



Meeting Host



Manaaki Whenua
Landcare Research

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Land Information
New Zealand
Toitū te whenua

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Where the Rubber Hits the Road: Rivers in NZ A Local Government Perspective

105th OGC Technical Committee
Palmerston North, New Zealand
Sean Hodges & Adrienne Bonnington
6 December 2017

Introduction

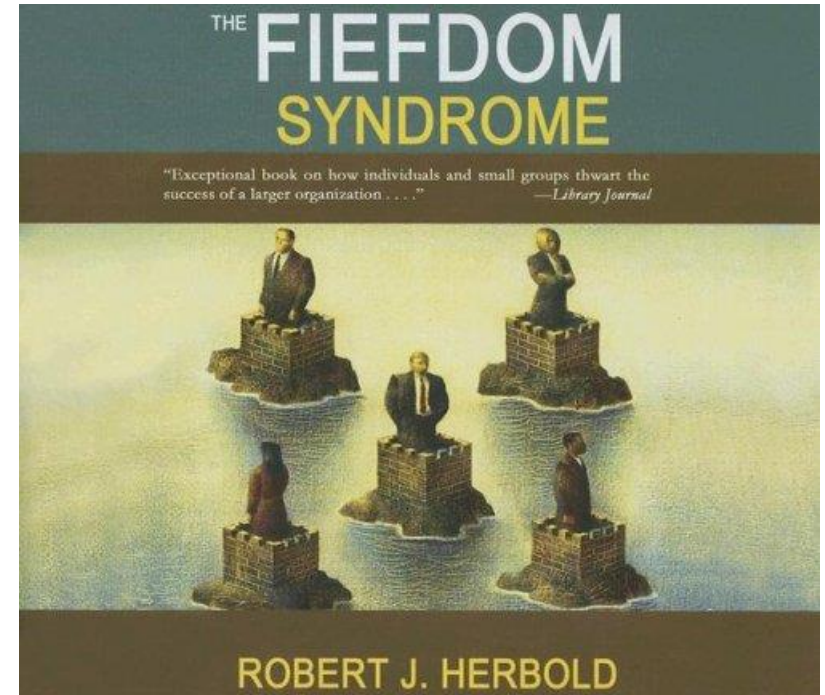


- Regional sector approach
- Pragmatic viewpoint
- Least cost and most standard
- Still hit and miss!
- How to communicate value

LAWA



- Strong governance
- Methods applied removed influence of fiefdoms
- Standard's acting as effective national tools
- No one standard rules

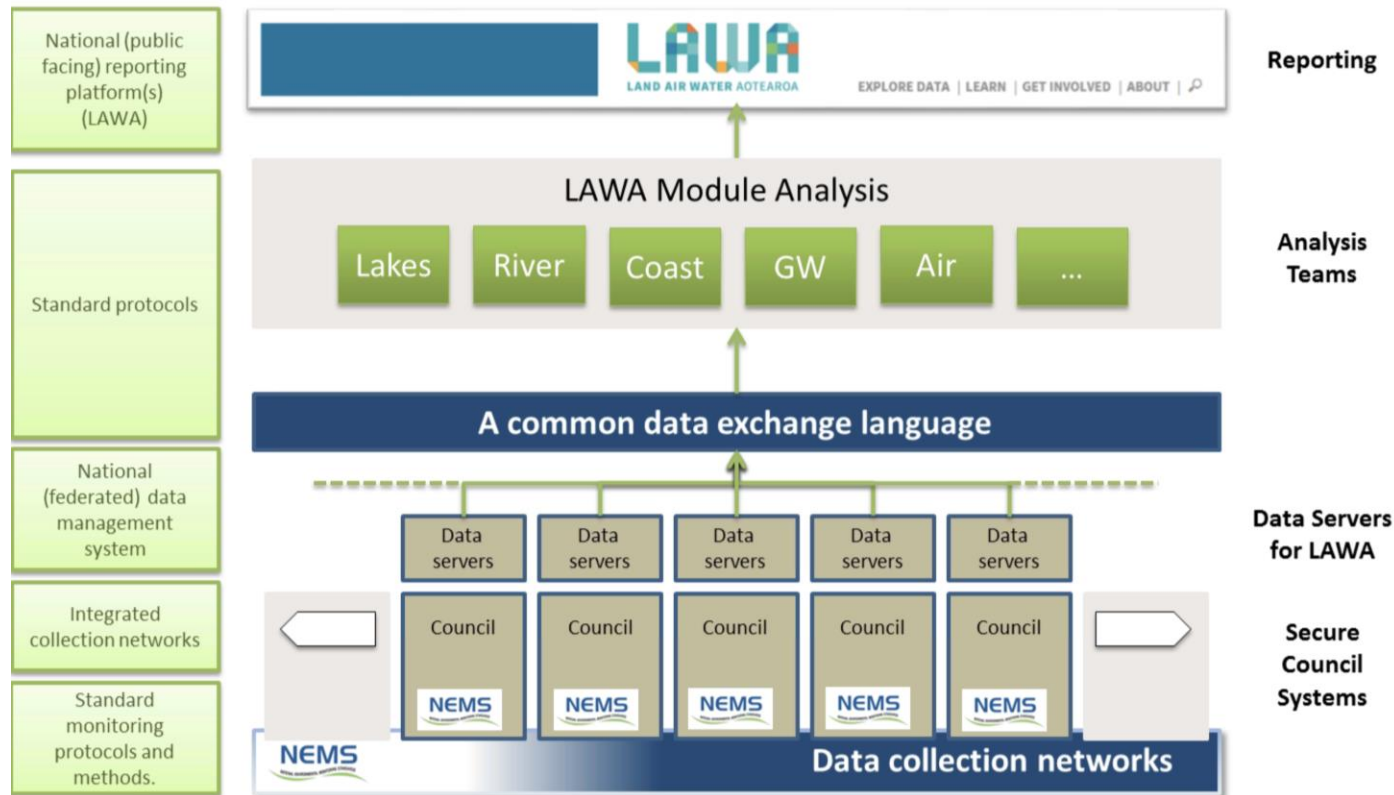


Art sourced from
<https://www.amazon.com/Fiefdom-Syndrome-Robert-J-Herbold/dp/0786177942>

LAWA



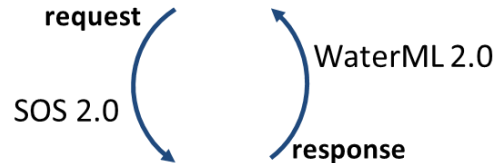
- Conceptual model of how LAWA is brought together





Results/data to LAWA

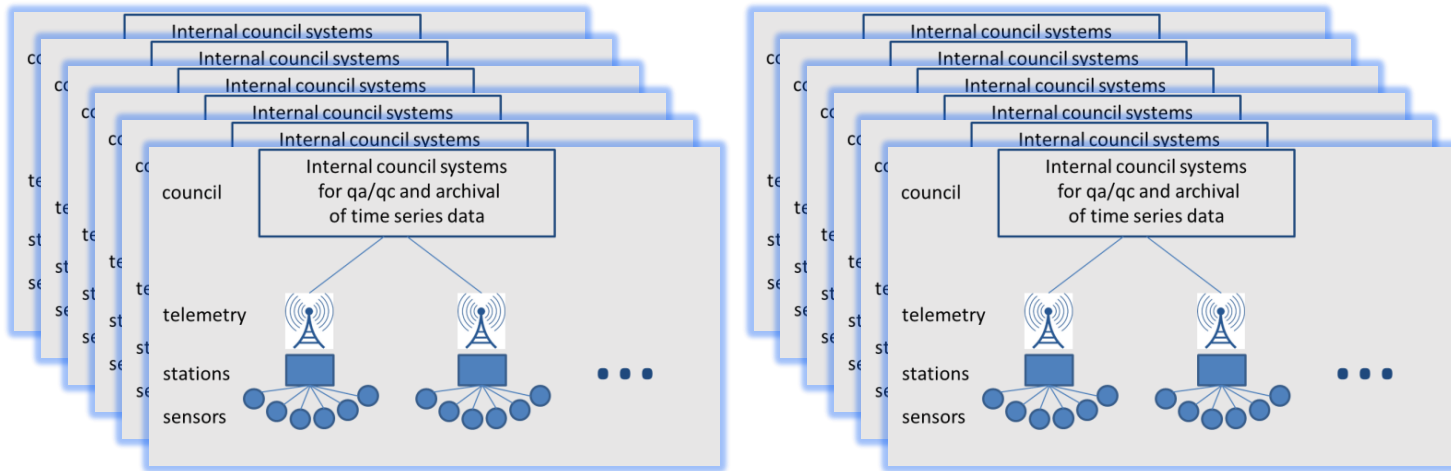
LAWA data analysis



Time-series data server

SOS2 and WaterML2 are internationally-based Standard languages for asking a question to a time-series data server, and for getting the data back

Eg. Hilltop, Kisters, 52North






EXPLORE DATA | LEARN | GET INVOLVED | ABOUT |

LAWA connects you with New Zealand's environment through sharing scientific data

Search for a site near you



Near me now



Or explore topics

KARYN MADDREN
STREAMLAND SUFFOLKS

RIVER OF THE MONTH
The Araparera River - Auckland

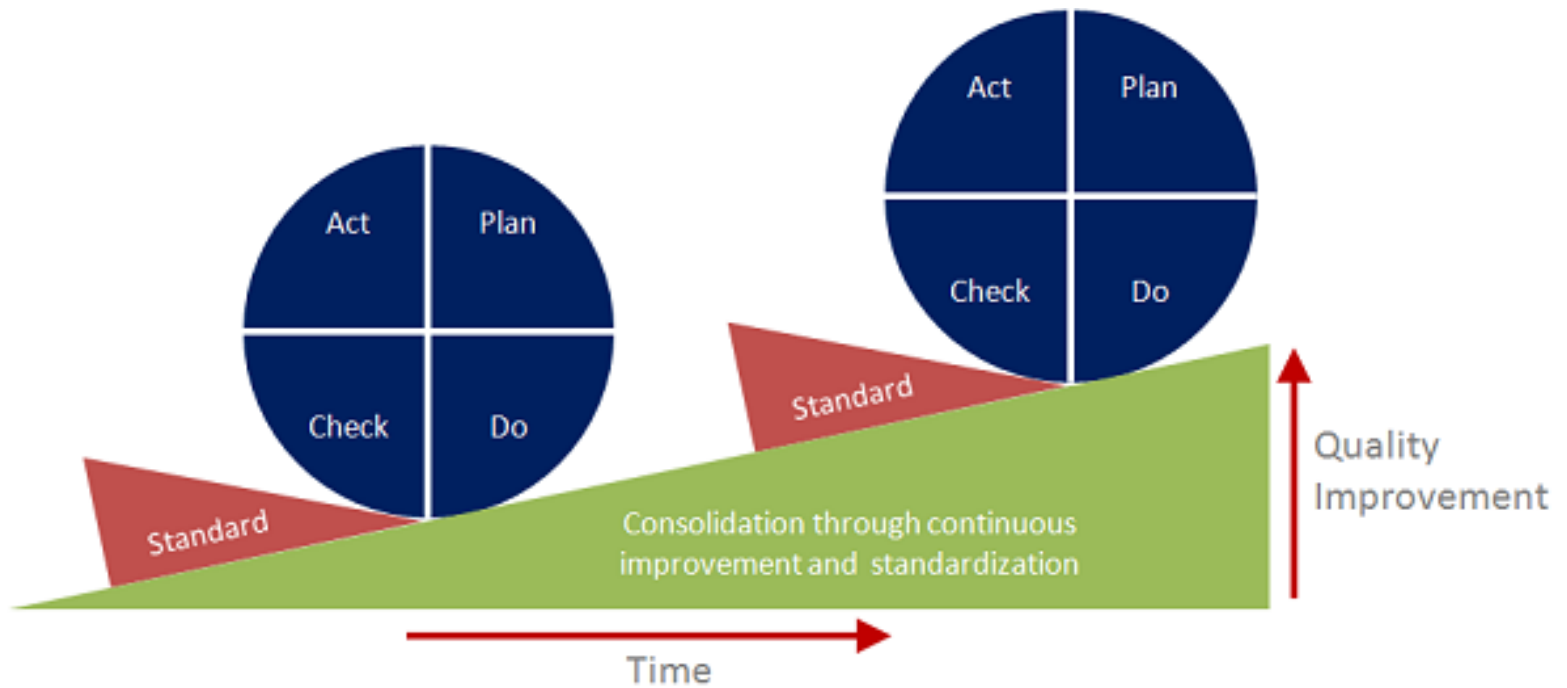
RIVER OF THE MONTH
View our archives

ENEWSLETTER
Signup for the LAWA eNewsletter

WATER CLARITY
What is water clarity?

CONSERVING WATER
Tips to help during summer

LAWA and the Deming cycle

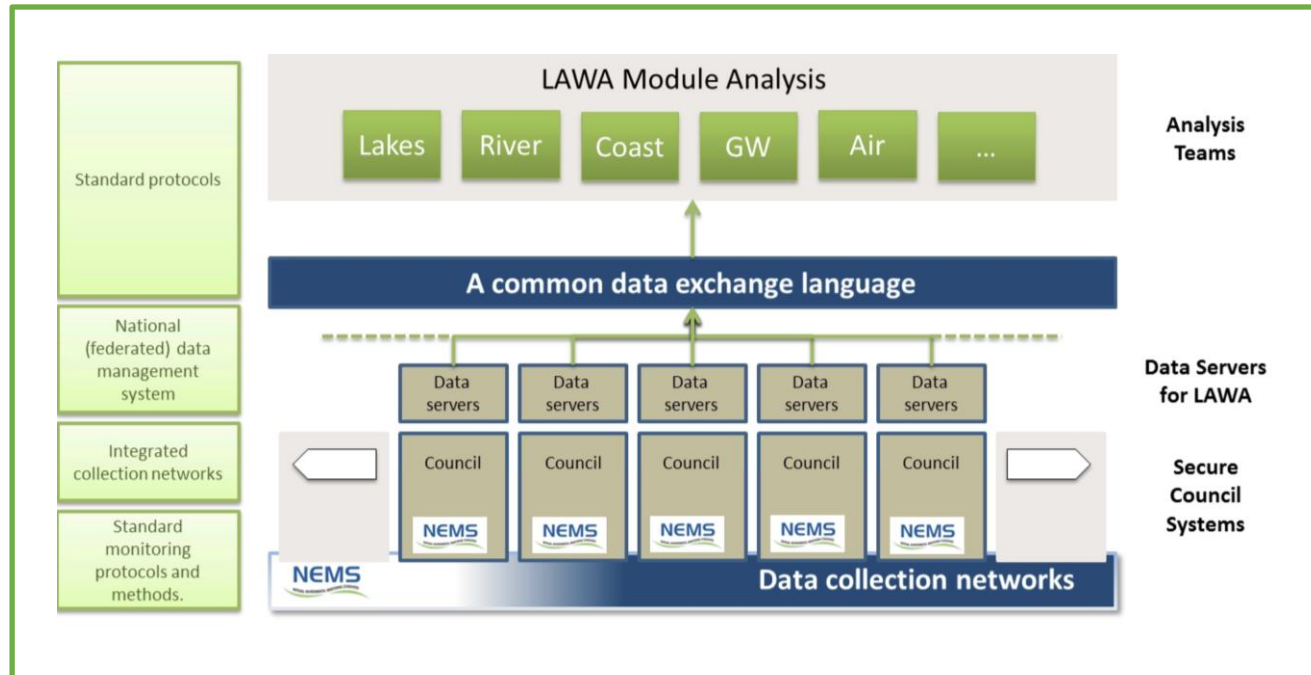


Post-LAWA



- Conceptual model of post-LAWA

Single point of access, irrespective of source



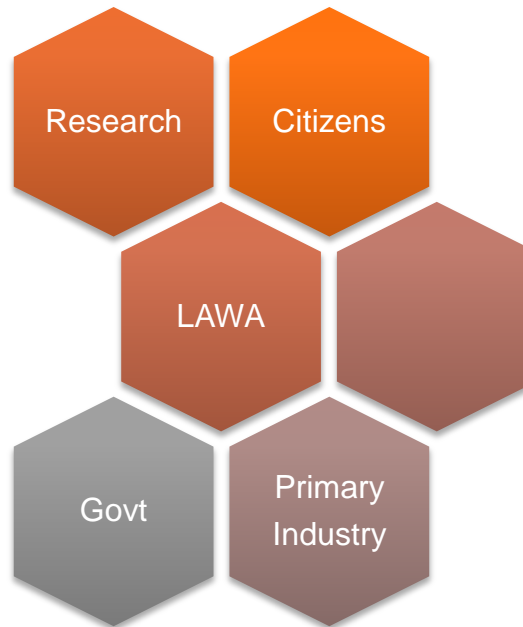
Internal disciplines established

Post-LAWA



- Conceptual model of post-LAWA
- Multiplicity of standards required

Single point of access, irrespective of source





We are. | Regional
LGNZ. | Sector



Environmental Integrated Data Infrastructure (e-IDI)



Objectives:

- Brokering solution to transform disparate datasets
- Underpinned with standards
- Use of existing for common terms
- Data discoverability and accessibility
- Data analysis, query and reuse

Data Sources



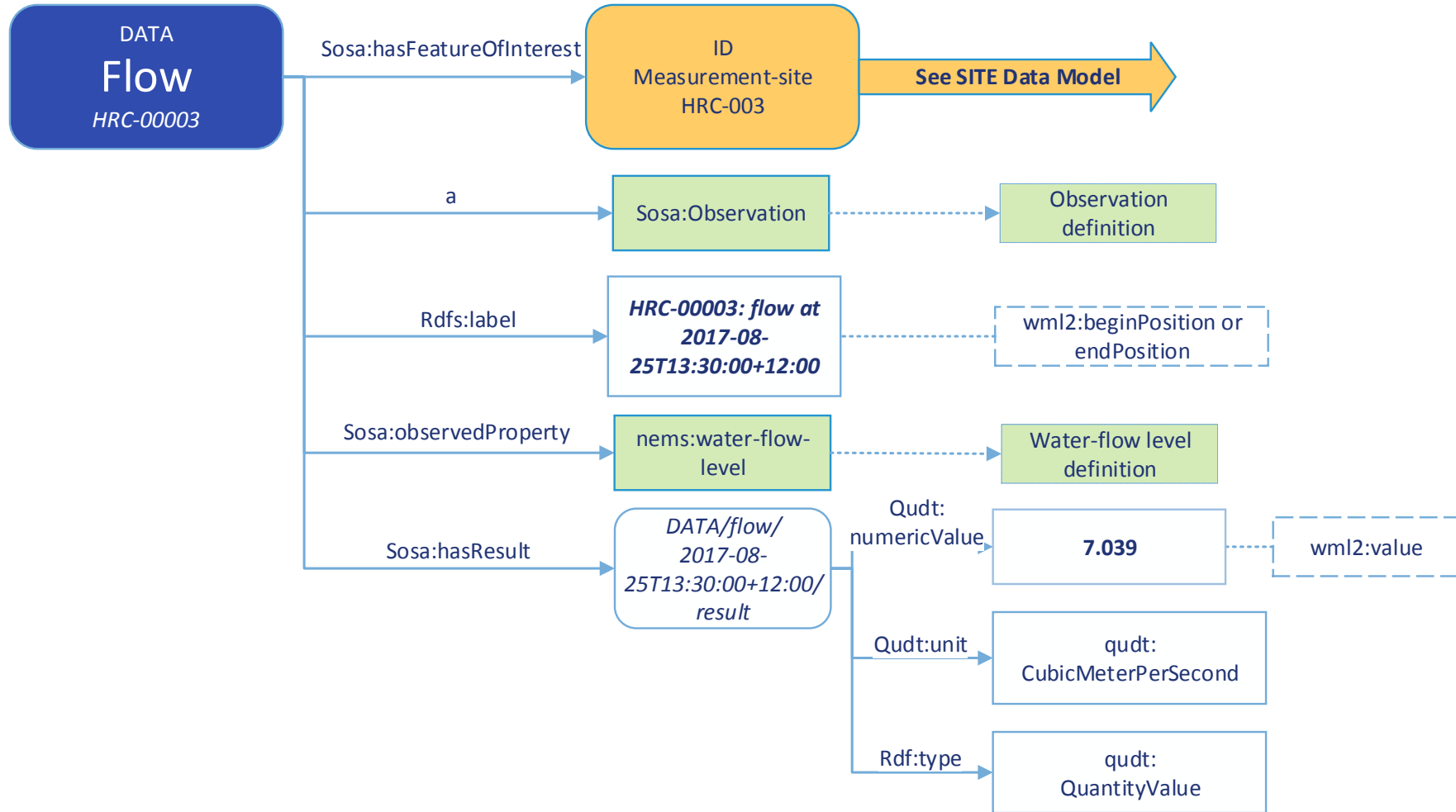
Source	Datasets	Format	Systems
Councils (4)	River Monitoring Sites	WFS	
	River Measurements flow and stage	XML/WML2	Kisters, Hilltop
	Water Management Zones	WFS	
	Metadata	XLS	Excel
Stats NZ	Regions	Shapefile	ESRI
	Meshblocks (census data)	Shapefile	ESRI
MFE	River Environment Classification	CSV	

Standardising Data

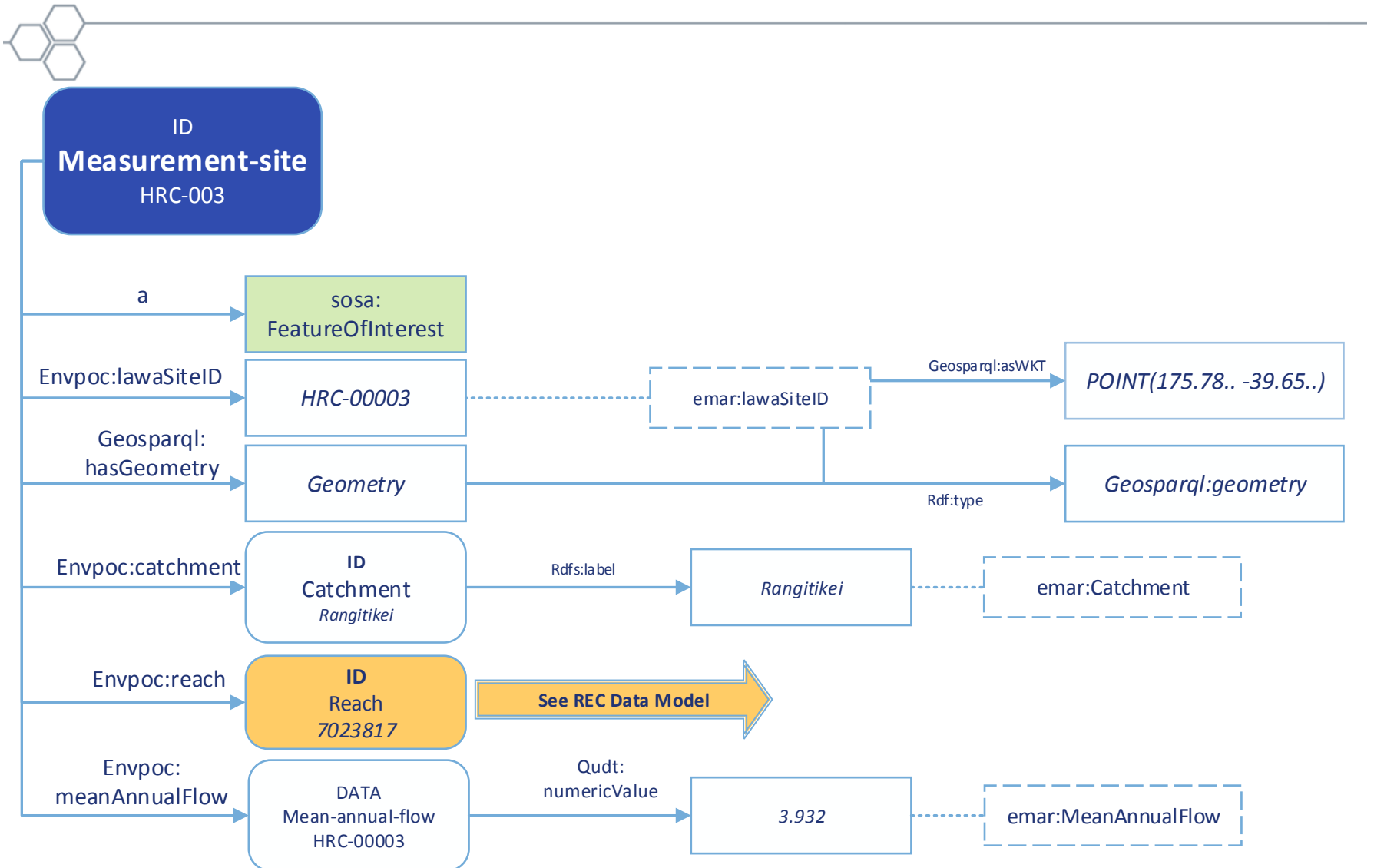


Features	OGC supplied format	ISO Standards	Mapped Vocabularies
Flow & Stage Measurements	SOS WaterML2	19156 Observations & Measurements	SOSA (W3C) QUDT - units of measurement
Monitoring Sites	WFS	[Localised]	NEMS terms Geosparql (W3C) Geo (W3C) Schema.org QUDT

Mapping example: Flow



Mapping example: Sites



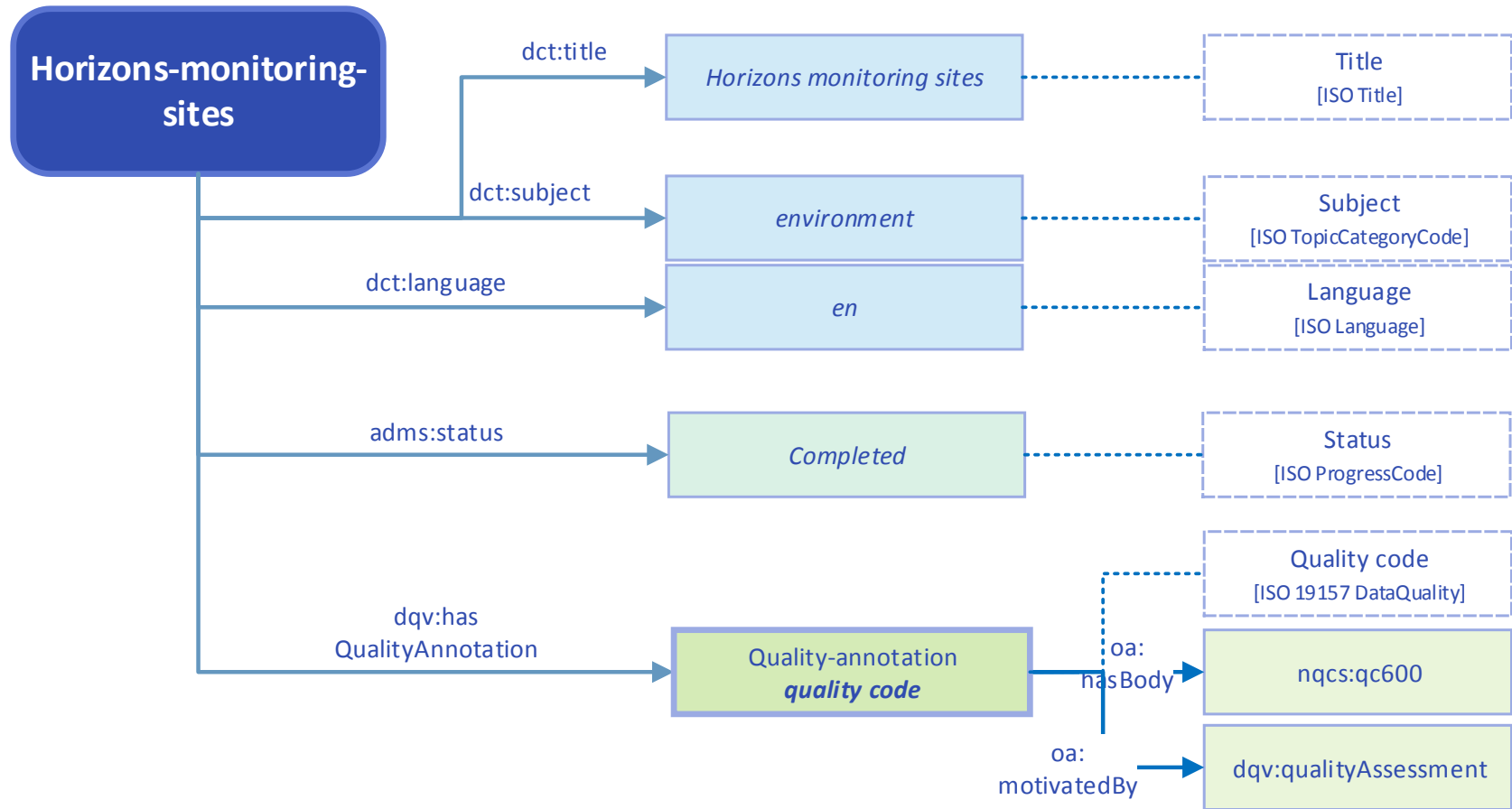
Standardising Metadata



Based on ISO 19115

Dataset	Mapped Vocabularies	Format
Monitoring Sites	Dublin Core PublishMyData terms ADMS DCAT DQV Metadata (CSIRO) VOID	XLS
Flow & Stage Measurements (time series)	Dublin Core PublishMyData VOID DCAT	XML/WML2 Manual input into SaaS

Metadata mapping example



Discoverability & Access



<http://envdatapoc.co.nz/>

NEW ZEALAND
Environmental Integrated Data Infrastructure
Proof Of Concept Beta

Explore ▾ Tools ▾ Search ▾ Help

This site holds regularly updated river flow data from four New Zealand regional councils: Canterbury, Hawke's Bay, Horizons and Waikato. The data can be viewed, explored and downloaded through this [map-based user interface](#).

The data is organised into a series of [datasets](#) and stored as '[Linked Data](#)'. This makes the information available through the Web for use in other software applications. You can also explore it through this website. Just explore the links, or take a look at the [Getting Started page](#).

Read about the [background to this project](#) and please take note of the [Disclaimer](#) section: this site is a proof of concept and not suitable for operational use.

LATEST UPDATES

Horizons stage measurements	28/11/2017
Hawkes Bay flow measurements	28/11/2017
Hawke's Bay stage measurements	28/11/2017
Waikato flow measurements	28/11/2017
Waikato stage measurements	28/11/2017

EXPLORE BY THEME

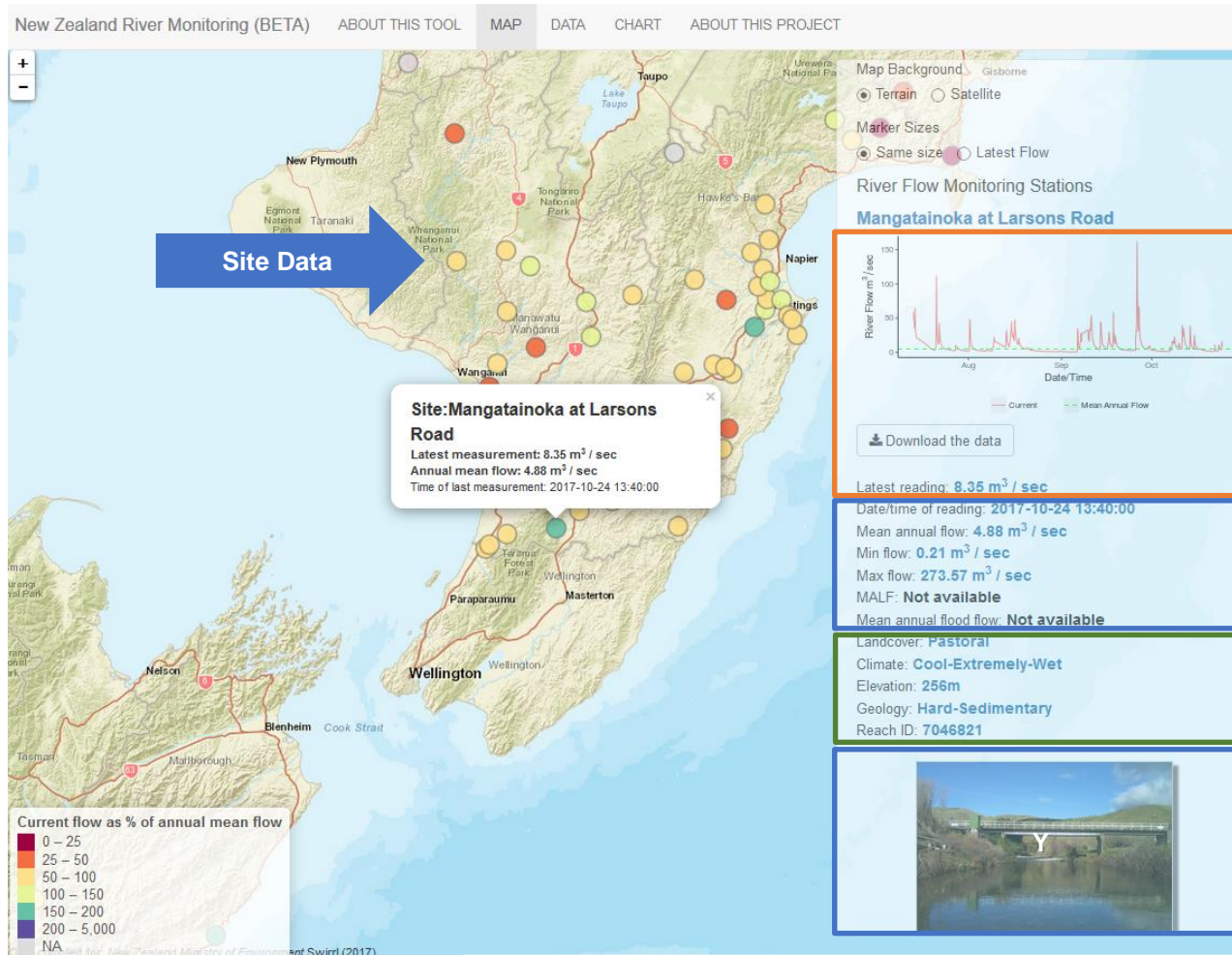
[Flow data](#)
[Geographical information](#)
[Monitoring sites](#)
[Stage data](#)

OR BROWSE ALL OUR DATASETS

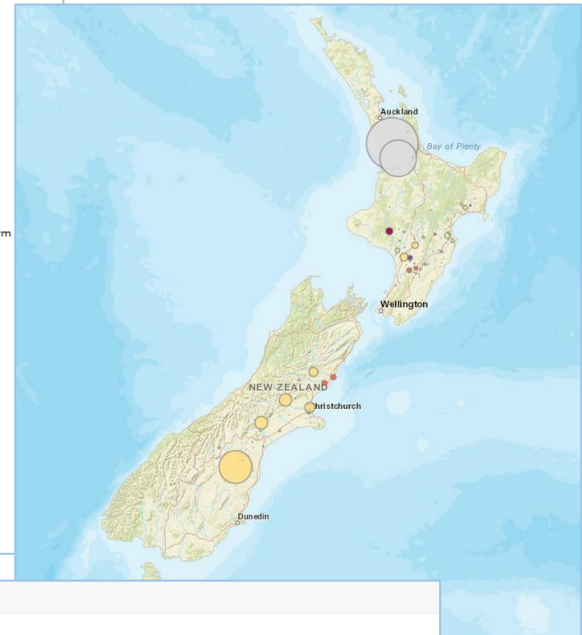
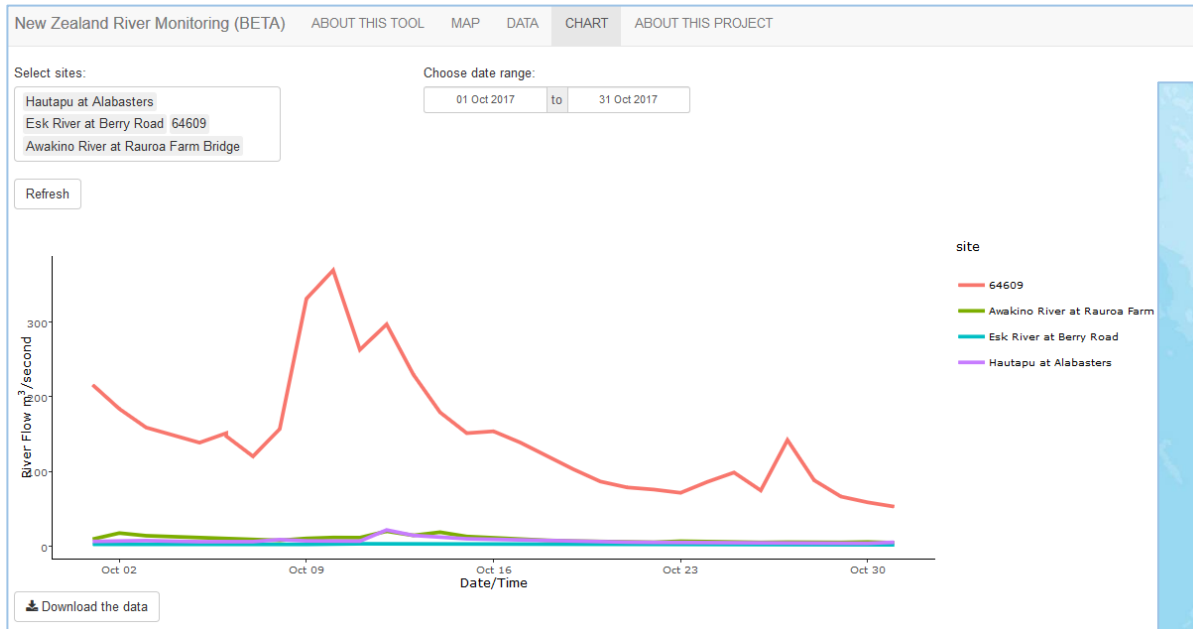
Data Visualisation



https://swirrl.shinyapps.io/NZ_River_Flow/



Visualising Data across Regions



New Zealand River Monitoring (BETA) ABOUT THIS TOOL MAP DATA CHART ABOUT THIS PROJECT

Datatable

Show 10 entries Search: urban

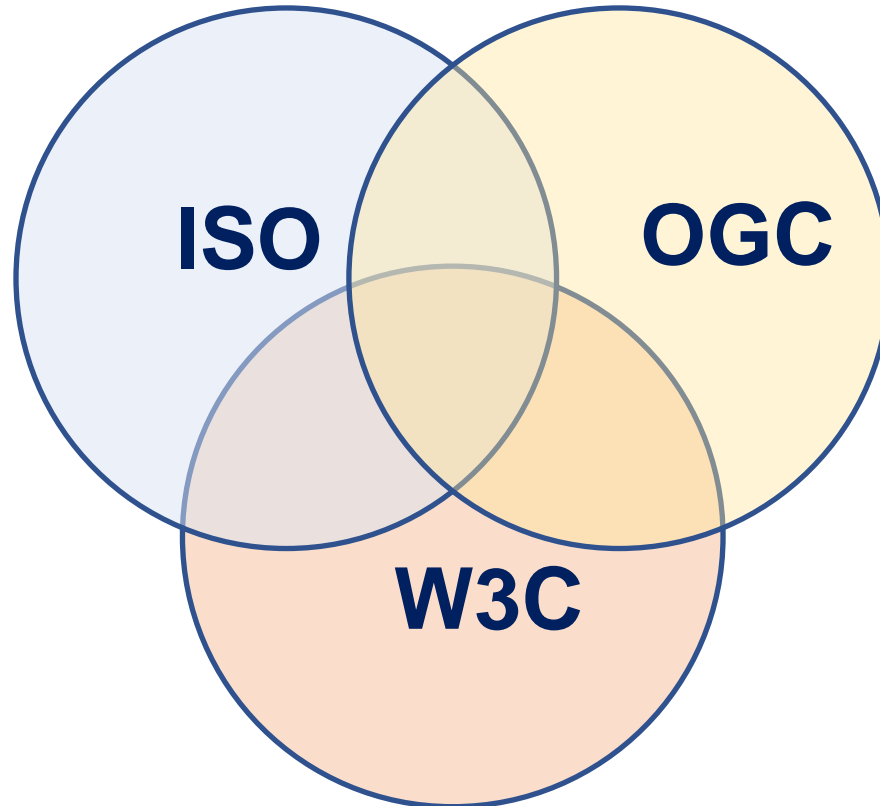
	Site Name	Latest flow reading	Time of latest reading (yyyy-mm-dd hh:mm:ss)	Annual Mean Flow	% Between latest and mean	Elevation	Catchment	Climate	Geology	Landcover	Reach	Lat	Long
43	Irongate Stream at Clarks Weir	0.292	2017-11-03 04:00:00	0.37	78.92		Karamu	Warm-Dry	Alluvium	Urban	8025621	-39.6421693	176.8074351
78	66425	1.522	2017-11-28 00:00:00	1.47	103.26	1.98	6640100	Cool-Dry	Alluvium	Urban	13044123	-43.465579	172.6504524
79	66602	2.501	2017-11-27 00:00:00	1.87	133.46	4.22	6668900	Cool-Dry	Alluvium	Urban	13046232	-43.5298101	172.6342905
80	66612	0.974	2017-11-27 00:00:00	1.04	94.02	3.39	6664000	Cool-Dry	Alluvium	Urban	13047240	-43.5606472	172.6478726

Showing 1 to 4 of 4 entries (filtered from 115 total entries)

Download the data

Previous 1 Next

Implementing Standards...



Is Hard!

Without standards... even harder!



Resources



- Sparql Endpoint:
 - <http://envdatapoc.co.nz/sparql>
- Project information and links
 - <http://www.mfe.govt.nz/node/23788>
- Proof of Concept Services (available until 30 March 2018)
 - PublishMyData:
 - <http://envdatapoc.co.nz>
 - Data Visualisation Application
 - https://swirrl.shinyapps.io/NZ_River_Flow/



Questions?

