

Fort Collins Circular Economy Workplan

Introduction: What is Circular Economy?

In the traditional linear economy, materials follow the chain of “take, make, waste” where raw materials are taken from an environment, made into a product, and once that product has reached the end of its life, it is sent to the waste stream. In a circular economy, products come with only what is needed, last longer, are repairable, and, when they can’t be used anymore, are easily and safely recycled. A circular economy aims to eliminate waste by focusing on the reduction, recycling and reuse of materials, lowering the number of raw materials taken from our natural environment, designing products for longevity, and creating new business models that promote a sharing economy. **For Fort Collins, the circular economy is about rethinking current processes to effectively utilize natural resources to increase supply chain stability, create sustainable employment opportunities and ensure the resilience of our natural and built environment.**

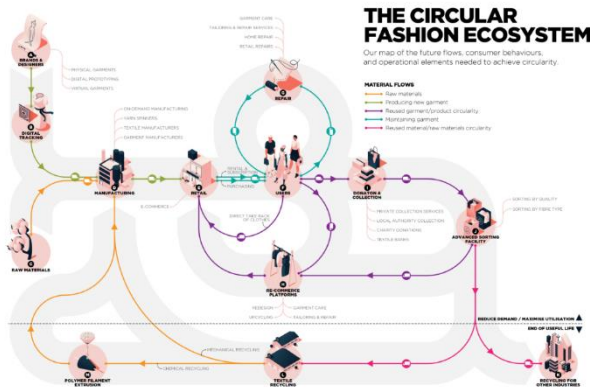


Circular Economy Concept - A Circular Ecosystem.

A circular ecosystem functions similarly to a natural ecosystem in that a given material can be handled by a variety of different players throughout its lifecycle. Recyclers, producers, consumers, repair services, thrift, and remanufacturers – all impact whether a material is kept in circulation or heads to a landfill. When systems keep materials moving in a loop, the results are circular products that are created with little to no raw materials, and its end of life in mind.

An example of a circular ecosystem in Fort Collins is around food. In Fort Collins, many grocers have ambitious goals to reduce food waste and hunger by the end of this decade. These goals work in synergy with a City regulation that grocers must donate or compost their food waste. Donated food goes to local non-profits like the Food Bank for Larimer County and Vindeket Foods. At these non-profits, food is “rescued” and distributed to community members who support the ecosystem by being okay with the occasional bruised piece of fruit or day-old baguette. Food that can’t be rescued is composted and used

to grow new food or build soil in local landscapes, closing the loop.



Connecting to other City plans.

Several existing City plans have incorporated circular economy strategies, including Our Climate Future, Municipal Sustainability and Adaptation Plan, and the updated Economic Health Strategic Plan. This Circular Economy Workplan aims to work alongside and propel existing strategies while also filling gaps left by these plans.

Our Climate Future - achieving zero waste.

Moving toward an economy that keeps materials circulating is significant to reaching the community’s goal to landfill zero waste by 2030 and the transformational outcomes outlined in the Our Climate Future plan (Zero Waste Neighborhoods and Zero Waste Economy). While achieving zero waste will involve familiar strategies like recycling more types of materials and improving recycling behavior, around 15%-20% of the community’s waste is made up of consumer products that aren’t designed to be recyclable or are hazardous wastes that require specialized disposal. The circular economy can fill that gap by innovating new ways to keep these materials in use and recycle them.

Read the Climate Action Plan here.

Connecting to climate action. Fort Collins’ Our Climate Future Plan identifies “Healthy Local Economy and Jobs” and “Zero Waste Economy” as two [Big Moves](#) for an equitable, carbon neutral, and resilient Fort Collins.

BIG MOVE 9

HEALTHY LOCAL ECONOMY AND JOBS

The community supports a healthy innovative local economy with new opportunities for all people and businesses to thrive.



The Economic Health Strategic Plan – supporting a healthy economy.

The circular economy elements of the Economic Health Strategic Plan seek to support manufacturers, life science, and climate tech sectors, as well as entrepreneurs, while taking the broader view of the ecosystem and considering how all parts of our local circular economy work together. While the City has already integrated circular strategies into some of its environmental plans, the Economic Health Strategic Plan offers a significant opportunity to advance Fort Collins' climate and equity goals, as well as close planning gaps such as:

- Economic health dimensions of the circular economy (cluster support, wealth generation, skills and training, business attraction, etc.).
- Cluster sector strategic gaps.
 - Other plans have focused primarily on individuals, small businesses, institutions, and the construction and demolition sector.
 - The manufacturing, life science, and climate tech sectors have the greatest opportunity for innovation.
- Non-regulatory strategies that support businesses transitioning to circular business models.

Read the Economic Health Strategic plan [here](#).

Why is circular economy important to Fort Collins and its businesses?

Climate change is present in all facets of our lives with significant impact on people, places, businesses, and entire economies and these impacts are only expected to grow. The changing climate also brings new opportunities for innovation to our local economy. Opportunities include developing new products, more efficient processes and services, and creating new jobs all while building a more resilient and equitable community.

How a changing climate may impact Fort Collins businesses.

Climate risks. Each sector is faced with their own climate challenges and at varying impacts; in response, businesses must adapt and have their own sustainable goals and practices. Most sectors will see some disruption within their business models and value chains such as:

- Increased scarcity and increased costs of natural resources
- Supply chain shortages

- Regulatory changes and unpredictability
- Increased inflation and cost of doing business
- Rising costs for resiliency and redundancy measures, capital, and insurance
- Suppliers, partners, and governments requiring the use of sustainable or reusable materials and processes
- Changing consumer preferences and behaviors that move towards sustainability

Climate opportunities. Becoming more circular can benefit businesses by:

- Lowering costs, improving efficiencies and competitiveness
- Strengthening supply chain systems
- Creating more opportunities for innovation and progress towards sustainability
- Strengthening workforce, while taking advantage of workforce opportunities for job training
- Attracting top talent with company's sustainability character and commitment to sustainability
- Strengthening resiliency and adaption in times of uncertainty
- Creating new partnerships with other businesses and industries
- Leverage local assets (institutional and technological assets) to strengthen industry ecosystems
- Influence of shareholder and employee values and expectations

How a shift to a circular economy may impact the workforce.

The shift towards a more adept circular economy presents **new opportunities for workforce training and workforce mobility**. The circular economy offers innovative approaches to develop an inclusive economy through the creation of new jobs, as well as the reskilling, upskilling, and new skilling (RUN) of workers.

The interconnected nature of a circular economy means it involves many different types of high-skilled jobs – requiring technical work as well as jobs in engineering, science, design, and other areas of innovation. The circular economy model allows the opportunity to improve the quality of employment for our community by promoting inclusive and diverse jobs that continually provide new skills and training opportunities. This is necessary in an evolving, dynamic economy that promotes innovation.

How do we get to a circular economy?

Transitioning to a circular economy requires ambitious and deliberate efforts to create new processes and expand knowledge and infrastructure. It requires many different players working together to create a successful circular ecosystem. Institutions, like government and universities, have a role to play in this system, as do community members and business leaders.

The City's role.

Government can play a crucial role in advancing the circular economy through legislation, creating and developing programs and services, and as a large employer and organization through its own informed decisions around internal operations. The City is in the unique position that can propel the demand for circular products and influence the way organizations operate while leading by example through internal processes and policies.

Industry as a key partner.

Industrial activities, including private and public firms, (see call-out box for more details) are responsible for around 68,000 tons of landfilled waste each year. Because of this, industry is recognized as a partner

to driving a strong, effective circular economy. Industry partners can transform the traditional linear model into a more sustainable and regenerative system. Increasing circularity in local and regional industries not only support Fort Collins’ goal to become zero waste, it also reduces pollution, greenhouse gas emissions, and waste globally.

While 66% of industrial waste is already recycled, the circular economy is a way to get the rest of the way to 100% *and* reduce residential waste too.

What’s in our industrial waste?

Fort Collins *industrial* waste comes from a variety of industrial activities. Some of the biggest sources include:

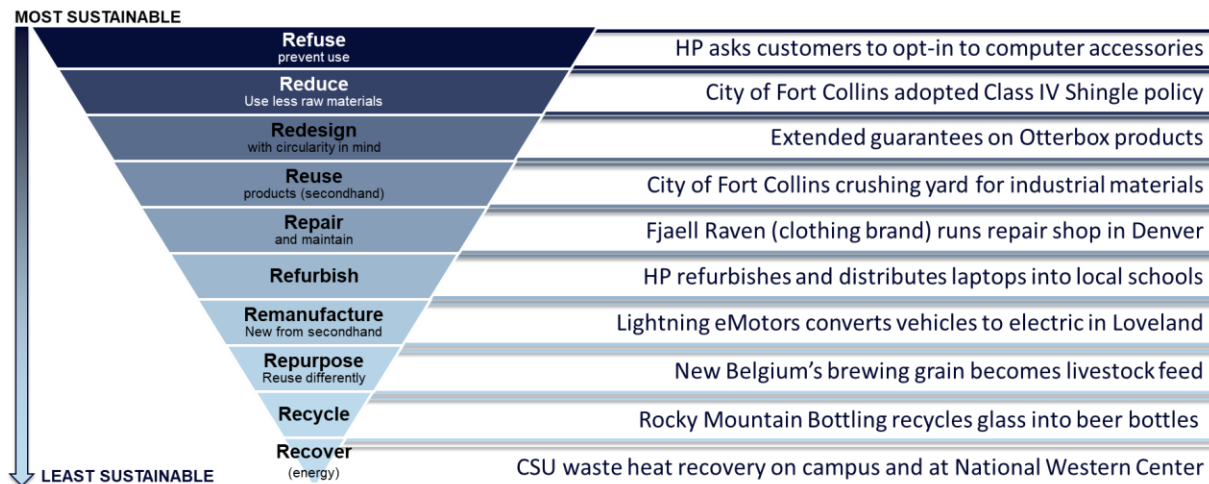
- Construction of roads and infrastructure
- Construction of buildings
- Manufacturing

What’s made in Fort Collins?

- Food and beverages
- Computers and electronic products
- Machinery
- Plastics and rubber products

Circular Strategies.

Most people know the adage “reduce, reuse, recycle” but there are many more “R-strategies” that can have a big impact on creating a more circular community. Many Fort Collins manufacturers, retail businesses, institutions and community groups are already leading the way by applying other “r-strategies” like refusing, reducing, redesigning and more. See the figure for examples and a few highlighted local leaders. The higher up the “R” hierarchy, the better the environmental impact.



In order to cultivate an environment where “r-strategies” are not only more accessible but a common practice, a shift in culture and way of life must occur. This workplan identifies four key objectives to get us started.

Objectives for a Circular Fort Collins

The strategies and actions detailed in this plan combine with existing efforts (Our Climate Future, the Municipal Sustainability and Adaptation Plan, and many community efforts) to jumpstart the circular economy in Fort Collins. These strategies are to:

1. Lay the groundwork

Develop internal infrastructure and common practices that will prepare Fort Collins for the shift to support a circular economy.

2. Lead by example

Leverage the City's leadership role to grow the Fort Collins' circular economy and encourage others to participate.

3. Develop circular businesses

Focus business development efforts to support businesses interested in implementing circular strategy.

4. Innovate

Partner with local stakeholders to test innovative circular practices and concepts in Fort Collins and collaborate with other communities to help scale the circular economy globally.

Objective 1. Lay the groundwork: Develop internal infrastructure and establish standardized practices to effectively transition Fort Collins towards a circular economy.

Key Initiatives:

- **Create an asset map of existing circular ecosystems, their gaps, and potential new ecosystems.**

Create an asset map of Fort Collins' existing circular ecosystems, identify any gaps, and explore opportunities for new ecosystems. This comprehensive map should encompass the existing initiatives and work undertaken by local institutions, organizations, industry partners, and other community groups. By understanding and leveraging the work of others will lead to better collaboration and the acceleration of a circular community.

Work with a consultant to help identify and categorize the existing circular ecosystems, which could include sectors like waste management, recycling facilities, sustainable product design, and remanufacturing. For each ecosystem, identify the key players, their roles, and the resources they contribute. Link each ecosystem, gap, and potential opportunity to specific goals and strategies.

A comprehensive asset map serves as a dynamic tool for stakeholders to understand the current circular economy landscape, strategically plan interventions, and catalyze the formation of new ecosystems that drive sustainable and circular practices.

- **Define measurable goals and metrics that will enable tracking Fort Collins' progress in transitioning to a more circular economy.**

Establish concrete and measurable benchmarks and performance indicators to effectively monitor and evaluate the strides made by Fort Collins, in its transition towards a more circular economy. This involves crafting specific goals that can be easily tracked and quantified through key metrics that will provide a comprehensive view of the city's progress. This will also provide better transparency in circular strategy and ensure stakeholder participation.

Metrics could encompass various aspects of the circular economy such as those that track waste diversion, the percentage of businesses adopting and implementing circular principles and strategies are indicators that can provide insights into the city's circular economy transition. Other economic indicators such as the growth of circular economy-related industries, job creation in sustainable sectors, and investments in circular initiatives, can shed light on the economic benefits derived from this transition.

The inclusion of quantifiable objectives and well-defined metrics will enable stakeholders to comprehensively track and analyze Fort Collins' journey towards a more circular economy, allowing for informed decision-making and effective resource allocation.

Objective 2. Lead by example: Leverage the City's leadership role to grow the Fort Collins' circular economy and encourage others to participate.

Key Initiatives:

- **Update City purchasing policy to support more City purchases of locally manufactured (circular) products.**

The City can enhance its purchasing policies to increase the procurement of both local and circular products. The City as a large organization holds influence in establishing stronger local procurement opportunities for all industry to utilize. The City's purchasing power is significant and could create demand for certain types of products and even positively impact market conditions for recycled products. Supporting local procurement practices additionally supports circular start-ups and entrepreneurs to meet local demands. Local procurement also plays an important role in supporting a circular economy by reducing waste streams and transportation impacts, supporting resource conservation, and strengthening supply chains, as well as promotes local economic resilience.

- **Identify and make City spaces and land available for circular initiatives and meeting spaces for circular-focused manufacturers, start-ups, and community groups.**

The City is a significant land holder in Fort Collins, a community with increasing costs to rent or purchase land or commercial space, especially for start-ups and entrepreneurs. By making its real estate assets available for circular economy projects, the City could reduce a significant barrier to innovative initiatives and start-ups.

This would entail working with the City's Real Estate Services Department to integrate circularity as a priority criterion for requests that end up in their review process. Additionally, it would look to proactively advertise un- or under-utilized spaces for life sciences and climate tech start-ups and entrepreneurs and other companies or organizations with circular initiatives.

- **Increase advocacy at different levels of government to ensure circular business goals and needs are met, including green investment funds, business-supportive policies, and recycled material availability.**

This strategy is one of the greatest levers the City can pull to advance the circular economy both within and beyond Fort Collins' borders. Where alignment exists with Fort Collins Council's Legislative Policy Agenda, the City can increase its advocacy for policies that support circularity and the circularity goals of Fort Collins businesses through member organizations like Colorado Communities for Climate Action (CC4CA), Recycle Colorado, and Colorado Municipal League. These same avenues are opportunities to ensure other barriers to circularity are reduced for all Colorado businesses, for example consistent regulatory frameworks across the State, stronger regional recycling markets, and more consistent access to capital for circular projects.

Objective 3. Develop circular businesses: Focus business and workforce development efforts to support businesses and community members interested in implementing circular strategy.

Key Initiatives:

- **Attract circular-focused businesses and those motivated to implement circular strategies, especially those that can close an eco-system gap.**

Circular-driven businesses, particularly tech start-ups, are critical to support and enhance local circular economy eco-systems and other areas of innovation. Additionally, the City seeks to engage other essential support industries such as plastics, composting, etc., or suppliers that can help bridge specific gaps within clusters. Furthermore, the City aims to attract businesses that share the community's values of the triple bottom line, working towards their sustainability goals as an organization.

- **Leverage existing relationships with industry leaders, networks, and other business development efforts to foster the growth of more circular strategy among industry leaders.**

Utilize existing convenings and networks of manufacturers to discuss circularity opportunities together, which would encourage collaborative problem-solving, knowledge sharing, and networking. By engaging industry leaders, this can help create meaningful dialogue and shared insights. This collective effort empowers manufacturers, who already hold the collective expertise and knowledge within the industry, to collectively examine the vast array of opportunities and advantages offered by adopting circular practices.

Another important component in supporting industry in the circular space is to compile, elevate, and regularly share local circular manufacturing case studies. Providing real-world examples helps demonstrate how adopting circular practices can benefit businesses, including improved efficiencies and competitiveness, strengthened supply chains, workforce opportunities, and many more. Furthermore, there is an opportunity to explore how leading circular businesses can be compensated for their teaching role around circular economy.

- **Provide tailored support to help businesses and entrepreneurs navigate government systems and connect to start-up funding.**

Provide support to community organizations, businesses, and entrepreneurs to understand how to navigate government systems and connect to startup funding for circular innovation. This support will

involve understanding their specific needs and barriers. Then guiding them through government systems and facilitating connections to various startup funding opportunities, including green financing, start-up and research grants, and other essential resources.

- **Promote the development of accessible career pathways that create a strong talent pipeline reflective of a local circular economy.**

By forging strategic partnerships and developing specialized programs, Fort Collins seeks to meet the evolving needs of the local workforce as well as needs of industry while supporting sustainable economic growth. The City will continue to elevate and explore new programs including training and development programs, certifications, and other post-secondary education that promote circular employment, including those that are directly involved or indirectly supports circular economy:

- Core circular jobs that ensure the closure of raw material cycles (e.g., jobs in repair, renewable energy, waste management).
- Enabling circular jobs that intend to remove barriers for core circular activities to occur (e.g., jobs in education, design, digital technology).
- Indirect circular jobs that work within other sectors and adopt circular strategies (e.g., jobs that provide services to circular strategies such as logistics, financial institutions, farmers, manufacturers).

Objective 4. Innovate: Partner with local stakeholders to test innovative circular practices and concepts in Fort Collins and collaborate with other communities to help scale the circular economy globally.

Key Initiatives:

- **Research and prioritize opportunities for co-location of material producers and users, underutilized spaces, ideas, recycling, sharing, and reuse services.**

This strategy involves collaborating with a consulting firm to conduct spatial and qualitative analyses, aimed at identifying potential opportunities for co-location in Fort Collins. This will help us to understand how the physical locations of materials within the community impact their circulation, and whether they end up in landfills. By conducting a spatial analysis of materials and circular opportunities in Fort Collins, the City can prioritize their implementation, capitalize on early opportunities, and plan for potential transitions in City policies in the long term.

- **Identify and collaborate on demonstration projects that have visibility in both the business community and the larger community.**

In the early-adoption phase of new concepts, it's important to have tangible examples that can be experienced first-hand in the community. Demonstration projects, such as the Colorado State University Fashion and Circular Economy Symposium, help tell the story of circularity and lets businesses test new and innovative concepts in a way that lets others benefit from lessons learned. Examples from other communities include co-locating coffee shops with mushroom growers, creating circular office parks that house public meeting spaces and circular start-ups, or having local shops sell products made from rescued food waste (e.g., beer brewed from old bread).

- **Support the development of circular ecosystems using an innovation lab approach with meaningful implementation funding.**

Materials circulate within a system of users and stakeholders, ranging from recyclers, to producers, consumers, repair services, thrift, and remanufacturers. Institutions like government and academia have a role in the system too. When these systems close the materials loop to become circular, they function almost like an eco-system.

What each eco-system needs is unique and related to the specific products it produces, for example what the local beer industry needs to function as a circular ecosystem is likely very different than what the tech industry needs. By convening these industry ecosystems individually, the group can work together to set relevant goals, identify barriers and needs, and advance strategies collectively. One method to convene eco-systems towards a bigger goal is the innovation lab approach.

Through this Circular Economy Workplan, the City of Fort Collins aims to help the business community foster sustainable progress, while also helping businesses take advantage of new opportunities. The actions in this workplan can guide Fort Collins forward in the pursuit of a more equitable and sustainable economy and create a more inclusive environment. This requires a collaborative effort of all partners, including government, local industries, community organizations and residents. As a main hub in Northern Colorado, Fort Collins has the potential to propel the circular economy and build a more sustainable environment and economy locally, regionally, and globally.

Local Examples

HP recycles devices responsibly:

Here's what local tech leader HP says about their contribution to the circular economy:

"We're committed to reducing the e-waste, carbon emissions, and energy consumption – and we know you are, too. You can reduce your organization's environmental impact when you return your devices to HP for restoration, reuse, or responsible recycling.

When our products reach end-of-use status, our regulation-compliant programs support responsible collection and processing to cover as much material as possible – reducing negative effects on the ecosystems and human health.

HP contributes to a circular economy by actively growing the supply chain and market for recycled materials, as well as by empowering communities with a better quality of life and economic opportunity."

Hoffman Mills supports circular construction

The construction and demolition industries deal with a lot of materials, which means they have a lot of circular economy potential. The City of Fort Collins crushing facility and its construction company customers do a lot to make Fort Collins circular! The facility reprocesses and stores construction materials like asphalt and concrete until they are needed for a new building project.

New Belgium cycles

New Belgium Brewing is known for supporting a culture of bicycling but that's not the only type of cycle they invest in. New Belgium is a local leader in circular economy and regularly partners on advocacy

efforts that bring more circular opportunities to keep materials cycling in all of Colorado's industries. Here's how the City of Fort Collins can support their efforts!

"It's great when cities are tuned into state and federal programs which benefit decarbonization and circularity goals."

Next Steps

Progressing forward with the Circular Economy Plan involves several crucial next steps:

1. **Council adoption and implementation:** Having received approval from the Fort Collins City Council solidifies the City's commitment and provides the necessary mandate to proceed with the outlined strategies.
2. **Stakeholder alignment:** Securing the support and engagement of local stakeholders is critical. Collaborating with businesses, community organizations, and community members will ensure a unified effort in achieving our circular economy objectives. **Industry must be involved so the system supports them as they move towards circular practices.**
3. **Resource allocation:** To effectively drive this initiative forward, the City must commit to allocating appropriate resources, including staff and budget. These resources are vital to facilitate the implementation, monitoring, and continual refinement of a local circular economy. Resources necessary to move the circular economy plan will be proposed in the next the City Budget For Outcomes (BFO) cycle.
4. **Progress enablers:** To move this plan forward, we need a combination of factors, including effective communication strategies, engagement programs, industry and community buy-in, regular performance assessments, and built-in flexibility to adapt to evolving circumstances.

With these strategic steps, we are well-prepared to advance a circular economy plan, fostering a resilient and thriving economy and community.