will also attend as necessary.

The ELDG will ensure that the plans for delivering Crossrail infrastructure ready for Elizabeth line operations are aligned with TfL's strategic priorities and that the Elizabeth line delivers the outputs specified in the Sponsors Requirements. Specific decisions under delegated

authority will continue to be made by individuals in accordance with existing TfL governance arrangements.

Question 2: Please can you provide a new organogram detailing the new governance structure, reporting lines, key decision-making forums and escalation routes?



Question 4: How have the experiences of the previous governance arrangements informed the development of the new arrangements?

The handover of the governance of the Crossrail project to TfL was always part of the process of completing the Elizabeth line. As the railway nears completion, it is necessary for the operator, TfL, to take over the running of the project so that it can seamlessly transition to a revenue service.

As the handover of assets began, the decision-making process became more complex. The main purpose of the governance transition was, therefore, to simplify this process. As a result of these changes, there is now increased connectivity between CRL, TfL and London Underground.

In January 2020, the CRL Board commissioned a review of its own effectiveness. The findings of that review have helped inform the design of the revised Governance arrangements, in particular regarding the frequency of meetings. To further increase transparency of the project, Elizabeth Line Committee meetings will take place in public and be broadcast live on TfL’s YouTube channel.

Question 5: Please can you outline the key ways in which you believe that the new governance structure will improve the project management of Crossrail?

The process to handover the completed rail infrastructure to TfL is underway with the Crossrail project planning to start intensive operational testing, known as Trial Running, at the earliest opportunity in 2021. This marks the project's important transition from construction to an operational railway.

The governance changes were targeted primarily at the executive layer and board level with no fundamental changes to the programme or project management layers. However, placing the Commissioner in charge of the overall project means the whole of TfL can pivot towards prioritising the completion of the Elizabeth line with support from across the organisation and the Commissioner's top team.

The transition of governance simplifies responsibilities, with the ELDG comprising senior members of TfL, London Underground and CRL, under the leadership of the Commissioner and allows operator and constructor to discuss and agree decisions collectively.

Over time, further phases of the transition will take place as the Crossrail project becomes a fully integrated part of TfL. In the meantime, the Commissioner and leadership team at TfL will work closely with CRL to deliver the opening of the central section in the first half of 2022 or sooner.

Question 6: How will the new arrangements improve the transparency and openness of the project? Please give specific examples if possible.

Since it was first announced that the central section of the railway would not open to passenger service in December 2018, significant and positive work has taken place to improve the project's transparency and to increase the oversight of the project by its Sponsors, TfL and the DfT. Under the new arrangements, high-level oversight will also be provided by the ELC.

The Committee will meet in public six times a year or at such greater frequency, as I will determine as chair. It will also include members of the TfL Board, and be attended by a special representative from the DfT as joint sponsor of the project.

Additionally, the following measures are being implemented to further increase the transparency of the project:

- All papers for the ELC will be published online in advance of the meeting, unless specifically exempt as set out in the Local Government Act 1972.
- CRL will continue to provide a monthly update to the chair of the London Assembly Transport Committee and quarterly updates to the Public Accounts Committee
- Elizabeth Line Committee meetings will take place in public and be broadcast live on TfL's YouTube channel.

- P-Rep reports and the response from CRL will continue to be published by TfL – These will be published every 2 months; a more regular publication cycle than when reports were submitted to the Programme and Investment Committee.
- As Senior Reporting Officer for the project, the TfL Commissioner will attend DfT Investment, Portfolio and Delivery Committee every three months to provide updates on the progress to open the Elizabeth line.

I hope you find this information useful and look forward to discussing these changes in more detail at the Committee session. If you require any further detail, please contact my office.

Yours sincerely,



Heidi Alexander

Deputy Mayor for Transport

cc: Laura Pelling, Committee and Member Services, London Assembly

Appendix 3: Letter from the Chair of the Transport Committee to TfL (Crossrail), 15 December 2020



Dr Alison Moore AM
Chair of the Transport Committee

Heidi Alexander
Deputy Mayor For Transport
Transport for London
(Sent by email)

15 December 2020

Dear Deputy Mayor,

Transport Committee Meeting – 1 December 2020

I would like to thank you for attending the Transport Committee meeting on 1 December. We are grateful for your contributions during the session. Your answers were of much assistance and Members found the discussion stimulating and insightful.

During the course of the discussion, you kindly agreed to provide the Committee with an update on the recommendation from the September 2020 Sponsor Board meeting to consider appointing an external organisation to undertake a review of the governance arrangements for the Crossrail project.

In addition to this action, the Committee has several follow-up questions arising from the meeting, detailed below. We would be grateful if you could provide a response to the following additional questions as set out below.

Governance

We discussed in more detail the role of the new governance structures in the oversight and delivery of the project. It was noted that a weekly “countdown meeting” had been established to enable the Commissioner to take “corrective action” on any concerns raised by Mark Wild or Andy Lord. The Committee is keen to know specific examples of issues that have been raised at the meeting and resolved as a result of the new reporting arrangements.

We discussed the role of the Project Representative (P-Rep) in providing scrutiny, oversight and challenge to the project. During the meeting, you indicated that you would like to meet the PRep in the next couple of weeks to discuss its role in the next phase of the project, including specifically its role at the Elizabeth Line Committee. The Committee would like to receive a progress update on the meeting, including the outcome of any discussion.

Project Delivery

During the meeting, in the context of keeping the project on schedule, the Commissioner said “in order to stick to the timeframe we may park doing some things that are not critical for opening, but we would still get them done.” The Committee would like to know what decisions have been taken to date to pause work.

We heard that it was difficult to provide a precise opening date for the Elizabeth Line, but that the position would become clearer in the New Year, when system integration dynamic testing is likely to have finished. In response to a question from the Deputy Chair regarding the likely time required between now and the opening, Mark Wild stated “we will not know until about mid to late January [2021] whether the effect has been to reduce those time periods you have said”. The Committee is keen to receive a status update in January.

Furthermore, we heard that “hooking up” all of the stations – in particular, the integration of 60,000 individual digital assets – will be crucial to the second critical path. We understand that this is due to be completed over the course of 2021. Given its integral role in the second critical path, the Committee would like to see an overview of the milestones required to complete this work.

Finally, a number of points were raised regarding Crossrail’s current workforce vacancy rate. In particular, we heard that the vacancies were those specifically relating to specialist roles and those required to deliver the technical and safety assurance processes, which will be vital to complete the project.

In summary, I would be grateful if you could respond to the following questions:

1. *Please can you provide examples of project issues that have been taken to the new “countdown meeting” and the outcome of the Commissioner’s interventions?*

2. *Please can you provide an update on your plan to meet the P-Rep and the outcome of the discussion?*
3. *Please can you provide a full list of paused project work, as a result of decisions taken to prioritise work critical to the opening of the Line, along with revised completion dates for the affected work?*
4. *Please can you provide an update on the outcomes of the initial system integration dynamic tests and the likely time required to open the Line?*
5. *Please can you provide an overview of the milestones required to complete the hooking up of all stations, in particular the integration of digital assets?*
6. *Please could you provide a full list of current vacancies linked to the project, broken down by programme area?*

I would be grateful to receive a response by 15 January 2021. Please copy your response to Luke Rigg, the Committee's Senior Policy Adviser, (luke.rigg@london.gov.uk).

Yours sincerely,



Dr Alison Moore AM
Chair of the Transport Committee

Copied to:

Andy Byford, Commissioner, Transport for London
Mark Wild, Chief Executive Officer, Crossrail Limited

Appendix 4: Letter from TfL to the Chair of the Transport Committee (Crossrail), 12 January 2021

Alison Moore AM

By email

Date: 12 January 2021

Dear Alison,

Thank you for your letter of 15 December. I am glad Members found the meeting on 1 December useful. I set out responses to your follow-up questions below.

At the final meeting of the Sponsor Board, Sponsors agreed to carry out a lessons learned exercise on the governance arrangements over the life of the Crossrail project to inform the initiation and evolution of governance on current and future major projects. Their approach is to build on and update the Crossrail Learning Legacy paper published in 2016, [“Lessons learned from structuring and governance arrangements: perspectives at the construction stage of Crossrail.”](#)

Transport for London (TfL) is in the process of developing the terms of reference of the review and once agreed it will discuss with the Department for Transport the best approach to commission the review. The terms of reference will clarify the lines of enquiry for the review and the proposed list of interviewees.

Please can you provide examples of project issues that have been taken to the new “countdown meeting” and the outcome of the Commissioner’s interventions?

Alongside receiving regular updates from Mark Wild, Andy Lord and from across London Underground and Crossrail on the status of the project, the Commissioner holds a weekly meeting to track progress against key milestones in order to meet certain critical dates such as Trial Running, Trial Operations and opening of Stage 3.

This provides a regular forum to discuss issues that could put pressure on the schedule or suggestions to streamline the path to opening, so that resolutions and next steps can be collectively agreed.

For example, it has been discussed in recent meetings that a significant level of assurance work and health and safety materials will need to be completed in early 2021, ahead of Trial Running. This has allowed the Commissioner to challenge the project to guarantee appropriate support is given to Crossrail and London Underground’s assurance and engineering teams in advance, and ensure effective planning and resources are in place.

In assuming overall control for the Crossrail project - and accountability for the earliest possible, safe opening of the Elizabeth Line - the Commissioner is leaving nothing to chance. He has brought in specialist expertise to focus on stations completion and to improve overall project controls. They also participate in the Commissioner's Countdown meetings.

Please can you provide an update on your plan to meet the P-Rep and the outcome of the discussion?

I met with the P-Rep following the Transport Committee session and we agreed that at future Elizabeth Line Committee meetings the P-Rep would be available to answer questions in both Part 1 and Part 2 of the meetings.

Please can you provide a full list of paused project work, as a result of decisions taken to prioritise work critical to the opening of the Line, along with revised completion dates for the affected work?

To date, no decisions have been made to pause works that are not critical for opening. However, some non-critical works that can be delivered post revenue service have been handed over to TfL to deliver.

Please can you provide an update on the outcomes of the initial system integration dynamic tests and the likely time required to open the Line?

The first phase of Systems Integration Dynamic Testing (SIDT) took place between 3 and 17 December 2020. In total 33,300 train miles were run, with up to eight trains operating at once. This was the first time eight trains had been operated together in the Central Operating Section, with the majority of prior testing limited to four trains operating at any one time. Trains were timetabled to run in groups at 5-minute headways, replicating the close running that will be seen in 12 trains per hour operation. The objective of SIDT is to test the system to the maximum extent in an operational context, stress operation, flush out issues and provide an environment for our operators to familiarise themselves with the systems. Performance varied over the 15 days, but overall it met the project team's expectations.

The project is continuing to test the railway and the first phase of SIDT in December 2020 was run on the latest available signalling and train control software. An upgraded version of the software will be used for SIDT once it resumes on 13 January 2021 which will be very close to the software the project plans to use in Trial Running. There are a number of signalling and train software issues to resolve, many of which have been seen before and already have fixes scheduled for release or are being developed; others are being discussed with Siemens and Bombardier.

SIDT has run more trains and provided greater mileage than the project has previously achieved in test operations. It has also provided insight on priorities for fixes and highlighted areas of improvement for planning and operational procedures. Overall, the first two weeks of SIDT have not changed the project team's expectations of timescales for opening but it

has increased their understanding and accelerated learning of how the system performs and how it is managed.

Please can you provide an overview of the milestones required to complete the hooking up of all stations, in particular the integration of digital assets?

In order to complete station integration, the following activities and events are required:

- Complete a dry-run of the Central Management System (CMS) and Station Management System (SMS).
- Complete a dry-run of station Fire Alarm and Emergency Systems.
- Complete 50 hours of dry-runs and fault free running of mechanical and electrical plants.
- Complete a final 100 hours of fault-free running of systems required for safe operation of the station.
- Communications stress testing which are to be undertaken at Liverpool Street and Woolwich to test fall-back system operation.
- The final Bringing into Use (BIU) stage will follow the above testing once the systems have been fault tested and any defects have been corrected. BIU marks the handover milestone of the station to the operator and takes place at the end of the T-12 period when all the systems will go live and the station will in principle be ready for use. BIU includes the following activities:
 - o Passenger Alarm and Voice Alarm (PAVA) testing
 - o PAVA final integration
 - o Fire Alarm System final verification (London Underground Stations)
 - o CMS, SMS and Fire Alarm System BIU
 - o Operator take over

Following Farringdon station commencing the T-12 process in late 2020, the project team expects it to be the first station to reach BIU in the first quarter of 2021.

Please could you provide a full list of current vacancies linked to the project, broken down by programme area?

This is set out at Appendix A.

Thank you again for writing to me.

Yours sincerely,



Heidi Alexander

Deputy Mayor for Transport

Appendix 5: Derailed: Getting Crossrail back on track: Key findings and actions

Key findings ⁵¹	Actions ⁵²
<p>Governance and assessment of risk</p> <ul style="list-style-type: none"> • The Governance structure was not fit for purpose to deliver such a complex infrastructure project, especially in its more mature stages. • The Crossrail executive did not have the skills required at the later stages of the programme to adequately assess and understand risk as the project moved from construction to operations. • The independent reviewer (Jacobs) reported significant risks to the December 2018 opening as early as January 2018. However, Sponsors did not sufficiently act upon these reports of risk. 	<ul style="list-style-type: none"> • Independent reviews of the governance were undertaken which led to improvements in the systems and processes on the project. • Mayor committed to continue to keep the governance structures under review as the project progresses through to completion. • New Chair and Deputy Chair were appointed in January 2019 and new executive team were put in place.
<p>Leadership and corporate culture</p> <ul style="list-style-type: none"> • The Corporate culture at Crossrail suffered from optimism bias or “<i>hero mentality</i>”. • Crossrail Executive was too committed to the deadline and did not give adequate attention to the existence of red flags, mainly raised by the P-Rep. 	<ul style="list-style-type: none"> • Increased frequency of meetings between Transport Commissioner, Chair of TfL and the Chair and Chief Executive of Crossrail. • Mayor’s Chief of Staff and Deputy Mayor for Transport met with Crossrail every fortnight to discuss progress on all aspects of the project.

⁵¹ London Assembly, [Derailed: Getting Crossrail Back On Track](#), April 2019

⁵² Mayor of London, [Reply from Mayor to Crossrail report](#), 4 July 2019

<p>Transparency and communication of risk</p> <ul style="list-style-type: none">• Communication channels between Crossrail Limited and key stakeholders lacked transparency. There was an absence of a sufficiently detailed record of these communications.• The absence of sufficiently detailed record of these communications prevents adequate scrutiny and attribution of responsibility• Instead of communicating risks head on, these were downplayed in the weekly updates to the Mayor.	<ul style="list-style-type: none">• The minutes of both the Crossrail Board and Sponsor Board meetings were published on TfL and Crossrail’s websites.• Monthly updates were sent to the Transport Committee and detailed reports from the Chief Executive and Chairman of Crossrail.
<p>Project Design</p> <ul style="list-style-type: none">• While innovative, the project has been complex, from the design of the stations to the number of signalling systems to be integrated into the programme. This level of complexity on various elements of the programme posed a risk to budget and schedule pressures for delivering Crossrail.	<ul style="list-style-type: none">• TfL, as a sponsor of the Crossrail project, is ensuring that lessons have been learned and are taken into account during the planning of future large infrastructure projects.

Other formats and languages

If you, or someone you know needs this report in large print or braille, or a copy of the summary and main findings in another language, then please call us on: 020 7983 4000 or email assembly.translations@london.gov.uk

Chinese

如您需要这份文件的简介的翻译本，
请电话联系或按上面所提供的邮寄地址或
Email 与我们联系。

Hindi

यदि आपको इस दस्तावेज का सारांश अपनी भाषा में
चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये
गये डाक पते या ई मेल पते पर हम से संपर्क करें।

Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang
tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện
thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান,
তাহলে দয়া করে ফো করবেন অথবা উল্লেখিত ডাক ঠিকানায় বা
ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

Greek

*Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα
σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί
μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.*

Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں
درکار ہو تو، براہ کرم نمبر پر فون کریں
یا مذکورہ بالا ڈاک کے پتے یا ای میل
پتے پر ہم سے رابطہ کریں۔

Turkish

Bu belgenin kendi dilinize çevrilmiş bir özetini
okumak isterseniz, lütfen yukarıdaki telefon
numarasını arayın, veya posta ya da e-posta
adresini aracılığıyla bizimle temasa geçin.

Arabic

الوصول على ملخص لهذا المستند بلغتك،
فرجاء الاتصال برقم الهاتف أو الاتصال على
العنوان البريدي أو عادي أو عنوان البريدي
الإلكتروني أعلاه.

Punjabi

ਜੇ ਤੁਸੀਂ ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਸੰਖੇਪ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਲੈਣਾ
ਚਾਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ
ਉਪਰ ਦਿੱਤੇ ਡਾਕ ਜਾਂ ਈਮੇਲ ਪਤੇ 'ਤੇ ਸਾਨੂੰ ਸੰਪਰਕ ਕਰੋ।

Gujarati

જો તમારે આ દસ્તાવેજનો સાર તમારી ભાષામાં
જોઈતો હોય તો ઉપર આપેલ નંબર પર ફોન કરો
અથવા ઉપર આપેલ ટપાલ અથવા ઈ-મેઇલ સરનામા
પર અમારો સંપર્ક કરો.

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