

UK Pavement Management System



Technical Note 43

Welsh PI (2007/08) guidance notes for UKPMS Developers

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Document Information

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Description	This Technical Note provides guidance for UKPMS Developers to allow them to produce THS/010, the Welsh PI for 2007/08.

Document History

Version No	Status	Author	Date	Changes from Previous Version
1.01	Draft	RAC	30/07/07	1 st draft – containing questions for the reference group
1.02	Revised	RAC	31/08/07	Revised following the meeting of the Transport & Highways Reference Group on 20 th August 2007.
1.03	Issue	RAC	27/09/07	Formal version for release

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Introduction

This Technical Note provides guidance for UKPMS Developers to allow them to produce THS/010, the Welsh PI reports for 2007/08. It provides:

- **Background Information** on survey coverage
- **Processing & Reporting Requirements** including an example report

Background Information

THS/010, the Welsh PI, is based on SCANNER data collected according to the road class as follows:

- **Principal (A) Roads:** 100% in a single direction or 50% in both directions each year. Roads not surveyed in the previous year must be surveyed in the present year.
- **Non-principal classified (B & C) Roads:**
 - B Roads: 100% in a single direction or 50% in both directions each year. Roads not surveyed in the previous year must be surveyed in the present year.
 - C Roads: 25% in a single direction.

Processing & Reporting Requirements

The data is processed using the SCANNER Road Condition Indicator (RCI) with a user-specified weighting set. The RCI should use data collected during the financial year being reported upon i.e. 1 Apr 07 to 31 Mar 08 for the 2007/08 results.

The PI results are calculated separately for principal roads and for non-principal classified roads to give THS/010a and THS/010b respectively.

The formula used is:

$$\frac{\text{Numerator}}{\text{Denominator}} \times 100$$

For THS/010a:

Numerator: the total length of A roads greater than or equal to the Red threshold.

Denominator: the total surveyed length of A roads.

For THS/010b:

Numerator: the total length of B & C roads greater than or equal to the Red threshold.

Denominator: the total surveyed length of B & C roads.

All lengths shown on the reports are given in km to 3 decimal places and all percentages including the PI result are given to 1 decimal place.



In due course confidence limits may be required but are not specified for THS/010 for 2007/08.

Content of the Reports

Notes:

1. Other than that the reports should be presented in the three parts given below, the following is not intended to give guidance on the layout or format of the report merely to show what content should be included and how that content should be derived.
2. If the data is not provided on coincident subsections then the SCANNER RCI is not valid and it is not possible to produce the PI.

Part 1 – Run Details & Data Selected

This part of the report contains the details and identifiers for the run.

Ref	Description	Example	
		THS/010a	THS/010b
1.1	Authority	Oldshire CC	Oldshire CC
1.2	UKPMS System	Bloggs PMS	Bloggs PMS
1.3	UKPMS System Version	2.45	2.45
1.4	Run Identifier	ABC01	ABC01
1.5	Run Date	05/04/2008	05/04/2008
1.6	Weighting Set Identifier	WS223v0202	WS224av0202
1.7	Rule Set Identifier	RP8.01	RP8.01
1.8	From Date	01/04/2007	01/04/2007
1.9	To Date	31/03/2008	31/03/2008
1.10	Combination method	Sum	Sum
1.11	Threshold type	Bin	Bin

Note that for those Developers who choose to implement the RCI as a type of Automatic Pass, the Run Identifier is simply the Automatic Pass identifier.

This is then followed by the criteria used to select the sections and surveys. Generally, for THS/010a, this will simply be to select all sections with a DfT Classification Code of 3 and for THS/010b to select all sections with a DfT Classification Code of 4 or 5. However, it may be necessary for an authority to specify particular surveys; for example if multiple SCANNER surveys have been carried out within the date range for THS/010 and not all of these were intended for THS/010. The report must give the type of criteria (e.g. survey number, or a specified section attribute) and the values included for that attribute.

Ref	Description	Example	
		THS/010a	THS/010b
1.12	Criteria Type	DfT Classification Code	DfT Classification Code
1.13	Criteria Value	3	4 or 5



Note that currently the Road Condition Indicator algorithm and weighting sets only apply to SCANNER data. If, in the future, they are extended to other survey types then there will be a requirement to select the ‘TTS’ survey type for THS/010.

Part 2 – Surveyed Network

This part of the report gives the possible survey lane length together with the length which has actually been surveyed. For THS/010b separate figures should be provided for the B Roads and C Roads.

Ref	Description	Example	
		THS/010a	THS/010b
2.1	Selected network sections	91	218
2.2	Selected network length	75.838	165.438
2.3	Possible survey lane length	127.113	321.445
2.4	Actual survey lane length	64.030	162.650
2.5	Percentage of selected network surveyed in survey period	50.4%	50.6%

The selected network sections figure is the number of sections in the selected network (i.e. with DfT classification 3 for THS/010a and with DfT Classification 4 or 5 for THS/010b).

The selected network length is the sum of the *Section Length Number* for the selected network.

The possible survey lane length is calculated as:

$\Sigma(\text{Section Length Number multiplied by Nearside Multiplier for the section Road Type})$,
for the selected network.

The actual survey lane length is the sum of all subsection lengths with eligible data. (The definition of ‘eligible’ here is that the data satisfies the date criteria, plus any survey and section criteria).

The percentage (Ref 2.5) is calculated as actual survey lane length (Ref 2.4) divided by possible survey lane length (Ref 2.3) expressed as a percentage. For A roads and B Roads this figure should be approximately 50%.

In addition to providing the above statistics a breakdown of the network on the basis of Rural/Urban/Undefined is also required. For THS/010b this breakdown is required for B Roads and C Roads separately.

Ref	Description	Example	
		THS/010a	THS/010b
2.7	Rural surveyed network	42.321	130.123
2.8	Urban surveyed network	19.874	31.647
2.9	Undefined surveyed network	1.835	0.880
2.10	Total surveyed network percentage	84.4%	98.3%



The rural surveyed network is the sum of all rural subsection lengths with eligible data; similarly the urban surveyed network is the sum of the urban subsection lengths with eligible data. The undefined network length is the sum of all those subsections with eligible data but which are neither urban nor rural. Together the rural, urban and undefined figures should add to give the actual survey lane length (Ref 2.4).

The total surveyed network percentage is the actual survey lane length (Ref 2.4) expressed as a percentage of the selected network length (Ref 2.2). For C roads this figure should be approximately 25%.

Part 3 – BVPI Results

This part of the report contains the THS/010 result.

Since the weighting set uses a Bin type threshold, the length and percentage in each bin is given. For THS/010b this information is required for B Roads and for C Roads separately.

<i>Ref</i>	<i>Description</i>	<i>Example</i>	
		<i>THS/010a</i>	<i>THS/010b</i>
3.1	Bin description	Red	Red
3.2	Bin threshold	>=100	>=100
3.3	Length (km) in bin	15.020	11.516
3.4	Percentage in bin	23.5%	7.1%

Note that the sum of the length in all bins should total to give the actual survey lane length (Ref 2.4) for that road class, and the sum of the percentages should be 100% (subject to rounding errors).

The final figures in the report give the THS/010 figure.

<i>Ref</i>	<i>Description</i>	<i>Example</i>	
		<i>THS/010a</i>	<i>THS/010b</i>
3.5	THS/010	23.5%	8.0%

THS/010a is the percentage in the Red bin; THS/010b is the total length of B & C class roads in the Red bin expressed as a percentage of the total surveyed length of B & C class roads.



Example Reports

THS/010a

Run Details & Data Selected

Authority: Oldshire CC
 UKPMS: Bloggs PMS v2.45
 Run Identifier: ABC01
 Run Date: 05/04/2008
 Weighting Set ID: WS223v0202
 Rule Set ID: RP8.01
 Dates: From 01/04/2007 to 31/03/2008
 Combination method: Sum
 Threshold type: Bin

Criteria:

DfT classification 3

Surveyed Network

Selected network sections: 91
 Selected network length: 75.838 km
 Possible survey lane length: 127.113 km
 Actual survey lane length: 64.030 km 50.4%

Rural surveyed network: 42.321 km
 Urban surveyed network: 19.874 km
 Undefined surveyed network: 1.835 km
 Total surveyed network: 64.030 km 84.4%

PI results

Green (<40) 27.669 km 43.2%
 Amber (>=40) 21.341 km 33.3%
 Red (>=100) 15.020 km 23.5%

THS/010a 23.5%

**THS/010b****Run Details & Data Selected**

Authority: Oldshire CC
 UKPMS: Bloggs PMS v2.45
 Run Identifier: ABC01
 Run Date: 05/04/2008
 Weighting Set ID: WS224av0202
 Rule Set ID: RP8.01
 Dates: From 01/04/2007 to 31/03/2008
 Combination method: Sum
 Threshold type: Bin

Criteria:

DfT classification 4
 DfT classification 5

Surveyed Network

DfT Classification:	4		5	
Selected network sections:	218		526	
Selected network length:	165.438 km		426.838 km	
Possible survey lane length:	321.445 km		846.193 km	
Actual survey lane length:	162.650 km	50.6%	110.129 km	13.0%
Rural surveyed network:	130.123 km		60.346 km	
Urban surveyed network:	31.647 km		48.143 km	
Undefined surveyed network:	0.880 km		1.640 km	
Total surveyed network:	162.650 km	98.3%	110.129 km	25.8%

BVPI results

Green (<40)	109.488 km	67.3%	43.313 km	39.3%
Amber (>=40)	41.646 km	25.6%	56.545 km	51.3%
Red (>=100)	11.516 km	7.1%	10.271 km	9.3%

THS/010b 8.0%