



**Land Information  
New Zealand**  
*Toitū te whenua*

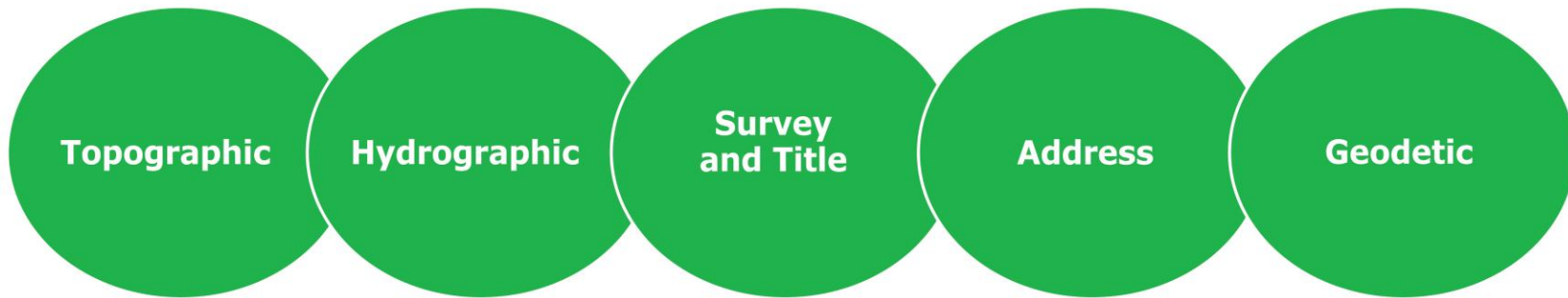
# Using LINZ Data Service Web Services in FME

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13 May 2013



**DATASETS**



**WEB PORTAL**

**WEB SERVICES**

(WMS, WFS, CS-W)



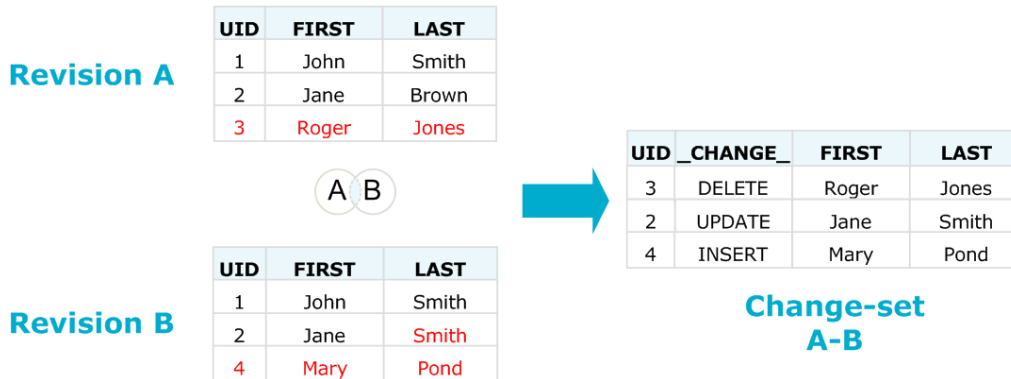
## Web Feature Service access



- > Login to LDS: <http://data.linz.govt.nz>
- > Create an API key:  
<http://data.linz.govt.nz/my/api/>
- > Use <http://wfs.data.linz.govt.nz/<API-KEY>/wfs>  
Or
- > Visit 'Services' tab of each layer to get layer specific WFS URL's

# Web Feature Service Changesets

- Access to just the changed data from one revision to another:



- Provided by extension over WFS service
- Two additional URL date parameters **'to'** and **'from'**

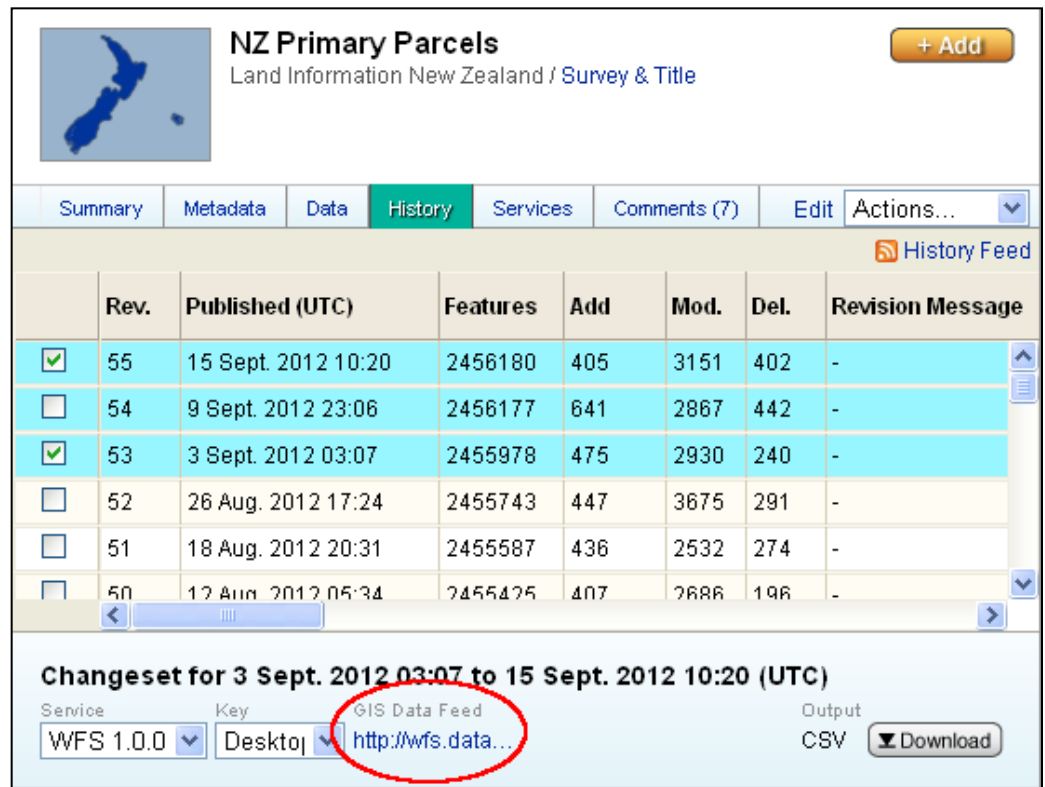
## Changeset availability



- Changesets are available for many of our vector datasets:
  - Property ownership and boundaries
  - Electoral street addressing and roads
  - Authoritative streets and places
  - Crown land
  - Geodetic
- Any layer with a “Primary key: id” in the Data Information panel supports changesets

# Where to find changesets

- > Visit the History tab
- > Choose the revision range you need
- > Choose your WFS settings and API key
- > Copy the WFS URL
- > Paste the URL into your GIS app and connect



NZ Primary Parcels  
Land Information New Zealand / Survey & Title

Summary Metadata Data **History** Services Comments (7) Edit Actions...

History Feed

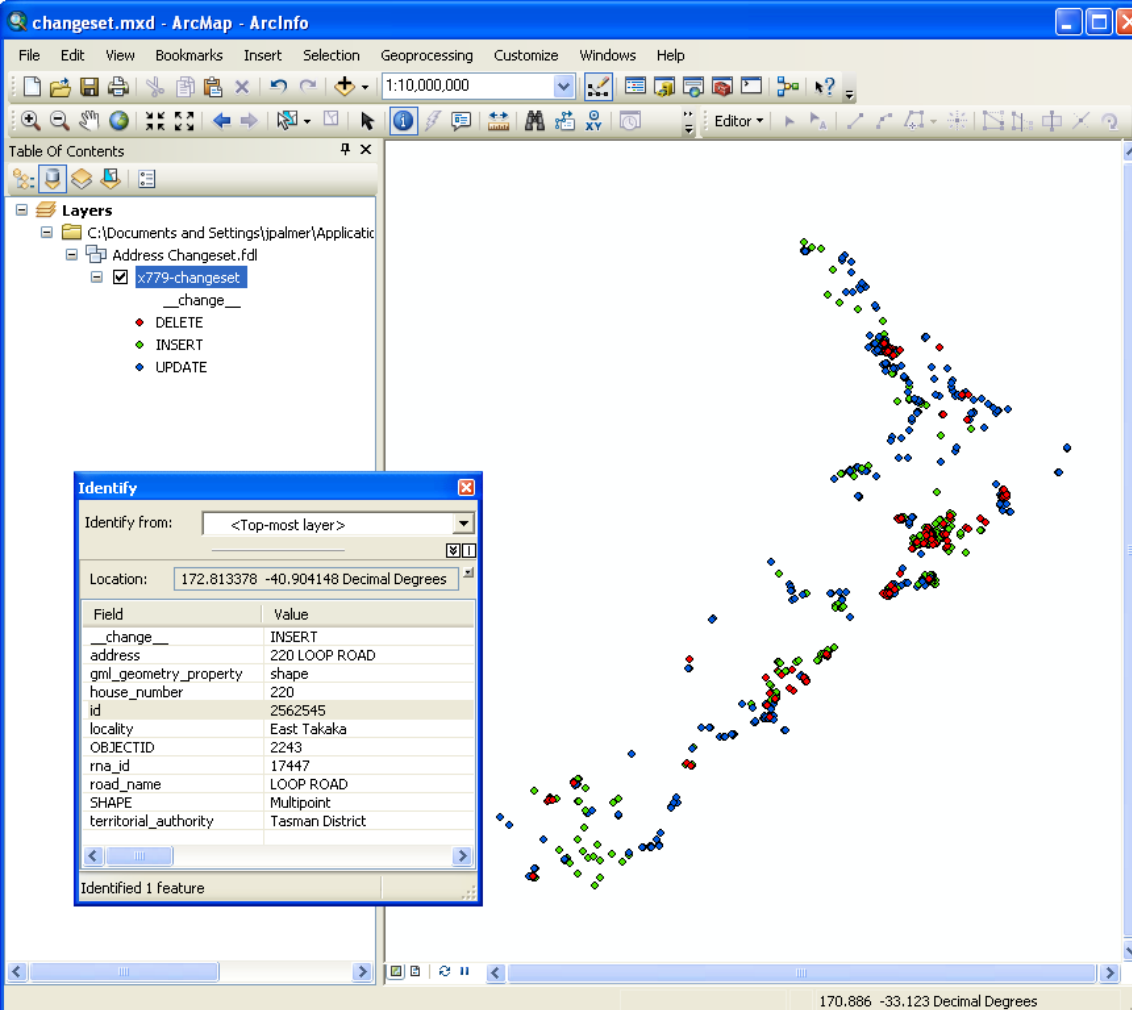
	Rev.	Published (UTC)	Features	Add	Mod.	Del.	Revision Message
<input checked="" type="checkbox"/>	55	15 Sept. 2012 10:20	2456180	405	3151	402	-
<input type="checkbox"/>	54	9 Sept. 2012 23:06	2456177	641	2867	442	-
<input checked="" type="checkbox"/>	53	3 Sept. 2012 03:07	2455978	475	2930	240	-
<input type="checkbox"/>	52	26 Aug. 2012 17:24	2455743	447	3675	291	-
<input type="checkbox"/>	51	18 Aug. 2012 20:31	2455587	436	2532	274	-
<input type="checkbox"/>	50	12 Aug. 2012 05:34	2455425	407	2686	196	-

Changeset for 3 Sept. 2012 03:07 to 15 Sept. 2012 10:20 (UTC)

Service: WFS 1.0.0 Key: Desktop **GIS Data Feed** Output: CSV

<http://wfs.data...> [Download](#)

# LDS Street Address changeset viewed in ArcGIS



changeset.mxd - ArcMap - ArcInfo

File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help

1:10,000,000

Table Of Contents

Layers

- C:\Documents and Settings\jpalmer\AppData\Local\Temp\Address Changeset.fdi
- Address Changeset.fdi
  - x779-changeset
    - \_\_change\_\_
      - DELETE
      - INSERT
      - UPDATE

Identify

Identify from: <Top-most layer>

Location: 172.813378 -40.904148 Decimal Degrees

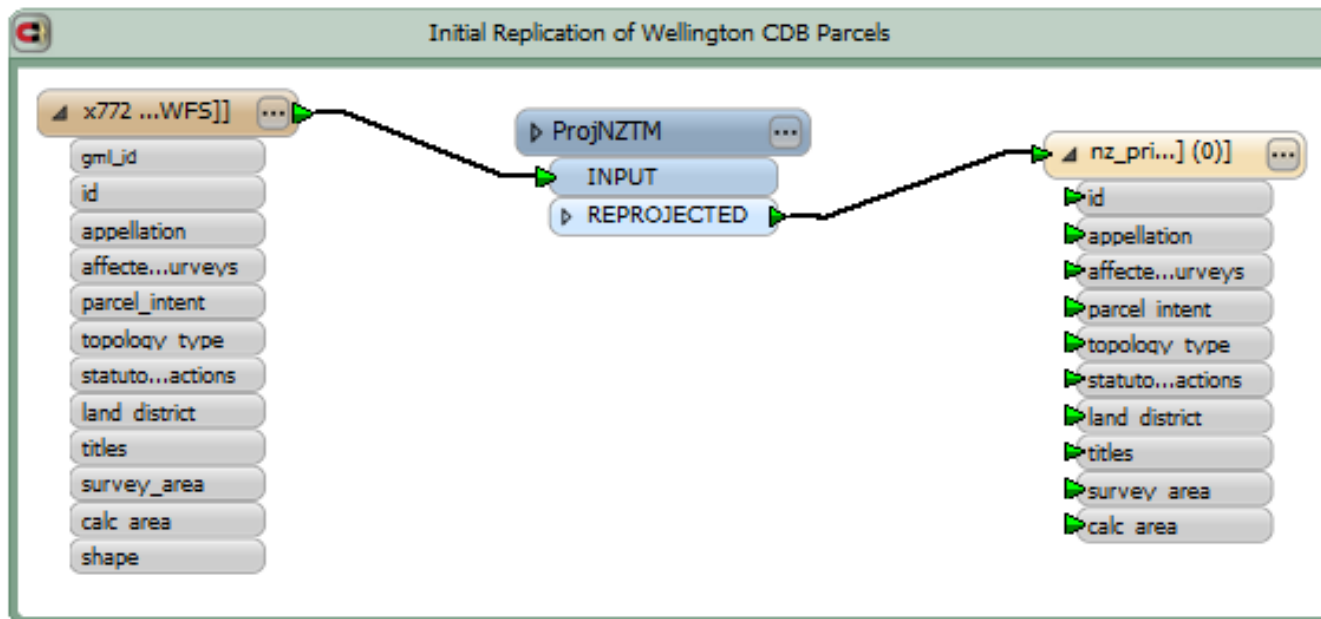
Field	Value
__change__	INSERT
address	220 LOOP ROAD
gml_geometry_property	shape
house_number	220
id	2562545
locality	East Takaka
OBJECTID	2243
rma_id	17447
road_name	LOOP ROAD
SHAPE	Multipoint
territorial_authority	Tasman District

Identified 1 Feature

170.886 -33.123 Decimal Degrees

# LDS Web Feature Service in FME - example

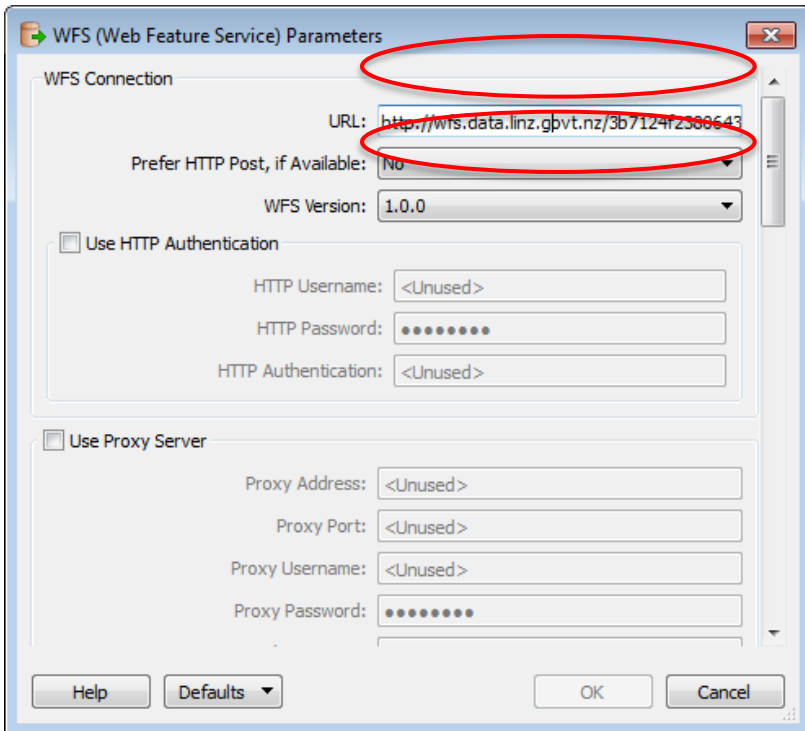
- > Create the initial replication of LDS Primary Parcels by copying the data to Spatialite format noting the revision date/time





# Open your LDS WFS connection

> Set your LDS WFS parameters



WFS (Web Feature Service) Parameters

WFS Connection

URL:

Prefer HTTP Post, if Available:

WFS Version:

Use HTTP Authentication

HTTP Username:

HTTP Password:

HTTP Authentication:

Use Proxy Server

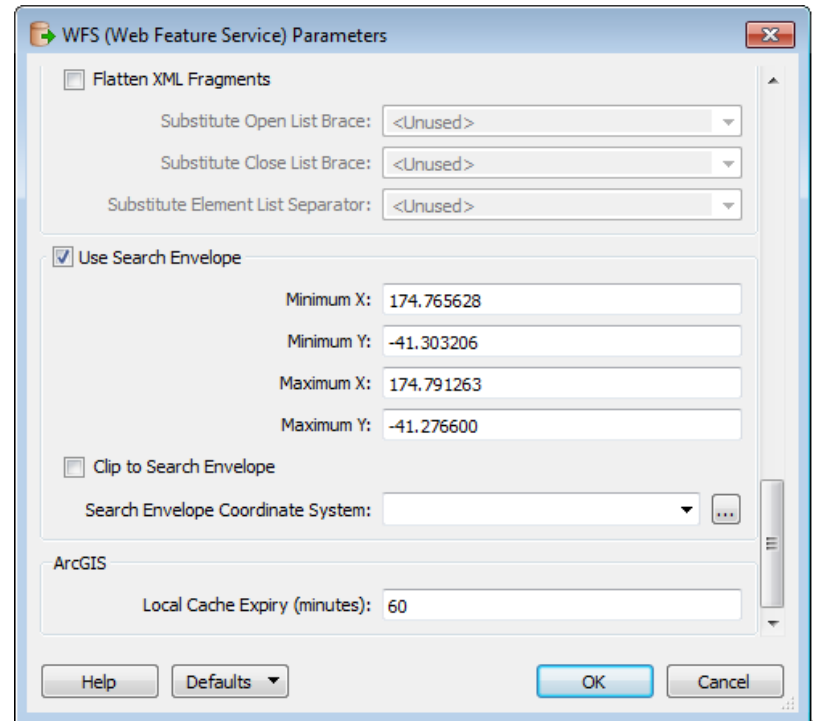
Proxy Address:

Proxy Port:

Proxy Username:

Proxy Password:

Help Defaults OK Cancel



WFS (Web Feature Service) Parameters

Flatten XML Fragments

Substitute Open List Brace:

Substitute Close List Brace:

Substitute Element List Separator:

Use Search Envelope

Minimum X:

Minimum Y:

Maximum X:

Maximum Y:

Clip to Search Envelope

Search Envelope Coordinate System:

ArcGIS

Local Cache Expiry (minutes):

Help Defaults OK Cancel

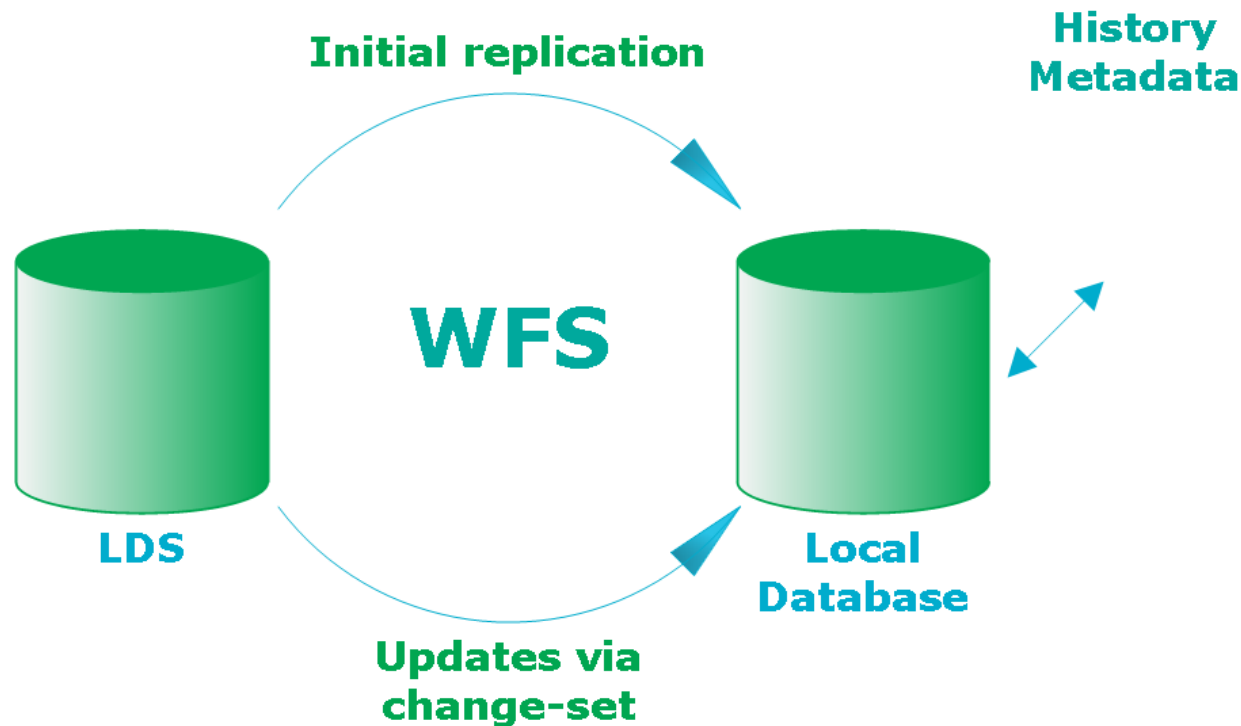
# Web Feature Service gotchas and tips



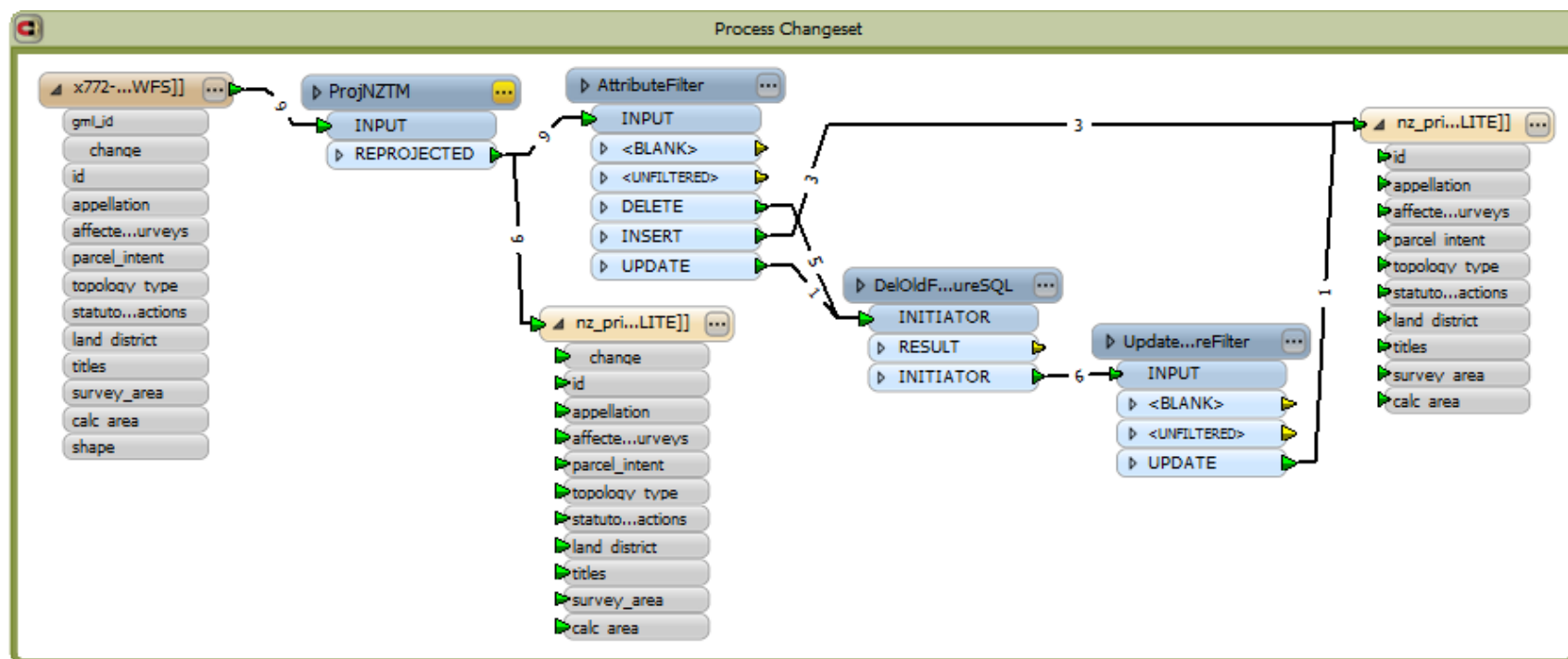
- Coordinate axis order change in WFS 1.1.0. For help visit: <http://www.linz.govt.nz/axis-order>
- FME 2013 improved WFS 1.1.0 support – upgrade!
- Use GML2 output. It's more efficient for the LDS servers to process. URL parameter **OUTPUTFORMAT=GML2**

# LDS changeset process

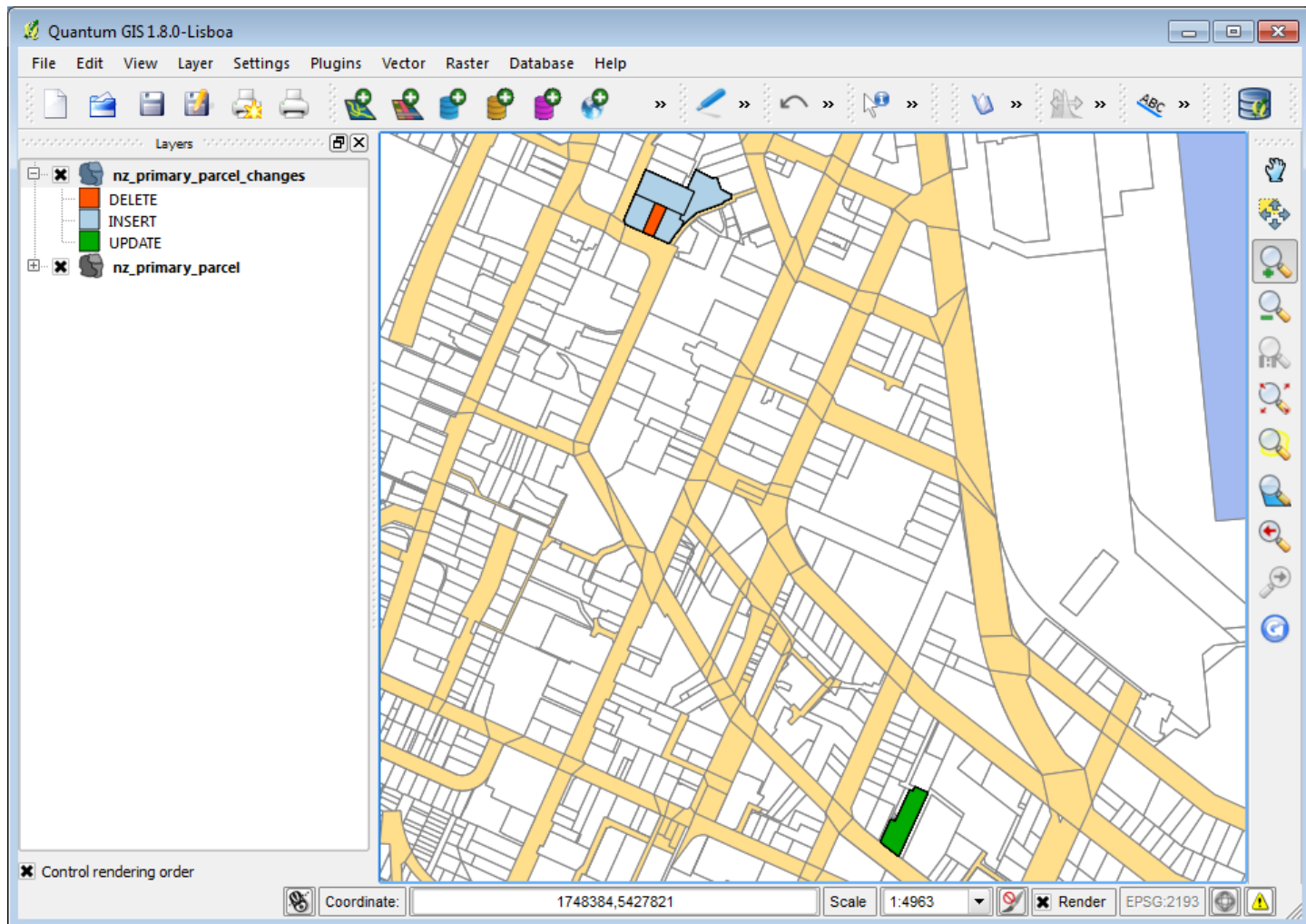
- > Record the date/time of your last local revision and script on an ongoing basis



# FME changeset process from end to end



# FME changeset example viewed in Quantum GIS



## WFS Changeset tips



- Changeset URLs need to use the hidden 'changeset' feature type, e.g. LDS layer 772:

```
http://wfs.data.linz.govt.nz/<YOUR-API-KEY>/v/x772-changeset/wfs?  
service=WFS&  
version=1.0.0  
request=GetFeature&  
typeName=v:x772-changeset&  
viewparams=from:2012-03-24;to:2012-04-01
```

# Selecting the changes you want



- 'to' and 'from' revision timestamps can be in the following formats:
  - Midnight on August 1 2011, UTC: **2011-08-01**
  - Midnight on August 1 2011, NZST: **2011-08-01+1200**
  - 2pm on August 1 2011 in NZST: **2011-08-01T14:00+1200**
  - 3:18:30am on December 1 2011 in NZDT: **2011-12-01T03:18:30+1300**
- Use UTC. Then no daylight savings headaches
- Timestamps with time zone are interpreted in **UTC** time.

## More resources



- Changesets intro: <http://www.linz.govt.nz/about-linz/linz-data-service/features/change-set-service>
- Download the example FME workbench:
  - [FME workbench parcel replication example \(MSSQL 2008\)](#)

