MetroWest

Portishead Branch Line (MetroWest Phase 1)

TR040011
Applicant: North Somerset District Council

8.8 Level Crossing Narrative Risk Assessment – Ashton Containers Footpath Level Crossing

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, regulation ref: 5(2)(q)
Planning Act 2008

Author: Network Rail
Date: November 2019

Document Purpose

This technical document was produced by Network Rail as part of the Governance for Railway Investment Projects stage 3 option selection design and technical assessment, in accordance with Network Rail document formatting requirements.

The document assesses the impact of the DCO Scheme proposals on the existing Ashton Containers Footpath Level Crossing (which was closed temporarily by the MetroBus Scheme and has remained closed). The document assesses a number of options for the level crossing and makes a number of conclusions.

Level Crossing Narrative Risk Assessment

Ashton Containers Footpath Level Crossing

POD 121m 05c

Western Route Level Crossing Team

May 2018

V2.1

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Introduction

Background

1. Currently, the Portishead Branch (POD) is a lightly-used freight line extending between Parson Street Junction and Portbury Dock. Freight operators have permission for up to 25 movements per day but on average only three movements occur in any 24 hour period and these are generally outside the times of peak road traffic.
2. Ashton Containers Footpath level crossing (sometimes called Baron's Close level crossing) is located on the POD and provides pedestrian access for Public Footpath BSS/422/10.

Reason for the risk assessment

4. It is proposed to introduce an hourly passenger service on the POD branch in addition to the current level of freight traffic under the Metro West Phase 1 scheme.
5. This risk assessment will consider the impact of these changes to Ashton Containers FP level crossing.

Site Description

Crossing environment

6. The line of route is the Portishead Branch (POD) in the Western route and the mileage of Ashton Containers FP level crossing is 121m 05c.
7. The POD is almost exclusively a single-track branch line except for a short section (approximately 34 chains) of double-track close to Parson Street Junction. The line-speed is limited to 30 mph. There is also a three mile disused section of the POD not currently in Network Rail's ownership which is to be brought back into ownership and operation as part of MetroWest Phase 1.
8. The Ordnance Survey Grid Reference for the crossing is ST568711 and the postcode is BS3 2LB.
9. The local authority is Bristol City Council.
10. The supervising signal box is Bristol Panel Signal Box.
11. The POD is not electrified.

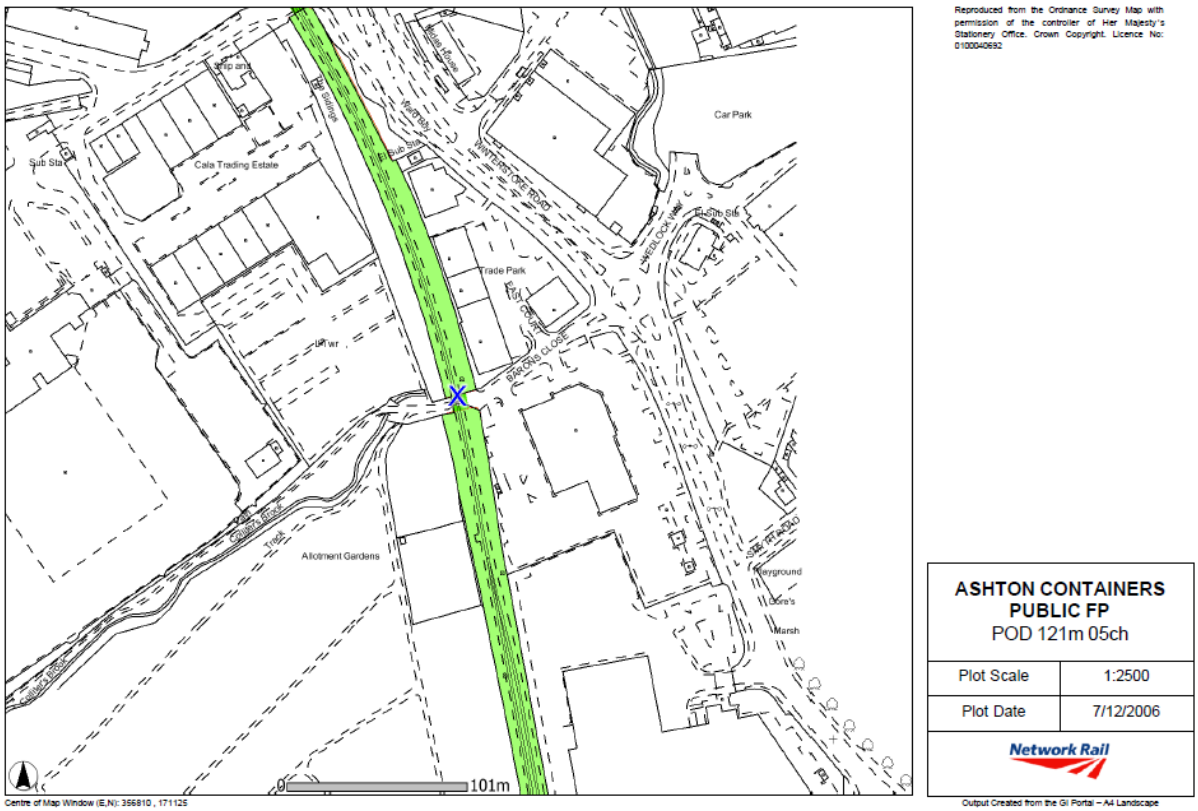

Figure 1: extract of Marlin mapping the Ashton Gate area of Bristol showing Ashton Containers FP level crossing as the blue cross (map not to scale).

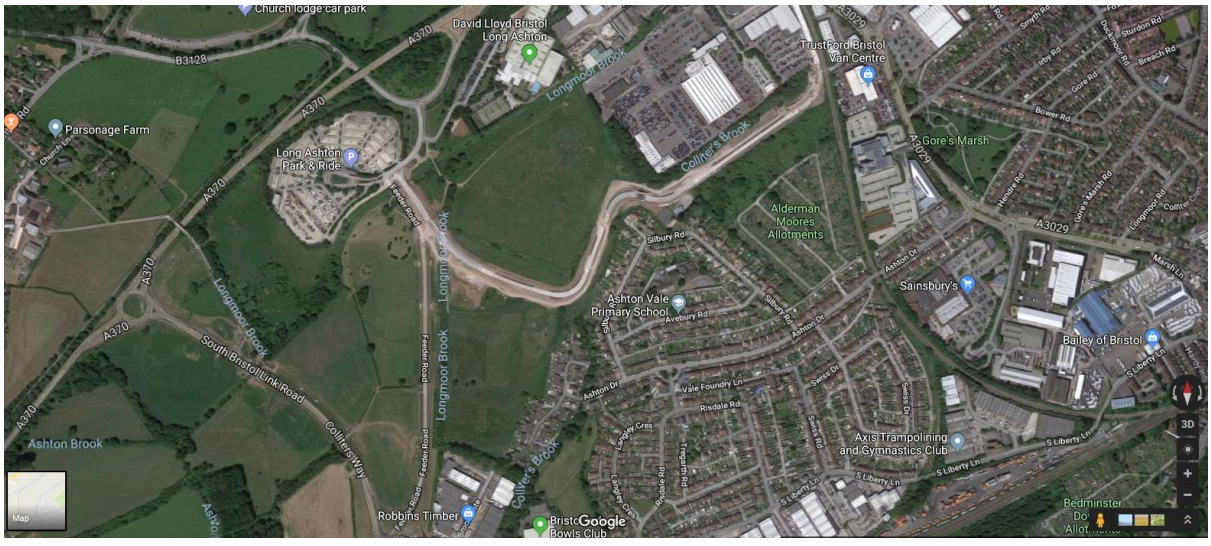

Figure 2: aerial image of the Ashton Gate / Ashton Vale area of Bristol showing the park and ride development and the busway.

12. The level crossing is approached from eastern side along Baron's Close, a dead-end public road that serves a number of commercial and retail properties. Most notably the section of the road closest to the level crossing serves a commercial vehicle business which tends to use the road as a drop-off facility for vehicle deliveries and there are usually vehicles parked on either side of the road.

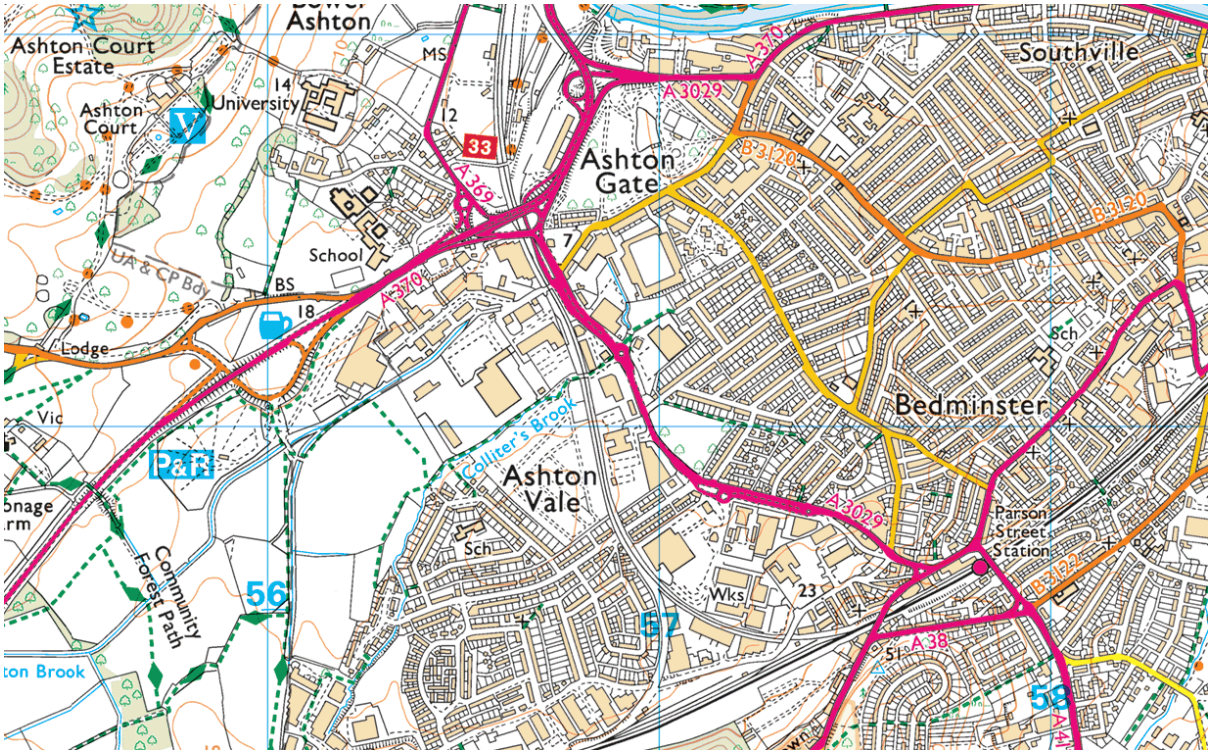

Figure 3: Ordnance Survey extract of the Ashton Gate / Ashton Vale area of Bristol. The MetroBus busway is not shown.

13. The approach from the western side along the footpath, which follows Colliter's Brook through scrub tree and hedgerow growth, now also crosses the newly constructed Ashton Vale-Temple Meads MetroBus busway, which has not yet opened. As the busway turns northwards to cross over the POD, a new skew bridge has been constructed over the Ashton Junction Level Crossing (Ashton Vale Road). The busway (which is a kerb guided busway) has a tall kerb on both sides. As it is now necessary for pedestrians to cross the busway and the Ashton Containers level crossing, negotiating these tall kerbs is likely to impeded some people and raises safety concerns. The approach either side of Ashton Containers pedestrian crossing is a public right of way. A plan of the current public rights of way and proposed alterations to public rights of way is shown in appendix i). For clarification appendix ii) shows the alignment of the Metrobus busway as it passes alongside and over the railway. The photographs below show the busway, busway kerb and the Ashton Containers level crossing.

Photo 1. Approaching Ashton Containers Level Crossing from the busway looking northeast

Photo 2. At Ashton Containers Level Crossing looking north to busway

Photo 3. Ashton Containers Level Crossing Gate looking northeast (Gate Padlocked)

14. The level crossing has typical public footpath pedestrian gates in both railway boundary fences and Stop, Look, Listen signs (rail signs reference CC03z) at the pedestrian decision points on both sides. The crossing deck was removed some time ago when the crossing was locked out of use. The crossing remains locked out of use.

Local properties, businesses and amenities

15. Between the A3029 Winterstoke Road and the railway are a number of commercial and retail properties, mainly vehicle-related (a car/van dealership, a tyre replacement garage, a car parts retailer etc.).

16. There are other retail outlets on the eastern side of the A3029 Winterstoke Road and beyond these residential areas of Ashton Gate.

17. The pre-eminent attraction in the area is the Bristol City F.C. Ashton Gate Stadium.

Rail approach and usage

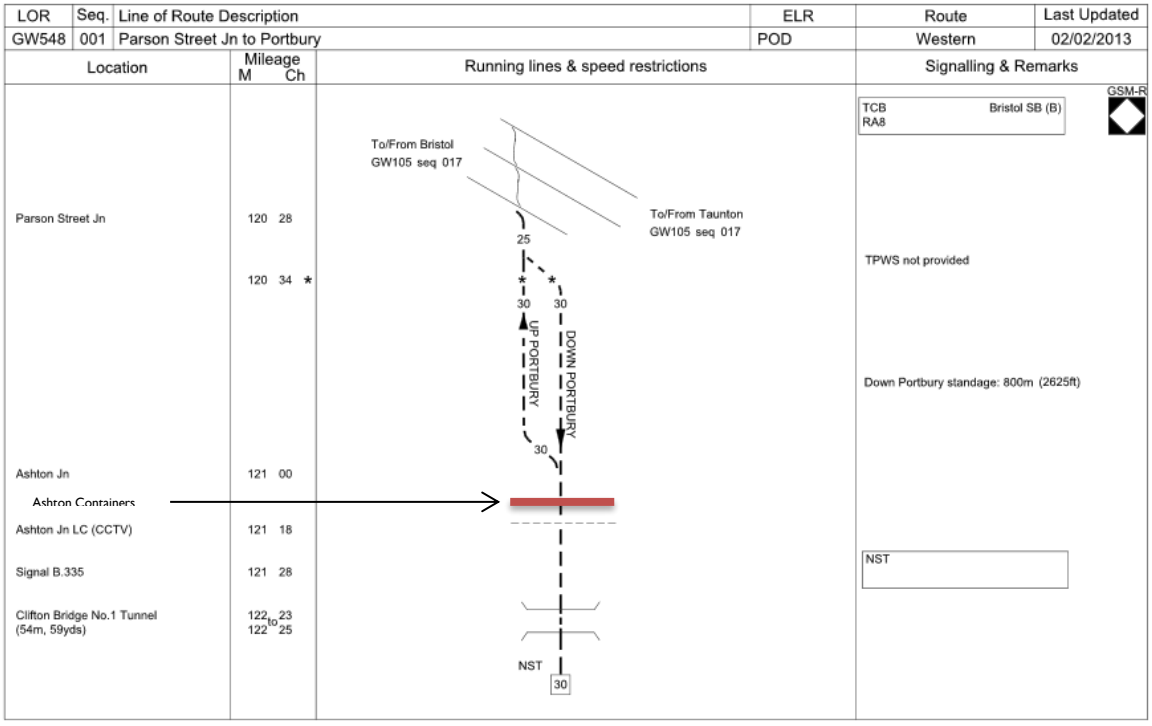

Figure 4: extract of the Sectional Appendix relevant to Ashton Containers FP Level Crossing (POD 121m 05c).

18. The crossing crosses the single line (bi-directional working) of the Portishead Branch line. The line speed in both directions is 30mph. The crossing has been closed for several years due to the construction of the Ashton Vale – Temple Meads MetroBus project. There is very little historic data available for the use of the level crossing.

19. The re-introduction of hourly/hourly plus passenger services will add to the current low level of freight traffic using the branch line.

Level Crossing Method of Working

Pre-Project level crossing method of working

20. Ashton Containers is a passive footpath level crossing. There are no active warning systems such as Miniature Stop Lights at the crossing to inform users, either through visual or audible warnings, and no restrictions on the movement of users such as lowering barriers or pedestrian gates interlocked with train signalling, to indicate that a train is approaching and that users should not attempt to cross.

21. The safety of users is dependent upon all users stopping, looking and listening for the approach of trains and deciding for themselves whether it is safe to cross or not. When looking for the approach of trains, users need to view the full front of a train from such a distance that if they started to cross they would have enough time to be clear of the rails before the train arrived at the crossing. This is the required sighting distance. The last risk assessment carried out at the crossing prior to its temporary closure, to allow works associated with the MetroBus link over the railway, was carried out on 25th September 2012. This risk assessment identified that the required sighting distance was 61m based on a traverse width of 5.6m, a user traverse speed of 1.189m/s, and a (train) line speed of 30mph (13.42 m/s).

22. An additional mitigation is provided by whistle boards. In the Up direction the whistle board is located at 202m in advance of the crossing and in the Down direction the whistle board is at 165m in advance of the crossing. The train driver is required to sound the horn in all circumstances except between Night Time Quiet Period (NTQP) hours of 23:59 and 06:00.

Post-Project level crossing method of working

23. Before the Project commenced, the footpath that crossed the railway continued westwards beyond the railway boundary and through an area of hedgerow/scrub tree growth following Colliter's Brook. The footpath still follows the course of the brook but crucially between the crossing and the brook there is a newly constructed shared pedestrian path/cycleway running adjacent to the MetroBus-way westwards and running beneath the skew bridge northwards to terminate near Ashton Junction CCTV level crossing. Consequently, it is now assessed that the crossing would be used by cyclists as well as pedestrians, albeit that the cyclists would be likely to push their bicycles over the crossing rather than ride them.

24. The traverse width is therefore now assessed as 6.6m, to now account for the length of a bicycle in the act of crossing, while the traverse speed would remain as 1.189m/s, and the line speed would remain as 30mph (13.41m/s). In addition, it is also assessed that a combination of cyclists using the crossing, being encumbered users, and the reasonable prospect of the crossing being used by unaccompanied children, as a type of vulnerable user, not least as cyclists where the relatively traffic-free busway and the adjacent cycleway provision would be an attractive area to cycle, suggests that the traverse time of users should be increased by fifty percent in line with current good practice.

25. The traverse time will therefore increase to 8.33 seconds and, consequently, the required sighting distance increases to 112m.

Hazards, Risks and Mitigations

Train/person collision

26. *A user fails to recognise that the footpath crosses the railway at a level crossing.* The crossing has pedestrian gates to indicate a change in the conditions of the footpath and 'Stop, Look, Listen Beware of Trains' signs next to the gates (and the decision points) to warn users of the hazard.

27. *Sub-standard sighting time*. The sighting from the crossing can be assessed as good. The least favourable sighting distance, from the Down side looking at an Up direction train approach, at 170m is still in excess of the required sighting distance of 112m. In addition, the crossing is provided with whistle boards at 202m (Up) and 165m (Down).

28. *Second train coming*. The relative infrequency of trains that will use the branch line and the lack of a second track minimises the risk of a second train being in the vicinity of a first train as a user crosses over the crossing.

29. *User fails to stop, look and listen*. From the crossing the user will have sighting of an approaching train in excess of the required minimum distance and is provided with whistle boards in both directions such that an audible warning of an approaching train can be heard at the crossing. These features are standard constituents of a typical passive level crossing and users must satisfy themselves, given the information provided by the sighting and audible warning, whether it is safe to cross or not.

Slip, trip, or fall

30. *User slips, trips or falls on the crossing*. Between the railway boundary fences, the approaches to the crossing have a smaller grade of crushed stone than normal ballast to aid pedestrians and before the crossing was temporarily closed also had a timber and anti-slip material crossing deck at rail height.

Unauthorised access off the crossing

31. Level crossings provide easy access for people without authority to railway land containing important and hazardous infrastructure. Previously, this crossing was supplied with anti-trespass guards. Even though these can be replaced, should the crossing be reopened, the guards can only act to deter trespass and cannot prevent it. Trespass is not modelled in a level crossing risk assessment but is an important factor when considering the potential for closing a level crossing.

Football match attendance

32. Although football fans are not currently allowed to park at the Long Ashton Park & Ride at the far end of the busway, this may change in the future and if so the fans would either walk along the cycleway towards Ashton Gate Stadium or take the MetroBus and alight at the first stop near Silbury Road and either way, take the shortest route across the railway via the Ashton Containers footpath level crossing. However, it is apparent that no special provision has been

made for pedestrians to cross the busway since there are no dropped kerbs or tactile paving where the public footpath crosses. Although signage is provided at the junction of the Public Footpath and the cycleway to direct users along the cycleway route to cross the railway at the Ashton Junction highway level crossing (CCTV Manual Barrier controlled crossing), in order to avoid the conflict between pedestrians and fast moving buses, there is a public right of way either side of the Ashton Containers pedestrian level crossing.

33. Network Rail supports the intention to direct pedestrians as well as cyclists away from the footpath level crossing to the alternative CCTV Manual Barrier controlled crossing.

ALCRM

34. Level crossing risks are calculated and recorded through the All Level Crossing Risk Model (ALCRM). ALCRM has three significant quantitative outputs; an Individual risk ranking between A (very high) and M (very low); a Collective risk ranking between 1 (very high) and 13 (very low); and a Fatalities and Weighted Injuries score which indicates the probability of a fatality or serious injury occurring at a crossing every year.

35. Since the crossing is currently locked out of use, and was at the time of the last scheduled level crossing risk assessment in December 2015, the current ALCRM risk score is M13 and the FWI is 0 (zero).

36. The last risk assessment conducted before the crossing was closed concluded with a risk score of D6 and a FWI of 0.000108471.

Options Considered

37. Modelling various scenarios, or 'options,' in ALCRM is a routine exercise following the calculation of the current risk score and FWI.

38. The ALCRM output for the option that considers the crossing has been reopened and has a low level of daily use by cyclists as well as pedestrians plus the additional risks inherent from a higher than normal use by vulnerable users (notably encumbered users and unaccompanied children) produces a risk score of C5 and a FWI figure of 0.000714237. These are all relatively medium to high scores/figures. The FWI increases by almost seven-fold compared to the last risk assessment where the crossing was open.

39. It is very probable that this option will become the current 'live' risk assessment if the crossing were reopened without any other action to mitigate the risks identified above.

40. At this stage, no other options that involve keeping the crossing open have been quantified. Since the sighting distances are satisfactory and exceed the required sighting distance, and the crossing already has whistle boards, there is no requirement to consider installing Miniature Stop Lights (MSL), or a standalone audible warning system. The risks have been reduced as far as is reasonably practicable.

41. The crossing could be closed through more expensive solutions, namely a footbridge or a subway, but these have not been considered beyond a common sense assessment that their costs would substantially outweigh their safety benefits and have therefore been ruled out.

42. The preferred option is to close the level crossing permanently. This can be achieved through the diversion of the public right of way from its current alignment to the alignment of the new permissive pedestrian path/cycleway that runs directly from Colliter's Brook (opposite Ashton Containers level crossing) under the skew bridge and terminates near Ashton Junction MCB CCTV level crossing. It is understood that the diversion of the public footpath, by creating a new public right of way on the currently permissive pedestrian/cycle path is within the scope of the powers that can be sought in a Development Consent Order. The footpath diversion can be included in the relevant schedule of the Order such that the closure of the level crossing could be achieved.

43. When closed, Network Rail will securely fence-off the crossing with palisade fencing (the current track workers access point on the eastern side of the crossing will have a lockable palisade gate) and erect and maintain public notices regarding the diversion of the footpath on site for a reasonable time.

44. The risks from Ashton Containers FP level crossing would be transferred to the current risks at Ashton Junction MCB CCTV level crossing. However, while the former is a passive crossing relying upon users to determine for themselves whether to cross, the latter is a protected crossing with barriers, warning lights and audible alarms and oversight by signallers via CCTV cameras, all of which are applicable to pedestrians and cyclists as well as motorists. This would be a preferable outcome for overall level crossing risk reduction.

Conclusion

45. Ashton Containers FP level crossing (also known as Baron's Close level crossing) has been closed while the construction of the busway skew bridge has proceeded and the perishable components (the timber crossing deck and anti-trespass guards) have been removed.

46. The change in land use on the western side of the railway to include a pedestrian path/cycleway has important implications for the use and therefore the risk profile of the level crossing. Consequently, the risks have been reassessed.

47. It is now considered that cyclists and vulnerable users, including unaccompanied children, will form a higher than normal population of the crossing users and therefore the criteria used for assessing user traverse times and the required sighting distance has been adjusted. While the actual sighting distances are still more than the required distance the margin of safety has been reduced.

48. Nevertheless, the quantifiable risks at the crossing will increase and in the case of the FWI the figure increases by a factor of seven.

49. There are no reasonable opportunities to mitigate the increase in the risk profile by improving or enhancing the level crossing.

50. Network Rail strongly advocates and endorses the diversion the public footpath, by means of the proposed DCO, so that the public right of way ran along the existing permissive cycleway/maintenance access from Ashton Vale road and beneath the skew bridge. This would allow the level crossing to be closed. All traces of the crossing can then be removed.

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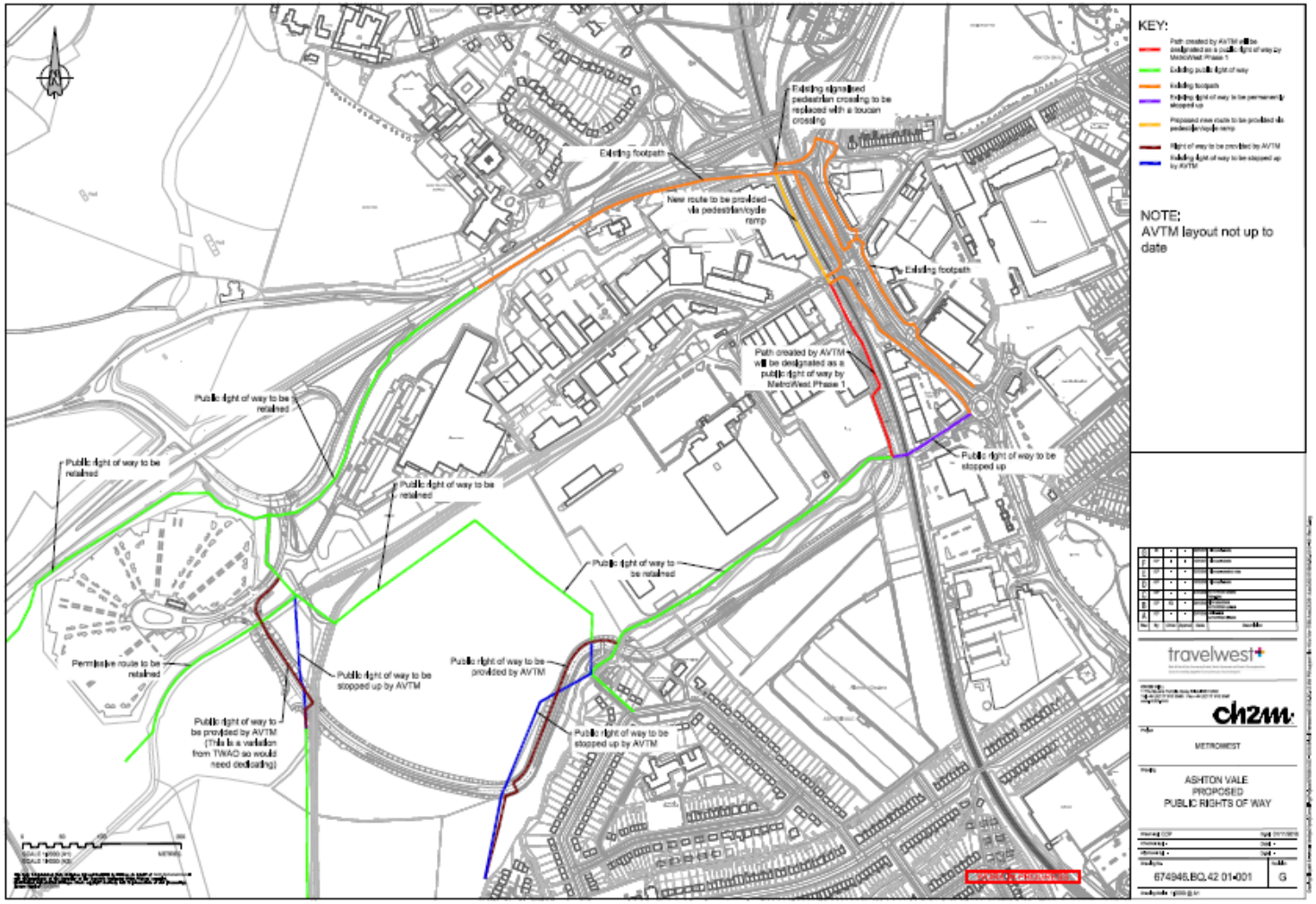
Western Route Level Crossing Team

Appendix i)


KEY:
NOTE:
AVTM layout not up to date
Existing signalised pedestrian crossing to be replaced with a toucan crossing
Existing footpath
New route to be provided via pedestrian/cycle ramp
Existing footpath
Path created by AVTM will be designated as a public right of way by MetroWest Phase 1
Public right of way to be retained
Public right of way to be retained
Public right of way to be retained
Public right of way to be stopped up
Public right of way to be retained
Permissive route to be retained
Public right of way to be stopped up by AVTM
Public right of way to be provided by AVTM
Public right of way to be provided by AVTM (This is a variation from TWAO so would need declaring)
Public right of way to be stopped up by AVTM
travelwest
ch2m
METROWEST
ASHTON VALE
PROPOSED
PUBLIC RIGHTS OF WAY
674946.BQ.42.01-001
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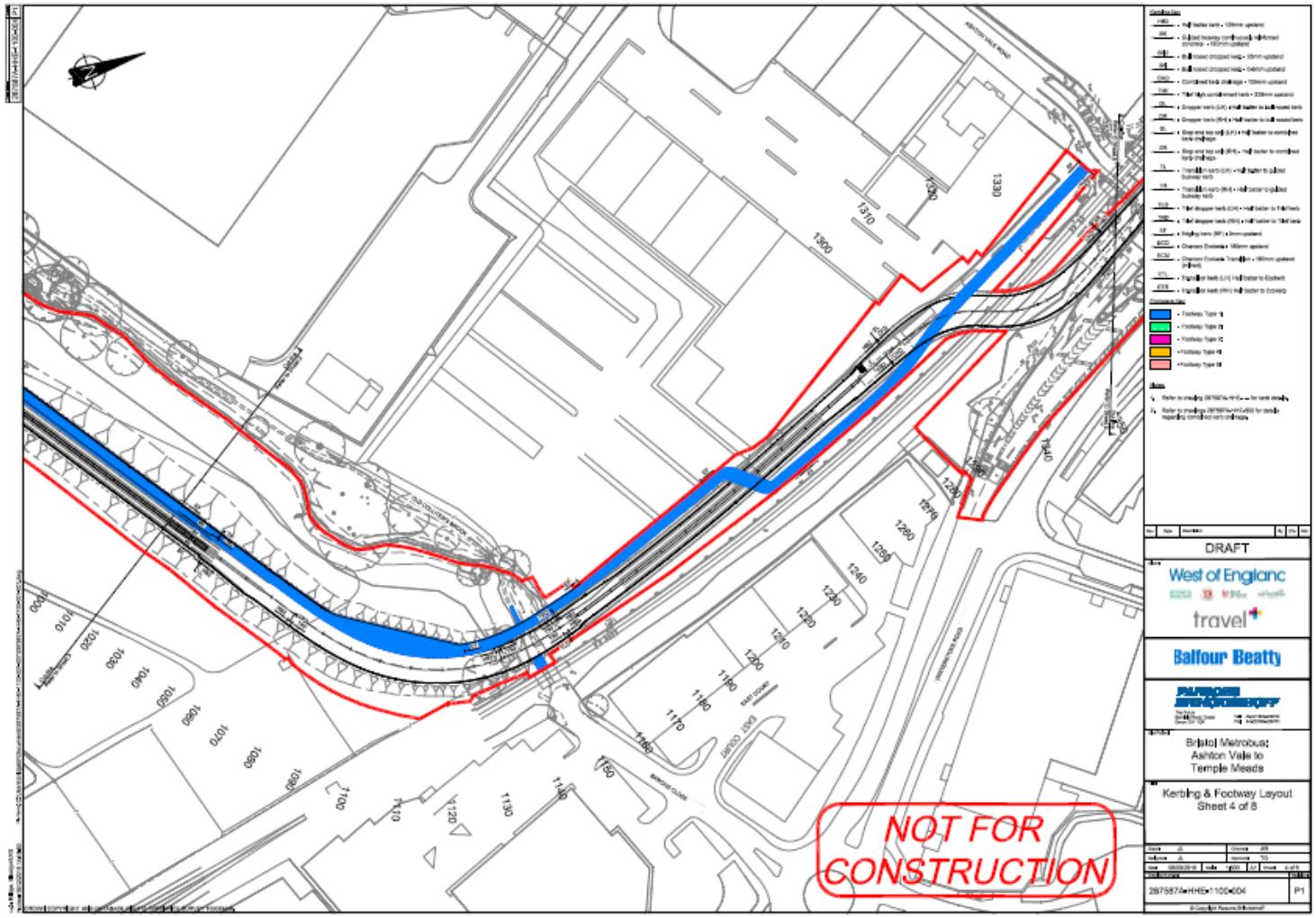
Appendix ii)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