



# Shetland Islands Council

**Environment and Transport Committee**

**12 April 2016**

## **Carriageway Condition of Shetland's Roads**

**RD-03-16-F**

**Executive Manager - Roads**

**Roads  
Infrastructure Services Department**

### **1.0 Summary**

- 1.1 The purpose of this report is to update the Committee on the current condition of Shetland's roads.

### **2.0 Decisions Required**

- 2.1 That the Environment and Transport Committee NOTE the improvement in the overall Road Condition Indicator (RCI) figure shown in the 2014-16 results.

### **3.0 Detail**

- 3.1 This report is for the Committee to note and comment on the performance indicators relevant to the carriageway condition of Shetland's roads. In particular that:
- the overall Road Condition Indicator (RCI) has improved from the 41.9% reported last year to its current figure of 38.9%;
  - the long term trend over 10 years shows a 4% deterioration in the condition of Shetland's carriageways; and
  - Shetland Islands Council's expenditure per kilometre on carriageway maintenance is the 5<sup>th</sup> lowest of the Scottish local authorities.
- 3.2 Road Condition Indicator  
Audit Scotland's statutory performance indicator (SPI) for road carriageways is 'the percentage of the road network that should be considered for maintenance treatment'. The figure reported for the SPI is a Road Condition Indicator (RCI) produced from machine-based measurements taken during a Scotland wide survey of the road network. The parameters measured are:

- surface texture, helps to provide skidding resistance and indicates surface wear;
- cracking, indicates deterioration of the surface course or more deep seated structural defects;
- rutting, can affect vehicle handling or cause water to pond;
- longitudinal profile, the main factor controlling ride quality and hence user perception and is also a good indication of defects in the road structure.

The former two parameters are usually treated with surface dressing and the latter require a minimum of overlay resurfacing or more expensive reconstruction if the damage has reached the base layers.

### 3.3 Survey Frequency

The required survey coverage of the road network is detailed in the SPI. The “A Class” roads are surveyed in both directions every two years, that is one direction one year and the opposite direction the following year. The “B and C Class” roads are surveyed in both directions over a four year period, that is 50% per year in one direction. The unclassified roads have a 10% sample surveyed on an annual basis selected at random by the survey contractor.

While surveys are carried out on an annual basis, the RCI is calculated over two years to minimise the effect of sampling errors on the results.

### 3.4 Results

The results are categorised into Green, Amber and Red condition bands where:

**Green** indicates the carriageway is generally in a good state of repair;

**Amber** indicates the carriageway has some deterioration that should be investigated to determine the optimum time for planned maintenance treatment; and

**Red** indicates the carriageway has lengths in poor overall condition that are likely to require planned maintenance soon.

The RCI figure includes both the Amber and Red categories so an increase in the figure indicates deterioration in the condition of the road. Table 1 and Graph 1 show how the RCI for both Shetland’s and Scotland’s roads have varied since 2004. The graphs show that although there have been crests and troughs over the years the general trend is a deterioration in the condition of each of our road classifications.

Table 1: Road Condition Indicators (RCI) for Shetland and Scotland

|         | <b>A Class<br/>Shetland</b> | A Class<br>Scotland | <b>B Class<br/>Shetland</b> | B Class<br>Scotland | <b>C Class<br/>Shetland</b> | C Class<br>Scotland | <b>Unclass<br/>Shetland</b> | Unclass<br>Scotland | <b>All<br/>Shetland</b> | All<br>Scotland |
|---------|-----------------------------|---------------------|-----------------------------|---------------------|-----------------------------|---------------------|-----------------------------|---------------------|-------------------------|-----------------|
| 2004-06 | <b>18.3</b>                 | 27.4                | <b>33.1</b>                 | 32.2                | <b>34.5</b>                 | 31.0                | <b>48.3</b>                 | 41.3                | <b>36.9</b>             | 35.9            |
| 2005-07 | <b>21.0</b>                 | 28.6                | <b>34.5</b>                 | 33.4                | <b>35.8</b>                 | 31.9                | <b>48.1</b>                 | 42.8                | <b>37.8</b>             | 37.2            |
| 2006-08 | <b>19.9</b>                 | 29.2                | <b>33.1</b>                 | 34.2                | <b>35.7</b>                 | 33.0                | <b>54.6</b>                 | 42.5                | <b>40.2</b>             | 37.4            |
| 2007-09 | <b>16.3</b>                 | 28.5                | <b>31.5</b>                 | 33.6                | <b>32.4</b>                 | 33.1                | <b>54.1</b>                 | 36.6                | <b>38.3</b>             | 34.2            |
| 2008-10 | <b>21.8</b>                 | 29.6                | <b>33.9</b>                 | 34.9                | <b>35.9</b>                 | 33.2                | <b>51.2</b>                 | 39.4                | <b>39.3</b>             | 36.1            |
| 2009-11 | <b>24.7</b>                 | 30.5                | <b>38.2</b>                 | 35.8                | <b>38.8</b>                 | 35.0                | <b>50.3</b>                 | 41.9                | <b>40.7</b>             | 37.9            |
| 2010-12 | <b>26.4</b>                 | 30.5                | <b>41.8</b>                 | 36.3                | <b>40.7</b>                 | 36.0                | <b>53.8</b>                 | 38.3                | <b>43.7</b>             | 36.4            |
| 2011-13 | <b>25.2</b>                 | 29.4                | <b>39.6</b>                 | 35.0                | <b>39.9</b>                 | 34.8                | <b>53.1</b>                 | 39.0                | <b>42.5</b>             | 36.2            |
| 2012-14 | <b>21.1</b>                 | 28.7                | <b>38.0</b>                 | 35.2                | <b>38.2</b>                 | 36.6                | <b>54.0</b>                 | 39.4                | <b>41.4</b>             | 36.7            |
| 2013-15 | <b>21.2</b>                 | 29.0                | <b>39.3</b>                 | 36.1                | <b>38.1</b>                 | 37.3                | <b>54.6</b>                 | 39.3                | <b>41.9</b>             | 37.0            |
| 2014-16 | <b>20.7</b>                 | 29.0                | <b>34.4</b>                 | 34.8                | <b>35.0</b>                 | 34.7                | <b>51.1</b>                 | 40.2                | <b>38.9</b>             | 36.7            |

#### 3.4.1 “A class” Roads

Shetland’s “A class” roads have been and still are in a better condition than the average for “A class” roads in Scotland. The gap between them had reduced from a high of 12.2% in 2007-09 to 4.1% in 2010-12. However, this closing of the figures has slowed then reversed with the latest survey showing that the difference is now 8.3%. This is a slight increase on last year’s gap of 7.8% and is solely due to the 0.5% improvement in the condition of our “A-class” roads as the Scottish average has remained the same since last year. This may have occurred because we have been targeting treatment at lengths of “A class” road that the SCANNER survey has shown to be in an amber condition. The surface dressing of these lengths is a low cost treatment that improves the carriageways surface texture and seals any cracking to prevent the ingress of water. The result is improved skid resistance, the prevention of future frost damage and an improvement in the condition indicator from amber to green. This could be considered a “whole life cost” approach as it minimises the total maintenance costs over the lifetime of a road. It is preferable to a “worst first” approach where the stretches of road in the poorest condition are repaired first. The Audit Commission in their report titled “Going the Distance: Achieving Better Value for Money in Road Maintenance” state “focusing on the worst roads first may not be the best approach to managing with less funding” and “by considering the road over its whole life cycle, it is possible to select the best time to intervene in order to preserve the road in an economically viable way.” The relatively good condition of our “A class” carriageways means that we are now able to give more priority to the treatment of our unclassified roads.

#### 3.4.2 “B and C Class” Roads

While a number of these roads were improved in the 1970's and 80's the majority are still single track. In the region of 20% of these are founded on peat that generally has a low load bearing capacity. This can result in uneven road surfaces, differential settlement, edge deterioration, cracking and eventually disintegration of the bitmac surface. This has always been a problem but the rate of deterioration increased as the number of heavy goods vehicles accessing aquaculture sites and other developments increased. This is why Shetland's "B and C class" roads have over the years tended to be in a poorer condition than the Scottish average. The exception was in a period between 2007 and 2009 when the condition of the "B class" roads improved significantly. In the two years following this period there was a deterioration of approximately 9% in the condition of the "B and C class" roads. However, this has again improved recently and these two classes of road now have a condition figure on a par with the national average. This improvement is again likely due to these roads having been given greater priority over our unclassified roads.

#### 3.4.3 “Unclassified” Roads

The "unclassified" roads have historically been in a worse than average condition. They tend to be narrower than their "classified" equivalent and so are even more susceptible to edge damage due to HGV's or the larger agricultural vehicles now being used. From 2011 to 2014 the condition of Shetland's unclassified roads was approximately 15% worse than the Scottish average. This was a decline from a figure that was 12% worse in the preceding 4 years. It is likely that this continued decline was partly due to the classified roads being treated with more priority than was previously the case. However, last year their RCI showed a significant reduction to a figure only 10.9% worse than the national average. However, given that only 10% of the unclassified roads are surveyed each year it is too early to make any conclusions about the success or otherwise of our recently adopted practice of increasing the length of unclassified roads to be treated each year (see para 3.5 below). For example, it may be that the survey's random sample contains, for this year only, a high proportion of roads in the best condition.

#### 3.4.4 Entire Network

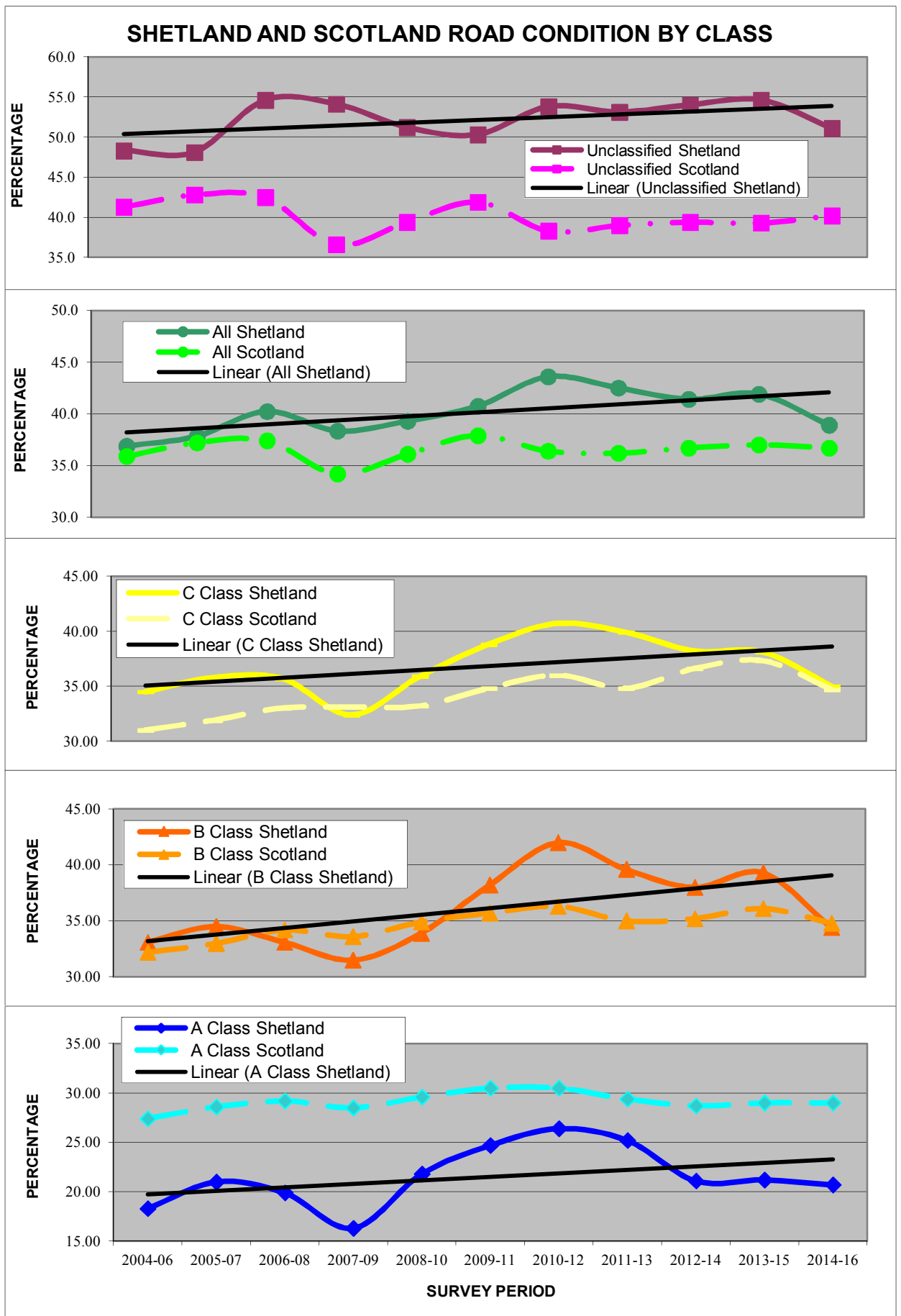
The "all" roads figure for the entire network is now 2.2% worse than the average, an improvement of 2.7% since last year. The graph shows that the Shetland figure began to diverge from the Scottish average figure in 2009-11 but is now closing again as our figure has slightly improved and the Scottish average has remained relatively steady. Prior to this the percentage of Shetland's carriageways that should be considered for treatment was approximately 3% greater than the national average largely due to the relatively poor condition of our single track unclassified

roads. The reduction in funding may have been a contributory factor in the increase from this 3% gap but the main reason for the long term decline since 2004 is likely to be that the majority of Shetland's "classified" roads were improved in a short period during the early years of the oil "boom." Many of these have shown and continue to show signs of deterioration after 30 years of use.

### 3.5 Analysis

The survey results show that between 2014 and 2015 there was an improvement of 3.0% in the overall condition of Shetland's roads from 41.9 to 38.9%. This is due to improvements across all road classes but most notably the 4.9% and 3.5% improvements in the "B class" and "unclassified" condition figures. The condition of our "A and C class" carriageways also improved during this period by 0.5% and 3.1% respectively. However, it is important to remember that the unclassified roads, which in terms of length make up of 44% of our network, are only surveyed once every 10 years. Therefore, it is important to consider the long term trend when evaluating progress. In the past 5 years there has been an improvement of 4.8 % in the overall RCI equating to a 1% fall per year in the length of road requiring maintenance treatment. This progress has been fairly steady with the exception of 2013-15 which showed a slight deterioration in condition. This was explained at the time by the SCANNER survey having to be done in March 2014 to facilitate our negotiations with TOTAL regarding the "extraordinary" damage done to Shetland's road network by the Laggan-Tormore Gas Plant traffic. The survey is usually done later in the year meaning that it would include a number of road lengths that have been treated during the course of that year's resurfacing or surface dressing programme. Therefore, the earlier survey, completed before we had undertaken any treatment works, is likely to have had a detrimental impact on the RCI figures. The figures from the following year's survey, done at a later date, would have benefited from the work done in the latter part of 2014. This is perhaps reflected in the 2014-16 results which as discussed above exceeds the 1% improvement that has been the norm. This would suggest that the 2014-2016 level of improvement will not be maintained and that an improvement of 1% per year is a more realistic expectation in the short term. In fact if we consider a longer term trend over a 10 year period then all our road classes have deteriorated since 2004. This is shown by the "linear" lines on the graphs of Shetland's RCI figures (see Graph 1 below). The RCI for each class has increased by 4% on average over this 10 year period meaning that in that time there has been a 4% increase in the lengths of road in need of maintenance treatment.

Graph 1: Comparison of Shetland and Scotland Road Condition by Class



### 3.6 Conclusion

In 2014 we realised and reported that there was a need to reconsider our priorities and give more weighting to the improvement of our unclassified roads. The conclusion reached was that this would result in a deterioration of the overall RCI because the unclassified roads are only surveyed once every 10 years and it would take a number of years for any improvement in them to register in the overall RCI figure. However, if we did not increase the proportion of unclassified roads to be treated they would continue to decline resulting in the failure of road surfaces and the need for more costly repairs. Based on the latest figures the initial indications are that the overall RCI is not suffering but, as stated above, the short term results may give a false indication. Therefore, it may be a number of years before we can determine that this new practice of treating a greater proportion of unclassified roads has been a success. It is to be hoped that an improvement in our “unclassified” roads, which make up 44% of our total road network, will arrest and may even in time reverse the long term decline in overall carriageway condition within Shetland.

### 3.7 Maintenance Backlog

The Society of Chief Officers of Transportation in Scotland (SCOTS) has analysed the SCANNER surveys and the carriageway maintenance budgets of local authorities to calculate a maintenance backlog figure. The inputs to the backlog calculation are:

- the survey data parameters;
- the treatment method for each defect type;
- the treatment costs supplied by each Council; and
- the carriageway lengths and widths supplied by each Council.

The resulting figure is the expenditure required to bring the entire road network of an authority to the acceptable or “Green” condition. The 2015 headline backlog figure to improve Shetland's carriageways to this acceptable condition is £53.8 million.

The backlog figure is generally calculated by SCOTS every two years. It was calculated last year so it will be 2017 when it is next done. The figures since 2009 are shown in the following table.

Table 2: Backlog Figures (Recalculated) for Shetland 2009-15

|             | BACKLOG<br>(£M) | VARIANCE<br>(£M) | VARIANCE<br>(%) | RCI<br>OVERALL | RCI<br>“A class” | RCI<br>CLASSIFIED | RCI<br>UNCLASSIFIED |
|-------------|-----------------|------------------|-----------------|----------------|------------------|-------------------|---------------------|
| <b>2009</b> | 27.3            |                  |                 | 36.6           | 16.3             | 26.0              | 54.1                |
| <b>2010</b> | 35.5            | 8.2              | 30.0            | 39.3           | 21.8             | 29.9              | 51.2                |
| <b>2011</b> | 45.7            | 10.2             | 28.7            | 40.7           | 24.7             | 33.2              | 50.3                |
| <b>2013</b> | 50.5            | 4.8              | 10.5            | 42.5           | 25.2             | 34.2              | 53.1                |
| <b>2015</b> | 53.8            | 3.3              | 6.5             | 41.9           | 21.2             | 32.0              | 54.6                |

There is a significant increase in the backlog of £10.2 million in the one year period between 2010 and 2011. The overall RCI only increases by 1.4% in this period but there was a significant increase in the lengths of “A class” roads that required maintenance. The cost per metre of resurfacing these wider two lane roads is higher than the same length of single track unclassified road which would partly explain the large increase in the backlog. In the 2011 to 2013 period the increase in the backlog slows to £4.8 million even though the overall RCI deteriorates at a slightly greater rate. This is explained by a significantly reduced rate of deterioration of the more expensive “A class” and classified roads. The backlog figure continued to increase in the 2013-15 period but only by £3.3 million. This is despite a reduction in the overall RCI of 0.6%. This can in part be explained by inflation but also by an increase in the length of the network that is in a red condition and needs more expensive treatment and a relative decrease in the amber condition that needs a less expensive treatment.

### 3.8 “Steady State” Figure

SCOTS developed the backlog concept further and arrived at a figure giving the annual budget required to maintain carriageways in a “steady state” so that they are neither improving nor deteriorating. The model “applies” treatments to ensure that the overall red and amber proportions after 10 years are similar to those at the start. The red RCI percentage is held at its current level by treating any amber RCI values that were about to deteriorate into red. The model also treats the worst of the network in red to represent maintenance that would be immediately necessary. Therefore, the steady state figure increases as the road condition deteriorates. In 2009 this figure for Shetland was £2.4 million per year. The actual spend on carriageway treatments in 2009/10 was £2.08 million or 87% of the steady state figure. The budget is £1.75 million for 2015/16 which equates to only 73% of the “steady state” figure from 2009. However, as the condition of Shetland’s carriageways has deteriorated the gap between the “steady state” and actual budgets has increased significantly. The “steady state” figure was calculated again last year at the request of a number of local authorities. The figure for Shetland now stands at £5.6 million. Therefore, the 2015/16 carriageway maintenance budgets totalled only 31% of the funding required to maintain our roads in their current condition. This substantial increase in the “steady state” figure is due to inflation and an increase in the unit cost of repairs as well as increased structural deterioration throughout the network.

### 3.9 Future Road Condition

In the current economic climate, there was a need to realign budgets with available resources. Recent reductions to carriageway maintenance budgets will have some detrimental

impact on the future condition of the road network. They were initially a relatively small proportion of the £316,000 gap that already existed between spending and the modelled cost of maintaining the network in its current condition. However, these small reductions accumulated and last financial year were £623,000 less than the 2009/10 “steady state” figure. The carriageway maintenance budgets have been increased by approximately £16,000 from their 2014/15 actual figure by reallocating funds from the winter maintenance budget. Milder winters have meant that this budget has been under spent in recent years and the reallocation partly addresses the reduction in working capacity brought about by construction inflation. However, the new “steady state” figure of £5.6 million for 2015 shows that the gap between the budget and the funding required to maintain carriageways in their current state has significantly increased. This will have an appreciable effect on Shetland’s roads, and on the statutory performance indicator, if it continues in the long term. It is vital that planned and preventative maintenance measures, such as surface dressing, are adequately funded in order to avoid much costlier reactive maintenance such as the repair of potholes or deeper failures of the road foundation.

#### 3.9.1 Structural Failures

However, these preventative measures cannot address the structural failure of our carriageways that results from poor “foundations” and heavy loading from larger vehicles. We have already stated “that the majority of Shetland’s classified” roads were improved in a short period during the early years of the oil “boom.” Many of these have shown and continue to show signs of deterioration after 30 years of use.” Due to the age of these roads a significant proportion of that deterioration is and will be structural. We have to bear this in mind and be prepared for an increase in the lengths of road that will have to be resurfaced or reconstructed. The “easy” gains to be made in carriageway condition by the inexpensive surface dressing of amber sections of carriageway will in time diminish. This would allow a redistribution of funding with the surface dressing budget being reduced in favour of the resurfacing budget. In turn this would, in the meantime, allow a slight increase in the structural treatment of failed sections thereby reducing the expected peak in structurally failed roads. However, given the higher unit rate of resurfacing and reconstruction this peak is likely to result in a worse RCI figure and an increased backlog.

#### 3.9.2 Financial Model Predictions

The SCOTS financial model can be used to predict the likely change in Network RCI over the next 10 years for any Scottish Authority by calculating the difference between the

“steady state” budget and the settlement expected in future years. Were the 32% figure to be retained for the long term the RCI would be expected to increase by a further 22% in the next 10 years. We would hope to reduce this percentage by careful use of surface dressing but any deterioration is significant when the road network, which is the Council’s most valuable asset, has an estimated gross replacement cost approaching £1,000 million.

#### **4.0 Shetland Gas Plant**

- 4.1 An agreement was reached between the Council and TOTAL whereby TOTAL have provided £400,000 towards the cost of repairing damage to the public roads in the vicinity of the plant and on their haul routes. The majority of the relevant repairs have been programmed for 2016/17.

#### **5.0 SCOTS Audit Recommendations**

- 5.1 A representative of SCOTS met with Road Service officers in to undertake an “informal” review of the services’ asset management planning practices. A number of improvements were recommended including actions relevant to carriageway condition. These were:

- finalisation and formal approval of the Council’s Road Asset Management Policy (RAMP);
- review the performance indicators that are currently reported.

The former is being progressed and a finalised RAMP will be reported to this Committee for its approval in June 2016. The latter has already been addressed insofar as deciding on the most appropriate additional indicators for Roads. These have already been added to the Council’s website for the public’s information.

#### **5.2 Performance Indicators**

The additional indicators are the percentage of road network treated by length, the percentage of road network surface dressed by area and carriageway maintenance cost per kilometre. The Council’s performance benchmarked against the 32 Scottish local authorities is also given in each of these criteria. Figures for these indicators are shown in the following tables. It is notable that Shetland Islands Council is ranked 3<sup>rd</sup> for percentage of the carriageway surface dressed each year and that we spend the 5<sup>th</sup> least of the 32 authorities on the maintenance of our carriageways.

**Table 3: Shetland's Performance Indicators and Benchmarking**

| <b>Financial<br/>Year</b> | <b>% of<br/>Network<br/>Treated<br/>(by Length)</b> | <b>R<br/>A<br/>N<br/>K</b> | <b>% of<br/>Surface<br/>Dressing<br/>(by Area)</b> | <b>R<br/>A<br/>N<br/>K</b> | <b>Maintenance<br/>Cost per Km<br/>(£)<br/>(Lowest = 1)</b> | <b>R<br/>A<br/>N<br/>K</b> |
|---------------------------|-----------------------------------------------------|----------------------------|----------------------------------------------------|----------------------------|-------------------------------------------------------------|----------------------------|
| 2011/12                   | 4.21                                                | 15                         | 3.62                                               | 5                          | 2,992                                                       | 9                          |
| 2012/13                   | 3.98                                                | *                          | 3.38                                               | *                          | 3,222                                                       | *                          |
| 2013/14                   | 4.68                                                | 10                         | 3.64                                               | 3                          | 3,281                                                       | 6                          |
| 2014/15                   | 4.60                                                | 10                         | 3.56                                               | 3                          | 3,096                                                       | 5                          |

(\* information not available)

**Table 4: Shetland's RCI Benchmarking versus 32 Scottish LA's**

|         | <b>A Class<br/>Ranking</b> | <b>B Class<br/>Ranking</b> | <b>C Class<br/>Ranking</b> | <b>Unclassified<br/>Ranking</b> | <b>Overall Ranking</b> |
|---------|----------------------------|----------------------------|----------------------------|---------------------------------|------------------------|
| 2004-06 | <b>5</b>                   | 18                         | <b>20</b>                  | 23                              | <b>16</b>              |
| 2005-07 | <b>6</b>                   | 20                         | <b>19</b>                  | 22                              | <b>19</b>              |
| 2006-08 | <b>4</b>                   | 16                         | <b>20</b>                  | 29                              | <b>21</b>              |
| 2007-09 | <b>2</b>                   | 15                         | <b>14</b>                  | 32                              | <b>23</b>              |
| 2008-10 | <b>4</b>                   | 19                         | <b>18</b>                  | 29                              | <b>20</b>              |
| 2009-11 | <b>8</b>                   | 23                         | <b>19</b>                  | 27                              | <b>19</b>              |
| 2010-12 | <b>14</b>                  | 27                         | <b>21</b>                  | 30                              | <b>25</b>              |
| 2011-13 | <b>7</b>                   | 24                         | <b>17</b>                  | 29                              | <b>23</b>              |
| 2012-14 | <b>7</b>                   | 21                         | <b>17</b>                  | 29                              | <b>22</b>              |
| 2013-15 | <b>8</b>                   | 28                         | <b>16</b>                  | 30                              | <b>25</b>              |
| 2014-16 | <b>8</b>                   | 22                         | <b>19</b>                  | 28                              | <b>21</b>              |

## **6.0 Implications**

### Strategic

- 6.1 **Delivery On Corporate Priorities** – The local outcomes from Shetland's Single outcome agreement include "Shetland stays a safe place to live, and we have strong, resilient and supportive communities." The condition of the carriageway has direct implications for road safety.

A further local outcome that is particularly relevant to carriageway condition is "Our internal and external transport systems are efficient, sustainable, flexible and affordable, meet our individual and business needs and enable us to access amenities and services."

6.2 Community /Stakeholder Issues

The condition of the road network will affect its reliability which in turn will impact on stakeholders and the community if there are delays and temporary road closures due to maintenance works.

6.3 Policy and/or Delegated Authority – The Council's Scheme of Administration and Delegation provides authority for each functional Committee to discharge the powers and duties of the Council within their own functional areas in accordance with the policies of the Council, and the relevant provisions in its approved revenue and capital budgets.

6.4 Risk Management – Failure to manage and maintain the road network. The net ongoing running costs of the Council carries a significant risk of the Council's financial policies not being adhered to and will require a further draw on Reserves.

6.5 Equalities, Health And Human Rights  
No implications.

6.6 Environmental  
No implications.

Resources

6.7 Financial – Under the Local Government in Scotland Act 2003, the Council has a duty to make arrangements that secure Best Value. Best Value is continuous improvement in the performance of the authority's functions taking into account efficiency, effectiveness, economy and equal opportunities.

There are no direct implications arising from this report but for Councillors information the combined total carriageway maintenance cost (made up of resurfacing, surface dressing, reconstruction and patching) for each of the past 8 financial years and the budget for 2016/17 is as shown in the following table.

| <u>Financial Year</u> | <u>Resurfacing</u> | <u>Surface Dressing</u> | <u>Patching</u> | <u>Reconstruct</u> | <b>TOTAL</b> |
|-----------------------|--------------------|-------------------------|-----------------|--------------------|--------------|
| 2008/09               | 1,169,810          | 407,138                 | 161,738         | 232,852            | 1,971,538    |
| 2009/10               | 1,131,472          | 356,923                 | 227,261         | 367,884            | 2,083,540    |
| 2010/11               | 720,618            | 656,758                 | 579,778         | 434,467            | 2,391,621    |
| 2011/12               | 631,938            | 530,585                 | 417,145         | 133,360            | 1,713,028    |
| 2012/13               | 610,105            | 550,500                 | 366,833         | 269,669            | 1,797,107    |
| 2013/14               | 616,295            | 501,754                 | 398,599         | 265,456            | 1,782,104    |
| 2014/15               | 680,953            | 426,732                 | 338,007         | 288,816            | 1,734,508    |
| 2015/16               | 687,000            | 463,500                 | 330,700         | 269,000            | 1,750,200    |
| 2016/17               | 687,000            | 489,500                 | 330,700         | 269,000            | 1,776,200    |

6.8 Legal – None.

6.9 Human Resources – None.

6.10 Assets And Property – The road network is the largest community asset for which Shetland Islands Council is responsible. It is vital and fundamental to the economic, social and environmental well being of the community. It helps to shape the character of an area, the quality of life of the local community and makes an important contribution to wider Council priorities including growth, regeneration, education, health and community safety. Roads also make a wider contribution to society, providing access to ferry terminals, ports and airports.

## **7.0 Conclusion**

7.1 This report is for the Committee, in its monitoring and scrutiny role, to note and comment on the performance indicators relevant to the carriageway condition of Shetland's roads.

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31 March 2016

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### List of Appendices

None

### Background Documents

SCOTS Financial Model, March 2010

[http://scots.sharepoint.apptix.net/Lists/Announcements/Attachments/141/170510%20SCOTS%20SRMCS%20Backlog%20\(Public%20Report\)%20V2-2.pdf](http://scots.sharepoint.apptix.net/Lists/Announcements/Attachments/141/170510%20SCOTS%20SRMCS%20Backlog%20(Public%20Report)%20V2-2.pdf)

END



**Environment and Transport Committee****12<sup>th</sup> April 2016****Exceptions from Contract Standing Orders including Emergency Work on Ferries****FO-01-16-F****Executive Manager – Ferry Operations****Infrastructure Services Department****1.0 Summary**

- 1.1 This report informs the Environment and Transport Committee of the works carried out under exception to the Council's Contract Standing Orders by Ferry Operations Service since the last meeting of the Committee.

**2.0 Decision Required**

- 2.1 That the Environment & Transport Committee NOTE the exceptions applied.

**3.0 Detail**

- 3.1 The Council's Contract Standing Orders require competitive tendering where the estimated value of goods, works and services is in excess of £10,000. Where the estimated cost is equal to or greater than £50,000, appropriate advertising would apply in accordance with the Contract Standing Orders.
- 3.2 The Council's Contract Standing Orders provide a number of exceptions, where certain criteria have to apply. Since the last meeting of the Committee it has been necessary to consider the exceptions detailed at Part 1, Paragraph 2 (iii), Emergencies. All such instances of exceptions arising must be reported to the relevant Service Committee within six months of the exception occurring.

**Emergency Works. Exception 2(iii).**All Vessels

- 3.3 Part 1, Paragraph 2 (iii) provides an exception where: "The demand is for the execution of work or the supply of goods, materials or services, certified by the relevant Service Director as being required as an emergency measure so as not to permit the invitation of tenders. "Emergency" means only an event which could not reasonably have

been foreseen.”

- 3.4 The m.v “Linga” suffered from a failure of the emergency generator/ harbour generator on 2<sup>nd</sup> January 2016. Following inspection by local service agents it was deemed the damage to the engine was such that replacement of the engine was necessary. Work was instructed immediately to minimise disruption to service caused by tendering the work.
- 3.5 During trials it became apparent that a specialist engineer from ABB was required to investigate an issue with the port side frequency converter, which is part of the propulsion control system, ABB are the manufacturers of this equipment. The frequency converter would not initialise correctly and thus the port side propeller could not turn.
- 3.6 Upon completion of work and successful sea trials to the satisfaction of Lloyds Register Classification Society m.v. “Linga” was allowed to return to service.
- 3.7 L & M Engineering supplied and fitted the new engine at a cost of £12,556.  
ABB attended the vessel and completed repairs are estimated at a cost of £18,270 but the final cost will not be known until the final invoice has been received.
- 3.8 The Director of Infrastructure Services authorised the emergency works on the vessel immediately.

## **4.0 Implications**

### Strategic

- 4.1 Delivery On Corporate Priorities – Connection and Access is a key priority in Our Plan and the issues in this report support the outcome: There will be transport arrangements in place that meet people’s needs and that we can afford to maintain in the medium term.
- 4.2 Community /Stakeholder Issues – Communities need their lifeline ferry services, any disruption to service will be challenging so emergency repairs must be instructed immediately without requiring tendering to return the vessel to service quickly.
- 4.3 Policy And/Or Delegated Authority – In accordance with Section 2.3.1 of the Council’s Scheme of Delegations the Environment and Transport Committee has responsibility for Ferry Services. The Council’s Contract Standing Orders apply to all Council service departments.  
Contract Standing Orders Part 1 require the reporting of exceptions to the relevant Service Committee within six months of the exception occurring.
- 4.4 Risk Management – There is a risk to the economic and social wellbeing of the island communities if ferries cannot be returned to service as quickly as possible following technical problems.
- 4.5 Equalities, Health and Human Rights – There are no Equality, Health or Human Rights implications.

4.6 Environmental – There are no Environmental implications.

#### Resources

##### 4.7 Financial

The cost of the specialist and emergency works described above total an estimated £30,826 which will be met from underspends within the Ferry Operations Service, mainly from a reduction in fuel costs due to lower fuel price.

##### 4.8 Legal

The Council must comply with EU Procurement Regulations and Council Contract Standing Orders.

##### 4.9 Human Resources

The only Human Resources implications are the resource required to ensure compliance and the capacity of engineering staff to respond in such emergencies. There is an intention to develop framework agreements with all specialist suppliers to remove the need to apply the exception from Contract Standing Orders. The capacity of the Service to achieve that is limited due to the pressure of tendering dry-docking, planned maintenance and responding to emergency works.

##### 4.10 Assets & Property

N/A

## **5 Conclusions**

5.1 Contract Standing Orders contain exceptions to the general rule that procurements go through a competitive tendering process. This allows the Council's services to continue as best they can without interruption or with as little interruption as possible in the circumstances.

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For further information please contact:  
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01806 244274  
25 March 2016

END





**Environment and Transport Committee  
Policy & Resources Committee**

**12 April 2016  
18 April 2016**

|                                                                         |                                           |
|-------------------------------------------------------------------------|-------------------------------------------|
| <b>Exception from Contract Standing Orders MV Geira Emergency Works</b> |                                           |
| <b>FO-02-16-F</b>                                                       |                                           |
| <b>Report Presented by Executive Manager,<br/>Ferry Operations</b>      | <b>Infrastructure Services Department</b> |

## **1.0 Summary**

- 1.1 This report describes the emergency repair works required to be carried out to the MV Geira under exception from the Council's Contract Standing Orders and requests that Policy & Resources Committee notes the action take for the associated funding requirement.

## **2.0 Decisions Required**

- 2.1 That Environment & Transport Committee NOTES the exception under the Contract Standing Orders for emergency repair work carried out on MV Geira.
- 2.2 That Policy & Resources Committee NOTES the transfer of capital budget from savings and underspends on projects in the 2015/16 Asset Investment Plan described at paragraph 4.7 required to fund the emergency work on the MV Geira.

## **3.0 Detail**

- 3.1 The Council's Contract Standing Orders require competitive tendering where the estimated value of goods, works and services is in excess of £10,000. Where the estimated cost is equal to or greater than £50,000, appropriate advertising would apply in accordance with the Contract Standing Orders.
- 3.2 Standing Orders Part 1, Paragraph 2(iii) provides an exception where "The demand is for the execution of work or the supply of goods, materials or services, certified by the relevant Service Director as being required as an emergency measure so as not to permit the invitation of tenders. "Emergency" means only an event which could not reasonably have been foreseen."

- 3.3 During routine annual refit works a problem was exposed that required immediate rectification
- 3.4 MV “Geira” is 28 years old, built in 1988 at Dunstons, Hessel. She currently operates on Bluemull Sound, providing a Ro-Ro vehicle and passenger service between the Islands of Yell, Unst and Fetlar.
- 3.5 MV “Geira” has a scheduled annual refit which is required to undertake planned maintenance and works to maintain certification and approval from MCA (Maritime and Coastguard Agency) to continue in operation.
- 3.6 During the 2015/16 annual refit, on Malakoff’s Lerwick slipway, all rubber belting fenders were removed to allow grit blasting of the steel plating behind.
- 3.7 On completion of grit blasting works a significant amount of pitting and weaknesses of the steel plates were identified, behind the rubber belting, aft on the port side of the engine room. This required further investigation to confirm the integrity of the material
- 3.8 A full Ultrasonic Thickness (UT) and visual examination was carried out on the plates to determine material thickness and condition throughout. The original plate thickness on commissioning and confirmed from the vessel construction drawings were 7.5mm.
- 3.9 After an analysis of the examination results, it was identified that the belting plates had a degradation of 10-15% across at least 50% of the plate and as high as 25% in other areas. The examination also found extensive areas of pitting of 1-6mm across 70% of the belting plates.
- 3.10 In conjunction with MCA, following review of the UT report and visual inspection it was concluded that the pitting coverage combined with material thickness wastage had led to at least 75% of the plate being below acceptable limits. The remaining 25% of plating was found to only border on acceptable limits.
- 3.11 When commissioned, the MV “Geira” was built to Lloyds Register (Classification Society) rules. MCA refer to Lloyds Register rules when assessing the condition of the steel work. Within these rules it states the ‘maximum permissible diminution levels’, for the steel work and vessel type is 30%.
- 3.12 It was clear that the vessel could not return to service without the repair works being carried out. This was an entirely unforeseeable event and it was decided that the works required to be carried out as an emergency to minimise disruption to the service. Due to the above conditions and applicable rules, it was agreed the extent of the re-plating works required would be from the stern forward, approximately 25m in length, on both port and starboard sides. The remaining plating, approx. 5m in length, had acceptable material thickness and that the extent of pitting could be brought to within recognised limits by over-welding of the deepest pitted areas.
- 3.13 Following replacement of the steel plating (and as a preventative measure) a coating of hot sprayed zinc was applied to reduce the risk

of future corrosion issues. This was followed by a further 5 coatings of paint.

- 3.14 It is difficult to determine the cause of the degradation of the steel plates behind the rubber belting. Possible causes could include sea-water ingress through the protective paint coating or rubber belting rubbing and causing wear of the protective coating.
- 3.15 Upon review of records, no previous UT inspections of the plates behind the rubber belting fenders were carried out. However, visual inspections of the paint coatings have been conducted in previous years. The last visual inspection was conducted in 2013, with no concerns noted.
- 3.16 For future planning it has been agreed that more frequent UT and visual inspection behind the rubber belting will be needed to try to identify these types of issues at an earlier stage so they can be addressed as part of routine works.
- 3.17 It should also be noted that MCA vessel surveys have not required the rubber belting fendering to be removed for inspection of the plates behind.
- 3.18 Given the age of the vessel, more regular inspection behind the rubber belting fendering will be added to the planned maintenance schedule, to coincide with, at a minimum, UT testing required for MCA every 5 years.

## **4 Implications**

### Strategic

- 4.1 Delivery On Corporate Priorities – Connection and Access is a key priority in Our Plan and the issues in this report support the outcome: There will be transport arrangements in place that meet people's needs and that we can afford to maintain in the medium term.
- 4.2 Community /Stakeholder Issues – Communities need their lifeline ferry services. Any disruption to service will be challenging so emergency repairs must be carried out immediately to remove or minimise any disruption to service.
- 4.3 Policy And/Or Delegated Authority
  - 4.3.1 In accordance with Section 2.3.1 of the Council's Scheme of Delegations the Environment and Transport Committee has responsibility for Ferry Services. The Council's Contract Standing Orders apply to all Council service departments. Contract Standing Orders Part 1 require the reporting of exceptions to the relevant Service Committee within six months of the exception occurring.
  - 4.3.2 Policy & Resources Committee has responsibility to secure the co-ordination, control and proper management of the financial affairs of the Council.

- 4.4 Risk Management – There is a risk to the economic and social well-being of the island communities if ferries cannot be returned to service as quickly as possible following technical problems.
- 4.5 Equalities, Health and Human Rights – There are no Equality, Health or Human Rights implications.
- 4.6 Environmental – There are no Environmental implications.

4.7 Financial

- 4.7.1 The cost of the repair works described above is estimated at approximately £450,000 in lieu of final billing, which has been met from savings and underspends on the following Infrastructure Services projects in the 2015/16 Asset Investment Plan;

|                              |                 |
|------------------------------|-----------------|
| Trondra Bridge Bearings -    | £150,000        |
| Burra Bridge Bearings -      | £ 36,000        |
| Waste Management Recycling - | £164,000        |
| Fivla Life Extension -       | <u>£100,000</u> |
| Total                        | £450,000        |

- 4.7.2 In line with the Council's Financial Regulations this project was agreed with the Executive Manager - Finance prior to any commitment being incurred.

- 4.7.3 As the Policy & Resources Committee meeting falls after the 2015/16 year end, when no further changes can be made for in-year budgets, the transfer of budget has already been actioned for this project.

4.8 Legal

The Council must comply with EU Procurement Regulations and Council Contract Standing Orders.

4.9 Human Resources

The only Human Resources implications are the resource required to ensure compliance and the capacity of engineering staff to respond in such emergencies.

4.10 Assets & Property - None

## 5 **Conclusions**

- 5.1 It was essential for the island communities that the MV Geira serves to have her returned to service as quickly as possible following the discovery pitting and weaknesses in the steel plates.
- 5.2 The damage could not have been reasonably foreseen and a decision was taken to carry out emergency repair works under exception to the Council's Contract Standing Orders.

5.3 The emergency works have been funded from savings and underspends in the current year's Asset Investment Plan.

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4 April 2016

END