seqwater
WATER FOR LIFE

Water for life

South East Queensland's Water Security Program

2018 Annual Report

2018 IN REVIEW

Many communities comprise the region we call South East Queensland. While we supply water to the region as a whole, 2018 showed how our variable and changing climate impacts the way we deliver water.

Changing the way we operate the grid

In 2017 the northern sub-region's vulnerability to drought caused us to make changes to our infrastructure and the way we operate the water grid, to improve our capability to protect this region during extended drought conditions.

The northern sub-region, encompassing the Sunshine Coast and Noosa, does not currently have a climate-resilient water source such as desalination or purified recycled water. Due to population growth, this region will require a new water source some time before 2040 - or even earlier in a severe drought.

In 2018, we minimised production at local water treatment plants and supplied water from North Pine and Wivenhoe dams earlier than we have done in recent years to protect the exisiting water in dams in the northern sub-region. We also continued projects to increase the water grid's capacity to supply water into this region.

Watching water levels

The levels in our drinking water dams at the end of 2018 are a stark example of why we can't count on the rain to fall when and where we need it to meet water supply needs.

Dams on the Sunshine Coast and Gold Coast received good, regular inflows, and overflowed on a number of occasions. In contrast the water levels in South East Queensland's (SEQ) two biggest water storages, Somerset and Wivenhoe dams, have been slowly declining.

At the end of 2018, Somerset and Wivenhoe drinking water storage levels were 76% and 67% respectively. Without good inflows into the Somerset-Wivenhoe system, the levels in these dams alone could trigger our drought response plan, even when some of our smaller drinking water dams are full or near-full.

The water levels in Wivenhoe Dam, South East Queensland's largest water storage, fell to 68% in 2018.

WIVENHOE & SOMERSET DAMS

In 2018, the spotlight shifted from our northern sub-region to the central sub-region's Somerset and Wivenhoe dams, the two largest water storages connected to the SEQ Water Grid.

Seqwater monitors the level of the dams which supply water. For much of the year, dams on the Gold Coast and Sunshine Coast were either nearly full or spilling excess water. At the same time, Somerset and Wivenhoe dams did not receive significant inflows and water levels declined.

When at capacity, these dams account for more than 70% of total drinking water supply for all of SEQ. The situation again highlighted the importance of the water grid's ability to move treated water around the region when dams in one region are full and others are declining.

Water from Somerset Dam is released into Wivenhoe Dam, which in turn supplements the natural flow of the Brisbane River and maintains an adequate supply of water to the Mt Crosby water treatment plants.

Wivenhoe Dam has a total storage capacity of 3.132 million megalitres. At full drinking water supply level, it will hold 1.165 million megalitres, or about 2,000 times the daily water consumption of Brisbane. During a flood, Wivenhoe is designed to hold back a further 1.967 million megalitres, in what we call a flood storage compartment, on top of its normal drinking water storage capacity.

Somerset Dam is our second largest dam, and can hold almost 400,000 ML at full supply.

Somerset Dam is one of the region's oldest dams and is still an important water storage today.

Realities of Rain

In South East Queensland, we can count on all types of rain. There's wedding day rain, long weekend rain and school holiday rain!

In fact, the only rain we can't count on, is rain when we need it, where we need it. That's why we're planning our water future - because we can't always count on the rain.

Realities of Rain is starting the conversation with South East Queensland communities about what we do when we can't always count on the rain.

WHY ARE WE TALKING ABOUT RAIN?
Up until now, we've relied on dams for our water supply – but dams count on rain falling when and where we need it.

Dams store water - they don't make it. With the climate changing and our population growing, just having dams is not going to be enough for a sustainable future.

No one wants to see a South East Queensland without enough water to live, work and play the way we want to. That's why we're planning now - and we want SEQ communities to be part of the plan we're creating.

Check out **yourseqwater.com.au/realities-of-rain**

WHICH DAMS SUPPLY DRINKING WATER?
Water for South East Queensland is provided by our drinking water dams (in order of size): Wivenhoe, Somerset, North Pine, Hinze, Baroon Pocket, Leslie Harrison, Ewen Maddock, Cooloolabin, Sideling Creek, Lake Macdonald, Little Nerang and Wappa

IMPROVING THE SEQ WATER GRID

The water grid is a network of bulk water supply pipelines that stretch more than 600km to move treated drinking water around the region.

The water grid connects the region's major water treatment plants and our climate-resilient water sources, the Gold Coast Desalination Plant and the advanced water treatment plants of the Western Corridor Recycled Water Scheme. Seqwater continuously improves the SEQ Water Grid to more efficiently deliver water around the region.

In 2018, we:

- continued delivery of around $20 million in capital works to improve the capacity of the SEQ Water Grid to transfer water into the northern sub-region
- began the Beaudesert Water Supply Zone Upgrade, which will connect Beaudesert and Wyaralong Dam to the SEQ Water Grid
- connected 100,000 Moreton Bay residents to the SEQ Water Grid through the Petrie Water Supply Upgrade
- planned and commenced upgrades to Ewen Maddock, Sideling Creek, Leslie Harrison, and Lake Macdonald dams as part of our Dam Improvement Program
- connected more than 800 residents in the Scenic Rim to a new Canungra Water Treatment Plant.

What is the SEQ Water Grid?

The water grid doesn't top up dams - it transports treated drinking water around the region. Due to the layout of the grid, we can't always move water directly from one area to another. For example we can't move water directly from the Gold Coast to the Sunshine Coast. Instead water is transported via the grid from the Gold Coast to Brisbane then water produced in Brisbane is transported to the Sunshine Coast.

Water is usually sourced and treated locally. We can change the way we manage the water grid in times of extreme weather, water quality issues or when we need to carry out maintenance or repairs on treatment plants or pipelines.

Because there are limits to the amount of water the grid can move, it can't completely replace local water supplies - only supplement them. That's why we still need to plan for the future to make sure communities in South East Queensland have enough water to live, work and play.

The water grid was built during the Millennium Drought, when some parts of the region had lots of water and others had almost none, and we had no way to move it from one area to another. While we cannot supply all of the region's water supply without local rainfall, the water grid can help move some water to drier parts of the region and take pressure off local supplies.

Legend

- Northern Pipeline Interconnector
- Western Corridor Recycled Water Scheme
- Southern Regional Water Pipeline
- Eastern Pipeline Interconnector
- Network Integration Pipeline
- Other bulk water pipelines connecting the SEQ water grid
- Local government boundary
- Reservoirs
- Water Treatment Plants (WTP) – connected to grid
- Water Treatment Plants (WTP) – off grid
- Water Treatment Plants (WTP) – other
- Western Corridor Recycled Water Scheme
- Desalination plant
- Power Station

Water Treatment Plants (WTP)

1 Amity Point WTP
2 Banksia Beach WTP
3 Beaudesert WTP
4 Boonah Kalbar WTP
5 Canungra WTP
6 Capalaba WTP
7 Dayboro WTP
8 Dunwich WTP
9 East Bank (Mount Crosby) WTP
10 Enoggera WTP
11 Esk WTP
12 Ewen Maddock WTP
13 Hinze Dam WTP
14 Image Flat WTP
15 Jimna WTP
16 Kenilworth WTP
17 Kilcoy WTP
18 Kirkleagh WTP
19 Kooralbyn WTP
20 Landers Shute WTP
21 Linville WTP
22 Lowood WTP
23 Maroon Dam WTP
24 Molendinar WTP
25 Moogerah Dam WTP
26 Mudgeeraba WTP
27 Noosa WTP
28 North Pine WTP
29 North Stradbroke Island WTP
30 Point Lookout WTP
31 Rathdowney WTP
32 Somerset Dam (Township) WTP
33 West Bank (Mount Crosby) WTP
34 Wivenhoe Dam WTP

Western Corridor Recycled Water Scheme

35 Bundamba Advanced Water Treatment Plant AWTP
36 Gibson Island AWTP
37 Luggage Point AWTP

Desalination Plant

38 Gold Coast Desalination Plant

Reservoirs

39 Alexandra Hills Reservoirs
40 Aspley Reservoir
41 Camerons Hill Reservoir
42 Ferntree Reservoir
43 Green Hill Reservoirs
44 Heinemann Road Reservoirs
45 Kimberley Park Reservoirs
46 Kuraby Reservoir
47 Molendinar Reservoir
48 Mt Cotton Reservoir
49 Narangba Reservoirs
50 North Beaudesert Reservoirs
51 North Pine Reservoirs
52 Robina Reservoir
53 Sparkes Hill Reservoirs
54 Stapylton Reservoir
55 Wellers Hill Reservoirs

Power Stations

56 Tarong Power Station
57 Swanbank Power Station

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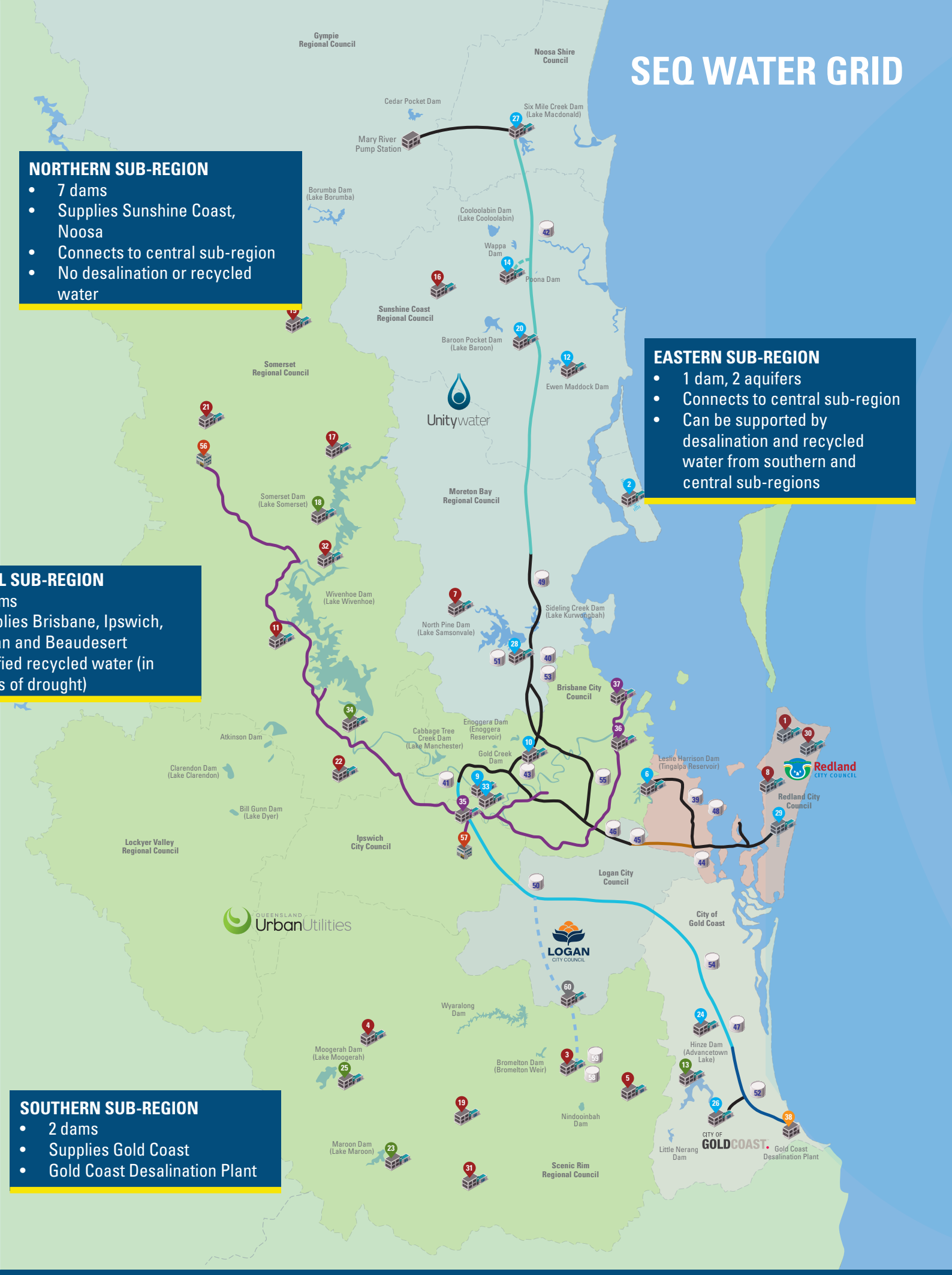
SEQ WATER GRID



NORTHERN SUB-REGION

- 7 dams
- Supplies Sunshine Coast, Noosa
- Connects to central sub-region
- No desalination or recycled water

EASTERN SUB-REGION

- 1 dam, 2 aquifers
- Connects to central sub-region
- Can be supported by desalination and recycled water from southern and central sub-regions

L SUB-REGION

ms
olies Brisbane, Ipswich,
n and Beaudesert
fied recycled water (in
s of drought)

SOUTHERN SUB-REGION

- 2 dams
- Supplies Gold Coast
- Gold Coast Desalination Plant

Although the region is interconnected, the Water Grid is operated to a large extent at a sub-regional level. Each of the sub-regions – northern, central, eastern and southern – is centred on a specific water storage to balance cost effectiveness and water security.

MEETING SEQ'S WATER NEEDS

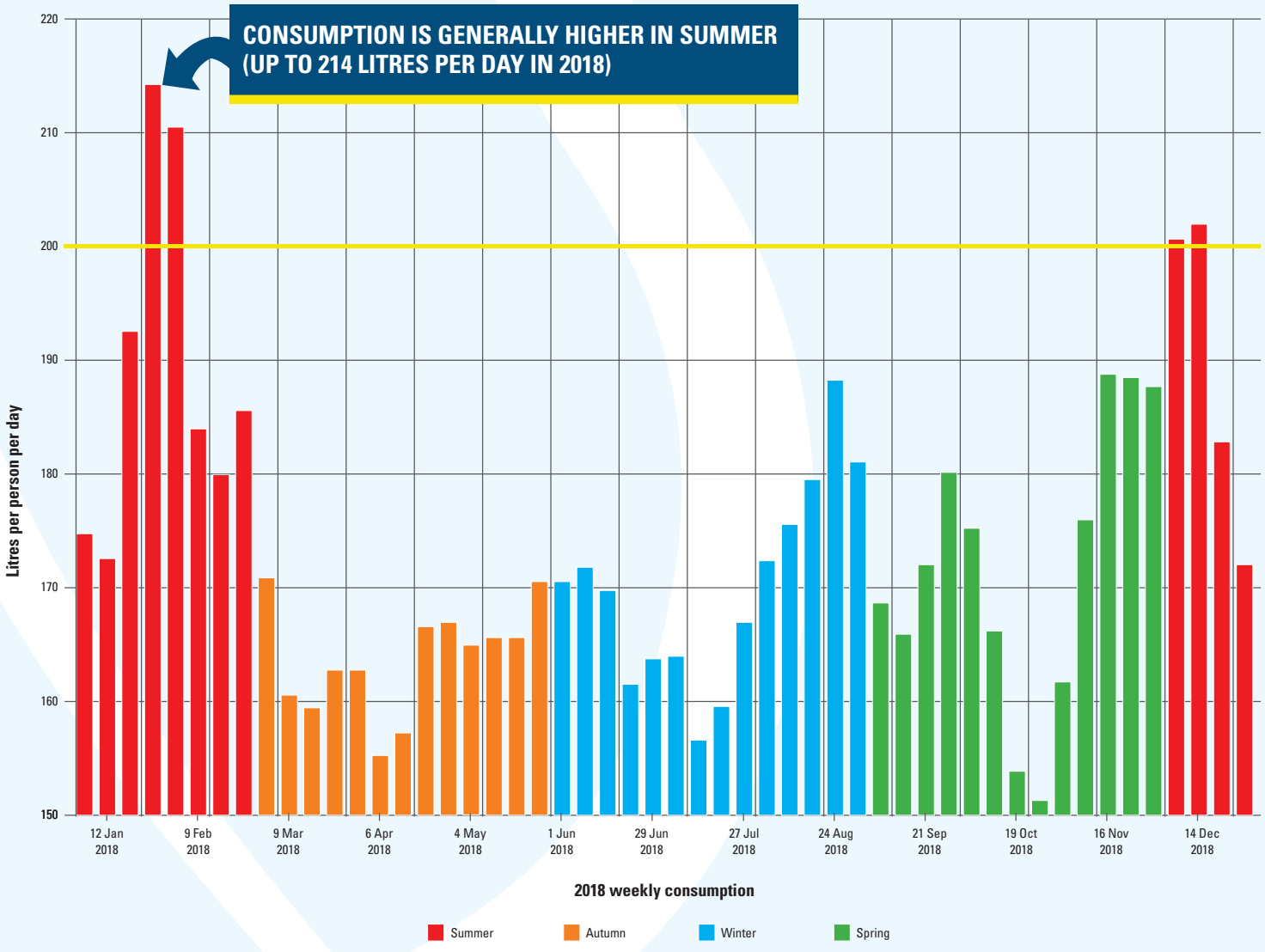
In 2018, the average person used **173 litres of water** per day.

We talk about 'demand' when determining how much water communities in South East Queensland use. Demand is significantly impacted by climate, population growth, weather and changes in how communities consume water.

On average, actual demand tracked approximately 1% lower than Seqwater projections in 2018, however we saw the impact of climate on demand in 2017, with water use spiking during hot dry spells.

Seqwater continues to work with the Water Service Providers (Unitywater, Queensland Urban Utilities, City of Gold Coast, Redlands Coast, Logan City Council) to understand longer-term demand management options.

The average South East Queenslander used about 173 litres a day in 2018.



BEING PREPARED FOR DROUGHT

All water supply droughts start with declining inflows into dams. It is the severity and duration of the drought that differs.

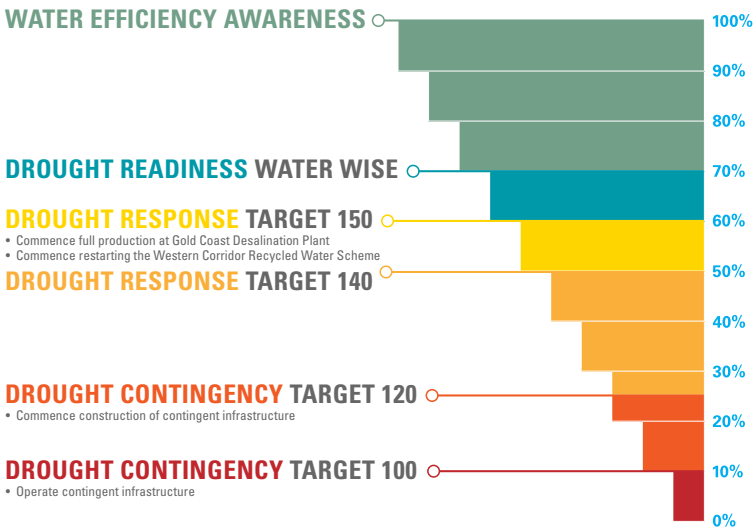
In 2018, while key storages on the Gold and Sunshine Coast were near full capacity or spilling, water levels declined in our two largest water storages, Somerset and Wivenhoe dams.

While as a region, our water grid dam levels remained comfortably above 70% in 2018, Seqwater will continue to monitor water levels closely.

When the 70% level is reached, the region enters into a drought readiness phase – which means drought is on the horizon and its time for the community to start preparing.

When we reach 60%, the Gold Coast Desalination Plant ramps up production to full capacity and we begin to restart the region's three advanced water treatment plants which produce purified recycled water.

SOUTH EAST QUEENSLAND DROUGHT RESPONSE



PROTECTING OUR CATCHMENTS

Healthy and resilient catchments are essential to maintaining a safe and secure water supply.

Catchments in SEQ make up more than 1.2 million hectares of land, but Seqwater owns less than 4% of that land.

We rely on the community to help protect our catchments and source waters. Partnerships with the community are indispensable. To help deliver catchment improvement works on private land, Seqwater partners with local and regional catchment organisations, councils, state government agencies, and landowners.

In 2018, new partnerships were formed with Noosa Landcare, Healthy Land and Water, the SEQ Natural Resource Management Group, and Sunshine Coast and Somerset Regional Councils.

Working with these partners, Seqwater is addressing catchment issues around Lake Macdonald, controlling vine and weed infestations across multiple catchments and mitigating wastewater system risks.

As we move into 2019, Seqwater will increase investment in catchment care and improvement. In the 2018-19 financial year, $10 million in investments is planned, almost double that of two years ago.

Seqwater CEO Neil Brennan with Healthy Land and Water Project Manager Mark Waud and HLW CEO Julie McLellan, inspecting remediation work at a mid-Brisbane River property.

Seqwater will work with local partners to address catchment issues around Lake Macdonald in Noosa during 2019.

LOOKING AHEAD

In 2019, Seqwater will continue to improve the region's resilience to drought and work with communities across South East Queensland to make our water supply the best it can be.

Improve our ability to transfer water north

We will continue to implement the almost $20 million of projects to improve the capacity of the SEQ Water Grid to transfer water into the northern sub-region.

These projects include upgrading a water quality management facility, increasing pipeline capacity and expand the ways we can supply water to this region.

Readying our climate-resilient water sources

After the successful restart of a single reverse osmosis train at the Luggage Point Advanced Water Treatment Plant, Seqwater can supply about 23 ML of water a day for use by industry and power stations. Although we don't anticipate recycled water will be added to the drinking water supply in 2019, the purified recycled water produced meets all water quality parameters within the Australian Drinking Water Guidelines.

By restarting the train, we can provide assurance that our entire recycled water scheme (including our additional Advanced Water Treatment Plants at Gibson Island and Bundamba) is ready to go in the event of a drought.

Watching Wivenhoe

Even with some of our main water storages at full capacity and with the combined level of our drinking water dams at about 76% at the end of 2018, without good inflows into the Somerset-Wivenhoe system, we may need to enact our region-wide drought response plan, such is the impact of these storages on the system as a whole.

Seqwater will continue to closely monitor the situation and respond accordingly based on changing conditions.

Baroon Pocket Dam on the Sunshine Coast is the northern sub-region's major water storage.

About Seqwater

Seqwater delivers a safe, secure and cost-effective water supply to South East Queensland. We manage up to $11 billion of water supply assets. This includes dams, weirs, conventional water treatment plants and our climate-resilient water sources, the Gold Coast Desalination Plant and the Western Corridor Recycled Water Scheme. This also includes the SEQ Water Grid, a 600 kilometre reverse flow pipeline network enabling drinking water to be transported around the region.

One of Seqwater's core functions is long-term strategic planning for a reliable and sustainable water supply. We call this plan our Water Security Program. In March 2017 we released an updated version of this plan, available at **seqwater.com.au**

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