Aboriginal Heritage Assessments GIS Specification

IP Integrated Management System

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1 General

1.1 Context and purpose

This specification details the requirements for Geographic Information System (GIS) Datasets, relating to Aboriginal Heritage assessments, provided to Transport for New South Wales (TfNSW) by delivery partners, contractors, consultants and suppliers.

The specification has been developed to interface with the TfNSW Digital Engineering (DE) Framework, but can also be used for projects that do not use the DE Framework.

1.2 Scope and application

This specification is intended to be read in conjunction with the following TfNSW documents and is intended to assist suppliers to fulfil the geometry and schema requirements in these documents:

- DMS-FT-580 – *GIS Schema*

- IC-QA-G75 – *GIS Specification*

- IP-0048-TL01 – *Template file structure for Aboriginal Heritage Assessments GIS*.

This specification outlines the template GIS database schema and provides guidance to users relating to populating the GIS database for delivery.

This specification applies to GIS Datasets to be delivered as part of Aboriginal Heritage Assessment works carried out for projects delivered by Infrastructure and Place (IP) or as required for TfNSW.

1.3 Terms and definitions

The terms and abbreviations used in this document have the meaning/definitions provided in DMS-SD-123 – *DE Terms and Definitions*.

The terms and definitions specific to this specification are included in Table 1:

Table 1 – Terms and Defintions

Term	Definition
Geographic Information System (GIS) Dataset(s)	Individual, digital and hardcopy, geospatial raw data, layers, models, maps, plans, diagrams and any other data created or intended for use within GIS.

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Term	Definition
Schema	Refers to GIS Dataset attribute field names, attribute data types, and the application of attribute validation, subtypes, relationship classes, and attachments.
Supplier	Refers to any organisation who supplies Transport for NSW with GIS datasets relating to an aboriginal heritage assessment.

1.4 Reference documents

The following documents are referenced in the text:

- DMS-FT-580 – *GIS Schema*
- IC-QA-G75 – *GIS Specification*
- IP-0048-TL01 – *Template file structure for Aboriginal Heritage Assessments GIS.*

2 Technical requirements

Comply with the requirements in IC-QA-G75 – *Geographic Information Systems (GIS).*

2.1 Digital file types

The template GIS database is in ESRI file geodatabase (GDB, version 10.0) for population by suppliers.

Templates can also be provided in shapefile format for suppliers who do not have the software to use a geodatabase.

Site photographs are to be provided in JPEG format and, where the capture equipment has the capability, with location metadata tags, or 'Geotags'.

2.2 Coordinate systems

All aboriginal heritage assessment GIS datasets supplied to TfNSW must be supplied relative to the applicable Map Grid of Australia zone (MGA56, MGA55, or MGA54) on the Geocentric Datum of Australia 2020 (GDA2020). Feature datasets within the template GIS database can be supplied in either map grid.

2.3 Directory structure and file naming

GIS file names must comply with the DMS-FT-580 – *GIS Schema*.

The template directory structure and the structure of the GIS database are presented in Figure 1, refer to IP-0048-TL01 – *Template file structure for Aboriginal Heritage Assessments GIS,* which includes a template file geodatabase and file structure compliant with Figure 1. IP-0048-TL02 includes three directory

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structures, one of each MGA zone, the example in Figure 1 represents the MGA54 directory structure. Populate only one of these.
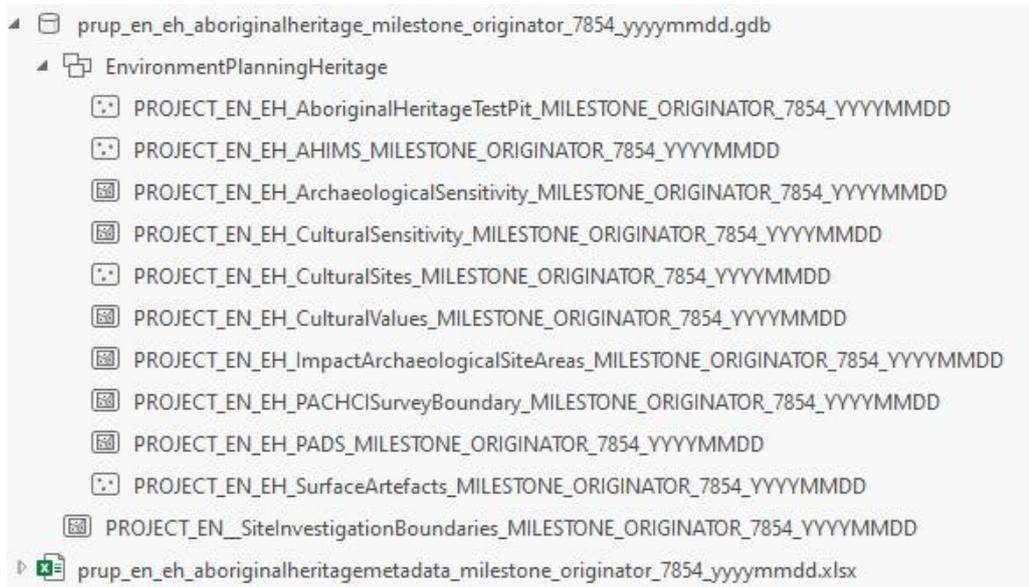
Figure 1 – Example directory structure for a project on GDA2020/MGA54

2.3.1   Feature class and file naming

Each feature class name is composed of eight components, separated by an underscore as per Table 2. For further information and codification please refer to DMS-FT-580 or to the Project Data Building Blocks (PDBB).

Table 2 – Feature class name components

Component	Data type
1	**Program Project Alias Code (shortened to Project for this purpose) –** the project abbreviation from the PDBB.
2	**Discipline –** as per DMS-FT-580, for the purpose of Aboriginal Heritage studies this will be "en" (Environment and Planning).
3	**Sub-discipline –** as per DMS-FT-580, for the purpose of Aboriginal Heritage studies this will be "eh" (Heritage).
4	**Title –** title of the data set, no spaces.
5	**Project Milestone Code (shortened to Milestone for this purpose) –** as per DMS-FT-580.
6	**Originator –** the company who have produced the data (from the GIS Schema). If you have downloaded the data from an alternate source for example DPIE land zoning and not changed the data (excluding coordinate system translation), the originator should be DOP as per DMS-FT-580.
7	**Coordinate EPSG code (shortened to Coordinate for this purpose) –** as per DMS-FT-580.
8	**Effective Date –** in the format yyyymmdd.

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ProgramProjectCode_Discipline_SubDiscipline_Title_ProjectMilestone_Originator_
CoordinateEPSG_EffectiveDate

For example, data produced on the Picton Road Upgrade Program for Potential Aboriginal Deposits by Biosis for 20% concept design in GDA2020 MGA56 on the 20/10/2021 would be named as follows.

> prupp_en_eh_pads_m220_bios_7856_20211020

File names must be within a 63-character limit to comply with Transport's GIS database specifications.

2.4   Cartographic products

Comply with the requirements in G75 and refer to the relevant tab on DMS-FT-580 for the provision of a cartographic products register to be included with data submissions where cartographic products have been created.

Note: This includes digital products, for example web maps and portals.

2.5   GIS database schema

The template GIS database contains ten feature classes. These feature classes have the fields that Transport would like to see consistently recorded for aboriginal heritage.

The fields provided in the templates are a minimum, where additional relevant data is captured by a supplier, please add this data to the table structure.

If the supplier records a field survey path (generated by GPS unit during field work) this must also be supplied to TfNSW as it can assist us in future studies.

2.6   Dataset metadata

Comply with the requirements in G75 and refer to the relevant tab on DMS-FT-580 for the dataset metadata requirements for all GIS data submitted to TfNSW. A dataset metadata form prepopulated with each template directory structure is included in IP-0048-TL01.

2.7   Feature level metadata

Feature level metadata must be populated by suppliers. Each feature class contains standard fields used to maintain information about the source and purpose of each feature in the feature class. Table 3 outlines the feature level metadata fields which exists in each feature class.

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Table 3 – Feature level metadata

Field name (alias)	Data type	Acceptable values	Description
comments (Comments)	TEXT	For example, Random meander survey	Further information relating to the feature/survey.
fsource (Feature source)	TEXT	For example, Garmin GPSMap 64 Apple iPad Desktop data capture from aerial photography dated....	Data source from which the feature *geometry* was derived. If this is a GPS receiver, include the make and model of the device used to determine the location.
sourcedate (Source date)	DATE	dd/mm/yyyy For example, *7/11/2016*	Effective date of the source from which the feature *geometry* was derived. For features captured in the field this should be the date that the survey was undertaken. For features captured from another source, the effective date of the source is to be used. Also referred to as FeatureReliability in DMS-FT-580 prior to version 2.1 of that document.
planaccur (Planimetric accuracy)	DOUBLE	0.01 0.1 0.25 0.5 1 2 5 10 25 100 250	This is the standard deviation in metres of the position of the feature's horizontal coordinates (68% of the data points should be less than this distance from their actual position). If an indication of location error is provided by the GNSS device then this is to be recorded in this field. Otherwise, an expected level of error based on the manufacturer's documentation is to be recorded. For features which are captured from another spatial dataset use the planimetric accuracy as specified in the metadata.
ecmlink (ECM Objective link)	TEXT	-	To be populated with the ECM reference/Objective file number, if supplied by the project team.
Supplier (Supplier)	TEXT	-	Name of company supplying data, where different from the originator (author).

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2.8   Aboriginal heritage metadata

The following defines the minimum attributes that must be populated for each feature class in the template geodatabase (refer to IP-0048-TL01 for the file structure template). Where additional relevant data is captured by a supplier, add this data to the table structure.

2.8.1   Aboriginal Heritage Information Management System (AHIMS)

Template geodatabase feature class name:

project_en_eh_ahims_milestone_originator_coordinate_yyyymmdd

Table 4 – AHIMS attribute table schema (point features)

Field name (alias)	Data type	Acceptable values	Description
siteid (Site ID)	TEXT	For example, 58-4-0792	Site ID as supplied by Heritage NSW.
sitename (Site Name)	TEXT	For example, South Batemans Bay IF 1;SBB IF1;	Site name as supplied by Heritage NSW.
context (Site Context)	TEXT	For example, Open Site/Enclosed Shelter type	Site context as supplied by Heritage NSW.
sitestatus (Site Status)	TEXT	For example, Destroyed	Site status as supplied by Heritage NSW.
sitefeat (Site Feature)	TEXT	For example, Artefact	Site feature as supplied by Heritage NSW.
sitetype (Site Type)	TEXT	For example, Isolated Find	Site type as supplied by Heritage NSW.

2.8.2   Potential Aboriginal Deposit Sites (PADS)

Template geodatabase feature class name:

project_en_eh_pads_milestone_originator_coordinate_yyyymmdd

Table 5 – PADS attribute table schema (polygon features)

Field name (alias)	Data type	Acceptable values	Description
siteid (Site ID)	TEXT	For example, 58-4-0792	AHIMS ID for the site if it exists.
pad_name (PAD Name)	TEXT	For example, PAD 2	PAD name as created by supplier.
landform (Landform)	TEXT	For example, Low undulating hills	Landform description.
desc (Description)	TEXT	For example, high potential, elevated flat terrace at confluence of drainage lines; Undulating flats	Description of site.

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Field name (alias)	Data type	Acceptable values	Description
area_m2 (Est Site Area m²)	DOUBLE	For example, 0.2	Estimated site area in m².

2.8.3   Aboriginal heritage test pit locations

Template geodatabase feature class name:

project_en_eh_aboriginalheritagetestpit_milestone_originator_coordinate_yyyymmdd

Table 6 – Aboriginal heritage test pit attribute table schema (point features)

Field name (alias)	Data type	Acceptable values	Description
testpitno (Test pit number)	TEXT	For example, TP1	Test pit number, as created by supplier.
pad_name (PAD Name)	TEXT	For example, PAD 10	PAD ID, as per PADS feature class.
date (Date)	DATE	dd/mm/yyyy	Date of excavation.
recorder (Recorder)	TEXT	For example, John Smith, Archaeological services	Name and company affiliation of person recording the excavation.
nw_endh_mm (NW end height mm)	LONG	For example, 550	Height of excavation.
ne_endh_mm (NE end height mm)	LONG	For example, 550	Height of excavation.
se_endh_mm (SE end height mm)	LONG	For example, 550	Height of excavation.
sw_endh_mm (SW end height mm)	LONG	For example, 550	Height of excavation.
finds (Finds)	TEXT	For example, 400 artefacts; 1 potential artefact	Quantity of any finds.
samples (Samples)	TEXT	For example, Yes	Details of any samples taken.
landform (Landform)	TEXT	Closed depression Crest Dune Flat Open depression Ridge Saddle Slope Terrace flat Very steep slope	Description of landform at site.
disturb (Disturbance)	TEXT	For example, Wombat burrow; Tree roots	Details of any disturbance.

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signif (Significance)	TEXT	For example, Low; Moderate	Significance of the finds.
artefacts (Artefacts)	TEXT	For example, Baked flake; Quartz core	Description of any artefacts present.
photo_id (Photo ID)	TEXT	For example, Plate 3	Photo ID file number.

2.8.4 Stage 2 Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI) survey boundary

Template geodatabase feature class name:

project_en_eh_pachcisurveyboundary_milestone_originator_coordinate_yyyymmdd

Table 7 – PACHCI survey boundary attribute table schema (polygon features)

Field name (alias)	Data type	Acceptable values	Description
name (Survey Name)	TEXT	-	Survey area name, if exists. This field is optional.

2.8.5 Cultural sites

Template geodatabase feature class name:

project_en_eh_culturalsites_milestone_originator_coordinate_yyyymmdd

Table 8 – Cultural sites (point features)

Field name (alias)	Data type	Acceptable values	Description
site_id (Site ID)	TEXT	-	Site ID as supplied by Heritage NSW or assigned by an archaeologist or anthropologist.
date_id (Date identified)	DATE	dd/mm/yyyy	Date identified.
desc (Description)	TEXT	For example, Contemporary resource gathering area; Ceremonial site	Site description.
landform (Landform)	TEXT	Closed depression Crest Dune Flat Open depression Ridge Saddle Slope Terrace flat Very steep slope	Description of landform at site.

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Field name (alias)	Data type	Acceptable values	Description
method (Method of ID)	TEXT	For example, Oral history interview; Workshop	Method of identification.
condition (Condition)	TEXT	Very poor Poor Good Very good Excellent	Condition rating.
photo_id (Photo ID)	TEXT	-	Photo ID file number.
sensitive (Sensitivity)	TEXT	Low Moderate High Total loss of value	Sensitivity of site to change.
restrict (restrictions)	TEXT	For example, Women site; restricted site – contact knowledge holder John Smith (0423 567 895) prior to releasing information;	Any restrictions noted by the knowledge holder or source.

2.8.6 Cultural values

Template geodatabase feature class name:

project_en_eh_culturalvalues_milestone_originator_coordinate_yyyymmdd

Table 9 – Cultural values attribute table schema (polygon features)

Field name (alias)	Data type	Acceptable values	Description
date_id (Date identified)	DATE	dd/mm/yyyy	Date identified.
name (Location Name)	TEXT	-	Name of the location.
desc_loc (Location Description)	TEXT	-	Description of the location.
method (Method of ID)	TEXT	For example, Oral history interview; Workshop	Method of identification.
photo_id (Photo ID)	TEXT	-	Photo ID file number.
ref_number (Interview ref number)	TEXT	-	Reference number used for interview transcript.
type_value (Value type)	TEXT	Aboriginal Cultural Value Aboriginal Historic Area Aboriginal Historic Area/Contemporary Resource use area Archaeology Camp and Resource Gathering	-

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Field name (alias)	Data type	Acceptable values	Description
		Contact site Contemporary Resource use area Cultural/Spiritual/Ceremonial Flora and Fauna Pathway Song line	
desc_value (Value description)	TEXT	-	-
signif (Cultural significance)	TEXT	-	Cultural significance.
sensitive (Sensitivity to change)	TEXT	Low Moderate High Total loss of value	Sensitivity of site to change.

2.8.7 Cultural sensitivity

Template geodatabase feature class name:

project_en_eh_culturalsensitivity_milestone_originator_coordinate_yyyymmdd

Table 10 – Cultural sensitivity attribute table schema (polygon features)

Field name (alias)	Data type	Acceptable values	Description
site_id (Site ID)	TEXT	-	Site ID.
date_id (Date identified)	DATE	dd/mm/yyyy	Date identified.
desc (Description)	TEXT	-	Site description.
method (Method of ID)	TEXT	For example, Oral history interview	Method of identification.
photo_id (Photo ID)	TEXT	-	Photo ID file number.
signif (Cultural significance)	TEXT	-	Cultural significance.
sensitive (Sensitivity to change)	TEXT	Low Moderate High Total loss of value	Sensitivity of site to change.

2.8.8 Archaeological sensitivity

Template geodatabase feature class name:

project_en_eh_archaeologicalsensitivity_milestone_originator_coordinate_yyyymmdd

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Table 11 – Archaeological sensitivity attribute table schema (polygon features or raster)

Field name (alias)	Data type	Acceptable values	Description
sensitive (sensitivity)	TEXT	Low Medium High	Sensitivity.

2.8.9 Impacted archaeological site areas

Template geodatabase feature class name:

project_en_eh_impactarchaeologicalsiteareas_milestone_originator_coordinate_yyyymmdd

Table 12 – Impacted archaeological site areas attribute table schema (polygon features)

Field name (alias)	Data type	Acceptable values	Description
impact (level of impact)	TEXT	Direct total Direct partial Indirect	Level of impact.

2.8.10 Surface artefacts

Template geodatabase feature class name:

project_en_eh_surfaceartefacts_milestone_originator_coordinate_yyyymmdd

Table 13 – Surface artefacts attribute table schema (point features)

Field name (alias)	Data type	Acceptable values	Description
name (Name)	TEXT	-	Name of the site.
site_id (Site ID)	TEXT	-	Site ID as developed during assessment.
ahims_id (AHIMS ID)	TEXT	For example, 58-4-0792	AHIMS ID for the site if it exists.
photo_id (Photo ID)	TEXT	-	Photo ID.
date (Date found)	DATE	dd/mm/yyyy	Date artefacts were found.
type (Type)	TEXT	-	Type of artefact.
desc (Description)	TEXT	-	Description of the artefact.
condition (Condition)	TEXT	Very poor Poor Good Very good Excellent	Condition of the artefact.

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Field name (alias)	Data type	Acceptable values	Description
conseq (Consequence of harm)	TEXT	For example, Total loss of value	Consequence of harm.
signif (Significance of harm)	TEXT	Low Moderate High	Significance of harm.
mitigation (mitigation)	TEXT	For example, salvage	Mitigation measure recommended by an archaeologist.

2.8.11   Site investigation boundaries

This feature class is for the purpose of recording the extent of the different survey boundaries relevant to the project. This must include the boundaries of any site investigation works or study areas.

Template geodatabase feature class name:

project_en__siteinvestigationboundaries_milestone_originator_coordinate_yyyymmdd

Table 14 – Site investigation boundaries attribute table schema (polygon features)

Field name (alias)	Data type	Acceptable values	Description
type (Type)	TEXT(50)	For example, Survey Boundary	Type of boundary
name (Survey Name)	TEXT(200)	-	Study area name, if exists. This field is optional

3   Document history

Version	Published date	Summary of changes
1.0	December 2022	First release of the document.

4   Contact

For all requests regarding non-standard digital GIS file types, submissions of schema and geometry for review, and any other enquiries regarding the provision of GIS Datasets please contact Spatial Project Services via email on **SpatialProjectServices@transport.nsw.gov.au**.

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