West Midlands' Circular Economy Routemap

Kickstarting the region's journey to a green industrial revolution

West Midlands Combined Authority

usefulprojects
part of the Useful Simple Trust

SOENECS
Innovative Sustainable Solutions

Executive summary

A vision for the West Midlands' circular economy

The West Midlands' circular economy will support the green industrial revolution. It will contribute to sustainable, inclusive growth, to the social economy and to a green recovery. The region's circular economy will make better use of resources, generating more value and creating new jobs.

This vision is underpinned by four principles: inclusive green growth, enabling foundations, innovation and collaboration, and resource optimization.

Why a circular economy?

The circular economy is much more than a sophisticated term for recycling. A circular economy is a different approach to the economy based on regenerative principles and business models that seeks to deliver environment and social value whilst promoting a strong economy.

For the West Midlands, transitioning to a circular economy supports the region in becoming the home of the green and circular industrial revolution. The West Midlands Circular Economy Routemap aims to kickstart the circular economy by building on existing best practice, projects, and expertise. Doing so will:

- Contribute inclusive, green growth and innovation, and create new jobs whilst safeguarding existing ones. A 2020 report by the Waste and Resources Action Programme (WRAP) found that a circular economy will help the UK build back better, bolstering the economy by £75 billion and creating over half a million jobs.
- Support the creation of a social economy and generate social value for local communities. Analysis conducted by the Ellen MacArthur Foundation shows that the average household income would increase by £2,500 a year in a circular economy.
- Reduce environmental degradation by reducing material extraction and resource consumption as well as waste generation. For example, transitioning to a circular economy could reduce global greenhouse gas emissions (GHG) by 10 billion tonnes.
- Accelerate a green, inclusive, and just recovery from COVID-19, and maximise post-Brexit opportunities that build on the region's unique characteristics and strengths.

How did we develop the routemap?

To develop this routemap, we:

- Produced a baseline analysis. This included:
  - High-level mapping of material and waste flows for five sectors. The selection of sectors was guided by the West Midlands Local Industrial Strategy.
  - Policy analysis and desk research on best practice and project case studies. It revealed a lack of robust framework and incentives to enable a circular economy at scale in the region. This analysis also demonstrated the need to put in place enabling levers that support an economy-wide transition.
  - Interviews and workshops with public, private, and academic stakeholders.
- Identified five economy-wide enabling levers and developed an implementation plan.
- Recommended that, in addition to the enabling levers, the West Midlands Combined Authority (WMCA) and its partners focus their efforts and resources on strategic interventions within three priority areas.
- Selected three priority areas and developed strategic interventions for each area. These interventions build on the region's economic and industrial strengths, capitalise on existing projects and expertise, and have a unique selling point that will drive the region's national and international competitiveness.

Enabling levers for a circular economy

Transitioning to a circular economy will be a challenging process that can generate multiple opportunities for the region. To do so, it will require a coordinated set of interventions across a wide range of sectors.

To support this economy-wide shift, five enablers are explored in this routemap:

- **Policy and regulation:** Embedding circularity in planning and design, improving regulatory and fiscal instruments to support a circular economy, and using procurement to grow new circular markets and supply chains.
- **Governance:** Implementing robust internal processes, convening experts and partners, encouraging partnerships and collaboration, developing new supply chains, and supporting a wider adoption of new, innovative circular business models.
- **Capacity-Building:** Launching a comprehensive behavioural change programme to encourage a shift in societal thinking, supporting upskilling and training, and strengthening existing business support programmes.
- **Soft infrastructure:** Supporting system-wide innovation, improving linkages between research and commercial application, using data platforms and digital infrastructure to accelerate the transition, and ensuring logistics support the movement of goods and materials.
- **Hard infrastructure:** Investing in critical energy, waste, and transport infrastructure, and in shared spaces, resource recovery hubs and storage facilities.

This routemap explores each enabler in further detail, proposing next steps and an implementation plan, identifying delivery partners and best practice.

Priority areas and strategic interventions

To accelerate the transition to a circular economy, the West Midlands must target its strongest sectors, leveraging its expertise and scaling up existing projects. To that effect, three priority areas were informed by a high-level material flow analysis and stakeholder engagement. They were selected based on the following criteria:

- Economic sectors where there are significant material and/or waste flows.
- Alignment with other corporate policies such as job creation, health improvements or environmental protection.
- Opportunity to leverage regional strengths such as existing skills, expertise and/or areas with considerable opportunity for growth.

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The three priority areas are:

Circular Manufacturing: Industry and manufacturing consumes 3.3 million tonnes of minerals every year. With 16% of resource inputs feeding into transport manufacturing activities, the routemap focused specifically on transport manufacturing. This capitalises on the region's position as a major automotive hub and aerospace cluster. The West Midlands has a unique opportunity to drive the growth of a competitive clean tech sector, support the decarbonisation of the transport sector, and optimise the use and re-use of precious materials and metals through manufacturing.

Circular Construction: The construction sector is the largest consumer of minerals and the biggest producer of waste in the region. The waste generated by this sector represents a lost opportunity as value can be created from construction outputs. With 220,000 homes and major infrastructure projects planned, the West Midlands must reduce the impact of this sector on the natural environment. Distinctive opportunities exist in unlocking brownfield sites, embedding circular design, capitalising on new material innovations, and leveraging new delivery models, whilst building on the region's existing initiatives (such as the Zero Carbon Homes Routemap and the Advanced Methods in Construction Roadmap).

Circular Food: As the largest consumer of natural resources in the region, the food and agriculture sector was chosen because the West Midlands is a major food and drink manufacturing hub, home to giants such as Mondelez as well as a plethora of diverse community groups working on food issues. This unique landscape means the West Midlands can engage the entire food supply chain to re-design its food system. A system-wide shift in this sector would deliver socio-economic benefits, reduce environmental degradation, and contribute to the social economy.

This routemap explores 4 to 5 strategic interventions for each of the three priority areas described above. It provides detailed next steps, delivery partners and metrics for each intervention identified. The table on the right summarises each strategic intervention proposed in the routemap. To accelerate the transition to a circular economy, a mixture of large scale and smaller scale interventions were selected.

Priority Sector	Strategic Interventions	Overall Aim
Circular Manufacturing	Circular battery manufacturing	Design the first truly circular battery factory, distinguishing the West Midlands Gigafactory from other similar projects.
	Industrial symbiosis delivery programme	Implement a place-based industrial symbiosis delivery programme to cross-fertilise opportunities across the three priority areas.
	High-value fuels from waste	Use advanced processing technologies to turn residual, municipal and industrial waste into high-value fuels for aviation, logistics, heavy plant and other manufacturing sectors.
	Circular manufacturing centre of excellence	Establish a Circular Manufacturing Centre of Excellence to support circular design best practice and to develop advanced technologies (robotics, AI etc.).
Circular Construction	Circular strategies for infrastructure	Develop circular strategies and action plans for major infrastructure projects and utility providers.
	Circular building product initiative	Support the development of leading, regional circular buildings' systems, products and service offers.
	Zero waste construction hub	Launch a physical and virtual hub to recover and exchange materials, as well as share and incentivise circular design and processes.
	Circular repurposing programme	Develop and implement circular approaches for refurbishing and repurposing commercial and residential properties, as well as public buildings and spaces.
	Brownfield land reclamation	Set up a facility and associated advisory services to unlock the development potential of brownfield sites of all sizes, and to ensure brownfield reclamation adopts a circular approach to site clean-up and clearance.
Circular Food	Regenerative food production	Support regenerative agriculture and permaculture practices as well as local food growing initiatives.
	Circular food manufacturing	Develop circular strategies for food and drink processors and manufacturers, focusing on opportunity to use food waste as a productive resource.
	Circular food hubs	Create circular food hubs with optimised logistics to collect and redistribute food that would otherwise be wasted.
	Healthy consumption	Raise awareness and encourage sustainable, local food consumption, working closely with existing communities and volunteer groups.
	Circular nutrient loop	Close the nutrient loop by developing bio-technologies to recover and enhance value of food waste and other waste products (sewage etc.).

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Next steps

A circular economy is a vital part of WMCA's overall approach to building a greener, healthier, and more inclusive region. Transitioning to a circular economy can build resilience, create new jobs, reduce environmental degradation, and support the growth of the social economy. To deliver the full potential offered by a circular economy, it will be essential for WMCA and its partners to develop shared ambitions and work closely together.

This routemap is only the first step for the region's journey towards a circular economy. Next steps proposed in the routemap include:

- Implement key actions across the enablers identified, including updating WMCA's Single Commissioning Framework and procurement rules, embedding the circular economy in the wider Net Zero Behaviour Change Campaign and the Commonwealth Games 2022 legacy work, as well as commissioning any further research and intelligence that may be required to inform future actions.
- Develop a business case for a West Midlands Industrial Symbiosis delivery programme with a focus on unlocking opportunities within and between the three priority areas identified in the routemap. The Tyseley Energy Park and the East Birmingham Corridor have been identified as hot spots for cross-sector circular activities.
- Develop a business case for a Zero Waste Construction Hub to support material recovery and exchange and to share and incentivise best practice in circular design and construction.
- Work with partners to convene a Circular Battery Partnership to create a world-leading ecosystem of circular battery manufacturing and to develop funding proposals.
- Explore innovation opportunities to transform waste into high-value fuels for hard-to-decarbonise sectors (such as aerospace).
- Accelerate a circular construction repurposing programme to implement circular approaches for refurbishing and repurposing commercial and residential properties as well as public buildings and spaces.
- Develop a network of circular community hubs based around sharing goods, food, and skills, supporting the wider Social Economy Growth Strategy and existing projects looking to re-design our food system.

The route ahead will not be simple but transitioning to a circular economy offers huge potential for the region including becoming the home of the green industrial revolution.

Circular economy enablers

Transitioning to a circular economy requires a fundamental shift in how we operate, how we think about industrial processes and how we design our products and services. This routemap has identified five enablers that support an economy-wide transition to a circular economy. WMCA and its local authority constituent members can take a leading role in implementing these enablers. These enablers can also be applied to wider programmes of work beyond the circular economy.

Policy and Regulation

Planning & Design

- Encourage circular design and processes, particularly in planning.
- Ensure consistency and harmonisation of policies across all local authority constituent members.

Legislation & Regulation

- Introduce regulatory instruments that support the circular economy including better implementation and enforcement of existing and upcoming waste legislations.

Fiscal Incentives

- Align taxation and fiscal incentives with circular economy outcomes.

Procurement

- Develop collaborative approaches to service provision amongst public sector bodies in the region.
- Use public sector procurement to grow new circular markets and supply chains and to accelerate the introduction of circular goods and services.

Governance

Internal Processes

- Implement internal governance processes within WMCA to assign roles and responsibility, allocate resources and monitor progress.
- Plan within WMCA the delivery of circular economy strategic interventions identified in the routemap.

Partnerships

- Act as a convenor of experts and key stakeholders and encourage knowledge-sharing.
- Encourage circular economy partnerships and collaboration across synergistic sectors.

Business Models

- Encourage the adoption of new business and finance models to encourage circularity and innovation as well as increase regional businesses' competitiveness.
- Facilitate the development of circular products and services.
- Support region-wide systems-thinking and industrial symbiosis.

Capacity-Building

Behavioural Change

- Work with local communities, businesses and schools to demystify the circular economy.
- Encourage a shift in societal thinking and behaviours amongst local communities.

Upskilling & Training

- Ensure adequate training and upskilling is provided to public sector employees, regional businesses and supply chains in order to support a transition to a circular economy.

Business Support

- Streamline existing business support and ensure all businesses, including SMEs, can benefit from circular economy opportunities.

Soft Infrastructure

R&D & Innovation

- Support innovation by de-risking the use of circular processes and providing seed funding.
- Improve linkages between academic research and commercial applications.

Data & Digital

- Use digital platforms and data technologies, such as 5G, to better track movement of resources and facilitate trading of materials. This should build on WMCA's Digital Roadmap.
- Use digital platforms and data technologies to grow a regional sharing economy.
- Create a repository of information on the circular economy.

Logistics

- Ensure logistics enable easier tracking and transport of goods and materials across various sectors/businesses and to enable a sharing economy. This should include enabling reverse logistics.

Hard Infrastructure

Physical Infrastructure

- Invest in critical physical infrastructure (energy, waste and transport) to support wider transition to a circular economy.
- Ensure access to financially viable storage facilities.

Shared Infrastructure

- Invest in shared spaces for communities and businesses to encourage the growth of a sharing economy.

Enabling interventions: 2022 implementation plan

2022 will be an important year for WMCA and its partners to set the enabling foundation and map out strategic first steps required to accelerate a transition to a circular economy in the region. The table below presents the key target outcomes and potential actions WMCA and its partners should aim to achieve in 2022.

Useful Projects and SOENECS have proposed a potential implementation plan in Appendix 1, which is accompanied by a detailed matrix of the actions proposed (See Appendices 2 to 6). This implementation plan is one potential route to deliver enabling actions. Others exist based on the resources made available to deliver the routemap.

Enabler	Target Outcomes for 2022	Potential Next Steps and Actions	Delivery Partners
Policy and Regulation	– Procurement and commissioning policies and processes pro-actively support a circular economy. – Circular design is incentivised in a harmonised manner across all local authorities and key partners in the region. – The region is at the forefront of embedding and implementing new waste regulations.	– Update WMCA's Single Commissioning Framework. – Publish new procurement guidelines to support circularity. – Hold workshops with local authorities to pro-actively prepare for new waste regulations.	City of Wolverhampton Council, Walsall Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council, Birmingham City Council, Coventry City Council
Governance	– Sufficient internal resources have been allocated by WMCA and its Boards to deliver key actions set in this routemap. – A robust governance structure has been set up to support the delivery of key actions in this routemap. – The West Midlands becomes a first-mover in adopting innovative, circular business and finance models at a region-wide scale.	– Appoint a Circular Economy Lead. – Establish a Circular Economy Delivery Board to oversee the delivery of strategic projects. – Work with partners such as ASG to express the benefits of new business and finance models.	The Advanced Services Group, UKMSN+, CLES progressive economics for people and place
Capacity-Building	– The skills supporting a transition to a circular economy have been identified. – Funding provided by WMCA and key partners supports a circular economy. – A comprehensive behavioural change programme is ready to be launched to normalise the circular economy and encourage local communities and businesses to put a higher value on circular products and services.	– Add circular economy requirements for WMCA-led grants. – Commission a forecast report to look into circular economy skills gap, working with partners like the Great Birmingham and Solihull LEP's Low Carbon Skills Team. – Include circular economy actions in the Energy and Environment Behavioural Change Strategy.	Birmingham Chamber of Commerce, Birmingham City University, Greater Birmingham & Solihull Local Enterprise Partnership, Black Country LEP, CWLEP Coventry & Warwickshire Local Enterprise Partnership
Soft Infrastructure	– Logistics are improved to support better recovery, movement and exchange of resources across the region. – Building on WMCA's Digital Roadmap, digital tools, platforms and infrastructure enable a better collection of data and sharing of resources.	– Publish recommendations to improve logistics, including the use of reverse and consolidated logistics. – Launch online repository of existing sharing platforms. – Align actions of this routemap with the Digital Roadmap.	Innovation Alliance for the West Midlands, CFRC, WM 5G
Hard Infrastructure	– Energy, transport and waste infrastructure all enable a transition to a more circular economy. – Physical locations have been selected to recover and exchange resources, as well as to support a sharing economy.	– Select location for regional Resource Recovery Hubs and financially viable storage facilities. – Launch an online repository and booking system for unused, vacant or idle spaces, whilst ensuring equal access to digital platforms.	Energy Capital, Transport for West Midlands, Department for Environment Food & Rural Affairs

Circular manufacturing

The West Midlands is a major automotive hub, with 40% of all cars exported from the UK made in the West Midlands. It is also the largest aerospace cluster in the UK, with 25% of the country's aerospace sector located in the region. Embedding circularity within the manufacturing sector will ensure these sectors continue to thrive, are resilient to future increases in material costs, and jobs are safeguarded.

The majority of employment within the West Midlands' manufacturing sector is in intermediate product supply chains to the end producers, rather than in processing of primary resources or in assembly of end products. This presents opportunities and challenges that will need to be explored further when developing specific interventions.

The manufacturing sector is a priority area for the West Midlands given the national government's support for growing the clean tech sector, particularly to support the decarbonisation of the transport sector.

The clean tech sector poses a resource challenge. This sector, which includes electric vehicle, batteries, rapid charging infrastructure, wind turbines and other smart devices, relies heavily on the supply of imported scarce materials (such as rare earth, cobalt, manganese, graphite, indium, neodymium and lithium) as well as highly refined metals (such as aluminium, composites, silver, nickel and copper).

The demand for these materials is predicted to grow by 2050, as high as 1000% for Lithium according to the World Bank. Given the rapid increase in demand and potential scarcity of these raw materials, there is a need to increase efficiency in the use of these materials and to ensure that they can be recovered and recycled at the end of their life.

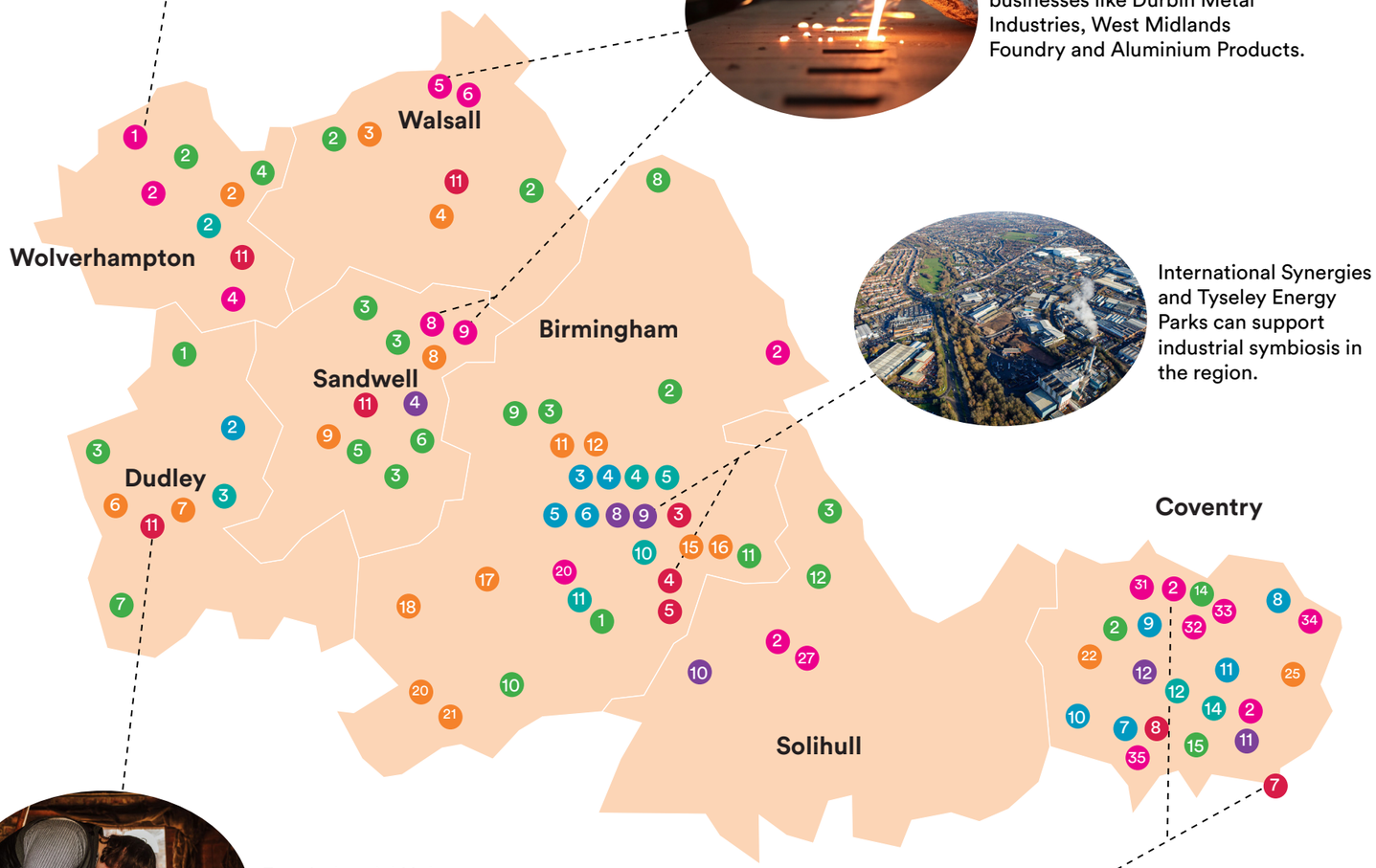
To that effect, circular economy interventions that would bring the most value to the region within the manufacturing sector include:

- Adopting a circular economy approach to electric vehicle, battery, and EV charging including high-value material recycling.
- Adopting circular economy approaches to metal recycling and to produce low carbon fuels from waste.
- Providing specialist circular design and development services for the manufacturing sector combined with the development of advanced material recovery technologies and facilities, including investment in robotics, robot/human interfaces and the use of artificial intelligence (AI) in resource recovery.

See Appendix 7 for more detailed information on the strategic interventions chosen for this priority area.

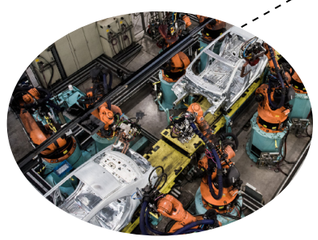
Part of the aerospace manufacturing hub with companies like MOOG Group.

Strong presence of metal manufacturing and reprocessing businesses like Durbin Metal Industries, West Midlands Foundry and Aluminium Products.



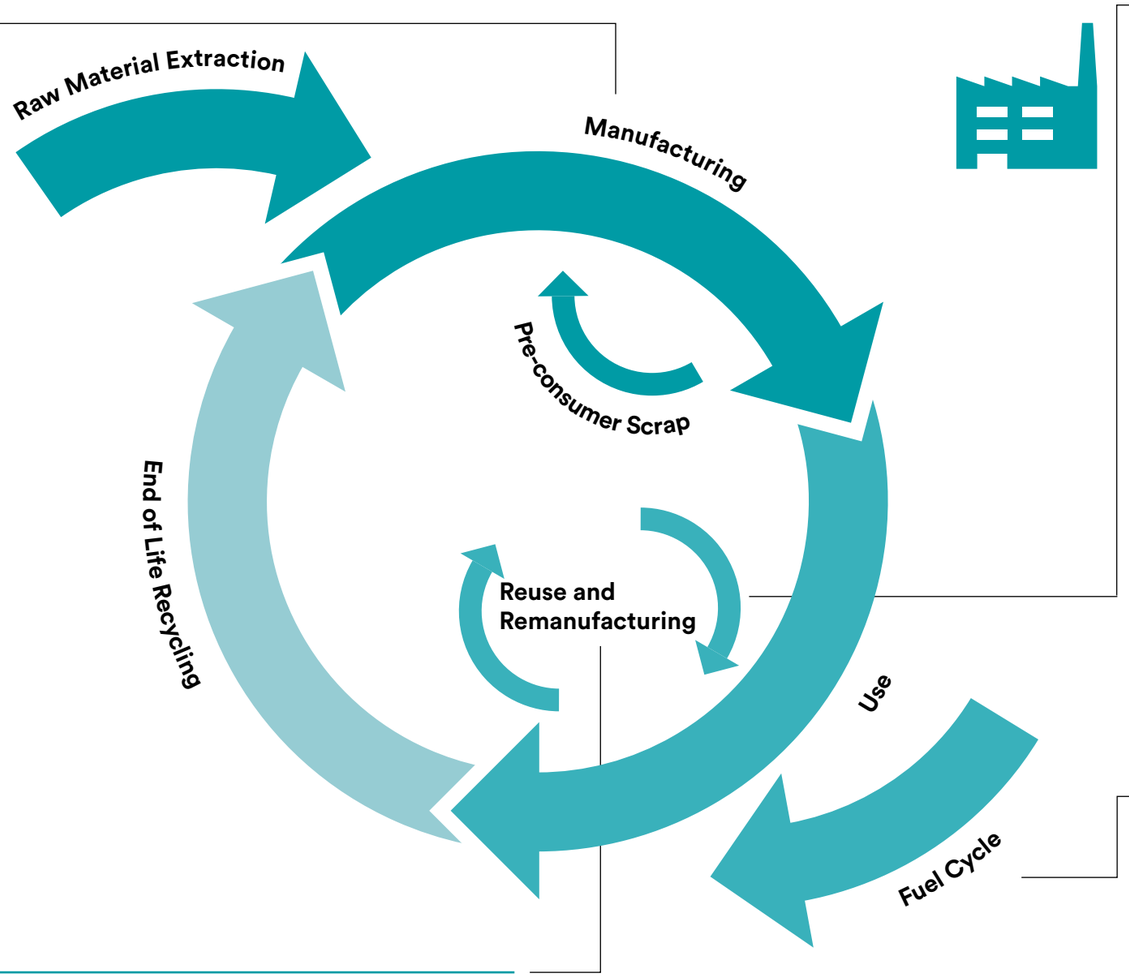
International Synergies and Tyseley Energy Parks can support industrial symbiosis in the region.

Four Industrial Hubs planned in the Black Country building on manufacturing strengths.



Automobile and battery manufacturing cluster with Jaguar Land Rover HQ, UKBIC and future Gigafactory.

Circular manufacturing
Strategic interventions



Circular Battery Manufacturing

What? Design the first truly circular battery factory, distinguishing the West Midlands Gigafactory from other similar projects worldwide.

Why? To meet the growing demand for electric vehicles and batteries, to ensure that scarce materials are recovered, to secure jobs in the automobile manufacturing sector.

Role of WMCA? Enable.

Partners: See Appendix 7 for complete partners list.

Next Steps:

- Convene all partners to establish formal partnership and develop project and research proposals.
- Build political support and an investment prospectus.
- Develop and submit funding proposals to support a wide range of applied development projects.

Industrial Symbiosis Delivery Programme

What? Implement a place-based industrial symbiosis delivery programme to cross-fertilise opportunities across the three priority areas.

Why? To reduce resource consumption, to support SMEs in adopting circular processes, to create/save jobs, to minimise environmental degradation.

Role of WMCA? Enable and potential delivery partner.

Partners: See Appendix 7 for complete partners list.

Next Steps:

- Select location for a demonstrator project, focusing initially on high-value metal recycling (such as aluminium) and water.
- Develop a funding proposal for the selected industrial symbiosis demonstrator project.
- Convene key partners to develop a region-wide industrial symbiosis programme, aligning it with existing business support.

Circular Manufacturing Centre of Excellence

What? Establish a Circular Manufacturing Centre of Excellence to support circular design best practice and to develop advanced technologies (robotics, AI etc.).

Why? To test new technologies and processes for end of life resource recovery and circular manufacturing and to increase knowledge about circular manufacturing.

Role of WMCA? Enable.

Partners: See Appendix 7 for complete partners list.

Next Steps:

- Engage and convene identified partners to gauge support, to identify existing or potential locations for a centre of excellence and to share best practice.
- Develop and submit a major sectoral funding application for a centre of excellence and associated research/developmental projects.
- Support research into best practice for circular design in manufacturing and into advanced technologies.

High-Value Fuels from Waste

What? Use advanced processing technologies to turn residual, municipal and industrial waste into high-value fuels for aviation, logistics, heavy plant and other manufacturing sectors.

Why? To increase the volume and value of resources generated from waste, to develop new technologies that can be exported globally.

Role of WMCA? Enable.

Partners: See Appendix 7 for complete partners list.

Next Steps:

- Engage relevant sectors to test appetite, secure support and establish formal partnerships.
- Identify one initial focus area (sustainable aviation fuel, sewage waste, etc.) and develop detailed plan and proposal for early funding.

Circular construction

With over 220,000 new homes and major infrastructure projects like HS2 planned, embedding circularity within construction can unlock new opportunities, generate cost savings and build resilience across regional supply chains. Circular design and processes can also decrease the amount of virgin materials consumed and reduce environmental degradation associated with construction.

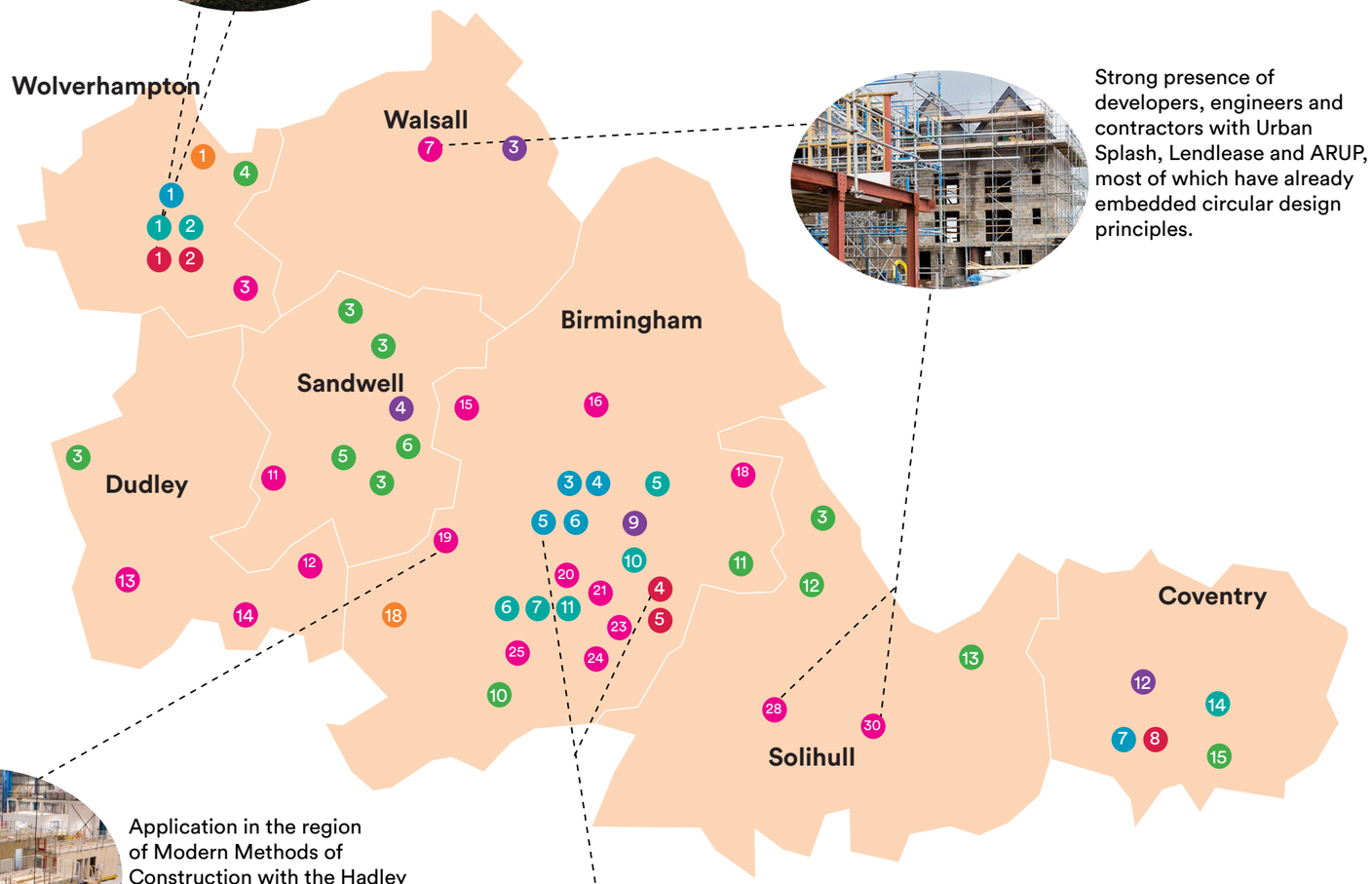
The West Midlands can leverage the funds it has secured to transform the construction, demolition and excavation (CD&E) sector. For example, WMCA and its constituent members have received several investment packages to support investments in infrastructure across the region. It has a £100 million Land Fund and £24 million Competitive Fund. WMCA and its constituent members have also received a £84 million investment to unlock and accelerate the region's pipeline of brownfield sites.

To that effect, circular economy interventions that would bring the most value to the region within the CD&E sector include:

- Adopting circular design principles and construction processes for residential, commercial and major infrastructure projects. A particular opportunity is to create a physical and virtual resource recovery and material exchange hub to make better use of material wasted in construction.
- Unlocking the value of brownfield sites with the creation of a leading facility to provide a register of sites, and incentives for developing these sites. This can be spearheaded by Wolverhampton and their National Brownfield Institute.
- Supporting the growth of regional specialist circular products and services relating to the construction industry, creating a one-stop shop to deliver all required services. Working and mobilising supply chains.

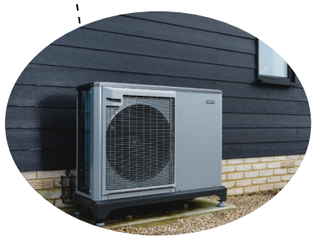
See Appendix 8 for more detailed information on the strategic interventions chosen for this priority area.

Opportunity to unlock brownfield sites with the National Brownfield Institute and the Brownfield Research and Innovation Centre.



Strong presence of developers, engineers and contractors with Urban Splash, Lendlease and ARUP, most of which have already embedded circular design principles.

Application in the region of Modern Methods of Construction with the Hadley Group setting up a MMC Hub and the presence of companies such as Totally Modular and LoCal Homes.



Leading research on decarbonising heat for buildings with the National Centre for Decarbonised Heat and the Energy Innovation Centre.

Circular construction
Strategic interventions

Brownfield Land Reclamation

What? Set up a facility and associated advisory services to unlock the development potential of brownfield sites of all sizes.

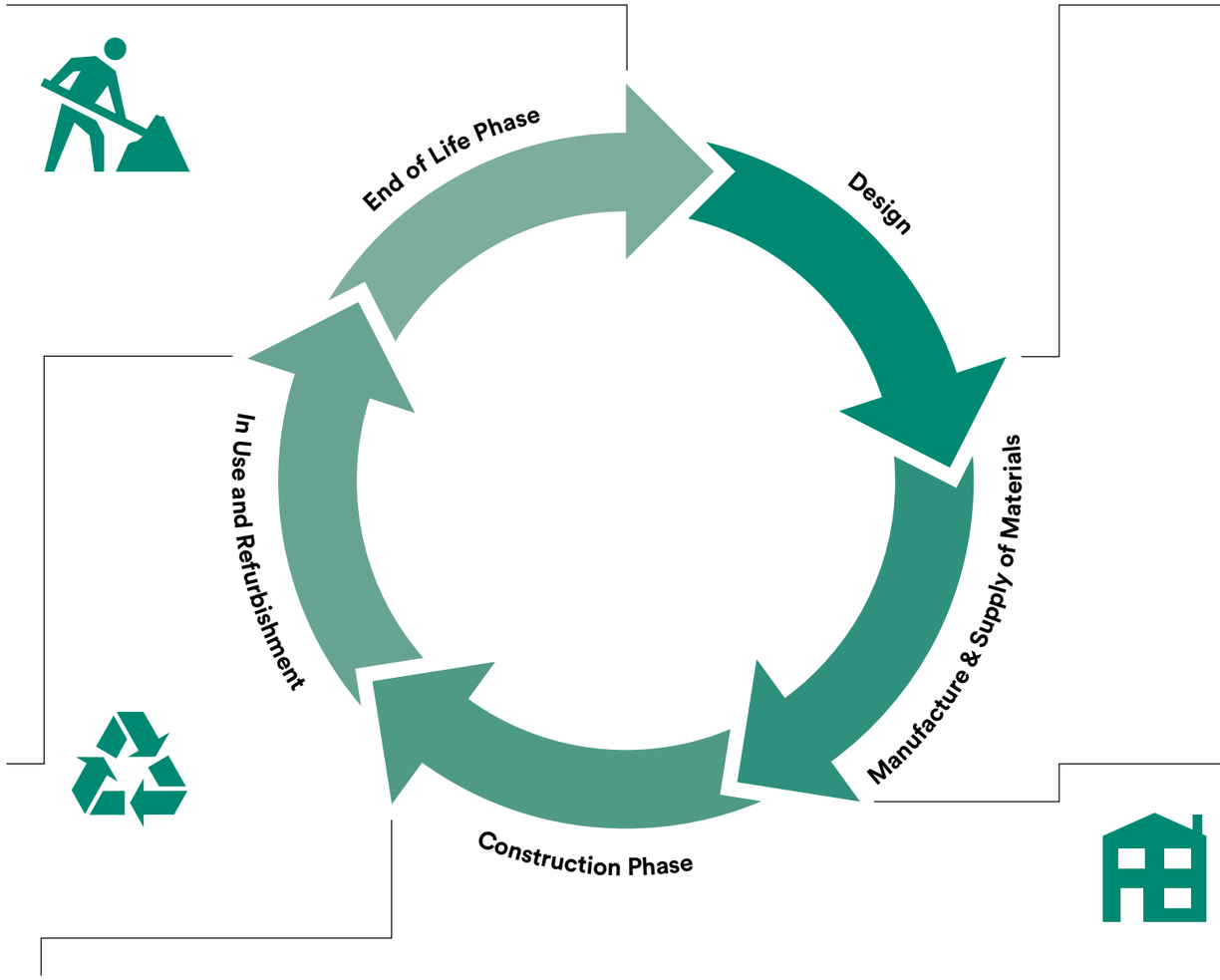
Why? To reduce resource consumption, wasted materials on brownfield sites, and the amount of soils and virgin materials imported.

Role of WMCA? Enable and Influence. Lead on own sites.

Partners: See Appendix 8 for complete partners list.

Next Steps:

- Explore option for the National Brownfield Institute to become leading facility.
- Convene partners to develop incentives including for smaller sites.
- Create a register of brownfield sites and develop a data-sharing platform.



Circular Repurposing Programme

What? Develop and implement circular approaches for refurbishing and repurposing commercial and residential properties, as well as public buildings and spaces.

Why? To minimise construction waste, to reduce virgin material extraction and to revitalise unused space.

Role of WMCA? Enable and Influence. Lead on own sites.

Partners: See Appendix 8 for complete partners list.

Next Steps:

- Audit public spaces, high streets and unused/vacant commercial spaces to create a region-wide revitalisation investment prospectus.
- Support R&D in circular products, services and approaches that support repurposing and refurbishing.
- Publish guidance on alternative financing and delivery models.

Zero Waste Construction Hub

What? Launch a physical and virtual hub to recover and exchange materials, as well as share and incentivise circular design and processes.

Why? To use fewer materials and reduce waste on construction sites, to encourage material exchange within the built environment.

Role of WMCA? Enable and Influence. Potential delivery partner.

Partners: See Appendix 8 for complete partners list.

Next Steps:

- Determine best location for material recovery and exchange hub(s), developing feasibility and funding proposal.
- Mobilise and convene regional supply chains around circular construction methods (including MMC and AMC).
- Launch virtual hub and share best practice guidance and incentives for circular construction processes.

Circular Strategies for Infrastructure

What? Develop circular strategies and action plans for major infrastructure projects and utility providers.

Why? To mobilise and scale up circular supply chains, to encourage innovation, and to support circular, sustainable utility provision.

Role of WMCA? Enable and Influence. Lead on own sites.

Partners: See Appendix 8 for complete partners list.

Next Steps:

- Identify and convene major infrastructure and utility companies and their supply chains to develop projects and incentives.
- Create a forum for infrastructure and utility companies to share best practice.
- Publish best practice guidance for circular strategies for infrastructure and utility companies.

Circular Building Product Initiative

What? Support the development of leading, regional circular buildings' systems, products and service offers.

Why? To create a suite of regional circular building products, to increase the number of circular products and services, to support regional job creation.

Role of WMCA? Enable and Influence. Lead on own sites.

Partners: See Appendix 8 for complete partners list.

Next Steps:

- Work with the Zero Carbon Homes Task Force and other key partners to select ten regional building product manufacturers/suppliers.
- Convene partners and experts to explore creation of a consortium of regional organisations to act as a one-stop shop for circular buildings' products, services and systems.

Circular food

Thanks to its surrounding rural areas, the West Midlands region as a whole remains one of the UK's main agricultural hubs, making the food and agricultural sector a key priority for this routemap. According to DEFRA, the biggest agricultural contributors to the region's £2.4 billion outputs are milk, poultry meat, wheat and fruit. The West Midlands is also home to several farms, with income from farming increasing by 34% between 2015 and 2019. Grazing livestock accounted for 28% of farmed area, whereas cereal farms accounted for an additional 26%.

The food and agricultural sector was chosen as a priority area given the presence of large food processors and manufacturers, local agro-ecological farms and movements, as well as numerous community-based groups focusing on food. Numerous research projects, including Food Trails, are looking to make the region's food system more circular and to eliminate food waste across the supply chain. This routemap will support such research projects.

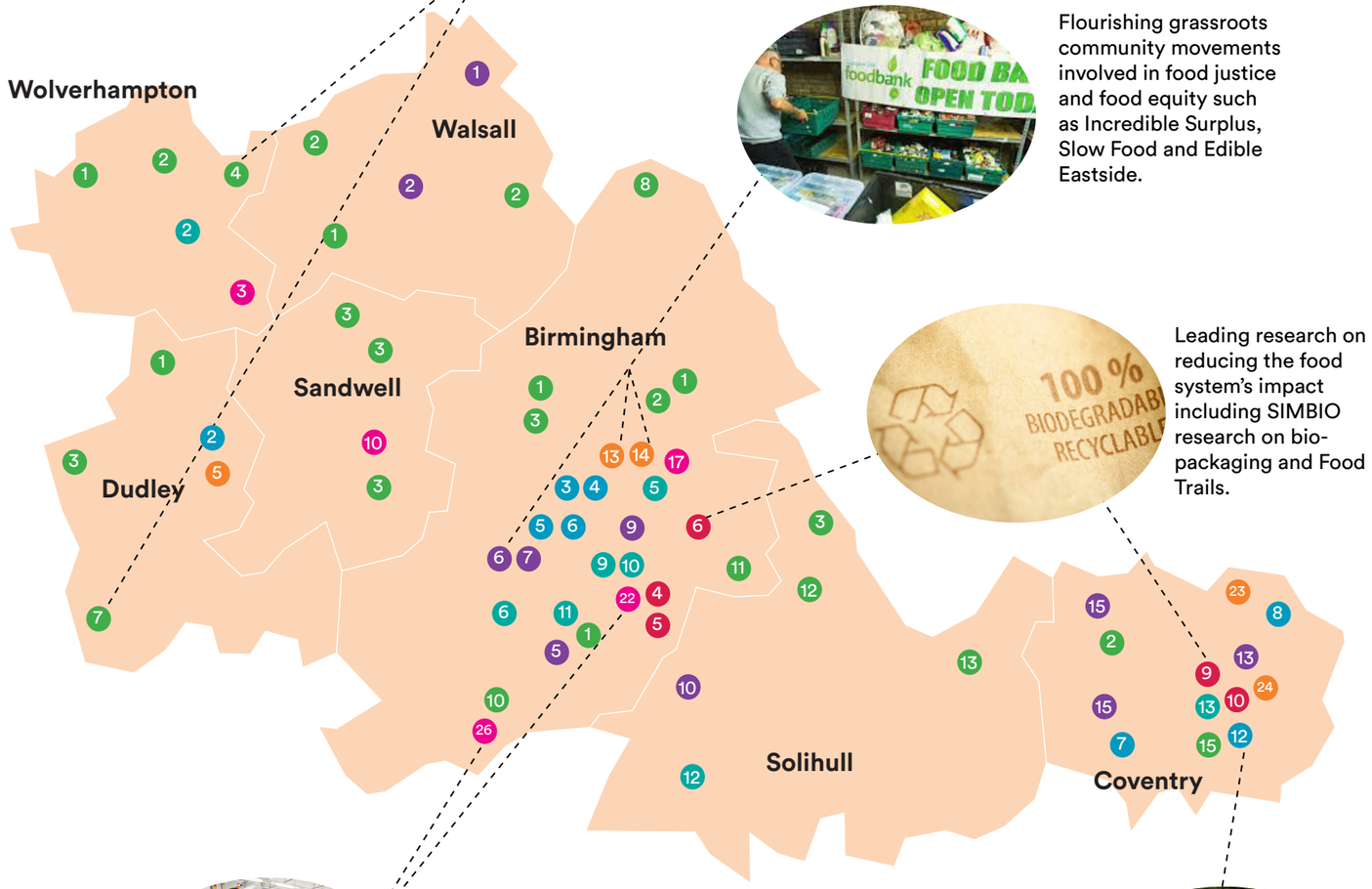
To that effect, circular economy interventions that would bring the most value to the region within the food and agriculture sector include:

- Adopting a systems-thinking approach to redesign the food system working with leading research institutions, regional agro-businesses and farms to deliver tangible social benefits and economic growth.
- Encourage more sustainable food consumption in the region, including improving distribution and access to food and supporting existing grassroot movements to continue their work as part of a recovery. Additionally, urban agriculture and urban horticulture opportunities should be further explored, building on existing initiatives and community groups such as District Eating.
- Unlocking the value of food and drink manufacturing waste and the potential of wastewater sludge for agricultural purposes. This will help close the nutrient loops, deliver new jobs and reduce environmental degradation.

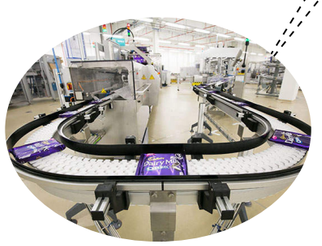
See Appendix 9 for more detailed information on the strategic interventions chosen for this priority area.

Several anaerobic digestion plants in the region producing bio-gas or compost.

Flourishing grassroots community movements involved in food justice and food equity such as Incredible Surplus, Slow Food and Edible Eastside.



Leading research on reducing the food system's impact including SIMBIO research on bio-packaging and Food Trails.



Presence of large food processors and manufacturers, including breweries. This includes companies like Mondelez and 2 Sisters Food Group.

Centres of excellence on how to reduce the impact of agriculture on the environment including the Centre for Agro-Ecology, Water and Resilience.

Circular food
Strategic interventions

Circular Nutrient Loop

What? Close the nutrient loop by developing bio-technologies to recover and enhance value of food waste and other waste products (sewage etc.).

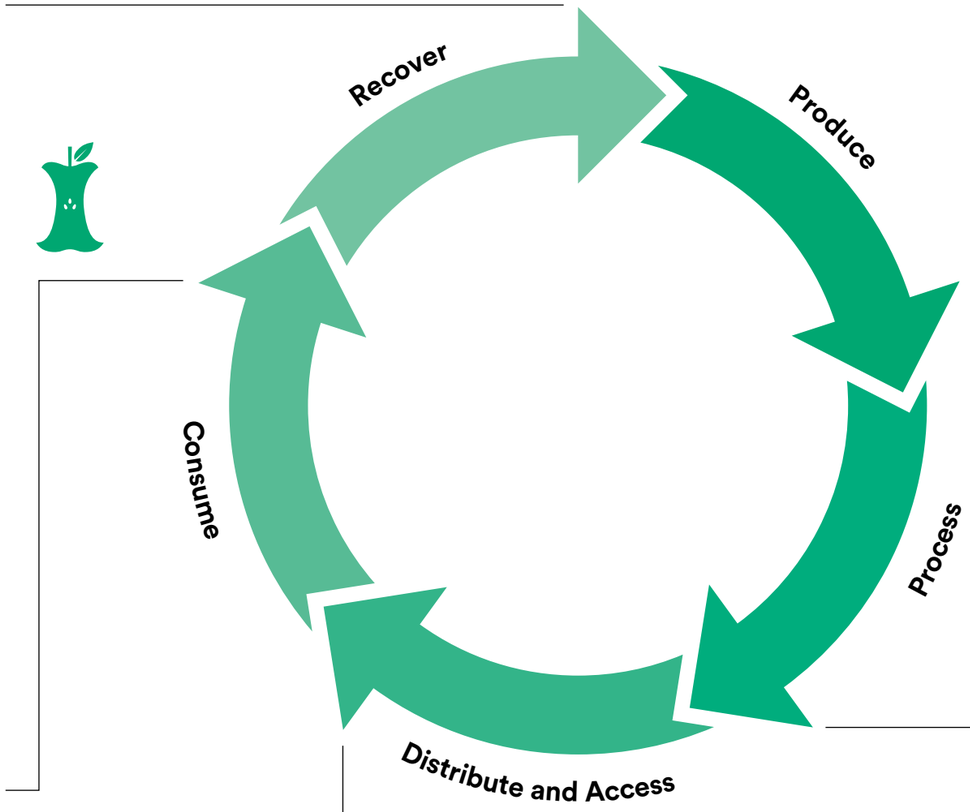
Why? To reduce use of finite resources, to retain important nutrients in the soil, to reduce negative environmental impacts.

Role of WMCA? Enable.

Partners: See Appendix 9 for complete partners list.

Next Steps:

- Engage with wastewater and sewage companies to identify technologies to recover nutrients from sludge for agricultural use and create an online platform to facilitate exchange with farmers.
- Support local authorities in streamlining food waste collection, including producing best practice guidance for food separation.
- Determine logistics required to transport food waste to anaerobic digestion and composting plants and then distribute compost to farms and inject biogas in local gas network.



Regenerative Food Production

What? Support regenerative agriculture and permaculture practices as well as local food growing initiatives.

Why? To maintain soil health, to reduce food miles, to increase food security.

Role of WMCA? Enable and Influence.

Partners: See Appendix 9 for complete partners list.

Next Steps:

- Map existing sustainable, local food growing schemes and farms to identify best practice and gaps in provision.
- Convene key partners to develop incentives, support programmes and communal projects.
- Support local authority constituent members in implementing enabling policies, particularly in planning.

Healthy Consumption

What? Raise awareness and encourage sustainable, local food consumption, working closely with existing communities and volunteer groups.

Why? To improve health of local communities, to reduce costs associated with unhealthy diets, and to reduce environmental impact of modern diets.

Role of WMCA? Enable and Influence.

Partners: See Appendix 9 for complete partners list.

Next Steps:

- Convene local authorities to launch a cohesive behavioural change programme for healthier diets.
- Lobby national government for stronger regulations on fast food advertisements (near schools etc.).
- Provide support to existing community/volunteer groups including access to finance and space.

Circular Food Hubs

What? Create circular food hubs with optimised logistics to collect and redistribute food that would otherwise be wasted.

Why? To improve local communities' access to healthy, affordable food, to reduce waste food, and to ensure better redistribution of food.

Role of WMCA? Enable and potential delivery partner.

Partners: See Appendix 9 for complete partners list.

Next Steps:

- Determine logistics requirements to bring in and redistribute food that would otherwise be wasted.
- Based on logistics requirements, determine best location for central food hubs, making best use of vacant/unused spaces or publicly-owned buildings.
- Convene existing community/volunteer groups and other key partners to develop funding proposal for hubs.

Circular Food Manufacturing

What? Develop circular strategies for food and drink processors and manufacturers, focusing on opportunity to use food waste as a productive resource.

Why? To mobilise circular food supply chains, to reduce resource consumption and pollution, to support further R&D in sustainable agro-business processes.

Role of WMCA? Enable and Influence.

Partners: See Appendix 9 for complete partners list.

Next Steps:

- Develop proposal for bio-packaging and no single-use plastic at the Commonwealth Games.
- Convene agro-businesses, food processors and other key partners to map flows of resources and identify opportunities to trade resources.
- Commission audit of existing food technologies to identify where further support into R&D and commercial application required, including bio-packaging.

Conclusion

6

Summary

A circular economy is a vital part of WMCA's overall approach to leading the green industrial revolution. There are many ways in which a circular economy can be developed, all of which should support a more inclusive and stronger economy, social value creation and a cleaner, greener environment.

The West Midlands already has exceptional strengths in its centres of excellence, research programmes, businesses and pilot projects focusing on circularity. These provide a fantastic springboard to accelerate the region's transition to a circular economy.

However, this transition remains a challenging, all-encompassing and demanding endeavour. It requires a set of coordinated enabling and strategic interventions across various sectors, involving multiple stakeholders and businesses as well as a radical shift in how we think about our economy.

It is why this routemap recommends that the West Midlands initially focuses on three priority areas and on builds enabling foundations to support a wider transition, based on extensive stakeholder engagement, a material flow assessment, existing circular economy expertise and aligned to the key regional and national strategies.

The priority areas selected are:

- **Circular manufacturing** with opportunities in advanced manufacturing, clean technology, vehicle and battery manufacturing, converting waste to high-value fuels.
- **Circular construction** with opportunities in brownfield land reclamation, repurposing vacant and unused spaces, circular design and construction processes and material recovery hubs.
- **Circular food** with opportunities in bio-technology R&D for agro-processing and agro-manufacturing, recovering and re-using food waste, and unlocking the potential of local social enterprises and community groups working on food issues.

Recommendations

This routemap is the first step in formalising the region's journey towards a more circular economy. We recommend that:

1. **WMCA**:

- Publishes this routemap and shares best practice across the region.
- Works with key stakeholders identified in the routemap to:
  - prioritise strategic opportunities and develop detailed project and funding proposals.
  - prioritise the enabling actions in the routemap.
  - commission in-depth material flow analysis for key sectors, when and where needed to inform future actions, as well as other sectors such as retail, tourism or health care and life science.
- Establishes appropriate internal and region-wide governance, refreshing the current Taskforce to align with priorities to support delivery of the routemap.
- Aligns the actions in this routemap with other internal programmes and strategies.
- Takes proposals on resource requirements and investment opportunities to WMCA Board, once this more detailed work has been completed.

2. **Local authorities** in the West Midlands:

- Work with WMCA on developing relevant strategic opportunities as above.
- Identify opportunities to use their enabling functions such as waste, planning, procurement and other key strategies, plans and policies, to support investment in critical waste, energy and transport infrastructure that will create the conditions for a more circular economy.

3. **National government** provides funding and policy support for industry-wide transitions to a more circular economy. This is essential since the West Midlands cannot transition to a circular economy without the support of the national government.