

Appendix C



Analysis Report

Milton Keynes Footway analysis and treatment selection

(CMK used as sample area)

Client: Milton Keynes Council

Primary Contact: Andy Dickinson

Date: 18/04/2012

Consultant: Gary Morland

Project Outline

Milton Keynes Council is investigating the appropriate scheme for the footways and redways around central Milton Keynes, and have contracted Symology to provide assistance in scheme identification.

The justification for any scheme selected is to be based on an informed approach, utilising an accredited United Kingdom Pavement Management System (UKPMS), and be based on condition data and local knowledge.

This would make use of the data from the Footway Network Surveys that were collected in 2010 and 2011.

This will be followed by a site visit to verify if any maintenance had been carried out by other departments, if the data had further deteriorated and the treatments identified reflected the treatment's required out on site.

It's worthwhile noting that any analysis carried out in a UKPMS system must always be verified by an Engineer to ensure the data is representing the on-site conditions. It is also common that authorities have the maintenance and capital schemes split between directorates which can cause duplication of work if not communicated correctly.

Scheme preparation and treatment selection

The work carried out utilised Symology's accredited UKPMS system. The Automatic pass required to produce reporting and treatments was run using the latest Rules and Parameters (RP10.01*) and Technical Note 47 part 2*. By running the **FNS Performance Report 2: FNS Headline Condition Indicator we can obtain defect lengths** for functional Impairment and Structurally Unsound condition.

FNS Performance Report 2: FNS Headline Condition Indicator – Extract

Please refer to the supplementary guidance for larger version of the below report.

FNS Performance Report 2: FNS Headline Condition Indicator

Milton Keynes Council - Central Milton Keynes
Footways (only)

Rule Set R1001
Pass Id 3

FWHI	Surveyed Length (km)	Condition Level												
		1: As New		2: Aesthetically Impaired		3: Functionally Impaired			4: Structurally Unsound			3 plus 4		
		km	%	km	%	km	%	Average Extent %	km	%	Average Extent %	km	%	Average Extent %
1	15.451	8.808	57.0	0.151	1.0	2.154	13.9	31.0	4.338	28.1	33.3	6.492	42.0	32.6
2	28.494	16.021	56.2	0.292	1.0	3.407	12.0	33.6	8.773	30.8	32.8	12.181	42.7	33.0
4	9.090	4.937	54.3	0.075	0.8	1.199	13.2	33.1	2.879	31.7	33.3	4.078	44.9	33.2
All	53.035	29.767	56.1	0.518	1.0	6.760	12.7	32.7	15.990	30.2	33.0	22.751	42.9	32.9

Network Headline Indicator: Percentage Length with functionally impaired or structurally unsound defects:

42.9%

*For Rules and parameters, Technical Notes and Full reports please refer to the supplementary guidance.

Milton Keynes Council provided the following market tested treatment rates. These were entered into Symology and an automatic pass re-run to calculate the treatments and associated costs.

Treatments Rates

Treatment code	Treatment description 1	Treatment description 2	Treatment description 3	Unit Type	Hierarchy	Cost
LO/LR/FL	Localised Treatment	Local Relay	Flags	0005 FOOTWAY	* *ALL*	£ 150.00
LO/OC/BI	Localised Treatment	Off-CW Local Repair	Bituminous	0005 FOOTWAY	* *ALL*	£ 40.00
LO/OC/CO	Localised Treatment	Off-CW Local Repair	Concrete	0005 FOOTWAY	* *ALL*	£ 40.00
RS/OO/BI	Resurfacing	Off-Carriageway Overlay	Bituminous	0005 FOOTWAY	* *ALL*	£ 40.00
RS/RB/BL	Resurfacing	Relay Blocks	Blocks	0005 FOOTWAY	* *ALL*	£ 50.00
RS/RF/FL	Resurfacing	Relay Flags	Flags	0005 FOOTWAY	* *ALL*	£ 150.00
ST/OR/BI	Strengthening or Renewal	Off-Carriageway Recon	Bituminous	0005 FOOTWAY	* *ALL*	£ 40.00
ST/OR/BL	Strengthening or Renewal	Off-Carriageway Recon	Blocks	0005 FOOTWAY	* *ALL*	£ 150.00
ST/RC/FL	Strengthening or Renewal	Reconstruct	Flags	0005 FOOTWAY	* *ALL*	£ 150.00
SU/OS/BI	Surface Improvement	Off-CW Surface Treatment	Bituminous	0005 FOOTWAY	* *ALL*	£ 40.00

Before we could interrogate and verify the UKPMS results we omitted any sections that would be impacted on future planned works around Central Milton Keynes including the shopping centre.

Works identified:

- Planning application for The Centre:MK extension (**£579k**)
- Narrow parking strip between Highway verge and front of Parking in Central Milton Keynes Value (**£1.66m**)

Any sections, treatments and costs impacting on the above works where omitted for this project but set aside for future reference when required by Milton Keynes Council.

Treatments and Costs

Treatment summary

Treatment Discription 1	Treatment Discription 2	Treatment Discription 3	Treatment	Treatment Group	
Localised Treatment	Off-CW Local Repair	Concrete	LO/OC/CO	£	1,080.00
Strengthening or Renewal	Off-Carriageway Recon	Bituminous	ST/OR/BI	£	3,024.00
Strengthening or Renewal	Off-Carriageway Recon	Blocks	ST/OR/BL	£	3,150.00
Resurfacing	Relay Blocks	Blocks	RS/RB/BL	£	4,320.00
Resurfacing	Off-Carriageway Overlay	Bituminous	RS/OO/BI	£	27,072.00
Localised Treatment	Off-Carriageway Lcl Relay	Blocks	LO/OY/BL	£	33,180.00
Localised Treatment	Off-CW Local Repair	Bituminous	LO/OC/BI	£	93,444.00
Surface Improvement	Off-CW Surface Treatment	Bituminous	SU/OS/BI	£	110,676.00
Strengthening or Renewal	Reconstruct	Flags	ST/RC/FL	£	390,660.00
Resurfacing	Relay Flags	Flags	RS/RF/FL	£	865,740.00
Localised Treatment	Local Relay	Flags	LO/LR/FL	£	7,445,730.00
					£ 8,978,076.00

When generating schemes within UKPMS, the software will only generate treatments when observations over the Intervention level are triggered. This means that some sections within the spread sheet do not have treatments. I have retained these sections to give a full picture of the network.

There may well be a scenario's when authorities are treating two sections either side of a section that has no treatment planned. In most cases (depending on length) the engineer will include this section within the scheme for cost effectiveness. For this reason I have retained the sections with no treatment for full network coverage.

Please refer the following spread sheet for the Central Milton Keynes FNS scheme treatment and associated costs **Milton Keynes FNS programme £800k plus £750k MKC identified.pdf** And for the all Footways sections in Central Milton Keynes please refer to **Milton Keynes FNS programme measured width fixed merge 100mv2.xls**

Treatment Schemes to a value of £800k has been allocated. These can be identified in red within the **Milton Keynes FNS programme £800k plus £750k MKC identified.pdf** spread sheet. However

there are also schemes that we also verified by Andrew Dickinson so for completeness I have included these, this takes the treatment value to £1.5m.

The sections identified had been ranked with a high Condition index (more deteriorated condition). The allocation of the Condition indices is calculated when running the automatic pass within the UKPMS software.

If any future funding becomes available treatment schemes can be further identified using the same spread sheet.

Discussions regarding treatment schemes around other parts of Milton Keynes took place. A similar exercise could be undertaken as long as the Footway Network Surveys were available for those areas.

Scheme treatment verification

Confidence in the treatments was required. Therefore, site investigations were carried out identifying scheme length, width, treatment and cost.

See Site Inspection report. **Milton Keynes Footway Inspection and verification.ppt**

On site observations

Sections identified within the office CMK/039/7, CMK/039/8, CMK/039/9, CMK/039/10, CMK/039/11, CMK/039/12 have been downgraded for treatment. It was felt that these sections didn't qualify to be on the scheme list but would benefit from some careful maintenance.

Location	Site visit (Data Verification)	Refer to image number	Overall CI	Ranking	Treatment cost	Agreed on site
CMK/018/02	under planning app	940, 941	22.101449	8.354646	£37,260.00	Yes
CMK/018/03	under planning app	940, 941	19.202899	4.944587	£37,260.00	Yes
CMK/019/23	Area confirmed as Structurally unsound, Area marked up for repair by Neighbourhood Engagement Officer	937, 938, 939		25	£168,750.00	Yes
CMK/038/01	Disabled parking / Insurance Claims against these sections / Car Parking / No edging	934, 935, 936		25	£13,260.00	Yes
CMK/038/04	Disabled parking / Insurance Claims against these sections / Car Parking / No edging	934, 935, 936	23.484848	9.982174	£17,820.00	Yes
CMK/038/03	Disabled parking / Insurance Claims against these sections / Car Parking / No edging	934, 935, 936	17.54386	2.992776	£30,780.00	Yes
CMK/038/02	Disabled parking / Insurance Claims against these sections / Car Parking / No edging	934, 935, 936	17.361111	2.777778	£19,440.00	Yes
CMK/039/09	Upon inspection A.Dickinson agreed that this could be down graded	933, 932, 931	18.75	4.411765	£21,360.00	No
CMK/039/07	Upon inspection A.Dickinson agreed that this could be down graded	933, 932, 931	17.424242	2.852049	£26,730.00	No
CMK/039/10	Upon inspection A.Dickinson agreed that this could be down graded	933, 932, 931	17.307692	2.714932	£28,080.00	No
CMK/039/11	Upon inspection A.Dickinson agreed that this could be down graded	933, 932, 931	17.307692	2.714932	£16,380.00	No
CMK/039/08	Upon inspection A.Dickinson agreed that this could be down graded	933, 932, 931	17.1875	2.573529	£17,280.00	No
CMK/039/12	Upon inspection A.Dickinson agreed that this could be down graded	933, 932, 931	14.516129	0	£35,805.00	No
CMK/030/35	Section identified as structurally unsound	927, 929	36.231884	0	£49,680.00	Yes
CMK/039/06	These sections have been identified by A.Dickinson for treatment	930	8.870967	0	£0.00	Yes
CMK/039/05	These sections have been identified by A.Dickinson for treatment	930	3.846154	0	£0.00	Yes

It was agreed that the footways had deteriorated significantly since the sections were last surveyed back in 2010. The analysis has been carried out using the 2010 data however our site verification did identify the footways being significantly worse on site than the data suggested.