

# Climate Leadership in Chicago's Food Retail Sector



INSTITUTE  
OF DESIGN

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# 01 INTRODUCTION

**Course objective:** Leverage design research and strategy to shape climate action and wasted food management in the City of Chicago.


**Context: Climate leadership around wasted food in Chicago**

2023: Multi Stakeholder collaboration

2024: Food Retail

CHICAGO WILL  
REDUCE ITS  
CARBON  
FOOTPRINT

BY 62%  
BY 2040



Chicago's 2022 CAP Centers On Equity

To better serve communities that disproportionately experience the chronic stress of the changing climate and the shocks of extreme weather events, the 2022 CAP anchors all climate strategies with the objective to create a more just and equitable city. Alongside aggressive carbon emission reduction investments, governments must invest in climate actions that address and prevent furthering the legacy of social injustices in frontline and overburdened communities.

Co-benefits

Economic inclusion and savings

Reduced Pollution Burden

Equitable access to critical infrastructure

Community health and resiliency

Pillar	Strategy	Action
<div>2</div> <div>Build circular economies to create jobs and reduce waste</div>	<b>1. Reduce waste and landfilling</b>	<div>A. Introduce community-wide organic waste collection and decomposition by 2025</div> <div>B. Implement equitable waste source prevention strategies by 2030</div> <div>C. Divert 90% of commercial, industrial, and institutional waste by 2030</div> <div>D. Divert 75% of construction and demolition waste by 2030</div> <div>E. Enable building design for disassembly and reuse by 2035</div> <div>F. Divert 90% of residential waste by 2040</div>

## 02 METHODS

We used design, systems and futures thinking methods to envision pathways for addressing wasted food in the food retail sector in Chicago, in ways that build a more sustainable, equitable and just food system for all.



### UNCOVERING DIVERSE PERSPECTIVES

Analyze values and visions of City of Chicago, retailers and non-profit organizations surrounding wasted food



### MAPPING THE CURRENT STATE

Understand stakeholder priorities, challenges and potential barriers, and identify leverage points



### EXPLORING FUTURE POSSIBILITIES

Scan the horizon for signals of change and envision alternative pathways for tackling wasted food



# 02

Uncovering diverse perspectives

## METHODS



### Tools:

*En-ROADS*  
*Best practices*  
*Narrative analysis*  
*Mapping imaginaries*

### Main questions:

Why does wasted food matter? What **values and visions** drive stakeholders' efforts for addressing wasted food across Chicago?



**“Environmental Justice and Equity”**



**“Food as Human Right”**



**“Free from Hunger and Waste”**



**“The WE in Agency”**



# 02

Mapping the current state

## METHODS



### Tools:

Stakeholder map  
Causal loops  
Insights

### Main questions:

What are the **current initiatives** for addressing wasted food in the city, retail and rescue contexts? What are some of the **challenges** and underlying **tensions**?

### Insight 1: POLICY VOID

Chicago's food waste policy landscape is sparse with no definitive requirements. This presents both a problem and ample opportunity for impactful policies.

### Insight 2: TRUST FRAGILITY

Food rescue and donation relies on trust - communication gaps and failures to break the system. Effective *information transfer* between different players is needed.

### Insight 3: RESPONSIBILITY & RISK

Retail store associates are given the responsibility to rescue food for donation without time, proper knowledge or systems to rely on.

### Insight 4: LOSS PREVENTION

Retail corporate culture prioritizes loss prevention and cost minimization, leaving little room for rescue or recycling.



# 02 Exploring future possibilities

## METHODS



### Tools:

Horizon scanning  
STEEP analysis  
Scenario creation  
3 Horizons  
Futures wheel

### Main questions:

What are the **signals of change** that could influence the future of wasted food? What pathways could help tackle wasted food in **transformative ways**?

#### Edible Packaging

Edible packaging is gaining popularity as a sustainable alternative to traditional materials. It comes in two main forms: films and coatings. Films are like edible food wrap, while coatings are sprayed or dipped on food to create a protective layer. Both can be eaten or peeled off. Estimated growth of USD 2.8 billion by 2030.

##### Comments on impact:

- Less waste generation by individual homes, promoting circular economy
- It can act as a barrier against spoilage, potentially extending the shelf life of food products.



#### THE RISE OF HOME GARDENING

Accelerated by the pandemic, home gardening has become a popular hobby for both urban and non-urban dwellers. Households are producing their own vegetables from their gardens to save money, achieve sustainable goals, and enjoy a new hobby.

##### Comments on impact:

- Decentralization of food production and less reliance on big farms
- Heightened awareness on the resources needed to produce food, as well as the process of food harvesting



Source: <https://www.bbcnews.com/news/gardening-inflation-growing-vegetables-grocery-prices-social-media-1a1ba>

Samartha Chandra

#### Zero Waste Cooking

Zero-waste cooking means you have no waste left behind while cooking a meal. This includes parts of the ingredients you're using and packaging from the ingredients. When practicing zero-waste cooking, you will use every single part of vegetables, fruits, meat, and whatever else may be required for your dish. However, this doesn't mean you must use every part in one dish. Parts can be used for other dishes in your kitchen, get composted, or repurposed for another use. For example, Roast to Steam cooking.

##### Comments on impact:

- The aim is not only to reduce or avoid waste, but also to prevent waste from occurring in the first place by focusing on the entire product cycle of our food.



#### Decline in Market Share of Traditional Grocery Stores

The rise of warehouse clubs, supercenters, and home delivery services has contributed significantly to the decline in traditional grocery store market share. Consumers are increasingly attracted to the cost savings and convenience offered by bulk shopping centers and home delivery options, especially those with larger families. This shift underscores a broader trend towards convenience and value-driven purchasing behaviors.

##### Comments on impact:

- Traditional grocery stores have historically held the largest market share in at-home food consumption, but their dominance has dwindled over time. In 1997, they accounted for 72% of food expenditures at home, dropping to 54.2% by 2022.



<https://www.ft.com/market-intel/usda-data-reveals-shifts-in-food-purchasing-behavior>

Sanya



The city recently required grocery stores to facilitate the food waste management process in their local communities. As the Garden Manager, which is also a relatively new position, for some reason the task of managing the food waste drop-offs and the partnerships with the city fell onto her (maybe because the garden also generates waste?). While she understands the importance of this task, she is overwhelmed and have asked the management to hire a dedicated person to manage this new system and relationship.



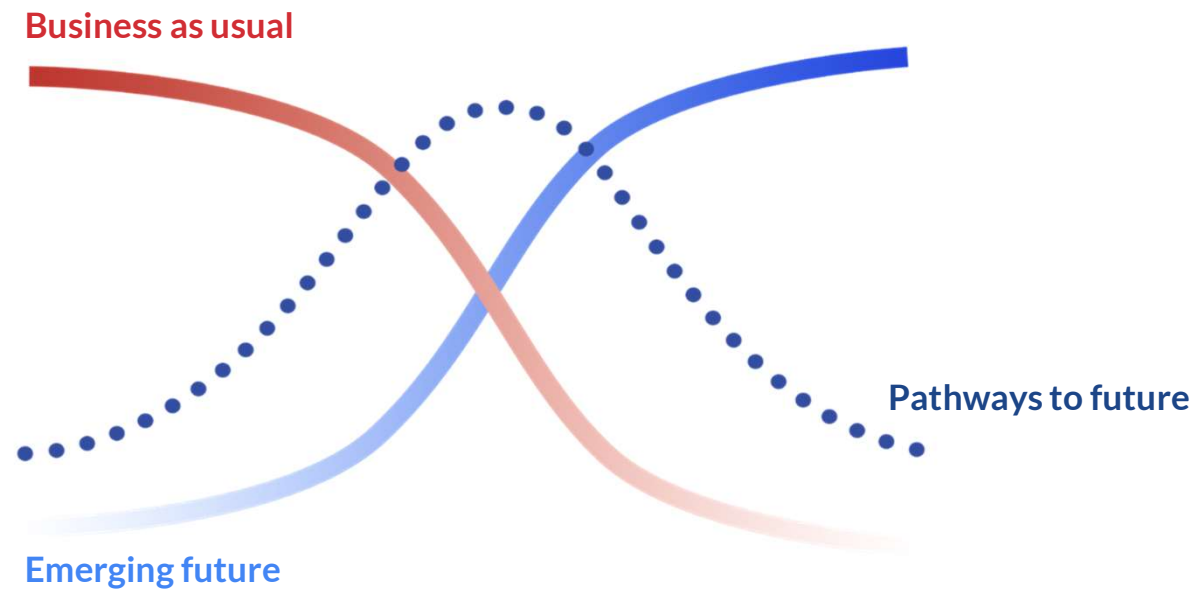
Job creation in waste mgmt and gardening

Added cost for retailers

Decreased strain on waste mgmt infrastructure

## 03 PROPOSED PATHWAYS 2030

We propose three pathways to open a dialogue about how to inspire transformative action and engage retailers for tackling wasted food in Chicago.



Adapted from Sharpe et al. 2016



I

## Consumer demand for planet-friendly, healthy, transparent food

What if...consumers better understood their food choices and the impact on the planet, and the [City of Chicago incentivized retailers and customers](#) to make [sustainable choices](#)?

### Vision 2030

**The year is 2030.** Chicago is a climate leader city with a sustainable food system that redirects, generates, and sustains demand for fresh produce, directly improving public and planetary health. (Planetary Health Diet)

### Evidence

#1

Consumers interested in growing their own food, also experience mental health and wellness benefits, community connections, increased food security and sense of accomplishment

#2

As consumers prioritize local, healthy, and sustainable options, independent grocery stores' unique strengths position them for a potential comeback

#3

Rising grocery costs due to climate change and extreme weather events are putting pressure on consumers. By 2035, higher temperatures alone are projected to increase annual food inflation by 0.92% to 3.23%.

#4

Taxes and clear product information can significantly influence consumer choices about food.

The EU revolutionizing labeling to extend shelf life, and Colombia taxes junk food starting 2025.

### Goals

Shift food demand and culture

Make planetary health diet convenient for consumers

Make healthy food more cost effective

Consumers are empowered to choose low climate impact food

# I

## Consumer demand for planet-friendly, healthy, transparent food



### Chicago's "Convenience" Redefined

Fast-track permits for plant-forward markets & stores. Partner perks include grants, training, and support to invest in sustainable infrastructure.



### Costs Reallocation

The city supports small businesses with operational insights and incentives to reduce costs, ensuring they remain competitive. To help with demand prediction and resource allocation, the city offers subscription boxes featuring a planetary diet and rescued food options.



### New Culture

City can steer sustainability culture shift. Clear labels highlight food's human and planetary impact. Disincentives such as billboard taxes and "harm fees" on unhealthy options can nudge behavior, while healthy food promotions on impulse shelves and optimized store layouts entice sustainable choices.

1. Supply Chain Complexity 2. Dependent on mass behavioral change 3. Affordability vs Accessibility 4. Cultural and Lifestyle Differences 5. Navigating Greenwashing and Trust

## I Consumer demand for planet-friendly, healthy, transparent food

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### How could we implement this in 3 years through a pilot experiment?

Activating existing infrastructure and networks around public transit in the Austin neighborhood to fast-track the implementation of sustainable food businesses and initiatives.

- Establish Sustainable Food Hub at Austin Boulevard Station. Offer incentives, such as reduced rent, tax breaks, or access to shared resources (e.g., commercial kitchens, cold storage), for small food businesses to flip food surplus into food resources.
- Prioritize and monetize time and distance by establishing a efficient distribution network centered around the “Green Line.”
- Impose "Harm Fees" on Unhealthy Advertisements, a system where companies or businesses advertising unhealthy or environmentally damaging food products are required to pay a "harm fee" or surcharge. The revenue generated from these fees could be reinvested into funding community education programs, urban agriculture initiatives, or subsidies for sustainable food businesses in the area.

#### What is the hypothesis we are testing?

Increasing awareness and accessibility of planetary food options by leveraging existing high-traffic infrastructure and food networks will positively influence consumer behavior, driving demand for healthier, more sustainable choices through convenience and seamless integration into daily routines.

#### Who should be involved?

- Chicago Department of Public Health
- Department of Planning and Development (DPD)
- Chicago Department of Transportation (CDOT)
- Community Organizations: Austin Coming Together
- Chicago Food Policy Action Council
- Independent grocery stores
- Local restaurants

# I

## Consumer demand for planet-friendly, healthy, transparent food

### What existing policies do we have currently or need to have?

- Leverage: Chicago Sustainable Food Plan, 2022
- Leverage: Transit-Oriented Development (TOD) Policies
- Propose: Sustainable Food Business Incentives, for small business to invest together as community on sustainable food infrastructure.
- Propose: Advertisement Regulations
- Revise: Zoning and land use policies to prioritize the development of sustainable food-related businesses and infrastructure

### What are the possible barriers and tensions?

- Community buy-in: Residents might be unsure if the pilot program offers a lasting solution that truly benefits them in the long run
- Technology and shared facility implementation costs
- Competing priorities between different city departments

### What technology, data, and infrastructure can support this?

- Consumer behavior data, purchasing patterns
- GIS mapping and food rescue route optimization
- Vacant lots and underutilized spaces
- Cold storage and distribution facilities

### What are the key metrics to determine success?

- Increase in number of small businesses and retailers activated through the pilot
- Increase in number of food surplus diverted to rescue organizations
- Increase in number of jobs created in community
- Reduce in travel time and convenience access to fresh food
- Success story of resilient business model that lasts for more than 3 years

# II

## Pre-Competitive Collaboration

What if food retailers joined forces to reduce food waste with support from the city?

### Vision 2030

**The year is 2030.** Chicago food retailers have changed their approach to food supply chain management. With support from the city, retailers have invested in new technologies and new roles that prioritize food waste prevention.

### Evidence

#1

The public's growing awareness around the importance of reducing food waste is driving a trend toward buying "imperfect" produce, renewed interest in cooking, and demand for fresh ingredients.

#2

In-store meal kits created from upcycled foods offer a streamlined approach to meal preparation, reducing decision fatigue and providing a hassle-free experience.

#3

New technology is enabling retailers to better predict the shelf life of foods at every point along the food supply chain, enabling them to adjust prices to reduce food waste and maximize profits.

#4

Advanced inventory management systems enable retailers to better predict customer demand. This helps prevent food waste by enabling retailers to only order what they can predict will be sold.

### Goals

A mutually beneficial partnership between retailers and the City of Chicago

Prioritizing food waste prevention

Build collaborative relationships with food rescue CBOs

Develop new workflows and upskill employees

Shift food supply chain management practices



## II Pre-Competitive Collaboration



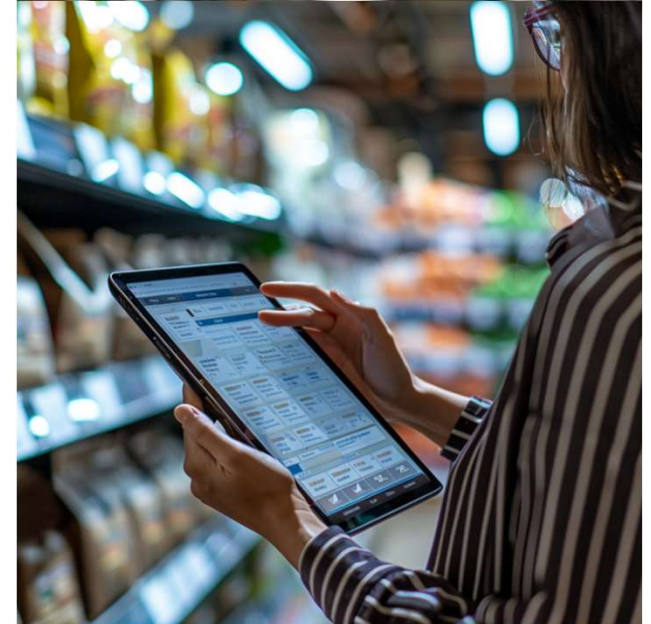
### Dynamic Pricing

Prices adjust to reflect freshness



### Repurposing Food

Dedicated specialists find new uses for overstocked products and for products nearing the end of their shelf life



### Collaboration with Competitors

Retailers share best practices to reduce food waste

1. Overstocking vs under stocked shelves 2. Dynamic pricing logistics 3. Store manager vs. Community leader 4. Diverse Logistics 5. Fresh produce focus



## II Pre-Competitive Collaboration

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### Transparency with local CBOs

Retailers and local food rescue organizations share their data and collaborate to meet common goals



### Progress

Food retailers contribute to the city's waste diversion goals

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1. Overstocking vs under stocked shelves 2. Dynamic pricing logistics 3. Store manager vs. Community leader 4. Diverse Logistics 5. Fresh produce focus

## II Pre-Competitive Collaboration

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### How could we implement this in 3 years through a pilot experiment?

**Host a Food Waste Reduction Summit for local retailers:** Convene a group of retailers to discuss food waste in their business. Participating stores will be chosen based on their existing food waste tracking practices, diverse locations throughout the city, and diverse product offerings. Identify one committed partner poised to spearhead transformative initiatives.

Pilot one or more aspects of new food supply chain management at this store which might include:

- Dynamic Pricing
- New role for Repurposing Specialist, and/or
- New role for Community Outreach Coordinator

#### What is the hypothesis we are testing?

- Ensuring retailer is willing to participate & have resources to implement the pilot by conducting readiness assessment.
- Ensuring the viability & feasibility of the pilot program.
- Testing the value of each strategy.
- Demo success of one retailer will encourage more retailers to join the program.

#### Who should be involved?

- Convening body (e.g. Department of Public Health)
- Adjacent governmental departments (DOE, DSS)
- Retailers (chosen based on their existing food waste tracking practices and locations in the city)
- Customers (Surveying them about their shopping habits and attitudes towards food waste)
- Local food rescue orgs and volunteers

## II Pre-Competitive Collaboration

### What existing policies do we have currently or need to have?

- Tax incentives for the retailers
- Current policies preventing the repurposing of food (e.g. ingredient labeling inhibits creative repurposing)

### What are the possible barriers and tensions?

- Implementing new software or hardware can be a financial burden for retailers.
- Integrating new technology and processes into existing operations can be disruptive and require staff training and a culture shift.
- Retailers might be hesitant to discount nearing-expiry items if it significantly reduces profit margins.
- The DoE might prioritize environmental impact, while retailers prioritize profitability.
- Customers might be hesitant to purchase discounted, nearing-expiry items due to concerns about freshness and quality.

### What technology, data, and infrastructure can support this?

- Attempts to reduce the burden/ financial pressure off the volunteers
- Technology to capture more precise food metrics
- Technology to collect and analyze data on food waste before, during, and after the pilot program
- Dynamic pricing software
- Inventory management software
- Food donation management app
- Retailer Staff (to be trained as per changing practices)
- Best practices from West Coast and European stores

### What are the key metrics to determine success?

- Willingness of retailers to join and continue participating in a food waste summit as measured through % of retailers who participate in first summit and register for next summit.
- Significant reduction in food waste tonnage, comparing pre and post pilot implementation within 1 year.
- Successful integration of new strategies in retail stores tracked via store data in 1 year.
- The financial savings from implementing the pilot after 1 year are projected to pay for the cost of implementing the program within 3 years.

# III

## City - Retail Partnership for Public Health

What if **retailers transformed from sellers to community wellness hubs**, offering holistic services to strengthen their central role in the local food ecosystem and the community health?

### Vision 2030

In 2030, we imagine a future where retailers expand their roles in the community - transforming from merely sellers to central players in the food ecosystem and public health. This shift is **made possible by the support of the city / government, through policies, financial support, and a thriving partnership**. Partnered retailers take on active roles in food redistribution and access, waste prevention and reduction, and public health efforts.

### Evidence

#1

Retailers serve as crucial leverage points, **uniquely positioned** to evolve and enhance community resilience and service.

#2

The retail grocery environment significantly **influences dietary choices** and shapes health outcomes across across all income groups.

#3

Consumers' **desire for sustainable, healthier options is limited by current choice architectures**, requiring substantial upgrades in infrastructure and services to facilitate these choices.

#4

The **fragmented food rescue**, distribution, and waste management ecosystem suffers from coordination issues and inefficiencies due to multiple stakeholders.

#### Goals

Forge a mutually beneficial partnership

Align economic & health goals

Build loyal, empowered community

Enhance food accessibility

Reduce food waste

## III City - Retail Partnership for Public Health



### Retail Owned Food Pantry

Streamline operations and cost efficiency.



### Community Composting Hubs

Enhance scalability and accessibility.



### Retailers as Physical Channels

Boost health outreach and engagement.

1.Regulation and Process Conflicts 2. Resource Allocation Tensions 3. Service Access Disparities 4. Ecosystem Stakeholder Resistance 5. Initiative Accountability Issues



### How could we implement this in 3 years through a pilot experiment?

Partnering with a retailer and a local food pantry in the same neighborhood to provide an in-store pantry.

- This could look like a straightforward “pantry” section at the retailer, or an innovative program that allows people to obtain the surplus food that would otherwise be donated away from the retailer site to pantries
- Implement this pilot in two separate locations (e.g. the suburbs vs. the city) to understand contextual differences
- The in-store pantry could be run by volunteers, with the support of the local existing pantry for best practices and training
- The retailer would be engaged to participate in the pilot through a city-backed incentivization program

#### What is the hypothesis we are testing?

Integrating food rescue operations within retailers significantly reduces inefficiencies and food insecurity, thereby enhancing community well-being and dignity. This strategy, by capitalizing on the high visibility and accessibility of retailers, enhances collaboration among various agencies, leading to reduced task inefficiency, diminished information gaps, and fewer coordination issues and friction.

#### Who should be involved?

- Retail Grocery Stores
- Greater Chicago Food Depository
- Local food pantries
- Department of Public Health



### III City - Retail Partnership for Public Health

#### What existing policies do we have currently or need to have?

- Food pantries are already aligned to existing health and food safety standards that dictate how food must be handled, stored, and transported.
- Bill Emerson Good Samaritan Food Donation Act : Liability Protection
- Tax incentive and breaks for partnering retailer
- Funding for the initiative

#### What are the possible barriers and tensions?

- Retailers trade-off shelf space for profit versus pantry space for community benefit
- Staffing and change management due to the added operation at the retailers
- Forge collaborations with food pantries to enhance operational synergy

#### What technology, data, and infrastructure can support this?

- **Inventory Management** with New Barcoding, RFID Tagging/ Labelling
- **Dedicated Pantry Section:** Establish a specific area within the store for displaying rescued food items
- **City Funding:** Secure financial support from the city to incentivize the retailer's evolving role in food rescue efforts, fostering a sustainable partnership.
- Dedicated spaces for sorting, packing and labelling between pantry and retail stores

#### What are the key metrics to determine success?

- Change in local food insecurity levels (reported in the Community health assessment of local hospitals)
- Change in volume of food waste at retailer and costs associated with food waste management
- Measuring Financial Savings for directing the food towards pantry.
- Change in time saved in the processes of collecting, sorting, and redistributing waste and rescued food.
- Ability to cross-check monthly inventory/ waste ratio and inconsistencies in data collection

## 04 KEY TAKE-AWAYS

The team proposed three pathways for how city officials, retailers and community members could collaborate to reduce wasted food, improve access to healthy food and advance climate goals by 2030.

- I. Chicago's food ecosystem meets growing consumer demand for planetary-friendly, healthy, transparent food.
- II. Food retailers collaborate to invest in new technologies and new roles that prioritize food waste prevention.
- III. Food retailers transform into community wellness hubs

These pathways are meant to provide both inspiration and provocation, about potential futures and tensions that might emerge in these futures. Within each pathway, identified pilots can be activated within the next 3 years.

- I. Reinvest in existing infrastructure near public transit stations to test sustainable food business incentives.
- II. Host pre-competitive collaboration summit for local retailers to showcase pricing innovations and new staff roles.
- III. Co-locate food pantry inside a food retail establishment to reduce coordination and transportation costs.

Activating these pilots will require coordination among representatives from the public, private and non-profit sectors. They ground our futures thinking within the current realities, and can be realistic ideas for moving forward towards systemic change in Chicago's wasted food landscape.

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