EPA United States Environmental Protection Agency

EPA Tools and Resources Webinar: Excess Food Opportunities Map

Claudia Fabiano
US EPA Office of Land and Emergency Management

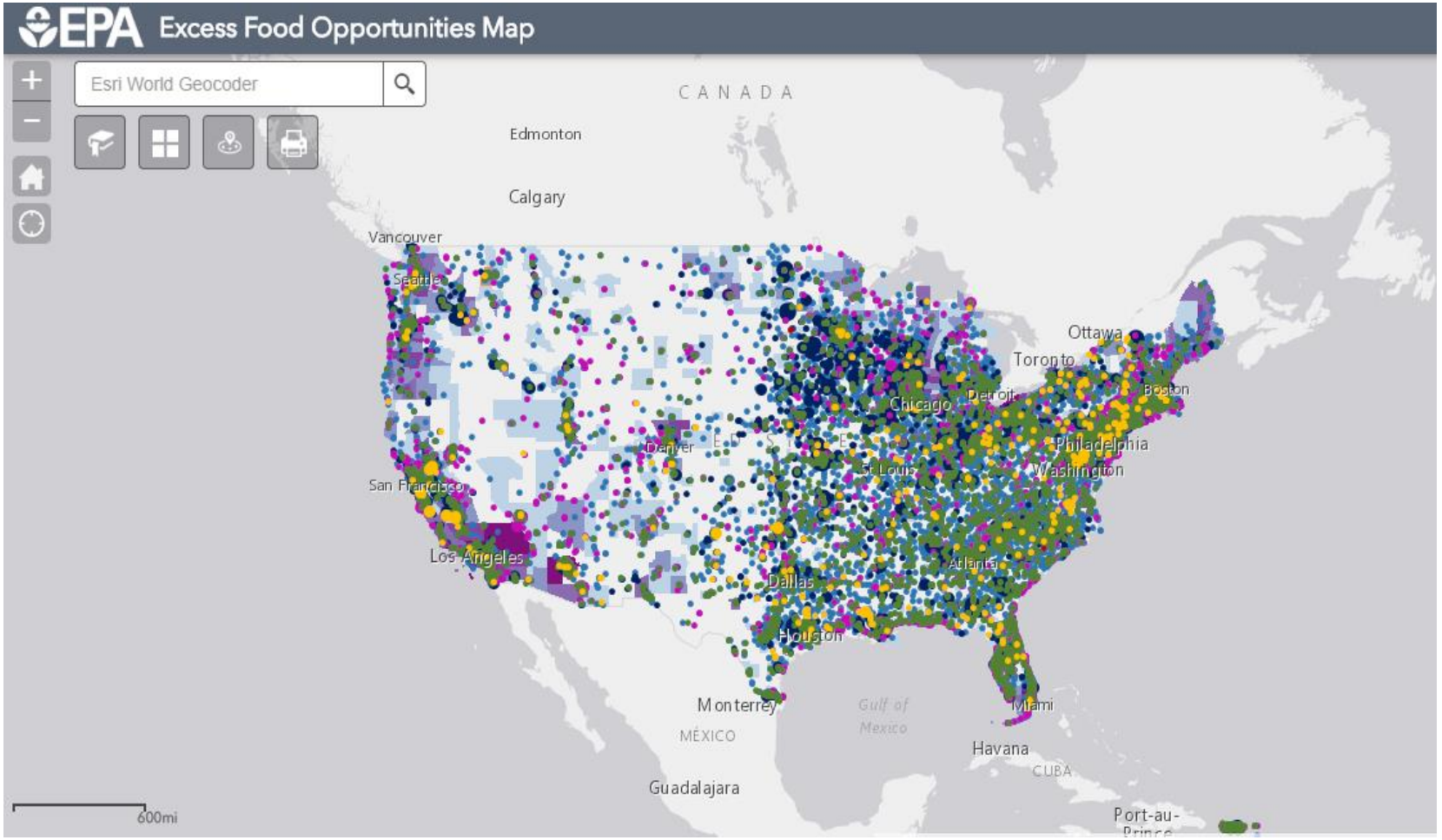
Steve Rock
US EPA Office of Research and Development

October 16, 2019

Problem

- 79 billion lbs of food waste generated in the U.S.
- Food makes up about 22% of municipal solid waste going to landfill.
- EPA and USDA announced national goal to cut food loss and waste in half by 2030.
- EPA's role is to provide information, data and tools; share best practices; and foster collaborative partnerships.

Excess Food Opportunities Map Version 2.0



Approach

- This map is an expansion of an EPA Region 9 project that was intended to show available feedstocks for anaerobic digesters.

- The EPA ORD and Region 9 team compiled the background for the Map for two years, collecting and sifting data from many sources, such as state-led and industry specific studies. We created formulas or found literature for how to make reasonable estimations for each type of generator.

- For example, we found studies on how much food waste is generated per student at elementary and secondary schools, then collected state by state enrollment data to determine how much excess food may be available at each school location.

Map Overview

- Identifies potential excess food generators and estimated quantities from institutional, commercial & industrial facilities
- Identifies potential recipients of excess food
- Can be used to identify strategic opportunities for location-specific management of excess food
- Potential users include:
  - State & local governments
  - Private sector and nonprofits
  - Prospective project developers (e.g., compost or anaerobic digester facility)
  - Businesses who generate excess food

Functionality of Map

The map ***does*** provide:

- Geographic locations of potential generators and recipients
- Estimates of excess food generation rates at the establishment level
- Service area for communities with organics collection programs
- Select contact information

The map ***does not*** provide:

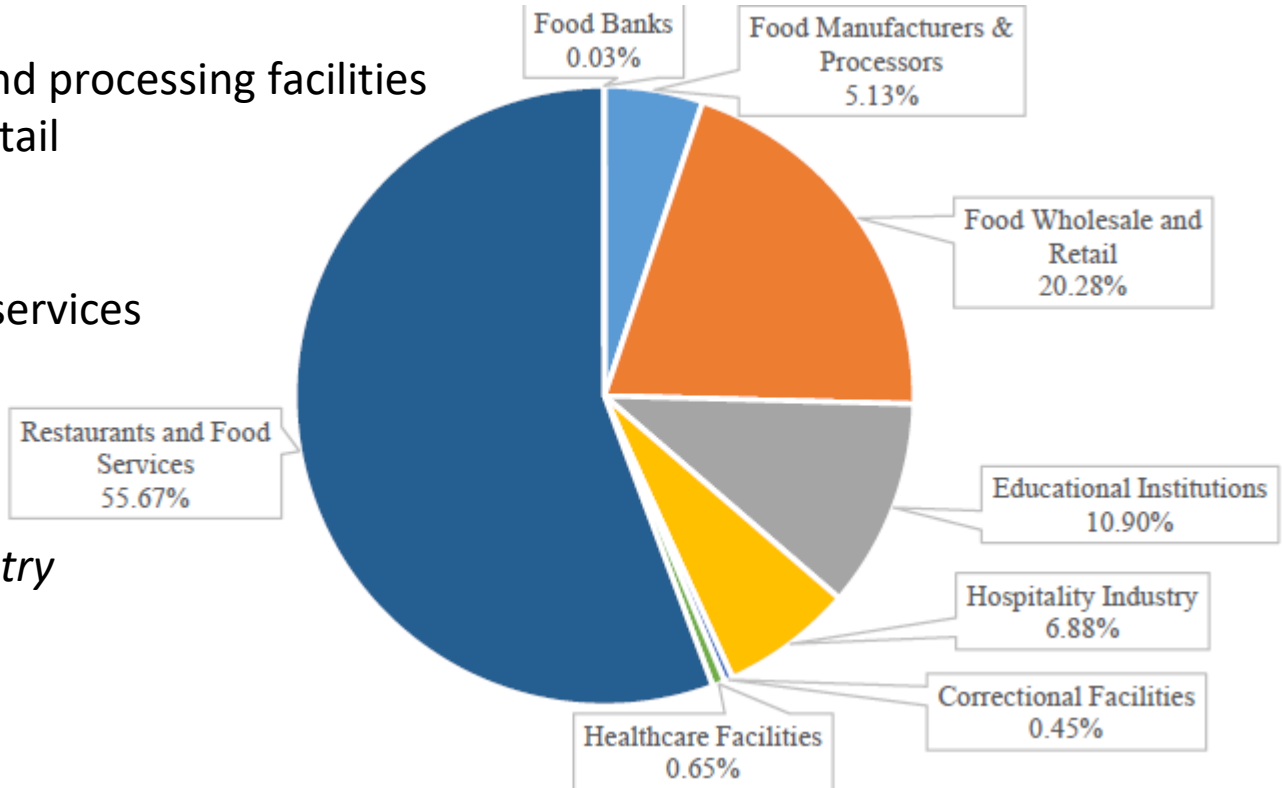
- Exact measurements of excess food
- Information on actual diversion activity
- Capacity of potential recipients to accept excess food
- Estimates of on-farm excess food

Potential Generators of Excess Food

Almost 1.2 million excess-food generating establishments mapped across 76 NAICS* codes and three school types

Industries grouped as follows:

- Correctional facilities
- Educational institution
- Food banks
- Food manufacturing and processing facilities
- Food wholesale and retail
- Healthcare facilities
- Hospitality industry
- Restaurants and food services



**NAICS= North American Industry Classification System*

Potential Recipients of Excess Food

Recipients include approximately:

- 300 food banks
- 1,400 anaerobic digestion facilities
- 3000 composting facilities

Data sources include Feeding America, Water Environment Federation/ American Biogas Council, EPA's AgSTAR program, BioCycle, and state composting registries.

Facilities mapped whether or not they currently accept excess food.

Examples* of Potential Excess Food Generators

NAICS Code	North American Industry Classification System (NAICS) Code Description
311230	Breakfast Cereal Manufacturing
452311	Warehouse Clubs and Supercenters
721110	Hotels and motels
922140	Correctional institutions
622110	General Medical and Surgical Hospitals
722511	Full-Service Restaurants

**There are 76 NAICS codes and three school types in total*

Estimated Excess Food Generation Rate Calculation

1. Identify industry-specific methodology/generation factor.
2. Acquire establishment-specific data (buy or download).
   - From Hoover's, Inc.: Commonly available business statistics such as annual revenue and employee count
   - From National Center for Education Statistics: Number of students, type of schools
   - From Dept. of Homeland Security: Number of hospital beds
3. Plug establishment-specific data into identified methodology to generate estimate for each establishment.

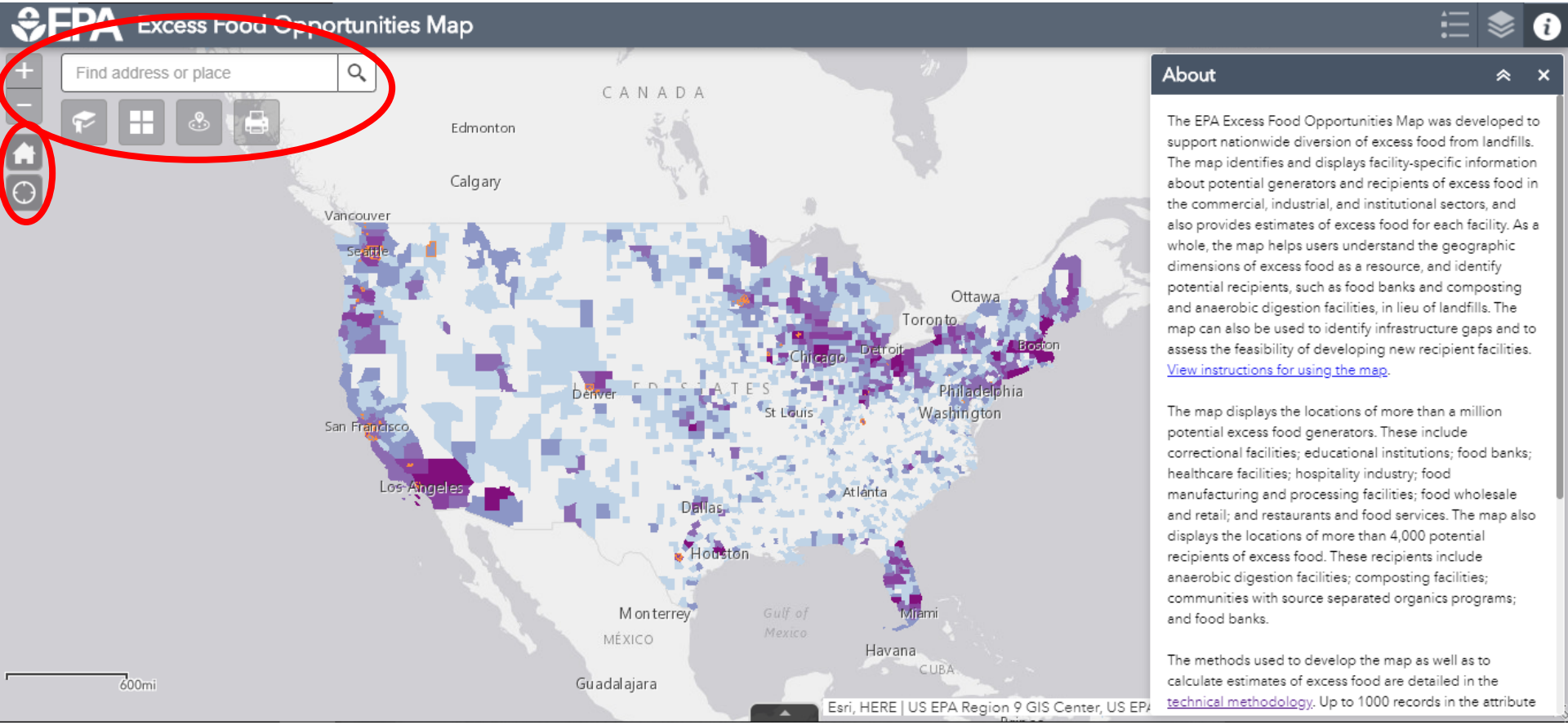
Methodology:
FWRA, 2014

$$\text{Food Manufacturers and Processors Excess Food } \frac{\text{tons}}{\text{year}} = \text{Facility's Annual Revenue (\$)} \times 0.053 \frac{\text{lb}}{\text{Annual Revenue (\$)}} \times \frac{\text{tons}}{2{,}000 \text{ lb}}$$

Limitations

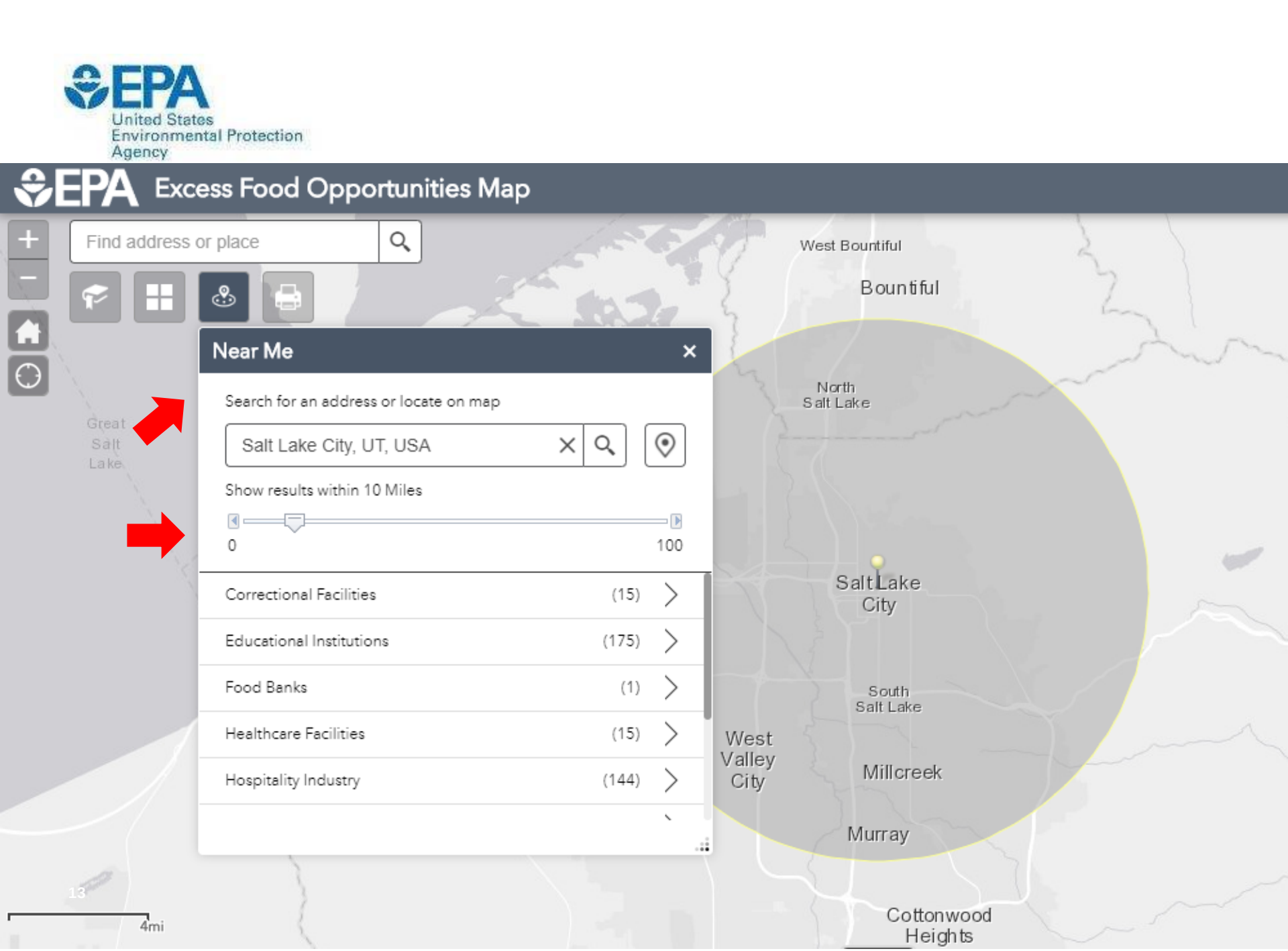
- Methodologies are based on sometimes dated and limited measured data.
- Excess food estimates don't distinguish between edible and inedible food.
- Generators – No information about actual excess food or diversion activity.
- Recipients – No indication of capacity to accept excess food.
- Farms aren't mapped.
- Food rescue data are limited.

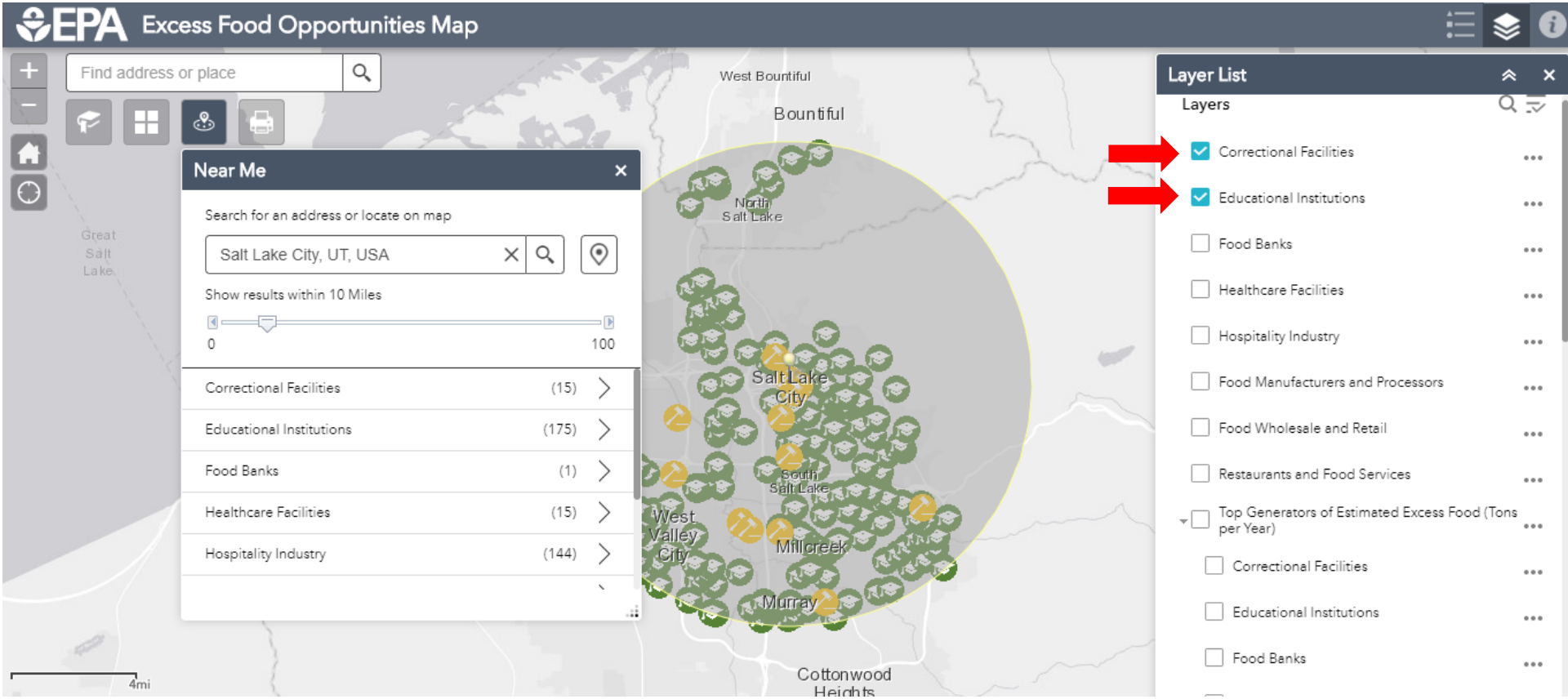
EPA
United States
Environmental Protection
Agency



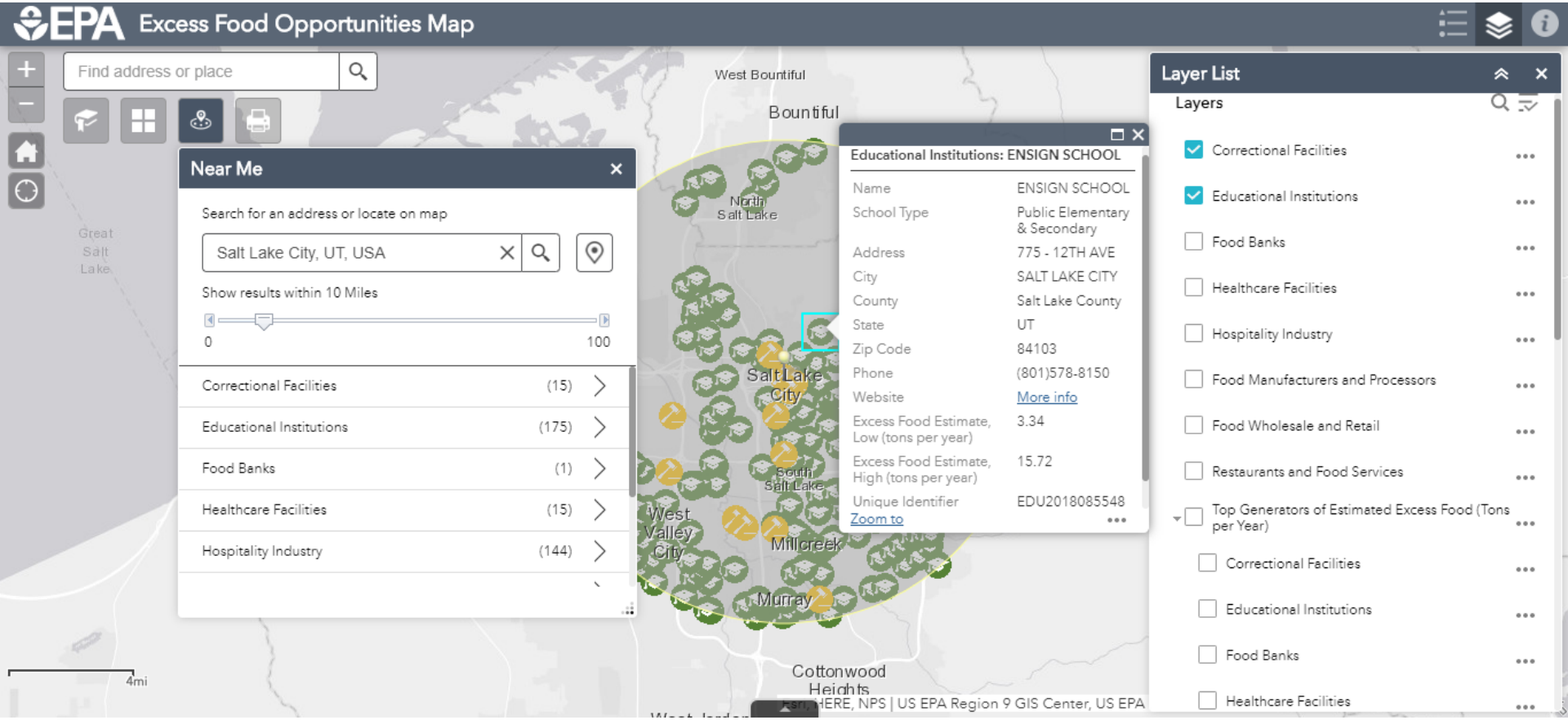
Direct link to map:

https://geopub.epa.gov/excessfoodmap/

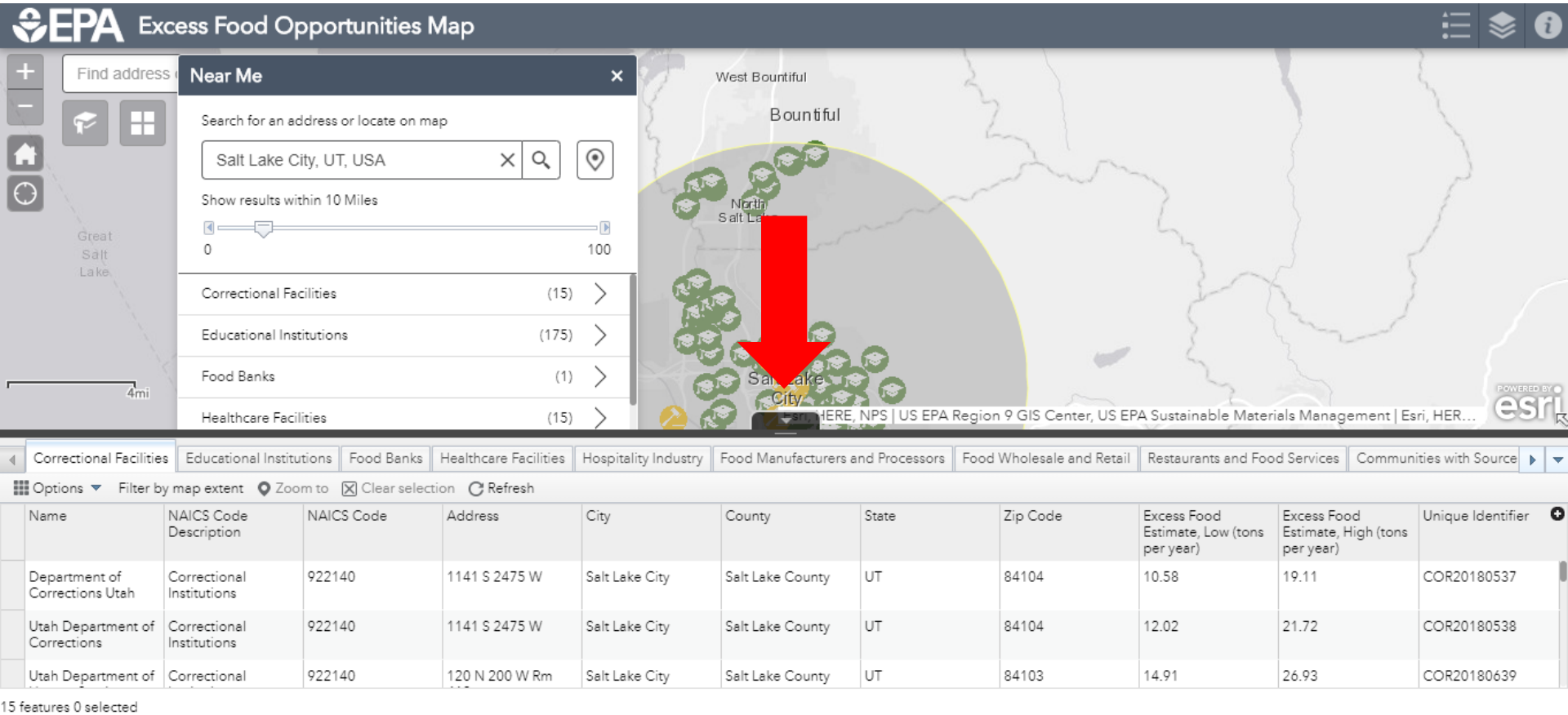

EPA
United States
Environmental Protection
Agency
EPA Excess Food Opportunities Map
Find address or place
Near Me
Search for an address or locate on map
Salt Lake City, UT, USA
Show results within 10 Miles
0
100
Correctional Facilities (15)
Educational Institutions (175)
Food Banks (1)
Healthcare Facilities (15)
Hospitality Industry (144)
West Bountiful
Bountiful
North Salt Lake
Great Salt Lake
Salt Lake City
South Salt Lake
West Valley City
Millcreek
Murray
Cottonwood Heights
4mi


EPA Excess Food Opportunities Map
Find address or place
Near Me
Search for an address or locate on map
Salt Lake City, UT, USA
Show results within 10 Miles
0
100
Correctional Facilities (15)
Educational Institutions (175)
Food Banks (1)
Healthcare Facilities (15)
Hospitality Industry (144)
West Bountiful
Bountiful
North Salt Lake
Great Salt Lake
Salt Lake City
South Salt Lake
West Valley City
Millcreek
Murray
Cottonwood Heights
4mi
Layer List
Layers
Correctional Facilities
Educational Institutions
Food Banks
Healthcare Facilities
Hospitality Industry
Food Manufacturers and Processors
Food Wholesale and Retail
Restaurants and Food Services
Top Generators of Estimated Excess Food (Tons per Year)
Correctional Facilities
Educational Institutions
Food Banks

United States Environmental Protection Agency



EPA United States Environmental Protection Agency



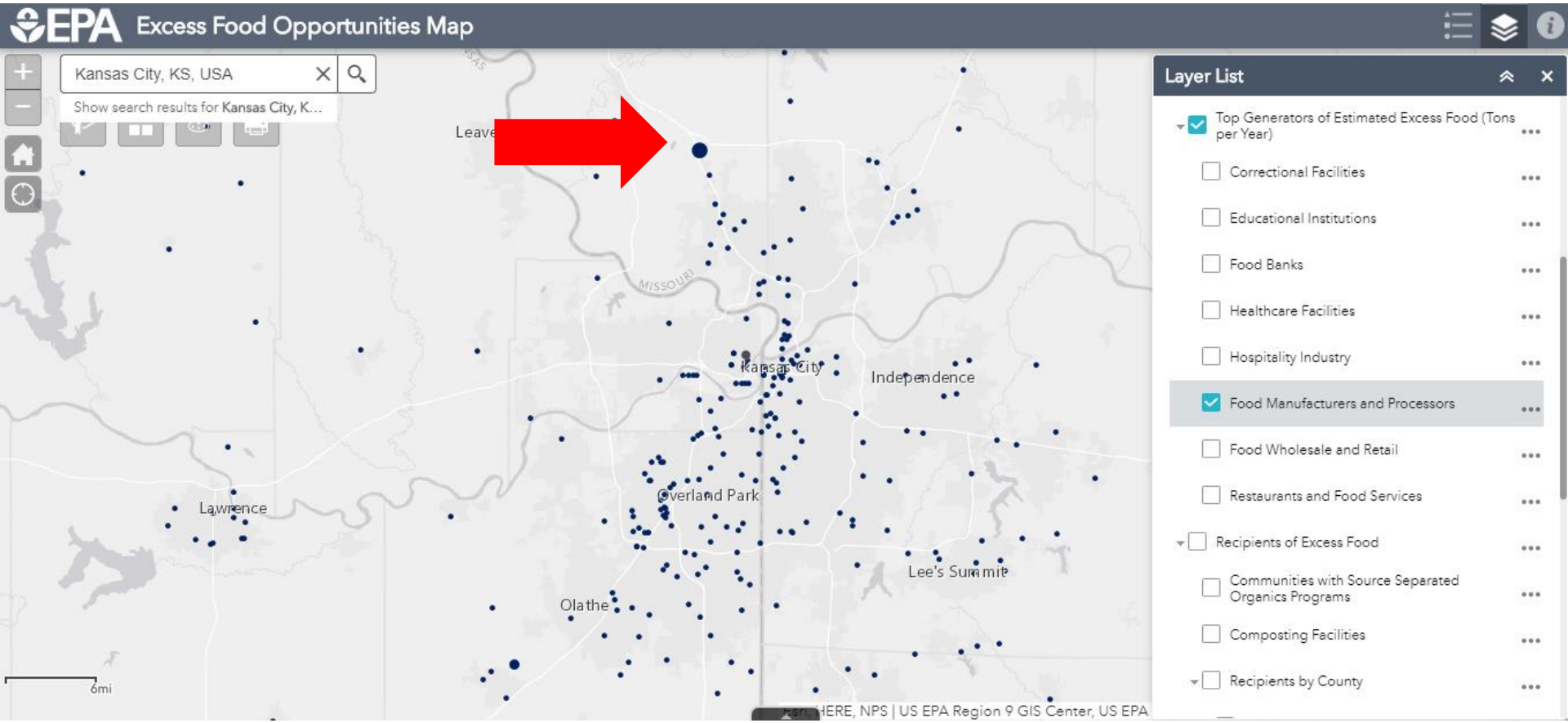
Correctional Facilities | Educational Institutions | Food Banks | Healthcare Facilities | Hospitality Industry | Food Manufacturers and Processors | Food Wholesale and Retail | Restaurants and Food Services | Communities with Source

Options | Filter by map extent | Zoom to | Clear selection | Refresh

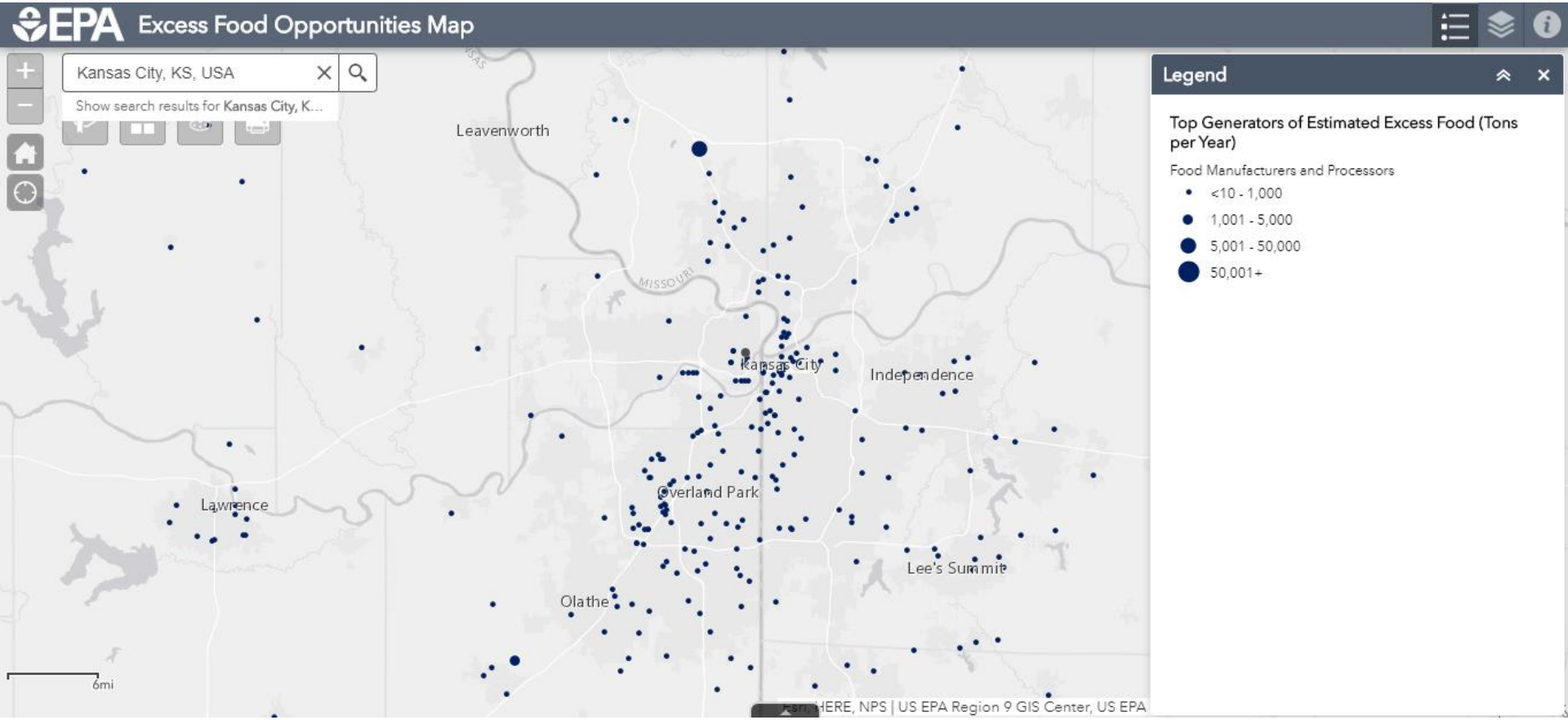
Name	NAICS Code Description	NAICS Code	Address	City	County	State	Zip Code	Excess Food Estimate, Low (tons per year)	Excess Food Estimate, High (tons per year)	Unique Identifier
Department of Corrections Utah	Correctional Institutions	922140	1141 S 2475 W	Salt Lake City	Salt Lake County	UT	84104	10.58	19.11	COR20180537
Utah Department of Corrections	Correctional Institutions	922140	1141 S 2475 W	Salt Lake City	Salt Lake County	UT	84104	12.02	21.72	COR20180538
Utah Department of	Correctional	922140	120 N 200 W Rm	Salt Lake City	Salt Lake County	UT	84103	14.91	26.93	COR20180639

15 features 0 selected

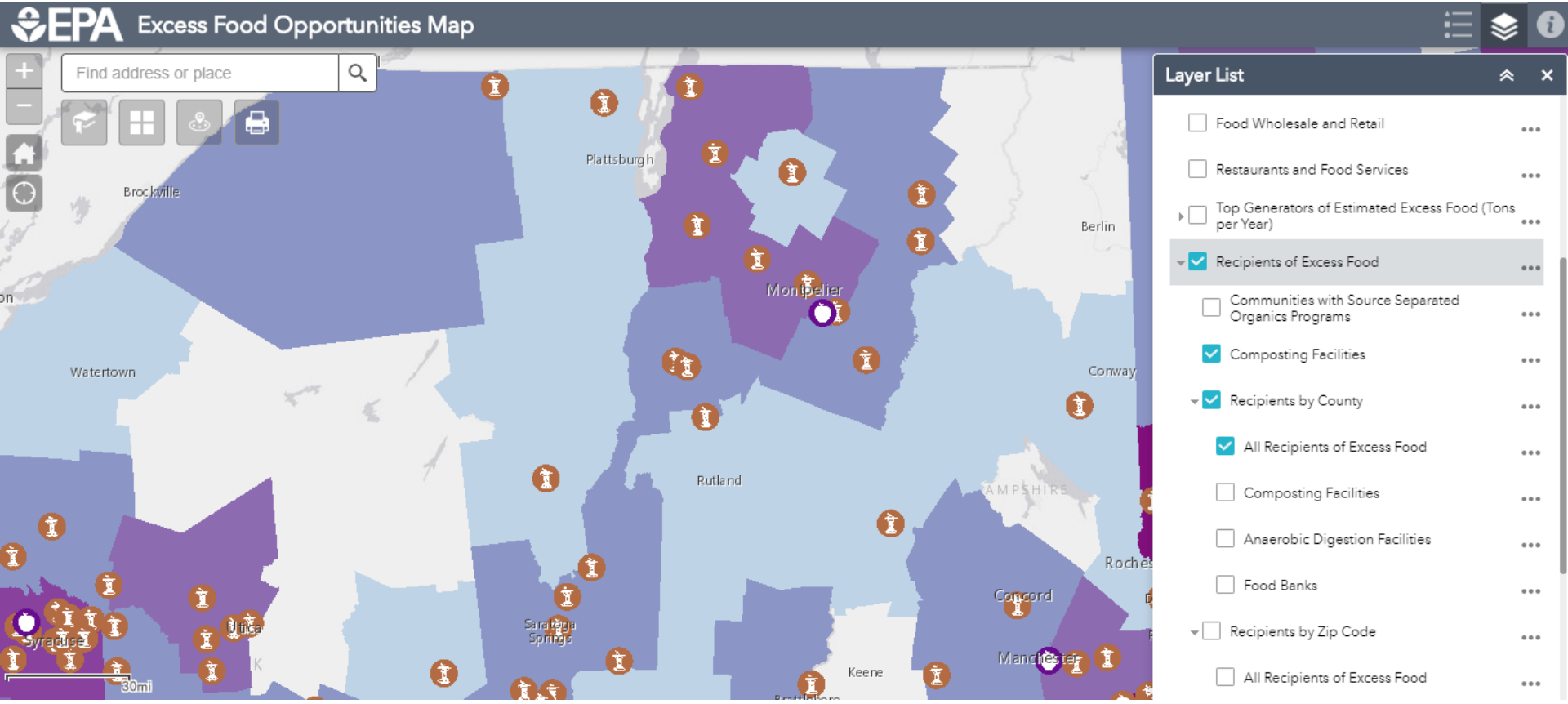
EPA United States Environmental Protection Agency



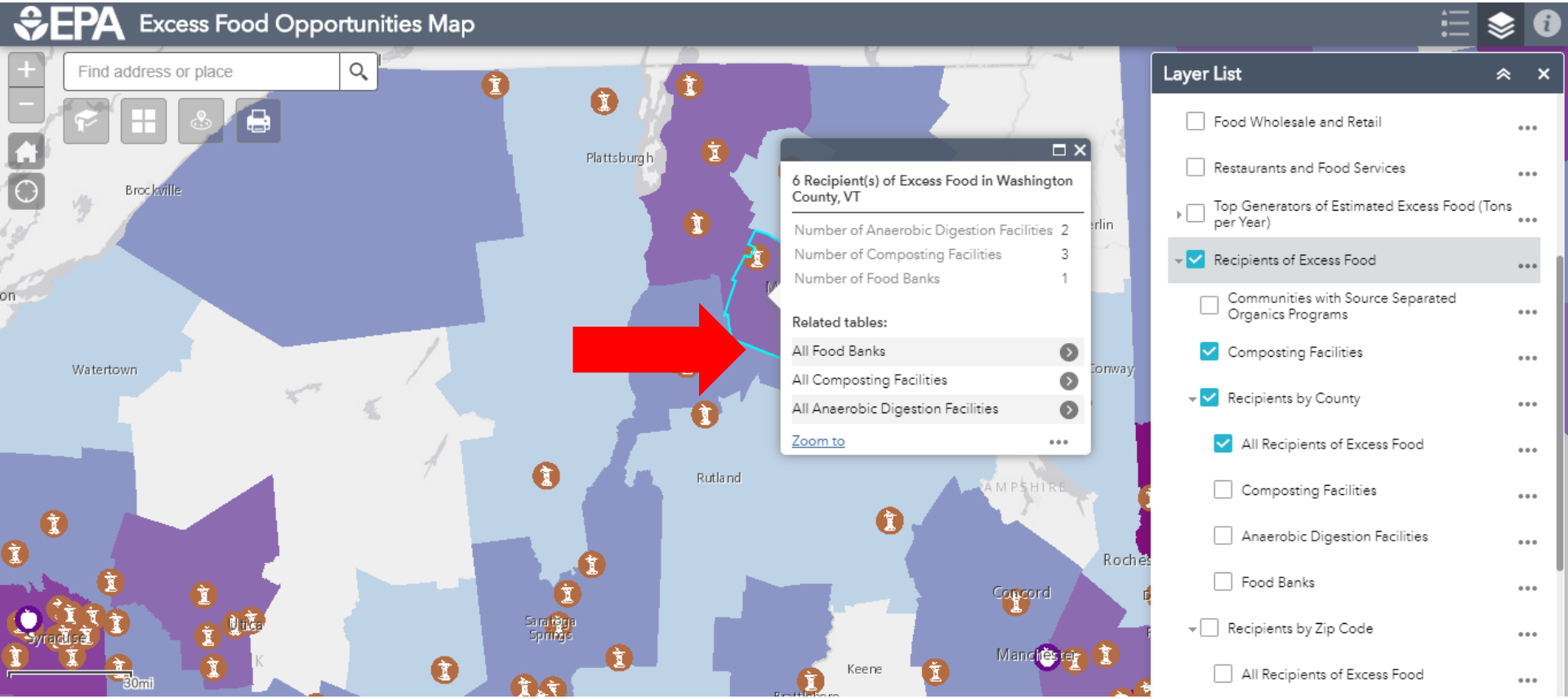
EPA United States Environmental Protection Agency

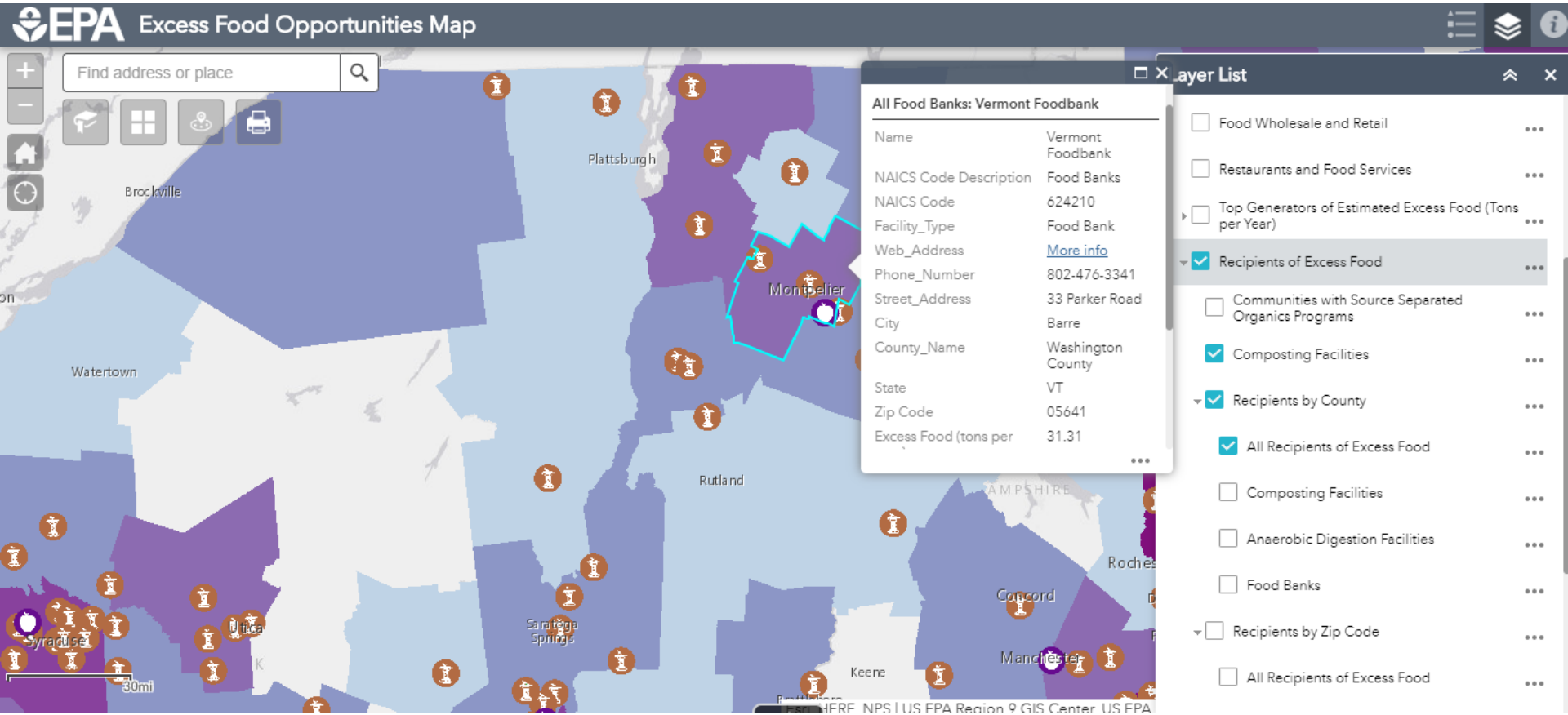


United States Environmental Protection Agency

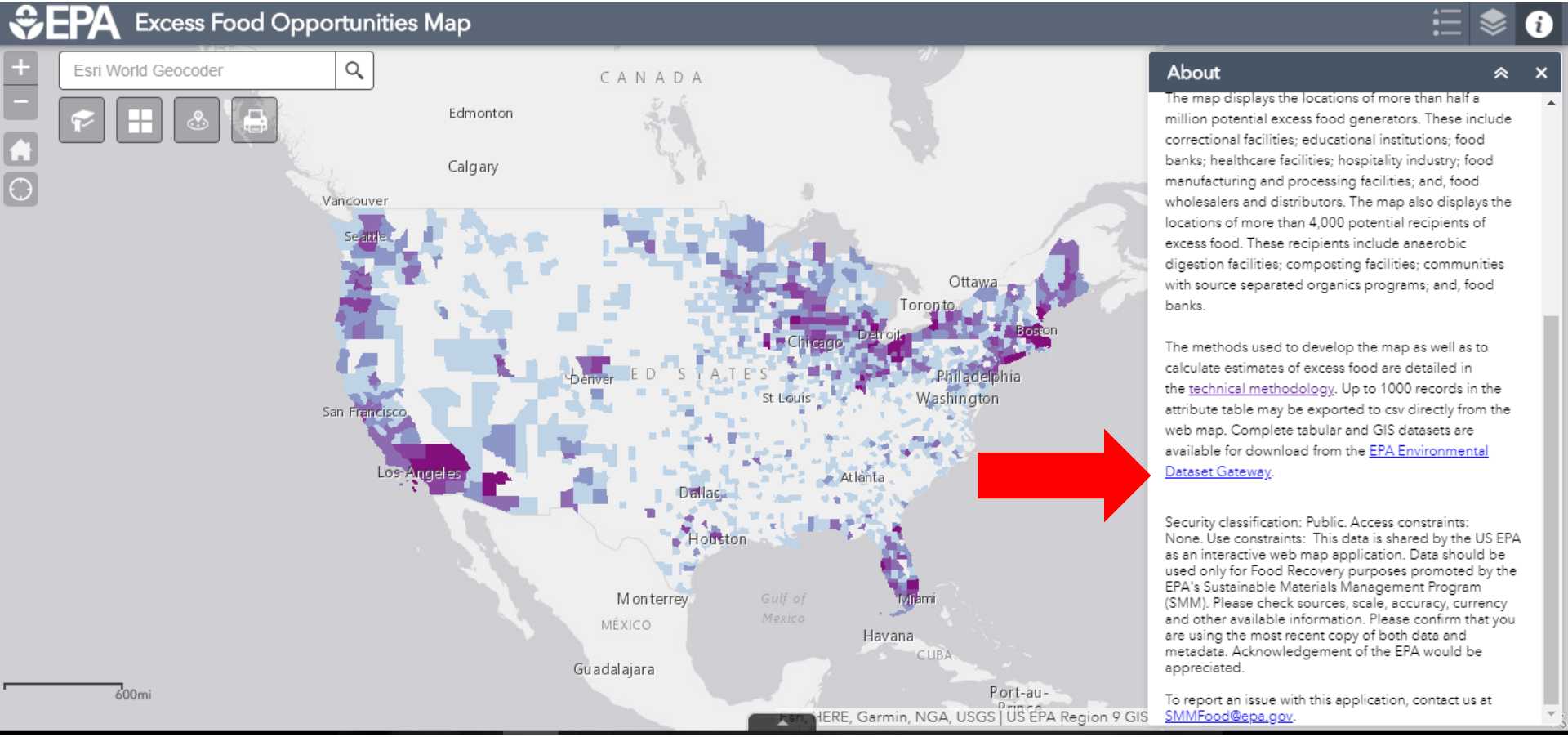


EPA United States Environmental Protection Agency




EPA Excess Food Opportunities Map
Find address or place
Plattsburgh
Brockville
Montpelier
Watertown
Rutland
Concord
Keene
Manchester
Saratoga Springs
Syracuse
30mi
All Food Banks: Vermont Foodbank
Name
Vermont Foodbank
NAICS Code Description
Food Banks
NAICS Code
624210
Facility_Type
Food Bank
Web_Address
More info
Phone_Number
802-476-3341
Street_Address
33 Parker Road
City
Barre
County_Name
Washington County
State
VT
Zip Code
05641
Excess Food (tons per
31.31
ayer List
Food Wholesale and Retail
Restaurants and Food Services
Top Generators of Estimated Excess Food (Tons per Year)
Recipients of Excess Food
Communities with Source Separated Organics Programs
Composting Facilities
Recipients by County
All Recipients of Excess Food
Composting Facilities
Anaerobic Digestion Facilities
Food Banks
Recipients by Zip Code
All Recipients of Excess Food

EPA United States Environmental Protection Agency



https://edg.epa.gov/data/PUBLIC/R9/ExcessFoodPublic_USTer_2018_R9.gdb.zip

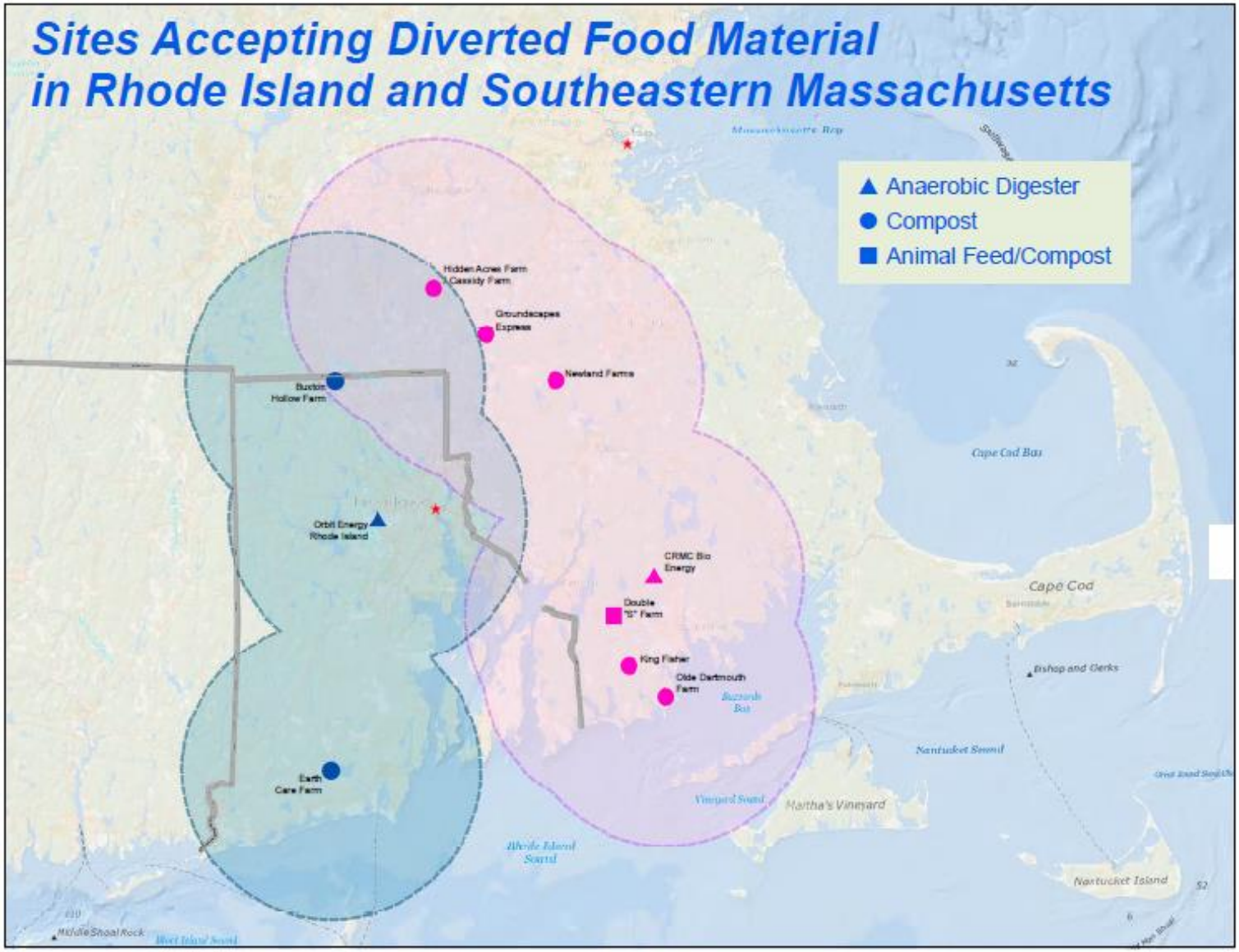
How Users Can Leverage the Map

- **Identify strategic opportunities** for location-specific management of excess food

- **Support decision-making** through identification of:
  - Potential sources of food for rescue and reuse
  - Feedstocks for compost, anaerobic direction, or other excess food processors
  - Potential infrastructure gaps for managing excess food
  - Alternatives to sending excess food to landfill

- **Download data**, and adapt/adopt methodology, if desired

Case Study: Rhode Island



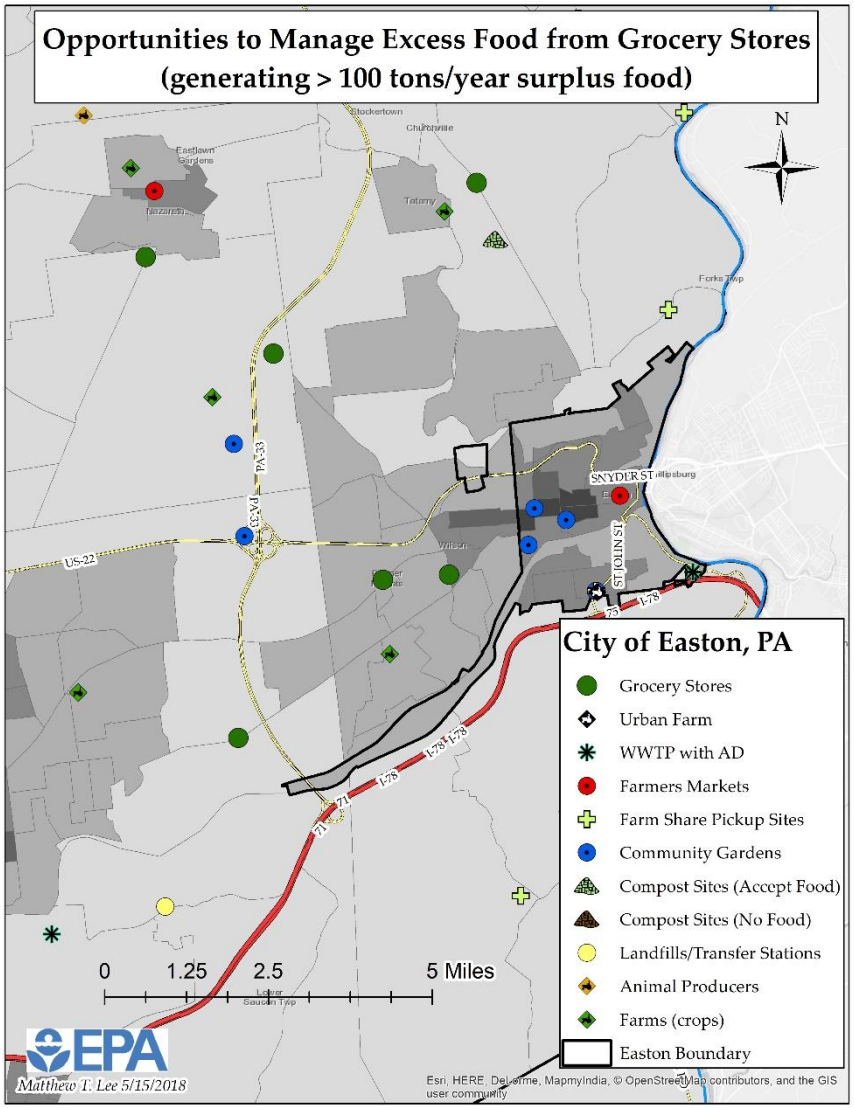
Map generated by EPA Region 1 GIS team

Case Study: Rhode Island Impacts

- More businesses and institutions will take action to reduce food waste, as they are now subject to Rhode Island's Refuse Disposal Law and can access the free food waste assistance program
- More businesses donating excess food

Sources: health.ri.gov & wastedfood.cetonline.org

Case Study: Lehigh Valley, PA



Map generated by EPA Region 3 GIS team

Case Study: Lehigh Valley, PA Impacts

- Increased composting by businesses
- Community composting pilot
- Schools implementing share tables

Version 2.1 Underway

- Updating anaerobic digester data set
- Updating communities with source separated organics
- Expanding food bank layer

Take Home Messages

- Use the map on its own, or in combination with other data
- Technical methodology presents up-to-date equations to estimate excess food
- Data sets can be downloaded for your own use

Resources

United States Environmental Protection Agency

Map & resources:

- Technical Methodology
- FAQs
- User Guide
- Data available for download

For questions and feedback, email:

SMMFood@epa.gov

https://www.epa.gov/foodmap

Contacts

Claudia Fabiano
Environmental Protection Specialist
Sustainable Management of Food
Office of Resource Conservation and Recovery
US EPA Office of Land and Emergency Management
fabiano.claudia@epa.gov
703-308-0157

Steve Rock
Environmental Engineer
Center for Environmental Solutions and Emergency Response
US EPA Office of Research and Development
rock.steven@epa.gov
513-569-7149

Acknowledgements: Charlotte Ely and Cheryl Henley in EPA Region 9 and Amanda Hong in EPA Region 8