

Wiltshire Council

Environment Select Committee

Date: 12 March 2019

Highway Infrastructure Asset Management System (HIAMS) and Streetworks Management

Purpose of Report

1. To review how the new Highways Infrastructure Asset Management System (HIAMS) has impacted Wiltshire Council's Street Works service.

Relevance to the Council's Business Plan

2. The Wiltshire Council Business Plan 2017 – 2027 sets out the vision to create strong communities, with priorities for growing the economy, strong communities and protecting the vulnerable. As part of growing the economy it is acknowledged that it is necessary to bring the county's roads up to an acceptable state.

Background

3. Wiltshire Council is responsible for 4,500 kilometres of roads, 1,500 bridges and over 40,000 street lights with an estimated replacement value of £5 billion. The local highway network is vital to providing connectivity for businesses and communities. Effective maintenance to ensure its availability is essential to the economic development of an area.
4. In the summer of 2017 Wiltshire Council and Oxfordshire County Council jointly followed a full open tender procedure to procure a modern Highway Infrastructure Asset Management System (HIAMS) to replace a number of older legacy systems. The tender was awarded to WDM Ltd in November 2017.
5. The vision behind HIAMS is to bring all asset information onto one digital platform and utilise highly visual and mobile, map based tools to better manage and co-ordinate operational and strategic activities across the service. The HIAMS covers safety inspections and potholes, street works, bridges, street lighting and major highway maintenance schemes.
6. The HIAMS provides a highly visual map based user interface, and full mobile working capability for all highways operatives and functions. The HIAMS also provides a full complement of asset analysis tools to enable the Authority to improve its understanding of the condition of its highways and associated assets and make better investment decisions.

7. The Street Works Module in HIAMS provides the Council's Street Works Team with the ability to co-ordinate and manage all highway activities in accordance with the relevant Street Works and Traffic Management Legislation (e.g. New Roads and Street Works Act (NRSWA)1991, Traffic Management Act 2004, and associated Codes of Practice for Street Works).
8. The Streetworks module provides a register of all highway activities and provides a means of progressing works through their complete life cycle.

Highway activities include, but are not limited to:

- Public Utility Works
 - Highway Authority Works
 - Licences
 - Other Obstructions and
 - Special Events (Carnivals, Parades, etc.)
9. Wiltshire Council is currently undergoing a phased implementation of seven highways modules.

Main Considerations for the Council

10. Wiltshire Council is responsible for a highway network of 4,500 kilometres (3,000 miles) of road. The importance of these routes to residents, local businesses and the economy for the movement of people and goods is generally understood by the public.
11. What is not so well understood is the function that the county's roads also perform in delivering the electricity, gas, water, drainage, telephone, broadband and other services needed by our communities. Under most roads there is a complex network of services which are vital to the local businesses and communities.
12. These services are provided by a large number of different organisations who often make use of numerous different contractors to repair, renew or provide new services. All of these operations on the road network need to be carried out safely, and with as little delay to the travelling public as possible.
13. The Utility companies have a statutory right to carry out works to their apparatus in the roads and footways, and this has to be co-ordinated with the extensive road maintenance and resurfacing work undertaken by contractors working for this Council.

Responsibilities of the Council

14. The Council, as Street Authority, has a statutory duty to co-ordinate all works in the highway, for which it has responsibility under (S59 of NRSWA) and Utility companies have a statutory duty to co-operate in this process.
15. The Council also has a statutory duty under the Traffic Management Act (TMA) to ensure that traffic disruption from road works and other activities on its road network is kept to a minimum.

16. Under NRSWA the Council is required to maintain a register for every street for which it is responsible. The register should contain information about street works and other prescribed types of works. This includes road works by Wiltshire Council and its contractors. This is now managed in HIAMS. The amount of advance notification that a works promoter needs to give prior to undertaking their works is dependent on the type and duration of the works.
17. All works on the public highway have to be registered. Electronic notices are submitted from work promoters following a protocol known as EToN (Electronic Transfer of Notices) which is heavily regulated. Each set of works will require many notice submissions governing the life cycle of the works. These notices are sent and received from HIAMS.
18. Major works (works lasting longer than ten days) must submit three months' advance notice and one month notice of actual start. Standard works (3 -10 days duration) require ten days' notice, and minor works (planned works of up to three days) require three days' notice. Immediate, urgent and emergency works do not require notification prior to commencement on site, but they must be noticed within two hours of starting.
19. The Council's legal powers allow us to give direction of timings to reduce the duration of works, enforce financial penalties for over running works, and manage the licencing and approval process for a number of other legal authorisations required, including road closure applications, temporary traffic signal licences, private works contractors licences (Section 50 licences) and any changes to the Council's permanent signals required to undertake the works.
20. There are usually about 19,000 works each year on the roads in Wiltshire, with around 85,000 notice transactions annually. This is a significant amount of activity on the highway network which needs to be monitored and managed.

Use of HIAMS for Managing Street Works

21. The Council introduced the HIAMS Street Works module on 1 April 2018, and the street works team began full electronic mobile working with street works inspections in the summer of 2018 using tablet devices in the field. This has eliminated the need for printing large amounts of paperwork and the double handling of information.
22. The Street Works Module in HIAMS provides the Council's Street Works Team with full functionality to co-ordinate and manage all highway activities in accordance with the relevant Street Works and Traffic Management Legislation (e.g. NRSWA 1991, Traffic Management Act 2004, and associated Codes of Practice for Street Works).
23. The Streetworks module provides a register of all Highway Activities, including those by public utilities, highway authorities, licences and special events. It provides a means of progressing works through their complete life cycle.
24. Digital mapping is integrated within the HIAMS street works module's mapping interface. This provides the user with a range of powerful map based tools to display works against any HIAMS datasets.

25. Comprehensive co-ordination tools integrated within the mapping are provided, which enable potential clashes or disruptions to be simply and easily highlighted to the user (e.g. new works requests on a diversion route for a works currently in progress). These filters can be defined by the Authority and help to focus the Street Works Team's attention to the issues that matter, which eliminates the searching through all notices to find conflicts.
26. The HIAMS Street Works Module contains comprehensive algorithms that are used to ensure the application of incentives for the efficient completion of works such as overstay charging, remedial works or inspection failure penalties. The automatically applied charges can be removed or reduced by approved users. All changes are fully audited and Street Works Function retains a record of both the original and applied charge against the works. This functionality enables Street Authorities to produce accurate, substantiated invoices and helps Works promoters monitor and minimise costs.
27. Diversion routes for road closures can be created by authorised users using graphical route building tools. Streets or Street Units are added to a route simply by clicking on the relevant section of road. Upon creation, the diversion routes are assigned to the road closure, allowing the co-ordination algorithms to alert users of any potential conflicts received from Works Promoters on the diversion routes.

HIAMS Mobile Street Works Inspections

28. HIAMS provides powerful map based mobile software for all operational processes, including Street Works Inspections. The software is operating system can run on any mobile device. The software has full offline capability for when the mobile signal is poor and it automatically uploads data when mobile coverage is re-established.
29. Wiltshire Council does not currently provide staff that work remotely or on site with mobile tablet hardware. The highways department has purchased tablet devices at its own cost to enable the service to take advantage of the powerful mobile apps that HIAMS has to offer in order to improve its operational efficiency.
30. The devices are locked down so that users can only access HIAMS. The Information Governance Team and ICT Team were consulted to ensure that adequate security and data protection procedures are in place. These devices are not supported by Wiltshire Council ICT and are the sole responsibility of the highways department. Please refer to **Appendix 1** for some screen prints of the mobile street works software.
31. Sample and routine inspection schedules of utility reinstatements and other highway works are configured in HIAMS by the street works team, and then generated and issued to the relevant street works inspector automatically by the system. The inspectors can view their inspections workload on the interactive mapping in their mobile software and complete their inspections on their tablet devices. The outcomes of the inspections are automatically sent back to the main HIAMS database, and then on automatically to the relevant statutory undertaker for action.

32. In addition to displaying all inspections issued to an inspector the street works mobile software also provides the map based functionality to display all current works being undertaken in the highway and queries such as all works coming to the end of the guarantee period. This enables the inspector to check this work while in the area, further improving operational efficiency and quality of work.
33. The introductions of HIAMS for managing the streetworks operation and the introduction of mobile working has been a great success, and it has demonstrated the value of the system. The next stage of the HIAMS implementation to use the system for recording highway defects such as potholes and introducing mobile working capabilities for the area highway teams.

Safeguarding Considerations

34. Does not apply.

Public Health Implications

35. Improved understanding and co-ordination of road works on the highway network enables the Authority to better manage traffic and congestion which in turn will have benefits for public health. Improved traffic management can reduce journey times and improve air quality for the travelling public.

Procurement Implications

36. There are no procurement implications.

Environmental and Climate Change Considerations

37. Improved understanding and co-ordination of road works on the highway network enables the Authority to better manage traffic and congestion which in turn will have benefits for public health. Improved traffic management can reduce journey times and improve air quality.
38. The highways service is making large strides in improving efficiency through the use of mobile technology, and the development of the My Wiltshire platform has been leading the way. By allowing staff to carry out inspections and contractors to record repairs in the field we are reducing the use of paper and double handling of information, which has a positive impact on the environment.
39. The HIAMS system is continuing this work and has enabled the traffic management team to carry out inspections of various utility and highways works on mobile devices for the first time, further reducing the use of paper and double handling, and ensuring all data is held in one system, easily accessible to staff.

Equalities Impact of the Proposal

40. The highway network is important to local businesses, and to public transport operators. The delays, due to un-programmed maintenance and road repairs, have been identified as concerns by local businesses. Improving maintenance decisions and the Authority's ability to manage road space booking with HIAMS will help demonstrate that transport is important in Wiltshire.

Risk Assessment

41. There are risks to service efficiency, knowledge and asset management associated with not taking the opportunities to embrace and utilise digital technology. HIAMS is a mobile and highly configurable system that can be shaped by the various teams that use it. The power of systems such as this lies with the users and their willingness to embrace change and develop and utilise the software. This is often the biggest stumbling block with the roll out of digital solutions.
42. The highways department is seeking to mitigate this risk by ensuring robust change management processes are in place to support users as they learn to use and develop HIAMS. The establishment of super users and a support network within the service to enable speedy resolution of issues is important. The Highways Asset Team has also sought the advice of the corporate digital team when it comes to improving communication and managing peoples expectations and fears when implementing new digital solutions.

Risks that may arise if the proposed decision and related work is not taken

43. No specific decision is required at this time.

Risks that may arise if the proposed decision is taken and actions that will be taken to manage these risks

44. No specific decision is required at this time.

Financial Implications

45. The highway network and related infrastructure forms the Council's largest asset, and has a replacement value of over £5 billion. It is important that it is maintained in the most cost-effective way in order to obtain value for money. This includes ensuring that work carried out by others on the network is carried out to the appropriate standards and managed effectively and efficiently.
46. It is predicted that the annual cost of congestion in the UK will rise by 63% by 2030 to £21 billion. It is essential that the disruption caused by road works and street works is efficiently managed and that the Network Management team have sufficient resources to do so.
47. The use of a modern, map based, mobile software solution such as HIAMS provides the tools to meet these requirements. There have been financial implications for the highways service in order to utilise the mobile capability of HIAMS through the need to purchase tablet devices because a corporate ICT solution is not currently available.

Legal Implications

48. The duties of the Council as highway authority are mainly set out in the Highways Act 1980, NRSWA and the TMA. It is important to ensure that the Council carries out the duties in this legislation, which includes co-ordinating and monitoring the work carried out by others on the highway network.

49. The Secretary of State has powers to intervene if it is deemed that a Local Authority is failing to comply with its Network Management duties under the TMA.

Options Considered

50. Not having a system such as HIAMS would make it difficult for the Council to meet its duties as defined in the legislation, particularly NRSWA and TMA. The continued use and improvement of the HIAMS digital platform for Street Works is important for the efficient operation of the highways service. It ensures that the Authority is utilising the latest digital technology to better manage its considerable assets.

Conclusions

51. The highway network forms the Council's largest asset, and it is important that it is maintained in the most effective way in order to support the economy and local communities.
52. Co-ordinating the large number of different potentially conflicting operations on the road network is often a challenge, especially as the road network has evolved over time and in many instances does not have adequate capacity for current traffic flows.
53. The HIAMS street works module has been in use since 1 April 2018 and the street works team has been working electronically in the field using tablet devices since the summer of 2018. HIAMS has provided tools that enable the Street Works Team to better understand what is happening on the network and to direct their attention to those conflicts and works that may cause disruption if not managed carefully.
54. HIAMS enables the Street Works inspectors to utilise mobile software on tablet devices in the field for the first time which has eliminated the printing of paperwork and the need to continually return to the office or email information back to be manually entered into the system. It also enables better means for the inspectors to plan and manage their workloads through the use of mapping and GPS technology.

Proposal

55. It is recommended that the Environment Select Committee:
 - (i) Recognises the progress made by the highways service to modernise and improve the digital tools and processes in use through the rollout of HIAMS, and the associated improvement in the efficiency and management of Wiltshire's roads and highway assets.
 - (ii) Supports the use of mobile technology to improve operational efficiency, workload management and environmental impact.

- (iii) Requests a report on the next stage of the HIAMS implementation with regard to highways inspections and the benefits of the HIAMS mobile working capability later this year.

Parvis Khansari
Director of Highways and Transport

Report Author:
Paul Bromley
Highways Asset Manager
February 2019

Background Papers

None

Appendices

Appendix 1 – HIAMS Mobile