



OFFICE OF
SUSTAINABILITY

Circular Economy

Positioning Richmond to Lead Virginia's Circular Economy Revolution



WHAT IS A CIRCULAR ECONOMY?

An economic system that aims to minimize waste and pollution by keeping products, materials, and resources in use for as long as possible through strategies like reuse, repair, refurbishment, remanufacturing, and recycling.



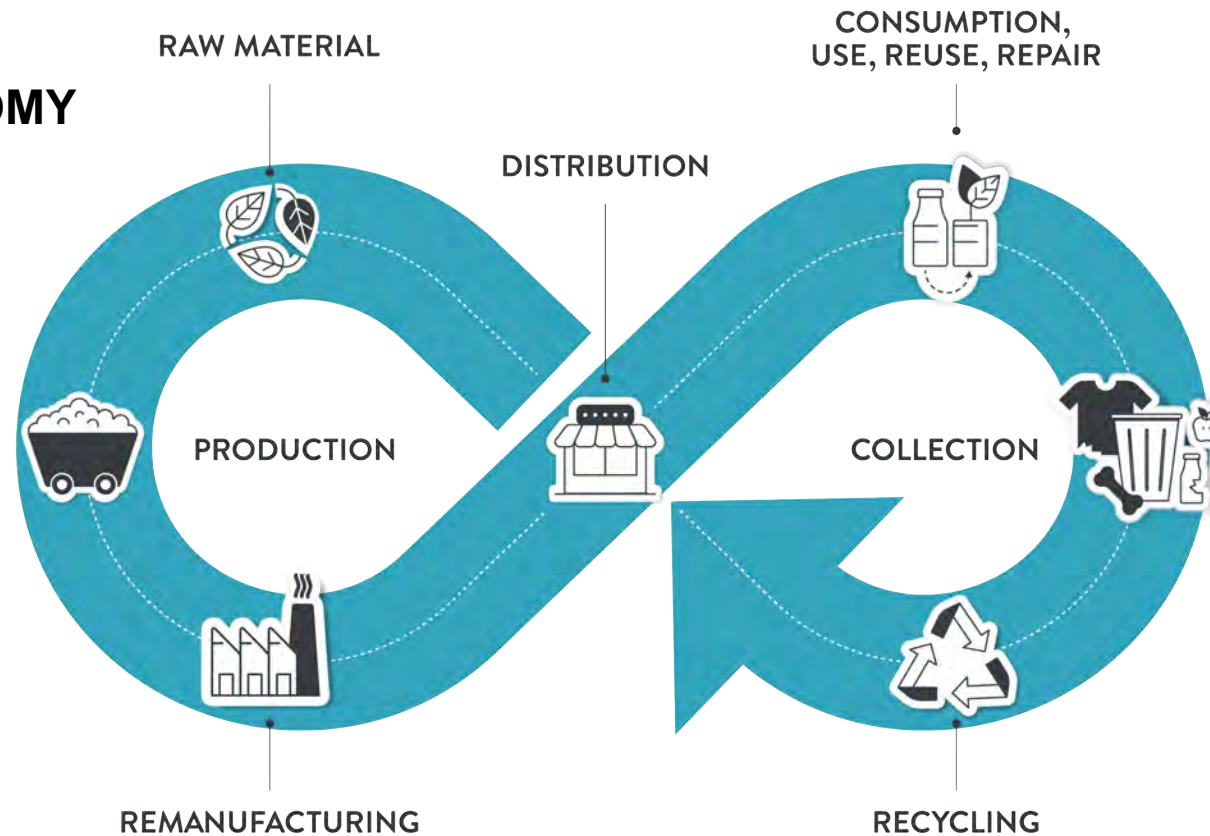
TRANSFORMING HOW WE THINK ABOUT WASTE

LINEAR ECONOMY



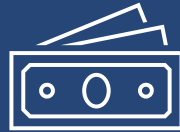
TRANSFORMING HOW WE THINK ABOUT WASTE

CIRCULAR ECONOMY



WHY ARE CITIES LEADING THIS REVOLUTION?

Cities are uniquely positioned to drive circular economy transformation because they control key levers:



DIRECT
FINANCIAL
INCENTIVES



CONVENING
AUTHORITY



INFRASTRUCTURE
CONTROL



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AMERICA'S FIRST CIRCULAR ECONOMY INNOVATION CENTER

INNOVATION BARN IN CHARLOTTE, NC

The Charlotte Model

- City owns the building, leases for \$1/year to managing nonprofit
- Envision Charlotte manages operations with \$1M annual budget
- Mixed funding: corporate sponsors + grants + tenant rent + earned revenue



INNOVATION BARN IN CHARLOTTE, NC

WHAT'S INSIDE THE INNOVATION BARN?

Business Incubation Labs

- Plastics lab converting takeout containers into reused materials
- Glass crusher turning bottles into construction materials
- Urban lumber mill creating furniture from construction waste
- Aquaponics system growing fish and vegetables in closed loops



INNOVATION BARN IN CHARLOTTE, NC

WHAT'S INSIDE THE INNOVATION BARN?

Community Engagement Spaces

- Circular economy educational field trips
- Event spaces hosting monthly sustainability networking
- Public tours twice weekly



INNOVATION BARN IN CHARLOTTE, NC

WHAT'S INSIDE THE INNOVATION BARN?

Revenue-Generating Amenities

- Coffee shop training members of the unhoused community as baristas
- Craft beer taproom featuring local brewery partners
- Retail space selling products made from upcycled materials



INNOVATION BARN IN CHARLOTTE, NC

IMPACT

Y1 Numbers that Matter

- 8 businesses incubated in first 10 months
- 7,000 visitors and 1,000 tours
- 2,000 volunteer hours mobilized

Economic Impact

- Tenants pay \$8-15/sqft rent, generating consistent revenue
- Corporate partnerships provide ongoing funding streams
- Field trips, tours, and visitors bring revenue to the district

Environmental Impact

- Hundreds of tons diverted from landfills annually
- Local businesses meeting sustainability goals through partnerships
- Model being replicated nationwide



WHY RICHMOND IS PRIMED AS A CIRCULAR ECONOMY HUB

Our unique competitive advantages



UNIVERSITY
PARTNERSHIPS



BIOTECH
INDUSTRY



BUILDING STOCK
ADAPTIVE REUSE



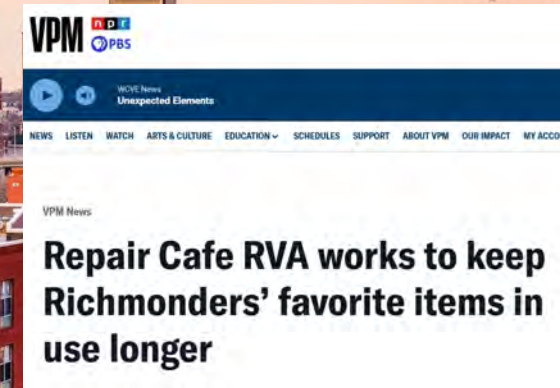
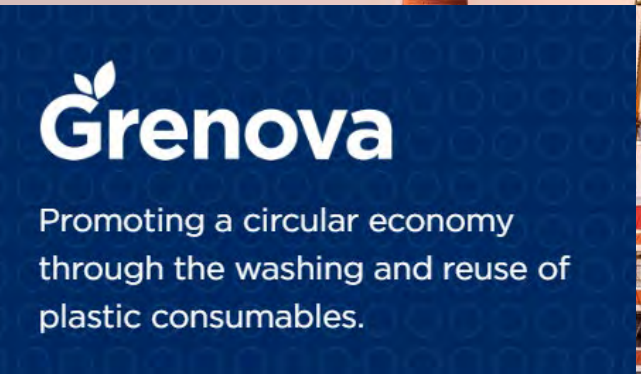
STRATEGIC
LOCATION



MANUFACTURING
HERITAGE



POSITIONING RICHMOND AS CIRCULAR ECONOMY LEADER



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POSITIONING RICHMOND AS CIRCULAR ECONOMY LEADER

PHASE 1: BUILDING A FOUNDATION

Immediate Actions

- Conduct materials flow analysis
- Continue to develop partnerships and secure initial corporate sponsor commitments
- Recruit anchor tenant businesses focused on local waste streams





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RICHMOND COOL KIT

COOLING STRATEGIES FOR HEAT RESILIENCE

Guidebook of 25 evidence-based cooling strategies that can reduce surface temperatures in urban and suburban settings.

Cool by Design

- **Urban Greening** – trees, green infrastructure, blue space.
- **Shade** – built shade sails and shade structures
- **Smart Surfaces** – light-colored surfaces, heat-resistant materials
- **Depaving** – impervious surface removal



RICHMOND COOL KIT

COOLING STRATEGIES FOR HEAT RESILIENCE

Establishes a shared understanding of the causes and impacts of urban heat, outlines cooling strategies, lists City staff resources, and promotes community resilience to extreme heat and flooding.

Cool by Design

- Cool neighborhoods, homes, and businesses
- Cool walking, biking, and transit infrastructure
- Cool community spaces, parks, libraries, and schools
- Increased climate resilience and well-being for all Richmonders

