

Advancing the Bioeconomy in NW Ohio: A Sustainable, Scalable, Replicable Model for Rural Economic Development

Wes Jurey

President & CEO, ATIP Foundation;

Richard Brenner, Ph.D.

Director, ATIP Foundation;

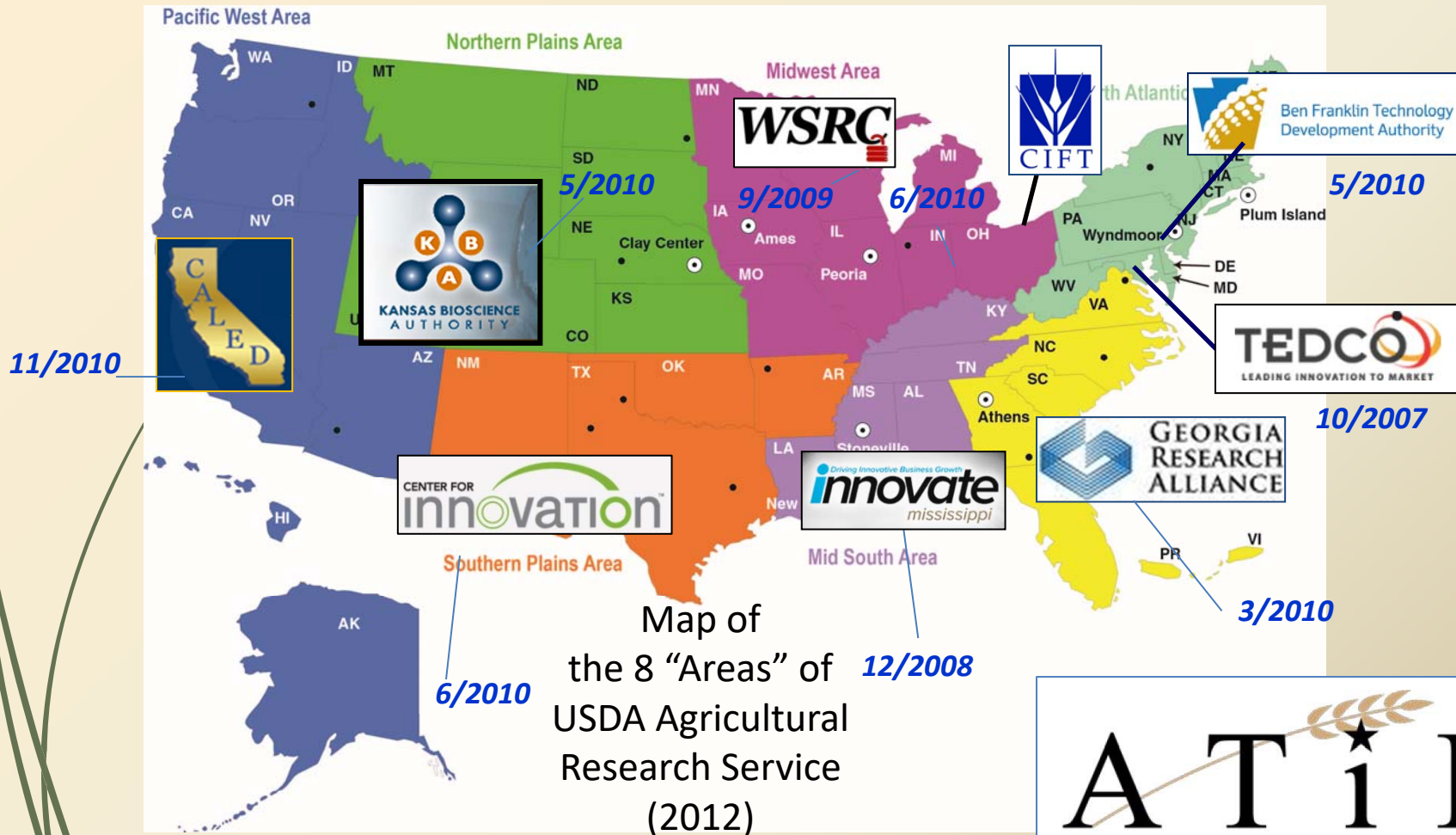
Todd Campbell

Counsel to the Foundation (Clean Economy Works, LLC)

CIFT Ag Breakfast

May 21, 2020

The Agricultural Technology Innovation Partnership (ATIP) Network

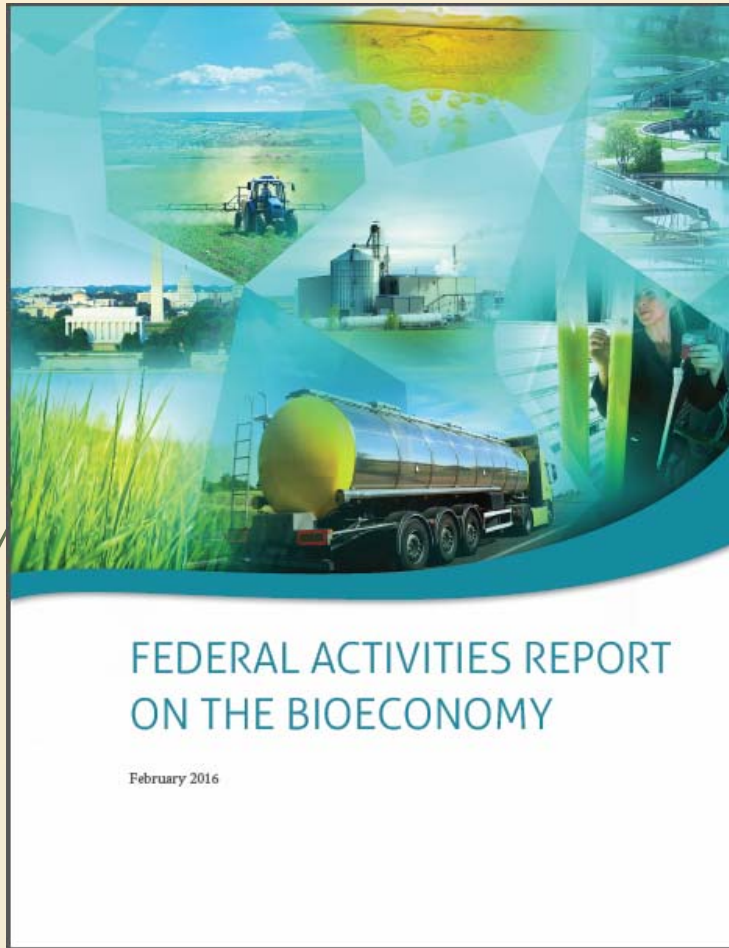


Map of the 8 "Areas" of USDA Agricultural Research Service (2012)

-- mission ---

To provide both a unifying entity for member organizations, as well as flexibility to engage other organizations that have a vested interest in seeing USDA research outcomes adopted by the private sector to create goods and services for public benefit, wealth creation, and rural economic development.

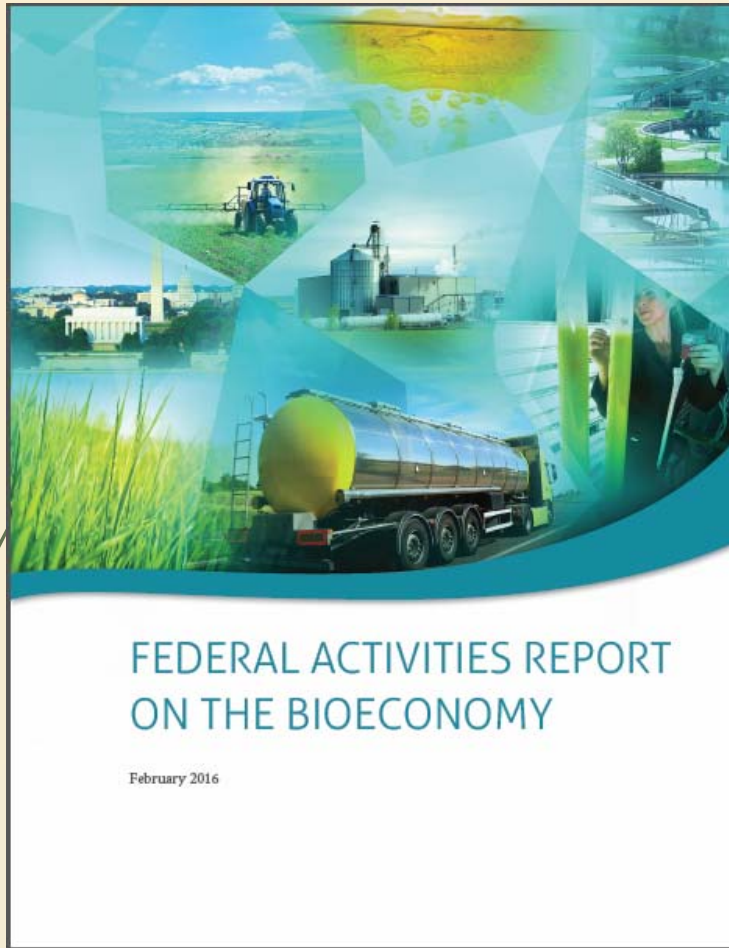
https://www.biomassboard.gov/pdfs/farb_2_18_16.pdf



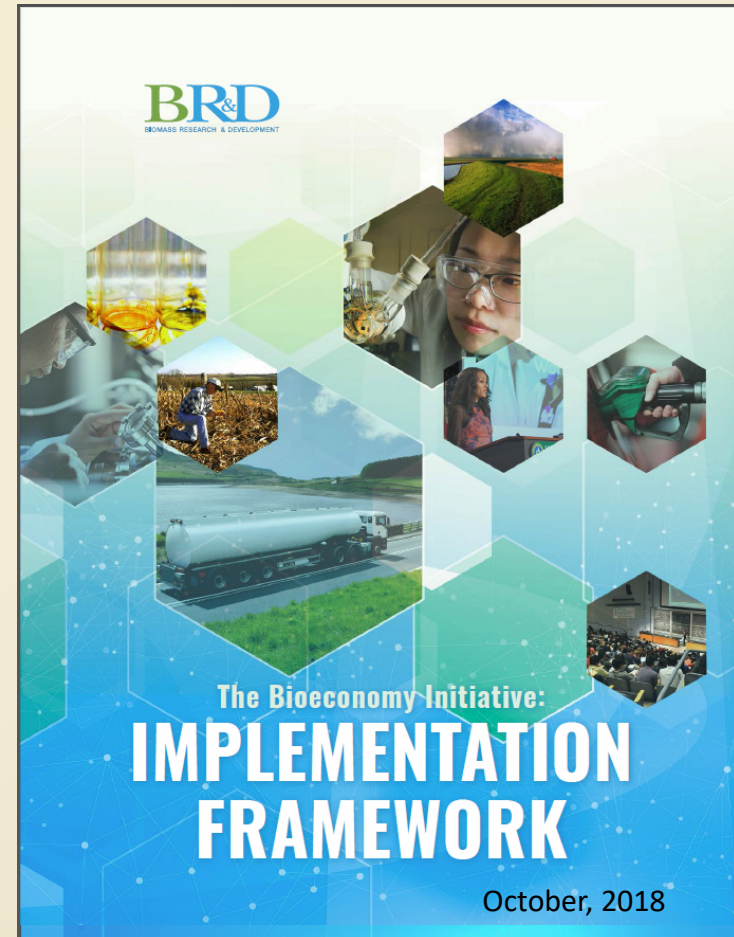
**Published by the Biomass
Research & Development Board
(BR&D)**

*Participating Agencies include:
Environmental Protection
Agency, U.S. Department of
Agriculture, U.S. Department of
Energy, U.S. Department of the
Interior, U.S. Department of
Defense, U.S. Department of
Transportation, the National
Science Foundation, and the
Office of the White House.*


https://www.biomassboard.gov/pdfs/farb_2_18_16.pdf



https://biomassboard.gov/pdfs/Bioeconomy_Initiative_Implementation_Framework_FINAL.pdf



Background





Agricultural Technology Innovation Partnership

ATIP Foundation 2016 Regional Bioeconomy Forums:
“Addressing the Challenges & Opportunities of Advancing the Billion Ton Bioeconomy”

Venues and Regional Co-hosts

Southeast: September 16, Atlanta, GA (Georgia Institute of Technology)
Southwest: September 29, Mineral Wells, TX (Chamber of Commerce)
Northwest: October 3, Seattle-Tacoma, Washington (Washington State University)
Northeast: October 18, Orono, ME (University of Maine)
Midwest: November 15, Columbus, OH (The Ohio State University)

National Sponsors



Background

ATIP Foundation Biojet Fuel 2017 Regional Forum Series:
“Accelerated Commercial Development of Hydrotreated Renewable Jet Fuel (HRJ) from Redesigned Oilseed Feedstocks Supply Chains”

Venues and Regional Co-hosts

June 5-6, Richland, WA
 (Washington State University)



June 13, Fargo, ND
 (ND Department of Commerce / ND State University)



July 11, Wichita, KS
 (Wichita State University / Kansas State University)



Research Grant Participants & Partners

AeCAP
Agrisoma Biosciences
ATIP Foundation
Cornell University
Kansas State Univ.
Keygene

Michigan Technological Univ.
 North Central Regional Sun Grant Center
 South Dakota School of Mines and Technology

University of Idaho
 University of Maryland
 University of Tennessee
 UOP/Honeywell

USDA Agriculture Research Service
 USDA National Institute of Food and Agriculture
 USDA Natural Resource Conservation Service

Forum Stakeholders

- 1. Local, County & State Governments**
- 2. Workforce and Economic Development Organizations**
- 3. Academic institutions**
- 4. Financial services**
- 5. Business and industry**
- 6. The supply chain, from biomass producer to end-users of products**

Economic Foundations

- 1. Public Policy / Regulatory Structure**
 - Municipal, county, state, & federal regulations all play a role
 - Support of local and state governments
- 2. Infrastructure**
 - Assessing region's infrastructure (people, product, information flow)
 - Logistics / capacity / capabilities (e.g., biomass depots?)
- 3. Access to capital**
 - Participation of the financial services sector
- 4. Access to Technology**
 - Federal / university / private sector
- 5. Access to a Trained Workforce**
 - Alignment of public education, higher education, publicly-funded workforce system

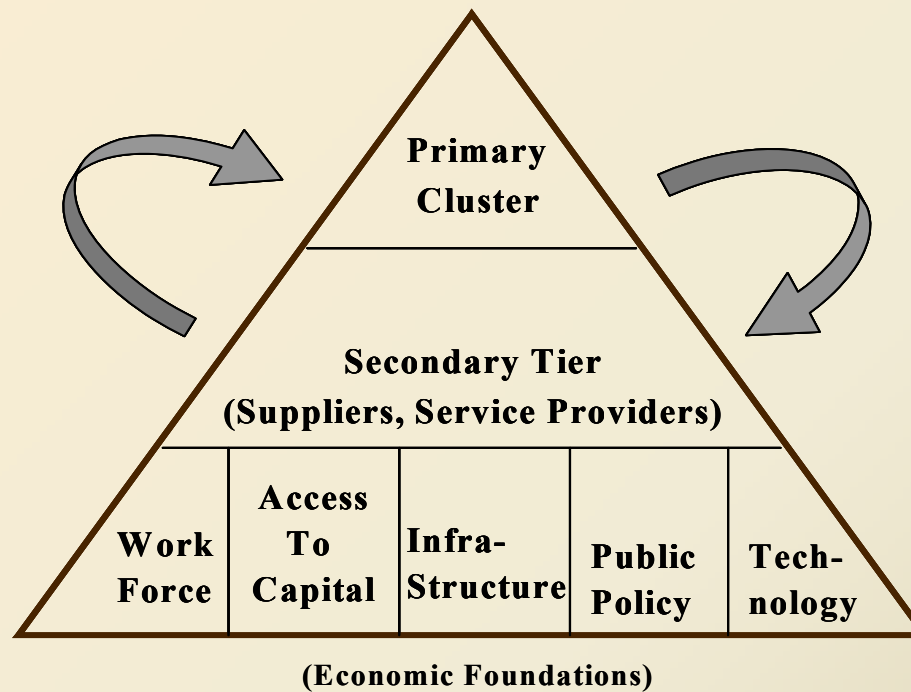
Forum Project Themes

- **Finance**
 - Public funding
 - general access to capital
- **Public Education & Awareness**
 - Clear definitions of “bioeconomy” and “sustainability”
 - Articulate value proposition & case for support
- **Public Policy**
 - Government incentives ; tax credits; regulatory issues
- **Supply Chain**
 - Logistics / capacity / capabilities (e.g., biomass depots?)
- **Workforce**
 - Need to engage U.S. Departments of Education, and Labor
 - Local education curriculum
 - Training opportunities
- **Federal Resources**
 - Request for federal support of regional collaboration

Four Critical Forum Issues

- **Development of diversified supply chains that are financially sustainable**
- **The support of the financial investment community**
- **Consistent public policy**
- **An extensive public education and awareness campaign**

Replicable Model Based on Industry Cluster Model



Strengthening the 5 primary economic foundations in alignment with and support of our primary industry clusters is equally critical to our economic sustainability.

The fundamental premise : demonstrate how the informed integration of six stakeholder sectors can serve as a catalyst for a strategic approach that will translate federal and academic research outcomes into rural wealth creation, thereby fostering the bioeconomy.

The approach: ATIP Foundation is working with USDA and other federal agencies to establish and work with regional project steering committees to develop paths forward to establish a bioeconomy industry in the region.

Fundamental To Our Approach

- **Sustainable**
- **Replicable**
- **Scalable**

Complementary / Replicable Projects

- **2018 “Advancing the Bioeconomy in North Texas for Job Growth & Wealth Creation...[4 counties]”**
 - USDA Rural Business Development Grant
 - Awarded to ATIP Foundation, July 2019
- **2019 “Advancing the Bioeconomy in NW Ohio for Job Growth & Wealth Creation...[9 counties]”**
 - USDA Rural Business Development Grant
 - Awarded to CIFT, June 2019
- **2019 “Advancing the Bioeconomy in the San Joaquin Valley [8 counties] for job growth & wealth creation for Rural Economic Development”**
 - USDA Rural Business Development Grant
 - Awarded to ATIP Foundation (July 2019)

Goals & Objectives

- 1. To demonstrate a methodology that will bring stakeholders together from our six identified sectors into a formal partnership for the purpose of translating federal research outcomes to the marketplace in a manner that supports wealth creation through the establishment of sustainable industry sectors in the bioeconomy, thereby stimulating job creation and economic development in rural America.**
- 2. To demonstrate the role USDA, and perhaps other federal agencies, can play in the development of the model, relative to existing research and technical assistance programs.**

Special Objectives

To establish, in an identified rural region, the initial elements that will serve as the foundation for the emergence of a Bioeconomy industry sector.

Advancing the NW Ohio bioeconomy...

- **Generate Regional Feedstock Resource Assessment & Inventory Reports and Heat Maps;** *identifying volume of dairy wastes and other biomass feedstocks... for conversion to bioenergy and co-products through digesters and pyrolysis units to be deployed by project/corporate partners.*
 - Dairy wastes
 - Commodity crop residues
 - Downed trees (storm damage), utility right-of-way trimmings
 - Food wastes
 - Purpose-grown crops for remediation of phosphorus levels, waste-water treatment facility (WWTF) spray fields
 - Invasive plant spp. management
- **Database of resources** *will also include infrastructure & services (people, product, information flow; logistical capabilities); informed & engaged financial services sector; economic development organizations, academic & workforce systems; and supportive state & local governments.*

Stakeholder Engagement

- A. Regional Leadership**
 - Stakeholders representing 6 sectors
- B. City/County/Sector**
 - Outreach to Cities, Counties, Chambers of Commerce and Economic Development Organizations
- C. Workforce & Education Sector Leadership**
- D. Academic Sector Leadership**
- E. Financial Sector Leadership**
- F. Supply Chain Sector Leadership**
 - Local USDA offices for Rural Development
 - Agricultural Extension Service
- G. State Sector Leadership**
 - State, Workforce, and Education Agency

<http://atipfoundation.com/biocharlibrary>

Business Opportunities Management System

“Suspect”

- A company that has been briefed by ATIP (on the Bioeconomy in general) and the work we are doing to support business opportunities, and then indicates they plan to establish operations or expand current operations in the next three years, and they will also consider relocation to the NW region of Ohio.

“Prospect”

- A company that has worked with us, utilizing our GIS data base, to thoroughly assess the opportunities, and has then indicated they will consider the region as a prospective location, and will sign a Memorandum Of Understanding (MOU) and/or Non-Disclosure Agreement (NDA) to work with us.

“Client”

- A company that has provided us with all of their site selection criteria; we have distributed the criteria to the relevant EDCs, who have provided ATIP with applicable sites; we have shared those specific site data with our client, who then tours one or more sites and engages with the relevant EDCs.

“Project”

- A company that has identified a site; and is engaged with the EDC in conducting due diligence on the site, and all other relevant issues (i.e. workforce, incentives, policy, etc.).

“Finalist”

- A company that has told the EDC their site is one of the final 2-3 locations they are considering in the US.

State / Regional Agencies

CENTER FOR INNOVATIVE FOOD TECHNOLOGY (CIFT)

Rebecca Singer, President & CEO, is a member of ATIPs Board, committed to partner with ATIP to develop the Model in Ohio, and to support business expansion into Ohio. Among the many values of CIFT is that they have strong relations with the State Agencies and Governor's Office and have already briefed them on our Model.

The development of our Model in Ohio is partially funded by a USDA Rural Business Development Grant to CIFT through the Ohio State Office.

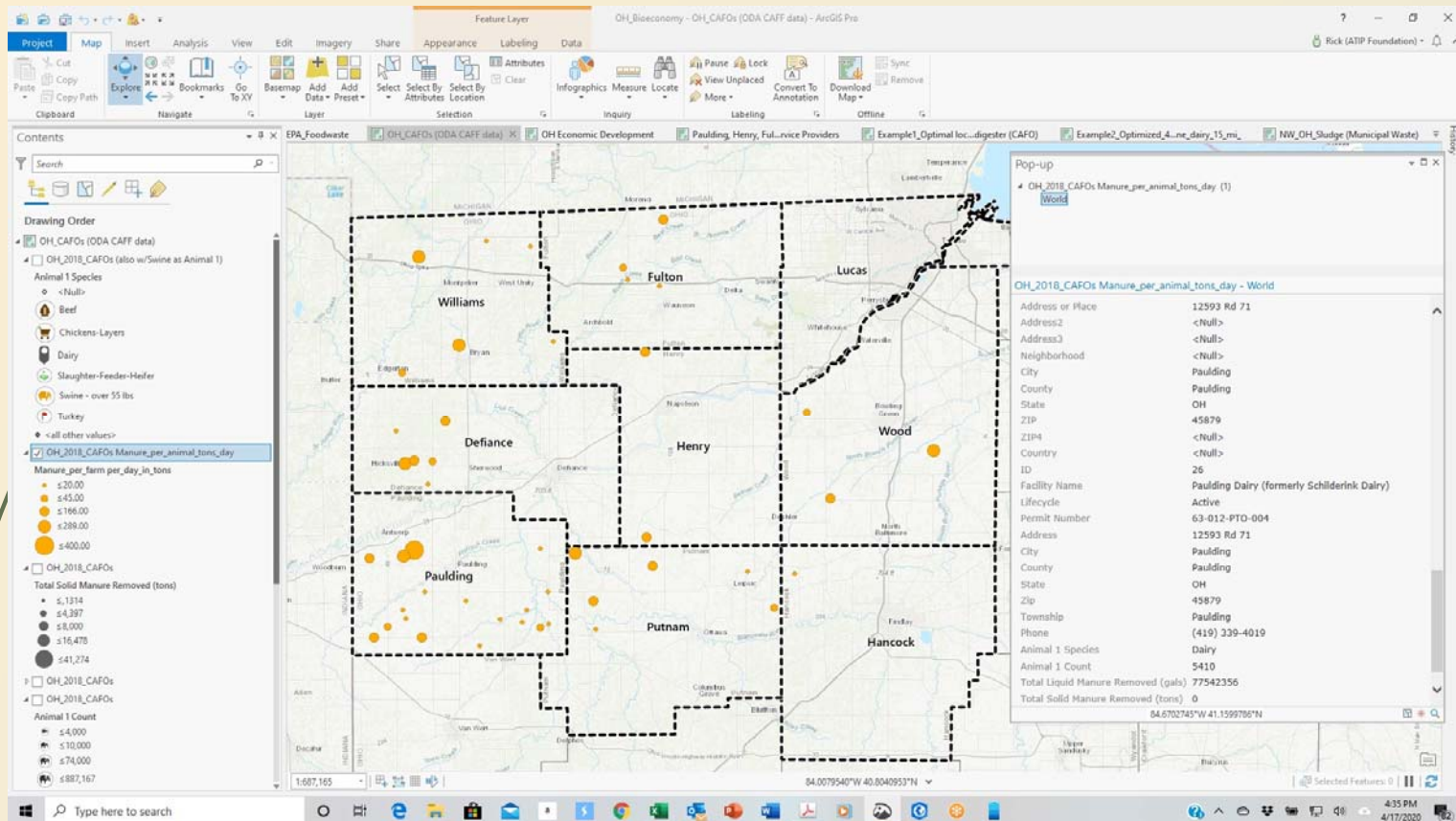
OHIO EPA

We have worked directly with several persons at OH EPA to gather the biomass inventory via GIS data for the municipal solid wastes, sewage sludge, and landfill locations (designations of use, fate of sludge, status, materials accepted), and can call on them to update any datasets suitable for GIS that appropriately inventory biomass sources and quantity.

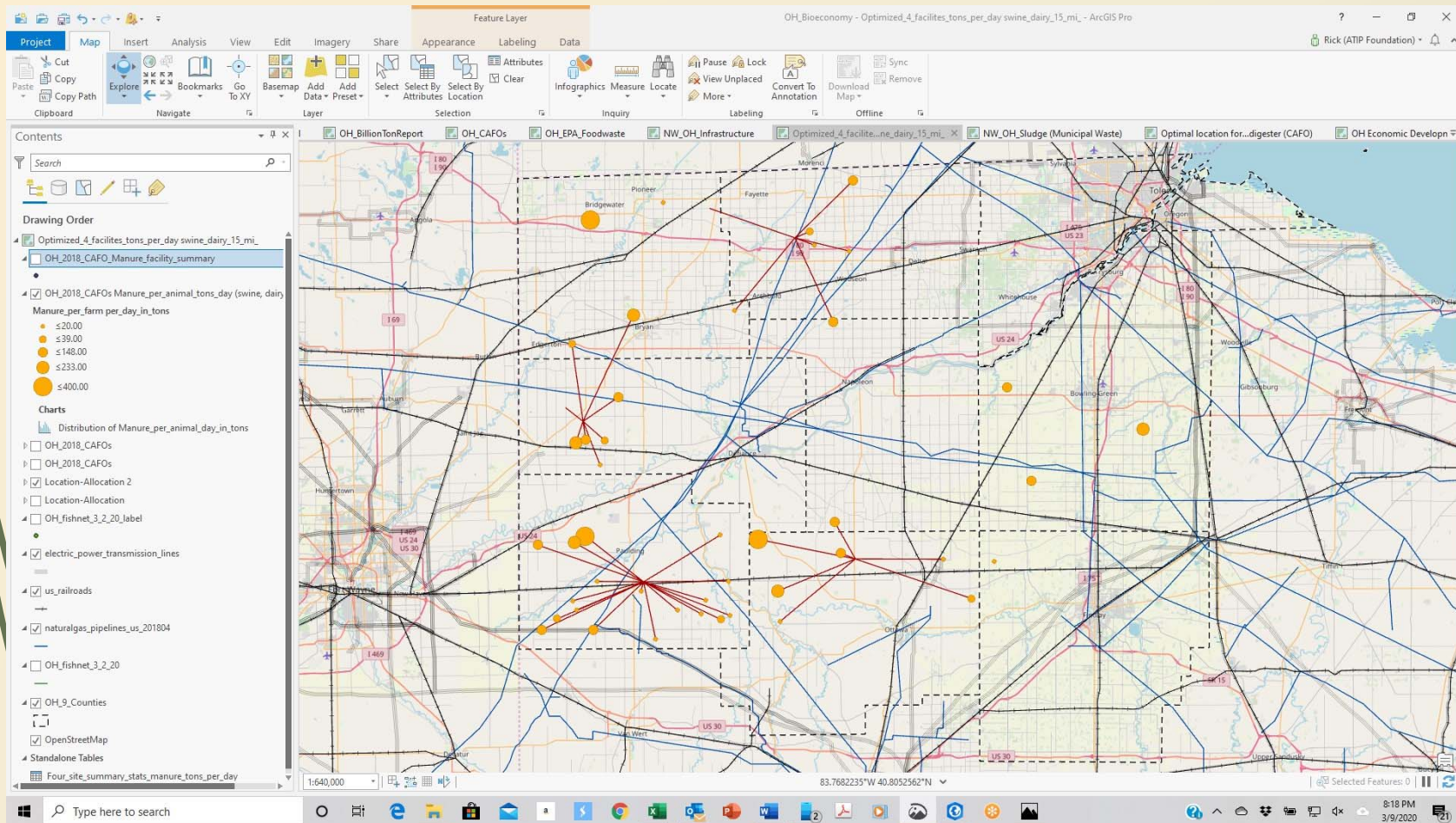
OHIO DEPT. OF AGRICULTURE (ODA)

CAFF (CAFO) datasets (2018 production) were provided directly by our contacts at ODA. They have made themselves readily available for follow up questions, and additional data requests. This includes access and conversations with the Chief Counsel in ODA who oversees public document releases.

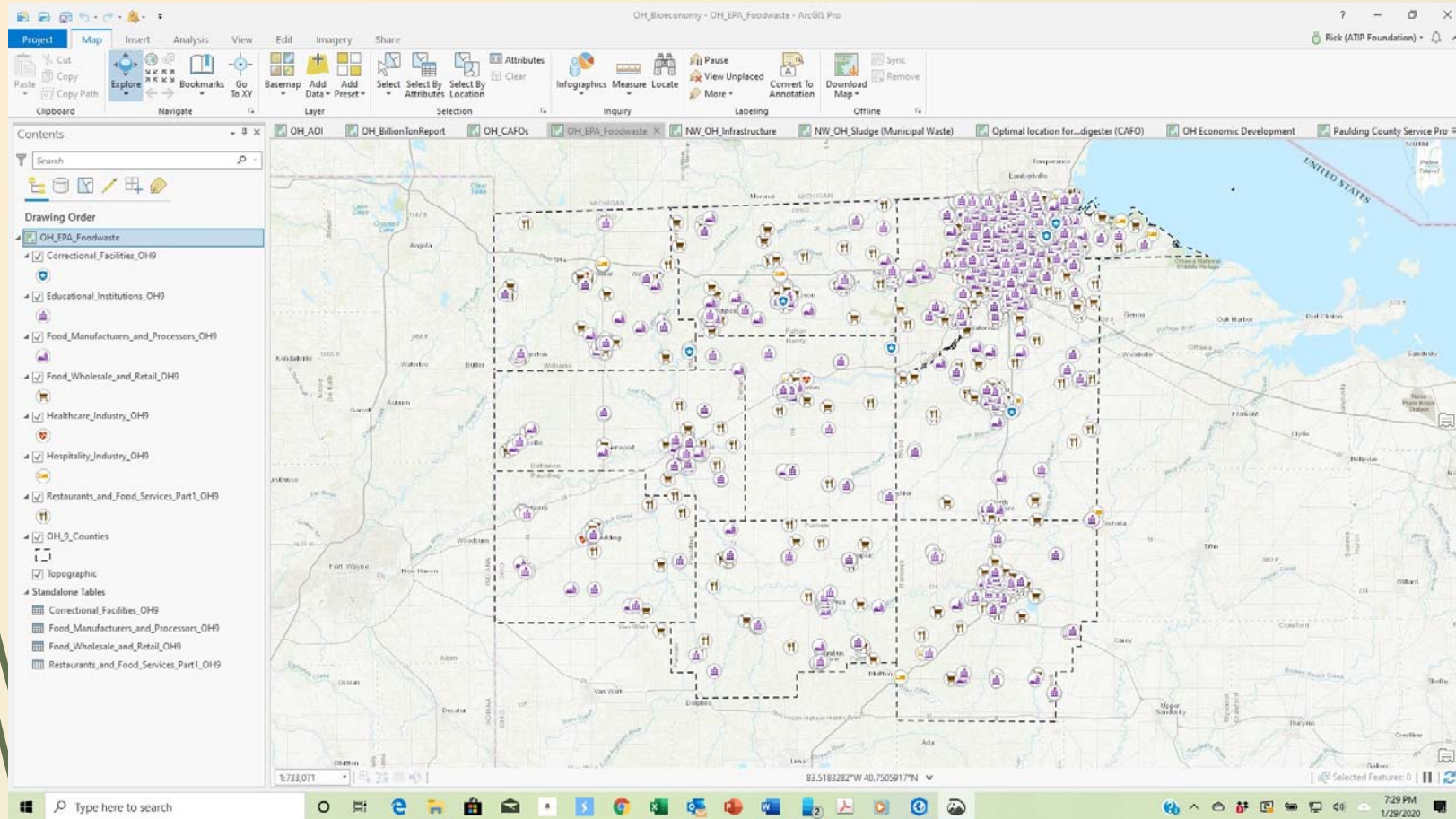
Inventory of biomass: Wastes from Animal Production



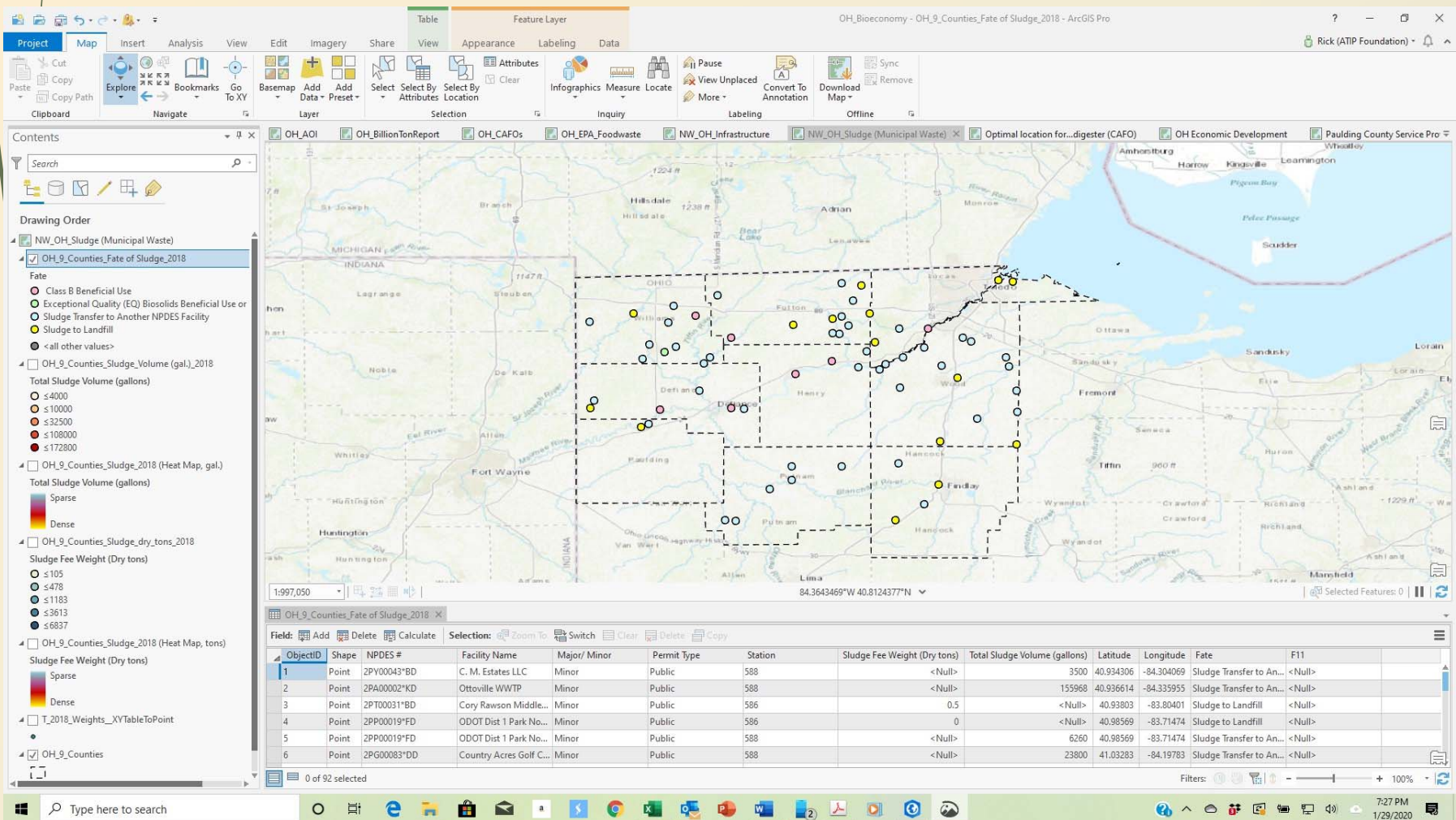
Query: If installing 4 biomass conversion facilities, where are the optimal locations relative to manure sources, gas pipelines, other infrastructure?



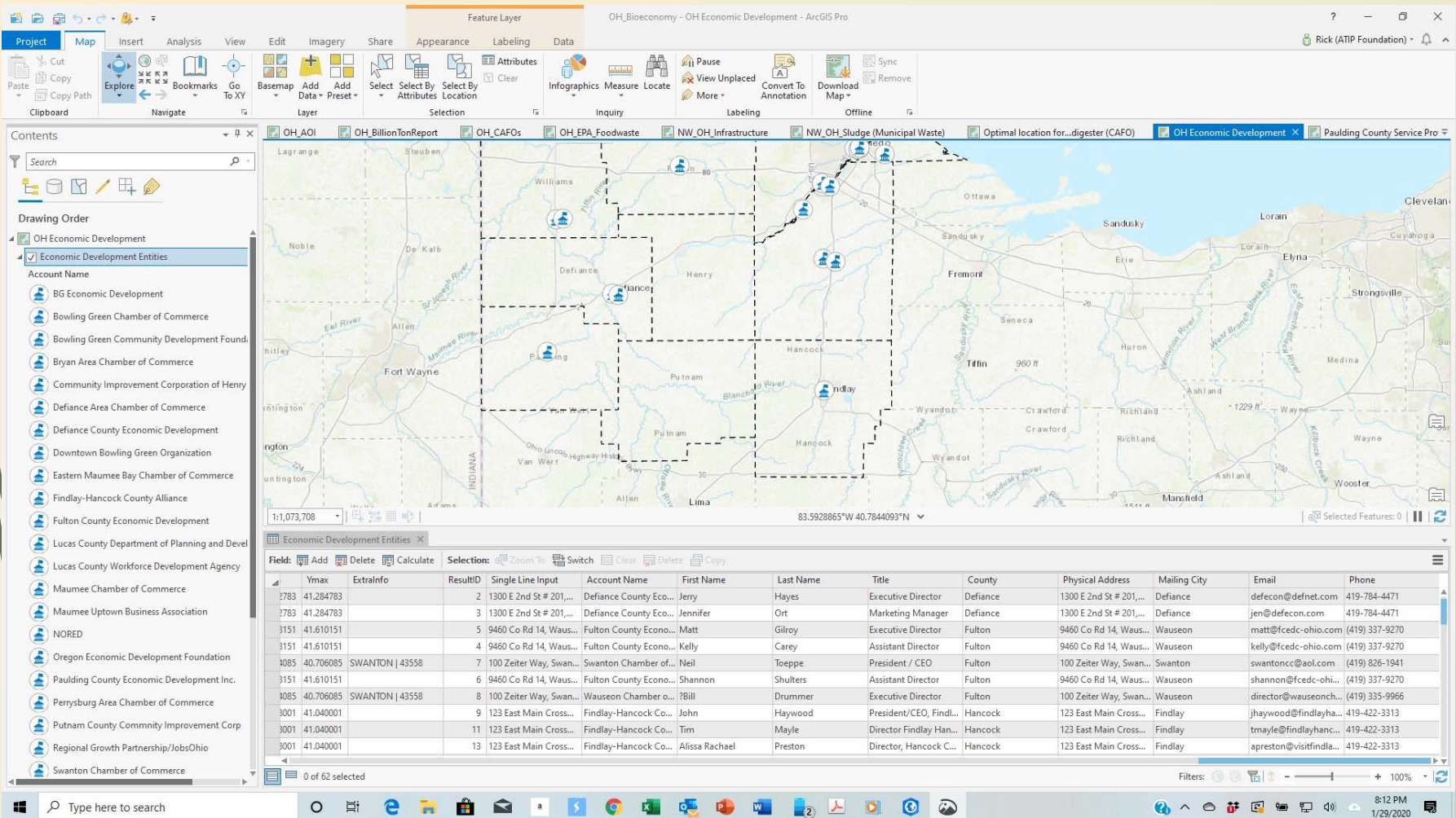
Inventory of biomass: EPA Estimates of Food Waste



Inventory of biomass: Sewage Sludge / Municipal Waste



Inventory of Service Providers: Economic Development



Ymax	ResultID	Account Name	First Name	Last Name	Title	County	Physical Address	Mailing City	Email	Phone
2783 41.284783	2	1300 E 2nd St # 201,...	Jerry	Hayes	Executive Director	Defiance	1300 E 2nd St # 201,...	Defiance	defecon@defnet.com	419-784-4471
2783 41.284783	3	1300 E 2nd St # 201,...	Jennifer	Ort	Marketing Manager	Defiance	1300 E 2nd St # 201,...	Defiance	jen@defecon.com	419-784-4471
3151 41.610151	5	9460 Co Rd 14, Waus...	Matt	Gilroy	Executive Director	Fulton	9460 Co Rd 14, Waus...	Wauseon	matt@fcedc-ohio.com	(419) 337-9270
3151 41.610151	4	9460 Co Rd 14, Waus...	Kelly	Carey	Assistant Director	Fulton	9460 Co Rd 14, Waus...	Wauseon	kelly@fcedc-ohio.com	(419) 337-9270
4085 40.706085	7	100 Zeiter Way, Swan...	Neil	Toepp	President / CEO	Fulton	100 Zeiter Way, Swan...	Swanton	swantoncc@aol.com	(419) 826-1941
3151 41.610151	6	9460 Co Rd 14, Waus...	Shannon	Shulters	Assistant Director	Fulton	9460 Co Rd 14, Waus...	Wauseon	shannon@fcedc-oh...	(419) 337-9270
4085 40.706085	8	100 Zeiter Way, Swan...	78ill	Drummer	Executive Director	Fulton	100 Zeiter Way, Swan...	Wauseon	director@wauseonch...	(419) 335-9966
3001 41.040001	9	123 East Main Cross...	John	Haywood	President/CEO, Findl...	Hancock	123 East Main Cross...	Findlay	jhaywood@findlayha...	419-422-3313
3001 41.040001	11	123 East Main Cross...	Tim	Mayle	Director Findlay Han...	Hancock	123 East Main Cross...	Findlay	tmayle@findlayhanc...	419-422-3313
3001 41.040001	13	123 East Main Cross...	Alissa Rachael	Preston	Director, Hancock C...	Hancock	123 East Main Cross...	Findlay	apreston@visitfindl...	419-422-3313

QUESTIONS