

Roads AI trial for recording Cat2 defects

The issue:

Social distancing has been in place since March 2020. Following advice sought from ECC's Director of Wellbeing, Public Health & Communities on 17th March 2021, we are still observing this approach. This means that we will not place two inspectors in one vehicle. We have a CMA in place to explain our current inspection approach; this states that we are not looking for priority 3 or priority 4* defects on our driven inspections as we cannot confidently state that we can see all imperfections meeting minimum investigatory levels during our inspections.

In September 2020, with social distancing set to remain in place for the coming months, we looked at alternatives to provide a more comprehensive inspection.

We have a new programme called Road AI which has been implemented on a trial basis from 1 October 2020 to determine its suitability to identify priority 3 and priority 4 defects. To date, over 800 priority 3 and priority 4 defects have been identified using Road AI on the PR1 and PR2 network.

Revised scope of the trial from April 2021

1. Currently, the trial is focussed on the PR 1 and PR 2 network. We propose that after 1st April 2021, this is widened to include Local roads.
2. Currently the aim of the trial is to record any priority 3 and priority 4 carriageway defects.
3. After 1st April 2021, the scope would be expanded to determine which other defect types can be easily recorded from Road AI (e.g. signs, guardrail and the like).
4. The original process for the trial was for drivers to record footage, and for inspectors to review this footage in the days immediately after the inspection. In consultation with another authority (Cumbria CC) we propose revising this process as follows; the inspector will drive a route recording any priority 1 and priority 2 defects as normal. The same inspector will then review the footage, recording any priority 3 and priority 4 defects. Cumbria have found this process to be more efficient, it also retains a level of knowledge of the area being driven.
5. The software is in the early stages of trials for walked inspections. We would propose undertaking trials for walked inspections during this period.

Trial objectives

To determine the optimal approach to undertaking inspections using Road AI (i.e. via the existing trial method, having separate resources undertaking recording and assessment, or the same resource conducting both)

To determine suitability of Road AI for recording all defect types recorded in a safety inspection (not just Carriageway)

To determine whether Road AI is suitable for walked inspections.

Process outline

- Inspectors to carry on inspecting as per the CMA looking for priority 1 and priority 2 defects, but not looking for priority 3 and priority 4 defects.
- Road AI will record the surface from a Highways inspection vehicle driven by a trained officer.
- Road AI results will be analysed to highlight any potential defects by the same inspector that recorded the footage in the days immediately after the inspection. The review date is classed as the date of the inspection.
- Confirm Connect will be used to display existing recorded defects alongside Road AI displaying carriageway imperfections it has recorded.
- We will then:
 - Cross reference any priority 1 + priority 2s that already exist
 - Review any defects already plotted
 - Investigate any other red areas (using the Road AI video)
 - The trained officer will risk assess and enter a new defect into Confirm in the following way: Risk assess and record dimensions and risk assessment details of the defect e.g, RANSA 4=1x4 50mm+ x 1sqm and priority 3s or priority 4 priority selected for all defects that look to meet the investigatory level that have been recorded on Road AI.

*priority 3 and priority 4 defects are those deemed at low risk of causing harm, as defined as s3 and s4 in the Maintenance and Inspections Strategy, Carriageways, Footways & Cycleways, July 2019, page 18. This document can be found at the following location:
<https://essexhighways.org/uploads/files/2019-strategy/maintenance-inspections-strategy-for-carriageways-footways-and-cycleways.pdf>