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Dear Florence,

In our November update we advised that due to challenges in the software integration and assurance and handover, opening of the central section will not occur in 2020 as previously indicated, however we will open as soon as practically possible in 2021. We committed to providing more certainty on the opening of the Elizabeth line in early 2020 and we are making good progress towards meeting this commitment.

We are doing everything we can to complete the Elizabeth line as quickly as we can, but it must be delivered to the highest safety and quality standards to ensure the reliability of the railway from day one of passenger service.

Safety

The performance position remains unchanged and improvement is needed as there have been a number of high potential near miss incidents including a smoke alarm being activated at Whitechapel following a fault with a control system panel and a valve on a gas main at Bond Street being disturbed.

In response to the number of high potential incidents, Crossrail has worked with the supply chain and client teams and interventions are being taken which include a refresh of the Safety and Health Leadership Team approach and introduction of a Frontline Leaders Forum from this month. The objective is to enhance health and safety conversations, determine the leadership interventions focused on our programme risks and to share learning and good practice.

A "Stepping up" Week was held in November with a dedicated programme of activities for health and safety across the whole of Crossrail. This was a highly successful week featuring workshops, presentations, guest speakers, site engagement visits and training sessions, all hosted and led by the supply chain project teams. One highlight was that over 70 awards were presented, recognising contributions to health and safety across the project.

On 20 November the Health and Safety Executive (HSE) and Office of Rail and Road (ORR) conducted a planned joint inspection at Bond Street and Liverpool Street stations. The outcome was very positive with no improvements requested or formal interventions made on site.

MOVING LONDON FORWARD





2019 Round up

The Central Operating Section has made good progress in 2019. Fit-out is nearing completion at many stations, we have handed over the first two out of the 30 big engineering structures: Victoria Dock Portal and Pudding Mill Lane Portal. Farringdon station is now PPE free, this is the first station across the programme. All physical work is complete in Shafts and Portals and all Platform Screen Doors have been commissioned.

We have made significant progress on the routeway, this is on track to complete the remaining fit-out and snagging activity by early 2020. Tunnel Pump Drainage and Fire Mains have been fully commissioned in the routeway along with the national communication system which is used industry wide.

There has been greater collaboration with the supply chain, working as one team. We now also have a supply chain management strategy to prioritise and deploy Tier 2 and 3 resources across the programme.

Close headway multi-train testing commenced for the first time on the railway and a co-located joint team of experts was established by Crossrail with senior technical experts from Bombardier, Siemens and Crossrail. Siemens and Bombardier software has been integrated to test as a single system, and minimum functionality was defined for Trial Running.

Central Section Progress

Safety and delivery of the programme remain the two most critical and dominant priorities for Crossrail. Crossrail is seeing increased collaboration and accountability between all suppliers to drive these priorities and progress the project towards completion. This is particularly evident in the Central Section.

Whitechapel station has reached the Staged Completion 1 point which means the station meets the requirements for Trial Running. Reaching this critical point allows learnings to be shared and implemented across the programme to further improve the delivery process.

Focus and challenges

Early on in the year, we identified a number of risks and challenges for the project. They included delays to software integration and challenges for handover due to the scale and complexity of the task. As we set out in November in our last update, we will need further time to complete software development for the signalling and train system as well as the safety approvals process for the railway.

Software

Testing of the train and signalling software is ongoing in the central section with PD+10 as planned. Each new version of the software increases functionality and the range of Dynamic Testing that can be undertaken. The software version PD+11 is still anticipated to be the



version used for the start of Trial Running however we will gain further certainty around this once we begin testing with this software configuration later this month.

Crossrail's executive team visited the Siemens facilities in Germany on 27 November with TfL Commissioner Mike Brown. This visit allowed Siemens to update us on their testing, software development and assurance. The day provided an opportunity to see first-hand some of the complex works being undertaken to deliver the signalling system for the Central Operating Section and Siemens' overall commitment to the delivery of Crossrail.

Assurance

The lessons learned while handing over the initial Shafts and Portals have developed our understanding of handover requirements. Each individual asset requires extensive assurance due to their safety critical nature. This has taken longer than anticipated.

Crossrail's performance management process is now being transitioned from production focused to assurance and handover. Handover Execution Plans are being written for each of the 30 stations, shafts, portals and railway systems, setting out requirements of each element of the railway at various stages of completion. Exemplar handover document templates are now driving a consistent standard and level of quality.

Operational Readiness

TfL is continuing its preparations for the handover of the next elements, currently expected to be Mile End shaft, Royal Oak Portal and Custom House station early in the new year. TfL is also preparing to take on a role of maintenance support on the track and systems ahead of handover. This will enable the maintenance team to gain valuable hands-on experience, familiarisation and readiness.

Plans continue with simulated desktop exercises and refresher training for the frontline operations teams to cover for any gaps in skills.

Crossrail teams are also providing support to Siemens in Germany to factory test the latest software. This will ensure updates to the training simulator are fit for purpose when installed in the control centre in Romford.

Network Rail

Network Rail has completed all infrastructure works to support the Stage 5A TfL Rail service between Paddington and Reading in readiness for the timetable change on 15 December. Ahead of the start of services, TfL Rail Class 345 trains have been operating some services to and from Reading, on behalf of Great Western Railway since 25 November. This has enabled TfL Rail to gain valuable operational experience in advance of the start of full services to Reading on December 15.

Station enhancement works continue at Southall, Hayes & Harlington, West Drayton, West Ealing, Ealing Broadway and Acton Main Line and are on track for completion in late 2020.



At Ilford and Romford, station enhancement works are ongoing and currently forecast for completion in December 2020 / early 2021.

Progress continues with the Great Eastern Main Line traction power upgrade and the targeted completion date of May 2020, whilst contract awards for the station information security systems are in place for Harold Wood, Forest Gate, Goodmayes and Gidea Park, and anticipated for mid-2020 completion.

Kind regards



Mark Wild
CEO