While most of our towns in our Northern and Central districts source their raw water from rivers (i.e. the Murray) or irrigation channels, we have a number of water storages in the southern areas of our region which supply raw water. We also have one bore. These are shown on the map below.
<table>
<thead>
<tr>
<th>Supply system outlook summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Raw water system</strong></td>
</tr>
<tr>
<td><strong>Brewery Creek System</strong> (Woods Point)</td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months</td>
</tr>
<tr>
<td><strong>Broadford/Kilmore system</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• Stage 2 water restrictions are currently applied due to low inflows to the system, but are expected to be lifted in November 2019</td>
</tr>
<tr>
<td>• The local supply is currently being supplemented by the transfer of Regulated Goulburn System water to Broadford and Kilmore and has capability of transferring 7YW water to Kilmore. This may continue for the next 6 to 12 months under both average and dry inflow scenario.</td>
</tr>
<tr>
<td><strong>Euroa and Violet Town (Sevens Creeks System)</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• Stage 2 water restrictions are currently applied to Euroa and Violet Town due to low inflows and storage augmentation works;</td>
</tr>
<tr>
<td>• New 300ML storage has been completed and a 700ML storage is to be completed in 2019;</td>
</tr>
<tr>
<td>• An alternative bore water supply is being investigated to supplement supply;</td>
</tr>
<tr>
<td>• Under average inflow conditions Stage 2 water restrictions may continue for the next 12 months</td>
</tr>
<tr>
<td>• Under extremely dry inflow conditions (no inflows) Stage 4 water restrictions triggers may be reached in the next 12 months</td>
</tr>
<tr>
<td><strong>Regulated Goulburn System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months.</td>
</tr>
<tr>
<td><strong>Katunga System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• Allocations depend on groundwater system recharge/recovery and the 5 year rolling average for groundwater demand</td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months</td>
</tr>
<tr>
<td><strong>Nine Mile Creek (Longwood) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 6 to 12 months under both the average and dry inflow conditions;</td>
</tr>
<tr>
<td><strong>Delatite River (Mansfield) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months based on both average and dry inflow conditions;</td>
</tr>
<tr>
<td>• If no inflows encountered for the next three months, water restrictions may be triggered;</td>
</tr>
<tr>
<td><strong>Steavenson River (Marysville &amp; Buxton) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months;</td>
</tr>
<tr>
<td>• Storage levels are predicted to remain above restriction levels for the next 12 months under average or dry conditions</td>
</tr>
<tr>
<td><strong>Regulated Murray System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months.</td>
</tr>
<tr>
<td>• In the 2006-2009 period, allocations reduced from 95% to 43% in a 12 month period. At an allocation of 43%, GVW may need to purchase water on the market as supplement supply in 2019/20 if transfer between Goulburn and Murray Systems is not permissible.</td>
</tr>
<tr>
<td><strong>Mollisons Creek (Pyalong) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in this system within the next 12 months.</td>
</tr>
<tr>
<td>• For dry periods the current strategy is to implement water carting to supplement supply rather than introduce water restrictions.</td>
</tr>
<tr>
<td><strong>Seven Creeks (Strathbogie) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months.</td>
</tr>
<tr>
<td><strong>Upper Delatite River (Merrijig &amp; Sawmill Settlement) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months;</td>
</tr>
<tr>
<td>• Stream flows have been adequate during the recent dry period and have responded quickly following recent rainfall.</td>
</tr>
<tr>
<td>• Under an extreme dry scenario water carting may be required for a short period.</td>
</tr>
<tr>
<td><strong>Yea River (Yea) System</strong></td>
</tr>
<tr>
<td><strong>Outlook comments</strong></td>
</tr>
<tr>
<td>• No water restrictions are expected in the next 12 months.</td>
</tr>
</tbody>
</table>
Brewery Creek System (Woods Point)

Streamflow Analysis (Dec 2019-Dec 2020)

- **Forecast Assumptions**
  - **Minimum Conditions**:
    - Minimum 1 year inflows (Nov 2005 - Oct 2006)
  - **Average Conditions**:
    - 50th percentile (Nov 1999 - Oct 2008)
  - **Dry Conditions**:
    - 5th percentile (Nov 1996 - Oct 1997)
  - **Lowest Daily**:
    - Period in which lowest daily flows occur. Corresponds to 25th percentile (Nov 1983 - Oct 1985)

Seasonal Outlook

- **Dry December to February likely for southern mainland Australia**
  - The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.
  - The drier outlook continues into December for southern Australia.
  - Note that the latest observed streamflow data used to produce the forecast for Woods Point is currently not available on BOM’s website.

Monitoring Areas of Uncertainty

- **Water Consumption**
  - **Total Demand vs Forecast**
    - Historic Demand
    - High Demand
    - Low Demand
    - Baseline Demand
    - Number of Connections

- **Non Revenue Water**
  - **Non Revenue Water Consumption**
    - Year on Year

UWS Action Plan

- **Actions**
  - **Timeframe**
  - **Estimated Cost**
    - Short Term (2019-2025)
      - Monitoring of streamflow and demand for departures from the baseline forecasts
      - 2019 + N/A
      - Verify distribution system non-revenue losses and if real and economically justified implement program to reduce losses
      - 2019 + Not costed
      - Assess preferred opportunities for demand management
      - 2019 + N/A
      - Upgrade CCTV tanks
      - Medium Term (2025-2040)
      - As for short term
      - Long Term (2040-2065)
      - As for short term

References:

Overview of System Status

- **6 month Outlook**
  - Estimated streamflow at Brewery Creek (Victoria) is above 2005/06 levels. The Woods Point bulk entitlement has no diversion restrictions based on streamflow. Demand can be continuously met under a low flow scenario (repeat of 2005/06)

- **12 Month Outlook**
  - Currently there is no indication that restrictions will need to be implemented within the next 12 months.

- **2 Year Outlook**
  - Water restrictions would not be predicted within the next 2 years under the current below average climate conditions.
Broadford/Kilmore System

Monitoring Areas of Uncertainty

Water Consumption

Bushfire Impact Analysis

Overview of System Status

Stage 2 water restriction are currently applied to Kilmore. Operation Mode 3 implies transfer of Regulated Goulburn system water to both Broadford and Kilmore plus additional supply from YVW has been triggered and could be continued for the next 6 months under both average and dry inflow scenarios.

UWS Action Plan

Short Term (2019-2025)

- Monitoring of streamflow and demand for departures from the baseline forecasts
- Verify distribution system non-revenue losses and if real and economically justified implement program to reduce losses
- Assess opportunities for demand management
- Assess opportunities for stormwater harvesting in new developments
- Assess opportunities for water recycling projects from future growth
- Broadford WTP Pre-Treatment
- Upgrade Broadford No. 3 Res to Sunday Creek PS

Medium Term (2025-2045)

- As for short term
- Broadford-Kilmore interconnection pipeline, pumping station and Kilmore Tank
- Investigate Warrin (YVW)-Kilmore interconnection pipeline
- Long Term (2045-)

References:
Seven Creeks System (Euroa and Violet Town)

**Seasonal Outlook**
- **Dry December to February likely for southern mainland Australia.**
- The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.
- The drier outlook continues into December for southern Australia.

**Forecast Assumptions**
- **Minimum Inflows: (Nov '17 - Oct '21)**
- **5th Percentile Inflows (Nov '17 - Oct '21)**
- **50th Percentile Inflows (Nov '16 - Oct '16)**

**References**

**Overview of System Status**

**6 Month Outlook**
- Stage 2 water restrictions are currently applied and could continue for the next 6 months under a dry condition scenario.

**12 Month Outlook**
- Storage levels are predicted to remain above restriction levels for the next 12 months under an average condition scenario. Water restrictions could be triggered under a dry condition scenario.

**2 Year Outlook**
- Storage levels are predicted to remain above restriction levels for the next 24 months under an average condition scenario. Water restrictions could be triggered under a dry condition scenario.

**Monitoring Areas of Uncertainty - Water Consumption**

**Monitoring Areas of Uncertainty - Water Consumption**

**UWS Action Plan**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term (2019-2025)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigating bore water as supplement supply</td>
<td>2019 +</td>
<td>N/A</td>
</tr>
<tr>
<td>Assess preferred opportunities for demand management</td>
<td>2019 +</td>
<td>To be costing</td>
</tr>
<tr>
<td>Construct 300ML Res and interconnecting pipework</td>
<td>Completed</td>
<td>N/A</td>
</tr>
<tr>
<td>New offsite pump station and inlet pipeline on Seven Creeks (10ML/d)</td>
<td>Completed</td>
<td>N/A</td>
</tr>
<tr>
<td>Increase Abingra Res capacity to 700ML</td>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>Replace Abingra pump station</td>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>Replace 3 km of Goomar pipeline (3km x DN300)</td>
<td>2022</td>
<td>$2.7 m</td>
</tr>
<tr>
<td>Medium Term (2025-2040)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As for short term</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Long Term (2040-2065)</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**Euroa System Summary**

The Euroa water supply system comprises supply from Waterhouse Reservoir and two diversion locations on Seven Creeks. It has an effective storage capacity of 1147ML.

Demand in 2018/2019 was slightly greater than the baseline forecast scenario.

The new raw water storage projects at Euroa are currently in progress and programmed to be completed in 2019 to provide improved supply reliability to the townships.

Cumulative rainfall for 2019 is currently higher than that of 2018.

A new 300ML raw water storage has been recently completed and the rehabilitation of the existing Abingra Reservoir to 700ML will be completed in 2019.

An alternative bore water supply is being investigated to supplement supply.

The Corporation is planning to use the 7ML Polly McQuillans storage as the first in the Seven Creeks system to start decline. This will be diverted at Goomar weir to the water treatment plant.
Forecasts of Inflows and Use of Allocation

24 Month Eldon Inflow Forecast

Seasonal Outlook

Dry December to February likely for southern mainland Australia

The December to February climate outlook, issued on 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.

The drier outlook continues into December for southern Australia.

Monitoring Areas of Uncertainty

Industrial Demands

Annual Industrial Demand (ML)

Water Consumption/Connections

Volumes Transferred to Murray/Broadford/Kimber

Overview of System Status

6 month Outlook

The next 6 months are secure with 100% water allocation available.

12 Month Outlook

An allocation of 100% has been received in 2019/20 which is adequate to meet unrestricted demand and provides for any transfers to the Sunday Creek and Murray systems. Carryover would also be utilised to provide further supply security.

2 Year Outlook

In a repeat of 2005-2007 inflows, an allocation of 100% would be received in 2020/21.
Katunga System

Aquifer Level Analysis

Groundwater Monitoring Depth

Rainfall Monitoring

Seasonal Outlook

Dry December to February likely for southern mainland Australia.
The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.
The drier outlook continues into December for southern Australia.

References:

Overview of System Status

6 month Outlook

A 100% groundwater allocation is available in 2019/20 which provides adequate supply to meet baseline demand. Water restrictions will not be required.

12 Month Outlook

Allocations for the next water year depend on recharge/recovery and the 5 year rolling average for groundwater demand.

2 Year Outlook

Allocations in future will depend on recharge/recovery and the 5 year rolling average.

UWS Action Plan

Short Term (2019-2025)

Monitoring of groundwater levels and salinity to identify potential reduction to annual entitlement
Verify distribution system non-revenue losses and if real and economically justified implement program to reduce losses
Assess preferred opportunities for demand management
Ground level storage tank
Medium Term (2025-2046)
As for short term
Long Term (2046+)
As for short term
Opportunity of transfer pipeline from Numurkah to Katunga

Water demand for 2018/19 was less than the baseline demand forecast.

Groundwater systems recover and draw down over long periods. The 1997-2009 drought had significant impacts on recharge amounts. Aquifer recovery occurred over the 2008-2014 period. Note that Annual Demand referred to in this graph represents total groundwater usage in the Katunga Groundwater Management Plan area.

The 5 year rolling average demand for groundwater usage in the Katunga area decreased from 2010 to 2015, but increased in from 2016 to 2019.
Nine Mile Creek System (Longwood)

Storage Forecast (Dec 2019 - Dec 2021)

Monitoring Areas of Uncertainty System Inflows

Streamflow: Modeled v Actual

Water Consumption

Total Demand vs Forecast

Non Revenue Water

Longwood System Summary

Longwood is supplied from Nine Mile Creek Reservoir which is located on Nine Mile Creek. This storage has a capacity of 27ML.

Modelled streamflow has been used in the Outlook prediction model. It is clear that both inflows track the rainfall well although the model is quite conservative, meaning that confidence can be derived from the output. Future model updates will be required to improve the match between modelled and actual streamflow.

The 2018/2019 demand was similar to the baseline demand. Non revenue water has not changed significantly over the past year.

References:

Overview of System Status

6 Month Outlook

Storage levels are predicted to remain above restriction levels for the next 6 months under both the average and dry conditions scenarios.

12 Month Outlook

Storage levels are predicted to remain above restriction levels for the next 12 months under both the average and dry conditions scenarios.

2 Year Outlook

Storage levels are predicted to remain above restriction levels for the next 12 months under an average conditions scenario. Water restriction (Stage 1) could be triggered for the next 12 months under a dry condition scenario.

UWS Action Plan

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term (2019-2025)</td>
<td>Continue gauging of streamflow and assessment to monitor the progressive impacts from bushfires.</td>
</tr>
<tr>
<td>Assess preferred opportunities for demand management and opportunities from the alternative Water Atlas.</td>
<td>2019 +</td>
</tr>
<tr>
<td>Medium Term (2023-2049)</td>
<td>As for short term</td>
</tr>
<tr>
<td>Long Term (2040-2065)</td>
<td>As for short term</td>
</tr>
</tbody>
</table>
Delatite River System (Mansfield)

Storage Forecast (Dec 2019 - Dec 2021)

- Total Mansfield System Storage
  - Worst Minimum Inflows
  - Dry Inflows Storage
  - Avg. Inflows Storage

Monitoring Areas of Uncertainty - Water Consumption

- Total Demand vs Forecast
  - Historic Demand
  - Baseline Forecast Demand
  - High Forecast Demand
  - Low Forecast Demand

Mansfield System Summary

The Mansfield water supply system comprises supply from the Delatite River, with relatively high raw water storage capacity of 576 ML. The high storage capacity relative to the average annual demand makes the system relatively secure, and the system is considered to have a low to moderate risk profile.

The 2018/2019 demand was above the baseline demand and consistent with the high demand. This is mainly due to high temperature and dry conditions in 2018/2019.

Cumulative rainfall for 2018/2019 is tracking above the lowest year on record of 2006. All existing raw water storages are currently maintained at full levels to prepare for the coming summer.

Forecast Assumptions

- Minimum Conditions:
  - 50th percentile inflows (Nov 1958 - Oct 1990)

Seasonal Outlook

Dry December to February likely for southern mainland Australia

- The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.

- The drier outlook continues into December for southern Australia.

References:

Overview of System Status

6 month Outlook

- Storage levels are predicted to remain above restriction levels for the next 6 months under both average and dry climate scenarios. A repeat of the minimum inflow conditions from Nov 2005 - Oct 2007 would trigger water restrictions within 6 months.

12 Month Outlook

- Storage levels are predicted to remain above restriction levels for the next 12 months under an average or dry condition.

2 Year Outlook

- Based on the average climate and dry scenarios, water restrictions would not be predicted within the next 2 years.
Steavenson River System (Marysville and Buxton)

Storage Forecast (Dec 2019 - Dec 2021)

Monitoring Areas of Uncertainty

Water Consumption

Bushfire Impact Analysis

Marysville & Buxton system summary

The Marysville & Buxton system sources raw water from the Steavenson River at Marysville, with a storage capacity of 100ML. The high system yield relative to current demand levels mean that this system has a relatively low risk profile.

The current baseline demand forecast reflects the reduced number of connections in Marysville since the 2009 bushfire. The 2018/19 demand was slightly below the baseline demand. Both the 2018/19 streamflow and rainfall were above 10th percentile levels. A longer period of monitoring is required to assess the bushfire impact on this catchment.

Overview of System Status

6 month Outlook

Storage levels are predicted to remain above restriction levels for the next 6 months under both average and dry climate scenarios. A repeat of the minimum inflow conditions from Nov 2005 - Oct 2007 would trigger water restrictions within 2 years.

Seasonal Outlook

Dry December to February, likely for southern mainland Australia.

Dry Conditions:

5th percentile inflows (Nov 2007 - Oct 2009)


Average Conditions:

Forecast Assumptions

Minimum Conditions:


References:

12 Month Outlook

Storage levels are predicted to remain above restriction levels for the next 12 months under both average and dry climate scenarios. A repeat of the minimum inflow conditions from Nov 2005 - Oct 2007 would trigger water restrictions within 2 years.

2 Year Outlook

Demand is expected to increase as properties are rebuilt in the Marysville and Buxton townships.

UWS Action Plan

Actions | Timeframe | Estimated Cost
--- | --- | ---
Short Term (2019-2025)
Continue gauging of streamflow and assessment to monitor the progressive impacts from bushfires. | 2019 + | N/A
Assess preferred opportunities for demand management and opportunities from the alternative Water Atlas. | 2019 + | N/A
Medium Term (2025-2040)
As for short term | N/A | N/A
Respond to impacts of bushfires and growth | 2025 + | N/A
Long Term (2040-2065)
As for short term | 2040 + | N/A
Respond to impacts of bushfires and growth | 2040 + | N/A
Regulated Murray System

Allocation Forecast

The full inflow record was used to assess seasonal determinations for a range of inflow scenarios. The scenarios for different inflow conditions have been plotted using the following terminology:
- Inflows: a 100 year of records, this inflow volume has 10% chance in 100 or 1 chance in 10 of being accused.
- Average: considering a 200 year of records, this inflow volume has 1% chance in 100 or 1 chance in 10 of being accused.
- Dry: Considering a 100 year of records, this inflow volume has 5% chance in 100 or 1 chance in 10 of being accused.

Murray System Outlook for Seasonal Determination of High-Reliability Water Shares

<table>
<thead>
<tr>
<th>Inflow Conditions</th>
<th>Similar Inflow Season</th>
<th>16 December 2019</th>
<th>12 February 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average</td>
<td>73%</td>
<td>83%</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td>47%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>Extreme Dry</td>
<td>41%</td>
<td>43%</td>
<td></td>
</tr>
</tbody>
</table>

Seasonal Outlook

Dry December to February likely for southern mainland Australia

The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.

The drier outlook continues into December for southern Australia.

References:

Overview of System Status

6 Month Outlook

A 40% allocation is currently available for the Murray system in 2018/19. This allocation plus carry over from 2019/20 is adequate to meet unrestricted demand for 2018/19.

12 Month Outlook

In the 2006-2009 period, allocations reduced from 95% to 43% in a 12 month period. At an allocation of 43%, GWW may need to purchase water on the market as supplement supply in 2019/20 if transfer between Goulburn and Murray Systems is not permissible.

2 Year Outlook

In the 2006-2009 period, allocations reduced from 95% to 35% in a 24 month period. At an allocation of 35%, GWW may need to purchase water on the market as supplement supply in 2015/20 if transfer between Goulburn and Murray Systems is not permissible.

Monitoring Areas of Uncertainty

Industrial Demands

The 2018/2019 demand was below the baseline forecast.

Water Consumption/Connections

The 2018/2019 demand was below the baseline forecast.

Volumes Transferred from the Regulated Goulburn

No Goulburn System Allocation has been transferred to the Murray System since 2010/11.

GWW may need to purchase water on the market as supplement supply in 2019/20 if transfer between Goulburn and Murray Systems is not permissible.

UWS Action Plan
Mollisons Creek System (Pyalong)

**Storage Forecast (Dec 2019 - Dec 2021)**

The Mollisons Creek system forecast is based on two-year total flows and may not be prescriptive of monthly/seasonal variations.

**Forecast Assumptions**
- Dry Conditions
- Average Conditions

**Seasonal Outlook**
- Dry December to February likely for southern mainland Australia
- December to February climate outlook issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.
- The drier outlook continues into December for southern Australia.

**References**

**Overview of System Status**

**6 Month Outlook**
- Water restrictions may be triggered under a dry condition scenario in the next 6 months. Due to the small volumes involved, the current strategy for Pyalong is to implement water rationing to supplement supply rather than introducing water restrictions.

**12 Month Outlook**
- Storage levels are predicted to remain above restrictions levels for the next 12 months under an average condition scenario. Water restriction may be triggered under a dry condition scenario within the next 12 months. Due to the small volumes involved, the current strategy for Pyalong is to implement water rationing to supplement supply rather than introducing water restrictions.

**2 Year Outlook**
- Based on continuation of the average climate conditions, a repeat of dry inflow conditions from 2007 to 2009 would trigger water restrictions within the next 24 months.

**Water Quality**

**Water Quality**
- There is some uncertainty in regards to water quality in Mollisons Creek, particularly to high salinity. There is a clear relationship between inflow and EC, with EC increasing when flow is low.
- EC is currently lower than the levels in previous drought periods.
- The need for water quality improvements at Pyalong is being monitored.

**UWS Action Plan**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term (2019-2025)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Monitoring of streamflow (quantity and quality) and demand for departures from the baseline forecasts. | 2019 | N/A |
- Assess preferred opportunities for demand management. | 2019 | N/A |
- Water rationing in dry years. | 2019 | Not costed |
- Medium Term (2025-2065) |
- As for short term | N/A | N/A |
- Long Term (2040-2065) |
- Tooborac pipeline and booster pump station | 2040 | $2.1 m |
- or Kilmore to Pyalong Pipeline | 2040 | To be costed |
**Sevens Creek System (Strathbogie)**

**Streamflow Analysis (Dec 2019 - Dec 2020)**

**Monitoring Areas of Uncertainty Water Consumption**

**Forecast Assumptions**
- **Minimum Condition** Minimum 1 year flows (Nov 14 - Oct 1)
- **Average Conditions**
- **Dry Conditions** 5th percentile (Nov 07 - Oct 08)
- **Lowest Daily**

**Rainfall Monitoring**

**Dry December to February likely for southern mainland Australia**
- The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.
- The drier outlook continues into December for southern Australia.

**References:**

**Overview of System Status**

**6 month Outlook**
- The streamflow analysis indicates that streamflow is higher than 2005/07 levels. There is currently no passing flow diversion in the bulk entitlement for Strathbogie. If streamflow reduces to 2005/07 levels, supply can continue to be maintained without water restrictions.

**12 Month Outlook**
- There is no indication that water restrictions would need to be implemented in the next 12 months.

**2 Year Outlook**
- There is no indication that water restrictions would be required within the next 2 years.

**Recent Water Consumption**
- Water consumption in 2018/19 was consistent with the baseline forecast.
- Due to the small volumes and high supply security, there has not been an economically justified program to implement any targeted non-revenue water reduction programs.

**Water carting may be required to supplement supply during a hot summer if requested by the GBCMA to maintain a certain streamflow rate.**

**UWS Action Plan**

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring of streamflow (quantity and quality) and demand for departures from the baseline forecasts.</td>
<td>2019</td>
<td>N/A</td>
</tr>
<tr>
<td>Verify distribution system non-revenue losses and if real and economically justified implement program to reduce losses.</td>
<td>2019</td>
<td>Not costing</td>
</tr>
<tr>
<td>Assess preferred opportunities for demand management.</td>
<td>2019</td>
<td>N/A</td>
</tr>
<tr>
<td>Water carting in dry years.</td>
<td>2019</td>
<td>Not costing</td>
</tr>
<tr>
<td>Medium Term (2025-2040)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As for short term</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Long Term (2040-2065)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As for short term</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| Upper Delatite River System (Merrijig and Sawmill Settlement)

### Streamflow Analysis (Dec 2019 - Dec 2020)

#### Streamflow Monitoring

- **Min Streamflow**
- **Dry Streamflow**
- **Avg Streamflow**
- **Max Streamflow**
- **Actual Demand**

#### Forecast Assumptions

- **Minimum Conditions**: Minimum 1 year inflows (Nov 2006 to Oct 2010)
- **Average Conditions**: 50th percentile (Nov 2006 to Oct 2007)
- **High Conditions**: 5th Percentile (Nov 1983 to Oct 1984)

#### Rainfall Monitoring

- **Current Year**
- **2006 Rainfall**

### Seasonal Outlook

**Dry December to February** likely for southern mainland Australia
- The December to February climate outlook, issued 17 October 2016, suggests drier than average three months is likely for large parts of Australia.
- The drier outlook continues into December for southern Australia.

### Overview of System Status

- **1 Month Outlook**
  - Climate and streamflow forecast indicates a median flow conditions over the next 3 to 6 months. The risk of flow falling below the passing flow threshold for diversions is considered to be low. The recession curve indicates that under a return to dry scenario, streamflows could fall below the diversion limit within 4 months period. Note that the 2006/07 streamflow data has been selected on the basis of lowest historical data. It should be also noted that recession curve is a model input and in practice, flows did not fall below the passing flow limit in 2006/07.

- **2 Month Outlook**
  - The only scenario under which water restrictions would need to be considered is an extreme dry scenario (repeat of 2006/07).
  - Restrictions would only be triggered for a short period if passing flows fall below the threshold for diversion.
  - Streamflows recover quickly after the dry periods and it would be expected that there will be no issues with supply security in the longer term.

### Upper Delatite System Summary

- The Upper Delatite system receives a pumped supply from the Delatite River. It is a run of river system with no storage capacity available.
- The reliability of the Upper Delatite system is highly dependent on demand levels, particularly during dry periods. Demand is currently tracking at the upper end of the

#### Non Revenue Water

### Recent Water Consumption

- Water consumption in 2019/20 was above the baseline demand due to the dry weather condition in the summer 2018/19.
- Non revenue water should be monitored on a yearly basis.

### UWS Action Plan

<table>
<thead>
<tr>
<th>Actions</th>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor streamflow and demand for departures from the baseline forecasts</td>
<td>2019 +</td>
<td>N/A</td>
</tr>
<tr>
<td>Assess preferred opportunities for demand management</td>
<td>2019 +</td>
<td>N/A</td>
</tr>
<tr>
<td>Water cartage during low flow periods and storm events</td>
<td>2019 +</td>
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<tr>
<td>Medium Term (2025-2040)</td>
<td>As for short term</td>
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<tr>
<td>Long Term (2040-2065)</td>
<td>As for short term</td>
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</tr>
</tbody>
</table>
**Yea River System**

### Streamflow Analysis (Dec 2019 - Dec 2020)

- **Minimum Conditions**
  - Minimum 1 year Inflows (Nov 2000 - Oct 2007)
  - Average Conditions 50th percentile (Nov 1977 - Oct 1978)

- **Dry Conditions**

### Forecast Assumptions

- **Yea River System Summary**
  - The Yea system is supplied from the Yea River downstream of the Mainnede RIver confluence. It is a run of river system with no storage capacity available.
  - Demand is currently tracking within the predicted band through this needs to be continued to be monitored.

### Rainfall Monitoring

- **Cumulative Rainfall**
  - **2005 Rainfall**
  - **Current Year**

### Seasonal Outlook

- **Dry December to February likely for southern mainland Australia**
  - The December to February climate outlook, issued 17 October 2019, suggests a drier than average three months is likely for large parts of Australia.
  - This drier outlook continues into December for southern Australia.

### Overview of System Status

- **6 month Outlook**
  - Streamflows are tracking above 2006/07 levels and are expected to remain above the passing flow threshold for diversions. There is no indication that water restrictions will be required.

### UWS Action Plan

<table>
<thead>
<tr>
<th>Actions</th>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short Term (2016-2025)</strong></td>
<td>Monitoring of streamflow and demand for departures from the baseline forecasts</td>
<td>2017</td>
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<tr>
<td></td>
<td>Assess preferred opportunities for demand management</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>Maintenance to prevent the accumulation of silt at the pump intake</td>
<td>Ongoing</td>
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<tr>
<td><strong>Medium Term (2025-2040)</strong></td>
<td>As for short term</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Long Term (2040-2065)</td>
<td>N/A</td>
</tr>
</tbody>
</table>