HIGHWAYS AND TRANSPORT ASSET MANAGEMENT STRATEGY

Annex A
Asset Data Strategy

Surrey County Council

June 2016

SURREY

1. Knowledge of our Assets

Data is an asset that is frequently undervalued and under used. Collection of highway asset data is very costly, so it is important to maximise its value across the full asset lifecycle. Our co-ordinated, lifecycle approach to asset data and information management will help achieve the requirements of quality assurance, health and safety, environmental management objectives and delivery of projects to budget and on time. Our robust approach to data management has been used as a case studies for other authorities to follow within UKRLG/HMEP's Highway Infrastructure Asset Management Guidance document.

For effective strategy, planning and execution of our schemes, many situations arise that require the use of data to ensure that appropriate decisions are made. This demands knowledge of all aspects of data, including the varieties of data type and formats; sources of data; procurement and collection of data; handling and management of data; quality control and assurance processes involved.

Our Asset Data Strategy is focussed on the following key areas;

- Enabling Highways and Transport decision makers by providing them access to place based data
- Clear documentation of all datasets and their custodians, and the systems and processes used to manage them, in order to to improve consistency and accuracy of data.
- Improving interoperability between data and systems to increase data availability and efficiency of data management. This includes improving the flow of data between teams as part of the scheme lifecycle, including delivery of quality scheme data back into the Asset Database
- Aligning Highways data with Corporate IMT Data Governance Policy to ensure corporate best practice
- Aligning with national standards such as the LGA (Local Government Association) Open Data standards. Adhering to national guidance prevents wasted effort, ensures compatibility with other organisations and makes publishing and sharing of data easier.
- Ensuring reliable business information data is available at agreed frequencies for use in applications such as Tableau
- Developing service wide engagement through a satisfaction survey, and follow up every 6 months to measure improvement and focus objectives.

2. Data Sources

Highway asset data is a valuable asset in its own right. It is important that this value is maintained and added to through good data management practices. Putting clearly documented and efficient procedures in place gives decision makers confidence in the data they are using, and ensures processes can be repeated in a consistent manner.

With more than a hundred recorded datasets it is vital to prioritise which asset databases and management processes are improved first so resources can be focussed in the most important places. Information about each dataset is recorded in the Data Catalogue. The Data Catalogue aims to record all metadata and management information about each dataset, such as; How the data is updated, who the data custodian is, the systems or software used to update it, how the data is symbolised, how and when the data is published – including data sensitivity issues, who the data is shared with, limitations of the data, processes that rely on the data.

Data collection is costly and resource intensive so a well planned process is essential. Data is collected, validated and updated using methods appropriate to the asset type. Data collection methods are tailored to each asset, ideally utilising existing maintenance activities to collect data, as was the case for the gully asset. Other methods include a desk based exercise using Ordnance Survey Mastermap data, video surveys and other GIS data and validation in the field. A countywide aerial survey and data capture exercise was carried out in 2007 which formed the basis of several key datasets, including safety barriers, grass verges and pavements. Traffic signals data was updated by survey in 2012, detailed pavement condition surveys were completed in 2015 and structures data is routinely updated. The Asset Data and Systems Team now holds and manages hundreds of thousands of highway asset records with update procedures in place.

3. Data Types and Formats

Data is received from a range of sources in a range of formats including video feeds; images, tabular formats such as.csv and MS Excel worksheets, CAD drawings, and ESRI shape files and geodatabases. Where necessary, data is converted to points, polylines or polygons depending on the geometry of the asset so that it is viewable via a Geographic Information System (GIS). The data management plan for each dataset records the steps undertaken to process each dataset when it is received, this ensures data consistency and helps automate processing wherever possible which reduces staff time.

4. Data Update

Data is published at frequencies agreed between data custodians (the individuals responsible for dataset management) and users. Information about what data is published and in which systems is recorded in the Data Catalogue and published on a monthly basis. An Asset Data Working Group has been set up , it meets on a monthly basis to identify gaps, prioritise improvements and communicate future plans.

Data management plans ensure all data entering the asset database is controlled and validated to meet defined standards. As part of the data management methodology quality assurance procedures are being developed to control the import of data as necessary.

Data that is manually generated is subject to built-in data quality standards implicit in the data management process used to capture the data. For instance; templates and workflows can be applied to ensure that the data input is initiated by the right person, in the right format and at the right time. Data that is obtained from contractors and surveys is subject to pre-defined metadata standards, extensive validation and marked with a score to indicate its quality and reliability. Provision is also made to re-score amended input data and update the dataset as quality is improved.

Throughout the first five year contract with Kier great improvements have been made towards quality and efficiency of data collected and shared by Kier and their partners. Scheduled data transfer supported by Surrey's IMT department has improved availability, quality and consistency of datasets such as safety defects, gully cleansing and street lights. Collaboration between Surrey and their partners has lead to clearly defined data structures for transfer of information which has greatly improved data validation and quality assurance. This means we are able to flag any data issues easily and quickly.

5. Database Structure

There are two key pieces of development work that will be happening in 2016-17.

1) The Asset Data Catalogue is currently supported and maintained by the Asset Planning Team. This will be expanded across Highways as a common format for documentation of all datasets, systems and management processes. In 2016-17 the focus will be on putting the onus on data custodians to document their datasets in a common format to improve communication and sharing of information across the service. This will help build an understanding of the bigger picture in terms of data, help prioritise work streams and improve IMT support and focus. This approach is supported by corporate IMT and it is hoped to ultimately be extended across Surrey County Council as a common documentation format.

2) Procurement of a new Highways Data Management System. This is driven by the need for replacement PMS (Pavement Management System) and works ordering system, but is also considering suitability of 60 other highway data management systems and other software for replacement. This exercise will benefit all Highway staff by; introduction of more efficient work processes, provision of GIS mapping at every stage of work ordering and management, better integration between teams due to reduction in number of systems, better dataset integration, reduced license costs for multiple systems. The clear documentation of datasets, processes, systems and roles and responsibilities will facilitate design of a whole highway data management system that takes into account all aspects of highway work and data management more completely than ever before.

6. Future Improvements

The business plan for the service is underpinned by a Performance Management Framework. This sets out a series of performance measures across all our activities which will be used to demonstrate that we are achieving the objectives of the business plan and delivering the Council's corporate goals. It will allow us to identify risks to service delivery and highlight opportunities. Progress against the framework will be scrutinised on a regular basis with quarterly reporting to the Service Leadership Team. Implementing this framework is an ongoing process and we will continue to adapt our approach as we mature.

Included within the framework is a series of measures against the delivery of the asset management strategy. These will be used to monitor our progress against the delivery of the objectives set out in the strategy on a number of levels.

This page is intentionally left blank