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Mr Andrew Hall
Deputy Chief Inspector of Rail Accidents
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Andrew,

RAIB Report: Trains passed over washed out track at Baildon, West Yorkshire, 7 June 2016

I write to provide an update¹ on the action taken in respect of recommendations 1 and 3 addressed to ORR in the above report, published on 16 February 2017.

The annex to this letter provides details of the action taken regarding the recommendations. The status of recommendation 1 is now '**Implemented**'; and recommendation 3 is '**progressing**'. We do not propose to take any further action in respect of the recommendation 1, unless we become aware that any of the information provided becomes inaccurate, in which case I will write to you again.

We will publish this response on the ORR website on 9 October 2018.

Yours sincerely,

Oliver Stewart

¹ In accordance with Regulation 12(2)(b) of the Railways (Accident Investigation and Reporting) Regulations 2005

Recommendation 1

The intent of this recommendation is minimise the risk of recurrence of another track washout at Baildon endangering trains.

Network Rail should put measures in place to reduce the risk of a track washout at Baildon. Measures to be considered should include, but not be limited to, the following:

- a) following the inspection of the drain system that leads from culvert GUE/5, an assessment of whether there is any blockage that needs clearing, or a permanent restriction in the drain system (paragraph 100a.i);
- b) installation of a line-side flood water capture system to carry flood water away safely from the site to prevent further washouts (paragraph 100a.ii); and
- c) completion of the work already begun on providing alerts to trigger actions of incident responders following heavy rainfall events detected in the Baildon area by the Network Rail Weather Service system

ORR decision

1. Network Rail have made improvements to the drainage to at Baildon to reduce the risk of flooding of the track reoccurring during heavy rain. CCTV and Remote Condition Monitoring equipment has also been installed at site to allow close monitoring of water levels.
2. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:
 - taken the recommendation into consideration; and
 - has taken action to implement it.

Status: Implemented.

Previously reported to RAIB

3. On 19 February 2018 ORR reported that Network Rail had not yet been able to implement an engineering solution to prevent a future washout at Baildon. As a mitigation, Network Rail were planning to install CCTV and water level sensing equipment at the location to help control staff identify conditions that may lead to a washout. Once the equipment has been installed, a local operating procedure will be written, briefed and agreed with Operations and Maintenance.

Update

4. On 20 September 2018 Network Rail provided a closure statement containing the following summary:

To summarise the following has been completed here:

- *A full survey of the drainage system has been completed and confirmed that it is in good condition with no significant defects or obstructions*
- *The benching inside culvert GUE2/5 has been modified to reduce friction which contributed to the system backing up*
- *The chambers, both upstream and downstream of culvert GUE2/5 have been modified to allow them to be locked down and seal the system. This is to prevent the lids being blown off in heavy rainfall events which allowed water to flow freely along the trackside*
- *The upstream chamber has also been considerably raised from ground level to increase its capacity. This will mitigate the risk of the chamber over flowing during heavy rain*
- *This chamber has also had CCTV monitoring equipment fitted and can be viewed at any time on www.telemetry-data.com*
- *This chamber has also had Remote Condition Monitoring (RCM) fitted inside to monitor the water levels through www.timeview2.net and issue alerts via text*
- *Control staff also have access to the two systems above to allow remote monitoring of the chamber as part of the Extreme Weather Alert Telecom (EWAT) process. We believe that all mitigation that is feasible at this location has now been completed and the recommendation can now be closed.*

Recommendation 3

The intent of this recommendation is to improve the effectiveness of communicating safety critical information between incident controllers and signallers and drivers, in order to reduce the time taken to alert trains in emergency situations.

Network Rail should review how its controllers respond to emergency phone calls about the safety of the line, to make sure that important information is captured and accurately transmitted to relevant railway responders, and implement any identified improvements. The scope of the review should include consideration of the following:

- a) controllers making direct contact with the initiator of the emergency call to clarify the nature of the emergency situation and its location (paragraph 69), and
- b) the most appropriate way for GSM-R emergency calls to be made to train drivers, whether from the control room directly, via the shift signalling manager, or via the signaller

ORR decision

5. Network Rail has reviewed how controllers on the LNE route respond to emergency calls and have introduced a new standard operating procedure. In addition, Network Rail is installing a dedicated telephone line between power signal boxes on the LNE route so enable more efficient communication in an emergency. The work was expected to be completed by 14 August 2018, but has been delayed. The completion date is in the process of being reforecasted, but is yet to be confirmed.

6. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it, but ORR has yet to be provided with a revised time-bound plan.

Status: Progressing. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Previously reported to RAIB

7. On 19 February 2018 ORR reported that Network Rail had not provided a formal response to this recommendation.

Update

8. On 27 June 2018 Network Rail provided the following update:

Network Rail has initiated a review on LNE Route on how its controllers respond to emergency phone calls about the safety of the line, to confirm that important information is captured and accurately transmitted to relevant railway responders.

The purpose of the review was to determine whether process improvements are required, and whether these are Route specific or applicable nationally. The outputs of the review are detailed below.

The review included consideration of the following:

a) controllers making direct contact with the initiator of the emergency call to clarify the nature of the emergency situation and its location:

Following the incident at Baildon, York Route Control has introduced a suite of standard operating procedures, one of which is how to handle a call from the Network Rail helpline and other calls which include members of the public, fire

service, police service, etc. This procedure details the steps required and includes guidance on obtaining full details from callers and the requirement to log all details immediately. The briefing process carried out following this incident has emphasised the need for controllers to contact the person reporting the incident to obtain full details of the nature of the emergency and its location.

b) the most appropriate way for GSM-R emergency calls to be made to train drivers, whether from the control room directly, via the shift signalling manager, or via the signaller:

The most appropriate way for GSM-R emergency calls to be made to train drivers is to contact the shift signaller manager directly, as controllers do not always know which signalling panel controls which area (in multi panel locations) and the control GSM-R locations cover larger areas than signallers.

LNE are in the process of implementing a dedicated telephone line between power boxes on the LNE route and route control to be used as an emergency line which will immediately highlight that it is an urgent/emergency call. Should contact not be possible in a timely manner however then an emergency call should be made using the control GSM-R terminal.

LNE have led an extensive programme of refreshing controllers in the use of GSM-R for emergency calls using simulators, which are now located permanently in the control development suite. LNE have also developed an aide memoire that is located directly in front of the GSM-R terminal to remind controllers how to undertake an emergency call.

Further on-going actions include:

- 1. Continue with roll out of dedicated lines at signalling locations with shift signalling managers, and*
- 2. Continue with the programme of development in the use of GSM-R.*

Timescale: 14 August 2018

Previously reported to RAIB

Recommendation 1

The intent of this recommendation is minimise the risk of recurrence of another track washout at Baildon endangering trains.

Network Rail should put measures in place to reduce the risk of a track washout at Baildon. Measures to be considered should include, but not be limited to, the following:

- a) following the inspection of the drain system that leads from culvert GUE/5, an assessment of whether there is any blockage that needs clearing, or a permanent restriction in the drain system (paragraph 100a.i);
- b) installation of a line-side flood water capture system to carry flood water away safely from the site to prevent further washouts (paragraph 100a.ii); and
- c) completion of the work already begun on providing alerts to trigger actions of incident responders following heavy rainfall events detected in the Baildon area by the Network Rail Weather Service system

ORR decision

1. Network Rail has not yet been able to implement an engineering solution to prevent a future washout at Baildon. As a mitigation, Network Rail are planning to install CCTV and water level sensing equipment at the location to help control staff identify conditions that may lead to a washout. Once the equipment has been installed, a local operating procedure will be written, briefed and agreed with Operations and Maintenance.

2. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it, but ORR has yet to be provided with a timebound plan.

Status: *Progressing*. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

3. On 22 January 2018 Network Rail provided the following initial response:

Network Rail's LNE Route has initiated work to address this recommendation and will be completed in three stages:

Stage 1:

A full survey of the drainage system was completed during September 2016. The culvert is in good condition both upstream and downstream with no significant defects or obstructions that could affect hydraulic performance. The configuration of the incoming pipe and chamber, however, is such that significant head losses can occur, that could cause backwater effects resulting in flooding from the cover of the chambers during extreme rainfall events.

Network Rail will collaborate with Bradford MBC (the owner of the affected section of the pipe) to modify the chambers to reduce friction during high flows.

Multiple meetings between Network Rail and Bradford MBC took place during July and September 2017 and a joint investigation into the drainage is being undertaken.

A further meeting took place during November 2017 to review the CCTV footage from the inspections and agree the appropriate course of action; unfortunately however the CCTV footage from Bradford MBC was not available to view.

A further meeting with Bradford MBC will be arranged during Spring 2018, to review the CCTV footage from the inspections and agree the appropriate course of action.

Stage 2:

Open channel system with storage and attenuation to be considered. Reliable outfall required.

Network Rail completed an internal desk top investigation and a report was produced during July 2017. This identified an existing but disused culvert that appeared to offer an appropriate solution (appears originally to have been designed to take the overflow from the main culvert).

A remit was issued to a contractor to deliver an onsite investigation to find this existing culvert. The report into the intrusive drainage investigation has now been completed. Despite investigation, the culvert inlet and outlet have not yet been found and the condition the watercourse downstream of the old culvert is unknown. Without extensive work on private land it would not be possible to prove the route and condition of the downstream drain. Without assurance of the competence of the downstream drain, it is not feasible (morally or practically) to create an overflow route. The investigation has recommended that Network Rail lock down the upstream and downstream chamber covers to Culvert GUE2/5.

As mitigation, a process is in place for when an EWAT is issued for additional inspections to be undertaken by local maintainers.

CCTV overview cameras (with images viewable by control) are to be installed. Additionally, when an EWAT is issued local maintenance and operations staff have been briefed to pay special attention to the critical assets at Baildon.

Stage 3:

CCTV and remote water level sensing equipment will be installed in the chamber. An Operating procedure is to be written, briefed and agreed to Control staff, maintenance and local operations colleagues.

A remit for installation of CCTV was issued in October 2017 and funding was arranged in December 2017, delivery dates are awaited.

A remit for Remote Condition Monitoring for the upstream chamber at Baildon (to advise of rising water levels) has been issued and is being priced. Once the equipment is installed, tested and commissioned a local operating procedure will be written, briefed and agreed with Operations and Maintenance.

*Timescale
30/06/2018*

Recommendation 3

The intent of this recommendation is to improve the effectiveness of communicating safety critical information between incident controllers and signallers and drivers, in order to reduce the time taken to alert trains in emergency situations.

Network Rail should review how its controllers respond to emergency phone calls about the safety of the line, to make sure that important information is captured and accurately transmitted to relevant railway responders, and implement any identified improvements. The scope of the review should include consideration of the following:

- a) controllers making direct contact with the initiator of the emergency call to clarify the nature of the emergency situation and its location (paragraph 69), and
- b) the most appropriate way for GSM-R emergency calls to be made to train drivers, whether from the control room directly, via the shift signalling manager, or via the signaller

ORR decision

1. Network Rail has not provided a formal response to this recommendation.
2. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:
 - has not provided a response setting out how the recommendation will be delivered.

Status: *Insufficient response*. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

3. On 22 January 2018 Network Rail provided an initial response to recommendations 1 and 2, but no information on actions to address recommendation 3.