

REPORT TO INFRASTRUCTURE SERVICES COMMITTEE – 13 MAY 2021

BRIDGES PRIORITISATION POLICY AND PROCEDURE

1 Reason for Report/Summary

- 1.1 At the Infrastructure Services Committee meeting of 21 January 2021 (Item 18) the Committee agreed to instruct Officers to develop a formal policy that links to the prioritisation model, and report back to this Committee for approval in line with the Policy Development and Review Framework in Part 4B of the Scheme of Governance.

2 Recommendations

The Committee is recommended to:

- 2.1 Consider the comments received from Area Committees and feedback from the public engagement;**
- 2.2 Consider the revised Policy and Procedure; and**
- 2.3 Approve the Bridge Prioritisation Policy and Procedure for immediate use.**

3 Purpose and Decision Making Route

- 3.1 The purpose of this report is to present a formal Policy and Procedure for the prioritisation of bridge works which clearly demonstrates the methodology used to ensure that the allocated resources are invested in the bridge network in the most beneficial manner.
- 3.2 Detailed work has been undertaken to develop a formal policy in accordance with the Scheme of Governance Part 4 B – Policy Development and Review Framework. This has involved consultation with all Area Committees together with a public online engagement opportunity which concluded on 12 April 2021. The comments from Area Committees and a report detailing the outcome of the online engagement are given in **Appendices 1 and 2** to this report.
- 3.3 The draft policy and associated procedure were revised taking into account the comments from the Area Committees and the additional information arising from the consultations. The proposed updated Policy and Procedure form **Appendices 3 and 4** to this report.

4 Discussion

- 4.1 Whilst the Area Committees were generally in favour of the Policy and Procedure there were some common themes within the comments when viewed across all 6 areas. These have been broadly grouped into 4 headings as follows, with outline comments provided:-

Diversions

- allowance for the cumulative effect of several bridges being out of operation
- consideration of socio-economic impacts
- concern over delays to emergency services

Operational concerns

- capacity to deliver works
- control of vehicles weights
- importance of detailed inspections
- aligning bridge and road priorities in terms of improvements
- consideration of limiting works carried out (do we need to fix everything and at what level of structural capacity)
- diversions for temporary closures
- diversions and improvements to road networks

Suggested revisions

- wider scope for describing roads and their uses
- safe roads and active travel initiatives
- community engagement and participatory budgets
- more consideration of single access definition for businesses

General

- one prioritisation list for all 6 areas
- duty to maintain listed structures
- lack of flexibility in the approach to date
- support for Bridge Alert Status scoring for Black bridges increased to 5 to match Red 1 bridges

4.2 Feedback from the public engagement indicated, high levels of participation from those affected directly by bridge closures and restrictions, in particular the Laurencekirk, Drumoak, Durriss and King Edward areas. The engagement across all other areas accounted for only 19% of the responses.

4.3 Participants of the public engagement were asked to rank 5 elements in order of the weighting they thought appropriate. The overall ranking was as follows (highest to lowest)

Importance of Road (Network Criticality)
Diversion Mileage
Bridge Condition (Bridge Alert Status)
Historic Assets/ Bridge Size
Flooding (Climate/ Environmental Change)

The majority of the feedback given related to diversions, with a clear focus on a number of areas:

- loss of community
- associated time and cost implications for journeys
- cumulative effect for multiple closures
- loss of business
- additional traffic along diversion routes
- suitability of diversion routes
- safety concerns due to emergency services delays and navigation problems
- local development affected

- 4.4 The scale of the backlog of the works required to Aberdeenshire's bridges together with the time taken to bring schemes from inception through to completion, whilst ensuring the optimum solution is adopted in each case, requires long term planning using objective criteria. As such, having one prioritised list to cover all 6 areas provides the basis for a clear plan moving forward.
- 4.5 The initial prioritisation procedure was developed using 3 key elements, Network Criticality (NC), Bridge Alert Status (BAS) and Size/Heritage (SH) within a formula to determine a score.
- 4.6 From the initial method indicated to the Infrastructure Services Committee on 21 January 2021 (**Item 18**), the black BAS score has been revised from 4 to 5 to match the Red 1 score thus equating a bridge closure with an imminent bridge closure score. This change was made to take cognisance of the effect of the loss of a bridge on the local community, an issue raised during both the Area Committee and Community engagement exercises.
- 4.7 Network Criticality and Bridge Alert Status remain the principal elements in the scoring, however the engagement process raised concerns regarding the manner in which diversions are taken into account. It is clear that diversion length has to be considered, as diversion mileages can vary from under 1 to over 140 miles. However, the quality of the available diversion route compared to the original route is also a factor to consider.
- 4.8 The Resilience Factor has been included to better reflect the areas where the diversion routes pose significant issues. This factor will be used in circumstances where there are already excessive bridge restrictions locally and there is a high risk of any further bridge or road incident in the local area restricting traffic movement to an unacceptable level. Currently this "Critical" level would be applied to the King Edward area and the section of Ward 19 lying inland of the A90. A factor of 1.3 is proposed.
- 4.9 As mentioned in the starter paper, the prioritisation process proposes a top slice for critical scour repairs (washouts), catastrophic events involving several smaller bridges in a localised area and minor preventative repairs. This will

provide a level of basic funding for more local issues and will provide some of the flexibility requested by Area Committees.

- 4.10 The online engagement software used for the public engagement exercise will allow more community engagement going forward. While the potential for a participatory budgeting approach was raised during the engagement process, this is not something which could be considered at this time due to the nature and legislative requirements of our duties.
- 4.11 The top slice for historic assets was also supported as the duty to maintain these structures was highlighted during the consultations.
- 4.12 For effective prioritisation the following are of particular importance.

Importance of Detailed Inspection

- 4.13 It is proposed to implement a Bridge Inspector Certification Scheme in order to demonstrate competence as required by the Design Manual for Roads and Bridges and supported by the SCOTS Bridges Group. This will involve a comprehensive written submission assessed by the Structures Manager and supplemented with an interview. This process will determine the suitability of the inspector against nationally agreed requirements and highlight any supplementary training needs. This will be reviewed on a 3 yearly basis, with a requirement to submit inspection reports and evidence of 35 hours of Continuing Professional Development (CPD) per year to ensure required competence levels are maintained as a minimum. Ensuring quality and consistency of inspections and ratings is critical for equitable comparison across all bridges.

Roads Aspects

- 4.14 On a local level this relates to the condition of the roads used for diversions, effectiveness of signs, increased levels of traffic and the ability of emergency services to easily navigate.
- 4.15 Aberdeenshire-wide concerns include aligning roads and bridge priorities, in terms of improvements, to ensure effective spending. This would also consider whether less used roads are still required, providing the alternative routes are acceptable.
- 4.16 The Network Criticality developed for the prioritisation recognises the changing use of roads and includes town and settlement hubs to reflect this, however it is a broad-brush approach and should be considered in conjunction with Road and Transportation aspirations. Moving forward it is proposed to review the Network Criticality to consider whether it can more closely aligned to the Carriageway Hierarchy used for roads maintenance. Both systems are based on the national A, B and C system, amending priorities based on changes in use and existing restrictions.

5 Council Priorities, Implications and Risk

- 5.1 This report helps deliver the Strategic Priority “Infrastructure” and “Resilient Communities” within the Pillar “Our Environment”, having the responsible finances, and addressing issues of climate and sustainability.
- 5.2 This report helps deliver against the Council’s current Roads Asset Management Plan.
- 5.3 The table below shows whether risks and implications apply if the recommendations are agreed.

Subject	Yes	No	N/A
Financial	X		
Staffing		X	
Equalities		X	
Fairer Scotland Duty		X	
Town Centre First		X	
Sustainability	X		
Children and Young People’s Rights and Wellbeing		X	

- 5.4 An equality impact assessment is not required because the recommended actions do not have a differential impact on people with protected characteristics.
- 5.5 The prioritisation methodology can be used to create a Capital Investment optimised list for the repair, refurbishment, strengthening and renewal of the bridge portfolio, which can then inform budget setting.
- 5.6 At the time of writing the approved Capital Budget for bridges works for 2021/2022 from the Bridges and Structures Rolling Programme line is £850,000.
- 5.7 In addition a Capital Infrastructure Investment Fund has been agreed which has allocated a further £40 million to be invested in Bridges and other Infrastructure Services projects over the next 10 years. The confirmed allocation from this fund for 2021/2022 to invest in bridges and other highway structures (i.e., road retaining walls) is £2,175,000.
- 5.8 To provide a works programme for 2021/2022 the general principles developed for presenting a draft Prioritisation Policy and Procedure have been used and works programmes for that year only will be presented to Area Committees during May 2021. The works programme beyond March 2022 will be refined to align with the final agreed Policy and Procedure and will be subject to review on an annual basis.

5.9 The sustainability implications associated with this prioritisation methodology are generally positive. The network level prioritisation approach ensures that investment is directed to where it is of the most benefit when considered at the strategic level. The inclusion of the dedicated budget lines for Climate Adaptation and Sustaining Repairs allows targeted response to address local issues brought about from various causes. Finally, the Historic Assets budget line specifically addresses the need to sustainably manage important historic infrastructure.

5.10 The following Risks have been identified as relevant to this matter on a Corporate Level:

ACORP001 – Budget pressures. Continued review of optimised work bank to ensure that available budget is used to maximum effect whilst accepting that some schemes will be below the investment cut-off and hence likely to be subject to future weight or lane restrictions and possibly closure.

ACORP006 – Reputation management. Bridges are critical infrastructure and without the application of robust asset management principles the resulting closures would damage the reputation of the Council as a sound custodian of critical infrastructure.

ACORP007 – Social Risk. In rural areas the loss of links within already widespread communities has been highlighted as a concern.

ACORP010 – Environmental Challenges. The effects of flood events are likely to increase in the coming years. Protecting bridges from scour is critical and funding for this should be prioritised.

Link to [Corporate Risk Register](#)

5.11 The following Risks have been identified as relevant to this matter on a Strategic Level:

- ISSR001 – Active Travel. Bridges form a critical element of the road network which in turn provides opportunities for all forms of active travel.
- ISSR004 – Climate Change. The protection of the historic environment is limited due to lack of available resources.
- ECSSR004 - Support Inclusive, Vibrant and Healthy Communities – increased restrictions and bridge closures is likely to have an isolating effect on local communities.

Link to [Directorate Risk Registers](#)

6 Scheme of Governance

6.1 The Head of Finance and Monitoring Officer within Business Services have been consulted in the preparation of this report and their comments are

incorporated within the report. They are satisfied that the report complies with the [Scheme of Governance](#) and relevant legislation.

- 6.2 The Committee is able to consider [and take a decision on] this item in terms of Section F.1.1 of the [List of Committee Powers in Part 2A](#) of the Scheme of Governance as it relates determination of policy matters in relation to Roads, Landscape and Waste Services.

Alan Wood
Director of Infrastructure Services

Report prepared by Donald Macpherson/Gillian Cunningham
28 April 2021

List of Appendices –

- Appendix 1 – Area Committee Comments (to be updated for Garioch and Buchan following the meetings of 20/04/21)
- Appendix 2 – Bridges Policy and Procedure, Survey Response Report
- Appendix 3 – Draft Policy
- Appendix 4 – Draft Procedure (including appendices)
- Appendix A – Network Criticality Flowchart
- Appendix B – Bridge Alert Status Flowchart

APPENDIX 1

Comments from Area Committees

Reference Comment Observations by Officers Changes or Recommendations to Policy Committee

Banff & Buchan

- BB01 Some methodology should be built in to take account of the cumulative effect of several bridges being out of operation.
- BB02 There should be some weighting to reflect any potential restrictions or delays to emergency services.
- BB03 There should be more flexible consideration for single access properties.
- BB04 The policy should not be too rigid but should have flexibility to take into account unknown/unexpected events.
- BB05 Consideration should be given to socio-economic impacts on the area.
- BB06 Assurance needed that legal opinions are being sought for every aspect of the policy and, in particular, the options relating to the Road Traffic Orders currently in place in the King Edward Area.

Formartine

- F01 There could be future problems with capacity to deliver the maintenance work.
- F02 How do we deal with overweight loads using the current structures, controls and measurements.
- F03 We need to have a wider scope in the introductory paragraphs for describing our roads and being sensitive to the different types of road users, to be more mindful of the Council's safe roads and active travel initiatives.
- F04 In terms of network criticality, we need to have flexibility to consider local solutions from our communities, where appropriate.
- F05 A participatory budget approach should be considered to enable our communities to help identify and deliver solutions.
- F06 The length of alternative routes should be considered in terms of how this fits with improvements to the road network.
- F07 The bridge prioritisation policy should also fit with improvements to the road network.

- F08 In consideration of the full network prioritisation, how can we equitably limit what works are carried out.
- F09 We should consider what is important to businesses who don't have a rateable value, and currently may not be considered.

Kincardine and Mearns Area

- KM01 The Committee welcomed and supported the Bridges Work Bank Prioritisation report, draft policy and draft procedure.
- KM02 The Committee welcomed the inclusion of the black bridge alert status being critical and therefore given the highest score.
- KM03 The Committee stressed the importance of detailed inspections and assessment being carried out to ensure the condition of the bridge is known, to assist with future decisions regarding weight restrictions.
- KM04 The Committee agreed with one Prioritisation List for the six areas.
- KM05 The Committee suggested that further consideration is given to all diversions being put in place due to any temporary bridge closures.
- KM06 The Committee requested to be updated on the consultation exercise being carried out using the new engagement tool.

Marr

- M01 Support the proposed policy and the need for a prioritisation procedure based on set of objective criteria.
- M02 Note that an Infrastructure Fund has been put in place which will make a significant difference.
- M03 Questioned the need to review policy every 2 years.
- M04 Noted there was a duty to maintain listed structures.

Buchan

- B01 Highlight the importance of a sufficient budget being made available to allow our roads and bridges to be maintained and repaired given (a) the dependence on them and (b) the damage our cold climate can have on them.
- B02 Bridges with an Alert Status of 'Black' and which are still used by the community, should be assessed as a high priority and repaired.
- B03 The cohesiveness of communities must be written into the policies, both social and economic, as it is not acceptable if a small bridge fails and the community it serves can't get to school or work for example.

B04 Where we have a multiple failure of bridges due to an event this should be recorded as a single issue, and prioritised as such, not as individual bridges.

Garioch

G01 Committee congratulated officers on the report and the first class system which ensured that bridges were fairly and objectively assessed and prioritised.



From mountain to sea

Bridges Policy & Procedure

SURVEY RESPONSE REPORT

14 March 2021 - 12 April 2021

PROJECT NAME:

How We Prioritise Bridges



From mountain to sea

Survey Questions:- 386 responses.

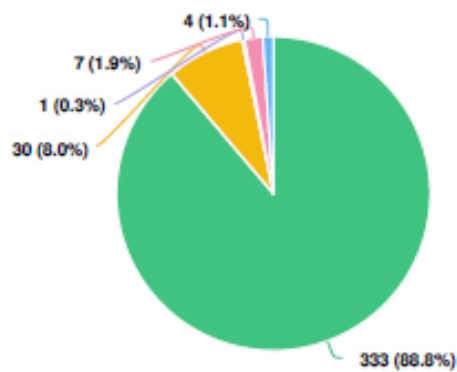
Q1 What is your home postcode?

Postcode	No of Responses	Area
AB10 1	1	Aberdeen City
AB12	1	Aberdeen City
AB12 3	2	Aberdeen City
AB12 4	2	K & M
AB12 5	21	K & M
AB13 0	1	Aberdeen City
AB14 0	2	Aberdeen City
AB15	1	Aberdeen City
AB16 5	1	Aberdeen City
AB25 2	1	Aberdeen City
AB30	1	K & M
AB30 1	104	K & M
AB31 4	8	Marr
AB31 5	105	K & M
AB31 6	52	K & M
AB32 5	1	Marr
AB32 6	1	Garioch
AB32 7	1	Garioch
AB33 8	2	Marr
AB34 5	2	Marr
AB36 8	1	Marr
AB39 2	8	K & M
AB39 3	17	K & M
AB41 8	1	Buchan
AB41 9	3	Formartine
AB42 0	1	Buchan
AB42 1	1	Buchan
AB42 2	2	Buchan
AB43 6	1	Buchan
AB45 1	3	B & B
AB45 3	12	B & B
AB51 0	2	Garioch
AB51 4	1	Garioch
AB51 5	1	Garioch
AB51 7	1	Garioch
AB53 4	1	Formartine
AB53 5	8	Formartine
AB54 6	1	Marr
AB54 7	1	B & B
AB56 5	1	Moray
DD10 0	5	K & M



From mountain to sea

Q2 | Are you, an Individual, Business, Organisation or Community Group?



Question options

Individual Business Organisation Community Group rather not say

Optional question (375 response(s), 11 skipped)
Question type: Dropdown Question



From mountain to sea

Q3 If a business, type of business?

Farming
Property Management
Food Producer
Retail
Café
Farm Shop
Road Haulage
Accommodation
Dog Walking
Freight Transport
Agricultural
Farriery
Building
Hairdressing
Equestrian
Beauty
Tree Surgery
Flooring



From mountain to sea

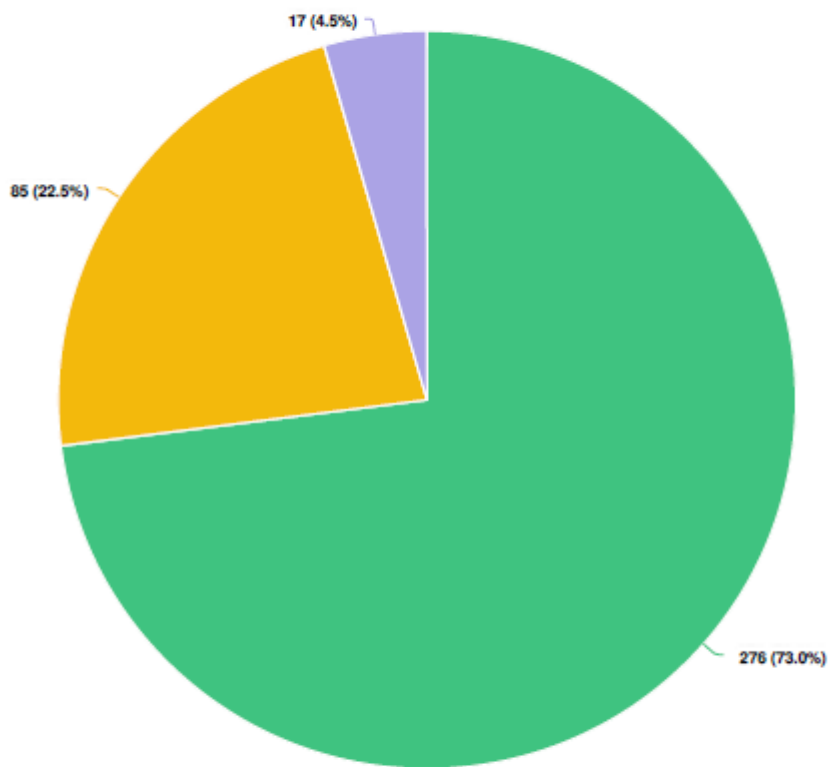
Q4 | If an organisation or community group please state name.

Howe of the Mearns Heritage Trust
Park Bridge Action Group
Mearns Community Council
Benholm & Johnshaven Community Council
Crathes, Drumoak & Durriss Community Council
Reconnect King Edward
Cycling UK
Durriss & Drumoak Community Group
Drumoak Scouts



From mountain to sea

Q5 | If a bridge had to be restricted to cars/small vans or pedestrians only to extend its life, would you support this?



Question options

● Yes ● No ● Don't know

*Optional question (378 response(s), 8 skipped)
Question type: Dropdown Question*



From mountain to sea

Q6 If you answered No to the previous question, would you like to give a reason for this?

There were 99 comments received here from all respondents, not just those who chose 'No'.

Here are some of the comments received:

Bridges were positioned for a purpose. They need replaced or repaired to meet original function.
If the Victorians managed to build all these bridges, surely modern society can manage to maintain, replace and develop a little further rather than to go backwards?
There appears to be no option for a bridge which has been already removed.
Should be fully capable of carrying vehicles.
Rural bridges are important for agricultural and heavy goods vehicles providing transport for crops, livestock and supplies.
Aberdeenshire Council needs to maintain our roads and bridges. The economy depends on good roads and bridges.
Unless the use of the bridge has diminished and the trend is likely to be maintained would I agree with the proposal.
If it is a road bridge it should always be open to vehicles.
Bridges are essential to rural life and should not be closed to all traffic. Proper maintenance is what is required to keep bridges open.
It is the councils obligation to fix the infrastructure, spend resources wisely instead of supporting campaigns outwith the region.
Bridges are in place to enable access. Restrictions in use of a bridge is a restriction of access. Often leading to extended journeys.
Rural bridges are key for connectivity in the community and the closure of bridges is isolating areas that are already remote. Bridges should be maintained such that they can remain in service for the community.



From mountain to sea

Q7 Please rank the following elements in order of the weighting you feel should be given when assessing bridge prioritisation - Rank by most (1) to least (5)

OPTIONS	AVG. RANK
Importance of Road (Network Criticality)	2.00
Diversion Mileage	2.51
Bridge Condition (Bridge Alert Status)	2.88
Historic Assets/Bridge Size	3.67
Flooding (Climate/Environmental Change)	3.83

Optional question (372 response(s), 14 skipped)
Question type: Ranking Question



From mountain to sea

Q8 Have you been directly affected by bridge closures/restrictions? If yes, please explain the impact this has had on your day to day circumstances?

There were a large volume of comments for some areas, we have added some here for each area.

K & M
Very lengthy diversions and poor access to properties, poorly detailed diversions and not indicated until you get there thus increasing the mileage and inconvenience.
Additional traffic through our village due to closure of bridges. Our ability to access other areas of The Mearns for shopping, recreation and visiting friends adding mileage.
Yes, access to work, journey increased, safety compromised. Don't understand how the council expects people to use flyovers when the length of the journey needed to access the few there are in the area is increased unreasonably which also increases potential hazards. Not reasonably practicable in any way and more so in these environmentally sensitive days, never mind covid restrictions!
Yes, routes have had to be changed to get to GP surgery, as two main Bridges used have been affected, one demolished and a second restricted by traffic lights as now single traffic.
Negative impact on communities of rerouting vehicles, increased traffic through Fordoun and Drumlithie and associated speeding. Increased fuel costs plus environmental costs of longer journey. Reduced productivity with time lost. Increased personal risk using more dangerous junctions on A90.
Longer to get home and having to use other minor roads where road users are very inconsiderate. These roads are in a poor state but we have no option but to use them.
Yes. Park Bridge closing has changed my school run from 5mins to 20mins!!! My kids cannot easily visit their friends and we cannot easily access services in Drumoak. We have been cut off from our community and our friends.
Yes, my daily journey to work has increased from 6 miles to 19 miles. It has also impacted clubs, activities and the social interaction my children are able to have. The environmental cost of many people increasing their daily mileage should also be a factor to consider.
Having children at the local primary school, I have been affected greatly. The primary school is a small rural school and relies heavily on its bond with neighbouring Drumoak Primary school and its facilities. This link has severely affected the bond among the young people of both areas.



From mountain to sea

Marr
Yes extra commute distance daily to work totalling extra 20 miles daily.
They add an intolerable length to the journey making it nearly unfeasible to travel.

Garioch
Diversion therefore added mileage in getting to work. Increased cost and CO2 emissions.
I was fortunate the detour was only a couple of miles.

Formartine
Extra mileage. Longer commute. Inconvenience.
Loss of Millcroft bridge in 2019 severely affected access to our property. We now have access via a kilometre long muddy track with no passing places. The replacement of this bridge was described as a priority on the official report but still no action. A rudimentary crossing could be reinstated for around £15000.
Yes - we now have an extremely long diversion to get to Fraserburgh as the Litterty bridge has not been mended.
The bridge closure on my road (Mill of Plaidy) has made the road a dead end at one end, and the main A947 at the other end, making it impossible for daily exercise to be achieved without having to leave the house via car. This has had an impact on my physical health, and due to the previous and current lockdowns, has also had an impact on my mental health. I do not always have access to a car, and with literally no other access to a walkway (other than the main road, which due to high traffic at high speeds is too unsafe to walk along) there is nowhere else to go. It's very disappointing as the countryside walking options were one of the main reasons we relocated and bought our home here in July 2019. Another impact is, cars, vans, and even artic lorries have continued to travel down this road, until they reach the bridge which means they then have to reverse back up the road - I've witnessed 2 artic lorries doing this - which is ridiculously unsafe as they have to back right up onto the main A947 to get out, also - ripping up each verge along our road at the same time. Other bridges closures have caused a lot of inconvenience also. I have family in the Fortie & Longmanhill areas so having to take lengthy detours to visit them was/ will be a great inconvenience when out of lockdown.
Bridges near my home have been closed for some time after flooding washed them away/caused damage. There have been some diversions which have not been adequately signed, and some are inconvenient. Most bridges are now fixed, but there is one still out which affects local traffic.
Our only access is a muddy kilometre long track across farmland with no passing places.



From mountain to sea

Banff & Buchan

A number of local bridges have been closed 18 months now, the road network I have used all my life is now fragmented and difficult to navigate.

Yes. Having the bridges at King Edward gone, getting to Fraserburgh has been lengthy. Any deliveries coming from that direction have been affected. Ambulance services have been impeded too.

I live within a few miles of three bridges that are either restricted, closed or demolished in the past five years. Who would have thought the Victorian's were more capable than today's society.

There's only one bridge open in King Edward.

Yes. My business has been affected by the loss of the King Edward Bridges. It has potentially increased operating costs by 10% with only one access route with a diversion increase of 15 miles. This is a total of 30 miles each day which is having a damaging effect on the business.

Yes - all the closed bridges around the King Edward area since September 2019 have affected me on almost a daily basis. Diversions are long and fuel costs increased, Ambulances have become lost trying to access properties local to me in emergencies. Deliveries are delayed or cancelled.

Buchan

Yes, damaged bridges near Kind Edwards have impacted my day to day commute to go to see and ride my horse. My commute is now 10 miles longer than it was before the floods in September 2019.

Yes, slight delays.

Yes. Not best example, as forms A90, but bridge over River Ugie on North Road towards St Fergus is prime example of bridge long past its use by date. Flooding in bad weather due to poor design/repairs leads to constant repairs and closure. It simply cannot cope with being bridge for main artery route north. The Deveron bridge between Banff and Macduff is another. That is a main route for HGVs, probably due to lack of speed cameras on A98 as opposed to A96, but again the design is not great and volumes of traffic now are huge. One closure causes significant detours.

Optional question (323 response(s), 63 skipped)

Question type: Essay Question



From mountain to sea

Q9 Do you have any other comments we should bear in mind as we develop a bridge prioritisation programme?

As with Q8, there were a large volume of comments for some areas, we have added some here for each area.

K & M
Bridges are vital infrastructure and essential for business and social needs, far too many woke Councillors not concentrating on the basics of getting infrastructure repaired, maintained and improving Aberdeenshire.
With the bridge closure you have split Durris and Drumoak communities.
You need to look at how closure or restrictions on bridges affect economic development. Business will not be attracted to an area where access (staff, customer, third party) is limited.
Bridges that have already been removed should have priority for rebuilding.
I think bridges are built for a reason.. to get from a to b at the safest most direct route ..they would not have been built if not needed therefore upkeep of them is important.. especially when rural area are becoming more popular and country roads busied and more damaged due to heavier traffic.
Gas terminal development permitted on basis of traffic using abbeyton bridge, traffic now travelling through Fordoun. Increased risk of damage to bridges at drumlithie, Fordoun and Powburn as a result of failing to fix Abbeyton when council has had knowledge of maintenance requirements for over 60 years!
The impact of climate change, including increased rainfall and subsequent erosion will undoubtedly reveal plenty of weaknesses in the current road network. The current siting of bridges may no longer be suitable and better locations may be available Rural networks should be reviewed in view of the ongoing trend in the amalgamation o of farms and the reduction of agricultural workers. Many of the extensions to public roads in the last 70 years may no longer be justified - and with them their associated bridges.
I'm sure alternatives have been looked at such as utilising Army Engineering or pre-fabricated bridges to standardise and save costs while also beig safe and functional?
Emergency services need to have priority of getting to calls quicker - especially in rural areas where waiting times are long anyway. Closing these bridges does not help this situation. A weight or width limit for the Fordoun rail bridge could not only preserve the bridge but be a cost saving on an expensive and not required traffic light system. If Abbeyton Road Bridge was rebuilt and open!
Please take into consideration the industry in the area and the vehicular traffic that serves it as this places a big strain on the local roads and bridges. Some of these industries are using large transportation as they are moving very heavy goods. Because of the loss of a bridge serving these industries in my area, they are now using the road through the village which is unsafe and not ideal.
The consequences of bridge closures or restrictions on local communities needs to be considered, not



From mountain to sea

just whether the roads join urban hubs or the bridges are of historic interest. Many rural communities rely on roads with no pavements for active travel, and increased traffic on these roads poses a risk to life, as well as discouraging people from taking up active travel. If a diversion or restriction would lead to traffic having to pass through a settlement, this should be taken into account and increase the bridge priority. Smaller, rural settlements are less likely to have safe active travel links with nearby hubs, and any increase in vehicular traffic will be a detriment to those settlements and the people who live in them.

Marr

Motorists shall be advised to take a route that makes sense and is not simply the shortest distance

Shutting bridges cuts off communities!!

The amount of historical bridges in Aberdeenshire make this programme no mean feat, with flooding and budget constraints i wish you well & remember you'll never please everyone- but good luck

Garioch

Whilst a lot of attention has been drawn to the issue of Park Bridge, it seems that the reasons behind its closure are based on sound engineering judgement. On a wider view, it is undoubtedly a difficult balancing act to allocate spending over so many assets, each undoubtedly deemed essential by their local community. Trust in the professionalism, knowledge, experience and judgement of Council officials is essential. I support the proposals, as they appear to be designed to protect Aberdeenshire's Bridges using a well reasoned system based on fair reasons, hopefully eliminating political or other pressures.

Very easy to close bridges but this can make it very difficult for those living in the country which can entail large mileage on possibly a daily basis via what become permanent diversions

there is no point spending money on repairs if flooding etc is likely to be an ongoing issue.

Formartine

Policy and procedure seems that it will always be biased towards bridges that serve towns and villages rather than rural communities and businesses. Prioritisation for the replacement/repair of bridges leading to complete road closure need higher priority.

PLEASE DONT WAIT UNTIL WE ARE IN URGENT NEED FOR A FIRE ENGINE OR AMBULANCE.
NONE OF US ARE GETTING ANY YOUNGER!!!

I appreciate the bridge closest to me will probably & unfortunately be the last bridge to be repaired, however I am now expecting a baby in June, so I'm really worried about the lack of exercise options we have. I wondered if a temporary footbridge would be an option for this bridge in particular?

We had a community meeting with MP and Councillors in January 2020 but still our community is neglected.



From mountain to sea

Banff & Buchan
There needs to be an ongoing maintenance programme. How did so many bridges land up in such a state? Surely if they were being properly maintained, they would not all have collapsed. The council should be proactive not reactive.
The majority of crossings are little more than culverts and should be treated as such, historic considerations should be limited to major structures.
People's lives depend on having a working bridge. King Edward's whole community are in real need. Even the school bus can't reach pupils. The lack of bridges has divided the community in half.
Put more effort into a management and financial structure that allows society to develop and improve rather than working out how to avoid the provision of all existing routes and access.
Understanding the local economy and its dependence on the road network as well as local residents. The King Edward area is predominately farming and all industries connected with that. Increased costs affect the ability to compete within the industry UK wide.
Consult with the public more before making your decisions

Buchan
The national transport strategy hierarchy for sustainable transport should be used in prioritisation
As you state yourself bridges built 100-200 years ago were designed for horse and cart not 100s or 1000s of vehicles a day. Add in the HGVs and larger vehicles the bridges, and roads, are at breaking point. The Council along with Scottish Government for the trunk roads need to have a proper plan in place to have new bridges in place at the network critical bridges. With a plan for the smaller bridges that maintains access for all but equally HGVs etc should be restricted and alternative routes/solutions found albeit enforcing it is very difficult, sat navs take no account of rules!
Putting dead end road signs at the last crossroad before the bridges instead of planning to rebuild the bridges IS NOT a solution. It is impacting the life of everyone in that area. The damaged bridges are not even indicated from the main roads A98 and A947. Delivery drivers and ambulances can't get easily to their destination because nothing is indicated!



From mountain to sea

Public Road Network - Bridges Work Bank Prioritisation Policy (Draft)

April 2021



Contents

1	Introduction	4
2	Policy Statement	4
3	Scope	4
4	Implementation and compliance	5

Policy Status	Draft (as of 13 April 2021)
Responsible Officer	D Macpherson, Bridges and Structures Manager, Roads, Landscape and Waste
Policy Sponsor	P. McKay, Head of Service, Roads, Landscape and Waste
Authorised by	Draft only
Approval Date	Draft only
Review Date	Draft only

Revision Date	Previous revision date	Summary of changes
-	-	-

1 Introduction

- 1.1 Roads are amongst the most influential agents of society. They are the pathways of industry, social cohesion and national opportunity, rendering economic growth practicable. Roads connect the city and town with the village and farm, linking areas of production to commercial markets. Communities, no matter their size, are reliant on the road network to sustain their connectivity.
- 1.2 **Aberdeenshire Council is responsible for 3,500 miles of public road, carried by 1,308 bridges, which equates to a bridge approximately every 2.7 miles of road.** This reflects the highly dispersed and economically active communities that we have across our area.
- 1.3 Recent years have seen an increase in the number of bridge closures and restrictions due to undermining from excessive water flow in channels (scour) and accelerating deterioration in structural condition, often as a consequence of the age of the structure. This policy has been developed to clearly demonstrate how remedial works required on bridges will be prioritised and available funding will be allocated. In doing so, the bridges at risk will be highlighted allowing mitigation to be considered.

2 Policy Statement

Aberdeenshire Council recognises the age profile of its bridge stock and the necessity to prioritise an identified bridges work bank in the pursuit of supporting an efficient and effective public road network.

We will:

- **Provide a clear method for the prioritisation and scheduling of the work bank, to be referenced in a specific procedure.**
 - **Apply this procedure across Aberdeenshire based on need and allocated budgets.**
 - **Review the “Prioritised List” annually and report to the six Area Committees on an annual identified works programme.**
 - **Review the Policy every two years and update as appropriate.**
 - **Promote explanation of Policy and Procedure to communities when circumstances require.**
-

3 Scope

This policy shall apply to:

All bridges carrying public roads for which Aberdeenshire Council is the Bridge Authority.

4 Implementation and Compliance

Aberdeenshire Council's Bridges Work Bank Prioritisation Procedure contains detailed direction on the establishment of a prioritised work bank list. The Bridges and Structures Manager will be responsible for updating this Procedure to reflect changes in legislation and any other improvements or amendments considered to be needed.

Ends



From mountain to sea

Bridges Work Bank

Prioritisation Procedure

Prepared By:

Donald Macpherson, Bridges and Structures Manager

Version: 13 April 2021 (DRAFT)

1 Background

- 1.1 This procedure seeks to formalise the method for the prioritisation and sequencing of apital funded maintenance, repair, strengthening and renewal for all road bridges under Aberdeenshire Council's ownership.
- 1.2 This prioritisation will allow the most effective use of available Capital funding with a view to supporting the resilience of the road network.

2 Discussion

- 2.1 Aberdeenshire Council covers a significant area with diverse communities and economies, reflected in each of the 6 local Council Areas. Significant industries include fishing, agriculture, tourism, sustainable energy and oil and gas. Communities, no matter their size, are reliant on the road network to sustain their connectivity. On a local level the fair provision of services, social interaction and support, together with swift access for emergency vehicles are high priority.
- 2.2 **There are currently 1,308 Bridges on 3,500 miles of public road. It is estimated that 900 bridges are over 100 years old, including 520 bridges which are over 200 years old. They were not designed for the level of traffic they currently carry resulting in many restrictions, particularly for heavier vehicles (abnormal loads).**
- 2.3 Key long term climate changes, as detailed by Adaptation Scotland, include intense, heavy rainfall events in both winter and summer, and rising sea levels. The first of these can result in scour, migration of watercourses and bridge collapses. Recent years have seen flooding on an Aberdeenshire wide level,



From mountain to sea

for example Storm Frank where over 300 bridges were damaged in December 2015, and on a more localised level in September 2019 where 7 bridges were destroyed. There is little warning when these events will occur, and the locations cannot yet be accurately predicted. The second key change, rising sea levels, has implications for all bridges and infrastructure in coastal zones.

- 2.4 Budget constraints have resulted in the delay of bridge maintenance and replacement/strengthening works. This combined with ongoing deterioration in the bridge stock over the past 25 years has led to a significant backlog of work. Prioritisation is required to focus spending on maintaining the most resilient network possible.

3 Road Network Criticality

- 3.1 Our 3,500 miles of public roads are classified as A, B, C or U within a system set up in 1920. Whilst this gives a national view of the overall road network, it lacks detail on the realistic current use of roads at a local level.
- 3.2 A system of 'Network Criticality' will be used for bridge prioritisation. It will use the established national classification, but with adjustment for several factors to determine Vital, Important and Standard network categories. These categories should reflect the current uses of the network, and will be established in accordance with the flowchart given in **Appendix A**.
- 3.3 The Network Criticality uses travel links between towns and settlements (hubs) to provide this finer detail together with consideration of routes which are the only access to properties and businesses.
- 3.4 The criteria for hubs is defined as: -
- Principal and Other Town Centres in accordance with the Aberdeenshire Local Development Plan 2017.
 - Urban areas with settlements having a population of greater than 3000 people (in accordance with Mid 2016 population estimates for settlements. (<https://www2.gov.scot/urbanrural>))
- 3.5 Another element of the road network to be considered is single access roads. Their Network Criticality will be reviewed in accordance with the flowchart in **Appendix A**, by considering the number of dwelling houses (i.e. a permanent residence determined from the electoral register) and or businesses affected (i.e. a business paying business rates).



From mountain to sea

- 3.6 Should a road or bridge be restricted for more than three months, the Network Criticality of the surrounding road network will be reviewed and, if necessary, revised.

4 Bridge Alert Status

- 4.1 The Bridge Alert Status for each bridge considers:-

- load carrying capacity
- structural condition
- scour risk and existing scour damage

The flow charts for determining Bridge Alert Status are given in **Appendix B**.

- 4.2 The output from the flowcharts in **Appendix B** gives the Bridge Alert Status which signifies estimated timescales for closure/weight restriction to motorised traffic on the grounds of public safety, if no works are carried out. This is shown in Table 1.

Table 1

Bridge Alert Status	Possibility of restriction or closure if no work is carried out
Black	Already closed
Red 1	Within 1 year
Red 2	Within 2 years
Red 3	Within 5 years
Amber	Within 10 years
Yellow	Within 20 years
Green	Over 20 years

- 4.3 The bridge load carrying capacity (assessment) defines the capability of a bridge to withstand a maximum prescribed vehicle weight. This is affected by the structural form, original design and construction, together with subsequent deterioration, and takes the form of detailed structural calculations.
- 4.4 A bridge passing it's assessment will remain open to traffic up to the standard loading of 40 tonnes. If a bridge does not pass the assessment it will be considered at a reduced load carrying capacity level and may be subject to a weight restriction or closure as appropriate.



From mountain to sea

- 4.5 Scour risk is a measure of the structure's susceptibility to undermining or damage from water. This can be due to flood events and/or erosion from rivers, burns or other water sources. The scour risk for each bridge is assessed and reviewed during inspections.
- 4.6 Bridge condition is monitored through regular inspections and when any significant changes are observed, a review of the Bridge Alert Status and Assessment for that structure will be triggered. Inspections also give an indication of the rate of deterioration with a view to predicting future structural behaviour.
- 4.7 All abnormal loads must seek approval from Aberdeenshire Council for their proposed route before travelling. These loads include mobile cranes, quarry and timber plant, oil and gas fabrications and turbines and generators for power. There are already severe restrictions on many routes for this type of movement.

5 Resilience

- 5.1 The effect of diversions on prioritisation was investigated and found to be difficult to equitably assess over such a wide and diverse area. Diversion lengths vary from 1 to over 140 miles, with routes on all classifications of public road.
- 5.2 The standard normally used for diversions ensures traffic is diverted onto a road the same or better standard, in more rural areas this is not always possible, for C and U class routes this can mean increasing traffic on single track roads which may not have sufficient capacity.
- 5.3 Where there are a many restrictions or closures in a local area this may have a funneling effect in concentrating traffic on a limited number of routes. This also has significant implications for emergency services navigation and for community wellbeing.
- 5.4 A resilience factor is proposed for areas which already have significant restrictions and where further restrictions/closure would have a major impact on the local community and/or local businesses.

The Resilience Factor (RF) will be:-

Normal – 1
Critical – 1.3



From mountain to sea

5.5 Currently the areas at critical resilience are:-

- King Edward due to the loss of 6 bridges.
- The area of Ward 19 lying to the North West of the A90 due to the number of weight, width and height restrictions and closures.

6 Further Considerations

6.1 Aberdeenshire has a rich social and economic history which is reflected in its bridges with 10 Category A, 43 Category B and 56 Category C listed structures. We have an additional statutory duty to protect and maintain them in accordance with listed building legislation.

6.2 To reflect the implications of the complexity of works, and the licenses and permissions required for longer bridges and listed structures, bridges have been subdivided into 3 Size/Heritage tiers:-

- Tier 1 - Large bridges with deck length over 20 metres for single span and over 30 metres for multi span, and all Category A listed heritage structures. Total number 54.
- Tier 2 - Medium sized bridges with deck length over 8 metres up to 20metres for single span and over 12 metres up to 30metres for multi span and all Category B and C listed heritage structures. Total number 147.
- Tier 3 - Small bridges with deck lengths up to 8 metres for single span and up to 12 metres for multi-span. Total number 1107.

7 Prioritisation

7.1 Each Bridge in Aberdeenshire will be given an 'Initial Priority Score'. This score will be out of a total of 225 and will be determined from factors relating to Network Criticality and Bridge Alert Status together with Size/Heritage Tier.

7.2 The ratings for these factors are given in Tables 2 to 5 below.

Table 2

Network Criticality (NC)	NH Rating
Vital	3
Important	2
Standard	1



From mountain to sea

Table 3

Bridge Alert Status (BAS)	BAS rating
Black	5
Red 1	5
Red 2	4
Red 3	3
Amber	2
Yellow	1
Green	0

Table 4

Resilience Factor (RF)	RF Rating
Critical	1.3
Normal	1

Table 5

Size / Heritage (SH)	SH Rating
Tier 1	3
Tier 2	2
Tier 3	1

Initial Priority Score = $10 \times (\text{BAS} \times \text{NC} \times \text{RF} + \text{SH})$

Example 1

A Tier 1 bridge with alert status Red 3 on an Important Route with normal resilience
 $= 10 \times (3 \times 2 \times 1 + 3) = 90$

Example 2

A Tier 3 bridge with alert status Red 1 on a Vital Route with critical resilience
 $= 10 \times (5 \times 3 \times 1.3 + 1) = 205$

Example 3

A Tier 2 bridge with alert status Amber on a Standard Route with normal resilience
 $= 10 \times (2 \times 1 \times 1.0 + 2) = 40$



From mountain to sea

- 7.3 Where there is an immediate risk to the public which cannot be mitigated using closure or restriction (e.g., where demolition is required), then funding will be provided as top priority to carry out the required safety works. The affected bridge will be given a default Priority Score of 225.

8 Allocation of funding

- 8.1 This method of prioritisation will be used to recommend a programme of Capital bridge works for the current 10-year Investment Control Period i.e., 2021 to 2030, corresponding to the funding allocated in the Council's budget setting process. The prioritised list will be updated annually in accordance with changes to network criticality and condition alert status and any other relevant changes.

- 8.2 To account for actions which are more relevant in the short term, a set proportion of the annual budget will be retained for time sensitive concerns. This will include:-

- Critical scour repairs (washout).
- Bridge works where an event has had a catastrophic effect on a local area.
- Minor repairs where delay would lead to rapid failure.
- Investigations and assessments on larger, complex and/or unusual structures to fully understand structural actions and implications.
- Works to preserve listed bridges at risk.

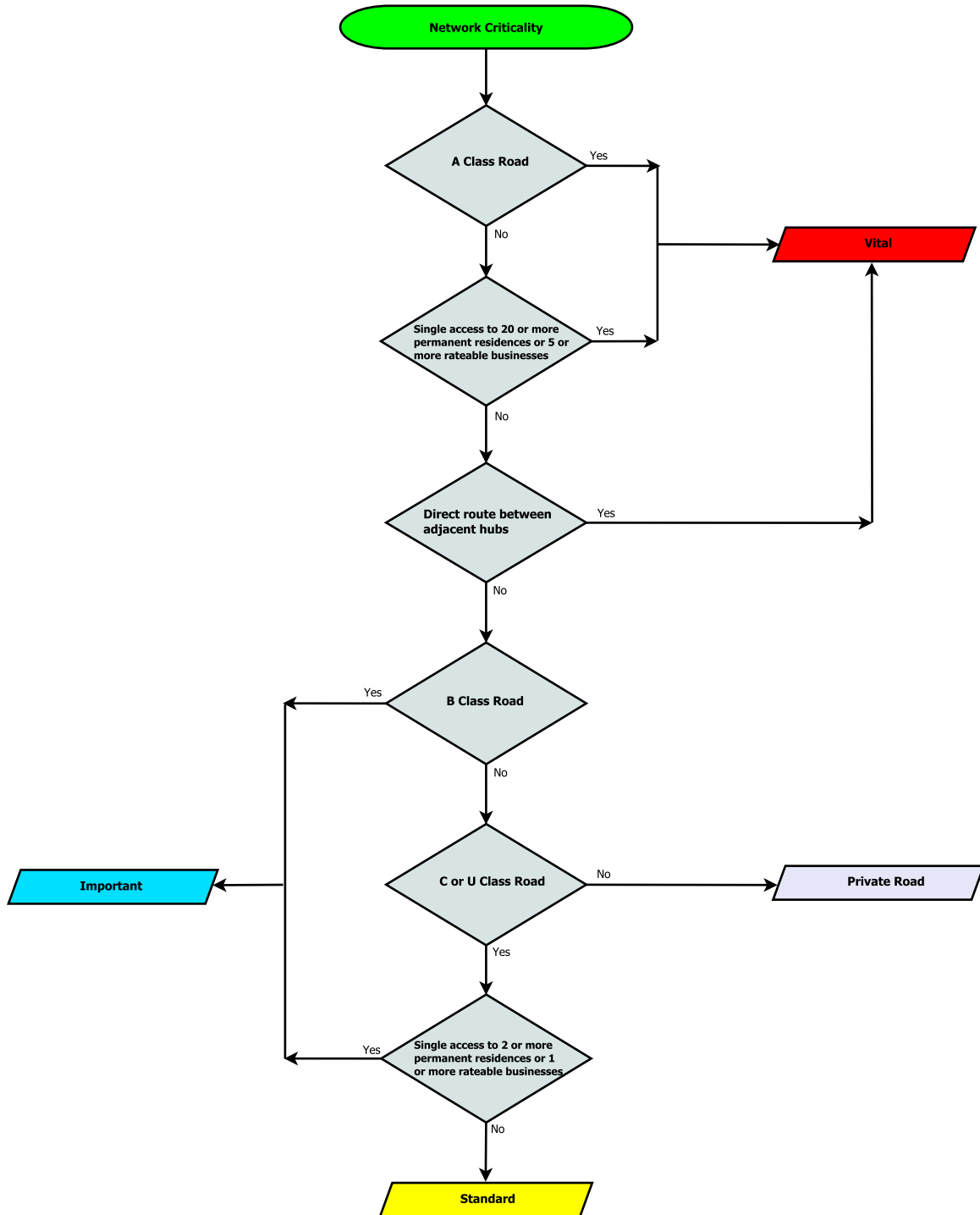
9 Looking Forward

- 9.1 An annual review of this procedure will be undertaken to:-

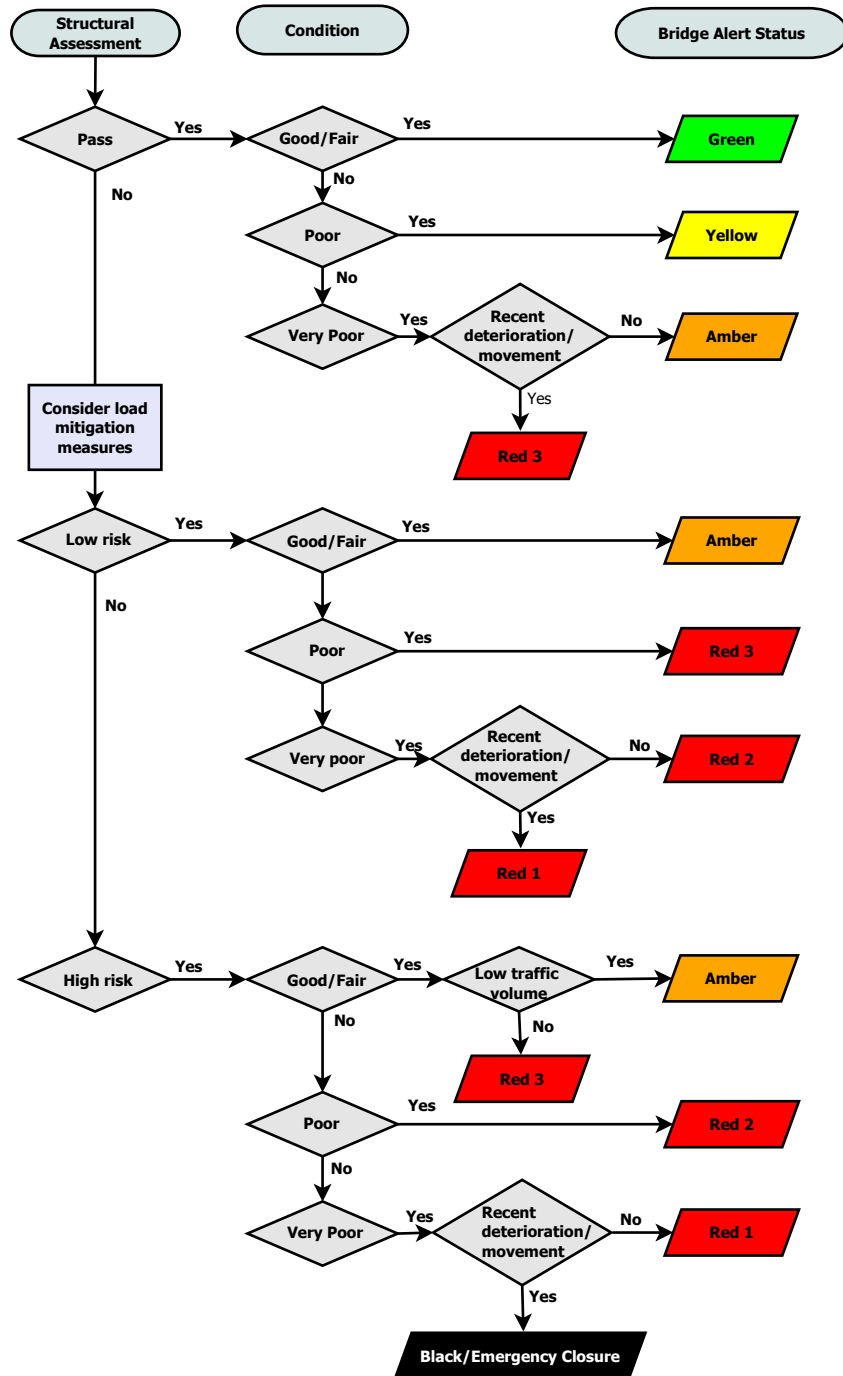
- Consider feedback from users and the wider community.
- Ensure the scoring is appropriate for the factors under consideration.
- Validate long term outcomes.
- Allow for changes in legislation, road use and Aberdeenshire Council's Priorities.

Ends

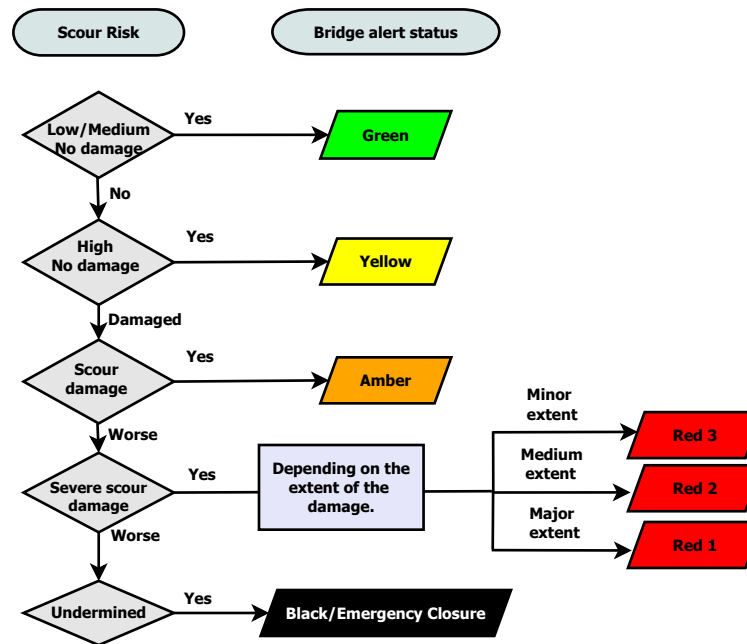
Draft Appendix A (13th April 2021)
Network Criticality Flowchart



Flowchart 1 - Assessment Capacity and Condition



Flowchart 2 - Scour Risk



Notes

- a) Each flowchart should be followed to determine the alert status in respect of the issues considered.
- b) Following an event e.g. RTA or spate, all affected bridges are to be reviewed.
- c) The overall alert status will be the highest of the 2 flowcharts.