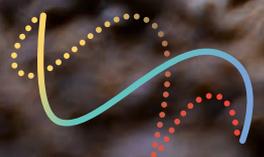




# Planet Positive Water

OUR PLAN TO BE NET POSITIVE WATER BY 2030



This  
Changes  
Everything



## FOREWORD

Water is one of our planet's most precious resources, and while it covers approximately 70 per cent of the Earth's surface, less than 1 per cent of that is fresh water and our access to it is limited. Growing urban populations and economies, together with the impacts of climate change, are placing an enormous burden on water availability, and a quarter of the world's population across 17 countries are living in regions of extreme high-water stress<sup>1</sup>.

The wide-reaching repercussions that water scarcity is likely to have on our societies cannot be ignored. In 2018, the World Economic Forum ranked water as the world's number one social risk, with conflicts over water resources expected to increase. In addition to this, a lack of access to clean water will likely lead to a greater occurrence of health issues such as cholera and typhoid fever, and food supplies will rapidly deplete. And, with the existing climate change scenario, water scarcity in some arid and semi-arid places is expected to displace between 24 million and 700 million people by 2030<sup>2</sup>.

It's also becoming harder to ignore the likelihood of a water stressed world. Just four years ago, Cape Town was close to becoming the first major city in the world to run out of water, with "day zero" only narrowly avoided. In Australia in that same year, 100 per cent of New South Wales was declared to be drought-affected, and in January 2020, Stanthorpe in Queensland ran out of water, forcing the local council to import 42 truckloads of water every day to meet demand.

As global temperatures continue to rise, it's clear that solutions to help preserve and protect our water supplies are desperately needed. And we all need to do our bit. As a business, we've noted that the lower price on water doesn't reflect its value, which has meant that it hasn't been given the same focus as other environmental issues such as energy and waste, and technology and innovation opportunities have lagged.

Along with our targets to be net positive carbon and send zero waste to landfill by 2030, we made a commitment to be net positive water. For us, this means giving back more than we use. The strategies we've outlined in this plan, set out how we'll do this, being mindful these will likely adapt as technologies for water savings and water generation evolve.

We also expect that the interrelationship between carbon and water, as well as water in materials used, will continue to attract greater interest as capability and standards in environmental, social and governance issues continue to mature.

And as with our carbon and waste plans, we see a significant opportunity to collaborate with our peers, industry bodies, and utility companies, to address the problem of water scarcity more broadly.

Regards,

*Susan Lloyd-Hurwitz*

**Susan Lloyd-Hurwitz**  
CEO & Managing Director

## SUSTAINABLE DEVELOPMENT GOALS MOST RELEVANT TO OUR PLAN



**"WATER IS ONE OF THE MOST IMPORTANT RESOURCES ON THE PLANET, AND WE ALL NEED TO FIND MORE SUSTAINABLE WAYS TO USE AND MANAGE IT. WE CAN'T WAIT FOR IT TO RUN OUT TO DO SOMETHING ABOUT IT; THE TIME TO TAKE ACTION STARTS NOW."**

Susan Lloyd-Hurwitz, CEO & Managing Director

1. <https://www.wri.org/news/release-updated-global-water-risk-atlas-reveals-top-water-stressed-countries-and-states>  
2. <https://www.unwater.org/water-facts/scarcity/>

## INTRODUCTION

Mirvac's bold sustainability strategy, *This Changes Everything*, was launched in 2014, under which we set ambitious and industry-leading environmental targets to be net positive carbon and water and send zero waste to landfill by 2030. We set these targets recognising our planet as a key stakeholder in our business.

But setting ambitious targets isn't enough. Our plans across carbon, waste, and now water, set out the actions we'll take to reduce our impact and mitigate the environmental risks we face. And these risks don't just stand alone, they're interrelated and are greater than the sum of their parts.

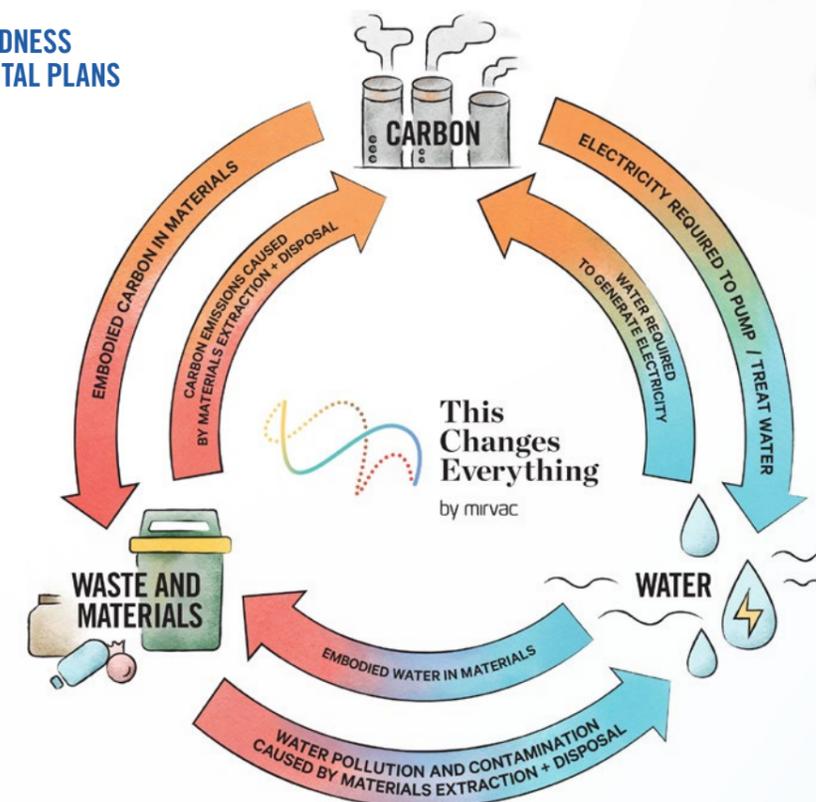
Since releasing our carbon and waste plans, we've met our target to be net positive carbon nine years ahead of schedule, meaning we now eliminate more than we emit. With 100 per cent renewable electricity across Retail, Office and Build to Rent (BTR) portfolios. We've also begun a pilot at our Willoughby apartment development in Sydney to see how we can halve our development waste, which is showing some promising potential outcomes. This includes a six tonne reduction in waste per apartment, as well as significant savings in waste avoidance, by employing design innovations such as prefabrication.

Planet Positive Water is the third of our environmental plans to be released. We've staggered these plans, prioritising carbon in 2019 and waste in 2020, given the urgent need to act on climate change and the stronger pricing signals in these two areas.

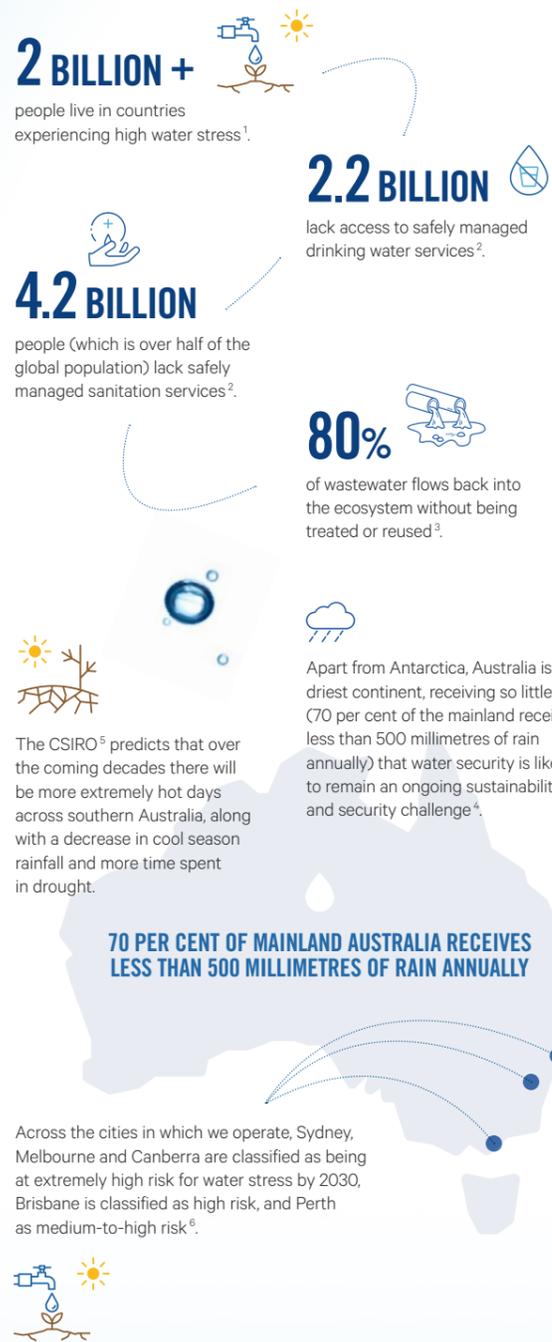
Together, these plans show how we minimise the harm in our operating environment, use our influence to build partnerships, and leverage our buying power for materials and resources to signal our support for renewable, regenerative, and planet positive goods.

Our aim is to ensure that our activities and influence do more than just no harm; we want to contribute to the preservation and regeneration of our precious and biodiverse environment.

## THE INTERCONNECTEDNESS OF OUR ENVIRONMENTAL PLANS



## WHY IT'S IMPORTANT WE CONSERVE WATER



## OUR WORLD

Ongoing urbanisation and an ever-increasing global population have dramatically impacted global water consumption. It's been reported that since 1900, our reliance on freshwater for agriculture, industry and municipal uses has increased six-fold<sup>7</sup>. At the same time the impacts of climate change and pollution have diminished our access to clean, fresh, available water supplies.

This has significant flow on effects: as well as severely disrupting food supply chains, water scarcity in the future will likely lead to energy shortages, an increase in life-threatening water-borne diseases, and higher instances of global conflict (as disputes over access to freshwater sources increase). There is also likely to be considerable economic turmoil, with a number of key industries that rely on water, such as manufacturing and technology, at risk.

And because water is cheap in Australia, that is, we pay for the connection and usage of infrastructure rather than the resource itself, there has been less impetus for governments and industries to drive and deliver water savings programs. A recent report by the Productivity Commission found that the National Water Initiative formed in 2004 was outdated, and that "governments at all levels had failed to remain focused on the challenges facing water policy"<sup>8</sup>, particularly in the face of both climate change and a growing population.

The lack of movement from government on water is also no doubt exacerbated by an ongoing uncertainty around water availability and demand. For example, different states experience different variations in available water at any given time, depending on rainfall and inflows.

Water efficiency projects or initiatives also tend to deliver a lower return on investment than those focused on carbon or waste, which provides fewer incentives for homeowners or commercial landlords to pursue them. Advancements in technology, particularly smart metering and behavioural interfaces, are, however, encouraging.

## OUR OPERATING ENVIRONMENT

Within Australia, and with 70 per cent of Australians living in capital cities, we each use an average of 100,000L of freshwater every year, making us one of the greatest consumers of water per capita in the world<sup>1</sup>. Within the property industry specifically, its reported that buildings use 20 per cent of the world's available drinking water<sup>2</sup>. Tenant amenities use the highest volume of water (in office buildings), followed by cooling towers, landscaping, wash down and baseflow / leakage.

Buildings also impact the natural water cycle. We draw on dams, rivers, groundwater and seawater (through desalination) for the supply of reliable drinking water, removing water from the natural environment and competing with environmental flows that maintain the health of our waterways. Once this water is used, it's then discharged into the sewer system as wastewater, and then treated and released back into the environment, which has a range of potential impacts on water quality.



In addition to this, our developments change the landscape of our environment. Porous surfaces that absorb rainfall (such as soil, sand and clay) are turned into impervious surfaces (such as concrete) causing rainfall runoff. These surfaces collect pollutants - from rubbish and debris, to oils and road dust - which are captured in the rainfall runoff. The volume of runoff from a development puts greater strain on natural waterways, increases the rate of runoff erosion, and significantly reduces the quality of the rainwater runoff through the pollutants that it carries.

In setting out this plan, we've focused on what we can do to reduce our impact on drinking water use and influence a subsequent reduction in wastewater discharge. We understand there are significant impacts from rainfall and stormwater runoff in terms of volume and quality, and we will continue to work to understand our impact so that we can minimise harm in our environment.

We also recognise that, as with waste, water it is an issue that requires significant collaboration across big business, industry, utilities, governments and non-government organisations, and that a multi-faceted solution is required.

### THE IMPACTS OF CLIMATE CHANGE ON GLOBAL WATER SUPPLIES, WATER RESOURCES AND WATER QUALITY ARE EXTENSIVE.

At a more local level, these include:

- > increased evaporation, leading to higher humidity and impacting drinking water supplies and agriculture;
- > an increase in the intensity and frequency of heavy precipitation events such as heavy rain storms and flooding;
- > increased surface runoff from storms, leading to water pollution and impacts to soil quality;
- > changes to ocean currents, which, in turn, impacts global weather patterns; and
- > more intense and prolonged droughts as well as more severe short-term droughts, leading to an increase in water demand.<sup>7</sup>



1. <https://www.unwater.org/water-facts/scarcity/>  
 2. <https://www.unwater.org/water-facts/water-sanitation-and-hygiene>  
 3. <https://www.unwater.org/water-facts/quality-and-wastewater/>  
 4. <https://www.ga.gov.au/scientific-topics/national-location-information/landforms/deserts>  
 5. The Commonwealth Scientific and Industrial Research Organisation is an Australian Government agency responsible for scientific research. <https://www.csiro.au/en/research/environmental-impacts/climate-change/state-of-the-climate/previous/state-of-the-climate-2018/future-climate>  
 6. <https://www.wri.org/resources/maps/aqueduct-water-risk-atlas>  
 7. <https://www.nationalgeographic.org/article/how-climate-change-impacts-water-access/>  
 8. <https://www.theage.com.au/politics/federal/productivity-commission-slams-government-s-water-plan-warns-cities-could-run-dry-20210210-p5717b.html?btis>

1. <https://www.yourhome.gov.au/water>  
 2. <https://www.nabers.gov.au/ratings/our-ratings/habers-water>

## OUR FOOTPRINT AND PROGRESS TO DATE

### Commercial

Since setting our target to be net positive in 2014, water intensity within our office and retail portfolio has reduced by 29 per cent<sup>1</sup>, which has been achieved through a range of initiatives implemented by our dedicated in-house engineers. These include utility metering and monitoring, leak monitoring, retrofitting bathroom services to reduce water consumption, the installation of rainwater systems to capture and utilise rain water, and physical night audits to assess the performance of water-using systems (such as cooling towers).

As well as reducing our intensity, these initiatives have helped us to achieve a 3.96 star average NABERS (National Australian Built Environment Rating System) Water rating<sup>2</sup> across our office portfolio (compared to a national average of 3.7 stars). Our integrated model also puts us in an enviable position where we can design and deliver water-efficient assets from the outset.

At 200 George Street in Sydney and 699 Bourke Street and 664 Collins Street in Melbourne, all of which were completed in the past six years, we achieved 4 star NABERS Water ratings by embedding water efficiency into the design. And to help future developments to be capable of achieving our net positive water ambition by 2030, we're upping the ante with a 4.5 star NABERS Water rating target. This includes our office development at 80 Ann Street in Brisbane, which is expected to complete this year, Waterloo and 55 Pitt Street in Sydney, and Spencer Street in Melbourne.

Mirvac's design standards also set out the minimum requirements we expect in order to achieve our sustainability targets across energy, water and waste. And it helps that we have a passionate team of facilities managers focused on driving the best water savings outcomes at our assets. At 380 St Kilda Road in Melbourne, for example, we improved the NABERS Water rating from 3 stars in 2012 to 5 stars in 2020, purely by focusing on improving water efficiency (see page 12 for more).

In addition to this, we're continuing to find ways to reduce our potable water use, which has increased by 8 per cent or 32 megalitres (ML) – since 2014 due to a number of factors<sup>3</sup>. As well as growing our portfolio<sup>4</sup>, non-potable water capture and reuse at our commercial assets has been challenging, while changes in rainfall in the capital cities in which we operate has impacted rainwater capture. Higher temperatures and humidity have also meant that cooling towers have had to work harder to reject heat, which causes greater water loss through evaporation. Further to this, end-of-trip facilities, while increasing tenant amenity, have added to building water use, and several of our retail centres have increased their trading hours, which has led to increased water and energy consumption.

The table below outlines our progress to date.

### WATER INTENSITY (L/M2)

	FY13 baseline	FY19	FY20	FY21	FY13-20 % change
Office and Industrial	725	532	532	324	-26.6%
Retail	1,689	1,068	1,068	934	-36.8%
<b>Total</b>	<b>1,075</b>	<b>762</b>	<b>762</b>	<b>534</b>	<b>-29.1%</b>

### POTABLE WATER USAGE (ML)

	FY13 baseline	FY19	FY20 <sup>5</sup>	FY21
Office and Industrial	350	489	437	260
Retail	492	494	468	406
<b>Total (ML)</b>	<b>842</b>	<b>982</b>	<b>905</b>	<b>666</b>

**3.96** ★★★★★  
**STAR AVERAGE**

NABERS Water rating across the office portfolio (PRE COVID)

**IN FY20, MIRVAC USED OVER 900 ML OF WATER  
ACROSS ITS OFFICE AND RETAIL PORTFOLIOS,  
OR 2.48 ML PER DAY**

### Residential

To influence reduced water consumption in our residential business, we're committed to delivering the most water efficient products our customers will support. As a minimum standard we install WELS-rated fixtures and appliances, including taps and spouts (minimum 5 star rating), toilets (minimum 4 star rating<sup>1</sup>), and showers (minimum 3 star rating). We also continue to work on influencing our customers' behaviour through education, with water savings tips included in our homeowners' manuals, so that our customers understand the benefits of water efficient showers and toilets.

In addition to this, we provide the infrastructure that supports the supply of recycled water to our customers' homes and connect to existing recycled water schemes where available (for example, at Woodlea in Victoria and Green Square and Pavilions at Sydney Olympic Park in New South Wales). Finally, we've installed rainwater tanks at a number of projects to reduce the water used for irrigation and overall residential water consumption.

### Construction

Water is used in a number of ways on our construction sites, including for dust suppression, cleaning, mixtures (such as render, concrete, and bricklayers' mortar), the washdown of equipment and trucks, and for worker amenities. We aim to use water as efficiently as possible, and we monitor and report on our water use across our projects. To help reduce water use on site, we've implemented systems for paintbrush wash that reuses water several times, and we've identified opportunities to reuse water for dust retention through rainwater capture and reuse. As a next step in this area, Mirvac will start to look at standardising water management and fixtures across our constructions projects, and leverage water use data to inform improved water efficiency measures.

### The challenge and opportunity

It's clear that targeting net positive water doesn't come without its obstacles, many of which are outside of our control. We have a vast continent of varying rainfall conditions which are intensifying with climate change; absent or ineffective policy, a result of a low commercial signal on water; a lack of clear data within the property industry; not to mention the challenges we face in influencing the behaviour of our tenants and customers.

Despite these challenges, we also see great opportunity. We recognise that we're an early mover on this subject and that we will continue to learn and find ways to improve and enhance our plan, particularly as technology, policy and action around water evolves.

In releasing this plan, we're hoping to inspire discussion, collaboration, partnership and innovation both within our industry and with other leading organisations, as well as with our employees and customers, so that we can continue to work towards solving this issue together.

## PURPOSE/OBJECTIVE

The purpose of this plan is to demonstrate how we measure our water use, how we reduce our use by focusing on water efficiency, how we capture water or change the source from potable to non-potable to offset our use, and then how we leverage the reach of our voice, our partnerships, and our buying power to effect even wider progress to value and conserve water.

## PRINCIPLES

In developing and sharing this approach, we bear the following principles in mind. We will continue to use these principles in our decision-making as the water context matures and our work evolves.



### Transparency

We are committed to being transparent around how we define our targets, how we report our water use, what we consider an offset is, and how together, these constitute net positive water. To this end, we have had this plan peer-reviewed, and in line with our commitment to transparency we will continue to update on our progress.



### Achievability

We start with what's in our direct control, always. We focus on the most efficient and cost-effective ways to conduct our business for a healthier planet. From there we consider the other levers we can pull, such as advocacy and partnership, to do what we can do to support a wider impact.



### Innovation

We recognise that we are among the first cohort of Australian businesses to set an ambitious net positive water target and share our plans on how we'll get there. We also recognise the opportunity we have to harness the power of our creative workforce. We encourage both sustainability and innovation at Mirvac, and when we set a bold direction together we see ideas start to flourish.

1. Across Mirvac's office and retail portfolios.

2. As at January 2021. The improvement on FY20 was largely due to less water being used by tenants during the COVID-19 pandemic lockdowns (particularly at our Melbourne assets).

3. It's worth noting that while our absolute water use has increased as more area has been added to the portfolios, our water intensity continues to reduce, reflecting our focus on water efficiency.

4. Using National Greenhouse Energy Reporting methodology, our office portfolio increased from 479,230 square metres in FY13 to over 741,905 square metres in FY20. Our retail portfolio increased from 371,370 square metres to 441,190 square metres.

5. It's important to note that water intensity was positively impacted by COVID-19 in FY20 and FY21, given reduced water use in Mirvac's commercial buildings.

1. <https://www.waterrating.gov.au/> reports that an upgrade to a 4 star rated toilet from an old single-flush toilet is estimated to save 50kL and \$148 each year on their water bills.

## SCOPE

### What is net positive water?

We define net positive water as replenishing more operational water than we use<sup>1</sup>. Specifically, this means:

1. reducing our potable water use through efficiency initiatives, behavioural change and procurement; and
2. capturing, producing and supplying non-potable water (including rainwater) to replace potable water use in our catchment areas.

Wherever practical, we have aligned our net positive water boundaries with our plan to be net positive carbon and with other reporting and rating frameworks, such as the National Greenhouse and Energy Reporting and NABERS, where appropriate, to ensure alignment with industry and policy standards.

As with net positive carbon and zero waste, our net positive water plan seeks to address the areas where we can have the most impact. For us, this means focusing on commercial assets where we have both operational control and a financial interest, as well as activities or initiatives within our construction and residential businesses that are in our control (for example, choosing water efficient taps in our residential apartments, or installing rainwater tanks and opting for drought-resilient plants in our masterplanned community sites).



### What's counted

We define our operational water use as water that is used by Mirvac as a direct result of Mirvac's core operations. This includes<sup>2</sup>:

Office	Retail	Build to Rent	Apartments	Masterplanned Communities	Construction
- base building cooling towers	- base building cooling towers	- common areas	- landscaping (prior to practical completion)	- landscaping (prior to practical completion)	- amenities
- amenities	- amenities	- central heat rejection	- treatment and reuse systems	- treatment and reuse systems	- construction office
- cleaning	- cleaning	- swimming pools	- leakage	- water collection	- dust suppression
- fire water	- fire water	- leakage	- fire water	- leakage	- wash down
- leakage	- leakage	- cleaning of common areas	- landscaping		- onsite construction
- landscaping	- landscape				
- waste wash down	- waste wash down				
- end-of-trip facilities	- tray washers				
	- end-of-trip facilities				

### What's not counted

Water used at assets where we do not have a financial interest will not be counted, given we don't have the authority to make decisions over the water infrastructure or initiatives delivered. This is where we manage buildings on behalf of another owner, such as the LAT portfolio. We manage a number of buildings (80 Pacific Highway, 31 Market Street, 55 Market Street, 255 Elizabeth Street all in Sydney), where we have operational control, but do not have control over the capital spend. However, in line with our commitment to transparency we'll continue to report on our water usage or in-use water consumption for residential homes and apartments, wherever data is available.

Similarly, as we do not have operational control at our industrial assets (due to lease and management structures), water use here will not be counted, but we'll continue to report where we have data. In practical terms, this will include precinct meter data that is apportioned.

### How are offsets defined?

We define offsets as non-potable water produced from an asset or infrastructure in which our financial contribution made it possible for the infrastructure to be built. We believe this is consistent with examples put forward in case studies of global organisations working towards the United Nations Net Positive Water Initiative. The volume of offsets will be determined through metered water data that has proven to have reduced drinking water consumption by the same volume. We will only count offsets for the reasonable asset life of the initial infrastructure, even if that infrastructure continues to produce non-potable water after this time. In addition, we will not use offsets that rely on data modelling.



### Influence

We have identified a number of areas where, although we don't have operational control or a financial stake, we have the ability to influence an outcome that will positively contribute to our water plan and reduce water usage. We don't plan to be limited by our definition of offsetting Mirvac's water use, and we're also strongly committed to taking further opportunities within our power to make a positive water contribution. These include:

- > **design:** through our integrated capability, we can make decisions that will reduce water consumption. This includes opting for water efficient fittings, fixtures and appliances in our industrial assets and residential products, preferring water resilient plants in our landscaping, and making choices around how we connect to, and use, recycled water;
- > **procurement choices:** as with waste, we can reduce our impact by using our purchasing power for good and preferring suppliers that have lower embodied water in their products, being mindful of materials where low embodied water, low embodied carbon, and recycled or regenerated goods intersect<sup>1</sup>;
- > **fitout guidelines:** as asset managers, we can include standards in our fitout guidelines that help our tenants minimise their water impact, which includes embodied water and operational water use;
- > **renewable electricity:** Mirvac's transition to renewable electricity saw our carbon footprint reduce by 80 per cent as at 1 January 2021, which, in turn, has reduced the impacts of our flow on water use by approximately 353 ML, given the higher water use in generating electricity from coal. Our transition from onsite fossil fuels to renewable electricity also reduces impacts on water withdrawal and water quality from gas extraction and refining; and
- > **advocacy:** we're committed to working with all levels of government, as well as water utilities companies and with our industry peers, to generate improvements and innovation in water infrastructure and water-saving programs. Through education programs, we can also encourage positive behaviour in our employees and customers.

The water savings we influence will not be counted towards our net positive water target.

### Net positive water definitions

**Potable water:** water that is safe to drink or use for food preparation.

**Non-potable water:** water that is not safe to drink or use for food preparation.

**Capture:** to retain water for later use to replace potable water.

**Produce:** to capture, treat and supply non-potable water in order to replace potable water.

**Supply:** reticulation and/or provision of non-potable water to replace potable water.

**Offsets:** any non-potable water (volume) captured, produced and/or supplied as a direct result of Mirvac's business operations.

1. This is the same definition that Microsoft, one of a small number of other companies with a net positive target, has used. By aligning our definition with theirs, we can create a common language from which we can all speak about this bold ambition.  
 2. See Appendix A for a full breakdown of our boundary statement, which outlines what's included in our net positive water plan, the things that aren't but that we will continue to report on, what's excluded, and the areas where we've identified we can influence a better outcome.

1. This aligns with Planet Positive: Waste and Materials, which outlines our strategy to send zero waste to landfill by 2030 by embracing principles of the circular economy.



**The water cycle**

While the impacts of water scarcity are far reaching on a global catchment scale, water (unlike carbon) is an issue that needs to be solved at a local level. This requires us to understand our water sources and reserves and the impacts of water extraction on our local environment.

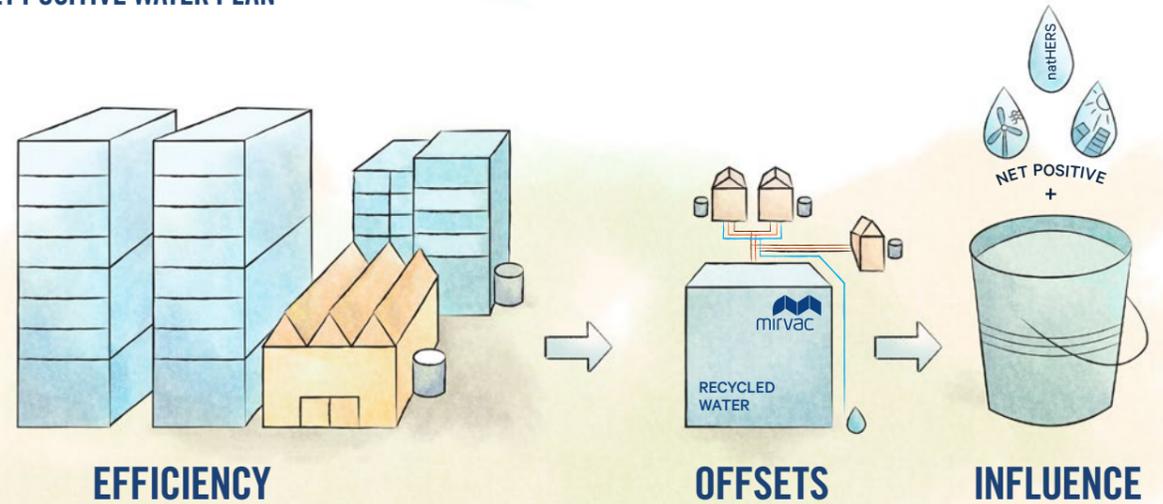
In the cities in which we operate, our assets are serviced by local water utility companies – Sydney Water in Sydney, Melbourne Water in Melbourne, South East Queensland Water in Brisbane, Icon Water in Canberra, and the Water Corporation in Perth. Coastal operations also utilise desalination plants, which is energy intensive and discharges highly concentrated saline water back into the environment, impacting water quality.

The drinking water supplied by water utility companies is drawn from the dams and rivers, which competes with environmental flows that keep the downstream wetlands and riparian zones (the area between the wetland and dryland) ecologically healthy.

Wastewater is treated to varying levels before being discharged back into the environment. This may be simple screening and sedimentation removal before discharge, or tertiary treatment where wastewater undergoes biological treatment, nutrient removal, clarification, filtration and disinfection before being discharged. This has an impact on the receiving waters, both with the consistency and volumes of flow, but also water quality.

By reducing our water use and offsetting the remainder of it by supplying recycled water (that in turn reduces drinking water use and subsequent wastewater discharge by the same amount), we have a positive impact on our urban drinking water cycle.

**OUR NET POSITIVE WATER PLAN**



\*Savings = 200ML and \$900,000 operational costs per annum, plus a valuation uplift of \$18m. Olympic-sized swimming pool = 2.5ML



STRATEGIES

# 1 WATER EFFICIENCY

We have a responsibility to be as water efficient as possible, especially in our operations where our footprint is most significant. In 2018, we set a target for all new developments to achieve a 4.5 star NABERS Water rating. In addition, we have committed to:

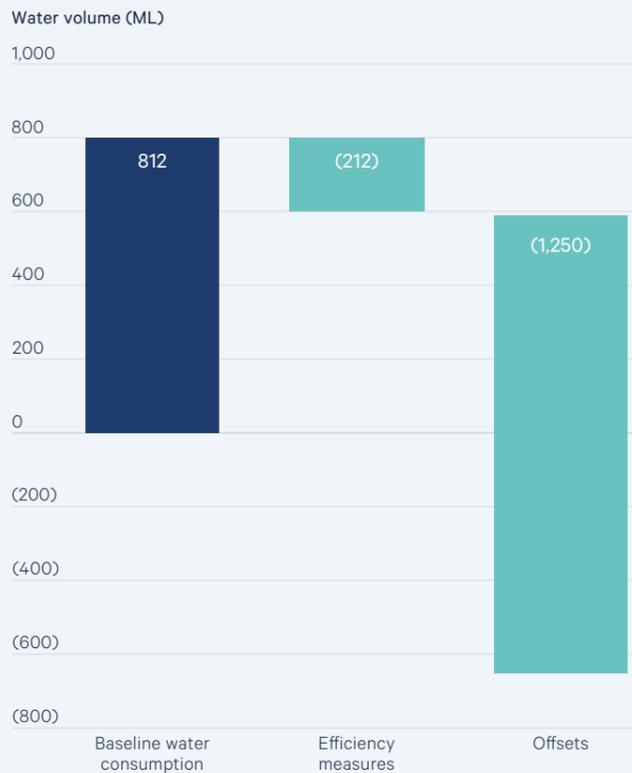
- > An average 4 star NABERS Water rating across portfolio by 2024;
- > A minimum 4 star NABERS Water rating for all new office assets by 2027;
- > An average 4.5 star NABERS Water rating across portfolio by 2030;
- > Continuous improvement in water efficient fixtures and fittings and the provision of rainwater tanks in our residential developments; and
- > Proactive customer communications to build understanding about why water is so valuable and how we can all use it more efficiently.

Given what we know about the growth appetite in BTR, and where our office and retail portfolios are heading, we forecast that Mirvac's operational water use would be approximately 812 ML per year by 2030 without additional interventions.

By implementing continuous improvements on water efficiency, we anticipate that we will reduce our water use by 7 per cent by 2024, and a further 10 per cent by 2027 (a 16 per cent total reduction from an FY19 baseline). As a result, we anticipate that our total potable water use in 2030 will be 590 ML per year. This represents a saving of over 200 ML, almost \$900,000 reduction in operating costs and potential valuation uplift of approximately \$18million.

In addition, we will be using water more efficiently in construction and reusing water where possible.

## 2030 NET POSITIVE WATER FORECAST



# 2 OFFSETS

We see our financial interest in large-scale developments as an opportunity to advance innovation and reduce potable water use to offset our operational water use. We will do this by:

- > Challenging all residential developments to reduce their reliance on water, for example, through infrastructure innovation and drought tolerant plants;
- > Targeting key masterplanned community (MPC) opportunities at scale to innovate with water infrastructure, like capturing and reusing stormwater in order to change the source irrigation water from potable to non-potable. We will pilot this work at several projects to begin exploring its potential. One such site will include the Wantirna South project in Victoria, a 171 ha site bordering state forest with 12.1 ha public open space of which 7 ha will be active space;
- > Bringing certainty and reliability to irrigation water data by installing meters on residential projects; and
- > Exploring opportunities to partner with stakeholders, such as leaders like the Green Building Council of Australia, water utilities, and local governments to take opportunities at scale across asset classes.

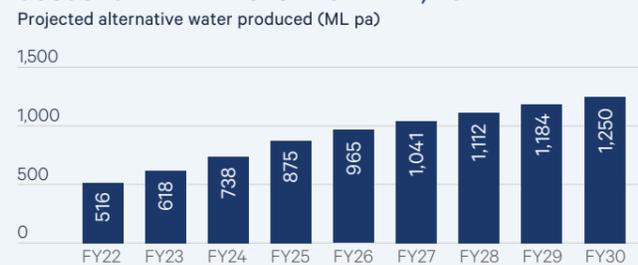
We have a range of MPC project opportunities where we can demonstrate our potential to generate offsets through reduced potable water use. The table below shows clearly that the Googong project delivers a substantial opportunity to deliver these offsets, and it is the only project so far in which we have high confidence in the data. However, it is not the only answer, and nor will we count the offsets it delivers in perpetuity.

For the other projects we are examining, the savings are significantly lower. We have not included those in our table at this point because we have low confidence in the accuracy of potential volumes. Not only have we modelled planned innovations, our plans often evolve in discussion with water and local government authorities. Unfortunately, this can lead to reduced innovation and fewer water outcomes delivered.

It is clear that meters are needed to improve the reliability of this data, and we will provide updates to this plan as certainty increases. As meters are installed and data can be verified, we also plan to begin voluntarily disclosing irrigation water use in residential, where we have operational control.

We will begin counting offsets based on available, validated data of savings or recycled water production, and then at the end of life for the infrastructure. For example, at Googong, offsets will be counted from 2021, as residents move in, and will steadily decrease after 15 years in line with the plant life cycle. With operational water use reduced to around 59 ML per year, we anticipate that by 2030, and each year after, we will be offsetting at least 59 ML to remain net positive water. Given the scale of water produced by Googong, we anticipate that we will reach net positive water in advance of our 2030 target.

## GOOGONG WATER RECYCLING PLANT, NSW<sup>1</sup>



<sup>1</sup> Projected treated water produced, based on current information and project program. Figures subject to change based on water demand and project timeline. Includes all end uses, such as public open space irrigation and residential use.

# 3 INFLUENCE

We want to see the value of water commensurate with how important it is to life. We will inspire conversations about the value of water with our teams, our partners, our industry, and our customers.

We expect that creativity and innovation will be unlocked through these conversations and that we will start to see real impact in terms of innovations in our design and development, progressive thinking in construction, efficiency in operations, and opportunities for our customers to conserve water.

We will add the impacts of the choices we influence (that go beyond water efficiency and water offsets) to our cumulative water saving tracker, wherever we can quantify them.

### Using our purchasing power for good

We're aware of the impact our spending choices can have. We want to buy better products and send a signal to our suppliers that we will preference those who are interested in coming with us on this journey. We want to inspire creativity and innovation in technology and product development.

We're already using our purchasing power for good when it comes to carbon and waste. With a very substantial annual spend, including over \$1 billion on materials in FY19, we've set a target to buy 25 per cent recycled materials in our high impact areas, such as concrete, steel and paper products.

And we've had a substantial impact on our scope 2 emissions by buying 100 per cent renewable electricity. As well as delivering a significant carbon reduction, we anticipate this choice alone will save approximately 353 ML of water in FY21 (combining base building and on-sold electricity), given the much more significant water use in coal fired power generation. And with our move towards full electrification in both commercial and residential development, our capacity to influence good outcomes only grows.

In addition, we are working towards developing a balanced scorecard materials matrix to help us assess our best spending opportunities for high-impact items. This matrix will factor in a variety of environmental benefits, including embodied carbon, embodied water, recyclability, and recycled content. We will be starting to request information about the water used in materials we buy through Environmental Product Declarations from our suppliers.



CASE STUDIES



380 St Kilda Road

Mirvac acquired a 50 per cent interest in 380 St Kilda Road over 25 years ago, purchasing the remaining 50 per cent in 2001. In 2012, the 15 level, A-grade building had a 3.5 Star NABERS Energy rating and a 3 star NABERS Water rating. Over the past eight years, Mirvac's in-house facilities management and technical services teams have focused on improving the environmental performance of the building, which has seen the asset reduce its greenhouse gas emissions by an incredible 70 per cent and its water usage by 44 per cent.

Mechanical upgrades, which started in 2013, set a strong foundation for these reductions. In terms of water, this has included optimal sizing of a new primary chiller and cooling tower plant, followed by upgrades to more efficient taps and toilets across the whole building. A strong commitment to continuous improvement, close monitoring of energy and water consumption, and excellent maintenance practices have further strengthened this approach.

As well as having a positive environmental impact, the improvements to the building have resulted in operational savings of over \$450,000 per year, a potential valuation uplift of \$8 million, and have improved the asset's NABERS Energy and Water ratings to 5.5 stars and 5 stars respectively. Mirvac is now exploring future opportunities for the building, including decentralised hot water, rainwater harvesting and roof-top solar. The future is bright for 380 St Kilda Road.

RESIDENTIAL



699 Bourke Street and 664 Collins Street

Standing next to each other above Southern Cross station in Melbourne, both 699 Bourke Street and 664 Collins Street were built with sustainability front of mind. Each asset uses onsite solar power, purchases 100 per cent renewable electricity, and utilises smart technology that collects real-time data on the buildings' performance so that Mirvac and its tenants can improve efficiency and effectiveness. In addition, each asset has an 80,000 litre rainwater tank installed on site to service toilets and urinal flushes. This helped both assets achieve a 4 star NABERS<sup>2</sup> Water rating following completion, commensurate with their design.

To maintain water performance, the facilities team has implemented a rigorous hydraulic maintenance contract that ensures fixtures, domestic hot systems and potable and rainwater tanks are regularly inspected for correct operation and leaks. The contract also requires that all water from tanks is used onsite rather than disposed before cleaning. Finally, cleaners are required to report on faulty equipment in amenities (such as taps, toilet and urinal flush systems), while security patrols are asked to monitor cooling towers and plant and equipment for any leaks.



Googong, ACT

Googong is a new township located on the NSW/ACT border, just 16 kilometres south-east of Canberra, which Mirvac is delivering in partnership with Peet. Setting a new benchmark for environmentally sustainable greenfield communities, the township will feature a dedicated water recycling plant that will be used to help drought-proof Googong, providing recycled water for public green spaces, residential lawns and gardens, and flushing of toilets. The system, which has been developed by Peet and Mirvac and will be operated, monitored and maintained by Queanbeyan-Palerang Regional Councils, is expected to reduce potable water consumption within the community by 60 per cent.



40 Miller Street

The importance of finding and fixing leaks

At 40 Miller Street in Sydney, a leak was identified by an onsite contractors and was reported the morning that it occurred, as well as being picked up through Mirvac's remote monitoring technology. The leak was running at approximately 5 litres per minute, which equates to over 2.6 ML a year. To put that in perspective, that's more than an Olympic-sized swimming pool of wasted water annually. In addition to this, if left unchecked, the leak would have cost the asset over \$8,500 a year. The leak was flagged with the facilities manager at 40 Miller Street, who immediately took action to repair it. Quick identification and prompt action to repair the leak saved a significant amount of water.



COMMERCIAL



Brighton Lakes, NSW

Brighton Lakes is a masterplanned community located in Sydney's south-west. Its strong urban design principles were intended to create a community that has a sense of safety and security, is site and climate responsive, and, importantly, delivers a sense of place. All stormwater within the development is directed through gross pollutant traps to the Golf Course Lakes, where water quality is addressed through a treatment train of holding ponds, wetland area and native vegetation, then used to irrigate the golf course. This process has provided greater efficiency and reliability of water supply for the golf course, as well as improving the quality of water going into the George's river.



Harcrest, VIC

Harcrest is a 56 hectare masterplanned community in Wantirna South, which was completed by Mirvac in 2015. Early in the design phase, the project team – having seen the impacts of drought on other projects in Victoria (particularly in regard to landscaping) – identified an opportunity to integrate a highly efficient stormwater capture system to irrigate the estate's public open spaces. Using a relatively small land catchment area, the water sensitive urban design draws on three underground stormwater storage tanks, two stormwater-treated wetlands, and a storage pond. It delivers the estate's irrigation demand with 96 per cent reliability, and guarantees a reliable and low-cost irrigation supply to all public open spaces in Harcrest, keeping the estate leafy and green and attractive to its residents.

1. Stormwater is treated through an infiltration system and then supplied to the wetlands. Wetlands improve biodiversity and reduce the heat island effect.  
 2. As a result of COVID impacts, 699 Bourke Street's NABERS water rating increased to 5.5 stars and 664 Collins Street increased to 5 stars.

## LOOKING AHEAD

Water is not an inexhaustible resource. Water has enormous potential, and we look forward to building resilience in our business by reducing our dependence on it.

With ongoing improvements to efficiency in our operational water use, we are ensuring that our assets are high performing and attractive to customers, both now and into the future.

In our residential business, we want to grasp the significant opportunities that are on offer to re-think the drivers of water use and maximise rainfall. There is clearly more work to do to bring certainty to these efforts by installing meters and being confident in how we measure and report on water usage.

Beyond reducing our consumption and offsetting the remainder, we know that our procurement choices can also have a big impact – like buying renewable energy, buying less water-intensive materials and installing household rainwater tanks at our residential projects. Despite us not counting these activities as offsets, we will continue to pursue the gains they deliver for our communities and our planet.

The water conservation conversation needs to ramp-up.

We want to help accelerate advocacy activity around the value of water and what we can all do to use it more wisely. We anticipate our industry groups and peers joining us in this conversation, and we appreciate the collegiality of this network.

We look forward to updating this plan as we continue its implementation.



**EMBRACING WATER AS A VALUABLE COMMODITY IS  
AT THE CORE OF OUR PLANET POSITIVE WATER STRATEGY**



## APPENDIX A:

### Influence

Mirvac has a strong influence on water use at our buildings and developments, even though we don't use the water or ultimately are accountable for it. This includes:

- > choosing renewable energy, which uses significantly less water than coal fired thermal energy;
- > installing water efficient fixtures, fittings, appliances and rainwater tanks in build to rent and build to sell, choosing water resilient landscaping and allowing connection to recycled water in our masterplanned communities;
- > providing fitout guidelines for our tenants that steers them towards water efficient appliances for their kitchens and amenities, and encourages them to consider water efficiency in their own designs, such landscaping green walls;
- > where Mirvac doesn't have a financial stake, but manages the property, we will continue to maximise water efficiency through asset management, and encourage asset owners to make capital expenditure choices that will improve water efficiency;
- > considering the embodied water in the materials we use for construction, fitouts and refurbishments. This is considered along with embodied carbon and recyclability of materials as per Planet Positive: Waste and Materials.

Responsible	Exclude	Report
<b>Office (where Mirvac has operational control and a financial stake)</b>		
<ul style="list-style-type: none"> <li>- Base building cooling towers</li> <li>- Amenities</li> <li>- Cleaning</li> <li>- Fire</li> <li>- Leakage</li> <li>- Landscape</li> <li>- Waste</li> <li>- End of trip</li> </ul>	<ul style="list-style-type: none"> <li>Commercial kitchens                             <ul style="list-style-type: none"> <li>- Kitchenettes</li> <li>- Retail</li> <li>- Dedicated tenant heat rejection (e.g. data centres)</li> <li>- Tenant amenities and showers</li> <li>- Irrigation (e.g. green walls)</li> <li>- Tenant - other</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Whole building water use</li> <li>- Base building water use</li> <li>- Excluded water use</li> <li>- Capture and reuse</li> <li>- External non-potable water</li> </ul> <p><small>Note: Mirvac will also continue to report on water use where Mirvac has operational control but no financial stake</small></p>
<b>Retail</b>		
<ul style="list-style-type: none"> <li>- Base building cooling towers</li> <li>- Amenities</li> <li>- Cleaning</li> <li>- Fire</li> <li>- Leakage</li> <li>- Landscape</li> <li>- Waste</li> <li>- End of trip</li> </ul>	<ul style="list-style-type: none"> <li>- Dedicated tenant heat rejection (e.g. cinemas)</li> <li>- Cleaning of tenant space</li> <li>- Tenant amenities (e.g. cinemas)</li> <li>- Tenant water use (e.g. (kitchen use, food preparation, car wash, thawing, humidification, showers, etc)</li> </ul>	<ul style="list-style-type: none"> <li>- Whole building water use</li> <li>- Base building water use</li> <li>- Excluded water use</li> <li>- Capture and reuse</li> <li>- External non-potable water</li> </ul>
<b>Construction</b>		
<ul style="list-style-type: none"> <li>- Amenities</li> <li>- Construction/operations office</li> <li>- Dust suppression</li> <li>- Wash down</li> <li>- Onsite construction</li> </ul>	None	<ul style="list-style-type: none"> <li>- All potable water use</li> </ul>
<b>Build to Rent (BTR)</b>		
<ul style="list-style-type: none"> <li>- Common area</li> <li>- Central heat rejection</li> <li>- Swimming pools</li> <li>- Leakage</li> <li>- Fire water</li> <li>- Cleaning common area</li> <li>- Landscape</li> </ul>	Resident water use	<ul style="list-style-type: none"> <li>- Whole building water use</li> <li>- Common area water use</li> <li>- Resident water use</li> <li>- Capture and reuse</li> <li>- External non-potable water</li> </ul>
<b>Industrial</b>		
<ul style="list-style-type: none"> <li>- None</li> </ul>	All water use	<ul style="list-style-type: none"> <li>- Whole building water use</li> <li>- Excluded water use</li> <li>- Capture and reuse</li> <li>- External non-potable water</li> </ul>
<b>Masterplanned Communities (MPC) and Apartments</b>		
<ul style="list-style-type: none"> <li>- Water used in landscape prior to practical completion</li> <li>- Precinct recycled water treatment and reuse systems</li> </ul>	All operational water	<ul style="list-style-type: none"> <li>- Precinct water treatment and reuse systems (e.g. Googong)</li> <li>- Water collection (modelled)</li> <li>- Water used in landscape prior to practical completion (where verifiable data is available)</li> </ul>