



Annual Status Report

Carriageways, 2022/23

Summary, March 2023

➤ Investment

- 2022/23 is the final year of the Council initial additional investment in roads.
- An additional £3.1m was invested in the year, In addition to £1m from DfT.

➤ Public/Customer Satisfaction (NHT Satisfaction Survey)

- The level of satisfaction with roads in Reading has improved in the last year.
- RBC are top quartile for all carriageway condition and maintenance indicators.

➤ Condition (Repair of Minor Defects)

- Minor defects (safety & maintenance) reduced by 28% (3,158 to 2,282) from the previous year.
- The vast majority (94% safety defects and 93% of the maintenance defects) were repaired within their allocated response times.

➤ Condition (survey results)

- The condition of the residential streets has improved over the last 3 years. The percentage of unclassified roads in a deteriorating condition has reduced from 49% to approximately 20% after three years of investment.
- The most recent condition survey has shown that the classified roads have improved a small amount.

➤ Future Condition

Based upon expected future funding:

- Years 1-3, investment levels will improve condition a small amount.
- Years 4 -10, unless investment is made of at least a steady state level the condition trend will revert to deterioration and the benefits of the additional investment will be progressively eroded.

➤ Future Strategy

- A condition survey using AI technology is currently being undertaken which will enable a plan for future needs to be defined.
- A specific strategy for concrete roads may be developed using this data as these roads have particular repair needs.
- Consideration needs to be given to ensuring that long term funding is obtained to ensure that the progress made in improving roads is not eroded by returning to levels of investment that are insufficient to prevent deterioration.

1. Purpose

This report presents the state of the council's carriageway assets as of March 2023. It enables council to plan, to set targets and to establish budgets based on a view of the predicted impacts.

Status

The report describes the status of the council's carriageway in terms of condition and investment.

Condition Projection and Impacts

A projection of future condition is presented showing the effects on condition over time using the predicted investment levels. The impact of the predicted future condition is provided by 10-yr forecasts. Assessment of the impact is provided to the extent possible with available data.

2. The Asset

Scale

The council manages 397km of carriageways. The roads range from busy major roads (typically A and B class roads) to residential streets. The network is made up of:

- 27% are classified roads (A, B and C roads, [107km])
- 73% are residential streets (Urban unclassified roads, [288km])

Value

The total (gross) replacement value of the carriageway asset was last calculated as £584m in 2015. It is unlikely that this valuation has changed significantly since that time.

3. Customer Satisfaction

The council participates in annual National Highways and Transportation (NHT) public surveys. The surveys provide data on satisfaction with highways and enable comparison with other authorities. In 2022 111 local authorities took part in the annual NHT Survey

General Levels of Satisfaction: Highway Maintenance Service

The following table shows RBCs results for indicators associated with road condition and maintenance. There are three types of indicators: key indicators, benchmark indicators and quality indicators. The key indicators reflect the overall service of the carriageways while the other indicators assess more specific aspects of the service.

'Overall Average' shows the average result for all 111 local authorities which participated in the 2022 survey. All but one of the average values for the carriageways is below 35%. This reflects a low level of satisfaction nationally with the road network. There are several positive aspects for RBC:

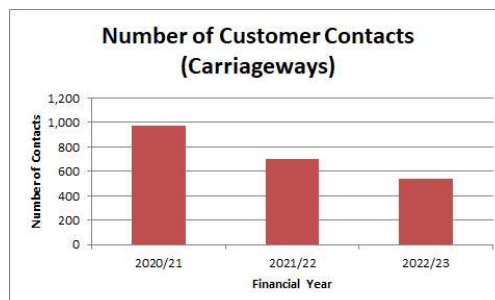
- All RBC's results are in the top quartile of the 111 participating authorities.
- The two 'Condition of Highway' indicators increased by 9% between 2021 and 2022.

The improvement in results, especially between 2021 and 2022, probably reflects the impact all the new road surfaces are having on the public in Reading.

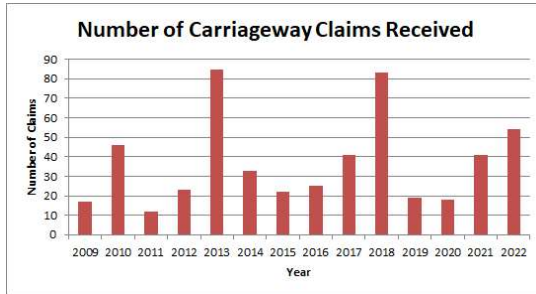
2022 NHT Results – Carriageways							
Ref	Indicator	RBC 2019	RBC 2020	RBC 2022	RBC Trend	Overall Average	Quartile
Key Benchmark Indicators							
KBI23	Condition of highways		31%	40%	↑	34%	1
KBI24	Highway maintenance		51%	50%	↔	46%	1
Highway Maintenance Benchmark Indicators							
HMB101	Condition of road surfaces	35%	31%	41%	↑	32%	1
HMB113	Deals with potholes / damaged roads	35%	30%	41%	↑	32%	1
HMB130	Speed of repair to damaged roads		28%	33%	↑	28%	1
HMB131	Quality of repair to damaged roads		35%	39%	↑	34%	1
Highway Maintenance Quality Indicators							
HMQI11	Number of Potholes		22%	43%	↑	22%	1
HMQI12	Action to repair local roads		33%	59%	↑	33%	1

Customer Contact/ Potholes

543 public enquiries relating to the carriageway were received in 2022/23. These have reduced by 44% over the last 3 years. Public contact at this level, is a significant generator of work in terms of both inspection and subsequent repair of defects that warrant repair/meet intervention levels.



3rd Party Claims



54 3rd party claims were received during 2022/23 relating to carriageway defects.

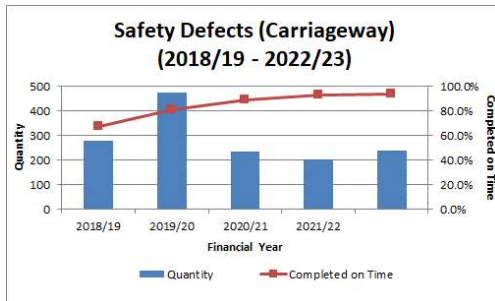
It must be noted that 36 of the 54 incidents occurred in the last three months of the financial year. A number of these claims were associated with defects at two sites, Junction 11 and Caversham Road. The council did not manage to repair these defects within the required response time. This resulted in the council having to settle 8 claims for a cost of £3,307.29. These are considered as two single incidents and not an indication that claims are increasing generally. Steps are being taken to avoid this problem recurring

4. Condition

The condition of roads is reflected by the number of defects requiring repair (recorded during inspections) and the lengths of road that require resurfacing (recorded by condition surveys). Both measures are required to understand condition and the service provided to users.

Safety Defect (Cat R1e and Cat R1 Repairs)

Defects that are considered potentially hazardous to users are categorised as Cat R1e and Cat R1 repairs. Cat R1e are defects classified as those that require the most urgent response, 1 hour. Cat R1 defects must be responded to by the end of the next working day.

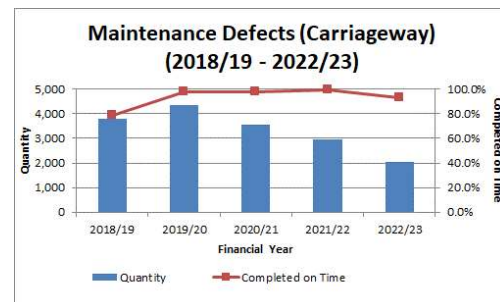


- 239 safety defects were identified in 2022/23
- 94% of these defects were responded to within the allocated response time.
- The annual quantity of safety defects remains at a steady level of approximately 220.

Maintenance Defects (Cat R2, Cat R3 and Programmed Works)

Maintenance defects are defects that do not require an urgent response are categorised as Cat R2, Cat R3 or programmed repair. Depending on where they are and their severity, they are allocated either a 7-day response (Category 2), a 28-day response (Category 3) or inserted onto the next programme for repair.

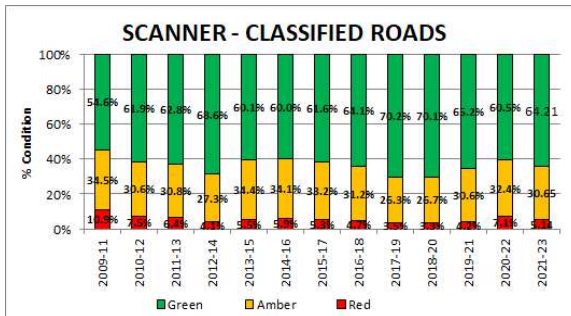
- In 2022/23 a total of 2,043 maintenance defects were recorded.
- 93% of these were repaired within their allocated response times.
- Maintenance defects have reduced by over 50% (4,365 to 2,043) since 2019/20 which is prior to the beginning of the improvements provided by the additional investment.



There has been a significant reduction in reactive repair of carriageway defects in the last 3 years. This can be attributed to the substantial amount of resurfacing carried out under the additional investment in residential road maintenance.

Condition: Classified Roads: Trends

Condition survey results for the last 4 years indicate increasing amounts on classified roads in need of treatment (red) or in need of investigation for maintenance (amber).



It is considered that the results surveys between 2017 and 2021 are not indicative of the actual condition of these parts of the network. In 2022 a different provider completed the survey. The results from this survey are considered reliable and accurate. The chart shows that over the last 13 years the level of condition has improved a small

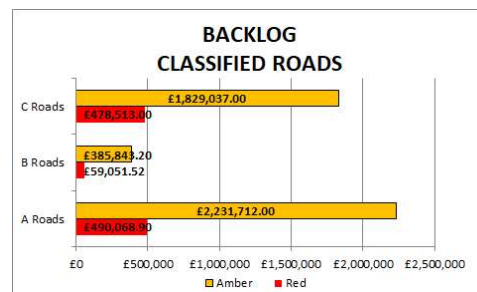
amount.

The most recent condition survey has confirmed that the classified condition is continuing to improve.

Total "Backlog"

Based on the results shown above the total cost of repairing all the lengths of classified roads in red or amber condition is **£5.5m**.

The split of this by road class is illustrated. The total backlog is theoretical. It is not practical to aim to remove it entirely.



Approx. £5.5m would be required to repair all poor (red) & deteriorating (amber) lengths of classified roads.

Maintenance Backlog/Condition Standard Targets

It is appropriate to consider the deficit between existing condition and appropriate condition targets.

Target Condition		
Class	Red	Amber
A	5%	25%
B	5%	25%
C	5%	25%

To achieve these targets on Class A, B and C would require the amount of poor (red) condition roads and deteriorating (amber) condition roads to be reduced. The "maintenance backlog" (the cost of returning the asset to the target condition) is therefore **£1.1m**.

Approximately £1.1m would be required to improve A, B and C roads to be within target.

Unclassified Roads

The condition of unclassified roads has been measured using a visual condition survey which has been undertaken annually since 2012. The survey is undertaken by the Highways Inspectors in conjunction with the safety inspections.

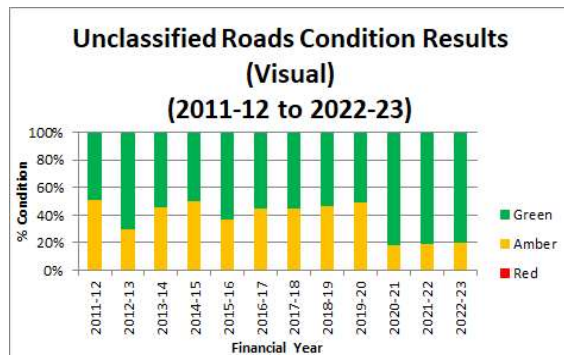
To enable consistency in reporting carriageway, condition the scores from the visual survey have been linked to the green / amber / red condition bands used for classified roads.

Condition Band	Visual Condition Score
Green	0 - 9
Amber	10 - 24
Red	25+

The accuracy of the visual condition survey relies on individuals rating condition in a consistent manner. It is therefore subject to variances that are greater than for a machine-based survey. The result for condition for unclassified roads shown below should be read with this in mind. The information does provide an approximate overall state of the unclassified roads and is also used to identify potential schemes.

Visual condition information was not available between 2020/21 and 2022/23. An estimate was calculated by changing all roads with new surfaces to 1 which is the lowest rating. An approximate level of deterioration was also incorporated into the estimated condition results.

Condition: Unclassified Roads: Trends



The survey results indicate that in most years there are no unclassified roads in red condition needing structural treatment.

In the last three years there has been increased investment in unclassified roads which has resulted in the level of amber condition reducing to approximately 20%.

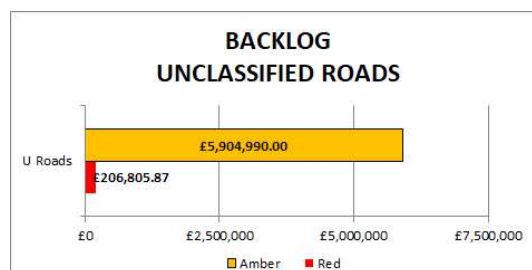
This equates to 56km of road. Prior to the investment the roads in amber condition were between 40 and 50%.

20% (56km) of unclassified road condition are in a condition where treatment is desirable.

Total "Backlog"

The total cost of repairing all the lengths of unclassified roads identified as poor (red) or deteriorating (amber) condition is **£6m**.

This has reduced from £16.5m reported in 2019 which is prior to the beginning of the improvements provided by the additional investment.



Approx. £6m would be required to repair all poor (red) and deteriorating (amber) lengths of unclassified roads.

Current Condition vs Existing Targets

The condition target levels for unclassified roads are shown in the table. These targets were set before the additional investment and now warrant review. Adopting target standards enables a “maintenance backlog” to be reported as the cost of returning the asset to the target condition. The improvement in condition achieved from the investment means that the target condition has now been met. The council aims to maintain the condition of unclassified roads at or below the current target.

Target Condition		
Class	Red	Amber
U	5%	35%

Condition Survey (Using AI Technology)

A condition survey of all the roads in the borough using AI technology has been commissioned. This will enable future maintenance needs to be determined in a detailed way that is not currently possible for unclassified roads.

Concrete Roads

A recent review and report on the benefits of the additional investment highlighted the fact that many roads in Reading are made of concrete. Such roads are usually strong and only suffer deterioration at their joints. These roads do become unsightly over time, especially if they have been previously overlaid with a bituminous layer that is now stripping off. It may be appropriate to create a strategy specifically for the future management of these roads. The cost of treating these roads is higher than for flexible (bituminous roads) but is expected to have a significantly longer lifespan.

Condition Summary

Road Class	Criteria	Standard	Actual 2022/2023	Met?	Trend (last 5 years)
All	Cat R1e & Cat R1 Defects #	475	239	n/a	Improving
	Cat R2 & Cat R3 Repair #	4365	2,043	n/a	Improving
A	Poor Roads	5%	6%	X	Getting Worse
	Deteriorating Roads	25%	38%	X	Getting Worse
B	Poor Roads	5%	3%	✓	Improving
	Deteriorating Roads	25%	31	X	Getting Worse
C	Poor Roads	5%	5%	✓	Getting Worse
	Deteriorating Roads	25%	25%	✓	Getting Worse
U	Poor Roads	5%	0%	✓	Steady
	Deteriorating Roads	35%	20%	✓	Improving

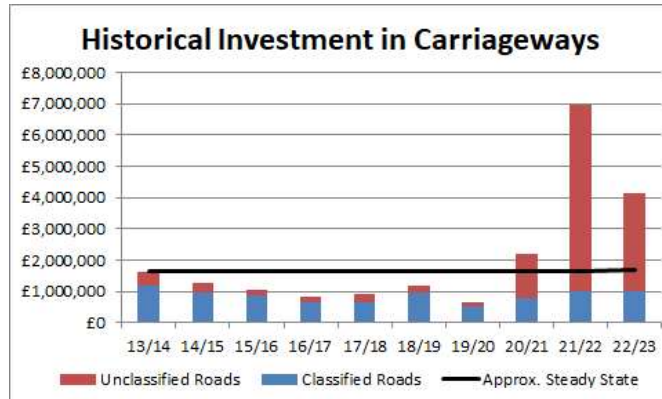
it is not appropriate to set standards for the number of defects as their occurrence can be the result of bad weather. It is however positive to see them reducing because of the additional investment.

5. Investment and Output

The results above have been achieved from investment over the period reported. The levels of investment made to deliver the standards that have been achieved are reported below.

Total Investment

Historical investment in carriageways has been as shown below.



Investment was boosted by additional investment from DfT Pothole funds as follows:

- 2016/17, + £60k
- 2017/18, + £97k
- 2018/19, + £134k

And, by addition major maintenance £350k pa in each of 2016/17 and 2018/19.

In 2020/21 RBC provided additional funding of £9m to invest on residential roads over a 3-year period.

These sums add up to provide the total investment as shown above and tabulated below.

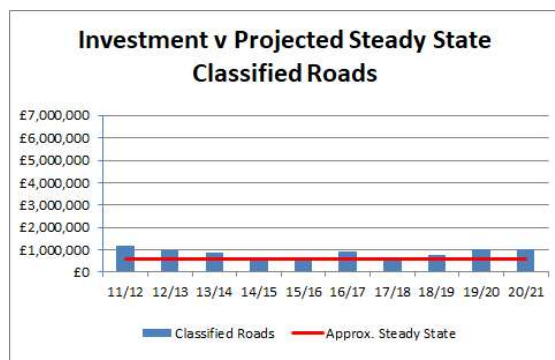
Year	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
Classified Roads	£1,166k	£970k	£875k	£641k	£629k	£939k	£525k	£770k	£1000k	£1000k
Unclassified Roads	£466k	£305k	£175k	£163k	£289k	£231k	£111k	£1415k	£5965k	£3125k
Total	£1632k	£1,275k	£1,050k	£804k	£918k	£1,170k	£636k	£2185k	£6965k	£4125k

The council, over the period shown, has invested all the monies supplied by the DfT on roads.

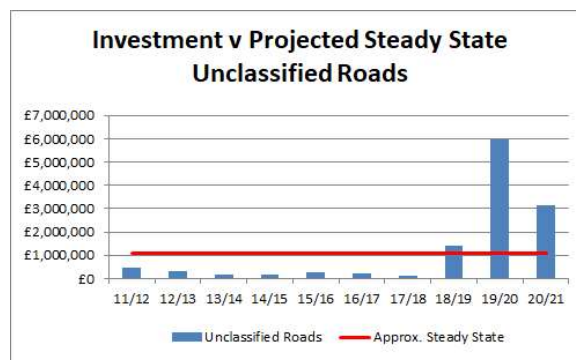
Average Investment

Prior to the additional investment provided in 2020/21 the average annual investment over the previous 7 years was £1.1m pa. This was lower than the estimated level of investment required to maintain a steady state of measured condition of £1.7m pa.

Comparing the investment made in classified and unclassified roads illustrates why the condition profiles reported earlier in this report have arisen:



Investment over the last 10 years has fluctuated between steady state levels and above that.



Prior to the residential roads Investment in 2020/21 unclassified roads had invested approximately 15% of the predicted steady state.

Investment/Cost of Routine and Reactive Maintenance

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Revenue	#	£60,000	£97,000	£134,681	£234,121	£183,620	£152,759	£112,203
Total Repairs	#	5,020*	3,116*	4,092*	4,840*	3,796*	3,158*	1,933*

Figures cannot be readily computed, *may include some footway repairs

The additional investment in residential roads between 2020/21 and 2022/23 follows years of under investment in those roads.

6. Projection of Condition

Projections of condition have been created using the CSSW* condition projection tool (6CW).

Results

The results of these projections are detailed below.

Projection	Annual Investment		Total 10 Year	Network Outturn Condition		
	0 to 3yrs	4 to 10yrs		Condition	Yr. 10	Benefit above Base
Baseline	£1.2m	£1.2m	£12.0m	Poor	2%	-
				Deteriorating	34%	-
1	Yr1-£2.5m, Yr2 - £2.1m, Yr. - £2.0m	£1.0m	£15.0m	Poor	1%	5km less after 10yrs
				Deteriorating	32%	9km less after 10yrs

(*CSSW = County Surveyors Society of Wales, a group coordinating all Welsh highway authorities who have developed the projection tool used. This has been calibrated against both data from authorities in Scotland and Wales, including several urban authorities with networks similar to Reading and against the Highway Maintenance Efficiency Programmes Carriageways Lifecycle Planning toolkit).

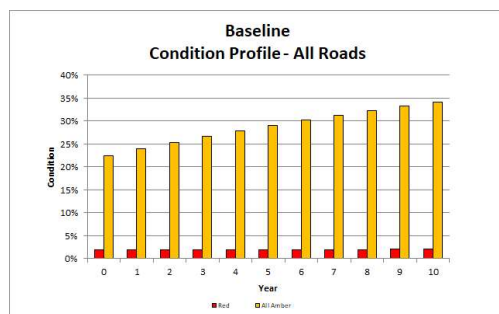
Baseline Projection: Current Budget for Planned and Routine Maintenance

Budget

The baseline projection is based on the Projected DfT Funding and is shown in the table below. The baseline option is based on mitigating the level of deterioration on all road classes. The option assumes a treatment strategy of 60% corrective treatments (resurfacing) and 40% preventative treatments (micro-surfacing).

Annual Investment	All Years
Planned Maintenance – Corrective and Preventative	£1,200k

Predicted Condition



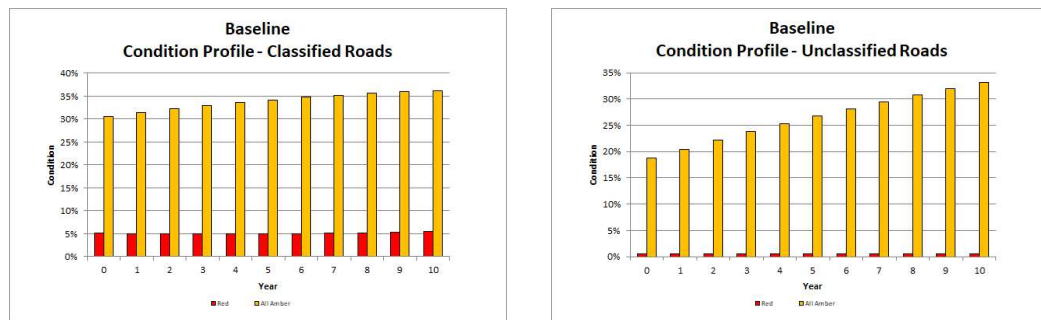
Poor Condition: ■

- Steady at 2.0%

Deteriorating Condition: ■

- Getting worse (from 22.5% to 34.1%)

The individual profiles for Classified and Unclassified Roads are shown below:



Predicted Impacts

Based on this level of investment it is predicted that there will be 400m more poor roads and 47km more deteriorating road at the end of 10 years. Over time deteriorating carriageway condition would lead to an increase in the number of carriageway defects requiring repair and a decrease in customer satisfaction.

Option Summary

- Deteriorating condition.
- Increasing reactive repairs, 3rd party claims and decreasing level of public satisfaction with highway condition.

Projection: Additional Investment in Years 1 to 3, followed by reverting to baseline

The projection is based on the following assumed funding levels.

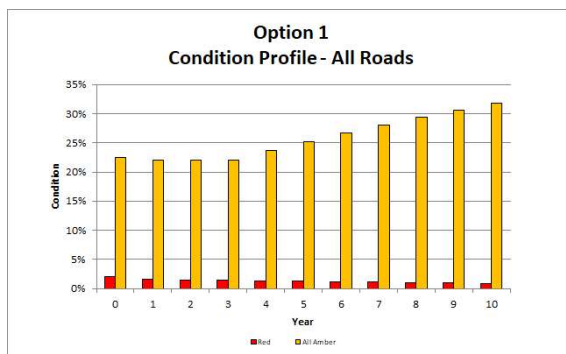
- Year 1 to 3: RBC Investment (including additional funding from borrowing),
Projected DfT Funding and National Highways Funding
- Years 4 to 10: Projected DfT Funding

The option assumes a treatment strategy of 60% corrective treatments (resurfacing) and 40% preventative treatments (micro-surfacing) for all years.

The funding levels for each of these are as shown below:

Annual Investment	Yr. 1	Yr. 2	Yr. 3	Yrs. 4 to 10
Planned Maintenance – Corrective & Preventative	£2,464k	£2,138k	£2,038k	£1,200k

Predicted Condition



Years 1 to 3:

Poor Condition: ■

- Improving (from 2.0% to 1.4%)

Deteriorating Condition: ■

- Improving (from 22.5% to 22.0%)

Years 4 to 10

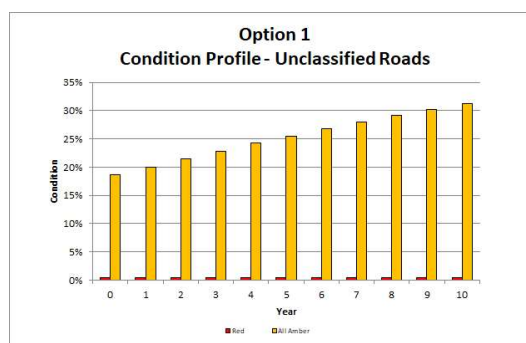
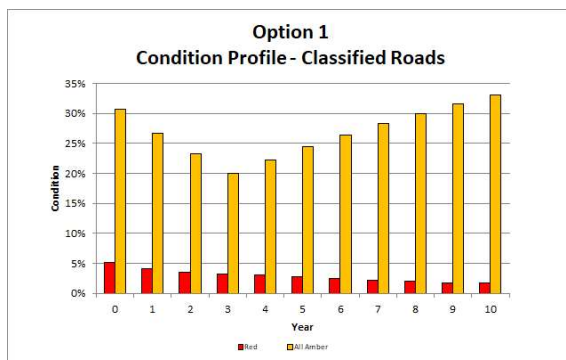
Poor Condition: ■

- Improving (from 1.4% to 0.9%)

Deteriorating Condition: ■

- Getting worse (from 22.0% to 31.8%)

The individual profiles for Classified and Unclassified Roads are shown below:



Predicted Impact

It is predicted that at the end of three years increased investment there will be 2km fewer poor roads and 2km fewer deteriorating road. However, if funding levels revert to just estimated DfT funding this will result in a deteriorating condition in the subsequent years part of that improvement will be eroded. At the end of ten years there will be 5km fewer poor roads but there will be 38km more deteriorating roads than currently exists. It can be expected that there would be a reduction in the number of reactive repairs, 3rd party claims and level of customer satisfaction in the years of the additional investment and for a period after that. Those benefits would be progressively eroded if this strategy were adopted.

Option Summary

- Improving condition initially but after the period of investment a return to deterioration
- An initial improvement in the level of reactive repairs, 3rd party claims and public satisfaction with highway condition to currently, but then a predicted reversion over the remaining period due to returning to a deteriorating state.

The projection shows an overall reduction of poor and deteriorating roads after the additional investment. It is predicted that these benefits will be lost if a steady state level of investment is not provided in the following years.

Investment Impact

The following table shows the impact on the condition made by the additional investment. RBCs increase in investment began in 2020/21 when £9m was provided for treatments on mainly for residential roads. This lasted for 3 years. At this stage further investment has been obtained for the next 3 years.

	Condition (Combined Poor and Deteriorating)		
Road Class	Baseline Actual (2020/21)	End of Investment Year 3 Projection	End of 10 Year Projection
Classified Roads	35.9%	23.3%	34.7%
Unclassified Roads	45.1%	23.4%	31.7%
All Roads	42.5%	23.4%	32.7%

The results show that the additional investment is projected to reduce the quantity of roads in poor and deteriorating condition by approximately 19%. **If at the end of the additional investment RBC's annual budget is only that provided by the DfT than the reduction in investment for the remaining 7 years is projected to erode the benefits gained by almost 50%.**

Conclusions

1. There has been a significant reduction in reactive repair of carriageway defects in the last 3 years. This can be attributed to the substantial amount of resurfacing carried out under the additional investment in residential road maintenance.
2. Condition survey results indicate that classified roads have been improved a small amount in the last 13 years.
3. Approximately £5.5m would be required to repair all poor (red) & deteriorating (amber) lengths of classified roads. £1.1m would be required to improve A, B and C roads to be within the target.
4. 20% (56km) of unclassified road condition are in a condition where treatment is desirable.
5. Approximately £6m would be required to repair all poor (red) and deteriorating (amber) lengths of unclassified roads.
6. The additional investment in residential roads between 2020/21 and 2022/23 follows years of under investment in those roads.
7. The projection shows an overall reduction of poor and deteriorating roads after the additional investment. It is predicted part of these benefits will be lost if a steady state level of investment is not provided in the following years.
8. The level of inflation has been higher than normal over the last year which has led to an increase in costs. The projections in this report are based on unit rates prior to the inflation. It is likely that the projections are over estimating the amount of works and therefore the amount of improvement in condition that may be possible in the future.

Appendix A: Reports by Road Class

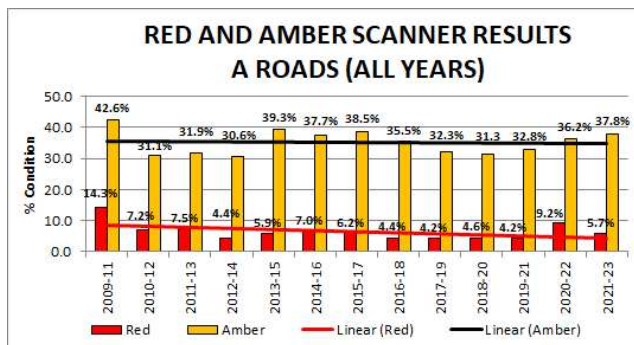
A Roads

37km (9.3% of the network by length). A-roads are in most cases the council's busiest roads.

Current Condition

- 5.7% (2.1km) in a deteriorated red condition
- 37.8% (13.9km) in a deteriorating amber condition

Trend in Condition



Poor Condition: ■

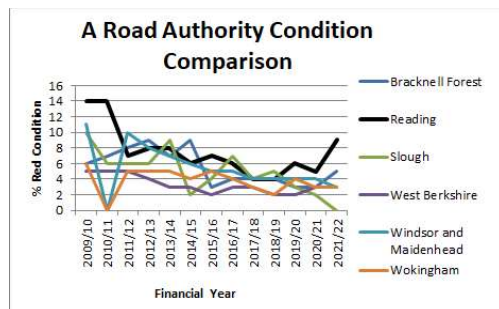
- Decreasing (improving)

Deteriorating Condition: ■

- Steady (approximately the same)

The amount of A road in poor condition has been trending downwards since 2009/11. In the shorter term the poor condition has been increasing since 2017/19. There have been some issues with the accuracy of the data. A new supplier completed the survey in 2022/23 and the results confirmed deterioration has occurred in recent years.

The amount of A road in a deteriorating condition (amber) has remained between 30% and 40% since 2010/12.



The percentage of A roads in a poor (red) condition has been very similar to neighbouring authorities over most of the last 10 years.

The increase in 2020/22 has not been reflected in the other authorities.

Summary Status

The amount of A roads is in a poor condition is 5.7% which is outside the target level of 5%.

37.8% of A roads are in a deteriorating condition. It would be desirable to reduce this with a target proposed of 25%.

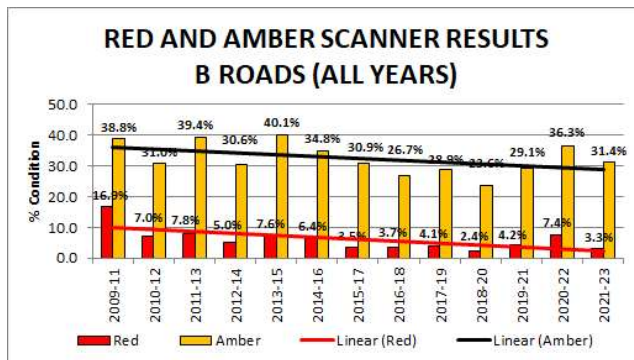
B Roads

10km (2.5% of the network by length). B roads are a mixture of routes. Some of these routes are as busy as A roads. Some carry significantly less traffic than others.

Current Condition

- 3.3% (0.3km) in a deteriorated red condition
- 31.4% (3.0km) in a deteriorating amber condition

Trend in Condition



Poor Condition: ■

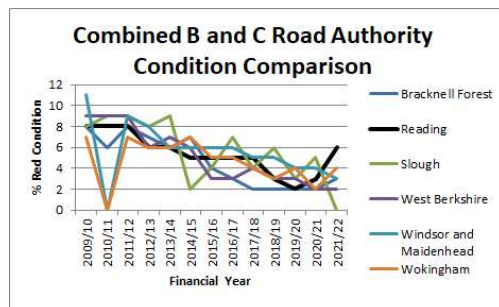
- Decreasing (improving)

Deteriorating Condition: ■

- Decreasing (improving)

The amount of B road in poor condition has been trending downwards since 2009/11. The results reported in 2019/21 and 2020/21 showed that the level of poor roads may be starting to increase. There have been some issues with the accuracy of the data in the last 4 years. A new supplier completed the survey in 2022/23 which resulted in 3.3% of the B road been classified in poor condition. If the previous 4 years of results were ignored then the overall trend is downwards.

The amount of B road in a deteriorating condition (amber) has trended downwards since 2013/15 when it recorded its highest value of 40.1%. There can be quite large annual variations in condition on this road class due to the small overall length 9,600m. Sections of road which are either renewed or deteriorate significantly will have a bigger effect on the overall condition than a longer length road class.



The Condition of B and C roads in terms of the percentage in a poor condition is like that in neighbouring authorities

Summary Status

The amount of B roads in a poor condition is 3.3% which is within the target level of 5%.
31.4% of B roads are in a deteriorating condition. It would be desirable to reduce this with a target proposed of 25%.

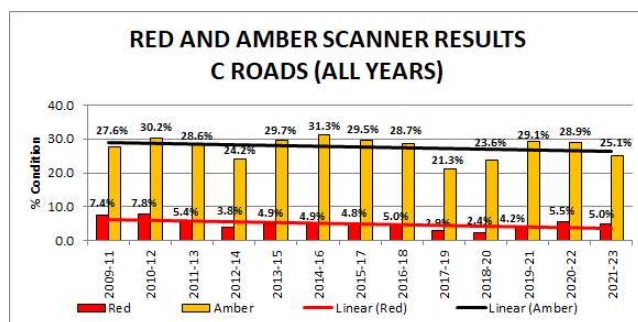
C Roads

69km (17.4%) of the network by length). C roads include a range of local urban distributor roads.

Current Condition

- 5.0% (3.5km) in a deteriorated red condition
- 25.1% (17.4km) in a deteriorating amber condition

Trend in Condition



Poor Condition: ■

- Decreasing (improving)

Deteriorating Condition: ■

- Decreasing (improving)

The amount of C road in poor condition trended downwards until 2018/20. It has increased annually since 2018/20. There have been some issues with the accuracy of the data. A new supplier completed the survey in 2022/23 and the results confirmed deterioration has occurred in recent years.

The amount of road in a deteriorating condition has been remained between 25% and 32% since 2009/11. In 2012/14 and 2017/19 the condition did drop below 25%.

Summary Status

The amount of C roads is in a poor condition is 5.0% which meets the target level of 5%.
25.1% of C roads are in a deteriorating condition. This almost meets the target proposed of 25%.

Unclassified Roads

288km (71.5% by length).

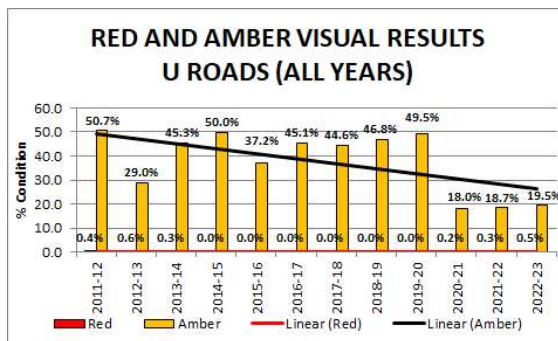
Unclassified roads are the largest group of roads in the network. Most of these roads are urban roads, predominantly residential streets.

Current Condition

Current unclassified road condition is:

- 0% in a deteriorated red condition
- 19.5% (56km) in a deteriorating amber condition

Trend in Condition



Poor Condition: ■

- Steady at 0%

Deteriorating Condition: ■

- Decreasing (improving)

There have been no poor condition roads identified in the survey since 2014/15.

Between 2020/21 and 2022/23 there was additional investment in unclassified roads which lead to deteriorating condition reducing to deteriorating condition reduced to below 20%. In the years prior to the investment the amount of road reported in a deteriorating condition had been mostly between 40 and 50%.

Data is not available for unclassified roads for other authorities and therefore a comparison is not possible.

Summary Status

There are no unclassified roads in a poor condition.

19.5% of unclassified roads are in a deteriorating condition which is inside the target level of 35%.

Appendix B: Explanatory Notes on Condition Measurement

The condition data in this report for classified roads is from Scanner surveys. Scanner surveys were designed for use on heavily used, designed roads. They are the method of survey used

internationally on strategic roads (trunk roads and motorways). They consequently lend themselves well to use on the busier road classes within the local road network.

There are however some issues with their use on the lower use roads and consequently Scanner surveys are not used nationally for U roads. RBC has adopted a visual condition survey method for these roads. The method used is a coarse assessment method and has been used historically predominantly to enable programmes of works to be created. The repeatability of these surveys is less than for machine (Scanner) surveys.

Classified Roads (A, B and C) 29% of the network

Condition of classified road carriageways (A, B and C roads) is measured annually by machine-based “scanner” surveys. The machine record cracking, rutting, texture and a measure of ride quality. These defects are collated and computed into figures that represent the condition levels described below. The survey results indicate the condition of the carriageway and how it is changing over time. The results report condition in terms of:

Poor Condition: Roads in a state where structural maintenance should be considered: Reported as red. typically **require a structural treatment** e.g., resurfacing combined with patching designed to restore the surface and the strength of the pavement



Red Condition

Deteriorating Condition (Major): Roads in a state where maintenance should be considered, e.g., resurfacing: Reported as Amber 1. Roads in this condition typically **require a resurfacing treatment** e.g., overlay with a new surface with a nominal amount of patching.



Amber 1 (Major Deterioration)

Deteriorating Condition (Minor): Roads in the early stages of deterioration where preventative maintenance should be considered. Reported as Amber 2. Roads in this condition typically require a **surface treatment**, e.g., a thin surfacing, to restore the surface



Amber 2 (Minor Deterioration)

The condition survey results are indicative primarily of the amount of road that warrants a treatment such as resurfacing or surface treatment.

Roads can, and are, kept in a safe condition by the regime of inspection and repair of minor defects (potholes etc), however there is an ongoing need to renew road surfaces to prevent them spawning potholes and the like that require reactive repair.