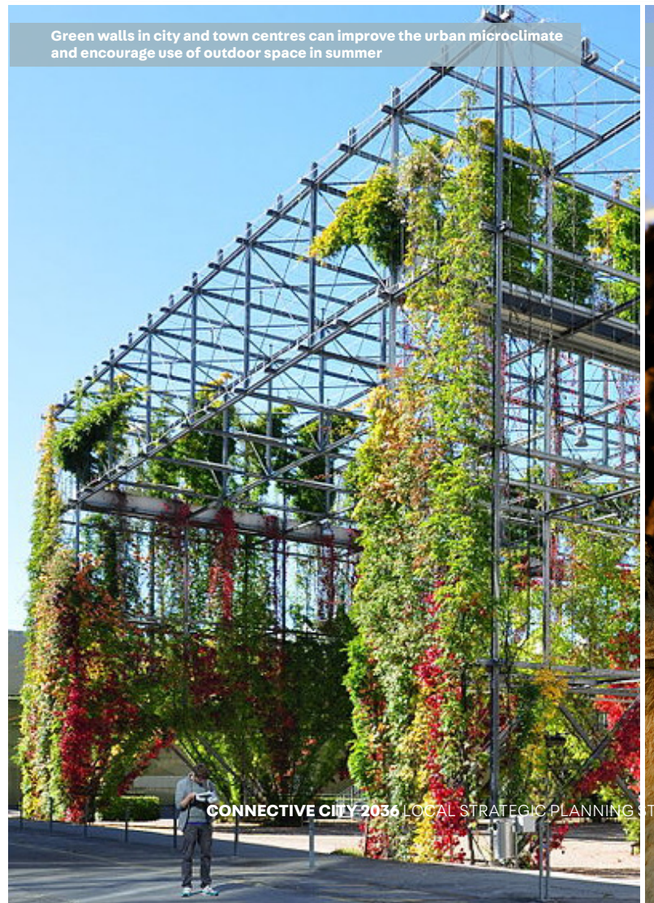
Evolution 9
Sustainable and Resilient Places

Connective City 2036 **aims for a resilient, responsive and sustainable city with buildings, spaces and people that use and manage energy, water and waste efficiently. Community lifestyles will be supported through integration of the built and natural environments to reduce the urban heat island effect, encourage new transport options, reduce waste generation and reuse water.**

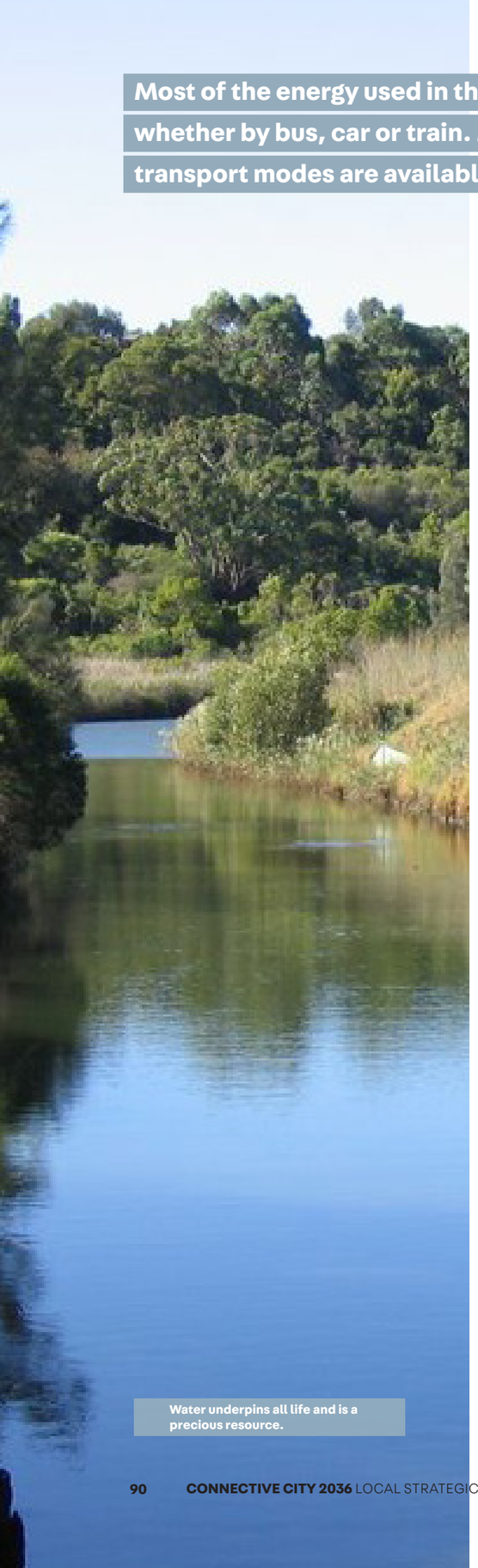
Cool streets and suburbs with mature tree coverage is a key characteristics of a more sustainable City.



Green walls in city and town centres can improve the urban microclimate and encourage use of outdoor space in summer

Mature trees in streets and parks are vital to a healthy, cool City.

Most of the energy used in the City is consumed by households and modes of transport, whether by bus, car or train. Making positive changes to how houses are designed, which transport modes are available to us and which ones we choose, will reduce energy use.



Water underpins all life and is a precious resource.

Reducing energy usage and moving towards renewable energy can reduce day to day costs, improve people's general health and reduce impacts on the environment.

In addition, well planned waste infrastructure, which incorporates design excellence in waste and recycling management to ensure minimum impact on the environment and community, together with measures to minimise waste transportation impacts, will be a responsive approach to future needs, and provide equitable access to waste, reuse and recycling services.

Opportunities

Canterbury-Bankstown must continually reduce waste, energy and water use to make city areas and streets cooler in summer, improve ecological systems and waterways and to manage water sustainably.

Making these improvements flows through all aspects of *Connective City 2036*. Providing sustainable transport through cycling and walking, improving waste infrastructure, creating green linkages for waterways, and preserving ecological areas will contribute to the built form of the city and liveability of residents. Every part of *Connective City 2036* is underpinned by a desire to improve sustainability factors.

Canterbury-Bankstown Council will, through the implementation of *Connective City 2036*, become a leader in sustainable urban planning and design.

Determining factors

Canterbury-Bankstown emits approximately 2.9 million tonnes of CO2-e per year, the fourth-largest emitter by local government area in Greater Sydney. Just over a third (68 per cent) of these emissions are associated with energy use at home and work, 20 per cent from transport and 12 per cent from waste.

With population growth there will be an increase in the amount of waste generated across the City. Across NSW, each person in 2017-18 generated 2.69 tonnes of waste. The recycling rate for NSW has reached 42 per cent but with a recycling rate target of 70 per cent there is a long way to go.

We are aware that the processes for reusing and recycling waste are not sustainable long term and there is a need to encourage separation, collection and set aside land for waste infrastructure to support and encourage a circular economy.

Supporting the sustainability and circular economy possibilities of commercial and industrial areas will support employment. Well planned waste infrastructure will minimise waste transportation impacts, be responsive to future needs, and provide equitable access to waste, reuse and recycling services for the community.

A sustainable and resilient future requires targeted approaches to suburban and urban living, so that more people can reduce emissions, produce their own energy, harvest rain and grey water and reduce household waste.

Structuring the city to allow for more housing within walking distance of centres will reduce emissions from transport and encourage walking, cycling and use of public transport.

Looking to improve the amenity of commercial and industrial areas and facilitating higher job densities supports new industries and makes more efficient use of existing urban land.

Locating of greener businesses close to where waste is being generated will provide better servicing proximity to where people live and work, therefore reducing transportation of waste.

Greening the City

Green spaces, waterways and trees shape and define the City and help reduce urban heat build-up and impacts of extreme weather events.

Natural systems can be woven throughout the urban parts of the City to:

- Improve the comfort and useability of all

PRIORITIES

Achieve net-zero emissions by 2050.

Manage energy, water and waste efficiently to support more resilient and liveable communities

Provide sustainability features to all housing.

Ensure waste works with building and streetscape design.

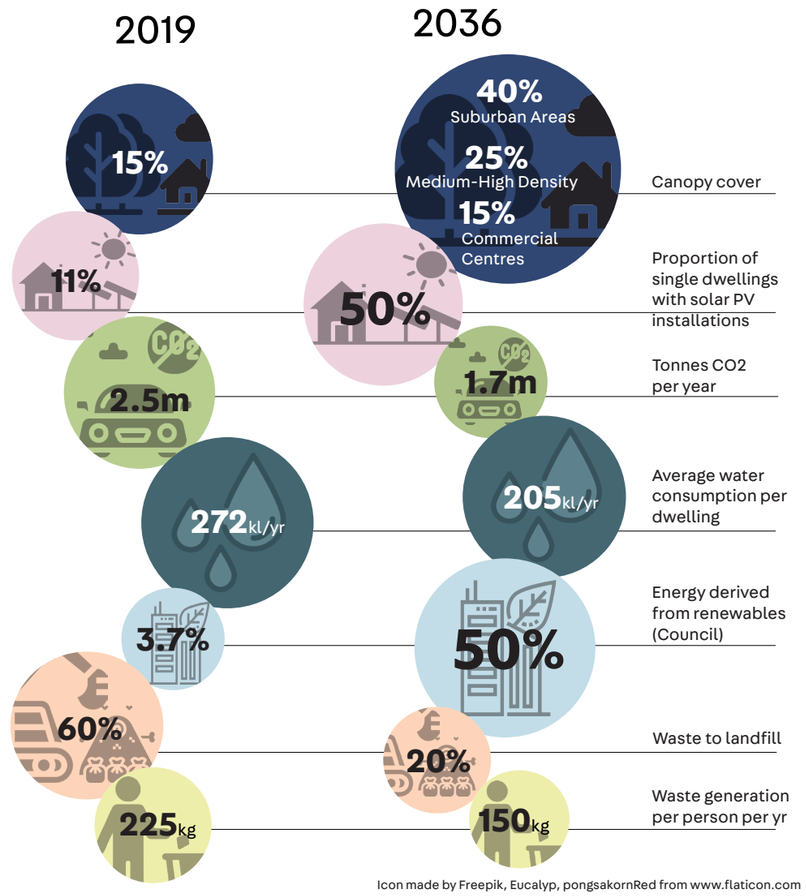
Concentrate housing close to public transport.

Support a locally based circular waste economy.

Optimise water conservation and reuse by adopting water sensitive urban design.

Increase tree cover.

Indicators



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places and spaces within the City, particularly cultural and civic spaces;

- Build the City's overall resilience to climate change;
- Improve shading on buildings, open spaces and streets;
- Encourage people to walk more by providing street trees for shade;
- Restore ecology though providing habitat for native animals in parks and street plantings; and
- Improve water percolation into the soil, thereby reducing runoff and flooding levels.

One of the key opportunities for the City is to rediscover its waterways, the Cooks, Duck and Georges rivers. Recreating habitat links and improved ecologically based recreation and green spaces across the City linking to river systems will also connect people to recreational opportunities.

Urban tree canopy

The effect of increasing urbanisation and global climate change are inextricably linked with the urban heat island effect. When compared to unvegetated public areas, a well-managed, lush tree canopy can reduce land surface temperatures by up to 15 degrees on a 35-degree day.

Connective City 2036 aims to increase tree canopy from the current 15 per cent of land area, to up to 40 per cent. This will mitigate urban heat, significantly cool streets and improve air quality.

A leafier, greener City encourages more people to walk, cycle and enjoy outside public space and can be easily increased in suburban areas along streets, in gardens, planter beds, in local parks and sports fields and new developments.

In more urbanised areas, such as town centres and commercial areas, *Connective City 2036* will seek to partner with developers, utilities and asset owners to establish and maintain greener and cooler public and private areas. This will not only create more attractive and larger landscaped areas but it can also increase property values if well located and designed.

Addressing the heat island effect in the City will help to mitigate climate change, while also making the City a great place to live.

Sustainable suburban living

Most people living in suburban areas benefit from front and rear gardens and roof space. These areas can be used to provide sustainable improvements such as power generation using Photo-voltaic Solar systems, solar hot water, rainwater collection and storage, electric charging points, space to compost food and garden waste and even using some garden space to grow vegetables.

All of these initiatives have an impact on lowering waste and reducing energy and water use because Canterbury-Bankstown has over 40 suburban areas covering around 100km . These will continue to be a key feature in *Connective City 2036*.

Sustainable housing in centres

New homes in the City, especially in centres, can be planned to incorporate higher levels of environmental performance by:

- Meeting higher BASIX energy and water targets;
- Being located within an easy walk of local centres.
- Being located close to public transport;
- Choosing more sustainable building materials that reduce environmental impacts;
- Proving more sustainable options, such as car share facilities;
- Ensuring buildings are well built for thermal comfort and built to last; and
- Incorporating design excellence for waste and recycling management for minimum impact on the environment and community.

We will continue to encourage the use of Solar Photovoltaic through *Our Energy Future* and installation of community electric vehicle (EV) charging stations.

Bike riding is good for health and reduced air pollution.

High density centres can be more sustainable places to live, where public transport is provided.

Green walls can reduce the urban heat island effect.

Electric vehicles are on the rise.

Outdoor places in centres offer spaces for city life.

Where large new apartment buildings or complexes are planned, measures will be taken to ensure that the apartments and building design allow residents to install solar,

a rainwater tank or options for better sun protection measures where suitable.

In addition, development of higher density housing must consider how to incorporate renewable energy and water capture and reuse, EV charging facilities in car parks, as well as deep soil planting for tree canopy, and greening and community spaces to grow food and compost waste.

Waste reduction and resource recovery

In 2017-18 the City produced approximately 90,000 tonnes of household waste and recycled approximately 35 per cent – as noted above, this is well below the NSW recycling target rate of 70 per cent.

Connective City 2036 aims to integrate waste management into the fabric of urban planning to support effective collection and management of waste as an essential service. This includes identifying sustainable waste outcomes for precinct plans, master plans and all developments (apartments, industrial, suburban) up front that are safe and efficient, maximise waste reduction, increase recycling and contribute to the built form and liveability of the community.

Improving collection and processing systems, particularly for organic waste, will reduce greenhouse gas emissions by cutting emissions from landfills and reducing resource waste.

Industrial and urban services lands will be retained for existing waste infrastructure and to support the development of a new waste and resource recovery industry to promote the circular economy and boost the recycling industry. This supports generating jobs in the waste industry, which is a key priority for the NSW Government.

Supporting sustainable businesses

Kingsgrove and Chullora industrial and technology areas provide an opportunity for Canterbury-Bankstown to specialise in industries that support net-zero emissions, integrated water cycle management and the circular economy. Chullora Business Park could support businesses that are developed and operated sympathetically with the natural wetland features of the area.

We will support local waste, recycling, composting and food waste facilities as a local and regional industry specialisation to help create jobs and attract investment, while supporting the processing of renewable resources and advanced technologies for the reuse of essential materials.

Supporting urban industrial uses that specialise in green technology will drive circular economy outcomes and provide future options for the city to sustainably manage its waste.

100 Resilient Cities

Canterbury-Bankstown Council is a member of 100 Resilient Cities and has made a commitment to better manage vulnerabilities and plan for ongoing stresses.

Some of the key issues is the need for affordable access to infrastructure, services, transport and shelter, and to provide skills and employment opportunities that are accessible to everyone across the City, the integrated decision-making where growth is aligned to the timely delivery and well managed affordable infrastructure are key resilience responses.

EVOLUTION 9 - SUSTAINABLE AND RESILIENT PLACES

	PRIORITY	ACTIONS	CBCITY 2028	SOUTH DISTRICT PLAN	COLLABORATION	RESPONSIBILITY	TIME FRAME
METROPOLITAN	**Achieve net-zero emissions by 2050**	Advocate for increases in building sustainability standards through higher BASIX and NABERs ratings			DPIE	CBC	!!!
	Manage energy, water and waste efficiently to support more resilient and liveable communities	Develop an approach to waste management that maximises the reduction of waste to landfill and considers opportunities for use of waste as a resource			EPA, Office of Environment, Energy and Science	CBC	!!
	Optimise water conservation and reuse by adopting water sensitive urban design	Re-establish the Yana Badu Wetlands (formerly Chullora wetlands) as part of the broader network of waterways and greenspace connections. The wetlands will be used an exemplary project of urban water management			Cooks River Alliance	CBC, Sydney Water	! !!
	Increase tree cover	Increase Tree Canopy to reduce the urban heat island effect towards 40 per cent cover				CBC	!! !!!
CITY SHAPING	**Achieve net-zero emissions by 2050**	Encourage the uptake of renewable energy in all sectors				CBC	! !!
		Lead and support the transition to electric transportation through expanded Council use				CBC	!! !!!
		Include measures to facilitate low-emission forms of transport (public transport, cycling, walking) in place-based transport planning			TfNSW	CBC	! !! !!!
	Manage energy, water and waste efficiently to support more resilient and liveable communities	Deliver community and schools education programs that celebrate and teach the importance of living with healthy waterways				CBC	! !! !!!
		Strongly support the use of renewable energy where possible to provide clean, affordable energy				CBC	! !! !!!
		Deliver well-planned waste infrastructure that is responsive to future needs, and provides equitable access to waste, reuse and recycling services through planning for the future of Kelso and resource recovery facilities for the city			EPA, Office of Environment, Energy and Science	CBC	!!
		Support the use of water-efficient technology across households and business			Sydney Water	CBC	!!!
	Provide sustainability features to all housing	Include planning controls for all development to improve the energy performance of buildings through the use of renewable energy such as solar storage				CBC	!!!
		Include planning controls requiring the installation of Electric Vehicle chargers in high density development, and encourage their installation in other development				CBC	!!!
		Implement design controls that require improved lighting and ventilation to reduce energy costs associated with lighting and heating				CBC	!!!
	Ensure waste works with building and streetscape design	Implement new planning controls that ensure waste management makes a positive contribution to built form, urban amenity, streetscapes and liveability				CBC	!!!
		Investigate and deliver waste management outcomes that are safe, efficient, cost effective and maximise recycling			EPA, Office of Environment, Energy and Science	CBC	!!
	Concentrate housing close to public transport	Maximise walking infrastructure across the LGA to ensure that each household has walkable access to their nearest centre				CBC	!
	Support a locally based circular waste economy	Advocate for better waste management practices and increasing the processing of renewable resources through exploring alternative waste and recycling technologies			EPA, Office of Environment, Energy and Science	CBC	!!
	Optimise water conservation and reuse by adopting water sensitive urban design	Implement planning controls requiring landscape elements within buildings (green roofs, walls etc)				CBC	!!
		Implement new planning controls that maximise opportunities for WSUD to reduce impervious surfaces, improve water quality, reduce urban runoff and re-use captured water where possible			Sydney Water	CBC	!!
	Increase tree cover	Develop a street tree policy to create opportunities for deep planting in streets and public spaces				CBC	!!!

Delivery: ! By 2021 (0–2 years) !! By 2021 and 2024 (2–5 years) !!! Beyond 2025 (more than 5 years) South District Plan Directions: Please refer to pages 13-15. *CBCity2028* Transformations: Please refer to pages 13-15.