xxxx Council Historic Environment Record

Data Management Statement (DMS)

Author(s):	xxxx
Origination Date:	
Reviser(s):	N/A
Date of last revision:	
Review due:	Annually
Version:	1.1
Status:	Approved
Summary of changes:	Updated information regarding GIS files
File name/location:	xxxx01HER\DataManagementStatement
Authorities covered by the HER:	xxxx Council xxxx Council

Related policies:	Date of last revision	Revision required?	Review Cycle	Location
Systems Security Policy	Non-Existent			
Recording Policy	Non-Existent			
Disposals Policy	Non-Existent			
Disaster Recovery Plan AKA HER Collection Salvage Plan	08/2015	Yes	Annually	xxxxArchaeology\00_DISASTER_PLAN
Business Continuity Plan AKA Archaeology Team Crisis Plan	07/2014	Yes	Annually	xxxxxArchaeology\00_DISASTER_PLAN
Index to Reference Collection AKA Guide to the HER's reference collections	05/03/2014	Yes	Annually	xxxxArchaeology\01HER\01HERDocs
Recording Manual AKA HER Manual For Data Entry	12/2015	Yes	Annually	xxxxx\Archaeology\01HER\Data_Entry_Manual
Prioritised list of backlog AKA HER Enhancement Plan	08/2014	Yes	Quinquennial	xxxxxx\Archaeology\01HER\Enhancement\0HEREP
Does the HER manage any other databases that have not been fully integrated into the main HER e.g. UAD, HLC, legacy database)?	If yes, please detail here: xxxxx Historic Landscape Characterisation (Archived at ADS)			

Contact HIPsTeam@HistoricEngland.org.uk if you have any queries when completing this form.

Please send your completed form, Part A (signed) and Part B, to HIPsTeam@HistoricEngland.org.uk

Part A

The HER system and software

Give a brief description of the systems and software that you use. Describe who developed the system and how it is maintained. Please supply a link or reference to relevant documentation, including licences.

The HER includes textual data in a computerised database using Oracle, currently version 11.2.0.4 but we're in the process of upgrading our databases to 12.2.0.1 . The SEA7 database is hosted on a VM xxx which is in turn hosted on an IBM Power 8 server
The HER is linked to spatial data in digital form on a Geographic Information System (GIS) using Arcmap, 10.7.1. The data is stored in a geo-database. And can be exported in various formats e.g. Shapefile or GML. Data size is approx. 10MB.

The HER software is bespoke. It was developed in house by a collaboration of xxx, ICT Internal Applications team, GIS team and ICT technical and database teams etc,
The HER went live in c 2007. Since then it has been enhanced by various IT requests and projects from the Archaeology team, following discussions within the team as to what was needed/wanted and to try and ensure MIDAS Compliance. A formal log of changes has not been kept, but could be reconstructed by email discussions, ICT development requests etc.

The physical files for the database are held on a filesystem mounted at /ora11SEAL but no-one apart from the DBAs and AIX administrators will have direct access to these

THE HER GIS layers are stored on the SQL Server, and run within the HER using the ArcGIS API for JavaScript v3

The system stores data in an ORACLE database and uses an internal web application for the user interface.

General ICT support is provided by xxxx Council IT Services and can be contacted on xxxxx.

A database model (e.g. entity relationship diagram) is stored at xxx)\Archaeology\01HER\IT_Development\ERM_HER_2020
Supporting documentation including details of any codes, abbreviations and terminology utilised in the database and GIS is stored at [drive/folder/file].

Licences required include:
End User - Internet Browser

Host/Development Environment: - Oracle; Visual Studio; EVO PDF Toolkit; Internet Information Services (IIS); Licences to run Dotnet servers; Licences to run File servers

To run the HER, a recent version of an Internet Browser with Java Script enabled is needed, and need to be connected to xxxxnetwork.

To run the GIS the following software is needed
Microsoft IIS 10
Windows 2016 Server

To run the GIS the following licences are needed
ArcGIS Server licence for map service hosting
Microsoft Windows Server 2016 license

The HER is used to provide data to the Heritage Gateway and xxxx.

Data

Please provide a top-level, overview description of the data held.

Data Type	Range of formats involved	Volume/File size	Location	Existing metadata** /catalogue?
Paper-based information sources	Aerial Photograph Collection, Grey Literature Files, Parish Files, HER Library, Misc Files; Card Index Files, Photographs	8 Tambours of material, not all full	HER Offices	Partial

*For example, may include NMP, HLC, UAD, EUS data not integrated into the HER system, digital grey literature PDFs etc. These may be located on servers or stored on external media such as CDs, HDDs.
** Metadata to accompany each of the digital and non-digital components of the HER should include as a minimum: file name, file type, description of the data and purpose, date of creation, date of last update, origin, restrictions of use, and rights information. Advice on the creation of metadata can be found at https://archaeologydataservice.ac.uk/advice/guidelinesForDepositors.xhtml; https://www.ukdataservice.ac.uk/manage-data/document/metadata.aspx and https://www.agi.org.uk/agi-groups/standards-committee/uk-gemini

There are 15,636 (up to 03/11/2020) images (jpegs) saved to a file server. Each image has two sizes - medium and small stored in the file server. The total file size of medium-sized images is about 798 MB, the total file size of small-sized images is about 197 MB.

The ‘Attached Documents’ section of HER modules has the number of files and type/size listed below. There files from the ‘Attached Documents’ section are all stored in Oracle database, in the same location as the HER. The file types and sizes are listed below.

File Type	Total Files	Total Size
avi	1	3.4 MB
bmp	18	64.9 MB
doc	2028	3,120.5 MB
docx	362	254.2 MB
dwg	4	2.8 MB
emz	2	39.7 KB
gif	5	8.5 KB
htm	80	2.1 MB
jpg	1766	2,224.6 MB
mdi	1	15.2 KB
mht	145	109.5 MB
mp4	1	1.2 MB
msg	3614	3,708.6 MB
oft	15	36.3 MB
pdf	31192	37,532.7 MB
png	36	27.7 MB
ppt	22	83.1 MB
rtf	576	659 MB
tif	516	689.8 MB
tmp	1	21.4 KB
txt	486	961 KB
xls	188	69.4 MB
xml	2	.6 KB
xps	1	3.3 MB

The xxxx area is also covered by an HLC project – this however has been archived with the ADS, so is not included in this statement.

Digital data backup

Back up procedures:
Please fill in the table below regarding backups for the HER database, GIS, digital reference collection and system files (where relevant). If an option doesn't suit your arrangements you can add your own text.

The HER System files are stored in xxxxx which is backed up daily, held on a SQL Server database. The entire server is backed up. The Backup has 30 days retention and only one copy of the backup is made daily.

We take a level 0 backup weekly, level 1 incremental backups nightly and archive log backups hourly (between 0800 and 1800). Backups are retained for 30 days and are snapshotted to a VM running at an offsite data centre

Backups are routinely verified. We haven't yet had cause to carry out an actual restore and recovery of the HER database other than when migrating it between servers. The same backup and restore method is used for the ResourceLink (an HR) database, which is test restored and recovered once a year.

Should the primary hosted VM fail due to e.g. a SAN or network failure, the database would be restored and recovered to a VM in an offsite data centre

The backups are scheduled via a cron script - the DBAs are responsible for ensuring that there are no issues, and for checking they are valid. The backups are held on an NFS host at the primary data centre, and snapshotted to an NFS host at the secondary data centre (offsite) in case of failure

The GIS is Fully backed up Daily, with hourly Log backups. Currently Full backups are kept for 1 week and logs for 3 days. There are 2 copies of the backups : one at xxxx (primary) data centre, and one replicated to xxxx(standby) data centre, The backups are not tested, monitored or examined.

rman validate goes through all of the steps of database restore and recovery apart from the very last one where it actually writes data to the DB data files, so we know that all of the backup files it requires are present and that they're logically consistent and without corruption

We go through the restore ... validate procedure regularly (weekly), again by using a script and checking the results. In addition the overnight backup results for all databases are written to a text file which is checked the following morning. It would be obvious if any of them had failed. We've never had a real DR situation for the SEA7 database, and the last time we used the restore procedure was when we migrated the database from the Power 7s to the Power 8s, which was in December 2019 and was successful. We haven't had any loss or corruption of the database during the last 2 years, and only the occasional backup issue.

A backup would be deemed bad if it failed the rman validate commands or where it hadn't taken place (reasons for that might be if the destination filesystem had run out

of space or where the database was offline for some reason), this would then be investigated

We keep the latest results from the rman validate. If the backup validation failed, this would be recorded and investigated.

Training

Record training undertaken by staff responsible for digital security, storage and backup procedures, Disaster Recovery and Business Continuity in Appendix 2. Keep this log updated as part of the DMS. Is the training adequate for the present needs of the service? What further training is required?

All Backup and Disaster recovery activities would be carried out by the Professional ICT staff of xxxx Council.

Responsibilities

Who is responsible for keeping this Data Management Statement up to date? Name: xxxx Job title: Historic Environment Record Officer Email: xxxx Telephone: xxxx
Who is responsible for data backups? Name: xxxx Job title: Hosting And Security Manager
Who is responsible for testing data recovery? Name: xxxx Job title: Hosting And Security Manager
Who is responsible for Disaster Recovery and Business Continuity? Name: xxxx Job title: Hosting And Security Manager
Xxxx Council acknowledges the principles and best practice contained in the National Security Code of Practice, including provision for exceptional decisions to deposit a security copy with another heritage organisation for safeguarding, as set out in the Code's Access Protocol. Signed for and behalf of xxxxCouncil By*: ……xxxx…….. Signature: ……. Title: ……xxxx…….. Email:……xxxx…….. Telephone:……xxxx…….. *We recommend the signatory is part of the HER senior management team.

Additional Notes:
xxxx has a Service Level Agreement with xxxx Council to provide the HER and archaeological advice service. They have been identified as a key Stakeholder for this Data Management Statement. In the event of xxxx shutting the HER,xxxxhave indicated they would like to have their portion of the data and collections devolved to them, though they have some concerns about what this actually entails. Discussions regarding this are ongoing.

Another key Stakeholder is the xxxx team. Discussions with them regarding what might happen in a similar case are also ongoing.

Part B

Data Security

Anti-Virus and firewalls are managed corporately by xxxx ICT services. Access to systems is managed though individual log ins which have to be formally requested from ICT, and are linked to email address accounts. Passwords are set by users but managed by xxxx ICT (in terms of format and length needed).

Additional log ins and passwords are needed to access the HER software, this is managed by the ORACLE team, with passwords being set by them.

Physical Storage

The HER Collections are held in Tambour shelving units in the HER offices. The offices are in County Hall, and are therefore not accessible to xxxx staff without an appointment. Most of the Tambours are kept locked when not being accessed. Access to the key location is only known to HER staff and volunteers.

Some of the data in these collections has been digitised, and is included in the backup procedures above, as they are kept on xxxx network locations. The files are linked to the relevant HER records, where possible. If file size limitations prevent this, the file path to the network location is included in the HER record.

There is an ongoing process of checking the collections for items which are unique. Where these are identified, a digital access copy is made and the originals are archived at the County Record office. The assumption is that all physical copies will be retained permanently, but as part of the review process this is also reviewed.

Legal Compliance

The Service has produced a Privacy notice, which details are compliance with GDPR, and is available as a PDF on our website at xxxx

Preservation

All the digital data will be needed to enable HER services to continue. All hard copy material still in the collections will also need to be accessible to support these services.

There may be some overlap between digital data (eg PDFs etc) and hard copy collection which has not been archived, and this could be checked and the relevant items archived. A time estimate for this is not possible.

Please send your completed form, Part A (signed) and Part B, to HIPsTeam@HistoricEngland.org.uk

Appendix 1: Data and file recovery log

Event e.g. recovery test or incident	Date	Description	Result/Action

Appendix 2: Training log

Staff name	Date	Training undertaken	Follow-up/Action