

# Local Smart Water Management Solutions in Australia

Turning data into Decision Support

HydroNET  
*LIVE*

 **esa**  
European Space Agency

**HydroNET**  
your water control room

  
**WATER TECHNOLOGY**  
WATER, COASTAL & ENVIRONMENTAL CONSULTANTS

Smart Water Management has no borders



# Partners

- International Software
- Funding Support
- Local Partners

=

Smart,  
Cost effective,  
solutions



Smart Water Management has no borders



# Australia



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# Australia

## A Water Control Room for the Goulburn Broken CMA





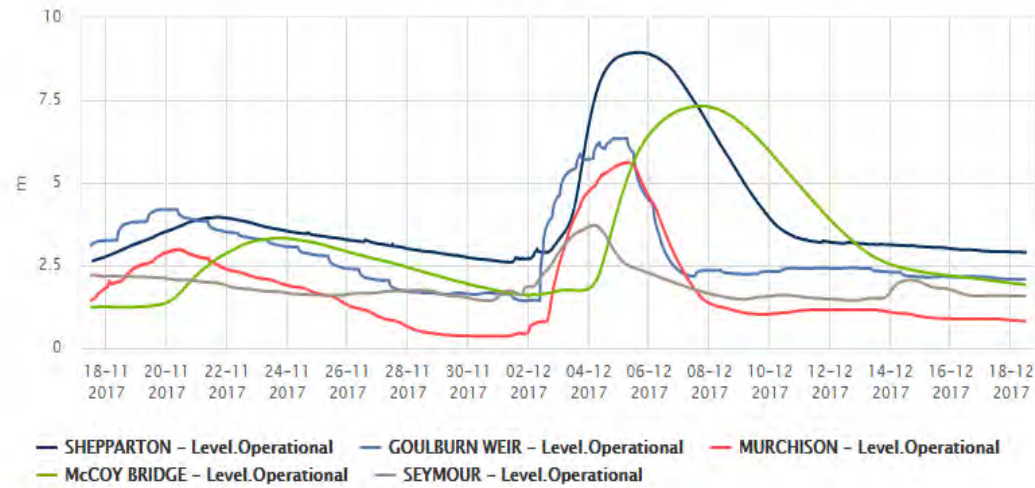
# Boundary Work: Goulburn Broken CMA

- Boundary Setting:
  - Riverine water quality & environmental management and monitoring
  - Information must be operationally available
  - Data located externally. Did not meet their specific information needs
- Boundary Object: HydroNET Water Control Room
  - Personalised live data in the field



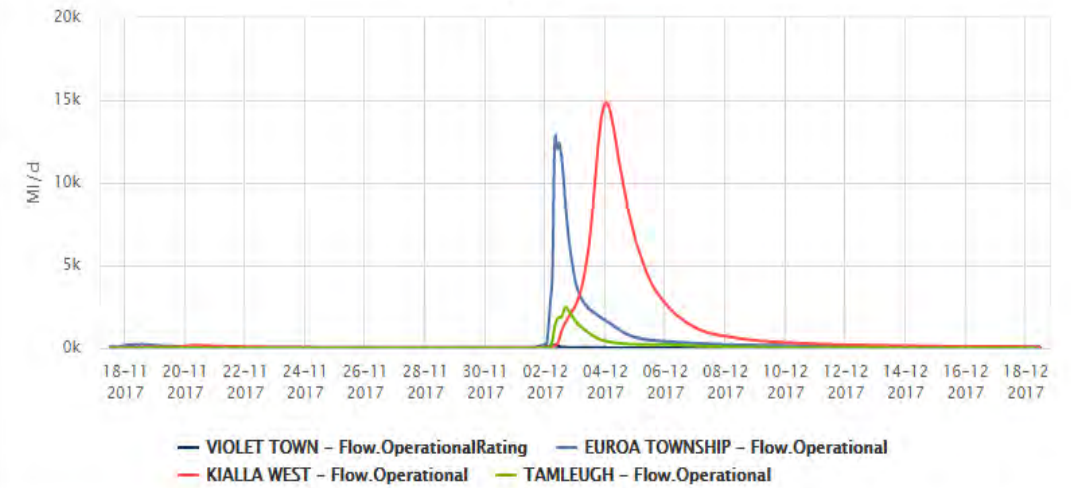
## Lower Goulburn River Levels

HydroNET



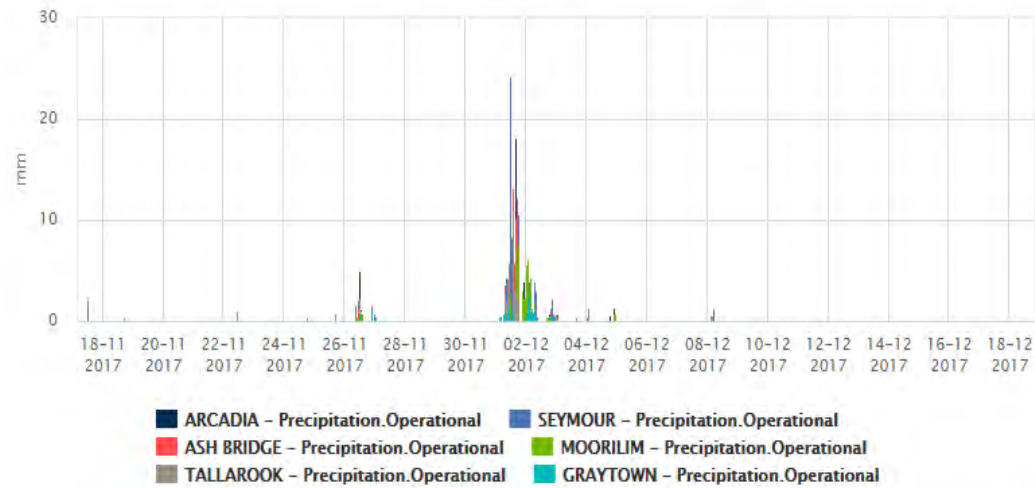
## Sevens Creek Flows

HydroNET



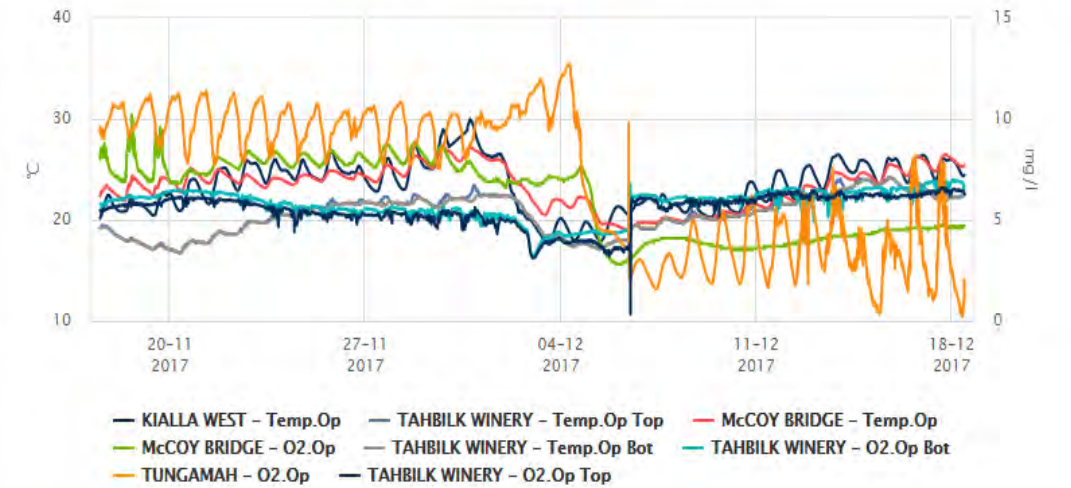
## Lower Goulburn River - Precipitation

HydroNET



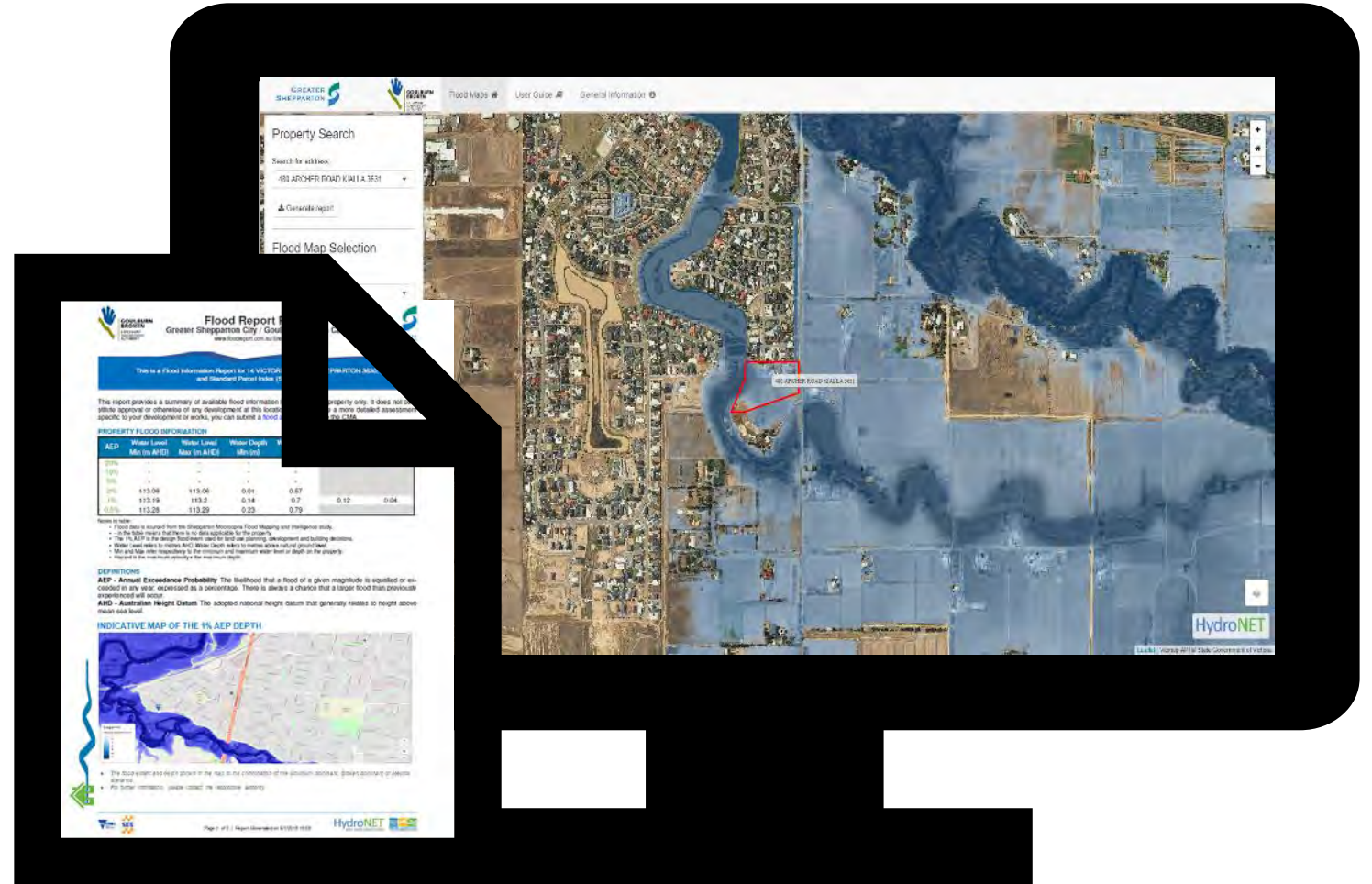
## Lower Goulburn River - Temp and DO

HydroNET



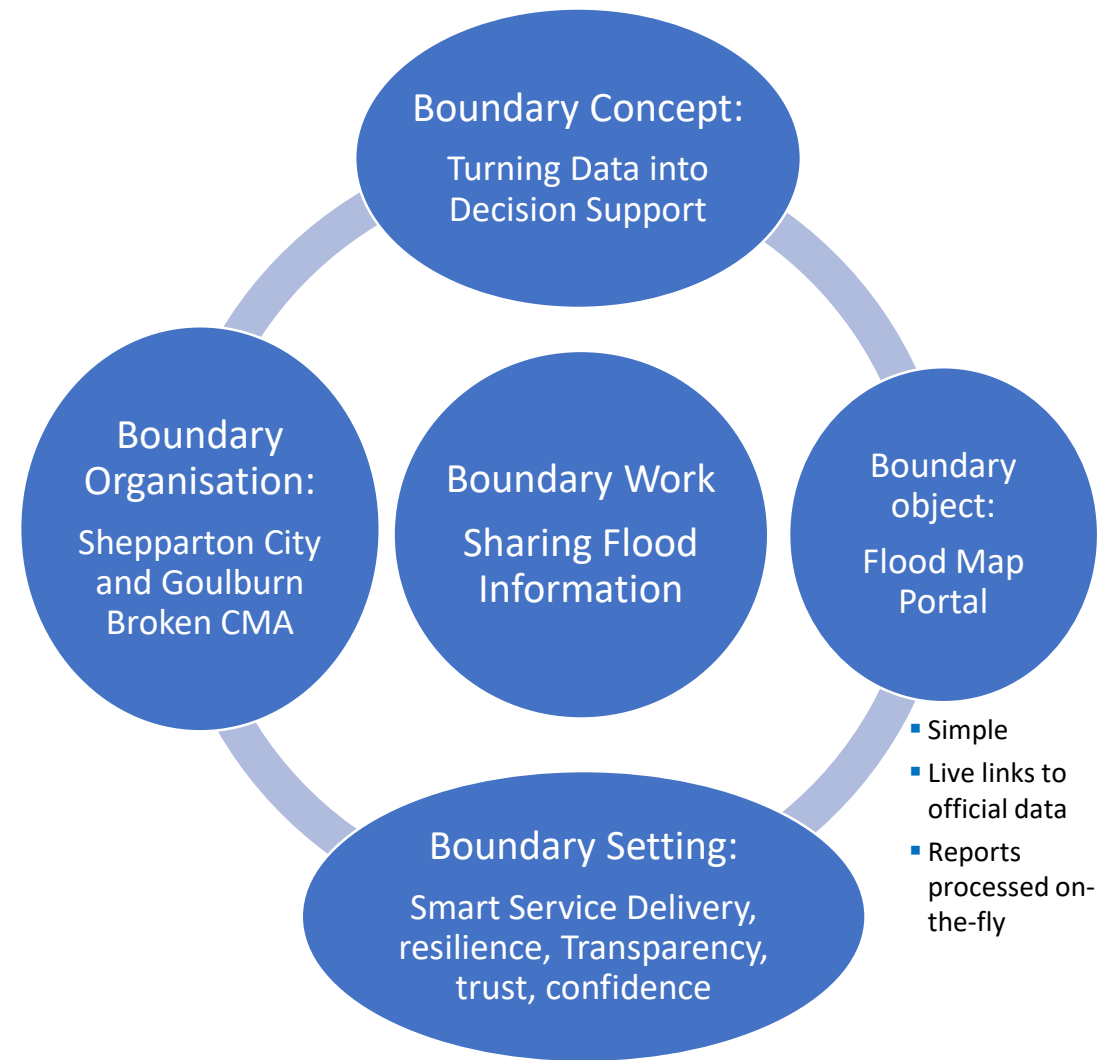


# Shepparton Property Flood Information and Report Portal



# Boundary Work: Shepparton and GBCMA

- 2011 floods = new legislation
  - Flood studies and sharing of flood (intelligence) risk information
- Lots of flood studies resulted but:
  - Not readily accessible and split across different organisations in different formats
  - Manual, repetitive, time-consuming, resource heavy to provide
  - Thus, users often requested later in development process
- A Need for Councils and CMA's to:
  - improve community flood resilience
  - provide property specific flood information
  - improve internal human resource utilisation





# Using the Portal

The screenshot displays the Greater Shepparton Flood Maps Portal. The interface includes a top navigation bar with links for Flood Maps, User Guide, and General Information. On the left, there are two main filter panels: 'Property Search' and 'Flood Map Selection'. The 'Property Search' panel contains a search for address field and a 'Generate report' button. The 'Flood Map Selection' panel includes dropdowns for Type (Depth), Selection (Select a Flood type), and Dominant river case (No dominant case), along with 'Show Map' and 'Clear Map' buttons. Below these panels is an opacity slider set to 67%. The main map area shows the Shepparton region with various flood map overlays in different colors (blue, green, yellow, orange, red). A blue location pin is placed on the map near Shepparton, with a tooltip that reads 'Goulburn River Gauge at Shepparton'. The map also shows various roads, rivers, and localities. At the bottom, there are logos for Water Technology, ESA (European Space Agency), HydroNET (your water control room), and Leaflet/Vicmap API.

**Property Search**

Search for address:

Please select an option below

Generate report

**Flood Map Selection**

Type

Depth

Selection

Select a Flood type

Dominant river case

No dominant case

Show Map Clear Map

Opacity

0% 67% 100%

**Property Search Area**

**Flood Map Selection Area**

Goulburn River Gauge at Shepparton

Shepparton

Water Technology

ESA European Space Agency

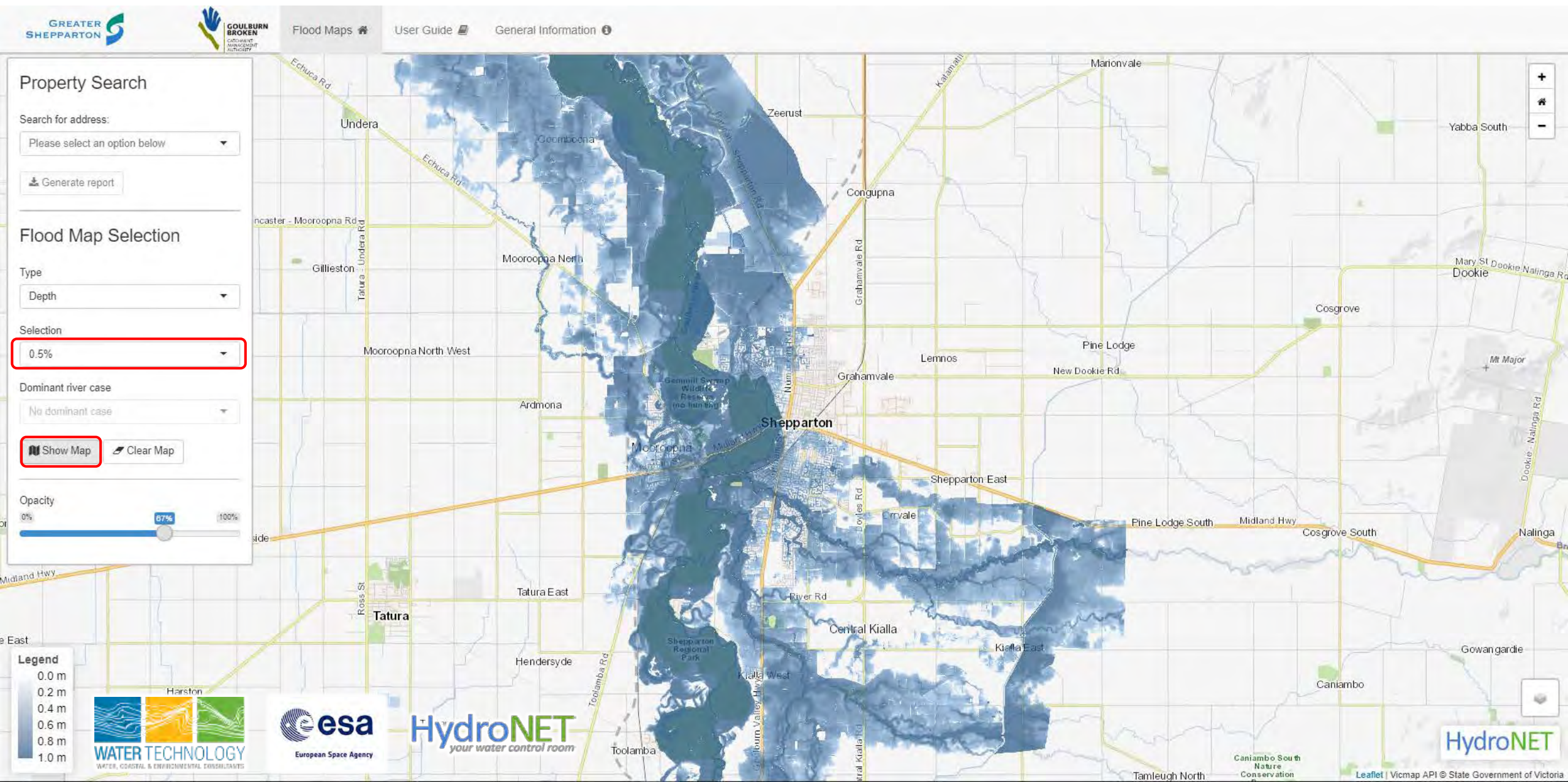
HydroNET your water control room

HydroNET

Leaflet | Vicmap API © State Government of Victoria






# Flood Map Selection - AEP







# Select Property and Generate Report



[Flood Maps](#) 


[User Guide](#) 

[General Information](#) 

### Property Search

Search for address

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 Generate report

### Flood Map Selection

Type



Depth

Selection

0.5%

Dominant river case

No dominant case

 Show Map  Clear Map

Opacity




0%

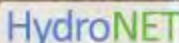
67%


100%

### Legend

- < 0.15m
- < 0.3m
- < 0.5m
- < 0.8m
- < 1.0m
- > 1.0m





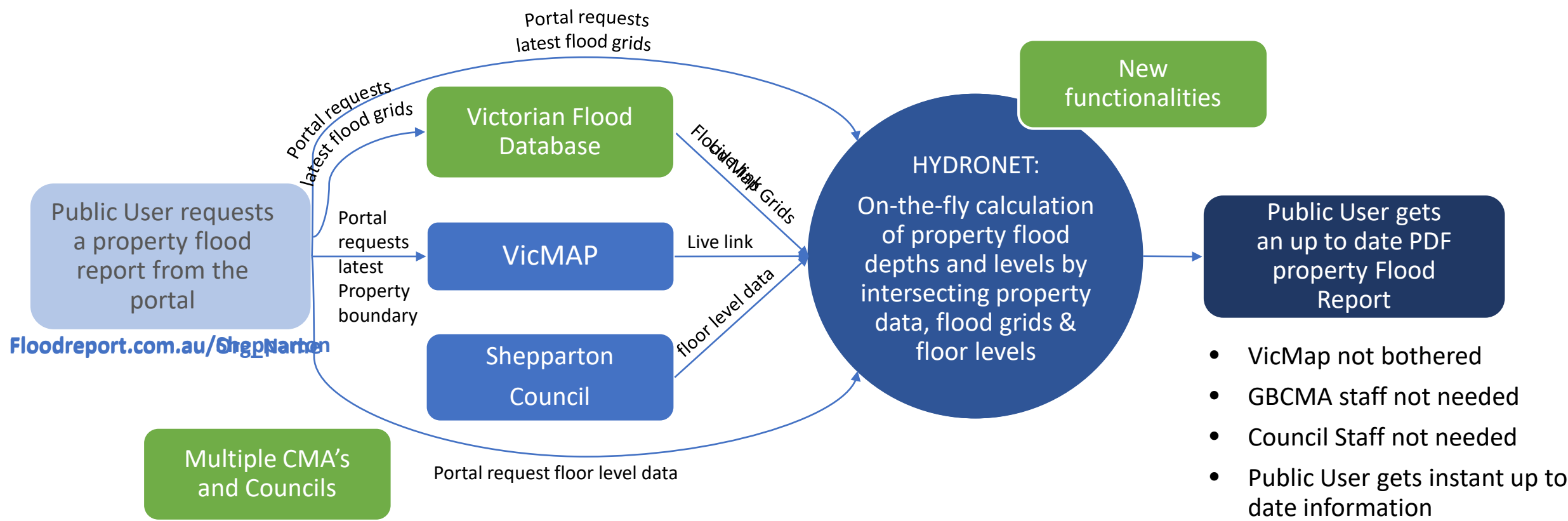


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Leaflet | Vicmap API © State Government of Victoria



# Current Flood Report Generation Process





This is a Flood Information Report for 303 ARCHER STREET SHEPPARTON 3630,  
and Standard Parcel Index (SPI) 55LP92569

This report provides a summary of available flood information for the selected property only. It does not constitute approval or otherwise of any development at this location. If you require a more detailed assessment specific to your development or works, you can submit a [flood advice request](#) to the CMA.

#### PROPERTY FLOOD INFORMATION

AEP	Water Level Min (m AHD)	Water Level Max (m AHD)	Water Depth Min (m)	Water Depth Max (m)	Max Velocity (m/s)	Max Hazard (VxD)
20%	-	-	-	-	-	-
10%	-	-	-	-	-	-
5%	-	-	-	-	-	-
2%	113.63	113.63	0.01	0.78	-	-
1%	113.65	113.65	0.01	0.8	0.45	0.12
0.5%	113.86	113.87	0.2	1.02	-	-

#### Notes to table:

- Flood data is sourced from the Shepparton Moorookpa Flood Mapping and Intelligence study.
- in the table means that there is no data applicable for the property.
- The 1% AEP is the design flood event used for land use planning, development and building decisions.
- Water Level refers to metres AHD. Water Depth refers to metres above natural ground level.
- Min and Max refer respectively to the minimum and maximum water level or depth on the property.
- Hazard is the maximum velocity x the maximum depth.

#### DEFINITIONS

**AEP - Annual Exceedance Probability** The likelihood that a flood of a given magnitude is equalled or exceeded in any year, expressed as a percentage. There is always a chance that a larger flood than previously experienced will occur.

**AHD - Australian Height Datum** The adopted national height datum that generally relates to height above mean sea level.

#### INDICATIVE MAP OF THE EXTENT AND DEPTH OF THE 1% AEP FLOOD



- The flood extent and depth shown in the map is the combination of the Goulburn dominant, Broken dominant or Neutral scenarios.
- For further information, please contact the responsible authority.

#### FLOOD PREPAREDNESS TABLE

Scenario	Goulburn River @ Shepparton Gauge Level	Flood Class / Design Level <sup>(1)</sup>	Water Level <sup>(2)</sup> (m AHD)	Water Depth over floor <sup>(2)</sup> (m)
Goulburn Dominant	9.5	~ Minor	-	-
	10.1	-	-	-
	10.7	~ Moderate	-	-
	10.9	-	-	-
	11.1	~ Major (20% AEP)	-	-
	11.3	~ 10% AEP	-	-
	11.7	~ 5% AEP	-	-
	12.1	~ 2% AEP	112.99	-0.31
	12.2	~ 1% AEP	113.11	-0.19
	12.3	~ 0.5% AEP	113.11	-0.16
Broken / Seven dominant	9.5	~ Minor	-	-
	10.1	-	-	-
	10.7	~ Moderate	-	-
	10.9	-	-	-
	11.1	~ Major (20% AEP)	-	-
	11.3	~ 10% AEP	-	-
	11.7	~ 5% AEP	-	-
	12.1	~ 2% AEP	113.06	-0.24
	12.2	~ 1% AEP	113.16	-0.14
	12.3	~ 0.5% AEP	113.28	-0.02
Neutral	9.5	~ Minor	-	-
	10.1	-	-	-
	10.7	~ Moderate	-	-
	10.9	-	-	-
	11.1	~ Major (20% AEP)	-	-
	11.3	~ 10% AEP	-	-
	11.7	~ 5% AEP	-	-
	12.1	~ 2% AEP	113.03	-0.27
	12.2	~ 1% AEP	113.19	-0.11
	12.3	~ 0.5% AEP	113.26	-0.04
Historic	Modelled 1974 Flood	-	113.11	-0.19
	Modelled 1993 Flood	-	112.79	-0.51
	Modelled 2010 Flood	-	-	-

#### Notes to table:

- The surveyed floor level for this property is 113.3m AHD, and is sourced from the Shepparton Moorookpa Flood Mapping and Intelligence study (SKM, 2002), where available. - in the table means that floor level data is not available for the property.
- (1) This is the approximate Flood Class or Design Level, based on the amalgamation of all dominance case scenarios. The actual design level will differ depending on actual events and influences from each of the Goulburn River, Broken River and Seven Creeks.
- (2) 'Water Level' and 'Water Depth Over Floor' are applicable at the location of the surveyed floor level for this property, usually being the front of the main building.
- If your property is not affected by flooding, you may be impacted indirectly by road closures, isolation & disruption to essential services.

#### FURTHER INFORMATION

Further definitions, information and resources relevant to this report is available in the 'General Information' document available for download at the flood information portal.

#### TERMS, CONDITIONS, COPYRIGHT AND DISCLAIMER

This report is subject to the copyright and disclaimer of the flood information portal, which you accepted by clicking on the "Agree and Continue" button when entering the portal, and which is available for download on the portal.



# Summary: “Turning Data into Decision Support”

- Smart Water Management needs Information for decision support
  - Turn Data into Information
  - Make readily accessible and personalised
  - Share it and collaborate
  - Turn Information into knowledge
  - Boundary works helps to conceptualise the setting for developing smart solutions
- Partner chain approach:
  - International software and funding support – cost effective
  - Local Partner provides local knowledge needed to determine smart solutions
- Boundaries Broken
  - Flood Portal
    - Funding – Flood portal affordable and expansion possible
    - Latest data used in reports - Vicmap API
    - 4 Organisations involved in report generation, Public has easy access
  - GBCMA Water Control room
    - GBCMA connects with GMW with no added burden to GMW
    - Disparate Data is now personalised and in the various format needed. No headaches to process and compile.



Smart Water Management has no borders



**Thank**  
**You**