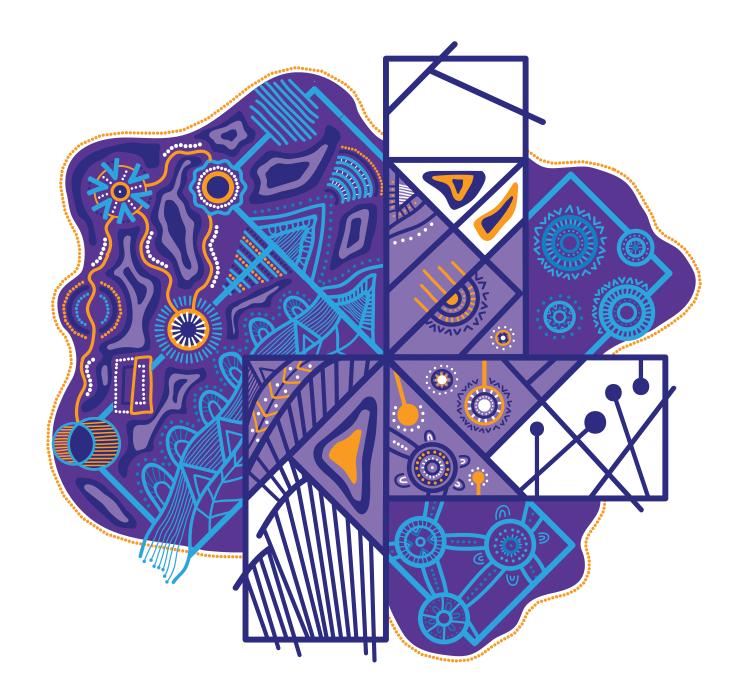


to deliver big ideas for Victoria's future

Arup's submission to Plan for Victoria



Acknowledgement of Country

We acknowledge the Traditional Custodians of the lands across Victoria. We pay our deepest respects to Elders both past and present and extend this respect to all other Indigenous peoples. We recognise and celebrate their diverse cultures, traditions and protocols. We honour the unbroken connections to the lands, waters and skies to which they belong, care for and return to.

The artwork, 'Continuing to shift to shape an even better world', illustrates the richness that emerges from the bringing together of two cultures – in this case, Arup's culture (the purple) and Aboriginal and Torres Strait Islander cultures (the blue). The original motif was developed by Tarni O'Shea from Gilimbaa. Tarni is a proud Aboriginal and South Sea Islander woman who is strongly inspired by the celebration of culture and bringing it to the forefront of the creative process.

The motif was updated in 2023 by David Williams of Gilimbaa to reflect new ways of thinking and the incorporation of culture in the place-making process, including a strengthened representation of community and Country.

ARUP



Nine action items to shape Victoria's future



Arup is committed to shaping a better world by supporting a bold, sustainable vision for Victoria. When the Department of Transport and Planning invited industry feedback on the upcoming Plan for Victoria, we saw an incredible opportunity to draw on our multidisciplinary expertise.

Our team came together to develop actionable transdisciplinary solutions that address the challenges and opportunities shaping Victoria's future.

We considered people, transport, children, climate change, growth, biodiversity, water, data and more. The result is nine action items designed to deliver immediate impact and long-term benefits for a more vibrant, sustainable Victoria.

Victoria faces significant challenges, but we see these as opportunities to drive bold, innovative change. Backed by our leadership in cities and government policy, we bring together experts across urban design, transport planning, sustainability and ecology to shape a future that meets both current and future ambitions.

Through collaboration with colleagues across Australia, Singapore, London and beyond, these action items outline a strategic vision for growth that protects the environment, harnesses technology and fosters resilient, thriving communities. We are here to help Victoria seize this moment and build a better future for all.



Piloting five new planning zones



approach to

climate change

4

Action item

Victoria's transport plan

Objectives

Promote denser urban living designed to be healthy and child friendly.

Establish and enforce regulations to reduce traffic and pollution, ensuring safer streets for walking, cycling and playing.

Guarantee access to open spaces, play areas, and nature for current and future generations.

Incorporate future generations as key stakeholders in urban planning and decision making processes.

Equitably distribute childcare and education infrastructure, prioritising areas with the greatest need.

Big ideas delivered



Transport access



Movement options



Job access

Explore more

Toward net zero land transport

Sydney's transport strategy

Read more

(Read more

Victoria urgently needs a transport plan to address our growth challenges and fulfil our generational commitment to a stable climate, community equity, liveability and economic prosperity.

Why

In 2051, Victoria is forecast to have a population of 10.3 million people, placing the city alongside current global cities such as New York, Hong Kong, London and Kuala Lumpur. Plan for Victoria provides a unique opportunity to improve how the state's transport and land use systems respond to this growth. advancing sustainability, equity, livability and economic prosperity throughout Victoria. The plan should reflect Victoria's impact on both national and global scales.

A Transport Plan can provide clarity and an evidence base to solve the state's access and mobility challenges. It must be integrated with community needs and made available to the public and industry to deliver better outcomes.

How

The Plan should include a mix of policy-led initiatives that seek to define:

- The long-term vision for key links to places of activity across Melbourne and Victoria.
- Key land use outcomes and the clustering of development at these places of activity or along these links.
- Investment in technology to improve accessibility, especially in regional areas.

Rather than a one-size-fits-all approach, the Plan should identify the policy initiatives and projects that respond to the unique challenges facing different parts of Melbourne and Victoria. It should also be tested under various growth and climate change scenarios, prioritising the most resilient and beneficial projects.

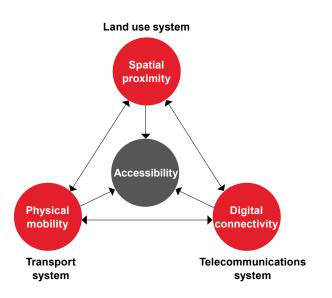
While the Plan would be multifaceted and integrated with other policy and planning objectives, it is critical that it includes a spatial language to articulate:

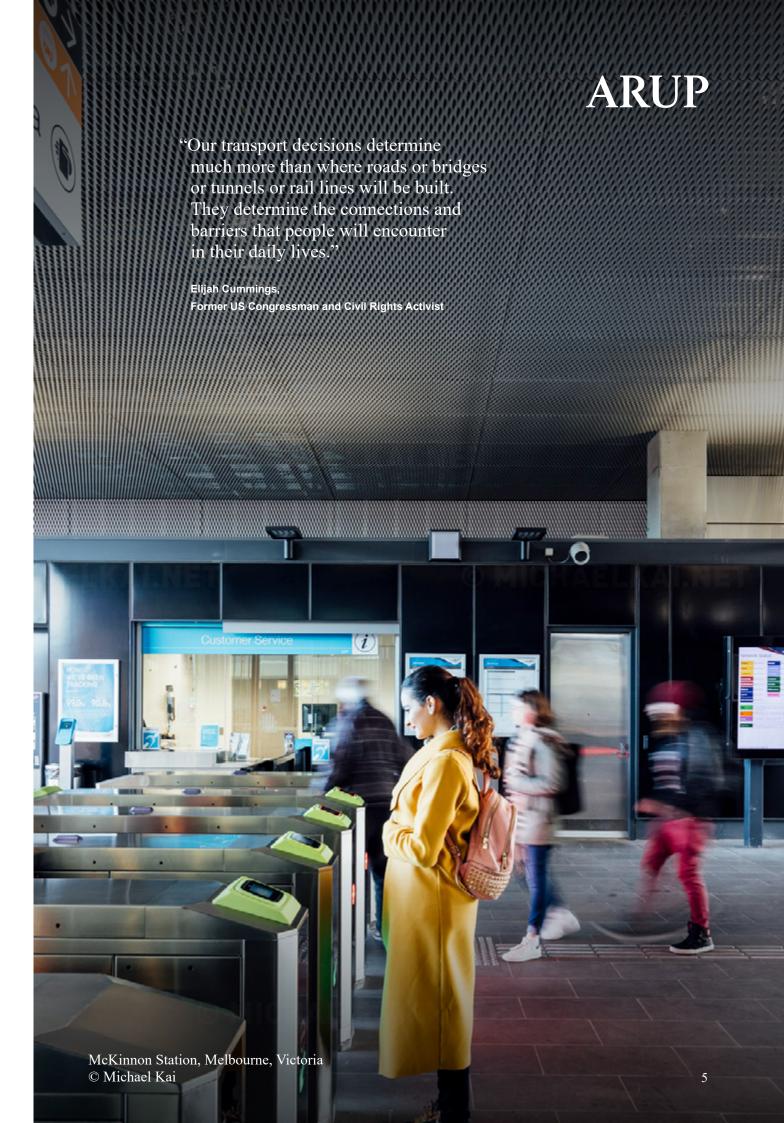
- The critical places within Melbourne and their interconnections.
- Rail corridors across Victoria that need enhancement, connection and extension to enable mobility.
- The tram and bus networks requiring improvement, including the potential for road space allocation to better prioritise public transport performance, the areas where reform is required and the new key extensions or networks.
- Strategic freight corridors across Melbourne and Victoria and the projects and initiatives to address current issues.
- Viable and feasible cycling routes for delivery.

Critically, the Plan must clarify the modal priorities and governance that can be a circuit breaker for progressing road space allocation.

The Transport Plan should highlight project priority, indicate time horizons for when the community can afford these changes and recognise that these changes can and will change over time.

Three key pillars of accessibility for Victoria





Action item

1,000 new parks for active living

Objectives

Safeguard open space for our growing population with targets for walkability, quality and m² per capita.

Tie development to meaningful open space provisions.

Facilitate opportunities for connections to Country for all and establish a new relationship with nature.

Improve health and wellbeing for all and achieve equity of access to open space for underserved populations.

Prioritise climate resilience for and through open space.

Big ideas delivered



Greener places



Hazard protection



Change certainty

Explore more

Green and thriving neighbourhoods

Read more

Healthy places healthy people: Strategic tree planning and planting guidance

(Read more

Whether it's 500, 1,000, or 10,000 parks, Victoria needs a bold new vision to deliver new parks and open spaces. This vision should uphold caring for Country principles, build on past efforts, and connect everyone to the outdoors through accessible, healthy parks for all.

Why

Planning for new parks is crucial for community health and wellbeing, especially as populations grow. Access to green spaces is linked to lower hospital rates and reduced heart disease, while also helping children meet physical activity guidelines. Parks offer spaces for social interaction, community pride and even refuge during emergencies.

With less than 50% of Victoria's native vegetation remaining, parks also play a key role in preserving biodiversity and linking habitats. They help cool urban areas and provide shade, clean air and flood resilience. As the population increases, it is essential to safeguard additional space for parks to ensure these benefits continue, particularly in economically disadvantaged communities where parks are vital in addressing health disparities and promoting long-term wellbeing.

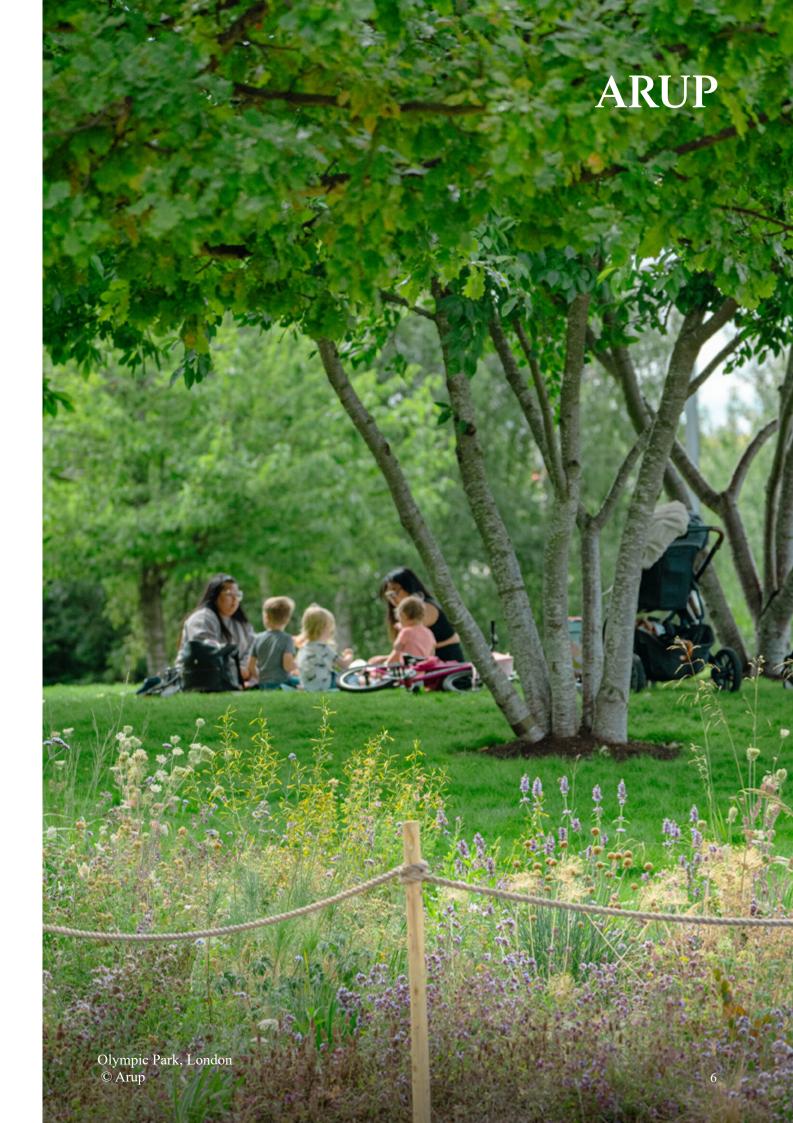
How

Plan for Victoria can deliver new parks and open spaces:

• Develop a statewide open space strategy that builds on and broadens the Open Spaces for Everyone strategy and aligns with the Guide for Open Space Strategies.

- The Plan should ensure parks work hard to deliver multifunctional benefits and quality. This approach should seek alignment with complementary strategies in water, environment, infrastructure, health and climate change.
- Alternative funding means should be explored to support implementation and maintenance of new and existing parks. Funding should link economic benefits for health and wellbeing, climate change, risks and disaster relief, environment, infrastructure, private developments and businesses. A fund should be established to deliver and manage open space.
- Take an integrated approach with stakeholders, including delivery authorities, First Nations, operational agencies and communities.
- The Plan should be spatial and data driven, layering data to identify needs, risks and opportunities. Inputs should include climate change, waterway and flooding, habitat and vegetation patches and corridors, infrastructure corridors, population and socioeconomic, walkability, urban heat island, land use and development plan data.
- "Victoria has the highest proportion of native vegetation removal of all states and territories this could be an opportunity to be the state with the highest rate of revegetation or net gain."

Ross Dennis Ecologist, Arup, Melbourne



Action item

A long-term approach to climate change

Objectives

Build a climate-resilient Victoria by future proofing communities, infrastructure and ecosystems against the impacts of climate change.

Establish clear, science-driven guidance to integrate long-term climate change considerations into all planning, assessment and decision-making processes.

Reduce costly risk by directing growth and infrastructure away from areas with intolerable future climate hazards, including bushfires, flooding, coastal inundation and extreme heat.

Ensure development does not exacerbate the impacts of climate change, such as increased urban heat island effect.

Big ideas delivered



Change certainty



Agriculture protection



Hazard protection

Explore more

ICA + PIA Land use planning communique

How can coastlines prepare for climate change?

Read more

change?

Climate change will bring profound changes to Victoria's social and ecological systems, transforming the way people live, work, move and sustain their livelihoods.

Why

Navigating uncertainty in a changing climate makes planning complex. Without a proactive approach to long-term climate futures, we risk embedding climate risk into our infrastructure, communities, and ecosystems and widening the insurance protection gap for households and governments to bear.

How

Improve data and information for decision making:

- Update climate-related hazard mapping overlays, taking into account the upper and lower bounds of a range of plausible climate scenarios.
- Overlay climate information with current and future zoning to assess the impact of climate change on settlements, infrastructure, ecosystems and livelihoods.

Develop a durable planning framework for adapting Victoria to climate change:

- Prevent development of high-value, long-lived assets, infrastructure, and economic activities in high risk areas through the use of risk-based zoning.
- Safeguard people, assets, and infrastructure already exposed to climate risks through planning for protective and green infrastructure and explore novel insurance and funding tools to reduce financial burden.
- Enable existing settlements to withstand tolerable climate risks such as flooding and urban heat by improving building standards and incorporating nature-based solutions.
- Actively review and refresh the vast array of information available on climate change impacts to human settlements and the natural environment. This can be done by developing a long-term climate change policy and process team to develop and embed complex policy and real-time analytics and information into decision-making. Make this publicly available.
- Enhance community awareness, education, and engagement to empower all Victorians to build climate resilience.
- Foster robust collaboration and partnerships across all levels of government, industries and communities.



Action item

A child-centric masterplan for Victoria

Objectives

Implement denser urban living optimised to be healthy and child friendly.

Create and enforce rules to reduce traffic and pollution, making streets safer for walking, cycling and playing.

Guarantee access to open spaces, play areas and nature for current and future generations.

Incorporate future generations as key stakeholders in urban planning and decision-making processes.

Equitably distribute childcare and education infrastructure, prioritising areas with the greatest need.

Big ideas delivered



Affordable homes



Movement options



Greener places

Explore more

Cities Alive:
Designing for
urban childhoods

Urban Childhoods Masterplan Belfast

Read more

Read more

Prioritising children's needs can unify progressive ideas, drive economic progress and ensure a brighter, more resilient future for Victoria.

Why

Child-friendly urban planning focuses on improving development, health and access for members of our community aged 0 to 17 – around 23% of Victoria's population. It goes well beyond playgrounds and skateparks, emphasising the importance of play and experimentation in cognitive and physical development, including social skills, autonomy and confidence.

The benefits of child-friendly environments add value to lives of all ages. The amount of time children spend playing outdoors, their ability to get around independently and their level of contact with nature are strong indicators of how a place is performing for everyone – including plants and animals.

How

The Plan for Victoria could articulate a state-wide approach to:

- Slowing down traffic where it matters most.
- Reducing air pollution, transitioning to bikes and electric vehicles.
- Ensuring investment in spaces and places for families and young people is prioritised for low-income and low-amenity places.
- Leveraging population data and growth projections to guide the rollout of daycare and education infrastructure. Building on this, we can also use data to inform initiatives such as safe streets and other targeted projects

• Recognising that teenagers are children too. The Plan could include a pathway to delivering essential infrastructure that helps teenagers feel welcomed and valued in the community, supporting civic engagement and future leadership development.

Using digital tools and data to make a better plan

By leveraging data and geographical information systems (GIS), we can strategically target communities where investment in family and children's infrastructure will yield the greatest economic, environmental and social benefits for the least cost. With the right metrics and research, we can roll out these initiatives effectively, ensuring maximum impact. Additionally, we can implement tools to measure and monitor the progress and outcomes along the way.

Children are our city's most important stakeholders and their digital proficiency often surpasses adults. Digital tools can empower young people to have a stronger voice in planning processes by providing accessible platforms to share their ideas and feedback. These tools can help ensure that young people's perspectives are actively considered in decisions shaping their communities.

"Children are a kind of indicator species. If we can build a successful city for children, we will have a successful city for all people."

Enrique Peñalosa Former Mayor of Bogotá



Action item

Building a biodiversity corridor network

Objectives

Restore our local biodiversity and habitat extent and reverse extinction trajectory.

Meet global targets of 30% restoration of ecosystems.

Improve amenity, quality of life, agricultural productivity and tourism.

Piece together the public and private land mosaic to create connected corridors.

Create a biodiversity market to incentivise private landholders.

Levarage linear public infrastructure to create revegetation corridors.

Big ideas delivered



Agriculture protection



Change certainty



Greener places



Hazard protection

Explore more

Bristol Avon Catchment Market

Keyn Glas, A30 Environmental Designated Funds

Read more

Read more

Enhancing and expanding habitats and connectivity strengthens the natural assets that underpin our economy, society and precious biodiversity.

Why

We see the benefits of a healthy environment in our daily health, quality of life, agricultural productivity, clean waterways, resilient landscapes, tourism and recreational pursuits.

By prioritising the expansion of existing habitat refugia and connecting islands of habitat across the state, biodiversity corridors maximise the benefits of efforts in conservation.

To connect the pieces of the private and public land puzzle, we need a blend of policies and incentives to unlock restoration potential.

How

Engaging with local communities to develop priorities and gain support for restoration is crucial, with an emphasis on local landscape values and ecosystem benefits. Creating a credit-based market for biodiversity and ecosystem services will incentivise private landholders to support corridor restoration. This market will also enhance Victoria's natural assets, benefiting local communities, supporting agricultural productivity, improving waterway health and increasing landscape resilience.

Agroforestry combines growing trees for timber and biodiversity in a managed landscape, benefiting surrounding land uses. Promoting practices such as agroforestry on private land will support farmers and Traditional Owners in delivering biodiversity benefits, creating local jobs and providing sustainably sourced timber.

Additionally, there is an opportunity to strategically leverage the network of existing underutilised public land along linear infrastructure such as roads, railways and utility easements to create biodiversity corridors. This approach offers a range of beneficial ecosystem services to the surrounding areas, in addition to connecting habitats. Supporting this can be achieved by setting biodiversity restoration targets for transport or public utility easements and amending existing public planting standards to allow for biodiversity planting.

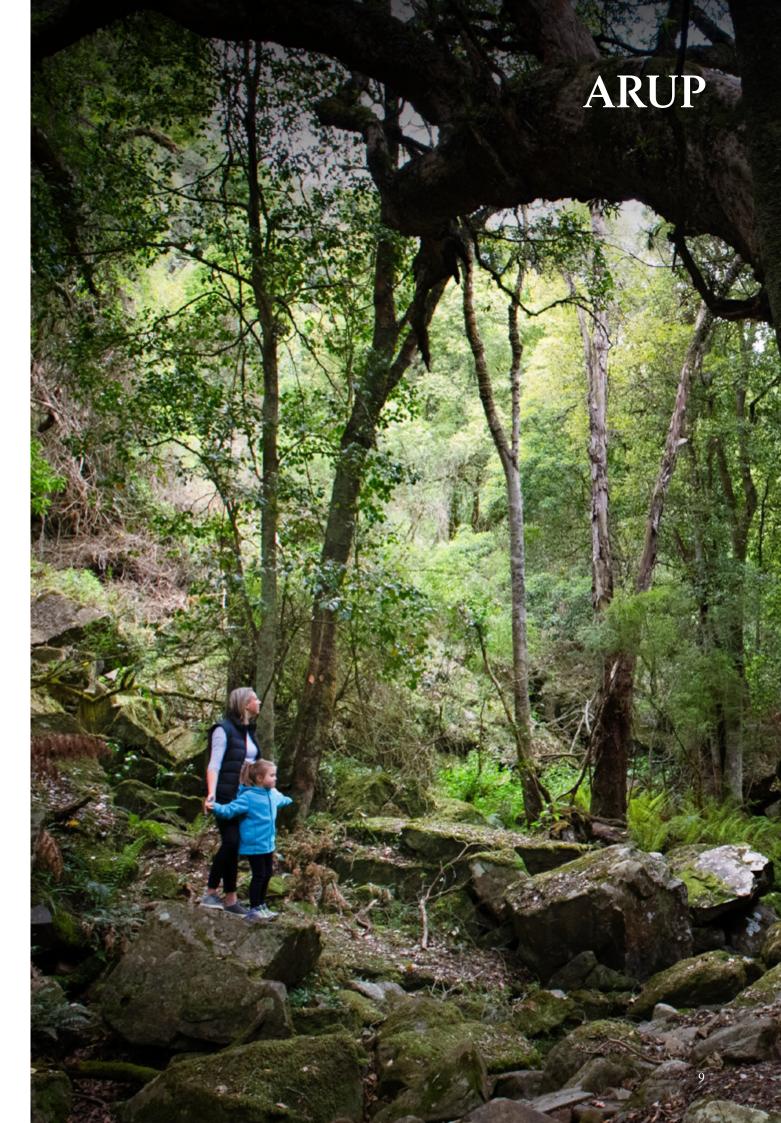
The benefits

Establishing biodiversity markets and setting public land policy targets will create a consistent demand that drives capacity and capability in the restoration sector, fostering job growth in the green economy. Enhanced capability will lead to better and more cost-effective restoration outcomes, making restoration more accessible and scalable.

Beyond restoration, there are critical issues hindering effective ecosystem management. Proper fire management will support conservation efforts and improve fire-resilient landscapes. There is a significant opportunity to collaborate with Traditional Owners and local communities to reinstate appropriate fire regimes and heal Country.

"It seems to me that the natural world is the greatest source of excitement; the greatest source of visual beauty; the greatest source of intellectual interest. It is the greatest source of so much in life that makes life worth living."

Sir David Attenborough



Action item

Enabling circular water cities

Objectives

Irrigating green spaces and streetscapes to enhance greening and cooling.

Reducing strain on drinking water supplies through reuse.

Supporting agricultural production in peri-urban areas, using nutrient rich urban water to grow food.

Reducing flood risk and protecting the health of our waterways and bays.

Exposing and celebrating water systems in the urban environment to enhance liveablity.

Big ideas delivered



Hazard protection



Change certainty



Greener places

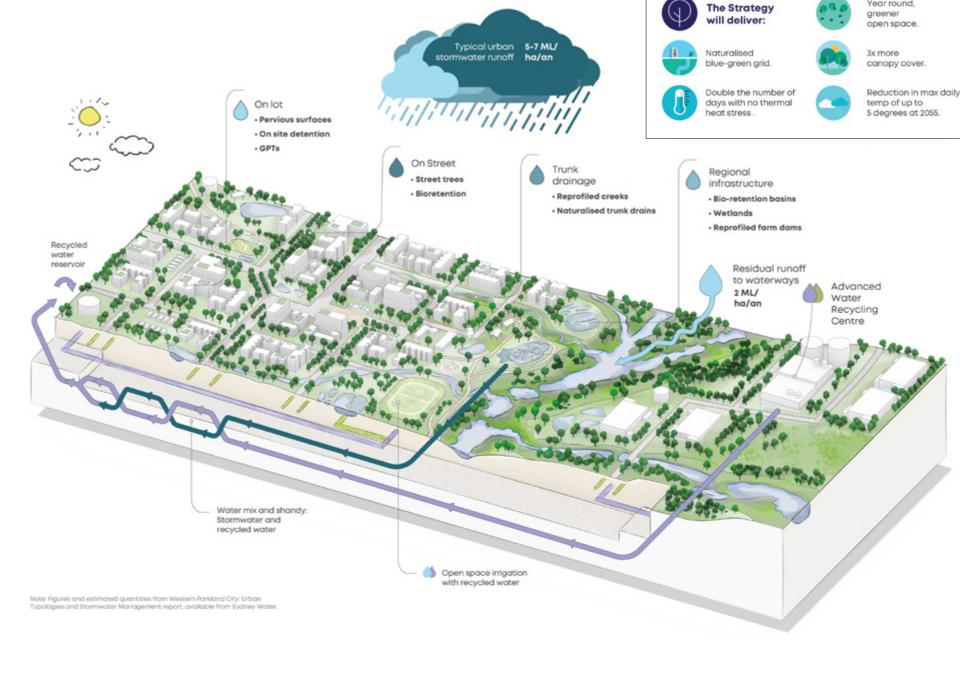
Explore more

Yarra Park
Water Recycling
Facility

Read more

Stormwater harvesting solutions for Victoria

Read more



By creating the right funding and delivery models, we can create circular water cities, which harness the 'urban waters', stormwater and recycled wastewater' as precious new supplies to support greening and agricultural production. By enabling the delivery of stormwater harvesting and recycled water schemes locally, we can unlock the potential of our urban areas.

Why

When viewed holistically, cities like Melbourne and others in Victoria generate more water than they consume. Rainfall on roofs and paved surfaces create significant stormwater runoff, while homes and businesses produce large amounts of wastewater. These resources, if released untreated, harm our waterways and environment. However, by capturing, treating and reusing them locally, we can provide more water than our cities need.

Victoria has made significant progress in developing supportive policies for integrated water management. To make stormwater harvesting and recycled water reuse more widespread, we must improve delivery mechanisms.

How

The enablers needed are two-fold:

- Cross-organisational delivery models:
 Collaboration among councils, water corporations,
 Traditional Owners and catchment managers to fund and deliver multi-benefit solutions.
- Taking the opportunities with new developments: Making alternative local water supplies the new norm for infrastructure delivery.

"It's true that Australia is a dry continent and our fresh water supplies are strained. But in an urban context, water is abundant, but it leaves our cities as waste streams. These just need to be harvested and reused locally. Then the beauty of it is, that when the city grows, the water supply grows too."

Celeste Morgan Integrated Water Management Leader, Arup

Western Sydney Aerotropolis Stormwater © Sydney Water, Arup IWM



ARUP

Action item

A strategy for the future of housing and settlements

Objectives

Provide clear and granular direction on strategy, investment, governance and implementation to private and public investors, non-profit organisations and community stakeholders.

Provide adequate and diverse housing and accessible employment opportunities.

Identify and map the key elements of 'liveability' at regional and local levels.

Improve the opportunity and contribution of all of Victoria's cities and townships and their communities in a frame of true economic, environmental and social sustainability.

Big ideas delivered



Affordable homes



Change certainty



Hazard protection



Job access

Explore more

Germany's Sustainable Development Strategy

The legacy of Albury Wodonga

Read more

Read more

Victoria's Settlement Strategy bridges ideas and action, ensuring every Victorian can fully participate in, enjoy and contribute to a sustainable life – economically, socially and environmentally – across the state.

Why

An explicit Settlement Strategy will provide clarity and confidence to private sector investors, and public, non-profit and community stakeholders. It will also support community confidence in decision making and investment, knowing that all key players are working together towards the same goal.

The Settlement Strategy as a Living Plan will be policy led, provocative, aspirational, explicit and data driven. It can quantify and put liveability at the core of decision making. It can challenge long-held assumptions and test thinking.

What would Victoria look like if we planned as though:

- Living, growing and ageing in place is a fundamental right?
- Resources are finite?
- Repurposing is more important than 'new'?

Hov

Data driving decision making:

A wealth of baseline information, increasingly in digital form, is available to address the unique challenges faced across Melbourne and Regional Victoria. Further and ongoing investment and integrating this with emerging policy (Energy and housing) and emerging governance changes (parking, codification and zoning reform) can provide a powerful platform for policy, implementation and reporting (e.g. real-time tracking of performance against housing targets).

Delivering new housing:

New housing informs public and private investment decisions and facilitates location-specific programmes by integrating policy and infrastructure choices with effective governance and funding structures that:

- Prioritises and 'flies' specialist expert teams (e.g. housing, transport) that are centres of excellence and provide design advice and planning approval advice, pre-approved pathways that speak to high-quality outcomes.
- Enables adaptations of future homes for specific locations that are close to transport providing a more appropriate housing type developed by local designers.
- Informs delivery mechanisms and provides opportunities to review the governance and financial structures required to support cities and regions (including value capture) consistent with meeting these outcomes.



Action item

Piloting five new planning zones

Objectives

Accelerate growth in housing across parts of the city.

Embed innovative thinking in the development industry.

Unlock private sector investment.

Test planning system assumptions.

Big ideas delivered



Affordable homes



Change certainty



Job access

Explore more

Building performance reimagined

Revaluing Sydney's CBD

Read more

Read more

The planning frameworks of the 20th century no longer meet the needs of today's cities. We need a bold, radical overhaul of the planning system to promote mixed-use developments, reintroduce cleaner and quieter industrial activities, and rethink how we repurpose existing structures.

Victoria's planning zones require a comprehensive transformation to encourage adaptability and innovation. By embracing a more creative approach, we can inspire new land uses that address pressing policy challenges and rethink the assumptions underlying our current zoning practices.

Priorities

The new zones should focus on aspirational changes, significantly departing from the current land uses across the state. Each new zone should be seen as an opportunity to radically change perceptions of land use. This shift will alter how developers interact with the planning system, driving new investment, potentially speeding up approvals, and ultimately enhancing the quality of built outcomes.

Examples of zone types:

- Integrated use zone (IUZ)
- Adaptable future zone (AFZ)
- Minimal rule zone (MRZ)

Focusing on innovation and new ideas will attract investors by creating spaces that give the community the city they desire.

Hov

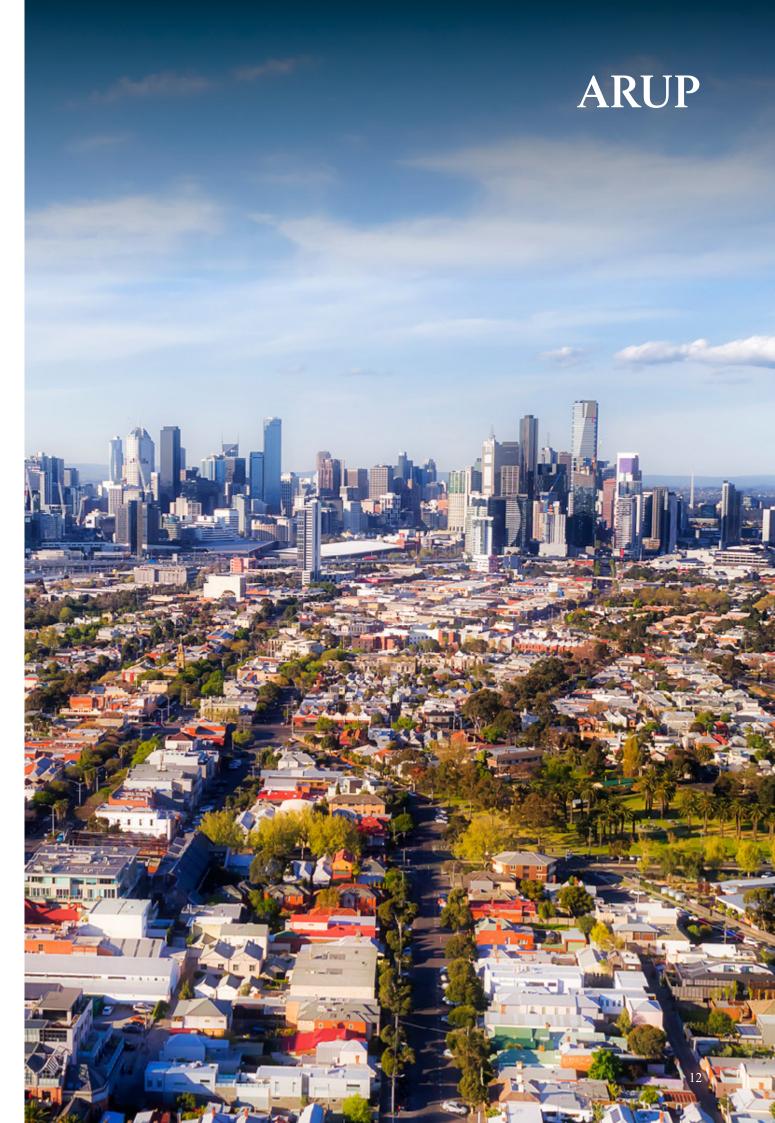
- Define five new zones, each with a different policy focus, departing from the current status quo.
- Deploy innovative land use zones in areas of the city that are failing to achieve policy outcomes.
- Introduce zone protoypes to test their effectiveness and gather feedback.

Where

- Target locations across the state ripe for renewal. Deploy the zones in pilot locations to test industry response.
- Focus on urban activity centres and regional locations poised for significant growth, especially around public transport hubs.

Tracking success

• Track the success of each new zone over ten years. This timeframe provides enough buffer to understand the impact on development activity and housing supply.



Action item

A digitally enabled plan

Objectives

Connect to live systems harnessing data from across government, academia and the private sector.

Enable collaborative editing allowing the plan to be commented on and edited by multiple stakeholders.

Offer dynamic enabling analysis of data at different spatial scales – from the state to the street within seconds.

Measure progress across multiple domains

- health, environment and accessibility
- aligned with the United Nations Sustainable Development Goals.

Big ideas delivered













Explore more

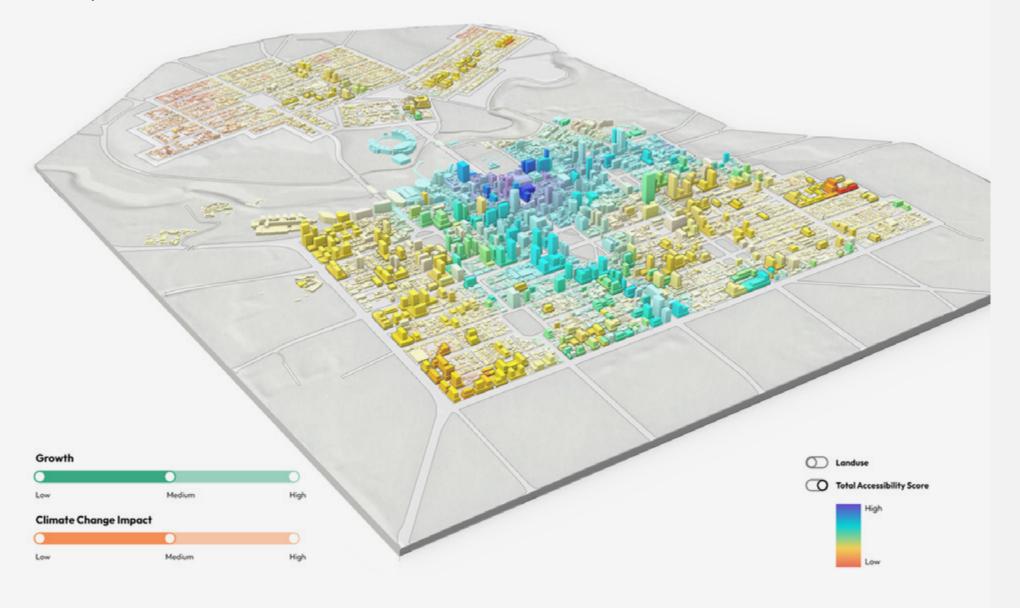
Digital tool: PlanTech

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Digital tool: Transforming Australian cities

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Growth potential scenarios

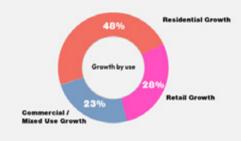


ARUP

High growth 2036

Within the city there are urban frameworks that operate at different scales and levels. While these all operate in an overlapping way it is useful to look at the main scales of operation. Infrastructure Australia breaks down these urban frameworks into Neighbourhood, District, and Regional/Capital City zones. Working definitions of these are set out below covering household numbers, distances and other characteristics.

Growth Metrics Population Growth Jobs Growth Opportunity Sites (Highly Likely) Opportunity Sites (Likely) Resillence Metrics		25,090		Future
				34,486
				850
		XXX	XXX	
			•	XXX
		Existing		Future
Total Resiliency Score		5.8	•	7.0
Urban Heat Island		3.1		6.0
Socio-Economic Advantage		4.1		2.1
Socio-Economic Diversity				•
Accessibility Metrics	Rank	Existing		Future
Total Accessibility Score	12	3.5		6.5
Open Space Accessibility	10	3.6		7.0
Public Transport	9	1.8		5.4
Community Facilities	12	3.6		5.4
Local Services	11	2.1		6.1
Retail	10	2.6		4.4



By embracing new and emerging technologies, we can enable innovative ways of connecting, measuring and collaborating. This supports a robust evidence base for responsive planning, leveraging Victoria's dynamic digital initiatives.

Long-term objectives should incorporate emerging technologies, including artificial intelligence (AI), which have the potential to accelerate manual tasks, enhance decision making and boost productivity.

Why

Megatrends such as climate change, urbanisation and an aging population will significantly impact Victoria. At the same time, digital advancements, including AI and advanced data analytics will enable the rapid analysis of diverse data streams. This makes it possible for planning initiatives to be responsive, manage disruptions and deliver resilient and sustainable services.

How

Deriving best value from digital technology requires a clear vision coupled with the organisational capacity to implement. As technology evolves quickly, we need to be agile to plan and adapt from legacy planning and regulation systems.

Success will require a mix of innovative approaches with strong governance. There is also an opportunity to establish a dedicated digital team, supplemented by industry, to embed digital enablement in the plan.

These new systems will build on the foundations provided by Digital Twin Victoria, Planning permit activity reporting (PPARS) and eComply, enabling contextualised access to data. This allows for the development of scenarios that help people visualise how places will grow and operate over time, using digital tools and data to create better plans.

The benefits

By accelerating the delivery of housing and transport and services simultaneously, we can effectively manage the energy transition while safeguarding our environment.

"Victoria has the potential to be a world leader in leveraging data and digital technology to support participation in planning and transparency in the decision-making process. Providing people with the visioning and scenario building tools needed to face emerging challenges."

Serryn Eagleson Digital Advisory Lead, Arup, Melbourne

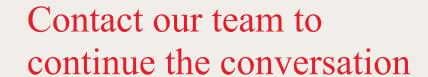
City Plan – Adelaide 2036 © Arup

ARUP

We are a global collective dedicated to sustainable development. We use technology, imagination and rigour to shape a better world.



Dedicated to sustainable development, Arup is a collective of 18,500 designers, advisors and experts working across 120 countries.



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