



HUNTER & CENTRAL COAST CIRCULAR ECONOMY ROADMAP 2022



Acknowledgements

Proudly delivered by the Hunter Joint Organisation on behalf of the councils of the Hunter and Central Coast Regions.

Our lead consultant, Edge Environment, provided thought leadership, content and project management for the Roadmap.

This project is a NSW Environment Protection Authority, Waste Less Recycle More Initiative funded from the waste levy.

We thank all of the local and state stakeholders that contributed their time, ideas and local knowledge to the development of this Roadmap.

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Proudly funded by the
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Acknowledgement of Country

The Hunter Joint Organisation acknowledges the country and history of the traditional custodians of the lands upon which we work and live.

We pay our respects to the Elders past, present and emerging, of our region, and of Australia.

Executive Summary

Circular economy provides a framework to design out waste and pollution, maximise value from resources using closed-loop systems, and regenerate natural systems. This circular model presents sizable economic, environmental, and social benefits for Australia, including \$1,860 billion direct benefit over the next 20 years, savings of 165 million tonnes of carbon dioxide equivalent, and an additional 17,000 jobs by 2047-48 in the food, transport and built environment sectors alone.

Our region, the Hunter and Central Coast, has already built incredible momentum behind the transition to a circular economy. A range of stakeholders across the public and private spheres have delivered capability programs, gathered and analysed data to identify new opportunities, developed impact assessment tools, designed innovative circular products, and supported demand for circular products and services, to name a few examples.

Becoming a circular region will require systemic transformation and include engagement and action from all stakeholder groups in the local ecosystem. Key additional factors that will support the transition to circularity include funding and investment, collaboration and partnerships, building capability and having a growth mindset, data analytics, and technology.

This Hunter and Central Coast Circular Economy Roadmap (Roadmap) showcases our successes and sets a path for the next 12 months for us to collaborate and accelerate towards our longer term shared vision of being Australia's leading regional circular economy.

With a view of our region's strengths and challenges, we have co-designed this Roadmap alongside our stakeholder ecosystem. This Roadmap prioritises initiatives based on their feasibility and potential to create local benefits.

The enabling initiatives we will commence over the next 12 months include working towards more circular public procurement, a circular metrics strategy to enable evidence-based decision making and measurement of progress, facilitating the trade of reusable products through a circular economy concierge, and identifying and developing the skills needed for circular industries and systems.

This circular model presents sizable economic, environmental, and social benefits for Australia, including...

\$1,860 billion direct benefit over the next 20 years

meaning \$billions of economic opportunity in the Hunter.

Our broader ecosystem is best suited to drive and operationalise our ambitions to keep local materials and products in use for longer through sharing and other circular business models, eliminate waste altogether and retain the value of materials through resource recovery processing.

Local Government representatives, are uniquely placed to provide strategic direction, connect stakeholders across the local ecosystem to collaborate and share knowledge, and remove some of the barriers to support circular economy progress at scale. The Hunter Joint Organisation (Hunter JO) as Local Government representatives will support these initiatives as project partners or through enabling initiatives with the collaboration and funding from the NSW State Government. The broader local circular economy eco-system that includes Federal Government, State Government, Newcastle University, community and industry associations will lead initiatives and partner through the collaborative Hunter Central Coast Circular Economy Facilitators Group (CE Facilitators Group).

The 12 month Roadmap was developed through consultation during 2021 with the local circular economy eco-system and assistance of the CE Facilitators Group. The roadmap provides not only a comprehensive list of initiatives happening across the Hunter Central Coast but also lays out the methodology for adding, maintaining and prioritising initiatives on a quarterly basis. Success of this Roadmap will initially be measured through the initiatives added, commenced and completed as well as the success of collaboration and engagement systems developed by the CE Facilitators Group.



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HUNTER & CENTRAL COAST ROADMAP STRATEGIC CONTEXT

Background

Our current linear economy, a take-make-waste model, is having detrimental effects on the economy, the environment, and communities. Australia generates over 74 million tonnes of waste each year. Approximately 1 million tonnes of waste is landfilled each year from the Hunter and Central Coast. The system is failing and leading to systemic and complex social and environmental challenges.

Circular economy is an economic model designed around closed-loop systems that maximises the value gained from materials already in the economy. Circular economy presents a huge environmental and economic opportunity. Estimates range from \$1,860 billion direct economic benefit for Australia over the next 20 years, and \$210 billion increase in Australia's gross domestic product and an additional 17,000 jobs by 2047- 48 from circular interventions in the food, transport and built environment sectors. Circular economy will be a key factor in tackling climate change by reducing emissions generated for example through agriculture and manufacture of key materials like cement, plastics, steel and aluminium. It's estimated that circular economy will save Australia 165 million tonnes of carbon dioxide equivalent each year by 2040, which will be key in meeting all Australian state government targets of net zero by 2050.

The Hunter and Central Coast (H&CC) recognise the benefits of circular economy for their local region and its merits for delivering on their strategic objectives for a sustainable, vibrant, and resilient region. With decreasing global demand for coal, local and state governments are supporting moves to diversify the economy and intensify investment in renewable energies in the region to build long-term economic resilience and support future-focused local jobs.

The H&CC's diversity in skills and industries, leading research institutions, and connectivity to domestic and overseas markets gives the region huge potential to become a regional leader in circular economy in Australia. Numerous stakeholders in the region have already made significant progress in enabling the conditions for a circular economy to thrive, building capability, enhancing demand for circular solutions, and bringing innovative circular products and services to market. This Hunter and Central Coast Circular Economy Roadmap (the Roadmap) knits together this progress and sets next steps to accelerate the transition, align and leverage collective vision for a circular and sustainable region.

The Roadmap was developed with extensive consultations sessions including:

- A regional workshop attended by over 40 representatives from industry, community, university and government organisations
- Workshop with the Circular Economy Sub-Committee of the Hunter JO Board
- Sessions with the Circular Economy Facilitators Group

The Roadmap was completed with the guidance and assistance of our consultants Edge Environment and funding from the NSW Environment Protection Authority through the Better Waste and Recycling Fund.



Moving the economy from linearity to circularity will involve challenging and changing ingrained ways of thinking, investing and operating. Enabling mindsets and modes of working in a circular economy include systems thinking, lifecycle thinking, (re)design thinking, biomimicry, collaboration through distributive networks, activating change, and storytelling.

What is Circular Economy?

Circular economy is a framework to use and manage materials required to meet the needs of society in such a way that does not deplete finite resources, retains value in closed-loop systems, and regenerates degraded ecological systems. To achieve this, the circular economy framework provides the following three guiding principles:

Eliminate waste and pollution

Keep materials in use

Regenerate natural systems

Some of the benefits that can be achieved through a circular economy are a reduction in carbon emissions, more value realised from resources, more resilient and collaborative ways of delivering products and services, living within planetary boundaries while providing safe and equitable social foundations. Circular economy directly connects with delivering on several of the United Nation's Sustainable Development Goals, pictured below in Figure 1.

- Creating circular products and services by obtaining knowledge, training and research in active ecosystems.
- Using existing infrastructure and skills to build industries to increase local cycling of organics, plastics and construction materials.
- Stimulate local communities to increase the demand for circular products and services.



Figure 1 - United Nation's Sustainable Development Goals



Policy Context

The policy landscape relating to circular economy in Australia is fast evolving. At the national level, the primary policy drivers for circular economy are the National Waste Policy and Action Plan which focus on resource optimisation; and set targets, responsibilities and timelines on recycling key waste streams and developing end markets for recycled products to close resource loops. Additionally, the National Food Waste Strategy sets a target of halving food waste by 2030.

At the state level, the NSW Circular Economy Policy Statement aims to assist the NSW Government in embedding circular economy principles into decision making, policies, strategies, and programs. The NSW Waste and Sustainable Materials Strategy 2021-2041 sets ambitious targets in line with circular economy principles, and the NSW Net Zero Plan is strongly linked to delivering the objectives of a circular economy. The state government has also funded NSW Circular, a body aimed at accelerating the delivery of a zero-carbon circular economy in NSW, with priorities for the 2020-23 of developing the case for circular economy with open evidence, co-designing and delivering new circular supply chains, and working collaboratively to remove barriers and achieve scale.

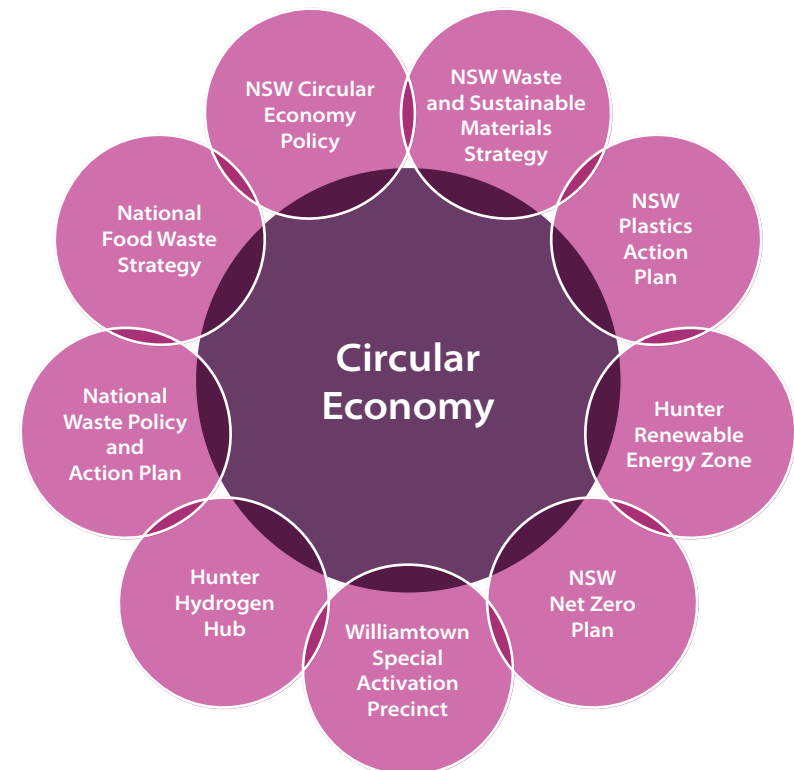


Figure 2 - Circular economy is at the heart of several national and state-level strategies.



Hunter and Central Coast Circular Economy Roadmap

The current policy landscape presents a mix of opportunities and challenges to transitioning the Hunter and Central Coast to a circular region. Some of the key opportunities and challenges are:

Opportunity	Challenges
Development of local engagement and education programs	Lack of Circular Economy knowledge
Supportive local government can assist with circular economy strategies and policy change	Lack of policy drivers
Value creation in old and new industries	Infrastructure spend required
Developing a Circular Economy Innovation hub and precinct	R&D spend and commercial change required
Economies of scale are good at a regional scale	Commercial competition vs Collaborative mindsets
Collaboration on data strategies	Data availability

The Hunter and Central Coast region has an opportunity to play a role in shaping future policy direction for innovative and collaborative circular solutions.

Guiding Principles

The guiding principles for developing this Roadmap are:

The transition is socially just and inclusive.

Decisions are based on evidence.

The Roadmap is a living document that will be adapted and updated regularly.

The Roadmap is future focused and will consider new projects and ideas.

Vision and Mission Statement

VISION

**AUSTRALIA'S
LEADING REGIONAL
CIRCULAR ECONOMY**
a thriving place for
people, planet and the
economy.

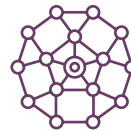
MISSION

**ACCELERATE THE TRANSITION TO A
CIRCULAR ECONOMY IN THE HUNTER
AND CENTRAL COAST THROUGH:**

- Providing strategic direction to empower and align local stakeholders,
- Connecting people to foster collaboration and innovation,
- Providing guidance on how value from resources can be maximised locally.

Focus Areas

Focus Area 1



REGIONAL CIRCULAR ECONOMY KNOWLEDGE HUB

- Hunter and Central Coast is recognised for circular economy knowledge, training and research
- Physical spaces to enable innovation, experimentation, and collaboration
- Active business ecosystem (ranging from start-ups to large corporations) creating circular products and services
- Skills development for circular jobs.

Focus Area 2



PIVOTING AND ADVANCING INDUSTRY

- Existing infrastructure and skills are leveraged to build local industries contributing to a circular region
- Local cycling of key materials, such as organics, plastics and construction materials
- Priority sectors include renewable energy, manufacturing and agriculture.

Focus Area 3



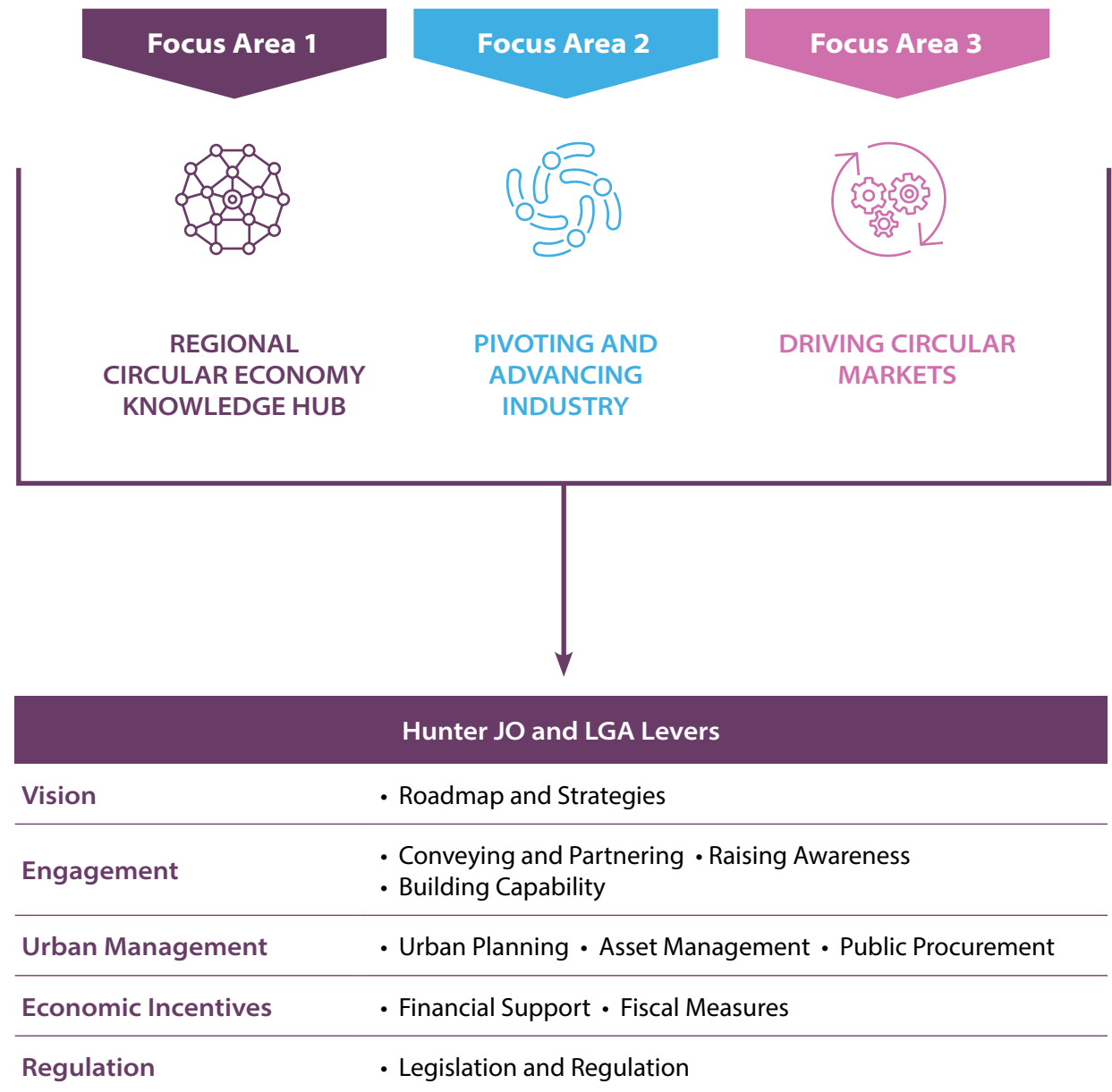
DRIVING CIRCULAR MARKETS

- Local circular communities where sharing and reuse is normal
- Stimulate markets for circular products and services through public procurement
- Industry is supported to create demand for circular products and services.

Hunter JO and Local Government Roles and Responsibilities

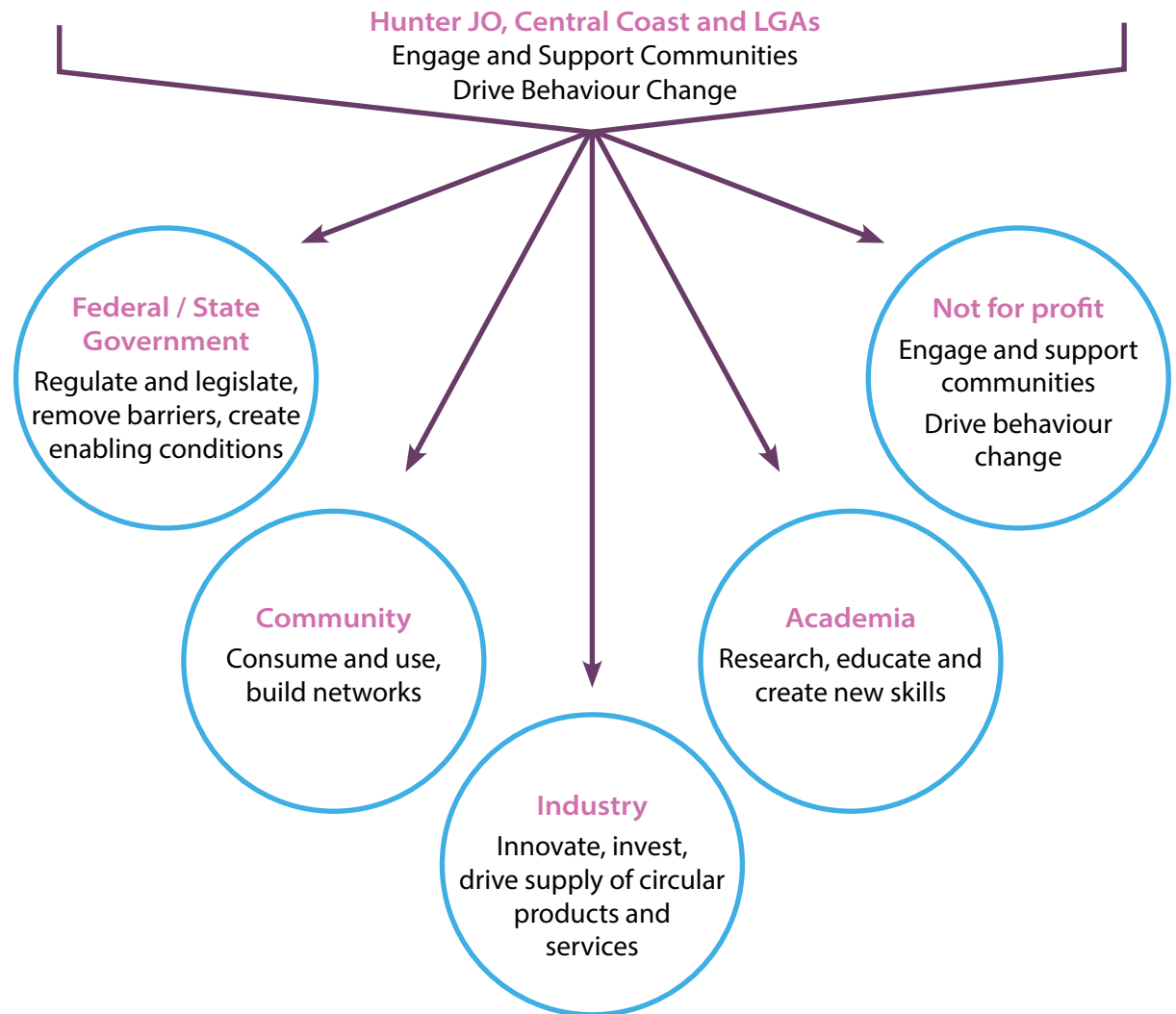
The Hunter JO and Local Government will create an enabling environment and remove some of the regional barriers for circular economy to prosper, as well as provide the scale to stimulate chosen markets through procurement. To drive policy change beyond the region, the Hunter JO and Local Government will play an advocacy role to state or federal government. Our main focus will be to understand the issues we are all trying to solve, find the shared interest in the region and enable collaboration across all partners and stakeholders.

The diagram shows that the Roadmap has been developed in line with the five levers adapted from the Ellen MacArthur Foundation's City Policy Levers, pictured alongside our three focus areas of the Roadmap.



Broader Ecosystem Roles and Responsibilities

Industry, state and federal government, not-for-profit organisations, academia, and the community each have the ability and the responsibility to make the circular economy real in the region. To drive such a large-scale and systemic transformation, the active and targeted participation of all stakeholder groups will be critical. The success of the transition will be the result of a collective and coordinated approach to identifying and driving circular economy projects in the region. Local government (through HJO and its member councils, and Central Coast Council) can provide the coordination and facilitation of the ecosystem enabling the transition and acting on initiatives that are directly in their sphere of influence. State and Federal governments provide a critical policy and funding leadership role. While academia and industry research and development will help drive the innovation needed for success. The Hunter and Central Coast ecosystem is visualised here as well as its core strength and key role of each stakeholder in making the circular economy real in the region.





HUNTER & CENTRAL COAST
CIRCULAR ECONOMY ROADMAP - 12 MONTH PLAN

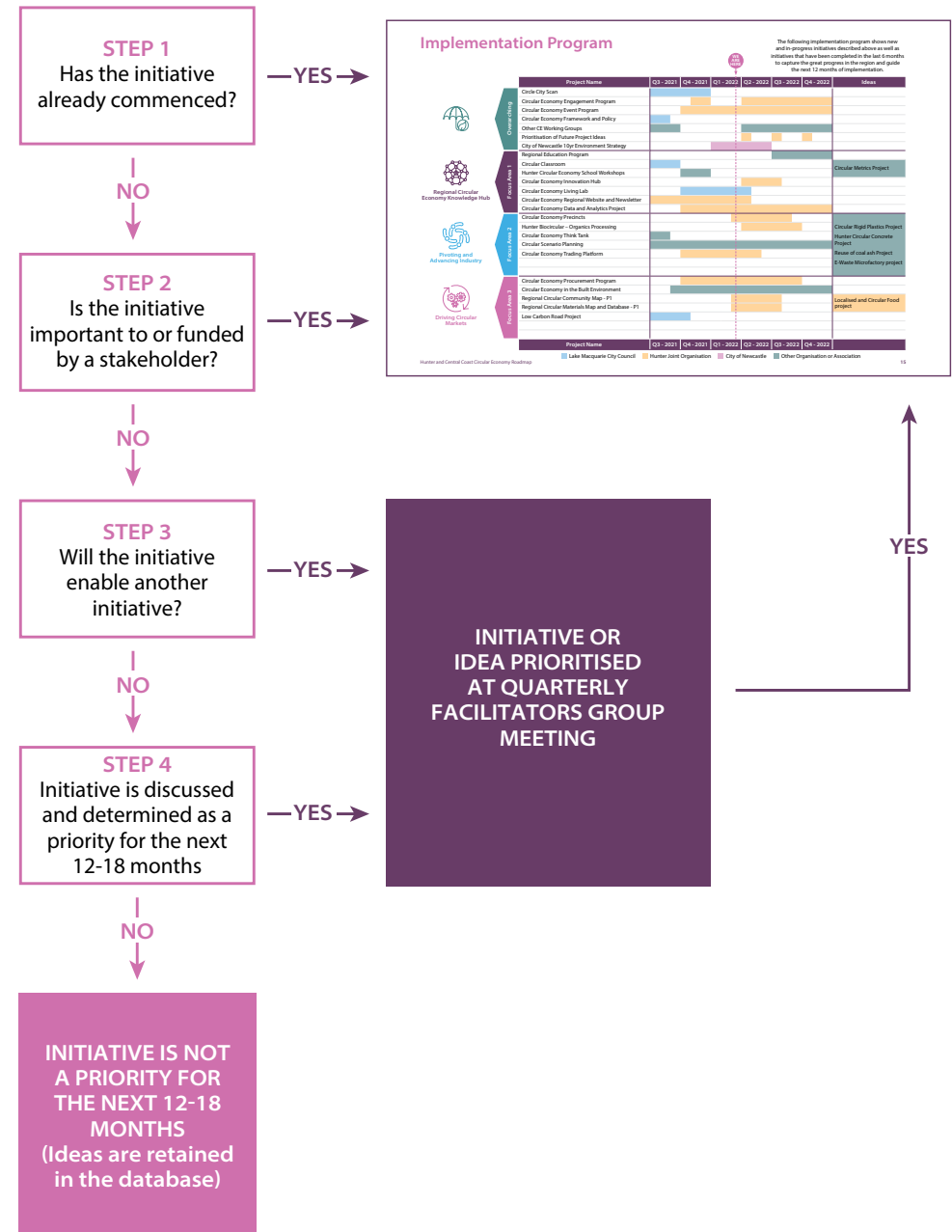
Prioritisation and Approach to Initiatives

A long list of initiatives to deliver on the vision for a circular economy in the region have already been co-designed over the last few years with stakeholders from across industry, government, not-for-profit and academia. Initiatives were included in the Roadmap using a decision tree (shown below). Projects were first prioritised if they had already commenced, were important to or funded by a stakeholder, or would provide outcomes that would enable other projects (steps 1, 2 and 3 in the decision-tree). At step 4, remaining initiatives were discussed at a high-level for alignment with strategic objectives, potential to create local benefits, and likely feasibility across a range of factors.

The initiatives were organised into the following three groups:

- Progress, resourced and recently completed initiatives prioritised at Step 1 and 2.
- New enabling initiatives prioritised at Step 3.
- Step 4 Ideas – Additional initiatives aligned to the objectives of this Roadmap for consideration by relevant local stakeholders – to be prioritised at the quarterly review meetings.

Developing the right amount of communication, engagement and collaboration is a key challenge in moving toward a circular economy. Balancing time, budget and resourcing constraints will always be difficult. It is the intent of the Hunter JO and the Hunter Central Coast Circular Economy Facilitators Group (CE Facilitators Group) to coordinate and host an annual collaboration event to provide engagement opportunities and foster new ideas and initiatives for update into the Roadmap. The CE Facilitators Group will run quarterly review meetings (step 3 and 4) and new ideas and initiatives can be posted through the various contact details provided in the next section.



Initiatives

The table below captures examples of the recent progress that is happening in the region and being driven by a range of regional organisations. The experience and learnings gained through delivering initiatives in any one organisation or Council could be leveraged across their peers to accelerate region-wide progress.

Initiative	Initiative Lead	Description
OVERARCHING		
Circle City Scan	Lake Macquarie City Council and University of Newcastle	Assessment of region wide material flow and other datasets to identify circular economy opportunities and initiatives.
Circular Economy Engagement Program	Hunter JO	Circular Economy at the Pub - Monthly networking meet-up. Open to all interested people. Planning for webinars, think tanks, other events and education sessions.
Circular Economy Event Program	Hunter JO	Preparing and scoping a regional CE events program for the next few years through an established events working group. Developing a CE event operating guide. Developing a funding proposal for future events.
Circular Economy Framework and Policy	Lake Macquarie City Council	Aligns Lake Macquarie's policy and all who work with and for Council with the NSW Circular Economy Policy. A working group to assist members of WMRR to look at Circular Economy initiatives for priority waste streams.
Other CE Working Groups	WMRR	A working group to assist members of WMRR to look at Circular Economy initiatives for priority waste streams.
Prioritisation of Future Project Ideas	Hunter JO	Conduct a quarterly assessment of emerging/potential projects with the Circular Economy Facilitator's Group, proposed project leads and partners, utilising the decision-making process to evaluate alignment with strategic objectives, impact potential and feasibility across a range of factors. Include an assessment of Think Tank (May 2021) projects.
City of Newcastle 10-year Environment Strategy (Driving a Circular Economy)	City of Newcastle	To manage our environment in the face of these challenges, City of Newcastle (CN) is renewing our 10-year Environment Strategy. One of the key focus areas is Circular Economy.

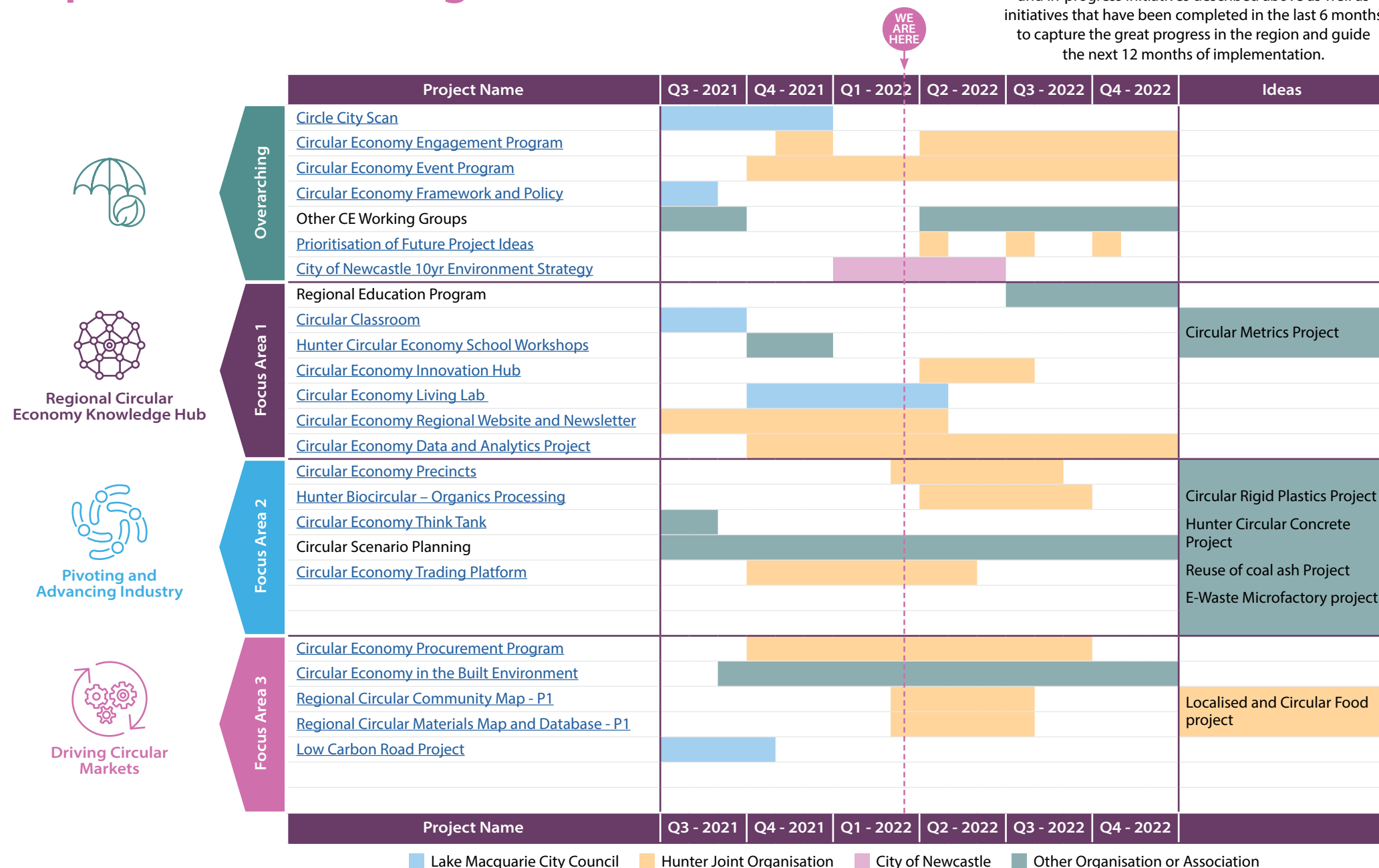
Initiative	Initiative Lead	Description
FOCUS AREA 1		
Regional Education Program	HCC CE Facilitators Group	Develop an overarching educational program for Hunter and Central Coast councils on circular economy. Including masterclasses for circular decision makers and technical experts on how to embed circular design.
Circular Classroom	Lake Macquarie City Council	Educating high school students on circular economy and (re)designing for circular systems.
Hunter Circular Economy School Workshops	Go Circular	Educating high school students on circular economy and (re)designing for circular systems.
Circular Economy Innovation Hub	Hunter JO	A knowledge repository, concierge service and coordinating organisation for circular economy in our region. Related to Living Lab business case project - essential pre project.
Circular Economy Living Lab	Lake Macquarie City Council	Develop a business case for a living lab, collaboration with academia to research complex problems relating to circular economy initiative implementation.
Circular Economy Regional Website and Newsletter	Hunter JO	Developing an interactive website (old version operational) to host information and knowledge on the Circular Economy. Develop a quarterly newsletter to keep people informed as to progress and events in the region and beyond.
Circular Economy Data and Analytics Project	Hunter JO	Working of the back of previous work completed - Material Flow Analysis and Circle City Scan - we are developing a plan for the ongoing collation, storage and interpretation of Circular Economy related data to develop into reports, dashboards, datasets and metrics developing.

Initiative	Initiative Lead	Description
FOCUS AREA 2		
Circular Economy Precincts	Hunter JO	Investigate feasibility for circular economy precincts in the Hunter region. Linked to Hunter BioCircular concept plan and CE Innovation Hub/s.
Hunter Biocircular – Organics Processing	Hunter JO	Pre-feasibility studies on a resource recovery precinct centring on organics recycling and valorisation, modelling economic scenarios, high-level assessment of potential sites. Generated interest from a range of potential industry partners.
Circular Economy Think Tank	Go Circular	Circular economy engagement workshop with industry, including key stakeholders identified through the enabling Hunter Circular ecosystem mapping. Future think tanks will become part of the Circular Economy Engagement Program.
Circular Scenario Planning – Solar Panels and Textiles	Multiparty (Lead to be established)	Develop scenario plans for material types in order to develop a best practice approaches to improve circular economy outcomes in the region. The project has begun with a focus on Circular systems for solar panels lead by City of Newcastle and the next project will be looking at textiles.
Circular Economy Trading Platform	Hunter JO (alongside member Councils)	Looking for solutions to facilitating the trading of waste materials to improve circular economy outcomes. Currently investigating several products that help materials trading.

Initiative	Initiative Lead	Description
FOCUS AREA 3		
Circular Economy Procurement Program	Hunter JO	Local Government circular procurement analysis on current activities. Coordinate and educate councils on procuring circular products. Develop a joint procurement framework to scale circular procurement and markets.
Circular Economy in the Built Environment	MECLA	The purpose of this project is to build awareness and capacity in the built environment sector on circular design, implementation, and sourcing, and to learn from each other's experience on circular solutions, products, and suppliers.
Regional Circular Community map - Phase 1	Hunter JO	Developing a map of circular businesses and organisations at the community scale that provide service in the circular economy and waste avoidance and reuse space. Phase 1 is scoping work and developing a funding proposal.
Regional Circular Materials Map and Database - Phase 1	Hunter JO	A project to build upon the original database of regional circular economy eco-system organisations and previously collated material flow information to develop a clearer understanding of the existing and potential material flow map. Phase 1 is scoping work and developing a funding proposal.
Low Carbon Road Project	Lake Macquarie City Council	Completed – Online tool for calculating life cycle costs and report on developing more 'circular' roads.

Implementation Program

The following implementation program shows new and in-progress initiatives described above as well as initiatives that have been completed in the last 6 months to capture the great progress in the region and guide the next 12 months of implementation.



Measuring Success

Measuring success in a circular economy context is it's early days of development. The linear economy has had 100's of years to develop measures of success so robust, comparable success measures for the circular economy will take time to mature. In this context we will endeavour to refine the success measure used in the ongoing development of the roadmap.

An initial list of measures is proposed to track progress on this roadmap

Number of initiatives
commenced



Number of initiatives
completed



Number of new projects
and ideas registered on
huntercircular.com.au

Number of new Circular
organisations, products and services
established and registered on
huntercircular.com.au



Satisfaction of stakeholders in the
roadmap and processes run
by the facilitators group

Level of Circular Economy knowledge
and skills within councils and
organisations (via survey)



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