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Dear Caroline,

Crossrail continues to make progress on completing the works necessary to commence passenger services in the central section of the railway in the first half of 2022. We are doing everything we can to complete the Elizabeth line safely, reliably and as quickly as possible, but there are no short-cuts to delivering this hugely complex railway.

Since my last update, we continue to increase train mileage, build reliability and flush out any issues with our systems and signalling software through Trial Running. We are currently running 12 trains per hour (tph), the initial level of service on the Elizabeth line when it enters passenger service. We continue to make good progress with the final integration testing of the railway, which ensures that all the different systems work seamlessly together. There is more work to do over the coming months, but this is a positive step forward. The trialling of the software and testing of the systems are crucial to demonstrating the safety and reliability of the railway; and a further step towards its opening to passenger services.

In the last period, a revised delivery strategy for beyond the opening of the central operating section has been developed, alongside a series of workshops that have focussed on supporting the delivery of the railway as close to the funding provision as possible.

We are safely continuing work at our stations and progressing well with their transfer to TfL. There are now seven stations in their possession with Canary Wharf expected to be the next station. Focus is also on the final integration of Abbey Wood station to be ready for passenger service and ensuring that Bond Street is ready to support Trial Operations.

Safety

With the project in the final complex stages the focus remains on ensuring that it is completed safely. There has not been a significant injury reported on the project now for five consecutive periods and the overall Health and Safety indicators remain within those set by the programme. There have, however, been two minor slips and trips in recent weeks that have caused minor injury. Learnings from these minor incidents will help inform corrective measures to ensure we remain as safe as possible.

Crossrail continues to focus on the communication of change and implementation of new procedures for safe access, which has resulted in a significant improvement following the early fail safe incidents that occurred after the transition to an operational railway earlier this year.

MOVING LONDON FORWARD





Covid-19 cases across sites are being contained and continue to be closely and carefully monitored through the Gold Response Team structure.

Trial Running

Trial Running 12 tph has continued, building up train mileage as well as identifying any defects and bugs in the systems and software. Trial Running has been positive and although there have been a number of expected settling-down issues encountered, they relate to known issues in the current software configuration. These are expected to be resolved with the upcoming software release known as ELR100. A small number of reliability fixes have also been identified in addition to the significant uplift of functionality and quality in ELR100. These will be accommodated during the Christmas period. Through Trial Running of the railway we have been able to detect bugs and test fixes with the system and software well in advance of passenger service and this will help build a more reliable service for passengers.

In the coming months, there will also be timetable demonstrations of 24 tph. This will be the service frequency in the central section when the full end-to-end Elizabeth line is operational.

The ELR100 software should be the last major configuration before revenue service and is pivotal to the programme advancing through to the next stage, known as Trial Operations. It is expected that the software will be assured and commissioned in a two-week period in October and will be one of the most comprehensive and important software drops. Following the commissioning of the software, Trial Running will resume, and the performance of the software will be fundamental in determining the commencement of the next stage, Trial Operations. Our opening window of the first half of 2022 remains unchanged.

The final railway integration tests to ensure all of the components of the system work seamlessly together should be completed in the coming months. These tests apply to the tunnel ventilation system, trains, software, signalling and power systems and can only be done at this stage now that the completed railway is available. The testing has gone well with more than 70 percent completed. Until all this testing has been completed and the uncertainty eliminated, the opening window cannot be refined.

In the [Autumn](#), works will take place to complete the outstanding works in the tunnels, including the commissioning of the tunnel ventilation system upgrade works.

Once Trial Running is complete, ELR100 is commissioned and all final remaining works completed, it will demonstrate that the Elizabeth line can run at the performance levels necessary to move to the next phase of the programme, known as Trial Operations.

Trial Operations

The countdown process for Trial Operations has commenced reflecting on the lessons learnt from the Trial Running countdown. Senior stakeholders from all organisations involved have attended the countdown meetings that have taken place so far.

Taking into account the necessary completion of testing, commissioning of software and the completion of safety assurance, the earliest date that Trial Operations can commence is towards the end of November 2021.

As mentioned in my previous update, now that Paddington and Whitechapel stations have been transferred to TfL, the next station in line to be transferred is Canary Wharf, which is expected to be later this autumn. Abbey Wood station is forecast to be fully integrated into the railway in the coming



weeks. This leaves Bond Street station which is currently showing encouraging signs that it will meet its requirements to be able to support Trial Operations. The team at Bond Street are pushing hard and making good progress and there is growing confidence in the schedule to finish the station. The opening of the railway will be independent of whether Bond Street station is available for use by passengers, but the team continues to work towards getting the station open as soon as possible.

Focus and Challenges

The Delivery Control Schedule (DCS) 1.2 has been agreed and forms the new baseline for all future reporting. It is an incremental refresh of the schedule to revenue service but also includes Stage 5B, which sees services from the east and west running through the central section of the railway.

The latest plans bring forward the delivery of key Elizabeth line benefits by ensuring that services from Reading, Heathrow and Shenfield can connect with the central tunnels sooner than previously planned after the opening of the central section of the railway. The earliest expected date for this is Autumn 2022. We plan that full end-to-end services will commence no later than May 2023.

As described in detail above, ELR100 software is critical for entry into Trial Operations. Its delivery, assurance and commissioning is being closely monitored by the Plateau 1 team.

Completion of the assurance activities necessary for entry into Trial Operations is a key focus for the programme. This process relies upon the completion of the final integration tests to provide the necessary evidence. As mentioned, these tests are progressing well, but the programme is compressed and will need to complete before the start of Trial Operations.

The final testing and tuning are underway with the tunnel ventilation system. These tests are complex and safety critical. It is forecast that the passenger service system configuration will be commissioned in the autumn as part of the further blockade that will look to complete elements of outstanding work in the tunnels.

Although the June/July Blockade intervention largely reduced access complexities across stations, assurance challenges persist causing movement to the date in which Canary Wharf is due to be transferred to TfL. A clear delivery strategy has been devised as a result of collaboration between all relevant parties and strong progress is being made in achieving the scheduled transfer date.

Operational Readiness

Overall, the Public Performance Measure (PPM) for TfL Rail services in period 5 improved to 95.6%, which is better than the target. This was second best in the industry, only Merseyrail recording a higher figure. The Moving Annual Average (MAA) at 95.4% also remained above target.

The current train control software on the Class 345 trains has not delivered the expected reliability growth, but the containment measures put in place by the operator have lessened the impact and allows a high performing passenger service. Further train software upgrades are being rolled out and another major reliability build will be released in December.

Six nine-car Class 345 trains are operating in passenger service between Shenfield and Liverpool Street, supplementing seven-car Class 345 and eight-car 'legacy' Class 315 trains. The transition of the Liverpool Street to Shenfield service to a full nine-car Class 345 operation, with up to 22 trains, will start in the Autumn, once the 'blockade' for the major signalling commissioning in Central Operating Section (COS) is complete and the FLU fleet can run through the COS unhindered for maintenance at Old Oak Common depot.



Network Rail

On 26 August, a new station building opened to passengers at Southall station. Constructed from glass and steel, the new ticket hall will provide a more spacious station entrance. As part of the works at the station, there are also three new lifts and a new footbridge, which will provide step-free access to all four platforms at the station.

Following the completion of station works at Hayes & Harlington earlier this month, passengers can now benefit from major improvements at the station including a redeveloped station entrance made from glass and steel, a new, more spacious ticket hall and new ticket machines. Step-free-access to all platforms has now been made possible with three new lifts at the station and this now allows passengers to make step-free journeys across TfL Rail between Paddington, Reading and Heathrow.

Station enhancement work continues on the eastern section at Ilford and Romford stations, with entry into service of the new station buildings anticipated in early 2022.

The next couple of months, moving into the autumn, will be crucial for the project for commencing Trial Operations. There is a real desire from everyone involved in the project to continue to build on the strong performance over recent months and put ourselves in a good position to deliver this railway in the first half of 2022.

Kind Regards,



Mark Wild
CEO