

**PROCEEDINGS OF THE BROWN COUNTY
LAND CONSERVATION SUBCOMMITTEE**

Pursuant to Section 18.94 Wis. Stats., a regular meeting of the **Brown County Land Conservation Subcommittee** was held on Monday, April 23, 2018 in Room 200, Northern Building, 305 E. Walnut St., Green Bay, WI

Present: Supervisors Norbert Dantine, Dave Kaster, Bernie Erickson, Alex Tran, Steve Deslauriers, Citizen Rep Stan Kaczmarek

Also Present: Mike Mushinski, John Bechle, Chuck Larscheid; Supervisors Ballard, Borchardt, Brusky, Lund, Schadewald, Sieber; Executive Streckenbach and other interested parties.

I. **Call Meeting to Order.**

The meeting was called to order by Chairman Dantine at 5:00 p.m.

II. **Approve/Modify Agenda.**

Motion made by Supervisor Kaster, seconded by Stan Kaczmarek to approve. Vote taken. MOTION CARRIED UNANIMOUSLY

III. **Election of Chair.**

Nomination made by Supervisor Erickson, seconded by Supervisor Kaster to nominate Norb Dantine as Chairman of Land Conservation Subcommittee.

Motion made by Stan Kaczmarek, seconded by Supervisor Kaster to close nominations and cast unanimous ballot for Norb Dantine as Chairman. Vote taken. MOTION CARRIED UNANIMOUSLY

IV. **Election of Vice Chair.**

Nomination by Stan Kaczmarek, seconded by Supervisor Erickson to nominate Supervisor Kaster as Vice Chairman of Land Conservation Subcommittee.

Motion by Supervisor Erickson, seconded by Stan Kaczmarek to close nominations and cast unanimous ballot for Dave Kaster as Vice Chair. Vote taken. MOTION CARRIED UNANIMOUSLY

V. **Set date and time for regular meetings.**

Hold until PD&T meeting.

VI. **Approve/Modify Minutes of March 26, 2018.**

Motion made by Supervisor Kaster, seconded by Stan Kaczmarek to approve. Vote taken. MOTION CARRIED UNANIMOUSLY

Comments from the Public None.

Land Conservation Department

1. Open Positions Report.

County Conservationist Mike Mushinski informed this request was for the same Agronomist position they had open for quite a few months. They were still looking for funding to fulfil the open position.

Motion made by Supervisor Erickson, seconded by Supervisor Kaster to receive and place on file. Vote taken. MOTION CARRIED UNANIMOUSLY

2. Bethel Park Wetland Bid Approval.

Mushinski informed this was for their Northern Pike Restoration Project they had since 2007. Their funding source from the natural resources damage assessment had changed from Wisconsin DNR to Fish and Wildlife Service. Fish and Wildlife Service was requiring that they bid projects out so under county policy, anything over \$25,000 they needed approval from Land Conservation Committee and County Board. They had a non-mandatory site visit and they bid the project.

Motion made by Supervisor Erickson, seconded by Supervisor Kaster to approve Green's Garden & Nursery L.L.C. from Nekoosa for \$55,721.00. Vote taken. MOTION CARRIED UNANIMOUSLY

3. Directors Report.

a. Lake Michigan Area Land & Water Conservation Association Spring Meeting.

Mushinski was under the impression this information was being provided to the committee but maybe it wasn't so this was to bring it to their attention – Meeting scheduled for May 18th in Grand Chute – All day event; morning training for new supervisors, afternoon business meeting.

b. Brown County Community Digester Feasibility Study Final Report & Green Pastures Bio Energy Center.

In Feb 2014, Brown County signed a letter of intent with Wisconsin Public Works (WPS) to do a study. 2016 the committee approved the request for proposals (RFP). Dynamics was hired to do the study which was completed and online. Dan Nemke from Dynamic was in attendance to present the feasibility study to the oversight committee (PowerPoint attached). WPS had the study now; they will then present it to the Environmental Protection Agency for approval.

Supervisor Deslauriers informed this was a big issue in his district and he wanted to give a local perspective because the Town of Holland site was the prime site on the grant application. The discussions were before 2014 and the letter of intent was 2014 for the grant application. The property was zoned exclusive ag and it was not the town's long term plan to open it up for industrial development but to keep it exclusive ag. He believed there was silence from the county and the developer until after the grant was made. The developer went to their town meeting and things brought up were troubling to the town as far as wanting to bring forward a half designed facility for planning to approve. Nemke interjected it was not the intent of the meeting but strictly an update as to where the grant application was.

Deslauriers stated they had industrial commercial in the sanitary district and they had a nutrient problem they were prepared to solve but this site, at the head of the East River, where they will process approx. 190 million gallons of manure a year, may not be the right place to do it. Deslauriers asked that this be brought back so they could have a more in depth discussion as he felt there had been a lack of collaboration and open and honest conversations with District 20.

Nemke stated without the grant award, there was no project. At this point the development was at a conceptual level and the two sketches was the limit of the design that went into the facility. Once the grant award was made, that would trigger the start of the development work. There was going to be a lot of work taking place between mid-May through the end of the year as far as starting the design and engineering work associated with the facility which will also start all the discussions with the town and siting of the project, etc. Mushinski stated he will put this back on the agenda when appropriate.

Streckenbach stated the report did exactly what was asked; the county received a grant from WPS to put together a phosphorus reduction in the watershed, Save the Bay. The business model said if you were going to try and reduce manure into the watershed through the tributaries you had to find concentration. The map pointed out a number of different locations where that was. In the end the southern part of Brown County made sense, it worked out in terms of what the report did. It was a report and it required someone to take action and that's where they saw the application for the grant, through PSC and they were fortunate to get that awarded because Kewaunee County was very aggressively interested in that happening in their community. In terms of a meeting in his office, it was not brought forth by him, he was the facilitator. It was asked to be brought forth by the farmers, the town chairman was there and a handful of other people.

Dantinne interjected reiterating that this was just a presentation of what had been done so far. Nothing was going to happen until they got the grant. They will then start the whole process; have hearings, public comments, questions, etc. and it will be added to their agenda at a future meeting.

Motion made by Supervisor Erickson, seconded by Supervisor Kaster to receive and place on file. Vote taken. MOTION CARRIED UNANIMOUSLY

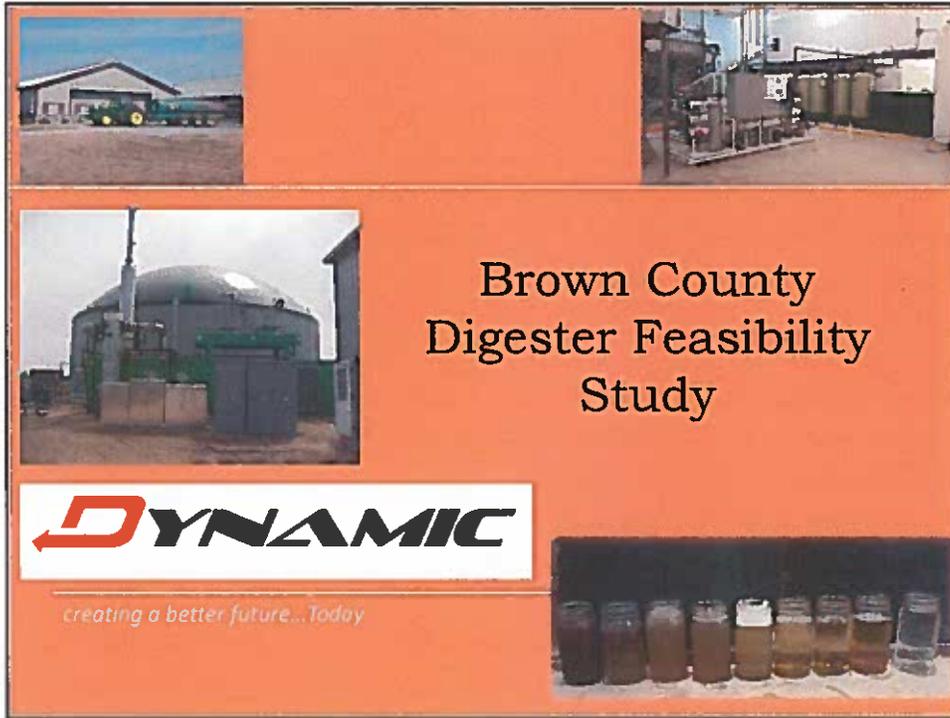
Other

4. **Such Other Matters as Authorized by Law.** None.
5. **Adjourn.**

Motion made by Supervisor Erickson, seconded by Stan Kaczmarek to adjourn at 5:45pm. Vote Taken. MOTION CARRIED UNANIMOUSLY.

Respectfully submitted,

**Alicia Loehlein
Administrative Coordinator - Transcriptionist**



**Brown County
Digester Feasibility
Study**



creating a better future...Today

DYNAMIC: Who Are We?

- **75 Years of Combined Experience in:**
 - Consulting & Engineering
 - Systems Integration of Organic Waste
 - Creating Renewable Energy, Organic Fertilizer, Clean Water
 - Operations & Maintenance Services

Property of Dynamic Group



Brown County Study Purpose:

- **“To explore the feasibility and sustainability of the construction of one to three Community waste treatment facilities with possible partnerships with Outagamie and Kewaunee counties designed primarily to receive manures from nearby dairy farms and harvest marketable byproducts to sell or return at no cost to farmers and also produce purified clean water from the waste stream. ”**

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The Feasibility Study Must Address:

1. Anaerobic digestion.
2. Biogas captured and used for generation of electricity, direct use in an industrial application, condition for natural gas pipeline injection, or compressed into CNG for onsite vehicle fueling or shipment to a nearby CNG fueling station to serve markets.
3. Nutrient Recovery specifically targeting phosphorous.
4. Agglomeration of captured nutrients.
5. Redistribution of captured nutrients through markets identified by collaborators and other unknown outlets and as renewable livestock bedding material.
6. Separate P and N formulations would be returned to the cooperating farmers to be used as a fertilizer product.
7. Consideration to remediate the effluent to the point the water can be discharged to the "waters of the state".
8. Cost to implement proposal system/facility.

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Nutrient Balance Summary

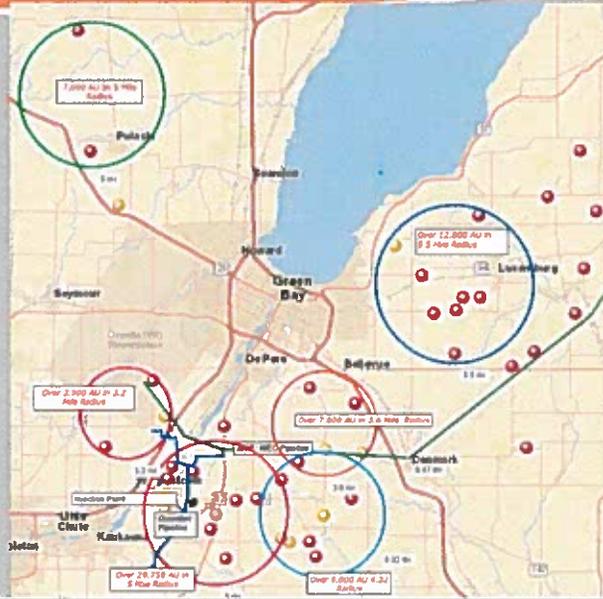
- Compared nutrients in manure to crop production nutrient demands in County

	Annual Crop Usage	Nutrients in Manure	% of Nutrients Supplied by Manure	Nutrient Balance
Nitrogen	16,241,000	11,948,640	73.6%	-4,292,360
Phosphorus	7,771,500	6,372,608	82.0%	-1,398,892
Potash	17,767,000	16,728,096	94.2%	-1,038,904

- Data suggests issues more related to timing and rate of application than the overproduction of nutrients

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Brown & Surrounding County Hubs



Manure Supply

- Held meeting with Brown County farms
Majority of attendees were from southern Brown County
- Discussed options for manure management
- Set up meetings with individual farms to discuss interest in participating in a project

Manure Supply

- Main concern of majority of farms we met with was volume reduction
- Manure application requirements limit their tillage options and cropping practices
- Need to move volume causes them to apply when it may not be ideal from an agronomic perspective
- Volume reduction would allow them to utilize more cover crops, reduce tillage practices, haul further
- Separating phosphorus from nitrogen and potassium would be beneficial
- Open to reducing manure/nutrients by 80-100%

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Manure Supply

- Selected farm group centered in Town of Holland as potential digester site
 - Highest number of animal units in area
 - Progressive group of farms with high level of interest in potential project
 - Close proximity to an interstate natural gas pipeline
 - Possible synergies with future landfill

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Biogas Options

- Evaluated feasibility of utilizing biogas for renewable electricity production
 - Not feasible based on purchase price of \$0.03/kWh by WPS
- Not close enough to a major direct use
- Worked through interconnect process with Guardian on the interstate pipeline running through western Brown County

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Biogas Options

- With access to the natural gas transmission line, we contacted multiple potential buyers of renewable natural gas (RNG)
- Significant premiums for RNG vs. brown gas
 - RIN Market for transportation fuel blenders
 - LCFS Market in California is used as a transportation fuel
 - Different pricing levels for biogas from manure (D3) vs. biogas from substrates (D5)

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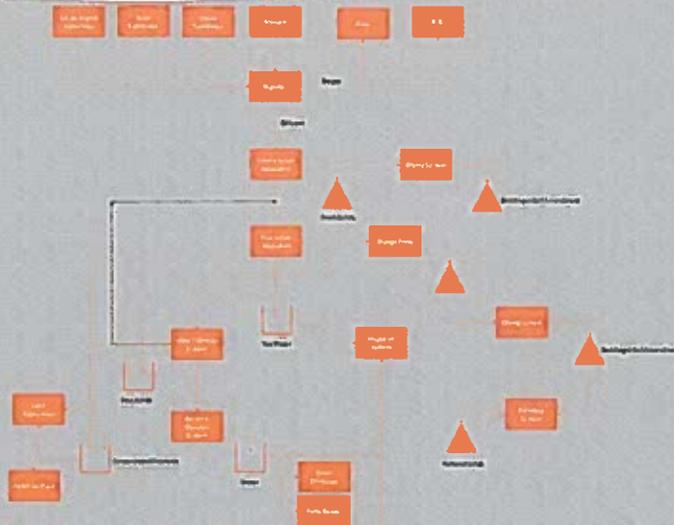
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Technology Evaluation

Digestion and Nutrient Management System Processors



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Technology Evaluation

- Reviewed various options for digesters, solids separation, fiber drying, and advanced separation
- Contacted multiple suppliers for technical information and pricing
- Selected equipment and processes that met the criteria of the feasibility study

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Preliminary Financial Evaluation

- Developed capex and opex estimates for various combinations of manure, substrates, gas pricing
- Manure only scenarios were not feasible without adding value to the products from the nutrient concentration system
- Adding substrates improved the feasibility due to the processing fees associated with accepting the substrates and the increased biogas production from the substrates

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Preliminary Financial Evaluation

- Talked with multiple organic fertilizer companies about purchasing the solids and/or liquids produced by the plant in order to improve the feasibility
- By incorporating additional technology to create a liquid organic fertilizer product, it improved the overall feasibility of the project

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Investor Options

- Preference by Brown County and the farms was not to be the funding source for the project
- Discussed the project with multiple private investment firms
- Project had the potential to meet most of their financial and technical requirements

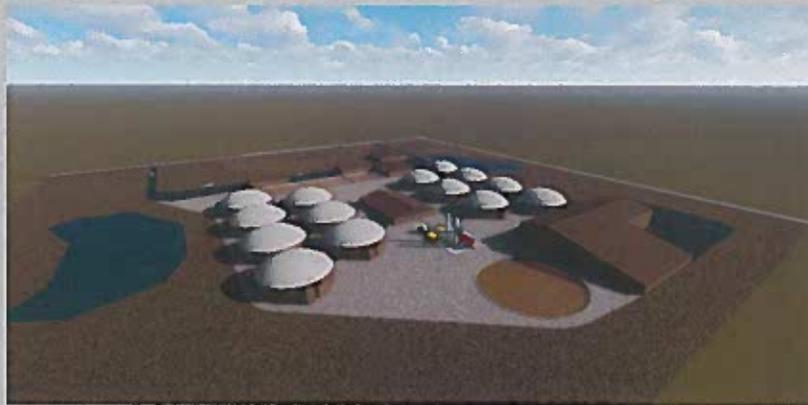
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State Grant Program

- In late January, PSC, DNR, DATCP announced \$20 million grant program for digester projects in Lake Michigan watershed
- Created a consortium of farms, technology suppliers, renewable natural gas buyer, fertilizer buyer, and investor to create a project that would qualify for the grant program
- Submitted the grant application on July 3rd
- Received \$15 million grant award on Sept 27
- Still in the process of negotiating the incentive agreement with the PSC

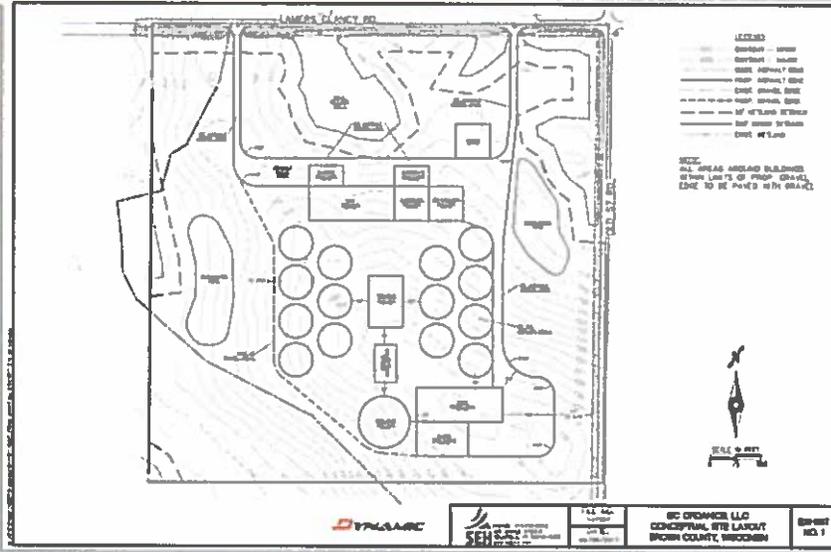
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Green Pastures Bio Energy Center



Property of Dynamic Group

Green Pastures Bio Energy Center



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We have formed the BC Organics Consortium to build, operate, and maintain the *Green Pastures Bio Energy Center*

Dairy Producers with over 20,000 animal units

- 2 major dairy producers; Combined 15,600 animal units
- 7 additional dairy producers; 100 - 2,700 animal units each

Dynamic Group, a designer, engineer, construction manager and operator of multiple digester facilities in the United States, including two community systems right here in Wisconsin.

BioStar Organics, a leader in renewable energy, water treatment, and waste management projects, as well as a leading manufacturer and marketer of liquid organic fertilizers.

WEC Energy Group, Wisconsin's largest utility holding company and owner of WPS serving Brown and Kewaunee counties. Primary financial backer of this project through a non-utility affiliate.

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Green Pastures Bio Energy Center and its hub and spoke design will generate significant annual benefits

- Eliminate land application of **189,000,000** gallons of manure in Brown County
- Remove **578,000** pounds of phosphorus from the watershed
- Produce **over 162,000,000** gallons of clean water
- Eliminate over **88,000 tons** of greenhouse gas emissions (16,863 passenger vehicle equivalent)
- Produce about **500,000 MMBtu** of renewable biogas
- Reduce road truck trips by **~20,000** with farmers saving **\$3,000,000** in hauling costs
- Provide **10 – 20** new permanent full time jobs

Site located south of the proposed Brown County landfill complex.

The facility will have an “open door” policy to allow smaller farms to deliver manure for processing when they run out of storage space or shouldn’t spread due to weather conditions.

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Feasibility Conclusion

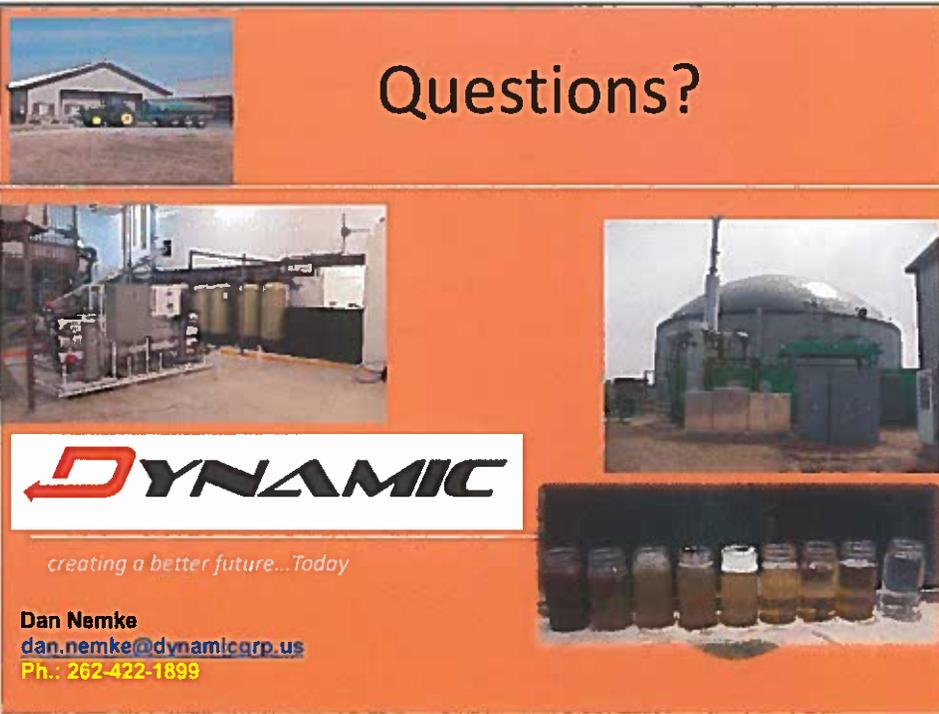
- Other potential sites exist in Brown County for future development
- Does not require a digester to achieve volume reduction/nutrient reallocation
- If a significant revenue source exists for the biogas, the digester portion of the project helps subsidize the water treatment portion of the project

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Feasibility Conclusion

- Appears to take a minimum of about 10,000 cows to get to an economically viable scale
- May need additional revenue or reduced operating costs to make feasible without grant funding
- May require processing fees paid by participating farms
- May be synergies with the first plant that can improve the feasibility of future plants

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Questions?



creating a better future...Today

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