U.S. Chamber of Commerce Foundation

Metabolic

Scaling Circularity:

# Best Practices & Learnings from Beyond 34

June 2025

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# Beyond 34: An Overview & Participating Regions

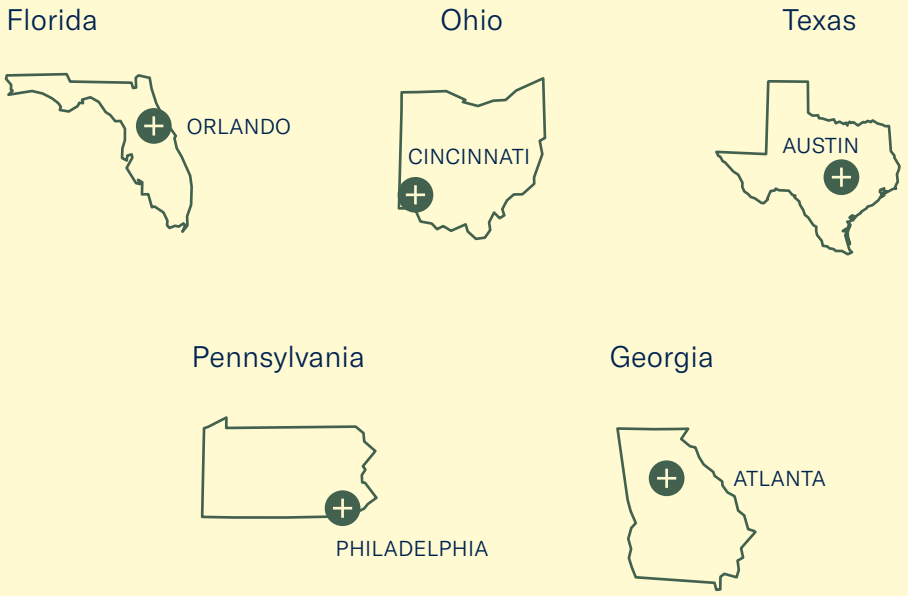
Since 2017, the U.S. Chamber of Commerce Foundation's Beyond 34 initiative has helped cities and the private sector make strides in advancing circularity and improving recycling systems across multiple U.S. regions. With the program coming to a close, this is an opportunity to reflect on the valuable insights and successes achieved, along with the lessons learned that can help guide other cities and regions in their transition toward a more circular economy. This closing report is not merely a reflection on the Beyond 34 program but a practical toolkit offering best practices for cities to advance their circular economy efforts.

## The Beyond 34 Initiative

As part of the U.S. Chamber Foundation's mission to harness the power of business to create solutions for the good of America and the world, Beyond 34 sought to enable communities, cities, and businesses to divert valuable resources from landfills and create sustainable, closed-loop recycling and recovery systems. The initiative aimed to demonstrate scalable processes for improving recycling rates and material recovery, develop strategic partnerships, and raise awareness about both the barriers and opportunities in moving toward a circular economy. To provide expertise on the circular economy, Metabolic, an international firm of experts in systems thinking and the circular economy, served as a technical partner on the Beyond 34 project.

## Participating Regions

The U.S. Chamber Foundation's Beyond 34 initiative has engaged key regions across the U.S., including Cincinnati, Ohio; Orlando, Florida; Austin, Texas; Philadelphia, Pennsylvania; and Atlanta, Georgia, to pilot and refine scalable circular economy models. In addition to these regions, insights were gathered from discussions with Charlotte, North Carolina; Boulder, Colorado; Portland, Oregon; and Phoenix, Arizona, broadening the understanding of circular economy practices across diverse urban contexts. Each city represents a unique landscape of challenges and opportunities in waste management and recycling. For example, Orlando focused on achieving zero-waste targets through community engagement, while Austin expanded composting access for both single-family and multifamily households. Philadelphia collaborated with local businesses to repurpose city space for circular initiatives, while Atlanta and Cincinnati are working on innovative approaches to increase composting facilities and develop resilient recycling systems. These regions serve as models, demonstrating how tailored strategies can drive local progress in circularity.



## This Report

This report provides an overview of the Beyond 34 initiative, its methodology, and the insights gained since the program launched. It begins by introducing the program and its foundational principles through the lens of Metabolic's holistic 7 Pillars framework for the circular economy. It outlines a practical approach to creating a circular economy roadmap, including methods like material flow analysis (MFA). The report then highlights voluntary actions by participating cities, showcasing their leadership in waste management, food and organics, the built environment, and circular industries. Finally, the report distills key learnings, shares lessons from the initiative, and offers a forward-looking perspective on advancing the circular economy across cities and regions in the U.S.

# The Beyond 34 Framework: Data-Driven Methodologies for Localized Circular Economy Strategies

A circular urban future should be built on resilient communities with strong ties to their local environment and provide a backbone of social goods and services to all citizens. Too often, the attempt to solve one problem in isolation from social, economic, ecological, or political considerations leads to unintended and undesirable consequences in other domains of society. Cities transitioning to a circular economy require a structured, collaborative approach to move from general assessments to targeted, impactful solutions.

The strategy framework outlined here, applied across Beyond 34 regions, begins with robust, localized data such as material flow analysis (MFA). This step-by-step approach guides cities through assessing their current conditions, identifying priority areas, setting actionable goals, and advancing toward implementation. Tailoring solutions to local needs ensures relevance and impact, while combining technical analysis with stakeholder engagement addresses community priorities and systemic challenges. Collaboration with private partners is critical, aligning resources, expertise, and innovation to effectively drive circular economy objectives.

STEP 1

# Assessing the Current State of Circularity

To begin, cities can develop a shared understanding of the current state of material circularity by conducting an MFA based on available data and informed by local partnerships. This analysis maps the resource flows through the city, helping identify where resources enter, are consumed, and are wasted or recycled. It highlights potential areas for improvement, such as high-waste sectors or underutilized resources, and serves as a foundation for setting local circular economy priorities. Gathering insights from key stakeholders across the private sector, local government, NGOs, and academia through meetings or focused discussions enriches this assessment and provides a more comprehensive picture of local challenges, opportunities, and areas with momentum.

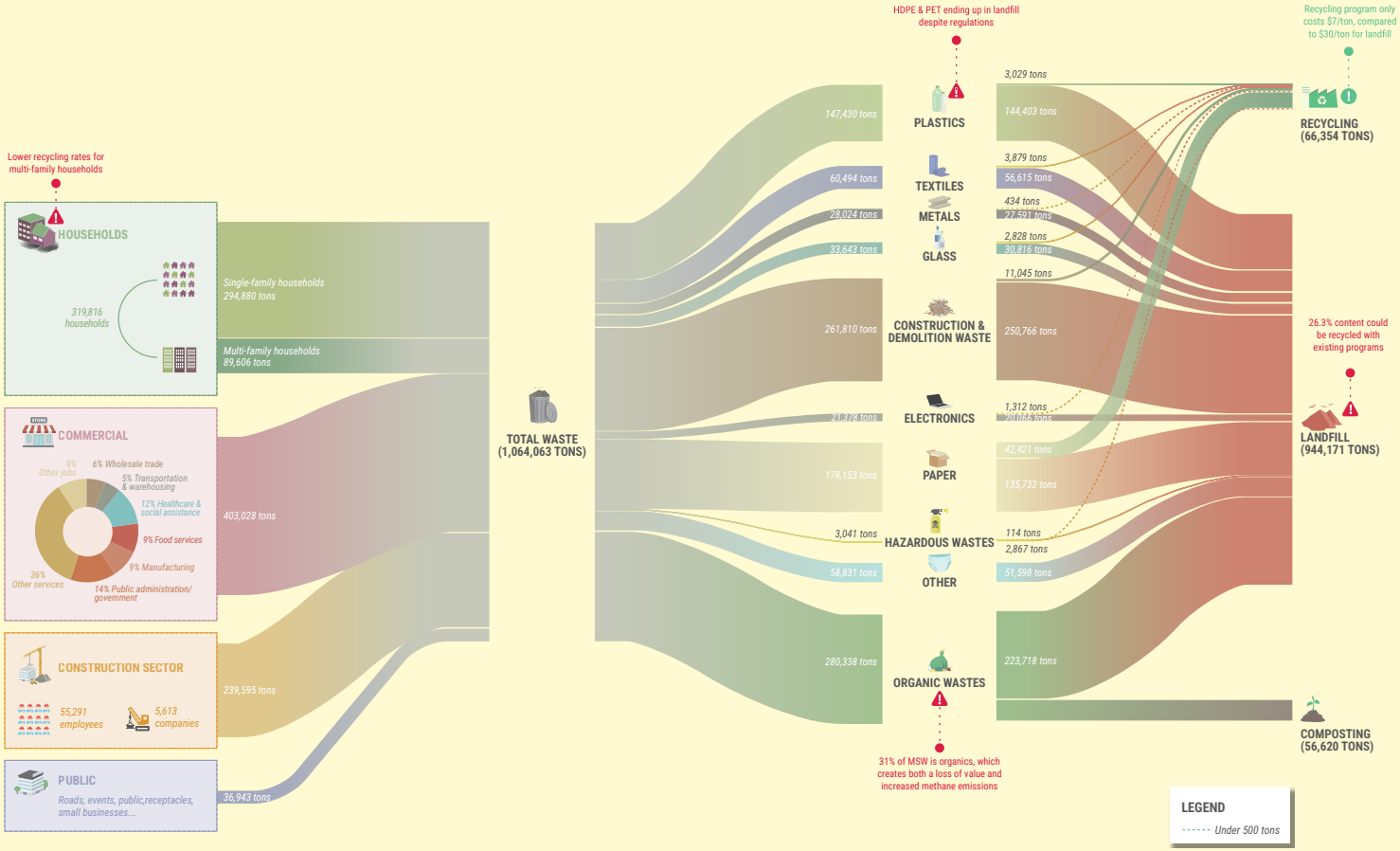



Figure: Example of a Material Flow Analysis for Charlotte, North Carolina (Metabolic)

STEP 2

## Selecting Circular Focus Areas

Once the current state is clear, cities can identify focus areas to maximize impact and align with community needs and stakeholder interests. These areas—such as circular built environment, organic waste management, or circular manufacturing—are typically selected based on the MFA findings, stakeholder input, and considerations of local priorities and capacities. Choosing a few key areas allows for targeted actions that address circular economy principles, such as resource conservation, waste reduction, local job generation, and community well-being.

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STEP 3

## Establishing Goals and Addressing Barriers

With focus areas selected, cities can organize workshops or collaborative sessions with stakeholders to develop short-, mid-, and long-term goals for each focus area. During these discussions, participants can help identify specific goals, pinpoint barriers (e.g., regulatory, technical, or economic obstacles), and discuss enablers for implementation. This goal-setting phase ensures alignment between the city's vision and the interests of private and public stakeholders and serves as a basis for developing actionable steps.

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STEP 4

## Moving From Strategy to Implementation

The next phase involves translating strategy into concrete actions. For each focus area, cities can develop roadmaps that outline pilot projects or initiatives to test circular approaches, assigning roles and responsibilities across stakeholders. Engaging private partners is essential for implementing these initiatives as they can contribute resources, innovation, and local expertise. By building public-private partnerships, cities can take tangible steps toward implementing circular economy principles and building scalable models that deliver local environmental and economic benefits. The next section highlights best practices on how to efficiently structure such partnerships in different focus areas like waste management, food waste and organics, the built environment, and circular industries.

# Collaborative Action for Circularity: Insights from Beyond 34

Regions involved in the Beyond 34 initiative, along with other leading regions across the U.S., have demonstrated their commitment to advancing circular economy goals through voluntary, collaborative action. By engaging private entities through innovative public-private partnerships, these cities have implemented impactful solutions, from waste reduction to closed-loop systems of material cycling. Drawing on interviews with stakeholders from Beyond 34 regions and beyond, key lessons highlight how voluntary actions and partnerships drive economic opportunities, enhance environmental resilience, and offer replicable blueprints for cities striving toward a circular future.

## Focus Areas

From the step-by-step, data-driven approach outlined earlier—centered on material flow analysis (MFA) to identify priorities—four areas emerged as focal points for most cities in the Beyond 34 program: waste management, food waste and organics, circular built environment, and circular industry.

1 **Waste management** remains fundamental as cities work to reduce landfill use and increase resource recovery through recycling and reuse initiatives.

2 **Food waste and organics** represent significant potential for impact, with cities focusing on composting, community education, and innovative solutions for diverting organic waste from landfills.

3 **In the built environment**, cities are adopting circular strategies that encompass the entire lifecycle of buildings, including sustainable design, material efficiency, adaptive reuse, and deconstruction. These approaches aim to minimize waste, promote the reuse of materials, lower embodied carbon, and integrate circular principles into urban planning and construction practices.

4 **Circular industry** efforts target the development of closed-loop production processes in areas such as circular plastics and the renewable use of energy.

# 1 Waste Management

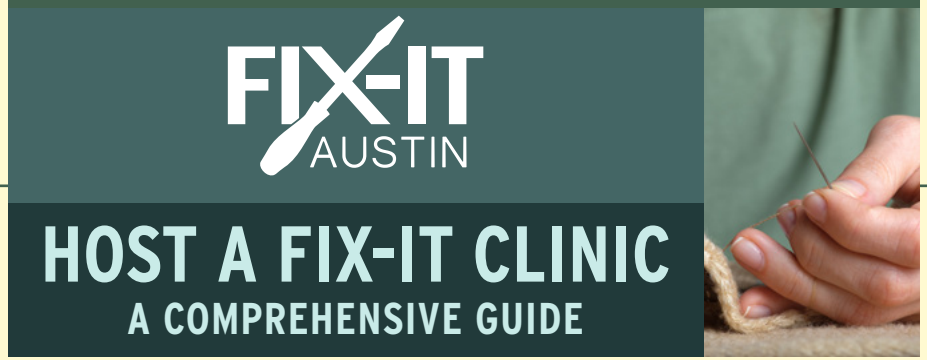
Beyond 34 regions such as Austin and Cincinnati, along with cities like Phoenix, have implemented innovative waste management strategies, tailoring approaches to enhance recycling efforts and drive sustainability. From Phoenix's utilization of its Materials Recovery Facility (MRF) as an educational facility to Austin's and Cincinnati's community repair initiatives, each city offers valuable insights and lessons for others seeking to improve their waste management systems and environmental impact.

**FIX-IT AUSTIN:**

# Connecting Communities Through Repair & Reuse

**LEARN MORE**

**AT A GLANCE:** The Fix-It Austin program promotes community engagement and sustainability by hosting free Fix-It Clinics where residents learn to repair everyday items, reducing waste and the need for new raw materials. Additionally, it supports local businesses through the Austin Reuse Directory, connecting residents with specialized repair services and promoting a circular economy.




## The Voluntary Action

The city of Austin's Fix-It Austin program aims to build community and educate residents about the importance of repair and reuse in reducing waste. By empowering individuals to repair everyday items like clothes, appliances, and electronics, the program helps keep these products out of landfills and decreases the need for new raw materials used to manufacture replacement products. A key element of the program is its Fix-It Clinics, free public events where residents can work alongside skilled volunteer coaches to troubleshoot and repair broken items. These clinics encourage hands-on learning and build a culture of sustainability by showing participants how to extend the life of their belongings.

## The Public-Private Connection

The Fix-It Austin program not only promotes sustainability through repair and reuse but also supports local businesses by driving customers to local repair shops. Through its Austin Reuse Directory, residents are connected with repair businesses specializing in items such as shoes, jewelry, furniture, and electronics. This partnership helps grow the local economy by encouraging residents to seek out skilled repair services instead of replacing broken items with new ones, creating more business for these local shops. By promoting repair through both hands-on learning at Fix-It Clinics and referrals to professional repair services, Fix-It Austin strengthens the circular economy and supports local enterprises while working toward the city's zero-waste goal by 2040.

**INNOVATION BARN:**

# Charlotte's Hub for Circular Solutions

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**AT A GLANCE:** The Innovation Barn in Charlotte provides space for sustainable organizations and startups to experiment with zero-waste innovations. Jointly funded by the city and managed by Envision Charlotte, it supports the creation of sustainable businesses, job opportunities, and educational initiatives, promoting a shift from a linear to a circular economy.

INNOVATION BARN

## The Voluntary Action

The Innovation Barn in Charlotte, a 36,000 square-foot refurbished city garage on Seigle Avenue, has become a central hub for circular economy practices. After three years of planning and construction, this $5 million project, jointly funded by the city and operated by environmental nonprofit Envision Charlotte, now functions as an incubator for 15–20 circular initiatives. In the Innovation Barn, sustainable organizations and startups have the freedom to experiment with circular, zero-waste innovations. Carolina Urban Lumber, for example, repurposes wood from trees cut down around the city into unique furniture, while MUSH and Crown Town Composting incorporate the resulting sawdust into compost. The Innovation Barn also serves as space for residents and businesses to come together and engage with circularity through informative events and networking sessions.

## The Public-Private Connection

The City of Charlotte owns the Innovation Barn building, while Envision Charlotte is responsible for managing and designing the activities within. Through the partnership, Charlotte is stimulating the creation of sustainable business, opening up job opportunities and means to further educate its residents on sustainability issues. Startups at the Innovation Barn are empowered to explore and innovate circular solutions by offering businesses a supportive space to grow and collaborate. By converting waste into new resources, the Barn provides a model for shifting from a linear economy, where goods end up in landfills, to a circular economy, where materials are continuously reused. By investing in the innovation barn, the city is investing in the creation of systems that can be used to manage its waste streams resourcefully.

**ANNUAL REPAIR FAIR:**

# Promoting Repair Culture and Local Business in Cincinnati

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**AT A GLANCE:** The Cincinnati Repair Fair promotes sustainability and community connections by offering residents the chance to repair household items with the help of volunteer fixers. The event also supports local businesses by partnering with venues like HighGrain Brewing and includes educational workshops, fostering a repair-focused mindset and enhancing the city's commitment to a circular economy.


## The Voluntary Action

The Cincinnati Repair Fair, launched in 2021, is a community-driven initiative that promotes sustainability through repair, strengthens local businesses, and supports greater community connections. Partnering with several NGOs, the City of Cincinnati created this annual event where residents can bring broken household items to be fixed by volunteer "fixers" to prevent these items from ending up in landfills. Although not every item can be fully repaired, the event offers valuable learning opportunities where participants gain hands-on knowledge from repair experts, while meeting others who are passionate about reducing waste and extending the life of their belongings.

## The Public-Private Connection

A unique feature of the Repair Fair is its collaboration with local businesses like HighGrain Brewing, where attendees can enjoy food and drinks while engaging in the event. By hosting the fair at popular local venues, the city strengthens the local economy and draws more visitors to these businesses. Additionally, the Repair Fair includes educational Fix-It Workshops that teach practical skills like garden tool upkeep, bike maintenance, and car care, further empowering the community to adopt a repair-focused mindset. The event also partners with the Cincinnati Reuse and Recycling Hub, which helps residents recycle unfixable electronics, enhancing Cincinnati's commitment to a circular economy. Together, these initiatives create a vibrant space where sustainability and local commerce intersect and benefit both the environment and the community.

**MATERIALS RECOVERY FACILITY:**

# Phoenix's Business-Focused Recycling Initiatives

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**AT A GLANCE:** Phoenix's Materials Recovery Facility supports the city's goal of 50% waste diversion by 2030 and zero waste by 2050 by educating businesses on the end-of-life processing of their products. Through tours and tailored presentations, businesses learn how materials are sorted and recycled, enabling them to make more sustainable choices, while the Phoenix Green Business program recognizes and promotes companies committed to waste reduction.

## The Voluntary Action

Phoenix is committed to achieving 50% waste diversion by 2030 and zero waste by 2050 in line with its Climate Action Plan. A key part of this strategy involves using the city's recycling infrastructure not only to divert waste but to educate businesses on how their products are processed at the end of their lifecycle. By providing insight into how materials are sorted, recycled, or disposed of, businesses can better understand the impact of their products and make more sustainable choices in their design and manufacturing processes.

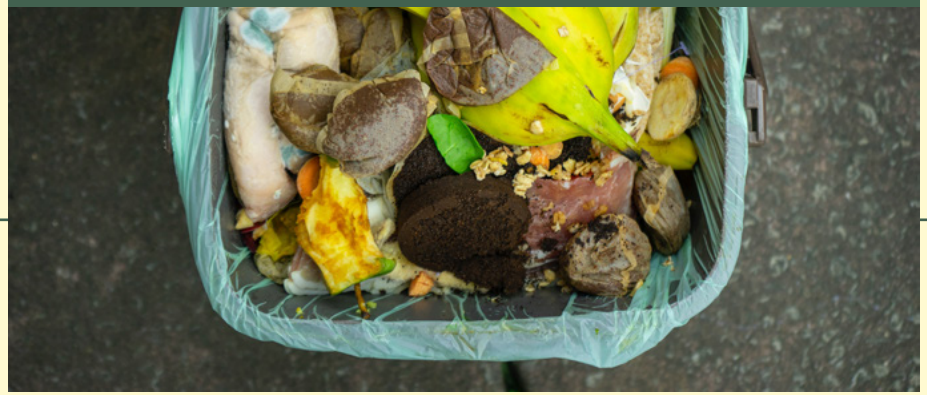
## The Public-Private Connection

Businesses gain valuable insights through visits to the North Gateway Transfer Station and Materials Recovery Facility (MRF), where recyclables are processed. These tours showcase how materials are sorted by hand and machinery, helping companies understand end-of-life processing and improve product recyclability. Phoenix's Zero Waste team also provides tailored presentations for businesses, schools, and community groups, focusing on best recycling practices and enhancing corporate recycling programs. Additionally, the Phoenix Green Business program recognizes sustainable companies with social media visibility, window decals, and exclusive events, encouraging broader adoption of waste reduction and sustainable practices.

**COLLABORATIVE WASTE MANAGEMENT:**

# Boulder's Open Market Approach

**AT A GLANCE:** Boulder enhances its waste management system by fostering partnerships with private haulers and nonprofits, facilitating collaboration and innovative solutions. The city operates an open market for service providers and hosts quarterly stakeholder meetings to address issues, ensuring efficient and effective waste management through active oversight and engagement.



## The Voluntary Action

To enhance the effectiveness and general quality of its waste management system, Boulder helps strengthen strong partnerships with private haulers and nonprofits to enhance its waste management system. By leveraging its central role within this network, the city facilitates collaboration among stakeholders, encouraging innovative solutions and shared accountability.

## The Public-Private Connection

Rather than contracting a single waste hauler, Boulder operates an open market for service providers. To ensure that the system runs smoothly, the city hosts quarterly meetings with all stakeholders, addressing emerging issues and promoting cooperation. These regular touchpoints allow Boulder to maintain an active role in overseeing waste management while outsourcing the service. Further, the meetings provide the city with up-to-date insights on waste production and disposal methods to ensure that its system remains efficient and effective. Early and consistent engagement has been crucial to the success of this collaborative model.

**REMOVING BARRIERS TO BUSINESS RECYCLING:**

# Orlando's Flexible and Cost-Effective Approach

**AT A GLANCE:** Orlando made recycling more accessible for businesses by offering tailored waste management plans and flexible options like shared collection units, avoiding mandatory quotas. This approach reduced costs, simplified processes, and encouraged participation, fostering collaboration and supporting the city's sustainability goals.


## The Voluntary Action

Orlando implemented a range of measures to make recycling more accessible and appealing for businesses. Recognizing common barriers, the city provided tailored waste management plans to ensure that recycling was straightforward and easy to adopt. To accommodate businesses with limited space or resources, Orlando introduced flexible options, such as allowing shared collection units across properties or enabling businesses to exchange containers to better suit their needs. The city avoided mandatory recycling quotas, giving businesses the freedom to choose their haulers and operate within a framework that prioritized flexibility and collaboration.

## The Public-Private Connection

By reducing costs and simplifying processes, Orlando incentivized businesses to participate in recycling, helping divert waste from landfills and supporting the city's sustainability goals. The flexible approach, including shared collection units, enabled even small or space-constrained businesses to recycle, enhancing the strategy's reach and impact. Allowing businesses to select their haulers and customize recycling plans minimized the need for strict enforcement, contributing to greater compliance, goodwill, and collaboration between the city and private stakeholders.

# Key Takeaways from Waste Management

## + Empowering Communities Through Repair Programs

**Takeaways for Cities:** Funding community repair programs, like Fix-It Clinics in Austin and repair fairs in Cincinnati, help reduce waste while strengthening community engagement.

- **Impact:** Offer these programs for free eliminates barriers to participation, allowing individuals from diverse economic backgrounds to engage in circular practices.
- **Collaborative Model:** Partner with volunteers, local businesses, and venues to share expertise and resources. This not only keeps programs cost-free but also increases visibility and public engagement for participating businesses, boosting the local economy.

## + Providing Shared Spaces for Circular Innovation

**Takeaways for Cities:** Support small-scale circular initiatives by providing affordable or free shared spaces as seen with Charlotte's Innovation Barn.

- **Impact:** Shared spaces encourage collaboration among businesses, enabling them to share expertise and repurpose each other's waste, driving sustainability across sectors.
- **Scalable Potential:** Small-scale initiatives can inspire larger-scale circular material use, contributing to long-term waste diversion goals.
- **Financial Support:** Reduced financial stress for participants allows businesses to focus on innovation rather than operational costs.

# Key Takeaways from Waste Management (continued)

## + Incentivizing Sustainable Practices in Businesses

**Takeaways for Cities:** Use tailored incentives to encourage businesses to adopt sustainable circular design and waste management practices as seen in Phoenix's Green Business program.

> **Impact:** Present businesses with tailored recycling practices and product recyclability assessments to inspire design changes that lower end-of-life waste production.

> **Recognition as an Incentive:** Publicly recognize businesses for their efforts through programs, social media, or events to enhance their corporate social responsibility profiles, encouraging wider adoption of sustainable practices.

## + Facilitating Public-Private Partnerships for Efficient Waste Management

**Takeaways for Cities:** Act as a convener by fostering collaboration among waste management stakeholders, similar to Boulder's regular meetings with waste haulers.

> **Impact:** Regular meetings create a forum for solving problems, maintaining operational efficiency, and improving communication within the waste sector.

> **Outsourcing With Oversight:** Leave room for private providers but maintain active oversight to ensure alignment with city sustainability goals.

## + Creating Flexible, Inclusive Recycling Models

**Takeaways for Cities:** Lower financial and logistical barriers to recycling for businesses, as demonstrated by Orlando's approach.

> **Impact:** Offering cost-effective recycling options—such as reduced costs for recycling disposal compared to general waste—makes participation more attractive.

> **Flexibility:** Allowing businesses to share recycling units and choose their haulers enables small and space-constrained businesses to participate.

> **Community Building:** Creating flexible recycling models encourages collaboration within the business community, aligning economic incentives with sustainability goals and diverting more waste from landfills.

# 2 Food & Organics

Cincinnati, Philadelphia, and Austin have implemented innovative strategies to tackle food and organic waste challenges. Cincinnati's Last Mile Food Rescue redirects surplus food from landfills to feed those in need, while Philadelphia has expanded composting programs and integrated them with school initiatives. Austin emphasizes composting education for multifamily communities as part of its ambitious zero-waste goals. These initiatives highlight diverse and effective approaches that cities can adopt to reduce food waste and advance circular and regenerative food systems.

**LAST MILE FOOD RESCUE:**

# Tackling Food Waste in Cincinnati

**LEARN MORE**

**AT A GLANCE:** The Last Mile Food Rescue project, established in 2019 in Cincinnati, addresses food waste and hunger by rescuing surplus perishable food and delivering it to nonprofit partners. Supported by the City of Cincinnati and local organizations, the initiative has saved millions of pounds of food from landfills, promoting sustainability and community welfare.


## The Voluntary Action

The Last Mile Food Rescue project has become an essential force in Greater Cincinnati, addressing critical issues like food waste, hunger, and environmental sustainability. By rescuing surplus perishable food from grocery stores, restaurants, and event vendors, the organization prevents millions of pounds of good food from ending up in landfills. Volunteers deliver this food to nonprofit partners, such as shelters and food pantries, that distribute it to those most in need. In 2022 alone, Last Mile saved nearly 2.4 million pounds of food, contributing to a total of 4 million pounds since its launch. The City of Cincinnati, one of Last Mile's donors, plays a crucial role in supporting the initiative, ensuring it can continue to divert waste while helping to feed the community.

The U.S. Chamber Foundation's Beyond 34 program initially set the stage for exploring broader organics management in the city. Building on these efforts, the city is now planning smaller collection units for organic waste to complement its food rescue and sustainability goals, further reducing landfill contributions and supporting circular practices.

## The Public-Private Connection

Cincinnati's financial support plays a crucial role in enabling Last Mile Food Rescue to fulfill its vital societal function. As the organization provides surplus food to nonprofit partners, the operational costs for logistics, volunteer coordination, and outreach rely heavily on donations. The city's contributions ensure the continued success of this service, allowing it to divert food from landfills and redistribute it to those in need. A significant part of Last Mile's success comes from its strong ties with local organizations, including the Cincinnati Chamber of Commerce. One notable example of the success of this partnership occurred during the Taste of Cincinnati event. The U.S. Chamber Foundation helped inform event vendors about Last Mile's food rescue efforts, leading to the donation of over 1,000 pounds of leftover food, which was redistributed to local shelters like Shelterhouse.

**COMPOSTING:**

# Turning Philadelphia's Food Waste Into Community Benefits

**LEARN MORE**

**AT A GLANCE:** Bennett Compost collaborates with the City of Philadelphia to collect food scraps from over 5,000 households and businesses weekly, diverting more than 70 tons of waste from landfills and producing high-quality compost for community gardens. This partnership, which includes educational programs and support for city initiatives, exemplifies how public-private efforts can align business operations with municipal sustainability goals.


## The Voluntary Action

Bennett Compost, a Philly-based company founded in 2009, collaborates with the City of Philadelphia to provide composting solutions for residents and businesses. Each week the company collects food scraps and compostable materials from over 5,000 households and businesses, diverting more than 70 tons of waste from landfills. The collected material is processed into high-quality compost, which supports community gardens and urban green spaces and contributes to the city's waste reduction and sustainability goals.

## The Public-Private Connection

Through a partnership with the City of Philadelphia, Bennett Compost operates from a building on **park land**, exchanging its services with the Parks & Recreation Department for the facility space. It collects food waste from city programs, such as youth meals and after-school initiatives, turning it into nutrient-rich compost. In addition to supplying 11,000 pounds of compost annually to community gardens, Bennett also conducts educational programs at recreation centers, teaching youth about composting and waste reduction. This collaboration exemplifies how public-private efforts can align business operations with municipal sustainability objectives while benefiting the community.

**AUSTIN RESOURCE RECOVERY:**

# Improving Compost Quality Through Education

**LEARN MORE**

**AT A GLANCE:** Austin provides composting access to multifamily households to support its zero-waste goal, focusing on educating residents and property managers about proper composting practices. Austin Resource Recovery provides resources and approved recycling services to ensure cleaner compost streams, benefiting local agricultural and horticultural industries.

## The Voluntary Action

In October 2024, Austin expanded composting access to multifamily households, addressing findings from **a 2015 study** that identified 85% of landfill waste came from the commercial and multifamily sector, with 37% being compostable. This effort supports the city's zero-waste goal to reduce landfill waste by 90% by 2040. Educating residents and property managers on proper composting practices—such as what materials are compostable—ensures cleaner compost streams and enhances the effectiveness of the program.

## The Public-Private Connection

Austin Resource Recovery provides educational resources, including best practices, printable signage, and instructional videos, to ensure compliance and improve compost quality. Property owners can choose approved recycling services to ensure that compostable material is diverted to legitimate facilities. Many facilities sell compost to agricultural and horticultural industries, creating economic and environmental benefits. This ongoing communication helps ensure that residents, employees, and property managers are well informed, which ultimately leads to cleaner compost that can be better utilized by local businesses in various agricultural and horticultural applications.

**LESSONS FROM ORLANDO:**

# Building Resilient Public-Private Partnerships for Organics Collection

### The Voluntary Action

Orlando launched a pilot project in collaboration with a private partner to collect and process all types of organic household waste. For two years the program operated successfully, but the withdrawal of the partner forced the city to transition to a new waste hauler. Differences in recycling guidelines between the two haulers caused confusion among residents, leading to frequent contamination of the collected organics. This ultimately resulted in the dissolution of the new partnership and the cessation of organics collection in the city.

### The Public-Private Connection

This experience underscores the importance of thorough planning and evaluation in public-private partnerships. Consistency in guidelines and clear communication with residents are essential for a program's success. Potential partners should be assessed not only on operational performance but also on their alignment with long-term goals and their ability to provide sustained support. By prioritizing these factors, cities can build more resilient partnerships and avoid similar challenges in the future.

**REDUCING FOOD WARE WASTE:**

# Boulder's Collaboration with Startups

**LEARN MORE**

**AT A GLANCE:** Boulder supports sustainable practices by providing grants to incentivize reusable cups at events and backing startups like DeliverZero, a reusable container system for food delivery. These initiatives reduce single-use waste and promote community-wide sustainability, showcasing how targeted investments can drive systemic change and environmental benefits.


## The Voluntary Action

Boulder encourages sustainable practices by supporting private initiatives through targeted grants and collaborations. The city provides up to $5,000 to incentivize the use of reusable cups at city-permitted events, reducing single-use waste. Boulder also became an early backer of DeliverZero, a reusable container system for food delivery and takeout. The startup, with a 98% container return rate and partnerships with 200 restaurants across New York City, Denver, and Boulder, credits the city's grant funding for helping overcome early financial hurdles and establishing operations locally. These initiatives reflect Boulder's commitment to reducing waste at the source by promoting innovative solutions.

## The Public-Private Connection

Boulder's financial support plays a key role in encouraging private-sector adoption of sustainable practices. By reducing barriers for businesses to implement waste-reduction initiatives like DeliverZero, the city directly addresses the overuse of disposable food ware, which accounts for nearly 1 trillion pieces annually in the U.S. These partnerships empower startups to scale, driving systemic change while promoting community-wide sustainability. Boulder's approach highlights how targeted investments can lay the foundation for long-term private sector success and broader environmental benefits.

# Key Takeaways for Food and Organics: Advancing Circularity Through Collaboration

## + Reducing Organic Waste While Supporting Communities

**Takeaways for Cities:** Partnerships with nonprofits like Cincinnati's support for Last Mile Food Rescue can effectively reduce organic waste while addressing food insecurity.

> **Impact:** Funding enables nonprofits to cover operational costs and expand their reach, benefiting both the environment and residents in need.

> **Collaborative Model:** Nonprofits rely on sustained partnerships to maintain and grow their services, demonstrating the importance of consistent municipal support.

## + Innovative Partnerships for Composting Solutions

**Takeaways for Cities:** Cashless partnerships, such as Philadelphia's collaboration with Bennet Compost, can lower barriers for businesses while reducing organic waste.

> **Impact:** Providing facility space removes up-front investment barriers and reduces operational costs, enabling businesses to scale sustainably.

> **Community Benefits:** Partnerships that contribute to community gardens and educational programs create shared value and support local engagement and circularity.

## + Educating Communities for Cleaner Compost Streams

**Takeaways for Cities:** Providing extensive educational resources, as Austin does, is critical for ensuring high-quality compost streams.

> **Impact:** Clear guidelines and accessible information help reduce contamination, making compost more usable for agricultural and horticultural applications.

> **Strategy:** The distribution of materials such as flyers, videos, and signage ensure widespread understanding of composting requirements.

## + Aligning Goals for Long-Lasting Collaborations

**Takeaways for Cities:** Successful partnerships, as learned from Orlando's experience, require alignment on long-term goals from the outset.

> **Impact:** Align on clear, shared objectives between municipalities and private partners to strengthen more resilient collaborations, avoiding disruptions that can hinder progress.

> **Lesson Learned:** Evaluate potential partners not only on operational performance but on their ability to align with the city's strategic vision.

# 3 Circular Built Environment

The built environment offers significant opportunities for cities to reduce waste and environmental impact while increasing economic and social benefits. Cities like Portland, Phoenix, and Atlanta showcase how deconstruction, material reuse, and adaptive reuse strategies can transform construction practices, reduce landfill waste, and empower communities.

**CERTIFICATION FOR DECONSTRUCTION OVER DEMOLITION:**

# Portland, Oregon's Progress

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**AT A GLANCE:** Portland, Oregon, has advanced sustainable construction through public-private partnerships, collaborating with companies to certify deconstruction projects and foster a deconstruction industry focused on material reuse. The Bureau of Planning and Sustainability supports these efforts with grants, enabling deconstruction projects, training opportunities, and community awareness initiatives to promote sustainability and economic growth.

## The Public-Private Connection

Portland, Oregon, has made significant strides in sustainable construction through its public-private partnerships, particularly in the realm of deconstruction. The city collaborates with 11 private companies that serve as certifiers for circularity in deconstruction projects, creating entrepreneurship and ownership opportunities within the community. This connection has led to the development of a deconstruction industry dedicated to salvaging materials for reuse rather than sending them to landfills.

## The Voluntary Action

To support these initiatives, the Bureau of Planning and Sustainability provides grants that have been pivotal in improving deconstruction over demolition activity in the city. These funds help cover the costs associated with deconstruction projects and encourage new contractors to enter the field. For example, the Deconstruction Grant Program has enabled the deconstruction of 24 houses and has provided essential training opportunities for emerging workers in the industry.

Community awareness has also been a focal point of these efforts. Grant-funded projects require signage at deconstruction sites, informing neighbors about the salvaging process and facilitating dialogue around it. This engagement helps build understanding and support for the initiatives, demonstrating how the public and private sectors can work together effectively to enhance sustainability and create economic opportunities.

**ADAPTIVE REUSE PROGRAM:**

# Revitalizing Neighborhoods in Phoenix

**LEARN MORE**

**AT A GLANCE:** Phoenix's Adaptive Reuse Program, launched in 2008, helps businesses and developers renovate historical structures by streamlining the adaptation process and providing financial support. This initiative reduces urban sprawl, promotes walkability, and stimulates local economies by preserving cultural heritage and minimizing the need for new construction.


## The Voluntary Action

The Adaptive Reuse Program was launched as a pilot program by the City of Phoenix in 2008. The program aims to help businesses and developers renovate and prepare historical structures for a new purpose. The city provides participants with a more streamlined process of adapting a building and offers funds to relieve some of the financial burdens associated with renovation. It has become one of the most comprehensive programs of its kind in the country and has served as a model for other cities like Los Angeles and Dallas.

## The Public-Private Connection

By reusing existing infrastructure, the program reduces urban sprawl and promotes the city's walkability while revitalizing older neighborhoods in the process. It also reduces environmental impact by minimizing the need for new construction. In addition to preserving an area's cultural heritage, the program stimulates local economies. The city offers credits that can be applied toward commercial plan review and permit fees, reducing costs by up to $7,000 per eligible project. The program also offers fee reductions for building renovations, including reduced development fees for small businesses. These initiatives help small businesses that lack the capital to repurpose older buildings and finance renovations without facing the full financial burden of meeting modern building codes.

**LIFECYCLE BUILDING CENTER:**

# Reclaiming Building Materials in Atlanta

**LEARN MORE**

**AT A GLANCE:** The Lifecycle Building Center (LBC) in Atlanta repurposes a historic industrial space to reclaim and reuse building materials, promoting environmental sustainability and community empowerment. Supported by the City of Atlanta and EPA, LBC transformed the site into a hub for circular benefits, preserving industrial heritage and advancing resilience.


## The Voluntary Action

The LBC represents a repurposing of a historic industrial space for community and circularity benefits. The facility spans 70,000 square feet and has a rich history as a foundry and manufacturing site, but it faced the threat of demolition before LBC acquired it in 2016. LBC is dedicated to promoting a world where reuse is the norm and focuses on empowering communities by reclaiming and reusing building materials, ultimately contributing to environmental sustainability and resilience.

## The Public-Private Connection

The City of Atlanta and EPA provided over $80,000 in environmental assessment funding, enabling LBC to address contamination issues like lead-based paint and apply for a $200,000 EPA Brownfield Cleanup grant in 2017. This support was pivotal in transforming the historic industrial site into a hub for reclaiming and reusing building materials. By prioritizing cleanup and repurposing, Atlanta preserved its industrial heritage, empowered community engagement, and aligned with broader goals of sustainability and resilience. The partnership demonstrates how local governments can collaborate with nonprofits to revitalize underutilized spaces for circular benefits.

# Key Takeaways for Circular Built Environment

## + Promoting Deconstruction and Material Reuse

**Takeaways for Cities:** Programs like Portland's deconstruction initiatives demonstrate how targeted support can reduce construction waste and environmental impact.

> **Impact:** Deconstruction grants enable businesses to adopt sustainable practices, creating employment opportunities and driving sector growth.

> **Community Engagement:** Public signage at deconstruction sites raises awareness and promotes sustainable building practices among residents.

## + Encouraging Adaptive Reuse of Existing Infrastructure

**Takeaways for Cities:** Phoenix's adaptive reuse program highlights how reusing old buildings can reduce construction waste while revitalizing urban areas.

> **Impact:** The reuse of infrastructure minimizes urban sprawl, promotes walkability, and preserves historical character.

> **Business Benefits:** Incentives like reduced development fees and streamlined processes encourage participation from developers and small businesses, increasing program impact.

## + Fostering Partnerships Aligned with Circular Goals

**Takeaways for Cities:** Atlanta's collaboration with the LBC shows the value of funding partnerships that align with city ambitions to reduce landfill waste and empower communities.

> **Impact:** LBC's facility, established in a historically significant building, provides affordable building materials and educational workshops and makes home improvements more accessible.

> **Community Benefits:** Savings on materials allow partners to reinvest in community programs, enhancing local engagement and sustainability.

# 4 Circular Industries

Circular industries reduce waste, create sustainable jobs, and strengthen collaboration. Phoenix's Microfactory transforms plastic waste into raw materials through partnerships with the city and Goodwill, while the Portland Clean Energy Community Benefits Fund (PCEF) supports projects that connect sustainability with underserved communities. These initiatives demonstrate how cities can drive innovation and address local economic and social needs.

**CIRCULAR PLASTICS MICROFACTORY:**

# Empowering Communities Through Circular Plastics in Phoenix

**LEARN MORE**

**AT A GLANCE:** Phoenix's Circular Plastics Microfactory, established through partnerships with Arizona State University, Goodwill, and Hustle PHX, converts plastic waste into new products and creates skilled job opportunities, supporting the city's Zero Waste initiative. This facility exemplifies strong public-private collaboration, empowering marginalized communities and supporting sustainable innovation and economic growth.

## The Voluntary Action

Phoenix introduced a groundbreaking Circular Plastics Microfactory, established through partnerships among Arizona State University (ASU), Goodwill, and Hustle PHX. This innovative facility aims to convert plastic waste into new products, such as skateboards and furniture, while also generating skilled job opportunities. By processing plastic waste sourced from Goodwill into pellets, the Microfactory not only diverts an estimated 550 tons of plastic from landfills annually but also supports Phoenix's sustainability goals, including its Zero Waste initiative aimed at diverting 90% of waste from landfills by 2050.

## The Public-Private Connection

The Circular Plastics Microfactory thrives on strong public-private collaboration. Hustle PHX empowers marginalized communities by integrating cooperative ownership and small-batch production, while partnerships with businesses support prototyping and plastic feedstock supply. Phoenix provides funding, infrastructure, and policy support, enabling sustainable innovation and economic growth. Collaborating with ASU and Goodwill, the city connects different types of stakeholders from business and educational research fields, creating a model that serves as an example for circular economy practices globally.

**CLEAN ENERGY FUND:**

# Portland's Community-Led Climate Solutions

**LEARN MORE**

**AT A GLANCE:** The Portland Clean Energy Community Benefits Fund (PCEF) focuses on initiatives that tackle issues like clean energy, regenerative agriculture, workforce development, and transportation decarbonization, particularly benefiting underserved communities. Its success relies on voluntary collaboration among nonprofits, businesses, schools, and government agencies, driving innovation and contributing to Portland's net-zero emissions target by 2050.


## The Voluntary Action

The PCEF supports community-led initiatives to address climate change while prioritizing the needs of historically marginalized groups. Nonprofits and community organizations apply for PCEF funding to implement projects focused on clean energy, regenerative agriculture, workforce development, and transportation decarbonization. These efforts directly enhance social, economic, and environmental outcomes for communities of color and low-income residents, aligning with Portland's broader climate action goals.

## The Public-Private Connection

While PCEF operates within the framework of a voter-approved policy, its success relies on voluntary collaboration among nonprofits, businesses, schools, and government agencies. These partnerships drive innovation and expand the reach of funded projects, ensuring they address local needs while contributing to the city's net-zero emissions target by 2050. This voluntary engagement enables stakeholders to take meaningful action beyond regulatory requirements, fostering grassroots climate solutions with broad community impact.

# Key Takeaways for Circular Industries

## + Supporting Sustainable Industries Through Strategic Funding

**Takeaways for Cities:** Funding initiatives like Phoenix's Microfactory can reduce landfill waste while promoting job creation in sustainable industries.

> **Impact:** Critical funding enables the establishment of recycling operations, turning plastic waste into raw materials. Partnerships with organizations like Goodwill provide access to existing waste streams and infrastructure, reducing costs and ensuring consistent production.

> **Cross-sectoral collaboration:** By pooling different types of organizations in or around a location, Phoenix harnesses the different strengths of its diverse fabric to create innovative circular solutions. Educational institutions and businesses collaborate and reap wider benefits, such as teaching future generations through practical means.

## + Empowering Community-Led Sustainability Projects

**Takeaways for Cities:** Programs like Portland's PCEF demonstrate how targeted funding can support nonprofits focused on social impact.

> **Impact:** By connecting nonprofits, businesses, schools, and government agencies, PCEF boosts collaboration and ensures that resources reach underserved communities, creating widespread social and environmental benefits.

# Key Lessons: Advancing Circular Economies in Cities and Regions

Driving a circular economy requires cities and regions to take deliberate and strategic actions that enable circular activities to thrive. The lessons from the U.S. Chamber Foundation's Beyond 34 program highlight four critical interventions—scaling circular activities, providing space to kick-start circular action, facilitating community and public-private collaboration, and promoting community learning—that together create an environment for systemic change.

KEY LESSON 1

# Funding to Scale Circular Activities

Public-private collaborations play a pivotal role in advancing circular economy initiatives by combining resources, expertise, and funding to overcome barriers to scaling. Circular initiatives, such as recycling and reusing, often face high initial costs due to limited infrastructure and economies of scale. Partnerships enable access to the financial and operational support necessary to bridge these gaps, particularly during early stages when the business case for circular activities may not yet be fully established. Over time, as partnerships drive efficiency improvements and resulting cost reductions, circular activities can become self-sustaining and replace resource-intensive linear practices.

Case studies from the U.S. Chamber Foundation's Beyond 34 program highlight the transformative potential of partnerships. In Phoenix, the Microfactory was established through city funding combined with a partnership with Goodwill, which ensured a consistent supply chain for processing plastic waste. This collaboration reduced operational barriers and created a model for sustainable circular practices. Similarly, in Portland, partnerships between the city and contractors were supported by deconstruction grants, which encouraged material recovery from demolished buildings, advanced circularity, and created new employment opportunities in the sector.

Partnerships also empower community-driven initiatives, like Cincinnati's Last Mile Food Rescue, which integrates circular practices by reducing food waste while addressing food insecurity. Such collaborations ensure that funding and resources are aligned with local priorities, spurring innovation and addressing urban challenges. Beyond financial benefits, partnerships help circular activities align with broader city-wide sustainability goals, creating both immediate and long-term impacts.

## Takeaways for Cities

- **Create Collaborative Funding Models:** Use grants or loan programs to support circular initiatives that align with city goals and engage diverse stakeholders, including businesses, nonprofits, and community groups.
- **Address Shared Infrastructure Needs:** Partner with private and nonprofit organizations to tackle infrastructure gaps in collection, processing, and logistics, helping circular businesses achieve scale.
- **Strengthen Long-Term Partnerships:** Build partnerships based on shared goals, ensuring alignment across stakeholders and fostering trust and accountability for long-term success.

## Takeaway for Businesses

**Partner for Growth:** Businesses can collaborate with local governments and nonprofits to secure funding, resources, and logistical support for circular initiatives. Engaging in partnerships, like the Microfactory in Phoenix, can provide access to stable supply chains and infrastructure, reducing barriers and accelerating the adoption of circular practices.

KEY LESSON 2

# Revitalizing City Space for Circular Activities

Reusing and revitalizing urban spaces is a powerful way to support circular activities while contributing to community development and sustainability. Circular initiatives, such as material reuse centers, repair hubs, and composting programs, thrive when provided with accessible and functional spaces. Cities can transform underutilized buildings or industrial sites into vibrant hubs for circular activities, enhancing urban regeneration and community engagement.

Case studies from the U.S. Chamber Foundation's Beyond 34 program highlight the potential of this approach. In Portland, deconstruction grants promoted material recovery from demolished buildings, reducing waste, and at the same time, public awareness was fostered through visible site signage. Similarly, Phoenix's adaptive reuse program revitalizes older buildings, transforming them into spaces for circular activities while preserving historical character and enhancing walkability. The Charlotte Innovation Barn offers another example, repurposing a former city garage into a dynamic hub for circular economy startups and initiatives. By providing affordable space and supporting collaboration among sustainable businesses, the Barn supports innovation and strengthens Charlotte's circular economy.

Revitalized spaces also encourage collaboration and innovation. Cities can establish incubators or "innovation barns" to support startups working on circular solutions, providing resources, mentorship, and networking opportunities. Partnerships with local institutions can further transform these spaces into experimentation zones, enabling businesses to test circularity standards and develop scalable solutions that benefit the broader community.

## Takeaways for Cities

- **Leverage Underutilized Spaces:** Transform vacant or outdated buildings into affordable hubs for circular activities. Focus on spaces that can serve multiple purposes, such as repair shops, community composting, and material storage facilities.
- **Foster Public Engagement:** Use visible projects, like deconstruction sites or repair cafes, to connect communities with circular activities. Public interaction builds awareness and encourages participation in sustainability efforts.
- **Create Innovation Zones:** Support experimentation and collaboration by establishing incubators or hubs dedicated to circular startups. Provide resources and mentorship to encourage local businesses to develop new solutions across various sectors.

## Takeaway for Businesses

**Leverage Revitalized Spaces:** Collaborate with cities to utilize repurposed spaces for operations, gaining affordable access to infrastructure while engaging with networks and increasing visibility. Use innovation hubs, like Charlotte's Innovation Barn, to test and refine circular products and services, aligning with urban sustainability goals.

KEY LESSON 3

# Fostering Collaborative Networks

Collaboration is fundamental to the success of circular activities, particularly in urban settings. Circular economy models, such as industrial symbiosis, thrive on partnerships where businesses and industries work together to ensure that residual materials from one process become valuable inputs for another. Cities are uniquely positioned to facilitate these connections, serving as conveners of diverse stakeholders, including manufacturers, waste processors, smaller circular innovators, and community organizations.

Case studies illustrate the power of city-led facilitation. In Atlanta, the Lifecycle Building Center (LBC) repurposes materials from deconstructed buildings, providing affordable resources for residents and businesses while reinvesting proceeds into community programs. This success was made possible through public funding aligned with private expertise. Similarly, Boulder operates an open market for waste collection service providers. To ensure that this system runs smoothly, the city hosts quarterly meetings with all stakeholders, addressing emerging issues and promoting cooperation. Cincinnati works with private partners and the NGO Green Umbrella to establish composting facilities, creating infrastructure that supports both waste reduction and community engagement. These collaborations demonstrate how cities can align diverse stakeholders to achieve circular economy goals effectively.

To build resilient circular ecosystems, cities can create networks where businesses share information about waste streams, enabling the development of circular loops. These networks spark trust and collaboration, integrating circular practices into the broader urban economy. Smaller circular businesses, in particular, benefit from partnerships with larger industrial players, gaining access to resources, infrastructure, and markets that might otherwise be out of reach. By prioritizing stakeholder collaboration, cities can drive systemic change at different scales to minimize waste and maximize resource efficiency.

## Takeaways for Cities

- **Create Platforms for Resource Exchange:** Develop city-led networks or platforms where businesses can share information about residual streams and available materials. These exchanges encourage industrial symbiosis and reduce waste.
- **Act as a Connector:** Facilitate partnerships between large manufacturers, waste processors, and smaller circular innovators. Provide logistical and technical support to align diverse stakeholders around shared goals.
- **Build Trust Through Transparency:** Ensure open communication between stakeholders to establish trust and long-term cooperation. Highlight the mutual benefits of resource sharing and waste reduction to shape stronger partnerships.

## Takeaway for Businesses

**Engage in Collaborative Networks:** Actively participate in city-led networks and collaboration platforms to identify resource-sharing opportunities, access larger markets, and strengthen partnerships that advance circular goals.

KEY LESSON 4

# Providing Information and Facilitating Community Learning

Cities play a pivotal role in raising awareness and boosting participation in circular economy efforts by providing accessible information and hands-on learning opportunities. Effective communication and education empower communities to adopt sustainable practices while strengthening local engagement.

Case studies from the U.S. Chamber Foundation's Beyond 34 regions highlight the impact of these initiatives. In Austin, the Reuse Directory connects residents with local repair services to make it easier to extend the life of goods and reduce waste. Digital tools, such as waste management apps, further support residents by simplifying proper sorting and recycling practices. Similarly, Cincinnati's Repair Fairs and Fix-It Austin workshops provide hands-on learning in skills like tool maintenance and bike repair, partnering with local businesses and venues to enhance community participation. These events reduce waste and strengthen ties between residents and the local economy.

On-site public engagement also plays a critical role. In Portland, signage at deconstruction sites informs neighbors about salvaging practices, leads to open dialogue, and increases public understanding of circular initiatives. This kind of visible, community-focused education deepens connections to sustainability efforts and encourages widespread support for circular practices.

By investing in education and outreach, cities can empower communities to take an active role in the circular economy, building a foundation for long-term change.

## Takeaways for Cities

- **Invest in Accessible Tools and Directories:** Create digital tools, such as apps or online directories, to connect residents with repair services and recycling programs. Ensure that these tools are user-friendly and widely promoted to maximize impact.
- **Organize Hands-On Learning Opportunities:** Host repair fairs, workshops, and community events to teach practical skills that empower residents to repair and reuse items. Partner with local businesses and venues to strengthen community ties and expand reach.
- **Incorporate Public-Facing Education:** Use visible initiatives, such as signage at repair or deconstruction sites, to raise awareness about circular practices. This approach encourages community participation and builds an understanding of sustainability efforts.

## Takeaway for Businesses:

**Enhance Circular Awareness Through Public-Private Connection:** Collaborate with city-led education programs to showcase expertise, connect with residents, and enhance visibility as a sustainability leader within the community.

By implementing these key lessons, cities can lay the foundation for a resilient circular economy, driving innovation, reducing waste, and building stronger partnerships across sectors. Through strategic funding, resourceful use of space, stakeholder collaboration, and community engagement, cities and businesses can unlock the potential of circular practices to address urban challenges and achieve long-term sustainability goals.

# Actionable Pathways for Communities and Businesses

# Cities

The U.S. Chamber Foundation's Beyond 34 initiative has demonstrated how cities can lead the transition to circular economies, making substantial progress in waste management, recycling, and sustainability across the U.S. This report provides insights as well as a practical toolkit of best practices that cities can adopt. To move forward, cities must turn lessons into actionable steps and focus on implementing systemic change.

## Concrete Next Steps for Cities:

### 1 Understand the Current System

- Begin by mapping material, energy, and human flows across the city. This includes analyzing spatial data and economic trends to gain a comprehensive understanding of the status quo. Tools like material flow analysis (MFA) can help identify hotspots where circular interventions will have the greatest impact.

### 2 Develop Tailored Strategies

- Use insights from system mapping to create customized strategies that align with local contexts.
- Collaborate closely with key stakeholders—including businesses, nonprofits, and community groups—to ensure buy-in and relevance.
- Focus on strategies that prioritize both short-term wins and long-term systemic transformation.

### 3 Provide Ongoing Monitoring and Feedback

- Establish robust systems to monitor progress toward circular economy goals, using clear metrics and regular evaluations. These monitoring systems enable cities to adapt strategies as needed and build confidence among stakeholders by demonstrating measurable progress.

### 4 Build Capacity and Knowledge Sharing

- Equip urban planners, policymakers, and financiers with the tools, skills, and knowledge they need to implement circular solutions effectively.
- Implement capacity-building efforts, such as workshops, training programs, and knowledge-sharing platforms, which are crucial for creating an ecosystem of expertise that supports circularity.

### 5 Leverage Funding and Partnerships

- Secure public and private funding to support scaling efforts, especially for initiatives with high societal benefits.
- Partner with local businesses and organizations to maximize resources and drive innovation in circular practices.

### 6 Revitalize City Spaces for Circular Activities

- Identify underutilized or vacant spaces that can be repurposed for circular activities, such as repair hubs, composting facilities, or innovation incubators. These spaces support circular businesses and strengthen community ties and urban resilience.

# Businesses

## 1 Leverage Support From Municipal and Local NGOs for Funds and Expertise

### Seek support from cities and nonprofits

- Apply for city grants and programs supporting circular business models.
- Collaborate with NGOs to access additional resources, shared spaces, and logistical support.

### Join city-led circularity initiatives

- Engage in city-run certification programs (e.g., Phoenix's Green Business program) to enhance circular business reputation and trust from citizens.
- Use city-backed (social) platforms to showcase commitment and actions taken to circularity and sustainability.

## 2 Revitalize and Promote Underutilized Spaces to Create Space for Experimental Circular Activities

### Set up startup operations in so-called Innovation Hubs or Incubators

- Locate your business within a (city-supported) circular economy space (e.g., Charlotte's Innovation Barn). Collaborate with the municipality to enhance the affordability of spaces in these hubs.
- Use these hubs for R&D, product development, and networking/synergizing with other circular businesses.

### Host public demonstrations and learning sessions

- Organize workshops, repair sessions, or behind-the-scenes tours in collaboration with municipalities to boost engagement and brand visibility.

## 3 Engage and Reap the Co-Benefits of Circular Resource-Sharing Networks

### Join industrial symbiosis networks

- Participate in or push for the creation of city-led platforms that allow businesses to exchange materials and byproducts to reduce costs, while enhancing circularity and the overall use of resources.
- Develop partnerships with waste processors and manufacturers to understand circular design needs and enable the high-value repurposing of materials effectively.

### Work toward internal adoption of circular practices

- Conduct internal audits to identify opportunities for reducing the waste of resources, focusing on design practices that integrate circular standards.
- Implement comprehensive take-back programs, repair services, or refurbished product lines.

## 4 Enhance Public-Private Educational Initiatives to Increase Community Awareness and Buy-In for Circular Activities and Products

### Support city-led awareness programs

- Provide expertise for city-organized sustainability workshops.
- Collaborate with local schools, universities, and community groups to promote reuse and repair culture together with prolonged circulation of resources.

### Use public-private partnerships for community outreach

- Leverage participation in repair fairs and sustainability events to connect with residents and promote circular business models.
- Sponsor or co-host circular economy initiatives to increase the visibility of circular actions.
- Collaborate with other businesses to ensure a level playing field, learn from each other, and exchange resources where applicable.

# NGOs and Community Organizations

## 1 Secure City Funding and Work on Private Partnerships

### Apply for municipal financial support

- Seek funding for community-driven repair programs, food rescue operations, and circular economy education initiatives.
- Advocate for long-term financial commitments from city governments to ensure the sustainability and full integration of such programs and their activities into people's minds and daily habits.

### Partner with local businesses to share resources like materials and expertise

- Collaborate with businesses to provide venues, tools, and expertise for repair fairs and sustainability workshops.
- Work with residual materials from local businesses to inform the business community how to give these resources a second life.

## 2 Work Toward Expanding Circular Education and Community Engagement

### Develop and distribute educational materials

- Create clear, accessible guides on composting, recycling, and repair practices.
- Use flyers, videos, and digital content to increase community awareness.

### Host hands-on learning events

- Organize repair cafes, community composting workshops, and deconstruction tours to build circular economy skills.
- Engage schools and youth programs to create long-term circular habits.

## 3 Work Toward Collaborative Models to Reduce Waste

### Strengthen community composting and food rescue initiatives

- Establish partnerships with city governments and waste management businesses to develop composting programs.
- Expand food rescue programs through partnerships with restaurants, grocers, and food banks.

### Support neighborhood-based recycling solutions

- Advocate for shared recycling programs that make it easier for small businesses and communities to participate and make resources circulate further.
- Develop partnerships with municipalities to implement flexible and low-cost recycling options for businesses and communities.

## 4 Advocate for Stronger Policy and City Vision for the Long Term

### Engage in municipal planning discussions

- Participate in city waste management meetings to ensure that community needs are considered.
- Advocate for equitable policies that support low-income and historically underserved communities in circularity efforts.

### Work with cities on adaptive reuse projects

- Help identify historically significant buildings that might be repurposed for community use.
- Provide input on the best ways to ensure community benefits from building reuse initiatives.

# How You Can Support Cities

The U.S. Chamber of Commerce Foundation ran the Beyond 34 initiative for several years. Launched in 2017, Beyond 34 was designed to increase the country's baseline 34% recycling rate by helping communities and businesses create closed-loop recycling and recovery systems that divert valuable resources from landfills. The initiative has been active in cities like Orlando, Cincinnati, Austin, Philadelphia, and Atlanta, providing a scalable model to identify and implement high-impact waste solutions tailored to local needs. The U.S. Chamber Foundation collaborated with corporations, local governments, local chambers, and technical partners, including Metabolic, to provide valuable lessons and actionable insights, including tools, templates, and case studies for communities to replicate successful strategies.

Metabolic remains a partner in advancing circular economy transitions in U.S. cities and regions. By combining data-driven analysis, stakeholder engagement, and practical tools, the company supports cities in creating sustainable systems that align environmental, economic, and community goals. Using tools like material flow analysis (MFA) and spatial data mapping, Metabolic provides a detailed understanding of resource flows, helping cities identify hotspots and prioritize impactful interventions. It collaborates with stakeholders to create actionable roadmaps tailored to local contexts, ensuring that strategies are feasible, inclusive, and focused on long-term transformation.

Additionally, Metabolic offers training programs and workshops to empower urban planners, policymakers, and local organizations with the skills and knowledge to implement circular practices effectively. It develops frameworks to track progress toward circular economy goals, allowing cities to adapt and optimize interventions over time. Metabolic also helps cities establish blended finance mechanisms that combine public, private, and philanthropic funding to support projects delivering community, sustainability, and economic outcomes. These funds enable integrated investments in areas such as green infrastructure, circular industries, and waste management initiatives.

By understanding their systems, engaging relevant stakeholders, and building the capacity to implement change, cities can achieve a more circular and sustainable future. For more insights or questions on how to bring Beyond 34's model to your community, contact Jorrit Vervoordeldonk, lead for cities and regions at Metabolic:

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