

STAFFORDSHIRE COUNTY COUNCIL

HIGHWAYS AND BUILT COUNTY

HIGHWAY SAFETY INSPECTION CODE OF PRACTICE

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HIGHWAY SAFETY INSPECTION CODE OF PRACTICE

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CODE OF PRACTICE FOR HIGHWAY SAFETY INSPECTIONS

The 2007 revision to the Code of Practice for Highway Safety Inspections had addressed the requirement for double manned safety inspections. In the interests of the Inspector and network safety, it was deemed necessary to conduct a double manned inspection regime on all carriageway safety inspection routes.

This revision also covered several operational changes to ensure that the Code reflected actual working practices within an evolving Staffordshire Highways organisation. An increase in minor carriageway defects and reducing budgets had required a revision of the policy in relation to defect repair times.

The 2019 revision to this Code of Practice brings it in line with Infrastructure Plus operational changes and now reflects current working practices and the latest guidance contained within the document “Well Managed Highway Infrastructure – Code of Practice” published October 2016.

1. INTRODUCTION

1.1 *DUTY TO MAINTAIN THE PUBLIC HIGHWAY*

1.1.1 Staffordshire County Council (SCC) is the Highway Authority for all roads and footways that are maintainable at public expense within Staffordshire excluding Stoke-on-Trent and those roads which are the responsibility of Highways England.

1.1.2 The duty is to maintain the fabric of the highway

1.2 *SAFETY INSPECTIONS*

1.2.1 The safety inspection process will help to provide a legal defence, against such claims, and relevant legislation relating to the County Council's Highway Safety Inspection Regime.

1.2.2 In Staffordshire, Safety Inspectors patrol the adopted highway network at pre-determined intervals based upon hierarchical standing. The Authority endeavors to ensure that identified hazards are rectified or made safe within specified time scales dependent on the severity and location of the defect, thereby protecting users of the highway network from injury or loss.

1.2.3 Restrictions in highway maintenance funding coupled with increasing traffic volumes, indicate that the level of funding available for maintenance services may not keep pace with the level of expenditure required. Therefore, in order to reduce their potential liability, Staffordshire County Council as the Highway Authority must ensure that the highway network is routinely inspected, so that defects can be identified, risk assessed, categorised and thus prioritised in line with this code of practice. This approach will ensure that identified defects are rectified within appropriate timescales in a consistent, cost effective and efficient manner.

1.2.4 It must be emphasised that safety inspections are not just a way for the Highway Authority to mitigate its liability, but are, first and foremost, the means by which the County Council can keep its network as safe as possible, for all categories of highway user.

1.3 *PURPOSE OF INSPECTIONS AND SUBSEQUENT COURSE OF ACTION*

1.3.1 The primary purpose of the safety inspection regime is to identify defects, which constitute an immediate or imminent danger to road users.

1.3.2 By utilising a risk management approach, highway safety inspections are used to identify those defects that will require urgent attention (within 24 hours), as well as those, where the locations and sizes are such, that longer periods of response would be acceptable.

1.3.3 During safety inspections, all observed defects that give rise to any degree of risk to users should be recorded, irrespective of the likely level of response. The degree of deficiency in a particular element of the highway in conjunction with a risk management approach, are crucial to determining the nature and speed of response in repairing that defect.

1.3.4 This Code defines defects in two categories, which correspond with those recommended in Well Managed Highway Infrastructure – Code of Practice” published October 2016.. This revision to the Code of Practice also now adds further differentiation to the Category 2 (High Risk), Category 3 defects to assist in a risk-based approach to the repair of such lower risk defects. The categories of defect are defined below;

Category 1: Those defects that require prompt attention because they represent an immediate or imminent hazard, or because there is a risk of short-term structural deterioration.

Three alternative actions arise:

(a) Category 1: 2 hour: Make the defect safe at the time of inspection and/or summon a maintenance crew to break off their existing work to carry out immediate repairs. In certain instances, an Inspector may be required to wait on site until the relevant crew arrives to carry out remedial action.

(b) Category 1: 24 hour: Request a maintenance crew to make the site safe or carry out repairs within 24 hours.

(c) In addition, a follow up Category 3 task can be request for a maintenance crew to carryout permanent repairs within 28 calendar days.

This defect type will be categorised within the relevant system as a Category 1 2 hour or 24-hour defect.

Category 2

High Risk Category 2 defect; Make safe or repair within 7 calendar days

This defect type will be categorised within the relevant system as a Category 2 defect.

Category 3

Medium or Low Risk Category 3 defect;

- These defects will be categorised within the relevant system as a Category 3M, 3Q or 3A defect. These categories relate to the inspection frequency so that defects on a monthly inspected road will be a 3M and similarly for quarterly inspections Q and annual inspections A.

The repair period assigned for Category 3 defects is 28 days for a monthly route (3M), 45 days for a quarterly route (3Q) and 60 days for an annual route (3A), as the overall operation within a year is resource limited according to the available budget. The categorisation process allows for a greater priority to be assigned to the defects on the busier roads that are subject to the most traffic and therefore possess the greater risk to the travelling public. This aligns with the overall risk-based approach to inspections and defect categorisation.

The number of outstanding defects and their completion times will be monitored on an ongoing basis to establish a performance measure for each type of category 3 defect this will then be the target for completion for each type of category 3 defect.

All defects generated from customer reports will be assigned a category as defined in the risk matrix.

Category 4

Low Risk Category 4; Carry out repair during the next available programme, add to scheme request log, consider for neighbourhood highway team programmes, schedule a more detailed inspection or schedule intermediate inspections before next standard inspection to monitor site condition.

This type will be categorised as a Category 4 issue; Category 4 issues are not considered to be safety related therefore are not considered as “defects” within the context of this policy.

1.3.5 This revision to the Code of Practice includes the following substantiation for Staffordshire County Council’s variation to the national “Well Managed Highway Infrastructure – Code of Practice” published October 2016.

- Staffordshire County Council work within a fixed-budget constraint for the undertaking of routine and reactive works, i.e. this means that the County Council allocates a financial provision and then determines the level of operational resources that can be afforded over the course of a financial year. Costs are monitored throughout that financial year and the level of resource is adjusted to ensure that the overall budgetary constraints are met.

- The above constraint on financial provision for routine and reactive highway maintenance is part of the overall investment strategy decision based on the Council’s commitment to an asset management approach to its highway infrastructure. The Council weighs and determines the conflicting demands on the

available funding and prioritises its expenditure across the wider need for structural maintenance, preventative maintenance, cyclical maintenance as well as the routine and reactive maintenance demands. These decisions are made by through the relevant governance processes of the highway service and are endorsed by the Council's democratic leaders alongside the wider interests of the Council as a whole across its full range of service provision.

- It is acknowledged that due to the above funding constraints that the level of resources available may not be sufficient to undertake all routine and reactive maintenance activities and that the aspirational timescales for repair included within the national "Well Managed Highway Infrastructure – Code of Practice" published October 2016. may not be achievable given peaks and troughs within any given year.

- The highway service prioritises the available resources to ensure that risk is taken into account. Category 1 and Category 2 (High Risk) defects are prioritised to achieve the highest possible rate of compliance to aspirational times for repair as is operationally possible. Category 3 – Medium Risk (Category 3M / 3Q / 3A) defects are differentiated in this policy to allow the Council to focus its resources for lower risk repairs onto the most intensively used parts of the network or where customers have highlighted a perceived risk, i.e. the time for repair of a Category 3M will be the lowest such that operational focus can be placed on repairing these defects where there is greater exposure to a hazard.

- Importantly, the time for repair will always be variable as the constraints on funding mean that response vary dependent upon network conditions, e.g. during times of inclement weather where resources are stretched response times will increase. The highway service measures and monitors its response times across all categories of defects to ensure that its overall performance can be reviewed with regard to risk and operational factors.

2. HIGHWAY SAFETY INSPECTION PROCEDURES

2.1 *ITEMS FOR INSPECTION*

21.1 This section of the code is a schedule of deficiencies to be identified during safety inspections. The list is by no means exhaustive and is provided as a check list for purposes of guidance **only**; the term running surface applies to carriageway, footway or cycle route.

The schedule is as follows:

- debris, spillage or contamination on running surface or hard shoulder;
- displaced road studs lying on the running surface;
- overhead wires damaged or unstable;
- damaged and exposed electrical wiring;
- embankments and cuttings apparently unstable;
- trees with loose branches or apparently unstable;
- hedges, fences and walls impeding the width of the running surface;
- signs, signals or lighting damaged, defective, blatantly incorrect, missing or unstable;
- road markings and studs missing, misleading or badly worn;
- signs, signals or lighting dirty or obscured;
- sight-lines obscured by trees, unauthorised signs and other obstructions;
- safety fencing, parapet fencing, handrail, and other barriers missing or defective;
- abrupt level differences in the running surface;
- potholes, cracks or gaps in the running surface;
- crowning, depression and rutting in the running surface;
- defective trenches in the running surface;
- edge deterioration of the running surface;
- overriding of verges;
- significant weed growth within the running surface;
- kerbing, edging, setts or channel defects;
- rocking or otherwise unstable footpath or cycleway surfaces;
- apparently slippery running surface;
- ironwork (gully lids, manholes etc.) broken, missing, faulty or worn smooth;
- gullies, drains or grips blocked or defective;
- standing water, water discharging onto or overflowing across the running surface.

2.2 *INVESTIGATORY LEVELS*

2.2.1 Table 1 below details guidance investigatory levels for items of inspection, 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 (further guidance notes on typical highway defects are contained in section 4 of this code).

TABLE 1: INVESTIGATORY LEVELS

Feature	Defect	Investigatory level
Carriageway	Pothole/Spalling Crowning Depression Rutting Crazing/cracking Sunken ironwork Raised ironwork Edge deterioration	40mm depth Dependant on reinstatement width(NRSWA) 50mm level difference (area 2m ²) 40mm depth 25mm width (40mm depth) 40mm level difference 20mm level difference 100mm level difference
Pedestrian Crossing	Pothole Trip	20mm depth 20mm level difference
Footway	Pothole Trip Rocking slab/blocks Open joints Sunken/raised ironwork Cellar covers etc. Tree root damage	20mm depth 20mm level difference 20mm vertical movement 20mm width x 300mm length (depth 20mm) 20mm level difference 20mm level difference 20mm level difference
Cycle route	Pothole Trip Rocking slab/blocks Open joints Sunken/raised ironwork Tree root damage	20mm depth 20mm level difference 20mm vertical movement 20mm width x 300mm length (depth 20mm) 20mm level difference 20mm level difference
Kerbing/Setts	Dislodged Loose/rocking Missing	50mm horizontally 20mm vertically Yes/no
Ironwork	Level difference within framework Broken/missing/faulty badly fitting/worn smooth	20mm Yes/no
Signs	Damaged Blatantly incorrect Mis-aligned Obscured Dirty	Non specifiable Non specifiable Non specifiable Non-specifiable Non-specifiable
Verge	Overriding	100mm depth (length 10m)
Trees/Hedges/Shrubs	Dead/dying/overgrown Overhanging branches: Carriageway Cycle route Footway	Yes/no < 5.1m clearance from running surface < 2.4m clearance from running surface < 2.1m clearance from running surface

2.3 DEFECT RISK ASSESSMENT

2.3.1 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 an inspection item is imminently approaching, has reached or is in excess of the investigatory level, the safety inspector should conduct a risk assessment in order to determine the appropriate level of response. The following procedure as detailed in paragraphs 2.3.2 to 2.3.8 should be followed for each identified defect (Further guidance and defect risk assessment scenarios are detailed in the 'GUIDANCE ON DEFECT CATEGORISATION' document, which accompanies the Highway Safety Inspection Code of Practice).

2.3.2 **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.

2.3.3 **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.

2.3.4. **Risk Impact:** The impact of a risk occurring should be quantified on a scale of 1 to 4:

1. Little or negligible impact
2. Minor or low impact
3. Noticeable impact
4. Major, high or serious impact

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.

2.3.5 **Risk Probability:** The probability of a risk occurring should also be quantified on a scale of 1 to 4.

1. Very low probability
2. Low probability
3. Medium probability
4. High probability

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.

2.3.6 **Risk Factor:** The risk factor for a particular risk is the product of the risk impact and the risk probability and is therefore in the range of 1 to 16. It is the factor that identifies the overall seriousness of the risk and consequently the appropriateness of the speed of response to remedy the defect. Accordingly, the priority response time for dealing with a defect can be determined by correlation with the risk factor, as shown in the risk matrix (Table 2).

2.3.7 **Risk Management:** Having identified a particular risk, assessed its likely impact and probability and calculated the risk factor, the category and the timescale to rectify the defect should be determined and the relevant defect category apportioned. The response category is represented by the coloured cells in the risk matrix.

2.3.8 **Risk Matrix:** Using the approach detailed above, having determined a Risk Impact and Risk Probability by simply multiplying the two to give the Risk Factor, the Risk Matrix detailed in table 2 below can be utilised to determine the defect category and hence associated response time. For example:

- A:** Low Risk Impact of 2 x Low Risk Probability of 2 = 4 = Category 4
- B:** Low Risk Impact of 2 x Medium Risk Probability of 3 = 6 = Category 3
- C:** Noticeable Risk Impact of 3 x Medium Risk Probability of 3 = 9 = Category 2
- D:** High Risk Impact of 4 x High Risk Probability of 4 = 16 = Category 1

TABLE 2: RISK MATRIX				
PROBABILITY ►	Very Low [1]	Low [2]	Medium [3]	High [4]
IMPACT ▼				
Negligible [1]	1	2	3	4
Low [2]	2	A 4	B 6	8
Noticeable [3]	3	6	C 9	12
High [4]	4	8	12	D 16

Category 2 Defect 4 (Low Risk) Carry out repair during next available programme	Category 3 (Medium Risk) Repair within 28 calendar days (3M) 45 calendar days (3Q) 60 calendar days (3A)	Category 2 (High Risk) Make safe or repair in 7 calendar days	Category 1 Responses within 2 or 24 hrs
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2.4 HIERARCHIES AND INSPECTION FREQUENCIES

2.4.1 Tables 4, 5 & 6 set out the hierarchies and inspection frequencies for carriageways, footways and cycle routes in Staffordshire. They are based upon the recommended frequencies of safety inspections as promoted in Well Managed Highway Infrastructure – Code of Practice” published October 2016..

2.4.2 In all cases where practicable to do so, carriageway, footway and cycle route inspections will be combined, to mitigate issues associated with network congestion whilst making the best use of resource.

2.4.3 By definition this means that there will be no separate inspection routes for category ‘F3’ & ‘F4’ footways or category ‘A’ & ‘B’ cycle routes, where a carriageway route exists with a 3-monthly frequency or greater. Except in the circumstance where substantial lengths or numerous sections of the footway or cycle route are not visible from the carriageway, in which case, the relevant Inspection Manager should be informed so that the relevant sections can be included in a designated walked/cycled route. Short isolated sections of footway or cycleway that are not visible from the carriageway should be walked during the driven inspection at the desired frequency.

2.4.4 All category ‘F1’& ‘F2’ footways and category ‘C’ cycle routes will have designated routes and will be walked or cycled at the required frequency.

2.4.5 Where ever possible inspections should be carried out at the specified frequency as detailed in tables 4, 5 & 6. In the scenario that the pertinent Inspector is unable to conduct the required inspection, in the first instance, if practicable, the Senior Highway Inspector, or his delegated representative should carry out the inspection using appropriate alternative staff. However, in order to offer some degree of flexibility to accommodate events such as staff sickness, training or annual leave an element of tolerance is required in relation to inspection frequency. For the purposes of this code the tolerance levels are as detailed in table 3, notwithstanding, any deviation in the inspection calendar, should not be such as to reduce the annual number of inspections undertaken. Where a monthly inspection is specified, the requirement is to undertake 12 inspections per year.

2.4.6 Senior Highway Inspectors will undertake audits on a random basis of completed inspection routes, in order to ensure acceptable tolerance levels are being achieved as part of a Quality Assurance procedure.

TABLE 3: SAFETY INSPECTION TOLERANCE LEVELS	
Inspection Frequency	Acceptable Tolerance Level + or -
Monthly	7 Calendar days
3 Monthly	14 Calendar days
6 Monthly	28 Calendar days
Annual	28 Calendar days

TABLE 4: CARRIAGEWAY HIERARCHY AND INSPECTION FREQUENCY			
Road Category	Hierarchy Description	Definition	Inspection Frequency
C1	Strategic Route	Principal 'A' roads, that form part of a strategic network at a regional level	Monthly - driven
C2	Main Distributor	Remaining 'A' roads	Monthly - driven
C3	Secondary Distributor	'B' roads, 'C' roads with a total traffic flow > 1000 in a 12hr period.	Monthly - driven
C4	Link Road	Remaining 'C' roads, roads linking the main and secondary distributor network, 'D' & 'U' roads with exceptionally high traffic flow, industrial estate service roads, residential distributor roads with considerable H.C.V. flow	3 Monthly - driven
C5	Local Access Road	Remaining 'D' & 'U' roads i.e. residential loop roads, housing estate roads, residential cul-de-sacs, rear access roads, lay-bys, unsurfaced and minor ways	Annual – driven if accessible otherwise walked

TABLE 5: FOOTWAY HIERARCHY AND INSPECTION FREQUENCY			
Footway Category	Hierarchy Description	Definition	Inspection Frequency
F1	Primary Walking Route	City/Town centres, busy urban shopping and business centres with high pedestrian volumes	Monthly - walked
F2	Secondary Walking Route	Schools, local shopping precincts, industrial outlets	3 Monthly – walked
F3	Link Footways	Strategic footways in urban areas connecting local access footways to higher category footways (i.e. footways leading to City/Town centres), footways leading to large employment establishments	6 Monthly – walked/driven
F4	Local Access Footways	Non-strategic housing estate footways, cul-de-sacs, divergent footways & rural footways.	Annual – walked/driven

TABLE 6: CYCLE ROUTE HIERARCHY AND INSPECTION FREQUENCY		
Cycle Route Category	Definition	Inspection Frequency
A	Part of Carriageway	As for carriageway, minimum frequency 6 monthly - driven.
B	Remote from carriageway	6 Monthly - driven/cycled/walked
C	Cycle Trails	Annual - cycled/walked

2.5 DOUBLE MANNED SAFETY INSPECTIONS

2.5.1 In the interests of Inspector and network safety, all driven carriageway inspection routes will be subject to a double manned inspection regime.

2.5.2 During these inspections there will be a designated driver and the inspection will be conducted from the passenger seat of the vehicle. Hence, the Inspector's attention can be purely focused on conducting the inspection, enabling defects to be effectively noted.

2.6 VARIATIONS TO STANDARD INSPECTION FREQUENCIES

2.6.1 "Well Managed Highway Infrastructure – Code of Practice" published October 2016., recommends that a risk management approach should be adopted in determining the inspection frequencies appropriate to a particular road. Although the maintenance category is the main determinant, the frequency of inspection should be governed by the functionality of the road and take into account the following factors: -

- Category within the network hierarchy
- Traffic usage, characteristics, and trends
- Incident and inspection history
- Characteristics of the highway corridor
- Network management policies
- Special designation of routes
E.g. Safer routes to schools, temporary diversion routes, or roads subject to intensive traffic during holiday periods

2.6.2 The frequencies set out in Tables 4, 5 & 6 should be regarded as "starting point" frequencies, which may be modified in the light of a consideration of the above factors. Thus, for the purposes of the Code, the frequencies should be regarded as minimum values, with enhanced frequencies being determined by a simple risk assessment of these factors, carried out by the Senior Highway Inspector in consultation with the relevant Highway Inspector(s). By way of example; a carriageway may form part of a diversion route for a long-term road closure and as such is subject to a substantially increased traffic flow, hence may warrant an increased inspection frequency. In many cases, an increased inspection frequency

will only be necessary for a finite period (i.e. the period of the closure), when the circumstances giving rise to the enhanced frequency no longer apply, then the network administrator should be advised, and the relevant system will again be amended.

2.7 VARIATIONS TO INSPECTION ROUTES

2.7.1 If, for any reason (i.e. a road closure) it is not possible to inspect all sections of the assigned route, the details of the feature/s not inspected should be recorded on the relevant system against the relevant individual feature upon completion of that feature. These non-inspection comments should be recorded in the 'Surface Conditions' section.

2.7.2 However, consideration must always be given to the potential of the closed section forming part of a combined inspection route, for example, the carriageway may be closed but the footway or cycleway remains open to pedestrians and cyclists or access is being maintained to other roads or numerous frontages. If these circumstances prevail steps should be taken to inspect the restricted section.

2.8 DEFECT CATEGORIES AND RESPONSE TIMES

2.8.1 Well Managed Highway Infrastructure – Code of Practice” published October 2016. defines two categories of defects:-

Category 1 and 2 Defects, requiring prompt attention, because they represent an immediate or imminent hazard, or because there is a risk of short-term deterioration.

Category 3 and 4 Defects are defined as “all other defects”, which are of a non-urgent nature and may be included in planned programmes of work, according to overall maintenance priorities.

NB. See earlier section 1.3.4 & 1.3.5 for specific details of variations against the national code of practice.

2.8.2 The Code recommends that “Highway Authorities should adopt a range of local response times and apply them in responding to various types of defects, according to the perceived degree of risk, having regard to the characteristics and use of the network”. It states that “the degree of deficiency in a particular element of the highway is crucial to determining the nature and speed of response in repairing that defect”.

2.8.3 The Code gives general guidance on the speed of response but recommends that on-site judgement should be used to determine the need and timescale to respond to particular local circumstances. As stated previously, the degree of risk from a pothole depends upon not merely its depth, but also on its surface area and location.

2.8.4 Following a risk assessment, the actual response time to repair a defect should be specified by the Inspector, having regard to the following factors: -

- Category of road/footway/cycle route within network hierarchy
- Traffic and/or pedestrian use, characteristics and trends
- Location (if the defect is in a vulnerable location, i.e. in the carriageway wheel track or in the vicinity of a hospital or school)
- Specially designated route (i.e. Safer Routes to School or a traffic diversion route)
- Existing or predicted climatic conditions (sensitive locations – flooding etc.)

2.8.5 In all cases, utilising a risk management approach, the Inspector should make a conscious decision to, either treat the defect as one which requires immediate attention, or, alternatively, specify the response time which, taking all of the above factors into account, is deemed to be appropriate. In relation to urgent Category 1 defects, in certain instances a defect may be deemed so dangerous that an inspector is required to immediately make the defect safe (i.e. cone off or effect a repair, where it is a safe and viable option or alternatively wait on site until a relevant crew arrives to carry out remedial action.

2.8.6 It will thus be seen that a degree of flexibility is available to tailor the defect response time to the particular circumstances which prevail. Having decided on an appropriate response time, this should be entered onto the relevant database, and the Authority will endeavour to undertake repairs with the aspirational time for completion with regard to allowable resources and network conditions at the time. Systems are in place to monitor performance on the response times being achieved, and it is important to ensure measures are taken to achieve response times where possible, so that the County Council's adherence to their stated aspirational timescales can be adequately demonstrated.

2.9 CATEGORY 1 DEFECTS

2.9.1 Category 1: These are defects which require prompt action because they represent an immediate or imminent hazard, or because there is a risk of short term deterioration.

Three alternative actions arise:

- a) Category 1: 2 hour; Make the defect safe at the time of inspection (i.e. sign and cone off) and summon a maintenance crew to break off their existing work to carry out immediate repairs. In certain instances, an inspector may be required to wait on site until the relevant crew arrives to make carry out remedial action.
- b) Category 1; 24 hour; Request a maintenance crew to make the site safe or carry out repairs within 24 hours.
- c) In addition a follow up Category 3 task can be request for a maintenance crew to carryout permanent repairs within 28 days.

NB1: Where defects with potentially serious consequences for network safety are made safe by temporary signing or repair, arrangements should be made for a special inspection regime to ensure the continued integrity of the signing or repair is maintained until a permanent repair can be made.

NB2: The decision on which course of action to adopt would depend on an ad hoc risk assessment, which would typically include a consideration of the following factors.

- The nature and severity of the defect
- Traffic and/or pedestrian usage
- the nature/use of the road
- Location e.g. wheel track, o/s hospital or school, proximity to a road junction
- Congestion/disruption caused by temporary traffic control
- Diversion Route
Special Designation Route e.g. Marathon
- Existing or predicted climatic conditions

2.10 CATEGORY 2, 3 and 4 DEFECTS

2.10.1 Category 2 Defects and issues consist of all types of defects/issues other than Category 1 defects and here again, the nature and timing of the response will be determined by assessing the degree of risk and taking into account the same factors detailed in respect of the response to Category 1 defects. Category 2 defects have been divided into three risk classifications, High, Medium and Low risk as suggested by Well Managed Highway Infrastructure – Code of Practice” published October 2016.. These defects will be referenced as category 2, 3 and 4 respectively, and the following response times should be apportioned;

Category 2: High Risk defect; Make safe or repair within 7 calendar days

Category 3: Medium Risk defect; Repair as follows:

Defect 3M: if defects occur on a road subject to monthly routine inspections then the aspiration for their repair time will be within 28 calendar days. All customer-initiated defects regardless of their location on the network will also be classified as Category 3M defects.

Defect 3Q: if defects occur on a road subject to quarterly routine inspections then the aspiration for their repair time will be within 45 calendar days.

Defect 3A: if defects occur on a road subject to annual routine inspections then the aspiration for their repair time will be within 60 calendar days.

Category 4: Low Risk Category 4 Issue; Carry out repair during the available programme, add to scheme request log, consider for neighbourhood highway team programmes, schedule a more detailed inspection or schedule intermediate inspections before next standard inspection to monitor site condition.

2.11 COMMENCEMENT OF DEFECT RESPONSE TIMES

2.11.1 The response time for carrying out remedial work varies with the Category of defect.

2.11.2 The response times stated in sections 2.11 & 2.12 commence from the time that the County Council first became aware of the existence of a defect (i.e. if the Authority is notified via electronic mail, it first becomes aware of the defect when the electronic mail is opened). This is particularly important in relation to defects which require an urgent response. Because the 24-hour response time starts when the County Council was first informed of the defect by a member of the public, **only** Customer Enquiry reports that are attributed as emergencies will potentially become Category 1 defects. In relation to defects noted by the highway inspector the 24-hour response time commences from the point that the defect was noted.

2.11.3 Category 2 defects will be submitted to the relevant system and dealt with by the appropriate officer(s), on the understanding that the work will be included in a planned programme of work at the earliest opportunity, but that no undue risk is judged to exist in the intervening period.

2.12 GUIDELINES ON CATEGORY 1 DEFECTS

2.12.1 Tables 7 & 8 are intended to give general guidance **only**, to Highway Inspectors on the existence of category 1 defects; they are by no means exhaustive.

TABLE 7: CATEGORY 1 DEFECTS: Defects presenting an immediate or critical hazard to road users requiring IMMEDIATE ACTION to make safe or repair. Such defects include, but are not limited to the following: -	
Defect	Intervention Criteria
- Major debris or spillage on the highway	None specifiable
- Critically unstable overhead wires, trees or structures	None specifiable
- Exposed live wiring	None specifiable
- Carriageway / footway / cycleway collapse with high risk of accidents / loss of control	None specifiable
- Isolated standing water with high risk of loss of control	Standing water in wheel tracks

TABLE 8: CATEGORY 1 DEFECTS CONTINUED: Defects presenting an urgent or imminent hazard, or risk of rapid structural deterioration requiring urgent repairs or to be made safe **WITHIN 24 HOURS**. Such defects will include, but are not limited to the following:

Defect	Intervention Criteria
- Rapid deterioration in stability of overhead wires, trees or structures	Non-specifiable
- Damaged, defective or obscured traffic signals	One or more signal heads defective
- Missing, obscured or dirty 'Stop' signs and road markings	None specifiable
- Missing, obscured or dirty 'Give Way' signs and road markings at a location of potential high risk (i.e. a junction joining a major road)	None specifiable
- Missing or seriously damaged safety or pedestrian fencing	Fencing unable to serve the intended function
- Pothole, trench or other abrupt carriageway level difference, of a size and location likely to cause vehicle damage / loss of control	Risks associated with depth / size will vary according to location
- Edge deterioration with abrupt level difference of a size and location likely to cause loss of control	Exceeding 100mm in depth
- Pothole, trench or other abrupt level difference on remote or carriageway – located cycle track, of a size and location likely to cause injury / loss of control	Exceeding 20mm in depth
- Pothole, trip or other abrupt level difference in footway or kerb line of a size and location likely to cause injury to users	Exceeding 20 mm in depth
- Gap / joint in footway of a size and location likely to cause injury to users	Exceeding 20mm in width

2.13 THIRD PARTY DEFECT REPORTS

2.13.1 Additional reactive safety inspections will also be required in response to reports of defects on the highway, received from third parties. Following inspection of the site, when they are found to be valid, such defects will be risk assessed and attended to in accordance with the response times for Category 1 or 2 defects. In the case of Customer Enquiry reports, pertinent staff, should record their findings and the attributed defect category in the close notes of the relevant report, and the relevant system updated to reflect the same.

2.14 CARRIAGEWAY INSPECTIONS

2.14.1 Safety inspections on carriageways will normally be carried out from a slow moving vehicle, and will be subject to a double manned inspection regime.

2.14.2 Vehicle based safety inspections should be carried out in accordance with the established risk management control procedures contained in the Health and Safety Files. Inspectors, whilst recording defects, should avoid parking on the highway, in a manner which is likely to compromise their personal safety or that of other road users.

2.15 DEFECT RECORDING PROCEDURES FOR SAFETY INSPECTIONS

2.15.1 All highway defects which are noted should be recorded on the mobile devices, separate instructions are available on the operation of these tools.

2.15.2 Where mobile devices are not used for direct input, defects should be recorded on site in a notebook and transferred to the relevant system on return to the office.

2.15.3 Each inspection route is made up of individual features. When an Inspector has completed a feature it can either be sent on its own or saved until a convenient time and several features can be sent together. The completion and sending of a feature represents that an inspection has taken place unless comments on an individual feature indicate otherwise. This is a mechanism by which completion of a route can be guaranteed and makes it absolutely clear, in the context of any legal scrutiny of our documentation and records that an inspection took place.

3. NOTES ON TYPICAL HIGHWAY DEFECTS

Note where investigatory levels are quoted in the following notes, these are for purposes of guidance only, and inspection items with a lesser degree of deficiency may, in particular circumstances; pose an equal or greater safety hazard.

3.1 *CARRIAGEWAY POTHOLES / DEPRESSIONS*

3.1.1 Potholes of any depth should be noted where their location and shape significantly affect carriageway riding quality and/or pose a safety risk. Potholes imminently approaching, corresponding to or is in excess of 40mm depth should normally be recorded and risk assessed, any pothole greater than 100mm in depth is considered to be a dangerous defect. Where wheel tracking is present in the carriageway, this should be recorded where there is a risk of standing water or where the passage of vehicles, especially motorcycles, are likely to be affected.

3.2 *SAFETY FENCE AND BARRIERS*

3.2.1 Any impact to safety fence or barriers that has caused structural damage; corroded parts, missing parts and any noticeable parts not to standard. Following the initial identification of a defect, consideration should be given to the need for a more detailed inspection of the whole fence or barrier.

3.3 *DAMAGED SIGNS OR BLATANTLY INCORRECT SIGNS*

3.3.1 Sign face or post damage, missing parts, inconspicuous, mis-aligned, misleading.

3.4 *OBSCURED SIGNS*

3.4.1 Signs not easily visible, e.g. obscured by vegetation, moss, or other signage & street furniture. Particular note should be taken of signs located in the vicinity of trees which become contaminated or obscured by lichen.

3.5 *LIGHTING COLUMNS, ILLUMINATED SIGNS/BOLLARDS*

3.5.1 Evidence of vehicle impact, exposed wiring, missing or loose inspection covers, vandal damage or severely corroded columns. Such defects should be referred to the County Council's PFI Contractor via the "Customer Enquiry" defect reporting facility.

3.6 *RECESSED ROAD STUDS*

3.6.1 Dislodged or missing metal road studs. (If found, remember to book a pothole so that a temporary repair can be undertaken on the resulting hole.)

3.6.2 Where more than 10% of the studs or individual cat's eyes are ineffective or missing then the marking system is considered to be substandard.

3.7 OVERRIDING OF VERGES

3.7.1 Overriding of verges causing rutting along the edge of the carriageway greater than 100mm deep and 10m in length.

3.8 DEFECTIVE IRONWORK

3.8.1 Ironwork which is broken, missing, faulty, badly fitting, worn smooth or has sunk abruptly more than 40mm, or protrudes above the carriageway or footway surface more than 20mm.

Where ironwork is missing or seriously defective with a high probability of injury to highway users it should be regarded as a dangerous defect.

(Following a risk assessment and categorisation, defective utility ironwork should be recorded on the relevant system.)

3.9 DISLODGED OR LOOSE KERBS

3.9.1 Any kerb, which is loose or projects more than 50mm into the carriageway/footway or presents a trip hazard greater than 20mm.

3.10 DISLODGED OR LOOSE SETTS

3.10.1 Any sett, which is loose or projects more than 50mm into the carriageway/footway or presents a trip hazard greater than 20mm.

3.11 TRENCHES

3.11.1 Any trench, which has settled in the carriageway or footway. If the trench is associated with utility works and is within the two or three-year guarantee period, the utility concerned must be approached to take the necessary remedial action in accordance with the defective reinstatement procedure as defined in NRSWA. (Even outside the guarantee period, where the subsidence can be attributed to defective workmanship, then the utility is liable for the reinstatement).

3.12 OBSTRUCTIONS – GENERAL

3.12.1 Any obstruction on any part of the highway network which is considered dangerous for vehicle drivers, pedestrians or cyclists. This item includes unauthorised roadside posts and boulders and tree debris. (See relevant standard letter and paragraph 4.2.8.2 of the County Highways Network Management Policy Document).

3.12.2 This item also includes the presence of plastic fixing ties, on sign or lamp columns, used in connection with fly posters, particularly those fixed at eye height of children or adults, which are thus likely to cause a hazard.

3.13 TREE DEFECTS

3.13.1 Applies to any tree located within the highway boundary, or located outside the highway boundary, but within falling distance of the highway, which has overhanging branches (refer to table 1 for investigatory levels), shows evidence of being dead, diseased, or of a generally unsafe or unsound nature. Also applies to any significant tree debris left within the highway boundary after felling. In cases of doubt, or where large scale remedial works are proposed, the advice of the relevant Highway Tree officer should be sought.

N.B. For non-highway trees, except where the defect constitutes immediate safety hazard, the relevant standard letter should be used in the first instance to affect a response from the frontager concerned.

3.14 INADEQUATE VISIBILITY

3.14.1 Covers any impaired visibility at road junctions caused by overgrown vegetation, badly sited signs, or other obstruction.

3.15 STANDING WATER

3.15.1 Caused by depressions of the highway surface, a blocked drainage system, or water discharging on to, or flowing across the highway. Applies to carriageway standing water more than 500mm from the kerb face or found in wheel track rutting depressions.

3.15.2 Also applies to footway standing water more than 10mm deep that restricts the footway width to less than 0.5m or is likely to cause pedestrians to use the adjacent carriageway.

3.16 DETRITUS, SPILLAGE OR CONTAMINATION

3.16.1 Motorcycles and cycles are particularly vulnerable to this type of defect, primarily on bends and junctions. It applies to situations where there is a need to clear the highway network of detritus, spillage or contamination, which has arisen because of e.g. leaf fall, loose aggregate or load spillage.

N.B.1 Except where the deposits on the highway prevent the safe passage of vehicles or pedestrians, such matters should be referred in writing to the appropriate environmental health authority or land owner using the relevant standard letter.

N.B.2 Includes accumulation of detritus at junctions, traffic islands and hatched areas of carriageway.

3.17 WEED GROWTH

3.17.1 Any significant ingress of weeds within the wearing course, of a carriageway, footway or cycleway, or within kerb drainage channels, which has caused disruption of the highway fabric, and/or will impede the flow of surface water.

3.18 FOOTWAY POTHoles, TRIPS, DEPRESSIONS OR UNEVEN SURFACES

3.18.1 Potholes, trips and rocking flags imminently approaching, corresponding to or in excess of 20mm should normally be recorded and risk assessed. Rapid change of footway profile greater than 25mm, particularly sites extending in plan dimension less than 600mm.

3.19 HEDGES, FENCES AND WALLS

3.19.1 Covers any situation where a hedge, fence or wall is impeding, the passage of vehicles, cyclists or pedestrians.

N.B. For non-highway hedges, fences, and walls and except where the defect constitutes an immediate safety hazard, the relevant standard letter should be used in the first instance to affect a response from the frontager concerned.

3.20 ROAD MARKINGS

3.20.1 Covers any noticeable defect with Road Markings, e.g. faded lines, missing or loose road studs. Where satisfactory response times cannot be achieved, due to the non-availability of a road marking contractor, it will be acceptable to place a "No Road Markings" sign for the interim period. Particular care should be taken to monitor the condition of mandatory road markings e.g. stop lines or double lines.

3.20.2 Road markings should be considered to be inadequate when more than 30% of the marking material is worn away.

3.21 ACCIDENT DAMAGE

3.21.1 Damage to any part of the Highway Network or infrastructure, which has been caused by a third party.

N.B. A note of all available details of the third party should be recorded and a recharge form submitted to the highway admin team with all appropriate details included.

3.22 BLOCKED DRAINAGE SYSTEMS

3.22.1 Flooding of the Highway Network caused by inadequate or a blocked drainage system e.g. blocked gully or grips. Specific attention should be given to the condition/operation of grips and gullies in sensitive locations, for example, at or near low points so as to prevent flooding.

3.23 OTHER

3.23.1 Covers any other defect not mentioned in the above list, but which is considered to constitute a safety hazard.

4. ADDITIONAL NOTES

4.1 NOTES FOR HIGHWAY SAFETY INSPECTORS

4.1.1 During all inspections, the inspector must be constantly on the lookout for any of the types of defect defined in this code, for which some form of action is required. Inspectors should consider the particular needs of vulnerable road users such as children, the elderly and the disabled as well as pedestrians, cyclists, motorcyclists, and motor vehicle users, in general, in assessing the severity of the defect and the appropriate response time.

4.1.2 For all highway defects logged on the relevant system the following information will be recorded: -

- Nature of defect
- Location/Route No.
- Time/Date the defect was noted
- Time/Date the defect was rectified
- Weather Conditions
- Where it is safe to do so a minimum of two photos showing the defect and its location should added to the record.

4.1.3 The inspector shall maintain a record of inspections which includes all inspections which have been carried out, together with his or her leave/absence details.

4.1.4 Where a length of carriageway is 'extensively' potholed, each separate pothole should be recorded where applicable, however it is acceptable for an aggregated area to be noted but the number of individual repairs within that area must be recorded along with the overall area of the repair and the depths.

4.1.5 All carriageway, footway or cycleway defects shall be clearly marked with white spray paint (where weather conditions allow) and it is safe to do so.

4.1.6 In the event of an identified defect being a Pothole, the size must be recorded as follows; the length x width in mm and the depth in mm.

4.1.7 A text description in addition to location must be given to aid the identification of the defect.

4.1.8 Where action is taken on site to remedy a defect either by the Inspector or by the Contractor whilst the Inspector is still in attendance, the defect should still be recorded on the relevant system and annotated accordingly.

4.1. Reports are available in a wide variety of formats and contents from the relevant system on the performance of inspections and/or defect repair.

