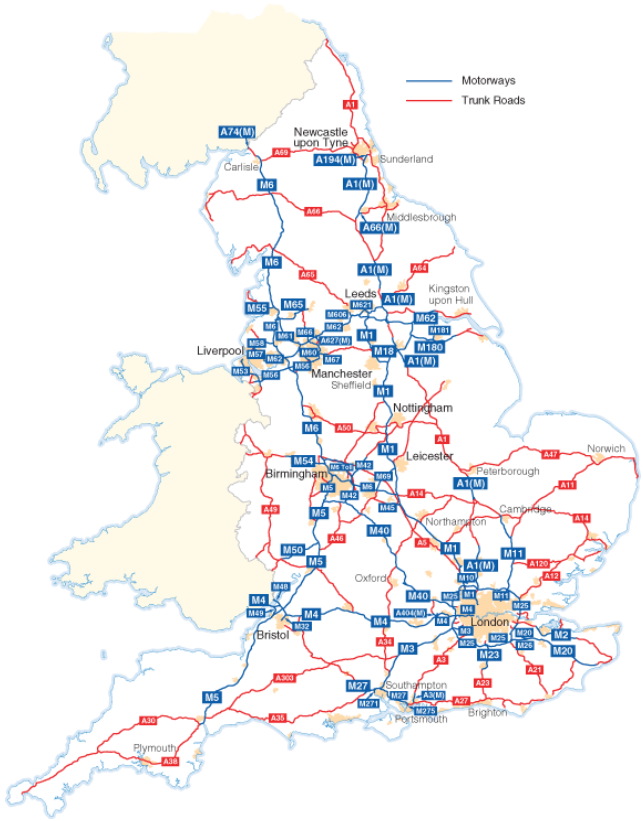
Development of the Highways Agency Cultural Heritage Asset Management Plan GIS database (CHAMP)

Jay Carver

Scott Wilson Heritage



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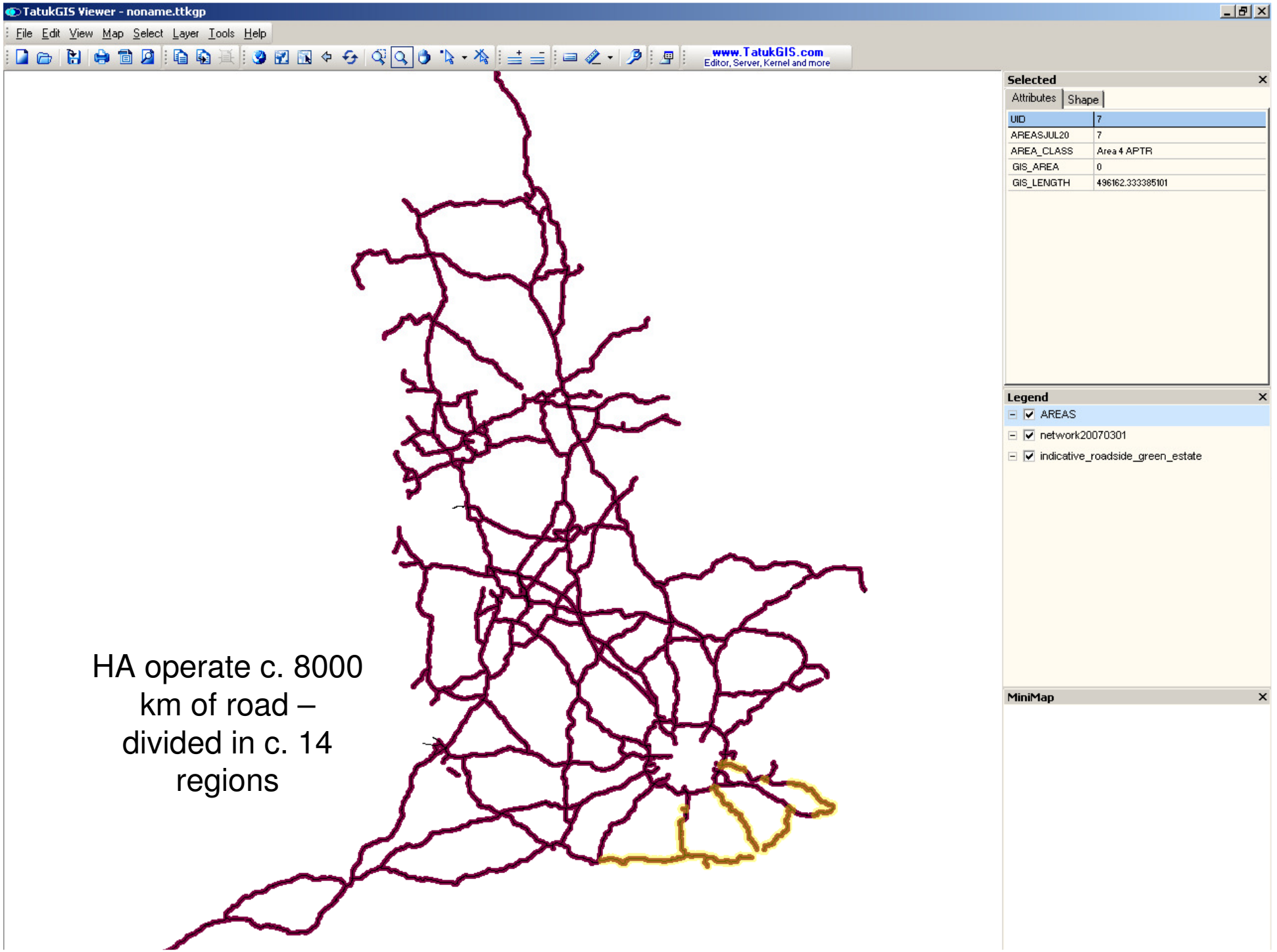
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File Edit View Map Select Layer Tools Help
www.TatukGIS.com
Editor, Server, Kernel and more
Selected
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AREASJUL20 7
AREA_CLASS Area 4 APTR
GIS_AREA 0
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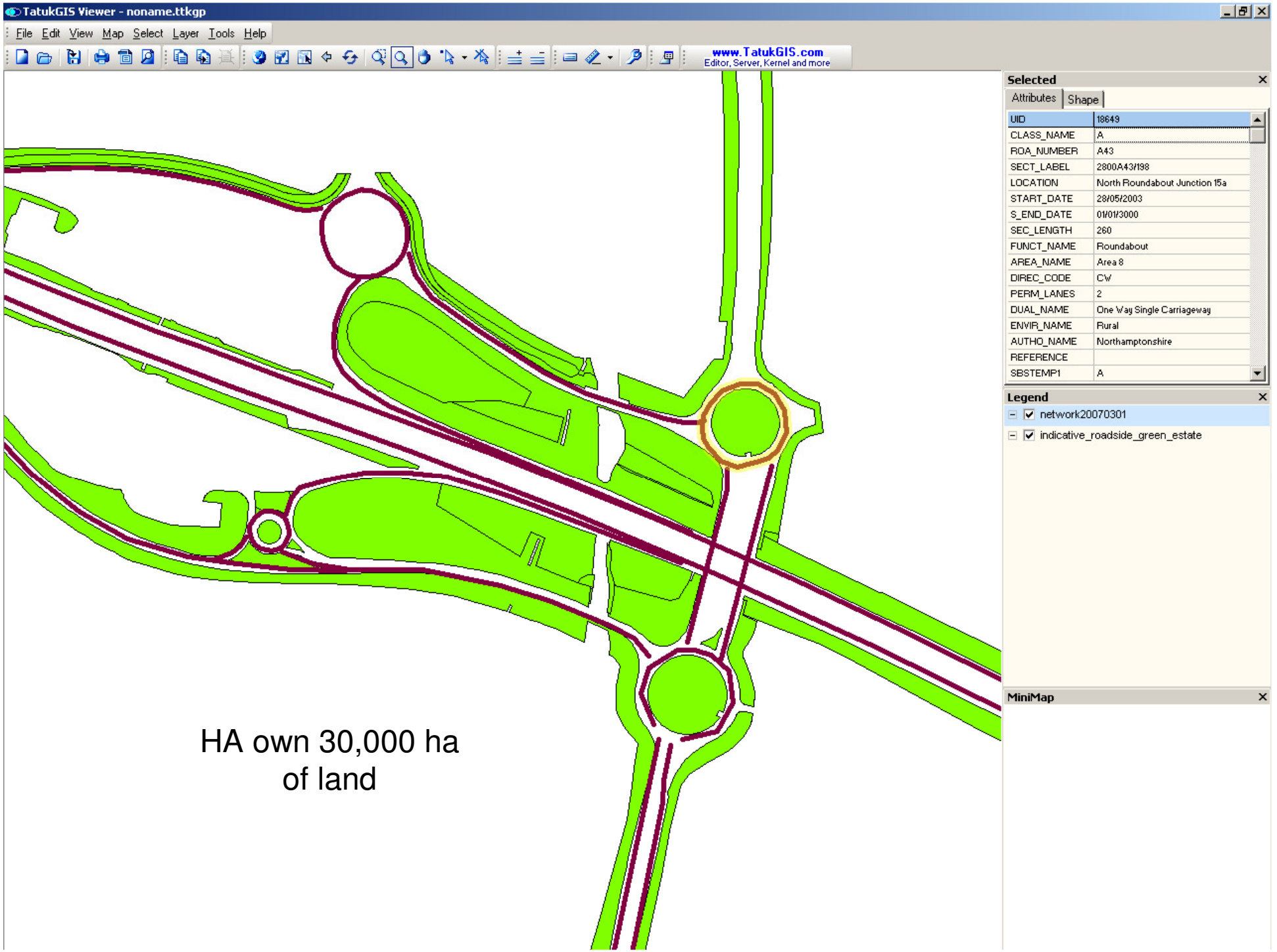
Legend
AREAS
network20070301
indicative_roadside_green_estate
MiniMap
HA operate c. 8000 km of road – divided in c. 14 regions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www.TatukGIS.com
Editor, Server, Kernel and more
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ROA_NUMBER A43
SECT_LABEL 2800A43/198
LOCATION North Roundabout Junction 15a
START_DATE 28/05/2003
S_END_DATE 01/01/3000
SEC_LENGTH 260
FUNCT_NAME Roundabout
AREA_NAME Area 8
DIREC_CODE CW
PERM_LANES 2
DUAL_NAME One Way Single Carriageway
ENVIR_NAME Rural
AUTHO_NAME Northamptonshire
REFERENCE
SBSTEMP1 A
Legend
network20070301
indicative_roadside_green_estate
MiniMap
HA own 30,000 ha
of land

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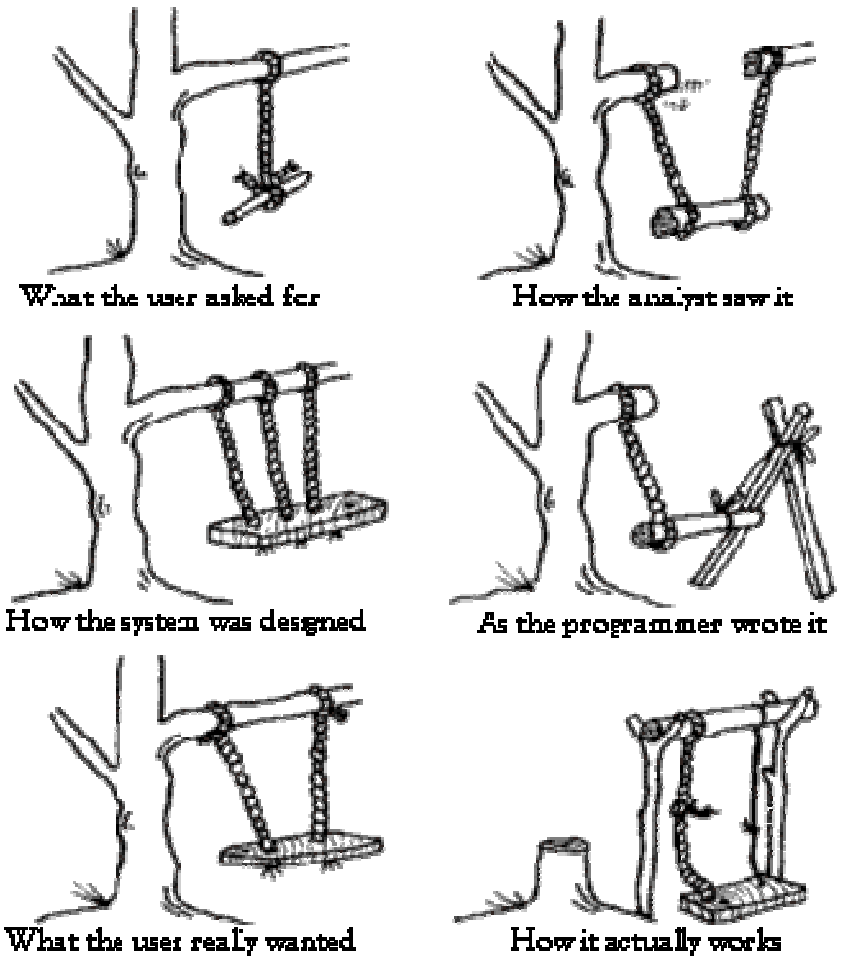
Key Questions

- Why a HA specific dataset?
- Why not just access web-based resources ad hoc?
- How will data be kept current/valid?
- How will new information be shared with others?



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Objectives

- Protocol for the care of the Government historic estate 2003
- Biennial conservation report 2005-7 Edition
- DFT estate currently lists (53 LB's; 12 SM's)
- How many heritage assets do HA own and/or operate within?
- What condition are they in?
- What action is needed to manage and protect them?
- Create partnership agreements with adjacent sites
- Create a core dataset
- Reduce duplication of effort!

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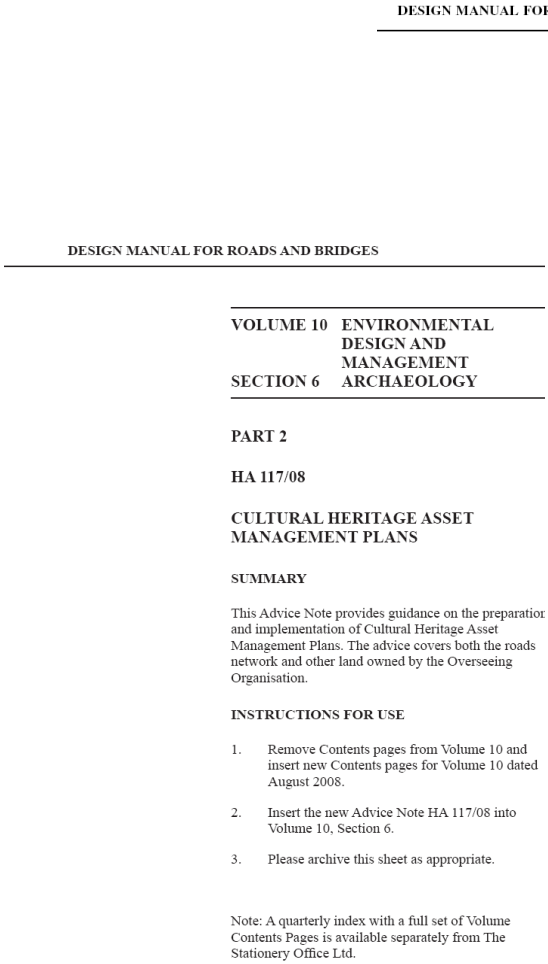
DFT example

Condition	No.
Good	19
Fair	10
Poor	8
Unknown	17
Disposed	11

Background and context

- DMRB Vol 10 Environmental Design and Management
- 2001 Environment database first issue
- 2003 CHAMP Pilot project A38 (HA/Cornwall CC)
- 2004 Revised DMRB Section 0 sets out the ENVIS GIS database requirements
- 2007 INTERIM ADVICE NOTE for preparing CHAMP'S
- 2007 ENVIS GIS published
- 2007 – work starts on CHAMP data population



DESIGN MANUAL FOR ROADS AND BRIDGES

VOLUME 10 ENVIRONMENTAL DESIGN AND MANAGEMENT
SECTION 6 ARCHAEOLOGY

PART 2

HA 117/08

CULTURAL HERITAGE ASSET MANAGEMENT PLANS

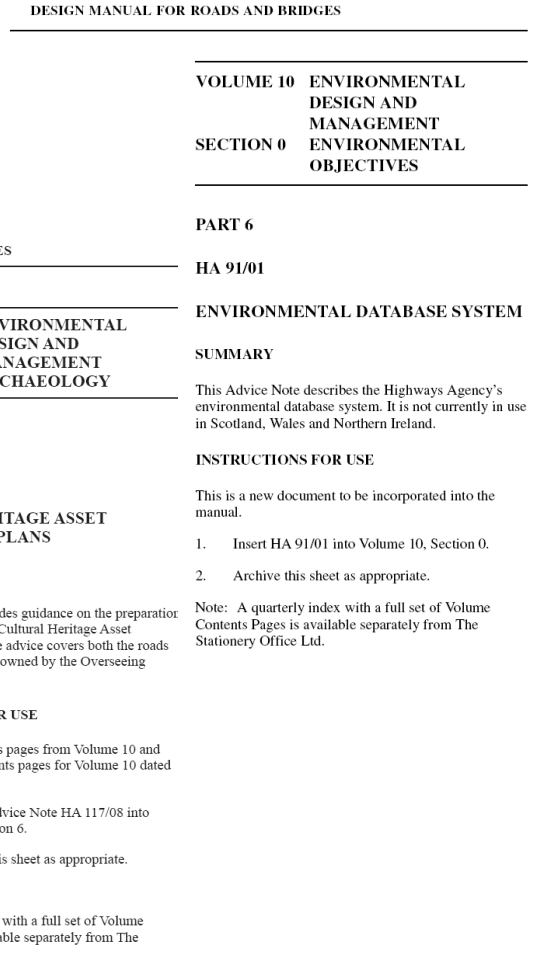
SUMMARY

This Advice Note provides guidance on the preparation and implementation of Cultural Heritage Asset Management Plans. The advice covers both the roads network and other land owned by the Overseeing Organisation.

INSTRUCTIONS FOR USE

1. Remove Contents pages from Volume 10 and insert new Contents pages for Volume 10 dated August 2008.
2. Insert the new Advice Note HA 117/08 into Volume 10, Section 6.
3. Please archive this sheet as appropriate.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from The Stationery Office Ltd.



DESIGN MANUAL FOR ROADS AND BRIDGES

VOLUME 10 ENVIRONMENTAL DESIGN AND MANAGEMENT
SECTION 0 ENVIRONMENTAL OBJECTIVES

PART 6

HA 91/01

ENVIRONMENTAL DATABASE SYSTEM

SUMMARY

This Advice Note describes the Highways Agency's environmental database system. It is not currently in use in Scotland, Wales and Northern Ireland.

INSTRUCTIONS FOR USE

This is a new document to be incorporated into the manual.

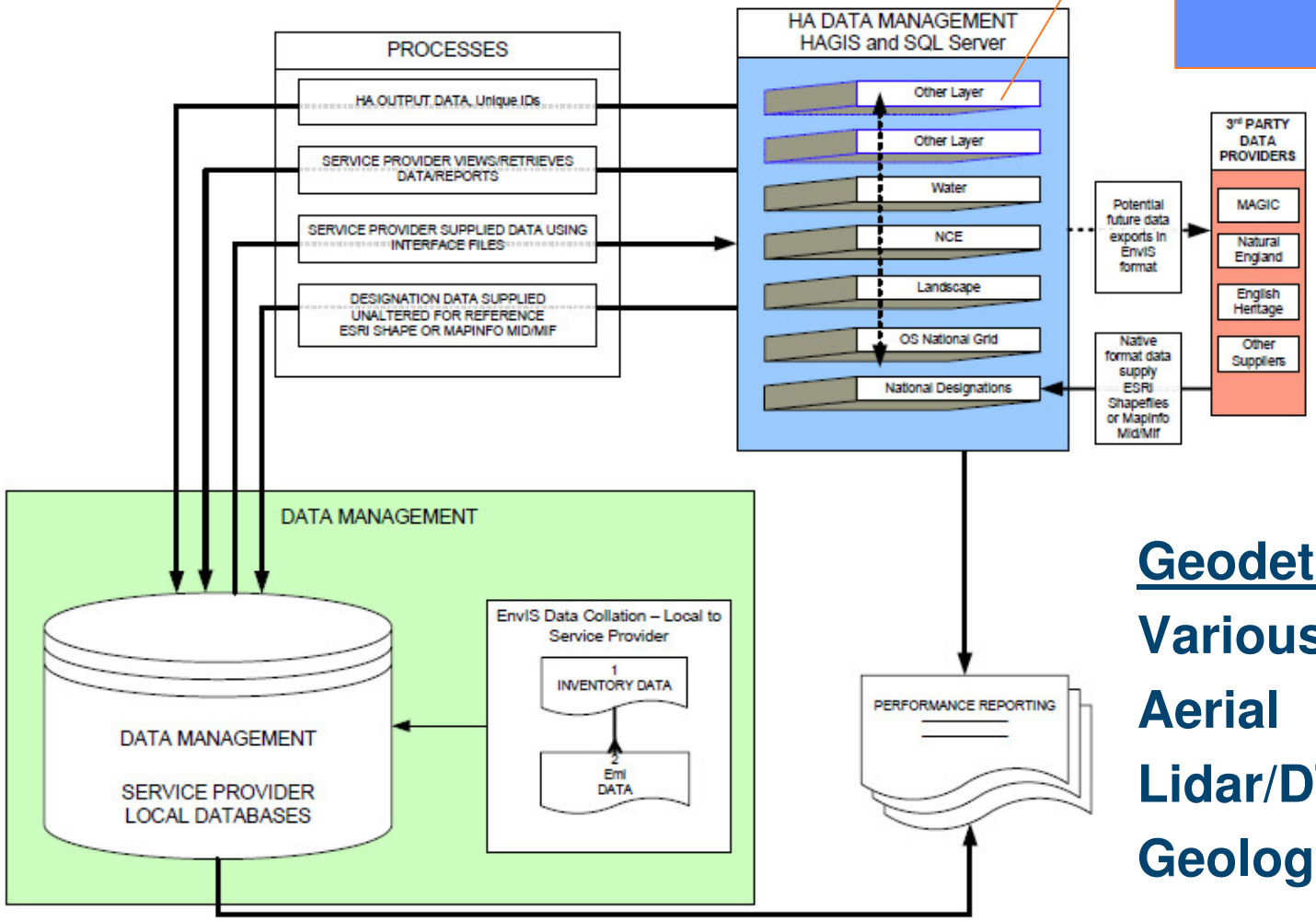
1. Insert HA 91/01 into Volume 10, Section 0.
2. Archive this sheet as appropriate.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from The Stationery Office Ltd.

ENVIS within HAGIS

HAGIS ESRI Arc SDE/SQL server

ENVIS (incl CHAMP LAYER)



Geodetic resources

Various OS Mapping

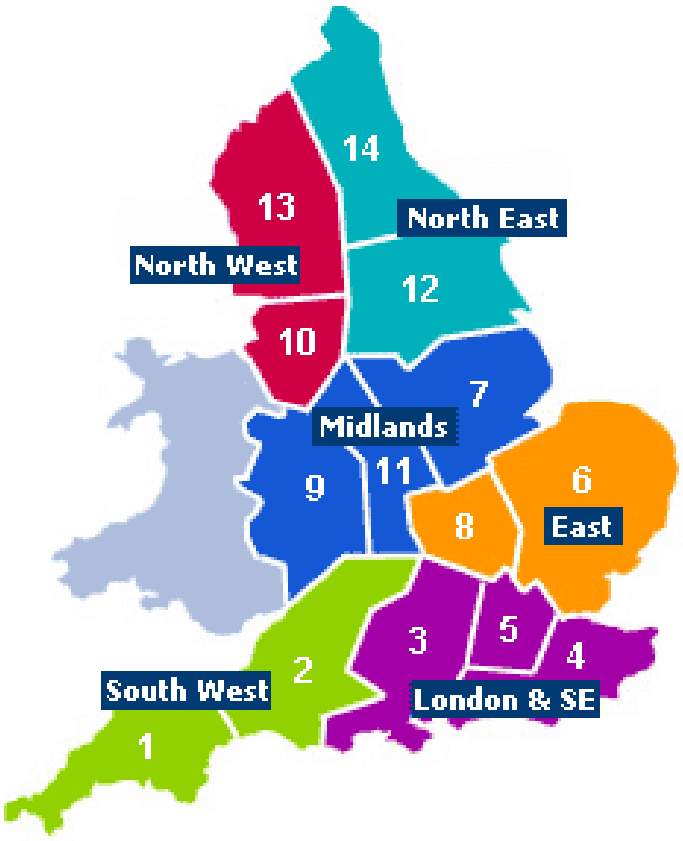
Aerial

Lidar/DTM

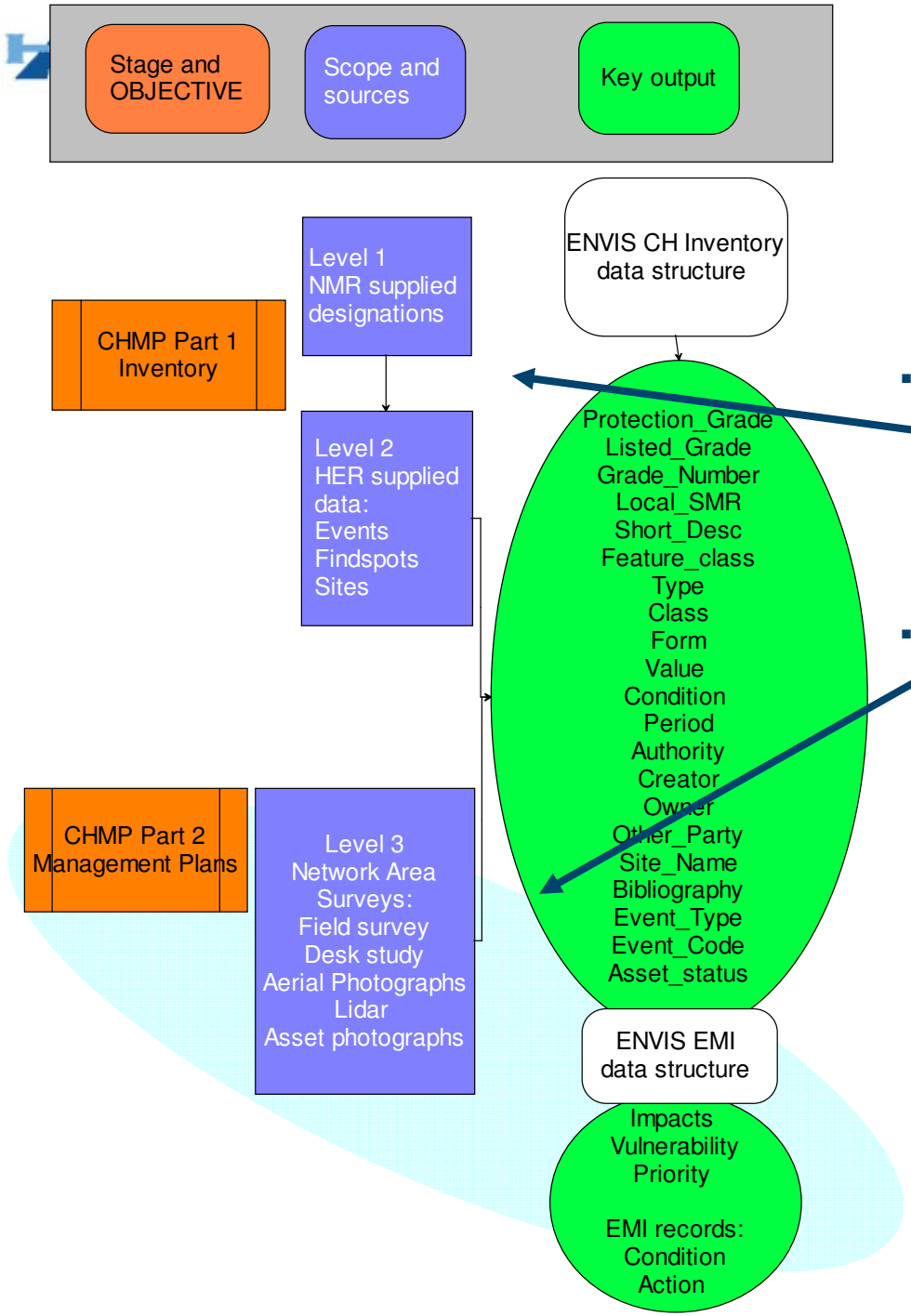
Geology

ENVIS Users

- Designed to provide desk top access to inventory and management actions
- HA regional and national teams
- Service providers
  - Managing agents - operational
  - Contractors- improvements to network



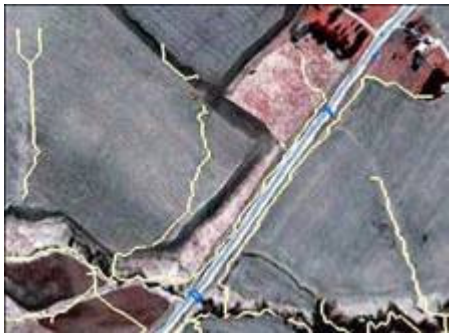
Structure

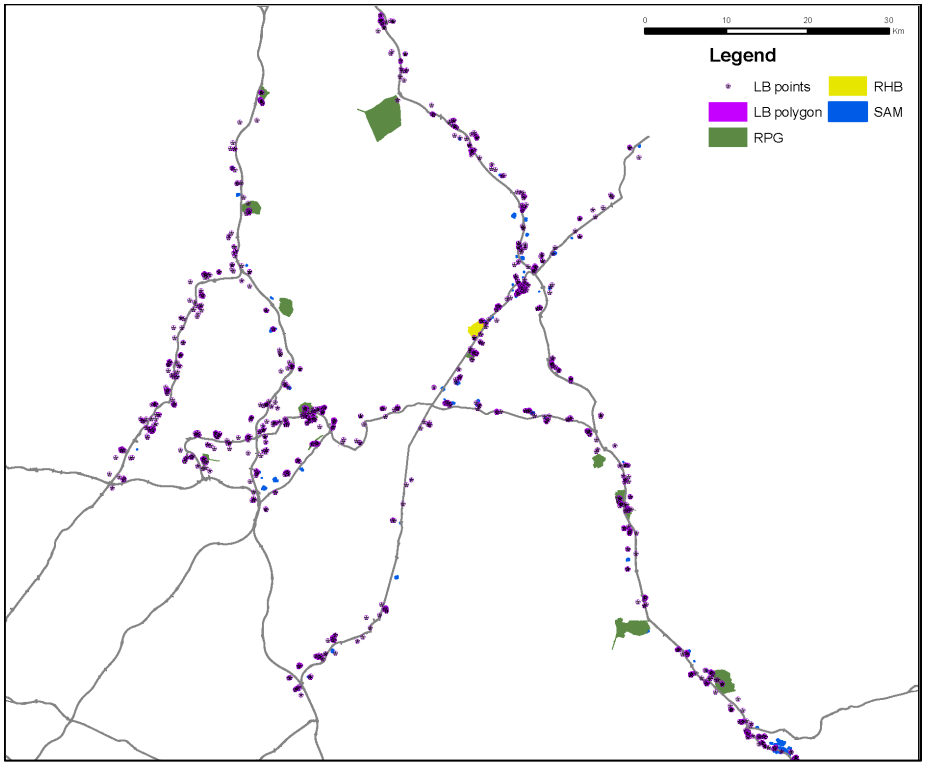


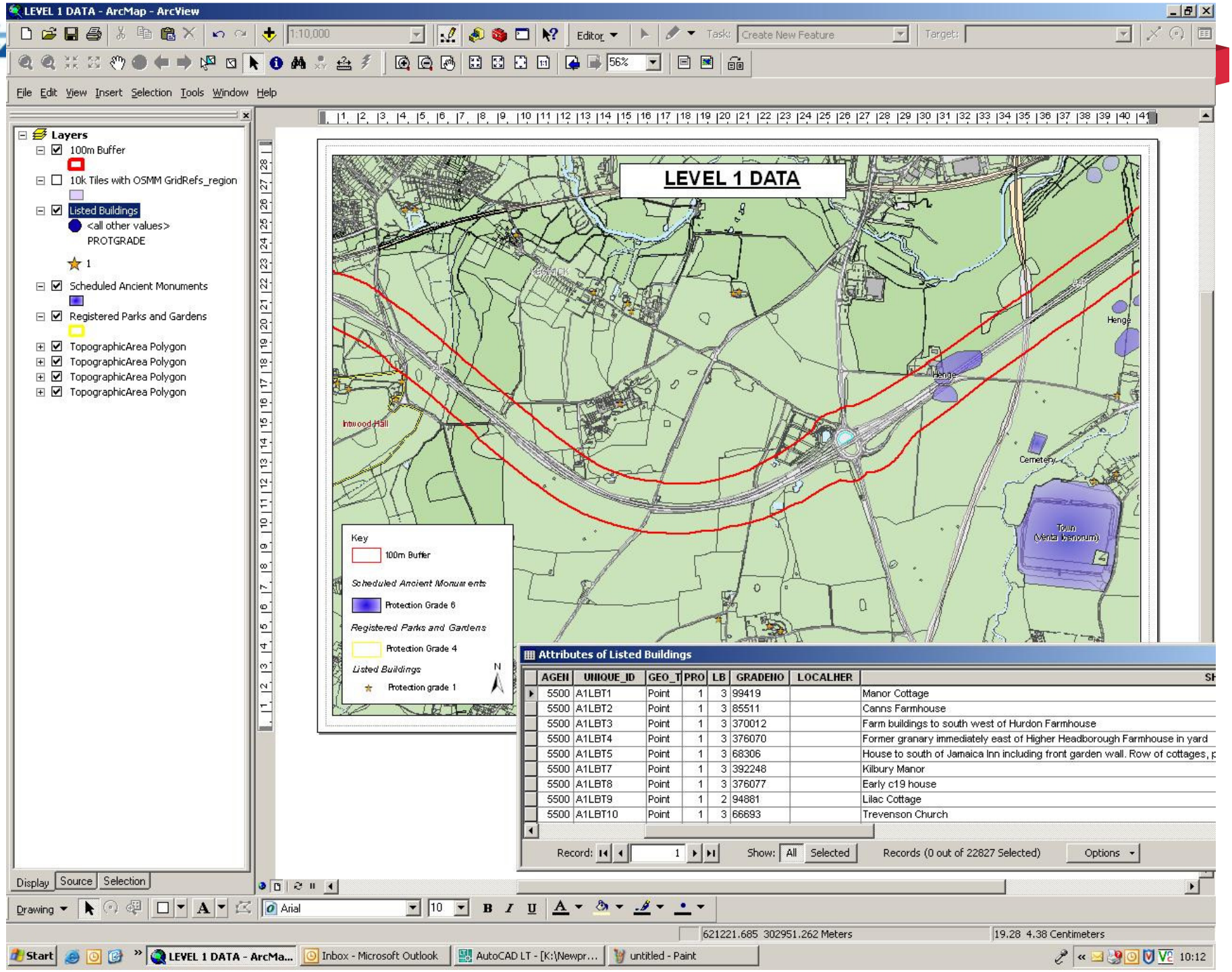
- **Part 1 - 2008-10**
  - **National level data inventory (NMR and HER's)**
- **Part 2 – 2010-11**
  - **Area level data enhancement and management plan preparation**

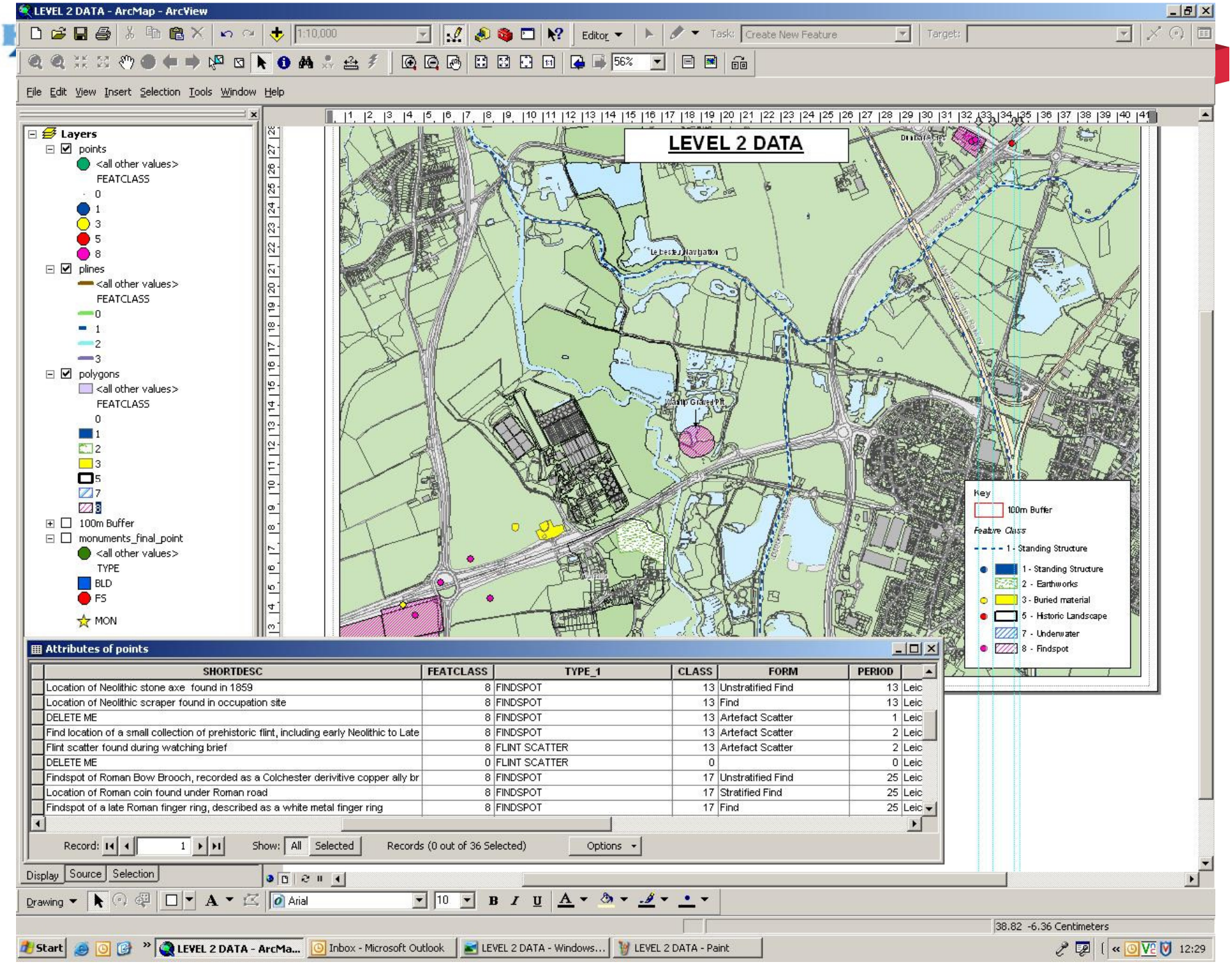
Coverage

- Data collection
  - Level 1 – 1 km buffer –
    Level 2 – 100m buffer

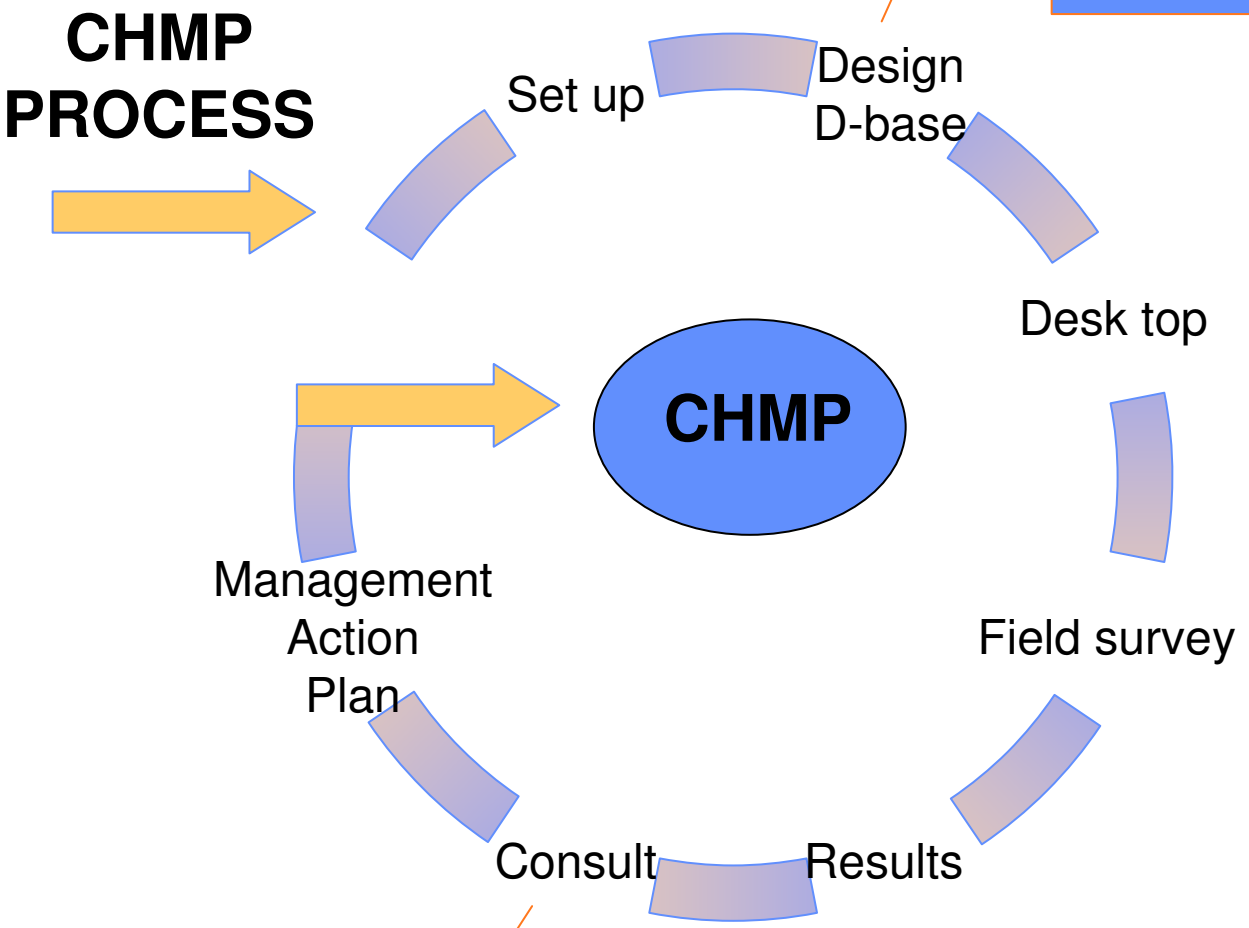





LEVEL 1 DATA - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
Layers
100m Buffer
10k Tiles with OSMM GridRefs_region
Listed Buildings
<all other values>
PROTGRADE
1
Scheduled Ancient Monuments
Registered Parks and Gardens
TopographicArea Polygon
TopographicArea Polygon
TopographicArea Polygon
TopographicArea Polygon
LEVEL 1 DATA
Henge
Henge
Cemetery
Town (Venta Icenorum)
Key
100m Buffer
Scheduled Ancient Monuments
Protection Grade 6
Registered Parks and Gardens
Protection Grade 4
Listed Buildings
Protection grade 1
N
Attributes of Listed Buildings
AGEN | UNIQUE_ID | GEO_T | PRO | LB | GRADENO | LOCALHER | SH
5500 | A1LBT1 | Point | 1 | 3 | 99419 | | Manor Cottage
5500 | A1LBT2 | Point | 1 | 3 | 85511 | | Canns Farmhouse
5500 | A1LBT3 | Point | 1 | 3 | 370012 | | Farm buildings to south west of Hurdon Farmhouse
5500 | A1LBT4 | Point | 1 | 3 | 376070 | | Former granary immediately east of Higher Headborough Farmhouse in yard
5500 | A1LBT5 | Point | 1 | 3 | 68306 | | House to south of Jamaica Inn including front garden wall. Row of cottages,
5500 | A1LBT7 | Point | 1 | 3 | 392248 | | Kilbury Manor
5500 | A1LBT8 | Point | 1 | 3 | 376077 | | Early c19 house
5500 | A1LBT9 | Point | 1 | 2 | 94881 | | Lilac Cottage
5500 | A1LBT10 | Point | 1 | 3 | 66893 | | Trevenson Church
Record: 1 Show: All Selected Records (0 out of 22827 Selected) Options
Display Source Selection
Drawing Arial 10
621221.685 302951.262 Meters
19.28 4.38 Centimeters
Start
LEVEL 1 DATA - ArcMa...
Inbox - Microsoft Outlook
AutoCAD LT - [K:\Newpr...
untitled - Paint
10:12


LEVEL 2 DATA - ArcMap - ArcView
File Edit View Insert Selection Tools Window Help
Layers
points
<all other values>
FEATCLASS
0
1
3
5
8
plines
<all other values>
FEATCLASS
0
1
2
3
polygons
<all other values>
FEATCLASS
0
1
2
3
5
7
8
100m Buffer
monuments_final_point
<all other values>
TYPE
BLD
FS
MON
LEVEL 2 DATA
Key
100m Buffer
Feature Class
1 - Standing Structure
1 - Standing Structure
2 - Earthworks
3 - Buried material
5 - Historic Landscape
7 - Underwater
8 - Findspot
Attributes of points
SHORTDESC | FEATCLASS | TYPE_1 | CLASS | FORM | PERIOD
Location of Neolithic stone axe found in 1859 | 8 | FINDSPOT | 13 | Unstratified Find | 13
Location of Neolithic scraper found in occupation site | 8 | FINDSPOT | 13 | Find | 13
DELETE ME | 8 | FINDSPOT | 13 | Artefact Scatter | 1
Find location of a small collection of prehistoric flint, including early Neolithic to Late | 8 | FINDSPOT | 13 | Artefact Scatter | 2
Flint scatter found during watching brief | 8 | FLINT SCATTER | 13 | Artefact Scatter | 2
DELETE ME | 0 | FLINT SCATTER | 0 | | 0
Findspot of Roman Bow Brooch, recorded as a Colchester derivitive copper ally br | 8 | FINDSPOT | 17 | Unstratified Find | 25
Location of Roman coin found under Roman road | 8 | FINDSPOT | 17 | Stratified Find | 25
Findspot of a late Roman finger ring, described as a white metal finger ring | 8 | FINDSPOT | 17 | Find | 25
Record: 1 Show: All Selected Records (0 out of 36 Selected) Options
Display Source Selection
Drawing Arial 10
38.82 -6.36 Centimeters
Start LEVEL 2 DATA - ArcMa... Inbox - Microsoft Outlook LEVEL 2 DATA - Windows... LEVEL 2 DATA - Paint 12:29

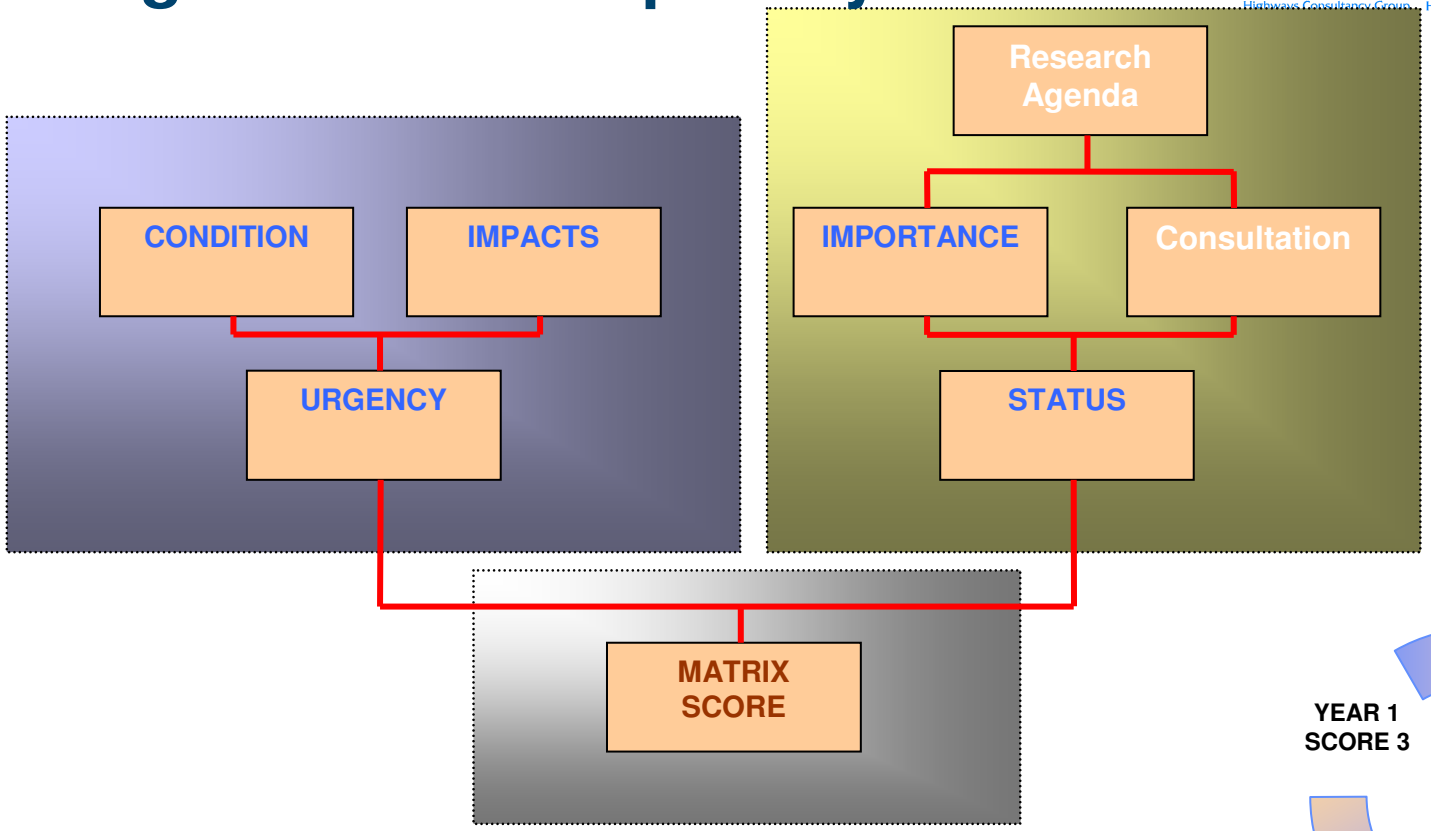
2003 Pilot study

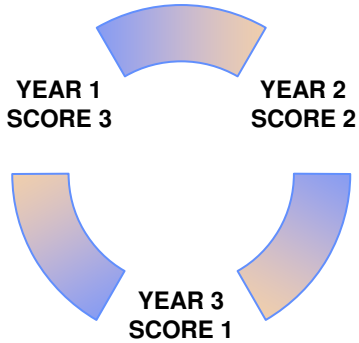


Now linked to wider Envis GIS

Can now be linked with EH/LPA owner agreements

Management Action priority matrix





URGENCY →

STATUS ↓

	HIGH	MEDIUM	LOW
PRIORITY	3	3	2
IMPORTANT	3	2	1
LOW	2	1	1

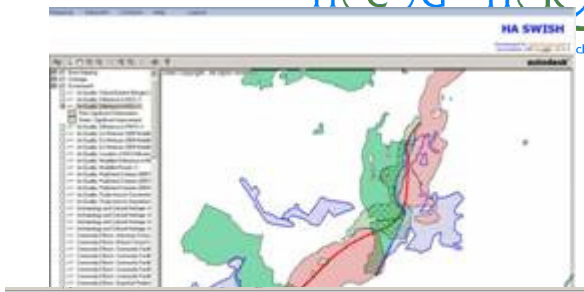
Progress Level 1

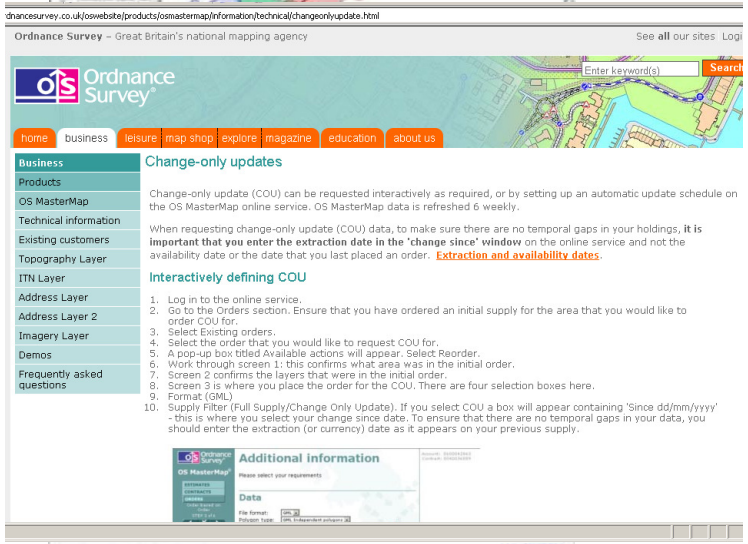
		Listed Building	Battlefield	HPG	SAM	WHS	Totals
A	**Total in 1 KM buffer**	42742	10	287	2202	9	45250
	% of total in A	*94%*	*0-1%*	*1%*	*5%*	*0-1%*	
B	**Intersects with or adjacent to estate**	**106**	**4**	**72**	**148**	**5**	**335**
	% of total in B	*32%*	*1%*	*21%*	*45%*	*1%*	
C	**% of total in A in B**	0.25%	40.00%	25.09 %	6.72%	55.56 %	

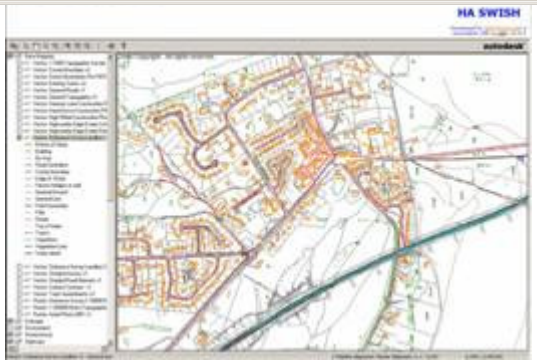
	Predicted	Actual	Exclude LB's outside 100m buffer
Level 1	*15,212*	*45,141*	*6,229*
Level 2	*20,213*	?	

Future

- Future analysis
  - Meet biennial report objectives
  - Active management and conservation
  - Managed disposal strategy
  - Develop Management agreements
- Links to HA Archaeology reports archive







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Collaboration and sharing

- Further development of Pan government agreements?
- E.G Expansion of available geodetic GIS layers- Historic mapping, Lidar, geology…..
- Progress of NMR and HER's towards fully integrated GIS coverage?
- Future of MAGIC?

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Key issues

- “data should be created once and used many times.’ Scotland’s Geographic Information Strategy goes on to say that, ‘… barriers to data sharing within and between organisations must be identified and resolved.’
- “By far the greatest concern is that the local services will not be consulted if their data is made available, leading to the data not being properly understood
- “We need a system that encourages consultation not one that tries to circumvent it.’ SMR/HER service.
- “It is the interpretation and the mediation of the data that is important.’ SMR/HER service.
    - **[2009, Inspired - The IT capabilities of the Scottish Sites and Monuments Records -Mike Middleton]**

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Interoperability

- The IEEE defines interoperability as:
- the ability of two or more systems or components to exchange information and to use the information that has been exchanged
- Interoperability can be divided into five different conceptual levels:
- No Data Exchange
- Unstructured Data Exchange: exchange of human-interpretable, unstructured data (e.g. free text)
- Structured Data Exchange: exchange of human-interpretable structured data intended for manual and/or automated handling, but requires manual compilation, receipt, and/or message dispatch
- Seamless Sharing of Data: automated data sharing within systems based on a common exchange model
- Seamless Sharing of Information: universal interpretation of information through co-operative data processing2
  - *By Daisy Abbott, University of Glasgow*
- *http://www.dcc.ac.uk/resource/briefing-papers/interoperability/*

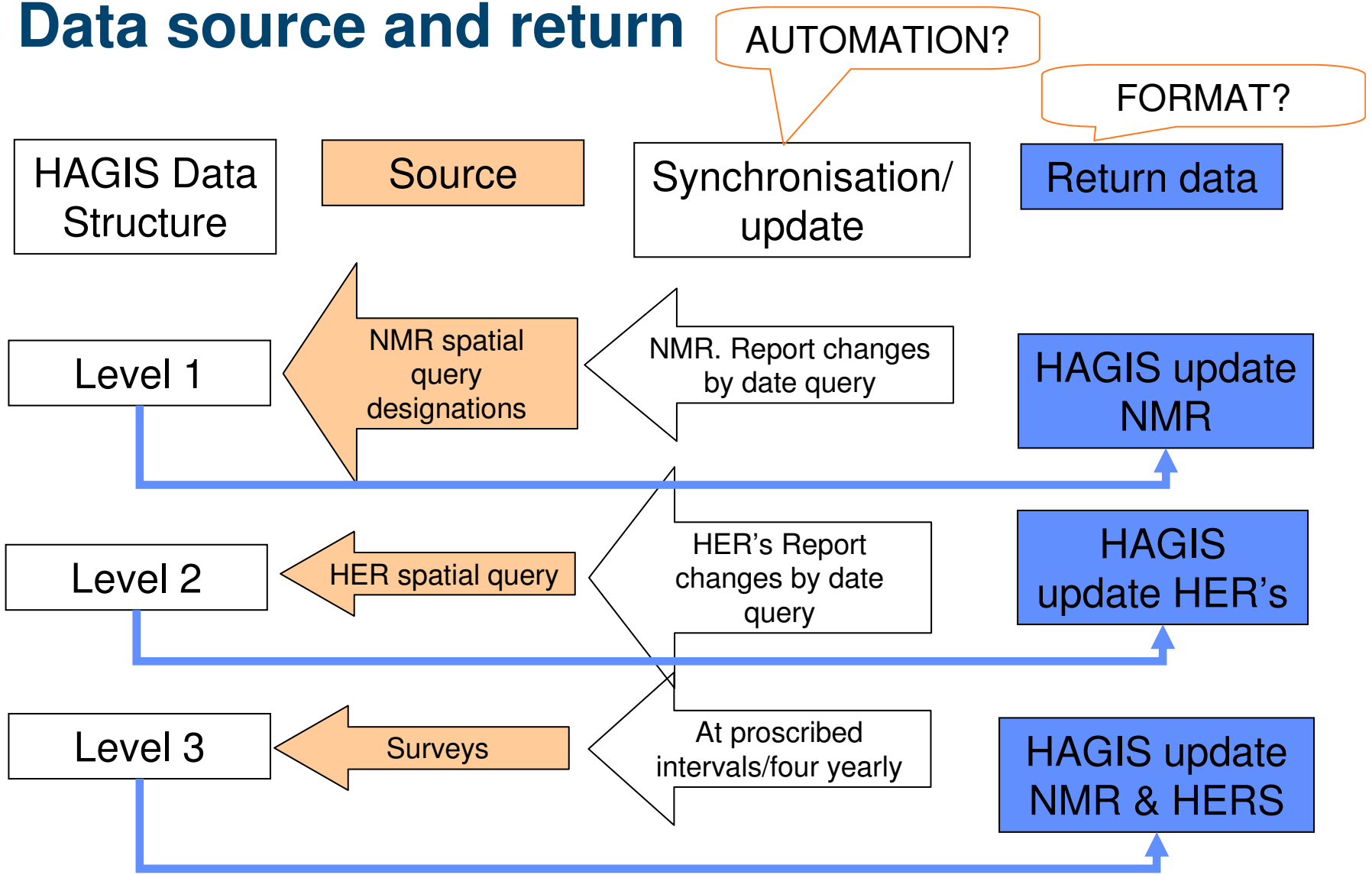
Synchronisation

- NT SMR – no formal synchronisation – ‘random data exchanges made with sources’ (pers.comm Alison Lane)
  - Future interoperability through HBSMR gateway?
- DE SMR – Regular non-automated updates performed by placement student (pers.comm Martin Brown)
- Forestry Commission?
- Environment Agency?

Envis data structure

EnvIS ENVIRONMENTAL ELEMENTS – CULTURAL HERITAGE			
ENVIS Cultural Heritage	Controlled by	Source	MIDAS List Nar
Protection Grade	Inscription list	FISH	
Listed Grade	NMR ID		
Grade Number	NMR standard		
Local HER	HER ID		
Short Description	Free text		
Feature Class	HA Look up table		
Monument Type	NMR Thesauri		
Monument Class	NMR Thesauri		
Monument Form	Inscription list	FISH	[Condition]
Period	HA Look up table		
Authority	Inscription list	FISH	[Unitary Author
Creator	Free text		
Owner	Free text		
Other party	Free text		
Site Name	NMR or HER value		
Bibliography	NMR or HER value		
Event Type	HA Look up table		
Event Code	NMR or HER value		

Data source and return



Thanks to…

- All at NMR and Martin Newman
- ALGAO – Sarah Poppy
- HER teams
- EH – Ian George