

Worcestershire County Council

Fixing and repairing potholes in Worcestershire

1. Introduction

As the Highway Authority, Worcestershire County Council has responsibility for the maintenance and repair of the public highway within the County, including fixing potholes and other defects. This document explains how we identify, report, track and repair potholes including their prevention in Worcestershire using our approach and methodology.

By using Asset Management principles in line with our Highways Asset Management Strategy, we ensure we assess all of our roads in terms of their condition and apply an efficient methodology to provide for repairing those roads over the short, medium and long term. We focus our resources to best effect to maintain the Counties roads to ensure repairs are afforded in a timely manner within the resources we have.

2. What is a pothole?

A pothole is a hollow or hole in the surface of the carriageway or footway and they occur throughout the year, but are more likely to form in the winter months. Potholes most often occur on older road surfaces where the surface has deteriorated and cracks form. These cracks will then allow water to seep into the road and can accelerate its deterioration and create the formation of potholes. In addition, If the water freezes, damage is created from the expansion of the ice when it freezes. Further damage to the surface of the road or footway is caused when the ice thaws and the surface contracts. When traffic passes over the damaged road surface, it can further crack and break allowing a hole or hollow to appear.

3. How big are potholes?

For a pothole to be defined and fixed it is usually deeper than 20mm and wider in diameter than 200mm for a footway and deeper than 40mm and wider in diameter than 200mm for a carriageway. The County Council Works within the guidance provided by the Department for Transport in how to identify, manage and repair potholes and other defects.

4. How do we identify potholes?

We identify potholes via our Highways Safety Inspections and also road condition surveys. In addition, members of the public, can report potholes to us. These are inspected and

where required and when they meet certain criteria repaired in line with DfT guidance on repairing potholes. The following provides more detail on what we do:

- Our Highway maintenance teams carry out regular safety inspections and reactive repairs to identified defects (e.g. potholes) and frequently monitor the condition of our road network as per the table below:
- Road condition surveys using Scanner and Course Visual Inspection surveys are carried out routinely to assess the condition of carriageways and can also identify defects such as potholes.
- Members of the public are able to use our website to [report potholes](#) online via our Public Enquiry Management (PEM) system. This has a tracking facility and allows our Highways and Transport Control Centre to review all requests received each day and determine the most appropriate action based on both the details that are provided and the policies and procedures we use. The PEM system allows members of the public to be updated about the progress of their reported issue.

Table 1: Category and Frequency of Inspection

Asset type	Category	Frequency
Carriageways	Strategic Routes	Once a month
	Main distributors	Once a month
	Link Roads	Every three months
	Local Access roads	Once a year
Footways	Prestige walking zones	Once a month
	Primary walking routes	Once a month
	Secondary walking routes	Every three months
	Link footways	Every six months
Cycleways	Local Access Footways	Once a year
	Part of carriageway	(as part of carriageways)
	Remote from carriageway	Every six months
	Cycle trails	Once a year

These inspections are in accordance with the Code of Practice for Well Maintained Highways (This is being reviewed in line with the new Code of Practice; Well Managed Highway Infrastructure for implementation by October 2018).

Worcestershire County Council is not responsible for carrying out safety inspections and fixing defects including potholes on the following roads:

- Motorways and trunk roads (A46) - these are the responsibility of Highways England
- Private roads or roads on private land - these are the responsibility of residents of each private road or the landowner.

5. Method of Safety Inspections

Carriageway safety inspections are carried out by an inspector and a driver from a slow moving vehicle (20 –25 mph) using predetermined routes. However in key urban areas or due to the volume of traffic and the presence of parked vehicles, it may be necessary to complete walked inspections.

During safety inspections, a holistic approach is taken to the completion of the inspection, where a risk based approach is used to identify any safety issues for the user of the highway. A wide range of items will be considered including the road/footway surface, kerb edges, lining, signs, fencing and verge/tree issues. Defects identified during these safety inspections are captured and recorded using map based computer software which has Global Positioning System (GPS) functionality (Bentley Exor System called Map Capture). This enables the accurate location of defects to aid timely repairs.

All driven inspections carried out on single two way carriageways are carried out in one direction only, but in the reversed direction on the following inspection. All dual carriageways are inspected in both directions on each occasion.

All footway inspections are carried out on foot. Cycleways and divorced footways are either walked or cycled. The same approach for the identification of safety issues as above are completed during walked footway inspections and entered into Map Capture.

6. Defect Priorities

All safety issues will be considered using a risk assessment based approach. The general “safety net” at which action is likely to be taken in most circumstances, is if the pothole in a carriageway measures 40mm in depth or more, and for footways, where the pothole measures 20mm in depth.

We will inspect a reported pothole within 5 working days or far less if it is identified as being a significant risk where practicable. We will determine the risk it poses to road or footway users by considering the size of the defect and its location in the highway. Any potholes deemed to be hazardous will be made safe within appropriate and relevant timescales.

Some defects need to be treated more urgently than others. The Inspector will allocate one of the following priorities to repair each defect in accordance with DfT guidance:

- Emergency response (on site) within 1 hour.
- 1 day response during the next calendar day.
- Urgent repair within 7 calendar days.
- Planned repair within 28 calendar days.

The Highways Safety Inspector identifies that the area at the defect location and/or its surrounds is in poor condition, they may raise an advisory note to be sent to the relevant

engineering team, to consider more large scale permanent repairs, for example patching or re-surfacing.

7. Commonly Used Treatments

In determining the type of treatments and materials used, the primary engineering objective is to ensure compatibility with the existing road or footway structure for load transmission and construction type. A wide variety of repair materials and processes are available to allow us to closely match the existing construction as much as possible, without affecting the integrity of the existing carriageway or footway.

Wherever and whenever possible, we advocate a 'right first time approach' to repairing potholes, with a semi-permanent repair called Type 1. This is where we saw cut the surrounding area of the pothole in a square shape that is larger than the pothole. The area is then excavated, in filled with hot Macadam and bonded with an appropriate material, and then fully compacted. Sealing compound on the vertical faces of joints is applied to prevent water ingress. Repairs are carried out to a depth of up to 100mm or onto sound material if present at less than 100mm.

Type 1 repairs carried out under a single instruction may be up to 1.5m² in total combined area and encompass a number of defects in close proximity within a single traffic management set-up of 20 linear metres. Type 1 repairs are typically less than approximately 0.5m² in total combined area within a single repair instruction.

Where it is not possible to carry out a Type 1 repair, for example, if carrying out the repair further jeopardises the structural condition of the carriageway or footway, then a Type 2 temporary or emergency repair is carried out until further and more extensive works can be programmed through an 'advisory'. A Type 2 repair is carried out using hot material as with a Type 1 repair, however, the sides are not generally cut out first, due to the inability to secure a sound edge if the surrounding tarmac is in poor condition. a suitable pre-packed cold material may be used outside of normal working hours for emergency repairs only. .

To ensure quality assurance, every repair or instruction is digitally photographed at arrival on site and after completion on site with an information board showing the defect instruction number (with the exception that 1 hour emergency instructions do not initially have a reference number), times and location.

A sample of our defect repairs including pothole repairs are recorded and reviewed weekly as part of our Performance Management Framework.

8. Preventative Treatments

In line with the Government's Pothole review report published in 2012, Worcestershire County Council adopt the view that prevention is better than cure to safeguard the asset and for this reason, we carry out a number of preventative treatments as follows: The County's 'outcome' based Term Service Contract with Ringway Infrastructure Services has allowed County Engineers to work closely with the Contractor ensuring structural patching is

carried out in the most efficient ways. This includes the often overlooked discrete lengths of carriageway.

The Contractor has developed a number of delivery methods to ensure maximum efficiency in an area where traditionally low productivity has been an issue:

- **Edge of carriageway repair:** The area is excavated and reinforced with a specific mix of concrete and then surfaced with Macadam. This reinforces the edge of carriageway that can be susceptible to damage when vehicles overrun the edge of carriageway on to the verge. Lining is then replaced as appropriate.

Structural Patching and edge of carriageway treatments are precursors to extend the life of the carriageway prior to surface dressing, re-surfacing or reconstruction treatments:

- **Surface Dressing:** A machine laid material; a binder is applied to the surface to seal the road and a layer of stone chippings is applied to create the skidding and ride properties. Worcestershire County Council carry out an annual surface dressing programme to predetermined treatment lengths around the county.
- **Re-surfacing:** Where the road surface, due to age, is starting to crack and craze with larger areas, the existing surface is removed and replaced with a new layer of Macadam or Asphalt.
- **Reconstruction:** The road is reconstructed when the works mentioned previously would not be enough to repair the road.