SALT Torquay One Planet Action Plan

August 2018

ONE PLANET COMMUNITY 2018

Barwon Water

SALT TORQUAY
ONE PLANET LIVING ACTION PLAN

Contents

1. Message from the Managing Director

I am delighted to present Barwon Water's One Planet Action Plan for SALT Torquay.

Barwon Water is proud to be the first water corporation in Australia to embrace the One Planet Living framework to help us work more sustainably.

The vision of One Planet Living is a world in which people enjoy happy, healthy lives, within their fair share of the earth's resources, leaving space for wildlife and wilderness. This supports our vision as an organisation that enables a more sustainable and prosperous region.

The SALT project will redevelop the former Torquay water basin to accommodate a diverse range of housing options including villas, townhouses and units, providing 81 dwellings – all with universal access. It is the region's first minimum 7.5-star residential development (the energy efficiency measure of the Building Code of Australia), setting a new standard for innovative, sustainable urban development.

The new estate incorporates a wide range of eco features, including household solar and battery storage and water sensitive urban design. We are also constructing a 250kW solar array on land opposite SALT. The array will generate enough energy to meet 93% of the estate's total energy needs. Other eco features include mandatory electric car charging points, innovative public stormwater controls and household rainwater harvesting and reuse for toilet, laundry and garden irrigation to reduce mains water consumption by 30%.

Barwon Water is committed to delivering a truly sustainable residential estate by establishing a framework for future residents to design, build and live in homes that have a small environmental footprint and can be run at a low cost. We have partnered with the local council and appointed a community facilitator to ensure future residents of SALT Torquay are supported to embrace One Planet Living once they move in.

Transforming the former basin site into an innovative urban development is also delivering benefits to customers and the local community. Profits generated from sales at SALT will replace revenue that would otherwise need to be generated through water bills, helping to keep our customers' bills down. The estate has been carefully designed to deliver key outcomes for the residents, including walkable connections to local recreational facilities, space for community gardening and attractive and accessible community spaces to encourage neighbours to come together.

We're taking action on climate change through our target of 100% renewable electricity by 2025, and zero net emissions by 2030. We are a key regional player in promoting liveability and economic growth whilst delivering high quality, affordable services that benefit customers and the community.

As a One Planet Living business, we aim to be an inspiring example of sustainability in our region. We acknowledge that the SALT community is an important step in that continuing journey and we look forward to implementing the actions outlined in this document, and reporting on our progress.

Tracey Slatter, *Managing Director, Barwon Water*

2. Message from Bioregional Australia

We congratulate Barwon Water on achieving recognition as a One Planet Community – national leader for the SALT Torquay One Planet Action Plan. Barwon Water are commended on their commitment to supporting the regional community to achieve sustainable living.

SALT Torquay is planned as a One Planet Living demonstration in a coastal region, committed to the ten principles and goals. We look forward to following Barwon Water's progress as it works towards implementing and reporting on the initiatives, particularly their goal to deliver a small ecological footprint in a coastal development.

The Salt Torquay One Planet Action Plan outlines actions for a better way to live within our community. It highlights the capacity of government and private sector organisations to embrace innovative solutions to increase quality of life while addressing social and environmental challenges.

Salt Torquay challenges the standard for sustainable and liveable communities in regional Australia. It will enable comfortable living environments for people of a range of physical abilities, connections to nature, and promises to be a vibrant, lively and a truly desirable place to live.

***Suzette Jackson**, Executive Director, Bioregional Australia Foundation*

3. About the project

SALT is a planned One Planet residential community set on the margins of the coastal township of Torquay in regional Victoria. Its history, location and setting is unique, local, and coastal, earning it the working name of 'SALT'. The development site:

- Overlooks the world famous surfing mecca of Torquay and Bells Beach at the northern reach of the Australian National Heritage listed Great Ocean Road
- Repurposes the decommissioned Barwon Water Torquay Basin (former water storage)
- Has direct physical connections to an existing community, education, infrastructure and surrounding natural environment.

SALT, at 85 Grossmans Road, is a 5.4 hectare boutique development located on the northern hills of Torquay, in close proximity to the education precinct.

The site is approximately 690m west of the intersection with the Surf Coast Highway and approximately 1.7 kilometres North-West of central Torquay. The development will be built directly on the old Barwon Water Torquay Basin, a decommissioned water storage basin.

The site grades from the northern boundary (Grossmans Road) with resulting sea views over the bay. The site has two low points in the south east and south west corners, each of which will become functional storm water management, rain garden amenities for the community.

These raingardens fit into a site scale Water Sensitive Urban Design (WSUD) strategy being implemented across the development. This strategy includes the implementation of natural drainage swales, drainage tree pits and permeable hard surfacing, all implemented to slow runoff and treat on site.

The SALT layout has been designed to respond to the site topography and the broader coastal landscape; optimise views and solar access to individual lots; minimise reliance on non-renewable energy; encourage sustainable use of water; encourage mobility via walking and cycling; and retain and reintroduce native vegetation. All buildings and works at SALT Torquay will require approval by an independent SALT Design Review Committee (DRC) prior to obtaining a building permit.

The DRC will facilitate innovative, diverse and environmentally leading housing design including ensuring NatHERS 7.5 star minimum energy ratings and sliver level (DDA) liveable housing guidelines are met. The DRC will also properly guide and ensure appropriate and consistent aesthetics, materials and landscaping based on the Contemporary Coastal Urban Architecture concept.

The project is being delivered off the back of Barwon Water's Strategy 2030. This marks the start of a paradigm shift from a utility provider towards an enabler of regional prosperity.

The 2030 Strategy seeks to deliver through a diverse and high-performing workforce, creating common ground for strategic partnerships, a more entrepreneurial approach to commercial opportunities, and a commitment to zero waste and zero emissions.

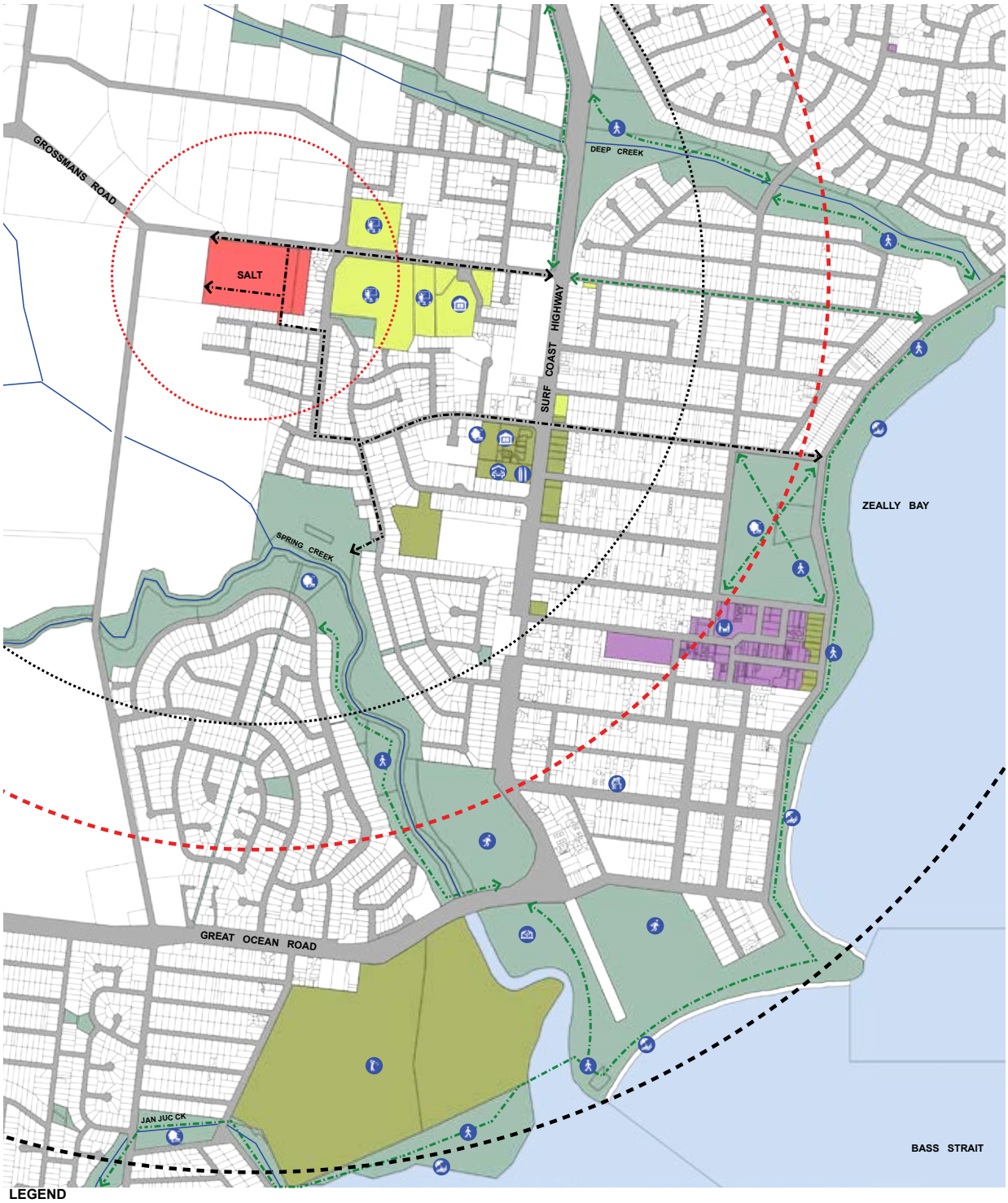
Barwon Water will achieve this whilst continuing to provide outstanding customer and community value, and maintaining its excellent record in high quality, affordable and secure water services.

SALT Torquay is a showcase project for Barwon Water to contribute to regional prosperity and meet its commitment under the OPL Framework.

2020 STRATEGY 30

What do we do?

Barwon Water



LEGEND

- PUBLIC OPEN SPACE
- SPECIAL USE ZONE
- COMMERICAL ZONE
- 400M WALKABILITY RADIUS IN 5 MINUTES (SOURCE PLAN MELBOURNE)
- 1600M WALKABILITY RADIUS IN 20 MINUTES (SOURCE PLAN MELBOURNE)
- SALT DEVELOPMENT
- SCHOOLS
- ROADS
- 1250M CYCLING RADIUS IN 5MINUTES LOW AVERAGE SPEED 15KM/H (SOURCE ACTIVE TRANSPORT)
- 2500M CYCLING RADIUS IN 5MINUTES HIGH AVERAGE SPEED 30KM/H (SOURCE ACTIVE TRANSPORT)
- WATER
- CREEKS
- EXISTING WALKING / CYCLING CONNECTIONS
- PROPOSED WALKING / CYCLING CONNECTIONS
- MENS SHED
- ACTIVE RECREATION
- COMMUNITY GARDEN
- PARKS
- WALKING TRACKS
- SHOPPING
- CO-WORKING HUB
- BEACH
- Ggolf
- SCHOOLS
- SURF PRECINCT
- COMMUNITY

Barwon Water | SALT

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SALT LOCAL CONTEXT MAP

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DRG NO.	REV	DATE	DES/DOC	AUTH
304609	A	02/05/2018	JD	AS

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4. SALT Torquay Visioning Statements

The excerpts below are intended to provide an insight into what it will be like to live at Salt Torquay.

A day in the life of a family with young children

"We love living at SALT Torquay. We walk to school and kinder, meandering through the estate picking up our friends on the walking bus to Torquay College and Children's Hub, stopping via the community park to grab a drink from the water fountain.

We live in a four bedroom detached villa house near the community park. We love the park, it's got a fun slide and we love watching the birdlife flying over the wetland, where we can learn about and look at frogs and insects. It's so close to the local economic hub and feels really vibrant.

Dad says the swales and raingarden help ensure the stormwater is clean before it enters Spring Creek and there is so much more green open space in our street. Mum works from home as the SALT Torquay Community Coordinator which our neighbours say is a very important and vital role for the estate.

Dad, after his morning surf, picks up a few other neighbours in the ride share group and travels to work in Geelong, using our electric car which has charged overnight in our garage. The car is awesome because it gets electricity directly from the sun via the 5kW solar panels on our roof. The energy not used is stored in a solar battery in our garage.

We have just started working with our neighbours to reduce our waste and use sustainable materials, this is a fun way of meeting new people. Mum and dad seem happier and less stressed since we moved here, especially after our weekend bike rides to the local coffee shop and beach."

A day in the life of a young couple

We moved to SALT from our fast paced life in Melbourne. SALT offered affordable land to build our dream home. We both work as engineers and are very conscious of our environmental footprint. The information provided to us has opened our mind to the impact of our old lives and how to improve in the future.

The vision of the estate is what attracted us to the area. All houses are required to deliver 7.5 star quality housing with a low environmental impact. The NBN connection enables us to work from home and we can use the local co-working space to meet clients easily. With the designed pedestrian connections, in such a central location of Torquay, it is easy for us to walk to local shops, ride to the beach and catch up with friends for dinner.

Living at SALT has enabled us to truly embrace and practice what we preach on living more sustainably. We have been able to demonstrate to our friends and family how we grow our own food, and influence our energy and water consumption through our smart analytical devices. There is a strong sense of community here and we know more of our neighbours than where we lived previously. We have been assisting the Community Coordinator with setting up a SALT Community webpage to provide links to local activities and events.

The monthly catch up at the park has been a great success, especially the wonderful home grown cooked food. It's great to see a broad spectrum of the community enjoy and live in this wonderful estate.

A day in the life of a single retiree

I moved to SALT Torquay to be closer to my grandchildren. After months of searching for a home to comfortably meet my daily needs, I found a two bedroom townhouse designed to silver rating 'Liveable Housing Australia' standard.

My home has been so well designed and can be easily adapted for when I become less mobile. SALT has enabled me to significantly reduce my living costs on a single person pension income. I love being able to track how much water and energy I am consuming via the smart box and in turn keep my bills lower. I even get to sell what electricity I have generated through my solar panels and stored in my battery back to the grid.

I have always adored gardening, however, with the assistance and advice of our Community Coordinator, I have ventured into growing my own vegetables. It's amazing how much less waste I am creating by composting my food scraps and growing my own food, which has been a great source for my grandchildren's favourite veggie lasagne and passing onto my neighbours.

There is a real sense of community at SALT and I regularly volunteer at the local church. I love my daily walks to the library and bus ride to the weekly Farmers Market. I am much more active than I have ever been.

"SALT Torquay is a showcase project for Barwon Water to contribute to regional prosperity and meet its commitment under the OPL Framework."

5. What is One Planet Living?

One Planet Living is a vision of a sustainable world, in which people everywhere can enjoy a high quality of life within the productive capacity of the planet, while leaving space for wilderness and wildlife. It uses ten principles of sustainability as a framework with a headline target for each principle that is linked to the environmental limits of the planet.

Today however, the world's population is consuming naturally renewing resources and polluting the planet at a rate 50% higher than what the earth can replenish or absorb. Global levels of biodiversity are falling with the *Living Planet Index* (WWF 2016) declining by over 58 percent between 1970 and 2012, with freshwater species declining by 81 per cent between 1970 and 2012. Unless action is taken now we could see a two-thirds decline in biodiversity in half a century from 1970 to 2020.

Ecological foot printing shows that if everyone in the world consumed as many natural resources as the average person in Western Europe, three planets would be needed to support human needs, where if everyone consumed as much as the average Australian, more than five planets would be needed. In some countries, such as South Africa, the overall average is just over one planet, however these figures disguise considerable variations between regions and lifestyles.

"We believe that this will be a thriving community that will help steer both Torquay and future regional developments toward more sustainable outcomes."

5.1 Ecological Footprint

Ecological footprint analysis is at the heart of One Planet Living as the overarching indicator of what constitutes a sustainable level of consumption, measuring our consumption of natural resources in global hectares of land and sea.

The Living Planet Report (WWF 2016) indicates humans are now exceeding the world's capacity to regenerate natural resources by 50% faster than can be replenished. If our demands on the planet continue at the same rate, by 2030 the equivalent of two planets' worth of resources will be needed to maintain our lifestyles, critically limiting the capacity for future generations to access resources on earth.

Over 150 Heads of State attended the opening of the Conference of Parties in Paris in December 2015, where the goal of limiting global temperature increase to well below 2 degrees Celsius was reaffirmed, with an aim for no more than a 1.5 degree Celsius rise. This is despite average global temperatures already increasing by over 0.8 degrees Celsius.

To avoid a two degree rise global greenhouse gas emissions need to be reduced by 50% from 1990 levels by 2050. For this to happen CO2 emissions will have to be no more than 0.8 tonne per person per annum by 2050. This requires staged planning for the transition.

The time to act, to reduce emissions and increase ecosystem services and biodiversity, is now.


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6. Project approach to One Planet Living

Barwon Water's 2030 strategy clearly defines the organisation's role as an enabler for regional prosperity, working through the future local challenges with the impact of climate change, the region's rapid population growth, a transitioning economy from an industrial base and rapid advancements in technology.

We envisage the SALT development as the first residential development to fulfil our 2030 vision. The vision for SALT, a new planned community within a growing region, is to:

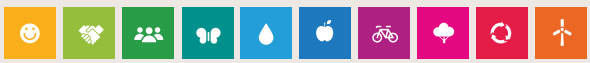
- Embrace an approach to sustainability that supports the Barwon Water 2030 Strategy and satisfies our commitment to the Bioregional Australia's OPL framework
- Seek to repurpose the site with a low environmental footprint
- Enable local and regional prosperity through socio-economic benefits of redevelopment of a key site
- Redevelop a key local site that will provide a missing link to connecting local communities
- Create a model for sustainable development within a regional Australian context.

Barwon Water is committed to a holistic sustainable outcome for SALT, beyond mandatory requirements, including the following broad objectives:

1. To achieve goals as set out in the *Barwon Water 2030: Enabling Regional Prosperity* Strategy, including Zero Waste, Zero Emissions and High Performance.
2. To 'stretch' sustainability outcomes beyond mandatory levels by designing and building a development that has minimal impact on the environment in which it exists; reduces the extent of natural resources that it uses; benefits society, and has positive economic influences for the region.
3. To create a development against which to benchmark future developments of the type and scale of SALT in the region.
4. To build a development that provides a variety of housing options and incorporates sustainability into all aspects of the design.
5. To develop a precinct in which people feel proud to live.

6.1 Summary table

The table on the following pages summarises the key goals under each of the ten One Planet principles to be achieved by 2020, and the main strategies for achieving these goals.



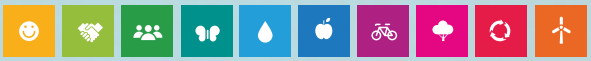
Project approach to One Planet Living		
One Planet Principle	**2020 Goal**	**Key Strategies**
Health and Happiness	Foster an active and healthy lifestyle by all residents	Ensure a 20-minute walk to key amenities with pedestrian and cycling orientated design; DDA and universal accessibility in all dwellings; public realm and a variety of way-finding items throughout the public realm; include central public gathering and play space at the southern retention basin and along the central pedestrian spine; and ensure visual and physical access to nature and survey residents on happiness levels for future improvement.
	Creation of direct access to nature, comfortable microclimates and community gathering spaces	Landscape principles to include the following: Evergreen trees on south; wind buffer upwind of buildings; maximise northern façade solar gain; large shade trees in streetscape; integrate WSUD into public realm as amenity.
Equity and Local Economy	Ensure access for all abilities in homes and public realm	Deliver all homes to be DDA accessible through achieving 'Silver level' liveable housing design guidelines. This will be a requirement within contract of sale; home and plan approvals by the independent design review committee; post construction audit and residents survey.
	Foster the development of a vibrant local economy	All consultants and contractors to be sourced from the GROW 21 region controlled by developer. Encourage local builders and apprenticeships. Encourage and advise on local alternatives and amenities including connections to local working hubs and men shed.
	Maximise opportunity for a broad demographic to purchase property	Provide a range of land and housing sizes.
Culture and Community	Foster a culture of local ownership	All way-finding, sculptural and educational items to be designed and installed by local artists and/or schools. Community consultation throughout to ensure local ownership; home and public realm design to meet CPTED standards. Post construction schools engagement.
	Foster a culture of sustainability	Education of systems within landscape design; welcome package advising and teaching; ongoing community engagement to involve at least 70% of SALT residents. Engage regional tertiary institute to research technical outcomes
	Foster local character and heritage	Design guidelines for all dwellings to encourage local character of Torquay; public realm materials and planting to be local and native to the area; ensure engagement with the Wadawurrung.

Project approach to One Planet Living		
One Planet Principle	**2020 Goal**	**Key Strategies**
Land and Nature	Create new habitats	Develop swales, rain gardens and retarding basins with planting selected to optimise habitat creation.
	Enhance ecosystem services	Create flood resilience, rain water storage and reuse and storm water retention and cleaning mechanisms throughout the site.
	Ensure net contribution to increased biodiversity	Define planting pallet for use in dwelling design guidelines and the public realm that supports local character and increases biodiversity. Provide free plants to all residents.
Sustainable Water	Maximum 120l of potable water use per person per day	10kL rainwater tanks for gardens, toilets and washing machines; require high water efficiency fixtures and appliances in all homes; guidelines to stipulate low maintenance planting.
	Mitigate flood and manage and clean all storm water onsite before release back into the environment	Construct street side swales, 1x raingarden and 1x retarding basin.
Local and sustainable food	Each dwelling to have access to food growing space	100% of dwellings to have garden space. Community facilitator to provide information on domestic food growing opportunities
	Foster education on local and sustainable purchasing habits	Inclusion of initial information in owner's welcome pack; provision of a local community sustainability facilitator to engage and help develop education on local options and good purchasing practice.
	Maximise reduction of food waste	Provision of community facilitator to help development of a community scale education and sharing initiative for privately grown food and food waste management.

Project approach to One Planet Living		
One Planet Principle	**2020 Goal**	**Key Strategies**
Travel and Transport	Foster a culture of walking and cycling	Urban design and location based on 20-minute neighbourhood principles; landscape design encourages walking and safe cycling.
	Reduce fossil fuel based car dependency	All dwellings required to have a 32Amp electricity point for EV car charging to each dwelling; design to walkable neighbourhood principles; DDA standards followed in public realm; connect/ advise community on connections to public transport options.
	Promote car and ride sharing	Foster sharing through community sustainability coordinator as well as an understanding of all alternate transport options.
	Raise awareness of impacts of travel ecological footprint	Resident welcome pack to provide information with a focus on air travel alternatives. Community sustainability facilitator to engage residents.
Materials and Products	Maximised use of low embodied carbon materials	No gas connection, reduce high embodied carbon material use in construction, educate builders and owners on alternatives.
	Maximise locally sourced materials	Requirement of tender for public works. Building design guidelines and resident welcome pack to promote the use of locally sourced materials and products.
	Foster use of non-toxic and recycled materials	Use on-site material; building design guidelines and engage owners.
Zero Waste	Minimise waste	Provide design guidelines that outline how to minimise waste through reduction, recycling and share economy; connect and engage residents with council initiatives.
	Maximise use of recycled material	Community connected to local initiatives through community sustainability facilitator (e.g. SCEG).
	Minimize waste to landfill	Maximise mass of material recycled in construction through private waste management requirements; waste minimisation training to builders; engagement with community members.
Zero Carbon Energy	Net zero operational carbon in all homes	SALT Torquay building design guidelines outlining high thermal efficiency, EV charge points, efficient appliances and energy monitoring to reduce overall energy demand.
	100% renewable energy consumption in all homes	Each home to install solar system (min 2.5kW). $5000 rebate on battery storage per household provided by Barwon Water. Additional 250kW offsite solar farm.

One Planet principles to be achieved by

2020



7. The One Planet Action Plan

This Action Plan embodies the goals and aspirations of Barwon Water, key stakeholders and the Bioregional Australia imperatives.

It includes some measures that can be directly implemented by Barwon Water as part of the redevelopment of the Torquay Basin, as well as targets and goals that are beyond the control of Barwon Water and which can only be achieved through the participation of statutory authorities, utilities, other stakeholders and future home owners.

The purpose of the Action Plan is to present Barwon Water and the community's long term vision for sustainability on the Torquay Basin site, within Bioregional Australia's OPL framework. It outlines the framework, strategies and mechanisms for Barwon Water and other stakeholders to implement the sustainability goals for the development.

This sustainability Action Plan also outlines how we will use One Planet Living to meet our key priorities outlined in the 2030 Strategy and ensure Barwon Water becomes a driver and enabler of regional prosperity.

As the land developer, Barwon Water will be delivering the public realm but will not ultimately be constructing the buildings. We have however implemented the following mechanisms to provide a framework for the creation of a community to live the One Planet Living lifestyle.

Key Mechanisms:

- One Planet Living Action Plan (OPL): Vision and strategy
- Structure Plan (SP): Outlines land use, lot size and orientation, densities, circulation
- Stakeholder analysis and engagement plan (SA): Stakeholder engagement through to and including operation
- Civil and Landscape Design Layout (DL): Infrastructure and landscape detailed designs
- Building design guidelines and builders briefing (DG): Dwelling design and sustainability requirements, features and opportunities
- Technology provision (TP): Solar and solar array and EV charging
- Design approvals committee (DA): Review process prior to construction
- Residents information pack (WP): Welcome, community information, strategies for optimising sustainability framework
- Community sustainability facilitator (CS): Engage community and stakeholders on initiatives.

7.1 Health and Happiness

Encouraging active, social, meaningful lives to promote good health and wellbeing.

7.1.1 Key strategies

Design: Design parameters to allow for access to nature; design to consider evergreen trees on south; wind buffer upwind of buildings; maximize northern façade solar gain; large shade trees in streetscape; integrate WSUD into public realm as amenity; walkability; pedestrian only areas; shared pedestrian and bicycle links to key amenities and surrounding communities; design to Crime Prevention through Environmental Design (CPTED) standards; dwelling design reviews and community facilitator to engage buyers and homeowners in early activities on site.

Construction: Ensure safety in construction; review amendments and design conflict resolution based on above design parameters; focus on healthy tree establishment.

Operation: Survey walkability and activity outputs; continued research into microclimates for learnings on future projects.

Health and Happiness				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
HH1	**2020**	80% Physically active residents; 20-minute neighbourhood.	55.5% of 18 -64 year olds Australians participate in sufficient physical activity (ABS, 2015)[1]. Plan Melbourne Guidelines for walkability (Plan Melbourne, 2017)[2]. Connect residents to active exercise groups via facilitator and social media.	SP; DL; CS
HH2	**2021**	Comfortable microclimate; access to natural amenity.	Heat – reduce temperature by 2 degrees on hot days through minimum 20% tree canopy coverage measured as % of total area (at least 20% increase in tree canopy coverage (CRC, 2016))[3].	SP; DL

1. Australian Bureau of Statistics (2015). National Health Survey: Final Results, 2014 – 2015. Retrieved 01 April 2018 <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4364.0.55.001#>

2. Plan Melbourne, 2017. Outcome 5. Retrieved 8 April 2018. <http://www.planmelbourne.vic.gov.au/__data/assets/pdf_file/0008/377117/Plan_Melbourne_2017_Outcome_5_PDF.pdf>

3. CRC for Water Sensitive Cities, 2016. Urban Heat, heat reduction and Public Health.

7.2 Equity and Local Economy

Creating safe, equitable places to live and work which support local prosperity and international fair trade.

7.2.1 Key strategies

Design: Design public realm to AS 1428.1 and dwellings to Silver Level Liveable Housing design requirements. Monitoring of land and house price release and building design approvals to determine what recommendations are taken up by end users.

Construction: Developer to assign local consultants and contractors; developer to encourage local builders where ever possible through engagement with owners. Construction audits will be required.

Operation: Residents welcome pack to outline local opportunities for supply of all daily requirements. Community sustainability facilitation to encourage engagement and provide information as required.

Equity and Local Economy				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
ELE1	**2020**	Targeting 100% compliance with DDA AS1428 in public space and silver level liveable housing in dwellings[4].	Building standards.	DL; DG; DA
ELE2	**2020**	80% local consultants, contractors, builders and apprenticeships for civil, landscape and dwelling construction.	No requirement.	OP; DL; DG; DA
ELE3	**2021**	60% community engagement with local suppliers; community advised about local opportunities and amenities.	No requirement.	WP; CS

4. Liveable Housing Australia. 2017. Liveable Housing Design Guidelines, Fourth edition. Retrieved 02 April 2018 <http://www.livablehousingaustralia.org.au/library/SLLHA_GuidelinesJuly2017FINAL4.pdf>

7.3 Culture and Community

Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living.

7.3.1 Key strategies

Design: Strategy and design based on vision and stakeholder input; research contextual requirements for materials, resilience and flora and fauna. Develop artists brief and design together with local artists.

Construction: Continued engagement with stakeholders. Implementation of items designed by local artists in collaboration.

Operation: Community facilitator to engage community on fair trade, provide information on local co-working and encourage events and methodologies for community interaction.

Culture and Community				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
CC1	**2019**	100% Engagement with local community for design of sculptures and wayfinding.	Not part of standard practice.	SA; DL; CS
CC2	**2018**	Contextually respectful design (orientation; materials; information and flora).	Standard best practice, assessed against design guidelines.	SP; SA; DL; DG; DA
CC3	**2019**	Exceed IAP2 standards for stakeholder engagement through all phases.	Minimum IAP2 standards[5].	SA; CS
CC4	**2020**	At least 15 community members known by name.	>2	CS

5. IAP2, 2015. Quality Assurance Standard for Community and Stakeholder engagement. Retrieved 02 March 2018 <https://www.iap2.org.au/Tenant/C0000004/00000001/files/IAP2_Quality_Assurance_Standard_2015.pdf>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7.4 Land and Nature

Protecting and restoring land and marine systems for the benefit of people and wildlife.

7.4.1 Key strategies

Design: Research functioning swales, rain gardens and wetlands with species selection based on maximising addition to ecosystem services (cleaning and slowing flood waters, attracting fauna, etc.) Maximise tree planning with specific species selection in streets and private land (clean air, shade, habitat creation, etc.).

Construction: Implement all design considerations as listed above onsite; ensure high quality establishment procedures; protect existing relative sensitive vegetation. Implement educational wayfinding items.

Operation: Maintain swales, raingarden and retarding basin, expose users to function and value, research ecosystem service value adds, survey residents on perceived value, and adapt learnings to future developments.

Land and Nature				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
LN1	**2021**	Increase biodiversity by 15% based on area assessment comparison of the current specialist ecological report.	Ecologically degraded site.	OP; SP; SA; DL; DG; DA
LN2	**2019**	100% Native, contextually significant plants in public realm and front gardens.	Surf Coast Shire approved public realm planting list, no requirement for front garden planting.	OP; DL; DG; DA
LN3	**2019**	Increase awareness of ecosystem service mechanisms through wayfinding and information in the residential welcome pack.	No public realm education/ behaviour change mechanism required.	SP; DL; CS
LN4	**2021**	Enhance ecosystems services in water sector by providing a retarding basin, raingardens, permeable surfacing as well as relevant filtration species.	Best Practice Environmental Management Guidelines (CSIRO, 1999)[6].	SP; DL; DA

6. CSIRO, 1999. Urban Storm Water: best practice environmental management guidelines.

7.5 Sustainable Water

Using water efficiently, protecting local water resources and reducing flooding and drought.

7.5.1 Key strategies

Design: Building design guidelines to include the requirement for Lots (excluding town houses and Villas) to have 10,000 litres rainwater tanks for 100% garden watering requirements as well as toilet and washing machine where feasible. Design guidelines and Community Facilitator to advise on low consumption appliances through each dwelling. Model and design based on best practice flood modelling, design to exceed best practice, follow Melbourne Water and Surf Coast Shire design requirements for water filtration and cleaning.

Construction: Carefully managed construction phasing to ensure no negative on site water management and downstream effects of construction.

Operation: Engage with community on lot scale best practice for water saving. Manage stormwater infrastructure and climate change forecasting.

Sustainable Water				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
SW1	**2020**	Reduce per person water consumption to 120l per person per day (based on potable water meter readings)	VIC target is 155l per person per day, SALT target is 120l per person per day of potable water consumption[7]	SP; DL; DG; DA; CS
SW2	**2019**	100% flood resilience based on extreme events in excess of 1:100 year flood	Best Practice Environmental Management Guidelines (CSIRO, 1999)	SP; DL; DG; DA
SW3	**2019**	100% stormwater managed on site and audited once constructed	Best Practice Environmental Management Guidelines (CSIRO, 1999)	SP; DL; DG; DA

7. DELWP, 2018. Target 155 and Target Your Water Use. Retrieved 09 April 2018 <https://www.water.vic.gov.au/liveable-cities-and-towns/target-155-target-your-water-use>

7.6 Local and Sustainable Food

Promoting sustainable humane farming and healthy diets high in local, seasonal organic food and vegetable protein.

7.6.1 Key strategies

Design: Require a minimum of 25% private garden space on all lots, design review committee to input and advice. Develop information pack to include sustainable food information and resources.

Construction: Advise to check dwellings are constructed to requirements.

Operation: Promote food production and composting in the residents welcome pack. Provision of community Sustainability Facilitator to communicate availability and sources of local sustainably food and encourage residents to reduce meat consumption. Facilitator to implement community scale sharing of excess vegetables. Connect with regional groups and council to help inform food policy. Survey residents on uptake of information and any barriers to private growing.

Local and Sustainable Food				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
LSF1	**2020**	Minimum 25% private garden area providing opportunity for food production.	0% planning permit requirement.	SP; DL; DG; DA
LSF2	**2021**	Increased awareness on food growing methodologies and vegetable based diets. 60% community engagement.	No requirement.	WP; CS
LSF3	**2021**	50% household food and garden organic waste diverted from landfill to on site composting.	Place waste in council supplied organic waste bin.	DL; DA; WP; CS
LSF4	**2020**	60% engagement with community sustainability facilitator for growing, waste, diets and local food.	No requirement.	WP; CS

7.7 Travel and Transport

Reducing the need to travel, encouraging walking, cycling and low-carbon transport.

7.7.1 Key strategies

Design: Design to optimise walking and cycling within development and connection to and awareness of surrounding amenities. Design to consider DDA access requirements to all amenities. Building design guidelines to incorporate 32amp connection and resident's information package to include information on travel options (connections to public transport, ride sharing, impact of air travel, etc.).

Construction: Audit of public realm and private realm based on requirements.

Operation: Foster ride sharing through community Sustainability Facilitator, promote use of single rideshare application as well as an understanding of all alternate transport options. Information pack and Facilitator to advise on alternatives to carbon based travel and all public transport options. High speed internet connection to allow working from home.

Travel and Transport				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
TT1	**2019**	20 minute walkable neighbourhood (measured of plan).	Plan Melbourne guidelines.	SA; DL; DA; WP
TT2	**2019**	100% DDA compliance in public realm.	Victorian building regulations.	OP; SA; DL; DA
TT3	**2021**	40% rideshare uptake through facilitation.	No baseline.	WP; CS
TT4	**2020**	100% homes with 32amp point for future connection of EV charging point.	0%	OP; DG; DA; WP; CS
TT5	**2021**	100% of residents educated on impacts of carbon based travel typologies.	0%	WP; CS

7.8 Materials and Products

Using materials from sustainable sources and promoting products which help people reduce consumption.

7.8.1 Key strategies

Design: Efficient design and specification of recycled site material and acceptable recycled and local material. Guide residents during dwelling design and engage architects and home builders early to educate on targets .

Construction: Engage builders and trades to reuse and recycle during construction. Audit and measure materials retained and used on site, builder's material sourcing and types of materials used.

Operation: Advise residents on sustainable and reduced toxicity materials. Promote minimisation, reuse and recycling in the residents welcome pack.

Materials and Products				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
MP1	**2019**	10% increase in use of recycled material in civil (average) and per home construction.	Standard construction practice.	DL; DG; DA; WP
MP2	**2019**	80% of materials sourced locally / made in Australia.	No baseline available.	DL, DA
MP3	**2019**	20% less than a current average Victorian Regional home of high embodied carbon material usage.	Current estimate is between 30% - 80% of total material[8].	DL; DA; WP

8. Schmidt, M. 2018. Developing and Integrated Environmental and Economic Framework for Building Evaluation. The University of Melbourne, Australia.

7.9 Zero Waste

Reducing consumption, whilst reusing and recycling to achieve zero waste and zero pollution.

7.9.1 Key strategies

Design: Design review of onsite material and optimisation of reuse before removing from site. Material to be removed from site to be assigned to closest Barwon Water sites as required. Dwelling design to conform and optimise reduction in waste.

Construction: Stock pile material to be reused, educate builders through induction, develop coordination mechanisms for re-purchase of excess or waste as needed between builders. Private sector skips to be provided by each resident and development scale skips provided for recyclable items.

Operation: Connect and stay updated with Surf Coast Shire initiatives, residents made aware of initiatives through welcome pack and Community Facilitator.

Zero Waste				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
ZW1	**2019**	Provide all residents with waste management design guidelines during construction.	Victorian site environmental management guidelines[9].	DL; DG; DA; WP
ZW2	**2019**	12 tonnes of materials reused on site during construction of civil works.	No requirement.	SA; DL
ZW3	**2020**	Recycling targets for construction of 90%; Residential target, zero food compost to landfill, 80% recycling material and 20% landfill.	Victorian site environmental management guidelines.	DL; WP; CS

9. EPA. 1996. Best Practice Environmental Management. Environmental Guidelines for Major Construction Sites. Melbourne, Australia

7.10 Zero Carbon Energy

Making buildings energy efficient and supplying all energy with renewables.

7.10.1 Key strategies

Design: Dwelling designs to incorporate at minimum 7.5 star NatHERS; insulation = R3 for walls and R5 for ceilings, infiltration = 9ach, ventilation = 0.5ach, appliances – 5 star min. Materials to be low embodied carbon as far as is viable in dwellings and public realm. Layout and mechanisms to minimise individual car transport. Design review committee to review and advise accordingly. Minimum 2.5kW solar per dwelling and incentive for batteries.

Construction: Architect/ designer briefing, plan approval, builder briefing on expectations for leakage and post construction audit based on guidelines.

Operation: Zero carbon during operation and provide a framework to live within carbon footprint limits; R values, infiltration rates, ventilation rates, skylights, appliances; home owner's operations manual on energy efficiency and Facilitator engagements.

Zero Carbon Energy				
	Outcome (Date)	**Target / Indicator**	**Baseline**	**Mechanism**
ZCE1	**2020**	Net zero operational carbon in dwellings.	73kg of CO^2 (equivalent) per person per day, 12% of which is associated to dwellings[10] [11].	OP; SP; DG; TP; DA;WP; CS
ZCE2	**2021**	100% renewable energy consumption in dwellings through roof solar and adjacent solar array.	17.3% average renewable energy consumption for Australia[12].	OP; SP; DG; TP; DA;WP; CS

10. Australian Government Department of the Environment and Energy. 2018. Individuals and households. Retrieved 01 May 2018 <http://www.environment.gov.au/climate-change/individuals-and-households>.

11. Holmes, D. 2014. The Conversation: Visualising Australia's Carbon Emissions. Retrieved 01 May 2018 <https://theconversation.com/visualising-australias-carbon-emissions-23816>.

12. Clean Energy Council. 2016. Clean Energy Australia Report 2016.

8. Monitoring plan

A comprehensive monitoring plan will be developed over the next year and will include as a minimum:

- Design review committee: for all design stage item approval from site to dwelling scale.
- Construction auditing: All construction phase items relevant to One Planet living will be audited as implementation occurs.
- Initial operation audit: Once all infrastructure is implemented a full review on a site and dwelling scale.
- Resident welcome pack inclusive of first round surveys.
- Engagement of a Community Facilitator for ongoing community engagement and surveying as required.
- Monitor land and house prices and building design approvals to determine what recommendations are taken up by end users
- Capture data on any metrics included in the design review, e.g. PV solar size, battery storage, size of home, no. of car spaces, recommendations taken up etc.
- Annual reporting.


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9. Closing Statement

The redevelopment of the old Barwon Water basin into a One Planet Living Community, SALT Torquay is a significant step forward for the region in terms of driving sustainability best practice and driving the local economy. SALT Torquay will delivers and holistic approach to sustainable development.

Key initiatives include:

- Minimum 7.5 star residential development (energy efficiency measure of the Building Code of Australia), setting a new standard for innovative, sustainable urban development.
- Household solar and battery storage.
- Barwon Water is constructing a 250kW solar array on our land opposite SALT. The overall solar generation will be equivalent to 93% of the estate's total electricity consumption.
- Mandatory electric car charging points.
- Innovative public stormwater controls and household rainwater harvesting and reuse for toilet, laundry and garden irrigation to reduce mains water consumption by 30%.
- SALT Torquay will accommodate a diverse range of housing options providing 81 dwellings with universal access.
- Engagement with construction staff on respect, safety and waste throughout.
- Engagement with residents on multiple issues including waste, safety, local economy, ride sharing and public transport.
- Pedestrian focus and local gathering and play areas collocated with natural amenity
- Education and behavioural change through continued engagement, education and wayfinding items through the site and the residents welcome pack.

We believe that this will be a thriving community that will help steer both Torquay and future regional developments toward more sustainable outcomes. We look forward to continued engagement, learning and monitoring as the development comes to life.

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