Summary of Objection

1. There are about 2,400 rural properties with a bore that are not connected to scheme water or sewage in Perth and Peel. As such, those properties are self-sufficient.

2. All those rural properties are in bushfire prone areas. Green Asset Protection Zones surround most of them to inhibit ember attacks and to keep bush fire fronts well away from people and buildings.

3. Reducing by one third the water available for irrigating those Zones significantly reduces their effectiveness and increases the risks to lives and properties in the event of bush fire.

4. Keeping these Zones green saves lives and property.

5. This objection recommends exempting those 2,400 properties from any reduction in the rostered use of bores.

6. Just 1 giga litre of groundwater is required to continue to protect the lives of 6,000 and more rural residents from bush fire.

7. Decisions about groundwater savings should be taken in the context of all of its impacts – fire safety not the least

Banjup Residents Group

The Banjup Residents Group (BRG) represents 250 of the 600 rural landowners in Banjup, Jandakot, and Treeby in Cockburn in Perth's south.

The BRG Committee has authorised that this submission be made on behalf of all members of the Group. We are content for our comments to be published and attributed to us.

Such properties are typically on 2 hectares with a single dwelling. None of the properties is connected to scheme water. All are in a Bushfire Prone Area. Drinking and household water is supplied from either each property's rainwater tank or from a bore, many of which have been in use for 30 years or more.

Banjup Bush Fire 2014

On 3 February 2014, a devastating bush fire swept through 500 hectares of bushland reserves and properties in Banjup. 60 private homes were surrounded by flames, some 20 metres high, with black smoke 100 metres high. Fortunately, none was lost owing to the cleared areas around each house and the sterling efforts of the firefighters[1]

Many households in Banjup were evacuated that day and were not permitted to return until 3 days later. Memories of that fire are still clear in residents' minds. Any proposal that increases the risks of bushfire to lives and properties in Banjup is strongly resisted. Indeed, Banjup landowners work continuously with the Department of Fire and Emergency Services (DFES), the Jandakot Volunteer Bushfire Brigade, and the City of Cockburn actively to reduce the risks of bushfire.

[1] https://banjup.wixsite.com/banjup/banjupfire2014

Asset Protection Zone

Following inquiries into the Perth Hills and Margaret River bushfires in 2011, DFES began developing fire management plans with local governments that led to increased regulations to enhance fire prevention and mitigation. A regulation gazetted in 2020 by the Fire and Emergency Services Commissioner was "Bush Fire Risk Treatment Standards"[2] that stipulate an "Asset Protection Zone" (APZ) that is a 20 metres wide area cleared of combustible vegetation around buildings (dwellings and close by sheds).

The purpose of an APZ is to extinguish "ember attacks" from approaching bushfires before they reach a dwelling and to keep bush fire fronts and their burning and falling trees well away from people and buildings.

Ground Cover in an APZ

Direct experience from the 2014 Banjup fire was that an APZ of mulch does not extinguish embers because the mulch readily ignites:

[2] https://www.legislation.wa.gov.au/legislation/statutes.nsf/law_s52472.html

Low native plants and shrubs are similarly ineffective in extinguishing ember attacks. In high summer, they are dry and combustible. In the image above nothing remains of the native vegetation at the further edge of the APZ.

The most practical effective ground cover for an APZ is grass that is maintained green throughout the bushfire season (December to March).

Further protection recommended by DFES is planting fire retardant trees at the outer edge of the APZ. Such trees typically are deciduous or fruit bearing and carry moisture laden leaves, in contrast to the dry leaves of eucalypts. Fire retardant trees also prevent ember attacks from the canopies of burning eucalypts beyond them. This image from DFES illustrates the safety benefits of green grass and fire retardant trees:

Irrigating an APZ

Soils in Banjup, Jandakot, and Treeby, like most on the sand plain, are very porous. Water and nutrients readily pass through the top metre or so, leaving little behind. Maintaining grass green in the summer ideally requires watering little and often. Too much water just drains straight through the sandy soil. Too little water during the summer heat barely keeps the roots alive and the grass leaves just dry out.

DWER's "Policy – Managing unlicensed groundwater use" (see Reference Documents below) implies that 1,350 kilo litres per year "is sufficient to water 2,000 m^2 of lawns and gardens"[3]. For the current roster arrangements, this equates to 6 mm[4] of water on 3 days per week. This is barely sufficient to keep the grass alive, particularly during the December to March bush fire season when hot windy days dry out the soil and brown the grass.

[3] 1,500 total – 150 household use = 1,350 kl

[4] 1,350 / 39 / 3 = 12 kl allowance per rostered day. 12,000 / 2000 / 1000 = 6 mm

Reducing Bore Roster Increases Risks from Bush Fires

Reducing the rostered days from 3 to 2 would reduce withdrawals to 891 kilo litres[5] per year and allow only 6 mm of water **2** times per week. This is insufficient to keep the APZ grass roots alive, let alone the leaves green, especially on hot days with easterly winds blowing – the very such day as when the Banjup fire struck in 2014.

Dry brown grass will not extinguish an ember attack – indeed, it would provide additional fuel for an on-coming fire. Simply increasing the watering on the 2 rostered days would have little to no effect as the water would just drain away.

Objection to Reducing Bore Roster Days

The proposal to restrict bore usage to 2 days each week on lifestyle properties significantly increases the risks to lives and property of bushfire. The proposal goes against the measures promoted by DFES and local governments to maintain effective APZs around dwellings on bushland properties.

Banjup, Jandakot, and Treeby rural landowners strongly object to the proposal because it does not distinguish between urban bore owners and those on rural properties with no scheme water and APZs to maintain.

Exempt Rural Landowners

Banjup, Jandakot, and Treeby rural landowners offer no view on the roster change for urban bore owners.

Whatever the outcome of the consultation process, we recommend government exempt rural landowners in bushfire prone areas from any reduction in their access to bore water, especially those not connected to scheme water,

Effect of Exemption

Overall, there are about 3,000[6] rural lifestyle properties in the Perth and Mandurah area covered by the bore roster reduction proposal.

DWER estimates that 80% of properties over 0.5 ha in the south coastal region have installed a bore and each of them extracts 1,500 kilo litres annually[7], with 1,350 kilo litres for gardening use. This means that there are 2,400 properties[8] whose withdrawals would be curtailed by the roster reduction proposal.

For all the 2,400 affected properties, this amounts to withdrawals from groundwater of 3.24 giga litres annually[9].

If the exemption were given, then 1.1 giga litres[10] would be exempted but the 6,240[11] lives on 2,400 rural properties would continue to be protected.

[5] 1,350 * 0.66 = 891
[6] DWER has no statistics but by inspection of Google Maps there are 2,100 south of the Swan River and 900 north of the River
[7] DWER Policy – Managing unlicensed groundwater use (Oct 2020)
[8] 3,000 x 80% = 2,400
[9] 2,400 x 1,350 = 3.24 giga litres annually
[10] 3.24 / 3 = 1.1 GL
[11] 2,400 x 2.6 residents per dwelling (ABS census 2016) = 6,240

Spare 1 giga litre Annually to Protect Lives and Property

This submission by the Banjup Residents Group demonstrates that decisions about groundwater savings should be taken in the context of all of its impacts – fire safety not the least – and draw on the wider practical experience of other government agencies and of responsible rural landowners.

Reference Documents

DWER Policy: Managing Unlicensed Groundwater Use (2020) – page 13

Table 1 Indicative water use from domestic bores

Property size (m^2)	Indicative groundwater use (kL/yr)	Average bore installation rate (% of lots)
Less than 500	400	5
500–999	800	30
1,000–5,000 (0.5 ha)*	1000	50
Greater than 5,000 (0.5 ha)	1500# +	80

* These property sizes are associated with special rural or rural properties.

Incorporates a component for internal household requirements (150 kL) and is sufficient to water approximately 2,000m^2 of lawns and gardens.

\+ A lower benchmark of 1,200 kL/year will be specified for the south coastal region while, 2,000 kL/year is provided for the Pilbara and Kimberley regions to account for the differences in rainfall and evaporation rates.