



Network Maintenance Management Plan

Annex H

Embankments and Cuttings



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H. 1 Embankments and Cuttings

Embankments and cuttings are used to build up or reduce existing ground levels so that there are no sudden changes in the surface level of the highway. They are also used on the approaches to underpasses and over bridges so that adequate clearance can be given to the obstruction for which the over bridge or underpass has been constructed. These obstructions can include but are not limited to:

- Roads
- Railways
- Canals
- Rivers

Embankments and cuttings can therefore be considered an important part of the construction of the road, and as such should be subject to inspections and maintenance.

If Embankment is over 1.5m and is structurally reinforced for example by Reinforced Earth, Sheet Piling, Gabion Walls or Geotextile and Ground Anchors then it is a Structure (See NMMP Annex C Bridges, Highways Structures and Road Restraint Systems).

H.2 Embankments and Cuttings Defect Categories

Defects on Embankments and Cuttings are to be assessed with reference to the Risk Matrix from the NMMP Core document 12.0 Defect Categorisation.

When checking for defects, all users of the full width of the highway shall be considered, including cyclists, equestrians and other non-motorised users, as well as disabled and elderly users.

Degree of Deficiency	Timeframe for action
Category 0 Defects	Emergency make safe response in 2 hours
Category 1 Defects	These require prompt attention and will require a permanent repair to be made within 5 days of the defect being reported.
Category 2 Defects	All other defects. These should be prioritised and considered for repair within planned programmes of work.



H.2.1. Definition of Embankment and Cuttings Defects at Investigatory Level

Feature	Examples of Embankment defects at Investigatory Level
Embankments and cuttings	Risk of loose material falling to injure users or property
	Failure detritus causing obstruction to highway
	Any minor slip which causes concerns over the safety of the travelling public or concerns over further movement
	Movement or collapse in any part of the full width of highway including footway or verge

H.3 Inspection of Embankment and Cuttings

Significant embankments and cuttings should be identified. These should be based on their height but also on the geological characteristics and the potential risk of slippages or rockslides.

All information from inspections, together with any immediate or programmed action, including nil returns, shall be recorded. Such information shall, whenever systems are available be recorded in a GIS format so that it may be utilised together with other relevant information in the review of the maintenance strategy, practices and the development of works programmes. Accurate recording of inspection results are crucial in assisting a defence against any third party claims.

The Inspection regime shall be subject to an annual review.

Where defects with potentially serious consequences for network safety are made safe by means of temporary signing or repair, arrangements should be made for a special inspection regime to ensure the continued integrity of the signing or repair is maintained, until a permanent repair can be made.

H.3.1 Highway Inspections

The frequency of Highway Inspections of Embankments and Cuttings shall be as identified in NMMP Annex A – Carriageway, Road Markings and Studs and Annex B – Footway, Cycleway and Public Rights of Way.

H.3.2 Area team Inspections

Area team inspections should be strongly focused on ensuring that the network meets the needs of users and comprise more detailed specific inspections of the embankment or cutting. These inspections may be undertaken in response to:

- Community concern
- As a result of incidents or extreme weather conditions
- In light of monitoring information, such as an abnormally high occurrence of damages claims

Responding to these is a part of the risk management process.

Dependent upon the degree of deficiency, each identified defect shall be assessed for action through either:

- Routine works
- Programmed works

H.3.3 Geotechnical Inspections

Geotechnical inspection arrangements should be based on specialist geotechnical advice or legacy records but should be programmed, where ever possible, to follow periods of heavy rain, severe frosts or periods of prolonged dry weather. A risk based approach will be taken to identify any issues critical to network performance.

H.4 Network Maintenance Types

H.4.1 Reactive Maintenance

For all Embankments and Cuttings defects, a risk base approach will be undertaken, preferably by an officer on site. Using the Risk Matrix in the NMMP Core document, the defect will be allocated a category and an appropriate response.

Measures taken will wherever practicable, take the form of a permanent repair to avoid the necessity to revisit the site in the short term. Where this is not possible a temporary make safe repair will be considered. If this is not achievable, traffic control measures, such as traffic lights or a road closure, will be put into place.

H.4.1.1 Landslip onto the Highway

Having confirmed that a landslip onto, or from under, the highway represents an immediate or imminent hazard (category 0 or 1 defect) it shall be rectified as follows:



- Traffic control measures shall be put into place to guide vehicular and pedestrian traffic safely around the Landslip. This may be by the use of Stop/Go boards, temporary traffic signals or an emergency road closure.
- As soon as is practicable and in accordance with Section 150 of the Highways Act 1980, the obstruction arising from the landslip shall be removed. Following this, long-term stabilisation measures shall be assessed. Such measures shall be considered for inclusion within future routine or programmed works. These measures may require the action of other parties and the use of the Authority's powers under the Highways Act 1980.
- Where the failed material may be the responsibility of an adjacent landowner, statutory body, rail operator or neighbouring authority, they shall be informed of the failure. They should also be informed of their responsibility to deliver permanent stabilisation solution as soon as is reasonably practicable.

H.4.2 Programmed Maintenance

All forward plans of Programmed Maintenance take in to account the criteria of

- Safety
- Serviceability
- Sustainability
- Community Effect

Environmental Management Issues shall be addressed as identified in the Environmental Impact Assessment section in the NMMP Core document and shall adhere to the Town and Country Planning (Environmental Impact Assessment) Regulations 2011.

Works shall be permanent and will, wherever practicable, adopt a holistic approach to management of the highway network. The potential to include such works shall be considered for all programmed schemes.

Appendix: Version Control

Version	Author	Checked	Approved	Comment
17 th November 2017	C Nicol	J Cross		Revised for Committee

Contact us...

Për Informacion Per Informazione Za Informacije नगरपाली लयी برای اطلاع
المعلومات معلومات کے لئی তথ্যের জন্য Za Informacija

by telephone: 0300 300 8000

by email: customer.services@centralbedfordshire.gov.uk

on the web: www.centralbedfordshire.gov.uk

Write to Central Bedfordshire Council, Priory House,
Monks Walk, Chicksands, Shefford, Bedfordshire SG17 5TQ