

## **CONFIDENTIAL DRAFT - PROPOSED CRL NARRATIVE: SCHEDULE**

The Elizabeth line's central section between Paddington and Abbey Wood will now open in summer 2019 instead of December 2018. The Elizabeth line remains on track to be fully open by December 2019 as originally planned.

The Elizabeth line is one of the most complex and challenging infrastructure projects ever undertaken in the UK. Construction is now in its final stages with a huge effort underway to complete and commission the new railway which brings together multiple contracts, new rolling stock and three different signalling systems.

We have been working hard to maintain the programme but there is now insufficient testing time available to introduce a railway that will be safe and reliable for services to commence in December 2018.

The programme has been impacted by a later than planned start to dynamic testing combined with access delays caused by remaining tunnel fit-out activity and delays with software development for the new Elizabeth line trains.

Testing has started but further time is required to complete the full range of tests required for the highly complex signalling and train systems software.

The railway can only open through the central section once full testing of the train and signalling system has been successfully completed and a sufficient level of system operational reliability has been achieved.

During the initial energisation of electrical equipment at Pudding Mill Lane sub-station on 11 November 2017, two voltage transformers failed. The cause of the failure was quality assurance. This delayed the start of energisation of power equipment in the tunnels by several months while extensive checks were completed.

The programme for testing has also been compressed by more time being needed by contractors to complete fit-out activity in the tunnels.

Rolling stock testing has been affected by delays with software development to allow the class 345 train to successfully operate across the three different signalling systems on the Elizabeth line. The testing process in the central section, when one and subsequently multiple trains are tested in the tunnels, relies on a certain level of software functionality to complete all the testing that must be undertaken.

The new Elizabeth line trains are already operating between Shenfield and Liverpool Street (mainline station) and between Paddington (mainline station) and Hayes & Harlington, in readiness for the full opening. The trains are also being tested in the Heathrow tunnels.