FLUA

Fen Line Users Association

Objection to the proposed Network Rail (Cambridge Re-Signalling) Order 2022

Statement of case

1. Introduction

1.1. The Fen Line Users Association represents users of the railway between Cambridge and King's Lynn and we strongly support renewal and modernisation of the signalling system.

1.2. However, **we object to the conversion of the level crossing at Waterbeach station to full barriers without providing an alternative means for passengers to cross the line.**

1.3. This crossing is used by passengers arriving from the village to catch trains to Cambridge and London, and by those who have parked in the car park wishing to catch trains towards Ely and King's Lynn. It will also be used by the shuttle bus, due to commence service in 2023, linking the station to the new town, which needs to cross the railway to reach a place where it can turn round.

1.4. The Applicant's reports on its modelling of the proposed full-barrier crossing do not give any indication of how long before their train is due a passenger needs to arrive at the station. **At other crossings at similar locations the barriers can be down for 15 minutes or more, and we have to assume the same will be the case here.** Currently, many passengers arrive from the village two or three minutes before the train is expected.

2. Applicant's modelling

2.0.1. The application documents include three reports on modelling of the effect of conversion to full barriers. We have a number of problems with the parts of these documents that are relevant to the Waterbeach level crossing, as follows.

2.1. Modelling Methodology document, reference [1]

2.1.1. Section 2.3 only considers driving into Cambridge, not walking to catch a train.

2.1.2 Paragraph 4.2.8 refers to railway timetables. The modelling needs to allow for future changes to the timetables and for late running. For instance the Ely to King's Cross trains (which stop at Waterbeach) are preceded by a Birmingham to Stansted service (which doesn't); a small change in the actual timing could affect whether the barriers go up between those two trains. If they don't, passengers need to arrive at the station before they go down for the Stansted train.

2.1.3 Paragraph 4.2.9 says "Bespoke logic will be developed to model the operation of the barriers to ensure a realistic operation at each site." but section 5.3 then explains that only the minimum closure time is specified for each crossing, with the difference between minimum and "average" (presumably the arithmetic mean) times being assumed to be the same as at Hinxton. However, the Hinxton crossing is between two stations, being 2.3 km from Great Chesterford and 3 km from Whittlesford, whereas the one at Waterbeach is at the end of the platforms. Assuming the strike-in point is the same for stopping trains as for those running at line speed (as there is no suggestion that anything more sophisticated will be installed)

stopping trains at Waterbeach can be expected to have a longer closure time, as indeed they do with the current AHB.

2.1.4. There is no mention of maximum closure times.

2.2. Performance report [2]

2.2.1. Paragraph 1.7.4 states that "the strike-in time of Hinxton is not consistent" and the median of the Hinxton data is used rather than the mean to provide "a fair estimate of the average" without explaining why that should be so. Indeed, the mean would be expected to provide a better estimate of the total time frequent users of the crossing will spend waiting. From the graph in figure 1.2 it is clear that the median will be less than the mean, and indeed the figures in table 1.6 are significantly less than those in table 5.1 of [1]. Maybe that is why it was chosen. A more relevant figure for users, especially those wanting to catch trains, would be the 99th percentile, showing the maximum time they would wait unless very unlucky.

2.2.2. Paragraph 3.1.2 says "this longer barrier down time allows multiple trains to pass through at once, whilst the shorter barrier down time only allows one train to pass through at a time." The down time has no effect on the running of trains, so it would be more accurate to say "this longer barrier down time often requires road traffic to wait for multiple trains to pass through, whilst the shorter barrier down time always allows the crossing to open between trains."

2.2.3. Paragraphs 3.1.7 to 3.1.9 refer to relocation of Waterbeach station. This was originally proposed over 20 years ago, and for many years has been at GRIP stage 3 with delivery promised for 3 years in the future. At one time Network Rail were expecting it to be delivered by 2018, in time to support 8-car trains on the Fen Line, but when it failed to materialise they lengthened the platforms at the existing station. We have now been told that the PACE equivalent of GRIP stage 4 is expected to be completed by the summer of 2023, with delivery of the new station in December 2025, i.e. still 3 years away. Therefore, if the crossing is converted in May 2023 (the date specified for the modelling in paragraph 1.4.1) the existing station will be in use with the new crossing for at least two and a half years.

2.2.4. Paragraph 3.1.9 suggests closure of the station car park will reduce traffic over the crossing. However, comparison of the traffic flows in figures 3.3 and 3.4 and table 9.1 with the size of the car park suggests the effect will be minimal, especially as cars arriving from the Horningsea direction do not currently cross the railway but would do so to access a relocated station.

2.2.5. Table 3.4 apparently shows journey times between the station and the A10 via Car Dyke Road; for westbound traffic the differences of only 4 seconds suggest that the time waiting for the crossing to open is not included. Figure 3.6 shows the route stopping short of the crossing, whereas the route in the Modelling Methodology document's figure 2.3 [1] extends to Clayhithe Bridge. We suspect that the latter would show much longer delays, and be a more accurate estimate of the effect of the new crossing.

2.2.6. Paragraph 3.2.1 refers to "signs" that traffic will not return to 2018 levels, but anecdotally it still seems to be increasing, especially mid-week. Moreover it has always been somewhat variable, being noticeably lighter in school holidays and heavier in bad weather when fewer people cycle to work. Figure 3.12 appears to be an underestimate, because pre-lockdown eastbound queues in the morning peak would routinely reach the length shown for DS2, while in the evening peak it was not unusual for 10 to 12 westbound vehicles to arrive during the short time the AHB is closed.

2.3. Local Model Validation Report [3]

2.3.1. Figure 3.2 shows traffic counts on Car Dyke Road and Cambridge Road being included in the data. However, much of the eastbound traffic passing over the level crossing will have come south on the A10, entering the village at the traffic lights at Denny End and passing along the High Street, and similarly in the opposite direction; and much of the traffic along Car Dyke Road will be accessing other parts of the village. If the model needs to extend further into the village than shown in the Modelling Methodology document's figure 2.3 [1] it would have been better to include the High Street.

2.3.2. Paragraph 3.2.1 reports the morning peak hour as being between 0800 and 0900, based on counts of vehicles on the road on a Tuesday in March. However, the busiest trains are in the hour between 0700 and 0800 and we would expect the number of pedestrians in that hour to be more than the 43 quoted in paragraph 3.2.4. Also, it would have been useful to have data for more days, in case the date chosen was atypical in some way (see 2.2.6 above).

2.3.3. Paragraph 3.6.1 says the barrier down times in the model were set from the observations, so it is not surprising that the model data in table 3.5 corresponds well to the observed data. However, two of the data points show the barriers being down for 9 seconds and 8 seconds respectively, and if true that would indicate a serious malfunction of the equipment.

2.3.4. Paragraph 3.7.2 says "the queue lengths in the model are similar to those observed" yet for 9 of the 30 data points the surveyed queue length is 8 or more (up to 18) while the modelled length is zero. The average observed length for the eastbound queues (which extend back into the village) is 2.75 times the modelled figure in the morning, and twice the modelled figure in the evening. We have to assume that the modelled queue lengths with full barriers are similarly underestimated.

2.4. Conclusion

2.4.1. The Applicant assumes the station will be closed to passengers by the time the crossing is converted, whereas it will be open for at least two and a half years from the planned date. The effect on passengers, which is not addressed in the modelling, therefore needs to be taken into account.

2.4.2. The modelling does not show the worst case time the crossing will be closed. In the absence of any other information, we have to assume it can be closed for 15 minutes or more at a time, as is the case at other crossings on lines with similar levels of traffic that are near stations (such as Shepreth and North Sheen).

2.4.3. Also, the modelling probably underestimates the average time a typical road user will need to wait for the crossing to open.

3. Options for mitigation

3.0.1. Currently the barriers are never down for more than about 2 minutes. Having gone down for one train they may stay down for a train in the opposite direction, but will go up once that second train has passed through.

3.0.2. **We request that the Applicant modify the project so that passengers have the same certainty that they will be able to cross the line to catch trains that they have at present.** Below we suggest some ways that could be achieved.

3.1. Retain current AHB

3.1.1. Drivers of road vehicles know that the crossing will not be closed for more than a minute or two, so have no incentive to misuse it. For a full barrier crossing they will know it will be

closed for at least several minutes, and maybe much longer, so will be tempted to speed across it if the amber aspect shows as they approach it. The crossing is on the crest of a rise, and the road approaching it is subject to subsidence, particularly on the eastern side, so there is a high probability that such speeding will result in losing control of the vehicle.

3.1.2. While it is easier for pedestrians to cross when the barriers are down than at a full-barrier crossing, there is plenty of anecdotal, and video, evidence of pedestrians vaulting over the barriers at full barrier crossings, or squeezing between them, especially at stations when they know the alternative is that they miss their train. Many passengers at Waterbeach walk or cycle to the station and know how long that will take, and do not need to use the ticket machine, so they time their arrival two or three minutes before the train is due. With the AHB they are able to cross while the crossing is open.

3.1.3. The AHB has had a number of safety features added to it including stop lights for pedestrians on the side that does not have a barrier and an announcement (and change in the tone of the audible warning) if a second train is approaching.

3.1.4. A further feature that could be added is to reduce the closure time for stopping trains, which currently trigger the sequence at the same point as trains travelling at line speed.

3.2. AHB+

3.2.1. We note that page 25 of the Enhancing Level Crossing Safety 2019-2029 report [4] refers to a new AHB+ crossing type. The report says “prioritised locations ... will include those at stations” and we do not understand why it was not considered here.

3.3. Pedestrian gates

3.3.1. In the past, gated crossings often had wicket gates for pedestrians which were not locked by the signaller until the train was approaching. A similar system might be developed under which exit is always possible and entry is barred on a similar timescale to the AHB.

3.4. Footbridge

3.4.1. Provision of a footbridge would allow passengers and other pedestrians and cyclists to cross the line when the road is closed.

3.4.2. It would be acceptable to use ramps rather than lifts to provide step-free access.

3.4.3. Network Rail is proposing work on all three of the level crossings on the edge of the village (Waterbeach, Burgess Drove, and Bottisham Road) as separate projects, but there is also an aspiration to close all three and replace them with a road bridge plus pedestrian/cycle crossings as depicted in a submission to the Outline Planning Application for the western part of the new town [5]. A bridge at the station would be an early contribution to that project.

3.5. Underpass

3.5.1. Waterbeach Lode passes under the railway at about 61 miles 6 chains; it is now culverted but at one time was a navigation and within living memory it was possible to walk under the railway along the route which is now designated as footpaths 247/20 and 247/21 which have now been diverted to the level crossing. Immediately to the north of the flood-bank the railway appears to be high enough above the ground level to accommodate a foot and cycle underpass, close to the steps that take footpath 247/20 up onto the northbound platform.

3.5.2. An underpass in that location, together with upgrading footpath 247/20 and the part of footpath 247/21 that leads to the level crossing, might be preferable to a bridge. As a step-free

route it would be shorter than ramps up to a bridge deck, and it would be less visually intrusive.

3.5.3. An underpass would also work well with the scheme referenced in paragraph 3.4.3 above.

References

TWAO application documents

on-line at https://www.networkrail.co.uk/running-the-railway/our-routes/anglia/improving-the-railway-in-anglia/cambridge-resignalling/

[1] Modelling Methodology (3 June 2021)

[2] Performance Report (14 June 2022, updated 24 November 2022)

[3] Local Model Validation Report (11 August 2022)

Other documents

[4] Enhancing Level Crossing Safety 2019-2029

[5] Waterbeach, Burgess Drove, and Bottisham Road - Combined Option A