ROTHERHAM BOROUGH COUNCIL - REPORT TO MEMBERS

1.	**Meeting:**	**Improving Places Select Commission**
2.	**Date:**	Wednesday 18 June 2014
3.	**Title:**	**Methodology for the prioritisation of highway works and the various methods of highway surface repairs.**
4.	**Directorate:**	**Environment and Development Services**

5. Summary

Further to the report presented to Improving Places Select Commission on 4th September 2013, this report provides members with information on the methodology for the prioritisation of highway works and the various methods of highway surface repairs.

6. Recommendations

It is recommended that Members note the contents of the report.

7. Proposals and details

Background

The Council is responsible for maintaining over 700 miles of roads and 1300 miles for footways and Public Rights of Way.

The Council's maintenance philosophy is twofold; The authority's primary objective is to ensure that Rotherham's roads and footways are maintained to the nationally recognised safety standards. This is achieved by our Highway Inspection & Enforcement team, which carries out routine Safety Highway Inspections on a regular basis.

The second is to carry out maintenance works on the highway, this is not necessarily on roads that are in are the worst condition. The rationale for this is that it is much more cost effective to carryout maintenance treatments during the life of a road and not at the end, which tend to be less complex, less time consuming, less expensive and extends the life of the existing highway network fabric. This is balanced out against the worst parts of the highway network where it is not feasible to keep it safe.

Works Prioritisation

To build up a picture of the condition of our highway network three forms of proactive assessment are carried out, these help with providing data for asset valuation and other condition reports:

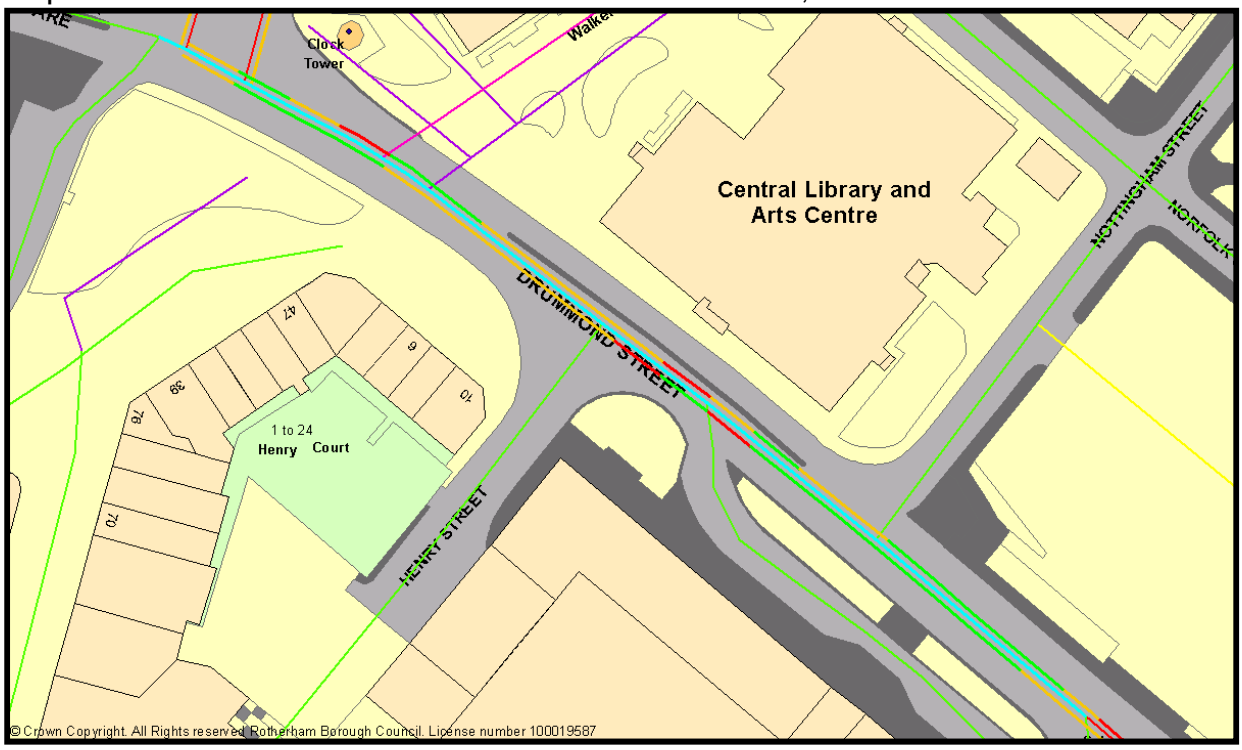
SCRIM (Sideway-force Coefficient Routine Investigation Machine). This machine provides a number (Investigator Level), which **gives an indication of the skid resistance of the carriageway surface**. It is used on all A, B, C Roads and those U Roads that form part of our winter precautionary salting routes. The SCRIM survey is carried out each year on third of the above highway network, giving a three year cycle. This survey does not provide a treatment type or cost estimate.

SCANNER (Surface Condition Assessment of the National Network of Roads). This vehicle **measures the carriageway surface for cracking, rutting**, longitudinal shape, transverse shape etc. It uses a number of lasers to scan the carriageway surface at road speed. The output from these measurements gives two forms of condition data comprising of a condition index number from 0 to 300 and this gives three colour conditions. These are defined by UKPMS (United Kingdom Pavement Management System) as Green (Generally good condition), Amber (Plan investigation) and Red (Plan maintenance work) sometimes called a RAG rating. SCANNER is carried out on A, B and C Roads each year on half of this network, giving a two year cycle. The limitation on this type of survey is that it can only be done on A, B and C class carriageways (not suitable for U Roads) and does not assess footways/footpaths. This survey type does provide a limited treatment with cost estimates and is also used in the DfT highway asset valuation process.

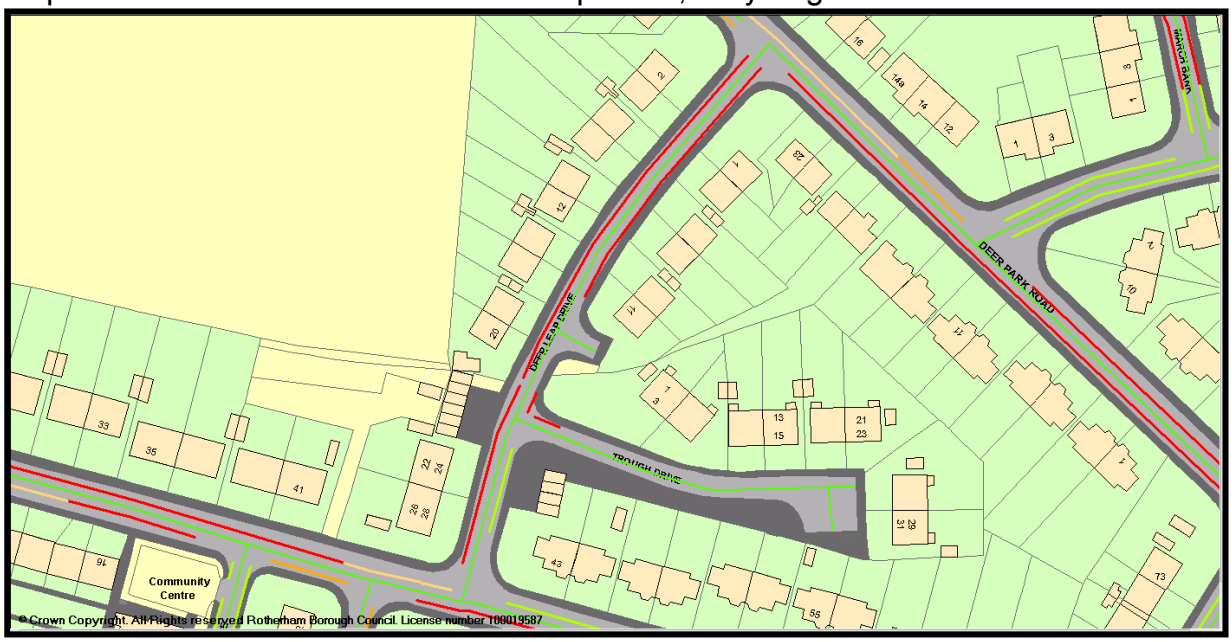
CVI (Coarse Visual Inspection). This is a walked condition survey identifying **detailed defects on the entire highway network**; including carriageways,

footpaths, footways and Public Rights of Way. The CVI assesses a number of defects and outputs a condition index ranging from 0 to 120. This form of survey does provide a comprehensive range of treatments with estimated costs. The CVI is carried out on a quarter of our highway network each year, giving a four year cycle. The condition index has been converted to a RAG rating to aid programming and is also used in the DfT highway asset valuation process.

Map 1: Condition Data – SCANNER – Drummond Street, RTC



Map 2: Condition Data – CVI – Deer Leap Drive, Thrybergh



The use of the RAG rating has been expanded on, by breaking the Amber into two. The colours represent the following condition index numbers:

Table 1 : Condition Colours (RAG)

SCANNER	Green	Amber (low)	Amber (high)	Red
	0-40	40-70	70-100	>100
	Generally good condition – No action	Plan investigation – May be suitable for patching, super patching or surface treatments	Plan investigation – May be suitable for patching, super patching, surface treatments or Overlay	Plan maintenance work – May be suitable for all treatments, except Surface Treatments
CVI	Green	Amber (low)	Amber (high)	Red
	0-40	40-55	55-85	>85
	Generally good condition – No action	Plan investigation – May be suitable for patching, super patching or surface treatments	Plan investigation – May be suitable for patching, super patching, surface treatments or Overlay	Plan maintenance work – May be suitable for all treatments, except Surface Treatments

Interactive Session

This is an opportunity for Members to identify locations in their wards. They will then be able to view the information live in a map form to see how these compare. There will also be an opportunity to see photographs of before and after; and condition data in other formats.

Treatment Examples

In the SCANNER example (Map 1) the choice of treat for the carriageway would have been super patching. This has been deferred, after consultation, due to the new Tesco site works. Estimate £38,000.

In the CVI example (Map 2) the footway would have had the following treatment: Excavate existing surface to accept 80mm thick surfacing, made up of 60mm thick Base Course and 20mm thick Surfacing. Estimate £13,500.

The SCRIM, SCANNER and CVI data is placed on the highway asset mgmt. database and processed through the UKPMS module. This allows for all inspection and assessment data to be analysed for the production of the three year works programme. This is further refined into an annual actual works programme.

A meeting is held twice a year to discuss the proposed and actual works programmes. In October a meeting is held which focuses on the remaining in-year works programme, the following years proposed works programme, and a further two years forward proposed works programme.

Following the October meeting the proposed following year programme is circulated for consultation and published in mid-November.

In April a review of the previous in-year works programme, new in-year works programme and the proposed forward works programmes is carried out. The table below illustrates this cycle.

Table 2: Works Programme Meetings

Meetings	Consideration Given To		
October 2014	Review In-Year 2014/2015	Proposed Programme 2015/2016	Future Programmes 2016-2018
November 2014	Publish Proposed Programme 2015/2016		
April 2015	Review In-Year 2014/2015	Review In-Year 2015/2016	Future Programmes 2016-2019
October 2015	Review In-Year 2015/2016	Proposed Programme 2016/2017	Future Programmes 2017-2019
November 2015	Publish Proposed Programme 2016/2017		
April 2016	Review In-Year 2015/2016	Review In-Year 2016/2017	Future Programmes 2017-2020

To produce the following years programme (October meeting) all the available condition data and stakeholder reports/consultation is used. This is usually done as a desktop exercise due to the extent of the data being used.

Methods of highway surface repairs (Treatment Types)

Treatments types are described below and are listed in hierarchical order:

No works required. This may be the outcome of the initial works preparation due to the defects do not yet requiring attention, works are planned in the future or others carrying out works (for example Statutory Undertakers or other Rotherham teams).

Safety Defect Repair. The vast majority of these are in the carriageway (potholes) and are treated by sweeping out the defect, placing the appropriate material (usually 3mm Fine Cold Asphalt or preparatory mixed material) and compacting. Safety defects can range from a missing gully lid to a fissure developing, they all have one thing in common, they need urgent attention. For this reason the vast majority

cannot be planned, so are classed as reactive maintenance. The small exception to this is those potholes that are repaired by the “Multihog” patch process.

Table 3: Highway Network – Safety Defects (Potholes) Repaired

Year	No. Actionable Defects	Cost (rounded to nearest £1,000)	Cost per Defect (rounded to nearest £)
2007/2008	11,638	£240,000	£21
2008/2009	12,062	£243,000	£20
2009/2010	15,624	£250,000	£16
2010/2011	28,229	£418,000	£15
2011/2012	28,347	£427,000	£15
2012/2013	32,530	£456,000	£14
2013/2014	32,386	£395,000	£12

The following treatments are all classed as non-reactive and can be planned.

Patching. This can be overlay, one course or multiple courses patching in small areas, from 400mm square to about the size of a dining room table. The “Multihog” is being used on some of these to excavate the existing surface. Where there is more than 30% (by area) of patching require this treatment is not suitable.

Super Patching. These are patches at least 50m in length and at least half width of carriageway or full width of footway/footpaths. This is used where there me be a number of localised patches that can be joined up or larger areas of deterioration. These can be overlay, one course or multiple course patching. Usually a large milling machine is employed to excavate these types of patches in bituminous surfaces.

Surface Treatment. This can be accompanied by pre-patching and is used on surfaces where there is fretting or minor defects; the existing surface should be sound for this treatment to be successful. There are several types of surface treatments we use, footway/footpath Microasphalt, carriageway Microasphalt, carriageway thin surfacing (6mm) and carriageway thin surfacing (10mm). The Microasphalt seals the surface and provides a uniform appearance; it does not improve the surface shape. Thin surfacing seal the surface, provide a uniform appearance and improve surface shape. They can also be used on surfaces less stable than for those where Microasphalt is used.

Overlay. Usually just the surface course, but can be accompanied by patching. It is used on surfaces which are generally sound, but the ride quality is poor. May not be suitable where the overlay reduces thresholds heights.

Resurfacing. The existing surface is excavated to accept single or multiple courses, does not include Sub-Base. This is used on surfaces where there is significant surface deterioration and the surface would not support a surface treatment or overlay.

Reconstruction. Excavate existing construction and replace with new, includes Sub-Base. This is used on surfaces where there is a major breakdown in the surface and is usually accompanied by failure of lower layers.

These treatment types become more complex, time consuming to implement and expensive as you move down through the treatments.

8. Finance

Available Budgets for Road Works

An estimate for the budget allocation for the next year is made based on the previous year's budget and other available information. As a guide this is further broken down into road class and treatment type to aid building the works programme.

Table 4: Highway Network – Budgets

Year	LTP	Revenue Works	Basic Maintenance	DfT Grant	Rotherham Capital	TOTAL
2013/2014	£2,037,770	£602,178	£958,551	£430,592	£1,000,000	£5,029,091
2014/2015	£1,847,533	£409,009	£458,551 £500,000(*)	£530,157	£0	£3,745,250

LTP = Local Transport Plan
DfT = Department for Transport
(*) = Includes A57 underspend

Table 5: Estimate of Budget Spend by Treatment– 2014/2015

	LTP	Revenue Works	Basic Maintenance	DfT Grant
Safety Defect			£450,000	
Patching			£400,000	£108,157
Super Patching	£100,000		£108,551	£140,000
Footway Microasphalt		£80,000		
Carriageway Microasphalt		£54,000		
Thin Surfacing 6mm		£80,000		
Thin Surfacing 10mm	£115,000			
Overlays	£100,000			
Resurfacing Footways		£195,009		
Resurfacing carriageways	£1,532,533			£282,000
Reconstruction Footways	£0			
Reconstruction carriageways	£0			
	£1,847,533	£409,009	£958,551	£530,157

Using the inspections, assessment data and UKPMS programmes an assessment of the highway network maintenance backlog has been carried out. It has identified

that the amount of work that is needed to be done to bring the network back to an acceptable level is in the region of £75,000,000 and £80,000,000.

The value of the highway asset is in the region of £1.5billion and has a budget allocated for highway maintenance that equates to 0.325%.

A review of the Highway Asset Mgt. Plan is currently being carried out and will include the funding requirements to achieve national average condition for the entire highway network.

9. Risks and Uncertainties

These are covered by the Code of Practice for Highway Inspection and Assessment.

10. Policy and Performance Agenda Implications

The condition of the roads is a key priority for the coming year as set out in the Corporate Plan

- All areas of Rotherham are safe, clean and well maintained.
    - We will make sure that Rotherham's roads and footpaths are safe to use, and that the condition is as good, or better than the national average.

11. Background Papers and Consultation

Code of Practice for Highway Inspection and Assessment

Code of Practice for Highway Maintenance Management, "Well Maintained Highways" published July 2005

12. Contact

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