

HIGHWAYS HIGHLIGHTS

HHH

INFORMATION FOR LOCAL COUNCILLORS
JUNE 2024

SAFER / GREENER / HEALTHIER

**MEMBERS TAKE
THE LEAD TO
HELP ESSEX
HIGHWAYS
REPAIR ROADS**

COMMENT

COUNCILLOR TOM CUNNINGHAM

CABINET MEMBER FOR HIGHWAYS INFRASTRUCTURE
AND SUSTAINABLE TRANSPORT

Dear colleagues,

The last few months have been very busy getting the Members' Highways Initiative up and running. This is a very important programme that means you can all work with Essex Highways to identify your priority defects in your divisions and have dedicated crews carry out the repairs. It's a change in how member-led schemes have previously worked, but putting all of you at the heart of the programme, has helped colleagues in the service best understand where the priority defects are.

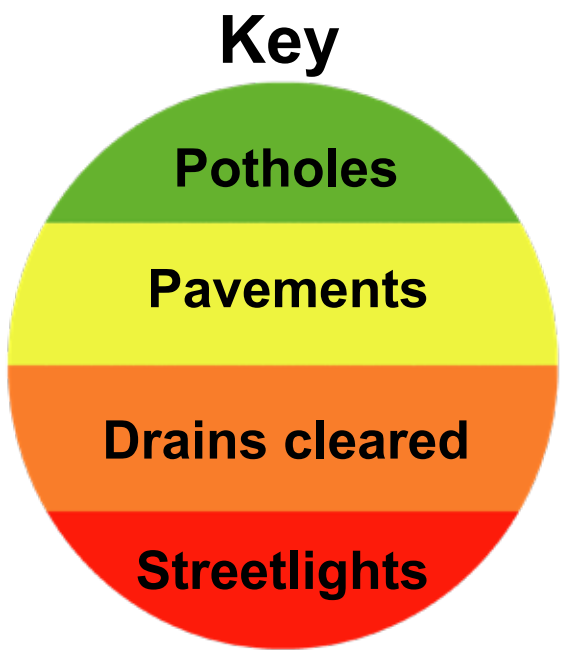
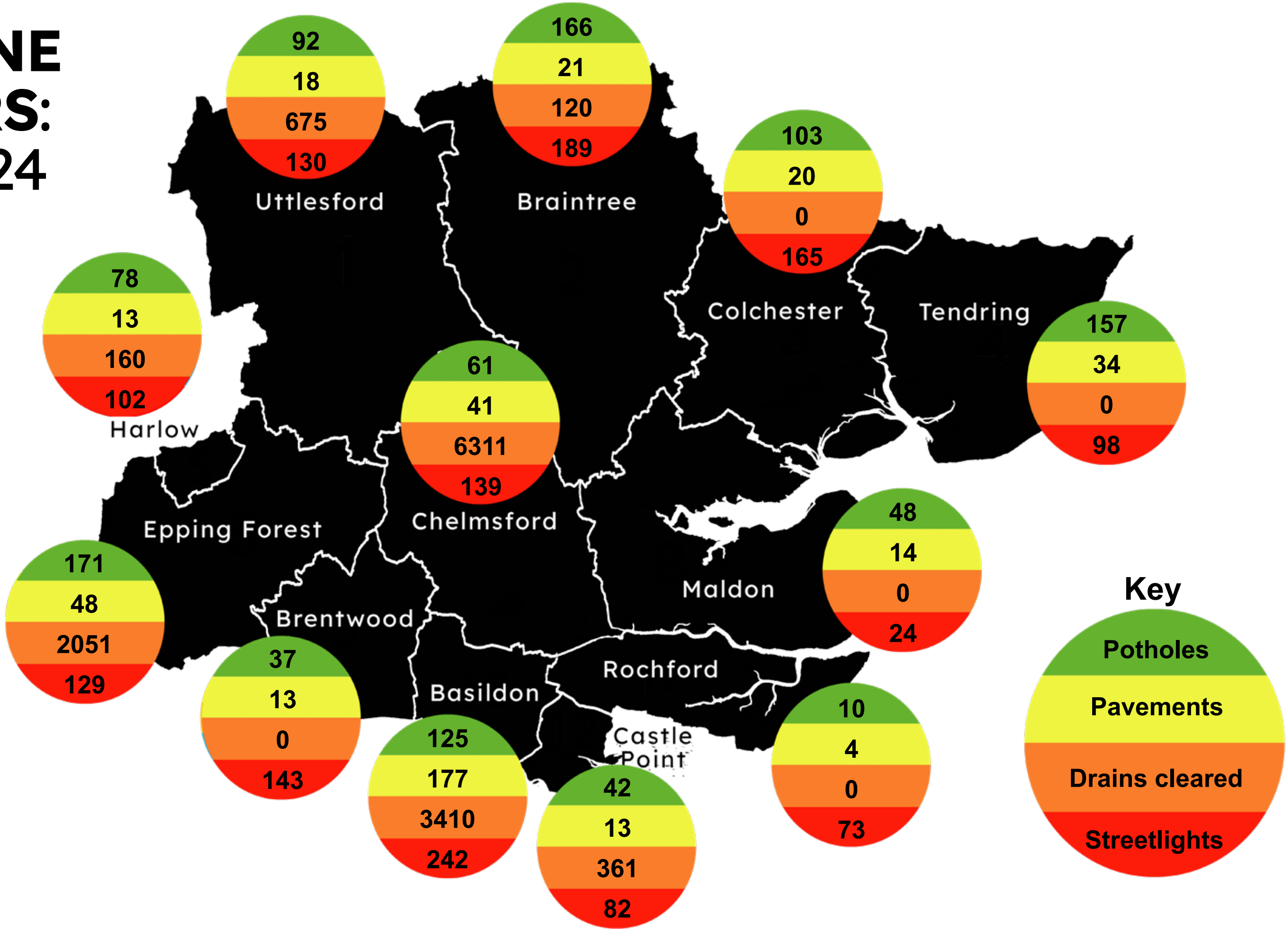
Guidance to support has previously been shared with you and will help you navigate both the updated portal, where you need to report your defects, and your schedule of works. Please do continue to engage in this process and together we can all help improve the quality of roads across Essex.

My thanks goes to the team that has worked very hard to get the initiative up and running and made sure it works well for all of us. I would particularly like to thank Cllr Mark Platt, who has been central to supporting the team as the Members' Highways Initiative has evolved, and in supporting many of you get to grips with the programme.

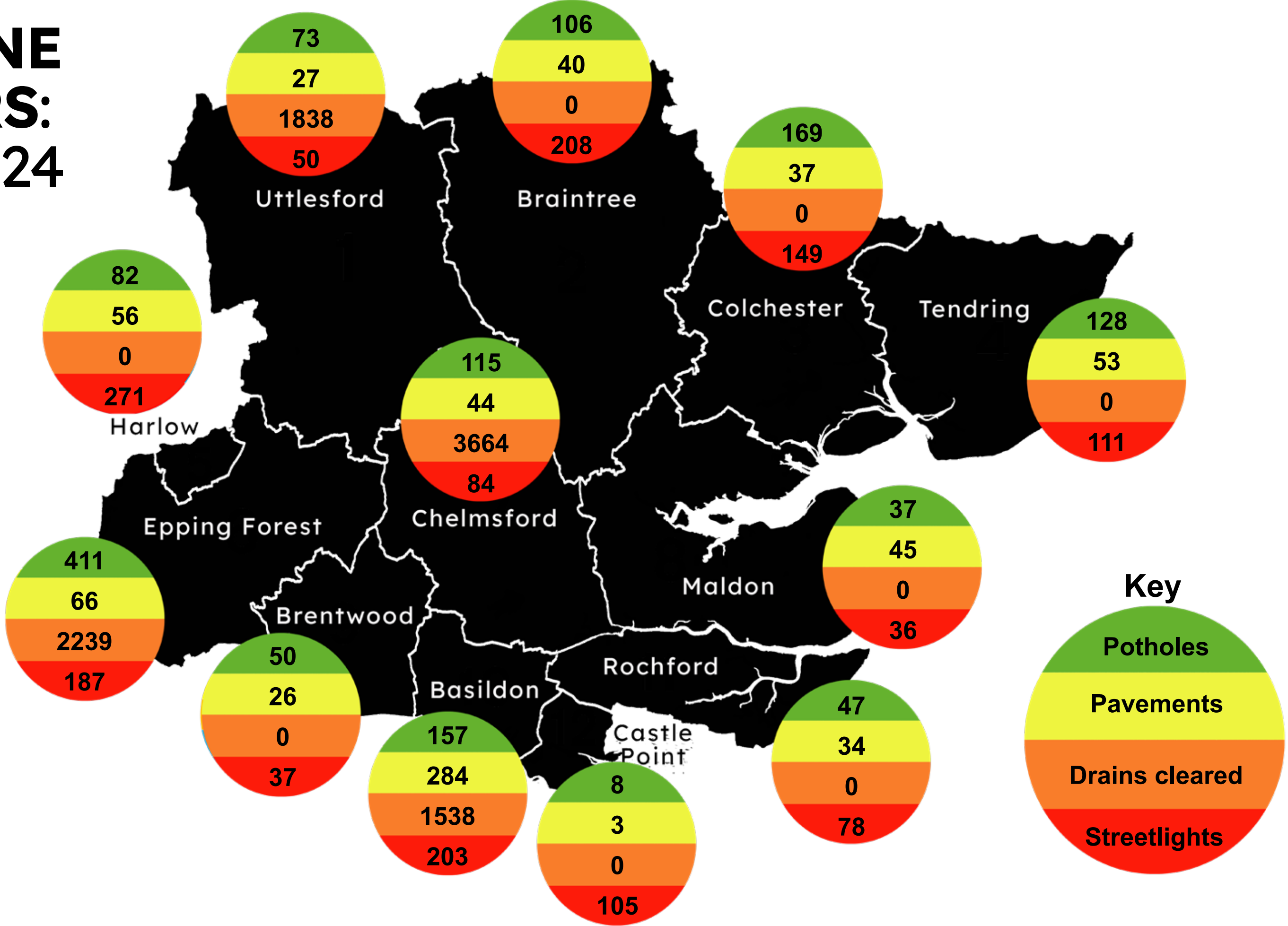
Best Wishes
Tom



ROUTINE REPAIRS: May 2024



ROUTINE REPAIRS: June 2024



MEMBERS TAKE THE LEAD TO HELP ESSEX HIGHWAYS REPAIR ROADS

Essex Highways is working with Members across the county to prioritise repairs

More road and pavement repairs are being carried out thanks to Essex County Councillors working with Essex Highways to identify issues in their divisions.

The Members' Highways Initiative (MHI) is funded by £8 million of the £12 million announced for highways repairs in February. The £12 million has been allocated across different areas of work, including additional highway crews for each borough, city and district to prioritise repairs raised by local Members and residents.

Each Member has a crew allocated to them for a week every eight weeks. This is in addition to the work Essex Highways already carries out to repair and maintain the county's highways, including the £39 million resurfacing programme.

The MHI will enable Members to identify, plan and prioritise defects in their division. This includes repairing outstanding issues as well as new defects. Issues include potholes, pavements, repairs to street furniture, drainage and enforcing vegetation maintenance on private land where it meets the highways.



The initiative will help ensure more repairs are carried out to help improve the condition of the highways in Essex and help the council in its ambition to deliver safer, greener and healthier travel for everyone.

Councillor Tom Cunningham, Cabinet Member for Highways, Infrastructure and Sustainable Transport, said: “This is an innovative approach for Essex Highways in carrying out much needed repairs in the county. We’re putting the power in the hands of Members, who know their local divisions better than anybody and are well placed to help advise Essex Highways on what repairs fellow residents want the most.

“I want all my fellow Essex residents to feel as proud as I do to live in an Essex that supports travel by all transport modes. Carrying out important repairs on our highways is a fundamental place to start and I’m pleased to be working closely with my colleagues to make this happen.”



ESSEX HIGHWAYS TEAMS UP WITH VINCI TO DEMONSTRATE A WORLD FIRST IN DRONE INSPECTIONS

Visually inspecting structures by drone has been possible for a while now, but one of the blockers to further adoption has been the inability to carry out touch and non-destructive testing on the structures being inspected.

However, Essex Highways and Vinci, with the support of SVTI, Voliro and Taylor Woodrow, recently teamed up to present a demonstration of the world's first drone capable of measuring the thickness and integrity of materials in real time.

The event took place on Thursday 16 May 2024 under the Pitsea Flyover in Essex and was attended by representatives of organisations that included Essex Highways, Cheshire East Highways, Vinci, Ringway and National Highways.

The demonstration itself was facilitated by Voliro who are leaders in the field of aerial mobile robotics and the Swiss Association for Technical Inspections (SVTI), a leading Swiss institution in the field of technical safety inspections.

Felix Stadler of Voliro, explained: "Our drone has greater capability compared to a conventional drone with fixed rotors. You can tilt the rotors forward and backward - the drone is from designed to do contact-based inspections and can push onto a surface with 1.5 kilogrammes of pressure. We can mount different sensors onto the drone depending on what and how you want to inspect a structure."

For the demonstration, two sensors were used; a half-cell potential sensor measured the likelihood for corrosion in the reinforcement within the concrete. Different readings of the structure taken with this sensor can signify potential issues within the structure. Also used was an Impact echo sensor where different sections of the structure are hit with a hammer.

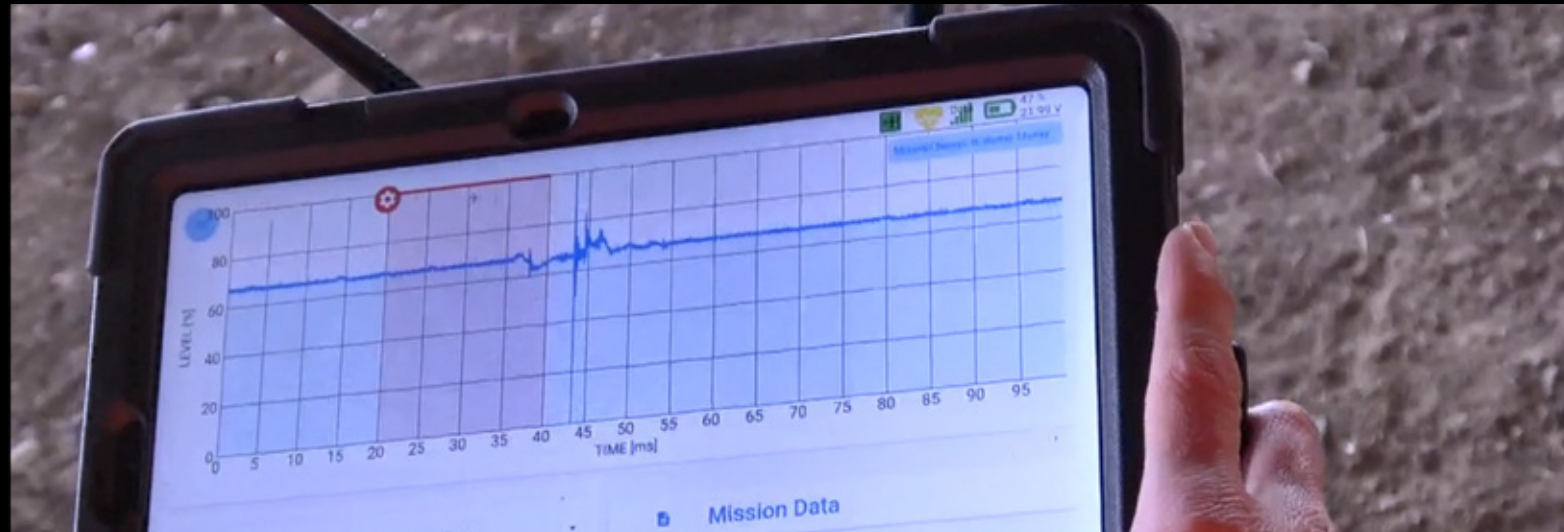
Readings captured using the Voliro drone fitted with SVTI's UACIS-HCP half-cell potential sensor



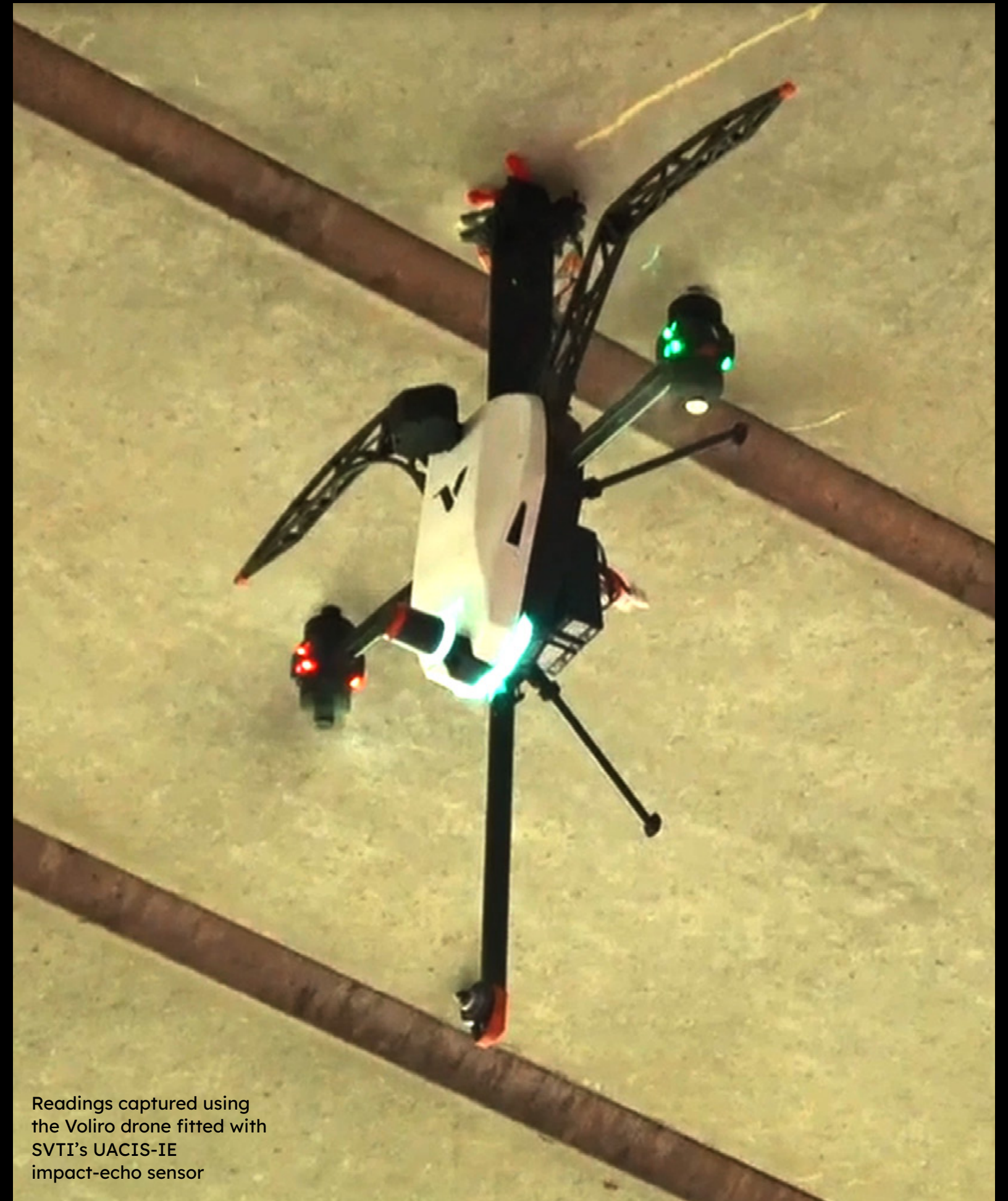
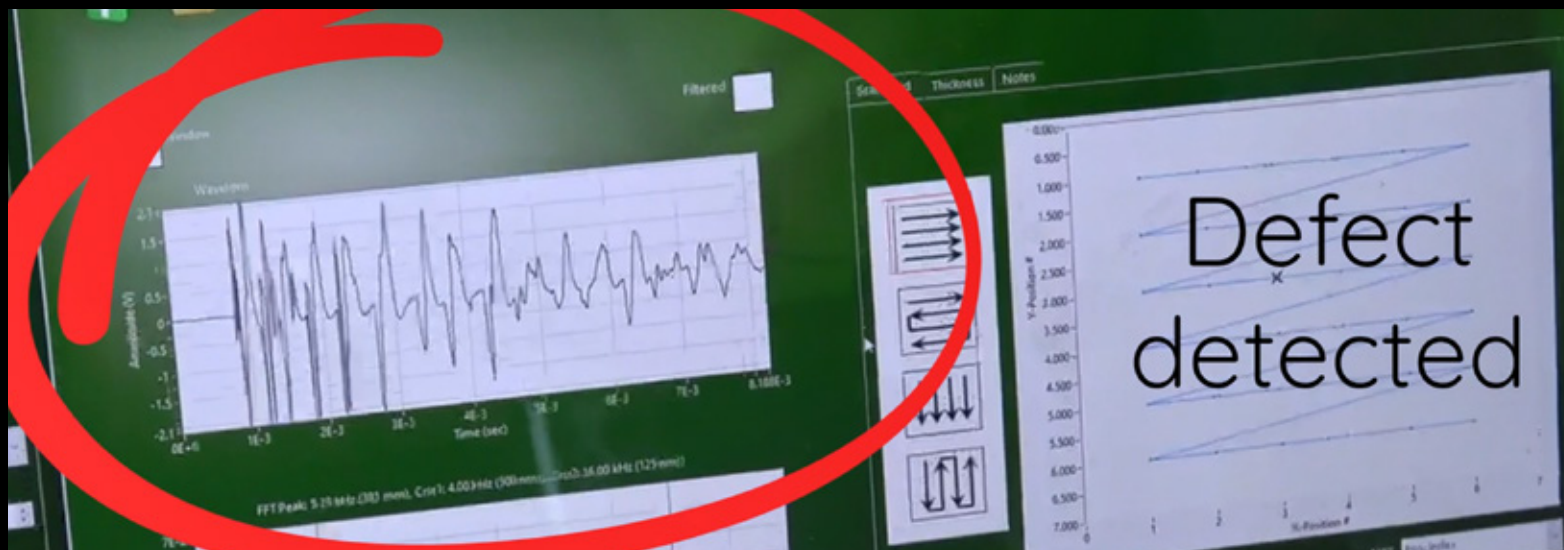
The vibrations from each hammer strike are measured by collecting the time signal for a few milliseconds. The time signal can then be transformed into a frequency domain. This gives a reading of dominant frequency peaks that directly link to the thickness of a structure. From the frequency, sound velocity can be used to calculate the thickness. If inconsistencies are identified, then it means there is some sort of defect in the structure. The Valero drone takes a photograph of the structure where it is collecting test results, which helps to locate any areas of concern later.

Stuart Froud, Technical Director, Structures, Essex Highways, said: “Like almost every other UK Highways authority, Essex has a huge variety of ancient, historic and more modern bridges carrying both major roads and local ones across watercourses.

“Minimising bridge and structures deterioration can sometimes be difficult and time consuming, but the use of drones helps us to target maintenance resources precisely when and where they are needed. The new advances in technology that were demonstrated at Pitsea will give us greater capability.”



Frequency domain readings (above) can be used to spot delaminations, voids or other defects (below)



Readings captured using the Voliro drone fitted with SVTI's UACIS-IE impact-echo sensor

ROUTE REPORTS HELPING US TO DRIVE CHANGE

ESSEX HIGHWAYS MAKES GOOD USE OF AI TECHNOLOGY IN ITS APPROACH TO MANAGING HIGHWAYS INFRASTRUCTURE

Essex Highways is committed to identifying and putting into service new advances in technology and innovations that help it maximise operations.

Necessity is often the mother of invention for local authorities – this, and the Covid pandemic, served as the catalyst for the service to seek out new ways of conducting highway safety inspections. Social distancing meant that it was not possible to have two Inspectors travelling together to carry out driven inspections.

A new approach was needed and Essex Highways began using AI technology to make that happen, a move that also positively contributed towards annual savings of £1 million. Four years after adopting this approach, it was time to change again. Essex Highways carried out a two-month review of different inspection software and systems, eventually selecting Route Reports. Its functionality offered a way for

driven inspections to be delivered more efficiently, at a higher quality and realise significant other operational benefits.

An in-vehicle camera generates a real-time view of asset conditions across the Essex network.

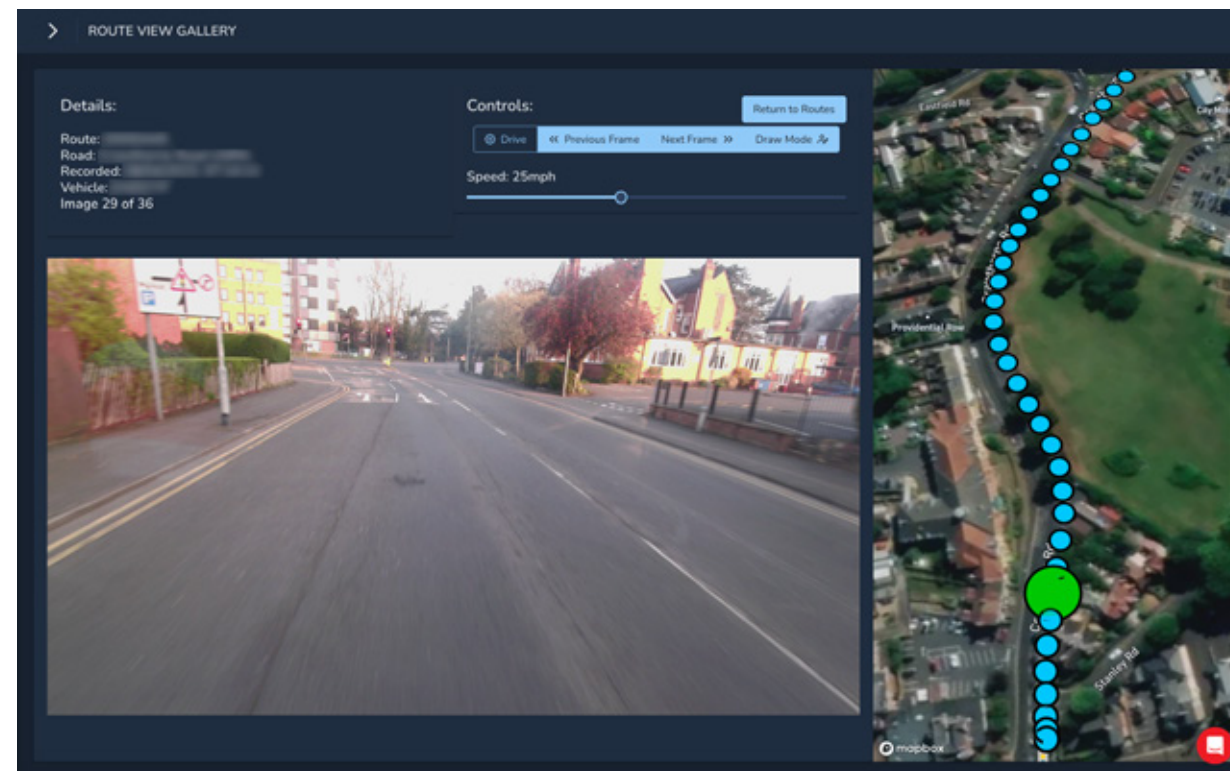
Digital recordings document the condition of the network and historical data is accessible so the asset conditions from any previous survey point in time can be referenced. The system also measures the dimensions of potholes which helps to review inspections more quickly, which in turn helps Essex Highways to process more

customer enquiries and do much more with the resources it has. Following a three-month evaluation, the service has committed to using Route Reports for the next three years in Essex.

Essex Highways is leading the way in using AI technology to change the way it manages its infrastructure.

With up to 2,000km of highway subject to driven

inspection every month, the service is very pleased with the additional capability Route Reports is providing, along with the benefits it brings. As AI technology develops, Essex Highways will continue to drive further improvements.



USEFUL CONTACTS

Whatever the weather, you never know when the unexpected might occur. Should there be instances of fallen trees, power outages, flooding etc, help and support can be found below:

IN AN EMERGENCY

If you think there's a risk to public safety, do not report it online, please call us immediately on 0345 603 7631 or if you have hearing problems you can use our text phone service on 0345 758 5592.

FALLEN TREES

To report a fallen tree that is obstructing a highway please contact Essex Highways:

<https://www.essexhighways.org/tell-us/trees-hedges-and-weeds>

To report a fallen tree on a highway that is a risk to public safety call:
0345 603 7631

POWER CUTS

In the event of a power cut in your area, report to UK Power Networks by calling 0800 31 63 105 or simply 105. You can also report and check power cuts in your area at ukpowernetworks.co.uk/powercut

FLOODING

You can keep an eye on flood warnings here;
<https://check-for-flooding.service.gov.uk/>

Essex County Council is the local flooding authority:

<https://www.essex.gov.uk/floods-emergency-planning>