

Groundwater Resource Management in Northern Victoria

Presentation to the Indigo Shire Council

Matthew Pethybridge - Manager Groundwater & Streams
Mark Bailey – Head of Water Resources



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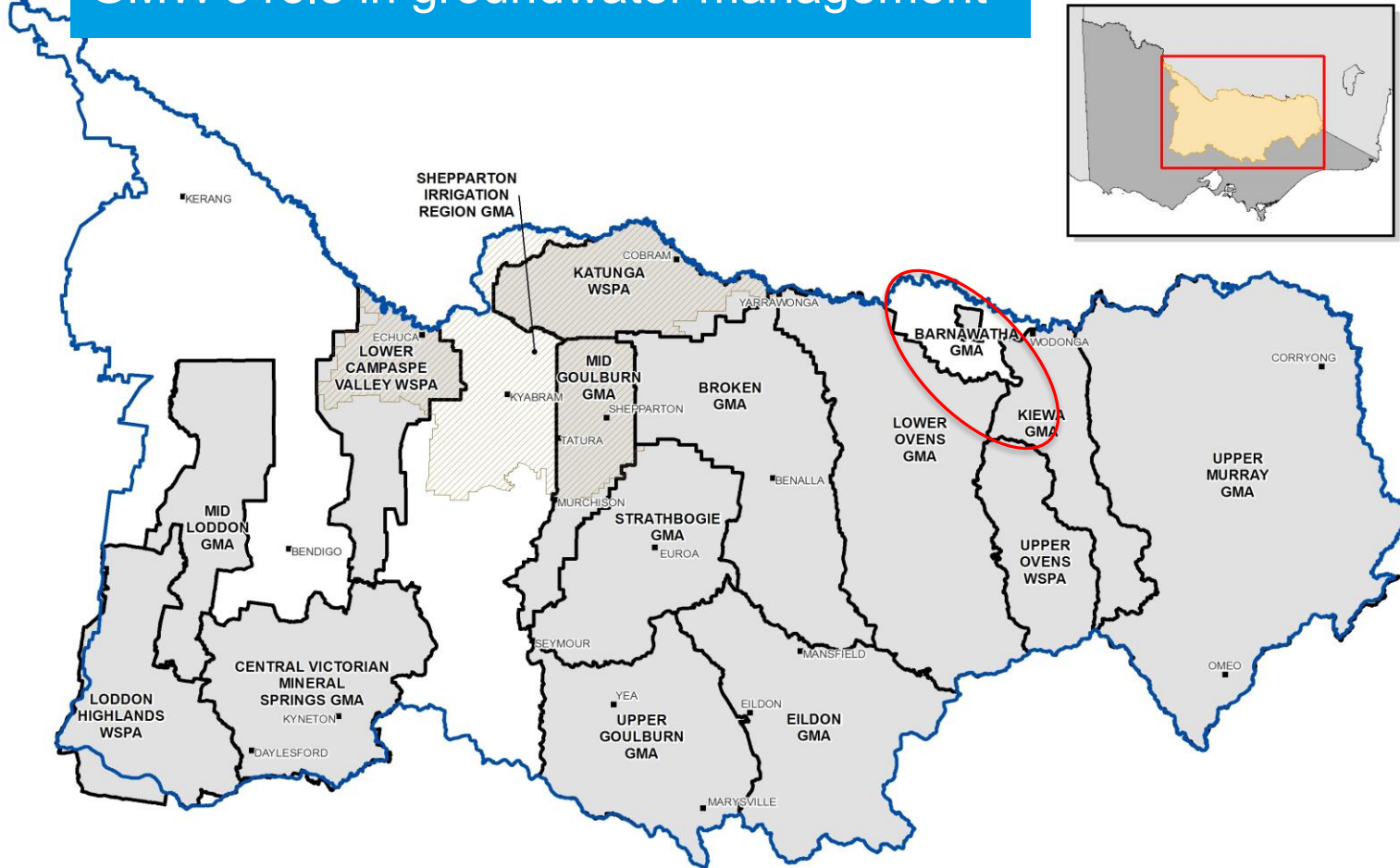
Today's presentation



Overview

1. Goulburn-Murray Water's role in groundwater licensing
2. Overview of GMW's licence assessment process
3. Overview of groundwater resources and licences on the Stanley Plateau

GMW's role in groundwater management



GMW's role in groundwater management



Groundwater licensing

- Bore construction licences – to drill and construct
- Groundwater licences – to take and use water
- Temporary and permanent licence transfers
- Risk assessment / consideration of relevant matters (*Water Act 1989*)

Overview of GMW's licensing process



Key matters to take into account (s40 of the *Water Act 1989*)

- Potential for impact on existing water uses
- Consider future water availability and quality
- Impacts on waterways and aquifers
- Environmental features (e.g. groundwater dependent ecosystems)
- Relevant groundwater management plan and objectives
- Permissible Consumptive Volume (i.e. a cap on licence entitlement)

Overview of GMW's licensing process



What GMW can't do....

- Make decisions which discriminate based on a type of use
- Apply caps, limits or conditions based only on a particular use type
- Base decisions on matters relevant to other legislative approvals (noise, traffic management, aesthetic concerns etc..)
- Impose tariffs based on a specific use type

Groundwater Licensing Process



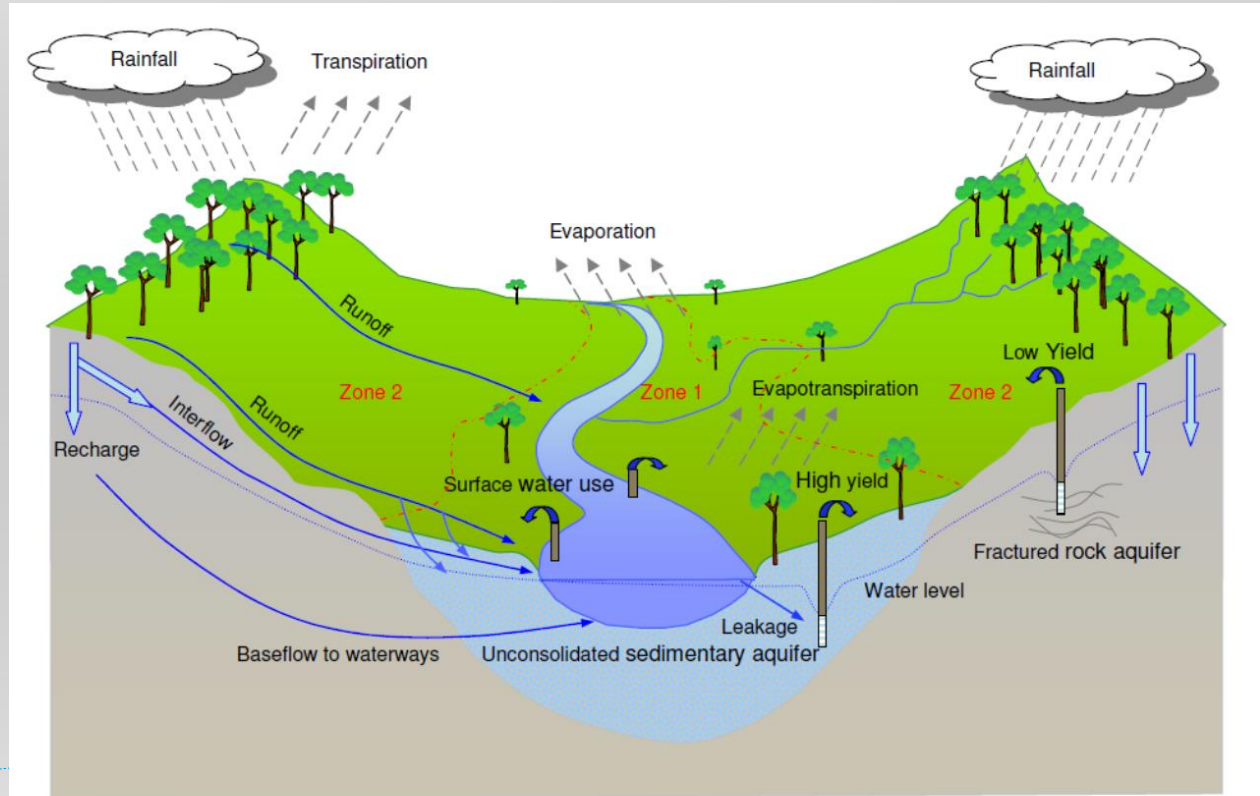
Three levels of assessment

1. Regional scale (catchment)
2. Sub- regional scale
3. Local scale (2km radius)

Overview of GMW's licensing process

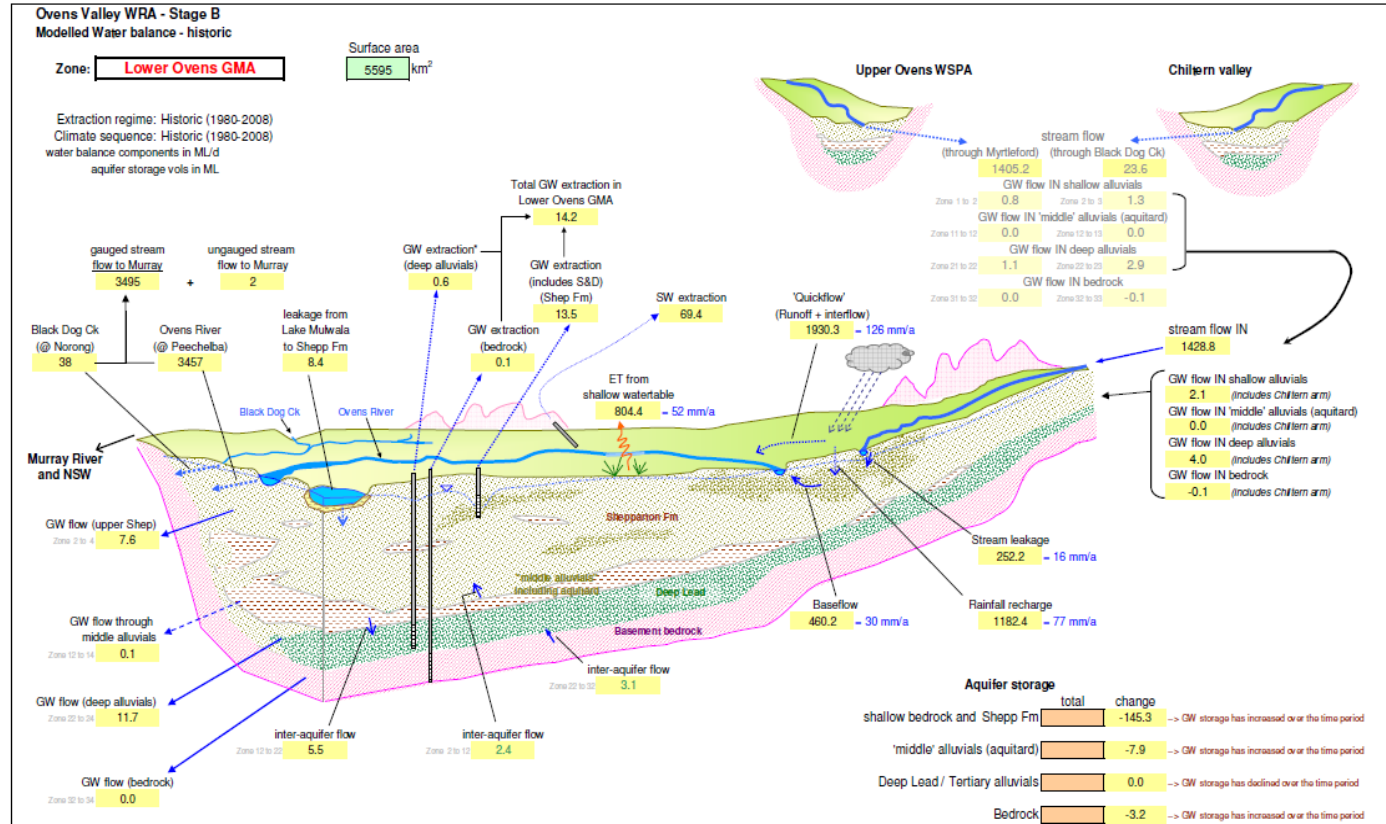


Licence assessment at a regional scale: Having a sound conceptual understanding

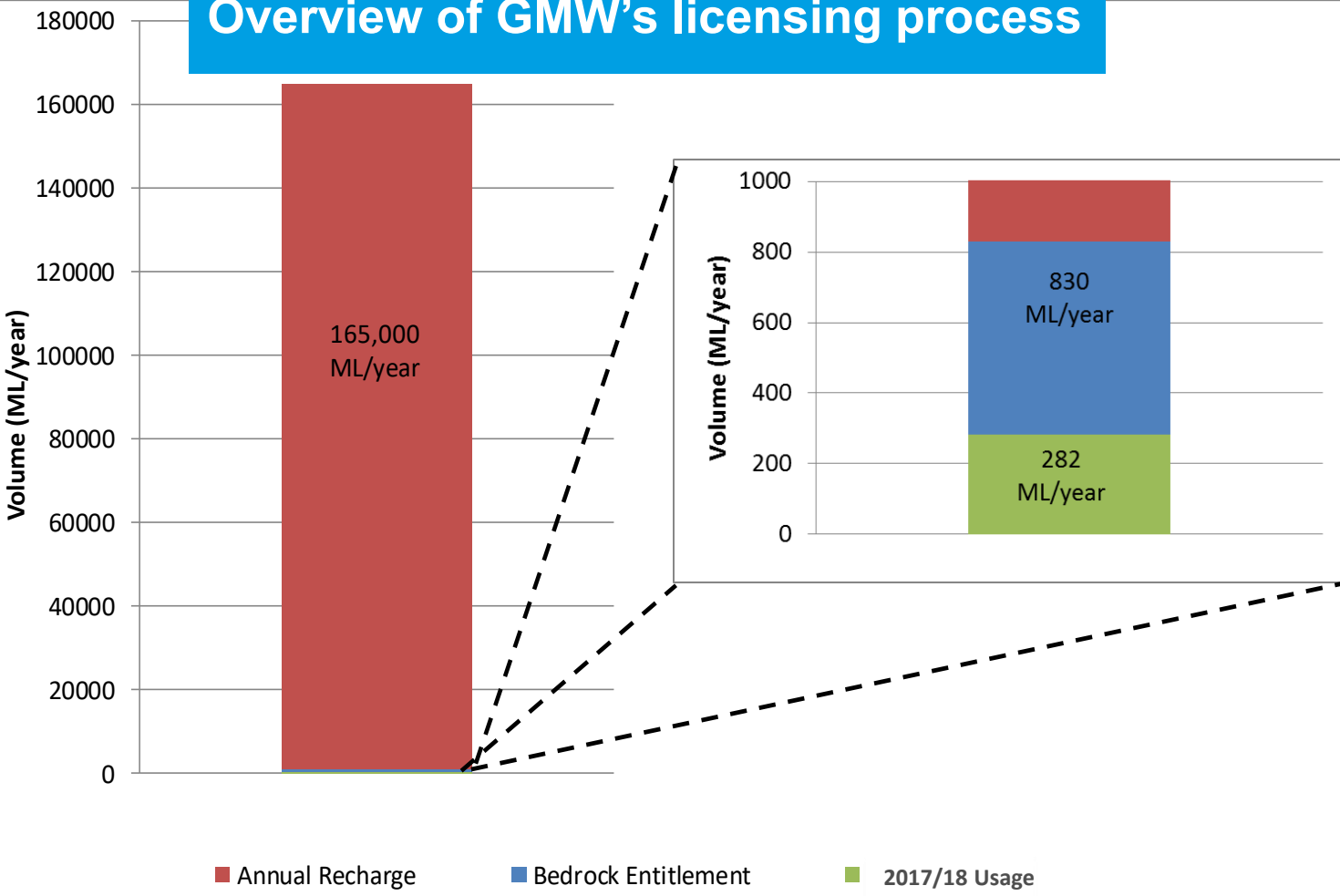


Overview of GMW's licensing process

• Licence assessment at a regional scale: Understanding the water balance



Overview of GMW's licensing process



Licence assessment at a regional scale:
Understanding the impact of current take

Overview of GMW's licensing process



Licence assessment at a regional scale

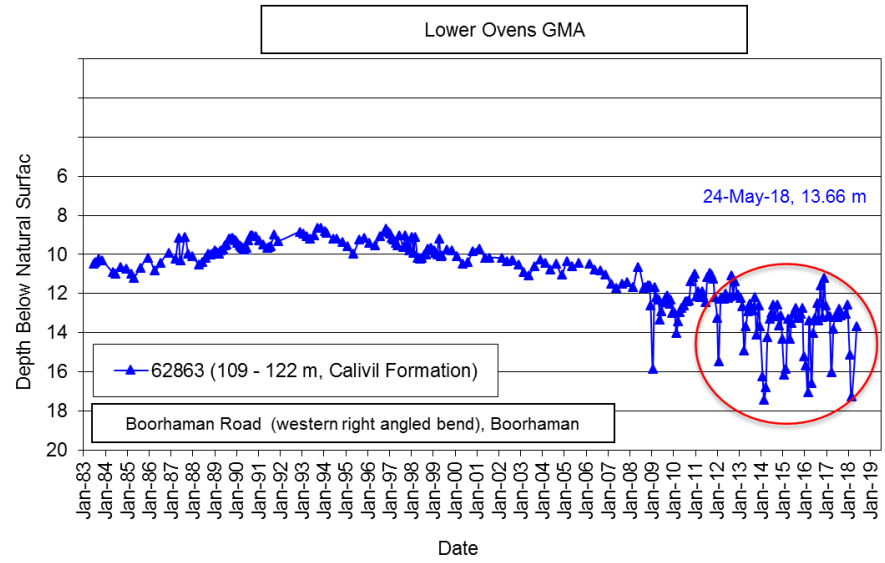
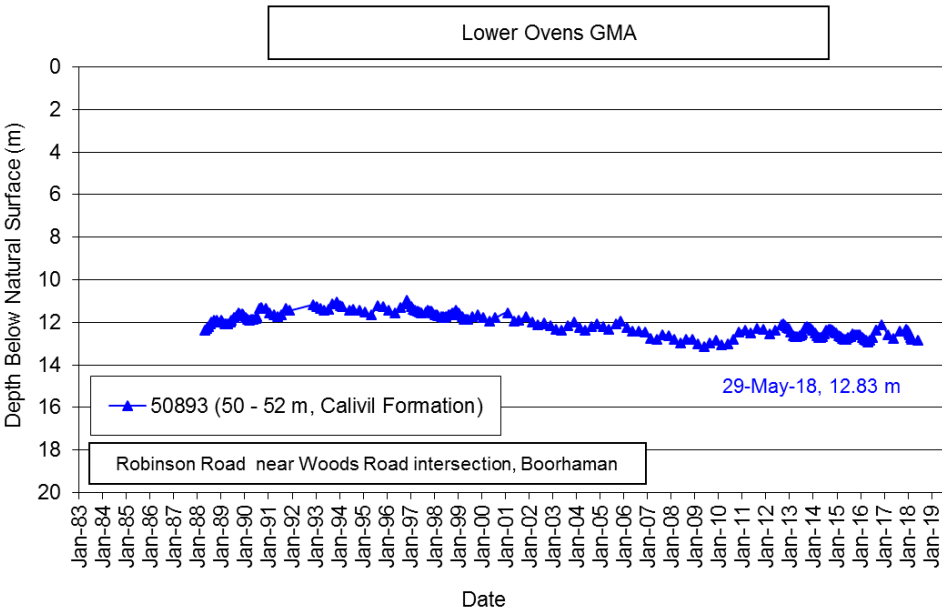
- Considering management plan objectives and rules, which include:
 - Any limits to issuing new or traded entitlements (e.g. caps)
 - How licence entitlements can be traded
 - How existing groundwater use is managed (e.g. triggers, metering)
 - Resource monitoring

Overview of GMW's licensing process

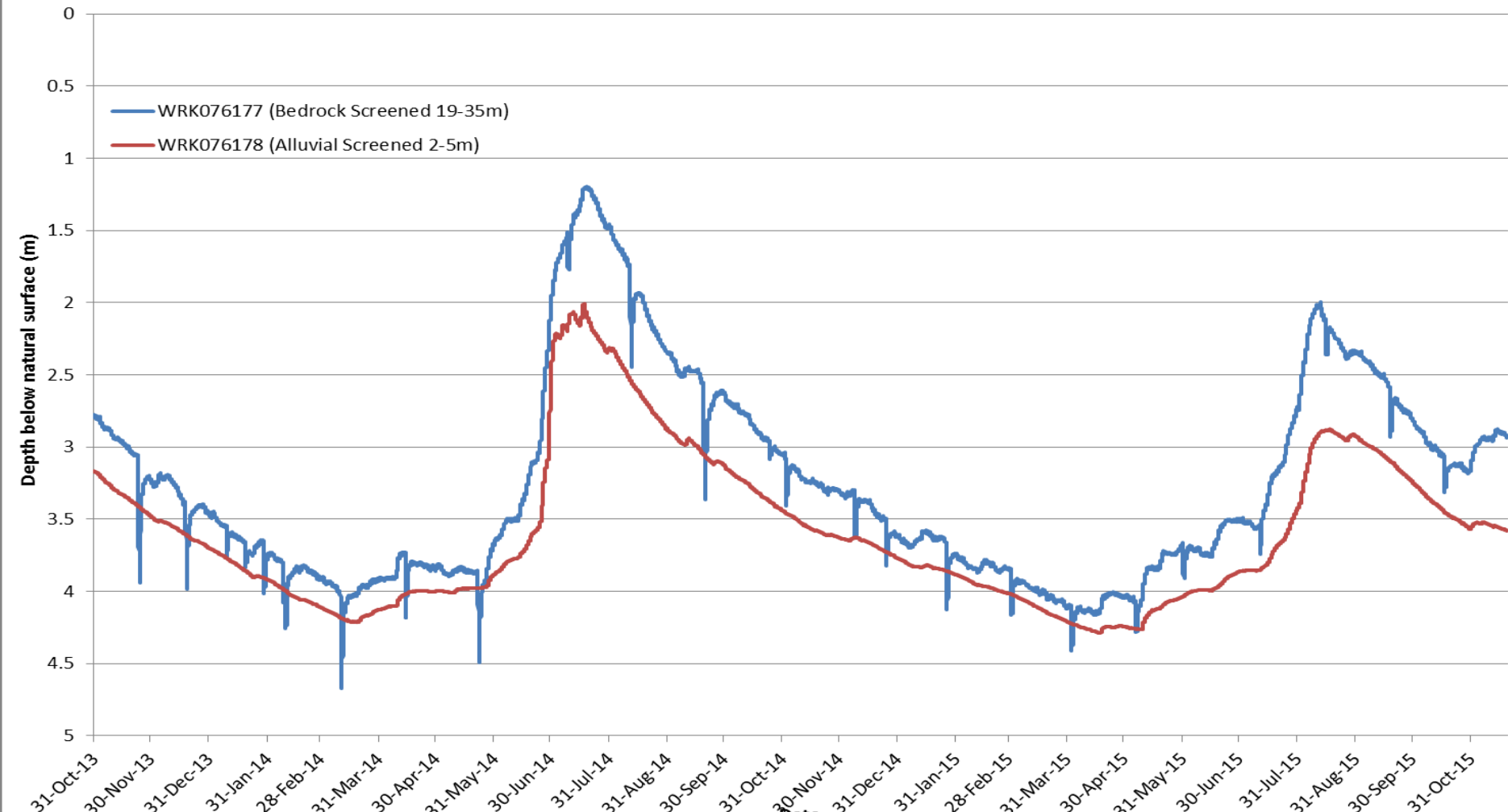
Licence assessment at a sub-regional scale

- Area of a few km² to 10s of km²
- Considers:
 - Local hydrogeology/ hydrology and features
 - Localised limits on resource take (e.g. at a management zone level)
 - Trading rules
 - More localised impacts of extraction





Upper Owens River WSPA - Buffalo Creek Clemens Lane

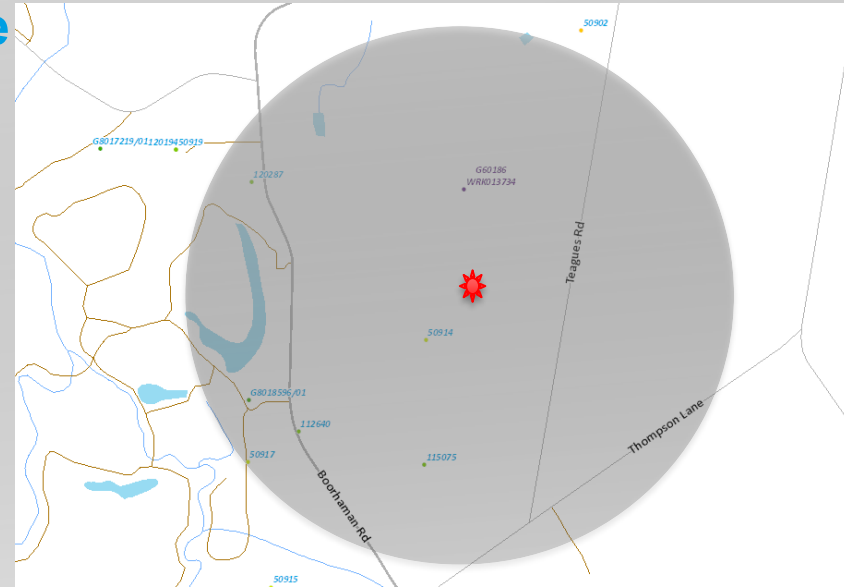


Overview of GMW's licensing process



Licence assessment at a 'site' scale

- 'Site' scale risk assessment
 - Surrounding water uses
 - Licensed and D&S bores
 - Dams and stream diversions
 - Environmental features (wetlands, GDEs)
- Field assessment
 - On-the-ground investigation and validation
- Integrate data to address relevant matters in the Act



Other relevant matters



Licensing notification process

- Section 49 of the *Water Act 1989* states that the Minister requires an applicant to give notice of an application
- GMW has set licensing advertising and notification requirements
- The Minister's Delegate must treat all applications in a fair and equitable manner

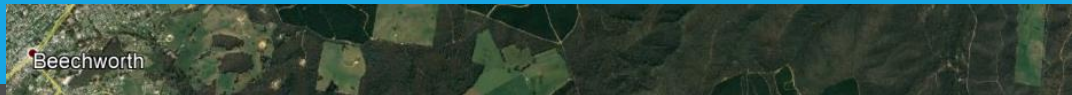
In closing....



- GMW is delegated under the *Water Act 1989* to administer and manage groundwater licensing in Northern Victoria
- Well established processes govern how all licence applications are assessed (including licence trades)
- A principle objective is sustainability of resources and dependent features
- We cannot discriminate between different authorised uses of water (whether commercial, irrigation, industrial, urban etc...)

Questions?





Groundwater Resource



The management of groundwater resources is undertaken using a Statewide approach:

- requires a hydrogeological understanding aquifer systems
- development of Water Balances using conceptual and numerical models.
- the models are tested against field information from observation bores and metered data.
- continual review provides confidence in modelled data.



Groundwater Recharge Stanley Plateau

- *Groundwater recharge is water that enters the aquifer (mostly from rainfall).*

| Radius (from Stanley town centre) | Recharge in radius (ML/yr) | Licensed volume in radius (ML/yr) | Licensed volume % of recharge | 2016-17 Usage % of recharge | 2017-18 Usage % of recharge |
|--|-----------------------------------|--|--------------------------------------|------------------------------------|------------------------------------|
| 2 km | 887 | 108 | 12% | 0.6% | 1.3% |
| 5 km | 5542 | 714 | 13% | 1.8% | 2.0% |
| 10 km | 22168 | 1321 | 6% | 1.0% | 1.2% |

Note: These figures are based on the modelled recharge to the Ovens Bedrock - sourced from the GHD Ovens Valley Resource Appraisal (2010). The total modelled recharge to the bedrock aquifer has been reduced in the table to represent a smaller unit area (in this case a 2 km, 5 km and 10 km radius).

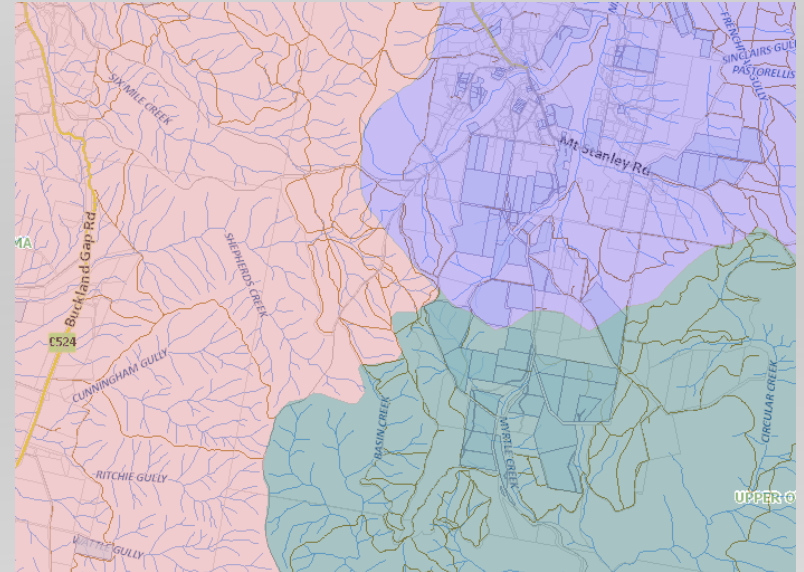
Groundwater Licence Stanley Plateau

| Use Type | Radius of Stanley (main intersection) | Licences | Total Entitlement (ML/yr) | 2016/17 Usage (ML) | 2016/17 % Usage (ML) | 2017/18 Usage (ML) | 2017/18 % Usage (ML) |
|---------------------------------|---------------------------------------|-----------|---------------------------|--------------------|----------------------|--------------------|----------------------|
| <i>All</i> | <i>2 km</i> | <i>6</i> | <i>108</i> | <i>5.3</i> | <i>5%</i> | <i>11.6</i> | <i>11%</i> |
| | <i>5 km</i> | <i>27</i> | <i>714</i> | <i>101.5</i> | <i>14%</i> | <i>113.6</i> | <i>16%</i> |
| | <i>10 km</i> | <i>40</i> | <i>1321</i> | <i>230.1</i> | <i>17%</i> | <i>269.2</i> | <i>20%</i> |
| <i>Dairy</i> | 2 km | 0 | 0 | 0 | 0% | 0 | 0% |
| | 5 km | 0 | 0 | 0 | 0% | 0 | 0% |
| | 10 km | 1 | 6 | 0 | 0% | 0 | 0% |
| <i>Irrigation</i> | 2 km | 6 | 108 | 5.3 | 5% | 11.6 | 11% |
| | 5 km | 22 | 598 | 82.1 | 14% | 94.9 | 16% |
| | 10 km | 32 | 1169 | 200.7 | 17% | 240.5 | 21% |
| <i>Industrial or commercial</i> | 2 km | 0 | 0 | 0 | 0% | 0 | 0% |
| | 5 km | 5 | 116 | | | | |
| | 10 km | 7 | 146 | | | | |

*Data sourced from Victorian Water Register

Stanley Plateau Management

- Intersection of three management plans
- No new groundwater allocated (trade only)
- All take and Use licences have conditions which allow implementation of restrictions



Thankyou

