

SERVICES SPECIFICATION

Specifications for Services Digital Spatial Data
at the City of Albany

Version 1.2
2017

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The SERVICES SPECIFICATION

As part of the CITY OF ALBANY SPATIAL DATA SPECIFICATION the Managed Space Specification focus on assets and maintenance areas that the City of Albany have to be aware of. It captures asset and some maintenance details that allow not only for financial reporting and maintenance of assets but also to support future design and development.

The underpinning spatial standards are defined in the parent document, CITY OF ALBANY SPATIAL DATA SPECIFICATION.

The MANAGED SPACE SPECIFICATION standard is a requirement of the City of Albany that streamlines the processes undertaken for all public and open space asset capturing and maintenance of this data in its geographic information systems (GIS).

This specification is for use by any Developers and Surveyors (hereafter referred to as “Consultants”) who undertake Land Development or Capital Works activities that have to be recorded by the City of Albany.

This also includes any related construction activities undertaken by the City of Albany.

1 GRAPHICS SPECIFICATIONS

1.1 Theme/Layer Structure

The following information is provided as the guide when putting together graphical information.

Depending on the asset to be captured, not all the layers indicated here may appear in submitted data.

It is important to note that each layer should only contain the listed features; any other features present will impede the acceptance testing.

Layer	Feature Type	Description	Attributes
SEWER POINTS	Point	Sewer access chambers, pipe connectors	Attribute
SEWER LINES	Polyline	Sewer pipes, including building connections	Attribute
SEWER PUMPS	Point	Sewer pumps	Attribute
SEWER LEACHATE PONDS	Polygon	Sewer leachate and retention ponds	Attribute
SERVICE POINTS	Point	Water, Gas, Electric or Fuel service points like water meters, power points, gas bayonets, taps.	Attribute
SERVICE LINES	Polyline	Water, Gas, Electric or Fuel service lines like electric conduits, water pipes and gas lines connecting out buildings	Attribute

1.2 Graphical Data Construction Principals

This section details the graphical data construction principles that must be adhered to for all features (polygons, lines, points).

Please use sound practices when recording data, such as snapping to lines or points, closing polygons and directional graphing in the direction of flow.

1.2.1 SEWER POINTS

The City manages some sewer services. This includes the sewer services running from the Water Corporation sewer line to City managed buildings like public toilets.

! Note: Sewer Pumps are NOT recorded here. It is recorded in SEWER_PUMPS, due to additional motor and pump attributes.

Each service feature shall be depicted by a single point.

The attributes for this layer are specified in [Table 2.1](#)

1.2.2 SEWER LINES

The City manages some sewer services. This includes the sewer services running from the Water Corporation sewer line to City managed buildings like public toilets.

Each service feature shall be depicted by a continuous line.

The attributes for this layer are specified in [Table 2.2](#)

1.2.3 SEWER PUMPS

Sewer pump services are installed on property that the City own, manage or lease. It is both a safety and maintenance concern. Knowing where these services are located is important and a managed asset.

Each pump feature shall be depicted by a point.

The attributes for this layer are specified in [Table 2.3](#)

1.2.4 SEWER LEACHATE PONDS

Sewer leachate ponds services are installed on property that the City own, manage or lease. It is both a safety and maintenance concern. Knowing where these services are located is important and a managed asset.

Each pond feature shall be depicted by a polygon.

The attributes for this layer are specified in [Table 2.4](#)

1.2.5 SERVICES POINTS

Electric, Gas, Water and Fuel services are installed on property that the City own, manage or lease. It is both a safety and maintenance concern. Knowing where these services are located is important and a managed asset.

Each service feature shall be depicted by a single point.

The attributes for this layer are specified in [Table 2.5](#)

1.2.6 SERVICE LINES

Electric, Gas, Water and Fuel services are installed on property that the City own, manage or lease. It is both a safety and maintenance concern. Knowing where these services are located is important and a managed asset.

Each service feature shall be depicted by a continuous line.

The attributes for this layer are specified in [Table 2.6](#)

1.3 Acceptance Testing

Please note that the SERVICES SPECIFICATION reflects the City of Albany's requirements to record the asset. Contractual and compliance requirements, such as provision of marked-up drawings, are separate to this specification.

- ! The submitted spatial data shall be a single continuous file/drawing (not tiled or split in any form). Non-compliance will result in failing the acceptance testing.
- ! Attributes must comply with all the specifications in [Section 2](#). Non-compliance will fail the acceptance testing.
- ! Please note that Data Validation is implied by the feature type, attribute data types and content descriptions provided in [Section 2](#). Contractors still have to ensure the data is correct.

1.3.1 CADD Submissions & Annotations

With submissions of CADD formats all graphical information will be checked against the Attribute files/tables. It is essential that there is a link/key between the graphics and the Attribute files/tables. Please refer to [Section 2](#) for the table structures and validating when compiling information for submission.

- ! CADD format submissions are only acceptable if the CAD file has an accompanying CSV file that links the drawing with the feature attributes. CADD graphical feature 'Handle' or 'EntityHandle' (survey: PNZD, drafting: COGO) is an attribute that is visible in most GIS software. It is ideal to use this identifier in the accompanying CSV files to create the data join.
- ! CADD submissions should also make good use of the layers to group graphics features together. For instance ensuring that all pits are in one layer and pipes in another.

If it has been pre-arranged to use CADD formats without accompanying attribute tables (where only callout boxes are submitted) additional costs will be incurred for processing of the data by the City of Albany staff, and will be charged back to the Consultant.

- o Relevant Cadastral Boundaries and Street Names must be included for spatial referencing and adhere to the MGA50 projection.
- o 'Callout boxes' is the preferred method to graphically represent the minimum attributes required by the **SERVICES SPECIFICATION** and is only used for cartographic representation. It is not considered to be useful 'data'. The callout boxes must cover the attributes in [Section 2](#) marked as **M** for mandatory.

1.4 Matching to Existing Infrastructure

It is the responsibility of the consultant to ensure the "As Constructed" digital data of the assets are related to the current data held by the City of Albany.

The City of Albany will make available an extract of any digital drainage data held in their GIS that cover the specific project area. In some instances there may not be any data available or available data may not have been verified.

- ! Submissions must include all required attributes of the existing infrastructure that the new assets are connecting to. This allows for verification of existing drainage data and creates a 'tie-in' reference for the new infrastructure.

2 ATTRIBUTE SPECIFICATIONS

All submissions will be provided in the preferred datum of City of Albany (MGA50 & AHD) as described in the CITY OF ALBANY SPATIAL DATA SPECIFICATION.

As all new cadastral information is placed on the MGA grid it is an expectation that all data provided by Contractors will be representative of this level of accuracy.

- All fields are to be populated in accordance with the notes and codes supplied in this document.
- All attribute files are to use the Column Names and Data Types set out in this section. Column names are restricted to 10 characters for compatibility (i.e. for ESRI Shape-files).
- Comma Separate Value (CSV) files is another preferred format. Therefore commas should not be used in attribute data.
- All attributes marked with an M in the tables must be provided, and will fail the acceptance testing if not provided. **M = Mandatory Attribute**
- All attribute fields are required and must be completed. Only those fields indicated with an O are optional and can be empty. O = Optional

2.1 SEWER_POINTS

	Column Name	Data Type	Max Length	Constraint	Contents
M	FEAT_TYPE	Alpha	5 chars	No commas	Type of sewer point. (Table 3.1)
	FIELD_REF	Alpha/Numeric	10 chars	No commas First chars are the FEAT_TYPE	A unique field reference to this asset. This attribute does not necessarily change when the asset is replaced or moved. It is not an asset ID for tracking, but rather a long term in-field & contractual reference. EG "BBQ7"
M	MATERIAL	Alpha	5 chars	No commas	Point material, EG: RC (Table 3.3)
	CAPACITY	Alpha	5 chars	No commas	Capacity of device
	DIAMETER	Whole Number	n/a	Whole mm	Diameter of circular pit; EG: 600
	DEPTH	Decimal Number	n/a	Metres to 2 metres	Natural or Finished Surface level to bottom of pit relative to FSL.
	STEP_IRONS	Whole Number	n/a	0 if none	Number of installed step irons; EG: 4
M	PLACE_DATE	Alpha/Numeric	10 char	dd/mm/yyyy	Creation/Construction/Installation date, EG: 2010; 17/05/2001
M	CONDITION	Whole Number	n/a	Whole Number	Asset Condition Rating classification (Section 4)
	ASSET_ID	Alpha	15 chars	No commas	Unique Asset identifier, used for accounting & asset management
	EXPEC_LIFE	Whole Number	n/a	Years	Expected life in Years
	REPL_COST	Decimal Number	n/a	Currency	Replacement cost of Asset as new
	LAST_AUDIT	Date	n/a	dd/mm/yyyy	Date of the previous audit EG: 12/06/2012
O	OWNER	Alpha/Numeric	100 chars	No commas	If the responsible entity is not the City of Albany EG: MRWA; Private
	PLAN_NO	Alpha/Numeric	20 chars	No commas	Plan Number or Survey Job Reference: EG: 6080R212
	SOURCE	Alpha/Numeric	100 chars	No commas	Additional details related to the PLAN_NO field; EG: As-Constructed Plan; Designed Drawing; Great Southern Surveyors - Stage 2 – 09/02/2013; CoA Assets Surveyor – Bob Jones – 15/07/2009
	WAPC_NO	Alpha/Numeric	20 chars	No commas	Western Australian Planning Commission reference number; or 'n/a'
O	COMMENTS	Alpha/Numeric	150 chars	No commas	Any additional comments that relate to this pit

City of Albany
2.2 SEWER_LINES

SERVICES SPECIFICATION

	Column Name	Data Type	Max Length	Constraint	Contents
M	FEAT_TYPE	Alpha	5 chars	No commas	Type of sewer line. (Table 3.2)
	FIELD_REF	Alpha/Numeric	10 chars	No commas First chars are the FEAT_TYPE	A unique field reference to this asset. This attribute does not necessarily change when the asset is replaced or moved. It is not an asset ID for tracking, but rather a long term in-field & contractual reference. EG "BBQ7"
M	POSITION	Alpha	11 chars	No commas	Use: 'OVERHEAD', 'SURFACE', 'UNDERGROUND'
M	MATERIAL	Alpha	5 chars	No commas	Pipe material, EG: RC (Table 3.3)
M	DIAMETER	Whole Number	n/a	In millimetres	Pipe Diameter.
M	US_IL	Decimal Number	n/a	Metres to 2 decimals	Invert Level at the Upstream side of pipe
M	DS_IL	Decimal Number	n/a	Metres to 2 decimals	Invert Level at the Downstream side of pipe. Usually DS_IL =< US_IL. COMMENTS if this is not so by design.
M	PLACE_DATE	Alpha/Numeric	10 chars	dd/mm/yyyy	Creation/Construction/Installation date, EG: 2010; 17/05/2001
M	CONDITION	Whole Number	n/a	Whole Number	Asset Condition Rating classification (Section 4)
	ASSET_ID	Alpha	15 chars	No commas	Unique Asset identifier, used for accounting & asset management
	EXPEC_LIFE	Whole Number	n/a	Years	Expected life in Years
	REPL_COST	Decimal Number	n/a	Currency	Replacement cost of Asset as new
	LAST_AUDIT	Date	n/a	dd/mm/yyyy	Date of the previous audit EG: 12/06/2012
O	OWNER	Alpha/Numeric	100 chars	No commas	If the responsible entity is not the City of Albany EG: MRWA; Private
	PLAN_NO	Alpha/Numeric	20 chars	No commas	Plan Number or Survey Job Reference: EG: 6080R212
	SOURCE	Alpha/Numeric	100 chars	No commas	Additional details related to the PLAN_NO field; EG: As-Constructed Plan; Designed Drawing; Great Southern Surveyors - Stage 2 – 09/02/2013; CoA Assets Surveyor – Bob Jones – 15/07/2009
	WAPC_NO	Alpha/Numeric	20 chars	No commas	Western Australian Planning Commission reference number; or 'n/a'
O	COMMENTS	Alpha/Numeric	150 chars	No commas	Any additional comments that relate to this pipe section

City of Albany
2.3 SEWER_PUMPS

SERVICES SPECIFICATION

	Column Name	Data Type	Max Length	Constraint	Contents
M	FEAT_TYPE	Alpha	5 chars	No commas	Type of sewer pump (Table 3.4)
	FIELD_REF	Alpha/Numeric	10 chars	No commas First chars are the FEAT_TYPE	A unique field reference to this asset. This attribute does not necessarily change when the asset is replaced or moved. It is not an asset ID for tracking, but rather a long term in-field & contractual reference. EG "BBQ7"
M	MAKE	Alpha/Numeric	25 chars	No commas	Manufacturer / Make
M	MODEL	Alpha/Numeric	25 chars	No commas	Model
M	PLACE_DATE	Alpha/Numeric	10 char	dd/mm/yyyy	Creation/Construction/Installation date, EG: 2010; 17/05/2001
M	CONDITION	Whole Number	n/a	Whole Number	Asset Condition Rating classification (Section 4)
	OUTLET_DIA	Whole Number	n/a	Whole Number in mm	Diameter of outlet
	FLOW_NOM	Whole Number	n/a	Whole Number in L/s	Flow rate (normal) Litre/second
	FLOW_MAX	Whole Number	n/a	Whole Number in L/s	Flow rate (max) Litre/second
	ALARM	Alpha/Numeric	1 char	Yes/No	Alarm fitted
	FLOAT_L1	Whole Number	n/a	Whole Number in mm	Float switch level 1
	FLOAT_L2	Whole Number	n/a	Whole Number in mm	Float switch level 2
	ASSET_ID	Alpha	15 chars	No commas	Unique Asset identifier, used for accounting & asset management
	EXPEC_LIFE	Whole Number	n/a	Years	Expected life in Years
	REPL_COST	Decimal Number	n/a	Currency	Replacement cost of Asset as new
	LAST_AUDIT	Date	n/a	dd/mm/yyyy	Date of the previous audit EG: 12/06/2012
O	OWNER	Alpha/Numeric	100 chars	No commas	If the responsible entity is not the City of Albany EG: MRWA; Private
	PLAN_NO	Alpha/Numeric	20 chars	No commas	Plan Number or Survey Job Reference: EG: 6080R212
	SOURCE	Alpha/Numeric	100 chars	No commas	Additional details related to the PLAN_NO field; EG: As-Constructed Plan; Designed Drawing; Great Southern Surveyors - Stage 2 – 09/02/2013; CoA Assets Surveyor – Bob Jones – 15/07/2009
	WAPC_NO	Alpha/Numeric	20 chars	No commas	Western Australian Planning Commission reference number; or 'n/a'
O	COMMENTS	Alpha/Numeric	150 chars	No commas	Any additional comments that relate to this pit

2.4 SEWER_LEACHATE_PONDS

	Column Name	Data Type	Max Length	Constraint	Contents
M	FEAT_TYPE	Alpha	5 chars	No commas	Feature type
	FIELD_REF	Alpha/Numeric	10 chars	No commas First chars are the FEAT_TYPE	A unique field reference to this asset. This attribute does not necessarily change when the asset is replaced or moved. It is not an asset ID for tracking, but rather a long term in-field & contractual reference. EG "BBQ7"
M	TOP_RL	Decimal Number	n/a	2 decimal places	Top bank level of the system
M	DES_CAP	Whole Number	n/a	Whole m ³	Design Capacity in cubic metres
M	PLACE_DATE	Alpha/Numeric	10 chars	dd/mm/yyyy	Creation/Construction/Installation date, EG: 2010; 17/05/2001
M	CONDITION	Whole Number	n/a	Whole Number	Asset Condition Rating classification (Section 4)
	ASSET_ID	Alpha	15 chars	No commas	Unique Asset identifier, used for accounting & asset management
	REPL_COST	Decimal Number	n/a	Currency	Replacement cost of Asset as new
	LAST_AUDIT	Date	n/a	dd/mm/yyyy	Date of the previous audit EG: 12/06/2012
O	OWNER	Alpha/Numeric	100 chars	No commas	If the responsible entity is not the City of Albany EG: MRWA; Private
	PLAN_NO	Alpha/Numeric	20 chars	No commas	Plan Number or Survey Job Reference: EG: 6080R212
	SOURCE	Alpha/Numeric	100 chars	No commas	Additional details related to the PLAN_NO field; EG: As-Constructed Plan; Designed Drawing; Great Southern Surveyors - Stage 2 – 09/02/2013; CoA Assets Surveyor – Bob Jones – 15/07/2009
	WAPC_NO	Alpha/Numeric	20 chars	No commas	Western Australian Planning Commission reference number; or 'n/a'
O	COMMENTS	Alpha/Numeric	150 chars	No commas	Any additional comments that relate to this feature

City of Albany
2.5 SERVICE_POINTS

SERVICES SPECIFICATION

	Column Name	Data Type	Max Length	Constraint	Contents
M	FEAT_TYPE	Alpha	5 chars	No commas	Type of service point. (Table 3.5)
	FIELD_REF	Alpha/Numeric	10 chars	No commas First chars are the FEAT_TYPE	A unique field reference to this asset. This attribute does not necessarily change when the asset is replaced or moved. It is not an asset ID for tracking, but rather a long term in-field & contractual reference. EG "BBQ7"
M	MATERIAL	Alpha	5 chars	No commas	Point material, EG: RC (Table 3.7)
M	PLACE_DATE	Alpha/Numeric	10 char	dd/mm/yyyy	Creation/Construction/Installation date, EG: 2010; 17/05/2001
M	CONDITION	Whole Number	n/a	Whole Number	Asset Condition Rating classification (Section 4)
M	SERIAL_NO	Alpha/Numeric	25 char	No commas	Device number EG: Water Corp device number
	ASSET_ID	Alpha	15 chars	No commas	Unique Asset identifier, used for accounting & asset management
	EXPEC_LIFE	Whole Number	n/a	Years	Expected life in Years
	REPL_COST	Decimal Number	n/a	Currency	Replacement cost of Asset as new
	LAST_AUDIT	Date	n/a	dd/mm/yyyy	Date of the previous audit EG: 12/06/2012
O	OWNER	Alpha/Numeric	100 chars	No commas	If the responsible entity is not the City of Albany EG: MRWA; Private
	PLAN_NO	Alpha/Numeric	20 chars	No commas	Plan Number or Survey Job Reference: EG: 6080R212
	SOURCE	Alpha/Numeric	100 chars	No commas	Additional details related to the PLAN_NO field; EG: As-Constructed Plan; Designed Drawing; Great Southern Surveyors - Stage 2 - 09/02/2013; CoA Assets Surveyor - Bob Jones - 15/07/2009
	WAPC_NO	Alpha/Numeric	20 chars	No commas	Western Australian Planning Commission reference number; or 'n/a'
O	COMMENTS	Alpha/Numeric	150 chars	No commas	Any additional comments that relate to this pit

2.6 SERVICES_LINES

	Column Name	Data Type	Max Length	Constraint	Contents
M	FEAT_TYPE	Alpha	15 chars	No commas	Gas Pipe, Water Pipe, Electrical Cable (Table 3.6)
	FIELD_REF	Alpha/Numeric	10 chars	No commas First chars are the FEAT_TYPE	A unique field reference to this asset. This attribute does not necessarily change when the asset is replaced or moved. It is not an asset ID for tracking, but rather a long term in-field & contractual reference. EG "BBQ7"
M	POSITION	Alpha	25 chars	No commas	Use: 'OVERHEAD', 'SURFACE', 'UNDERGROUND'
M	MATERIAL	Alpha	25 chars	No commas	Line material, EG: RC (Table 3.7)
M	DIAMETER	Whole Number	n/a	In millimetres	Line Diameter.
M	US_IL	Decimal Number	n/a	Metres to 2 decimals	Invert Level at the Upstream side of pipe
M	DS_IL	Decimal Number	n/a	Metres to 2 decimals	Invert Level at the Downstream side of pipe.
M	PLACE_DATE	Alpha/Numeric	10 chars	dd/mm/yyyy	Creation/Construction/Installation date, EG: 2010; 17/05/2001
M	CONDITION	Whole Number	n/a	Whole Number	Asset Condition Rating classification (Section 4)
	ASSET_ID	Alpha/Numeric	15 chars	No commas	Unique Asset identifier, used for accounting & asset management
	REPL_COST	Decimal Number	n/a	Currency	Replacement cost of Asset as new
	LAST_AUDIT	Date	n/a	dd/mm/yyyy	Date of the previous audit EG: 12/06/2012
O	OWNER	Alpha/Numeric	100 chars	No commas	If the responsible entity is not the City of Albany EG: MRWA; Private
	PLAN_NO	Alpha/Numeric	20 chars	No commas	Plan Number or Survey Job Reference: EG: 6080R212
	SOURCE	Alpha/Numeric	100 chars	No commas	Additional details related to the PLAN_NO field; EG: As-Constructed Plan; Designed Drawing; Great Southern Surveyors - Stage 2 – 09/02/2013; CoA Assets Surveyor – Bob Jones – 15/07/2009
	WAPC_NO	Alpha/Numeric	20 chars	No commas	Western Australian Planning Commission reference number; or 'n/a'
O	COMMENTS	Alpha/Numeric	100 chars	No commas	Any additional comments that relate to this pipe section

3 CODE LISTS

Code lists are used to standardise terminology by providing a list of item descriptions relating to a particular attribute. A number of attributes specified in [Section 2](#) require the input of these codes.

Consultants please note that should a code not exist within an attribute code list, mark the entity as code UNK, then write the new code and an appropriate description in the comment field. Please pre-empt this situation by communicating such anomalies to the City of Albany promptly (email: cityassets@albany.wa.gov.au).

3.1 Sewer Point Type

Code	Description	Comment
SV	Sewer Valve	
RVCD	RV Chemical Disposal	
SIO	Sewer Inspection Opening	
WLP	Waste Site Leachate Point	
SEP	Septic System	
BIO	Bio Filter	
UNK	Unknown	Use when not known

3.2 Sewer Line Type

Code	Description	Comment
SMC	Sewer Main Connection	The primary connection line that links the internal sewer lines to the Water Corporation sewer service.
ISL	Internal Sewer Line	E.G. from the toilet to the SMC
WLL	Waste Site Leachate Line	
WLC	Waste Site Leachate Chute	
UNK	Unknown	Use when not known

3.3 Sewer Materials

Code	Description	Comment
C	Concrete	
UNK	Unknown	Use when not known

3.4 Sewer Pump Type

Code	Description	Comment
SWBP	Sewer Booster Pump	
SWCP	Sewer Chopper/Grinder Pump	
SWSP	Sewer Submersible Pump	
UNK	Unknown	Use when not known

3.5 Service Point Type

Code	Description	Comment
WTL	Water Tap Locked	Special access
WTP	Water Tap Potable	
WTN	Water Tap Non-Potable	
GB	Gas Bayonet connection	
PP	Power Point (GPO)	
PFP	Petroleum Fuel Pump	
AFP	Aviation Fuel Pump	For the Airport
EGM	Electric Gate Motor	
CP	Cable Pit	
EP	Electrical Pit	
DB	Distribution Board (electrical)	
EC	Electrical Cabinet	
PM	Power Meter	
SWB	Switchboard	
TP	Telephone Point	
DP	Data Point	
WV	Water Valve	
ERTH	Earth Point	
ECM	Electrical Cable Marker	Marker to indicate nearby electric cable's
ED	Electrical Dome	
ET	Electrical Transformer	
UNK	Unknown	Use when not known

3.6 Service Line Type

Code	Description	Comment
WP	Pressurised Water	
GL	Gas Line	
EL	Electricity Line	
TL	Telephone Line	
DL	Data Line	LAN cable etc.
PFL	Petroleum Fuel Line	
AFL	Aviation Fuel Line	For the Airport
UNK	Unknown	Use when not known

3.7 Service Materials

Code	Description	Comment
PVC	PVC	
GAL	Galvanised	
COP	Copper	
UNK	Unknown	Use when not known

4 CONDITION RATINGS

Condition Ratings are generally in three classes. The maintenance demand is related to these classes:

- Rating 1 is Serviceable with no maintenance required;
- Rating 2 requires Maintenance but is still functioning;
- Rating 3 requires immediate attention. The asset has failed and is posing a risk.

A rating of 0 (zero) is only used when an asset has not been rated. This situation should be avoided.

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1.1	Rebekah Polette	Added codes in 3.1, 3.3,	03/07/2017
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