APPROVED

CITY OF URBANA, ILLINOIS
SUSTAINABILITY ADVISORY COMMISSION
Council Chambers, Urbana City Building
Tuesday, December 1, 2020

Commissioners Present: Stacy Gloss, Tomas Delgado, Maddy Garbacz, Andrew Stumpf, Morgan White, Grace Wilken, Jessica Lehmkuhl

Commissioners Absent: None

Staff Present: Scott Tess

Call to Order, Roll Call, and Declaration of Quorum
Stacy Gloss called the meeting to order, a roll was called and a quorum was present.

Approval of Minutes
Grace Wilken motioned to approve the amended minutes for the November 19, 2020 meeting to include reports on workshop and food scrap composting added. Morgan White seconded the motion. Tomas Delgado, Maddy Garbacz, Stacy Gloss, Andrew Stumpf, Morgan White, Grace Wilken and Jessica Lehmkuhl voted yes to approve the minutes. The motion passed.

Changes to the Agenda
No changes to the agenda.

Public Input
There was no public input.

Presentation – Prairie Research Institute Geothermal Grant
Andrew Stumpf shared the University of Illinois Extension's investment of $1 million in grants to support vital issues through the 2020 Extension Collaboration Grants. (See attached presentation). Discussion ensued.

Discussion on Food Scrap Composting
Grace Wilken opened the discussion for a proposed pilot food scrap composting program that would start in the summer of 2021. A discussion ensued. (See attached proposal)

Unfinished Business
Chair Stacy Gloss opened the discussion to revisit the Justice, Equity, Diversity and Inclusion (JEDI) Goals and the whiteboard discussion that was started at the November 2020 meeting. Grace Wilken and Morgan White volunteered to categorize the whiteboard and present to the commission at the February 2, 2021 meeting.

Commissioners Report
Chair Stacy Gloss reminded commissioners of the procedure of adding their reports to the meeting. Commissioners may email the chair prior to the meeting or ask for an agenda amendment or addition before the meeting.

Announcements
The Sustainability Advisory Commission has an immediate opening for Commission Member. Interested parties may download the application form at: https://www.urbanaillinois.us/boards/sustainability-advisory-commission.

The next Sustainability Advisory Commission meeting is scheduled for February 2, 2021.

With no further discussion, the meeting was adjourned at 8:29 p.m.

This meeting was recorded.

EXTENSION
NEWS FOR ILLINOIS

Illinois Extension
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Extension invests nearly $1 million in grants to support vital issues in Illinois

URBANA, Ill. – Reinforcing its commitment to bringing practical, research-based solutions to residents of Illinois' 102 counties, University of Illinois Extension announces an investment of nearly $1 million in 17 projects through the 2020 Extension Collaboration Grants which foster collaborative relationships between Extension and other units and academic departments across the university.

Extension is investing nearly $1 million in 17 projects through the 2020 Extension Collaboration Grants which foster collaborative relationships between Extension and other units and academic departments across the university.

"Extension is delighted to support these grants that facilitate the critical work of making research advancements that matter to the lives of Illinois residents and business owners," says Shelly Nickols-Richardson, associate dean and director of Illinois Extension. "The mission of Extension is to translate scientific findings from the university into practice, and we couldn't do that without our campus partners."

The 2020 Extension Collaboration Grants receive financial support from University of Illinois' Office of the Provost Investment for Growth Program and Illinois Extension. The program focuses on supporting research and partnerships that address critical issues in five key areas: food, economy, environment, community, and health.

Of 50 proposals submitted for the 2020 to 2022 program, 17 will move forward with research and outreach that increases food availability, fosters health and wellness, addresses critical environmental issues, and generally enhances the lives of Illinois' diverse populations.

Illinois Geothermal Coalition Technical and Outreach Program awarded to the Illinois State Geological Survey, with Andrew Stumpf as principal investigator, collaborating with Jay Solomon and Nancy Ouedraogo of Illinois Extension, and Tugce Baser of the Department of Civil and Environmental Engineering.

OBJECTIVES

- Develop technical and outreach/education programs supporting wider adoption of geothermal energy systems and disseminates information to decision makers and public stakeholders about the potential economic, energy efficiency, and environmental benefits to the residents of Illinois.
- Build an interactive dashboard providing technical data and explanatory information to the geothermal industry and government organizations.
- Develop a decision support tool to assist decision makers and public stakeholders in identifying how geothermal energy can be implemented successfully in long-term solutions.
- Project involves a coordinated state-wide education and outreach program that introduces all aspects of geothermal energy pertinent to Illinois, and provides a venue to discuss potential benefits to the residential, commercial, and industrial sectors.

Illinois Geothermal Coalition Technical and Outreach Program

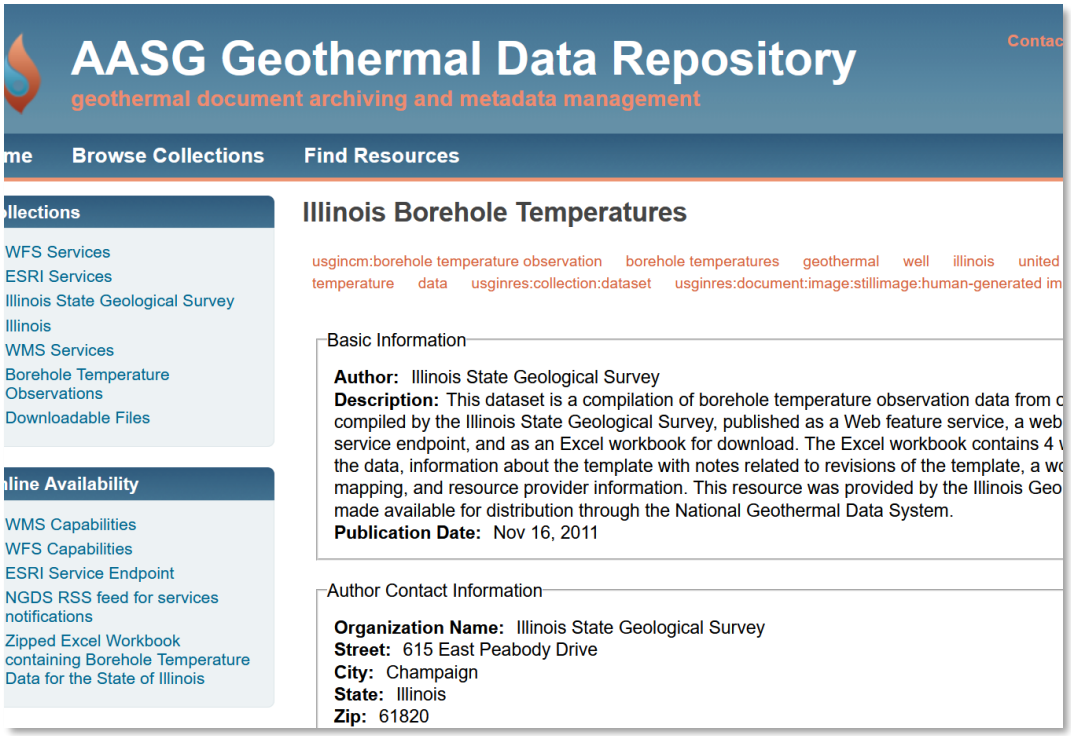
Project Team

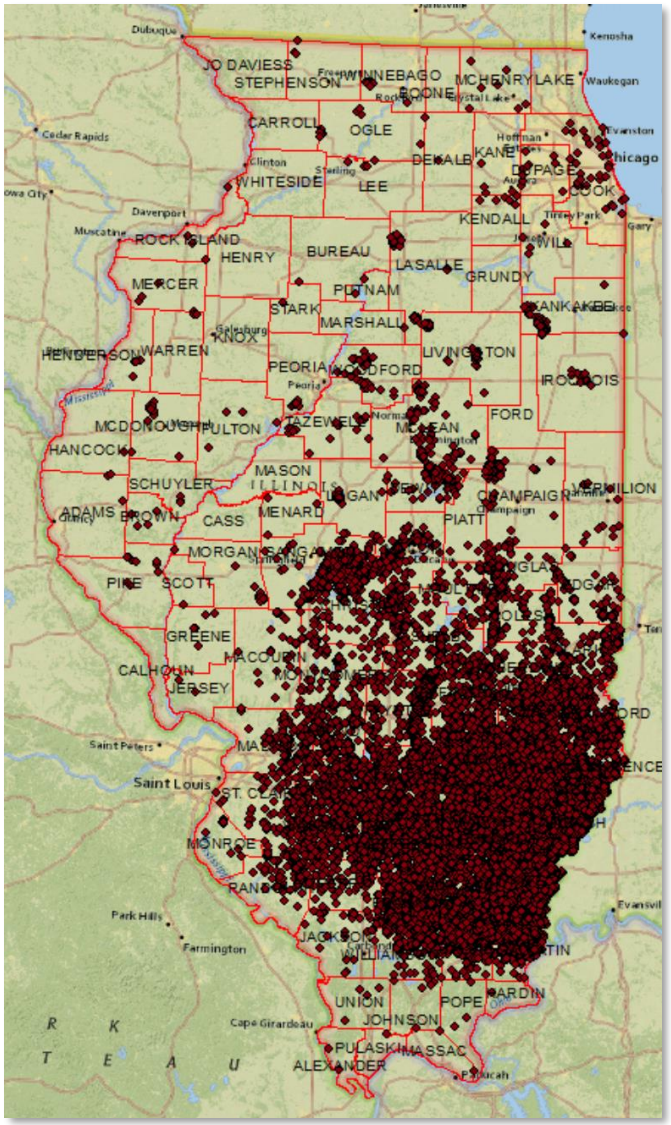
1. Andrew Stumpf; Principal Research Scientist, Illinois State Geological Survey
2. Jay Solomon; Extension Educator, Energy and Environmental Stewardship Team, University of Illinois Extension
3. Tugce Baser; Assistant Professor, Department of Civil and Environmental Engineering
4. Nancy Ouedraogo; Extension Specialist, Community Economic Development, University of Illinois Extension
5. Melony Barrett; Geospatial Applications Developer, Illinois State Geological Survey

Collaborators

1. John Freitag; Executive Director, Geothermal Alliance of Illinois (GAOI)
2. Madhu Khanna; Interim Dir., Institute of Sustainability, Energy & Environment
3. Mohamed Attalla; Executive Director, UIUC Facilities and Services
4. Steve Whittaker; Director, Energy and Minerals; Illinois State Geological Survey
5. Yu-Feng Lin; Director, Illinois Water Resource Center
6. Frank Holcomb; Associate Director, U.S. Army Corps of Engineers
7. Scott Tess; Sustainability and Resilience Officer, City of Urbana

Build an interactive dashboard





Develop a decision support tool

Geology

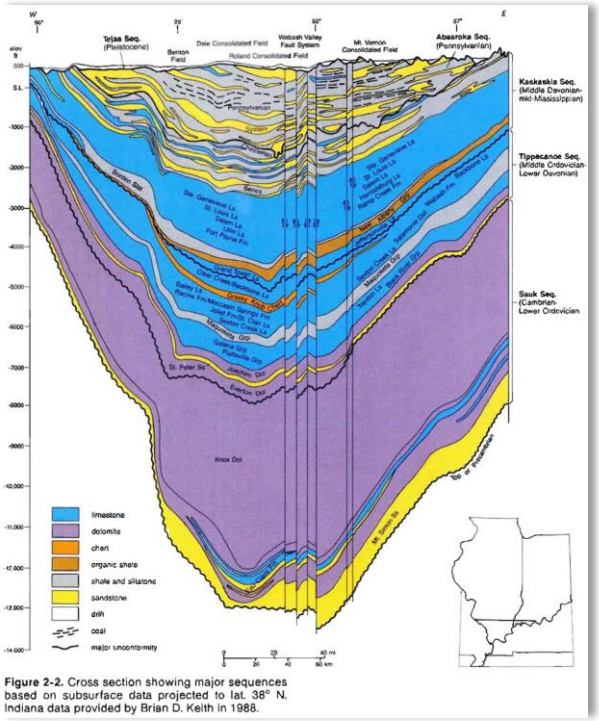


Figure 2-2. Cross section showing major sequences based on subsurface data projected to lat. 38° N. Indiana data provided by Brian D. Keith in 1988.

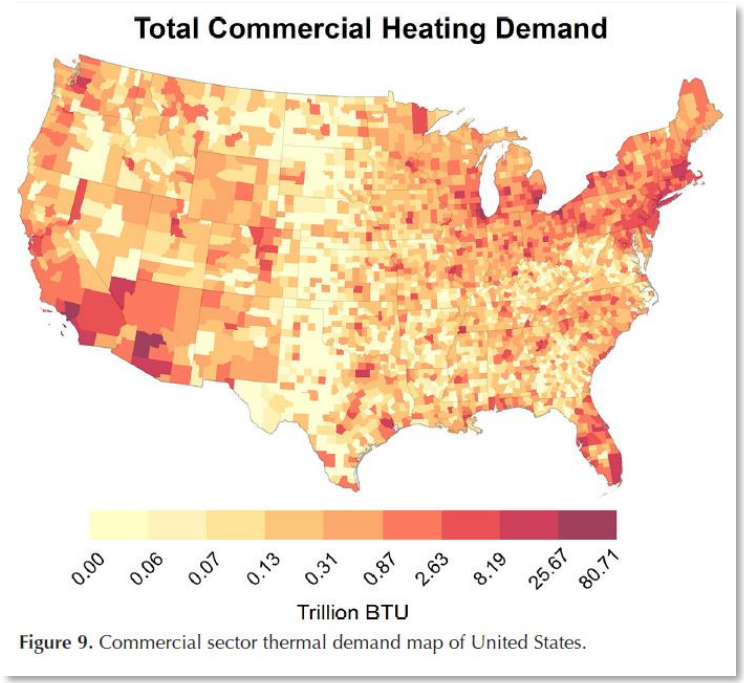
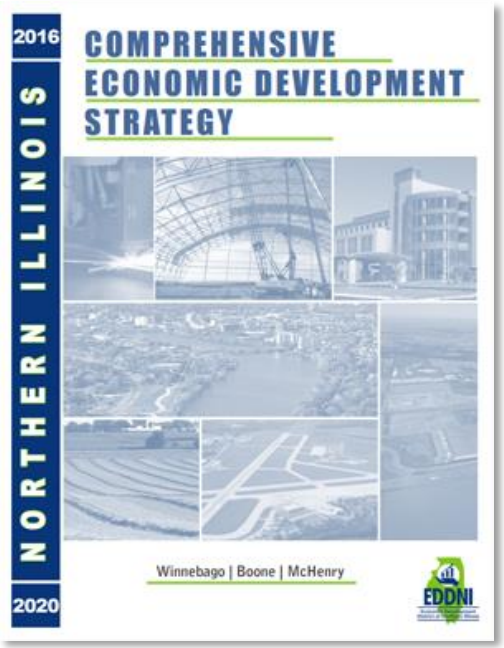


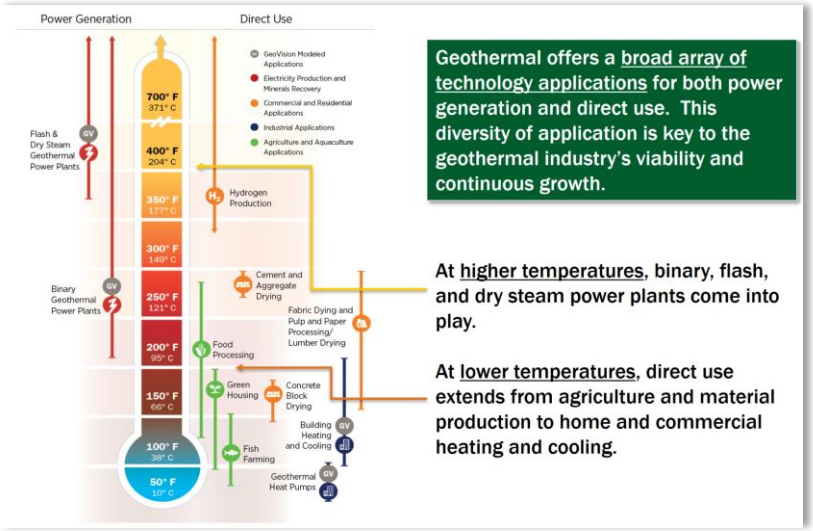
Figure 9. Commercial sector thermal demand map of United States.

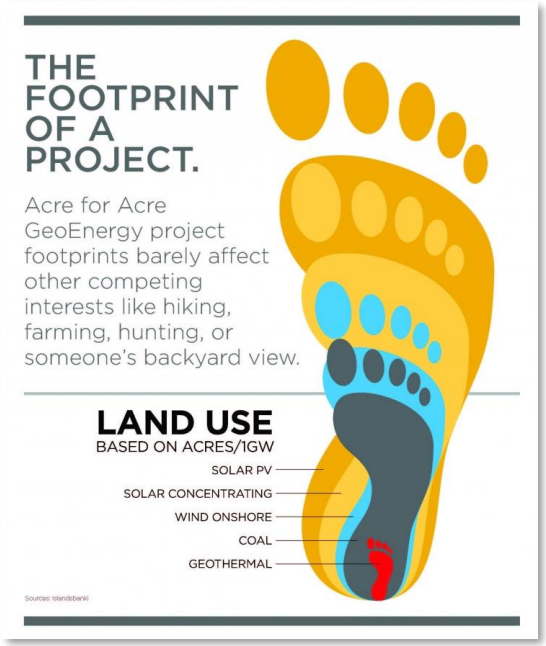
Geothermal Energy Technologies

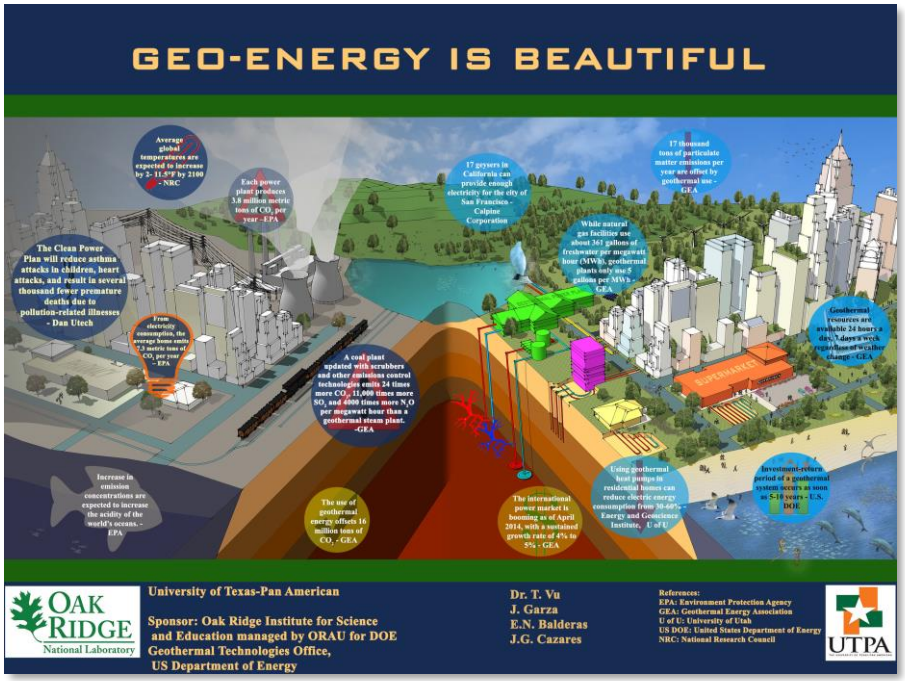
- Ground source heat pumps
- Direct-use heating and cooling
- Thermal energy storage
- Conversion of petroleum wells for geothermal energy production
- Abandoned mines as a geothermal resource

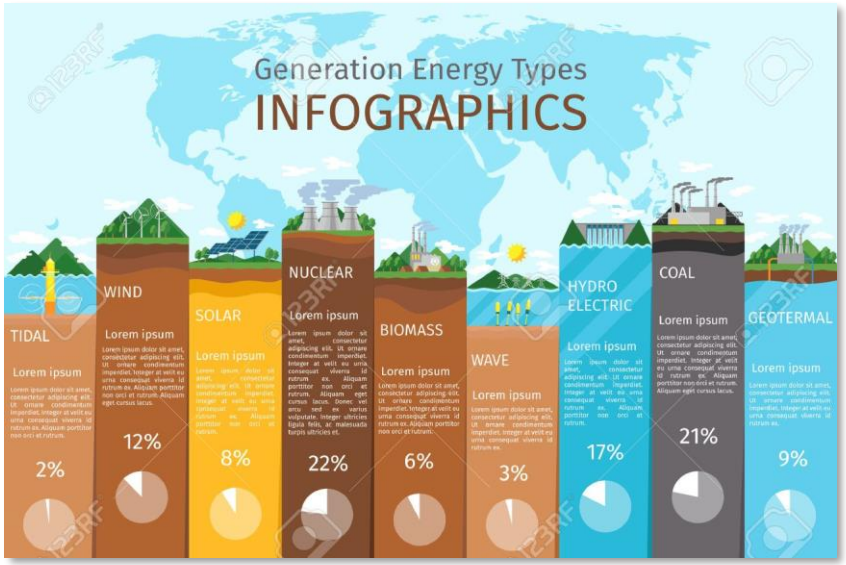


Coordinated state-wide education and outreach program









Proposal for Food Scrap Composting in Champaign-Urbana, IL

Overview

The overall goal is to compost food waste at the Urbana Landscape Recycling Center (LRC), with participation of private waste haulers and customers. The goal is to have an economically self-sufficient program, due to the reduced price of tipping at the LRC, as opposed to landfill tipping, and reduced or equal cost to customers with reduced landfill-bound trash. The first step is to start a pilot project at the LRC to compost pre-consumer, commercial food waste (restaurant/grocery) once or twice per week (about one compactor full), potentially starting in summer 2021. This requires no further permitting for the LRC, and pre-consumer food waste cuts down on LRC labor requirements in monitoring and disposing of contamination. Commercial food waste allows for larger volume and fewer drop off times (for pile management). The compost pile could be layered (with mulch or other carbon-rich organic waste) after food waste tipping (daily, weekly) and turned periodically. Waste haulers need to be contacted for commercial food waste (perhaps those already hauling commercially), to find a beneficial situation for haulers and their customers.

Benefits

Economic

- Reduced cost to waste haulers ($20/cubic yard at LRC, compared to $32/cubic yard at landfill transfer center)
- Reduced or equal cost to customers (if those cost-savings can be passed on to customers)
- Increased revenue for the LRC (in tipping fees, $20/cubic yard, and in sale of compost, $32/cubic yard)

Environmental

- Reduced organic waste in landfills, which reduces greenhouse gas emissions and leachate discharge
- Reduced fossil fuel usage in transportation (because the LRC is closer than any open landfills)
- Increased volume of local compost available to the community (instead of transporting synthetic or other fertilizers)

Social

- Local businesses and organizations can gain recognition for their composting efforts (Illinois Food Scrap Coalition, IFSC, and others)
- Participating customers learn about sorting compostable materials
- Potential job creation or increased labor hours in customer sorting, private hauling, and LRC management
- Less dependance on surrounding landfills, building a more sustainable and resilient community

Answered questions:

- Can we compost food waste at the LRC? YES
    - Pre- vs post- consumer
        - Pre-consumer, commercial (large volume fewer drop offs would be best for pilot project)
        - Residential poses cost barriers (based on survey data- Courtney Kwong) and possibly frequent tipping (also issue of contamination—inappropriate or unwanted material—in the waste stream
    - Pile management
        - Need 9+ months (summer 2021) to finished other LRC projects, and establish space, pricing, procedures, leachate runoff, etc.
- How much would be charged to tip at the LRC? $20 per cubic yard
    - Would be about $20 cubic yard for food waste drop off
        - Can convert to mass (per ton)
        - $32 per cubic yard at landfill transfer station
    - $32 cubic yard finished compost at LRC (sales)
- How much are haulers paying for landfill dumping (tipping)? ~$32 per cubic yard at transfer station
    - Where do they dump? Where is the landfill/transfer station?
- What about residential food waste?
    - Costs:
        - City of Urbana (Courtney Kwong) found that up to 100 households participating would be between $15-17/month for a food scrap subscription program. The cost per household decreases with more participants.
    - What are residents willing to pay?
        - City of Urbana survey (2019) found that 47% of respondents were willing to pay up to $10/month for compost pick up services, 15% up to $15/month, and 10% were not interested in paying for the service. (61% of respondents said that they would be interested in residential food waste pick up service, 31% “maybe”, and 8% “no”).
    - Does it have to cost more?
        - If food waste is already included in a household’s trash, there is no total increase in waste. The waste hauler may benefit from reduced cost of tipping fees at the LRC, that could compensate for the additional labor and vehicle route.
    - What about multifamily housing?
        - City of Urbana survey (2019) found that 46% of respondents already compost at home, which is much easier for a single-family residence with a yard. For apartment for dorm style housing, there may be an opportunity to collect household compostable waste from multiple households in fewer pickups and address the highest need (people who otherwise could not easily compost themselves).
- What are permitting requirements for haulers?
    - Urbana would license them just like garbage haulers https://www.urbanaillinois.us/Businesses-3

Questions that remain:

- How much do residents/restaurants/grocery and other retail pay for trash (by weight)?
- How much would be charged for residential compost pick up?
- What volume of waste is expected?
- What equipment is needed? (Containers, vehicle, concrete pad, compost containers, etc.)
- Long term sustainability (economic, environment, social)?
- What is the project budget for the proposed pilot project? Are there funds committed to the proposed pilot project?

Potential sponsors, supporters, or partners

- Urbana Landscape Recycling Center
- Dale Levitt Disposal
- Other haulers (Courtney will contact)
- City of Urbana (staff, SAC-Sustainability Advisory Commission)
- CCES- Champaign County Environmental Stewards
- Solidarity Gardens?
- City of Champaign

Next steps:

- Contact Urbana Walmart – Grace *(Contact other commercial businesses with food waste)*
- Haulers (for schnucks or Meijer) – Courtney
- LRC preparations – Kevin and Scott
    - Timeline- 9+ months before starting pilot project (as of Oct 2020, so summer 2021)
    - Need to set rules and regulations (procedures, cash register) before starting pilot
    - Where to dump food waste at LRC, pour concrete pad (~$4,000)

Background on environmental impacts of landfilled food waste in our food system

A tremendous amount of organic matter, and potential energy, is lost in the form of food waste. In the United States, 30%-40% of food is wasted, equaling roughly 67 million tons of food waste and over $150 billion each year (US EPA, 2016). Once in a landfill, this matter is covered (encapsulated) and starts to decompose anaerobically (without oxygen) causing it to release the greenhouse gasses (GHGs) methane (CH_4) and carbon dioxide (CO_2). Landfill gas accounts for 15% of US methane emissions (US EPA, 2016). This gas creates problems for landfill management, as it is highly flammable. As landfill space becomes more limited, regulated, and expensive, it makes sense to seek better alternatives for disposing of food waste. Instead of losing this organic matter as greenhouse gases in landfills, the nutrients can be recycled into a usable compost.

Food waste and food production are connected. The excessive waste of nutrients to grow food creates environmental damage as well. When nutrients (namely nitrogen and phosphorous) end up in water-ways due to fertilizer and nutrient runoff, they accumulate and create the problem of eutrophication—an overabundance of nutrients in water, leading to algal blooms, decreased dissolved oxygen, and eventually death of aquatic life (Smith, et. al, 1999). This process results in aquatic dead zones across the planet. Eutrophication is one of the greatest threats to fresh water and coastal marine ecosystems, covering more than 245,000 km^2 of water surface across the world and resulting in economic costs of $2.2 billion each year (McCrackin, et. al, 2016). Agriculture is one of the leading causes to nutrient runoff that causes eutrophication, with the Midwest being one of the major contributors to the largest dead zone in the Gulf of Mexico (Charles, 2017). Using food waste compost in agriculture, instead of synthetic fertilizers, could reduce nutrient runoff while also reducing landfill organic matter and greenhouse gas emissions.

References

Charles, D. (2017). The Gulf of Mexico dead zone is the biggest ever seen. NPR Illinois. Retrieved from < https://www.nprillinois.org/post/gulf-mexicos-dead-zone-biggest-ever-seen#stream/0>

Smith, V., Tilman, G., and Nekola, J. (1999). "Eutrophication: Impacts of excess nutrient inputs on freshwater, marine, and terrestrial ecosystems". *Environmental pollution, 100* (3): 179–1

McCrackin, M., Jones, H., Jones, P., and Moreno-Mateos, D. (2016). Recovery of lakes and coastal marine ecosystems from eutrophication: A global meta-analysis. *Limnology and Oceanology, 62* (2): 507-518.

US EPA. (2016). Report of 2014. Retrieved from <https://www.epa.gov/sites/production/files/201611/documents/2014_smmfactsheet_508.pdf>

Callie- Dale Levitt 11/18/2020

- Also interested in starting food waste compost spring/summer 2021
- Do not currently service restaurant/grocery, but they COULD (Anywhere in URBANA)
- Could collect food waste when they collect yard waste (already have truck for yard waste)
    - Scott- “LRC probably doesn’t want these co-mingled. TT Kevin.”

- Container – 5 gallon buckets (no lifting device, so can’t be too heavy)
    - Paper bag insert, customers need to clean own buckets
    - Interested in free JJ’s buckets
- Could do pick up once a week in winter (maybe twice per week in summer)
- Any costs?
    - Containers (grant)
    - Paper liners?