Guidance for Best Value Indicators BV223 and BV224(a) in 2006/07

(Requirements for SCANNER surveys in 2006/07 for reporting BV223 and BV224(a) in 2007)

BV223 (condition of principal roads) and BV224(a) (condition of other classified roads) will be reported on the same basis in 2006/07 as in 2005/06, using the SCANNER Road Condition Indicator. This will show the proportion of the network in poor overall condition which is likely to require planned maintenance soon.

In addition to the BVPI figures, the SCANNER Road Condition Indicator, obtained through UKPMS, will provide local authorities with information about which sections of their networks should be considered for planned maintenance soon, which sections should be investigated to determine the optimum time for maintenance, and which sections are generally in a good state of repair (these three categories are colloquially known as "red", "amber" and "green" lengths).

The proportion of the network in the "red" category is reported as the BVPI, but there is no need to report the "amber" or "green" proportions. Detailed definitions of these categories are given at the end of this document.

Local authorities are advised to aim to have surveys carried out at approximately the same time each year, to minimise variations due to seasonal effects and the impact of the works programme.

BV223 - Condition of Principal Roads in England

Measurement

1. In 2006/07, local authorities in England are required to use SCANNER accredited surveys and a UKPMS accredited pavement management system to produce their BV223 report.

2. Where an authority was able to report BV96 in 2005 based on TTS surveys carried out in 2004/05, and has consequently carried out a SCANNER survey on half the principal network in 2005/06 (either 50% of the length in both directions or 100% of the length in one direction), they are required to survey the other half of their principal network in 2006/07 (i.e. the half not surveyed in 2005/06). These authorities will produce their BV223 report in 2007 based on the most recent SCANNER survey results covering their whole of their principal road network over 2 years from 1 April 2005 to 31 March 2007.

3. Where an authority was not able to report BV96 in 2005 based on TTS surveys carried out in 2004/05, and has consequently surveyed their full principal network in both directions in 2005/06, they are required to survey their full principal road length again in both directions again in 2006/07. These authorities will produce their BV223 report in 2007 based on the most recent SCANNER survey results covering their whole of their principal road network over the 1 year from 1 April 2006 to 31 March 2007.

4. Where an authority carried out extensive TTS surveys in 2004/05 but was not able to report BV96 because of a lack of coverage, but has sufficient TTS coverage of at least half of their principal road network in 2004/05, and has re-surveyed the full length of their principal road network in 2005/06, they may **exceptionally** resurvey the other half of their principal road network in 2006/07 (i.e. the half without sufficient coverage in 2004/05). These authorities will produce their BVPI report in 2007 based on the most recent SCANNER survey results covering their whole of their principal road network over the 2 years from 1st April 2005 to 31st March 2007.

5. The minimum survey requirement for an acceptable BV223 report is for valid data covering at least 90% of the total length of the principal road network.

Reporting

6. The BV223 report will be produced using a UKPMS accredited pavement management system running Rules & Parameters RP7.01 (or later) and the latest version of Weighting Set WS223.
7. Authorities should report the percentage length of their principal road network which is in poor overall condition and is likely to require maintenance soon (the "red" length).
8. The thresholds and weightings to be used to calculate the condition of road lengths are included in UKPMS weighting set WS223 and are shown below, with the indicator contribution shown below.
9. De-trunked roads and principal motorways will be included in the calculation of BV223 for 2006/07.
10. BV223 results should be reported in whole numbers. Decimals should not be used.
11. The Department for Transport advised local authorities in June 2005 that they would have to provide a target for BV223 as part of their final LTP2 in March 2006. However, as BV223 targets could not, in March 2006, be based on actual survey data, the Department will provide further guidance separately on the setting of SCANNER-based targets and trajectories (and when revised targets should be submitted). Authorities will have an opportunity to adjust their provisional targets part way through the LTP2 period, when data are available on which to make a reasoned proposal.

Thresholds and weightings for BV223 (included in UKPMS WS223)

Principal roads in England (BV223)						
Family	UKPMS Defect Code	Condition	Lower threshold	Weighting	Upper threshold	Condition
Rut depth	LLRT LRRT	Acceptable	10 mm	Linear	20 mm	Severe
Longitudinal profile 3 m variance	LV3	Acceptable	4 mm^2	Linear	10 mm^2	Severe
Longitudinal profile 10 m variance	LV10	Acceptable	21 mm^2	Linear	56 mm^2	Severe
Whole carriageway cracking intensity	LTRC	Acceptable	0.15 %	Linear	2.0 %	Severe
Wheel track cracking intensity	LWCL LWCR	Acceptable	0.5%	Linear	5%	Severe

Nearside wheel track texture depth	LLTX	Acceptable	0.6 mm^2	Linear	0.3 mm^2	Severe
SCORE			0 points		100 points	

Contribution to Road Condition Indicator

Defined for principal roads surveyed in 2004/05 and 2005/06					
Family	UKPMS Defect Code	Importance (relevance) factor	Reliability factor	Overall (combined) factor	Maximum points
Rut depth (greater of nearside and offside)	LLRT LRRT	0.9	1.0	0.9	90
Longitudinal profile 3m variance	LV3	0.8	1.0	0.8	80
Longitudinal profile 10m variance	LV10	0.6	1.0	0.6	60
Whole carriageway cracking	LTRC	0.9	0.55	0.5	50
Wheel track cracking intensity (greater of nearside and offside)	LWCL LWCR	0.9	0.44	0.4	40
Nearside wheel track texture depth	LWCR	0.5	1.0	0.5	50
Maximum total points					370

BV224(a) - Condition of Non Principal classified roads in England

Measurement

1. In 2006/07, local authorities in England are required to use SCANNER accredited surveys and a UKPMS accredited pavement management system to produce their BV224a report.

2. In 2006/07, local highway authorities should complete the survey of their B class roads commenced in 2005/06, through surveys carried out over the full length of their B road network, in the opposite direction from 2005/06, using a SCANNER accredited survey vehicle. The minimum requirement is for valid survey data covering at least 90% of the overall length of the B class roads.

3. In 2006/07, local highway authorities should continue the survey of their C class roads through surveys carried out in one direction only over at least 50% of the length of their C class roads, using a SCANNER accredited survey vehicle. These roads should be different from those surveyed in 2005/06, bringing the total extent of survey on C class roads up to at least 60%. The minimum requirement is for valid survey data in 2006/07 covering at least 45% of the overall length of the C class roads. To achieve this, local authorities will need to instruct their survey contractor to survey more than the minimum length, to allow for survey lengths without valid data.

4. Authorities will produce their BVPI report in 2007 based on all the SCANNER survey results covering their non principal classified road network over the 2 years from 1st April 2005 to 31st March 2007.

Reporting

5. The BV224(a) report will be produced from the SCANNER survey results using a UKPMS accredited pavement management system running Rules & Parameters RP7.01 (or later) and the latest version of Weighting Set WS224a.

6. Authorities should report the percentage length of their non principal classified road network which is in a poor overall condition and is likely to require planned maintenance soon (the "red" length).

7. The thresholds and weightings to be used to calculate the length of road are included in UKPMS weighting set WS224a and are shown below, with the indicator contribution shown below.

8. BV224(a) results should be reported in whole numbers. Decimals should not be used.

9. The precise method of combining the results from B and C roads to give a statistically meaningful result is shown in the formula defined below.

10. In the initial years of collecting SCANNER data relating to C roads, there may be some volatility in the C roads data due to the non-random selection of the sample. Authorities should therefore calculate separate reports for B and C roads, in order to understand more clearly what is driving any changes in BV224(a).

11. Local highway authorities should provide the figures for the B and C roads separately as well as the overall BV224(a) figure. This information may be required for subsequent validation checks regarding survey coverage.

12. The Department will provide further guidance separately on the setting of SCANNER-based targets and trajectories for BV224a. Targets and trajectories will be required from 2007/08 onwards upon the production of 2 years valid results i.e. upon production of BV224(a) for 2006/07, in June 2007.

Formula for calculating BV224(a)

$$\text{Percentage of network in need of further investigation} = 100 * \frac{\left[C_c * \frac{l_c}{S_c}\right] + \left[C_b * \frac{l_b}{S_b}\right]}{\left[C_c + C_b\right]}$$

C_c = Carriageway length of complete C road network

l_c = Lane length of C road surveyed and assessed as in need of maintenance

S_c = Lane length of C road surveyed

C_b = Carriageway length of complete B road network

l_b = Lane length of B road surveyed and assessed as in need of maintenance

S_b = Lane length of B road surveyed

Thresholds and weightings in UKMPS WS224a

Other classified roads in England (BV224a)							
Family	UKPMS Defect Code	Class	Condition	Lower threshold	Weighting	Upper threshold	Condition
Rut depth	LLRT LRRT	B & C	Acceptable	12 mm	Linear	25 mm	Severe
Longitudinal profile 3 m variance	LV3	"B"	Acceptable	4 mm^2	Linear	10 mm^2	Severe
		Urban "C"	Acceptable	7 mm^2	Linear	17mm^2	Severe
		Rural "C"	Acceptable	15 mm^2	Linear	25 mm^2	Severe
Longitudinal profile 10 m variance	LV10	"B"	Acceptable	21 mm^2	Linear	56 mm^2	Severe
		Urban "C"	Acceptable	45 mm^2	Linear	90 mm^2	Severe
		Rural "C"	Acceptable	45 mm^2	Linear	130 mm^2	Severe
Whole carriageway cracking intensity	LTRC	B & C	Acceptable	0.15%	Linear	2.0%	Severe

Wheel track cracking intensity	LWCL LWCR	B & C	Acceptable	0.5 %	Linear	5.0 %	Severe
Nearside wheel track texture depth	LLTX	B & C	Acceptable	0.6 mm^2	Linear	0.3 mm^2	Severe
SCORE				0 points		100 points	

Contribution to Road Condition Indicator

Provisional figures for other classified roads surveyed in 2005/06					
Family	UKPMS Defect Code	Importance (relevance) factor	Reliability factor	Overall (combined) factor	Maximum points
Rut depth (greater of nearside and offside)	LLRT LRRT	0.9	1.0	0.9	90
Longitudinal profile 3m variance	LV3	0.8	1.0	0.8	80
Longitudinal profile 10m variance	LV10	0.6	1.0	0.6	60
Whole carriageway cracking	LTRC	0.9	0.55	0.5	50
Wheel track cracking intensity (greater of nearside and offside)	LWCL LWCR	0.9	0.44	0.4	40
Nearside wheel track texture depth	LLTX	0.5	1.0	0.5	50
Maximum total points					370

Condition Indicators

Condition of sub-section (nominally 10 m length)

Total points	**Condition of sub-section**
$100 \leq$ total points ≤ 370	RED = plan maintenance soon

20 ≤ total points ≤ 99.99	AMBER = plan investigation soon
0 ≤ total points ≤ 19.99	GREEN = generally good condition

Definitions of red, amber and green carriageway condition.

- **"RED" = lengths in poor overall condition which are likely to require planned maintenance soon (i.e. within a year or so) on a "worst first" basis** (Although there may be justification for postponing major repairs, and only carrying out minor repairs to keep the road safe and serviceable, in order to minimise whole life costs. i.e. "economic prioritisation").
- **"AMBER" = lengths where some deterioration is apparent which should be investigated to determine the optimum time for planned maintenance treatment.** (Where there may be justification for carrying out a lesser maintenance treatment sooner, rather than more extensive treatment later, in order to minimise whole life costs. i.e. "economic prioritisation").
- **"GREEN" = lengths where the carriageway is generally in a good state of repair.**