

Western Bay of Plenty District Council

RESERVES & FACILITIES

AS BUILT DATA SPECIFICATION

September 2009



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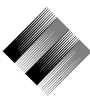


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1. OBJECTIVE OF THE SPECIFICATION

To ensure Reserves & Facilities asset data is captured into Council's GIS and the Loftus-HMS asset management system.

2. RELEVANCY

This document specification applies to council projects or for commercial or residential subdivision development projects with assets that are vested to council.

COUNCIL PROJECTS:

- Prior to the commencement of the physical works, a summary of the Reserves & Facilities assets & quantities to be created, upgraded or disposed of shall be clearly defined in accordance with the asset types described at Appendix A¹. This is to ensure alignment with the asset management system. A schedule of existing assets at the affected location will be provided by council on request.
- Project retention payments will not be approved until all as-built data supplied has been verified by council staff.
- The payment claim certificates are to reflect all costs apportioned to each asset created or upgraded as listed in the payment schedule, including professional services, contract variations and asset disposal costs.
- As-built data must comply with item 3 Data Supply.

COMMERCIAL OR RESIDENTIAL SUBDIVISION DEVELOPMENT PROJECTS:

- Where Reserves & Facilities assets are to be vested to Council, as built data is required to be submitted 10 working days before application for the signing off of the 224 Consents Notice. Failure to provide accurate "as built", may impact on the 224 Consent Notice completion.
- All assets that are to be vested in Council must comply with item 3 Data Supply.

3. DATA SUPPLY

The accuracy of the data supplied is to be +/- 0.1m (100mm) for the X & Y co-ordinates and +/- 0.01 (10mm) for the Z co-ordinate.

Data will be supplied directly to the Principal Administrative Officer (PAO) and/or the Project Engineer, in both hardcopy & electronic documentation:

- **Hardcopy**
Includes 2 sets of clear, legible, scaled line drawings with an as-built drawings certificate (Appendix B). Drawings shall provide both construction and location information - A3 size minimum.
- **Electronic**
Supplied on CD/USB flash memory drive or via email as per specification:
 - copy of the scaled line drawing(s) in .pdf or .dwg format (refer 3.1 below)
 - An Aspatial file (asset data attributes spreadsheet)
 - A Spatial file (asset GIS coordinates spreadsheet)
 - Digital photograph(s) of each asset
 - A copy of the as-built drawings certificate in .pdf format (Appendix B)

¹ Exception: Underground Utilities assets data shall be supplied in accordance with the Development Code Utilities as-built data specification.

3.1 SCALED LINE DRAWING

All scaled line drawings are required to be signed off by either a Registered Surveyor or a Chartered Professional Engineer. They include one sheet/drawing or series of sheets/drawings showing the new and existing assets as described in table 3.1.

TABLE 3.1 - ASSET TYPES & DRAWING PLOT REQUIREMENTS

<u>Asset description</u>	<u>Drawn colour (visible on plot)</u>	<u>Drawn line width</u>
Reserves & Facilities assets		
HORT - Grassed areas including grass type and area in square metres	light green	0.5
HORT - Trees (species, canopy radius, estimated maturity height and quantity)	dark green	0.5
HORT - Gardens including type, species and area in square metres	dark brown	0.5
HORT - Other vegetation control areas such as re-vegetation or erosion control plantings	light brown	0.5
FEATURES - Furniture - types such as tables, seating, refuse containers, drinking fountains, barbeque equipment	black	0.25
FEATURES - Playground / play equipment, including fall surface areas and supplier information	dark red	0.25
FEATURES - Signage – type, material, qty, description / message	black	0.25
FEATURES - Fencing, gates and barriers or bollards – types, and supplier information	dark blue	0.25
FEATURES - Any works of art – supplier data	black	0.25
FEATURES - Lighting and designation under AS/NZS 1158.3.1, including lighting power supply and ground trenching details, lighting type, quantities, lamp height, bulb types and power ratings	purple	0.25
STRUCTURES - All buildings or structures such as; public toilets, bridges, platforms, wharves/jetties, skate-parks and the like	black	0.25
PAVEMENT - including roadways, car-parks and footpaths/boardwalks	black	0.5
PAVEMENT - Sports hard-courts (for example, tennis, netball)	black	0.5
property/lot boundaries, kerb lines and or edge of seal	grey	0.25
ELECTRICAL – electrical power supply & distribution detail	dark grey	0.25
Abandoned and or removed Reserves & Facilities assets and surface features labelled abandoned or removed.	yellow	0.25
Utilities assets		
UTILITIES - all existing surface features i.e. manholes, valves, hydrants, pump stations, flow meters, cesspits, reservoirs, tanks	refer Utilities as built data specification	
Abandoned and or removed pipe work and surface features labelled abandoned or removed.	refer Utilities as built data specification	
new water features	refer Utilities as-built data specification	
new stormwater features	refer Utilities as-built data specification	
new wastewater features	refer Utilities as-built data specification	

Enlargements to show clearly how new features connect to existing features (if applicable)

The drawing set will include a **title block, legend and an asset summary table** (indicating new, existing and disposed assets) as it may be used for public enquires as well as for checking the electronic data supply.

DRAWING TITLE BLOCK

The title block will include:

- Contract/Sub division Number
- Date Drawn
- Street or Area Location
- Contractors Name
- Scale
- Surveyors Name
- Construction date
- Drawing amendment/issue number
- The words As Built Plans
- Drawing Number
- Drawing sheet size
- North Point/Arrow

DRAWING LEGEND

The Legend will show all symbols and line types used.

DRAWING ASSET SUMMARY TABLE

The Asset Summary table will identify all assets displayed on the drawing, including whether they are new, existing or disposed / for disposal.

3.2 ASPATIAL FILE (ASSET DATA ATTRIBUTES SPREADSHEET)

The Aspatial file is included at appendix A and will be provided electronically in .xls format by request.

An explanation of the Aspatial file attribute spreadsheet column headings is incorporated at Table 3.2 below.

When entering data if there is no information for a particular asset data cell, leave the field blank.

TABLE 3.2 - ATTRIBUTE SPREADSHEET COLUMN HEADING EXPLANATIONS

Column heading	Explanation
Asset Discipline	The asset management system arranges assets in a certain hierarchy. Asset discipline is the hierarchy level above Asset Group
Asset Group	The asset management system arranges assets in a certain hierarchy. Asset Group is the hierarchy level above Asset Type
Asset Type	Asset management system lowest denominator category for describing an asset type. Note that a description of each asset type is provided at Appendix A for clarity
Explanation of the asset type	This is provided to ensure consistency with asset type selection
Asset type code	Unique code assigned for any particular asset type.
Asset description	This is a 50 character free form text field used to describe the asset succinctly
Manufacturer details	Also sub-contractor or supplier details about the supply or construction of the asset
Photo file name	Field to provide the user with a cross reference to the digital photo
Installation date	The date that the asset begins it's lifecycle
As-built plan reference	Field to provide the user with a cross reference to the plan or drawing
Condition rating	A rating given from 1 to 5. 1 = new / excellent. 5 = very poor.
Survey date	Date that the asset attribute data was collected
Datum	For the spatial data - will either be "Moturiki" or "Auckland"
Length (metres)	Length of the asset in metres
Width (metres)	Width of the asset in metres
Height/depth (metres)	Height of the asset in metres
Diameter (metres)	Diameter of the asset in metres
Volume (m3)	Volume of the asset – m3
Area (m2)	Footprint area of the asset – m2
Quantity (each)	Generally only used for low value assets and a single asset ID will suffice for multiple identical assets. For example, picnic tables, litter bins.
Expired Asset ID (if applicable)	Existing site asset information will be provided prior to construction works. This field is used to identify the assets which are disposed of
ASSET NOTES	Free form text field used to capture any other information relating to the asset, not otherwise stated by the other attributes.

3.3 SPATIAL FILE (ASSET GIS COORDINATES SPREADSHEET)

Asset GIS coordinates will be captured either as a point, line or polygon feature. **Table 3.3 states which coordinate feature type to use for each asset type.**

Table 3.4 provides an example of the asset spatial data input file required.

Note that all Utility (generally underground) services asset spatial data must be captured in accordance with the Utilities as-built data specification document.

POINT FEATURES:

- Point features only require 1 set of co-ordinates.

LINE FEATURES:

- Line features requires at least 2 sets of co-ordinates.
- Straight lines - include any point that the line feature has a change in direction.
- Curved lines - the distance between points should not exceed 1m.
- Underground lines - start and end co-ordinates should be repeated for any corresponding surface point feature at each end of the line.

POLYGON FEATURES:

- Polygon features requires at least 3 sets of co-ordinates.
- The last set of coordinates must be the same as the first set of coordinates.

The coordinates must be in NZTM 2000 with levels based on the Moturiki VD 1953 Datum.

Within the WBOPDC region there are two datum's in operation 1) Moturiki VD 1953 and 2) Auckland Datum 1946 - Basically the cut-off point is at Apata (near Katikati) where a benchmark there (BC 33) has levels shown in both datum's.

If the Auckland Datum 1946 is used this will be converted to the Moturiki VD 1953 equivalent.

Asset type codes used for a feature will be applied to the as-built plan, spatial and aspatial files.

Existing feature Asset type codes will begin with an "ex". e.g. ex BAV ("existing Toilets – very basic").

TABLE 3.3 - ASSET HIERARCHY & GIS FEATURE TYPES

Asset Discipline	Asset Group	Asset Type	Asset Type code	GIS feature type
Hort	Grassed Amenity	Athletic Track	HAA	polygon
Hort	Grassed Amenity	Grazing Land	HAG	polygon
Hort	Grassed Amenity	Recreation	HAR	polygon
Hort	Grassed Amenity	Sports	HAS	polygon
Hort	Grassed Amenity	Weed Control	HAW	polygon
Hort	Trees	Amenity	HTA	point
Hort	Trees	Native Bush	HTB	polygon
Hort	Trees	Plantation	HTT	polygon
Hort	Trees	Protected	HTP	point
Hort	Trees	Tree Hedge	HTH	line
Features	Access	Ramp - Beach	FAR	point
Features	Access	Steps - Concrete	FAC	point
Features	Access	Steps - Other	FAO	point
Features	Access	Steps - Sand Ladder	FAL	point
Features	Access	Steps - Wooden	FAW	point
Features	ART - Open Air	Boulder - engraved	FABE	point
Features	Barriers	Bollards - Large 200dia	FIL	line
Features	Barriers	Bollards - Small 140dia	FIS	line
Features	Boardwalk	Boardwalk	FFBW	line
Features	Gates	Decorative	FGY	point
Features	Gates	Gate - Pipe	FGP	point
Features	Gates	Gate-pedestrian	FGG	point
Features	Lights	Floodlight - Double	FLD	point
Features	Lights	Floodlight - Quadruple	FLQ	point
Features	Lights	Floodlight - Single	FLS	point
Features	Lights	Floodlight - Triple	FLT	point
Features	Play Equipment	Other	FQO	point
Features	Play Equipment	Other - Coastal	FQOC	point
Features	Play Equipment	Seesaw	FQS	point
Features	Play Equipment	Seesaw - Coastal	FQSC	point
Features	Play Equipment	Slides	FQL	point
Features	Play Equipment	Slides - Coastal	FQLC	point
Features	Play Equipment	Swings	FQW	point
Features	Play Equipment	Swings - Coastal	FQWC	point
Features	Playgrounds	Adventure - Coastal Large	FPCL	point
Features	Playgrounds	Adventure - Coastal Medium	FPCM	point
Features	Playgrounds	Adventure - Coastal Small	FPCS	point
Features	Playgrounds	Adventure - Large	FPL	point
Features	Playgrounds	Adventure - Medium	FPM	point
Features	Playgrounds	Adventure - Small	FPS	point
Features	Playgrounds	Golf - Mini	FPG	point
Features	Playgrounds	Surface - Bark	FPB	polygon
Features	Playgrounds	Surface - Natural	FPN	polygon
Features	Playgrounds	Surface - Rubber	FPR	polygon
Features	Ponds	Artificial	FDA	polygon
Features	Ponds	Natural	FDN	polygon

Asset Discipline	Asset Group	Asset Type	Asset Type code	GIS feature type
Features	Refuse	Rubbish Bin - B FEL Round Colonial	FRB	point
Features	Refuse	Rubbish Bin - C 209 Ltr Drum / Lid	FRC	point
Features	Refuse	Rubbish Bin - D Excell design	FRD	point
Features	Refuse	Rubbish Bin - FEL Tilt SS R100	FRF	point
Features	Refuse	Wheelie Bin - Plastic	FRP	point
Features	Seating	Bench - Curved (Haiku Park Style)	FSC	point
Features	Seating	Bench - FEL Rose Garden style	FSR	point
Features	Seating	Bench - Special Type	FSU	point
Features	Seating	Bench - Steel/Timber	FSS	point
Features	Seating	Bench - Timber	FST	point
Features	Signs	ARTISTIC	FNZ	point
Features	Signs	Board - Routed	FNB	point
Features	Signs	Marine Information	FNM	point
Features	Signs	Post - Routed	FNP	point
Features	Signs	Sign - Information Kiosk	FNC	point
Features	Signs	Sign Board	FNS	point
Features	Signs	Traffic / road sign	FNT	point
Features	Sports Equipment	Basketball Hoop	FEH	point
Features	Sports Equipment	Goals - Soccer	FEG	point
Features	Sports Equipment	Net - Cricket Practice	FEN	point
Features	Sports Equipment	Wicket - Cricket	FEW	point
Features	Tables	Steel - Pedestal	FTT	point
Features	Tables	Timber - Picnic	FTP	point
Features	Water Features	Fountain - Display	FWF	point
Features	Water Features	Fountain - Drinking	FWD	point
Features	Water Features	Water Tap	FWT	point
Features	Whole Site	Resource Consent	FZR	N/A
Features	Whole Site	Whole Site	FZZ	N/A
Structures	Ablutions	Toilets - Basic	BAB	polygon
Structures	Ablutions	Toilets - High	BAH	polygon
Structures	Ablutions	Toilets - Medium	BAM	polygon
Structures	Ablutions	Toilets - Very Basic	BAV	point
Structures	Bridges	Pedestrian - Major	BBJ	line
Structures	Bridges	Pedestrian - Minor	BBP	line
Structures	Monument/Statues	Artistic	BMA	point
Structures	Monument/Statues	Remembrance	BMR	point
Structures	Other Structures	Access Ladder	BZL	point
Structures	Other Structures	Access Stairway	BZS	line
Structures	Other Structures	Other	BZZ	point
Structures	Other Structures	Skate Ramp	BZK	polygon
Structures	Other Structures	Swimming Pool	BZW	polygon
Structures	Other Structures	Veranda/Deck	BZV	polygon
Structures	Platforms	Viewing Area	BFV	polygon
Structures	Public buildings	Clubroom/Community	BPC	polygon
Structures	Public buildings	Hall	BPH	polygon
Structures	Retaining Walls	Wall 1.5m to 3.0m high	BRH	line
Structures	Retaining Walls	Wall under 1.5m high	BRL	line
Structures	Shelter/Pergolas	Barbeque Shelter	BSQ	point

Asset Discipline	Asset Group	Asset Type	Asset Type code	GIS feature type
Structures	Shelter/Pergolas	Bus Stop	BSB	point
Structures	Shelter/Pergolas	Shelter/Shade	BSS	point
Marine	Boat Ramps	Ferry Landing	MBF	polygon
Marine	Boat Ramps	Ramp-Multiple Lanes	MBM	polygon
Marine	Boat Ramps	Ramp-Single Lane	MBS	polygon
Marine	Boat Ramps	Unformed Access	MBU	polygon
Marine	Jetty/Wharf	Gangway	MJG	point
Marine	Jetty/Wharf	Jetty	MJJ	point
Marine	Jetty/Wharf	Wharf	MJW	point
Marine	Pontoons	Concrete	MPC	point
Marine	Pontoons	Plastic/Polystyrene	MPP	point
Marine	Seawall	Other	MSZ	line
Marine	Seawall	Rock-concreted /grouted	MSC	line
Marine	Seawall	Rock-Gabions	MSG	line
Marine	Seawall	Rock-Loose	MSL	line
Marine	Seawall	Sand Pillow	MSP	line
Marine	Seawall	Sand tube	MSU	line
Marine	Seawall	Timber	MST	line
Pavement	Carpark	AC SURFACE	PCA	polygon
Pavement	Carpark	Cobblestones	PCB	polygon
Pavement	Carpark	Concrete Kerb & Channel	PCK	Line
Pavement	Carpark	Concrete Nib Kerb	PCN	Line
Pavement	Carpark	Concrete surface	PCT	polygon
Pavement	Carpark	CS SURFACE	PCC	polygon
Pavement	Carpark	Speed hump (judder bar)	PCH	Line
Pavement	Carpark	Unsealed Surface	PCU	polygon
Pavement	Carpark	WHOLE CARPARK	PCW	N/A
Pavement	Hardstand	Cobblestones	PHC	polygon
Pavement	Hardstand	Pad - Concrete	PHP	polygon
Pavement	Path	Surfaced	PPS	polygon
Pavement	Path	Unsurfaced	PPU	polygon
Pavement	Recreation Area	Hardcourt - Foundation	PSF	N/A
Pavement	Recreation Area	Hardcourt - Surface (Concrete)	PSC	polygon
Pavement	Recreation Area	Hardcourt - Surface (Multiuse asphalt)	PSS	polygon
Pavement	Recreation Area	Hardcourt - Surface (Netball asphalt)	PSN	polygon
Pavement	Recreation Area	Hardcourt - Surface (Tennis asphalt)	PST	polygon
Pavement	Recreation Area	Hardcourt - Surface synthetic grass	PSG	polygon
Pavement	Recreation Area	Loose Court	PSL	polygon
Pavement	Roadway	AC SURFACE	PRA	polygon
Pavement	Roadway	Cobblestones	PRB	polygon
Pavement	Roadway	Concrete Kerb & Channel	PRK	Line
Pavement	Roadway	Concrete Nib Kerb	PRN	Line
Pavement	Roadway	Concrete surface	PRT	polygon
Pavement	Roadway	CS SURFACE	PRC	polygon
Pavement	Roadway	Speed hump (judder bar)	PRH	Line

Asset Discipline	Asset Group	Asset Type	Asset Type code	GIS feature type
Pavement	Roadway	Unsealed Surface	PRU	polygon
Pavement	Roadway	WHOLE ROADWAY	PRW	N/A
Drain	Culvert	Culvert - Pipe	Utilities as-built data specification	Utilities as-built data specification
Drain	Inlet / Outlet	Cesspit - Double	Utilities as-built data specification	Utilities as-built data specification
Drain	Inlet / Outlet	Cesspit - Single	Utilities as-built data specification	Utilities as-built data specification
Drain	Inlet / Outlet	Inlet	Utilities as-built data specification	Utilities as-built data specification
Drain	Inlet / Outlet	Outlet	Utilities as-built data specification	Utilities as-built data specification
Drain	Inlet / Outlet	Soakhole	Utilities as-built data specification	Utilities as-built data specification
Drain	Open Drain	Natural Channel	Utilities as-built data specification	Utilities as-built data specification
Drain	Open Drain	Swale	Utilities as-built data specification	Utilities as-built data specification
Drain	Stormwater Line	Manhole	Utilities as-built data specification	Utilities as-built data specification
Drain	Stormwater Line	Stormwater Main	Utilities as-built data specification	Utilities as-built data specification
Sewer	On Site Effluent	Advanced System	SEA	point
Sewer	On Site Effluent	Standard Septic Tank	SES	point
Sewer	On Site Effluent	Holding Tank	SEH	point
Sewer	Reticulation	Sewerage Service Line	Utilities as-built data specification	Utilities as-built data specification
Sewer	Reticulation	Pump Station	Utilities as-built data specification	Utilities as-built data specification
Water	Reticulation	Domestic Line	WRD	line
Water	Reticulation	Irrigation system	WRI	point
Water	Water Storage	Water Tank	WST	point
Water	Reticulation	Watermain	Utilities as-built data specification	Utilities as-built data specification

TABLE 3.4 – SPATIAL DATA INPUT FILE (EXAMPLE)

Asset type code + sequential number	→	HTP01					
Points	x	→	1852765.94				
	y	→	5837992.98				
	z	→	3.52				
Asset type code + sequential number	→	HTH01					
Lines	x	→	1852765.94	1852764.64	1852762.07		
	y	→	5837992.98	5837992.67	5837989.64		
	z	→	0	0	0	0	
Asset type code + sequential number	→	HTB01					
Polygon	x	→	1852759.58	1852764.64	1852762.07	1852759.58	
	y	→	5837987.14	5837992.67	5837989.64	5837987.14	
	z	→	0	0	0	0	

For a polygon feature, green shaded areas show start and end coordinates the same.

4. MEANS OF COMPLIANCE

Certification by a Chartered Professional Engineer Licence Cadastral Surveyor or their Authorised Representative that the information supplied on the as built plans is accurate. As Built plans are to be prepared or produce by the office of the Chartered Professional Engineer or Licence Cadastral Surveyor. The form for Certification is shown on the Appendix B of the specification booklet.

5. MANDATORY FIELDS

All Features

Aspatial data:

Asset type, Asset type code, asset description (< 50 characters), Manufacturer/supplier or sub-contractor, Photo file name, installation / construction date, Install/construction Date, as-built plan reference, condition rating, Survey date, Datum and quantity information.

Spatial data:

Asset type code + sequential number, X, Y, coordinates (as per example at Table 3.4)

APPENDIX A – ASPATIAL DATA ATTRIBUTE SPREADSHEET

APPENDIX B – CERTIFICATE FOR AS BUILT DRAWING

**CERTIFICATE FOR
AS BUILT DRAWINGS**

I, _____ Chartered Professional Engineer/ Licence
Cadastral Surveyor (cross out not applicable) hereby certify that the:

Earthwork
Public Access-ways
Right of Way
Water
Stormwater
Other Services

Roading
Reserve Development
Common Access Lots
Wastewater
Solid-waste

are correctly shown on the attached plans /reference numbers _____, prepared by
subdivision at the property specified below.

I hereby certify that the “as-built” measurements and information as shown hereon were made under my
Supervision or as noted and are correct to the best of my knowledge and belief.

I also understand that any inaccuracy of data supplied may require additional input from Council and their Asset
Manager and attract additional charges to the Consent Holder.

Property Description/Title: _____

Address of Property: _____

Chartered Professional Engineer/ Licence Cadastral Surveyor

Registration Number

Date: _____

APPENDIX C – AS BUILT CHECK SHEET

(This sheet is to accompany the "As built" contract document at all times)

Contract Name: _____	Contract Number: _____
----------------------	------------------------

Principal Contractor: (Name)

Project Engineers or Surveyors (Company name)

Contact person _____

Contact Person: _____

Contact details: _____

Contact details: _____

Sub-divisional As Built Plan data received at WBOPDC by Principal Administrative Officer

Sign _____ Date: _____

Format	Hard Copy	Original	Capitalisation of Asset Asset Capitalised? YES or NO Date: Officer (Name) Officer: (Contact Tel No :) :)
	Electronic Copy	Csv Xls Di dxf Pdf	

As Built Plan data received by Project Engineer

Sign _____ Date: _____

Format	Hard Copy	Original	Capitalisation of Asset Asset Capitalised? YES or NO Date: Officer (Name) Officer: (Contact Tel No:) No:)
	Electronic Copy	csv xls di dxf pdf	

Information Flow Processes:

Flow Processes	Comment	Time Frame required
Data Forwarded to Reserves & Facilities - ISO		
Date Received _____ Signed: _____		2 working days
Date Sent: _____ Signed: _____		
Data Returned to WBOPDC for entering onto GIS/AMS		
Date Received: _____ Signed: _____		12 working days
Date Sent: _____ Signed: _____		
Data Returned to Reserves & Facilities-ISO for checking and signing off from WBOPDC		
Date Received: _____ Signed _____		5 working days
Date Sent _____ Signed _____		
As Built plan and other associated information return to Principal Administrative Officer or Project Engineer from Reserves & Facilities – ISO		
Date Received: _____ Signed _____		For Safe Keeping