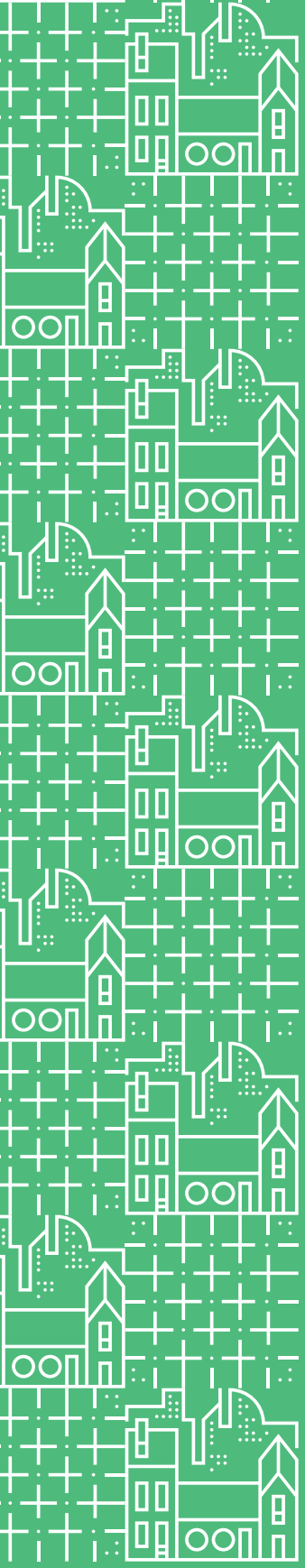
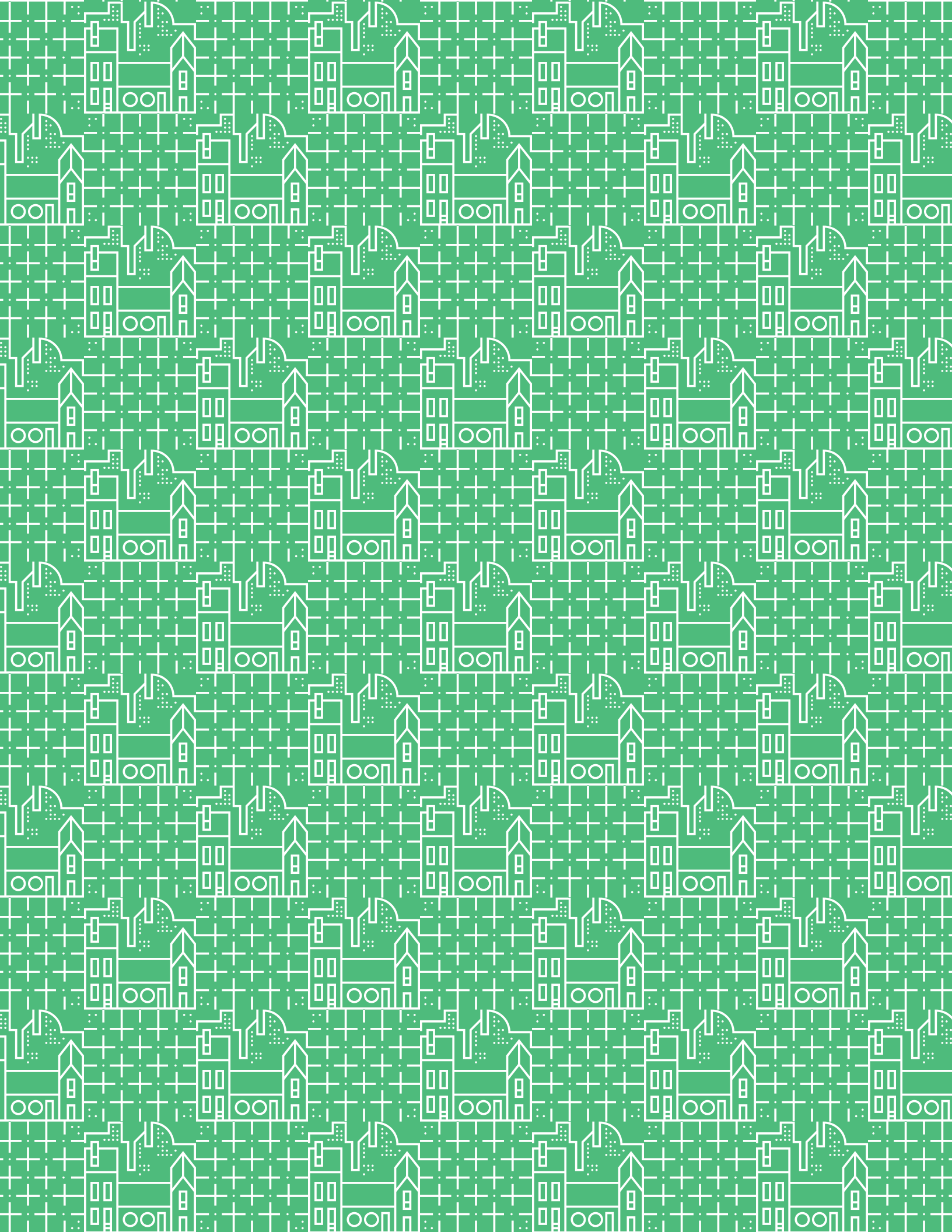


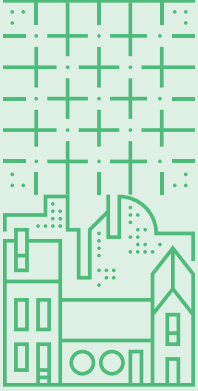
PLANT CHICAGO

THE CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS

FOCUS ON FOOD IN CHICAGO

- Farms & Growing
- Food Service
- Packaged Goods
- Food Recovery & Composting





DEAR BUSINESS OWNER,

We are so excited about your interest in the first-ever circular economy toolkit designed especially for small businesses!

As a small business owner, you are uniquely positioned to change our economy for the better. Small businesses like yours make up a significant portion of our economy, and small business owners like you are intimately familiar with every aspect of your operations. You know where you source your materials and ingredients, you deal with waste contracts, and you are sensitive to the needs and desires of the community where you are located. You know that what can make or break your business is your ability to collaborate with other businesses as well as your neighbors.

At its core, the circular economy is a conceptual solution to the following problem: we live in a world of finite resources yet we are operating as if there are infinite resources to "consume." Collectively, our globalized economic system is based on the false assumption that there will always be more resources to infinitely grow our economy. In a circular economy, businesses succeed while reducing reliance on "new" resources.

The circular economy is a collaborative practice. Like democracy, it only works when everyone participates. There is no perfect end state where we will suddenly have achieved circularity. Instead, it takes sustained collaboration between educated, empowered, and engaged businesses, governments and consumers/users. In order for this movement to be successful, businesses of all sizes must be at the forefront.

With this toolkit, you are not just exploring ways to become more "circular," but you are also on your way to becoming a more resilient and profitable business. Best of luck in your journey.

JONATHAN PEREIRA
Executive Director, Plant Chicago

Created in February 2020 by Plant Chicago, NFP

Plant Chicago is a registered 501(c)3 organization

For more information and downloadable content, visit:
plantchicago.org/toolkit

This work is licensed under the Creative Commons Attribution-NonCommercial 4.0 International License.
To view a copy of this license, visit creativecommons.org/licenses/by-nc/4.0/ or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

CONTENTS

Introduction **1**

What Is the Circular Economy? 5

Your People **13**

Your Networks **19**

Your Stuff **27**

Energy & Water Management 31

Ingredient Sourcing 38

Food Recovery & Organic Waste Diversion 47

Packaging 54

Nutrient Management 60

Communicate & Iterate **65**

Appendix **68**

Works Cited 69

More Circular Economy Resources 70

Local Circular Economy Business Practices 72

All Worksheets 75

WELCOME TO THE TOOLKIT

INTRODUCTION

Welcome to the Local Circular Economy Toolkit for Small Business: Food Focus

If you care about regenerating natural ecosystems, treating your people well, and making a lasting contribution to your local community, but aren't quite sure how to do these things, this toolkit was made for you! Plant Chicago believes that using the framework of a local circular economy can help you accomplish these noble aims alongside your financial goals.

A local circular economy is a collaborative economic practice sustained by the local circulation of resources, including energy, materials, nutrients, knowledge and money.

The **Local Circular Economy Toolkit for Small Business** is meant to help all of you industrious, collaborative, creative and knowledgeable business owners understand and implement local circular economy practices.

The areas covered in this toolkit are high-impact areas for food businesses to focus on when cultivating a local circular economy. In each section, the toolkit will guide you through benchmarking and goal-setting exercises, which are presented as one-page worksheets in each section. There are also plenty of opportunities to learn about each topic in depth if you'd like to do so before diving into the worksheets. Each section of the toolkit also has a list of resources that will help you get started on an action plan to achieve your circular economy goals.

If you're not familiar with the circular economy concept already, we recommend starting from the very beginning of the toolkit.

If you're already a circular economy enthusiast and want to dive in and start applying the principles to your own operation, we

recommend completing the activities in the **Your People** and **Your Networks** sections.

After doing so, you can choose the sections of **Your Stuff** that are most relevant and interesting to you and your business operations (*see guidance on page 30 for details*). Whatever you decide to do, please fill out the **local circular economy intake survey** (bit.ly/ce-intake-survey) before getting started.

We hope you leave this toolkit experience with a specific, measurable circular economy goal and a strong action plan to help you achieve it. We also include some advice on what to do once you've achieved your first local circular economy success.

WHY BUILD A TOOLKIT FOR SMALL BUSINESSES?

It is easy to dismiss the small business sector as only a minor player in the huge problems we face as a result of our current linear economic system. The majority of existing case studies, conferences and membership-based circular economy (CE) initiatives focus on supporting large multinational corporations as they work to become more circular.

However, data suggests that there is a massive opportunity for small businesses to have a large collective impact on the environment and in their own communities. According to the U.S. Small Business Administration, **small businesses make up over 99% of all businesses operating in the United States, with 88% of employer firms in this category employing less than 20 people.**[1,2] Small businesses produced nearly half of the country's private, nonfarm GDP in 2008.[3]

Currently, the role of small businesses is overlooked in current circular economy conversations and programs. As we'll discuss in this toolkit, cultivating local circular economies is an effective way for small

businesses to work together to solve some of the greatest challenges of our era.

Not only do small businesses have the desire to be part of the circular economy movement, but many small business owners and employees already possess the characteristics necessary to make the movement a reality in today's world. Small business owners tend to be **entrepreneurial, flexible, future-oriented, creative, innovative and well-connected** to the needs and desires of their own local communities.

Cultivating local circular economies is an effective way for small businesses to work together to solve some of the greatest challenges of our era.

Furthermore, the operations of very small businesses tend to happen at a smaller geographic scale which is conducive to lower environmental impacts and the creation of a strong **local** circular economy. Though small businesses want to participate in the circular economy movement and already possess relevant skills and characteristics, unfortunately many of them are not actively involved yet. If you own or have ever worked for a small business, the reason why is probably obvious: **small businesses are busy working**.

While multinational companies have the ability to hire consultants, scientists and marketing teams, small companies are lucky to be turning a profit and paying their employees a living wage. This is especially true for small companies in the food industry, where profit margins are razor thin.

With all of this in mind, Plant Chicago created the **Local Circular Economy Toolkit for Small Business**.

We see this toolkit as a first step in a small business owner's journey to explore circular economy concepts, assess their operations for circularity, set circular goals and implement practices that will help them cultivate a local circular economy, all while improving and streamlining their business operations.

FOCUS ON THE FOOD SYSTEM

This version of the toolkit is meant for small businesses who operate in the food system. This includes farms, food producers, food retailers, cafes, restaurants, food rescue organizations, food scrap haulers and compost operations. This version of the toolkit also focuses on resources, policies, challenges and opportunities that are specific to the Chicagoland (Illinois) region.

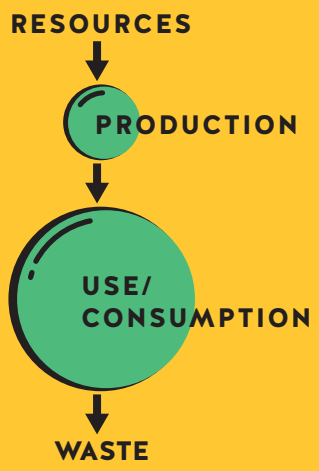
Although many of the tools and concepts in the toolkit could be helpful to a wide variety of small businesses, we recommend that businesses in other industries and locations reach out to their own local and/or industry-specific networks for more targeted guidance.

WHAT IS THE CIRCULAR ECONOMY?

▶ **Already familiar with the circular economy concept?** Feel free to skip ahead to "How to use this toolkit" on page 11 to get started.

THE LINEAR ECONOMY

Today's global economy is a linear system of production, consumption and waste that degrades natural ecosystems and has many negative impacts on humans and communities.



One end of this system continues to extract finite resources from the earth as if they will never run out. The other end of this system disposes of these same valuable materials in landfills, where they serve no economic purpose and have negative consequences on human and planetary health.

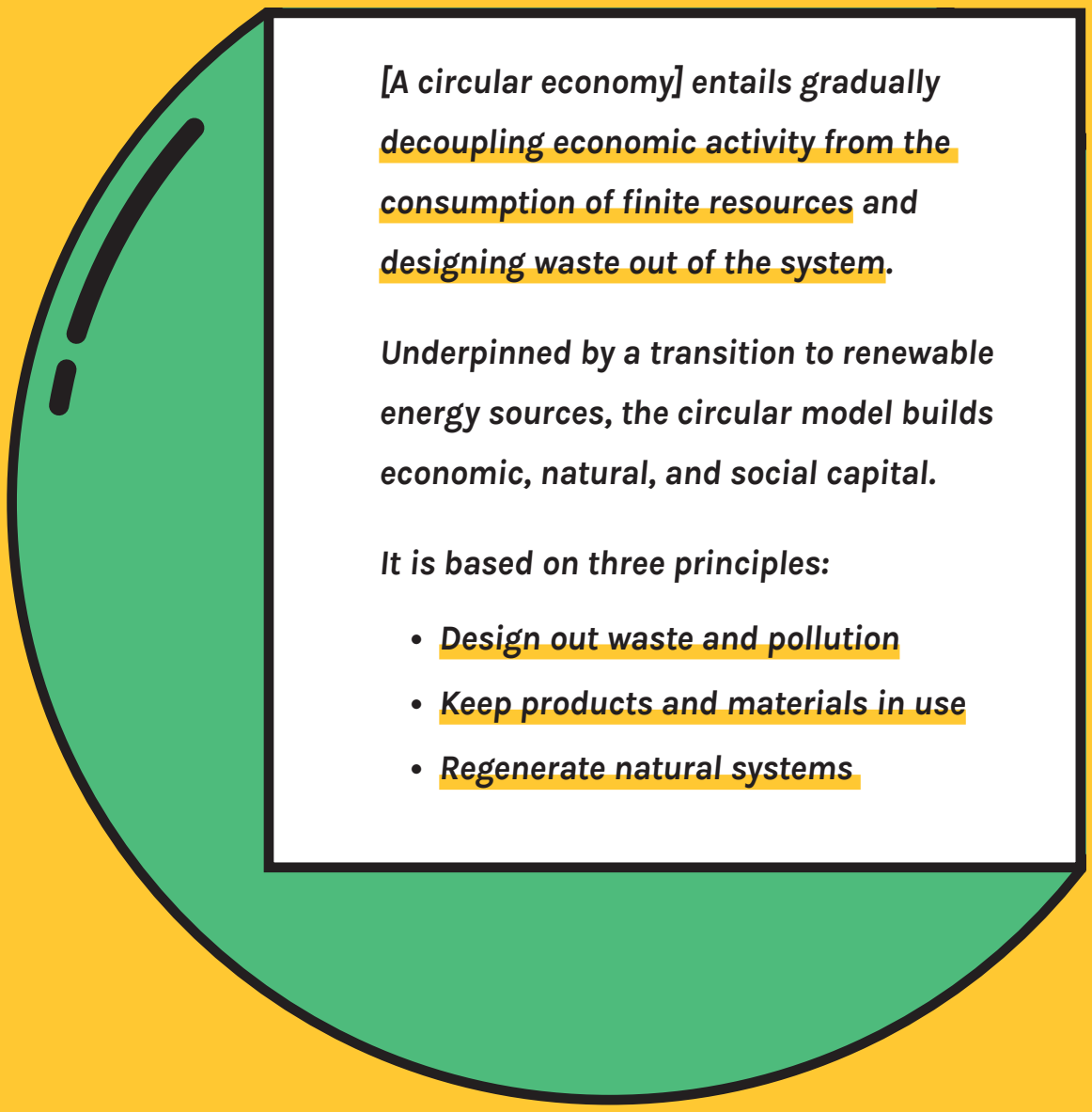
Paradoxically, financial capital is valued above all else, but businesses and consumers waste money every day by sending valuable materials to landfills instead of reusing, repairing, recovering or recycling them.

This linear system, and its largely unintended side effects, are huge contributors to both the ongoing global climate crisis and many human health hazards. Rapid climate change is increasing the frequency of natural disasters, creating climate refugees across the globe and decreasing the amount of fresh water and arable land to grow the crops necessary for human survival.[4] Furthermore, many of our remaining natural resources, like water and soil, are polluted with toxic materials due to linear economic activities.

Human activity within the linear economy is currently depleting the earth's natural resources at a rate that leaves them unable to regenerate naturally. Already, this has led to a rise in the costs of energy, water, food and raw commodities around the world. Unless we shift to a new economic model, these problems will continue to get worse in the coming years.

THE CIRCULAR ECONOMY

The circular economy has been posed by NGOs, businesses, researchers and government entities alike as a potential solution to the drastic problems outlined on the last page. Although there is no single agreed-upon definition of a circular economy — a 2017 study by Kirchherr et al. analyzed 114 definitions of the term[5] — the Ellen MacArthur Foundation, a thought leader in the global circular economy movement, defines it as:[6]

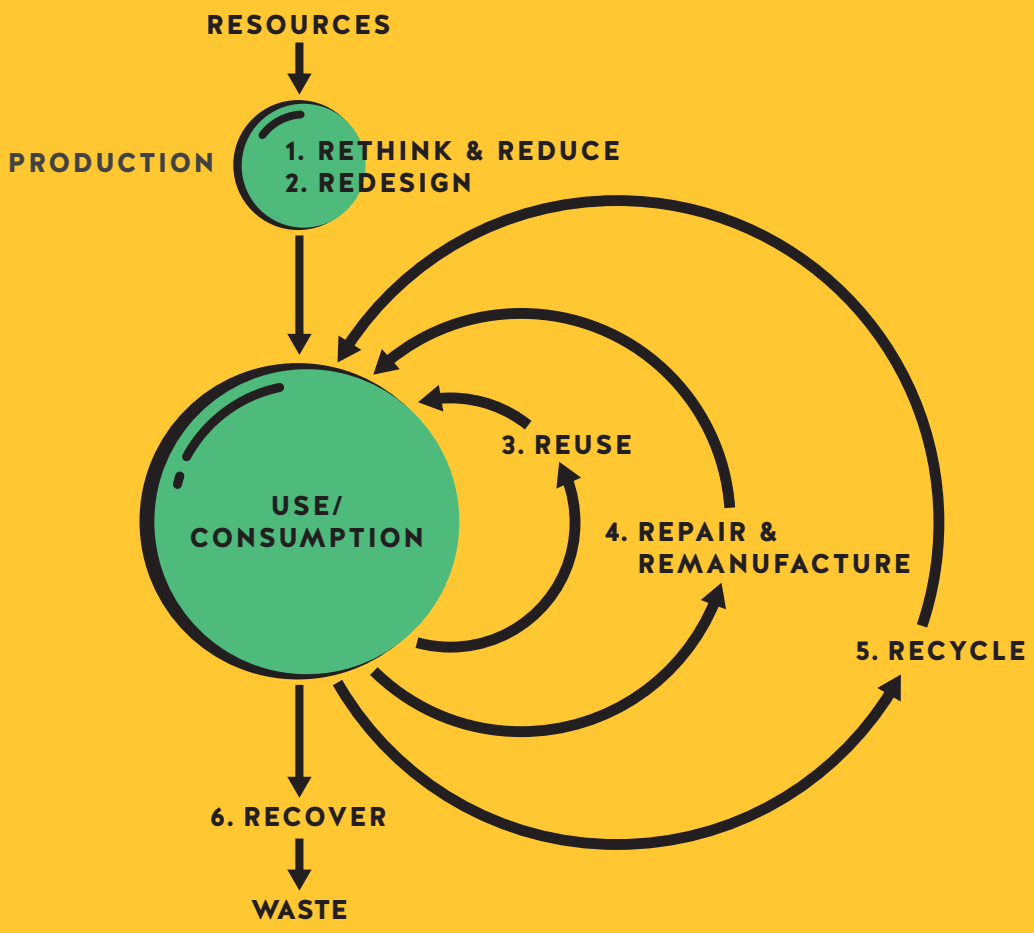


[A circular economy] entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system.

Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital.

It is based on three principles:

- ***Design out waste and pollution***
- ***Keep products and materials in use***
- ***Regenerate natural systems***



HIERARCHY OF ACTIONS

1. Rethink & Reduce
As a producer, ask yourself: Is this product the best way to meet the demand? Could we use fewer or different resources in its production?

2. Redesign
Consider reuse, repair and recycling options in advance of production.

3. Reuse
Use products multiple times.

4. Repair & Remanufacture
After initial use, maintain and repair products, or use them to create new products.

5. Recycle
Process and reuse materials.

6. Recover
Create energy from materials. Disposal should be avoided.

Adapted from PBL Netherlands Environmental Assessment Agency. themasites.pbl.nl/circular-economy/

At the facility scale, a circular economy can be described as conventional waste streams from one process being re-purposed as inputs for another, creating a circular, closed-loop model of material reuse.

Many large companies around the world are already taking the circular economy concept seriously as part of their long-term strategies. According to a 2019 report from financial services company ING, 62% of US firms planned to adopt a circular economy framework as part of their business strategy and 16% already had.[7]

WHY SHOULD BUSINESSES CARE ABOUT THE CIRCULAR ECONOMY?

In addition to the environmental and social benefits of a circular economy system, there are also financial gains to be had. These gains come in the form of both **cost savings** and additional **revenue opportunities** presented by circular economy practices.

Cost Savings

Cost savings in a circular economy come from three main areas: **reduced consumption** of raw materials, **resource efficiency** and **waste reduction**.

REDUCED CONSUMPTION

Commodity prices are on the rise, due in part to the growing scarcity of many natural resources, as well as volatility in worldwide markets.[8] In a circular economy, businesses will need to reduce their reliance on inputs made from new materials and their dependence upon the continued extraction of natural resources.

Not only will businesses reduce costs from an overall decrease in resource consumption, but they may also be able to do so through the use of reused, recycled or remanufactured materials instead of newly extracted ones.

RESOURCE EFFICIENCY

Resource efficiency entails using fewer resources, such as materials, nutrients, energy and water, to create the same or greater value.

A 2017 report by the International Resource Panel projects that natural resource use will increase by 119% by 2050, and proposes resource efficiency as a key to reducing overall natural resource use and avoiding catastrophic environmental impacts. The same report also notes the economic opportunity of resource efficiency, stating "resource efficiency and ambitious climate policies and initiatives could deliver annual economic benefits of more than US$2 trillion globally in 2050."[9]

Many circular economy related infrastructure upgrades, like energy efficiency or green energy installations, can also help save money in the long run. Even small efficiency upgrades can create cost savings.

A best practice in sustainability-focused business is to put these cost savings aside to use for more capital-intensive upgrades, like installing green energy infrastructure such as solar panels or geothermal systems.

WASTE REDUCTION

Costs can also be reduced in a circular economy because of a reduction in the amount of physical waste businesses produce. One key principle of the circular economy is to design out waste. When a company produces less waste, savings may be achieved through reduced disposal fees.

Revenue Opportunities

In addition to cost savings, circular economy practices can bring financial gains to businesses through new revenue opportunities. According to a report by Accenture[10], "the circular economy could generate $4.5 trillion of additional economic output by 2030 through new circular business models and revenue generating opportunities."

This report lists five main areas of revenue opportunity within a circular economy:

- **Maximizing the use of** (and revenue from) **underutilized assets** through sharing platforms such as Airbnb, Lyft, Zipcar, etc.
- **Product-as-service model** where a company retains ownership of an item, like a phone, and makes revenue from providing services around the item.
- **Extending the life of manufactured products**, with revenue coming from a company repairing or remanufacturing products for end users.
- **Circular supply chains** in which suppliers and purchasers continually cycle nutrients and/or materials through the supply chain.
- **Recovery and recycling**, with revenue produced through selling byproducts to other companies for reuse, recycling or remanufacturing (in addition to waste reduction and cost savings).

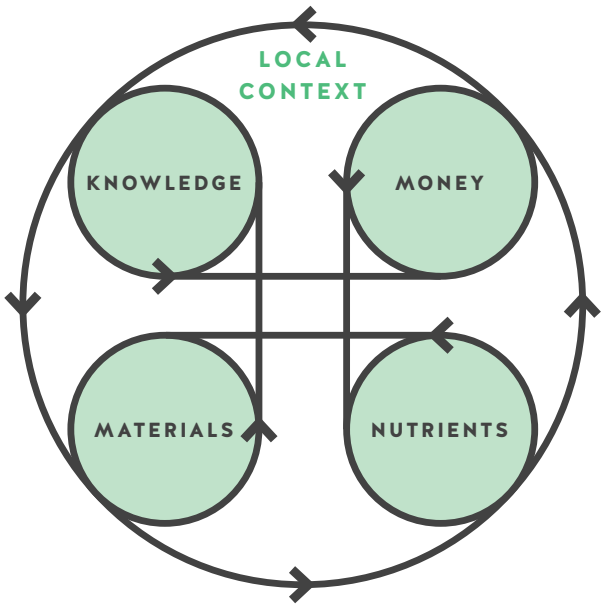
▶ **Want to learn more?** Check out the Circular Economy Resources list in the Appendix.

WHAT IS THE LOCAL CIRCULAR ECONOMY?

Many circular economy definitions and guides focus solely on how materials and energy management can regenerate natural ecosystems. Although macro resources are important to the circular economy movement, we're often leaving out how people and human communities could or should be involved in, and affected by, this new economy.

Instead, Plant Chicago defines a local circular economy as:

A local circular economy is a collaborative economic practice sustained by the local circulation of resources, including energy, materials, nutrients, knowledge and money.



The success of any local circular economy is driven by values of equity, transparency, diversity and inclusion. In a local circular economy, a business should:

- **Regenerate local ecosystems**
- **Address the needs and aspirations of local stakeholders**
- **Increase local human knowledge and capacity** around circular economy practices

Small businesses are already at a huge advantage in the local circular economy movement, since local stakeholders are much easier to involve at the scale at which most small businesses operate.

Plus, small businesses benefit from creating a robust local circular economy, since it can help engage local partner businesses, suppliers and customers, who are then more likely to support small businesses in their community.

HOW TO USE THIS TOOLKIT

Now that you've learned a little bit about the circular economy movement and the importance of cultivating the local circular economy, it's time to get to work on implementing circular economy practices at your business.

The following sections are a combination of assessments to help you understand where your business currently stands on CE practices and resources and tools to help you implement, improve, measure and communicate your CE practices.

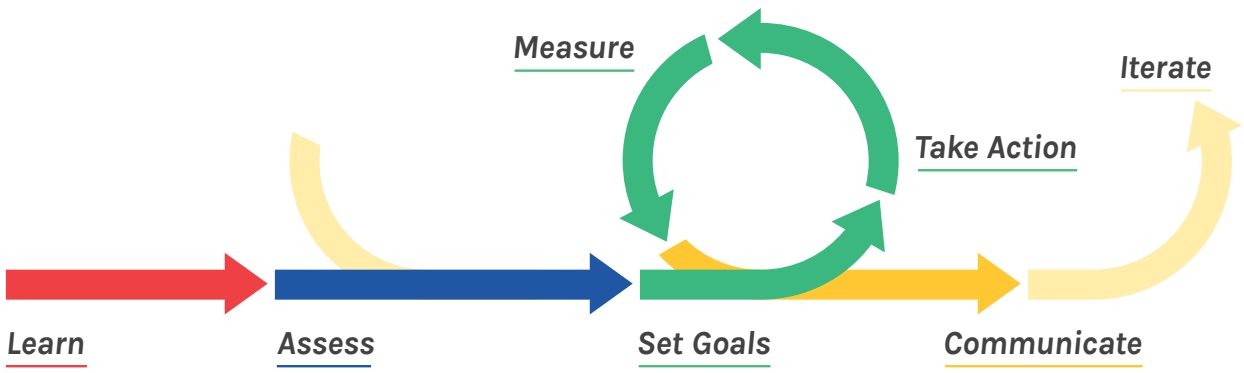
You may already be using circular economy practices in your operation!

The first step of the toolkit process is to fill out this survey to help you start thinking circular.

▶ **Fill out the local circular economy intake survey.** You'll find out some specific areas to focus on and your responses will help us identify more resources that businesses can use in the future. bit.ly/ce-intake-survey

After you have the results of the intro survey, you'll need to prioritize and decide what you'd like to focus on during the first steps of your local circular economy journey. In the next section, we'll give a quick overview of key practices within a local circular economy in three categories: Your People, Your Networks and Your Stuff.

FOR EACH SECTION:



YOUR PEOPLE

- Empathy Map
- Circular Goal Setting

YOUR PEOPLE

Best Practices for Businesses in the Circular Economy

LEARN

EMPLOYEES POWER THE ECONOMY

Economic and environmental sustainability are key aspects of any circular economy, but individual human "sustainability" is often overlooked by the movement. Fair labor practices are rarely mentioned in circular economy contexts today.

In a local circular economy, a business should focus on training and retaining employees to maximize value for their business, but also to increase local human knowledge and capacity around circular economy practices.

EMPLOYEE RETENTION

Employee retention is a critical challenge for small businesses. High employee turnover leads to higher costs over time, as turnover necessitates constant hiring and retraining.

Small businesses don't have the time and monetary resources required to constantly hire and train new employees, and thus should focus on improving factors that support employee retention at their companies. Retaining employees also means retaining the important knowledge and experience they've acquired while working at your business.

Key factors for employee retention include:

- Paying fair wages.
- Offering benefits like healthcare, retirement plans and paid time off.
- Offering training and professional development opportunities.
- Providing opportunities for advancement and leadership within the business.
- Involving employees in decision-making.
- Using open and effective communication.

▶ *Photo by Leah Kuhn*

OPENNESS TO CIRCULAR CHANGES

When working to align your business with a local circular economy system, creating a workplace culture that values the circular economy and sustainability is key. This can be done partially by offering circular economy training and professional development opportunities for employees.

The transition to circular practices can mean changes to many day-to-day operational practices (e.g., instituting a new system to separate organic waste for compost when there was only one bin for all "waste" items before). Since many of these initiatives will be carried out by employees, it's important to train and help staff members understand why these practices are being implemented. This step is critical to ensure that your new changes are successful and sustainable within your business operations.

> ***Creating a workplace culture that values the circular economy and sustainability is key.***

ASSESS

WHAT IS YOUR CURRENT STATE?

The first step to addressing your employees' needs is to understand them better. Creating an **empathy map** for each key stakeholder can help you uncover each group's wants, needs, values and opinions. Understanding your stakeholders is necessary for successful collaboration and behavior change, which are both integral to cultivating the circular economy within your company culture.

Fill out the **Empathy Map** worksheet on the next page to get started.

- First, explore your employees' needs, then branch out to other stakeholders. (For example, consider different types of customers, vendors and/or partners.)
- Fill out the worksheet by yourself or with a small group. Think about why the person is interacting with you, and what they see, hear, think, feel, say and do. Jot down words and phrases from their perspective.
- If you have two or more leaders in your business, it may be helpful for each person to fill out a worksheet about the same stakeholder, then compare notes. You might identify new insights about your employees, customers or stakeholders.

ASSESS

EMPATHY MAP

What does someone else experience when they interact with your business? Use this worksheet to understand your customers, employees and other stakeholders better by noticing what they see, hear, say and do. Write down your hypotheses in each area.

WHO are you empathizing with?

Customer type, employee, stakeholder, etc.

WHAT is their goal?

What do they want to achieve when they interact with your business?

WHAT DO THEY **SEE**?

WHAT DO THEY **SAY**?

WHAT DO THEY **HEAR**?

WHAT DO THEY **DO**?

SET GOALS

PEOPLE GOALS

See the list of key factors for employee retention on page 13 and consider implementing some of these measures in your business.

Additional suggestions:

- Hold a training on circular economy concepts for your employees.
- Create an empathy map for key stakeholders, including employees and customers.

Use the **Circular Goal Setting** worksheet in this section to capture your most important goals related to people.

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of goals for encouraging your people to embrace circular economy activities, you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress. In a few months, you might see big changes!

ADDITIONAL RESOURCES: PEOPLE

- The **MIT Living Wage Calculator** allows you to calculate a living wage based on your geographic location and a few other key data points.
  livingwage.mit.edu
- **Zero Waste Chicago** offers staff trainings on a variety of circular economy practices.
  zerowastechicago.com/business
- IDEO and Ellen MacArthur Foundation's **Circular Design Guide** offers suggestions, including worksheets and full workshop agendas, for getting a group into a circular economy and design thinking mindset.
  circulardesignguide.com

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

YOUR NETWORKS

- Geographic Range
- Your Stakeholders
- Symbiotic Groups
- Circular Goal Setting

YOUR NETWORKS

Building a Healthy, Collaborative Practice to Make the Circular Economy Real

LEARN

BUILDING COALITIONS AND CONNECTIONS

A local circular economy is by definition a collaborative practice, which can only be achieved by forming effective partnerships and networks at the local level.

As a small business owner, you probably already work with a variety of local partners, including customers and suppliers. These partnerships are likely based on acquiring capabilities, products or other assets you require from local actors. In a local circular economy, you may need to expand your partnerships to include additional people or organizations.

The ability to consider the implications of actions beyond a business's direct sphere of influence is necessary for CE-based decision-making.

ASSESS

WHAT IS YOUR CURRENT STATE?

Interested in understanding and strengthening your network to cultivate a local circular economy in your community? On the next three pages, you'll find worksheets that will help you think about who is in your network and how far it ranges.

- First, use the **Geographic Range** worksheet to think about your reach in the world.
- Then, fill out the **Your Stakeholders** worksheet to delve into your partners in the community.
- Finally, use the **Symbiotic Groups** worksheet to identify any symbiotic organizations you might want to work with in the future, and what activities you might engage in with them.

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

GEOGRAPHIC RANGE

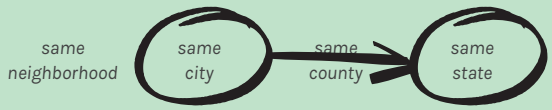
Where your business activities take place, and the people, places and things those activities affect, define your boundaries. These impacts can be economic, environmental and/or social. How local or global are your boundaries?

DISTANCE:

For each of the following rows, circle two choices. First, circle the **shortest distance** each one travels to or from your business. Second, circle the **longest distance** one travels.

EXAMPLE

How far do our **employees** travel to get to work?



How far do our...							
Employees travel to get to work?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Ingredients/inputs travel to get to our business *(including ingredients & packaging)*?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Products travel to reach a customer?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Waste travel to be processed, reused, recycled or disposed of?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Products travel to be processed, reused, recycled, or disposed of after they're used?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

YOUR STAKEHOLDERS

Your business likely interacts with a wide range of organizations, groups and people. We consider these your **stakeholders**: **people or groups who are affected by your activities or whose activities affect your business.** It is important to think about them during this process, because they are also affected by changes to your business.

We've listed some groups to start, but you should fill in any missing stakeholders.

1. **Cross out** ("X") any types of people who are **irrelevant or don't play a role**.
2. **Circle** the stakeholders who are being **helped or served** by your business.
3. **Star** the stakeholders who you consider **local**.

Customers

DESCRIPTION:

Employees

DESCRIPTION:

Business Partners

DESCRIPTION:

Supplier

DESCRIPTION:

Supplier

DESCRIPTION:

Landlord/ Tenant

DESCRIPTION:

Neighborhood Organization

DESCRIPTION:

Alderman

DESCRIPTION:

Investors

DESCRIPTION:

Chamber of Commerce

DESCRIPTION:

DESCRIPTION:

DESCRIPTION:

SYMBIOTIC GROUPS

Some networks you're a part of are harder to identify than your current stakeholders. Especially when it comes to your **local community**, nearby groups can affect each other in subtle ways (and might all be affected by the same people, decisions or pressures). For example, a new business starting in your neighborhood could bring more lunch customers, increase competition or even change the smells in the air!

List some businesses and organizations that coexist with you in your local area. They can include schools, nonprofits, community centers or others. If you need more ideas, check out the listings from your Neighborhood Council or Chamber of Commerce.

LOCAL BUSINESS, ORGANIZATION, COMMUNITY GROUP, ETC.	HOW DO YOU CURRENTLY INTERACT?	HOW COULD YOU INTERACT OR BENEFIT FROM EACH OTHER IN THE FUTURE?
01		
02		
03		
04		
05		
06		
07		

SET GOALS

NETWORK GOALS

As you explore Your Stuff and Your People, you will likely find many ways to involve your stakeholders and local groups in your activities.

In addition, here are a few action step suggestions that can help you start building your networks:

- Do some research on the stakeholders and symbiotic groups that you identified on the **Symbiotic Groups** and **Your Stakeholders** worksheets to identify a few immediate opportunities to work together on a project.
- Attend a local neighborhood council or chamber of commerce meeting.
- Create a definition of "local" for your business. Use the results of your Geographic Range worksheet to inform this decision and think about how this might influence your sourcing, hiring or distribution goals.
- Conduct a focus group with local stakeholders and/or symbiotic groups to find out how your business activities affect them and how they might like to be involved moving forward.

Use the **Circular Goal Setting** worksheet in this section to capture your most important goal(s) related to your networks.

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of goals for building an active network that can help you achieve your circular economy goals (and share resources or waste streams), you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress. In a few months, you might see big changes!

ADDITIONAL RESOURCES: NETWORKS

Your local Chamber of Commerce, Neighborhood Council, or other business-focused groups can be great resources for connecting with other businesses.

The City of Chicago, for example, maintains a few different lists of applicable organizations on their website:

- **Small Business Development Centers**
  chicago.gov/city/en/depts/bacp/sbc/small_business_developmentcenters.html
- **Additional Business Support Services**
  chicago.gov/city/en/depts/bacp/sbc/other_business_supportagencies.html
- **Map of Neighborhood Business Development Centers**
  chicago.gov/city/en/depts/bacp/sbc/neighborhoodbusinessdevcenters.html
- **Information on Special Service Areas**
  chicago.gov/city/en/depts/bacp/sbc/special_service_areasssa.html
- Many neighborhoods also have community groups (not specific to businesses, but typically open to all community organizations, businesses and residents). These groups are a great way to connect with and hear from local residents and organizations.
- Many local academic institutions have classes or clubs that connect students with local companies to conduct research, design programming and more. Consider reaching out to your local colleges and universities to seek assistance with the recommended Action Steps above.

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

YOUR STUFF

- General Circular Best Practices
- Energy & Water Management
- Ingredient Sourcing
- Food Recovery & Organic Waste Diversion
- Packaging
- Nutrient Management

YOUR STUFF

Circular Economy Best Practices
for the Food Industry

LEARN

GENERAL CIRCULAR BEST PRACTICES

Businesses in the food system have many unique challenges and opportunities when it comes to cultivating local circular economies. In the following sections, we will explain why each focus area is important for food businesses, guide you through the process of setting goals, and make an action plan to be more circular in each aspect of Your Stuff.

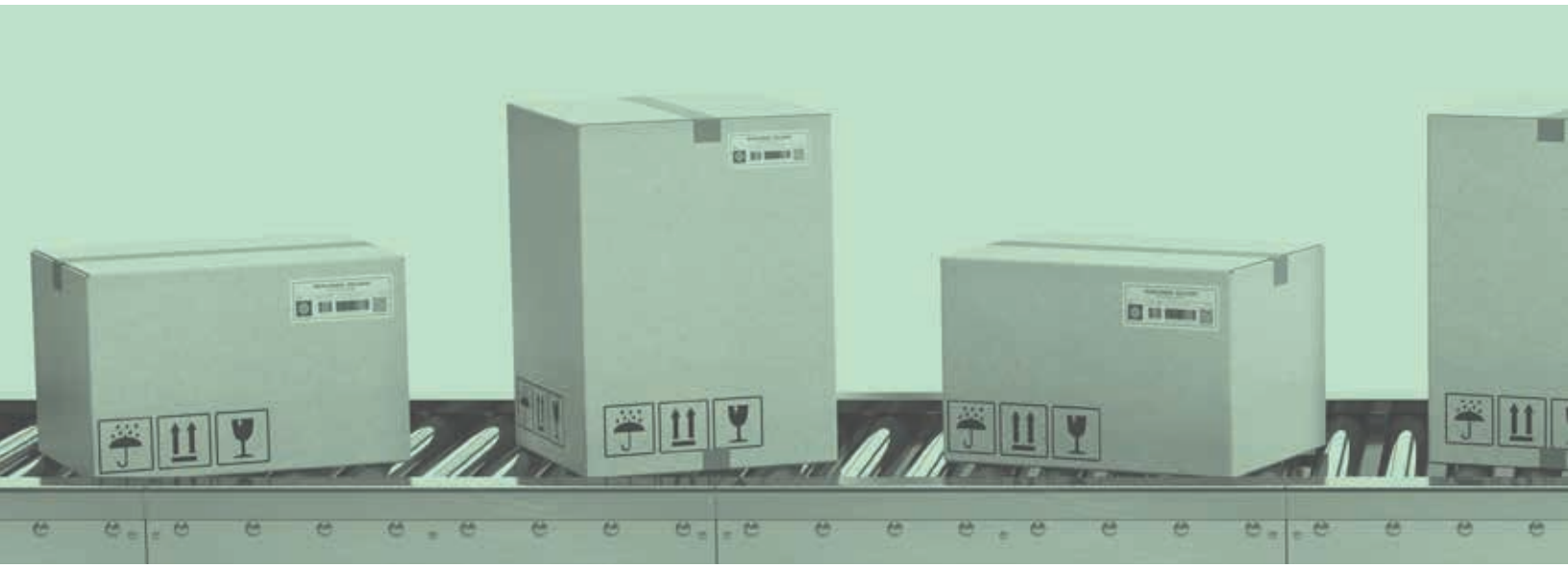
To get started, feel free to choose the topics that are most relevant and exciting to you, or use the priorities given for major food business categories on page 30 for guidance.

In general, for any business that makes a product, **materials and energy** are two of the most important factors to consider when looking to operate within a local circular economy. The following list of practices is a good starting point to guide your operations toward a circular economy.

▶ *Photo by Leah Kuhn*

Material Inputs

- Should be **minimized** to limit the amount of material and energy extraction required to create the input.
- Should be **made from reused or recycled materials** to limit the amount of raw material used.
- Should **travel as little as possible** to and from your business, to minimize greenhouse gases from transportation (and reduces shipping costs).
- Should be **made from materials that can be recycled, reused, remanufactured or composted locally**. This helps ensure that your product and/or its packaging will not end up in a landfill after it is used.
- Should be **made/grown using circular economy practices**, many of which are covered by third party certifications (e.g., sustainability, ethics). The best way to learn about your suppliers' practices is to talk with them directly.

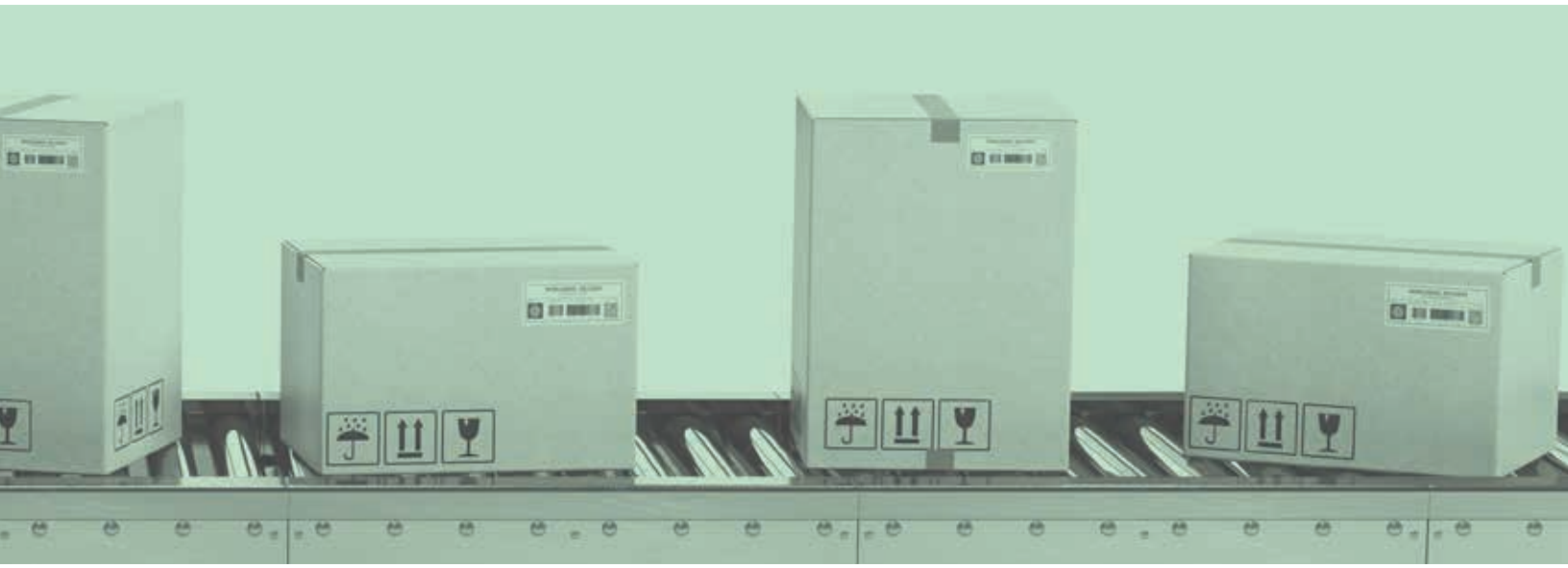


Energy and Water Inputs

- Should be **minimized** to reduce consumption of natural resources. This includes both finite resources like coal and natural gas and resources that are "infinite" but scarce in many parts of the world, such as water. Energy and water efficiency should be a top priority for any business.
- Should **come from clean/renewable sources** so that the energy a business uses after implementing energy efficiency measures does not deplete finite natural resources.

Business Space and Facilities

- Should be **as small as possible t**o meet your needs. This will help reduce energy consumption and allow you to scale only as needed/desired.
- Should be **shared with a complementary business/organization** if the space is bigger than your business's current needs. This could also create additional revenue via rent from a subtenant.
- Should be **located as near as possible to your customers, and to the resources and infrastructure needed to run your business**. This can help minimize transportation costs and lower overall greenhouse gas emissions.



Mechanical Equipment

- Should be **as efficient as possible** to save on energy costs and reduce consumption of energy and water.
- Should be **repaired when broken** instead of buying new equipment. This preserves the valuable energy and materials embodied in the piece of equipment instead of sending it to a landfill.

Material Byproducts and Waste

- Should be **reduced, reused, repurposed, recycled or composted** to avoid sending these materials and their associated monetary value to the landfill, where they serve no purpose in the economy or in the natural ecosystem.
- **Reducing the amount of byproducts** is a top priority when possible. When byproducts are unavoidable, **reusing and repurposing** are preferred ways of dealing with them, since they tend to be less resource-intensive.
- For organic waste, **composting** is the preferred solution.
- **Recycling** is usually preferable over sending materials to a landfill, but is energy- and resource-intensive, and should be a last resort for physical outputs in a circular economy, just before sending materials to a landfill.

FOOD-SPECIFIC FOCUS AREAS

When it comes to Your Stuff, there are too many targets for a small business to tackle all at once. In addition to the general guidelines we outlined previously, we recommend focusing on aspects of Your Stuff specific to your business type. Many of these categorized priorities are based on extensive research done by the Sustainability Accounting Standards Board.

> If there is a Your Stuff section that you'd really like to work on, but it's not listed under your sector below, feel free to go for it!

FOR CAFÉS, RESTAURANTS AND FOOD RETAILERS

- **Ingredient Sourcing**
- **Energy & Water Management**
- **Food Recovery & Organic Waste Diversion**

FOR FARMS

- **Water Management** (*All farms should see water efficiency & water reuse sections. Indoor farms should also see energy management.)*
- **Nutrient Management**
- **Food Recovery & Organic Waste Diversion**

FOR FOOD MANUFACTURERS OR CONSUMER PACKAGED GOODS

- **Ingredient Sourcing**
- **Energy & Water Management**
- **Packaging**

FOR FOOD RECOVERY, WASTE HAULERS OR COMPOSTERS

- **Energy & Water Management**
- **Nutrient Management**

HOW TO USE THE "YOUR STUFF" TOPICS

Each topic section includes an **introduction**, some advice and interactive exercises on **assessing your current state**, a walk-through of the **goal-setting** process with examples and action step recommendations, and a list of **resources** you might find helpful to achieve your goals.

After completing your chosen topic section(s), you will have a new goal and a step-by-step action plan, complete with a resource list, to begin cultivating a local circular economy through your business activities.

YOUR STUFF

ENERGY & WATER MANAGEMENT

LEARN

PUT ENERGY INTO MINIMIZING ITS USE

Energy is the top contributor to climate change worldwide. According to the United Nations, the food sector accounts for 30% of the world's energy consumption and 22% of total greenhouse gas emissions. The food sector is also a major consumer of water. This makes energy and water management a key priority for any food business that wants to participate in the circular economy.

Energy and water can be complicated to track and set specific goals around within a business context. Luckily, energy and water management are two of the most well-studied areas of environmental sustainability. There are plenty of best practice lists already out there for everyone, from homeowners to small businesses.

Energy Efficiency First

To quote the Illinois utility consumer advocate group Citizens Utility Board (CUB), "the cheapest kilowatt-hour is the one you never use." Although renewable energy is an exciting prospect, energy efficiency is always the best way to reduce energy costs and environmental impact. Businesses should maximize their energy efficiency before diving into the world of renewable energy.

> ***Energy efficiency is always the best way to reduce energy costs and environmental impact.***

ENERGY INCENTIVES

Luckily, Illinois utility companies, like ComEd in the Chicago area, offer many incentives for homeowners and businesses to complete energy efficiency upgrades. The **ComEd Energy Efficiency Program** offers small businesses free energy efficiency audits and a list of contractors who can offer full installation services for any work recommended after the audit, with up to 75% off total energy efficiency project costs. An energy audit is a great way to identify opportunities for energy efficiency and cost savings within your space.

There are also **financial incentives** available for businesses in Illinois to purchase energy efficient lighting and equipment, and to help building owners insulate and air-seal their building envelopes to maximize efficiency of their heating and cooling systems.

Green Power

Once you've maximized your energy efficiency, installing your own renewable energy generation system, participating in a community solar program, or purchasing renewable energy from your utility company is the next step in your circular energy journey. The EPA defines green power as "electricity supplied from a subset of renewable resources that provide the highest environmental benefit."[11]

Some examples of green power sources include solar, wind, geothermal, biogas, biomass (specific plant & waste materials), and low-impact hydroelectric.

INSTALL YOUR OWN RENEWABLE SYSTEM

The best approach to sourcing green power is to install a renewable energy system at your facility. This could be solar panels, a wind turbine, a geothermal system, or an anaerobic digester coupled with a power system. There are many financial incentives, such as rebates and tax credits at the state and federal level for renewable energy installations. At the moment, these incentives are heavily focused on solar energy.

COMMUNITY SOLAR

Another option for sourcing green power is community solar. This is a new program in Illinois that allows individuals and businesses who are unable to install their own solar panels to sign up to help pay for a solar panel installation at a nearby building. Individuals or businesses who pay into the system then receive ongoing bill credits for the solar energy their investment helps generate.[12]

GREEN POWER PLANS

If you are not able to install your own green power system or participate in a community solar program, another option is to sign up for a "green power" plan.

Illinois has a deregulated electricity supply market, meaning that businesses can choose an electricity supplier other than ComEd, the regulated supplier for the state. While some of the unregulated alternative suppliers offer "green" electricity plans, none of them are currently more affordable than ComEd's energy supply. As of January 2020, the CUB recommends sticking with ComEd as an electricity supplier.

Some good news is that ComEd and other Illinois utilities are required by state law to source at least 25% of their power from renewable energy sources by 2025, so some of your electricity may already be coming from renewable sources.[13]

Water Efficiency & Reuse

Similar to energy management, efficiency is the best practice for water management in a circular economy. If you want to go above and beyond efficiency, your business could look into reusing water within your operations, or sending your clean water to a co-located business when applicable.

ASSESS

WHAT IS YOUR CURRENT STATE?

Ideally, your business's energy and water bills will list both a dollar amount as well as the amount of each resource your business consumed during the billing period. Looking at these reports is a great start to understanding your current usage and potential for reduction. Another relatively easy thing to measure is what percent of your energy comes from renewable sources (wind, solar, geothermal).

You could also go a step further and use the **ENERGY STAR Portfolio Manager**, a free online tool to help people analyze their energy and water bills, and track usage over time. This tool also allows you to track any energy or water efficiency upgrades you make to see if they're paying off in financial savings over time.

SET GOALS

ENERGY & WATER GOALS

Depending on which energy and/or water-related circular economy practices you want to focus on, you may want to use one of the following goals as a starting point:

- % reduction in energy and/or water costs by [**DATE**]
- % lighting is energy efficient by [**DATE**]
- % of our energy will come from clean/renewable sources by [**DATE**]
- Increase % or $ investment by [**AMOUNT**] every [**TIME PERIOD**]

Use the **Circular Goal Setting** worksheet in this section to create an energy or water management goal.

Remember that it's okay to start small with your energy and water goals! Many energy efficiency projects are affordable and can add up to significant cost savings. Your cost savings can then be reinvested into more capital-intensive upgrades, like installing green energy systems.

Action Step Recommendations

Depending on the goal(s) you set, you may want to choose from the following action steps to achieve your goals. Or, come up with your own action steps!

UNDERSTAND YOUR USAGE

- Get a free energy audit through a local program. Most of the items/recommendations below will be covered in a comprehensive energy audit, like those offered for free by ComEd in the Chicagoland area.

LIGHTING

- Purchase energy-efficient lighting when bulbs or fixtures need to be replaced.
- Employ bi-level switching.
- Install dimmers on lights.
- Install daylight sensors.
- Swap light-up signs (like Exit and Open/Closed signs) to LED-lighted signs.
- Turn off lights when not in use.
- Install occupancy sensors.

HEATING AND COOLING

- Air-seal & insulate your building envelope (or work with your building owner to do so).
- Weatherize your space.
- Install a programmable thermostat.
- Change HVAC air filter regularly.
- Tune up HVAC equipment annually.
- Seal all heating & cooling ducts.

EQUIPMENT

- Perform regular maintenance/tune-ups on equipment to keep it running efficiently.
- Reduce idle time by shutting down/turning off equipment when not in use.
- Repair equipment as soon as possible when needed.
- Regularly calibrate any equipment that relies on temperature control via a built-in thermostat, such as refrigerators, dishwashers and hot water heaters.
- Keep cooling coils in refrigeration units clean.
- Purchase energy-efficient appliances when you need to replace an appliance. *For example, choose ENERGY STAR certified equipment.*

> ▶ Consider the lifecycle cost of equipment, instead of just the purchase price. Sometimes, more efficient equipment is pricier to purchase, but pays off in the long run through significant savings on your energy bills.

- Check the temperature settings of your cooling equipment. If the temperature is set cooler than needed, you could be wasting energy. According to ENERGY STAR, the most commonly recommended settings are between -14° and -8° Fahrenheit for freezers and between 35° and 38° Fahrenheit for refrigerators.
- Keep fridge and freezer doors closed as much as possible and make sure door seals close tightly.

GREEN POWER

- Install a renewable energy system.
- Purchase renewable energy.

WATER

- Repair leaky faucets and fixtures.
- Install faucet aerators.
- Convert existing toilets to dual-flush or low flow.
- When a need arises to purchase new equipment, replace appliances, fixtures and attachments with WaterSense, ENERGY STAR, or other high-efficiency models.
- Install greywater catchment system. *Be sure to check your local laws first!*

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of goals for your energy and water management, you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress.

ADDITIONAL RESOURCES: ENERGY & WATER

- **ENERGY STAR Portfolio Manager** energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager
- **ENERGY STAR Action Workbook for Small Business** energystar.gov/buildings/tools-and-resources/energy_star_action_workbook_small_business
- Database of State Incentives for Renewables & Efficiency (search incentives by state or ZIP code): dsireusa.org
- Center for Resource Solutions' Green-e certification program: green-e.org
- EPA resources on understanding & procuring green energy: epa.gov/greenpower/switch-green-power
- EPA resources for water efficiency in restaurants: epa.gov/watersense/best-management-practices
- **UL's free and searchable SPOT database** allows companies to find credible sustainability information for a wide variety of products. Searchable products include everything from insulation materials to toilet paper, from lightbulbs to flooring, and more. spot.ul.com/

Local Resources

- **ComEd Energy Efficiency Program for Small Business** is a free energy assessment and financial incentives for energy efficiency work, including specific guides for restaurants and grocery stores. comed.com/WaysToSave/ForYourBusiness/Pages/BusinessTypes.aspx
- Citizens Utility Board allows you to check current electricity pricing and find resources to interpret your electricity bill and calculate potential savings. citizensutilityboard.org/electric/
- Citizens Utility Board also has resources on clean energy. citizensutilityboard.org/clean-energy/
- City of Chicago list of water resources. chicago.gov/city/en/progs/env/water.html

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

YOUR STUFF

INGREDIENT SOURCING

▲ *Photo by Leah Kuhn*

LEARN

LOCALIZING YOUR SUPPLY CHAIN

Food production and food service businesses use a wide variety of ingredients and inputs to make their products, often relying on a global supply chain for their needs. The ability for this globalized system to deliver is highly dependent on the long-term availability of agricultural products at a certain price point. This ability is already being affected by climate change, water shortages, land management and other resource scarcity issues. Creating a supply chain that works to combat these issues is a key practice in the circular economy.

There are several key aspects for small businesses to consider when creating a more local, circular supply chain. But first, you should define what "local" means to you.

What is local?

Each business must decide what "local" means for them. The USDA says that a locally or regionally produced agricultural product travels less than 400 miles from its origin, or comes from within the same state.[14] The Leadership in Energy and Environmental Design (LEED) certification uses a 500-mile radius as a starting point for sourcing local building materials.[15]

Ingredient Supply Chain Best Practices

- As with most circular economy practices, **reduction** is the first step. Order only what's needed and closely manage your inventory to prevent waste.
- **Source locally** to minimize costs and greenhouse gas emissions from transportation.
- **Support fellow small businesses** to build a local circular economy and create a closer relationship with suppliers. This improves resilience and allows food businesses to start conversations about circular economy practices with their suppliers more easily.
- Source **reused or recycled materials** to avoid environmental impacts associated with extracting or producing brand new materials.
- Source agricultural products grown using **regenerative practices**.
- Work with suppliers to **minimize incoming packaging**.

URBAN INFLUENCE

Food businesses in cities like Chicago are well-positioned to influence how food is grown, produced and packaged, as 80% of food will be consumed in cities by 2050.[16]

REGENERATIVE AGRICULTURE

In a circular economy, food should be grown, produced and packaged in ways that regenerate natural ecosystems. In agriculture, this means using growing practices that build healthy soil, improve water retention, reduce nutrient runoff and cultivate a high level of biodiversity. In addition to purchasing ingredients directly from farms that are implementing these practices, businesses can also support regenerative agriculture and prevent food waste by using "imperfect" produce.

CONSUMER DEMAND FOR SUSTAINABILITY

Customer demand is another reason to implement circular ingredient sourcing. More and more people are starting to look for food that is produced locally, sustainably and ethically. Businesses can meet this rising demand by implementing the practices listed above and making their sourcing information available to their customers.

ASSESS

WHAT IS YOUR CURRENT STATE?

The first step in creating a more circular supply chain in your business is to understand more about your most-used ingredients.

There are three important aspects to consider in a circular supply chain:

- Geography
  Where does the ingredient come from?
- Material composition
  What is the ingredient made of?
- Production practices
  How was the ingredient made or grown?

On the next two pages, you'll find useful worksheets that will help you take a closer look at your ingredients.

- First, fill out the **Product Input** worksheet to find out more about the circularity of your supply chain as a whole.
- For your three most-used ingredients, copy and fill out the **Input Deep-Dive** worksheet to understand more about how each one is sourced and packaged.
- Also, refer back to the **Geographic Range** worksheet on page 20 to see an overview of how far your inputs currently travel to reach you.

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

PRODUCT INPUTS

What goes into your products has a big impact on your circular practices. Understanding your inputs/ingredients today can help you find room to improve.

INGREDIENT LIST:

Can you find areas to improve in your current set of inputs/ingredients?

*What are your **most used** ingredients? List them here.*

*Do you have any **"big ticket"** or **"special order"** ingredients? List them here.*

ESTIMATE:

Overall, what percentage of your inputs (or ingredients) are...

Any input/ingredient can be counted multiple times, so the total can be more than 100%

____ %
recaptured?
sourced from material that would otherwise be waste

____ %
produced locally?
within a specific geographic range that you consider local (e.g., 50 or 500 miles)

____ %
produced using CE practices?
sustainable and ethical toward people, animals and resources; these are often indicated by third party certifications

Of your recaptured ingredients/inputs, how many...

____ %
come from your own business?

____ %
come from another business or source?

Who are your current partners/sources? List them here.

INPUT DEEP-DIVE

Take a closer look at your **three most-used inputs/ingredients**.
For each ingredient, complete the following:

INGREDIENT: _____

Where do you purchase this input/ingredient? *(Circle one)*

From a vendor or distributor

Where does the product ship from?

Who is the original producer?

Directly from the source

Where is the producer located?

What type of packaging does it come in?

If the packaging has multiple components, list all components.

What do you know about how this input/ingredient was produced?

Circular economy practices include sustainable and ethical methods regarding people, animals and resources. Third-party certifications are often relevant, but the best way to learn this is to talk to your suppliers.

SET GOALS

INGREDIENT SOURCING GOALS

Depending on which sourcing-related circular economy practices you want to focus on, you may want to use one of the following goals as a starting point. Or feel free to make your own!

- % of product made from locally grown/ produced ingredients
- % of product made from locally purchased ingredients
- % of product made from ingredients certified to a third-party environmental standard
- % of product made from ingredients certified to a third-party social standard
- % of product made from recaptured material

Use the **Circular Goal Setting** worksheet in this section to capture your most important ingredient sourcing goal(s).

Action Step Recommendations

Depending on the goal(s) you set, you may want to choose from the following action steps to achieve your goals:

- Team up with fellow small businesses to collectively purchase circular inputs. If minimum order size is a barrier for your business to purchase a more circular ingredient, consider splitting an order with a nearby business who uses the same ingredient in their products.
- Write a purchasing policy that prioritizes circular criteria, such as purchasing locally produced ingredients, purchasing from locally based suppliers, purchasing products made from reused materials, purchasing products that come with minimal packaging, etc.
- Work with a local farm to source "imperfect" produce.
- Plan ingredient ordering around historic sales data and informed predictions about future sales to prevent over-ordering.

- Conduct a local sourcing pilot project to see if locally grown or produced inputs is feasible for your operations. Fill out the **Local Sourcing Pilot Project** worksheet in this section to get started.
- Design your menu or food product with food waste reduction in mind.
- Challenge yourself to design a menu or food product with as few ingredients as possible that still meets your business goals. Simplicity saves time and can help reduce waste and save money.

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of goals for your ingredient sourcing, you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress.

ADDITIONAL RESOURCES: INGREDIENT SOURCING

- **UL's free Prospector search engine** is meant to help companies find materials and ingredients for product development. Some sustainability information is included on products, with more sustainability related indicators to be added soon: ulprospector.com/en/na
- **LocalHarvest** is a resource to find local farms based on your location. localharvest.org/chicago-il
- Use the information you gathered when you filled out the worksheets in Your Networks to think about potential sourcing partnerships with other local businesses.

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

TAKE ACTION

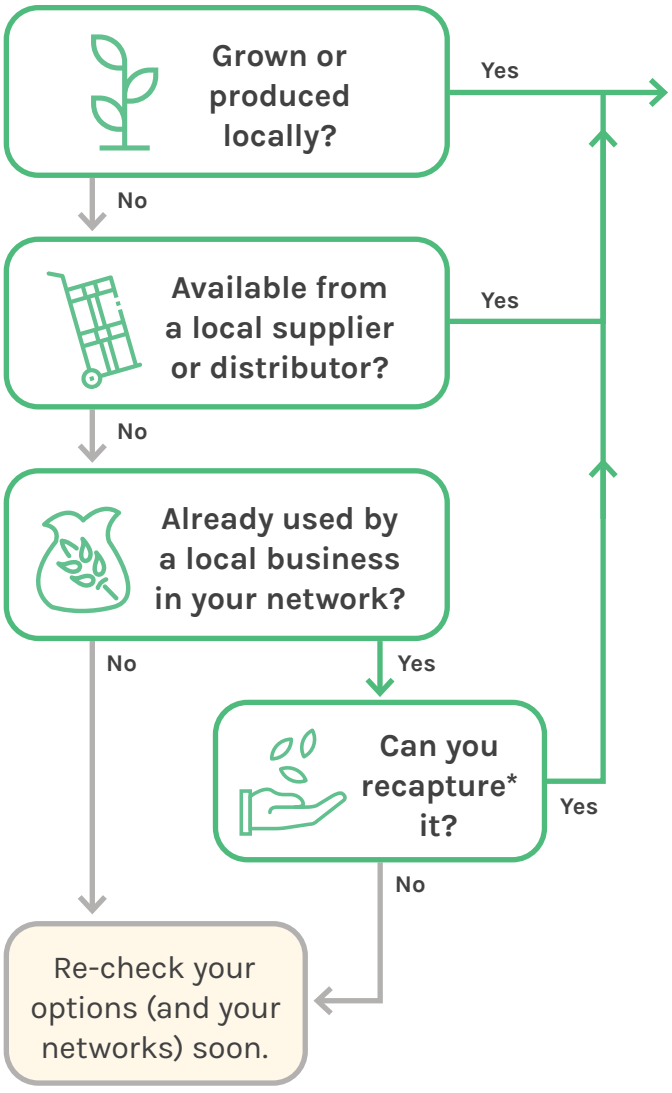
CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR SOURCING PILOT

If your top three products are not currently from local producers or vendors, do some research on locally grown or produced options. It may be helpful to refer to the **Product Inputs** worksheet you filled out earlier.

LOCAL ALTERNATIVES:

Can you find an ingredient/input that is...



Describe the ingredient/input source.

How does this source compare to your current source, based on the following factors?

Cost:

Convenience:

Quality:

Circular economy practices:

Set a goal to try this source as a pilot!

One of your goals might be to try a locally grown, locally distributed, or locally recaptured substitution in a test run over a certain period of time and see how it goes. Make sure to track any cost savings, additional costs, added revenue, or other impacts of the trial!

* ***A recapturing story:*** *An ice cream maker has a coffee roaster in her local network. When the coffee roaster has unsold, roasted beans that are past peak freshness, the ice cream maker offers to buy them at a discount to make coffee ice cream. The ice cream maker gets a locally sourced (and discounted!) ingredient, and the coffee roaster gets value from the sale instead of discarding the product.*

YOUR STUFF

FOOD RECOVERY & ORGANIC WASTE DIVERSION

▲ *Photo by Leah Kuhn*

LEARN

CURB AND REDIRECT ORGANIC WASTE

According to a 2018 ReFED report, "the U.S. restaurant sector generates 11.4 million tons of food waste annually, the full cost of which is more than $25 billion."[17] The majority of this food waste is sent to landfills, where it releases methane, a potent greenhouse gas, into the environment and serves no useful purpose.

In a circular economy, edible food is instead recovered and distributed to those who need food, and non-edible food (i.e., food scraps) is composted or used in a biogas/biomass energy generation system.

Luckily for small businesses, there is an immense economic opportunity in curbing food waste that also brings potential environmental and social benefits.

A 2017 report by Champions 12.3 found that for every dollar invested in food waste reduction, restaurants can realize approximately $8 in savings.[18]

The EPA's Food Recovery Hierarchy (shown on the next page) "prioritizes actions organizations can take to prevent and divert wasted food."[19] Recovery strategies at the top of the hierarchy create the most social, economic and environmental benefits.

A few strategies (e.g., ordering only what you need, sourcing "imperfect" product from farms) for food waste prevention are covered in the **Ingredient Sourcing** section, starting on page 44. This section focuses on post-processing and post-consumer waste.

The EPA's chart prioritizes feeding hungry people first, followed by animals, then industrial uses and composting. Landfills

and/or incineration are relegated to a last resort if no other use can be found. Keep these guidelines in mind as you set your circular goals and take action.

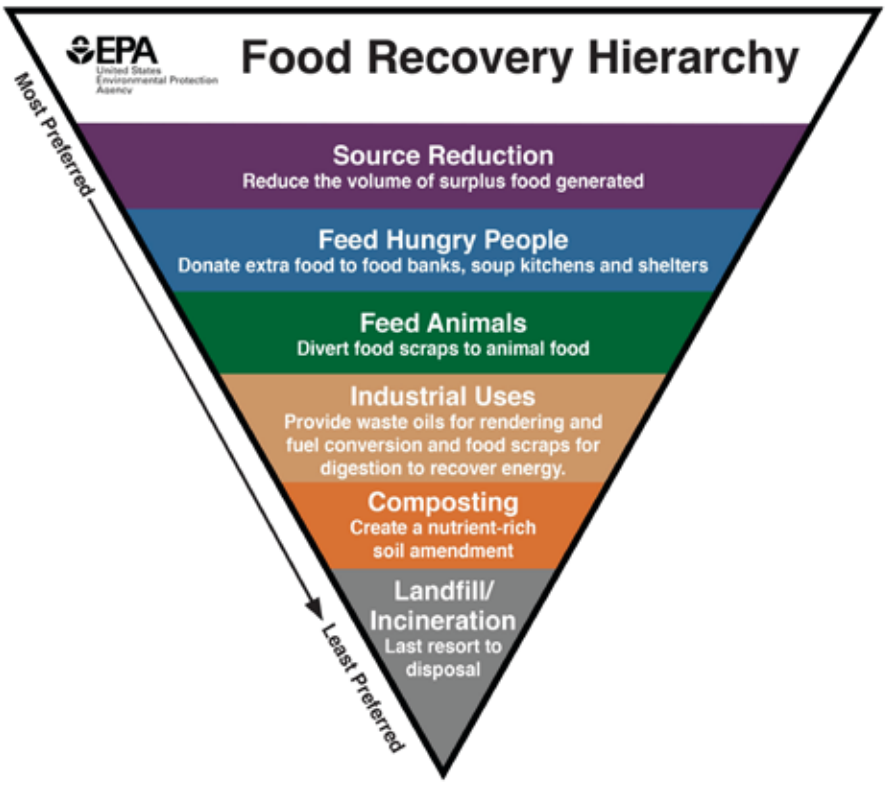
ASSESS

WHAT IS YOUR CURRENT STATE?

The first step in reducing food waste is to understand how much and what types of waste your business generates today.

You should know when and where the waste is happening. Is it in the kitchen, on the processing line, or in the dining room? A great way to get this information is by conducting a **waste audit**.

Roll up your sleeves and get ready to dig through some trash! The **Waste Audit** worksheets on the next two pages will help guide you through the process.



Source: Environmental Protection Agency (2019).

WASTE AUDIT PROCESS

To successfully complete a waste audit, an item-by-item sorting and weighting approach is recommended. The process is summarized in the following series of steps:

1 Think about your current waste management practices & timing.

How often is trash collected?

How often is recycling collected?

2 Estimate the types of waste material you generate and create preliminary categories.

- ☐ **Paper** _____
- ☐ **Plastic** _____
- ☐ **Metals** _____
- ☐ **Organic waste** _____
- ☐ **Glass** _____
- ☐ **Other** _____

Notes on the types of material you discard, collect and/or recycle (e.g., paper, organic/food, metal, plastic, glass)?

3 Determine time period for your audit based on your specific operational practices *(for example: 1 day, 1 week or 1 month)*. Over this time, you should be able to get a good sampling of the waste regularly created by your business.

How long should our waste audit last?

4 Collect waste over the amount of time you determined in Step 3.

5 For each sample, lay waste out on tarp and sort by material type and category. **Take photographs** throughout the waste audit.

6 Weigh waste and record data (e.g., material type, category, weight, collection location, sorting date) on a **Waste Audit Data Sheet**.

7 Analyze data and make recommendations.

For example, if there is a high organic waste content, set a goal to work with local composters to collect the material.

ASSESS

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS

plantchicago.org/toolkit

PLANT CHICAGO

WASTE AUDIT DATA SHEET

Lay waste out on tarp and sort by material type and category. **Weigh waste** and record data (material type, category, weight, collection location, sorting date) here.

Collection location:	*Date:*	*Sheet number:*

Estimate what percentage of the waste for each material type can be diverted in the following ways. Your percentages don't need to add up to 100%

CATEGORY	MATERIAL TYPE	TOTAL WEIGHT	REDUCE	DONATE/ EXCHANGE	RECYCLE	COMPOST
Paper	Mixed Paper		%	%	%	%
	Cardboard		%	%	%	%
	Newspaper		%	%	%	%
Plastic	Plastic Bottles #1 (PETE) or #2 (HDPE)		%	%	%	%
	# 3, 4, 5, 7		%	%	%	%
	Polystyrene # 6		%	%	%	%
	Plastic Film		%	%	%	%
	Other Plastics		%	%	%	%
Organic	Food Waste		%	%	%	%
	Yard Waste		%	%	%	%
Glass	Glass Bottles and Jars		%	%	%	%
Metal	Aluminum Cans		%	%	%	%
	Other Metal		%	%	%	%
Misc. Fiber, Metals, Residual, etc.	Misc. Items*, Textiles, Electronics		%	%	%	%
	Other Waste*		%	%	%	%

** Describe any misc. items or "other waste" found:*

SET GOALS

FOOD RECOVERY & WASTE DIVERSION GOALS

Depending on which food recovery and organic waste reduction-related circular economy practices (listed above) you want to focus on, you may want to use one of the following goals as a starting point. Or, feel free to make your own!

- % reduction in waste sent to landfill
- % or pounds of edible food donated to local organization(s)

Use the **Circular Goal Setting** worksheet in this section to capture your most important food recovery and waste reduction goal(s).

Action Step Recommendations

Depending on the goal(s) you set, you may want to choose from the following action steps to achieve your goals. Or, feel free to come up with your own action steps!

- Set up a system to measure waste consistently and accurately.
- Use waste data to inform ordering decisions and avoid over-ordering .
- Experiment with making new products from trimmings and other kitchen or production scraps (e.g., vegetable stock from veggie scraps).
- Offer "seconds" for employees to take home. This prevents food waste and potential food theft, and also doesn't require partnering with an outside organization or transporting food outside of your place of business.
- Partner with a local organization who distributes food to the community and donate edible items.
- Sign up for a local food scrap pickup service.
- Sign up for a local used cooking oil pickup service.
- Provide smaller servings of a menu item (like fries that come with a burger) and offering the option for a refill if the customer would like more. As ReFED's **Restaurant Food Waste Action Guide** suggests[20], this strategy leads diners to leave less uneaten food on the plate.

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of goals for your food recovery and organic waste diversion, you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress.

ADDITIONAL RESOURCES: FOOD RECOVERY & WASTE DIVERSION

FOOD RECOVERY

- The **Greater Chicago Food Depository** accepts donations from companies across the food industry. chicagosfoodbank.org/food-industry-donations
- **Feeding America** is a nationwide network of food pantries: feedingamerica.org
- The **Bill Emerson Good Samaritan Food Donation Act** protects food donors from criminal and civil liability if they are donating to a non-profit organization. feedingamerica.org/about-us/partners/become-a-product-partner/food-partners
- **Food Recovery Network** is a national nonprofit that supports students to fight food waste on campus and beyond. foodrecoverynetwork.org

ORGANIC WASTE DIVERSION

- **ReFED** has many food-waste prevention resources, including its "Top 27 Solutions to Food Waste," each of which is based on a detailed economy analysis: refed.com
- **Zero Waste Chicago** offers a variety of services for small businesses, including waste assessments, zero waste training and sourcing sustainable packaging. zerowastechicago.com/business
- **Illinois Wasted Food Solutions Task Force**: sevengenerationsahead.org/illinois-wasted-food-action-alliance
- **Illinois Food Scrap Coalition** has a range of resources and information on composting in Illinois: illinoiscomposts.org/resource-directory

CHICAGO-AREA FOOD SCRAP AND COOKING OIL PICKUP SERVICES

- **Illinois Food Scrap Coalition** has a comprehensive list of organic waste haulers and composters in the state: illinoiscomposts.org/haulers-processors
- **Collective Resource**: residential and commercial organic materials pickup. collectiveresource.us
- **Healthy Soil Compost**: residential and commercial organic materials pickup. healthysoilcompost.com
- **The Urban Canopy**: residential and commercial organic materials pickup. theurbancanopy.org
- **WasteNot Compost**: residential and commercial organic materials pickup. wastenotcompost.com/
- **Loyola Institute of Environmental Sustainability Cooking Oil Collection**: used cooking oil pickup and drop-off services. luc.edu/sustainability/initiatives/biodiesel/oil-donations/
- **Mahoney Environmental**: used cooking oil pickup and recycling service. mahoneyes.com

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

YOUR STUFF

PACKAGING

▲ *Photo by Leah Kuhn*

LEARN

SEND YOUR WASTEFUL PACKAGING PACKING

Unlike many other industries, packaging can be necessary in the food industry for important safety and consumer health reasons. In today's world, most of the packaging used across industries is made of plastic.

Unfortunately, according to a report by the Ellen MacArthur Foundation, "most plastic packaging is used only once; 95% of the value of plastic packaging material, worth US $80-120 billion annually, is lost to the economy."[21] Some of this plastic goes to landfills, but much of it ends up in the polluting the environment, including important bodies of water.

Some good news is that there are a growing number of options to purchase compostable packaging, recyclable packaging, packaging made from recycled materials, and reusable packaging. As a business owner, you'll have to decide what works for your business.

THE "COMPOSTABLE" TRAP

Part of making this decision is considering local recycling and composting programs and infrastructure. Even if you do send a customer home with compostable packaging, will they be able to compost it or will they end up sending it to a landfill anyway?

For instance, the City of Chicago does not offer municipal composting alongside landfill and recycling services. This, coupled with

the fact that the majority of "compostable" packaging can only be properly composted in an industrial system, means that most people in Chicago do not have an accessible way to compost this packaging.

However, surrounding municipalities, including Evanston, IL and Oak Park, IL, do offer municipal composting options for residents.

PACKAGING REGULATIONS

It's also important to keep in mind that your municipality may have specific regulations related to packaging.

In Chicago, retail stores are affected by the city's Checkout Bag Tax, which applies to all plastic and paper bags given to customers at the point of checkout.[22] In early 2020, an ordinance that would severely limit the use of single-use plastic items by restaurants was introduced in Chicago's city council.

Your local health department may also have regulations or guidance regarding reusing containers and allowing customers to bring their own containers. Be sure to check your local regulations before launching a new packaging initiative.

ASSESS

WHAT IS YOUR CURRENT STATE?

The first step in understanding your business's potential to use more circular packaging is to understand what your current packaging is made of.

- Complete the **Packaging Life Cycle** worksheet on the next page for each of your most-used pieces of packaging.
- Once you have described the materials and post-consumer options available for your current packaging, opportunities to find better options may become obvious.

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

PACKAGING LIFE CYCLE

This worksheet focuses on the packaging you use to sell, distribute, and/or transport your product(s). (To learn more about incoming/supplier-generated packaging, revisit the packaging section of the Product Inputs worksheet.)

Focus on your **three most-used pieces of packaging**. For each, answer the following:

PACKAGING TYPE:

What product(s) is the packaging used for? What function does it serve?

What is the piece of packaging made of?
If there are multiple components, list them all.

Is the piece of packaging all one type of material (e.g., a plastic bag or a cardboard box) or a combination of multiple materials (e.g., a cardboard box lined in wax or a glass jar with a metal lid)? Circle one.

One type of material **Multiple types of material**

What percentage of this piece of packaging is made from recycled materials?

%

After use, can this piece of packaging be...

☐ **Reused?**

How can it be reused by the customer (e.g., reusing a glass jar for storage)?

Could it be useful to me if it were returned to me by customers? If so, what extra steps would need to happen to reuse it after a return (washing, repairing, etc.)?

☐ **Recycled?**

NOTE:
Materials typically accepted by Chicago-area recycling haulers include the following:

- *#1-5 & #7 plastic bottles and containers (does not include plastic bags or foam products)*
- *Clean and dry paper or cardboard*
- *Cartons (milk and juice, etc.)*
- *Glass jars and bottles*
- *Aluminum, steel and tin cans*
- *Foil and pie tins*

☐ **Composted?**

NOTE:
While compostable packaging exists, many compostable packaging items must be sent to an industrial composting facility in order to be properly composted. The City of Chicago does not currently offer compost pickup services, so businesses would need to sign up for a private compost service. A list of companies in the Chicago area are listed in the toolkit under ***Additional Resources: Food Recovery & Waste Diversion.***

SET GOALS

PACKAGING GOALS

Depending on which packaging-related circular economy practices you want to focus on, you may want to use one of the following goals as a starting point. Or, feel free to make your own!

- % reduction in overall packaging
- switch from mixed materials to 100% recyclable or compostable materials
- % of packaging made from recycled content
- % of packaging able to be recycled by consumers
- % of packaging able to be composted by consumers

> **Remember, the City of Chicago does not offer municipal composting services.** Since most compostable packaging won't break down in backyard compost systems, this could be a difficult goal to meet. Reducing the overall amount of packaging is always the best option in a circular economy.

- % packaging able to be returned to my business for reuse or proper composting

Use the **Circular Goal Setting** worksheet in this section to capture your most important packaging goal(s).

Action Step Recommendations

Depending on the goal(s) you set, you may want to choose from the following action steps to achieve your goals. Or, feel free to come up with your own action steps!

- Reduce packaging if possible. *Ask yourself: Is there a way to reduce packaging? Is there excess/unnecessary packaging? Could I meet my packaging needs with less materials?*
- Reuse packaging materials.
- Redesign packaging to be more aligned with CE principles. These can include reclaimed/recycled materials, alternative materials (such as bio-based or renewable materials), recyclable, or compostable materials.
- Reach out to your current supplier to see whether they offer the packaging you might need if you decide to redesign your packaging to fit one of the above criteria.
- If any of the above options are available, do a trial run and see how it goes.
- If your order is too small to get a packaging supplier to try something

new, consider teaming up with other small businesses in your area or industry to make a bulk order.

- Educate your customers on the proper treatment of recyclable or compostable packaging through in-person reminders, online communications and labels on packaging. Recycling or compostable packaging thrown in the garbage has negative environmental impacts.

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of packaging goals, you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress.

ADDITIONAL RESOURCES: PACKAGING

- In their report "**Reuse: Rethinking Packaging**," the Ellen MacArthur Foundation reported on several potential models of returnable/reusable packaging, with corresponding case studies from real businesses. ellenmacarthurfoundation.org/assets/downloads/Reuse.pdf
- Recycle By City has a helpful **guide for household recycling in Chicago**: recyclebycity.com/chicago/guide
  Note that your commercial provider may have different practices/requirements.

CHICAGO-BASED COMPANIES THAT MAKE COMPOSTABLE PACKAGING

The products offered by these companies are not compostable in a typical home/backyard composting setup. They must be sent to an industrial composting facility to be composted. Residents and businesses would need to sign up with a private organic waste hauler if they want to properly compost these items.

A list of private haulers can be found in the Food Recovery & Organic Waste Diversion resources section on page 52.

- **Onyx Company**: onyxcompany.com
- **Elevate Packaging**: elevatepackaging.com

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

YOUR STUFF

NUTRIENT MANAGEMENT

▲ *Photo by Scott O'Malley*

LEARN

BUILD LOCAL HEALTH FROM THE GROUND UP

In a local circular economy, farms should manage nutrients in order to regenerate natural ecosystems through improving soil health and minimizing nutrient runoff to waterways. Not only does proper nutrient management benefit local ecosystems, but it also benefits crop health and overall farm productivity.

While all food businesses must manage nutrients in a way, this section is geared toward nutrient management for farms. Other types of food businesses should refer to the **Ingredient Sourcing** and **Food Recovery & Organic Waste Diversion** sections for information on managing incoming nutrients — in the form of raw ingredients — and outgoing nutrients — in the form of your products and byproducts.

Adding too few nutrients to the soil (or water, in the case of hydroponic and aquaponic growing) can be detrimental to plants, but adding too many or adding the right amount at the wrong time can cause runoff, leading to environmental issues like dead zones in important bodies of water.

A key practice in "circular" nutrient management for soil-based farms is the use of compost, preferably from a local source, as opposed to nutrients from synthetic fertilizer products.

Water-based Growing Systems

Controlled Environment Agriculture (CEA), which includes indoor hydroponic and aquaponic growing, is a relatively new industry. There is currently very little information about best practices in nutrient management for water-based indoor growing systems. We include a few resources at the end of this section, and we hope that more research will be done in the near future.

ASSESS

WHAT IS YOUR CURRENT STATE?

One way to understand which nutrients, and in what quantity, your soil might need is to get your soil tested. If you can pinpoint certain nutrients that are needed in your unique soil profile, you will be less likely to over-apply nutrients on your land.

SET GOALS

NUTRIENT MANAGEMENT GOALS

Depending on the state of your soil and local ecosystem, you should identify one or more goals to pursue to ensure they are as strong as possible in the future.

Use the **Circular Goal Setting** worksheet in this section to capture your most important nutrient management goal(s).

Action Step Recommendations

Depending on the goal(s) you set, you may want to choose from the following action steps to achieve your goals. Or, feel free to come up with your own action steps!

ORGANIC FARMING STRATEGIES

- Plant cover crops.
- Use compost, along with other soil-building strategies in place of chemical fertilizers.
- In a hydroponic system, use a nutrient solution made from organic matter such as worm compost tea instead of a synthetic nutrient solution.
- Explore possibilities to treat and recycle water used in your hydroponic system.

CULTIVATE SOIL BIODIVERSITY

- Use diversified crop plantings.
- Integrate fungi into soil to encourage mycorrhizae (symbiotic/beneficial relationships between fungi and plants that can help with water and nutrient uptake).
- Integrate livestock to aerate and fertilize soil.

TAKE ACTION

ACTION PLANS & MEASUREMENT

Now that you have a set of goals for your nutrition management, you can take action and make them happen.

Along your journey, take notes and measurements (where applicable) to track your progress.

ADDITIONAL RESOURCES: NUTRIENT MANAGEMENT

- The **University of Illinois Extension** maintains a list of soil testing labs in Illinois. web.extension.illinois.edu/soiltest
- Learn more about soil health via the **Sustainable Agriculture Research & Education program** (SARE). sare.org/Learning-Center/What-is-Soil-Health
- Advocates for Urban Agriculture offers **technical assistance for Chicago-area urban farms** and a **comprehensive resource guide** for Chicago-area urban farmers. auachicago.org/technical-assistance auachicago.org/resources
- The **Chicago chapter of the Bionutrient Food Association** offers events and resources geared toward soil health and sustainable nutrient management. bionutrient.org/site/chapters/US/chicago-il
- The University of Arizona's **Controlled Environment Agriculture (CEA) Center** has a wide variety of CEA research and resources: ceac.arizona.edu
- An ongoing multi-state project through the **National Institute for Food and Agriculture** is researching how technology can assist with water and nutrient management in CEA systems. Part of the research project looks at how new applications of technology can help CEA operations avoid nutrient run-off and over-use of water resources. nimss.org/projects/view/mrp/outline/18481
- **The Hydroponics Planet** has a few helpful DIY guides for making organic nutrient solutions and reusing/recycling water in a hydroponic system. thehydroponicsplanet.com/diy-hydroponic-nutrients-6-cheaper-homemade-recipes thehydroponicsplanet.com/how-to-recycle-hydroponic-water-a-beginners-guide
- The USDA has a wide variety of resources related to nutrient management, soil erosion, and organic growing techniques like agroforestry. usda.gov/topics/forestry/agroforestry
- The USDA also provides technical assistance for urban farms on topics related to nutrient management. nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/urbanagriculture

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

What is one reason this matters to my business?

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

COMING FULL CIRCLE

COMMUNICATE & ITERATE

Tracking, Adjusting, Communicating and Iterating on Your Circular Economy Goals

CONGRATULATIONS ON SETTING YOUR LOCAL CIRCULAR GOALS!

By now you should have at least one goal with an accompanying action plan to implement a local circular economy practice within your business operations.

If you're not sure what your action plan is, look back at your Circular Goal Setting worksheet(s). The prompts on each sheet should help you determine what your action plan is and who should be involved in carrying out the plan.

Now that you know where you're headed (and why!), it is important to communicate this information with Your People and Your Networks.

Look back at what you discovered in those two sections to help you think about who you will need to communicate with, what those people/groups care about, and how best to communicate with these audiences.

For example, you may want to:

- Host a training session for employees on separating organic waste streams.
- Launch a social media campaign to let customers know about your new returnable packaging system.
- Set up phone calls with your suppliers to let them know about your new circular purchasing policy.

▶ *Photo by Leah Kuhn*

MONITOR YOUR PROGRESS

It's also important to make sure you track data regularly to monitor your progress and know when you've met the goal you set. Make sure you're including financial data in your tracking system! This will help you determine whether implementing certain local circular economy practices helps you reduce costs, increase revenue, or otherwise affects your bottom line.

There may also be intangible benefits to implementing these new initiatives, such as increased employee welfare, community engagement and more meaningful customer interactions. Work with Your People and Your Networks to come up with a tracking schedule and system that works for your business and any project partners.

ADJUSTING YOUR PLAN

If you didn't meet your goal in the time frame you anticipated, that's okay! Go back and look at your goal setting worksheet to see if you need to adjust your action plan or utilize different or additional resources to help you accomplish your goals.

Don't forget to communicate your goal, including any challenges you've experienced, to Your People and Your Networks. You never know who might be able to offer resources and support!

CELEBRATE YOUR SUCCESS

Once you've achieved your original goal (and celebrated this huge accomplishment!), it's time to communicate your success. Achieving a circular economy goal is an exciting opportunity to share your circular economy success stories with employees, customers, partners and other members of your network. Communicating your progress can also be helpful to other businesses in Your Network who might also be on their own circular economy journey.

STAYING AWAY FROM "GREENWASHING"

If you're communicating your successes via marketing channels, such as social media platforms or product labels, it's important to communicate accurate information with consumers without "greenwashing" your business or your products.

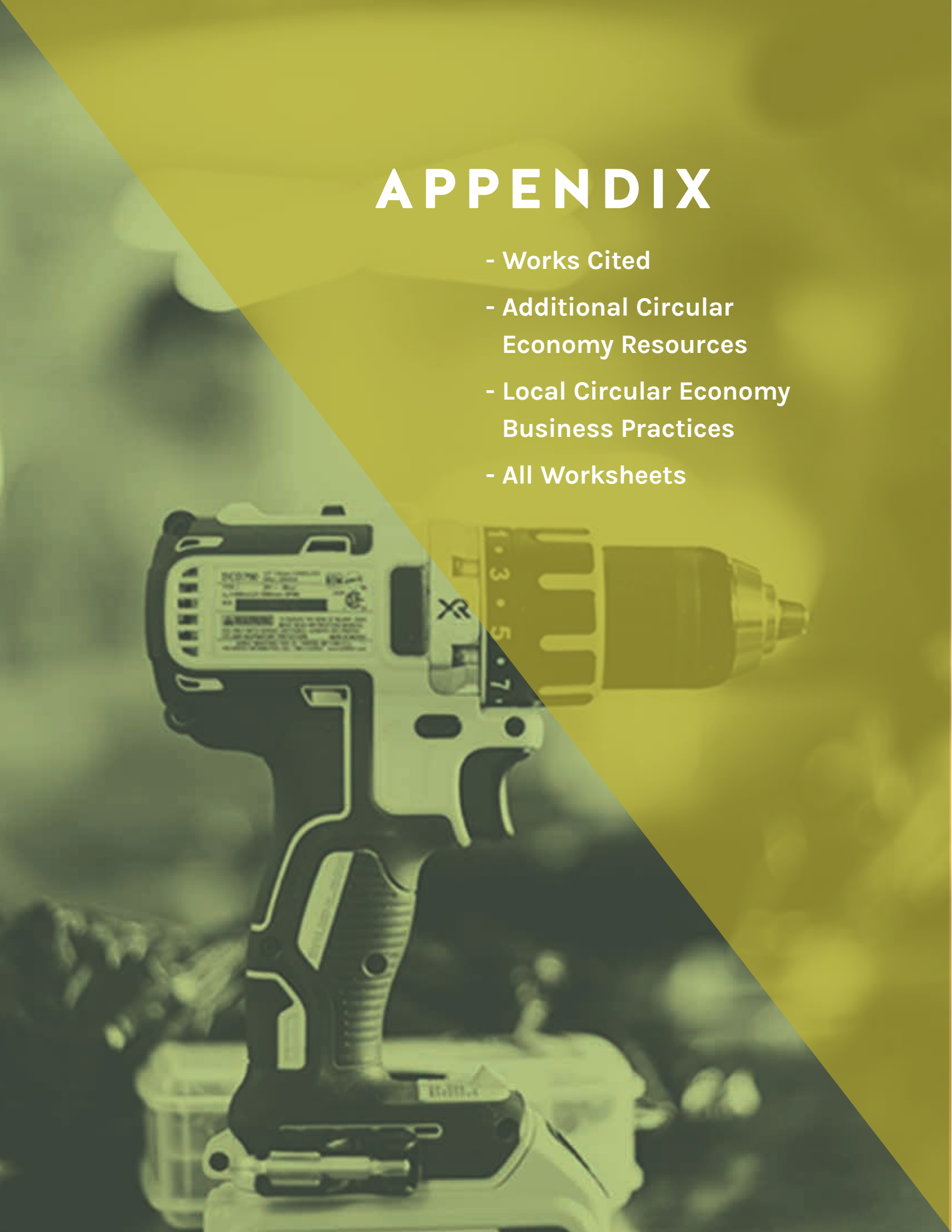
One way to do this is to avoid using general terms like "green" or "eco-friendly" to describe your products. If general claims are made, they should be qualified with clear and specific information about how the product benefits the environment. The US Federal Trade Commission offers more specific guidance on this topic through their **Green Guides**.

ITERATE!

Lastly, once you've achieved your original goal, you'll want to update it or set a new one. This could mean improving a system you've already been working on or focusing on a new circular economy opportunity. For example, if you achieved a goal of diverting 50% of your waste from the landfill through recycling and composting, you'll need to decide if it's feasible to try for a higher diversion rate or move onto a different area, like ingredient sourcing, instead.

APPENDIX

- Works Cited
- Additional Circular Economy Resources
- Local Circular Economy Business Practices
- All Worksheets



WORKS CITED

INTRODUCTION

1 U.S. Small Business Administration Office of Advocacy. **Frequently Asked Questions About Small Business**. cdn.advocacy.sba.gov/wp-content/uploads/2019/09/24153946/Frequently-Asked-Questions-Small-Business-2019-1.pdf

2 United States Census Bureau. **2015 Firm and Estab Release Tables**. census.gov/programs-surveys/bds/data/data-tables/2015-firm-and-estab-release-tables.html

3 Kobe, Kathryn, for U.S. Small Business Administration Office of Advocacy. **Small Business GDP: Update 2002-2010**. cdn.advocacy.sba.gov/wp-content/uploads/2019/05/10163006/Small-Business-GDP-Update-2002-2010-Full-Report.pdf

4 United Nations. **Sustainable Development Goals**. un.org/sustainabledevelopment/sustainable-consumption-production

5 Kirchherr, Julian & Reike, Denise & Hekkert, M.P.. (2017). Conceptualizing the Circular Economy: An Analysis of 114 Definitions. SSRN Electronic Journal. 127. 10.2139/ssrn.3037579

6 Ellen MacArthur Foundation. **What is a circular economy?** ellenmacarthurfoundation.org/circular-economy/concept

7 ING. **Opportunity and disruption: How circular thinking could change US business models**. ingwb.com/media/2692501/ing_us-circular-economy-survey-05-02-2019.pdf

8 World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company. **Towards the Circular Economy: Accelerating the Scale-up Across Global Supply Chains**. www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf

9 United Nations Environment Programme. **Resource Efficiency: Potential and Economic Implications**. resourcepanel.org/sites/default/files/documents/document/media/resource_efficiency_report_march_2017_web_res.pdf

10 Accenture. Newsroom: **The Circular Economy Could Unlock $4.5 Trillion of Economic Growth, Finds New Book by Accenture**. newsroom.accenture.com/news/the-circular-economy-could-unlock-4-5-trillion-of-economic-growth-finds-new-book-by-accenture.htm

YOUR STUFF

11 United States Environmental Protection Agency. **Guide to Purchasing Green Power**. epa.gov/sites/production/files/2016-01/documents/purchasing_guide_for_web.pdf

12 Citizens Utility Board. **Community Solar in Illinois**. citizensutilityboard.org/community-solar-illinois

13 Citizens Utility Board. **Electric Competition: A Guide For ComEd Customers**. citizensutilityboard.org/electriccompetitioncomed

14 Martinez, Steve et al. United States Department of Agriculture. **Local Food Systems: Concepts, Impacts, and Issues**. ers.usda.gov/webdocs/publications/46393/7054_err97_1_.pdf

15 U.S. Green Building Council. LEED BD+C, **Regional materials**. usgbc.org/credits/new-construction-schools/v2009/mrc5

16 Ellen MacArthur Foundation. **Cities and Circular Economy for Food**. ellenmacarthurfoundation.org/publications/cities-and-circular-economy-for-food

▶ *Photo by Leah Kuhn*

17 ReFED. **Restaurant Food Waste Action Guide**, 3. refed.com/downloads/Restaurant_Guide_Web.pdf

18 Champions 12.3. **The Business Case for Reducing Food Loss and Waste**. champions123.org/the-business-case-for-reducing-food-loss-and-waste/

19 United States Environmental Protection Agency. **Food Recovery Hierarchy**. epa.gov/sustainable-management-food/food-recovery-hierarchy

20 ReFED. **Action Guide**, 35.

21 Ellen MacArthur Foundation. **The New Plastics Economy: Rethinking the Future of Plastics.** ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics

22 City of Chicago. **Checkout Bag Tax - UPDATED**. chicago.gov/city/en/depts/fin/provdrs/tax_division/news/2016/december/NewCheckoutBagTax.html

MORE CIRCULAR ECONOMY RESOURCES

CIRCULAR ECONOMY CONCEPT

Learn more about the general concept and the worldwide Circular Economy movement.

- The **Ellen MacArthur Foundation** offers a wide variety of CE resources, including podcasts, reports, videos, infographics and more. ellenmacarthurfoundation.org
- Start with the **Circular Economy Concept explainer video** for a quick intro to the CE concept. youtube.com/watch?v=zCRKvDyyHml
- IDEO and Ellen MacArthur Foundation's **Circular Design Guide** is meant to help designers (and others!) get into a circular mindset with downloadable worksheets and tools. circulardesignguide.com
- **Circular Economy Knowledge Map** from Het Groene Brein. kenniskaarten.hetgroenebrein.nl/en/kenniskaart/circular-economy

- The **US Chamber of Commerce Foundation** offers a variety of resources on CE for businesses in the US, including reports, case studies, webinars, and an online Circular Economy Toolbox. uschamberfoundation.org/sustainability-and-circular-economy/resources-and-programming
- The **UN Sustainable Development Goals** are not explicitly tied to the CE movement, but are a great framework for thinking about the importance of sustainability topics in our global ecosystem. sustainabledevelopment.un.org

CIRCULAR ECONOMY METRICS

Learn about more ways to measure the "circularity" of your business.

- **Circulytics** from the Ellen MacArthur Foundation. ellenmacarthurfoundation.org/resources/apply/circulytics-measuring-circularity
- The **UL 3600 Standard** measures and certifies products, facilities and companies according to specific circular indicators. ul.com/resources/circularity-facts-program

CHICAGO-AREA SECONDHAND RESOURCES

Rent or purchase second-hand products locally with these organizations.

- **Chicago Tool Library** chicagotoollibrary.org
- **The Waste Shed** thewasteshed.com
- **Rebuilding Exchange** rebuildingexchange.org
- **ReUse Depot** reusedepot.org
- **Habitat for Humanity ReStores** chicagolandhabitat.org/site/PageServer?pagename=where_we_build
- **Evanston Rebuilding Warehouse** evanstonrebuildingwarehouse.org
- Restaurant auctions & estate sales
- Online platforms that allow people and organizations to sell or trade used items include **Craigslist** (chicago.craigslist.org), **OfferUp** (offerup.com/explore/sc/il/chicago), and **Rheaply** (rheaply.com)

LOCAL CIRCULAR ECONOMY BUSINESS PRACTICES

In a local circular economy, a business should:

- ***Regenerate local ecosystems***
- ***Address the needs and aspirations of local stakeholders***
- ***Increase local human knowledge and capacity around circular economy practices***

This list of best practices was generated collaboratively in 2019 by Plant Chicago and a group of advisors with experience in business, academics, community outreach and circular economy practices.

TO REGENERATE LOCAL ECOSYSTEMS:

- Purchase inputs that can be locally regenerated (e.g., reused, recycled, composted).
- Purchase inputs that are made with local materials.
- Purchase inputs that are produced locally.
- Source renewable energy.
- Contract local services to divert non-product outputs from the landfill (through repair, reuse, recycling, composting, etc.).
- Extend the life of available resources and equipment.
- Reincorporate waste products into production or end product.

- Return nutrients to the correct ecosystem.
- Properly dispose of toxic materials.
- Maximize energy efficiency.
- Support biodiverse ecosystems through sourcing ingredients that are not grown in monoculture.
- Build products that are made to last.
- Design out waste.
- Create a culture that values reuse.
- Share equipment.
- Locate operations close to the resources and infrastructure that will be used.
- Accurately measure inputs and outputs on a regular basis.
- Identify indicators of success based on the conditions of the local ecosystem, instead of financial gains alone.
- Quantify and communicate non-financial transactions (e.g., sharing equipment, reusing/repurposing another business's old equipment).

TO ADDRESS THE NEEDS AND ASPIRATIONS OF LOCAL STAKEHOLDERS:

- Actively involve local agents in defining all benefits the business can bring to the local economy.
- Actively form partnerships with local stakeholders based on complementary capabilities.
- Strengthen existing relationships between local agents.
- Work with local stakeholders to shape and sign a community benefits agreement.
- Open-source data using the appropriate medium & language to reach local stakeholders.
- Hire & train local talent.
- Pay a living wage.
- Hold or attend regular meetings with local stakeholders.
- Actively involve employees at all levels in decision-making processes.
- Allow individual employees to take ownership over special projects that could further CE practices.
- Share resources and information with other local businesses.
- Share resources and information with local agents/stakeholders.
- Identify indicators of success based on the needs and aspirations of local agents, instead of financial gains alone.
- Cultivate and quantify non-financial transactions (e.g., sharing equipment).
- Work with diverse stakeholders.
- Promote fellow local businesses.

- Involve customers and other local agents in decision making process and/or business operations.
- Reinvest profits locally (e.g., through supporting local artisans, suppliers and/or educational programs).
- Promote non-financial successes to local leaders.
- Actively solicit regular feedback from local stakeholders (and incorporate it, as appropriate).

TO INCREASE LOCAL HUMAN KNOWLEDGE AND CAPACITY AROUND CIRCULAR ECONOMY PRACTICES:

- Hire & train local talent.
- Create a workplace culture that values reuse and sharing.
- Educate customers about CE practices (e.g., build excitement about use/reused products and/or educate on proper ways to reuse/repurpose/divert materials in a product after consumption).
- Actively involve employees at all levels in decision-making processes.
- Train employees at all levels on CE practices (e.g., waste audits, MEFA studies, equipment repair, composting, etc.).
- Share accurate data on inputs and outputs with employees, customers and potential collaborators.
- Open-source "how-tos" to replicate their success with implementing a CE practice.
- Share information with other businesses.
- Connect employees with professional development activities related to CE.

ALL WORKSHEETS

Each of the worksheets found throughout the Local Circular Economy Toolkit are copied here for reference.

- **Empathy Map**
- **Geographic Range**
- **Your Stakeholders**
- **Symbiotic Groups**
- **Product Inputs**
- **Input Deep-Dive**
- **Circular Sourcing Pilot**
- **Waste Audit Process**
- **Waste Audit Data Sheet**
- **Waste Audit Data Sheet: Blank**
- **Circular Goal Setting** x3

ASSESS

EMPATHY MAP

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS

plantchicago.org/toolkit

PLANT CHICAGO

What does someone else experience when they interact with your business? Use this worksheet to understand your customers, employees and other stakeholders better by noticing what they see, hear, say and do. Write down your hypotheses in each area.

WHO are you empathizing with?

Customer type, employee, stakeholder, etc.

WHAT is their goal?

What do they want to achieve when they interact with your business?

WHAT DO THEY **SEE**?

WHAT DO THEY **SAY**?

WHAT DO THEY **HEAR**?

WHAT DO THEY **DO**?

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

GEOGRAPHIC RANGE

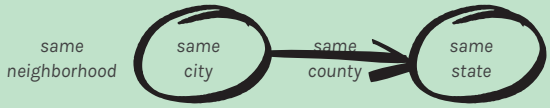
Where your business activities take place, and the people, places and things those activities affect, define your boundaries. These impacts can be economic, environmental and/or social. How local or global are your boundaries?

DISTANCE:

For each of the following rows, circle two choices. First, circle the **shortest distance** each one travels to or from your business. Second, circle the **longest distance** one travels.

EXAMPLE

How far do our **employees** travel to get to work?



How far do our...							
Employees travel to get to work?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Ingredients/inputs travel to get to our business *(including ingredients & packaging)*?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Products travel to reach a customer?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Waste travel to be processed, reused, recycled or disposed of?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*
Products travel to be processed, reused, recycled, or disposed of after they're used?	*same neighborhood*	*same city*	*same county*	*same state*	*same region*	*same country*	*different country*

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

YOUR STAKEHOLDERS

Your business likely interacts with a wide range of organizations, groups and people. We consider these your **stakeholders**: **people or groups who are affected by your activities or whose activities affect your business.** It is important to think about them during this process, because they are also affected by changes to your business.

We've listed some groups to start, but you should fill in any missing stakeholders.

1. **Cross out** ("X") any types of people who are **irrelevant or don't play a role**.
2. **Circle** the stakeholders who are being **helped or served** by your business.
3. **Star** the stakeholders who you consider **local**.

Customers

DESCRIPTION:

Employees

DESCRIPTION:

Business Partners

DESCRIPTION:

Supplier

DESCRIPTION:

Supplier

DESCRIPTION:

Landlord/ Tenant

DESCRIPTION:

Neighborhood Organization

DESCRIPTION:

Alderman

DESCRIPTION:

Investors

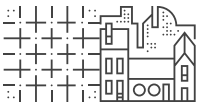
DESCRIPTION:

Chamber of Commerce

DESCRIPTION:

DESCRIPTION:

DESCRIPTION:



SYMBIOTIC GROUPS

Some networks you're a part of are harder to identify than your current stakeholders. Especially when it comes to your **local community**, nearby groups can affect each other in subtle ways (and might all be affected by the same people, decisions or pressures). For example, a new business starting in your neighborhood could bring more lunch customers, increase competition or even change the smells in the air!

List some businesses and organizations that coexist with you in your local area. They can include schools, nonprofits, community centers or others. If you need more ideas, check out the listings from your Neighborhood Council or Chamber of Commerce.

LOCAL BUSINESS, ORGANIZATION, COMMUNITY GROUP, ETC.	HOW DO YOU CURRENTLY INTERACT?	HOW COULD YOU INTERACT OR BENEFIT FROM EACH OTHER IN THE FUTURE?
01		
02		
03		
04		
05		
06		
07		

ASSESS

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS

plantchicago.org/toolkit

PLANT CHICAGO

PRODUCT INPUTS

What goes into your products has a big impact on your circular practices. Understanding your inputs/ingredients today can help you find room to improve.

INGREDIENT LIST:

Can you find areas to improve in your current set of inputs/ingredients?

*What are your **most used** ingredients? List them here.*

*Do you have any **"big ticket"** or **"special order"** ingredients? List them here.*

ESTIMATE:

Overall, what percentage of your inputs (or ingredients) are...

Any input/ingredient can be counted multiple times, so the total can be more than 100%

____ %

recaptured?

sourced from material that would otherwise be waste

____ %

produced locally?

within a specific geographic range that you consider local (e.g., 50 or 500 miles)

____ %

produced using CE practices?

sustainable and ethical toward people, animals and resources; these are often indicated by third party certifications

Of your recaptured ingredients/inputs, how many...

____ %

come from your own business?

____ %

come from another business or source?

Who are your current partners/sources? List them here.

INPUT DEEP-DIVE

Take a closer look at your **three most-used inputs/ingredients**.
For each ingredient, complete the following:

INGREDIENT: _____

Where do you purchase this input/ingredient? *(Circle one)*

From a vendor or distributor

Where does the product ship from?

Who is the original producer?

Directly from the source

Where is the producer located?

What type of packaging does it come in?

If the packaging has multiple components, list all components.

What do you know about how this input/ingredient was produced?

Circular economy practices include sustainable and ethical methods regarding people, animals and resources. Third-party certifications are often relevant, but the best way to learn this is to talk to your suppliers.

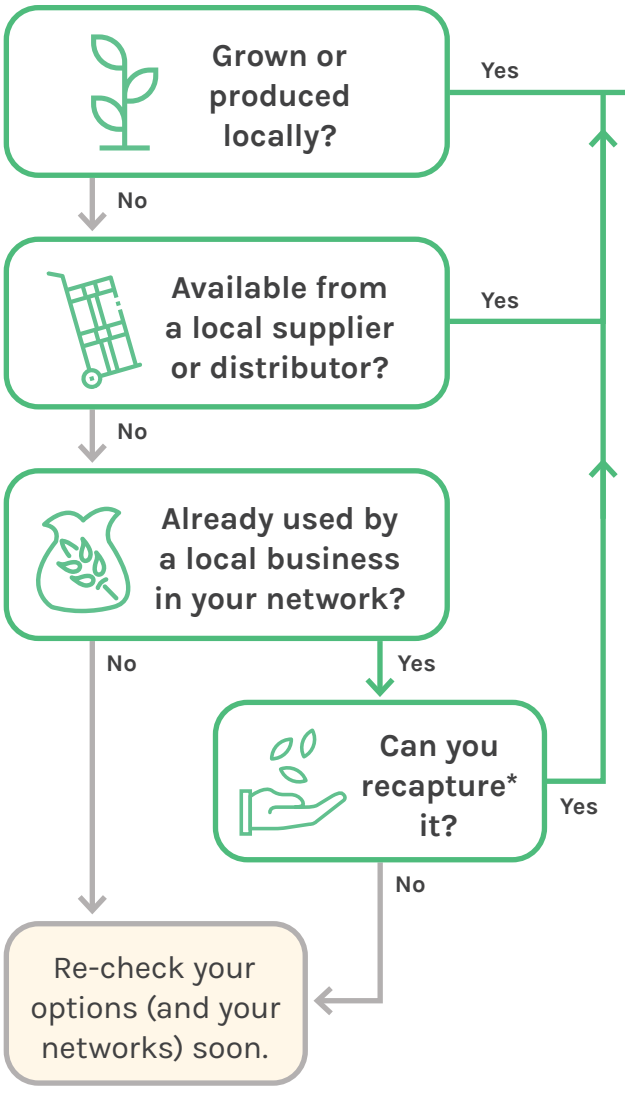
CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR SOURCING PILOT

If your top three products are not currently from local producers or vendors, do some research on locally grown or produced options. It may be helpful to refer to the **Product Inputs** worksheet you filled out earlier.

LOCAL ALTERNATIVES:

Can you find an ingredient/input that is...



Describe the ingredient/input source.

How does this source compare to your current source, based on the following factors?

Cost:

Convenience:

Quality:

Circular economy practices:

Set a goal to try this source as a pilot!

One of your goals might be to try a locally grown, locally distributed, or locally recaptured substitution in a test run over a certain period of time and see how it goes. Make sure to track any cost savings, additional costs, added revenue, or other impacts of the trial!

* ***A recapturing story:*** *An ice cream maker has a coffee roaster in her local network. When the coffee roaster has unsold, roasted beans that are past peak freshness, the ice cream maker offers to buy them at a discount to make coffee ice cream. The ice cream maker gets a locally sourced (and discounted!) ingredient, and the coffee roaster gets value from the sale instead of discarding the product.*

WASTE AUDIT PROCESS

To successfully complete a waste audit, an item-by-item sorting and weighting approach is recommended. The process is summarized in the following series of steps:

1 Think about your current waste management practices & timing.

How often is trash collected?

How often is recycling collected?

2 Estimate the types of waste material you generate and create preliminary categories.

- ☐ **Paper** _____
- ☐ **Plastic** _____
- ☐ **Metals** _____
- ☐ **Organic waste** _____
- ☐ **Glass** _____
- ☐ **Other** _____

Notes on the types of material you discard, collect and/or recycle (e.g., paper, organic/food, metal, plastic, glass)?

3 Determine time period for your audit based on your specific operational practices *(for example: 1 day, 1 week or 1 month)*. Over this time, you should be able to get a good sampling of the waste regularly created by your business.

How long should our waste audit last?

4 Collect waste over the amount of time you determined in Step 3.

5 For each sample, lay waste out on tarp and sort by material type and category. **Take photographs** throughout the waste audit.

6 Weigh waste and record data (e.g., material type, category, weight, collection location, sorting date) on a **Waste Audit Data Sheet**.

7 Analyze data and make recommendations.

For example, if there is a high organic waste content, set a goal to work with local composters to collect the material.

ASSESS

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS

plantchicago.org/toolkit

PLANT CHICAGO

WASTE AUDIT DATA SHEET

Lay waste out on tarp and sort by material type and category. **Weigh waste** and record data (material type, category, weight, collection location, sorting date) here.

Collection location:	*Date:*	*Sheet number:*

Estimate what percentage of the waste for each material type can be diverted in the following ways. Your percentages don't need to add up to 100%

CATEGORY	MATERIAL TYPE	TOTAL WEIGHT	REDUCE	DONATE/ EXCHANGE	RECYCLE	COMPOST
Paper	Mixed Paper		%	%	%	%
	Cardboard		%	%	%	%
	Newspaper		%	%	%	%
Plastic	Plastic Bottles #1 (PETE) or #2 (HDPE)		%	%	%	%
	# 3, 4, 5, 7		%	%	%	%
	Polystyrene # 6		%	%	%	%
	Plastic Film		%	%	%	%
	Other Plastics		%	%	%	%
Organic	Food Waste		%	%	%	%
	Yard Waste		%	%	%	%
Glass	Glass Bottles and Jars		%	%	%	%
Metal	Aluminum Cans		%	%	%	%
	Other Metal		%	%	%	%
Misc. Fiber, Metals, Residual, etc.	Misc. Items*, Textiles, Electronics		%	%	%	%
	Other Waste*		%	%	%	%

** Describe any misc. items or "other waste" found:*

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

WASTE AUDIT DATA SHEET: BLANK

Lay waste out on tarp and sort by material type and category. Weigh waste and record data (material type, category, weight, collection location, sorting date) here.

Collection location:	*Date:*	*Sheet number:*

Estimate what percentage of the waste for each material type can be diverted in the following ways. Your percentages don't need to add up to 100%

CATEGORY	MATERIAL TYPE	TOTAL WEIGHT	REDUCE	DONATE/ EXCHANGE	RECYCLE	COMPOST
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%
			%	%	%	%

** Describe any misc. items or "other waste" found:*

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

What is one reason this matters to my business?

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

What is one reason this matters to my business?

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

CIRCULAR ECONOMY TOOLKIT FOR SMALL BUSINESS
plantchicago.org/toolkit
PLANT CHICAGO

CIRCULAR GOAL SETTING

Setting well-defined goals is the first step to embracing circular practices in your business. We recommend using the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to help you write them. Learn more about SMART goals from the University of California at bit.ly/uc-smart-goals.

Date:

Circular Economy Topic:

What is one reason this matters to my business?

MY GOAL

Use the action plans and local circular economy practices in the toolkit as a starting point.

Who are the stakeholders involved (e.g., employees, customers, partners, suppliers, community)?

What barriers could get in the way? How could we overcome these?

What resources are needed to achieve this goal (e.g., stuff, time, people)?

What action steps can we take to achieve this goal?

How will we measure our progress? When will we collect data?

ACKNOWLEDGMENTS

DEAR READER,

Over the past year, I had the pleasure of leading Plant Chicago's **Circular Economy for Small Business** toolkit project. Like any project in a local circular economy, this toolkit would not have been possible without the help of Our People and Our Networks! Plant Chicago's toolkit working group met almost every month for about one year to help shape the vision, content, look, and feel of the toolkit. Below is a list of our working group members:

Dr. Weslynne Ashton, PhD
Associate Professor of Environmental Management and Sustainability at IIT Stuart School of Business

Phil Fry
Plant Chicago Board of Directors

Alexis Greco
BallotReady

Margaret Knap
Environmental Studies graduate student at University of Illinois-Springfield & Plant Chicago Toolkit Project intern

Dr. Nancy Landrum, PhD
Professor of Sustainability Management at Loyola University Chicago

Tara Larrue
Plant Chicago Auxiliary Board

Dr. John Mulrow, PhD
University of Illinois at Chicago

Dr. Andre Nogueira, PhD
Associate Researcher and Instructor at Harvard T.H. Chan School of Public Health

Shantanu Pai
Assistant Researcher at University of Illinois

Jonathan Pereira
Executive Director at Plant Chicago

Catherine Sheehy
Global Lead of Sustainability Partnerships, Environment & Sustainability at UL

Cassie Slimmer
Experience Designer

Tommy Straus
Plant Chicago Auxiliary Board & Compost Club Administrator at The Urban Canopy

Serena Suh
Research & Project Development intern at Plant Chicago

Eric Weber
Circular Economy Project Specialist at Plant Chicago

Special thanks to Plant Chicago interns **Margaret Knap** and **Serena Suh**, who interviewed and gathered feedback from the 10 small businesses who tested the first version of our toolkit worksheets. Margaret and Serena also did research, contributed content and gave valuable feedback on the toolkit. **Rosanna Lloyd** of Just Ice, Inc. and **Debbie Wood** of No Denial Foods were the first two business owners who agreed to test the toolkit. A huge thanks to them for putting in the time and giving insightful feedback that helped make the toolkit something that small food business could (and hopefully will!) use. Thanks also to the rest of the business testers, who asked to remain anonymous. Plant Chicago staff members **Kassie Hinrichsen** and **Stef Funk** spent time editing and proofreading the text, and toolkit working group member **Cassie Slimmer** took the content and vision created by the working group and turned it into the beautiful document — if we do say so ourselves — you see here, using wonderful photos from **Leah Kuhn** and **Scott O'Malley**.

This toolkit was made possible in part through the support of the Robert and Toni Bader Foundation.

Please contact Plant Chicago at **info@plantchicago.org** with questions, comments or requests for more information regarding the toolkit.

With gratitude,

LIZ LYON
Small Business and Circular Economy Manager at Plant Chicago

PLANT CHICAGO

Created in 2020 by Plant Chicago, NFP

For more information and downloadable content, visit **plantchicago.org/toolkit**