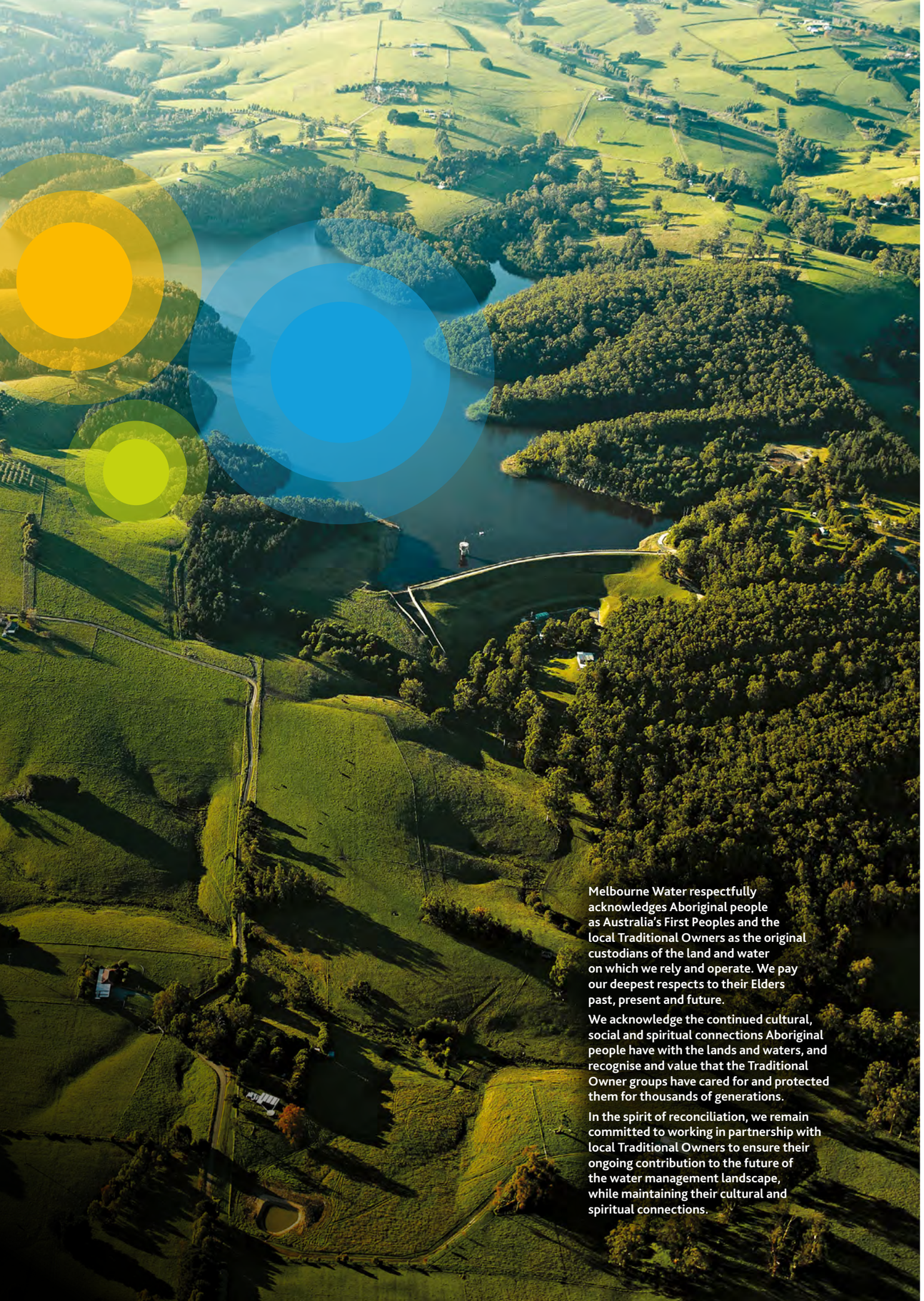
Delivering on the Sustainable Development Goals

VICTORIA
State Government

Melbourne Water



Melbourne Water respectfully acknowledges Aboriginal people as Australia's First Peoples and the local Traditional Owners as the original custodians of the land and water on which we rely and operate. We pay our deepest respects to their Elders past, present and future.

We acknowledge the continued cultural, social and spiritual connections Aboriginal people have with the lands and waters, and recognise and value that the Traditional Owner groups have cared for and protected them for thousands of generations.

In the spirit of reconciliation, we remain committed to working in partnership with local Traditional Owners to ensure their ongoing contribution to the future of the water management landscape, while maintaining their cultural and spiritual connections.

Welcome to the Delivering on the Sustainable Development Goals, Melbourne Water's report on our commitment to advancing sustainability through the United Nations Sustainable Development Goals (SDGs).

The report highlights Melbourne Water's unwavering commitment to advancing the sustainability of the communities we serve, and describes our contributions to broader national and global sustainability goals.

Foreword

Melbourne Water has a proud history of designing and implementing sustainable water management for the growing and thriving city of Melbourne. It began 125 years ago, with our predecessors laying the foundation for sewerage and water supply infrastructure that reflected the optimism for a city that would continue to grow and increase its demand for water and sewerage management.

Adversity throughout the last century – including flooding, drought and more recently, increased impacts of climate change has driven innovation and challenged us to think differently about our role in enhancing life and liveability for the people of greater Melbourne.

Melbourne Water's approach to sustainability supports and aligns with the *2030 Agenda for Sustainable Development*, adopted by World Leaders at a United Nations General Assembly in 2015. The 2030 Agenda sets out an action for people, planet and prosperity.

The plan is delivered through 17 SDGs which call for action by all countries to promote prosperity while protecting the planet. The UN has now formed a Global Compact – a voluntary initiative based on CEO commitments to implement universal sustainability principles and to take steps to support UN goals. As a signatory to the United Nations Global Compact, Melbourne Water uses the 17 SDGs to guide us in working towards a sustainable future for the communities we serve.

How we are advancing the goals

The vital role of clean water and sanitation in creating and delivering sustainable communities puts Melbourne's water industry in a key position to advance the SDGs. In addition, Melbourne Water's role in managing the health of Melbourne's rivers, creeks, wetlands and urban lakes across the Port Philip and Westernport region is a major contributor to the liveability of Melbourne. By managing waterways from catchment to coast we protect and improve the quality of our waterways, establish healthy ecosystems and enhance biodiversity in an increasingly urbanised region. We have been listening to our stakeholders, customers, and staff to understand what is important and where our opportunities for leadership are.

The three pillars of our Strategic Direction drive us to strengthen the wellbeing of the community, co-create the world's most desirable places to live and enhance the natural environment. Delivering on these three pillars provides cascading benefits – from providing food and clean energy to promoting equality and supporting quality education.

Given the interdependent nature of the goals, by continuing to drive progress and partnerships to deliver against these three pillars and goals, we are also enhancing positive outcomes for goals such as climate action, community wellbeing, the health of our oceans and agricultural production.

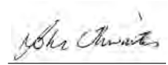
Melbourne Water has an opportunity to contribute across all of the Sustainable Development Goals in some aspect.

The Sustainable Development Goals are now embedded into our long-term direction setting, and play a vital role in delivering sustainable outcomes through our core services to benefit our communities.

Achieving the ambitious targets of the SDGs requires local and international partnerships that bring together government, the community, the private sector and other stakeholders to mobilise all resources. Melbourne Water has strong partnerships with our customers and stakeholders, and we are making use of our capability in integrated water management (IWM) to progress the SDGs in other countries.

An important journey towards positive and real change

Melbourne Water will continue to harness our core values of care, integrity and courage to continually drive progress in advancing sustainable development to deliver the services that our communities need now, and in the future. Through acting on our commitments of leadership, innovation and partnership Melbourne Water will drive advancements towards a sustainable future. Acting locally to achieve a global impact is what the SDGs emphasise – breaking down large aspirational goals into something we can all strive for in our daily lives. We are committed to our path and together with our partners, we can and will contribute to advancing the SDGs for all, while maintaining our focus on our vision – to enhance life and liveability for the community of Melbourne.



John Thwaites
Chairman

Michael Wandmaker
Managing Director

No Poverty

While global poverty rates have been cut by more than half since 2000, one in ten people in developing regions are still living with their families on less than the international poverty line of US$1.90 a day, and there are millions more who make little more than this daily amount. In Australia, 3 million people – one in eight adults and more than one in six children – are living in poverty.[1]

Poverty is more than the lack of income and resources to ensure a sustainable livelihood. It results in hunger and malnutrition, social discrimination and exclusion, as well as the lack of participation in decision-making. It also leads to limited access to education and other basic services. Currently one in three children from Australia's most disadvantaged communities do not meet one or more key developmental milestones when they start school. By the time they are 15 years old, disadvantaged students are on average 2–3 years behind in reading and maths.[2]

Sustainable Development Goal 1 is to end poverty in all forms everywhere – and we're starting here on our doorstep in Melbourne. Tackling poverty benefits all communities nationally and internationally, assisting economic growth, underpinning social cohesion, and decreasing political and social tensions and instability. By taking on poverty, we create a better society for our communities, now and in the future.

We have:

- strong financial sustainability strategy and business efficiency models to manage water, sewerage, floodplain and waterway services as cost effectively as possible
- reduced the wholesale cost of water and sewerage by 9 per cent in the last Price Submission
- cemented our reputation as one of Australia's lowest cost providers of water services
- a social procurement process which expands delivery requirements beyond safety, capability and cost to also include business integrity, diversity, inclusion and reconciliation measures. This process is creating jobs and opportunities for people who may have struggled to find work and reinvigorating depressed or marginalised communities.

We are:

- supporting disadvantaged communities through flexible billing payment plans for Melbourne Water's waterways and drainage charge
- managing risk of economic hardship by supporting staff and families who may be experiencing family violence
- redefining our customer strategy to deliver services and experiences our customers most value
- moving from an asset to customer centric focus to support decision making which delivers better value for our customers.

We will:

- build on our engagement in our 2021 Pricing Submission and place customers and community at the centre of our decision making through a broad range of engagement activities to drive outcomes which deliver value for money
- expand and enhance our service offering to deliver more equitable access across our service area
- strive to maintain high quality, safe, reliable and efficient services that meet the needs of our customers.

Case Study

Pricing submission

Our prices are regulated by the Essential Services Commission and reviewed every 5 years to drive best value for customers and will next be reviewed in 2021.

Our next pricing submission will set out the revenue required to deliver water, sewerage, waterways, drainage and recycled water outcomes most valued by our customers and the community while supporting Melbourne's growing population, adapting to a changing climate, and associated expenditures for the regulatory period to 2026.

Early engagement has identified that our customers and the community are calling for greater cost efficiency, customer value and an increased focus on innovative solutions in a changing environment.

By working in partnership with our retail water partners, customers and communities to develop our next pricing submission, we aim to deliver business efficiency and value for money as we manage our precious resources for a stable and prosperous Melbourne.

Zero Hunger

There are currently 815 million people who live in hunger today, with an additional 2 billion people expected to be undernourished globally by 2050. Hunger is a hidden crisis in Australia, with over 3.6 million people experiencing food insecurity at some point every year, 27 percent of which are children. In fact, the demand for food relief is rising, with charities reporting a 10 percent increase in demand last year.[3]

The SDGs aim to end all forms of hunger and malnutrition by 2030, making sure all people – especially children and the more vulnerable – have access to sufficient and nutritious food all year round.

Investments in agriculture are crucial to increase productivity and sustainable food production systems are necessary to help alleviate the perils of hunger. Melbourne is Australia's fastest growing city, expected to eclipse 8 million people by 2050. This rapid growth is placing increasing pressure on our food security, as well as adding pressure to turn existing agricultural and peri urban land into housing.

Melbourne Water is delivering on our commitment to reduce hunger in our region through our partnerships with retail water companies to make recycled water available for agriculture and food production, and enabling Melbourne Water land to be used for community benefit through projects like charity market gardens with the Hope City Mission.

We have:

- partnered with South East Water to provide 1655 ML of recycled water in 2017-18 to small farms and market gardens along the South Eastern Outfall
- partnered with Madowla Park Holdings to make 5000 hectares of land available to grow animal feed for the next 15 years
- upgraded the Eastern Treatment Plant in 2012 to improve the quality of treated water discharged to the environment and amount of recycled water available for reuse. This has made approximately 120 GL of high quality Class A recycled water available
- built garden beds for the Hope City Mission distribution centre to supplement the donated food for disadvantaged communities.

We are:

- investigating irrigation improvements at the Western Treatment Plant (WTP) to improve the efficiency of the farm to take up to 20 GL of recycled water per year
- providing water security for farming communities in the Southern Rural Water region with a new Bulk Recycled Water Agreement
- partnering with Trility to supply 5360 ML of recycled water to the Eastern Irrigation Scheme for broad-acre agriculture
- researching options to best manage recycled water quality which ensures sustainable supply from WTP which meets the needs of farmers
- including more treated stormwater into our water cycle to help strengthen the availability of water for agriculture and the food industry.

We will:

- provide a reliable supply of recycled water from WTP to support the Werribee Irrigation District into the future
- work alongside stakeholders and support the Department of Environment, Land, Water and Planning to develop the next regional *Sustainable Water Strategy* that will advocate for Melbourne's long-term agricultural water needs.
- implement the *Melbourne Sewerage Strategy*, which identifies the key role of recycled water in meeting Melbourne's future needs, including agriculture and food production.

Case Study

Werribee Irrigation District

The Werribee Irrigation District is an important agricultural production area on the western fringe of metropolitan Melbourne. Using recycled water from Western Treatment Plant (WTP), over 400 growers produce lettuce, broccoli, cabbage and other vegetables for local consumption and export.

Millions of dollars have been invested into additional water treatment at WTP and in 2017 Melbourne Water and Southern Rural Water signed a new Bulk Recycled Water Agreement, providing security for the farming community in the region.

The agreement guarantees Melbourne Water will supply up to 11,000 ML of recycled water from WTP to Southern Rural Water each year. Southern Rural Water then supplies the water to agricultural irrigators in Werribee South via its supply network. By securing a reliable supply of recycled water from WTP Melbourne Water and Southern Rural Water are ensuring that the Werribee Irrigation District remains a viable, thriving farming region for years to come.

Case Study

Hope City Mission

In 2016 a linear strip of above-ground garden beds was built on a pipe track corridor owned by Melbourne Water behind the Hope City Mission distribution centre. The Mission uses the vegetables grown at the site to supplement the more than 200 kilograms of fresh produce they distribute to disadvantaged communities every day.

Hope City Mission's emergency relief programs provide assessment-based Foodbank, financial assistance and advocacy, and life skills workshops to those in greatest need in the eastern metropolitan suburbs of Melbourne.

Good Health and Wellbeing

Despite determined global progress, much more effort is needed to fully eradicate a wide range of diseases and address persistent and emerging health issues around the globe.

Significant progress can be made towards helping to save the lives of millions by providing more efficient funding of health systems, improved sanitation and hygiene, increased access to healthcare and more tips on ways to reduce ambient pollution.

The ideal of good health and wellbeing is enshrined in Melbourne Water's strategic pillars of Healthy People, Healthy Places and Healthy Environment. By providing safe, affordable, world class drinking water and sewage treatment, we can help protect public health and strengthen the wellbeing of our community. We can also positively impact health and wellbeing through a range of measures including contributing to cooler, greener open spaces.

Melbourne Water is also committed to building a generative safety culture for our staff, contractors and their families.

By embedding safety deeply within our culture we meaningfully improve the wellbeing of our people. This is combined with our commitment to flexible working, self-development and support for mental and physical health, ensures we support our staff and their families in body and mind.

We have:

- worked in partnership with the City of Whitehorse to build a 1.1 kilometre shared pathway in Burwood East to support community recreation and exercise as the city grows
- supported councils and community groups to build and maintain over 20 percent of the cycling and walking paths throughout the greater Melbourne region where they are on Melbourne Water land
- partnered with the Victorian Aboriginal and Torres Strait Islander community to support the delivery of indigenous led environmental watering initiatives such as the rewatering of the Bolin Bolin Billabong
- involved Traditional Owners in the decision making around water planning as part of the *Healthy Waterways Strategy* and the *Melbourne Water System Strategy*.

We are:

- delivering Reimagining Your Creek to help revitalise underutilised spaces and contribute to urban cooling, while supporting the physical and mental wellbeing of our communities
- partnering with Traditional Owners to deliver the Yarra Strategic Plan, which is a long term plan for managing and enhancing the Yarra River
- prioritising land and waterway planning around community need and the potential for improved community health
- assisting employees to be safe at home, on the road and at work through a variety of programs including First Aid Training for Children and Care of the Elderly
- delivering high quality research through The Walter and Eliza Hall Institute of Medical Research – through the Melbourne Water Centenary Fellowship for Water, Global Health and Innovation. This research aims to develop low-cost diagnostic tools to improve health outcomes by better managing water quality risks.

We will:

- drive for outstanding safety leadership by all Melbourne Water employees who work to proactively protect their own, colleagues' and the community's safety
- monitor emerging risks to water quality and sewage treatment, including waterborne virus outbreaks, through a comprehensive applied research program
- renew the Arden and Macaulay precinct in partnership with the Victorian Planning Authority, the Department of Economic Development, Jobs, Transport and Resources and VicTrack to maximise liveability, community use of facilities and connectivity to transport.

Case Study

Melbourne Water's commitment to liveability

We deliver on our commitment to enhance the life and liveability of Melbourne by engaging in projects that deliver more community benefit, where it is compatible with our services.

As Melbourne grows it becomes ever more important that our city continues to provide opportunities for exercise such as cycling and walking, community interactions and access to open outdoor areas. Melbourne Water projects actively contribute to the liveability of Greater Melbourne. This includes new or enhanced shared pathways, improved connectivity and access, quality and quantity of green open space, passive and active recreation, and urban cooling among other benefits.

Working with stakeholders and the community, the Reimagining Your Creek program has identified locations across Melbourne where we can work together to design and restore previously engineered stormwater channels turning them into open waterways, enabling communities to connect with their local waterway, each other and the environment.

The program sees Melbourne Water engaging with local communities to learn about which aspects of these waterways and surrounding spaces are important to them, what existing aspects they value, and any changes they need to make their local creeks special places to visit.

By working together with the community, we are creating desirable, open spaces where people can interact with nature and with each other.

Quality Education

Over 265 million children around the world are currently out of school and 22 percent of them are of primary school age. Additionally, even the children who are attending schools are lacking basic skills in reading and maths.

In the past decade, major progress has been made towards increasing access to education at all levels and increasing enrolment rates in schools particularly for women and girls. Basic literacy skills have improved tremendously, yet bolder efforts are needed to make even greater strides for achieving universal education goals.

People with low literacy skills experience entrenched cycles of disadvantage, and can be excluded not only from the workplace generally, but from emerging economy jobs that require a high level of literacy. In Australia, many adults struggle with the literacy and numeracy skills required in everyday life, with one in three Australians rated with literacy skills low enough to make them vulnerable to unemployment and social exclusion[4].

Education is an essential tool for achieving sustainability and Melbourne Water has deeply embedded education into the operations of our business. Many of our sponsorship and grants programs are directed to educating future water leaders to understanding the water cycle and the importance of water for all life.

We have:

- improved water literacy by supporting the Victorian curriculum through a range of initiatives including conference partnerships, in school programs, and capacity building for teachers in waterway health monitoring and research
- educated more than 100,000 students over the last 10 years about the whole of water cycle at our education centres at the Western Treatment Plan, the Eastern Treatment Plant and Edithvale Education Centre
- launched a variety of new digital tools and online platforms to increase community participation, including the Frog Census app which received the IAP2 Core Values Award (Environment) in 2017
- introduced a stronger focus on delivering apprenticeships and traineeships which has led to 82 employees currently in progress or certified
- partnered with Water Retailers to design and deliver a collaborative graduate program aimed at engineers and entry level talent
- implemented a Career Development Centre that gives our people access to a variety of development opportunities including formal training programs, coaching, mentoring and on the job learning.

We are:

- piloting new digital online immersive experiences for our teachers, students and community to support water cycle education
- developing teacher capacity through our support of the Kids Teaching Kids conference and other conferences in the education industry
- building a community that values water and the environment with our broad range of citizen scientists whose waterway monitoring activities contribute to vital waterway research
- creating a learning organisation which values learning and continuous improvement where the tools, technology, practices and work environment inspire our people to take accountability for their performance in achieving business outcomes.

We will:

- drive new digital education services to meet the growing needs of our teachers, students and community
- continue to advocate for improved IWM outcomes with our local council partners and build water industry capacity through our Clearwater program
- continue partnering with academic institutions including Victoria's largest TAFE institutes and universities to build future skills capability, to provide qualifications and create lifelong learning opportunities.

Case Study

River Detectives

The Melbourne Water River Detectives sustainability program supports educators to explore their local rivers and creeks with students. The program inspires an understanding, appreciation and care for their local waterways and provides water testing kits and professional training for educators, so they are confident to explore their local waterway with their students. Together, educators and students collect data that contributes to the national data on water quality, making a vital contribution to research while learning to understand the importance of data. The program was launched in 2017 and is continuing to grow in school and environmental organisation involvement, with more than 1000 students participating in monitoring in 2017-18.

Case Study

Melbourne Water Teaching Resources

Using our educational resources we empower teachers to inform their students about our water supply catchments, sewage treatment and rivers, creeks and major drainage systems. Our educational resources make it easy to teach students about Melbourne's water resources and the water cycle. Targeting primary, secondary or tertiary students, our growing range includes an interactive map, videos, lesson plans, guides and booklets provide a complete understanding of the water cycle for the next generation of water warriors.

5 GENDER EQUALITY

Gender Equality

While the world has achieved progress towards gender equality and women's empowerment (including equal access to primary education between girls and boys), women and girls continue to suffer discrimination and violence in every part of the world. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.

In recent decades, women in Australia have made significant strides towards gender equality. At universities, in workplaces, boardrooms and government, the number of women taking leadership roles is multiplying: The number of women on the Boards of ASX-listed companies grew from 8.3 percent in 2009 to 26.2 percent in 2017. Increasing the number of women in corporate leadership positions is likely to significantly increase financial returns[5]. We are proud that Melbourne Water's Board of Directors has an equal balance between male and female representation among non-executive Directors.

Gender equity is critical to Melbourne Water's operations: to be the best Melbourne Water we can be, we need to draw on the skills and perspectives of all our people. To access the best talent, and maximise the potential of our existing workforce we need to recognise employees bring different skills and strengths to the business. We are committed to creating, supporting and achieving a diverse workforce and inclusive workplace culture, and we want all our people to feel like they belong and are valued for their contributions.

We have:

- taken deliberate steps to increase the number of women in non-traditional roles – a change that has delivered positive results. In 2018 female firefighters made up almost 20 percent of Melbourne Water's total firefighting team
- changed our recruitment strategy to attract a broader field of candidates and improve diversity targets by using different channels including social media and targeted campaigns
- delivered a range of programs designed to increase the leadership readiness of high-potential women, most recently piloting the Elevate program in 2018 where 25 percent of graduates have since entered into either acting or permanent leadership roles.

We are:

- encouraging our suppliers to support gender equality in the way they work with us. Recent construction tenders have promoted the inclusion of broader targets for a range of roles for women
- building our inclusive workplace culture and improving gender parity through our *Diversity and Inclusion Strategy* and Gender Equality Plan
- working to retain the best talent regardless of gender through supported career development, equal remuneration and a robust talent mapping process
- embedding greater workforce flexibility, with 25 percent of our workforce accessing formal flexible working arrangements in 2017-18
- supporting all employees regardless of gender to access parental leave benefits.

We will:

- seek to be a leader in gender equality within the water industry and the Victorian community
- operate a 40-60 percent female in our corporate workforce, including leadership by 2023 and have targeted activity to increase representation of women in operational areas to 30 percent
- ensure 50 percent of talent identified through the talent mapping process are women by 2023.

Case Study

Our Gender Equality Plan

To effectively respond to our changing work and environment, a focus on gender equality enables Melbourne Water to better meet challenges and deliver innovative solutions for our community. A focus on diversity, including gender equality, ensures Melbourne Water will be well-equipped to solve complex issues that arise, through enabling us to draw on diverse perspectives, skills and experiences.

Our *Gender Equality Plan 2018-20* outlines our commitment in key areas to attract, retain and provide opportunities for all Melbourne Water employees, through ensuring development and retention of diverse talent, and inclusive recruitment strategies to attract diverse applicants.

At Melbourne Water, we want all our people to feel like they belong, are valued and rewarded for their unique differences. We are working hard to achieve greater genderparity within all areas of the business with representation of women in management roles significantly increased.

We aim for our workforce to be 50 percent female and we seek to be a leader in gender equality through a focus on learning and development, within the water industry and the Victorian community, and contribute to building the pipeline of diverse talent for our industry.

Clean Water and Sanitation

Access to water, sanitation and hygiene is a human right, yet billions are still faced with daily challenges accessing even the most basic services. This is a global challenge: around 1.8 billion people lack access to safe drinking water, and 2.3 billion people are living without improved sanitation. While significant gains have been made in access to safe water, more than 2 billion people live with the risk of reduced access to freshwater resources by 2050.

Australia has placed a strong emphasis on safe drinking water and sanitation for decades but it wasn't always the case. In the 1880s, Melbourne was dubbed as 'marvellous Melbourne' due to its unsanitary street channels leading into open sewers. Freshwater, previously readily available, became contaminated with every kind of domestic waste.

Melbourne now has a world class sewerage system. We have had access to safe and reliable water services for over 125 years, with most of our drinking water coming from protected catchments – high up in the Yarra Ranges – so that our drinking water remains among the cleanest in the world. Nevertheless the challenges posed by drought and climate change, as well as a rapidly growing population, will continue to place pressure on our water resources for decades to come.

Sustainable Development Goal 6 covers all aspects of clean water and sanitation, and it is one of Melbourne Water's highest priorities. Access to clean drinking water and effective sanitation is fundamental to human health, and is vital to underpinning a strong society and economy.

Melbourne Water manages our water supply system to ensure we have enough water in storage to maintain supply if Melbourne again faces a severe drought situation such as the Millennial drought, which brought us 10 years of below average rainfall.

Most of our drinking water comes from forests high up in the Yarra Ranges to get to your tap, water travels through reservoirs, treatment plants and many kilometres of pipes.

We have a *Melbourne Water System Strategy*, developed with metropolitan and regional water businesses, which outlines the challenges (such as climate change and population growth) and range of options to support our growing city over the next 50 years.

In addition, our *Drinking Water Quality Strategy* outlines how we will achieve our vision of safe, secure and affordable drinking water for Melbourne. And the *Melbourne Sewerage Strategy* will ensure that our sewerage system has the potential to not only continue to protect public health and the environment, but also deliver enhanced value through contributing to our city's liveability.

Clean Water and Sanitation continued over page

A water sensitive city is one that is sustainable, liveable, productive and resilient through efficient and effective management of water resources through holistic planning. While our infrastructure for water supply, sewerage and drainage is doing well, we are actively working towards an Integrated Water Management (IWM) approach. This includes making use of alternative water sources – like recycled water and stormwater – to reduce pressure on our drinking water supplies while improving the liveability of our communities.

We have:

- protected our forested drinking water catchments for over 100 years
- provided sanitation services to protect public health for Melbournians as the population grows over our longstanding 125-year history
- augmented the water supply system to include a rainfall independent source of water, the Victorian Desalination Plant
- limited access to water from the Goulburn River basin accessible under specific low water storage conditions
- invested significantly in research and development that we publish in the public realm, fostering innovation across the industry worldwide
- partnered with the Eliza Hall Institute to develop accessible technology to identify water borne illnesses that can be used in remote locations.

We are:

- responding to the impact of population growth and climate change on our precious resources and infrastructure through our *Melbourne Water System Strategy*, *Drinking Water Quality Strategy*, and *Melbourne Sewerage Strategy*
- continuously augmenting our sewerage infrastructure and adapting our services to meet the growing needs of the community. This includes treating wastewater at the Eastern Treatment Plant to a very high standard for recycling use and discharge to the South Eastern Outfall, and moving to energy self-sufficiency at the Western Treatment Plant
- adopting World Health Organisation standard for microbial risks to drinking water and applying a consistent risk management framework for sound and efficient investments now and into the future
- communicating vital public information about our water storages, inflows and demands via a variety of digital and traditional channels including online apps, daily updates, and annual water outlook updates published in collaboration with our retail water partners
- increasing community awareness of water management through the co-designed *Healthy Waterways Strategy* and collective governance models to address catchment-wide issues.

We will:

- utilise all our water sources to deliver sustainable water and sewerage services in an integrated way, managing the risks posed by drought and environmental degradation
- collaborate through Integrated Water Management forums and plans to deliver up to 80 GL per year from alternative water sources by 2065
- capitalise on the significant opportunities to increase the amount of water used for non-drinking purposes from our sewerage system to offset the impacts of population growth and climate change
- continue to identify efficient and innovative approaches to managing emerging water quality risks in our water supply catchments
- invest in climate research and operationalise outcomes to build resilience and climate risks to environmental values of waterways and wetlands
- continue working with the retail water corporations and DELWP to ensure water continues to be used efficiently while enhancing liveability for the community, maximising affordability, and supporting drought preparedness.

Case Study

Melbourne Water System Strategy, Melbourne Sewerage Strategy and *Drinking Water Quality Strategy*

Our strategies for delivering safe, secure, affordable water supply and sewage treatment are key to delivering on our vision to enhance life and liveability. Climate change and rapid population growth pose ongoing challenges to delivering the high quality water and sanitation services we are renowned for into the future. Both the *Melbourne Water System Strategy* and *Melbourne Sewerage Strategy* take a long-term 50-year view, which map out a portfolio of actions to meet these challenges, including how to better integrate the way we deliver our services across the water cycle. The *Drinking Water Quality Strategy* has a 20 year horizon which considers how to manage water quality from the catchments the moment rain falls, right through to customers turning the tap on.

All of these strategies identify throughout where actions help deliver across all of the Sustainable Development Goals.

Our strategies are developed and implemented in collaboration with our customers and stakeholders, and reflect the perspectives of the community. We are committed to building strong partnerships with our customers and other agencies to deliver the strategies in an adaptive way, responding to the uncertainty that exists in the drivers like climate change.

7 AFFORDABLE AND CLEAN ENERGY

Affordable and Clean Energy

As a society, we rely on stable and affordable energy services to function every day. A well-established energy system supports all sectors of the economy, with energy central to nearly every major challenge and opportunity the world faces. Currently, approximately three billion people lack access to clean-cooking solutions and are exposed to dangerous levels of air pollution. Additionally, almost one billion people are functioning without electricity and 50 percent of them are found in Sub-Saharan Africa alone.

Historically, energy has been sourced from non-renewable resources like coal and oil. The burning of these fossil fuels emits greenhouse gases, which are a significant driver of climate change, one of the most significant challenges we face in managing the water cycle. Climate change is now affecting every country on every continent. Weather patterns are changing, sea levels are rising, weather events are becoming more extreme and greenhouse gas emissions are now at their highest levels in history. Without action, the world's average surface temperature is likely to surpass three degrees centigrade this century. The poorest and most vulnerable people are being affected the most.

Focusing on universal access to energy, increased energy efficiency and the increased use of renewable energy creates new economic and job opportunities and is crucial to creating more sustainable and inclusive communities and resilience to environmental issues like climate change.

Electricity and fuel are some of the largest inputs into Melbourne Water's business, and we are always looking for ways to improve our energy efficiency and to reduce our use of energy from non-renewable sources. We have a strong history of making the most of opportunities to generate electricity from renewable sources. Our water supply system operates mostly by gravity, distributing water from our elevated reservoirs in the Yarra Ranges across the region.

We have:

- harnessed renewable energy that would otherwise have been wasted by building a number of hydroelectric plants into our water supply network which capitalise on gravity-fed water flows. This is currently generating 55.1 GWh per annum
- made significant investments in methods to capture and use the biogas from sewage treatment to generate over 100 GWh of electricity per annum and reduce greenhouse gas emissions and their harm on the environment.

We are:

- continuing to work with experts across the world to come up with new ways of reducing our emissions even further, and sharing our knowledge to help tackle what is a global challenge for all water businesses
- offsetting the electricity we draw from the grid by capturing renewable energy from sources within our system, increasing the overall amount of renewable energy generated within Victoria and reducing costs to our customers and the community at large.

We will:

- establish new onsite solar farms to help power Eastern Treatment Plant and Winneke Treatment Plant. Together they will generate 42 GWh per year of electricity, further reducing our greenhouse gas emissions
- meet our commitment to reduce our carbon emissions to net zero by 2030
- further reduce our organisational carbon footprint over the 2021-22 period through our refreshed *Environmental Stewardship Strategy*
- increase the Western Treatment Plant's renewable energy production by 46.5 GWh per year to be a an exporter of energy with construction of an additional biogas power plant in 2019.

Case Study

Hydropower

Melbourne Water has a strong commitment to hydropower generation as part of its commitment to renewable energy. By integrating hydroelectric power stations into our water supply system, we are generating renewable electricity by harnessing a natural, sustainable and reliable source of energy.

Our hydroelectric power generation is made possible when water is transferred from our major storage reservoirs (at high elevations) to our smaller service reservoirs (at lower elevations) predominantly via gravity. As the water in the pipelines approaches the lower elevation reservoirs, the energy in the water pressure is captured by hydroelectric turbines in our power plants, generating electricity from energy that would otherwise go wasted.

As a result of our $65 million investment in hydropower since 2007, our water supply system can now generate more electricity than we need to for its operation, allowing our hydroelectric power stations to export renewable energy into the local electricity grid, offsetting our energy usage in other parts of the business. Generation from the plants and associated revenue from electricity generation and renewable energy certificates is reducing Melbourne Water's operating costs, delivering greater customer affordability.

Decent Work and Economic Growth

Roughly half the world's population still lives on the equivalent of about US$2 a day. In many places, having a job doesn't guarantee the ability to escape from poverty. This slow and uneven progress requires us to rethink and retool our economic and social policies aimed at eradicating poverty.

Promoting economic growth is essential to improving work prospects everywhere, including here in Melbourne. Of equal importance is ensuring this growth is sustainable by finding ways to decouple economic development from environmental degradation, and ensuring that everyone can benefit.

Victorian Government procurement is one of the largest drivers of the Victorian economy, and Melbourne Water is committed to using our buying power to generate social value above and beyond the value of the goods and services we procure. We have adopted a global mindset in how we procure our goods and services, leveraging our supply chain to deliver value to the community through social benefits, whilst managing costs.

We have:

- created a new procurement policy and framework which shifts value exclusively from monetary benefit to considering social and environmental impacts
- led the development of a common Victorian Water industry supplier code of practice. The new standard broadens commitments to include environmental and diversity and inclusion considerations in the supply chain.

We are:

- working with our existing suppliers by sharing our environmental and diversity and inclusion strategies, and focusing on ways to identify opportunities which deliver mutual value
- contributing to reconciliation and economic empowerment through our contract with Safeman to supply our personal protective equipment which includes a 2 percent target commitment for purchases from Indigenous-owned businesses where for every dollar of revenue $4.41 of economic and social value is created
- reducing our ecological footprint in line with our *Environmental Stewardship Strategy* by including environmental criteria in our supplier code of practice process
- transitioning to a zero emission vehicle fleet.

We will:

- contribute to a fair, inclusive and sustainable Victoria through procurement which benefits all Victorians
- support safe and fair workplaces in our supply chain through an emphasis on secure employment for all workers
- collaborate across the Victorian water sector to identify high level risks and impacts of violations of human rights in the supply chain, to better manage and mitigate these risks in the long term in line with Modern Slavery legislation.

Case Study

Creating social value through procurement

Melbourne Water procures more than $500 million in goods and services each year and we have committed to unlocking social value from this purchasing power.

The Victorian Government's requirements already include diversity and inclusion, but for our critically important infrastructure projects we wanted to raise that bar even higher. In 2018, following a rigorous process focusing on social procurement, we signed agreements with two joint ventures, to construct critical water and sewerage assets. Our social procurement process required short-listed candidates to identify opportunities and targets to support reconciliation, diversity and gender equality through their work for Melbourne Water. The successful joint ventures were also required to ensure that all subcontractor agreements closely reflect their commitments to diversity and inclusion. The partnerships exemplify our commitment to contributing to economic empowerment through the creation of job opportunities for disadvantaged Victorians.

Industry, Innovation and Infrastructure

Economic growth, social development and climate action are heavily dependent on investments in infrastructure, sustainable industrial development and technological progress.

It has long been recognised that growth in productivity and incomes, and improvements in health and education outcomes require investment in infrastructure, including infrastructure that supports a sustainable water cycle and builds resiliency against damaging natural events like flooding.

In Australia, we face dual challenges in maintaining and upgrading ageing infrastructure, while building new infrastructure to support our growing population. Water services are a fundamental input to industry, providing water and waste treatment and minimising the disruption of impacts like flooding and drought.

Melbourne, in particular, is in the midst of a population boom, with more than 5 million people now living in the city and a further 3 million expected by 2050. Infrastructure Victoria recognises that the State's cities are expanding and that Government must continue to plan and provide infrastructure for new communities (Victoria's 30 Year Infrastructure Strategy).

Melbourne Water places itself at the forefront of investment in infrastructure improvements to reduce the environmental and economic costs of delivering our services to the community. Our research and partnership programs support innovation and develop industry capacity in water and sanitation both in Australian and overseas, and our leadership in innovations in renewable energy recovery from sewage treatment services are gaining recognition on a global scale. Each year our substantial capital investment program delivers upgrades existing infrastructure in our water, sewerage and drainage networks, to support Melbourne's growing population.

We have:

- invested over $530 million in 2017-18 in essential upgrades to our water, sewerage and drainage networks, including a highly automated nitrogen removal plant at the Western Treatment Plant. This investment forms part of our extensive asset management program across our $15.2 billion asset base
- partnered with development organisations to deliver capacity building programs that support innovation in water and sanitation in developing countries
- utilised the Victorian Desalination Plant, a climate independent water source, to provide a reliable, sustainable water supply that enables us to build a buffer for future droughts.

We are:

- collaborating with our customers and stakeholders to explore the benefits of a more connected water grid in Victoria
- implementing new flood mapping tools which enable us to improve and share knowledge with local council partners on how to best manage flood risk
- increasing our remotely-operated technology program to optimise the maintenance and management of land and assets. This includes a new terrestrial remotely-operated vehicle capable of supporting gas sensing, visual inspection and physical manipulation work and a fleet of eight multi-rotor drones
- trialling wireless sensing and monitoring devices on our assets to expand flood warning capability
- driving efficiencies through the use of artificial intelligence (AI) and machine learning to reduce electricity use in our water treatment operations
- embedding a more integrated water supply system that includes diverse water sources like rainwater, stormwater and recycled water to reduce the demand on the existing supply system and deliver a range of environmental and social benefits.

We will:

- deliver outcomes from the Victorian Integrated Water Management (IWM) forums to contribute 80 GL per year from alternative water sources
- improve understanding of role of IWM in flood resilience through delivery of the Flood Management Strategy, including better tools for analysing costs and benefits
- advance the circular economy through our commitment to beneficially use 100 percent of our water and resources while ensuring affordability for our customers and community.

Case Study

Partnering to build capacity in developing countries

Currently 2.3 billion people globally lack basic sanitation and more than one billion of those are living in informal urban settlements, like slums. The Wellcome Trust, a global charitable foundation, has awarded funding of $14 million to an international consortium led by Monash University for a five-year project that will significantly advance human health and wellbeing in slums by transforming water infrastructure, water management and sanitation practices.

Melbourne Water has partnered with Monash University to build capacity in IWM in Fiji and Indonesia, through the Revitalising Informal Settlements and their Environments (RISE) project. Two infrastructure projects will upgrade 24 settlements in Fiji and Indonesia, which were chosen because they represent typical challenges to providing water management in the Asia-Pacific region.

Case Study

Safeguarding public health through expansion of our sewerage system

In 2012 Melbourne Water launched a three-stage $290 million program of works to increase the treatment capacity at the Western Treatment Plant and ensure nitrogen levels (resulting from wastewater treatment) entering Port Phillip Bay do not increase.

Construction of a highly automated $150 million nitrogen removal plant began in January 2017 which will treat 140 million litres of wastewater per day. Technical and environmental innovations in the nitrogen removal plant's design will improve energy efficiency and deliver advanced monitoring to enhance the wastewater treatment process.

10 REDUCED INEQUALITIES

Reduced Inequalities

The international community has made significant strides towards lifting people out of poverty. The most vulnerable nations – the least developed countries, landlocked developing countries and small island developing states – continue to make inroads into poverty reduction.

However, inequality persists and large disparities remain regarding access to health, education services and other assets. For example, there is an estimated gap of approximately 17 years between Aboriginal and Torres Strait Islander people and non-Indigenous life expectation in Australia. For all age groups below 65 years, the age-specific death rates for Indigenous Australians are at least twice those experienced by the non-Indigenous population.[6]

To reduce inequality it is critical that we work to ensure universal enjoyment of human rights. This understanding is one of the underpinnings of Australia's advocacy for equal human rights protections for women and girls, people with disability, youth, the elderly, LGBTI individuals, indigenous populations, and racial, ethnic or religious minorities. For example, Australia is committed to ensuring that LGBTI people are included in the implementation of the SDGs, and since 2015 has increased its advocacy and funding to support equal human rights for LGBTI persons globally.[7]

Melbourne Water recognises that actively supporting a diverse workforce and inclusive workplace culture reflects and meets the needs of our community. It also helps to attract, retain and develop exceptional talent. We are committed to building a workforce that is inclusive across all areas of the business where all our people have opportunities to learn, grow and achieve their full potential.

We have:

- taken specific steps through our *Accessibility Inclusion Plan* and Innovative *Reconciliation Action Plan*, to providing training and employment opportunities to reduce inequalities in our workforce and community
- created a shared full time role with our metropolitan water retailer partners to help guide the metropolitan water sector as a whole in its engagement with Traditional Owners
- employed Aboriginal and Torres Strait islander people into senior roles, to help drive engagement and increase Melbourne Water's capacity to drive inclusion throughout our work
- launched our first LGBTI Inclusion Plan in 2017 and partnered with Pride in Diversity to deliver LGBTI Awareness and Ally Training for Melbourne Water employees.

We are:

- updating our *Reconciliation Action Plan* towards a much broader and deeper commitment to reconciliation and building relationships across our business with Traditional Owners and Aboriginal and Torres Strait Islander communities
- actively seeking, wherever we can, to recognise and address the barriers to employment
- building stronger community connections with Traditional Owners and the broader Aboriginal and Torres Strait Islander community through collaborative engagement, including on significant initiatives such as the Yarra Strategic Plan, and secondment roles at the Wurundjeri Land Council
- improving access to Melbourne Water managed goods, services and facilities for people with a disability through technology aids, new accessibility criteria in our procurement tenders and more accessible communication templates.

We will:

- up-skill our people to effectively respond and refer if a colleague shares that they are experiencing family or domestic violence
- share our learnings and partner on initiatives with other organisations in the water sector
- further increase role flexibility to cater for the growing diversity of our workforce
- improve customer and community outcomes through a deeper understanding of their needs.

Case Study

Building a Diverse and Future Focussed Workforce

Melbourne Water is committed to ensuring that its workforce reflects the diversity seen in the broader community and is inclusive for all. We recognise the unique role that diversity and inclusion plays in ensuring a safe and supportive cultural environment for employees, where people are free from prejudice, stereotypes and harassment. We aim to be as diverse and vibrant as the community we serve, embracing different perspectives and supporting all our people to achieve fulfilling careers and lives.

Our *Diversity and Inclusion Strategy* outlines how we will achieve this, with actions guiding improvements in reconciliation, gender equality, workforce flexibility, accessibility and LGBTI inclusion. Implementing the strategy drives inclusion in a way that supports our business goals of collaboration and innovation. Through actions in this strategy Melbourne Water has embedded greater workforce flexibility, with 25 percent of our workforce accessing formal flexible working arrangements in 2018, and a total of 85 percent of our workforce accessing flexibility in some form. Increased awareness and reduced stereotypes relating to disability within employment supported 7 percent of our organisation to voluntarily self-report their disability.

Embracing diversity leads to a better understanding of and engagement with the people we work with and the communities in which we work. It ensures everyone has an opportunity to express their opinion, and all contributions and accomplishments are valued.

Sustainable Cities and Communities

Cities are hubs for ideas, commerce, culture, science, productivity, social development and much more. At their best, cities have enabled people to advance socially and economically. However, many cities around the world are facing acute challenges in managing rapid urbanisation, including ensuring adequate housing and infrastructure to support growing populations, managing the environmental impact of urban sprawl and reducing vulnerability to disasters. Furthermore, there is a need to improve resource use and reduce pollution in cities as they expand.

Population growth is placing pressures on the ability of cities to sustain prosperous communities. The number of people living within cities worldwide is projected to rise to 5 billion people by 2030. Melbourne reached a population milestone of 5 million people in 2018, and is expected to reach 8 million people by 2050.

Sustainable Development Goal 11 recognises that it is important that efficient urban planning and management practices are in place to deal with the challenges brought by urbanisation, and that access to basic services is essential to thriving cities.

Contributing to a sustainable and liveable greater Melbourne is at the heart of Melbourne Water's vision. We help create this vision through our world-class water and sewerage infrastructure, and drainage and floodplain management services which support resilient cities and towns. The long-term interests of the community and future generations are central to our decision making process. We deliver on this commitment by engaging in projects and partnerships that provide significant community benefit from our land, and by using IWM approaches to help develop sustainable new housing precincts.

We have:

- finalised the *Melbourne Sewerage Strategy*, which supports the transition of sewerage management to an integral and respected part of broader waste management that supports sustainability
- helped keep water bills low by treating 60 percent of Melbourne's sewage at the Western Treatment Plant, a very low energy plant which uses bacteria to breakdown organic matter in wastewater
- developed the Flood Integrated Decision Support System to help keep Melbourne safe by providing emergency services partners with timely, high quality information on flood risks.

We are:

- supporting sustainable water and land management practices to build a water sensitive city for the people of Melbourne
- helping to build a region that is resilient to floods and manage the impact of climate change and urban development
- looking for new ways to reduce carbon emissions from the wastewater sector by bringing together a group of experts on greenhouse gas emissions from around the world.

We will:

- catalyse the delivery of a water sensitive city for the people of Melbourne through integrated planning between councils, water industry and developers
- collaborate on precinct plans to drive IWM and achieve the target to use 80 GL of water a year from non-traditional sources by 2065
- achieve the target of having 100 percent sustainable reuse of the annual production of biosolids from the Western Treatment Plant.

Case Study

Arden Macaulay Redevelopment

With Melbourne's population projected to grow to almost eight million by 2051, and 70 percent of that growth predicted to occur in existing areas, the pressure to deliver urban renewal projects is high.

Arden Macaulay is an important urban renewal area for Melbourne, likely to accommodate 45,000 new jobs and over 12,000 dwellings by 2051. Urban renewal of this area provides an opportunity to reshape the future of lower Moonee Ponds Creek with improved flood management, open space, water quality and liveability.

Through the Flood Mitigation Strategy for the area, Melbourne Water has worked closely with the Victorian Planning Authority to assess options for mitigating flood risk, including different locations, scale of infrastructure and above ground storage. We are supporting the City of Melbourne to investigate greening and cooling options associated with the flood mitigation infrastructure, and City West Water in development of an IWM plan to explore the potential for stormwater harvesting at the site.

Case Study

Sunbury Integrated Water Management Plan

Sunbury in northern metropolitan Melbourne has been identified as an area of growth by the Victorian Government, with the population forecast to more than double over the next 20 years. The effects of a growing population, increasing urban development and climate change will impact the available water sources in the Sunbury region as well as the health of local waterways.

To address these future challenges, the Sunbury IWM Plan is currently under development. The plan is based on the Victorian Government's IWM Framework which helps the water sector, government and community work together to better plan, manage and deliver water in Victoria's towns and cities.

Western Water and Melbourne Water are working with councils, state government, other stakeholders and the community to ensure the best water management outcomes for this vibrant new community.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Responsible Production and Consumption

Economic growth and development require the production of goods and services that improve the quality of life. Sustainable growth and development require minimising the natural resources and toxic materials used and the waste and pollutants generated throughout the entire production and consumption process.

Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all.

In Australia, waste management and resource recovery is an ongoing challenge, particularly with the large number of supply chains and the complexity of national and state regulatory frameworks. Reducing waste and improving our re-use of waste will achieve broader environmental, economic and social benefits and will become increasingly important as the population continues to grow.[8]

At Melbourne Water we are committed to promoting resource recovery and sustainable use of resources. We are working to ensure sustainable consumption and production patterns through sustainably managing and efficiently using natural resources and substantially reducing waste generation through prevention, reduction, recycling and reuse.

We have:

- harnessed biogas for more than 25 years at the Western Treatment Plant through covers on primary sewage treatment lagoons. Floating lagoon covers collect methane-rich biogas and convert it to green energy, reducing greenhouse gas emissions and power demand
- transported more than one million tonnes of biosolids (a waste product remaining after sewage treatment) from the Eastern Treatment Plant for reuse in supporting construction and landfill projects
- information on flood risks.

We are:

- reducing our call on Victoria's electricity grid and lowering our energy costs through innovations in harnessing the inherent energy in our water supply systems
- supporting our water retail and agriculture customers in alternative waste management opportunities with investment and support of innovative new technologies including organic co-digestion of food waste
- striving to beneficially reuse 100 percent of our water and resources from the sewerage system including looking to establish new markets for ongoing production of biosolids.

We will:

- develop and implement resource recovery opportunities that could include a greater use of biosolids, nutrients, methane, heat, energy and recycled water
- ensure the development of our sewerage system is resilient for future and current generations to ensure the provision of a safe, reliable, affordable and effective service
- implement further sustainable consumption and production practices to reduce future economic, environmental and social costs, strengthen economic competitiveness.

Case Study

Sewage as a resource

The *Melbourne Sewerage Strategy* includes a bold new approach that defines the long-term vision for the sewerage system's role in waste management to support liveability and resilience for a growing population.

Developed with our retail water partners in 2018, this strategy outlines our deep commitment to shifting from a "collect, treat dispose" approach for managing wastewater, to a "circular economy" approach, which aims to keep resources in use for as long as possible, maximising their value while they are in use and then recovers them to create new products and materials when they reach their end of life.

Increased resource recovery with a circular economy model is expected to deliver multiple benefits, including protection of the environment and human health, and enhanced economic resilience in a resource constrained future. Enhanced resource recovery offers the opportunity to provide greater benefits for the liveability of Melbourne by meeting future waste management challenges and reducing our carbon footprint.

Case Study

Organic Co-Digestion

Many industrial food customers have organic liquid wastes that are unsuitable for discharging to the sewer network. There is a need to explore ways that these wastes can be treated to ensure they do not harm the environment and to harness their energy.

Melbourne Water has undertaken an innovative trial to turn these wastes into biogas at the Western Treatment Plant (WTP). The trial used existing assets to reduce waste to landfill and create extra renewable energy, in turn becoming a new source of revenue. Interest in the service has been so positive that an expansion of the trial was required. Melbourne Water is now maximising the production of biogas in the existing anaerobic lagoons at WTP by accepting an increase in organic waste load of up to 3 percent over five days a week.

13 CLIMATE ACTION

Climate Action

Climate change is now affecting every country on every continent. It is disrupting national economies and affecting the social, economic and environmental aspects of the planets ecosystems. Weather patterns are changing, sea levels are rising, weather events are becoming more extreme and greenhouse gas emissions caused by human activity are now at their highest levels in history.

Without action, the world's average surface temperature is likely to increase by another three degrees centigrade this century. The poorest and most vulnerable people are being affected the most. In collaboration with 175 other countries that ratified the 2015 Paris Agreement to combat climate change, Australia has committed to keeping global warming below two degrees. Since 2005 Australia's emissions have fallen 11 percent while the economy grew 38 percent, but the improvement is not yet enough for our nation to be on track to reach net zero, nor the Australian Government's current 2030 target of 26 to 28 percent below 2005 levels.[9]

The Victorian water sector is the single largest contributor to the Victorian Government's carbon emissions. Melbourne Water accounts for 51 percent of this output, due to our responsibility for the wholesale sewage treatment in the greater Melbourne region.

Climate change is impacting Melbourne Water's services and infrastructure and its responses to more severe droughts, fire, floods, storms and sea level rise. We are taking action across every area of our business to help prepare and protect communities by addressing the physical impacts of climate change and understanding market transition risks (such as carbon prices).

We have:

- developed a Climate and Resilience Plan to guide our efforts through ten key actions to address climate change and build resilience
- reduced our emissions by nearly half since 2000 through our greenhouse accounting and energy programs, including investments in hydropower and innovations in methane gas capture from sewage treatment
- established flood services which better prepare communities for extreme weather events and climate adaptation.

We are:

- managing the flow and quality of stormwater runoff to support resilient natural environments through improving access to Melbourne Water land for open-space use and providing urban cooling through shade and greening in shared public spaces to help build resilient communities
- transforming our procurement practices to reduce our carbon footprint and transitioning to a zero emissions car fleet by 2023
- researching emissions reduction technology, including launching a global innovation competition to find new ways of addressing scope one emissions.

We will:

- reduce our carbon emissions to net zero by 2030. Our goal is to achieve a 50 percent reduction of current emissions by 2025 and reduce to net zero by 2030
- demonstrate greater participation in planning and adaptation in our cities to better support rising sea levels, protect biodiversity and improve emergency planning
- invest in additional alternative energy sources, including a potential new solar farm at the Eastern Treatment Plant
- partner with others in emerging regional resilience networks to ensure regional coordination and engagement and community participation.

Case Study

Towards net zero carbon emissions

To help protect the environment and preserve Melbourne's liveability for future generations, Melbourne Water is addressing the challenge of climate change by adopting innovative options to reduce its greenhouse gas emissions. The biggest use of energy within Melbourne Water is associated with the transfer and treatment of sewage, producing 84 percent of our total annual emissions. In contrast the water supply system is responsible for 15 percent of our total emissions.

Our commitment to carbon reduction has already begun through established practices as well as planned initiatives, these include:

- capturing methane-rich biogas by covering the anaerobic lagoons at the Western Treatment Plant – this source of renewable energy already meets 95 percent of the plant's energy demands
- generating hydroelectricity through our water transfer system, which already produces nearly 70,000 megawatt hours per year – enough to power more than 14,000 homes
- gathering global water experts together for an 'Emissions Impossible' workshop to identify solutions to reduce methane and nitrous oxide gas emissions from wastewater treatment plants
- transitioning to a zero emissions vehicle fleet within 10 years.

Life Below Water

The world's oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea.

Ocean waters are expected to warm up because of climate change and become more acidic because of the addition of CO2 to the atmosphere caused by human activities (known as the 'direct effect'). More acidic ocean conditions prevent some marine organisms, such as coral and some plankton, from forming and maintaining their shells and skeletons. The impacts could extend up the food chain, affecting Australian fisheries, aquaculture and tourism.[10]

More intense storms and a growing population will increase the volume of nutrients, pathogens, pesticides, heavy metals and sediments in the waterways. This will reduce oxygen and light levels which could directly poison aquatic life, reduce amenity and prevent drinking or swimming.

As the primary waterway manager for the greater Melbourne region, Melbourne Water takes its responsibility to the waterway environment seriously. Each of our waterways ultimately flows out into our oceans, meaning we have a responsibility to manage and monitor pollutants in our waterways before they end up in our bays. In addition, treated water from the Western Treatment Plant and Eastern Treatment Plant also makes its way to the sea, so ensuring its quality is also a critical focus.

We have:

- partnered with DELWP and the EPA to finalise the new Port Phillip Bay Environmental Management Plan which will guide the sustainable management of our iconic Bay over the next decade
- established approximately 70 monitoring sites on the Yarra River to continually measure changes to oxygen levels, salinity and nutrients
- developed an ongoing maintenance program to remove sediment and litter from the drainage system and prevent them from entering waterways and bays
- a world class sewerage management system for transporting and treating sewage, including the production of recycled water.

We are:

- partnering with private landowners, farmers, community groups and land management agencies to restore and protect our waterways by funding on-ground management works such as fencing waterways to exclude stock, weed control, revegetation works, whole-farm planning, and nutrient and sediment reduction works
- assisting the Metropolitan Fire Brigade and the Country Fire Authority to develop a set of guidelines for controlling and managing firewater runoff into waterways
- building a nitrogen removal facility at the Western Treatment Plant which will help reduce the amount of nitrogen entering Port Phillip Bay
- researching emissions reduction technology, including launching a global innovation competition to find new ways of addressing scope one emissions.

We will:

- co-deliver our *Healthy Waterways Strategy* which guides what we do to manage waterway health in the Port Phillip and Westernport region and includes a target to harvest 80 GL of stormwater per year by 2050
- implement the *Melbourne Sewerage Strategy* by working towards advancing the circular economy through our commitment to beneficially use 100 percent of our water and resources while ensuring affordability for our customers and community
- continue research to understand the impacts of emerging contaminants such as per- and poly-fluoroalkyl substances (PFAS) on our business operations and environment.

Case Study

Boags Rocks, South Eastern Outfall

The 2012 upgrade to the Eastern Treatment Plant is setting world-leading standards for advanced wastewater treatment. The success of the highly awarded project has led to a significant improvement in the quality of treated water and recycled water and is also proving cost-effective while benefiting the environment and the community.

Previously, treated water from the plant was either recycled or pumped along a 56km pipeline before being discharged into the ocean at Boags Rocks. This was impacting the marine environment and recreational users of the surrounding beaches.

To address these issues, Melbourne Water engaged in rigorous, world-leading pilot trials that led to a new treatment solution based on ozone, biological filters, UV and chlorine treatment. This resulted in a $400 million advanced tertiary treatment upgrade that is unprecedented in its use of innovative processes for large-scale wastewater treatment. The effectiveness of this innovative approach has resulted in a reduction of impacts on the environment, in turn eliminating the need for an estimated $400 million ocean outfall extension.

Case Study

Research Centre for Aquatic Pollution

A new $5 million partnership between RMIT University and Melbourne Water will help combat pollution in Australia's waterways and bays. Leading experts in aquatic ecology and pollution research will join forces to investigate ways to protect Melbourne's waterways and keep them healthy for the long term.

The growing pressure from increasing population and urban development means it is vital to gain a greater understanding of current, new and emerging aquatic pollutants. Understanding how toxic chemicals and other pollutants are affecting our ecosystems, plants and animals is a key concern and so the Research Centre has been tasked with developing innovative ways to minimise the detrimental effects of aquatic pollutants.

This new partnership is a great opportunity to further protect our waterways and bays from pollution, and work with leading researchers and institutions to ensure the best outcomes for the environment.

Life on Land

Degradation of environmental resources, like forests and biodiversity is accelerated by development such as urbanisation and agriculture. Biodiversity fulfils critical ecosystem services that would otherwise require significant financial expenditure: from pollination to pest insect control, maintaining pristine drinking water catchments, buffering streams from catchment changes, and filtering and cleansing stormwater.

Forests cover about 31 percent of the Earth's surface and, in addition to providing food security and shelter, they are key to combating climate change and protecting biodiversity. Natural landscapes, including forests and waterways, are also important for recreation and mental well-being. They are closely linked to spiritual values, religious beliefs and traditional teachings in many cultures.

Allowing land and freshwater ecosystems within catchments to deteriorate puts our water quality at risk, which means we spend more money and energy to ensure our water is safe to drink. It also degrades the cultural heritage and biodiversity value of the resources, in some cases irreversibly.

We are committed to being responsible stewards for the environmental and cultural assets that we manage, so they continue to deliver value to current and future generations. Melbourne Water is one of the largest landholders in the state of Victoria and many of our landholdings include precious protected forest areas from where our water is sourced.

We have:

- protected the catchments that provide a sustainable source of water for Melbourne, ensuring that world-class drinking water that needs minimal treatment can be provided in the future
- sustainably managed the Western Treatment Plant, part of an internationally important Ramsar wetland which annually protects critically important world bird species. We have made this site more accessible to conservationists and birdwatchers by upgrading roads, improving signage and improving our access permit application process.

We are:

- managing two Ramsar listed sites, the Edithvale-Seaford Wetlands and Western Treatment Plant, by undertaking pest animal and plant control, environmental watering and species monitoring
- working in partnership with the Victorian Environmental Water Holder to plan and deliver environmental water flows to protect biodiversity
- enabling communities to use Melbourne Water land for broader community benefits through programs such as *Our Space Your Place*
- implementing a program of Sites of Biodiversity Significance (SOBs) to protect vulnerable land.

We will:

- implement our *Environmental Stewardship Strategy* to reduce our ecological footprint by 10 percent over the 2021-22 period including establishing a biodiversity report card
- continue to deliver our education and citizen science monitoring programs, including enhancing the award-winning Frog Census, Waterbug Census and Platypus eDNA.

Case Study

Protected Catchments

Melbourne's protected water catchments are the reason why most of our drinking water needs very little treatment. Safeguarding these vital assets is one of our most important activities. Our catchments include:

- 56,300 hectares of state forest – managed by the Department of Environment, Land, Water and Planning
- 90,800 hectares of national park – managed by Melbourne Water and Parks Victoria
- 7,500 hectares of Melbourne Water land
- 2,100 hectares of private land.

Melbourne is one of the few cities in the world with protected catchments, which produce high-quality water. These are located north and east of our city, often in national parks and state forests with limited public access. They have hardly changed since they were reserved for harvesting water more than 100 years ago – a fantastic legacy of our city's planners.

In 2018 Melbourne Water voluntarily reaffirmed its commitment to its protected catchments reviewing and renewing By-Law No.1 – Water Supply Protection. This By-Law allows Melbourne Water to continue to control and manage the land within our protected catchments, preventing illegal access and pollution, and ensuring they remain pristine and secure for future generations.

Peace, Justice and Strong Institutions

Effective public institutions are critical to advancing the SDGs. To be effective, they need to be truly inclusive, allowing participation by all groups in society in policy that shapes our shared future, particularly protecting the environment for future generations.

It is important to address threats of international homicide, violence against children, human trafficking and sexual violence to promote peaceful and inclusive societies for sustainable development. This paves the way for the provision of access to justice for all and for building effective, accountable institutions at all levels.

Melbourne Water's Board has adopted a charter that defines its role and responsibilities within the legislative framework provided by the Water Act 1989 and other applicable legislation including the Public Administration Act 2004. The Board makes plans to achieve specific objectives which deliver long-term, sustainable, outcomes whilst monitoring safety, health and environmental standards and management systems.

We are committed to ensuring our culture is safe, inclusive and our workforce reflects the diversity of the community we serve. A diverse workforce allows us to embrace diverse perspectives, backgrounds and experience to generate innovative ideas, helping us to perform at our best to deliver value to our customers and the community.

We have:

- a robust governance system to ensure we excel in meeting our statutory and regulatory requirements, informed by our Board's charter which is in line with the Water Act 1989 and the Statement of Obligations
- embedded a fraud and corruption framework, including ongoing education and awareness and avenues for reporting any allegations and undertaking risk assessments
- adopted best practice principles in managing procurement to minimise the risk that we inadvertently support indentured labour as part of our commitment to end modern slavery
- implemented actions to strengthen our governance of Freedom of Information and privacy practice.

We are:

- managing risk across the business through our Enterprise Risk Framework and annual Board reviews of our risk policy, appetite, framework and strategic risks
- increasing employees' awareness of privacy, establishing a cross-functional employee reference group for our Privacy Framework, and introducing a Privacy Breach Contingency Plan in our emergency management system.

We will:

- safeguard and support our people and their families
- minimise the impact of family violence as significant barrier to the effective participation of women in our organisation
- facilitate data sharing and information access while respecting the privacy of our customers' and employees' personal and health information.

Case Study

Melbourne Water family violence support

In Australia, up to one in three women and one in seven men experience family violence at some stage in their lives. Violence against women is estimated to cost the Australian economy $22 billion a year.[11]

Melbourne Water is committed to ensuring our culture is inclusive and our workforce reflects the diversity of the community we serve, and we can't champion a safe, diverse and inclusive workforce without addressing domestic and family violence. What we experience at home we also bring to work. And it's not just the people experiencing family violence that are affected – friends, family members and colleagues of those experiencing violence also experience distress.

Our support program includes access to paid leave so people experiencing violence can attend medical appointments, legal proceedings, seek safe housing and a range of other activities related to dealing with violence. In addition we provide access to flexible working arrangements including changes to working times, changes to work location, telephone number or email address. This support extends to flexible working arrangements for employees providing care or support for a family member experiencing family or domestic violence.

In 2018 we designed an online learning module to raise awareness and understanding of family and domestic violence, and have shared this tool with the water sector to build capability at an industry level.

Guidance and training is provided for managers to help support any team members dealing with family and domestic violence, and all employees have access to a range of free and confidential services with the expertise to provide counselling, services and appropriate support.

Partnerships for the Goals

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local levels.

Creating the world's most liveable city is a collaborative effort and it requires real cooperation, from local communities through to the highest levels of government. Achieving the ambitious targets of the SDGs requires local and global partnerships that bring together government, the community, the private sector and other stakeholders to mobilise all resources.

Melbourne is a large and growing city, and in delivering the SDGs, multiple organisations have a role to play. When it comes to creating a sustainable Melbourne into the future, it can only be achieved in partnership. Melbourne Water recognises that successfully enhancing life and liveability for all Melburnians can only be delivered through meaningful collaboration with our customers and our partners, who are central to everything we do.

We have:

- created charters for our local government and developed customer relationships to cement our service delivery standards and improve outcomes for the community we jointly serve
- collaborated with the State Emergency Service for more than ten years to increase flood awareness and preparedness, and support community resilience
- invested in collaborative research projects that deliver benefits to our business and the water sector, nationally and internationally, together with several universities and research organisations.

We are:

- partnering with our retail water customers across a range of priority areas including IWM, Traditional Owner engagement, diversity and inclusion and building community water literacy
- supporting sustainable land management and agriculture practices with our customers and stakeholders that uphold the health of our water supply catchments and agriculture for generations to come
- collaborating with local councils, government departments and community groups to create recreation and education opportunities along waterways that strengthen the wellbeing of our community.

We will:

- continue our journey to building strong and respectful partnerships with Traditional Owners and Aboriginal Victorians through implementation of our next *Reconciliation Action Plan 2018-2020*
- engage in projects and partnerships that provide significant community benefit from our land
- work in partnership with the community to preserve the health of Melbourne's rivers and creeks to create healthy waterways for future generations.

Case Study

Healthy Waterways Strategy

Melbourne Water recognised the importance of deep collaboration for the development of the Healthy Waterways Strategy for the Port Phillip and Westernport region for the next 50 years.

This strategy provides strategic direction for the management of a vast array of waterways, from iconic rivers such as the Bunyip and Yarra, to wetlands such as the Ramsar-listed Edithvale-Seaford Wetlands and vitally important creeks such as Dandenong and Kananook.

Melbourne Water led a co-design approach to refreshing the strategy, which included extensive engagement and consultation with stakeholders and community groups from each catchment. The resulting strategy was built on more than 2600 individual suggestions for improvement, with input from 630 people across 220 different organisations.

The refreshed *Healthy Waterways Strategy* prioritises improvements to waterway recreation, community connection and amenity, including improving access to 177 kilometres of waterways and providing 1879 kilometres of new vegetation canopy along waterways. It also sets out ambitious targets, such as the capture and beneficial reuse of more than 80GL of stormwater per year.

Endnotes

1. P. Davidson, P. Saunders, B. Bradbury and M.Wong Poverty in Australia, 2018. ACOSS/ UNSW Poverty and Inequality Partnership Report No. 2, Sydney: ACOSS, 2018
2. www.thesmithfamily.com.au/poverty-in-australia
3. www.foodbank.org.au/hunger-in-australia/the-facts/
4. www.sbs.com.au/news/insight/explainer/hidden-costs-low-literacy-australia
5. Deloitte Access Economics (2016) Toward Gender Parity : Women On Boards Initiative, A Research Report commissioned by the Queensland Department of Communities, Child Safety and Disability Services, Office for Women and Domestic Violence Reform
6. International Symposium on the Social Determinants of Indigenous Health, Adelaide, 29-30 April 2007: https://www.humanrights.gov.au/news/speeches/social-determinants-and-health-indigenous-peoples-australia-human-rights-based
7. Department of Foreign Affairs and Trade (2018) Report on the Implementation of the Sustainable Development Goals, Australian Government
8. Department of Foreign Affairs and Trade (2018) Report on the Implementation of the Sustainable Development Goals, Australian Government
9. ClimateWorks Australia (2018) Tracking progress to net zero emissions: National progress on reducing emissions across the Australian economy and outlook to 2030
10. https://coastadapt.com.au/ocean-acidification-and-its-effects.
11. KPMG (2016) The cost of violence against women and their children in Australia, commissioned by the Department of Social Services, Australian Government