The Highland Council
Comhairle na Gàidhealtachd

Structures Inspection Policy

Roads and Infrastructure

Infrastructure, Environment and Economy

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Approval

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Contents

1. Introduction

1.1. The Highland Council has a duty under the Roads Scotland Act 1984 to manage and maintain their adopted roads, ensuring that they are safe for use and fit for purpose. The Highland Council will comply with this duty by ensuring an inspection regime is in place for all structures which form part of the adopted road and are maintained by them.

1.2. Structures are inspected to monitor their condition and identify defects. The results of these inspections will be used to identify future works programmes and maintenance regimes including emergency repairs if required.

1.3. This Policy does not include structures owned by third parties or Services within the Council. Other parties may include, but are not limited to, Network Rail, Scottish Canals, and private landowners. Maintenance and inspection responsibilities for these structures are agreed between the third party and The Highland Council.

2. Scope

1.4. This policy shall apply to all structures which form part of the adopted road network and prospectively adoptable roads for which The Highland Council is the local roads authority. The following will apply in Highland for inspection purposes and have been derived from CS 450 Inspection of Highway Structures.

Asset	Dimension	Comment
Bridge, buried structure, subway underpass, culvert and any other similar structure	• All structures greater than or equal to 3m span • Culverts 2 – 3m span, or multi-cell culverts where cumulative span is greater than or equal to 5m • Corrugated metal culverts 0.9m or more in span • Pedestrian subways	Includes road bridges, subways, footbridges, cycle route bridges, bridleway bridges, underpasses, etc.
Earth retaining structure	• All structures with an effective retained height, i.e. the level of fill at the back of the structure above the finished ground level at the front of the structure, greater than 1.5m	

Reinforced/ strengthened soil/ fill structure with hard facings	• All structures with an effective retained height of greater than 1.5m	
Sign and/ or signal gantry	• Structural aspects of permanent large sign/signal gantries and large Variable Matrix Signs(VMS)	Not applicable for Highland Council.
Masts	• Structural aspects of all cantilever masts • Structural aspects of all lighting masts of 20m or greater, i.e. the vertical distance from top of post to bottom of flange • Structural aspects of mast for camera, radio, speed camera and telecommunication transmission equipment. Structural aspects of any signs defined as requiring technical approval (TA) in accordance with CG 300	Not included in this policy (Lighting Section organises any inspections necessary). Not applicable for Highland Council (none in Highland at the time of writing this policy).
Access gantry	• A moveable structure providing access to a road asset, typically for bridge inspection and maintenance.	Part of the existing structure.
Tunnels	• An enclosed length of road of 150m or more	Not applicable for Highland Council.

Other structures	• Other structures that are within the footprint of the road, e.g. service/ utility crossings	Will only apply to those owned and/ or maintained by Highland Council.
	• Any remaining structures defined as requiring technical approval in accordance with CG 300 or any agreed with the Overseeing Organisation.	Cattle grids.
Third Party structures	• Any of the above categories but owned by others, e.g. private owners or utility companies	See section 5.1 for more details.

Table 1: Structures Definitions

1.5. Notwithstanding the above, CG 300 Technical Approval of Highway Structures applies to all road structures with a clear span of 0.9m and above and to retaining walls greater than 1.5m high. This policy does not change those parameters and Technical Approval should be applied for as necessary.

1.6. Structure records will be maintained by Roads and Infrastructure.

3. Inspections

3.1. The inspection programme will be determined annually by the Structures Section and, depending on priorities identified or unforeseen circumstances, may change through the year.

3.2. We will:

- Follow the guidelines provided by the 'Well Managed Highway Infrastructure': A Code of Practice and CS 450 Inspection of Highway Structures.
- Apply the guidance within the Highland Council OP708 which details the process to be used for undertaking inspections of structures and any subsequent works ordering.

3.3. The individual roles within Roads and Infrastructure responsible for undertaking inspections are as follows:

Position Descriptions	Role
Supervising Engineer	The engineer who supervises the inspection programme and is ultimately responsible for inspections of road structures
Authorising Engineer	The engineer appointed by the Supervising Engineer who authorises inspection reports
Senior Inspector	A person appointed by the Supervising Engineer with the competence and qualifications to inspect road structures, (including complex structures)
Inspector	A person appointed by the Supervising Engineer with the competence and qualifications to inspect road structures (not including complex structures)

Table 2: Roads and Infrastructure roles responsible for undertaking inspections

3.3.1. The Supervising Engineer is the Principal Engineer (Structures Section).

3.3.2. Complex structures are defined as those with long spans, high skews, unusual or unconventional aspects, or high risk details such as half joints or post tensioning. Complex structures will be designated by the Supervising Engineer.

3.4. The various types of inspections, and the Council's strategy relating to them, are as follows:

Inspection Type	Definition	Council Strategy/ Inspection Frequency
Safety Inspection	Check of those parts of a road structure that are visible from the carriageway or footway to ensure the safe and efficient identification of safety related defects	Undertaken as part of routine Road Safety Inspections or as a result of notification of a defect by a third party
Call Out Inspection	Check of safety concerns by qualified inspection staff	As a result of a safety inspection or identification of safety defects by other members of staff in the course of their general duties a qualified inspector /engineer shall assess and prioritise

		the need for a call out inspection.
Inventory Update and Defect Check	Check Inventory details held in database and carry out visual survey for defects. If a serious defect is found, a GI shall be carried out.	Risk Based Interval
General Inspection	A visual inspection of all parts of the structure undertaken without the need for additional access equipment, using safe, ground level viewing positions.	Risk Based or 3 year intervals
Principal Inspection	A close examination, within touching distance, of all accessible parts of the structure.	Risk Based or 9 year intervals
Special Inspection	A special inspection shall provide detailed information on a particular element, part, area, or defect that is causing concern or inspection of which is beyond the requirements of the general and principal inspection regime.	Need determined by Supervising Engineer as a result of another inspection or event.
Inspection for Assessment	An inspection for assessment shall provide the information required to undertake a structural assessment.	Undertaken as determined by the need for an assessment as decided by the Supervising Engineer.

Acceptance Inspection	1. Pre-opening inspection	Undertaken in the form of a principal inspection approximately one calendar month before the issue of completion documentation or the opening/reopening of the structure to the public.
	2. Defects liability inspection	Undertaken in the form of a Principal Inspection just prior to end of the defects liability period.
	3. Transfer inspection	Prior to transfer between two parties where Highland Council takes over responsibility for the structure
	4. Handback inspection	Prior to handback between two parties where Highland Council takes over responsibility for the structure

Table 3: Inspection Types and Council Strategy

3.5. To fully implement a risk based approach for all structures, an initial principal inspection will be required on those that do not currently have one. This will take resource and time to achieve. There is no fixed timescale for implementing this but it is expected that information will be gathered on a continuing basis.

4. Inspection Frequency

4.1. The frequency of inspections adopted will be based on the data available, the implementation of a risk based approach and efficient use of resources. Existing intervals for General (3 years) and Principal Inspections (9 years)

will remain as is until a risk based approach has been implemented and as follows:

Asset	Principal Inspection	General Inspection
Bridges and Culverts ≥5.0m (overall length)	Risk Based	Risk Based
Bridges and Culverts between 3.0m and 5.0m (overall length)	No inspection	3/6/9 year cycle then implement Risk Based
Bridges and Culverts less than 3.0m	No PI Inventory update and defect check	No GI Inventory update and defect check
Retaining Walls >=5.0m (retained height), supporting the road	3/6/9 year cycle then implement Risk Based	3/6/9 year cycle then implement Risk Based
All other Retaining Walls	No PI Inventory update and defect check	No GI Inventory update and defect check
Cattle Grids	No inspection	3/6/9 year cycle then implement RiskBased

Table 4: Inspection Frequencies

4.2. The frequency of inspections will be maintained wherever possible but particular situations such as weather related responses may require resources to be used elsewhere. Where this occurs, the delay in completing inspections will be kept to a minimum and the original programmed regime resumed.

4.3. Principal Inspections are generally undertaken within a calendar year. General Inspections should also follow the calendar year but where circumstances do not permit this, delays should be contained to the financial year wherever possible. Inspections may require to be delayed for programming reasons, to take advantage of traffic management deployments or due to third party access requirements. It is therefore not practical to state a fixed tolerance limit for inspection dates.

5. Inspection Requirements of Other Owners

5.1. Other owners such as Network Rail have the responsibility for some structures within the road boundary. Where the Council is confident that the responsible party has an inspection regime in place, it is not required to do its own inspections. However, where it is uncertain that a responsible owner has undertaken inspections, a General Inspection (GI) should be undertaken if it is in the interests of the wider public to do so. The requirement for these GIs will be determined by the Supervising Engineer or relevant Road Operations Manager, Roads and Infrastructure. The owner still retains the primary responsibility for the structure's integrity and public safety.

6. Defects

6.1. Defects found during inspections are recorded with appropriate responses. There are two sets of categories used for defect responses depending on the type of inspection undertaken.

6.2. For routine surveillance inspections undertaken as part of routine Road Safety Inspections, the structure defects found will be passed to the relevant Area Structures Technician. If necessary, the Road Inspector will categorise the defect using the currently applicable categories for road safety defects. However, the Structures Technician, or other appropriate staff member, will reassess the defect and categorise it according to the risk categories below.

Category	Description	Response
S1: Critical/ Emergency	A defect likely to deteriorate significantly in the immediate future to a point where it can cause serious harm to the public or result in structural collapse.	Immediate action to protect public if necessary. At least temporary repair or mitigation measures within 24 hours(1).
S2: High	Those not an emergency but requiring immediate attention as they may present a significant hazard to road users or short term structural deterioration.	Action within a reasonable timescale and within the budget available. Response could include adding to a rolling programme of works.
S3: Medium	Defects requiring attention to improve longevity of the asset.	No fixed timescale. Response could include adding to a rolling programme of works.
S4: Low	Minor defects unlikely to cause any significant deterioration or be of risk to the road user.	No fixed timescale. Response could include adding to a rolling programme of works.
S5: Negligible	No foreseen hazard to road users or integrity of a structure.	No action or planned work as resources permit.

Note (1): 24 hours will be interpreted as the end of the following day.
Table 5: Defect Risk Categories

6.3. The following ‘S’ category notes are intended as guidance and should not be taken to be definitive explanations for each response. Any defect can be put into any category, depending on the severity and hazard it may present.

6.3.1. **S1: Critical**

a) Elements in a Very Poor condition where the structure has either fully or partially collapsed, is in imminent danger of doing so, or is presenting a serious hazard to the public.
b) The Inspector should not leave the site until the structure is made safe, or the public are excluded from the danger area, using cones, barriers or signs as appropriate.
c) Examples include, severe deformations or movement under load, severe damage to load bearing elements, full or partial collapse of key elements, including parapets.

6.3.2. **S2: High**
a) Elements in a Poor or Very Poor condition, where there is no imminent danger to the public.
b) Examples include, severe loss of section, cracking in areas of high stress, significant scour etc.

6.3.3. **S3: Medium**
a) Elements in a Fair or Poor condition.
b) Examples may include moderate corrosion, spalling, cracking, bearing or joint replacements, clearing significant vegetation, clearing drainage, repointing, repainting etc.

6.3.4. **S4: Low**
a) Elements in Good condition.
b) Examples may include minor vegetation clearance, minor painting, minor pointing loss, etc.

6.3.5. **S5: Negligble**
a) Elements in Very Good condition.
b) Examples may include: Insignificant vegetation (e.g. minor weeds), graffiti removal, etc.

6.4. Definitive response times are not included for the defect response categories, with the exception of making safe S1 emergency ones. In the case of S1 defects, the severity of the defect will dictate the time taken to undertake a permanent repair. Where possible, permanent repairs will be undertaken as soon as is practicable. Alternatively, permanent repairs will be included in annual maintenance programmes.

6.5. Inspectors should inform the relevant Area Roads Operations Manager or Senior Engineer at the earliest possible opportunity of a defect which may present an immediate risk to public safety. The Supervising Engineer should also be notified.

6.6. Where a structure has been identified in a replacement or repair programme, defects may not be addressed and therefore left to decline, to prevent inefficient use of resources.

6.7. Other inspection types have their own reporting methods and defects may be rectified by other parties (such as during a maintenance period). Safety inspections are not the only means of identifying serious defects. Inspectors and other members of staff may also identify safety defects in the course of undertaking their general duties. These should be reported for repairs/ action as appropriate.

6.8. Other road users may also report defects to the Council and these will be processed for action as appropriate.