



OFFICIAL NOTICE AND AGENDA

of a meeting of a City Board, Commission, Department
Committee, Agency, Corporation, Quasi-Municipal
Corporation, or Sub-unit thereof.

Meeting: SUSTAINABILITY, ENERGY AND ENVIRONMENT
COMMITTEE

Members: John Kroll (C), Carol Lukens, Scott Charette, Jay Coldwell, Mary Kluz,
Ashley Lange, Jesse Kearns

Location: Board Room of Wausau City Hall, 407 Grant Street.

Date/Time: Thursday, February 2, 2023 at 5:30 p.m.

1. Welcome and introductions
2. Public comment
3. Approve minutes of December 01, 2022 meeting
4. Update on Wisconsin Local Government Climate Coalition (WLGCC) membership
5. Discussion and Possible Action: Greenhouse Gas Resolution
6. Discussion: Nomination for Sustainability Award
7. Discussion: Energy Efficiency and Conservation Block Grant (EECBG) timeline and allowable activities
8. Discussion: Education on Food Systems Resilience and the Municipal Role
9. Next meeting date TBD
10. Adjourn

It is likely that members of, and a quorum of the Council and/or members of other committees of the Common Council of the City of Wausau will be in attendance at the abovementioned meeting to gather information. **No action will be taken by any such groups.**

Questions regarding this agenda may be directed to the City Planning Office @ (715) 261-6760.

This Notice was posted at City Hall and emailed to the Media on 02/02/2023

Any person wishing to offer public comment may email City Clerk Kaitlyn Bernarde at clerk@ci.wausau.wi.us with "SEEC comment" in the subject line prior to the meeting start. All public comment, either by email or in person, will be limited to items on the agenda at this time. The messages related to agenda items received prior to the start of the meeting will be provided to the Chair.

Other Distribution: Media, Alderpersons, Mayor, City Departments

CITY OF WAUSAU SUSTAINABILITY, ENERGY AND ENVIRONMENT COMMITTEE

Time and Date: The Sustainability, Energy and Environment Committee met on Thursday, December 1, 2022 at 5:30 p.m. in the Board Room of Wausau City Hall

Members Present: John Kroll (C), Jay Coldwell, Carol Lukens, Mary Kluz, Ashley Lange, Jesse Kearns

Others Present: Andrew Lynch, Brad Lenz

In compliance with Chapter 19, Wisconsin Statutes, notice of this meeting was posted and transmitted to the Wausau Daily Herald in the proper manner.

1. Welcome and Introductions

Chair Kroll called the meeting to order at 5:30 p.m. Introductions were made.

2. Public Comment

None.

3. Approval of Minutes from previous meetings

Coldwell/Kluz made a motion/second to approve the minutes of September 22, 2022. The motion carried unanimously.

4. Recap: Good News Project Tour

Kroll shared information about the tour of the Good News facility on November 18. The organization does large scale electronics recycling to support their other projects such as inexpensive medical devices and mission building trips. Committee members were impressed with the facility and organization that has 400 volunteers. The GNP does have vouchers available for their e-recycling service to offset the 45 cents/pound cost and would like the committee's help in publicizing this. The committee will consider this at future meetings. A nomination for the Sustainability Award was also mentioned.

5. Greenhouse Gas (GHG) presentation recap

Kroll discussed his GHG presentation at the October City Council meeting. Despite some technical issues, the presentation went well and Kroll felt there was good support in the public present at the meeting. In general, the Council seemed supportive. There was a question regarding the scope of the resolution, whether it was for the whole City or just government operations. Committee felt this was a positive step.

6. Discussion and Possible Action: Discussion and drafting of GHG resolution

The committee discussed the draft version in the packet and offered changes. There were some small word changes suggested. The committee suggested inserting the history of sustainability actions the city has already taken and add the opportunities from the federal legislation. Kroll posed the question of the commitment of having 50% clean energy by 2030 and 100% by 2050 and the group debated this for some time. It was decided to revisit this point at the next meeting after members had time to research. Coldwell suggested inserting the word 'secure' into the commitment about energy profile due to the remarks the mayor had made at the previous council meeting. It was decided that staff will take the committee comments and prepare a clean copy of the resolution. Then it would be sent to the Attorney's office and the Mayor to advise on the best path forward. It was unknown if this could go directly to Council or through a committee.

7. Discussion and Possible Action: Resolution to join the Wisconsin Local Government Climate Coalition

Lynch discussed the purpose of joining the WLGCC and all that was required was a resolution from the City. Joining the WLGCC would provide the City input on state legislative and regulatory actions, provide technical assistance, and assist with finding grants. Regarding the draft resolution, the committee suggested inserting the history of sustainability actions the city has already taken and insert a mention of the BIL and IRA legislation, but otherwise it was fine.

Motion: Recommend to City Council to adopt resolution, with discussed edits, to join the WLGCC.

Kluz/Kearns. Motion and Second. Motion passes unanimously.

8. Next meeting date

January 5th at 5pm

9. Adjourn

Motion/Second by Lukens/Kearns. Motion passed unanimously. Meeting adjourned at 6:50 p.m.

RESOLUTION OF THE PUBLIC HEALTH & SAFETY COMMITTEE	
Supporting Reduction of Greenhouse Gas Emissions and Energy Security.	
Committee Action:	
Fiscal Impact:	Undetermined
File Number:	Date Introduced:

RESOLUTION

WHEREAS, the city’s Sustainability, Energy and Environment Committee (SEEC) was created to act as an advisory body to the Common Council in the development of policies, programs, and decisions that affect the relationship between the City and the environment; and

WHEREAS, the city of Wausau desires to be among the communities leading on critical environmental and societal issues, having approved a Resolution in support of environmental justice; and

WHEREAS, the city of Wausau has embraced Energy Independence, evidenced by the passing of an energy independence resolution in 2008; and

WHEREAS, the City declared itself an eco-municipality in 2009, and among the guidelines for sustainable practices are reducing dependence upon fossil fuels and reducing dependence upon harmful chemicals and other manufactured substances that can accumulate in nature; and

WHEREAS, the Wisconsin Initiative on Climate Change Impacts (WICCI) shows continued warming, increases in rain and snow, and more frequent extreme rainfall events; and,

WHEREAS, in 2020, the city of Wausau joined other communities in leading a healthier future as a Green Tier Legacy Community through the Wisconsin Department of Natural Resources; and,

WHEREAS, the Green Tier Legacy Community scorecard encourages member communities to commit to achieving a science-based, community-wide Green House Gas reduction goal, and

WHEREAS, The Federal legislation known the Bipartisan Infrastructure Law and the Inflation Reduction Act, have created historic opportunities for communities and individuals to transition to renewable energy sources and reduce their greenhouse gas emissions, and

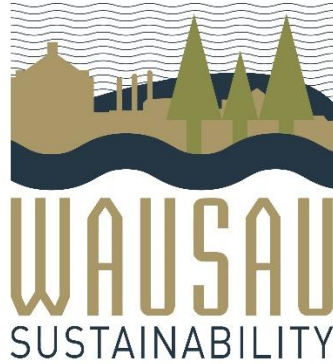
WHEREAS, Future availability and price of fossil fuels for energy production may be volatile due to circumstances beyond the control of the City of Wausau.

NOW THEREFORE, BE IT RESOLVED, the city commits to...

- Determine the level of energy use and emissions in City government operations
- Develop a municipal energy plan with the goal of moving City government operations to a more secure, and 100% clean energy profile by 2050
- Provide resources and information to residents and businesses to support them in the transition to a cleaner energy future.
- Create cost savings through efficiency upgrades and clean energy technologies that will reduce the burden of City government operations on the tax levy.

Approved:

Katie Rosenberg, Mayor



2023 Wausau Sustainability Awards Application

The Wausau Sustainability Awards recognize individuals, businesses, and organizations that are committed to creating a more sustainable and energy-smart Wausau. These awards are also meant to share examples of sustainability initiatives and projects with residents, businesses, community groups, and nonprofits and encourage similar projects.

*Applications are due by **October 1st, 2023 at 5 pm.***

1. Your contact information:

Name(s): _____

Street/City/Zip: _____

Phone #: _____ E-mail : _____

Eligibility (circle one): Self-nominating Nominating another

2. Nominee's contact information:

Name of individual, business or organization: _____

Website of nominee (if available): _____

Name of contact person: _____

Contact person's e-mail: _____

Street/City/Zip: _____

3. How would you best describe the nominee:

- Energy: Renewables, Efficiency or Conservation** – Efforts to reduce energy consumption or increase the use of renewables, including transportation demand management. Consideration is given to the level of investment, documented reduction/generation of energy, reach of the effort and/or greenhouse gas emissions.

If you have questions about the Sustainable Wausau Awards contact andrew.lynch@ci.wausau.wi.us or call at 715-261-6686.

- **Environmental Education** – Programs and projects that effectively teach both children and adults how to learn about their environment and to make intelligent, informed decisions about how to take care of it.
- **Resource Conservation, Preservation or Stewardship** – Individuals, businesses, and organizations that demonstrate their commitment to the improvement of the Wausau community by conserving, preserving, replanting or restoring the natural environment, improving water quality or reclaiming the urban environment either directly through programs and actions or indirectly through innovative products or practices. This also could include innovations in waste management, recycling or composting.
- **Green Site and/or Building Design** – The design, development, construction, or renovation of buildings and sites in ways that set an example and/or exceed standard energy efficiency, incorporate low impact design, preserve natural site features and resources, use of green infrastructure stormwater management BMPs, create healthy indoor conditions, etc.
- **Health, Food and Agriculture** – Individuals, businesses, and organizations that demonstrate commitment to producing, using, or promoting local, sustainable, healthy food, or increasing access to healthy food for underserved populations.
- **Student Leadership** – An individual student, school group or community youth group that demonstrates excellence in a sustainability effort.
- **City Staff** - Staff that goes beyond job duties to improve sustainability for City policies, programs, or operations.
- **Other** – If you have a sustainable project that doesn't fit one of the above categories, please suggest another category: _____

4. **Describe the nomination in 150 words or less. Be sure to include if the project/initiative served an underserved population and any partnerships formed as a result of the project/initiative.**

5. Describe in 150 words or less the outcomes or results of the effort using specific examples, data, and/or other evidence.

6. Please include links or photocopies of any press reports that describe the project/initiative, such as news articles, photographs, web articles, newsletter articles, etc.

7. Please note that at minimum, one photo of the project/initiative will be needed for possible use in any announcements of honorees. If no photo is available, a volunteer is available to take one.

Honors will be presented at a regular meeting of the city council. Award winners should be present at the award ceremony and are encouraged to make a short acceptance speech.

Please submit application and materials electronically to: [Andrew Lynch](mailto:andrew.lynch@ci.wausau.wi.us)

If you have questions about the Sustainable Wausau Awards contact andrew.lynch@ci.wausau.wi.us or call at 715-261-6686.

- If one or more of the 10 most populated counties is ineligible or considered a city (i.e., a city-county consolidated government), the next largest county by population will be moved into the list of the 10 most populated counties for that state.
- Census areas in Alaska were not considered eligible counties because they have limited government functions.⁹
- There are no counties in the District of Columbia.

Indian Tribe Eligibility

As defined by [section 541\(4\)](#) of EISA, the term “‘Indian tribe’ has the meaning given the term” in [section 4](#) of the Indian Self-Determination and Education Assistance Act.”¹⁰ The Indian Self-Determination and Education Assistance Act states that the term “Indian tribe” means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to [the Alaska Native Claims Settlement Act \(ANCSA\)](#),¹¹ which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

There are 774 Indian tribes eligible for a formula grant through the EECBG Program including: [574 federally recognized Indian tribes listed by the Bureau of Indian Affairs \(BIA\) in the 2022 Federal Register Notice](#);¹² six additional Indian tribes because eight bands of Indian tribes comprise two of the federally recognized Indian tribes, 12 Alaska Native Regional Corporations established under the [ANCSA](#);¹³ and 182 currently active Alaska Native Village Corporations, group corporations, and urban corporations. ANCSA defines “group corporation” and “urban corporation,” which are similar to village corporations except that they apply to established Native groups and urban communities of Alaska Native people. As such, “group corporations” and “urban corporations” are included in the definition of Indian tribes defined by DOE for the EECBG Program.

DOE includes the following clarifications to the records used to identify the Indian tribes that are eligible for the EECBG Program, in line with the BIA’s 2022 Federal Register Notice:

- Minnesota Chippewa is comprised of six separate bands of Indian tribes each eligible for a direct formula grant: Boise Forte Band, Fond Du Lac Band, Grand Portage Band, Leech Lake Band, Mille Lacs Band, and White Earth Band.
- Capitan Grande Band of Diegueno Mission Indians of California is comprised of two separate bands of Indian tribes both eligible for a direct formula grant: Barona Group of Capitan Grande Band of Mission Indians of the Barona Reservation and Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation.
- The Passmaquoddy Tribe is made up of Pleasant Point and Indian Township. There will be one formula allocation made to the Passmaquoddy Tribe that will be split proportionally between the two parts upon the grant being awarded.

2.2 ALLOWABLE ACTIVITIES

Under the EECBG Program, entities will develop various initiatives and projects that address one or more of the program purposes. Entities are encouraged to use their EECBG Program funds in a manner that is of maximum benefit to their population, in a manner that will leverage other sources of financing or

⁹ [Guide to the State and Local Census Geography – Alaska.](#)

¹⁰ [42 U.S.C. 17151\(4\)](#), referencing [25 U.S.C. 5304\(e\)](#).

¹¹ [Public Law 92-203, Dec. 18, 1971, 85 Stat. 688.](#)

¹² [87 FR 4636](#) (Jan. 28, 2022).

¹³ [33 U.S.C. 1602 et seq.](#)

funding, and will yield maximum benefits over time in terms of energy and emission reductions. DOE also encourages entities to consider investing the funding in ways that lead to equitable and just outcomes. To these ends, DOE encourages entities to develop new and innovative approaches within the framework of the legislation and the guidance. Eligible activities are listed below, and full details are described in section 544 of the EISA.¹⁴

An eligible entity may use its EECBG Program 2022 formula award to carry out activities to achieve the purposes of the program, including—

- (1) Development and implementation of an Energy Efficiency and Conservation Strategy;
- (2) Retaining technical consultant services to assist the eligible entity in the development of such a strategy, including—
 - (A) formulation of energy efficiency, energy conservation, and energy usage goals;
 - (B) identification of strategies to achieve those goals—
 - (i) through efforts to increase energy efficiency and reduce energy consumption; and
 - (ii) by encouraging behavioral changes among the population served by the eligible entity;
 - (C) development of methods to measure progress in achieving the goals;
 - (D) development and publication of annual reports to the population served by the eligible entity describing—
 - (i) the strategies and goals; and
 - (ii) the progress made in achieving the strategies and goals during the preceding calendar year; and
 - (E) other services to assist in the implementation of the energy efficiency and conservation strategy;
- (3) Conducting residential and commercial building energy audits;
- (4) Establishment of financial incentive programs for energy efficiency improvements;
- (5) The provision of grants to nonprofit organizations and governmental agencies for the purpose of performing energy efficiency retrofits;
- (6) Development and implementation of energy efficiency and conservation programs for buildings and facilities within the jurisdiction of the eligible entity, including—
 - (A) design and operation of the programs;
 - (B) identifying the most effective methods for achieving maximum participation and efficiency rates;
 - (C) public education;
 - (D) measurement and verification protocols; and
 - (E) identification of energy efficient technologies;
- (7) Development and implementation of programs to conserve energy used in transportation, including—
 - (A) use of flex time by employers;
 - (B) satellite work centers;
 - (C) development and promotion of zoning guidelines or requirements that promote energy efficient development;
 - (D) development of infrastructure, such as bike lanes and pathways and pedestrian walkways;
 - (E) synchronization of traffic signals; and

¹⁴ [42 U.S.C. 17154.](#)

- (F) other measures that increase energy efficiency and decrease energy consumption;
- (8) Development and implementation of building codes and inspection services to promote building energy efficiency;
- (9) Application and implementation of energy distribution technologies that significantly increase energy efficiency, including—
 - (A) distributed resources; and
 - (B) district heating and cooling systems;
- (10) Activities to increase participation and efficiency rates for material conservation programs, including source reduction, recycling, and recycled content procurement programs that lead to increases in energy efficiency;
- (11) The purchase and implementation of technologies to reduce, capture, and, to the maximum extent practicable, use methane and other greenhouse gases generated by landfills or similar sources;
- (12) Replacement of traffic signals and street lighting with energy efficient lighting technologies, including—
 - (A) light emitting diodes; and
 - (B) any other technology of equal or greater energy efficiency;
- (13) Development, implementation, and installation on or in any government building of the eligible entity of onsite renewable energy technology that generates electricity from renewable resources, including—
 - (A) solar energy;
 - (B) wind energy;
 - (C) fuel cells; and
 - (D) biomass; and
- (14) Programs for financing energy efficiency, renewable energy, and zero-emission transportation (and associated infrastructure), capital investments, projects, and programs, which may include loan programs and performance contracting programs, for leveraging of additional public and private sector funds, and programs that allow rebates, grants, or other incentives for the purchase and installation of energy efficiency, renewable energy, and zero-emission transportation (and associated infrastructure) measures; and
- 15) Any other appropriate activity, as determined by the Secretary, in consultation with—
 - (A) the Administrator of the Environmental Protection Agency;
 - (B) the Secretary of Transportation; and
 - (C) the Secretary of Housing and Urban Development.¹⁵

2.3 EECBG PROGRAM FORMULA AWARDS: GRANTS AND VOUCHERS

To streamline the award process, DOE is providing local and Tribal governments applying for an EECBG Formula Program award with the option to select a grant or voucher. In addition, DOE is providing project blueprints, which are designed to help further streamline the award process. Blueprints may be used with either grants or vouchers. Entities selecting a grant should follow the application instructions shown in Section 7.0. Additional guidance will be forthcoming from DOE on the application process for Vouchers. The expected award period for vouchers is up to two years.

¹⁵ [42 U.S.C. 17154.](#)

UNDERSTANDING FOOD SYSTEM RESILIENCE

DISASTER JUSTICE

Some disruptions are referred to as **disasters**. The United Nations Office of Disaster Risk Reduction defines a disaster as “a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.”⁴ Many also argue that disasters are rooted in social problems, that disasters disproportionately affect disadvantaged communities because of structural inequities, and that disaster preparedness and response efforts perpetuate these oppressive systems. **Disaster justice** has emerged as a concept that “blends the ongoing struggles for environmental, climate, ecological, language and social justice with demands for improvement of disaster preparedness and response mechanisms.”⁵ To learn more about how to support community-led disaster justice efforts, see the Praxis Project’s [Moving from Disaster Preparedness to Disaster Justice: Centering Community & Racial Justice for a Transformed Future](#).

This section will help you to:

- Describe food system resilience and how it differs from sustainability and stability
- Frame food system resilience as a determinant of a well-functioning food system
- Understand the difference between shocks and stressors and how they can both affect food system functioning
- Explain and recognize characteristics of more resilient food systems

This section provides the fundamentals of food system resilience. Even if you are well-versed in food system resilience concepts, we recommend that you read this section so you are familiar with how we define food system resilience for this guide.

We define food system resilience as “the capacity over time of a food system and its units at multiple levels, to provide sufficient, appropriate, and accessible food to all, in the face of various and even unforeseen disturbances.”¹ To help better understand this definition, we break it apart—exploring first what we mean by food system and resilience and then how the two concepts merge for food system resilience.

FOOD SYSTEM

A **food system** is “all the activities and resources that go into producing, distributing, and consuming food, the drivers and outcomes of those processes, and all the relationships and feedback loops between system components.”² A food system can be very complicated; within a jurisdiction, it may be overseen by multiple government departments, and both depend on and impact the functioning of other systems—such as transportation, energy, or health.

The food system framework (**Figure 3**) highlights the multiple external influences on a food system and the interconnections between different elements.³ You will notice that the arrows go in multiple directions. For example, consumer behavior is influenced by food environments, but it also influences food environments. The external drivers at the top of the figure, to varying degrees, are impacting the food system and can cause disruptions to the food system.

Food systems serve multiple purposes and different groups may prioritize different goals for food system functioning. In

this guide, a key goal is having a food system that supports **food security**, with a particular focus on ensuring food security for communities that experience the greatest inequities. According to the Food and Agriculture Organization of the United Nations (defined during the 1996 World Food Summit), “**Food security** exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”⁶

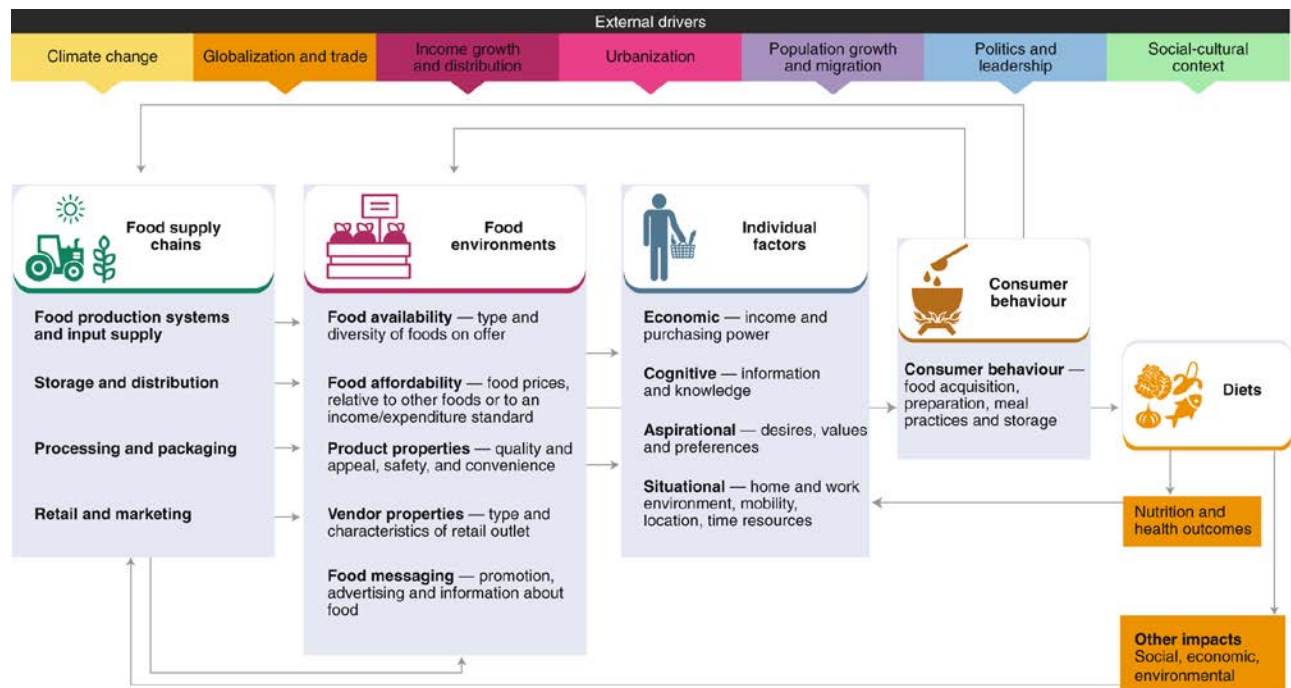
Food security is multifaceted and has several dimensions. In this guide, food security includes:

- **Food Accessibility:** Food is accessible if it is both economically and physically accessible to all parts of the population.⁷
- **Food Availability:** Food is available if it is physically present and available to consume in a given location.⁷
- **Food Acceptability:** Food is considered acceptable if it is religiously and culturally appropriate for the person eating it, nutritionally adequate, and safe to eat.⁷

These components of food security can be used to frame a food system’s ability to continue functioning and support food security during and after a disruption. Later modules provide examples and suggestions for how to understand the components of food security in food system resilience planning.

While this guide focuses on food accessibility, availability, and acceptability, other considerations like food agency—the ability of actors to make their own food choices⁸ —may also be important to consider when thinking about food security and food system functioning.

Figure 3. Food System Framework. Source: Fanzo, Haddad, McLaren et al. 2020. [The Food Systems Dashboard is a new tool to inform better policy](#). Nature Food. Used with permission.



A NOTE ON THE TERM, “RESILIENCE”

When this guide uses the term, resilience or suggests actions to build resilience, it often has an implied positive value. This does not mean that resilience is about strengthening and preserving systems that are broken, oppressive, or unjust. It also does not mean that communities and individuals should constantly be asked or forced to be resilient, often from disruptions to which they contributed little. The positive connotation of resilience is used in this guide because we believe that by investing in collaborative and forward-thinking planning, food system resilience work can help build more equitable, just, and prepared food systems rather than preserving what is harmful.

RESILIENCE

The Stockholm Resilience Centre defines **resilience** as “the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop.”⁹ Building resilience is not about preventing a disruption to a system or making something “fail-safe,” but making sure that it is “safe to fail”¹⁰ —meaning that although a failure or disruption in the system occurs, it is contained and minimized and presents opportunities for learning.

Resilience assumes disruptions will occur. Disruptions can be natural or human-made, and they are commonly described as either shocks or stressors.

- **A shock** is a sudden disturbance to a system.¹¹ In an urban food system, for example, this might be a flood or civil demonstration that prohibits trucks from distributing food to grocery stores.
- **A stressor** is a gradual eroding of a system.¹¹ In the food system, examples of this are increasing average temperatures from climate change altering the growing seasons in a region, or high levels of food insecurity.

Resilience is sometimes used interchangeably with other terms such as sustainability and stability. They are distinct but not mutually exclusive. These three concepts can all be considered goals of a food system. For example, while often it is desired to have a resilient and sustainable system, a minor amount of instability can sometimes increase resilience if it promotes adaptation or transformation that ultimately makes the system stronger.¹²

Figure 4 provides side-by-side definitions for each concept along with descriptions of the goals or outcomes of each and an example of what it looks like within a food system.

Figure 4. Definitions and Goals of Sustainability, Stability and Resilience within Systems

	SUSTAINABILITY	STABILITY	RESILIENCE
DEFINITION	<p>“The ability to meet the needs of the present without compromising the ability of future generations to meet their own needs”¹³</p>	<p>“The ability to return to an equilibrium state after a temporary disturbance”¹⁴</p>	<p>“The capacity to deal with change and continue to develop”⁹</p>
GOALS	<p>Balancing present and future needs, preventing and mitigating resource or capacity loss, & preventing future disruptions</p>	<p>Maintaining equilibrium, minimizing disruption, & robustness</p>	<p>Learning, adapting, transforming, & persisting despite challenges</p>
EXAMPLE	<p>Some vegetable growers have switched from conventional to organic practices to improve soil health and improve the ability of the land to keep producing food for generations to come.</p>	<p>A farmer who uses greenhouses for growing vegetables can keep temperatures inside the greenhouse stable and production at the same level, even in the case of electrical outages because they have a backup generator.</p>	<p>When COVID-19 containment measures closed restaurants, a farmer who had supplied food to restaurants adapted to distribute food to community members through community-supported agriculture (CSA). Because of the new business generated through the CSA, the farmer was able to expand their operations post-pandemic.</p>

FOOD SYSTEM RESILIENCE

Food system resilience applies resilience thinking to a food system. It is “the capacity over time of a food system and its units at multiple levels, to provide sufficient, appropriate, and accessible food to all, in the face of various and even unforeseen disturbances.”¹

One way to think about food system resilience is to ask four key questions:¹⁵

1. Resilience of What?

- What are the things or systems that you are trying to make more resilient? What are the boundaries of the food system you are trying to make more resilient, and what other systems are intersecting with that food system?
- Example: City X is interested in making the local food system, more specifically the food system within the city boundaries, more resilient. City X will have to consider regional, national, and international supply chains as it imports a considerable amount of its food.

2. Resilience to What?

- What natural or human-made disasters may impact the food system? Are you concerned with “stressors” or “shocks,” or both?
- Example: City X is interested in taking an all-hazards approach, meaning it is concerned about multiple different hazards that are expected and unknown. Because of its geographic location, and climate change, City X is particularly concerned about extreme coastal weather events and sea level rise.

3. Resilience for What Purpose?

- What are the goals in building food system resilience? How can the goals help promote emergency response efforts and long-term systems transformations?
- Example: City X wants to make sure that the food system is prepared for the next disruptive event, but it also wants to make the current and future food systems more equitable and just.

4. Resilience for Whom?

- How does resilience work promote procedural, distributional, structural, and intergenerational equity?
- Example: City X wants to work collaboratively with the communities that are most at risk of food system disruptions to build a more equitable, just food system. It wants to collaborate in all stages of the process, share in the leadership, and build community capacity to respond to future disruptions.

Figure 5 shows the resilience timeline for a food system. The food system starts at a baseline level of functioning prior to a disruption. After a disruption, the system must respond and recover over time. A more resilient food system maintains a higher level of functionality during the disruption and immediately after a disaster. It also recovers more quickly and ideally ends with a higher level of food system functioning (“bouncing back better”).

We can use a hypothetical city and the COVID-19 pandemic as a way to better understand this timeline. Before the start of the COVID-19 pandemic, City X had a moderately well-functioning food system. Food was generally accessible and available, but 12 percent of the population of City X was considered food insecure. A substantial proportion of the actors

EQUITY CHECK

Consider the following questions for your local food system:

- What would bouncing back better look like?
- What pre-existing inequities could you target with food system resilience work?

You don't have to know the answers to these questions yet, but they can help you consider how to prioritize equity. The next module digs deeper into equity concerns.

in the food system felt that they had access to food and that the food was acceptable. There were, however, many who felt that the food system was unequal and unjust. You will see that the straight line in the middle of the left side of the diagram represents baseline food system functioning.

When COVID-19 was declared by the World Health Organization a global pandemic in March 2020, this was a shock to City X's food system. Food insecurity rates rose drastically in City X, with many newly food insecure households. You will see in the middle panel that the shock reduced the level of food system functioning. Over time, City X's food system started to recover and food system functioning improved. The recovery did not stop at the initial state of food system functioning but improved beyond where it started. The food system learned, adapted, and transformed into one that functions better than before the shock.

Many characteristics or "attributes" of resilient systems have been identified in research and practice.¹⁷ **Table 2** provides some attributes commonly linked with resilient urban systems and examples of how they could be demonstrated in a food system. The equity attributes were added by the Community of Practice members. Given the complexity of food systems, these attributes can show up in many ways and in some cases can support each other, while in other cases they can even act at cross-purposes. In later modules, you will revisit these attributes and develop strategies aimed at strengthening them.

Figure 5. Food System Resilience Timeline. Adapted from *The Resilience of America's Urban Food Systems: Evidence from Five Cities*¹⁶ and *Food system resilience: Defining the concept*¹

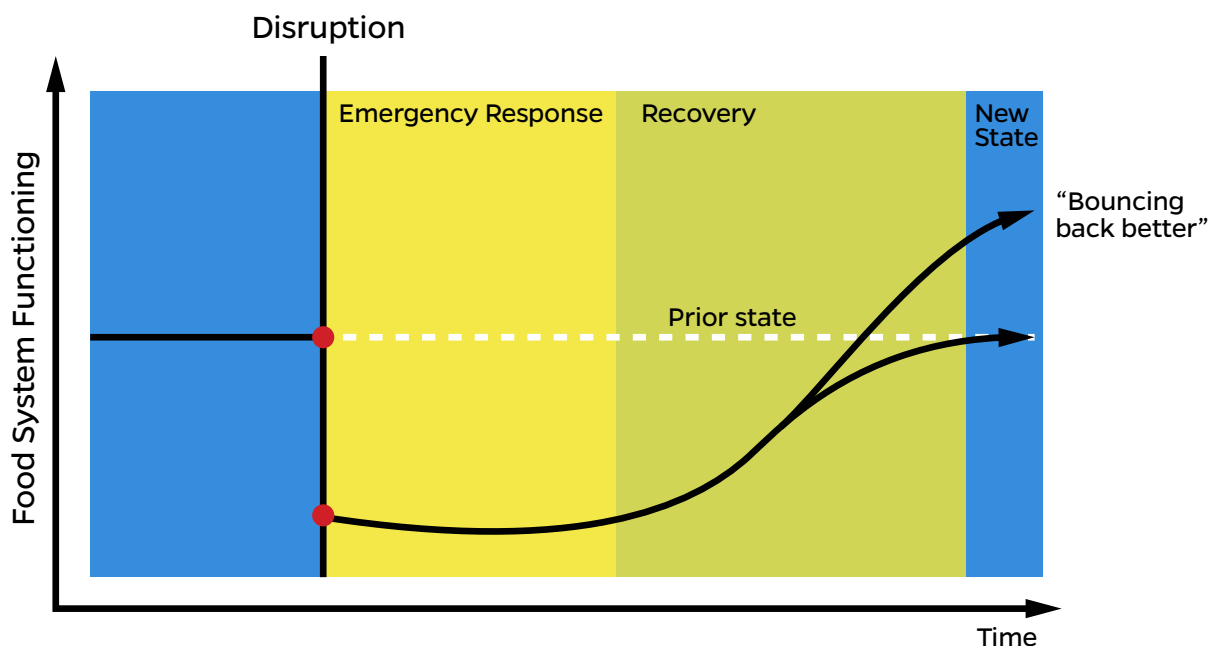


Table 2. Food System Resilience Attributes, Descriptions, and Examples

Attribute	Description (in food system context)	Food System Example
Diversity	A variety of food system elements that can serve a similar purpose	A variety of food retail options, such as farmers markets, independent grocers, and supermarkets
Redundancy	Multiple or duplicative food system elements that can serve the same purpose	Neighborhoods with more than one grocery store in walking distance
Connectivity	Multiple food system elements that connect and communicate with one another	Regular communication between food banks and emergency response actors during a crisis
Capital Reserves (social, financial, natural, political)	Available “backup” resources that can be used during a disruptive event	Strong community networks (social), reserve funds (financial), arable soil (natural), state government support (political)
Flexibility	The ability to make modifications to food system elements during disruptive events when needed	Government providing waivers to operate school meal programs outside of normal hours
Preparedness	A plan in place for how to ensure food access, availability, and acceptability during a disruptive event	Food included in emergency management protocol; Formation of an Emergency Food Working Group
Procedural Equity	Establish “transparent, fair, and inclusive” food system resilience planning, implementation, and evaluation processes ¹⁸	Local government food system resilience planning work is done in partnership and co-owned by community partners, and community members are compensated for their engagement in the process
Distributional Equity	Ensure the benefits and burdens of your food system resilience planning are equitably distributed ¹⁸	Food system resilience actions prioritize resources to communities that experience the greatest inequities, disproportionate impacts, and have the greatest unmet needs
Structural Equity	Uproot long-term, embedded structures that perpetuate inequitable food system and resilience outcomes ¹⁸	Local government offers unrestricted grants to projects supporting communities most impacted by food-related injustices ¹⁹
Intergenerational Equity	Actions taken today conserve resources for future generations ²⁰	Youth are included in the development, implementation, and evaluation of food system resilience actions

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