

**KANDIYOHI COUNTY AND CITY OF WILLMAR ECONOMIC DEVELOPMENT COMMISSION (EDC)  
AGRICULTURE & RENEWABLE ENERGY DEVELOPMENT COMMITTEE  
MINUTES  
March 21, 2019  
Christianson PLLP, Willmar**

Present: Rollie Boll, Ian Graue, Dustin Kotrba, Kim Larson, Dan Lippert and Keith Poier

Excused: Kevin Halvorson and Dan Tepfer

Absent: Bruce Reuss and Larry Konsterlie

Guests: Mike Youngerberg, Senior Director of Product Development & Commercialization, Minnesota Soybean Growers Association and Chad and Krista Willis

Staff: Connie Schmoll, Business Development Specialist and Aaron Backman, Executive Director

Secretarial: Diane Beck, Legal & Administrative Assistants, Inc.

Past Vice Chair Dustin Kotrba called the meeting to order at approximately 7:35 a.m. and declared a quorum was not present.

**AGENDA**—There was not a quorum present.

**UNFINISHED BUSINESS**—

Connie Schmoll introduced and welcomed Mike Youngerberg and shared a brief bio.

**Soybeans.** Youngerberg reported there has been a huge effect on the soybean industry without the exports to China and the African Swine Flu in China is taking a toll on its hog industry which may be 10% of China's export market. About half the soybean oil is going into the biodiesel market with approximately 2.9 billion gallons of B100 is going to various markets. There are three biodiesel plants in Minnesota: Brewster, Albert Lea and Isanti, which produce a combined 85 million gallons of B100. Consumption continues to grow in other areas, but is somewhat hampered by the renewable fuel standards; there is legislation introduced to aid the soybean industry. Youngerberg provided an update on the biodiesel markets throughout the United States which continue to grow. Another market that is growing steadily is renewable hydrogen carbon biodiesel which is a stand-alone process.

[Kim Larson joined the meeting.]

Youngerberg shared opportunities for the soybean additive markets. The City of Hutchinson conducted a pilot project using soybean oil as a road sealant and estimated an approximate savings of 30% of its asphalt usage. Other soybean oil products include BioStripe for use in striping parking lots, and BioSealcoat. In talking with the Governor's office, there are definite positive things happening in soybean oil products which would boost the soybean market. Opportunities continue to build in the fish market. Another project in Minnesota includes a company in the early stages of product development of taking glycerin out of soybeans and converting it to a single-cell protein for hog feed. Other markets for glycerin are makeup, food and in deicing airplanes. The University of Minnesota (U of M) is working to convert soybean biodiesel for use in laundry detergent products. The human food protein market also continues to grow, as well as be an avenue to help people with peanut allergies. Youngerberg feels there are many soybean opportunities in the protein markets. Youngerberg shared the *Think Soy, 2017 Soy Products Guide* magazine, which is available through a link at [www.SoyNewuses.org](http://www.SoyNewuses.org).

Aaron Backman inquired if it is easier to adjust the percentage of biodiesel standards? Youngerberg shared there are ways to adjust; however, it would increase the cost. Backman also inquired if there is an opportunity for Minnesota to have a biodiesel processing plant. Youngerberg shared early planning stages are taking place for a biodiesel processing facility in Crookston. Youngerberg distributed a list of Regional Solvent Extraction Plants, which includes a Budgetary Capital Cost Estimate Chart and Soybean Processing Cost Estimates for various size plants (see attached). Youngerberg also distributed a document prepared by the USDA in Illinois showing soybean prices compared with value of soybean oil and meal (see attached).

Dan Lippert inquired if there is a risk of losing the Crookston plant to North Dakota for tax reasons. Youngerberg shared discussions with the company and growers, including legislators, who are in favor of having the plant in Crookston. Youngerberg distributed a memo from Industrial Process and Management Consultants in Erie, Pennsylvania, regarding a feasibility study summary for a soybean processing facility and a handout from the U of M entitled "Potential Economic Impact of a Soybean Crush and Biodiesel Facility near Crookston, Minnesota" (see attached).

Kotrba inquired about what is slowing the investment in value added biodiesel products. Discussions held regarding the agriculture industry, renewable plastics and education.

Schmoll thanked Youngerberg for his interesting presentation and indicated she will follow up with him.

**AGENDA**—With a quorum now present, Past Vice Chair Kotrba presented the March 21, 2019 agenda.

IT WAS MOVED BY Rollie Boll, SECONDED BY Keith Poier, to approve the Agenda. MOTION CARRIED.

**MINUTES**—Past Vice Chair Kotrba presented the February 21, 2019 Minutes.

IT WAS MOVED BY Rollie Boll, SECONDED BY Dan Lippert, to approve the Minutes of the February 21, 2019 meeting. MOTION CARRIED.

## REPORTS

**Industrial Hemp Subcommittee.** Schmoll noted the February 21 and February 4, 2019 Industrial Hemp Exploratory Subcommittee minutes were included in the meeting packet and shared Charles Levine attended a subcommittee meeting and gave an update on his production of CBD oil. Schmoll reported she and Laura Arne met with Jayme Cline of Christianson PLLP, who looked into the value-added state grant. The subcommittee determined to conduct a feasibility study and apply for a grant next year and to narrow down the focus of the subcommittee. Kim Larson shared there is great interest; however, additional knowledge of industrial hemp is needed. Schmoll shared other presenters will be attending future subcommittee meetings.

**Ag Marketing and Event Planning Subcommittee.** Kotrba provided an update of the Ag Marketing and Event Planning Subcommittee's plans for the Partners in Ag Innovation conference scheduled for Thursday, August 1, 2019, 7:00 a.m. to 2:00 p.m. at MinnWest Technology Campus (MWTC). Discussions were held regarding sponsorships and securing speakers. A Save the Date notice was sent and Past Vice Chair Kotrba shared the notice has a 40% open rate. There will be a \$30 registration fee this year. The next subcommittee meeting is scheduled for 2:30 p.m. April 4<sup>th</sup>. Schmoll commented it is interesting to work with an event planner and it helps take work off the EDC and MWTC.

**NEW BUSINESS—**Poier shared he read an article regarding a committee working on transportation issues in Minnesota. Backman commented he spoke with Matt Johnson of Mid-Minnesota Development Commission, which have formed the Mid-Minnesota Regional Transportation Coordination Council to create a regional transportation plan that addresses everything from public transit to Uber. The initiative is mainly focused on transit rather than highways.

**Ag/Renewable Energy Community Events/Projects.** Schmoll will be attending the AURI New Uses Forum on March 28 & 28<sup>th</sup> in St. Louis Park.

## ADJOURNMENT—

IT WAS MOVED BY Kim Larson, SECONDED BY Ian Graue, to approve adjourn the meeting.  
MOTION CARRIED.

There being no other business, the meeting was adjourned at approximately 9:00 a.m.

**NEXT MEETING—**The next committee meeting is **7:30 a.m., April 18, 2019** at Christianson PLLP, Willmar.

### Regional Solvent Extraction Plants

#	Name	Location	Daily Crush	Other Comments
1	ADM	Mankato, MN	4,200 TPD	Has oil refinery, operates UP/DME rail
2	AGP	Dawson, MN	2,100 TPD	On BNSF rail
3	Cenex Harvest States	Mankato, MN	3,900 TPD	Has oil refinery, operates UP/DME rail
4	Cenex Harvest States	Fairmont, MN	3,510 TPD	On UP rail
5	MN Soy Processors	Brewster, MN	3,000 TPD	On UP rail
6	Cargill	Bloomington, IL	1,800 TPD	On UP rail
7	Incobrasa Industries	Gilman, IL	2,400 TPD	Has oil refinery, operates IC/TPW rail
8	ADM	Des Moines, IA	4,050 TPD	Has oil refinery, operates UP/BNSF rail
9	AGP	Eagle Grove, IA	3,300 TPD	On UP rail
10	AGP	Mason City, IA	1,650 TPD	On I&M rail
11	Cargill	Cedar Rapids, IA	3,600 TPD	Has oil refinery, operates UP/IANR rail
12	Cargill	Iowa Falls, IA	1,950 TPD	On UP/CC rail
13	Cargill	Lafayette, IN	1,950 TPD	On CSXT rail
14	Louis Dreyfus	Claypool, IN	4,408 TPD	Has oil refinery
15	Zeeland Farm Soya	Zeeland, MI	680 TPD	No direct rail
		<b>Total Capacity</b>	<b>42,498 TPD</b>	

### C. Mechanical Extraction vs Solvent Extraction

The table below shows the typical yields from a 60 pound bushel of soybeans for both mechanical and solvent extraction. While mechanical is less efficient in its yield, it requires lower capital investment, is more environmentally friendly, and is easier to permit:

#### Typical Extraction Mass Balance

	Solvent Extraction	Mechanical Extraction
Meal, Pounds	44 lbs. (73.4% yield)	47.2 lbs. (78.7% yield)
Oil, Pounds	11 lbs. (18.3% yield)	7.8 lbs. (13.0% yield)
Hulls	3.5 lbs. (5.8% yield)	3.5 lbs. (5.8% yield)
Shrink	1.5 lbs. (2.5% loss)	1.5 lbs. (2.5% loss)
<b>Total</b>	<b>60 lbs.</b>	<b>60 lbs.</b>

#### Budgetary Capital Cost Estimate

	30 DAYS STORAGE		60 DAYS STORAGE	
	2000 TPD with Degumming	Oil Refinery	2000 TPD with Degumming	Oil Refinery
Land	\$ 1,000,000	\$ -	\$ 500,000	\$ -
Buildings	\$ 3,000,000	\$ 600,000	\$ 3,000,000	\$ 600,000
Major Equipment	\$ 30,000,000	\$ 6,400,000	\$ 30,000,000	\$ 6,400,000
Minor Equipment	\$ 10,000,000	\$ 800,000	\$ 10,000,000	\$ 800,000
Storage Tanks	\$ 4,640,000	\$ -	\$ 7,080,000	\$ -
Electrical & Instrumentation	\$ 5,000,000	\$ 1,000,000	\$ 5,000,000	\$ 1,000,000
Utility Hookups	\$ 4,300,000	\$ -	\$ 4,300,000	\$ -
Site Work	\$ 2,000,000	\$ 100,000	\$ 2,000,000	\$ 100,000
Rail work	\$ 1,500,000	\$ -	\$ 1,500,000	\$ -
Balance of Plant/Miscellaneous	\$ 6,140,000	\$ -	\$ 6,140,000	\$ -
Preliminary/Detailed Engineering (4%)	\$ 2,703,200	\$ 300,000	\$ 2,703,200	\$ 300,000
Permitting, Startup	\$ 500,000	\$ -	\$ 250,000	\$ -
Contingency (25%)	\$ 17,695,800	\$ 2,300,000	\$ 18,118,300	\$ 2,300,000
<b>Total Capital Cost</b>	<b>\$ 88,479,000</b>	<b>\$ 11,500,000</b>	<b>\$ 90,591,500</b>	<b>\$ 11,500,000</b>
<b>Total Capital Cost, ROUNDED</b>	<b>\$ 88,500,000</b>	<b>\$ 11,500,000</b>	<b>\$ 90,600,000</b>	<b>\$ 11,500,000</b>

### Soybean Processing

#### Cost Estimates for various size plants

Soybeans Crushed	3600 TPD - 43 million bu/year	2000 TPD - 22 million bu/year
Total cost est	\$218 million	\$150 million
Total equity	\$105 million	\$72 million
Working capital	\$47 million	\$21 million

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Springfield, IL

Thu, Mar 14, 2019

USDA-IL Dept of Ag Market News

Soybean prices compared with value of oil and meal

	Unit	This week Mar 14, 2019	Last week Mar 7, 2019	Last year Mar 15, 2018
Soybean oil, crude tank cars & trucks Central IL.	¢/lb	28.82	28.92	30.41
Oil yield per bushel crushed	lb	11.88	11.88	11.88
Value from bushel of soybeans	\$	3.42	3.44	3.61
48% Soybean Meal unrestricted, bulk Central IL.	\$/ton	308.90	303.30	375.00
Meal yield per bushel crushed	lbs	46.50	46.50	46.50
Value from bushel of soybeans	\$	7.18	7.05	8.72
Value of oil and meal from bushel of soybeans	\$	10.61	10.49	12.33
No. 1 Yellow Soybeans truck price Central IL. points	\$/bu	8.66	8.66	10.15
Difference between soybean price & value of oil & meal	\$	1.95	1.83	2.18
Estimated Processing Value (EPV)	\$/bu	10.52	10.40	12.26

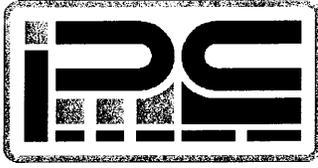
This table is presented for statistical comparison and is not intended to indicate operating margins.

Source: USDA-IL Dept of Ag Market News Service, Springfield, IL  
David Humphreys 217-782-4925 Springfield.LPGMN@ams.usda.gov  
In state only toll free 888-458-4787  
[www.ams.usda.gov/mnreports/gx\\_gr211.txt](http://www.ams.usda.gov/mnreports/gx_gr211.txt)  
[www.ams.usda.gov/LPSMarketNewsPage](http://www.ams.usda.gov/LPSMarketNewsPage)

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TO: Mike Youngerberg  
FROM: Seg Niebuhr, IPMC, LLC  
RE: Feasibility study summary

The following is a summary of the typical areas researched, analyzed, and reported on when performing a feasibility study on a soybean processing facility.

A typical study will require approximately 30 days to complete in DRAFT form with a subsequent review period where all team members will have the opportunity to review the document prior to a FINAL version being issued.

Prior to commencing the study, the following decisions regarding the general conditions surrounding the project will need to be finalized:

- Processing capacity (e.g. 135,000 bu / day)
- A general plan for inputs sourcing and for outputs dispensation (e.g. local beans processed into meal and oil to be sold into the open market)
- Location of the facility
- Any departures from industry-standard practices (e.g. process technology)

If any of these conditions are not finalized, pre-study work will be required to evaluate the options and determine the best path for moving forward into the study phase. Typically, any general assumptions used in the report are based on industry standards as well as the regulatory requirements of the community in which the facility will be constructed. It is advisable that all assumptions be discussed and agreed upon prior to commencement of work on the study.

The deliverable for this type of project will be a Study Report with sufficient information, backup documentation, data, and calculations that will assist the Owner in answering the following questions:

- the accuracy of assumptions made to date
- the future viability of the Project
- the likelihood, level, and timeline of success
- the risks to the project

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A typical report outline consists of the following:

- Introduction
- Assumptions
- Definitions
- Executive Summary
  - o Economic Feasibility
  - o Market Feasibility
  - o Management Feasibility
  - o Financial Feasibility
  - o Location
  - o Conclusions
- Site discussion
- Process technology discussion
- Inputs Costs
- Outputs Values
- Capital Costs
- Operating Costs
- Personnel discussion
- Sales Channels/Markets
- Market Factors
- Transportation
- Sales Seasonality
- Market Growth
- Profit Level
- Profit Variability
- Risk factors
- Financial Analysis
- Financial Stress Analysis
- "30,000-foot" options review
- Conclusions
- Recommendations

Every feasibility study has its unique attributes that may require some modification to this outline, but I trust this will serve to give you an idea as to the level of work performed during the preparation of a feasibility study as well as the type of information provided in the resultant final document.



# Potential Economic Impact of a Soybean Crush and Biodiesel Facility near Crookston, Minnesota

## Soybean Production in Northwest Minnesota

**Northwest Minnesota farmers planted 1,813,000 acres of soybeans in 2017.** This area includes the counties of Becker, Clay, Clearwater, Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau.



## State Biodiesel Production

Minnesota Department of Agriculture estimates **current biodiesel production will provide 53% of Minnesota's mandate for B20 biodiesel**, creating the perfect opportunity for profitable investments in Minnesota's clean-air future.



## Economic Impact of Proposed Facility in Crookston

### During Facility Construction



The construction of a soybean crush and biodiesel facility in Polk County **will generate \$134.0 million in economic activity and support 820 jobs.**

### During Facility Operation



Operation of a soybean crush and biodiesel facility in Polk County **will generate \$322.8 million in new economic activity and support 330 new jobs.**

## Effect on Soybean Basis in the Crookston Area



When fully operational, a soybean crush and biodiesel facility in the Crookston area **will narrow the discount (and lower the basis) by an estimated \$0.10 to \$0.20 per bushel.**

## Economic Impact of Proposed Facility in Northwest Minnesota



Operation of a new crush and biodiesel plant **will generate \$323.9 million of new economic activity in the 11-county region.** The 11-county region includes Becker, Clay, Clearwater, Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake, and Roseau counties.



## EXECUTIVE SUMMARY: POTENTIAL ECONOMIC IMPACT AND BASIS ANALYSIS OF SOYBEAN CRUSH AND BIODIESEL FACILITY NEAR CROOKSTON, MINNESOTA

On May 1, 2018, Minnesota's state mandate on biodiesel increased to 20 percent (B20) during the summer months. Soybeans are the primary source product for biodiesel and Minnesota is a leading soybean producing state. Minnesota, however, does not currently produce enough biodiesel within the state to meet the mandate's demand. Investors in Crookston, Minnesota have identified the potential for a new soybean crush and biodiesel plant, primarily using soybeans grown in Northwest Minnesota. University of Minnesota Extension, on behalf of the Crookston Housing and Economic Development Authority (CHEDA), completed an analysis of the economic impact of the new plant.

**Soybean Production and Biodiesel Demand:** Polk County farmers planted 326,000 acres of soybeans in 2018, the highest acreage of any Minnesota county. Soybean production in Northwest Minnesota has more than tripled since 1997. Meanwhile, the Minnesota Department of Agriculture estimates current biofuel production will only provide 53 percent of the biodiesel required to meet the Minnesota B20 market demand. Thus, Crookston is ideally located with both supply for a crush and biodiesel plant and with demand for its product.

**Effect on Soybean Basis:** From August 2015 through August 2018, soybean bids in Crookston and Argyle averaged 53 cents per bushel less than bids in Fairmont and Savage. When fully operational, a soybean crushing plant in Crookston will raise the basis by an estimated 10 to 20 cents per bushel.

**Economic Impact of Soybean Crush and Biodiesel Plant Construction:** In total, the construction of the plant will generate \$134.0 million of economic activity in Polk County. This includes \$43.1 million in labor income. The plant construction will support 820 jobs in the county. The industries experiencing the largest employment impacts include food and drinking places, wholesale trade, and professional and technical services. These impacts will be short-term, dissipating when construction is complete.

The direct output associated with the plant construction is \$106.7 million. The model estimates there will be 590 people employed directly in the construction process. They will be paid \$35.1 million.

**Economic Impact of Soybean Crush and Biodiesel Plant Operations:** Operations of the plant in Polk County will generate \$322.8 million of new economic activity. This includes \$17.2 million in labor income. The plant will support 330 new jobs. In addition, soybean purchases will support 180 farm-related jobs. Soybean purchases will also support \$58.9 million in farm-related output, including \$12.2 million in labor income. The industries feeling the highest impacts include agricultural support services, real estate, and food and drinking places.

**Economic Impact In 11-County Region:** Operations of a new crush and biodiesel plant will generate \$323.9 million of new economic activity in the 11-county region. This includes \$18.1 million in labor income. The plant will also support 330 new jobs. In addition, soybean purchases will support 980 farm-related jobs and \$257.8 million in farm-related output, including \$67.3 million in labor income. The 11-county region includes Becker, Clay, Clearwater, Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake, and Roseau counties

**Notes on the Economic Impact Analysis:** The data, analysis, and findings described in this report are specific to the geography, period, and project requirements of the proposed plant.