

Community Manure Treatment Feasibility Study



ENVIRONMENT, AGRICULTURE & NATURAL RESOURCES COMMITTEE
SEPTEMBER 25, 2025

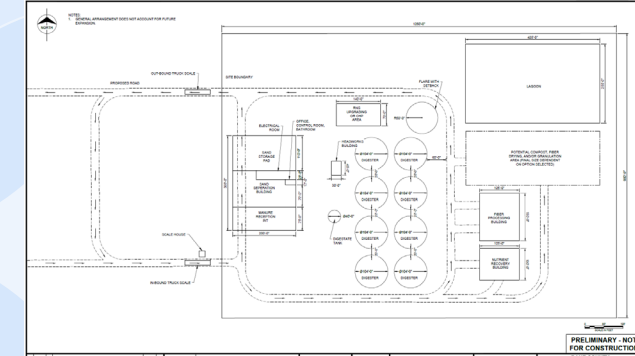
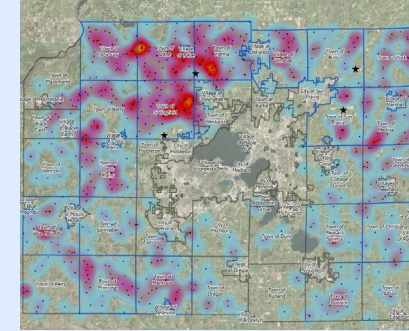


PROJECT TIMELINE

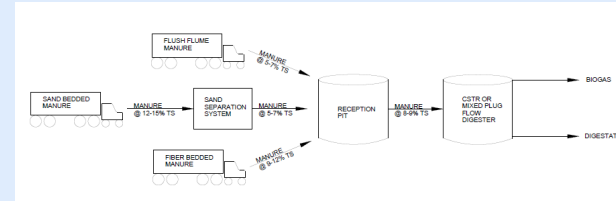
- **2022:** Dane County budget included funds for a *Feasibility Study*
- **2023:** Request for Proposals was posted and evaluated
- **2024:** Project awarded to Burns & McDonnell and commenced
- **2025:** Project completed and final report received in July

PROJECT TASKS

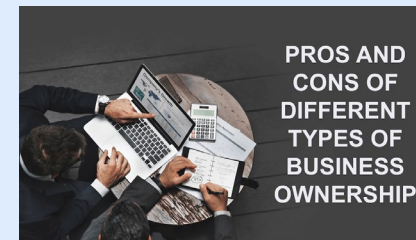
1. Investigation for manure facility location and processing technologies



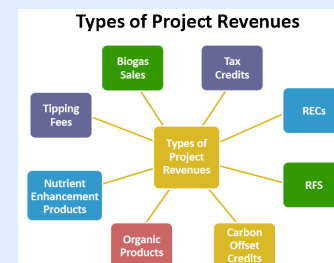
2. Analysis of by-product markets



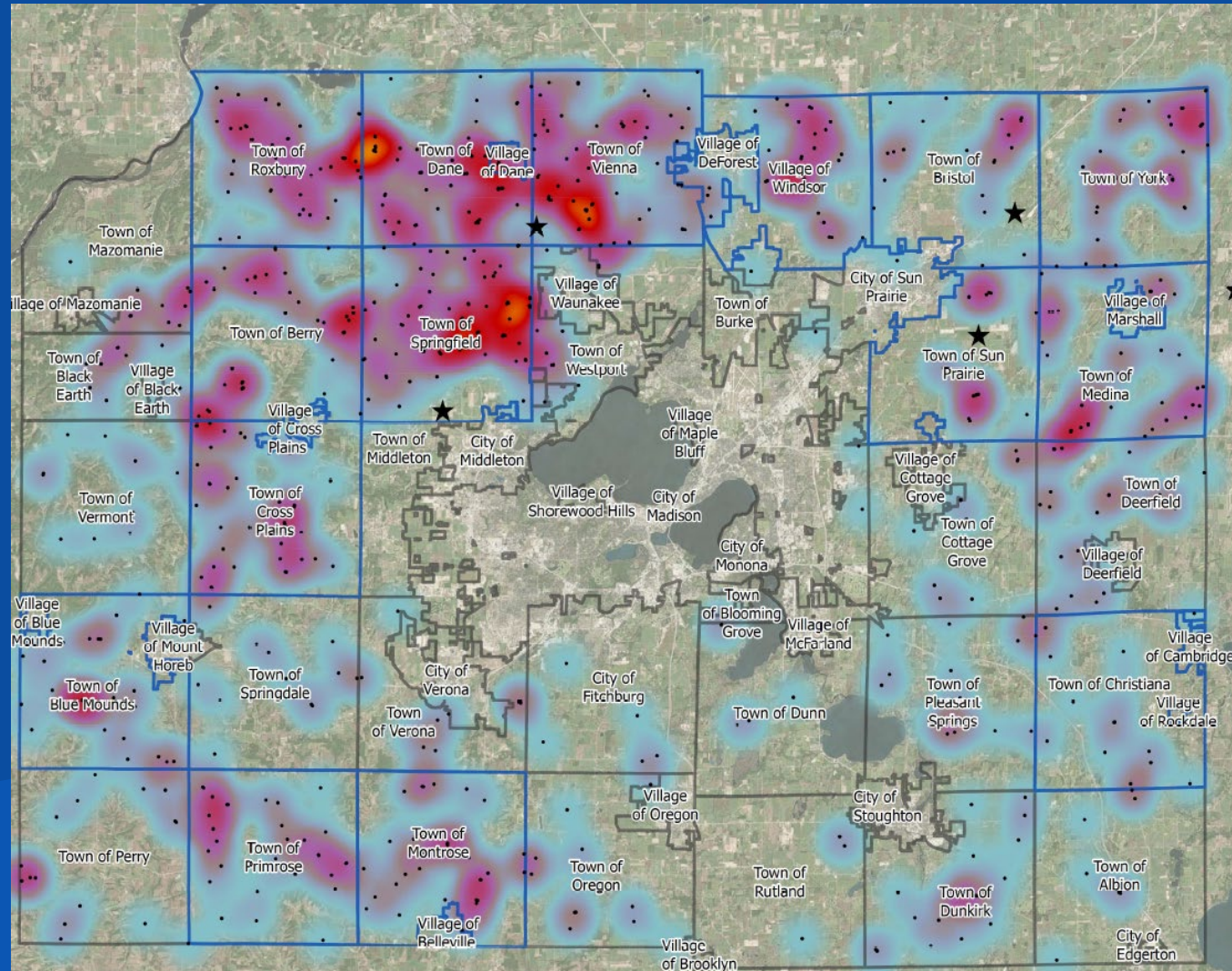
3. Assessment of business structure



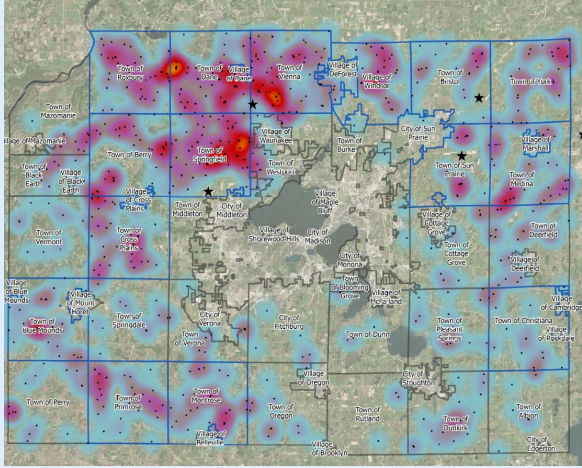
4. Analysis of economic costs



1. Manure facility location and processing technology



FACILITY LOCATION RANKING



Criteria:

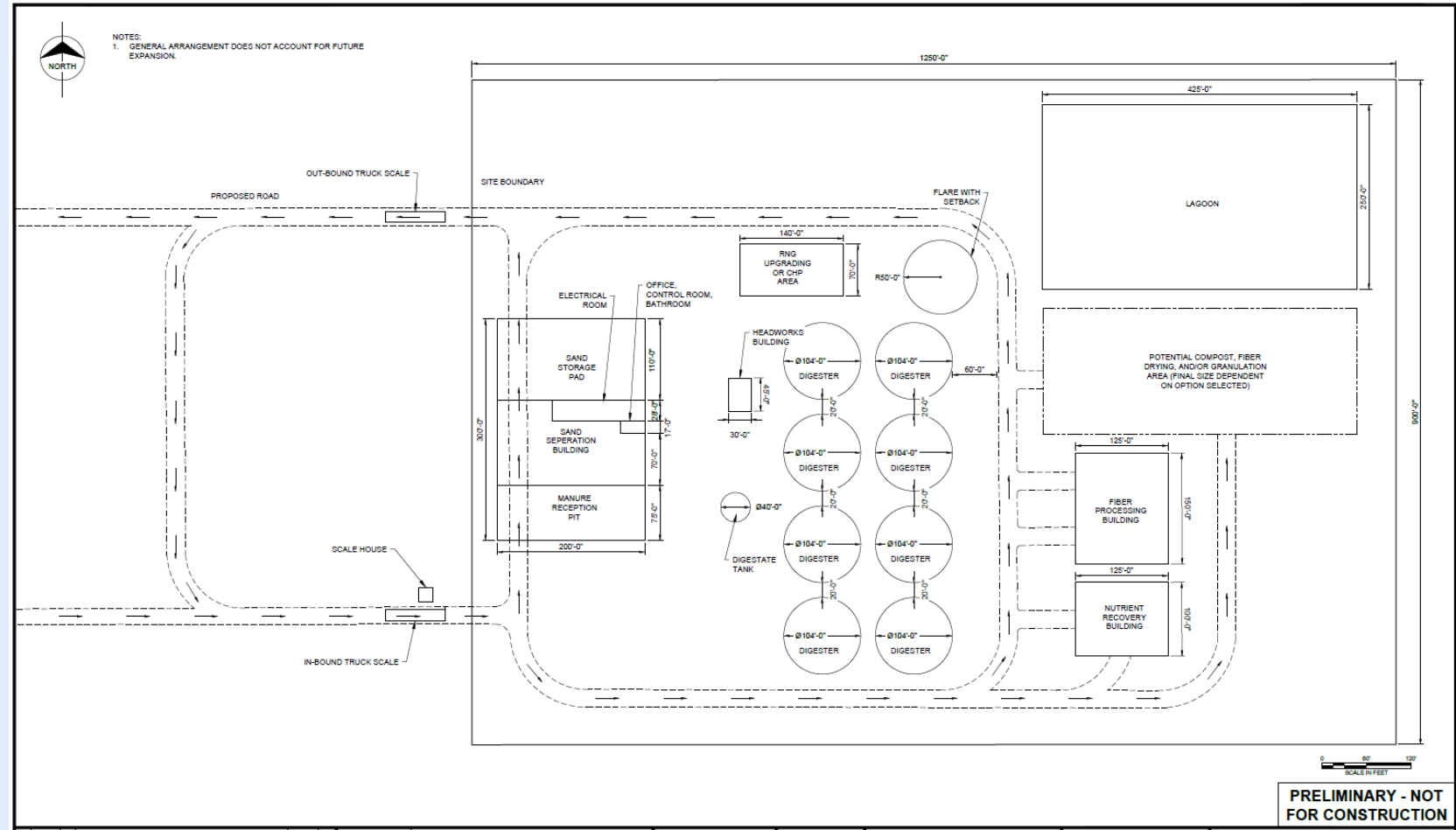
- Land availability
- Population density
- Utilities
- Environmental permitting
- Manure availability

SITE	MATRIX RATING	RECOMMENDATION STATUS
Town of Sun Prairie	77	Viable
Village of Windsor	86	Recommended
Town of Montrose	63	Not Recommended
Town of Vienna	89	Recommended
Town of Medina	71	Not Recommended
Town of Dane	75	Not Recommended
Town of Springfield	76	Viable

FACILITY TECHNOLOGY

Components:

- Manure reception
- Digester tanks
- Solids separation
- Solids and nutrient recycling
- Storage



2. By-Product Markets



Gas Production



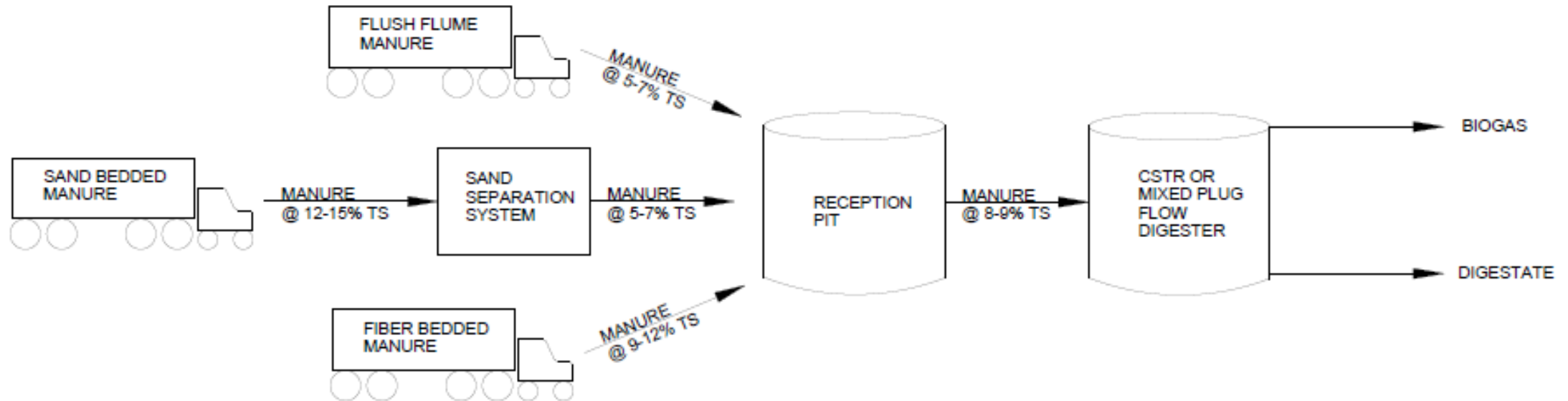
Solids & Nutrients

GAS PRODUCTION

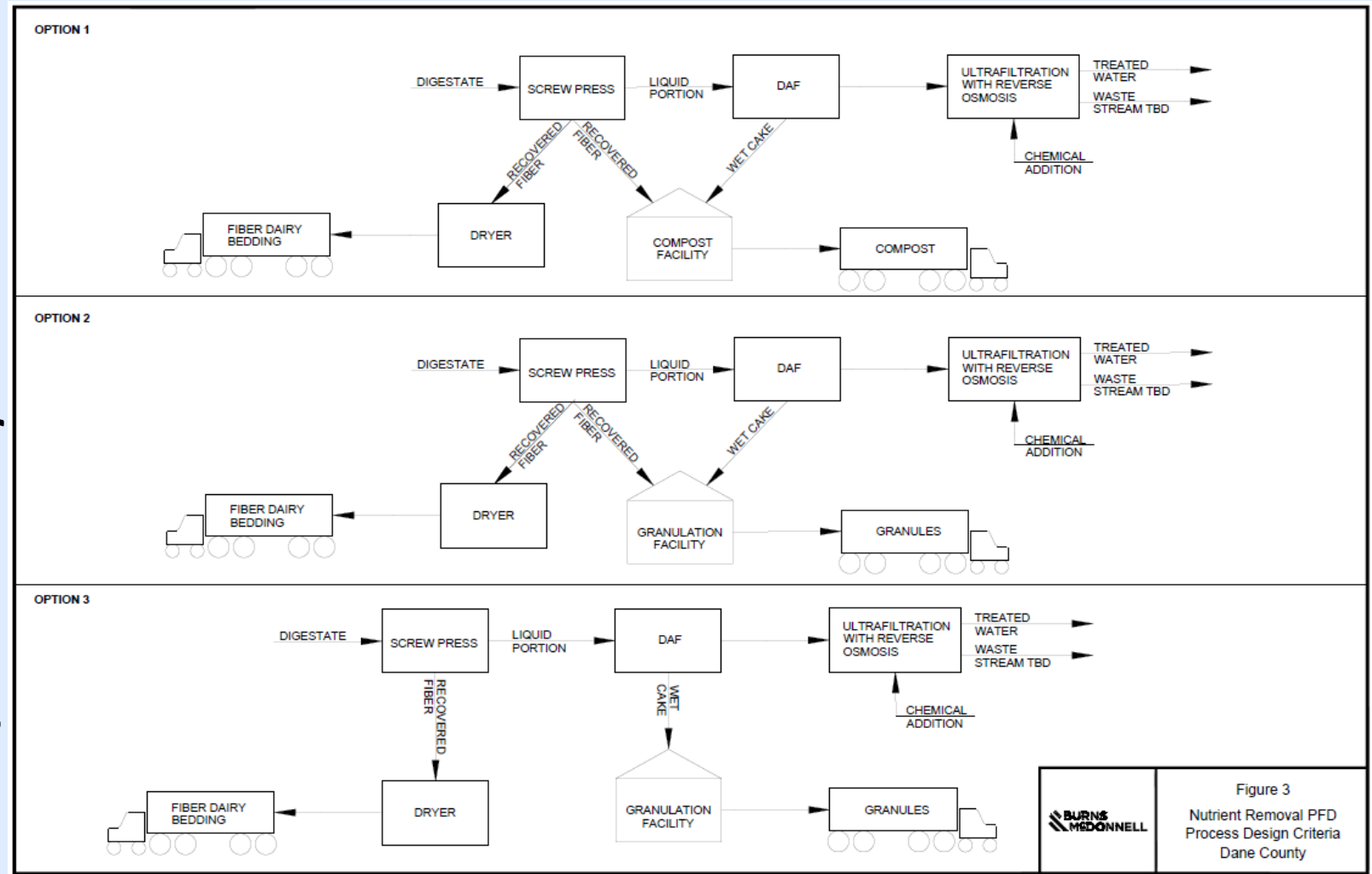
Products:

- Renewable natural gas (biogas)
- Electricity generation

Recommendation: Biogas



Optimized fertilizer



3. Business Structure



**PROS AND
CONS OF
DIFFERENT
TYPES OF
BUSINESS
OWNERSHIP**

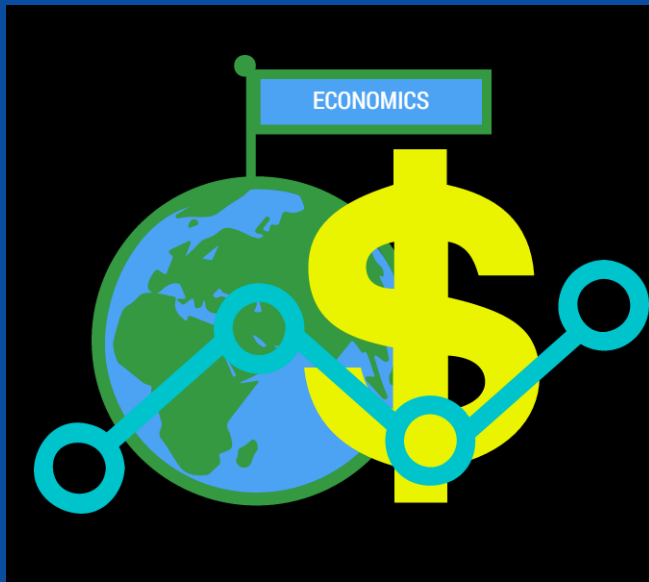
OPPORTUNITIES

- Public ownership
- Private ownership
- Cooperative
- Public-private partnership

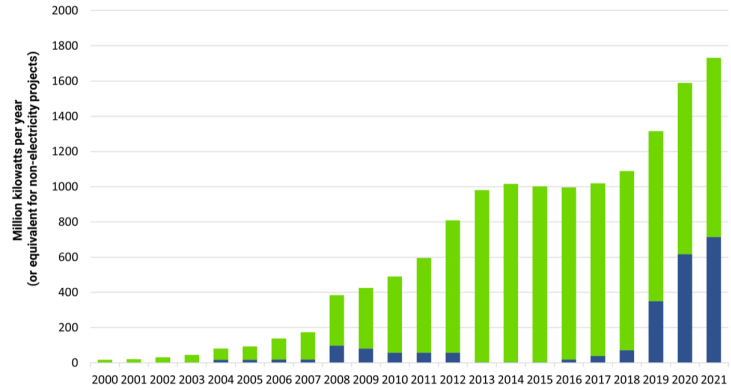
Public Ownership

Pros		Cons	
Public Interest Priority	Primary goal is to serve the public rather than to make a profit	Inefficiency	Can be less efficient due to bureaucratic red tape and lack of competitive pressure
Accountability	Higher level of transparency and accountability to the public	Funding Constraints	May rely on government budgets which are subject to allocation constraints
Quality Focus	Prioritize quality and safety over profit or cost-cutting	Limited Innovation	Without the drive for profit, there may be less incentive for innovation & improvement
Long-Term Vision	Plan for long-term rather than focus on pressure of short-term financial returns	Cost to Taxpayers	The cost of running the service may be covered by taxpayers which could be a burden if not managed properly

4. Economic Costs



Energy output from methane digesters

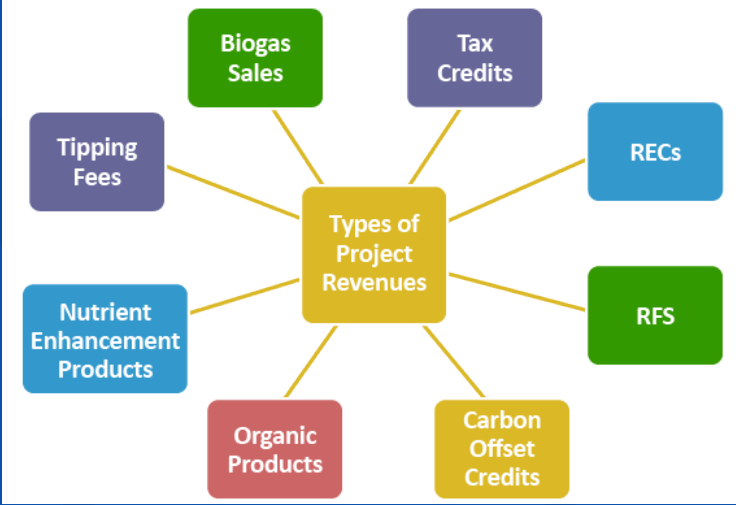


Data: Environmental Protection Agency
(Updated through September 2021)

*Note: Non-electricity projects include biogas uses for boilers and pipeline distribution. CNG (predominantly used for vehicle fuel) is not included in these values.

Chart by Noah Wicks **AgriPulse**

Types of Project Revenues



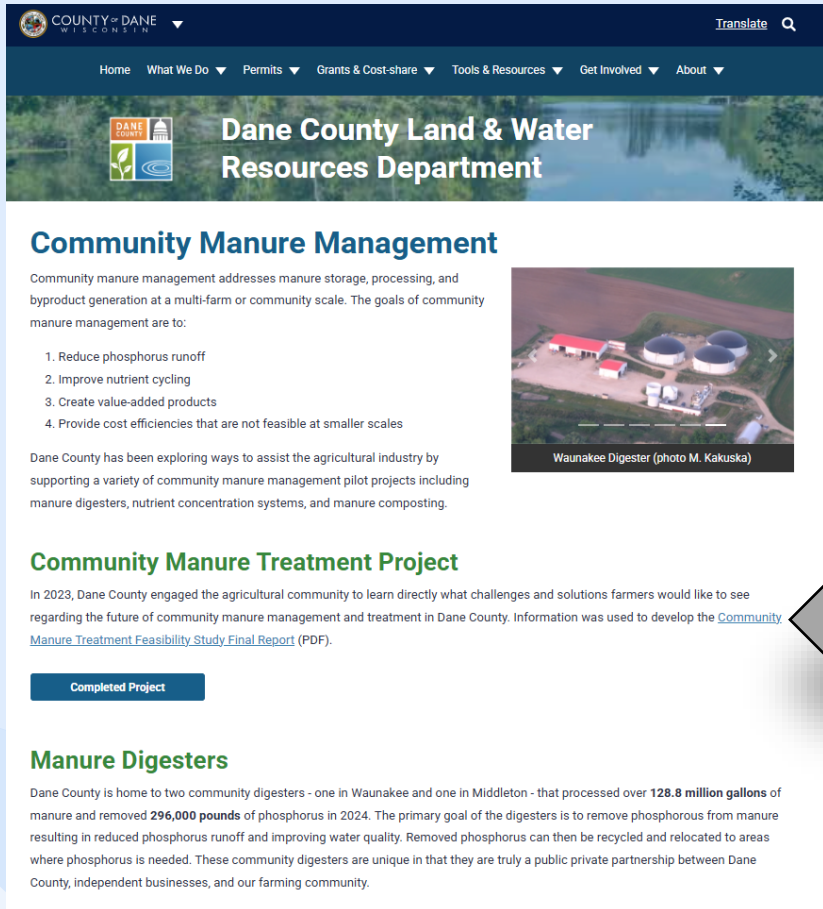
OPTIONS

Option	Project Cost (\$MM)	High Case NPV (\$MM)	High Case ROI (%)	Med Case NPV (\$MM)	Med Case ROI (%)	Low Case NPV (\$MM)	Low Case ROI (%)
RNG - Option 1	\$163	\$135	13%	\$12	6%	(\$99)	-3%
RNG - Option 2	\$212	\$201	14%	\$54	8%	(\$81)	1%
RNG - Option 3	\$190	\$178	14%	\$41	8%	(\$85)	0%
Power - Option 1	\$157	(\$86)	-2%	(\$158)	-	(\$231)	-
Power - Option 2	\$207	(\$23)	4%	(\$120)	-2%	(\$216)	-
Power - Option 3	\$185	(\$44)	3%	(\$131)	-5%	(\$218)	-

1. Compost
2. Max fertilizer production
3. Optimum fertilizer production

FINAL REPORT

<https://lwr.danecounty.gov/what-we-do/community-manure-management>



The screenshot shows the website for the Dane County Land & Water Resources Department. The header includes the County of Dane logo and navigation links: Home, What We Do, Permits, Grants & Cost-share, Tools & Resources, Get Involved, and About. The main content area is titled "Community Manure Management" and includes a list of goals: 1. Reduce phosphorus runoff, 2. Improve nutrient cycling, 3. Create value-added products, and 4. Provide cost efficiencies that are not feasible at smaller scales. Below this is a photo of the Waunakee Digester with the caption "Waunakee Digester (photo M. Kakuska)". Further down, there is a section titled "Community Manure Treatment Project" with a link to the "Community Manure Treatment Feasibility Study Final Report (PDF)". A button labeled "Completed Project" is visible. At the bottom, there is a section titled "Manure Digesters" with text about the two community digesters in Waunakee and Middleton.

Community Manure Management

Community manure management addresses manure storage, processing, and byproduct generation at a multi-farm or community scale. The goals of community manure management are to:

1. Reduce phosphorus runoff
2. Improve nutrient cycling
3. Create value-added products
4. Provide cost efficiencies that are not feasible at smaller scales

Dane County has been exploring ways to assist the agricultural industry by supporting a variety of community manure management pilot projects including manure digesters, nutrient concentration systems, and manure composting.

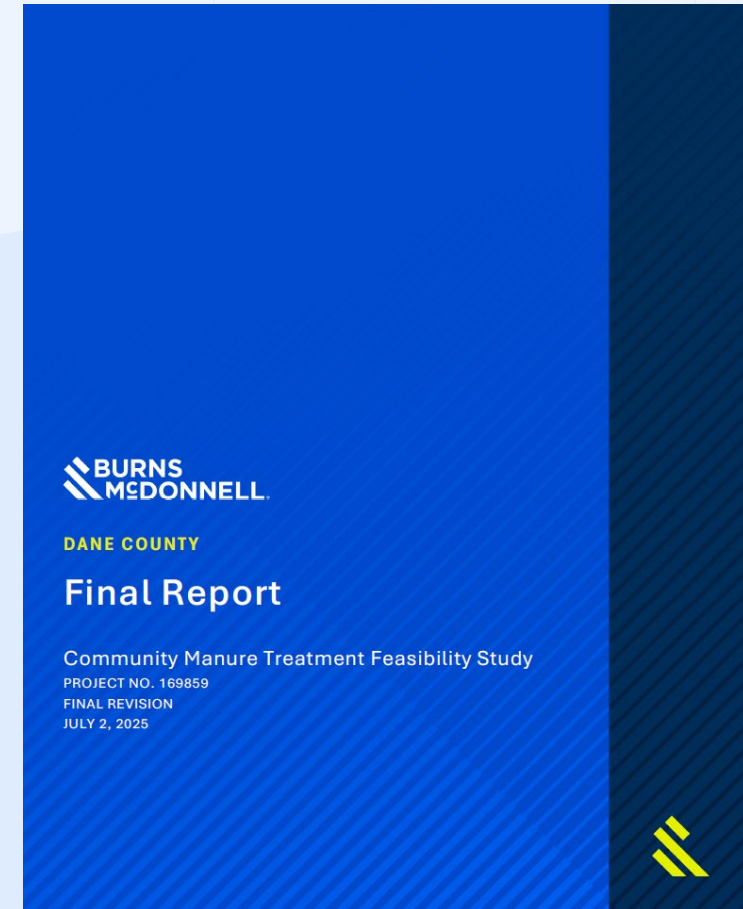
Community Manure Treatment Project

In 2023, Dane County engaged the agricultural community to learn directly what challenges and solutions farmers would like to see regarding the future of community manure management and treatment in Dane County. Information was used to develop the [Community Manure Treatment Feasibility Study Final Report](#) (PDF).

Manure Digesters

Dane County is home to two community digesters - one in Waunakee and one in Middleton - that processed over **128.8 million gallons** of manure and removed **296,000 pounds** of phosphorus in 2024. The primary goal of the digesters is to remove phosphorous from manure resulting in reduced phosphorus runoff and improving water quality. Removed phosphorus can then be recycled and relocated to areas where phosphorus is needed. These community digesters are unique in that they are truly a public private partnership between Dane County, independent businesses, and our farming community.

Click Here



The cover of the final report is blue with a dark blue vertical stripe on the right side. It features the Burns & McDonnell logo at the top left. The title "DANE COUNTY Final Report" is prominently displayed in white. Below the title, the subtitle "Community Manure Treatment Feasibility Study" is shown, followed by the project number "PROJECT NO. 169859", the revision status "FINAL REVISION", and the date "JULY 2, 2025". A small yellow logo is visible in the bottom right corner of the dark blue stripe.

BURNS & McDONNELL

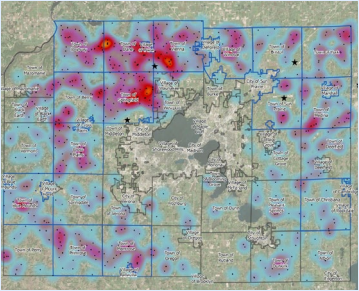
DANE COUNTY

Final Report

Community Manure Treatment Feasibility Study
PROJECT NO. 169859
FINAL REVISION
JULY 2, 2025

QUESTIONS?

1. Location and technology



2. Markets



3. Business Structure



4. Economics

