

# Code of Practice for Highway Safety Inspections

**April 2021**



Date	Revision Details	Reviewed By	Approved By	Signed	
1	April 14	Issued at start of Contract – dated October 2013 – Version 2	Danny Mullins	Andy Dickinson	
2	Sept 14	Updated format; added in details regarding Confirm connect as per new contract processes; updated quality control processes; updated note 1 in defect categorisation; updated info required on defect; inclusion of defect codes form confirm; updated tolerance of inspection due dates	Andy Dickinson/ Hannah Shires	Andy Dickinson	
3	Dec 14	Clarification of Desire lines, inclusion of Kerb defect tables, inclusion of bollards and potholes in priority criteria, inclusion of laybys in priority hierarchy, inclusion of policy approaches to Snow conditions and high density defect areas	Andy Dickinson/ Hannah Shires	Andy Dickinson	
4	Feb 16	Include defect matrix	Andy Dickinson/ Patrick Connolly	Andy Dickinson	
5	November 16	Review Draft Changes – Version 4.2	Andy Dickinson/ Patrick Connolly	Andy Dickinson	
6	January 17	Issued Final Copy – Version 4.3 – Dated November 16	Andy Dickinson/ Patrick Connolly	Andy Dickinson	
7	March 18	Review Draft Changes – Version 4.4	Andy Dickinson/ Steve Ashley/Patrick Connolly	Andy Dickinson	
8	October 18	Amend document following Pothole Review recommendations agreed by cabinet September 2018 – Version 4.5	Andy Dickinson/ Debbie Taylor-Bond	Andy Dickinson	
9	February 19	Update defect process flow - Draft	Andy Dickinson	Andy Dickinson	
10	April 19	Final Version to include defect process flow – Version 4.6	Andy Dickinson/ Patrick Connolly	Andy Dickinson	
11	December 19	Update on bollards (7.2 and 8) following HSE safety alert – Version 4.7	Andy Dickinson	Andy Dickinson	
12	March 20	National 'Lockdown' Covid 19 pandemic – Statement Emergency works only – Version 4.7.1	Brian Varney	Andy Dickinson	
13	April 20	National 'Lockdown' Covid 19 pandemic – Emergency works, restricted inspections plus enquiry responses only – Version 4.7.2	Brian Varney	Andy Dickinson	
14	August 20	Review existing CoP (version 4.7) to implement following lifting of last 'Lockdown' restrictions, increase in enquiries and financial requirements imposed by authority.	D.Smith/ R.Moffoot/Andy Dickinson	Andy Dickinson	
15	September 20	Issued reviewed Code of Practice – Version 4.8	D.Smith/ R.Moffoot/Andy Dickinson	Andy Dickinson	
16	April 21	Review matrix risk tables and associated definitions – Version 4.9 plus review programming dates	A Dickinson/ D.Smith	Andy Dickinson	
17	April 21	Add specifics regarding Bus Shelters	A.Dickinson	Andy Dickinson	

<b>Title</b>	<b>Code of Practice for Highway Safety Inspection</b>
<b>Current Version Number</b>	4.9.1
<b>Issue Date</b>	13th April 2021
<b>Document Status</b>	Final
<b>Previous Version</b>	4.9
<b>Issue Date</b>	April 2021
<b>Author/s</b>	Andy Dickinson
<b>Signature</b>	
<b>Date</b>	13 <sup>th</sup> April 2021
<b>Date of Next Review</b>	March 2022 (Note : If necessary this will be reviewed before this date if the national health situation changes and further 'Lockdown' restrictions are imposed)

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## 1. Introduction

The Council, in complying with its duty to maintain its highways as outlined within Section 41 of the Highways Act 1980 and for the purpose of Section 58 of the same, which provides for special defence, oversees cyclic highway safety inspections of all its adopted highways.

This Code of Practice has therefore been developed with the primary aim of providing assistance to those carrying out Highways Safety Inspections in accordance with Clause 181 of the Milton Keynes Term Service Contract for Highways, Streetlighting and Network Infrastructure that they may carry out their duties with consistency and to clear recognised and understood criteria.

This code has been developed by a working group of officers and inspectors who are directly involved at varying levels of responsibility in the function of Highway related maintenance, inspections, claims and management. This code gives due regard to the Council's duties and has taken reference from other good codes of practice and appropriate legislation. The code will be itemised on the agenda for team meetings for the purpose of continual review and improvement.

Milton Keynes Council's code is based on the "UK Roads Liaison Group Well-Managed Highways Infrastructure Code of Practice for Highways Maintenance Management" (2016). This makes recommendation in Section A.5.6, A.5.7, A.5.8 and A.5.9 for surveys and inspections using a risk based approach.

These sections deal specifically with safety inspections.

Our methodology however, is to undertake safety inspections as one process. Safety inspections are derived from two main sources:

- Planned cyclic safety inspections to identify potential dangers.
- Reactive safety inspections following customer enquiries logged in respect of defects reported on the Highway

Records of cyclic safety inspections and reactive safety inspections are maintained on a service specific computer database (Confirm).

This code sets out investigatory levels and operational processes that are considered to be appropriate and reasonable, taking into account the safety of highway users and the constraints placed upon the Council to manage public funds responsibly within defined budgets.

Safety inspections are carried out to specified frequencies, dependent upon the hierarchy of each highway in line with the recommendations of the Code of Practice for Highway Maintenance Management. During the inspection, defects are identified for investigation where they meet the investigatory levels as outlined within this code, jobs are raised prioritised and processed for repair.

## **Highways Maintenance Efficiency Programme (HMEP) Pothole Review - MK Highways Statement**

In April 2011 the Government announced an initiative to review the pothole problem under the umbrella of the Department for Transport sponsored Highways Maintenance Efficiency Programme (HMEP). A Project Board involving a range of key stakeholders from the public and private sectors, including road, footway and cycle user groups was set up in August 2011.

The Review has considered how local highway authorities in England currently deal with potholes, as well as wider stakeholder views and implications. The focus of the Review has been to identify good practice through consultation, in order to demonstrate how potholes and other related aspects of highway maintenance may be dealt with more efficiently and effectively. This will also enable sharing of knowledge between authorities, including lessons learnt. MK Highways team contributed to this review.

Now following the completion of this review and the publishing of the final document there are three key messages :

1. **Prevention is better than cure** – intervening at the right time will reduce the amount of potholes forming and prevent bigger problems later.
2. **Right first time** – do it once and get it right, rather than face continuous bills. Guidance, knowledge and workmanship are the enablers to this.
3. **Clarity for the public** – local highway authorities need to communicate to the public what is being done and how it is being done.

### Prevention is better than cure

Milton Keynes Council has committed to spending an additional £50 million on the highway asset. This will allow Milton Keynes Highways to take a more planned rather than a reactive approach to road repairs.

Milton Keynes Council is reviewing its Asset Management Plan to make it more robust to support its approach to 'Whole Life' management of the highway ensuring that roads are resurfaced or reconstructed at the right time in their life cycle thus preventing potholes forming in the first place.

As part of the longer term plan for maintaining its roads Milton Keynes is also utilising all recommended road treatment types to maximise the available budget, this will involve treatments such as surface dressing and micro-asphalt, both of these treatments seal the existing road surface and stop moisture entering the road pavement and thus stop the deterioration and potholes forming.

Milton Keynes has reviewed its highway specification and has embraced new standards to upgrade this specification to ensure that the materials used in the new contract are more robust and designs provide the highest standard for construction.

In addition Milton Keynes will both apply for Section 58 noticing for all its surfacing works that will prevent utilities from excavating for a set period to protect the integrity of the new work.

More co-ordination with utilities will take place due to the new permitting scheme that requires roadspace to be booked and more forward planning of works.

### Right first time

Milton Keynes has identified within its new specification for the new term service contract a section specifically on potholes and has both adopted the recommended HMEP new standards but has also enhanced this with guarantees for pothole repairs.

The new contractor has also invested in a mobile Roadmender 'hotbox' for tarmac which means that hot tarmac will be available 24 hours a day and repairs will be able to be done in hot material which will ensure a more robust repair first time where possible.

The workforce will also undergo additional industry standard training to ensure a better trained operative to carry out repairs.

New technology in the form of an 'Operational Hub' to monitor work teams to ensure that nearest gangs are dispatched to road repairs with correct material and skills and are monitored for performance.

Use of new pothole repair techniques i.e. a 'Jetpatching' machine which is a self-contained mobile unit that can deal with larger volumes and will produce a much higher output of areas repaired and thus has the potential to produce efficiencies whilst improving the road condition in Milton Keynes.

Dedicated trained Inspectors that carry out inspections and surveys to manage pothole repairs in the most effective way. The inspectors will be briefed on HMEP pothole principles and review any updates.

The new term service contract also set standards for performance by the contractor that will set targets for year on year improvements, these are termed Key Performance Indicators and cover such items as emergency repairs, timed and planned repairs and number of insurance claims against the authority. This will be reviewed annually and if additional indicators are needed they will be added in order to drive further improvements in standards.

### **Clarity for the public**

MK Highways team has committed to providing more information on potholes and their repairs, this has taken the form of this dedicated website page which covers off areas such as service statements, pothole statistics, frequently asked questions, inspections and our approach. This page will form part of the new 'Highways and Transport Hub website which aims to provide more detailed and easy to access information on all aspects of the service including 'potholes'. This site is constantly reviewed and updated.

Another key information point that is published on the website is the list of the future road surfacing and treatment programmes for the coming year along with the proposed dates.

In addition MK Highways team will be providing information to the MK Council and Ringway MK factual 'twitter' social media feeds to provide real time information on all aspects of roadworks including pothole repairs, this is following on from the successful winter 'twitter' feed already in operation.

As part of management of the road network Milton Keynes Council has bought in to the 'OneNetwork' roadworks mapping system that visually shows all works taking place on the roads in Milton Keynes, this will also be showing the whereabouts and work programmes for road surfacing and pothole repairs from 27 April 2014. This site is also embedded into the new Highways Hub website.

Milton Keynes Council takes part in the national annual NHT MORI poll survey of local authority highways and transport services, which collects public perspectives on, and satisfaction with, highways and transportation services in local authority areas (including road condition), this enables the authority to collect data and identify areas in need of improvement and also benchmark itself against other local authorities. The outcome of the survey is also used to measure the performance of the new contractor delivering the term service contract for the provision of Highways, Street Lighting and Network Infrastructure.

## 2. Definitions and Responsibilities

### Definitions

The Client	Milton Keynes Council Highways Service Team
NRSWA Team	Staff from Milton Keynes Council who are responsible for New Roads and Streetworks Act compliance across the Milton Keynes Network
The Contractor	Ringway Infrastructure Services
Hazard	in the terminology of this document is defined as an issue or defect on the network that has potential to cause harm to highways users
Investigatory Level	Depth at which a defect is then subject to a risk assessment as to whether it poses a hazard to the highway user.
Defect	in the terminology of this document is defined as a logged defective element of a highways asset and has an associated defect code and priority ranging from below investigatory level to high priority.
Risk Matrix	A risk matrix that takes into account the probability and the impact of a defect identified for investigation, following the assessment the defect is assigned a priority and raised as a job for repair.
Job	in the terminology of this document is defined as the action raised from a defect or a hazard that will be completed by the contractor.
Confirm	is the highways asset management system that captures all details of hazards, defects and jobs.
Confirm Connect	is the mobile version of Confirm that allows inspections to be carried out electronically on the highways.

### Responsibilities

The **Client** has a responsibility to provide clear guidance (i.e this code of practice) to ensure the contractor has clear instruction to deliver the Highways Safety Inspection Service. The client will also approve planned 28 day works prior to commencement.

The **Contractor** has a responsibility to deliver the Highways Inspection service in line with this Code of Practice and achieving the quality standards and objectives (Key Performance Indicators) outlined in the contract. The contractor is responsible for submitting a list of planned 28 day works on a 4 weekly basis for approval by the Client in accordance with the process flow in section 13, the existing KPI will apply from the date of approval in line with the matrix in section 13. The contractor shall submit an annual inspection programme by the end of March for approval to the client.

Further responsibilities for all parties are outlined in the detail contained within this code of practice.

### **3. Budgets and Resources**

To deliver on its 'duty of care' to users of the highway, and to ensure best value in public service the authority provides financial resources to secure operations to be carried out in both a planned and reactive manner in maintaining its highway in a safe condition. Clearly, reactive and planned programmes of work to remedy defects are dependent on the resources available to the authority to manage the risks that defects present. This manual therefore provides guidance on the appropriate identification, assessment and classification of defects to be repaired with priority assessed classification following a defect specific risk assessment by the inspector. Following the Covid 19 pandemic in March 2020 the authority has implemented additional financial scrutiny of costs. As a result planned 28 day works identified from inspections will be subject to validation by the Client prior to commencement, this process is documented in section 13 to ensure that this new requirement is delivered as efficiently and effectively as possible in line with existing resources.

#### **a. Budgets**

Each year the Council determines the allocation of its financial resources with due consideration to its strategic aims and priorities. The highway maintenance budget is one area of allocation, which is split into a number of service delivery areas each with its dedicated budgets. An allocation of budget is specifically set aside for undertaking urgent repairs identified during safety inspections.

#### **b. Resources**

A team of specially trained Highways Inspectors are used to undertake cyclic safety inspections, and reactive inspections. This team currently consists of four full time Highway Inspectors. The Highway Inspectors are supported by a line manager to provide advice and supervision. The Service Manager is also available for guidance and to implement changes to the code of practice. The Highway Inspectors are provided with: a PDA to carry out inspections electronically; availability of a chapter 8 liveried vehicle; Full Personal Protective Equipment in accordance with Health and Safety Policy.

#### **c. Training**

Highways Inspectors are briefed by their line manager and new employees spend a prolonged period of time with other colleagues within the inspection team prior to being allowed to undertake inspections alone.

The Code of Practice for Highway Maintenance recommends that the City & Guilds 6033 qualification can be used as a benchmark to establish the competence of staff engaged in highway inspections.

All team members are provided with this code as guidance to their work.

The team hold regular team meetings to discuss issues in relation to the inspection process allowing it to be continually reviewed and improved.

## Make up of training

- Managers introduction and briefing
- Work shadowing
- Introduction to the Code of Practice
- Team meetings
- Staff development interview (Appraisal)
- Any courses relevant to post

## Managers Introduction and Briefing

All new members of staff engaged on highway inspections undergo a manager's briefing and introduction on starting. This would include;

- a) A brief overview of the Council and its objectives
- b) A briefing on Highway procedures and protocol
- c) A Health and Safety Induction
- d) An introduction into IT procedures and conditions
- e) An induction into the workplace
- f) Training on the Highway Maintenance Management Database (Confirm and Confirm Connect)
- g) Training on the Customer Care software system, (Confirm)

## Work Shadowing

Dependent on the knowledge and experience of the new inspector, work shadowing can be arranged. This entails 'shadowing' an existing highways inspector to gain first hand knowledge of procedures and actions taken.

This would consist of:

- a) Accompanying an existing Highways Inspector on inspections, to gain knowledge on current standards, investigatory levels and method of recording defects
- b) Supervised learning and use of Confirm Connect to carry out the inspections
- c) Observing telephone manner and procedures
- d) Attending site to give instructions/supervise the dayworks gangs

## Code of Practice

Any new member of staff will be provided with this document, but also shown the Code of Practice for Highway Maintenance Management, and where it is kept. This document will form the basis of highway inspections for Milton Keynes.

## Team Meetings

Regular team meetings are held to discuss priorities, workload, changes to legislation and national guidance, software issues and problems within the service area. New Inspectors will be expected to attend and eventually participate in these meetings, both to update themselves with new procedures and to involve themselves in any new methodology/processes.

## Staff Appraisals

An appraisal is held each year, both to provide the appraisee with an opportunity to discuss any training requests, developmental needs and problems, and for the Manager to talk about performance and any issues related to work.

## Courses

New and particularly inexperienced inspectors are encouraged to attend courses on a variety of subjects, with the emphasis on all inspectors attaining a relevant Highway Inspection qualification.

Courses that are available and are specifically relevant to the inspectors needs may include;

### City and Guilds 6033

#### Unit 301, Health and Safety and Unit 311 Highway Safety Inspection

These courses are designed to assess the inspector's ability to work safely on the highway and to provide a qualification that will prove the inspector's knowledge with respect to undertaking safety inspections.

### NRSA Supervisors Accreditation

Inspectors are expected to have, or to attain this accreditation whilst in post. The course can be taken by a day release method, or a one off weeks training course.

### IT courses

Normally these courses are run in-house, and most Microsoft products are covered, ie. Excel, Word and Outlook. Courses can be undertaken at all levels from basic to advanced.

### Lantra T7

Traffic Management course designed to give the Inspector the ability to determine traffic management knowledge

### HMEP – Online Asset Management Qualification

This is an online training module and qualification that gives a good overview and knowledge to those who complete it of asset management principles and understanding of the need to follow the principles when assessing schemes.

### Court Training

Training to be undertaken in order to expose the inspector to court scenarios and and prepare them for the process of a legal court and cross examination by legal counsel.

Note : New staff will be trained to Standards above but may not hold accreditation until courses available.

## 4. Definition of Carriageway and Footway Categories

Based on the guidance in Section 8 (8.7 – 8.10) of the Code of Practice for Highway Maintenance, Milton Keynes Council has considered the guidance in terms of local application, and developed a road and footway category and hierarchy as shown below.

### a. Carriageways

Category 1	Motorways	None
Category 2	Strategic	All 'A' roads
Category 3a	Main Distributor	Grid roads that are not 'A' roads and 'B' roads within the designated area.
Category 3b	Secondary Distributor	'B' roads outside the designated area & all 'C' roads.
Category 4a	Link Road	Bus service routes
Category 4b	Local Access Road	All other roads

### b. Footways

Category 1a	Prestige Walking Zone	None
Category 1 Primary	Walking Route	All previously defined Primary Routes
Category 2	Secondary Walking Route	Local Centres and other shopping areas Other CMK areas
Category 3	Link Footways	School main entrances
Category 4	Local Access Footways	All other footways
Category 5	Public Rights of Way	

### c. Redways (Cycleways)

Category a	Cycleways that form part of the carriageway
Category b1	Primary redways, identified in salting routes
Category b2	All other redways
Category c	Leisure Routes – not normally MK responsibility

### d. Laybys

To be treated as Carriageway Category that the layby is attached to and shall be inspected as part of that inspection frequency.

## 5. Frequencies of Inspection

All highways are assigned a frequency of inspection that can vary dependent upon a number of factors, these include:

- Classification of road
- Amount of pedestrian traffic
- Location

A particular highway may in some instances have varying frequencies of inspections along its length. The general frequencies are as follows:

### a. Carriageways

Category 2	Monthly	Driven
Category 3a	3 Monthly	Driven
Category 3b	3 Monthly	Driven
Category 4a	6 Monthly	Driven
Category 4b	Annually	Urban - Walked in conjunction with the footway inspections. Rural - Driven

### b. Footways

Category 1	Monthly	Walked
Category 2 Others	3 Monthly	Walked
Category 2 CMK	4 Monthly	Walked
Category 3	6 Monthly	Walked
Category 4	Annually	Walked

### c. Redways

Category b1	6 Monthly	Walked/Cycled
Category b2	Annually	Walked/Cycled

## 6. Quality Control

Safety Inspections must be completed within a tolerance of +/- 5 days  
Performance against these targets is reviewed every month (KPI 1d). In addition to this there are further contractual Key Performance Indicators as part of the service providers performance which include measures of claims against the council (KPI 58).

Quality Audits on the defects and jobs raised during an inspection are also undertaken on a regular basis throughout the year by both contractor and MKC employees.

Any defects that require a job to be raised that exceeds £5k in value will require MKC approval to proceed.

Any Cat 1/1A jobs exceeding £250 will require MKC approval to proceed

All operational processes in relation to safety inspections further to this document are included in the Contractors BSI accredited integrated management systems (IMS) which means they are subject to quality audit protocols and can be reviewed by external parties. The contractor consider this COP as part of their IMS and as such will hold internal reviews on the application of this code.

## 7. Methodology for Inspections

The inspections for both footways and carriageways in Central Milton Keynes, town centres, estates and rural footpaths are undertaken on foot.

Principal roads, classified roads, bus routes, grid roads and unclassified roads are driven. All driven inspections are carried out by two persons – a driver and a dedicated observer (note : the observer will always be a trained highways inspector), whilst following Government guidelines on Covid 19 working practices.

Redways are either cycled or walked.

Information is entered onto electronic data capturing equipment (PDA) these devices are set up with Confirm Connect and are continually synchronized with the 'host' system for processing throughout the day. Inspections are undertaken with due regard to staff safety and in accordance with the appropriate procedures.

During the inspections the Highways Inspectors add defects in accordance with the defect codes available using the mapping functions on Confirm Connect (Table 1 – Defect Codes – Page 19 & 20). Priority codes are then added to the defects by the Highways Inspectors in accordance with the guidance contained in this Code of Practice. Photographs are taken of each defect raised to help show location and severity of the defect. These are all stored and accessible through Confirm.

Reactive Inspections as a result of an enquiry/client request are sent to the appropriate Highways Inspector who is inspecting the relevant area. It will appear on the PDA as an "enquiry" and the Highways Inspector will respond appropriately by either closing down the enquiry with appropriate information and photograph or raise a defect associated with the enquiry. In some circumstances they may need to be referred to

a third party/client and if this is the case then they will still capture as much information on site as possible. Where reactive inspections are not within an area due a cyclical inspection the reactive inspection will be done by a dedicated reactive inspection Highways Inspector.

## 7.1 Risk Management of Defects

In accordance with the new national guidance on risk management of the highway assets MK Highways has updated this code of practice for highway safety inspections to adopt the investigatory principle that replaces the intervention level. This is the primary change to the document that requires the highway inspector to apply a judgement to the risk matrix tables rather than only taking action when a defect reaches a set trigger, this is to ensure all risk factors are taken into consideration and all defects are risk assessed.

## 7.2 Investigatory level

The investigatory level is the point at which a risk assessment should be conducted. It must be stressed that these investigatory levels are for purposes of guidance **only**, and that in particular circumstances, inspection items with a lesser degree of deficiency, may pose an equal or greater safety hazard. Note : this is a visual risk assessment (VRA)

A Highway Inspector's on-site judgement will always need to take account of the particular circumstances that prevail. For example, the degree of risk from a pothole depends upon not merely its depth, but also on its surface area and location, and as such may warrant differing response times. When a defect is imminently approaching, has reached or is in excess of the investigatory level, the highway inspector should conduct a VRA in order to determine the appropriate level of response.

The following steps should be used to determine what action / if any should be taken when a defect is identified during an inspection.

- a) **Risk Identification:** As stated previously, this is any inspection item with a defect level that is imminently approaching, corresponds to, or is in excess of the stated defect investigatory level in the risk matrix tables – Section 12.
- b) **Risk Evaluation:** All identified risks have to be evaluated in terms of their significance, which means assessing the likely impact should the risk occur and the probability of it actually happening.
- c) **Risk Impact/Probability :** The impact is quantified by assessing the extent of damage likely to be caused should the risk become an incident. As the impact is likely to increase with increasing speed, the amount of traffic and type of road are clearly important considerations in the assessment. The probability is quantified by assessing the likelihood of users, passing by or over the defect, encountering the risk. As the probability is likely to increase with increasing vehicular or pedestrian flow, the network hierarchy and defect location are, consequently, important considerations in the assessment. Examples shown in the tables next page. Note this list is an example only and does not cover all impacts or probabilities possible during the VRA.

<p>Users –</p> <p>Wherever relevant these needs should be taken into account when investigatory risk assessments are carried out.</p>	<ul style="list-style-type: none"> <li>• Type of user ie pedestrian/cyclist/wheelchairs</li> <li>• Shared surfaces ie Redways or CMK Underpasses can be used by pedestrians and cyclists and have differing risks</li> <li>• Vulnerable users – Wheelchairs, visually impaired, prams/buggies</li> <li>• Electric Scooters – These are being trialled in MK in 2020 pending review and legalisation</li> </ul>
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Defect	Impact Risk
Trips/rocking slabs	<ul style="list-style-type: none"> <li>• Damage to clothing</li> <li>• Sprained ankles</li> <li>• Broken wrists, arms etc</li> <li>• Complications to elderly could be serious</li> </ul>
Potholes	<ul style="list-style-type: none"> <li>• Damage to car tyres, wheels etc</li> <li>• Loss of control and serious or fatal injury</li> <li>• Risk to cyclists/motorcyclists is higher</li> </ul>
Poor surface friction	<ul style="list-style-type: none"> <li>• Skidding, serious injuries or fatalities owing to extreme deceleration from high speeds or crushing owing to side impact.</li> </ul>
Missing/ Damaged Street Furniture/Bus Shelters	<ul style="list-style-type: none"> <li>• Road Traffic Collisions / impact with traffic islands</li> <li>• Uncontrolled pedestrian crossing carriageway leading to serious injury</li> <li>• Damaged bollard falling and causing injury</li> <li>• Pedestrian injury caused by defective elements on Bus Shelters</li> </ul>
Standing Water	<ul style="list-style-type: none"> <li>• Aquaplaning occurs at speeds above 40 mph. Serious injuries or fatalities owing to extreme deceleration from high speeds or crushing owing to side impact.</li> </ul>
Obstructions	<ul style="list-style-type: none"> <li>• Any obstruction on the highway has the possibility to Impact any highway user ranging from trips for pedestrians to impact collision for vehicles/motorcycles ranging from minor to serious or fatal.</li> </ul>

Defect	Probability
Users	<ul style="list-style-type: none"> <li>• Certain defect types may affect wheeled transport such as cycles/scooters ie gaps in modules/slabs and will have higher probability to that user group</li> <li>• Visually impaired / wheelchair users will be affected to a higher degree by obstructions</li> </ul>
Trips/rocking slabs	<ul style="list-style-type: none"> <li>• High Pedestrianised Area</li> <li>• Category of Footway</li> <li>• Major Pedstrian Route for Events</li> <li>• Route to School</li> <li>• Vicinity to Vunerable users</li> </ul>
Potholes	<ul style="list-style-type: none"> <li>• Category of Carriageway</li> <li>• Location of defect on Carriageway ie wheeltrack/roundabout</li> <li>• Size of defect ie overall dimension/delamination&gt;300mm</li> <li>• Highly trafficked route</li> <li>• Adjacent to ironwork</li> </ul>
Poor surface friction	<ul style="list-style-type: none"> <li>• Category of Carriageway</li> <li>• Location ie bend/braking area/junction</li> </ul>
Missing/ Damaged Street Furniture/Bus Shelter	<ul style="list-style-type: none"> <li>• Approaches to roundabouts/junctions in high category carriageways/ car parks/ service roads</li> <li>• Controlled crossing points near high pedestrianised areas</li> <li>• Bus Shelter structure used by pedestrians</li> </ul>
Standing Water	<ul style="list-style-type: none"> <li>• Category of Carriageway</li> <li>• Speed of Carriageway</li> <li>• Location on Carriageway ie bend/junction</li> </ul>
Obstructions	<ul style="list-style-type: none"> <li>• Category of Footway/Carriageway ie use/speed</li> <li>• Location of obstruction ie in middle of footway,on bend</li> <li>• Size of obstruction and impact on users</li> </ul>

#### d) Risk Matrix

Actionable repairs identified during safety inspections fall into four categories (see table 2 – Defect Categorisation – page 27) and each defect visually risk assessed and noted should be given a time category for repair.

The categories directly relate to the degree of danger presented by a defect in consideration with the visual risk assessment and as such the timescale for repair to remove the identified risk to the highway user.

This is defined in more detail in Section 12 Risk Matrix Tables.

## 8. Defects Identified during Safety Inspections

These are a list of examples of the types of defects to be considered during a safety Inspection. These are examples and cannot cover all hazards likely to be observed see **Note 1** after this table.

Footway	<ul style="list-style-type: none"> <li>• Potholes</li> <li>• Trips</li> <li>• Areas of Depression</li> <li>• Damaged Bollard</li> </ul>	<ul style="list-style-type: none"> <li>• Missing/Rocking Slabs</li> <li>• Gaps in modules/slabs</li> <li>• Flooding</li> <li>• Debris</li> </ul>	<ul style="list-style-type: none"> <li>• Crazing</li> <li>• Poor Surface Condition</li> <li>• Ironwork missing, broken, too high/low</li> </ul>
Kerbing	<ul style="list-style-type: none"> <li>• Poor Condition</li> <li>• Missing</li> </ul>	<ul style="list-style-type: none"> <li>• Broken</li> <li>• Dislodged</li> </ul>	<ul style="list-style-type: none"> <li>• Loose/Rocking</li> <li>• Uneven</li> </ul>
Carriageway	<ul style="list-style-type: none"> <li>• Pothole</li> <li>• Flooding</li> <li>• Areas of Depression</li> <li>• Delamination</li> </ul>	<ul style="list-style-type: none"> <li>• Rutting</li> <li>• Gaps/Cracks</li> <li>• Edge Damage</li> <li>• Debris</li> <li>• Damaged Bollard</li> </ul>	<ul style="list-style-type: none"> <li>• Crazing</li> <li>• Poor Surface Condition</li> <li>• Ironwork missing, broken, too high/low</li> </ul>
Verges	<ul style="list-style-type: none"> <li>• Rutting</li> </ul>	<ul style="list-style-type: none"> <li>• Obstructions</li> </ul>	<ul style="list-style-type: none"> <li>• Damage</li> </ul>
Overall	<ul style="list-style-type: none"> <li>• Overhanging Vegetation</li> <li>• Obstructions</li> <li>• Damaged or non operational Traffic Lights</li> <li>• Damaged or missing road signs/name plates</li> <li>• Damaged Litter Bins</li> <li>• Street lights,bollards,electrical street furniture, missing covers/day burners</li> <li>• Guard railing/VRS/Parapets</li> <li>• Damaged structures i.e. retaining walls / Bus Shelters</li> <li>• Trees exhibiting potential risk to highways users</li> </ul>		
Lining	<ul style="list-style-type: none"> <li>• Safety Related</li> <li>• Give Way Lines</li> <li>• Stop Lines</li> </ul>		
Signs/SNPS	<ul style="list-style-type: none"> <li>• Safety Related</li> </ul>		

**Note 1** : Please note that this table is not an exhaustive list, but covers typical items inspected in a safety inspection on the highway. It is a requirement of the Highways Inspector to to identify all potential hazards and make either a judgement or seek additional assistance in the event they encounter a potential hazard that is outside of their expertise. Hazards that are not a highway responsibility will be passed to the appropriate department or organisation although if there is an immediate risk and the 3<sup>rd</sup> party cannot attend it is the duty of the Highways Service to temporarily make safe the area and if appropriate recharge any costs – The primary concern is to safeguard highway users and this must be the priority for the highway inspector.

Defect types that are available to the Safety Inspectors to select on Confirm Connect on site as as per the table 1 – pages 21 & 22. Where it is felt a defect code does not match the defect presented then the closest defect type should be used and the issue reported back to RIS management team for further guidance.

### **a. Snow / Floodwater covering highway**

During periods of snow fall or highway flooding to the extent that the surface is covered rendering it unviable to safely inspect the highway and identify defects, the Highways Inspectors are to make the judgement, record and document the decision on Confirm.

The service provider will be responsible for assessing the risk to the Highway Inspectors and are to make the judgement, record and document the decision to stop/suspend/delay the safety inspections and notify MKC immediately in writing.

The service provider will be responsible for submitting to MKC Service Manager for approval, a recovery plan in line with the annual inspection programme (section 2 – roles & responsibilities) with an associated method statement within 24 hours of making the aforementioned decision. The recovery plan, dependent upon duration and location of lying snow/floodwater, should be a risk based approach, targeted to the completion of highway inspections on those highways with a high and medium route risk.

### **b. Approach to Areas of High Density levels of Carriageway Potholes – Proximity Repairs**

Where there are areas identified with a high density of carriageway potholes at or below investigatory levels it may not be cost effective or asset efficient to only repair those that are considered safety defects therefore when an actionable pothole is identified in an inspection if additional defects are also identified within 10 m<sup>2</sup> of said pothole any defects that falls into the ‘planned works’ green category – Table 2 – Defect Categorisation Page 26. shall be undertaken (a risk assessment of what repairs can be carried out safely must be undertaken).

### **c. Works outside scope of Defect Matrix**

Works identified that are outside the scope of the defect matrix to be discussed with the service manager and included in a planned works programme if budgets allow.

### **d. Hazards responsibility of other Council Services**

Any hazards identified that are the responsibility of associated council services shall be recorded and emailed to MKC CCS for re-allocation to the relevant department ie trees, Bus Shelters, broken glass, street lights etc.

Table 1 - Defect Codes on Confirm

Code	Description	Code	Description	Code	Description
BS01	BS: Damaged Bus Shelter	RD05	RD: Block Paved Kerb Missing	RD30	RD: Coloured Road Surf Deteriorating
DR01	DR: Underpass Pump Damaged	RD06	RD: BusStop markings faded worn	SF01	SF: Bollard Damaged
DR02	DR:Blocked Water Course Ditch	RD07	RD: Central Road Line markings faded worn	SF02	SF: Bollard Missing
DR03	DR:Blocked Drains Grids Grills	RD08	RD: Directional marking faded worn	SF03	SF: Bus Stop Sign Covered by Vegetation
DR04	DR: Blocked Footway Gully	RD09	RD: Disabled Bay markings faded worn	SF04	SF: Bus Stop Sign Damaged
DR05	DR: Blocked Carriageway Gully	RD10	RD: Double Yellow Lines markings faded worn	SF05	SF: Bus Stop Sign Missing
FL01	FL:Footpath Flooded	RD11	RD: Give Way markings faded worn	SF06	SF: Bus Stop Sign Unreadable Faded
FL02	FL:Property Flooded	RD12	RD: Granite Channel Broken Damaged	SF07	SF: Car Park Sign Damaged
FL03	FL:Redway Flooded	RD13	RD: Granite Channel Missing	SF08	SF: Car Park Sign Missing
FL04	FL:Road Flooded	RD14	RD: Granite Kerb Broken Damaged	SF09	SF: Car Park Sign Unreadable Faded
FL05	FL:Underpass Flooded	RD15	RD: Granite Kerb Missing	SF10	SF: Directional Sign Covered by Vegetation
FP01	FP: Footpath Damaged by Roots	RD16	RD: Granite Sett Kerb Missing	SF11	SF: Directional Sign Damaged
FP02	FP: Mud on Footway Redway	RD17	RD: Granite Sett Kerb Broken Damaged	SF12	SF: Directional Sign Face Wrong Way
FP03	FP: Paving Slab Broken Damaged	RD18	RD: Kerb Stone Damaged Broken	SF13	SF: Directional Sign Missing
FP04	FP: Paving Slab Loose Sunken	RD19	RD: Kerb Stone Missing	SF14	SF: Directional Sign Unreadable Faded
FP05	FP: Paving Slab Missing	RD20	RD: Missing Road Studs	SF15	SF: Illuminated Bollard Damaged
FP06	FP: Pothole on Footpath	RD21	RD: Mud on Road	SF16	SF: Illuminated Bollard Missing
FP07	FP: Pothole on Redway	RD22	RD: Oil Diesel Spill	SF17	SF: Illuminated Bollard Out Dim Flickering
FP08	FP: Redway Footpath Marking Faded/Worn	RD23	RD: Parking Bay marking faded worn	SF18	SF: Illuminated Sign Damaged
FP09	FP: Block Paved Footway Broken Damaged	RD24	RD: Pedestrian Crossing marking faded worn	SF19	SF: Illuminated Sign Dirty
FP10	FP: Block Paved Footway Missing	RD25	RD: Pothole	SF20	SF: Illuminated Sign Missing
RD01	RD: Access Protection markings faded worn	RD26	RD: Pothole in Car Park	SF21	SF: Illuminated Sign Out Dim Flickering
RD02	RD: Block Paved Carriageway Broken Damaged	RD27	RD: Road Slow markings faded worn	SF22	SF: Non Functioning Clock
RD03	RD: Block Paved Carriageway Missing	RD28	RD: School markings faded worn	SF23	SF: Redway Bollard Damaged
RD04	RD: Block Paved Kerb Broken Damaged	RD29	RD: Speed Roundal markings faded worn	SF24	SF: Redway Bollard Missing

Table 1 - Defect Codes on Confirm Continued...

Code	Description	Code	Description	Code	Description
SF25	SF: School Sign Covered by Vegetation	SL05	SL: Column Knockdown	TL12	TL: Pedestrian Crossing Damaged Leaning
SF26	SF: School Sign Damaged	SL06	SL: Column Leaning	UT01	UT: Drain Cover Damaged
SF27	SF: School Sign Face Wrong Way	SL07	SL: Day Burner	UT02	UT: Drain Cover Loose
SF28	SF: School Sign Missing	SL08	SL: Diffuser Hanging	UT03	UT: Drain Cover Missing
SF29	SF: School Sign Unreadable Faded	SL09	SL: Door requires attention	UT04	UT: Linear Drainage Cover Loose
SF30	SF: Sign Post Leaning Damaged	SL10	SL: Lamp Dim Glows	UT05	UT: Manhole Cover Damaged
SF31	SF: Street Name Plate Covered by Vegetation	SL11	SL: Lamp Flickers	UT06	UT: Manhole Cover Loose
SF32	SF: Street Name Plate Damaged	SL12	SL: Lamp obstructed by Vegetation	UT07	UT: Manhole Cover Missing
SF33	SF: Street Name Plate Unreadable Faded	SL13	SL: Lantern Damaged	UT08	UT: Utility Access Cover Damaged
SF34	SF: Speed Roundal Covered by Vegetation	SL14	SL: Needs Lamp Deflector Shield	UT09	UT: Utility Access Cover Loose
SF35	SF: Speed Roundal Damaged	SL15	SL: Needs renumbering	UT10	UT: Utility Access Cover Missing
SF36	SF: Speed Roundal Missing	SL16	SL: Lamp Out	UT11	UT: Linear Drainage Cover Damaged
SF37	SF: Speed Roundal Unreadable Faded	SL17	SL: Underpass lighting issue	UT12	UT: Linear Drainage Cover Missing
SF38	SF: Warning Sign Covered by Vegetation	SL18	SL: Water in Lantern	V01	V: Verge Damaged
SF39	SF: Warning Sign Damaged	TL01	TL: Beacon Light not flashing		
SF40	SF: Warning Sign Face Wrong Way	TL02	TL: Call button stuck broken		
SF41	SF: Warning Sign Missing	TL03	TL: Exposed Wiring		
SF42	SF: Street Name Plate Missing	TL04	TL: Light Surround Broken Missing		
SF43	SF: Speed Roundal Face Wrong Way	TL05	TL: Pedestrian Crossing Light Stuck On		
SF44	SF: Warning Sign Unreadable Faded	TL06	TL: Post leaning hit damaged		
SF45	SF: Pedestrian Barrier Damaged Loose	TL07	TL: Traffic Light Signal Lamp Out		
SL01	SL: Block of Lights Out	TL08	TL: Traffic Light Damaged Leaning		
SL02	SL: Cable Damaged	TL09	TL: Traffic Lights Stuck On		
SL03	SL: Column Damaged	TL10	TL: Traffic Lights Vandalised		
SL04	SL: Column Door Off	TL11	TL: Traffic Lights Signals Out		

## 9. Information to be added to the Defect

To enable the repair teams to undertake effective repairs in the first instance, it is imperative that certain critical information is passed on to the operational teams. It should be recorded in clear and concise fashion to aid accurate location and quality of work to complete the defect effectively.

This information must be recorded during the inspection on site and it is vital therefore that the information is recorded efficiently. The guidance within this code will assist in the process.

Critical pieces of information are required. These are:

- Location
- Type of defect and extent of repair
- Category of defect
- Traffic Management Requirements
- Materials
- Any other site specific details
- Photograph defect

### a. Location

Defects are logged electronically and as such have associated coordinates that are provided to the operational teams PDA devices. Photographs are also taken of the defects. However where appropriate defects shall be marked with temporary road marking paint as this will help the repair team to quickly locate a defect.

To locate a defect efficiently, the repair teams require three pieces of information:

- Street name
- The position of the defect on the highway
- Type of defect

Location information should use a combination of the following:

- House number
- Street lamp column number
- Building name
- Road junction
- Clear un-moveable landmark

What if there are no houses in the street?

Where no houses exist use street lamp column numbers.

What if there are no houses and no lamp columns?

Where neither houses nor lamp columns exist, mark the defects with road marking paint and number where necessary. Use other information as much as possible, ie. junction of road, distance from a landmark object, telegraph pole ref. no.

## Using building names

Building names are often more difficult to locate especially on long roads, so if it is necessary to give a building name it would help the repair team to have some additional information such as; 'Fairhaven between L/Col 21 and L/Col 23'.

### Examples

- Outside 17
- Adjacent to 21
- Junction with .....
- 5 metres from L/Col 16

Position information should use a combination of the following:

- Channel of carriageway
- At rear of footway
- Adjacent to
- Edge of kerb
- At radius
- On verge
- Central reservation
- On vehicle crossing

This list is by no means definitive. However by using combinations of these and other similar terms it is possible to give simple but clear instructions on a works order to assist the repair team to quickly locate the defect.

### Examples

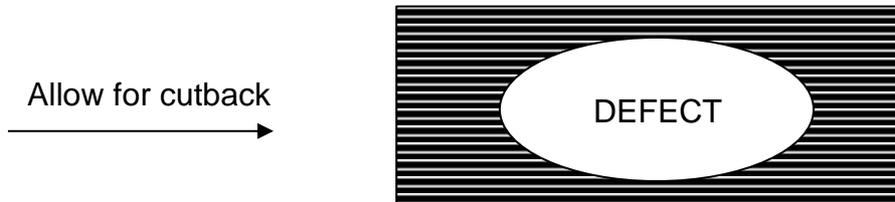
- Outside 21, pothole in channel of carriageway
- Property Mansion House, between L/Col 15 and L/Col 17 sunken slabs to kerb edge
- Opposite junction with Milton Drive, sunken kerb

## **b. Type of defect and extent of repair**

After selecting the appropriate defect type code from Confirm it may be sensible to detail in the description any further detail regarding the type of defect in addition to the materials that you will list for example: SF41 Warning sign missing is the selected defect code, then add to the description what warning sign it is that is missing.

In many instances the team will be unable for practical reasons to repair the precise area of defective highway. It may be necessary for instance, to cut back on a defective area of bituminous surface beyond the defect itself to remove loose surfacing which is not visible to the eye. The equipment necessary to undertake a repair may also require a minimum space to carry out its role effectively.

As a general rule for the repair to potholes; areas should be recorded at a minimum 300mm x 300mm and an allowance for cut back of 100 mm on all sides should be made.



For repairs to flagged and bituminous surfacing the measures should be as accurate as possible as they give a good indication as to the materials required and will diminish the need for variation payments when the works order is completed.

### **c. Traffic Management**

Details of any required traffic management to ensure the job can be completed safely should be detailed in the job raised. This is only to the extent of listing: TM required and where comfortable suggest options such as Stop and Go, or Traffic Lights required. A full TM assessment will be undertaken at planning stage given information highlighted that TM will be required.

### **d. Materials**

Where it is apparent that materials are necessary to carry out a repair, the materials should be stated e.g.,

Take up and relay two sq. metres of uneven paving, replace 1 no 600 x 600 slab.

When describing defects it will be necessary to refer to the particular materials, which are affected by the defect. In some cases the defect may affect several materials and these will also need to be covered within the description.

i.e., Outside 27 – depression in bitmac footway 0.3 sq. m, 2 sunken pcc kerbs, also 2 sq. m, of rocking pcc slabs and 1 no 150 x 150 sunken service box.

Such information is particularly helpful to the teams and reduces unproductive time. Where it is necessary to replace an item, if possible the product type and/or size should be given.

e.g:

- 5 x 10 (125 x 255) bull nose kerb
- Road gully cover 255 x 300
- PCC footway dished channel 150 wide
- PCC slab 600 x 600

Where there are items of defective street furniture it is important that the particular type of street furniture is noted. Photographs should be taken to aid identification.

### **e. Other Site Specific Details**

Any further details that may help service delivery should be included, where possible, in the descriptions. This includes proximity to schools, requirement for coning and area off the night prior to ensure full access to site and other such localised specifics that could be useful to the operational teams.

## 10. Defects not under the ownership of the Council

During an inspection defects may be identified which are not the responsibility of the Council to repair. The Council does however have a duty of care to the users of the highway. The staff involved in this activity shall therefore take steps to ensure that the party responsible for the repair are made aware of the defect and if necessary take interim action to make a defect temporarily safe if appropriate/possible.

### a. Statutory Undertakers

#### Defective apparatus

Where Highways Inspectors come across defective apparatus, they will access digdat to ensure the defect is utility owned and then contact the Operations hub stating what type of cover/defective apparatus it is i.e. foul or clean water. The hub will issue the section 81 notice to the utility company with the correct information in line with the procedures agreed by the New Roads and Streetworks Act (NRSWA) section.

#### Defective reinstatements

Where a Highways Inspector identifies a defective reinstatement suspected of belonging to a Statutory Undertaker this is recorded, stating where possible the undertaker concerned. This information is passed on to the NRSWA team who review whether it is still within the guarantee and if appropriate will serve the undertaker with a defect notice requiring them to take remedial action. Photographs will be made available to assist the NRSWA team. If it is not within the guarantee period then the defect will be passed back to the Operations team to action.

Any emergency actions will be dealt with in accordance with this Code of Practice irrespective of the ownership to ensure the ultimate safety to the travelling public.

### b. Unknown parties

Any emergency defect where the owner is unknown shall be recorded and action taken to make the defect safe. Investigations shall then be undertaken by the Highways Client team to locate the responsible party.

Note : Hazards that are not a highway responsibility will be passed to the appropriate department or organisation although if there is an immediate risk and the 3<sup>rd</sup> party cannot attend it is the duty of the Highways Service to temporarily make safe the area and if appropriate recharge any costs – The primary concern is to safeguard highway users and this must be the priority for the highway inspector.

**Table 2 - Defect Categorisation**

Priority	Timescale for Defect Repair
<p>No stand alone defects. Undertaken as proximity carriageway pothole repairs works if location contains actionable repairs.</p>	<p>Defects under investigatory level – No action if visual risk assessment eliminates need to for repair.                      Note : Carriageway Potholes identified that are under investigatory levels but are located within 10m2 within investigatory levels will be repaired at the same time as other higher priority pothole repairs (proximity pothole repairs – see section 8b).</p>
<p>Planned 28-day Works (28 days shall be defined as 28 calendar days from approval by MKC Client)</p> <p><b>See Note 1</b></p>	<p>Carriageway, Footway and all other Categories:</p> <p>A defect that, in the judgment of the inspector following visual risk assessment, should be included in the 28 day planned works programme,</p> <p><b>Note 1</b> : Defects in the amber category shall be designated as 28 day priority from validation by MKC – see process Section 13, however the inspector will have the discretion to increase/decrease the defect as a greater/lesser hazard to users of the highways. For example an access frequented by vulnerable users would attract a higher priority whereas a defect at the end of an alleyway with no pedestrian through traffic would be considered a lower priority and categorized accordingly. Any discretion used to change a defect priority as described above MUST include a note on confirm from the inspector giving reasons for the decision to either increase or decrease the priority.</p>
<p>Cat-1 (24 hours) or 1A (2 hours)</p>	<p>Carriageway and Footway and all other categories :</p> <p>A defect that, in the judgment of the inspector following visual risk assessment, should be repaired within either 2 hours (CAT 1A) or 24 hours (CAT 1).</p> <p>All other Categories :</p> <p>Defects that are to assessed and repaired or made safe within 2 hours (CAT 1A) or 24 hours (CAT 1). All defects that are only made safe are to be made permanent by inclusion in the 28 day planned works programme.</p>

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## 11. Defects – Investigatory Levels

### Carriageways - Potholes

Carriageway Hierarchy Depth	Local Access Road – 4b (annual)	Link Road – 4a (6 monthly)	Secondary Distributor – 3b (3 monthly)	Main Distributor – 3a (3 monthly)	Strategic Route (monthly)
< 40mm	No action for standalone defects. Subject to assessment in section 7. See definition				
> 40mm - < 50mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation				Cat-1 or 1A
> 50mm - < 75mm < 30mph	28-Day planned – See Note 1 – Table 2 – Defect Categorisation				Cat-1 or 1A
> 50mm - < 75mm > 30mph	28-Day planned – See Note 1 – Table 2 – Defect Categorisation		Cat-1 or 1A		
> 75mm	Cat-1 or 1A				

#### **Pothole Definition :**

A pothole is a sharp edged depression >300mm diameter anywhere in the carriageway where part or all of the surface layers have been removed including carriageway collapses, surrounds to ironwork and missing cats eyes. Particular attention must be given to delamination of surfaces greater than 300mm diameter and the impact on highway users when visually risk assessing a pothole for action.

At controlled pedestrian crossings and other designated crossing points, investigatory levels shall be as for the adjacent footways. Where potholes are identified within utility reinstatements reference shall be made to Section 10 of this manual to ensure that the NRSWA streetworks are notified.

Proximity Repairs : See section 8 b) and c)

## Carriageways - Road Defects – Concrete / Blockwork

Carriageway Hierarchy Depth	Local Access Road – 4b (annual)	Link Road – 4a (6 monthly)	Secondary Distributor – 3b (3 monthly)	Main Distributor – 3a (3 monthly)	Strategic (monthly)	Route
< 40mm	No action for standalone defects. Subject to assessment in section 7. See definition					
> 40mm - < 75mm < 30mph	28-Day planned – See Note 1 – Table 2 – Defect Categorisation				Cat-1 or 1A	
> 40mm - < 75mm > 30mph	28-Day planned – See Note 1 – Table 2 – Defect Categorisation		Cat-1 or 1A			
> 75mm	Cat-1 or 1A					

**Note :** Gaps in blockwork or expansion joints in concrete may pose a different level of impact and probability to certain road users ie cyclists, this must be taken into consideration when visally risk assessing any defects in relation to gap and width of tyre on a cycle. Note tyre widths vary from 25mm upwards there is no average width. The alignment of the gap is also important ie is is in line with direction of travel. Gaps in excess of 25mm should be considered for a Visual Risk Assessment.

## Footways – Surface defect in asphalt / paving and blockwork

Footway Hierarchy Depth	Category 4 (annual)	Category 3 (6 monthly)	Category 2 (3 monthly) Other (4 monthly CMK)	Category 1 (monthly)
< 20mm	No action for standalone defects. Subject to assessment in section 7. See definition			
> 20 mm - < 25 mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation			
> 25 mm - < 40mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation		Cat-1 or 1A	
> 40 mm	Cat-1 or 1A			

### Description :

In asphalt a defect is determined as a sharp edged depression anywhere in the footway where part or all the layers have been removed that is likely to cause a hazard. In either paving and/or blockwork surfaces it will be where there is a sharp edge caused by either raising and/or sinking of a unit relative to the surrounding surface. The defect will be determined as requiring a visual risk assessment when the vertical difference either approaches or exceeds 20mm or more in depth.

At controlled crossings, investigatory levels will be as for the corresponding adjacent footway.

A depression will be identified as requiring a visual risk assessment when it is approaching 40mm or more in depth and has a maximum horizontal measurement less than 300mm. Where potholes are identified within utility reinstatements reference shall be made to Section 10 of this manual to ensure that the NRSWA streetworks team are notified.

Gaps in blockwork or slabs may pose a different level of impact and probability to certain road users ie cyclists on shared surfaces ie CMK underpasses, this must be taken into consideration when visally risk assessing any defects in relation to gap and width of tyre on a cycle. Note tyre widths vary from 25mm upwards there is no average width. Gaps in excess of 25mm should be considered for a Visual Risk Assessment.

## Redways – asphalt / blockwork

Redway Hierarchy Depth	Category b2 (annually)	Category b1 (6 monthly)
< 20mm	No action for standalone defects. Subject to assessment in section 7. See definition	
> 20 mm - < 25 mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation	
> 25 mm - < 40mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation	
> 40 mm	Cat-1 or 1A	

### Note :

Particular attention should be given to longitudinal cracking in asphalt surfaces. Cracks wider than 25mm should be subject to a VRA assessment and if categorised as a hazard following the VRA sealing the crack with an overbanding should be considered.

Gaps in blockwork may pose a different level of impact and probability to certain road users ie cyclists on shared redway surfaces, this must be taken into consideration when visally risk assessing any defects in relation to gap and width of tyre on a cycle. Note tyre widths vary from 25mm upwards there is no average width. The alignment of the gap is also important ie is in line with direction of travel. Gaps in excess of 25mm should be considered for a Visual Risk Assessment.

### Carriageway - Kerbing/Channels

CW Hierarchy / Depth	Local Access Road – 4b (annual)	Link Road – 4a (6 monthly)	Secondary Distributor – 3b (3 monthly)	Main Distributor – 3a (3 monthly)	Strategic (monthly)	Route
< 40mm	No action for standalone defects. Subject to assessment in section 7. See definition					
> 40mm - < 75mm < 30mph	28-Day planned – See Note 1 – Table 2 – Defect Categorisation					
> 40mm - < 75mm > 30mph	28-Day planned – See Note 1 – Table 2 – Defect Categorisation				Cat-1 or 1A	
> 75mm	Cat-1 or 1A					

**Note :**

A defect shall be measured as either a vertical or horizontal displacement.

### Footway/Redway – Kerbing/Channels (Including CMK)

Footway Hierarchy Depth	Category 4 (annual)	Category 3 (6 monthly)	Category 2 (3 monthly)	Category 1 (monthly)
< 20mm	No action for standalone defects. Subject to assessment in section 7. See definition			
> 20 mm - < 25 mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation			
> 25 mm - < 40mm	28-Day planned – See Note 1 – Table 2 – Defect Categorisation			Cat-1 or 1A
> 40 mm	Cat-1 or 1A			

**Note :** In Central Milton Keynes there is a high number of large granite kerbs and channels as part of the construction of the infrastructure. In addition there are numerous planters constructed of large granite blocks. These units are all subject to displacement by vehicles and as such cause an obstruction in both the carriageways and the service roads/parking areas. If displaced they should be made safe as a CAT1A response, followed up by a permanent repair within either 24 hours or 28 days dependant on the visual risk assessment.

## Street Signs/Furniture

Location Defect	Grid Road	All Other Roads (Estates, Rural & Industrials)	Redways	Underpasses	CMK
Damaged Reflective Bollard on Island	28-Day planned – See Note 1 – Table 2 – Defect Categorisation				
Missing Reflective Bollard/STOP/GIVE WAY sign on Island/junction	Cat-1 – see note 15				
Damaged/Missing SNP	Visual Risk Assessment or 28 Day planned – See note 8 & 9				
Damaged/Missing Bollard	Visual Risk Assessment or 28 Day planned – See note 14				
Damaged Bus Shelter	Visual Risk Assessment – See note 16				
Directional/Traffic Sign damaged	Visual Risk Assessment – See note 10				
Directional/Traffic Sign missing	See note 11				
Directional/Traffic Sign dirty/unreadable	Visual Risk Assessment – See Note 12				
Chevron Sign damaged	Visual Risk Assessment – See note 13				
Chevron Sign missing	28-Day – See Note 1 – Table 2, Page 25 – Defect Categorisation				

**General Note** : The above matrix is a list of common items found on the highway, the inspector is also expected to identify any other furniture that is damaged and identified as a hazard. Any electrical furniture should be reported to the Ringway Hub for allocation in accordance with the Street lighting maintenance Code of Practice for the appropriate action.

**Note 8** : Street Name Plates (SNP) shall be assessed first by a highways inspector to determine condition prior to any action. If the SNP is damaged to the point that it is a hazard to the public a CAT 1A response shall be raised. Otherwise job raised as '28 Day' planned category and carried out under capital works.

**Note 9** : Raise job as '28 Day' planned category.

**Note 10** : Directional signs shall be assessed first by a highways inspector to determine condition prior to any action. If the sign is damaged to the point that it is a hazard to the public a CAT 1A response shall be raised. A visual risk assessment shall be carried out by the inspector, if the sign is damaged and unreadable the assessment needs to account whether this constitutes a hazard to the road user ie an unreadable estate local directional sign is clearly not a hazard whereas a speed limit sign outside a school would be considered a hazard. The action may well be simply to clean the sign, alternatively if the sign face has degraded and a new sign shall be required a job shall be raised under the 28 day planned priority. Otherwise job raised as 'Planned' category.

**Note 11**: A visual risk assessment shall be carried out by the inspector, if the missing sign constitutes a hazard to the road user ie a missing estate local directional sign is clearly not a hazard whereas a speed limit sign outside a school would be considered a hazard. If considered a hazard a job shall be raised under the 28 day planned priority. Raise job as 'Planned' carried out under capital works

**Note 12** : A visual risk assessment shall be carried out by the inspector, if the sign is unreadable the assessment needs to account whether this constitutes a hazard to the road user ie an unreadable estate local directional sign is clearly not a hazard whereas a speed limit sign outside a school would be considered a hazard. The action may well be simply to clean the sign, alternatively if the sign face has degraded and a new sign shall be required a job shall be raised under the 28 day planned priority.

**Note 13**: Chevron signs shall be assessed first by a highways inspector to determine condition prior to any action. If the sign is damaged to the point that it is a hazard to the public a CAT 1A response shall be raised. Otherwise 28 Day planned priority.

**Note 14** : Street Bollards shall be assessed first by a highways inspector to determine condition prior to any action. If the street bollard is damaged to the point that it is a hazard to the public a CAT 1A response shall be raised. Otherwise job raised as '28 Day' planned category for repair/replacement. Special consideration shall be given to heavy cast iron bollards in CMK that are damaged to determine if they are stable and may be subject to falling either by their own weight or by 3<sup>rd</sup> party action.

**Note 15** : If a reflective bollard/SOP/GIVE WAY sign is missing from an island/junction a CAT1 action to 'make safe' shall be raised ie install a 1 metre cone with a reflective sleeve to mark the island, this will then be reported to the Ringway Hub who will raise a job in accordance with the street lighting Code of Practice.

**Note 16** : Any Bus Shelter identified as damaged shall be immediately reported to Passenger Transport team. If it is a hazard to the public the area must be made safe pending instruction from the Client. All records to be provided including photographs and asset record number of bus shelter.

Flooding/Drainage

See Detailed Assessment Matrix and Text in Appendix A

## 12. Prioritisation of Defects

CAT – 1A (2 Hours)



Hazards presenting an immediate and imminent hazard or risk to road users. Immediately make safe or repair within 2 hours. Such defects will include:

### Carriageway

- Clearing up after RTC's;
- Clearance of debris or oil;
- Serious subsidence or collapse of road;
- Flooding over a large area;
- Missing ironwork
- Seriously damaged traffic signals
- Damaged Street Bollards
- Missing or seriously damaged guardrail
- Potholes – see matrix – potholes – section 11
- Redway/Footway Bollards missing (where lockable bollard flaps aren't able to make safe the hazard)
- Rapid deterioration of structure/ trees
- Hazardous Obstructions left on highway

### Footways

- Exposed electrical wiring on street furniture
- Rapid deterioration of structure/ trees
- Damaged Street Bollards/Bus Shelter

### Verges

- Hazardous Obstructions left on highway

### Flooding

- **See Matrix – Appendix A**

*Note – Defects in Confirm will only be raised where the asset is affected and then the 2 hour priority job associated will be raised. For other hazards eg flooding or debris spills only a Job will be raised.*

*All jobs identified in this category will be phoned directly through to the Operational Hub by the Highways Inspector, who will dispatch a gang to attend as soon as possible. The Highways Inspectors and Operations Hub will coordinate the appropriate recording of the detail in Confirm as per this guidance*

*Emergency Calls relating to defects will be dealt with in accordance with MKC “Emergency Procedures Manual”*



Defects presenting a hazard or risk to road users. Make safe or repair within 24 hours. Such defects will include:

### **Carriageway**

- Potholes – see matrix – potholes – section 11
- Abrupt level difference – see matrix – road defects – section 11
- Missing unlit bollard on island
- Damaged Street Bollards
- Hazardous Obstructions left on highway

### **Footways**

- Collapse or serious subsidence
- Damaged Street Bollards/Bus Shelter
- Missing ironwork;
- Seriously damaged street furniture or fencing
- Abrupt level difference/surface defects – see matrix – footways – section 11.

### **Redways**

- Serious subsidence or collapse of redway;
- Flooding over a large area;
- Missing ironwork.
- Surface defects – see matrix – redways – section 11

### **Verges**

- Edge deterioration or rut over 150mm in Cat 1 and 2 footways only.
- Verge damage likely to cause a hazard or risk, taking in to account the location and density of use by the public for guidance.
- Hazardous Obstructions left on highway

### **Flooding**

- See Matrix – Appendix A



Defects presenting a moderate level of hazard or risk. Such defects will include:

### **Carriageways**

- Missing or dislodged kerbs in carriageway
- Potholes – see matrix – potholes – section 11
- Abrupt level difference – see matrix – road defects – section 11
- Damaged Unlit Bollard on Island
- Damaged Street Bollards
- Signs that if missing/unreadable will constitute a hazard

### **Footways**

- Abrupt level difference – see matrix – footways – section 11
- Damaged Street Bollards/Bus Shelter
- Missing Bollards – where flap is able to make safe but bollard needs replacing
- Surface Defects – see matrix – footways – section 11

### **Redways**

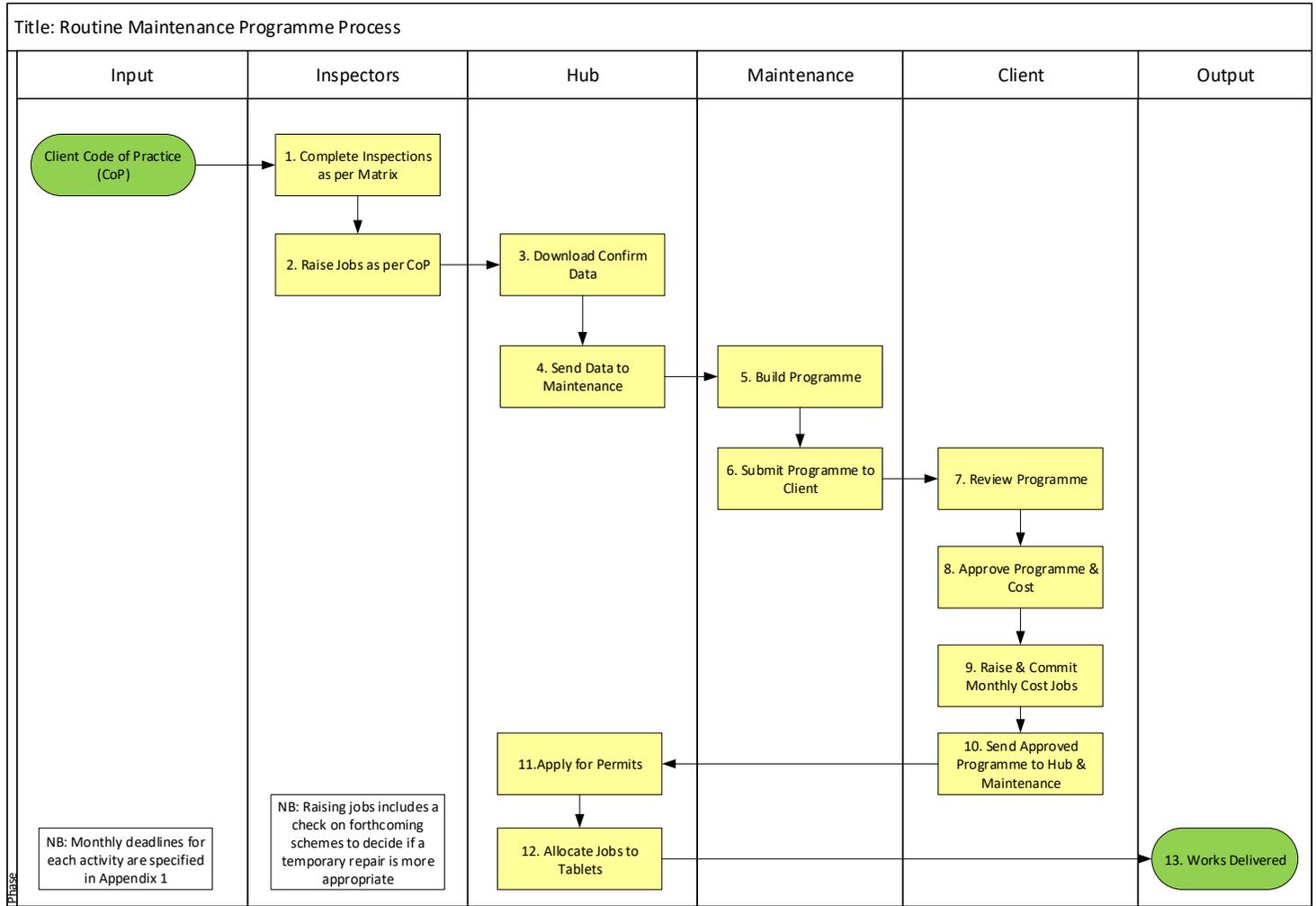
- Abrupt level difference – see matrix – redways – section 11  
Missing Bollards – where flap is able to make safe but bollard needs replacing
- Surface Defects – see matrix – footways – section 11

### **Flooding**

- See Matrix – Appendix A

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### 13. Safety Inspection Process Map



14. Appendix A

**Drainage & Flooding Matrix**

Probability Impact	Blocked highway drainage identified by Inspections or from general enquiries (see note 1)	Other flooding complaints (see note 2)	Floodwater entered garages, outbuildings or gardens (see note 3)	Flooding affecting Emergency Services (see note 4)	Flooded Underpass (see note 5)	Water entering habitable premises (see note 6)	Flooding on High Speed Roads (see note 7)
Negligible	<b>Planned</b>	<b>See note 2 Visual Risk Assessment</b>	<b>See note 3 Visual Risk Assessment</b>	<b>See note 4 Visual Risk Assessment</b>	<b>See note 5 Visual Risk Assessment</b>	<b>See note 6 Visual Risk Assessment</b>	<b>See note 7 Visual Risk Assessment</b>
Low	<b>Planned</b>	<b>See note 2 Visual Risk Assessment</b>	<b>See note 3 Visual Risk Assessment</b>	<b>See note 4 Visual Risk Assessment</b>	<b>See note 5 Visual Risk Assessment</b>	<b>See note 6 Visual Risk Assessment</b>	<b>See note 7 Visual Risk Assessment</b>
Intermediate	<b>Planned</b>	<b>See note 2 Visual Risk Assessment</b>	<b>See note 3 Visual Risk Assessment</b>	<b>CAT 1</b>	<b>CAT 1</b>	<b>CAT 1</b>	<b>CAT 1</b>
High	<b>See note 1</b>	<b>See note 2 Visual Risk Assessment</b>	<b>CAT 1</b>	<b>CAT 1</b>	<b>CAT 1A</b>	<b>CAT 1A</b>	<b>CAT 1A</b>

Extreme	See note 1	See note 2 Visual Risk Assessment	CAT 1	CAT 1	CAT 1A	CAT 1A	CAT 1A
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Impact Categories	
Negligible	Localised contained low impact standing water
Low	Low risk of flooding to non-habitable land
Intermediate	Medium Risk of impact to property
High	High Risk of Serious Injury
Extreme	Risk of Fatalities (including drowning) / Extreme Weather event

**NOTE : All flooding is subject to changes in situation/seriousness and risk at very short notice due to the variable nature of causes i.e. weather, behavioral nature of river levels that may cause delays in the full impact of an event, therefore any event shall be referred to either the Service Manager and /or Highways Duty Officer to ensure a strategic overview and regular review of priorities takes place to ensure resources are directed to areas of most need.**

**Priorities in the above matrix can be changed based on the visual assessment at short notice, any change MUST be notified to either the Service Manager or the Highways Duty Officer.**

**It is also critical that crews are prepared and any pre-warning of storm events shall prompt preparation of emergency crews to carry additional sandbags and road closed signs etc.**

**SANDBAGS : Milton Keynes Council will issue sand bags upon request by calling (01908) 226699 but only if you are at imminent threat of being flooded. The delivery time will depend on the scale of the flooding, the number and location of the callers and how many staff and vehicles are in use. We will not deliver sandbags in anticipation of rain/storm.**

**The Environment Agency has an information leaflet about sandbags, see link below, this is also on the councils website**

[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/467902/LIT\\_3833.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/467902/LIT_3833.pdf)

**Note 1 :** Blocked gullies, kerb weirs, trash screens, ditches or drainage ‘grips’ are either reported via the helpdesk as an enquiry or identified by the routine gully cleanse or a highway inspection. Where the impact is negligible, low or intermediate the response shall be to raise either a 28 Day or planned job and added to list for a separate attendance to carry out jetting/ clearance work with the gully/ drainage crew. Work requiring more investigation to determine solution will be referred to MKC client.

It is expected that if an event occurs that falls into the High or Extreme Risk category the impact shall fall into another category i.e. a blocked gully outside a property that causes flooding and risk of water entering the property it shall be dealt with under “water entering habitable property” and treated as a CAT 1A.

**Note 2 :** This category has been added to cover off any flooding that does not fit into the other categories such as flooding on a minor estate road that does not affect property or premises. The severity can be identified by the duration of a flood i.e. if the flood has receded within 2 hours it is considered Intermediate or less. If the road stays flooded greater than 2 hours it can be considered High and action will take the form of erecting Road Closure signs pending secondary action once the resolution is established at which point action will be taken as soon as resources allow. It is important that a visual risk assessment is carried out in these type of events to establish if further additional immediate action may be necessary.

The enquiry may require more investigation, the enquiry will need to be referred to MKC Client for further action and assessment of whether the issue will attract funding for inclusion on a future works programme.

Flooding/drainage issues again may fall into an associated category in the event of a High or Extreme event. Refer to that category for action.

**Note 3 :** Floodwater entering a garden or outbuilding may be distressing and be visually concerning, it is in itself often not of immediate priority during a high risk or extreme event and can be assigned a lower 24 hour priority, however it is important to visually assess these type of floods especially if the area is a known 'hotspot'. Priorities can change in short timescales.

Again it also depends on whether the flooding source is associated with surface water, river, highway, flash flood, continuous rain event etc.

**Note 4 :** Flooding affecting emergency services is a high priority as this may affect response to incidents especially during extreme weather events, this also supports the network resiliency . Low and negligible drainage issues may not impair the operation of an emergency services facility, again a visual assessment may be appropriate to determine if the situation may deteriorate with further rain etc.

**Note 5 :** A flooded underpass is a high risk category as underpasses are used by pedestrians to safely transit across roads and Milton Keynes has a high number of underpasses under high speed dual carriageways.

Any underpass that is covered by water and unpassable for pedestrians is considered either High or Extreme and will be subject to a 2 Hour Cat 1A attendance to either close the underpass off and re-route pedestrians with diversion signs. Or use of a pump/gully vehicle to clear the water.

If the underpass contains an electronic pumping station it shall be closed off and pedestrians re-routed and the retained supply chain shall be engaged to repair/replace the pump.

If a small amount of water is in the underpass but it is safe for the public to pass it shall be considered Low or Negligible, flood boards shall be erected.

Again with any flooded underpass a subsequent visual inspection is essential to ensure that the correct action has been taken. This is especially critical during unsettled weather periods.

**Note 6 :** Water entering premises is usually considered as either a high or extreme event and is most widespread during fluvial (river) flooding. Surface water flooding usually affects smaller numbers of properties and is more localised. It is possible to have a combination of both. It is not expected to experience flooding to premises during negligible to intermediate events.

In such an event it is **CRITICAL** that the service manager/MKC duty officer is notified at the earliest opportunity.

The authorities response to flooded properties is varied from road closures to delivery of sandbags, re-directing water flows, clearance of obstructions in watercourses (where safe to do so) and even assistance to the public/ emergency services.

**Note 7 :** Flooding on high speed roads can range from negligible to extreme, it is particularly difficult to deal with on MK grid network where there is a high density of high speed dual carriageways intersected by roundabouts.

The action required will be determined by an inspection (priority will be given to these inspections), responses range from lane closures to complete road closures, with flood boards and if necessary and resource allows a diversion route. More immediate responses may be actioned if the request is from a reliable source such as TVP.

In such an event it is **CRITICAL** that the service manager/MKC duty officer is notified at the earliest opportunity.

Action is not normally required on sites that are prioritized as negligible or low, again a visual assessment may be appropriate to determine if the situation may deteriorate with further rain etc.

## Appendix B – Job Defect Number Matrix

Milton Keynes Defect Repair Matrix							
Network Position	Surface Material	Defect Type	Repair Solution	Max Size for Defect	Notes	Job Type	SoR Ref
Verge	Soil and Grass	Rut or depression	Fill with top soil, compact and seed	Not exceeding 15 lin m	Please state volume to be filled	PR*	Planned
	Siding Out	Encroachment onto footway	Cut back and remove soil and vegetation	Not exceeding 15 lin m			
	Grips	Blocked Grip	Cut grip, stating width - 300/500/1000mm	Individual			
Footway, Redway, Cycle Tracks	Bitmac (Footway)	Surface Defect	Clean, cut vertical joint, fill with surface course, compact and overband	Individual up to 2m <sup>2</sup> or within 20 lin. m		RMFB, RMRB, RMFW, RMRW	DEFOOT
	Bitmac (Redway)	Surface Defect	Clean, cut vertical joint, fill with surface course, compact and overband	Individual up to 5m <sup>2</sup> or within 20 lin. m			
	Slabs	Uneven, loose, rocking or low	Take up and relay to correct level	Individual or up to 6 adjacent			
		Missing	Renew to match existing	Individual or up to 6 adjacent			
	Insitu Concrete	Cracks (as per COP)	Clean and repair with mortar material	Individual			
		Surface Irregularities	Clean and repair with mortar material	Individual			
	Block Paving	Uneven, loose, rocking or low	Take up and relay to correct level	Up to 1m <sup>2</sup>			
		Missing	Renew to match existing	Up to 1m <sup>2</sup>	State colour and thickness		
	Brick Paving	Uneven, loose, rocking or low	Take up and relay to correct level	Up to 1m <sup>2</sup>			
		Missing	Renew to match existing	Up to 1m <sup>2</sup>	State exact size and colour		
Natural Stone	Uneven, loose, rocking or low	Take up and relay to correct level	Up to 1m <sup>2</sup>	State sizes to be handled			
	Missing	Renew to match existing	Up to 1m <sup>2</sup>				
Carriageway	Bitmac	Surface Defect	Clean, cut vertical joint, fill with surface course, compact and overband	Individual up to 2m <sup>2</sup> or within 20 lin. m		RMCB	DECARRW
Kerbs, Edgings and Preformed Channels	Concrete	Broken, rocking or depressed or missing	Renew and reinstate as necessary	Individual or 5 within 20 lin. m		RMFW, RMRW	DEKEEDCH
		Chipped or damaged but still sound	Clean and repair with mortar material	Individual or 5 within 20 lin. m			
	Natural Stone	Rocking or depressed	Relay existing	Individual or 5 within 20 lin. m			
		Broken or missing	Renew and reinstate as necessary	Individual or 5 within 20 lin. m			
	Granite Setts	Rocking or depressed	Renew and reinstate as necessary	Up to 1 lin. m			
Broken or missing		Clean and repair with mortar material	Up to 1 lin. m				
Covers, Gratings, Frames and Boxes	Road Gullies	Broken or missing gully cover	Renew and reinstate as necessary	Individual		RMCB, RMFB, RMRB	DEBOXES
		Settled or rocking gully frame	Reset using rapid set mortar	Individual			
		Broken gully frame	Renew frame and cover and reinstate as necessary	Individual			
	Manholes	Broken or missing cover	Renew and reinstate as necessary	Individual			
		Settled or rocking manhole frame	Reset using rapid set mortar	Individual			
Broken manhole frame	Renew frame and cover and reinstate as necessary	Individual					
Signs and Street Furniture	Signs	Broken, missing, leaning	Repair, renew, upright as necessary	Individual	Please state dia. number for renewals	PR*	Planned
	Bollards	Broken, missing, leaning	Repair, renew, upright as necessary	Individual	Bollard type for renewals	RMSF	DESFS
Gullies and Catchpits	Road Gullies	Blocked	Jetting	Individual		PR*	Planned
Drainage Ditches	Ditch	Blocked	Excavate and spread arisings on site	Up to 1m <sup>3</sup>		RMCW, RMFW, RMRW	DEDITCH

Note : CMK footway paving defect count => 1 defect = Individual slab or up to 6 slabs within 10 m<sup>2</sup>

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## Appendix C – Defect Abbreviations

Description	Abbreviation	Description	Abbreviation
City centre slabs , silver granite on city centre bedding	CC	Kerbs / Radius add in the discription the type of kerbs i.e HB = Half batt	KRB/ RAD
Redway closure	RWC	Gully covers and frames	GUL
Footpath Closure	FPC	Carriageway	CW
Footway Closure	FWC	Roundabout Closure	RBTC
High speed Road closure, I. for inside closure -O. for out side closure	LCI / LCO	Roundabout	RBT
Road Closures	RC	Concrete edging or Wooden Edging	CEG/WEG
Stop -Stop boards	SSB	Portable Traffic Lights for 2/3/4	2WL/3WL/4WL
Stop and Go boards	SGB	Take up and Relay	TURL
Tarmac Footway (6mm or 10mm)	TF6 / TF10	Take up and replace	TURP
Tarmac Redway 6mm	RTF6	Take up and relay manhole covers	TURM
Block Carriageway	BCW	Give and Take System	GT
Block Footway	BLF	Priority Boards	PB
Redway	RWY	Stats Required	SR
Cone off Night Before	CNB	soil and seed for city centre	SAS
No TM Required	NTM	Granite kerbs and Granite setts , This can also be used for Granite Blocks	GK/GS/GB
Hot Roll Asphalt	HRA	Heavy lifting Equipment	HLFT
Dense Bituminus Macadam	DBM		
High Stone Content Asphalt	HSCA		

## Appendix 1 – Example dates from inspection of planned 28 day works to completion

- Under the current agreed schedule, minimum/maximum possible times from inspection to completion are 13 to 68 days.
- From Wednesday 14<sup>th</sup> April a new two-weekly schedule will begin. The schedule will be:
  - Inspect for two weeks
  - Programme, permit, approve and resource for one week
  - ‘Deliver’ and complete jobs for two weeks
- Delivery of the first three weeks of the new schedule will run concurrently with the final weeks of the current schedule.
- The requirement for jobs to be collated and approved in advance of delivery is an MKC audit requirement.
- The interim week is mainly needed due to MKC Streetworks requirements – minor permits legally require three working days’ notice, and local agreements are that no road closures can take place without notices being issued during the previous week.
- Under the new agreed schedule, minimum/maximum possible times from inspection to completion are 10 to 32 days.
- The first inspection period will be shorter than subsequent periods to move the schedule to cover full weeks.
- The table below shows the definitive target dates for the next six months. A review will be needed before Friday 24<sup>th</sup> September to agree future timetables.

Period	Inspection dates		Permits submitted by	Maintenance work	
	Earliest	Latest		Earliest	Target date
1	14/04/2021	23/04/2021	28/04/2021	03/05/2021	16/05/2021
2	24/04/2021	07/05/2021	12/05/2021	17/05/2021	30/05/2021
3	08/05/2021	21/05/2021	26/05/2021	31/05/2021	13/06/2021
4	22/05/2021	04/06/2021	09/06/2021	14/06/2021	27/06/2021
5	05/06/2021	18/06/2021	23/06/2021	28/06/2021	11/07/2021
6	19/06/2021	02/07/2021	07/07/2021	12/07/2021	25/07/2021
7	03/07/2021	16/07/2021	21/07/2021	26/07/2021	08/08/2021
8	17/07/2021	30/07/2021	04/08/2021	09/08/2021	22/08/2021
9	31/07/2021	13/08/2021	18/08/2021	23/08/2021	05/09/2021
10	14/08/2021	27/08/2021	01/09/2021	06/09/2021	19/09/2021
11	28/08/2021	10/09/2021	15/09/2021	20/09/2021	03/10/2021
12	11/09/2021	24/09/2021	29/09/2021	04/10/2021	17/10/2021
13	25/09/2021	08/10/2021	13/10/2021	18/10/2021	31/10/2021

