Appendix C - The results of the modelling for each of the three invest to save scenarios

Scenario 1 - The provision of an extra £20 Million of 'up front' investment

Introduction

Using the HMEP carriageway Lifecycle Planning Toolkit and Herefordshire specific asset data we have developed the detail within our model to project future condition based on a 'steady state' at current funding levels at approximately £7 Million per annum for capital highway maintenance works, with the injection of an additional £20 Million of up-front investment in maintenance works

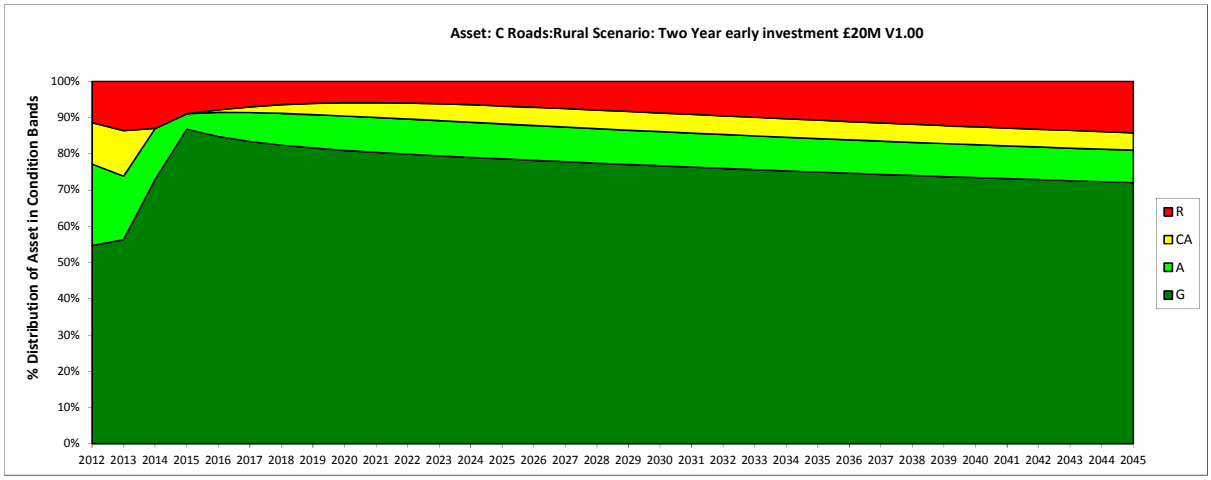
Results

The following table identifies the protected road condition for each homogeneous component of the carriageway asset as a consequence of the above investment scenario.

Homogeneous Component of the Asset	**Base Condition (2012 proportion of the asset identified as in need of maintenance)**	**Condition immediately following the delivery of the works as funded by this investment (2016 survey results)**	**Projected condition at the end of the 10 year contract term (2023 survey results)**
A Roads (Urban)	6.4%	0.24%	1.51%
A Roads (Rural)	7.5%	1.99%	1.65%
B Roads (Urban)	6%	1.67%	4.39%
B Roads (Rural)	6%	1.90%	5.59%
C Roads (Urban)	6.2%	1.98%	5.26%
C Roads (Rural)	10.3%	7.94%	6.24%
U Roads (Urban)	17%	4.64%	7.79%
U Roads (Rural)	31%	16.98%	16.24%

The following is a graphical illustration of the protected road condition for a component the carriageway asset as a consequence of the above investment scenario.

Rural C Roads



Key

Condition bands

R – ‘Red’ in need of maintenance

CA – ‘Critical Amber’

A – ‘Amber’

G – ‘Green’ in good condition

Scenario 2 - The provision of an extra £10 Million of 'up front' investment

Introduction

Using the HMEP carriageway Lifecycle Planning Toolkit and Herefordshire specific asset data we have developed the detail within our model to project future condition based on a 'steady state' at current funding levels at approximately £7 Million per annum for capital highway maintenance works, with the injection of an additional £10 Million of up-front investment in maintenance works.

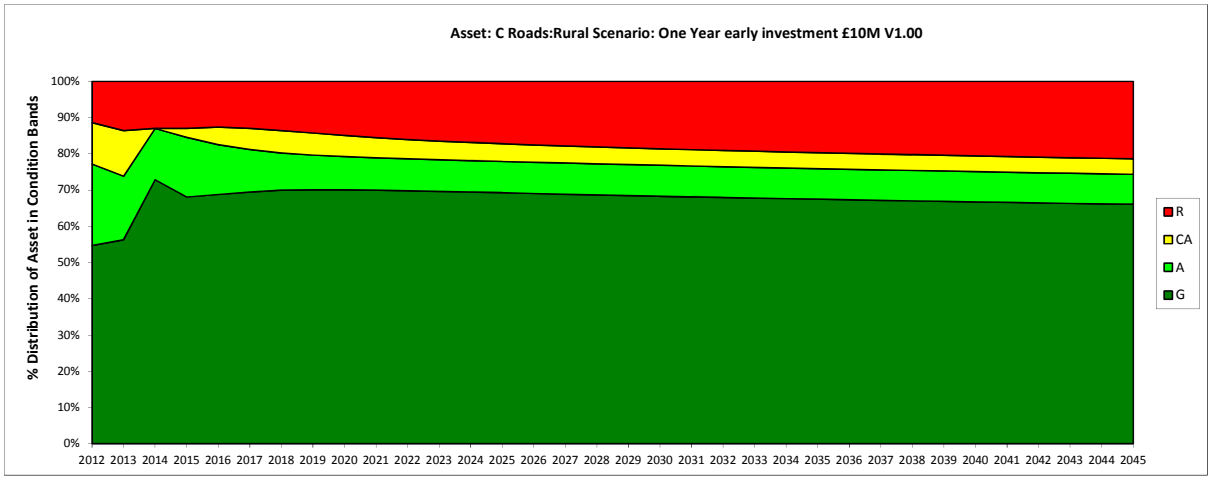
Results

The following table identifies the protected road condition for each homogeneous component of the carriageway asset as a consequence of the above investment scenario.

Homogeneous Component of the Asset	**Base Condition (2012 proportion of the asset identified as in need of maintenance)**	**Condition immediately following the delivery of the works as funded by this investment (2016 survey results)**	**Projected condition at the end of the 10 year contract term (2023 survey results)**
A Roads (Urban)	6.4%	1.72%	3.51%
A Roads (Rural)	7.5%	8.96%	10.40%
B Roads (Urban)	6%	4.55%	6.53%
B Roads (Rural)	6%	4.49%	10.96%
C Roads (Urban)	6.2%	4.24%	7.23%
C Roads (Rural)	10.3%	12.67%	16.53%
U Roads (Urban)	17%	8.44%	9.22%
U Roads (Rural)	31%	25.25%	24.51%

The following is a graphical illustration of the protected road condition for a component the carriageway asset as a consequence of the above investment scenario.

Rural C Roads



Scenario 3 – The provision of an initial extra over investment of £10 Million that is followed up in five years with a further £10 Million extra over investment.

Introduction

Using the HMEP carriageway Lifecycle Planning Toolkit and Herefordshire specific asset data we have developed the detail within our model to project future condition based on a 'steady state' at current funding levels at approximately £7 Million per annum for capital highway maintenance works, with the injection of an additional £10 Million of up-front investment in maintenance works, followed by a further investment of £10 million in five years.

Results

The following table identifies the protected road condition for each homogeneous component of the carriageway asset as a consequence of the above investment scenario.

Homogeneous Component of the Asset	**Base Condition (2012 proportion of the asset identified as in need of maintenance)**	**Condition immediately following the delivery of the works as funded by the first round of this investment (2016 survey results)**	**Condition immediately following the delivery of the works as funded by the second round of this investment (2019 survey results)**	**Projected condition at the end of the 10 year contract term (2023 survey results)**
A Roads (Urban)	6.4%	1.72%	0.69%	1.24%
A Roads (Rural)	7.5%	8.96%	2.89%	0.85%
B Roads (Urban)	6%	4.55%	1.04%	2.59%
B Roads (Rural)	6%	4.49%	2.62%	4.78%
C Roads (Urban)	6.2%	4.24%	2.97%	5.18%
C Roads (Rural)	10.3%	12.67%	11.59%	11.70%
U Roads (Urban)	17%	8.44%	4.56%	7.14%
U Roads (Rural)	31%	25.25%	19.97%	18.61%

The following is a graphical illustration of the protected road condition for a component the carriageway asset as a consequence of the above investment scenario.

Rural C Roads