South Gloucestershire

Drainage Challenge fund bid: Carriageway Condition Assessment

Methodology

SCANNER, CVI and SCRIM data has been extracted from the PMS for the 9 identified locations, and linked by chainage.

A Carriageway Condition Indices (CCI) has been calculated for each subsection using the methodology set out in UKPMS Technical Note 46. In addition, the SCRIM profile for those sites with valid (2015/2016) SCRIM data has been derived.

This has been reported against the bandings from the HMEP Lifecycle Planning Toolkit (HMEP 2012) by hierarchy.

Table A1: CCI Condition Bands by Road Hierarchy

Description	Code	CCI Condition Bands			
		Strategic Route & Main Distributors	Secondary Roads	Link Roads	Local Access Roads
Carriageway in Very Good condition	VG	0 – 3.0	0 – 4.0	0 – 6.0	0 – 7.0
Carriageway in Good condition	G	3.1 - 10	4.1 – 13.0	6.1 – 17.0	7.1 – 18.0
Carriageway in Fair condition	F	10.1 – 25.0	13.1 – 30.0	17.1 – 35.0	18.1 – 38.0
Carriageway in Poor condition	P	25.1 – 61.0	30.1 – 65.0	35.1 – 72.0	38.1 – 76.0
Carriageway in Very Poor condition	VP	61.1 - 100	65.1 – 100.0	72.1 – 100.0	76.1 – 100.0

This establishes the current condition of the network in each location.

Deterioration Modelling

For each site a deterioration model has been applied, and the CCI recalculated after 10 years' deterioration. This assumes no maintenance interventions during this time and is a forecast of the condition in 2027. For SCANNER the deterioration model applies an annual change to the parameters used to calculate CCI (rut/ 3m and 10m profile/ cracking and texture). For SCRIM an annual decrease in the SCRIM coefficient is applied and a revised SCRIM profile calculated. The annual deterioration rates applied are shown in table 1.

Parameter	Deterioration Per Year
Rut Depth	0.3
3m Profile Variance	0.2
10m Profile Variance	1
WC Cracking %	0.03
Texture Depth	-0.035
SCRIM Deficiency	-0.006

Table 1: Deterioration rates

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For the CVI data available on Beckspool Road the CCI has been calculated using the TN46 methodology. Deterioration has been applied on a linear basis where it has been assumed that a road deteriorates from 'good' as defined by the CCI to very poor over 25 years. There are a limited number of defects present from the CVI survey so the overall effect is to indicate deterioration from 'good' to 'fair' over 10 years.

Impact of deterioration

The deterioration model assumes no interventions. As the condition deteriorates there is likely to be an increase in the number of safety and routine maintenance interventions required, and any planned structural scheme is likely to require a more expensive intervention.
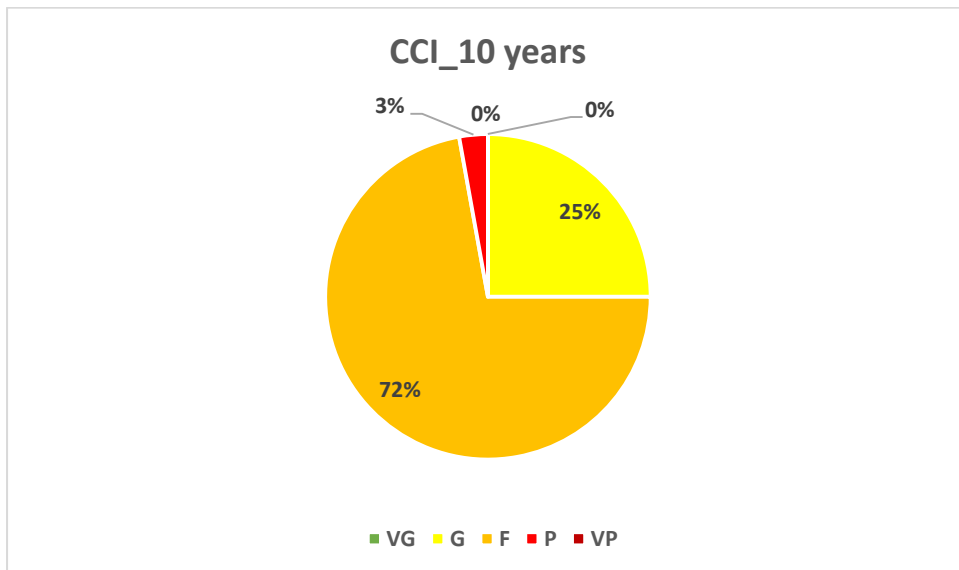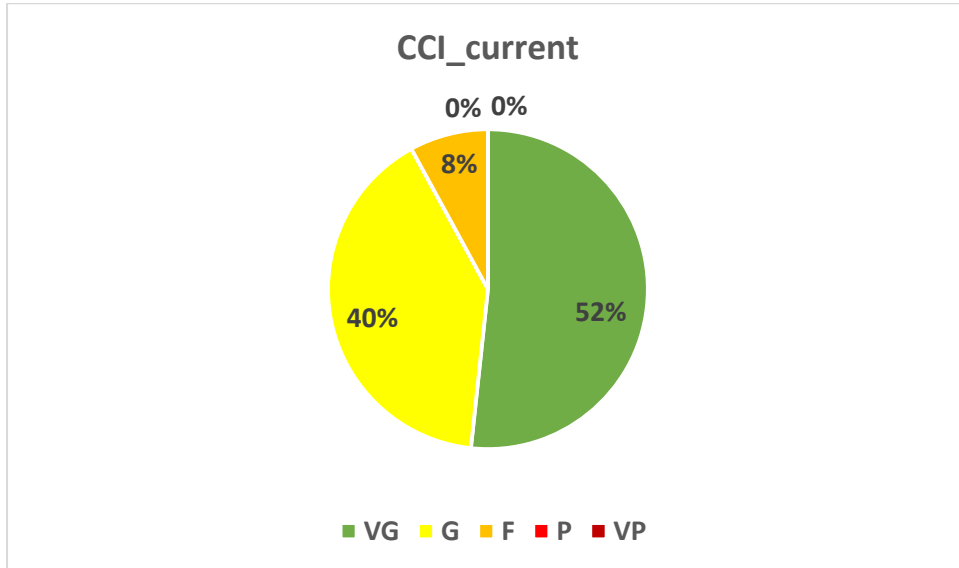
The SCRIM profile would indicate the safety risk on the roads will increase, and this will require management through an investigatory protocol and targeted treatments.

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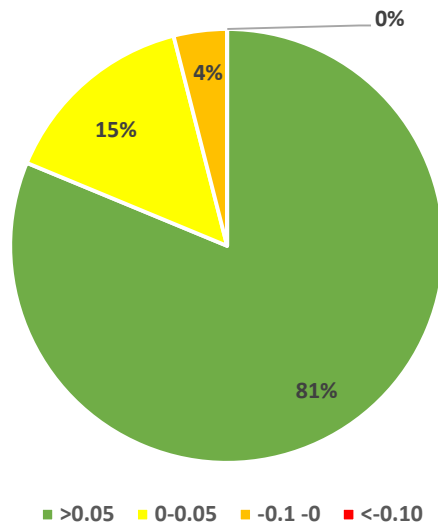
A420 Wick: High Street Wick
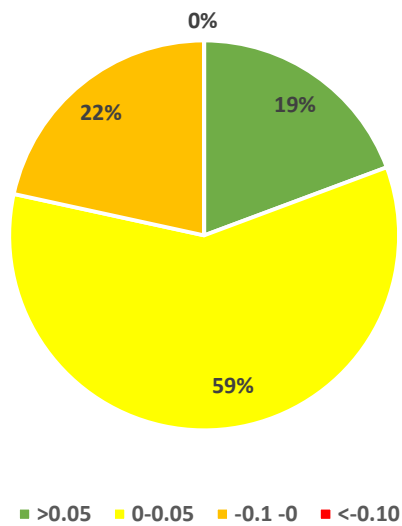
SCANNER survey: July/ August 2016

SCRIM survey August 2016

Condition categories for Strategic/ Main distributor (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

0% 0%
8%
40%
52%

■ VG ■ G ■ F ■ P ■ VP

CCI_10 years

3% 0% 0%
25%
72%

■ VG ■ G ■ F ■ P ■ VP

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SCRIM_Current

■ >0.05	■ 0-0.05	■ -0.1 -0	■ <-0.10

SCRIM_10 Years

■ >0.05	■ 0-0.05	■ -0.1 -0	■ <-0.10

South Gloucestershire Council
Carriageway Condition assessment
W.D.M. Limited: February 2017.

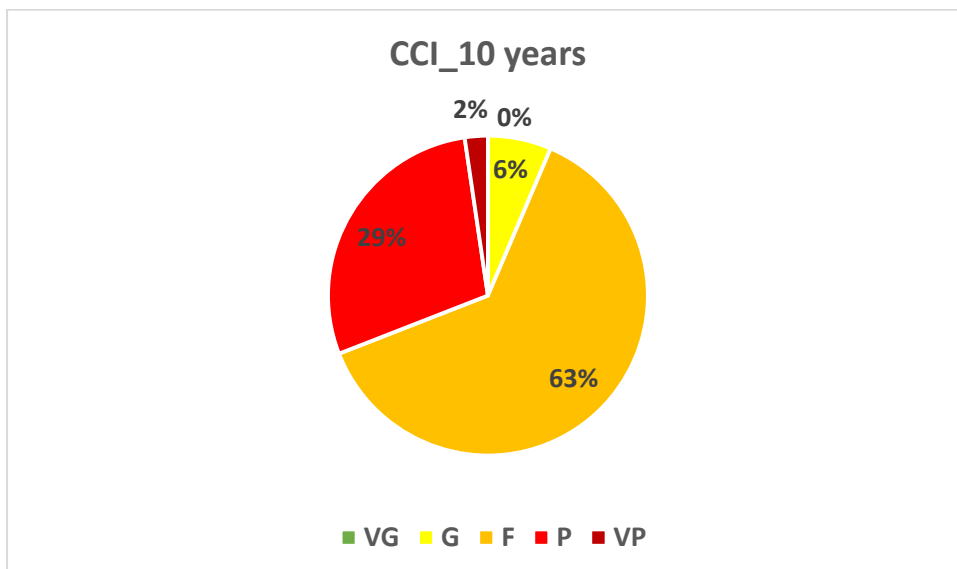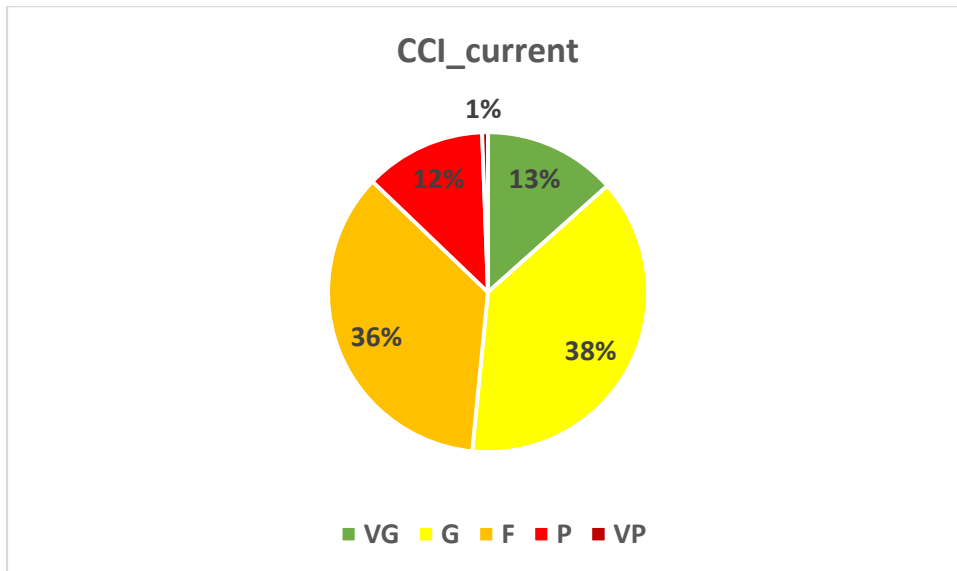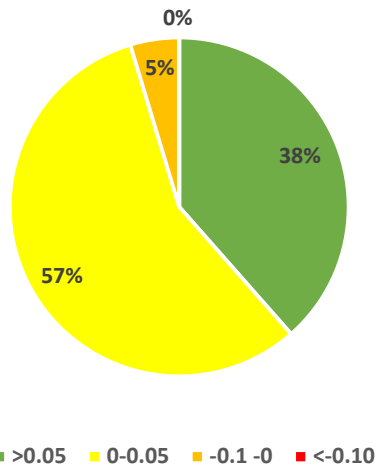# A431 Swineford: Bath Road
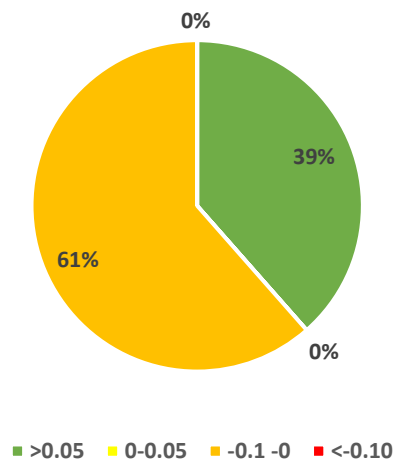
SCANNER survey: July 2016

SCRIM survey August 2016

Condition categories for Strategic/ Main distributor (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

1%		
12%	13%	
36%	38%	

VG ■ G ■ F ■ P ■ VP

CCI_10 years

2%	0%	
	6%	
29%		
63%		

VG ■ G ■ F ■ P ■ VP

SCRIM_Current

0%

5%

38%

57%

■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

SCRIM_10 years

0%

39%

61%

0%

■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

South Gloucestershire Council
Carriageway Condition assessment
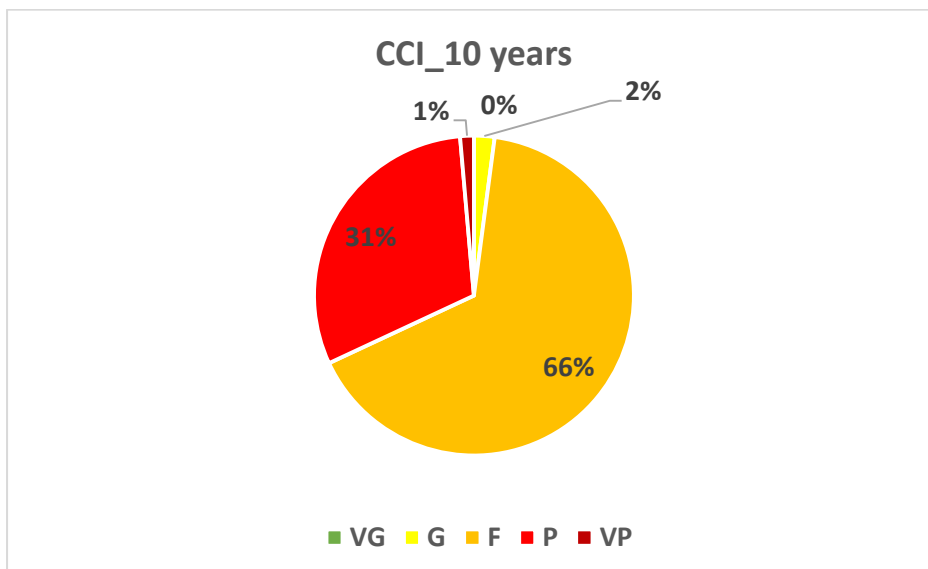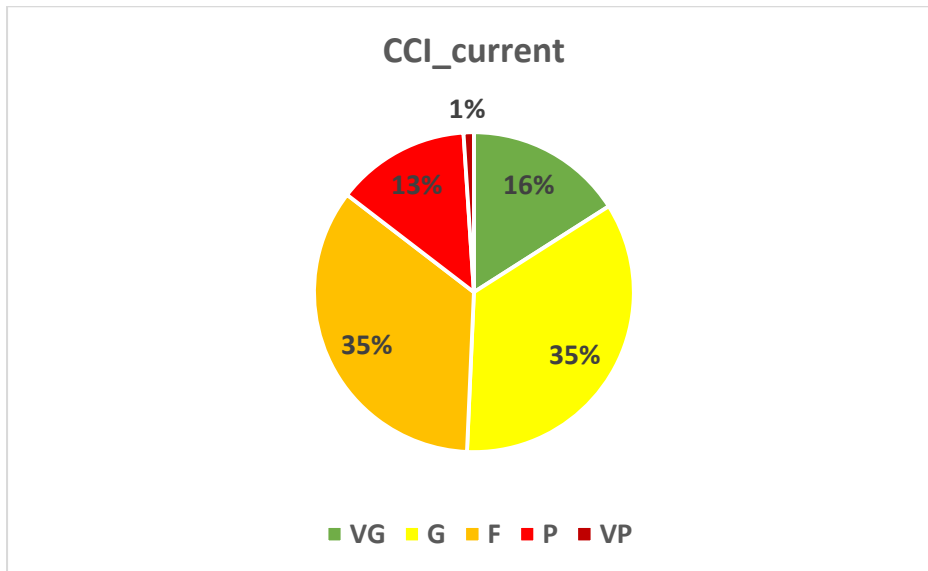W.D.M. Limited: February 2017.

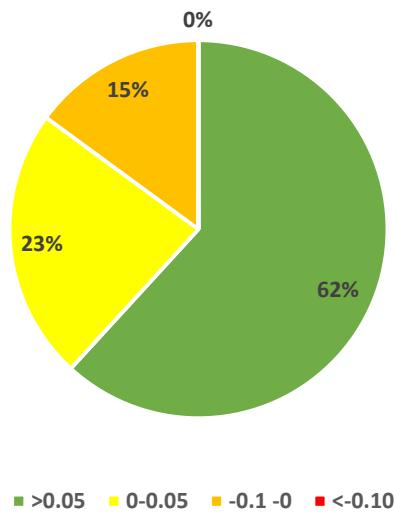# A4175 Oldland Common: Cherry Gardens
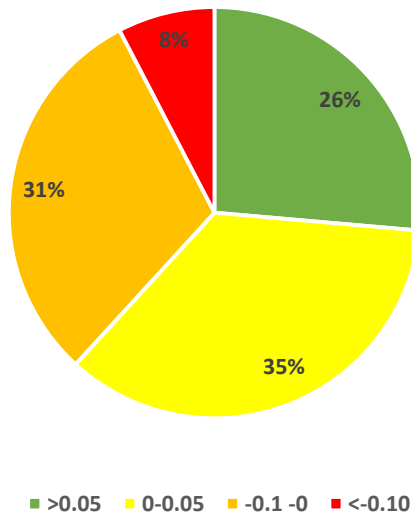
SCANNER survey: July 2016

SCRIM survey August 2016

Condition categories for Strategic/ Main distributor (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

■ VG	■ G	■ F	■ P	■ VP

CCI_10 years

■ VG	■ G	■ F	■ P	■ VP

SCRIM_Current

- 0%
- 15%
- 23%
- 62%

Legend: ■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

SCRIM_10 Years

- 8%
- 26%
- 31%
- 35%

Legend: ■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

South Gloucestershire Council
Carriageway Condition assessment
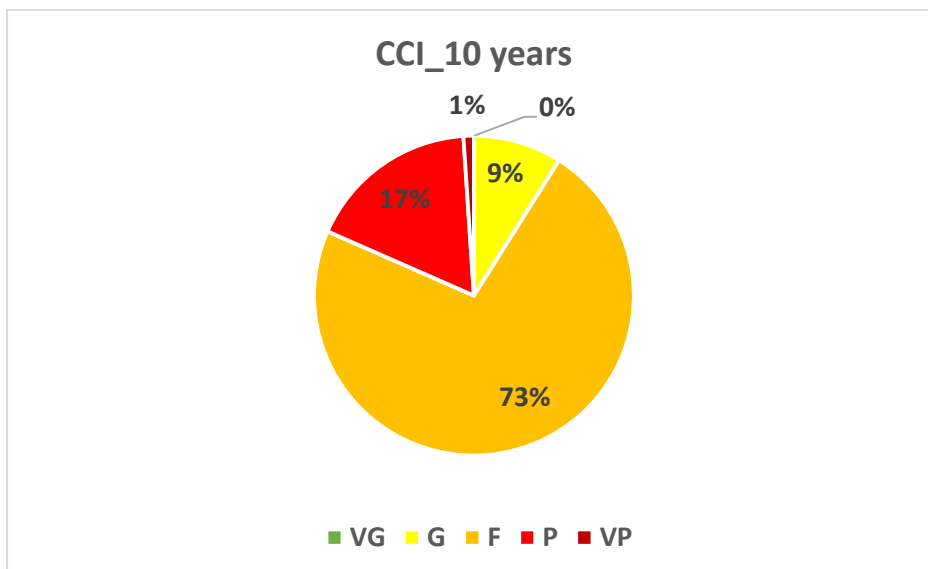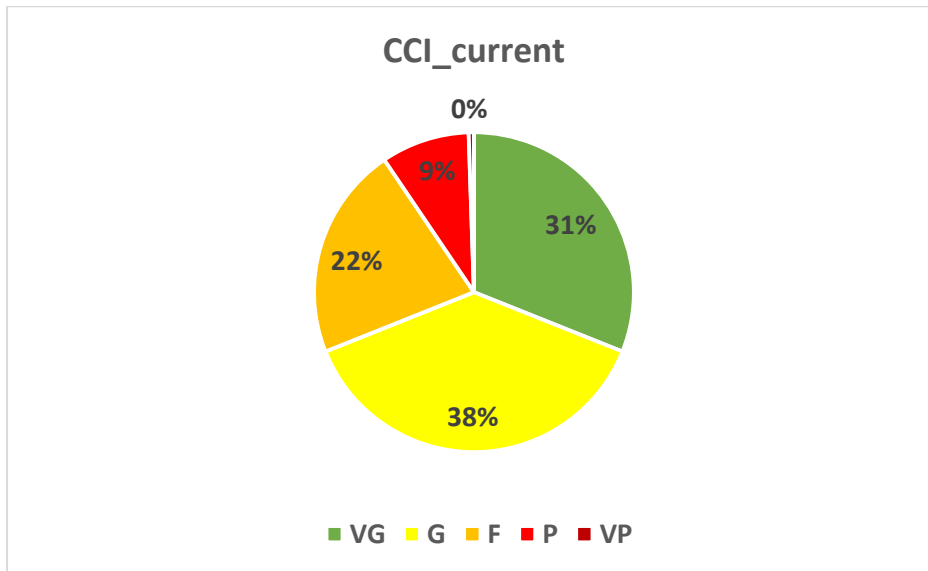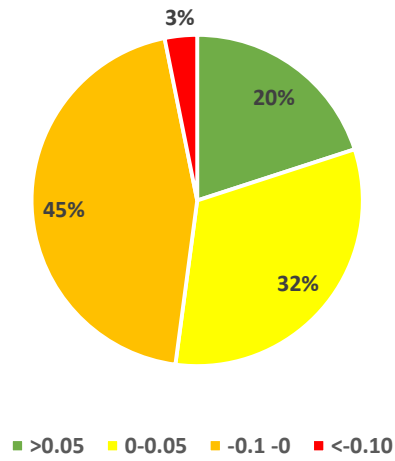W.D.M. Limited: February 2017.

B4058 Winterbourne: High Street
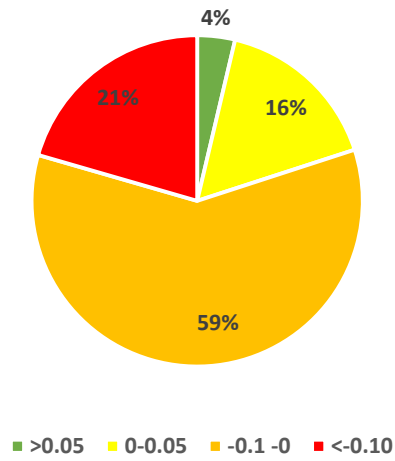
SCANNER survey: May 2015/ August 2016

SCRIM survey August 2016

Condition categories for Strategic/ Main distributor (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

0%
9%
22%
31%
38%

■ VG ■ G ■ F ■ P ■ VP

CCI_10 years

1% 0%
9%
17%
73%

■ VG ■ G ■ F ■ P ■ VP

SCRIM_Current

Legend: ■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

(Pie chart values: 3%, 20%, 32%, 45%)

SCRIM_10 Years

Legend: ■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

(Pie chart values: 4%, 16%, 59%, 21%)

South Gloucestershire Council
Carriageway Condition assessment
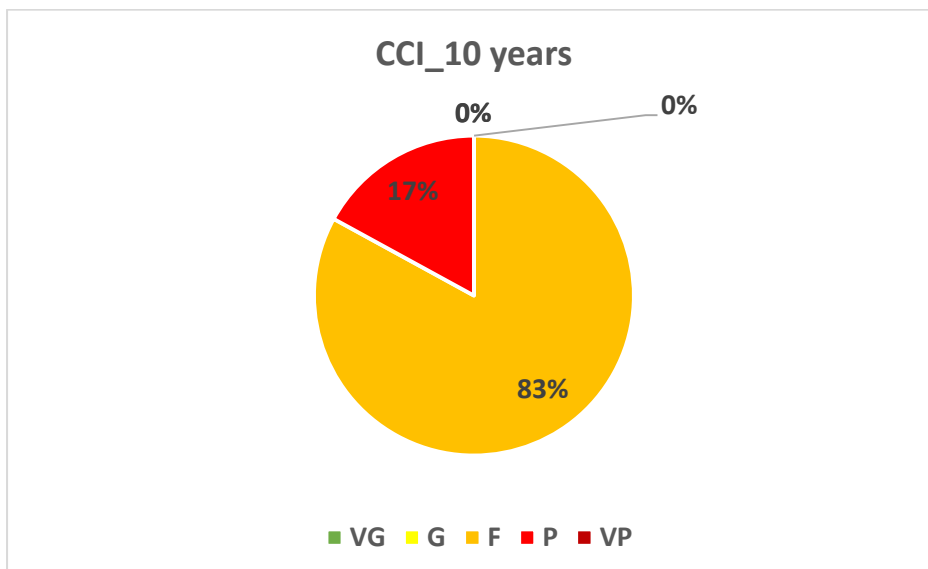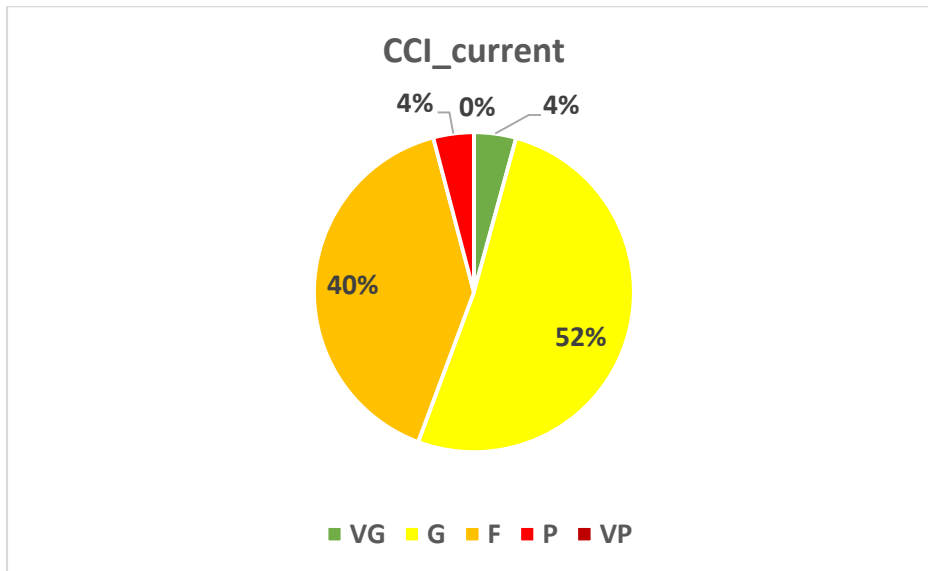W.D.M. Limited: February 2017.
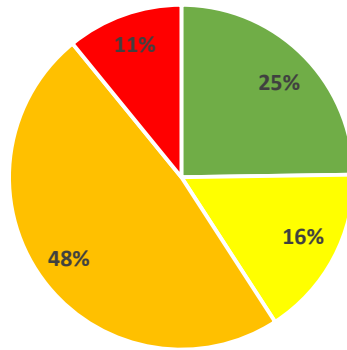
B4058 Bagstone: Bagstone Road

SCANNER survey: May 2015/ August 2016

SCRIM survey August 2016

Condition categories for Strategic/ Main distributor (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)
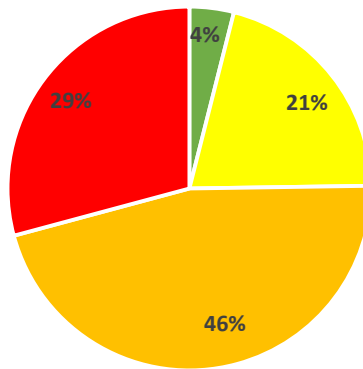
CCI_current

4% — 0% — 4%

40%

52%

■ VG ■ G ■ F ■ P ■ VP

CCI_10 years

0% — 0%

17%

83%

■ VG ■ G ■ F ■ P ■ VP

South Gloucestershire Council
Carriageway Condition assessment
W.D.M. Limited: February 2017.

SCRIM Current

- ■ >0.05
- ■ 0-0.05
- ■ -0.1 -0
- ■ <-0.10

25%

16%

48%

11%

SCRIM_10 Years

- ■ >0.05
- ■ 0-0.05
- ■ -0.1 -0
- ■ <-0.10

4%

21%

46%

29%

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Carriageway Condition assessment
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C317 Abson Road
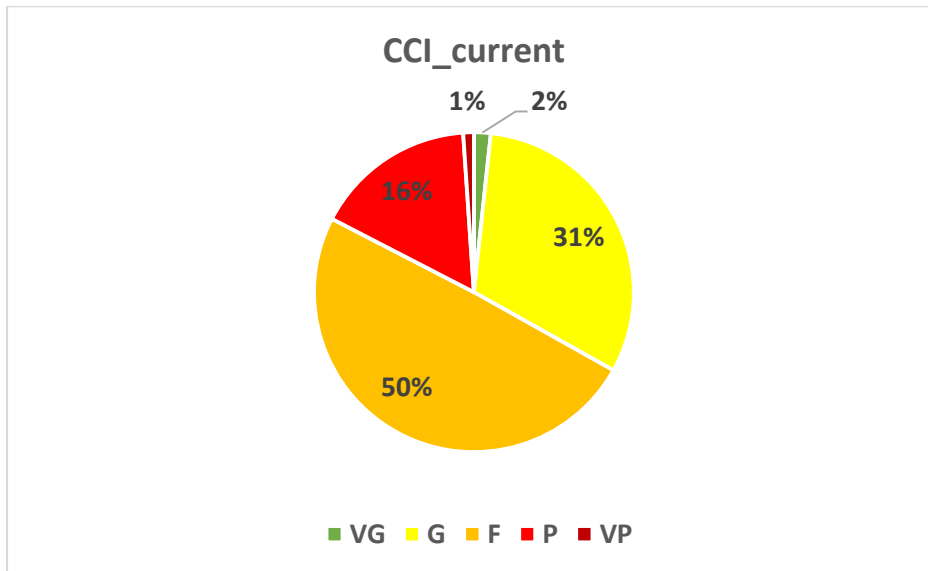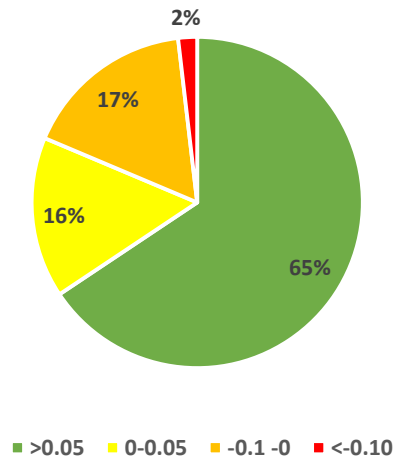
SCANNER survey: May 2015/ August 2016

SCRIM survey August 2015

Condition categories for Secondary Roads (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

1%   2%

16%

31%

50%

■ VG ■ G ■ F ■ P ■ VP

CCI_10 years

3%   0%   1%

32%

64%

■ VG ■ G ■ F ■ P ■ VP

South Gloucestershire Council
Carriageway Condition assessment
W.D.M. Limited: February 2017.

SCRIM_Current

2%
17%
16%
65%

■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

SCRIM_10 Years

5%
34%
29%
32%

■ >0.05 ■ 0-0.05 ■ -0.1 -0 ■ <-0.10

South Gloucestershire Council
Carriageway Condition assessment
W.D.M. Limited: February 2017.
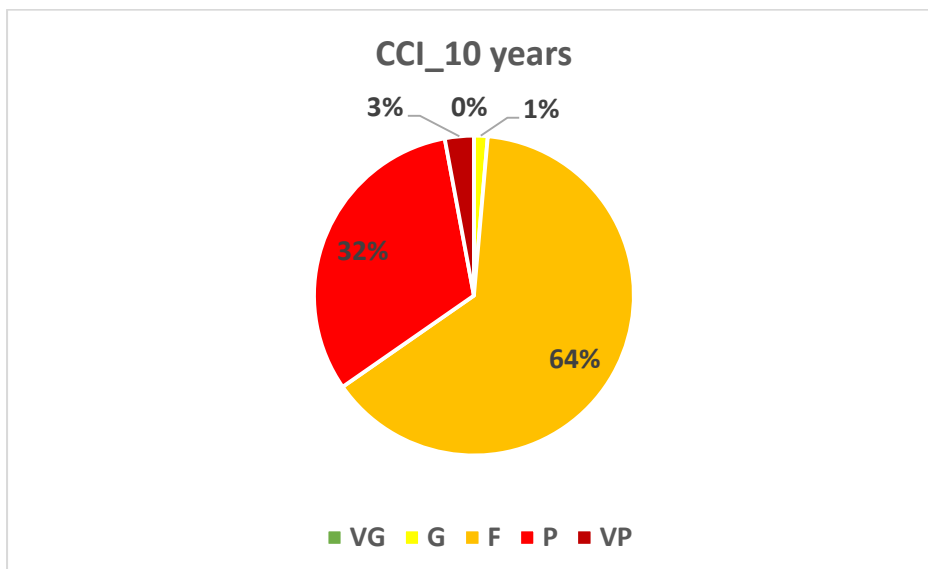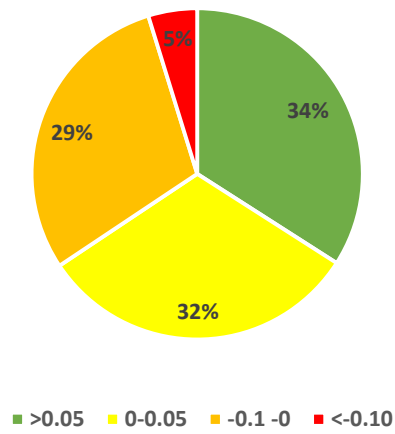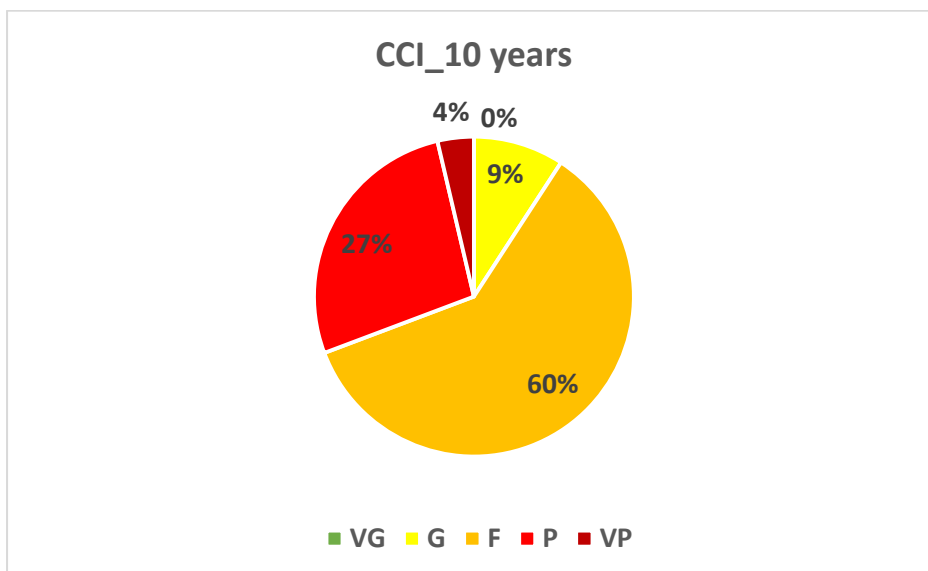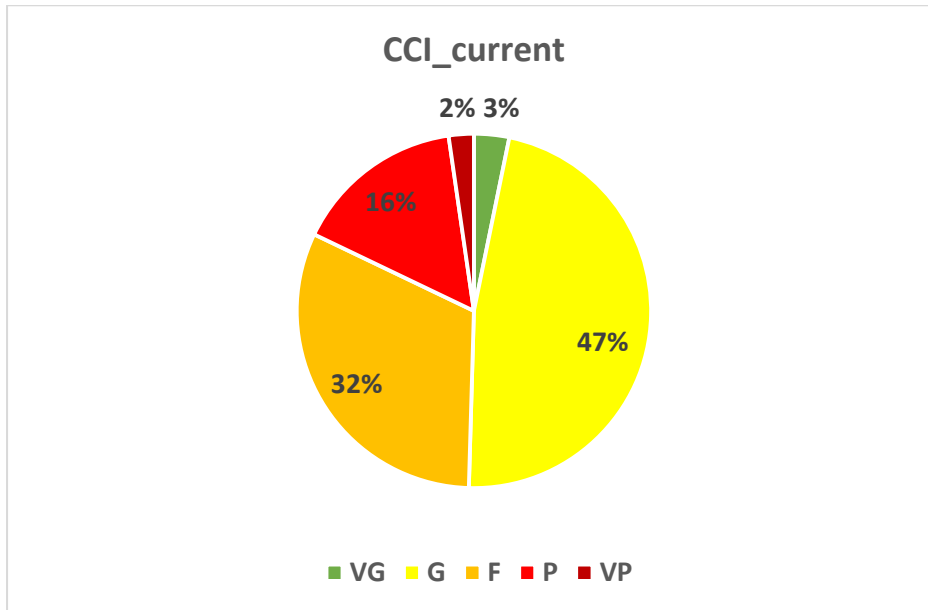
C231 Oldbury Village

SCANNER survey: May 2015/ July 2016

SCRIM survey: none

Condition categories for Secondary Roads (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

2% 3%

16%

47%

32%

■ VG ■ G ■ F ■ P ■ VP

CCI_10 years

4% 0%

9%

27%

60%

■ VG ■ G ■ F ■ P ■ VP

South Gloucestershire Council
Carriageway Condition assessment
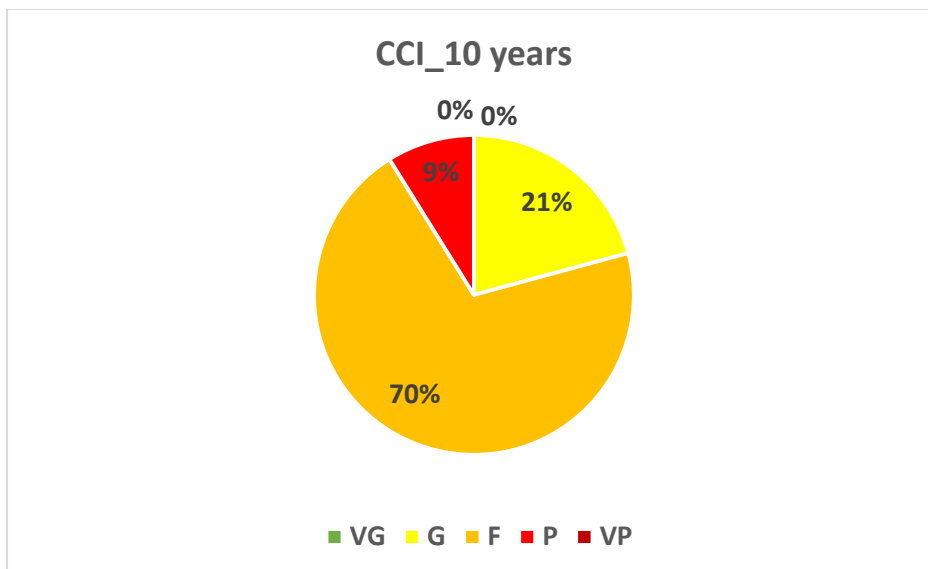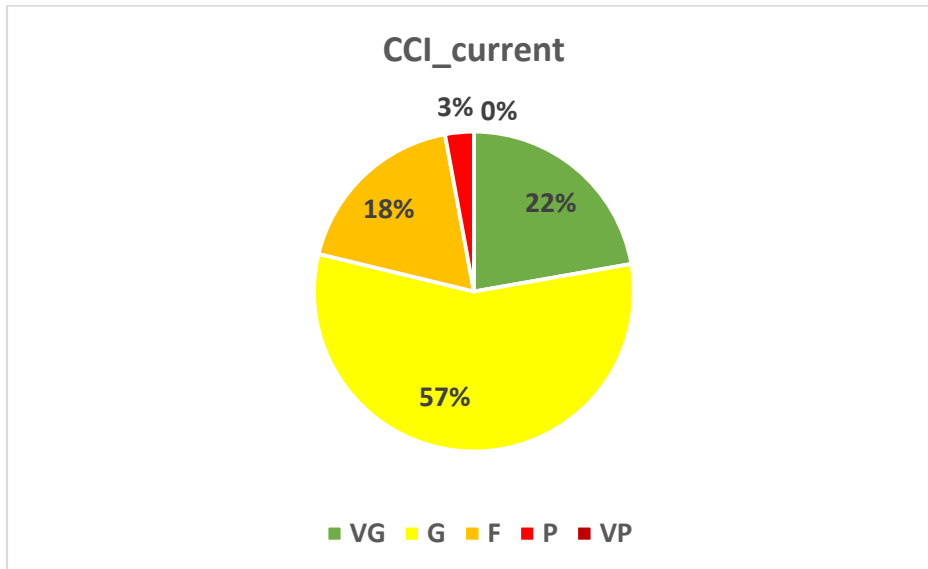W.D.M. Limited: February 2017.

C232 Oldbury Lane

SCANNER survey: May 2015/ July 2016

SCRIM survey: August 2016

Condition categories for Link Road (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

3% 0%
18%
22%
57%

■ VG ■ G ■ F ■ P ■ VP

CCI_10 years

0% 0%
9%
21%
70%

■ VG ■ G ■ F ■ P ■ VP

South Gloucestershire Council
Carriageway Condition assessment
W.D.M. Limited: February 2017.

C232 Beckspool Road, Frenchay

CVI survey:

Condition categories for Local Access Road (ref HMEP Lifecycle Planning toolkit: Table A1. November 2012)

CCI_current

0%   2%   0%

0%

98%

■ VG   ■ G   ■ F   ■ P   ■ VP

CCI_10 year

0%   0%

11%

89%

■ VG   ■ G   ■ F   ■ P   ■ VP

South Gloucestershire Council
Carriageway Condition assessment
W.D.M. Limited: February 2017.