Element 1 Bid – Hertfordshire

INTRODUCTION:
Hertfordshire has been at the forefront of highway asset management planning since producing the UK’s first HAMP in 2002. We have committed significant resources to the collection of asset and other data to support the development of transport asset management, particularly through developing our maintenance decision making. Below we summarise the recent data collection we have undertaken and the associated analysis.

1. HIGHWAYS STRUCTURES: Asset Management System.
A specialist Structures Asset Management System (‘BMX’) has been purchased as a key tool to facilitate our Asset Management Planning for structures. It is supporting our progression toward the defined ‘advanced’ level of ‘Advanced AM Planning’ (as defined in the ‘Management of Highway Structures - A Code of Practice’).

- **Staff costs implementing ‘BMX’** £20,000
- **Purchase costs ‘BMX’ (hardware, software & licences)** £43,000
- **Staff costs for data cleansing for ‘BMX’** £40,000

2. CARRIAGEWAY CONDITION SURVEYS: SCANNER survey.
Besides being used for national reporting purposes (i.e. BVPIs) SCANNER data is now fed into our deterioration modelling (see our Element 2 Bid for an outlined of the modelling in detail). This data forms a key component for the deterioration modelling analysis that drives our published 5 year forward maintenance works programme.

- **Cost of survey** £72,300
- **Staff time (analysis)** £4,000

3. CARRIAGEWAY CONDITION SURVEYS: CVI survey.
CVI data is another key data set fed into our deterioration modelling and the amount we survey significantly exceeds the minimum requirement. The output from the deterioration modelling analysis is our published 5 year forward maintenance works programme. Below are a summary of costs for surveying our ‘Unclassified’ roads.

- **Cost of survey** £77,000
- **Staff time (analysis)** £4,000

4. DETERIORATION MODELLING:
Our deterioration modelling is the core analysis which drives our published 5 year forward maintenance works programme. Our progress with this project was outlined at the Surveyor Magazine ‘Highways Maintenance 2008’ Conference, in the presentation – ‘Deterioration Modelling’ (Chris Allen-Smith).

- **Modelling costs (OPUS New Zealand)** £50,000
- **Staff time (support of analysis)** £6,000

5. CARRIAGEWAY SURVEYS:
As input into the Deterioration Model, ground penetrating radar (GPR) was previously done on the network to determine carriageway construction thickness and allow an assumption of strength to be established. The current Coring programme provides referencing for the GPR survey data used by the Deterioration Model by confirming construction detail. Falling weight deflectometer (FWD) tests also help validate assumed Carriageway strength. Recent survey and associated costs are;

- **Coring & FWD Survey** £40,000
- **Staff time** £5,000

6. FOOTWAY SURVEYS: Detailed visual surveys (DVI) - Footways
We wished to better focus our footway maintenance ‘forward works programme’. More information was needed for the lower category footways than is gathered for the prevailing national reporting requirements. The survey coverage this year has therefore been increased to exceeded normal coverage (i.e. 50% network of High & Medium categories) to include selected Low Use footways.

- **Survey costs** £73,300
- **Staff time** £2,000

7. WINTER MAINTENANCE: Route Efficiency project
Work has been done to analyse the efficiency of our gritting routes. GPS trace data was captured and then analysed to determine the most cost-effective routing and resource provision.

- **Obtaining GPS trace data** £20,000
8. DEVELOPMENT OF THE CURRENT ASSET MANAGEMENT SYSTEM

Our current Asset Management System is called HERMIS. Updating, extracting and analysing data of customer reported faults; defects arising from Safety Inspections and the details of other minor works are critical to our understanding of the most cost-effective and appropriate maintenance spending. Analysis of this data was critical in a project from our 2007 TAMP Improvement Plan; to review the current Cat.1 and Cat. 2 maintenance services and find possible synergies, efficiencies and potential cost savings

- Hermis Service Development – Consultancy £50,000
- Hermis Service Development – Staff time £100,000

9. PROCUREMENT OF REPLACEMENT ASSET MANAGEMENT (CONFIRM) SYSTEM

An obstacle to swift analysis of multiple data sets has been the inability to easily plot items of interest on mapping layers. The next generation of Asset Management Systems are providing this functionality, which offers the ability to provide much more relevant information in an easy to digest format leading to efficiency savings. Hertfordshire has made the decision to upgrade to a new system, with product evaluation, supplier short-listing and selection of the preferred system “CONFIRM” now having been made. The project is now well into the “roll-out” phase, with substantial ‘go-live’ of most modules due in June 2009 (NB Streetworks module already live).

- Procurement costs £20,000
- System cost £230,500
- Installation / roll-out costs (inc project management team costs) £260,000
- Hardware costs (i.e. new server and ‘hand-helds’) £465,000
- Annual Licence fee £28,000

10. DRAINAGE SURVEYS: Asset capture and mapping

In light of the Pitt Review, current practice in highway drainage maintenance was reviewed and a new approach implemented. Major focus has now been placed upon; improved ‘work-streaming’ operations and obtaining location, inventory and condition data to populate a Drainage Database and map on GIS for the whole organisation. Informed proposals for future planned cleansing programmes are now produced and systems confirmed for suitability and condition prior to other major schemes. These initiatives were described at the ‘Developments in Pavement Assessment 2008’ Conference, in the presentation – ‘Addressing the challenges of proactive highways drainage assessment’ (Andy Bailey).

- Staff time (supervision, design, analysis) £190,000
- Investigation costs £240,000

11. STREETLIGHTING: Street Lighting Non Destructive Testing & Inventory Collection

To maximise life remaining and minimise whole life costs, non-destructive testing of lighting columns is undertaken and this drives the column replacement programme. Accurate up to date inventory is required for identifying columns for testing. This testing is currently in year 6 of a planned 7 year programme (at a projected 5,000 columns per year). The resulting replacement programme is current funded at £1.2m per annum.

- Steel column testing £40,000
- Staff time (supervision, design, administration) £4,000
- Street Lighting Inventory update costs (staff time) £55,000

12. SKID RESISTANCE TESTING: Additional SCRIM Survey

In 2008 we have extended the coverage of our SCRIM surveys. The results are being used in the HCC carriageway Skid Resistance Management Strategy to identify sites where a treatment offers both safety and maintenance benefits. Outputs are linked with accident statistics and deterioration modelling in the development of some joint schemes within the Forward Works Programme.

- SCRIM survey; (supplier- Surrey CC) £37,600
- Grip testing for accident investigation (Mouchel) £5,000
- Staff Costs (analysis of results) £3,000

SUMMARY:

This document outlines the total costs incurred by Hertfordshire during 2008/09 in regard to data collection, analysis and use in our Transport Asset Management Planning. These costs total some £2,224,700, which exceeds the maximum funding proposed in the guidance document. We are consequently claiming the maximum amount of £376,100 in respect of Element 1.