

E29 Brown and Tawse: Childerditch Lane bridge

Visibility

1. At Paragraph 2.3 of the rebuttal evidence of Mr Burbridge (ref OBJ/105), Mr Burbridge states that forward visibility of 72.1m is required by Manual for Streets for the 85th percentile speed of 42.6mph recorded for vehicles on Childerditch Lane. Mr Burbridge suggests that visibility over the bridge would seem to be more in the region of 30m than 70m.
2. Using the basic formula for calculating Stopping Sight Distance (SSD) as set out at paragraph 10.1.5 of Manual for Streets 2 (MfS2), I agree that that provides a 72.1m forward visibility requirement for an 85th percentile speed of 42.6mph.
3. Paragraphs 10.2.3 and 10.2.4 of MfS2 require visibility in the vertical plane to be checked from a driver eye height of 1.05m (for car drivers) to 2m (for bus and HGV drivers), to a point 600mm above the carriageway. The latter dimension is used to ensure small children can be seen.
4. In this environment and the context of the PROW network in this area, unaccompanied small children would not be classed as existing users of this level crossing.
5. Therefore, forward visibility from a driver eye height of 1.05m to a point 1.05m above the carriageway has been checked using lidar data for the 40m long section of Childerditch Lane in which pedestrians are required to walk as part of the diversion route.
6. The available stopping sight distance was calculated as varying between 48m and 72.1m.
7. Pedestrians entering Childerditch Lane from the embankment steps will have varying visibility between 48m and 72.1m over the first 5m of the on road walking route. Thereafter, pedestrians will have the required visibility of 72.1m for 30m of the on road walking route. SSD is limited between 72.1m and 48m over the last 5m section of the on road walking route.
8. In 'Assessment of Walked Routes to School', (the guidance relied on by Essex County Council in undertaking their Road Safety Checks for the proposed diversionary routes to which they are objecting - [ECC 06]), it states (at page 7) that lines of sight for a driver (measured from a height of 1.05m) must be enough for them to see pedestrians walking along the carriageway and have sufficient time to safely take avoiding action at whatever speed they are travelling. It goes on to state (at page 7) that as an absolute minimum this must be the overall minimum stopping distance for traffic at the recorded 85th percentile speed of traffic. It also states (at page 10) that vehicle stopping distances should be taken as those given in the Highway Code.
9. The Highway Code gives a stopping distance of 36m for vehicles travelling at 40mph and a stopping distance of 53m for vehicles travelling at 50mph. The 85th percentile speed on Childerditch Lane in the northbound direction is 40.4mph and in the southbound direction is 42.6mph. I consider that the minimum available stopping distance of 48m is in line with the

Highway Code stopping distance required for the 85th percentile speed of vehicles based on interpolating the stopping distances stated for 40mph and 50mph.

Steps

10. At previous crossings where the proposed diversion route includes steps up to an existing bridge, clarification has been sought as to the likely number of steps proposed / the height difference which has to be addressed.
11. I can confirm the lidar data has been used to assess the level difference and topography for the feasibility of incorporating steps in these locations.
12. The steps provided will be in line with guidance in Inclusive Mobility with a maximum of 12 risers in a flight and landings at least 1200mm long to provide resting places between successive flights. Risers will be between 100mm and 170mm and treads between 250mm and 300mm. A landing will be provided at the top of the steps to allow pedestrians to wait for an appropriate point to step into and walk along the carriageway. As I set out at paragraph 12.17 of my rebuttal proof to the Ramblers Association (NR-32-4-2), the details of standing areas will be a matter for detailed design, to be agreed with the highway authority.
13. On the north east side of the railway bridge the level difference is 5m. 3 flights of 11 steps will be required in this location.
14. On the south east side of the railway bridge the level difference is 4.5m. 3 flights of 10 steps will be required in this location.
15. S2 timber steps have been indicated in this location. As discussed previously in the inquiry, S2 type steps will be built into the embankment (as opposed to type S4 steps where minimal disturbance to the ground is required). The final specification and choice of materials will be considered at detailed design and will be subject to agreement with the Highway Authority as part of the certification of the diversion route.