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| Title: SRD Departure Note | Departure ID/Revision: 102131/0 |
| Document Ref: SRD_102131_0 | Scheme name: A21 Rother Valley Railway |
| Date: 26th May 2021 | Standard: GG 101 |
| Author: [REDACTED] | Clause: 2.7 |

Observations

This application is the first formal submission for this departure which is for an 'aspect not covered', however, the departure has been submitted against GG 101 clause 2.7, which states '*Where an aspect of the works is not covered by existing requirements, a departure application for an aspect not covered by requirements shall be submitted*'. To clarify, by submitting the departure the designer is complying with GG 101 clause 2.7 and does not need to submit against a particular standard or clause.

The design proposal is for the installation and operation of a railway level crossing across the Strategic Road Network (SRN), specifically on the A21 at Robertsbridge. For design guidance, the designer has used the Office of Road and Rail (ORR) document 'Level Crossings: A guide for managers, designers and operators (2011)'. The Design Manual for Roads and Bridges(DMRB) does not provide requirements or advice relating to the design of level crossings as they are not a common feature on the all-purpose trunk road network. The submission indicates that the proposed crossing will enable the connection of Rother Valley Railway (RVR) with the existing Kent and East Sussex Railway (KESR) and provide economic benefits to the area as a result of linking Robertsbridge to Bodiam, which will provide a full link from Robertsbridge to Tenterden. The development seeks to provide three railway level crossings in total, with the other two crossings located on the local road network. The proposed crossing on Northbridge Street will be located approximately 300m west of the proposed A21 crossing and operation of one crossing may directly affect the other, particularly with regard to length of closure times and impact on the wider road network, which has not been considered within the departure submission.

The submission provides information regarding policy support through various organisations and local strategic goals and concludes that at both local and national level there is support for the RVR scheme. The proposal to extend and connect KESR to RVR at Robertsbridge, including the A21 level crossing proposal, has received planning consent from Rother Valley Council.

The submission states '*Planning policy support for the RVR scheme can be found at national level*', which the designer has concluded due to the interpretation of clause 83 of the National Planning Policy Framework (NPPF).

The designer states that the ORR are satisfied that the test of exceptional circumstances has been met, a tolerably safe level crossing could be created.

However, The attached ORR Statement of Case document (ORR SoC) states 'The ORR are satisfied that in railway terms their test of exceptional circumstances (as defined in our policy) has been met and that an alternative to a level crossing is not reasonably practicable on the basis of railway safety issues', therefore the ORR conclusion refers to railway safety only and does not consider the highway. The ORR SoC also concludes that there is a degree of gross disproportionality between the cost of a level crossing and the cheapest form of grade separated crossing. However, RVR proposes to use volunteer workers during construction of the level crossing to reduce costs to the £1.5m on which ORR have based their disproportionality conclusion. HE has approved partners in place who provide construction and maintenance services on the SRN and any works on the SRN to be undertaken by others would require approval from HE. Works undertaken by HE construction partners would increase the RVR cost comparison.

The submission concludes that, as there is no design requirement in the DMRB, the relevant design guidance is contained within the attached ORR document 'Level Crossings: A guide for managers, designers and operators (2011)'. The ORR attachment to the submission, RIG-2014-06 New Level Crossings para 2, states that new level crossings introduce particular risks to the railway. The ORR SoC, para. 35 & 36 states that highway safety issues fall outside of their remit.

The designer states within the submission that changes to the A21 approaches have been completed to the preliminary design stage and accepted by HE, however, no Stage 1 Road Safety audit has been included with the departure documents and there is no evidence that HE has agreed with the design proposals. The submission drawings indicate the replacement of the existing Advanced Directional Sign (ADS), located south of the roundabout, however it is unclear if there is sufficient visibility of the sign face as a result of the positioning of the crossing signals.

The proposed level crossing is within the existing 40mph speed restriction. The 40mph speed restriction extends north from a point approximately 41m south of the proposal for approximately 900m. Beyond these points the highway is subject to national speed limit. It is proposed to extend the 40mph restriction approximately 52m to the south of its current location. Department for Transport Circular 01/2013 states 'Speed limits should not be used to attempt to solve the problem of isolated hazards'. However, the designer has not provided any reasoning behind the extension of the reduced speed limit, or evidence that Highways England agree with this proposal. Relocating the start of the speed restriction to the south will reduce the length of the overtaking provision on this section of the A21.

The designer states that all carriageway alterations will take place within the proposed 40mph zone. The design proposes to improve the vertical geometry of the proposal by designing the vertical elements to 85A (equivalent to a 50mph speed limit) design speed. There is a risk that designing to a higher design speed may encourage speeds in excess of the posted limit.

Automated traffic counts (ATC) were undertaken approximately 15m north of the proposed level crossing location in March and April 2019 which showed the 85th percentile speed to be above the 40mph posted speed limit in both the northbound and southbound directions. The designer concludes that this is likely due to the straight and flat road geometry and the change in posted speed limit from 40mph to 60mph. The designer concludes that due to the extension of the 40mph limit, signage and road markings drivers are more likely to adjust their speed to adhere to the posted speed restriction.

Manual walking, cycling and horse riding counts undertaken in 2012 and 2013 by members of the RVR project team. The designer states that no walkers, cyclists or horse riders passing the site, however, the Summary of NMU Data document, Table 1.1, indicates that cyclists and pedestrians were recorded but it is unclear if they were recorded at the proposed crossing location. 2019 ATCs have registered frequent cycle activity along the A21, however, the Summary of NMU Data document, included as part of the submission, concludes that ATC data for cyclists is unreliable, and that video surveys have been reviewed. The document review video data and a manual classified turning count, both from 17th March 2020, the same day as the ATC was recording, however, the Summary of NMU Data states that this was focussed on a pedestrian crossing and Robertsbridge roundabout, which are both north of the proposed level crossing location. The ATC recorded three cycles between 0700 and 1900, and the document states that the video survey did not show these cyclists, and concludes that the ATC data is incorrect. A one-day sample cannot be deemed sufficient to provide justification that ATCs are unreliable and a larger time frame must be used.

The proposal will include an at-grade pedestrian crossing facility on the level crossing, with anti-trespass barriers and signage to prevent unauthorised pedestrian access onto the railway. There does not appear to be a pedestrian facility along the A21 for the at-grade level crossing to connect to.

The designer states that street lighting provision will be assessed and designed in accordance with DMRB and BS:5489-1.

Traffic data is provided in the Traffic Assessment Update (TAU) document. The document indicates that the timings of the level crossing closure will be between 64 and 72 seconds, resulting in maximum queues of 506m for northbound traffic and 420m for southbound traffic on the busiest day of the year. The TAU shows typical March/April northbound queues of 75-144m and southbound queues of 75-178m. The SRA (para 2.2.9) states that the planning permission restricts the railway level crossing use to between 09:00 and 17:00 to avoid the busiest periods on the network and the Traffic Assessment Note also states that services will operate between 09:00 and 17:00, However, these timeframes include peak hours of 16:00 to 17:00, and also the end of the school day. The traffic assessment does not include the projected visitor numbers provided in the Economic Impact report (22,000 initially, rising to 94,000 in 2030). These additional visitor numbers will have an impact on the queues at the level crossing.

The Traffic Assessment Note states that no data is available from Webtris from 2010 onwards. However, a search on Webtris does identify that northbound 2013 data is available for TAME site 30360432 immediately south of the proposed crossing, which shows average annual daily traffic (AADT) of 7380 with the busiest month being August with average daily traffic (ADT) of 8587. Data is also available for 2013 southbound at TAME site 30360431 which shows an AADT of 7397, with the busiest month being August with an ADT of 9407.

The designer has analysed personal injury road accident analysis for the most recently available 5-year period (2015 to 2020), which shows four personal injury accidents in the vicinity of the proposal, that resulted in one serious and three slight injuries. The serious injury accident occurred southbound approaching Robertsbridge roundabout and was attributed to the influence of alcohol. Two of the slight injuries occurred northbound at Robertsbridge roundabout, involving a rear end shunt on the northbound approach and a loss of control on the northbound exit. The other slight injury accident occurred south of Robertsbridge roundabout and involved a southbound vehicle towing a caravan, which became detached from the vehicle, crossing the northbound carriageway and striking two other vehicles.

The designer states that road marking provision has been designed to ORR Level Crossings Guidance document which cites the Traffic Signs Regulations and General Directions (2002) (TRSGD 2002) and Traffic Signs Manual. However, TRSGD 2002 has been superseded. The design proposes to provide double white lines (DWLs) to Diagram 1013.1A to prevent overtaking. However, at the northern end of the DWLs the markings revert to warning lines over a short distance. Drivers may attempt to overtake when exiting the roundabout but find they do not have the distance to do so. Similarly, northbound drivers may attempt to overtake when approaching the roundabout and find they also do not have sufficient space.

The Steer RVR Economic Impacts Report uses a 12-year period for analysis and concludes that the provision of a level crossing will deliver local economic benefits of £17.29m over the first two years of the construction period and the first ten years of operation. The designer states that this is followed by £1.08m of local economic benefits per subsequent year, which differs from the central value of £1.06m in the Economic Impacts Report (Table 4-9), which also states that this benefit begins after the link has been completed, which differs from the designers' statement.

The designer concludes that a grade separated crossing would have substantial negative environmental impacts on the Area of Outstanding Natural Beauty (AONB), including effective operation of the River Rother flood plain, however, the carriageway at this location is higher than the surrounding landscape, so embankments will be needed either side of the A21, which will impact on the flood plain.

The designer appears to contradict themselves with the statement that they are proposing new technology to be tested on the HE network, but also stating that it is proven elsewhere. The designer suggests that following successful introduction

would enable the technology to be proposed elsewhere on the SRN. It should be noted that this departure application cannot be used as justification for another level crossing elsewhere on the SRN, as each departure application is site specific.

The designer states that the future maintenance regime will be subject to agreement with HE and ORR prior to the level crossing becoming operational. The submission includes a Level Crossing Maintenance document and an HE Protective Provisions document, which seek to address any future maintenance responsibilities.

The risk assessment does not provide a comparison of risk between the current situation, and the risks associated with the addition of this at-grade level crossing. The SRA also fails to address the risks associated with the construction, operation and maintenance of any of the alternative crossing options when compared to a level crossing on the SRN.

Item H12 within the SRA states that crossings and their associated signs should be visible to the approaching use from a distance. The designer has not stated what the appropriate distance should be and if it is achievable.

The designer states that use of the ORR guidance would provide a crossing that is familiar to road users, however, A user of the SRN would not intuitively expect to encounter a new at-grade level crossing.

The submission does not provide any evidence of consultation with the Local Highway Authority (LHA) as to the impact of the crossing on their network, for example for road users seeking alternative routes to avoid queues on the A21 associated with the crossing use.

Submitted document 'RIG-2014-06 New Level Crossings' states that it is not within the ORRs role to consider wider economic and social benefits within a comparison. The ORR SoC bases its assessment of the practicability of alternatives to level crossings on construction costs, operating costs, and the risks created by the level crossing in terms of potential for fatalities and injuries. ORR SoC concludes that there is gross disproportionality when comparing the cost of the level crossing against the next grade separated option but does not set out what an appropriate gross disproportion factor would be.

When considering the economic benefits to the local community, these vary across the various documents but the lowest appears to be stated within the RVR Economic Impacts Report document. The document uses a 12-year period for analysis and states a benefit to the local community of £17.3m over the 2-year construction period and the following 10-year operational phase. The Cost Benefit Analysis document provides a higher benefit figure of £22.97m (para 1.9). The document provides 2 BCRs, the lowest being 1.85 and the highest is 3.74, both relating to the benefit to the local area resulting from the implementation of the level crossing. The Cost Benefit Analysis document clearly states that the benefits outweigh the costs in the case of the level crossing, but this is also the case regarding the option of a bridge over the SRN (para 1.10).

The costed figure of £1.5m for the level crossing option appears to be as a result of RVR using volunteer labour to construct the level crossing. The submission documents show that the cost of the crossing if no volunteer labour was used would be £6.8m. HE has approved partners in place who provide construction and maintenance services on the SRN. RVR appointed contractors, for both the initial construction and future maintenance, must have suitable experience and expertise, including experience of installing a level crossing on the SRN. RVR contractors or volunteers who undertake works on the SRN, will be required to apply to HE for approved supplier status, and provide the appropriate training and competence certificates. Utilising HE approved partners may result in a greater overall cost, affecting the BCR, and a different procurement and construction timetable for the proposed level crossing.

The figures within the Cost Benefit Analysis technical note, used to estimate the BCRs, state an increased accident rate on the A21 from 0.783 accidents per annum to 3.151 accidents per annum (Page 1, para 1.5). The submission states '*The only negative impact likely to result from the installation of the level crossing is in relation to safety*'. It should be noted that safety is the number one strategic imperative of HE.

The proposal is to use an Automatic Full Barrier Controlled Locally Monitored (AFBCL) however, ORR SoC (page 8) states this form of crossing control is unusual and may not be the ideal solution.

The Protective Provisions document requires updating, as it refers to Interim Advice Notes, which are no longer relevant.

Associated Departures

N/A.

Summary

There are omissions from this departure which prevent an informed decision from being made. This departure for an aspect not covered by standards is therefore returned for rework. The specific areas that need addressing are:

1. The departure has been incorrectly submitted against GG 101 clause 2.7, and requires resubmission as an aspect not covered by standards.
2. No DMRB standard exists for level crossings on the all-purpose trunk road. The closest DMRB standard would be CD 123 – Geometric design of at-grade priority and signalised junctions. It is recommended that the designer adopts the design principles relating to signalised junctions provided by CD123 as the basis for the highway elements of the design e.g. signal visibility, markings, stopping site distance (SSD) etc. and update the design to provide compliance.
3. The submission must consider the combined impact of the proposed level crossing the A21 and the two crossings on the local road network. To

consider the impact on road user safety due to traffic potentially diverting to avoid queues associated with the crossing

4. The designer must provide evidence of the consultation and agreement from Highways England, regarding agreed changes to the A21 at the level crossing approaches.
5. The designer must provide evidence of consultation with Highways England regarding the relocation of the 40mph speed limit.
6. The submission must evidence that assessment of the extension of the 40mph speed limit complies with the guidance provided in DfT Circular 01/2013 Setting Local Speed Limits.
7. The designer must confirm that the visibility of the proposed ADS and any existing roadside assets are not affected by the design, and that any new sign(s) can safely be accommodated within the available verge. Also, the increased surface area of the proposed sign face requires that the sign posts and foundations be assessed to ascertain their suitability for the replacement sign face.
8. The designer must undertake an overtaking assessment to ascertain the overtaking value of the route, in accordance Section 9 of CD 109 Highway link design. Following this, the designer must consult with the appropriate HE operations teams and gain approval to reduce the overtaking capacity of this section and submit a departure if the overtaking capacity is reduced to less than 30% as a result of the design proposal.
9. The designer must provide further comment regarding anti-trespass panels. Is there an aspiration that they will they also prevent unauthorised vehicle access onto the railway lines, or will a more substantial system be required?
10. The TAME counter figures from Webtris show an increase in the summer months and it is probable that there would also be an increase in cyclists, particularly due to the rural nature of the area, which may have a significant bearing on the submitted queue lengths and cyclist numbers quoted in the submission. Additional traffic surveys, particularly within the warmer months, are required to gain a more accurate analysis of traffic figures, walkers, cyclists, horse riders and an accurate assessment of peak periods.
11. The Traffic Assessment Note, and the SRA must consider the impact of journey times on the SRN as a result of trains running during peak periods, and the possibility of the disruption during the end of the school day.
12. The Traffic Assessment must be reviewed to take into consideration the increase in tourist numbers. The RVR Economic Impacts Report, Table 1-2, indicates that RVR is expected to attract an additional 22,000 visitor trips, rising to 94,000 in 2030, the impact of which has must be considered and the possible impacts recorded for the SRN and local road network.
13. Survey figures indicate that the operation of Robertsbridge roundabout will be compromised, disrupting traffic from Robertsbridge and Salehurst wishing to access the northbound A21 from both Northbridge Street and Church Lane. During the 'best case' days the southbound queues would end approximately 25m south of the roundabout, which could result in rear end

shunts due to vehicles leaving the roundabout to head south. Worst case northbound queues could potentially have an adverse impact on the operation of the A21/Redlands Lane junction. The submission must provide details of suitable mitigations and the proposed network signing strategy.

14. The submission uses the ORR Level Crossings Guidance document as a basis for the design, however, this is a 10-year-old document which also refers to TSRGD 2002 and has not been updated to reflect changes to requirements. The designer must review all signing and road markings and confirm that they are as prescribed in TSRGD 2016 and also ensure that there is compliant visibility to each sign. The designer must provide evidence that they have considered the need for secondary signing to inform of the presence of the crossing.
15. The submission must provide consistency between the economic benefit figures provided within the RVR Economic Impacts Report and the Cost Benefit Analysis Technical Note.
16. The Environmental Review shows that the vast majority of environmental issues occur at the construction phase. The negative impacts during the operational phase include noise, which the assessment states 'could' propagate further, and visual due to the overhead structure, which, the report concludes, would not be congruous with a rural setting. The overhead option could be seen to be advantageous over the level crossing due to the improved ecological, water and land use outcomes when compared to noise and the entirely subjective visual impact. The designer must provide documented evidence of consultation with relevant environmental bodies on their preferred option of crossing type.
17. The SRA states that full SSD is provided throughout the area of the proposed crossing, and is referenced as A21(T) Alignment Review (Doc Ref REP-239025-R001). This document has not been included with the submission. The submission does not demonstrate that the desirable minimum SSD (120m) for the existing 40mph speed limit can be achieved from the roundabout to the crossing, in accordance with CD 109 Highway link design. The submission also does not demonstrate that the desirable minimum SSD to the back of the southbound best-case queueing traffic scenario can be achieved from the local roads or the exit from the roundabout. The design must provide details of suitable mitigation for these safety issues to reduce the residual risk.
18. The proposed road markings on the A21, immediately to the south of the roundabout, allow a short overtaking section. The SRA should be updated to include an assessment of any potential hazards associated with the road marking layout at this location together with appropriate specific mitigation measures to reduce the residual risk.
19. A GG104 Walking, cycling and horse-riding assessment and review (WCHAR) must be appended to the departures submission and the contents used to update the SRA.

20. The SRA must be revised to include an assessment of specific hazards affecting cyclists and walkers which will result from the implementation of the level crossing. The revised risk assessment should also include details of appropriate mitigation measures to reduce the residual risks associated with these hazards.
21. The designer must revisit the SRA and assess the risks and mitigation measures involved with altering the vertical alignment of the A21 to that of a higher design speed.
22. The SRA must identify risks and provide mitigation regarding the risks to rail passengers as part of the 'other party' group, as a result of the provision of a level crossing.
23. The SRA must include a comparison of risk between the existing situation, and the risks to users of the SRN following the provision of a level crossing.
24. The SRA must include a comparison of risk between a level crossing and the other grade separated options.
25. Regarding SRA item H12, the designer must provide further details on the appropriate visibility to the crossing and its associated operational signs, and if this visibility cannot be achieved, must provide suitable details of suitable mitigations to reduce the residual risk.
26. Regarding SRA item H21a and b, the designer must provide further details on the levels of impact that the barrier will be designed to withstand.
27. To support this submission and justification, the designer must provide evidence of consultation with the LHA and agreement from them that they are content that the safe operation of their network will not be compromised by road users diverting onto their network to avoid queuing from the operation of the level crossing.
28. The designer states 'Queuing is expected to regularly extend through the roundabout when the barrier is lowered'. The interface between the proposed crossing and the existing roundabout creates a queueing hazard and the risk of road injury accidents. The designer must provide details of proposed mitigations to manage this risk.
29. To substantiate the BCRs stated for the at-grade railway level crossing, the submission must provide evidence that the RVR contractors and volunteers have suitable experience and expertise, including previous experience of installing a level crossing over the SRN.
30. The risk assessment must provide a comparison between the chosen level crossing and control arrangement against other available types, to ensure that the chosen crossing type is the most appropriate for the location.
31. The designer must update the Protective Provisions documents with reference to IANs which are no longer relevant.
32. As it is stated that the works to the approaches have been completed to the preliminary design stage, a copy of the final Stage 1 Road Safety Audit must be attached to the departure submission.
33. The designer must provide confirmation that the type of barrier and control arrangement (AFBCL) is acceptable by ORR for the situation.

