LEE COUNTY, IA

Biofuel Development Opportunity Zone

RATING GRADE: 'A'

Date of Issue: June 15, 2026

A
High Quality

Rating Parameters:

Category	Rated Quantity	Delivered Price	Supply Zone Size
Corn Stover	**550,000 bdt/yr**	**$94-$110/bdt**	**75-mi drive distance from Fort Madison, IA**

BDO ZONE ASSETS

- Large corn stover resource; rated supply of 550,000 bdt/year.
- Agronomically mature corn production system with multi-generational producer experience in cultivation and residue management.
- Virtually no industrial competition for corn stover.
- Excellent infrastructure assets including Mississippi River barge access, BNSF rail certification, and robust utilities availability.
- Very low political, regulatory, and sustainability risk.

BDO ZONE LIABILITIES

- Narrow, weather-sensitive post-harvest collection window.
- Low historical demand for commercially aggregated corn stover.
- Significant year-to-year variability in biomass feedstock availability.
- Seasonal weather and low temperature risks.
- Major scale-up requirements.
- Uncertain and difficult-to-quantify farmer participation.

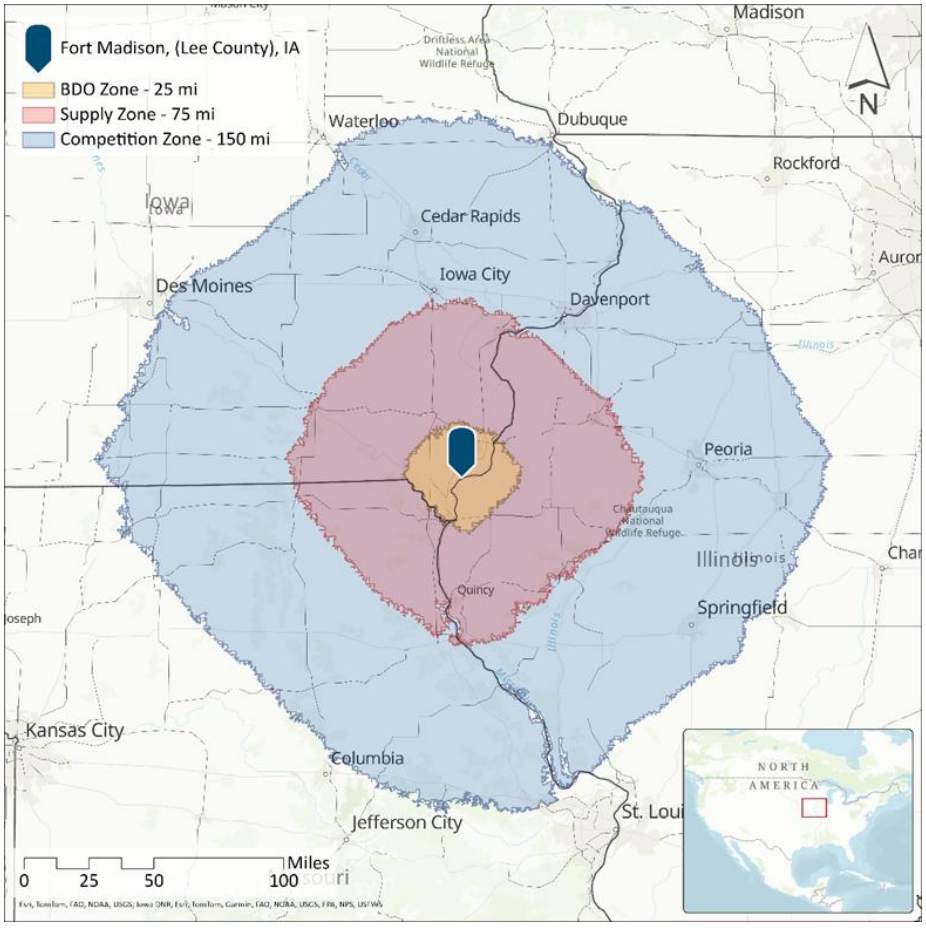
RATING GRADE

The Lee County, IA, Biofuel Development Opportunity Zone, is rated 'A', or 'low' risk.

Risk Rating Grades are defined as follows: AAA (extremely low), AA (very low), A (low), BBB (low-moderate), BB (moderate), B (moderate-high), and C (high).

'A' ratings denote high prospective viability of Feedstock Supply and Infrastructure and low expectations of default risk in the Zone. Capacity to support new biobased plant operations is considered strong. This capacity may, nevertheless, be more vulnerable to adverse weather, supply chain, economic, or infrastructure conditions than is the case for higher ratings.

LEE COUNTY, IOWA BDO ZONE



ANALYST NOTES

The Supply Zone is a procurement area centered on Fort Madison, Iowa, spanning parts of Iowa, Illinois, and Missouri across 30 counties. It supports an average of 1.7 million acres of planted corn annually, with county-level yields typically between 150–220 bu/ac, though yields fluctuate considerably across years. Dominant rotations are corn–corn and corn–soybean. Over the last decade, corn yields ranged from 172 bu/ac to 208 bu/ac, with notable reductions in certain years due to severe weather events including derechos and extensive spring flooding.

From a farming structure perspective, the Supply Zone includes 15,125 cropland farms totaling 4.3 million cropland acres, with an average farm size of 284 acres. The vast majority of farms (82%) are below 500 acres, with 10% between 500–1,000 acres, and 8% above 1,000 acres. Long-term trends reflect a decline in overall cropland area and number of operations, alongside a shift toward more very large farms (>2,000 ac) and fewer medium farms (180–500 ac).

Estimated corn stover generation averages 6.9 million bdt/year. After accounting for current uses — primarily soil protection (60%) and livestock bedding and feed (1%) — and applying a conservative Biomass Availability Multiple (BAM) of 4.0 to reflect uncertainty in producer participation, scale-up readiness, and annual variability, the analysis identifies a rated, low-risk available quantity of 550,000 bdt/year (approximately 8% of total generation), at an estimated delivered price of $94–$110/bdt.

BDO ZONE ASSETS

The primary asset of the Supply Zone is its substantial corn stover resource base. Spanning 30 counties across Iowa, Illinois, and Missouri and centered on Fort Madison, Iowa, the Supply Zone encompasses an average of 1.7 million planted corn acres annually with generally strong yield performance. This scale provides a planning basis for repeatable biomass generation well above the rated quantity.

A second major asset is the agronomic maturity of the production system. Corn is a deeply established crop across the tri-state region, and producers bring multi-generational experience to corn cultivation, residue management, and field operations. While large-scale industrial stover procurement is not yet developed, the underlying crop-production knowledge, machinery familiarity, and seasonal workflow needed to support residue harvest are already embedded in the regional farm economy.

The Supply Zone also benefits from a near-complete absence of industrial competition for corn stover. No major commercial stover buyers exist within the Competition Zone (150-mile drive radius), and existing demand is limited to small-scale, localized cattle bedding and supplemental feed, as well as routine soil management practices. A new project would enter a highly supportive supply environment with minimal price competition.

The sustainability basis for residue removal is well established. The rated quantity assumes substantial residue retention for erosion control and soil protection, and the delivered price incorporates nutrient replacement value paid to producers. This aligns feedstock procurement with conservation practice rather than relying on aggressive extraction, reducing long-term agronomic risk.

Regulatory, political, and sustainability risks are very low. No backlash against corn stover procurement is anticipated, feedstock subsidies are not relied upon, and conservation regulations governing residue removal are already incorporated into the rated quantity and delivery price assumptions.

BDO ZONE LIABILITIES

The principal liability is the operational complexity of aggregating corn stover at commercial scale during a very narrow harvest window. Stover collection generally must occur within approximately 45 days, from mid-September to early November, and early freezes, heavy rainfall, early snowfall, or frozen ground can materially shorten this window and reduce feedstock quality. This narrow harvest period is the central execution risk because residue harvest must compete for equipment, labor, and time during the most intensive phase of the grain-production calendar.

A closely related and high-scored liability is the historically low demand for commercially aggregated corn stover

within the Supply Zone. No industrial stover market has developed in the region, and the farming community carries a negative impression from the failures of earlier large-scale stover projects, including the now-closed or converted POET and DuPont facilities. Any new project will need to proactively build producer trust through early demonstration of reliable collection systems, transparent contracting, and consistent performance.

Year-to-year variability in biomass feedstock availability is a material risk. Historical data reveals wide swings in both harvested corn area — ranging from 936,440 acres in 2021 to over 2.02 million acres in 2020 — and average grain yields, from 172 to 208 bu/ac over the last decade. These fluctuations, driven by severe weather events and prevented planting episodes, directly affect the baseline volume of stover generated annually.

Seasonal weather and low temperature risks add further uncertainty. Fall harvest windows in the region are susceptible to early frost, which can weaken stalk integrity, trigger plant collapse, and complicate mechanical harvest. Cold snaps during spring planting can also reduce stand establishment and ultimately reduce stover generation. Autumn rainfall and flooding — particularly along the Mississippi River corridor — can make fields impassable to heavy equipment and compress the already narrow collection window.

It is noted that the seasonal and year-to-year variability risks are accounted for in the rated quantities: the BDO Zone is rated for 550,000 bdt/yr at low risk, while significantly more corn stover is expected in periods of higher production.

The scale-up requirements for baling, hauling, and logistics are substantial. Supplying the rated quantity would require approximately 100 balers, 200 tractors, and 30 trucks with 53-foot flatbed trailers. The regional equipment base is dominated by large round balers used for livestock operations, which are not optimal for industrial-scale procurement. A new project would need to either invest heavily in square-bale infrastructure or engage a third-party custom operator, adding capital and coordination requirements. However, because this investment is a predictable and manageable precondition, the relevant risk indicators are notched down significantly with the assumption of such investment.

Producer participation remains a major commercial uncertainty and is explicitly identified as the most difficult variable to quantify. Participation depends on the delivered stover price, the removal rate, contract terms, soil management concerns, distance to the facility, and prior experience with stover procurement. Even where physical residue exists, a project cannot rely on access to that material unless enough producers view stover removal as agronomically acceptable and economically worthwhile within the constraints of their existing row-crop operations.

INFRASTRUCTURE PROFILE

The evaluated property is the Fort Madison Industrial Site, a 128-acre flat greenfield parcel located on US Highway 61 South in Fort Madison, Lee County, Iowa. The site benefits from strong utility infrastructure across all categories: electric service is provided by Alliant Energy with 13.2 kV three-phase distribution and 64.5 kV transmission available; natural gas is available via a 6-inch, 70 lb distribution line; and water and wastewater are both provided by the City of Fort Madison. Fiber optic telecommunications run directly along Highway 61. The site is approximately 500 feet from US Highway 61 and 48 miles from I-172, and a BNSF rail line runs along the eastern boundary. The Southeast Iowa Regional Airport is 25 miles away. The primary transportation limitation is the absence of direct rail service to the site itself, and the distance from an interstate highway introduces moderate freight logistics risk.

SCORING & RATING METHODOLOGY

In assessing the biomass supply chain risk for the Biofuel Development Opportunity (BDO) Zone, 75 Risk Indicators from the US Standards for Biomass Supply Chain Risk (BSCR) were applied. These BDO Zone Risk Indicators are the subset of BSCR Risk Indicators applicable to evaluating feedstock risk within a BDO Zone.

- The BDO Zone is a 25-mile drive distance from the center point, which represents the siting area for future biomass projects and is where the industrial site is located.
- The Supply Zone is a 75-mile drive distance from the center point, where feedstock availability was assessed.

- The Competition Zone is a 150-mile drive from the center point, where consumers can compete for feedstock generated in the Supply Zone.

Feedstock quantities are expressed in bone dry tons per year (bdt/yr), while feedstock costs are expressed in United States dollars (USD). Maximum transport distance is based on a 75-mile driving distance from the center point (Fort Madison, IA).

The BDO Zone rating is based on an aggregation of the scores assigned to each BDO Zone Risk Indicator (RI) assessed in this report. First, each BDO Zone Risk Indicator is given a **Raw Risk Likelihood (RRL)** score, which denotes the likelihood of a risk to future BDO Zone projects due to the Risk Indicator. RRL Scores are scaled as either very low (2), low (4), medium (6), high (8), or very high (10).

Each BDO Zone Risk Indicator is given a **Raw Risk Impact (RRI)** score, which denotes the impact on a future BDO Zone project due to the Risk Indicator. RRI scores are scaled as either very low (2), low (4), medium (6), high (8), or very high (10). Impact level scores are based on the impact level of a risk on the successful development and deployment of a BDO Zone project with no mitigation measures.

The **Gross Risk Indicator (GRI)** score is then calculated as the product of the RRL and the RRI scores. For example, if an indicator is scored at an RRL of 2 and an RRI of 8, then the GRI for this risk indicator is 2 X 8 = 16.

If the analyst deems that a typical bio-based project could implement economically reasonable measures or best practices that mitigate the likelihood (RRL), the impact (RRI), or both, then the GRI will be notched accordingly.

The **Loaded RI** score for each Risk Indicator is the product of the GRI score and any notched scores. Loaded RIs are the final score for a Risk Indicator.

Loaded RI scores of 4 or less are deemed very low risk; scores between 5 and 16 are deemed low risk; scores between 17 and 36 are deemed medium risk; scores between 37 and 64 are deemed high risk; and scores of 65 and greater are deemed very high risk.

The total risk rating for the BDO Zone is the average of all Loaded RI scores and Infrastructure Indicators. The BDO Zone score for Lee County, IA is ***16.90 out of 100, resulting in an 'A' designation.***

All scoring and rationale for each Risk Indicator are provided in Section D.

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SECTION A: RISK INDICATOR SUMMARY

Figure A-1. All Risk Indicators Sorted by Risk Level

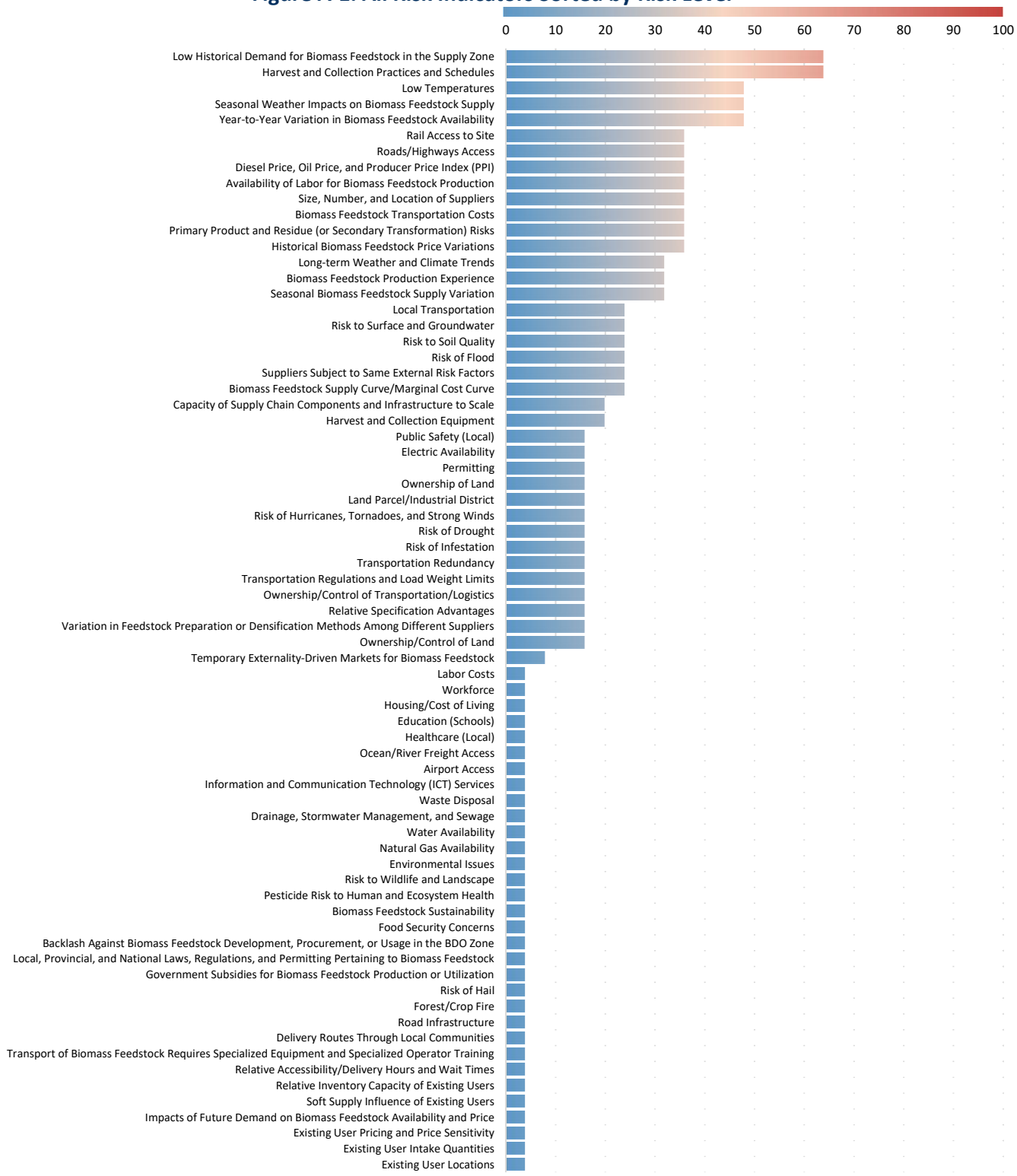


Table A-1. Risk Indicators and Associated Scores

Feedstock Supply Chain Risk Indicators	Raw Risk Likelihood	Raw Risk Impact	Gross Risk Indicator	Mitigation /Notching	Loaded RI Score
Category 1.0: Supply Chain Risk					
1.1 Risk Factor: Quantity and Delivered Cost of Available Biomass Feedstock					
1.1.1 Biomass Feedstock Supply Curve/Marginal Cost Curve	4	6	24	NN	24
1.1.2 Seasonal Biomass Feedstock Supply Variation	8	8	64	50%	32
1.1.3 Year-to-Year Variation in Biomass Feedstock Availability	8	6	48	NN	48
1.1.4 Historical Biomass Feedstock Price Variations	6	6	36	NN	36
1.2 Risk Factor: Harvest and Collection Risk					
1.2.1 Biomass Feedstock Production Experience	8	4	32	NN	32
1.2.2 Primary Product and Residue (or Secondary Transformation) Risks	6	6	36	NN	36
1.2.3 Harvest and Collection Practices and Schedules	8	8	64	NN	64
1.2.4 Harvest and Collection Equipment	10	8	80	75%	20
1.2.5 Ownership/Control of Land	4	4	16	NN	16
1.2.6 Variation in Feedstock Preparation or Densification Methods Among Different Suppliers	8	8	64	75%	16
1.3 Risk Factor: Existing Users					
1.3.1 Existing User Locations	2	2	4	NN	4
1.3.2 Existing User Intake Quantities	2	2	4	NN	4
1.3.3 Existing User Pricing and Price Sensitivity	2	2	4	NN	4
1.3.4 Impacts of Future Demand on Biomass Feedstock Availability and Price	2	2	4	NN	4
1.3.5 Soft Supply Influence of Existing Users	2	2	4	NN	4
1.3.6 Temporary Externality-Driven Markets for Biomass Feedstock	4	2	8	NN	8
1.3.7 Relative Inventory Capacity of Existing Users	2	2	4	NN	4
1.3.8 Relative Accessibility/Delivery Hours and Wait Times	2	2	4	NN	4
1.3.9 Relative Specification Advantages	4	4	16	NN	16
1.4 Risk Factor: Transportation					
1.4.1 Biomass Feedstock Transportation Costs	6	6	36	NN	36
1.4.2 Ownership/Control of Transportation/Logistics	4	4	16	NN	16
1.4.3 Transport of Biomass Feedstock Requires Specialized Equipment and Specialized Operator Training	2	2	4	NN	4
1.4.4 Delivery Routes Through Local Communities	2	2	4	NN	4
1.4.5 Transportation Regulations and Local Weight Limits	4	4	16	NN	16
1.4.6 Road Infrastructure	2	2	4	NN	4
1.4.7 Transportation Redundancy	4	4	16	NN	16
1.5 Risk Factor: Risks Related to Supply Chain Resiliency					
1.5.1 Size, Number, and Location of Suppliers	6	6	36	NN	36
1.5.2 Suppliers Subject to Same External Risk Factors	4	6	24	NN	24
1.6 Risk Factor: Biomass Feedstock Scale-up					
1.6.1 Capacity of Supply Chain Components and Infrastructure to Scale	10	8	80	75%	20
1.6.2 Availability of Labor for Biomass Feedstock Production	6	6	36	NN	36
1.6.3 Low Historical Demand for Biomass Feedstock in the Supply Zone	8	8	64	NN	64
1.7 Risk Factor: Climate and Natural Risks					
1.7.1 Seasonal Weather Impacts on Biomass Feedstock Supply	6	8	48	NN	48
1.7.2 Long-term Weather and Climate Trends	4	8	32	NN	32
1.7.3 Forest/Crop Fire	2	2	4	NN	4
1.7.4 Risk of Infestation	4	4	16	NN	16
1.7.5 Risk of Hail	2	2	4	NN	4
1.7.6 Risk of Flood	4	6	24	NN	24
1.7.7 Risk of Drought	4	4	16	NN	16
1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds	4	4	16	NN	16
1.7.9 Low Temperatures	6	8	48	NN	48
1.8 Risk Factor: Non-Weather Based Externalities					
1.8.1 Diesel Price, Oil Price, and Producer Price Index (PPI)	6	6	36	NN	36
1.8.2 Currency Risk	NR	NR	NR	NR	NR
1.8.3 Border Risk	NR	NR	NR	NR	NR
1.9 Risk Factor: Political and Social					
1.9.1 Government Subsidies for Biomass Feedstock Production or Utilization	2	2	4	NN	4
1.9.2 Local, Provincial, and National Laws, Regulations, and Permitting Pertaining to Biomass Feedstock	2	2	4	NN	4
1.9.3 Backlash Against Biomass Feedstock Development, Procurement, or Usage in the BDO Zone	2	2	4	NN	4
1.9.4 Consent of, and Co-operation with, Indigenous Communities	NR	NR	NR	NR	NR
1.9.5 Food Security Concerns	2	2	4	NN	4
1.10 Risk Factor: Sustainability and Environmental Concern					
1.10.1 Biomass Feedstock Sustainability	2	2	4	NN	4

1.10.2 Risk to Soil Quality	4	6	24	NN	24
1.10.3 Risk to Surface and Groundwater	4	6	24	NN	24
1.10.4 Water Use	NR	NR	NR	NR	NR
1.10.5 Pesticide Risk to Human and Ecosystem Health	2	2	4	NN	4
1.10.6 Risk to Wildlife and Landscape	2	2	4	NN	4
Category 2.0: Infrastructure					
2.1 Risk Factor: Physical Infrastructure					
2.1.1 Land Parcel/Industrial District	4	4	16	NN	16
2.1.2 Ownership of Land	4	4	16	NN	16
2.1.3 Permitting Description	4	4	16	NN	16
2.1.4 Environmental Issues	2	2	4	NN	4
2.2 Risk Factor: Utilities					
2.2.1 Natural Gas Availability	2	2	4	NN	4
2.2.2 Electric Availability	4	4	16	NN	16
2.2.3 Water Availability	2	2	4	NN	4
2.2.4 Drainage, Stormwater Management, and Sewage	2	2	4	NN	4
2.2.5 Waste Disposal	2	2	4	NN	4
2.2.6 Information and Communication Technology (ICT) Services	2	2	4	NN	4
2.3 Risk Factor: Transportation/Logistics					
2.3.1 Roads/Highways Access	6	6	36	NN	36
2.3.2 Rail Access to Site	6	6	36	NN	36
2.3.3 Airport Access	2	2	4	NN	4
2.3.4 Water Freight Access	2	2	4	NN	4
2.4 Risk Factor: Social Infrastructure					
2.4.1 Healthcare (Local)	2	2	4	NN	4
2.4.2 Education (Schools)	2	2	4	NN	4
2.4.3 Local Transportation	6	4	24	NN	24
2.4.4 Public Safety (Local)	4	4	16	NN	16
2.4.5 Housing/Cost of Living	2	2	4	NN	4
2.5 Risk Factor: Labor					
2.5.1 Workforce	2	2	4	NN	4
2.5.2 Labor Costs	2	2	4	NN	4
				Average	**16.90**

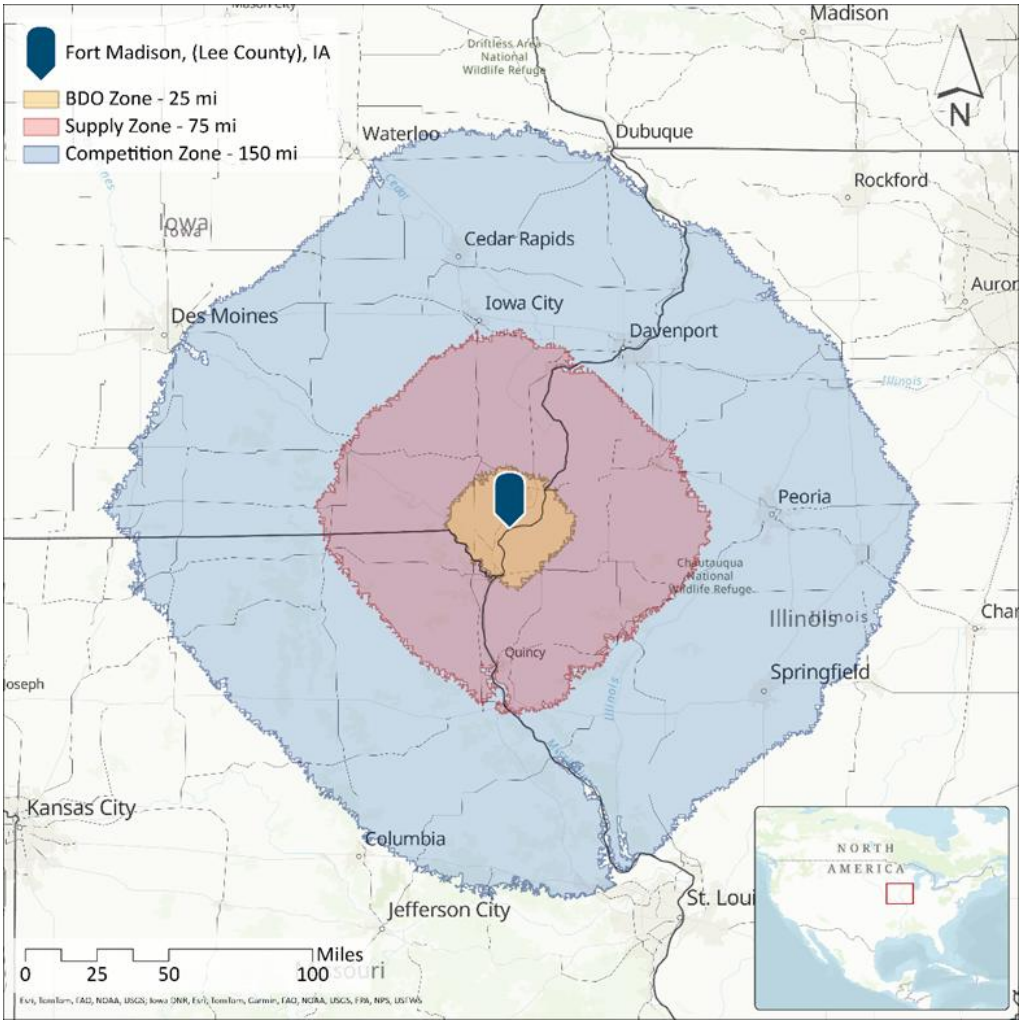
SECTION B: BIOMASS AVAILABILITY AND PRICING

OVERVIEW

BDO Zone Risk Indicators are scored with reference to rated quantities and prices. The rated corn stover quantity is determined by estimating the potential quantity produced within the Supply Zone, defined by 75-mi drive distance from Fort Madison, IA (Map B-1).

To estimate biomass availability for new projects, the current demand for corn stover in the Competition Zone (150-mi drive distance from Fort Madison, IA) is subtracted from the potential production estimate. The rated quantity is determined by dividing the availability estimate by a Biomass Availability Multiple (BAM) of between 1.5 and 4.0. The BAM is applied to account for uncertainty in underlying data, models, assumptions, producer participation, and future operating conditions for new bio-projects. The resulting rated quantity is a conservative, low-risk estimate of biomass availability for a new project. However, once the project supply chains are fully developed, additional quantities may become available. The price range associated with the rated quantity is determined through outreach and market analysis in the Competition Zone and reflects the expected delivered price a new bio-project would need to pay to secure the rated quantity.

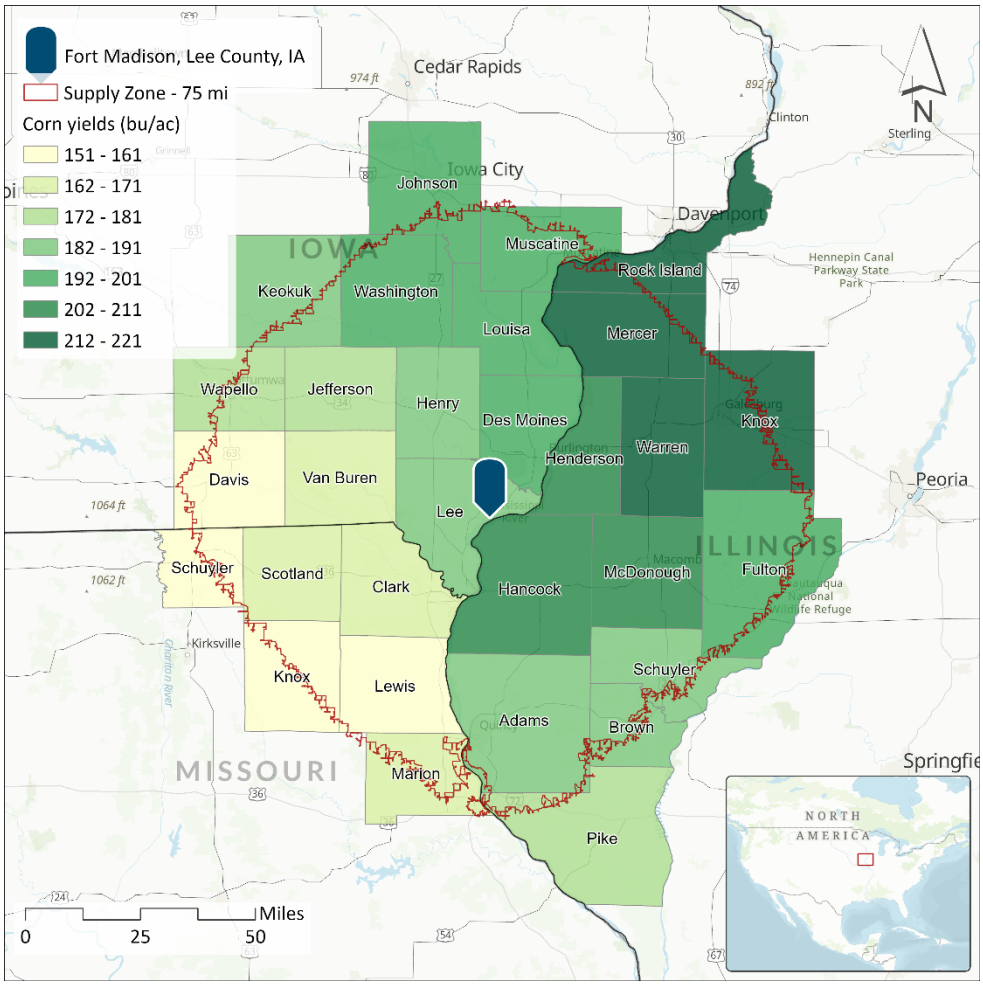
Map B-1. Map of BDO Zone and Competition Zone



SUPPLY ANALYSIS

The Lee County BDO Zone is located in the southeastern part of the state of Iowa, close to the border with the states of Missouri and Illinois (Map B-2) and with the center point in Fort Madison, IA. The Supply Zone spans over three states (IA, IL, and MO) and 30 counties and includes on average 1.7 million acres of planted corn annually. Large average corn yields between 150 bu/ac and 220 bu/ac are obtained annually in the Supply Zone (Map B-2). Traditional crop rotations include corn-corn and corn-soybean. According to the latest 2022 USDA Census data,[1] there were 15,125 cropland farms in the Supply Zone with a total cropland area of 4.3 million acres and an average size of 284 acres. The vast majority of the farms (82%) in the Supply Zone are below 500 acres, 10% between 500 and 1,000 acres, and 8 % above 1,000 acres. Since 2002, the number of large farms (above 2,000 ac) increased, the number of medium farms (180 ac - 500 ac) decreased, while the number of small farms (10 ac - 180 ac) remained fairly constant (Figure E-1 in Section E). Overall, since 1997 until 2022 a significant drop in both cropland area and number of cropland operations were recorded in the Supply Zone (Figure E-2). Consequently, due to geographical dispersion of farms of various sizes, coordinating harvesting, baling, transportation, and storage within 1-2 months after crop harvesting will require sound logistics.

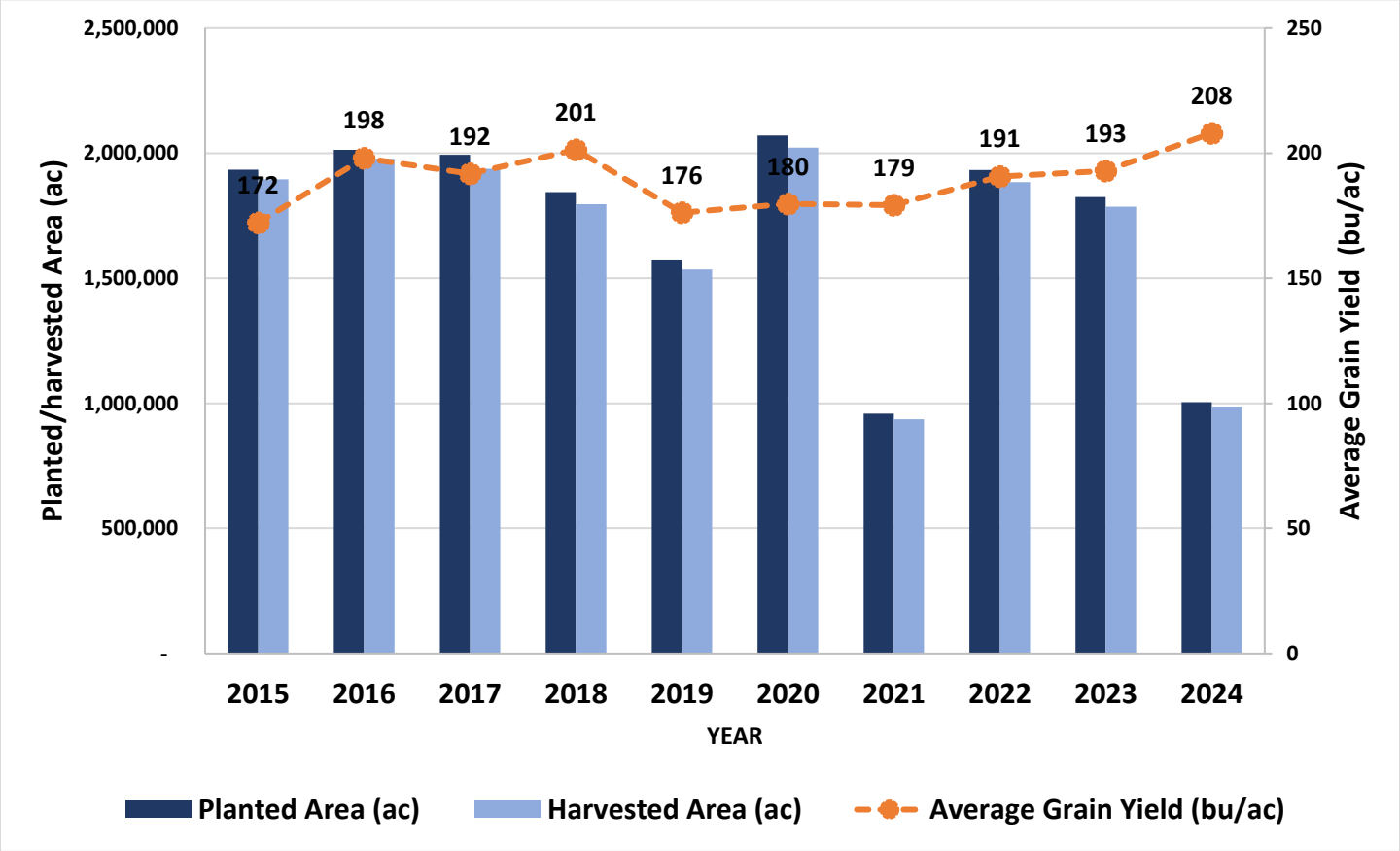
Map B-2. Map of Supply Zone – Location and Corn Yield Values, by County[2]



[1] quickstats.nass.usda.gov
[2] Ibid.

Figure B-1 indicates that the total corn planted area in the Supply Zone fluctuated significantly, especially between 2019 and 2024. Likewise, the average yield fluctuated between very low values (172-176 bu/ac) and larger values (201-208 bu/ac).[3] The lower yields could be explained by severe weather events such as Derechos[4] and intense droughts. The lower planted areas in 2019 and 2024 was caused by a historic spring weather event across the Midwest that made it too wet to plant on time. Many growers used the "Prevent Plant" crop insurance option when they could not plant by the June deadline, so acres went unplanted.

Figure B-1. Historical Planted and Harvested Areas and Grain Yield in the Supply Zone



[3] Ibid.

[4] Extreme weather events characterized by heavy thunderstorms, hail, and winds (www.extension.iastate.edu/agdm/articles/hart/HartOct20.html)

Table B-1 presents how the average corn stover generation was calculated from the total average area and average grain yield. According to our estimates, an average quantity of **6.9 million bdt of corn stover** can be generated annually in the Fort Madison, IA Supply Zone.

Table B-1. Annual Average Stover Generation*

Corn Stover Generation Factors	Values
Average annual harvested area (ac)	1,675,000
Average annual grain yield (bu/ac)	189
Average annual grain production (tons)[5]	8,800,000
Stover/Grain Ratio[6]	1.0
Average stover moisture content (wet basis)[7]	22%
Average annual silage generation (bdt)[8]	70,000
Average annual stover generation (bdt)	**6,900,000**

*All values were rounded

COMPETITION ANALYSIS

One of the two major uses of stover in the Supply Zone are soil quality management/protection and cattle bedding/feed (Table B-2). Agronomists recommend maintaining sufficient crop residue on the land to protect the soil from erosion. They suggest that approximately 60% of ag residues produced should be left in the field for soil management.[9] However, others recommend removing a certain amount of corn stover from corn fields as it can be beneficial to future corn yield. Partial removal of corn stover can help with warming the soil at the time of planting, reduced tillage intensity, and less fuel consumption for corn production.[10]

An estimated 1% of total corn stover generated in the Supply Zone, mostly silage, is being used for cattle feed. This is an average conservative value estimated through personal communications with local producers and experts. The actual value will vary depending on wet or dry years, as more stover is retained for cattle in dry years than in wet years. However, this value assumes rare cases in which local cattle farmers would require large amounts of stover to supplement for lack of feed or bedding.

Only one corn stover project exists in the vicinity of the Competition Zone:

Verbio (former DuPont) – Nevada, IA[11] is a subsidiary of Verbio Vereinigte BioEnergie AG in Germany, which bought the plant from DuPont in 2017 and began its conversion. The plant is located 202 miles drive distance from Fort Madison, IA. Since December 2021, Verbio converts corn stover to renewable natural gas (RNG) in its 16 grain-bin sized methane-digester tanks fed with bacteria from local cattle manure. The RNG is injected directly into the natural gas distribution and transmission grid and sold as a green fuel. The plant consumes approximately 135,000 bales/yr (70,000 bdt/yr) of corn stover. To collect the stover, the company provides 25 trucks and 18 balers, choppers, and accumulators to local producers. The bales are stored on site at the Nevada plant. Considering the distance from Fort Madison, there is no risk associated with this project competing for the rated quantity.

[5] A conversion factor of 35.71 bu/ton was applied (www.farmbooks.ca/Converter.html)
[6] www.sciencedirect.com/science/article/abs/pii/S1364032112001062
[7] Ebadian, M.; Sokhansanj, S.; Lee, D.; Klein, A.; Townley-Smith, L. Evaluating the Economic Viability of Agricultural Pellets to Supplement the Current Global Wood Pellets Supply for Bioenergy Production. Energies 2021, 14, 2263. https://doi.org/10.3390/en14082263).
[8] quickstats.nass.usda.gov (historical survey data for silage harvested area and yield)
[9] www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/crops-and-irrigation/field-crops/cereals-barley-wheat-oats-triticale/harvesting-surplus-cereal-straw
[10] store.extension.iastate.edu/product/14073
[11] www.verbio-north-america.com/locations/verbio-nevada-biorefinery

Table B-2. Current Uses in the BDO Zone

Corn Stover Use Factors	Values
Soil quality management/protection	60%
Livestock bedding and feed	1%
Current or proposed competition	0%
Average annual use	**61%**

RATED QUANTITIES AND PRICING

Table B-3 indicates the rated, low-risk stover quantity of **550,000 bdt/year** available for a new project in Fort Madison, IA. This rated quantity is capable of sustaining multiple projects as large as the ones already operating or planned in the region.

A **BAM of 4** was selected to account for uncertainty in the accuracy of existing data, scale-up readiness, historical harvesting practices and volumes, farmer participation, and annual changes in stover generation and demand. Among these factors, scientists and experts recognize that farmer participation is the most challenging to estimate and quantify. A review of literature reveals that several factors impact producers' decision to participate in a new biomass project, such as: stover price, contract terms, stover harvesting experience, stover removal rate, nutrient loss, soil erosion risk, distance to the biomass processing facility, harvest timeliness, crop rotation, and others.[12, 13, 14, 15, 16] Literature suggests that, among these factors, removal rate and stover price appear to have the highest impact on producers' participation.

Our rated quantity accounts for both a removal rate that ensures appropriate soil protection and a price that includes the nutrient replacement cost paid to the producers. A BAM of 4 ensures a realistic rated quantity representing **8% of the total** estimated stover generation in the Supply Zone, in agreement with local producers' expectations for a new project located in Fort Madison, IA. This percentage is expected to increase once a mutually beneficial project is implemented.

Table B-3. Annual Stover Availability and Rated Quantity Calculation

Availability Factors	Values
Average annual stover generation (bdt)	6,900,000
Average annual demand (bdt)	4,200,000
Collection efficiency[17]	82%
Annual stover availability	2,200,000
BAM	4.0
Rated Quantity (bdt) [18]	**550,000**
Removal % from total	**8%**

Table B-4 shows the various cost components that participate in estimating the delivered price range. Note that **the farm gate price ranges of $68-$84/bdt**, or **$35-$42/bale** are much lower than the current hay prices of $106-$154/bdt, or $54-$78/bale.[19] While hay prices are not necessarily an accurate indicator of corn stover prices, their historical fluctuations

[12] Corn stover as a biofuel feedstock in Iowa's bio-economy: An Iowa farmer survey
[13] Corn stover for bioenergy production: Cost estimates and farmer supply response
[14] Is Corn Stover Harvest Predictable Using Farm Operation, Technology, and Management Variables?
[15] Survey indicates farmers can supply corn stover biomass, but questions remain
[16] The "Stover Availability versus Supply" Puzzle and Contracting Options for Cellulosic Biomass
[17] Optimal stover collection ensures a high-quality stover for vast majority of stover projects (e.g., biofuels, bioenergy, etc.).
[18] Rounded value
[19] quickstats.nass.usda.gov (historical hay prices excluding alfalfa)

presented in Figures E-3 and E-4 could provide a relevant picture of the seasonal demand from the cattle sector. A stover project would most likely stabilize any corn stover price fluctuations by securing quantities at a set price that included the nutrient replacement value and a producer's markup, as presented in Table B-4.

Table B-4. Farm Gate and Delivered Price Ranges

Price/Cost Component	$/bdt	$/bale[20]
Chopping, Windrowing, Baling, Moving Cost[21]	$38 - $47	$19 - $24
Nutrient Replacement Value (paid to producer)[22]	$21 - $26	$11 - $13
Overhead/Markup (15%)[23]	$9 - $11	$5 - $6
Price at farm gate	**$68 - $84**	**$35 - $42**
Av. Transportation Cost (50-mi) [24]	$26	$13
Delivered Price	**$94 - $110**	**$48 - $56**

OPERATIONAL CONSIDERATIONS

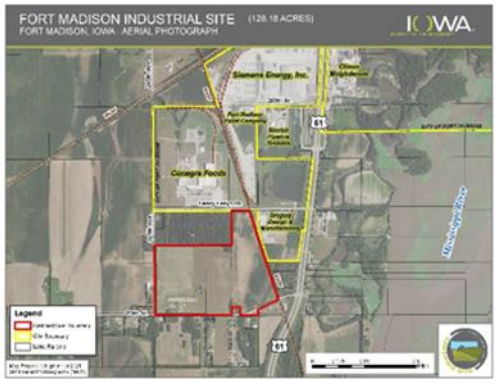
In summary, the rated quantity of corn stover was 550,000 bdt/yr (Table B-3) and the **delivered price range was $94-$110/bdt, or $48-$56/bale** (Table B-4).

If a new project located in Fort Madison, IA, utilized the rated quantity of corn stover, approximately **100 balers, 200 tractors,[25]** and **30 trucks with 53-ft flatbed trailers[26]** would be necessary. The 2022 Census, reported approximately 37,000 tractors and 4,275 balers[27] in the Supply Zone. While the above equipment requirements seem achievable under the current equipment availability, a large-scale corn stover project would most likely require improved baling and transportation efficiency. Consequently, investments in high-density square baling equipment may be necessary to significantly increase this efficiency. Verbio facility can serve as a relevant example as it deployed a fleet of large square balers to support its production.

Producers communicated that they would be in favor of the project proponent organizing the collection, storing, and transportation of stover bales, especially if collection can be done expeditiously, immediately after crop harvesting. However, many producers in the Supply Zone have heard of other growers in the region's previous experiences supplying larger quantities of corn stover to the projects in the region. Outreach indicated that the challenges that POET and DuPont projects encountered were not related to the supply chains, but to conversion technologies and oil prices. However, these now closed or retrofitted projects left a lingering memory within the farming community. Producers and experts suggested that a new project in Fort Madison would need to progressively build trust by first demonstrating collection and transportation equipment and optimal supply chain and storage systems. On the project development side, outreach indicated that all the above concerns can be well addressed by a project proponent and to a large degree they have been addressed in previous and current projects.

[20] Assumes large round or square bales with an average weight of 1,300 lbs or 0.51 bdt (22% moisture content)
[21] www.extension.iastate.edu/agdm/crops/html/a3-10.html
[22] This is a cost paid by project proponents to producers. It includes a 15% producer markup. Nutrient replacement value was calculated using an in-house calculator with current fertilizer prices (www.ams.usda.gov/mnreports/ams_2863.pdf) and nutrient contents (isuaamncus122stg.blob.core.windows.net/shop/PM1688.pdf)
[23] Includes compensation for temporary bale storage at producers' site
[24] Assumes $0.22/bale/loaded mile (2022 Iowa Custom Rate Survey), 53 ft flatbed trailer, 39 bales/load, 22% stover moisture content, loading/unloading cost. For transportation costs at 5-mi drive distance increments see Figure E-6.
[25] Assuming 2 tractors: one for the baler and one for the bale collector at 10-hr day x 40 harvest days per year x 25 bales/hr (www.extension.iastate.edu/agdm/crops/pdf/a3-24.pdf)
[26] Assuming 4 trips/day for 240 days/year
[27] Values adjusted by each county area within the BDO Zone (quickstats.nass.usda.gov)

SECTION C: INFRASTRUCTURE



PROPERTY OVERVIEW

Site Name:	Fort Madison Industrial Site
Address:	US Highway 61 South
City:	Fort Madison
State:	Iowa
County:	Lee
Acres:	128
Pricing Note:	$12,000/acre
Topography:	Flat
Zoning:	None

SITE CONTACTS

Economic Development Contact
Tim Gobble
Lee County Economic Development Group
(319) 463-9030
tgobble@leecounty.edg.com

ADDITIONAL NON-RATED SITES

Infrastructure Site Contact
Jaidan Hunt
Manager of Advisory Operations
jaidan@ecostrat.com

TRANSPORTATION

The site can be accessed from multiple roads, and US Highway 61 is approximately 500 feet east of the site. The site is 48 miles from I-172. The nearest commercial airport, Southeast Iowa Regional Airport (BLR) is 25 miles away. The site is not rail-served; however, a BNSF rail line runs along the eastern boundary of the site, and the site is BNSF certified.

ELECTRIC SERVICE

Electric service is provided by Interstate Power & Light, with Alliant Energy providing distribution and ITC Midwest providing transmission. The existing infrastructure includes 13.2 kV three phase distribution, and 64.5 kV transmission. The Devils Creek Substation is located less than 2 miles away. 2.5 MW capacity should be available within six months. **Contact:** Kay Sackville, Key Account Manager, kaysackville@alliantenergy.com, (319) 379-1413.

NATURAL GAS

Natural gas distribution is provided by MidAmerican Energy, and transmission is provided by ANR. There is a 6-inch 70 lbs distribution line, and a capacity of 15,000+ mcf/month. **Contact:** Greg Theis, Program Manager, Business & Community Dev., Gregory.theis@midamerican.com, (563) 333-8917.

WATER

Water is provided by the City of Fort Madison, and a 10-inch main with 1 million gallon/day capacity. The Fort Madison Waterworks plant is located 1 mile from the site, with a total permitted capacity of 5 million gallons/day and an excess capacity of 1.5 million gallons per day when factoring in peak utilization of 3.5 million gallons/day. **Contact:** Mark Bousselot, Public Works Director, City of Fort Madison, mbousselot@fortmadison-ia.com, (319) 372-7700.

WASTEWATER

Wastewater treatment is provided by the City of Fort Madison, with an 8-inch line located on the property. The Fort Madison Treatment Plant is located 2 miles from the site, with a total permitted capacity of 9 million gallons/day, and an excess capacity of 2 million gallons/day when factoring in peak utilization of 7 million gallons/day. **Contact:** Mark Bousselot (see above).

TELECOMMUNICATIONS

Telecommunication services are provided by Danville Mutual Telephone Company dba iConnectYou, with a fiber-optic chain that runs along Highway 61. **Contact:** Timothy Fencl, General Manager & CEO, tfencl@danvilletelco.net, (319) 392-4251.

SECTION D: RISK INDICATOR SCORING METRICS

CATEGORY 1.0: SUPPLY CHAIN RISK

1.1 Risk Factor: Quantity and Delivered Cost of Available Biomass Feedstock

1.1.1 Biomass Feedstock Supply Curve/Marginal Cost Curve

Rationale: The greater the feasible transport distance, the more feedstock is accessible to the Issuer, but at a higher delivered cost. The feedstock supply curve, sometimes referred to as the marginal cost curve, is a function of feedstock availability over its cost, which is primarily, but not exclusively, a function of distance. The feedstock supply curve is used to determine the availability of redundant feedstock at various price points, as well as the cost of replacing feedstock with substitutes located at different distances.

Feedstock cost curves are useful in determining supply chain resilience; they provide information about the cost of feedstock availability in times of supply disturbance. Biomass supply chains are prone to supply disturbances over time; suppliers can become insolvent, or weather events can temporarily disrupt feedstock availability. When a disturbance occurs, the Issuer may need to source replacement feedstock from different suppliers at different locations and at different costs. A biomass supply curve indicates quantities of feedstock available at various price levels from suppliers generally located further away than the core supplier.

Risk Information: The analysis found that the rated quantity could be sourced within 40 miles (Figure E-5). To procure over 50% of the available corn stover quantity, the supply radius must extend to 55 miles from the central facility. Up to around 1.8 million bdt/yr of corn stover is generated for the rated price range of $94-110/bdt. As there is no certainty that project proponents will be able to access the rated quantity from this area, the risk is deemed low to moderate.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**24**

1.1.2 Seasonal Biomass Feedstock Supply Variation

Rationale: Biomass supply can present significant seasonal variations. Seasonal supply variations, combined with limitations associated with longer-distance transportation and storage, can lead to BDO Zone biomass supply imbalances,[28] which can manifest in shortages and higher costs for Issuers.

Risk Information: Because corn is an annual crop, biomass generation is entirely seasonal, creating a massive influx of material during the fall harvest followed by several months of zero new production. Seasonal variations are further constricted to a roughly 45-day period between mid-September and early November when the harvest occurs.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**8**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	**8**

[28] Golecha & Gan, 2016.

Gross Risk Indicator (GRI)	Score
The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	64
Mitigation/Notching	**Notch**
Any large-scale project utilizing corn stover will require a large inventory build up during the harvesting season. Inventory mitigates seasonal supply variation significantly.	50%
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 32 out of 100.	32

1.1.3 Year-to-Year Variation in Biomass Feedstock Availability

Rationale: Biomass can have significant year-to-year supply variations due to variability in yield from biomass harvesting operations, particularly with agricultural biomass.

Risk Information: Year-to-year variation in biomass feedstock availability is significantly influenced by extreme weather events and fluctuating planted acreage. Historical grain production data illustrates this extreme volatility, showing that regional harvested corn area ranged from a low of 936,440 acres in 2021 to over 2.02 million acres in 2020. Correspondingly, grain yields fluctuated drastically from 172 bushels per acre to 208 bushels per acre between 2015 and 2024, directly impacting the baseline volume of residual stover generated in the fields. These dramatic annual swings are primarily driven by severe natural disasters, such as historic drought periods that lower biomass quality, or massive spring precipitation events that lead to widespread prevented planting. That being said, the year-to-year variation is partially accounted for by the high BAM of 4.0 (see Section B).

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	8
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	6
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	48
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	48

1.1.4 Historical Biomass Feedstock Price Variations

Rationale: If the historical feedstock price shows volatility, then the risk of future price fluctuation is elevated. If feedstock prices have historically exceeded the price at which the Issuer would have to cease operations or breach a financial covenant (i.e., the "red line" feedstock cost), then mitigation measures should be put in place.

Risk Information: Historical biomass feedstock price variations are closely tied to the shifting costs of agricultural inputs, fluctuating commodity grain markets, and overarching weather patterns. An analysis of alternative forage markets over a ten-year period from 2015 to 2025 shows that average regional hay prices reached a low of $110 per dry ton in 2017 before peaking at $181 per dry ton in 2023, serving as a reliable proxy to gauge the volatility expected in emerging stover markets. A primary factor driving corn stover prices is the replacement value of soil nutrients; when global fertilizer prices for phosphorus and potassium surge, the minimum price farmers will accept to remove stover rises proportionally to cover their re-application costs.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**

The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.2 Risk Factor: Harvest and Collection Risk

1.2.1 Biomass Feedstock Production Experience

Rationale: Risk is higher when suppliers have limited experience with planting, growing, harvesting, processing, and/or collecting biomass. Limited experience may be common for stover or other agricultural residue supply chains where farmers or producers may have no previous experience.

Risk Information: Regional experience with commercial-scale agricultural residue management remains limited, as the vast majority of corn stover is traditionally left in the fields to maintain soil health. Across the tri-state area, an overall average of approximately 15% of farms run livestock, with saturation varying regionally from around 2-3% in Illinois, to 10-15% in Southeast Iowa, and up to 30-40% in Northern Missouri. Within these communities, 80-90% of farms with livestock operations own their own balers, however, only 5-10% of total acres on operations with livestock are actually baled.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**8**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 32 out of 100.	**32**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 32 out of 100.	**32**

1.2.2 Primary Product and Residue (or Secondary Transformation) Risks

Rationale: If the feedstock is a new/secondary crop or a by-product, suppliers may either lack sufficient experience to mitigate risk or be unable to react to such risk. Secondary crops or by-product producers may be less likely to prioritize production. For new crop types, inexperience in planting, harvest, collection, and yield data may pose higher levels of risk. If the feedstock is a secondary transformation (i.e., wheat straw, corn stover), then production can be subject to variables beyond suppliers' control (e.g., changing demand for primary crop prices).

Risk Information: The primary product in this supply chain is corn grain, which enjoys massive, established market demand driven heavily by the ethanol industry, global export markets, and livestock feed operations. Historical and projected demand for corn remains robust, with the Midwest accounting for roughly a third of global corn production and states frequently harvest millions of acres annually, ensuring a vast underlying supply of primary feedstock. Because corn stover is a secondary transformation product, its recovery is highly sensitive to the primary grain harvest; if resources are strained or the harvest window is condensed by poor weather, farmers prioritize the lucrative primary grain crop, drastically increasing the risk of non-supply for the stover residue. Additionally, an efficient stover collection

requires early-season decisions on combine height settings and row spacing that must be made before grain harvest begins. Although some of these factors were accounted for in high BAM, the risk remains medium.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.2.3 Harvest and Collection Practices and Schedules

Rationale: Differences in harvest timing and practices used can create risk to both the quantity and quality of feedstock. For example, feedstock harvested by different suppliers in different windows can undergo varying levels of exposure to sun, wind, and moisture, leading to variations in delivered feedstock quality. For example, agricultural feedstocks and energy crops have optimal harvesting windows to ensure minimal moisture content. In certain BDO Zones, these harvesting windows may coincide with heightened weather risks, such as frost or rain.

Risk Information: The primary harvest window is highly condensed into an approximately 45-day period between mid-September and early November in the Midwest, with peak stover harvesting around November 1st. Weather events such as early freezes, heavy rainfall, or early snow accumulation can severely restrict field access and halt collection efforts, limiting the available timeframe to gather the year's entire feedstock supply. Additionally, due to uncertainty related to farmers' willingness to bale stover for a large-scale project on a particular schedule, the risk increases. The risk is deemed high.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**8**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	**8**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	**64**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 64 out of 100.	**64**

1.2.4 Harvesting and Collection Equipment

Rationale: Different types of harvesting and collection equipment used by suppliers in a BDO Zone can have a significant impact on the quality and availability of feedstock. Using different types and combinations of harvesting, collection, and processing equipment among suppliers can lead to non-homogeneous feedstock. Equipment that is not designed specifically for biomass cultivation, harvesting, and collection can increase feedstock quality risks. Relevant equipment should be specified for the sake of product consistency and risk reduction.

Risk Information: Although 80% to 90% of local farms with livestock operations own their own baling equipment, these machines are primarily designed for hay and are generally large round balers rather than the high-density large square

balers (3x4x8 feet) that industrial bio-facilities prefer for optimal transport and storage efficiency. Most farmers do not have livestock operations and do not own balers. Therefore, equipment is lacking in the Supply Zone.
Raw Risk Likelihood (RRL) — **Score**
The risk likelihood is deemed very high, therefore the RRL is 10 out of 10. — **10**
Raw Risk Impact (RRI) — **Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10. — **8**
Gross Risk Indicator (GRI) — **Score**
The Gross Risk Indicator (RRL X RRI) is 80 out of 100. — **80**
Mitigation/Notching — **Notch**
It is assumed that a new entrant would heavily invest in baling equipment, or engage an investment-grade third-party provider, in which case the risk is notched down significantly. — **75%**
Loaded RI Score — **Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 20 out of 100. — **20**

1.2.5 Ownership/Control of Land

Rationale: Suppliers that own land or a production facility where feedstock is produced tend to have better control of supply chains and present lower degrees of supply risk.
Risk Information: Land ownership in the region is predominantly characterized by family-owned farming operations rather than large corporate entities, though many operators rent a substantial portion of the acres they farm. This is a typical structure of farmland across North America and any risks related to it are structural risks pertaining to any agricultural residue project. Risk is low.
Raw Risk Likelihood (RRL) — **Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10. — **4**
Raw Risk Impact (RRI) — **Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10. — **4**
Gross Risk Indicator (GRI) — **Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100. — **16**
Mitigation/Notching — **Notch**
No adjustment. — **NN**
Loaded RI Score — **Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100. — **16**

1.2.6 Variation in Feedstock Preparation or Densification Methods Among Different Suppliers

Rationale: The shape and density of the unit in which feedstock is supplied can impact feedstock cost and quality. Standard feedstock densification modes for biomass consist of round or square bales, pellets, cubes, chips, or grindings. Bales of different densities can absorb moisture at different rates. In certain cases, round bales have been viewed as problematic due to their uneven moisture content distribution.[29]
Risk Information: The current regional capacity for required densification equipment is severely mismatched with industrial needs; while many local farmers possess the equipment to produce large round bales for personal livestock use, the specialized equipment required for high-efficiency industrial supply—such as heavy-duty large square balers, windrowers, shredders, and specialized loaders—is notably uncommon across the target area.
Raw Risk Likelihood (RRL) — **Score**
The risk likelihood is deemed high, therefore the RRL is 8 out of 10. — **8**

[29] Huhnke, 2018.

Raw Risk Impact (RRI) The risk impact is deemed high, therefore the RRI is 8 out of 10.	**Score** **8**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	**Score** **64**
Mitigation/Notching It is assumed that a new entrant would heavily invest in baling equipment, or engage an investment-grade third-party provider, in which case the risk is notched down significantly.	**Notch** **75%**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**Score** **16**

1.3 Risk Factor: Existing Users

1.3.1 Existing User Locations

Rationale: Competitors' locations relative to siting locations within a BDO Zone can affect the viability of procuring feedstock and the cost of that feedstock. Accurate and detailed competitor mapping provides an understanding of a competitor's geographical influence on new plants within a BDO Zone, including competitive advantages such as short hauling.

Risk Information: Within the Competition Zone, there is currently no major established commercial market or industrial user for corn stover. Instead, the stover is generally either baled and goes to small-scale, local cattle operations for winter feed and bedding, or it is left in the fields to maintain soil nutrients, rebuild soil structure, and prevent erosion.

Raw Risk Likelihood (RRL) The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**Score** **2**
Raw Risk Impact (RRI) The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**Score** **2**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**Score** **4**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**Score** **4**

1.3.2 Existing User Intake Quantities

Rationale: Clear understanding of feedstock consumption by key competitors for each rated feedstock type in the BDO Zone is essential to quantifying competitor risk.

Understanding current consumption and historical trends of feedstock utilization can provide valuable information about feedstock price elasticity during shortages and insight into events that may impact future supply conditions. It can enable more accurate estimates of the sensitivity of feedstock availability to potential future consumption levels or the impact of external events (e.g., weather events, structural economic changes, seasonality, or policy change).

Risk Information: Given the absence of large-scale commercial buyers in the immediate supply basin, current and recent historical intake quantities by competitors are negligible. The only consistent regional intake comes from local livestock farmers, who generally bale only 5% to 10% of available acres to meet their own relatively small feed and bedding needs. Around 15% of operations in the area have livestock operations, and 80% to 90% of operations with livestock have balers.

Raw Risk Likelihood (RRL)	**Score**

The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.3 Existing User Pricing and Price Sensitivity

Rationale: Understanding how much competitors pay (or receive) for different feedstock types is essential in determining the Issuer's competitiveness and accurately assessing the delivered cost range in the BDO Zone rating.

Current and historical prices paid/received by competitors provide insight into their procurement behaviors and exert pressure on suppliers in the BDO Zone, such as the ability/willingness to pay premiums for feedstock during times of feedstock shortage or reduce prices (or cut-off deliveries) during gluts. Competitors that have the ability to offer higher prices for feedstock during feedstock shortages can pose a significant risk to the Issuer.

Knowledge of competitor pricing and price sensitivity is also an essential prerequisite to formulating a feedstock cost curve, which can enable predictions of feedstock redundancy, i.e., how much feedstock could become available at different pricing levels.

Risk Information: There is no significant competitor in the Competition Zone that could control pricing given low current demand and the large quantity of corn stover that is potentially available.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.4 Impacts of Future Demand on Biomass Feedstock Availability and Price

Rationale: Feedstock utilization in a BDO Zone can change over time. Expansion of feedstock demand by current competitors can put additional pressure on feedstock and lead to higher prices, feedstock disruptions, shortages, supplier breaches, or other types of supply chain disruption.

If current markets for feedstock have been publicly signaling the potential for increased demand for feedstock, high interest in a supply zone can make suppliers overconfident, leading to a supplier-controlled market where short-term contracting becomes the norm and supply chain reliability is compromised for the Issuer. If and when it occurs, increased demand on feedstock may decrease availability and increase cost for new plants within the BDO Zone.

Risk Information: Corn stover use by farmers and the livestock sector is unlikely to change significantly, as its role as bedding and supplemental feed is already reflected in historical utilization patterns, which account for years where alternatives are less available.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.5 Soft Supply Influence of Existing Users

Rationale: In some cases, existing markets for feedstock may be able to exert high degrees of pressure over local suppliers, effectively enabling control of feedstock, especially during times of shortage. This control can derive from qualitative or "soft" factors, such as long previous relationships between local suppliers and existing markets for feedstock.
Risk Information: The "soft supply influence" exerted by existing users in this region is remarkably low because there are no dominant corporate buyers requiring large quantities of corn stover. Instead, business relations are informal and hyper-local; 80% to 90% of farms with livestock operations own their own balers and harvest their own stalks, meaning the intra-community market for buying and selling stover between neighbors is extremely slim. These existing supply relationships are based on personal agricultural ties and necessity rather than corporate leverage or long-term offtake agreements.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.6 Temporary Externality-Driven Markets for Biomass Feedstock

Rationale: Alternative, non-traditional, externality-driven competitors for feedstock can drive feedstock demand (and cost) in unusual circumstances. For example, an Issuer using corn stover as a feedstock would not typically compete with the higher-end animal feed market. However, in times of significant hay shortage (e.g., during drought), farmers may use corn stover as hay replacement, driving the price of stover feedstock and decreasing its availability for bio-projects.[30]

[30] Bergtold, 2018.

Risk Information: Temporary, externality-driven markets for corn stover in the region are primarily linked to severe weather events, most notably widespread droughts that devastate traditional forage crops. While the everyday market for corn stover is minimal and highly localized to small-scale animal bedding and feed, severe drought conditions can drastically alter this dynamic by forcing cattle producers to utilize stover as a substitute for depleted hay supplies. During these periods, corn stover becomes a critical emergency roughage source, which temporarily spikes regional demand and drives up prices, transforming what is typically a low-value agricultural residue into a highly sought-after commodity. Consequently, a new biomanufacturing entrant must account for these seasonal and weather-driven market shocks, as droughts will temporarily intensify competition with local livestock operators and elevate the baseline procurement costs for biomass. Nonetheless, these upticks in demand are temporary and are largely accounted for in the high BAM of 4.0 (see Section B).

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 8 out of 100.	**8**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 8 out of 100.	**8**

1.3.7 Relative Inventory Capacity of Existing Users

Rationale: The more inventory a competing biomass facility is able to store, the more competitive pressure it can exert on supply. The ability to store large inventories allows competitors to purchase inventory when the prices are low, potentially giving it an economic advantage. Additionally, the ability to store inventory during feedstock supply surpluses can enable competitors to continue to intake feedstock when the Issuer's plant (with lesser inventory capacity) may be forced to put suppliers on quota. Larger inventory capacity on the part of competing markets creates supplier loyalty and can make it more difficult for new projects to secure supply without paying a significant premium.

Risk Information: Because there is currently no major commercial market for corn stover in the immediate Supply Zone, the relative inventory and stockpiling capacity of existing users is exceptionally limited. The primary existing consumers are local livestock farmers who generally lack the massive indoor storage infrastructure required to protect large volumes of biomass from weather degradation. Instead, these existing users typically rely on physically moving bales immediately after harvest, utilizing specialized airtight plastic wrappers for outdoor round bale storage, or simply feeding the material before significant rot occurs.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.8 Relative Accessibility/Delivery Hours and Wait Times

Rationale: The value attributed by suppliers to local competing markets for biomass is often directly related to the degree of flexibility the market provides in terms of delivery hours and the more efficient discharge can occur.

Risk Information: Similar to the lack of inventory capacity, the absence of an established industrial competitor in the region means there are no standardized delivery hours, wait times, or commercial receiving infrastructures currently operating in the local market.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.9 Relative Specification Advantages

Rationale: When choosing a market for biomass feedstock, suppliers not only look at price but also at relative quality requirements or specifications. It is important to understand feedstock quality specifications for competing markets within the BDO Zone in order to accurately quantify the risk that competitors can exert on the Issuer's supply chain.

Risk Information: Local cattle operations—the primary existing competitors—generally utilize large round bales, which are cheaper to produce, easily manageable with ubiquitous farm equipment, and have very loose specifications regarding ash content or moisture since the material is merely ground up for feed or bedding. However, due to low demand for the cattle market, this risk is deemed low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.4 Risk Factor: Transportation

1.4.1 Biomass Feedstock Transportation Costs

Rationale: Transportation can be one of the most significant cost components of biomass supply chains. The average transport cost and percentage of total feedstock cost attributable to transport should be known.

Transport distances of 50-75 miles for biomass feedstocks are typical, but larger distances can be common. Where the average transport distance from suppliers to Issuers is high, the supply chain is subject to greater sensitivities to risks, such as increases in diesel cost, weather impacts, mechanical breakdown, and the demand for scarce feedstock from competitors closer to the source.

Understanding average transport distance can help flag higher-risk BDO Zones where transport distance materially exceeds the average.

Risk Information: Biomass feedstock transportation costs constitute a significant portion of the overall delivered price, heavily influenced by payload logistics and fluctuating fuel markets. According to regional supply curve data, procuring stover within a 50-mile radius or below yields a delivered price of $103 per bone-dry ton, but as the procurement radius extends to 70 miles, the delivered price climbs to $111 per bone-dry ton.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.4.2 Ownership/Control of Transportation/Logistics

Rationale: In most cases, suppliers that own or lease transportation equipment necessary to transport biomass from fields are at lower risk than those that do not. However, in some circumstances, reliance on third parties to transport biomass is common practice and does not contribute to risk.

Risk Information: Local transportation logistics for biomass typically rely on a combination of farmer-owned equipment and third-party custom haulers. It is estimated that approximately 10% to 15% of farmers in the region own their own semi-trucks, which are heavily utilized during the primary grain harvest. There are several custom hauling operations equipped with semi-trucks and gooseneck trailers, driven largely by the established regional hay market. Transportation ownership structure does not constitute significant risk. Some uncertainty exists with regards to access to transportation equipment during the harvesting season.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.4.3 Transportation of Biomass Feedstock Requires Specialized Equipment and Specialized Operator Training

Rationale: Requirements for specialized transport equipment (e.g., walking-floor trailers) can increase supply chain risk. Where there is low availability of required transportation equipment, equipment owners have increased leverage over transportation prices, and supply chain resiliency can be lower.

Risk Information: Transportation of corn stover bales (round and square) is achieved using standard 53 ft flatbed trailers. No specialized equipment is required.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.4.4 Delivery Routes Through Local Communities

Rationale: Transportation of biomass can become a nuisance to local communities, especially if a large number of trucks pass through residential and school areas. Local communities often have the power to force regulations regarding truck transport, impeding the ability of BDO Zone suppliers to transport feedstock.

Risk Information: The vast majority of potential delivery routes in the target region pass through rural communities that are already deeply familiar with heavy agricultural traffic, including routine grain and bale hauling.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.4.5 Transportation Regulations and Local Weight Limits

Rationale: In many BDO Zones, transportation is regulated based on seasonal road conditions. These regulations (e.g., "frost laws") often take the form of weight restrictions or limits on the number of trucks allowed on roads. Such regulations can impede the project's ability to source sufficient feedstock or increase the cost of doing so at certain times of the year.

Risk Information: Transportation regulations and load weight limits vary significantly across the tri-state region, requiring careful logistical planning. While all three states enforce a standard federal gross vehicle weight limit of 80,000 pounds on the interstate system, state highways offer different allowances. Missouri allows up to 22,000 pounds per single axle and 36,000 pounds per tandem axle on its non-interstate roads. In Iowa, the governor frequently issues seasonal harvest proclamations that allow agricultural haulers, including those transporting stover, to operate at gross weights up to 90,000 pounds on non-interstate routes without a permit. Seasonal "frost laws" pose the most severe regulatory disruption during the spring thaw; Iowa implements strict 80,000-pound caps and embargoes on designated vulnerable routes from February through May, while Illinois grants local counties the authority to enforce stringent weight reductions—sometimes as low as 5 tons per axle—which can effectively halt heavy transport on secondary roads. Missouri generally does not use statewide frost laws but heavily enforces strict bridge weight limits year-round.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	4

Raw Risk Impact (RRI)	Score
The risk impact is deemed low, therefore the RRI is 4 out of 10.	4
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	16
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	16

1.4.6 Road Infrastructure

Rationale: Feedstock cost and availability can be a function of road infrastructure, in particular the accessibility the infrastructure provides to feedstock. Issues with road networks will translate directly to risks to feedstock supply.

Risk Information: Road infrastructure is sufficient and is not perceived as risk.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.4.7 Transportation Redundancy

Rationale: Transport equipment redundancy is important for dealing with seasonally variable feedstock supplies as well as the risk of equipment breakdowns.

Risk Information: The availability and redundancy of transportation equipment suitable for corn stover within the BDO zone is generally high, primarily supported by the region's established hay and agricultural markets. The industry standard for hauling baled biomass utilizes conventional flatbed semi-trailers or custom gooseneck trailers, which are ubiquitous and heavily utilized across the Supply Zone. Furthermore, transportation redundancy is bolstered by the estimated 10% to 15% of local farmers who own their own semi-trucks; while these are heavily used during the primary grain harvest, they provide a flexible, secondary fleet for supplemental hauling during the rest of the year. Additionally, there is a strong presence of custom hauling operations that could support future developments. Some uncertainty exists related to access to transportation equipment during the harvesting season.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	4
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	4
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	16
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	16

1.5 Risk Factor: Risks Related to Supply Chain Resiliency

1.5.1 Size, Number, and Location of Suppliers

Rationale: In general, a supply portfolio involving multiple suppliers of various sizes (and from multiple BDO Zones) is important for ensuring steady and uninterrupted feedstock supply with minimal price fluctuations. If a small number of large suppliers provides a high proportion of total feedstock, a disruption or supplier breach will have greater impact on the supply chain. In such cases the risk of disruption is lower, but the impact of those disruptions is higher. Conversely, many small suppliers are less likely to have the capacity to withstand internal disruptions and thus may be more likely to breach. Here, risk of disruption is higher, but their likely impact is lower. The number of suppliers as well as the ratio of small to large suppliers should be optimized. There is no pre-determined number or optimal ratio of suppliers, although having too many or too few can both pose higher degrees of risk.

Risk Information: According to the latest 2022 USDA Census data, there were 15,125 farms in the Supply Zone with a total area of 4.3 million acres and an average size of 284 acres. The vast majority of the farms (82%) in the BDO Zone are below 500 acres, 10% between 500 and 1,000 acres, and 8% above 1,000 acres. Since 2002, the number of large farms (above 2,000 ac) increased, the number of medium farms (180 ac - 500 ac) decreased, while the number of small farms (10 ac - 180 ac) remained fairly constant.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.5.2 Suppliers Subject to Same External Risk Factors

Rationale: When a single risk event can impact the feedstock production ability of all (or most) suppliers, then feedstock risk is higher and supply chain resiliency is lower. Resilience is maximized when biomass supply chains exhibit diversity in spatial location (i.e., geography), production practices, and other elements of supply chain structures such that the impact of single high-risk events has varying impacts on suppliers.

Risk Information: Suppliers within the BDO Zone are collectively exposed to several systemic external risk factors that could simultaneously disrupt regional biomass availability. Agriculturally, corn stover suppliers face shared climatic and environmental vulnerabilities, including an increasing frequency of extreme weather events such as high-velocity straight-line winds, flash droughts, and severe seasonal flooding along the Mississippi River, all of which can drastically compress harvest windows and degrade crop quality. Economically, these farmers are uniformly impacted by macroeconomic input pressures—specifically the soaring costs of diesel fuel, heavy machinery, and agricultural fertilizers—which heavily dictate the financial viability of stover removal operations. The risk is mitigated by the large geographic extent of the Supply Zone; i.e. most disturbances are likely to occur locally.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**

Gross Risk Indicator (GRI)	Score
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	24
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	24

1.6 Risk Factor: Biomass Feedstock Scale-up

1.6.1 Capacity of Supply Chain Components and Infrastructure to Scale

Rationale: Scale-up risk increases if supply chain components or underlying feedstock infrastructure necessary for these components cannot scale to handle Issuer feedstock requirements and throughput capacity. Capacity to scale should be demonstrated.

Risk Information: While there is a high abundance of standard baling equipment utilized by local livestock operators, with an estimated 80% to 90% of livestock farms owning their own balers, these machines are predominantly large round balers. Because farmers are extremely hesitant to purchase this expensive new machinery without the guarantee of long-term project certainty, the existing supply chain infrastructure lacks the capacity to scale independently. Therefore, a new biomanufacturing entrant or dedicated third-party contractors will likely need to supply the baseline harvesting equipment to overcome these capacity limitations.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very high, therefore the RRL is 10 out of 10.	10
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	8
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 80 out of 100.	80
Mitigation/Notching	**Notch**
It is assumed that the new entrant will invest heavily in new equipment, or engage an investment-grade third-party company, in which case this risk will be effectively mitigated.	75%
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 20 out of 100.	20

1.6.2 Availability of Labor for Biomass Feedstock Production

Rationale: Skilled labor shortages can be difficult to remedy in the short term. The availability of suitable labor in an area can impact the ability to procure sufficient feedstock quantities on required schedules. Labor risks are higher where supply chains are not yet active or for Issuers for whom large feedstock requirements or the development of new (or expanded) supply chains demand significant additions to the local labor force.

Risk Information: Corn stover is produced as a byproduct of corn growing operations, therefore, the only additional labor needed is that needed for baling, stacking and transportation. That being said, the local agricultural sector is currently battling a severe, systemic labor shortage, driven by an aging farmer population approaching an average age of 60 and a widespread difficulty in attracting younger generations to farming. Risk is deemed medium.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	6
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	36

Mitigation/Notching	Notch
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	36

1.6.3 Low Historical Demand for Biomass Feedstock in the Supply Zone

Rationale: If Issuer BDO Zone does not have a history of developed large-scale feedstock procurement, suppliers may not have sufficient expertise in feedstock production to ensure reliable supply, especially in the early years. Where supply chains are not well-established, risk can be mitigated when new bio-based plants control a higher degree of feedstock processing.

Risk Information: Historically, there has been an exceptionally low demand for commercially aggregated corn stover within the Supply Zone. The vast majority of agricultural residue has traditionally been left in the fields to decompose in order to maintain soil health and recycle nutrients, with only a fraction of total acres being baled for localized, small-scale cattle bedding and winter feed. This results in an undeveloped market and a little appetite for corn stover extraction among the farming communities. This issue is further compounded by the negative reputation of the corn stover processing industry due to previously failed industrial projects.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	8
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	8
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	64
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 64 out of 100.	64

1.7 Risk Factor: Climate and Natural Risks

1.7.1 Seasonal Weather Impacts on Biomass Feedstock Supply

Rationale: Seasonal weather impacts are defined as those deriving from natural weather variations (e.g., spring thaws, rainy seasons, or dry seasons—as opposed to singular weather events like fires, droughts, or hurricanes). Seasonal weather changes can be a significant risk factor affecting feedstock availability, quality, and price.

Given the significant influence that weather has on multiple aspects of growing, harvesting, and transporting biomass, it is difficult to predict the availability of biomass at a specific location at different points in the future with a high degree of certainty. However, it is still possible, using past data and statistical models, to generate reasonable upper/lower bound estimates of biomass production in any given year in a wider supply zone. Such estimates are essential in assessing feedstock risk and enable accurate assessment of the efficacy of the Issuer's mitigation methods.

Risk Information: Seasonal weather patterns exert a profound and restrictive impact on the availability and quality of corn stover, primarily by dictating the viability of the narrow fall harvest window. Because stover collection must occur immediately following the primary grain harvest, autumn rains and muddy field conditions can severely delay or entirely prevent baling operations by making fields impassable to heavy machinery and increasing the risk of severe soil compaction. Furthermore, the harvest season faces a hard stop typically in November when the ground freezes, or early winter snowstorms arrive, creating immense timing pressures to collect the required annual volumes within an approximate 45-day period.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	8
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	48
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	48

1.7.2 Long-Term Weather and Climate Trends

Rationale: In certain BDO Zones, climatic trends and significant potential changes to future weather patterns can create feedstock risk.

Risk Information: Based on data over the past 10 years, the long-term climate trajectory for the region indicates a shift toward drier conditions (see Figure E-11) while temperatures have remained relatively constant. While prolonged drier conditions and future droughts may reduce primary corn grain yields, the physical quantity of corn stover biomass remains highly resilient because modern hybrids prioritize structural survival over reproductive output. However, an incoming biomanufacturing project would face significant feedstock quality risks, as severe moisture deficits fundamentally alter the plant's chemical composition by reducing essential structural sugars and lignin which, depending on a project's goal, may mean reduced quality of feedstock. Additionally, drier future conditions may compel farmers to leave more stover on the ground to preserve vital soil moisture and prevent wind erosion, thereby tightening the collectable supply. Furthermore, during severe dry periods, local livestock producers frequently rely on corn stover as an emergency hay replacement, which can temporarily drive-up regional feedstock prices and increase local market competition for the remaining available biomass.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	4
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	8
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 32 out of 100.	32
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 32 out of 100.	32

1.7.3 Forest/Crop Fire

Rationale: Forest/crop fires, especially when occurring on a large scale, destroy feedstock and create shortages. Fire-prone conditions are predicted to increase across North America. This could potentially result in a doubling of the amount of area burned by the end of this century compared with amounts burned in recent decades. Boreal forests, which have been historically greatly influenced by fire, will likely be especially affected by this change.

Other climate change impacts that could add damaged or dead wood to the forest fuel load (e.g., as a result of insect outbreaks, ice storms, or high winds) may increase the risk of fire activity. New research is aimed at refining these climate change estimates of fire activity and investigating adaptation strategies and options to deal with future fire

occurrences. There is growing consensus that as wildfire activity increases, fire agency suppression efforts will be increasingly strained. However, analyses of fire history suggest that the effect of climate variability on precipitation regimes is the primary reason for the decreasing fire activity.
Risk Information: Major wildfire events in croplands are uncommon in the American Midwest.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.7.4 Risk of Infestation

Rationale: Risk of future infestation, including its estimated consequences on feedstock supply, should be calculated into the overall risk profile. Since insect populations are influenced by environmental conditions, future changes in climate can be expected to significantly alter the outbreak dynamics of certain insect species. In some cases, larger and more frequent insect outbreaks may occur, but in other cases, recurring outbreaks may be disrupted or diminished.
Risk Information: Corn production in the region is not significantly affected by pest outbreaks. Infestation risk likelihood and impact are mitigated by routinized insecticide applications, crop rotations, and crop insurance. Risk remains low (and not very low) due to always present long-term susceptibility of all agricultural products to infestation.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.5 Risk of Hail

Rationale: Hail is one of the principal destroyers of agricultural crops in North America. There is much uncertainty about the effects of anthropogenic climate change on the frequency and severity of extreme weather events like hailstorms and their subsequent economic losses. Some studies indicate a strong positive relationship between hailstorm activity and hailstorm damage, as predicted by minimum temperatures using simple correlations. This relationship suggests that hailstorm damage may increase in the future if global warming leads to further temperature increases.
Risk Information: Hail does not pose a significant or systemic risk to the overall production or collection of corn stover in this specific area. This is primarily because hail events are localized; while a severe storm might batter stalks and destroy the crop canopy within a specific field or narrow storm path, it does not wipe out biomass across a multi-county Supply Zone. Additionally, this risk has been largely accounted for through the large BAM factor (Section B).

Raw Risk Likelihood (RRL)	**Score**

The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI) The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**Score** **2**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**Score** **4**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**Score** **4**

1.7.6 Risk of Flood

Rationale: Floods can cause catastrophic disruption and delay in feedstock supply. Where there is a high risk of flood and thus a negative impact on feedstock supply, the BDO Zone rating should account for this risk.

Risk Information: The Supply Zone is highly vulnerable to catastrophic riverine and flash flooding, particularly along the Mississippi River corridor, where major prevented planting claims and logistical disruptions can occur. Benchmark hydrological disasters, including the historic floods of 1993, 2008, 2019, and 2024, submerged millions of acres of prime farmland, suffocating corn root systems through prolonged soil anoxia and resulting in billions of dollars in lost agricultural production.

Seasonal or early spring flooding occurs with some regularity, particularly on low-lying "bottom ground" near the Mississippi, and in many cases, farmers are still able to plant a crop afterward with minimal long-term impact. More severe prevent plant events tend to occur on an approximate decadal cycle and are typically localized rather than uniform across the Supply Zone. As a result, while flooding presents a clear operational and logistical risk, particularly in extreme years, it is generally not considered a primary limiting factor for corn stover recovery in the region. Instead, it represents a manageable variability that must be accounted for in feedstock supply planning, storage strategies, and facility siting. The large BAM factor of 4, discussed in Section B, partially accounts for this risk as well.

Raw Risk Likelihood (RRL) The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**Score** **4**
Raw Risk Impact (RRI) The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**Score** **6**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**Score** **24**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**Score** **24**

1.7.7 Risk of Drought

Rationale: Droughts can cause significant disruptions to feedstock supplies across entire BDO Zones for extended periods of time, especially in the case of agricultural residues and energy crops.

Risk Information: While the broader Midwest region periodically experiences dry periods, drought does not pose a major or systemic risk to the commercial collection of corn stover in the target supply area. Risk is low (and not very low) because in every agricultural system some risk pertaining to drought exists.

Raw Risk Likelihood (RRL)	**Score**

The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds

Rationale: Hurricanes, tornadoes, and strong winds can destroy timber stands, crops, and feedstock piles. They can also delay agricultural operations. Hurricanes and tornadoes can indirectly cause temporary shortages of available transportation as available trucking moves to handle higher-value disaster-related contracts. For example, Katrina cleanup limited the availability of live-bottom trailers in the North and South East of the US for several months as truckers shifted operations to handle more lucrative government contracts.

Although scientists are uncertain whether climate change will lead to an increase in the number of hurricanes, warmer ocean temperatures and higher sea levels are expected to intensify their impacts. Recent analyses conclude that the strongest hurricanes occurring in some BDO Zones, including the North Atlantic, have increased in intensity over the past two to three decades.

Risk Information: While the region is shielded from coastal hurricanes, it is highly susceptible to severe thunderstorms, tornadoes, and catastrophic straight-line wind events, such as the historic August 2020 Midwest derecho that caused over $11 billion in damage and became the costliest thunderstorm disaster in U.S. history. However, crop destruction due to these events is limited to the path of thunderstorms and tornadoes, and is relatively small compared to the size of the Supply Zone. Furthermore, the risk is partially accounted for by the relatively large BAM factor, discussed in Section B.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.9 Low Temperatures

Rationale: Low temperatures can cause crop failure, leading to shortages of biomass. Additionally, low temperatures can have adverse impacts on the operations of feedstock processing equipment in Northern BDO Zones.

Risk Information: In the spring, planting into soils at or below 50°F can trigger imbibitional chilling, leading to seed mortality and poor stand establishment, as most recently seen in the prolonged cold snap of April 2018, which stalled planting progress to just 1% completion in some areas. In the fall, early frost dynamics further complicate outcomes: if a light frost kills leaf tissue but not the stalk, the plant reallocates non-structural carbohydrates from the lower stalk to

complete grain fill—helping preserve yield but weakening stalk integrity and increasing susceptibility to lodging and disease. A lethal freeze can kill immature plants entirely, causing them to collapse and create major mechanical challenges during harvest. Compounding this, operating combines in snowy or icy conditions is inefficient and prone to breakdowns, as ice interferes with moving parts, ultimately extending grain harvest timelines and compressing the already narrow stover collection window. Frost events also delay field drydown, further tightening this window and often pushing operations later into the fall, when conditions for field traffic are less favorable. Although fall temperatures have increased modestly—rising by approximately 1.6°F from 1979 to 2021 to an average of 56.2°F—this warming trend has not eliminated the risk of disruptive cold events, which continue to pose meaningful challenges to both grain and residue harvest logistics. Risk is deemed medium-high.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	**8**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	**48**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	**48**

1.8 Risk Factor: Non-Weather Based Externalities

1.8.1 Diesel Price, Oil Price, and Producer Price Index (PPI)

Rationale: CPI and PPI can impact feedstock cost of harvest and collection over time. Sensitivities to worst-case scenarios should be run.

Risk Information: The economic viability of the biomass supply chain is heavily dictated by macroeconomic indicators, which are currently experiencing extreme volatility. An analysis of regional Midwest (PADD2) diesel prices shows significant fluctuations over the last decade; average prices hit a decade-low of $1.93 per gallon in February 2016, plummeted to $2.24 per gallon during the May 2020 economic slowdown, and then surged to a peak of $5.66 per gallon by June 2022 due to global market constraints. As of March 2026, diesel prices have surged to $4.79/gal, driven by the Middle East conflict disrupting the Strait of Hormuz, a key global oil chokepoint. Furthermore, persistent inflationary pressures reflected in the producer price index (PPI) have drastically increased the baseline costs of heavy machinery, replacement parts, and agricultural fertilizers. This high-cost macroeconomic environment significantly tightens farm profit margins and elevates the minimum price that local agricultural suppliers must charge just to cover their fuel and operational expenses.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.8.2 Currency Risk

Rationale: Where feedstock is purchased in a currency different than that which a new bio-based plant will locate in a BDO Zone, currency exchange rates and volatility can constitute risk exposure. BDO Zones that cross the US-Canada border, for example, which intake feedstock from both countries, are exposed to such currency risk.

Risk Information: Not relevant.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	**NR**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	**NR**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	**NR**
Mitigation/Notching	**Notch**
Not rated.	**NR**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	**NR**

1.8.3 Border Risk

Rationale: Where feedstock is transported cross-border to another country, risk exposure to border closures and crossing delays becomes present. The availability of trucks willing to do cross-border runs is limited, which can decrease supply chain flexibility and resilience. Plants near the US-Canada border, which intake feedstock from both countries, are exposed to these risks.

Risk Information: Not relevant.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	**NR**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	**NR**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	**NR**
Mitigation/Notching	**Notch**
Not rated.	**NR**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	**NR**

1.9 Risk Factor: Political and Social

1.9.1 Government Subsidies for Biomass Feedstock Production or Utilization

Rationale: Feedstock that is directly subsidized through government programs can pose greater long-term risk than feedstock that is not. Subsidies may be subject to amendment or repeal, sometimes with minimal notice.

NOTE: This risk indicator refers to direct feedstock subsidies only; it does not apply to government subsidies that pertain indirectly to the Issuer's operations, such as Loan Guarantees, or to the markets for products produced by the Issuer.

Risk Information: Within the Supply Zone, there are currently no major direct government subsidies specifically dedicated to the production, harvesting, or collection of corn stover biomass feedstock. While the broader bioeconomy relies heavily on government incentives that pertain indirectly to a facility's operations or end-product markets—such as federal clean fuel production tax credits, the Renewable Fuel Standard, or state-level renewable fuels development

grants—and farmers receive general agricultural supports for the primary corn grain crop, the physical collection and sale of the secondary stover residue operates independently of direct feedstock subsidies.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.9.2 Local, Provincial, and National Laws, Regulations, and Permitting Pertaining to Biomass Feedstock

Rationale: Feedstock whose production is directly dependent on local, provincial, or national laws or government regulations can pose greater long-term risk than feedstock which is not, since laws and regulations may be subject to amendment or repeal.

If biomass utilization requires specific permits (e.g., percentage removal of corn stover, air emission, storage permits, rights-of-way, overweight permits for trucks, cross-border permitting for shipment of biomass, chain of custody, or certification of sustainability), the likelihood of obtaining such permits and/or complying with permitting requirements should be examined.

Risk Information: While the tri-state Supply Zone generally features a highly favorable and "agri-ready" business climate for agricultural operations, there are specific federal and state regulatory hurdles that directly govern biomass feedstock procurement. The most significant dependency involves private farmlands enrolled in federal conservation programs; farmers receiving cost-share funding through government entities are strictly prohibited by written contract from removing biomass from funded plots, such as terraces or grass waterways, without first formally amending their conservation plans. Additionally, conservation regulations mandate that a minimum of 35% ground cover must remain on highly erodible lands to prevent topsoil loss, effectively capping the legal volume of stover that can be harvested per acre. Nonetheless, all these factors have been accounted for in this assessment and the rated quantities discussed here are not subjected to this risk.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.9.3 Backlash Against Biomass Feedstock Development, Procurement, or Usage in the BDO Zone

Rationale: Public backlash against biomass development in the Issuer BDO Zone can directly impact the Issuer's ability to procure, transport, trans-load, store, or utilize feedstock by affecting local policies, regulations, and the Issuer's ability to obtain necessary permitting.

Risk Information: No public backlash against using corn stover is anticipated.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.9.4 Consent of, and Cooperation with, Indigenous Communities

Rationale: Where new project development on or near Indigenous land, or where near Indigenous communities exert influence over feedstock producing areas, consent of, and cooperation with, Indigenous communities decrease Issuer risk.

Risk Information: Not Relevant.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	**NR**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	**NR**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	**NR**
Mitigation/Notching	**Notch**
Not relevant.	**NR**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	**NR**

1.9.5 Food Security Concerns

Rationale: Despite the fact that any significant correlation between food prices and biofuel production is unclear, claims that biofuel production has driven up food prices, taken food from communities or had a negative impact on land use can fuel public backlash. For example, the removal of biomass may raise public concerns relating to food security if Issuer feedstock requires the use of land that would otherwise be used for growing food.

Risk Information: Corn stover is a by-product of corn production and does not compete with food. A small portion is used mostly in animal bedding.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**

Mitigation/Notching	Notch
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.10 Risk Factor: Sustainability and Environmental Concern

1.10.1 Biomass Feedstock Sustainability

Rationale: Public concerns about the sustainability of feedstock production can jeopardize biomass feedstock operations. Sustainability certification schemes should be utilized where applicable to ensure that feedstock comes from sustainable sources.

Risk Information: The sustainable harvesting of corn stover requires strict adherence to agricultural best practices and conservation regulations to prevent long-term soil degradation and habitat loss. Feedstock sustainability is heavily governed by federal and state regulations, particularly through the Natural Resources Conservation Service (NRCS), which requires farmers operating on highly erodible land to maintain at least 35% ground cover and adhere to strict, individualized conservation plans. To ensure that biomass collection does not compromise ecological health, the primary best management practices for sustainable stover procurement in the region emphasize harvesting a maximum of 50% of the available crop residue, utilizing no-till or reduced-tillage farming methods, planting winter cover crops to anchor the topsoil, and actively replacing the critical phosphorus and potassium nutrients that are removed alongside the stover. These practices are generally followed and therefore risk related to biomass feedstock sustainability is deemed very low.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.10.2 Risk to Soil Quality

Rationale: Soil sustainability can be defined as the management of soil in a way that does not exert any negative or irreparable effects either on the soil itself or any other systems. There is a diversity of approaches to soil sustainability in jurisdictional guidelines for biomass harvesting and production. For different feedstock types, there are also different thresholds at which feedstock removal causes significant negative consequences on the soil.

Poor soil quality that negatively impacts the long-term sustainability of the feedstock can entail long-term feedstock risk. Sub-optimal soil management can leave exposed soil post residue-harvest, which can lead to soil wash-off and soil carbon loss from precipitation and wind. Over-harvesting of biomass also depletes the carbon stock in the soil and creates a negative feedback loop that can degrade the soil and its nutrients.

Risk Information: Harvesting corn stover reduces soil organic carbon and vital nutrients, which increases the risk of soil crusting, reduced water infiltration, and accelerated erosion. Highly erodible lands with significant slopes—such as those prevalent in western Illinois and northern Missouri—are exceptionally vulnerable to these impacts, as they already experience substantial baseline soil loss if cover crops are not used. Agronomic research emphasizes that

maintaining soil organic carbon is the strictest limiting factor for sustainable harvesting, generally capping safe stover removal at a maximum of 50%. To prevent long-term soil degradation on these vulnerable sites, suppliers must adhere to partial-removal limits and implement conservation practices like planting winter cover crops and utilizing reduced or vertical tillage. These practices are generally followed in the region. Some risk remains with regards to soil management due to increased demand for stover and potential impacts of additional machinery, such as balers and stackers.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**24**

1.10.3 Risk to Surface and Groundwater

Rationale: Excessive nutrient runoff from biomass feedstock production can accumulate in surface waters and result in algal blooms and hypoxia, which can lead to habitat loss for aquatic species higher up the food chain and alter aquatic ecosystem food webs. Damage to aquatic ecosystems can cause social and regulatory backlash. Water intake issues can also increase risk.

Risk Information: The widespread removal of corn stover poses an indirect but notable risk to surface and groundwater quality, as diminished ground cover can significantly increase agricultural runoff, subsequently carrying loose sediment and applied nitrogen fertilizers into local watersheds. This nutrient runoff is a critical environmental concern because the tri-state agricultural corridor is a major contributor to the severe hypoxic "dead zone" in the Gulf of Mexico, prompting aggressive state-level initiatives aimed at reducing phosphorus and nitrogen loads by 45% across local water systems.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**24**

1.10.4 Water Use

Rationale: Biomass feedstock operations can have significant impacts on the hydrological flux (infiltration, groundwater recharge, interception, and transpiration) of ecosystems. This can lead to water shortages, lower yields, and backlash from regulatory bodies if management plans are not properly instituted.

Risk Information: Not relevant to corn stover production.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	**NR**

Raw Risk Impact (RRI)	Score
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	NR
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	NR
Mitigation/Notching	**Notch**
Not relevant.	NR
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	NR

1.10.5 Pesticide Risk to Human and Ecosystem Health

Rationale: Application of pesticides (i.e., herbicides, fungicides, and insecticides) on agricultural landscapes can result in adverse health effects for humans and ecosystems. If pesticide application is required in feedstock production, the impact must be considered in the BDO Zone rating.

Risk Information: Corn stover production does not lead to increases in pesticide application. Therefore, the risk is low.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.10.6 Risk to Wildlife and Landscape

Rationale: Biomass production and supply chain operations with negative impacts on wildlife and landscape are at a greater long-term risk of encountering project setbacks and disruptions.

Risk Information: The harvesting of corn stover poses minimal risk to local wildlife and landscape aesthetics because operations are strictly confined to existing, heavily cultivated agricultural fields rather than undisturbed natural habitats.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

CATEGORY 2.0: INFRASTRUCTURE RISKS

2.1 Risk Factor: Physical Infrastructure

2.1.1 Land Parcel/Industrial District

Risk Information: The Fort Madison Industrial Site comprises approximately 128 total acres, with 116 acres considered developable. The site is situated in a rural area characterized by cultivated fields and is generally flat. The property is composed of four lots bounded by 270th Street to the south and railroad tracks to the east. Currently, the site is located in unincorporated Lee County and is not subject to zoning; however, development requires annexation into the City of Fort Madison, where it would likely be zoned I-2 (General Industrial) following an initial R-1 designation. The property is available for $12,000 per acre. Geotechnical investigations indicate the site class is closest to D or E, and some removal of existing structures (silo, foundations) and debris is required prior to construction, estimated at $492,250. The large developable acreage, flat topography, affordable pricing, and proximity to major transportation infrastructure make this an attractive industrial site, though the annexation requirement and site preparation costs introduce moderate procedural and financial considerations.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.1.2 Ownership of Land

Risk Information: The property is privately owned by B & H Warehousing, Inc. and is available for purchase. As the site is currently in unincorporated Lee County with no municipal zoning, a buyer seeking city infrastructure services (water, sewer, electric) would need to pursue voluntary annexation into the City of Fort Madison. The annexation and zoning certification process is estimated to take 90–100 days to complete, including appropriate council meetings and public hearings. While the private ownership and availability for purchase are straightforward, the annexation requirement adds a procedural step that extends the typical acquisition timeline. The risk is assessed as low given the owner's willingness to sell and the defined, manageable timeline for annexation.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.1.3 Permitting Description

Risk Information: The site is currently located outside the municipal limits of Fort Madison. Development will require voluntary annexation into the city, a process described as "very timely" under Iowa state code. Upon annexation, the land is automatically zoned R-1 and must be rezoned to I-2 General Industrial. Rezoning and permitting processes take approximately 90-100 days. While the requirement for annexation and rezoning adds a procedural step compared to sites already within municipal boundaries, the defined timeline and demonstrated support from the City of Fort Madison position permitting as a low-risk factor.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.1.4 Environmental Issues

Risk Information: Environmental risk for the site is considered very low. A Phase I Environmental Site Assessment (ESA) update completed in 2020 found no recognized environmental conditions (RECs). A Phase II ESA was also conducted on a portion of the property that was formerly used as a gun range, and results showed no signs of lead contamination from the shells. The developable acreage is located in FEMA Flood Zone X, outside both the 100-year and 500-year floodplains. An Approved Jurisdictional Determination by the U.S. Army Corps of Engineers confirmed there are no jurisdictional wetlands or streams on the site. Threatened and endangered species studies concluded that no critical habitats for federally listed species (such as the Indiana Bat) are present. Additionally, an architectural and archaeological survey determined that no historic properties eligible for the National Register of Historic Places would be affected by development. The comprehensive environmental due diligence already completed—including Phase I and Phase II ESAs, flood zone verification, wetlands determination, species surveys, and cultural resources assessment—leaves virtually no outstanding environmental risk.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.2 Risk Factor: Utilities

2.2.1 Natural Gas Availability

Risk Information: Natural gas service is provided by MidAmerican Energy (distribution) and ANR (transmission). A 6-inch, 70 psig distribution line is located at the northeast corner of the property, with an available capacity of 15,000+

mcf per month. Additionally, a 10-inch natural gas pipeline runs along the same corridor as the 6-inch line, and a 2-inch main is available through Liberty Utilities. The proximity of existing high-capacity gas infrastructure, combined with multiple distribution options presents a very low risk for industrial natural gas needs. The 15,000+ mcf/month available capacity is substantial and would support energy-intensive industrial operations.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.2.2 Electric Availability

Risk Information: Electric service is provided by Alliant Energy (distribution) and ITC Midwest (transmission). A 13.2 kV three-phase distribution line is adjacent to the northeast corner of the property, and a 64.5 kV transmission line runs along U.S. Highway 61 just east of the site. The Devils Creek Substation is located less than two miles north. A capacity of 2.5 MW can be provided within six months by extending infrastructure into the site. The provider has indicated that construction costs could potentially be offset by revenue credits based on expected usage. The combination of existing three-phase distribution, nearby transmission infrastructure, a proximate substation, and a clear pathway to 2.5 MW capacity within six months—with potential cost offsets—positions electric availability as a low-risk factor. While the power is not yet on-site, the short timeline and provider commitment reduce the risk significantly.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.2.3 Water Availability

Risk Information: Water service is provided by the City of Fort Madison. A 10-inch water main is located approximately 600 feet east of the site on Henry Ladyn Drive. The system has a total and excess capacity of one million gallons per day (MGD) in the line, and the Fort Madison Waterworks plant, located 1 mile from the site, has a total permitted capacity of 5 million gallons/day with an excess capacity of 1.5 MGD when factoring in peak utilization of 3.5 million gallons/day. Extending the water line to the northern boundary of the site is estimated to cost $75,000 and take six months. The substantial excess treatment capacity (1.5 MGD), the proximity of the water main (600 feet), the low extension cost ($75,000), and the short timeline (six months) categorize water availability as a very low risk factor for industrial development.

Raw Risk Likelihood (RRL)	**Score**

The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.2.4 Drainage, Stormwater Management, and Sewage

Risk Information: Wastewater service is provided by the City of Fort Madison. An 8-inch sewer main is located approximately 1,200 feet east of the site, supported by a lift station with 150,000 gallons per day (GPD) of excess capacity. The Fort Madison Treatment Plant is located 2 miles from the site, with a total permitted capacity of 9 million gallons/day and an excess capacity of 2 million gallons/day when factoring in peak utilization of 7 million gallons/day. Extending the sewer main to the property is estimated to cost $150,000 and take six months. The site is not within a floodplain and contains no wetlands, facilitating standard stormwater management solutions. The substantial excess wastewater treatment capacity (2 MGD), defined extension costs, and absence of flood or wetland constraints position drainage and sewage as a very low risk factor.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.2.5 Waste Disposal

Risk Information: Solid waste disposal for Lee County is managed by the Great River Regional Waste Authority (GRRWA). The GRRWA Landfill is located approximately 7 miles west of the site near Fort Madison. This facility accepts municipal solid waste and industrial waste, ensuring local capacity for disposal needs. The proximity of the landfill, its acceptance of both municipal and industrial waste, and the established regional waste management authority provide adequate and convenient waste disposal services. The risk is assessed as very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**

The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.2.6 Information and Communication Technology (ICT) Services

Risk Information: Telecommunications services, including fiber optics, are provided by Danville Mutual Telephone Company (dba iConnectYou). Fiber infrastructure runs along Highway 61, east of the site. Extending the fiber line approximately 1,500 feet to the site is estimated to cost $7,500 or less and take approximately 90 days, plus additional time for railroad permitting to cross the BNSF tracks. The availability of fiber optic service within close proximity, the very low extension cost ($7,500), and the short timeline (approximately 90 days) ensure that high-speed industrial-grade connectivity is readily achievable. The risk is assessed as very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.3 Risk Factor: Transportation/Logistics

2.3.1 Road/Highway Access

Risk Information: The site is accessible via 270th Street, Henry Ladyn Drive, and 245th Avenue. U.S. Highway 61, a four-lane highway, is located approximately 500 feet east of the site, though access requires crossing the BNSF rail line. The site is approximately 48 miles from Interstate 172. Currently, 270th Street is unpaved and would require an upgrade to tractor-trailer standards (asphalt or concrete), with a conceptual cost estimate of approximately $1.2 million. While proximity to a four-lane highway is a significant strength, the need for immediate road paving upgrades and the rail crossing requirement to access Highway 61 present moderate infrastructure considerations. The combination of the unpaved access road, the $1.2 million improvement cost, and the rail crossing logistics elevate this indicator to a medium risk level.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.3.2 Rail Access

Risk Information: The site is bordered to the east by a BNSF Railway line and the property is BNSF rail certified. However, the property is not currently marketed as rail-served, and there is no existing rail spur connecting the site to the mainline. The rail line also acts as a physical barrier that must be crossed to access U.S. Highway 61 to the east. While

the BNSF certification confirms the site meets railway standards for potential rail service development, the absence of an existing spur and the logistical challenge of the at-grade crossing define this as a moderate risk for rail-dependent operations. Constructing a rail spur would require negotiation with BNSF and capital investment, adding both cost and timeline to the development process.	
Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.3.3 Airport Access

Risk Information: Commercial air service is available at the Southeast Iowa Regional Airport (BRL) in Burlington, located approximately 25 miles north of the site. This airport provides commercial connections, typically to hubs such as St. Louis or Chicago. Municipal airports are available in Fort Madison (approximately 11 miles) and Keokuk (approximately 9 miles) for general aviation, air cargo deliveries, and shipments, though these facilities have limited capacity. For larger commercial flights, the Eastern Iowa Airport in Cedar Rapids is available at a greater distance. The 25-mile proximity to a commercial airport with regional hub connections, supplemented by nearby municipal airports for general aviation needs, positions airport access as a very low risk factor.	
Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.3.4 Water Freight Access

Risk Information: The site is located less than one mile from the Mississippi River, a major inland waterway freight corridor. There are existing barge terminals with loading and off-loading capabilities in Fort Madison (Hall Towing, approximately 9 miles) and Keokuk (Hendricks Logistics, approximately 10 miles). Access to Mississippi River barge freight is a significant transportation asset for bulk commodity movement, providing cost-effective alternatives to rail and truck for high-volume shipments. While the site itself is not directly on the waterfront, the proximity of multiple barge terminals within 10 miles provides practical water freight access. This indicator is assessed as very low risk.	
Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**

Gross Risk Indicator (GRI)	Score
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

2.4 Risk Factor: Social Infrastructure

2.4.1 Healthcare (Local)

Risk Information: Healthcare services are provided by the Southeast Iowa Regional Medical Center (SEIRMC), which operates a campus in Fort Madison (formerly Fort Madison Community Hospital), located approximately 5 miles from the site. This facility provides emergency care, surgical services, and outpatient clinics. Higher-level trauma care is available at the SEIRMC Burlington campus (approximately 20 miles north) and the University of Iowa Hospitals and Clinics in Iowa City (approximately 85 miles). The 5-mile proximity to a full-service medical center with emergency and surgical capabilities, combined with access to regional and tertiary care within reasonable distances, positions healthcare as a very low risk factor.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

2.4.2 Education (Schools)

Risk Information: The Fort Madison area is served by multiple educational options. Iowa's open enrollment policy allows students residing in one school district to attend any other district, providing flexibility and choice. The site is situated between three public school districts offering pre-K through 12th grade education, plus a private/Catholic school option. Post-secondary and continuing education is available through Southeastern Community College (SCC), which serves the region with associate degree programs, vocational training, and customized workforce development programs. SCC's proximity ensures accessible higher education and skills training for the local workforce. The combination of multiple K-12 options under Iowa's open enrollment system and a local community college positions education as a very low risk factor.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**

The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.4.3 Local Transportation

Risk Information: The primary mode of transportation in the Fort Madison area is personal vehicle travel. Employed workers in the Fort Madison area currently commute an average of 15 miles one-way, taking approximately 18 minutes. Limited public transit is available through income-based demand-response services operating 12–16 seat buses, but these are not a primary commuting mode. The moderate commute distances and reliance on personal vehicles result in a low-to-moderate risk assessment for local transportation.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**24**

2.4.4 Public Safety (Local)

Risk Information: Public safety for the Fort Madison Industrial Site is supported by multiple overlapping service providers. The site would be served by a township fire department, and there are numerous mutual aid agreements between surrounding communities including Fort Madison, Montrose, Denmark, and others, providing robust fire and emergency response coverage. The Fort Madison Police Department provides law enforcement within city limits, while the Lee County Sheriff's Office serves unincorporated areas. Upon annexation into the City of Fort Madison, the site would fall under the city's police jurisdiction. Lee County's crime rates are generally consistent with Iowa averages. The multiple overlapping fire and EMS service agreements and established law enforcement coverage position public safety as a low risk factor.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustments.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.4.5 Housing/Cost of Living

Risk Information: The BDO Zone lies within eight counties, but largely resides in Lee County, IA (42% of the BDO Zone), Hancock County, IL (31%), and Des Moines County, IA (13%). Lee County's cost of living score is approximately 27.9% lower than the national average, and 10% lower than the state average. Hancock County's cost of living score is approximately 26.8% lower than the national average and 21.9% lower than the state average. Des Moines County's cost of living score is 13.4% lower than the national average, and 8.1% higher than the state average. As of 2023, the

median property value for the three most significant counties in the BDO Zone is $130,566.67 and median gross rent is $840.33/month. The extremely affordable housing market and low cost of living create a highly attractive environment for workforce recruitment and retention, particularly for trade and manufacturing workers. This risk indicator is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.5 Risk Factor: Labor

2.5.1 Workforce

Risk Information: In 2025, the BDO Zone had an estimated population of 87,463 people, with an average unemployment rate of 3.9% in September 2025, compared to the national average of 4.1%. In 2023, a Fort Madison laborshed study found that the Fort Madison laborshed area has an estimated working-age population (ages 18–64) of 68,578, with an estimated 19,975 individuals likely to accept employment in Fort Madison. Of the laborshed population, 76.3% are employed, 14.3% are self-identified unemployed, 3.0% are homemakers, and 6.4% are retired. Among the employed population (76.3%), 32.7% are likely to change their current employment, equating to approximately 17,184 individuals. Among the unemployed (14.3%), 75.9% are likely to accept employment (approximately 1,285 individuals). Among those likely to change employment, 77.2% have education beyond high school, and 41.4% are in production, construction, and material moving occupations. The large available labor pool, strong manufacturing workforce base, and alignment of existing skills with biofuel industry needs position the workforce as a very low risk factor.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.5.2 Labor Costs

Risk Information: The BDO Zone lies within three states; Iowa, Illinois, and Missouri. As of 2026, Iowa's minimum wage is $7.25/hour, mirroring the federal minimum wage and remaining unchanged for many years. Conversely, the minimum wage in Illinois and Missouri is $15/hour. There are eight counties that overlap with the BDO Zone, however the most significant are Lee County, IA (42% of the area), Hancock County, IL (31%), and Des Moines County, IA (13%). Lee County's average weekly wage for Q3 2025 was $1,112, Hancock County $963, and Des Moines $1,020, compared to the national average of $1,459. In 2024, the median household income in Lee County was $62,382, in Hancock County

$65,865, and in Des Moines County $62,928. The Fort Madison laborshed survey found that current median wages for individuals likely to change their employment to an opportunity in Fort Madison is $20/hour, with $25/hour attracting 66-75% of this population. From an employer standpoint, the competitive wage rates—below both state and national averages—combined with the federal minimum wage floor and a well-defined labor market pricing structure make Lee County attractive for labor-cost-sensitive industries. The risk is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

SECTION E: TABLES AND FIGURES

Figure E-1. Historical number of farms by size category (2002-22)[31]

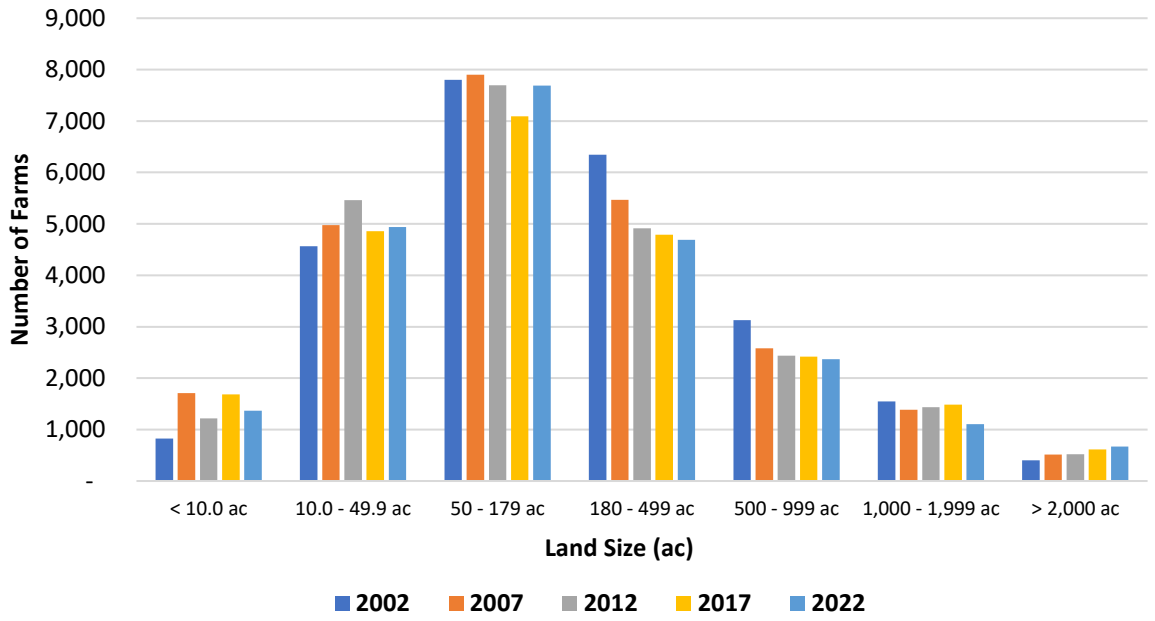
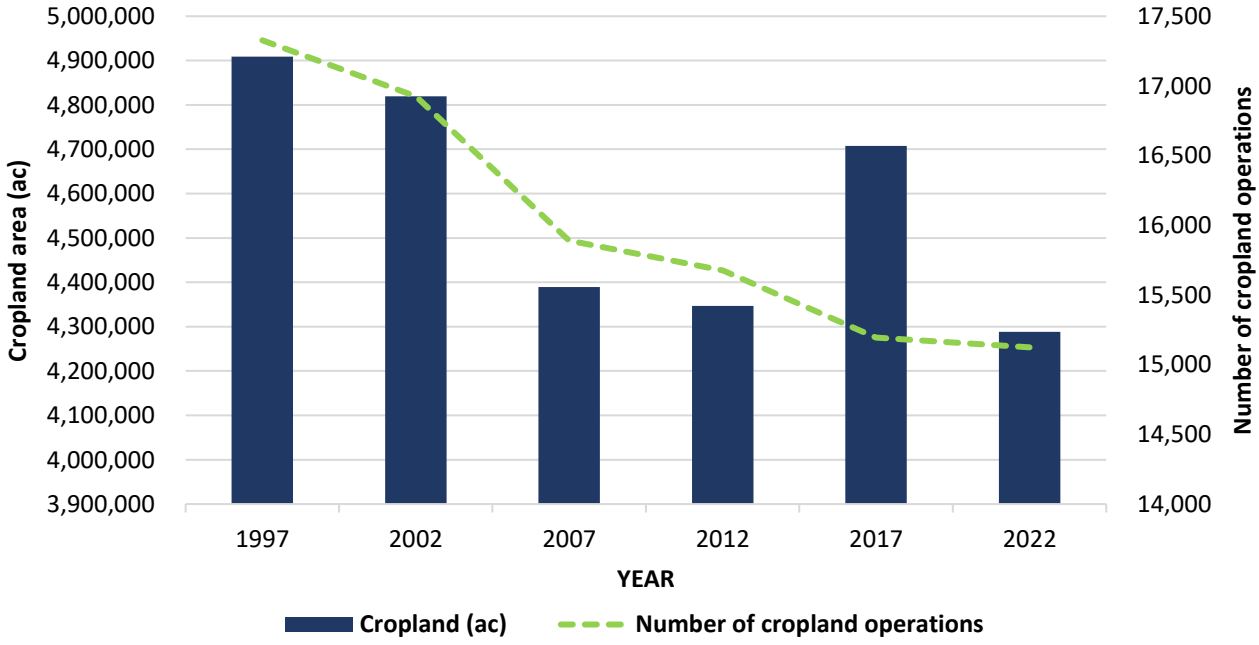


Figure E-2. Historical cropland (ac) and number of farm/cropland operations (1997-2022)[32]



[31] quickstats.nass.usda.gov
[32] Ibid.

Figure E-3. Historical Hay Prices (per bdt, excl. alfalfa, 2015-2025)

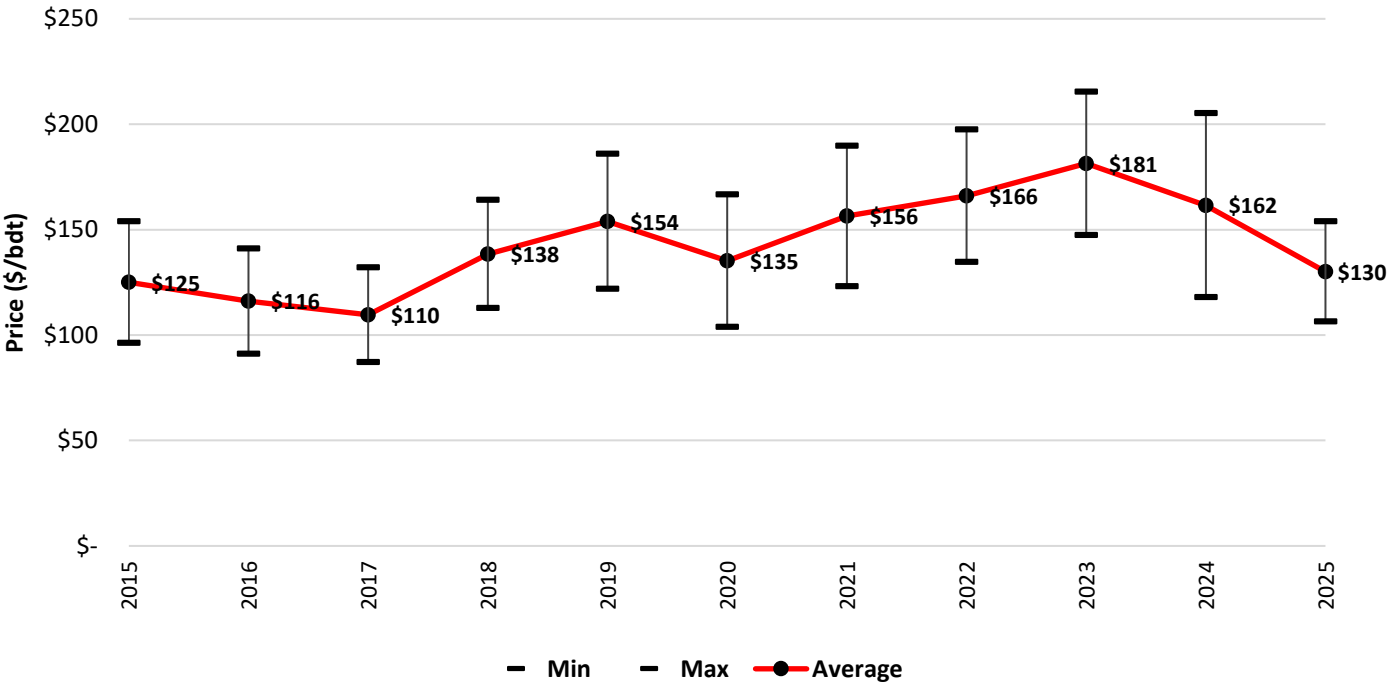


Figure E-4. Historical Hay Prices (per bale, excl. alfalfa, 2015-2025)

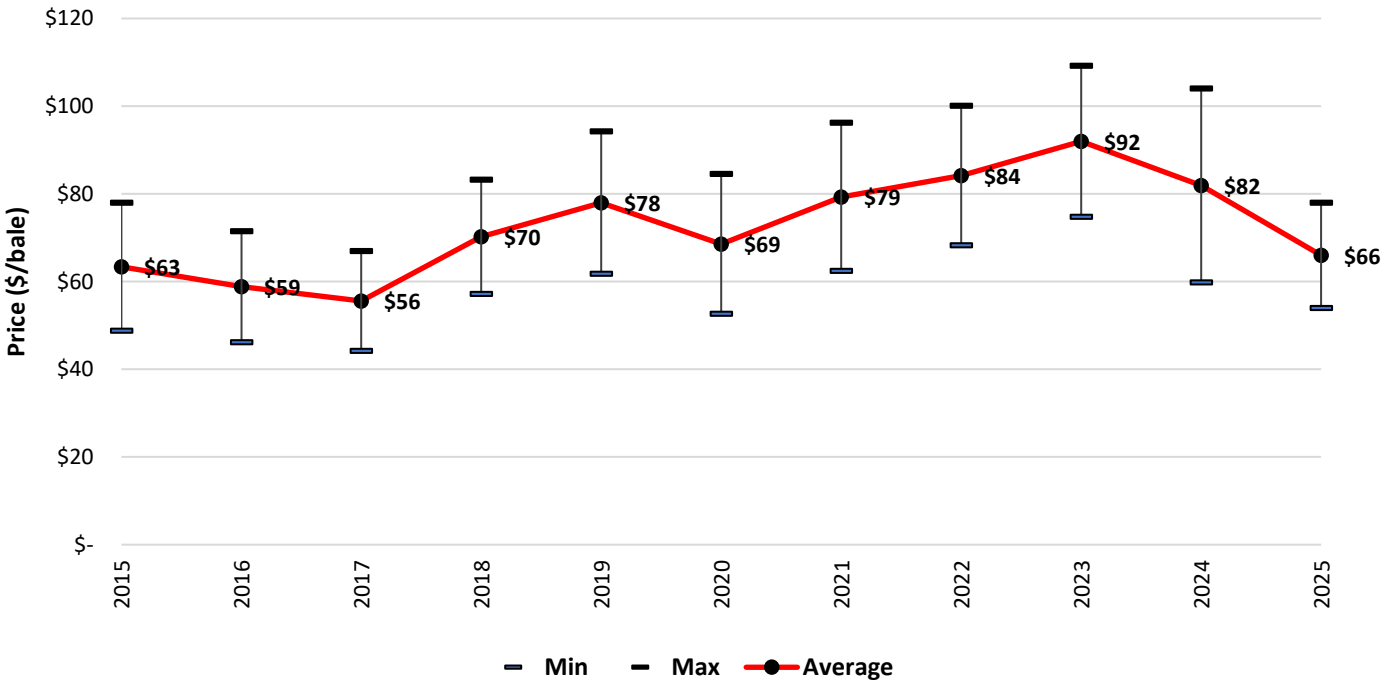


Figure E-5. Supply/Marginal Cost Curve and Rated Quantity of Corn Stover Generated in the Supply Zone

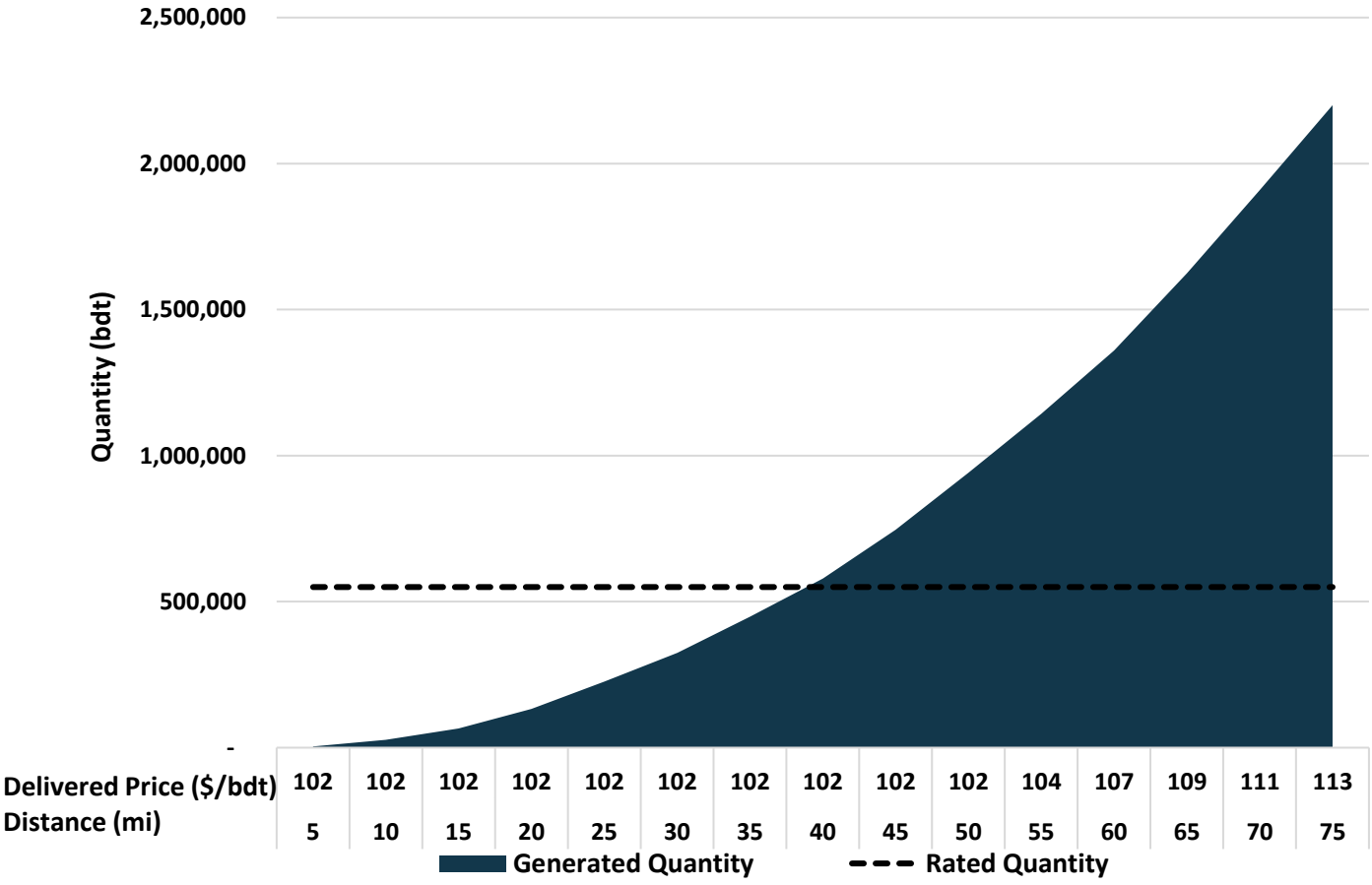


Figure E-6. Historical Average Annual Corn Grain Prices ($/bu) in Illinois, Iowa, and Missouri (2015-2025)

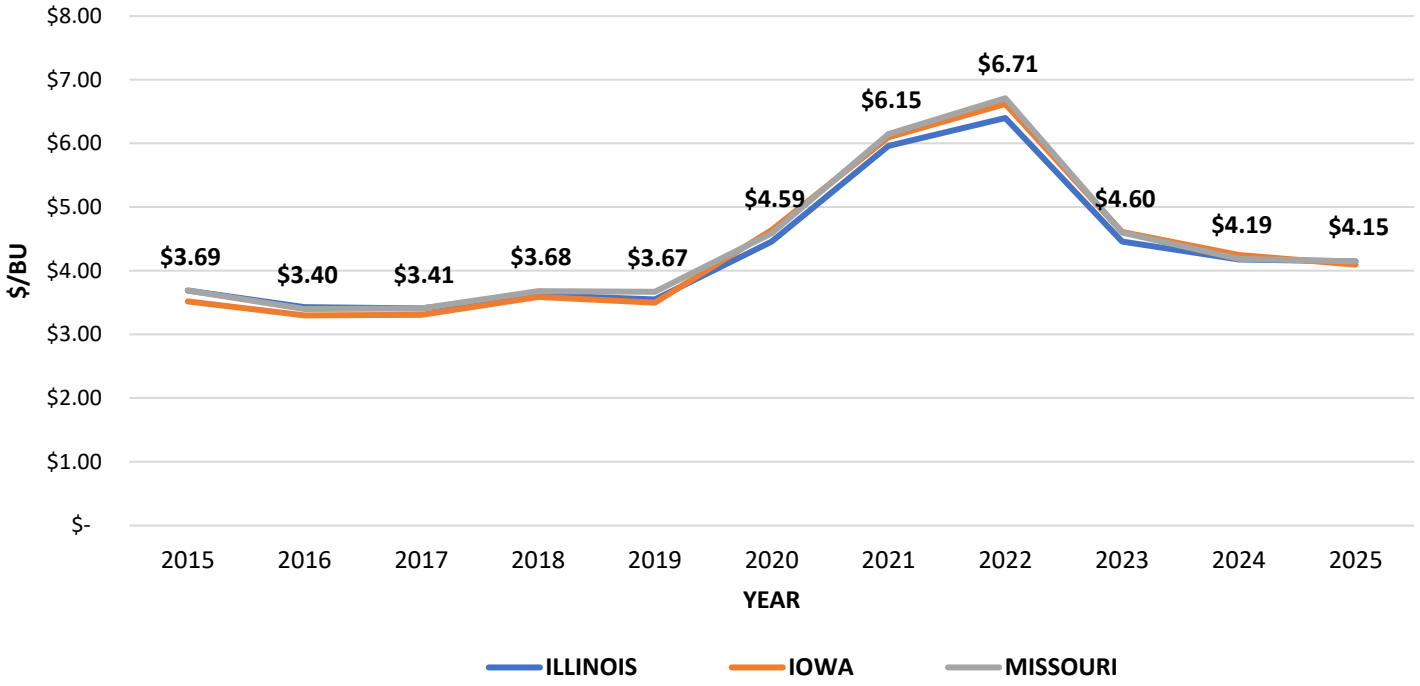
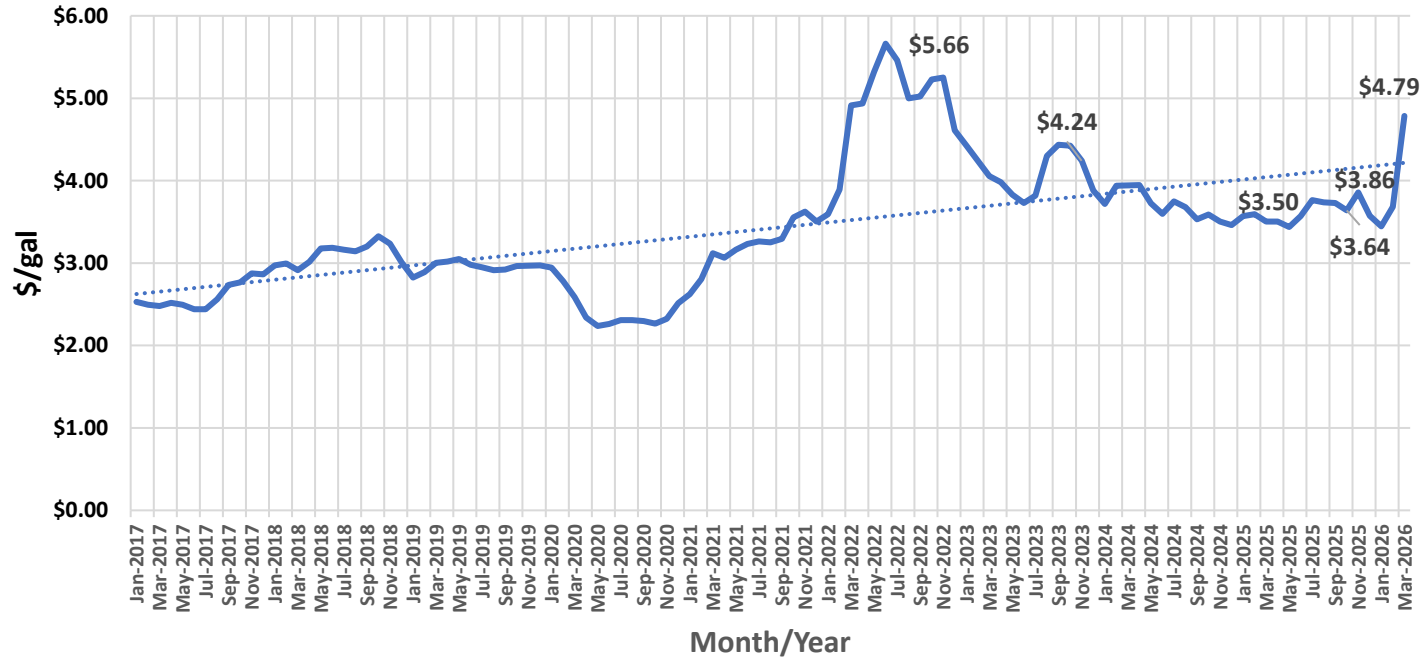
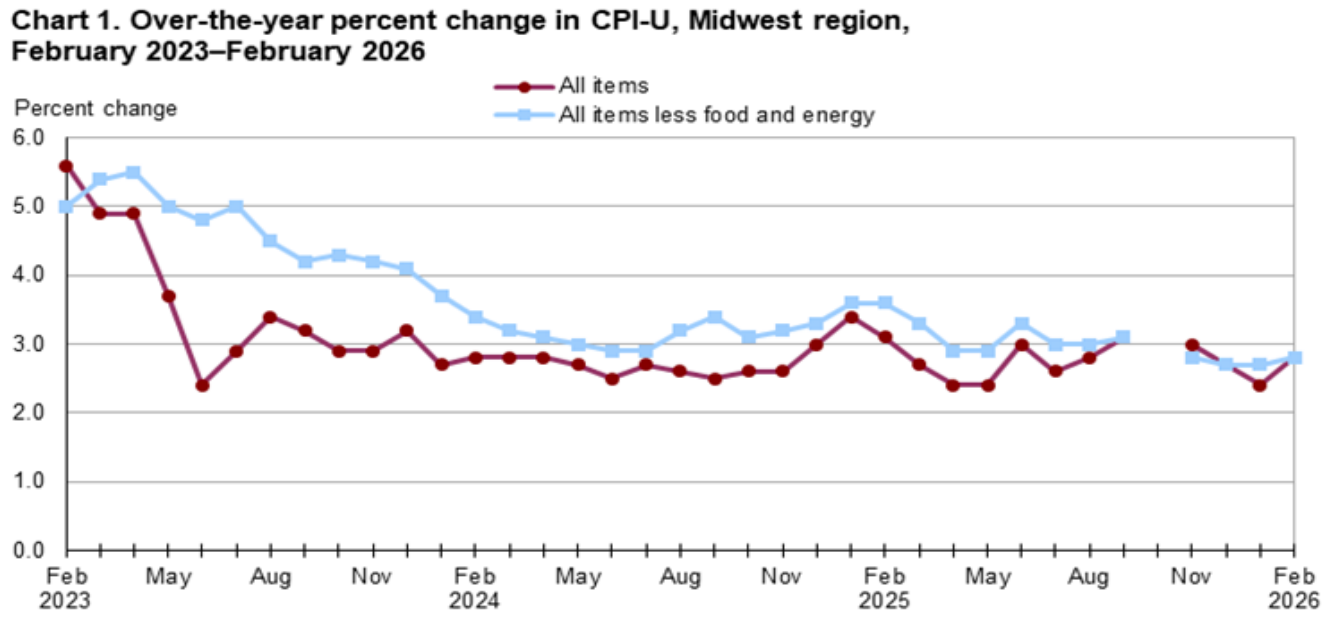


Figure E-7. Historical Average Monthly Diesel Prices for US Midwest (2017-2026)[33]



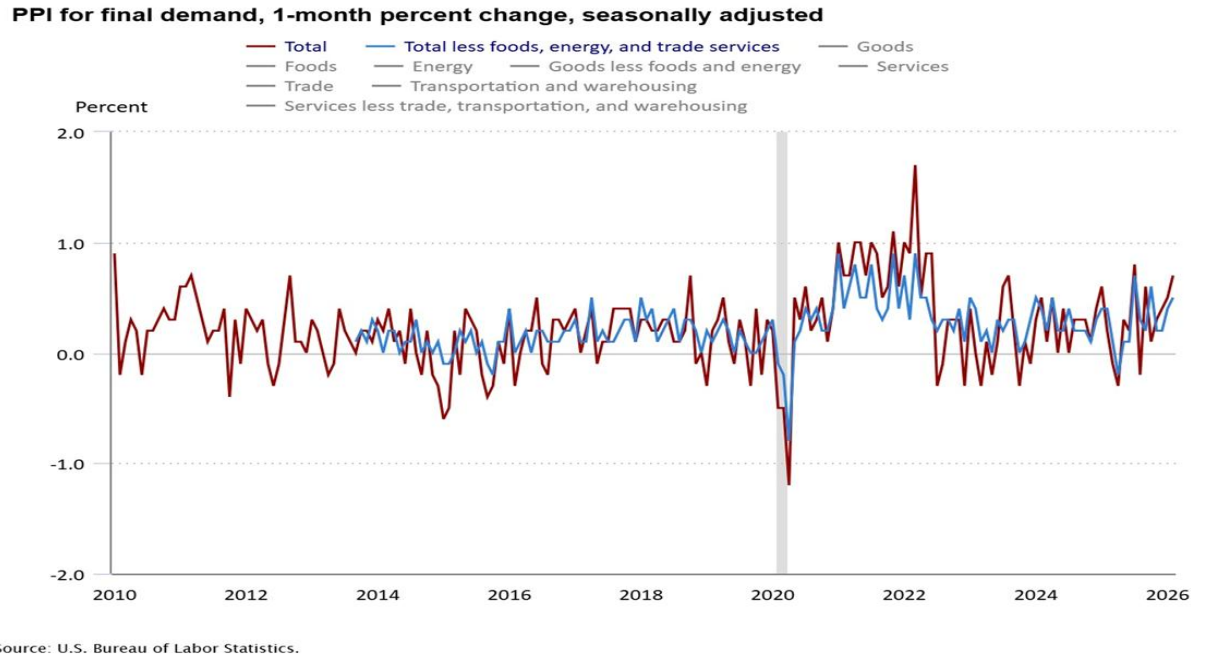
[33] www.eia.gov/dnav/pet/pet_pri_gnd_dcus_r20_m.htm

Figure E-8. Consumer Price Index - US Midwest Region (2022-26)[34]



Note: The October 2025 data values are not available due to the 2025 lapse in appropriations.
Source: U.S. Bureau of Labor Statistics.

Figure E-9. Product Price Index - US Midwest Region (2010-26)[35]



Source: U.S. Bureau of Labor Statistics.

[34] www.bls.gov/regions/mountain-plains/news-release/consumerpriceindex_midwest.htm
[35] www.bls.gov/charts/producer-price-index/final-demand-1-month-percent-change.htm#

Figure E-10. Historical Average Monthly Maximum and Minimum Temperatures (Burlington, IA Area)[36]

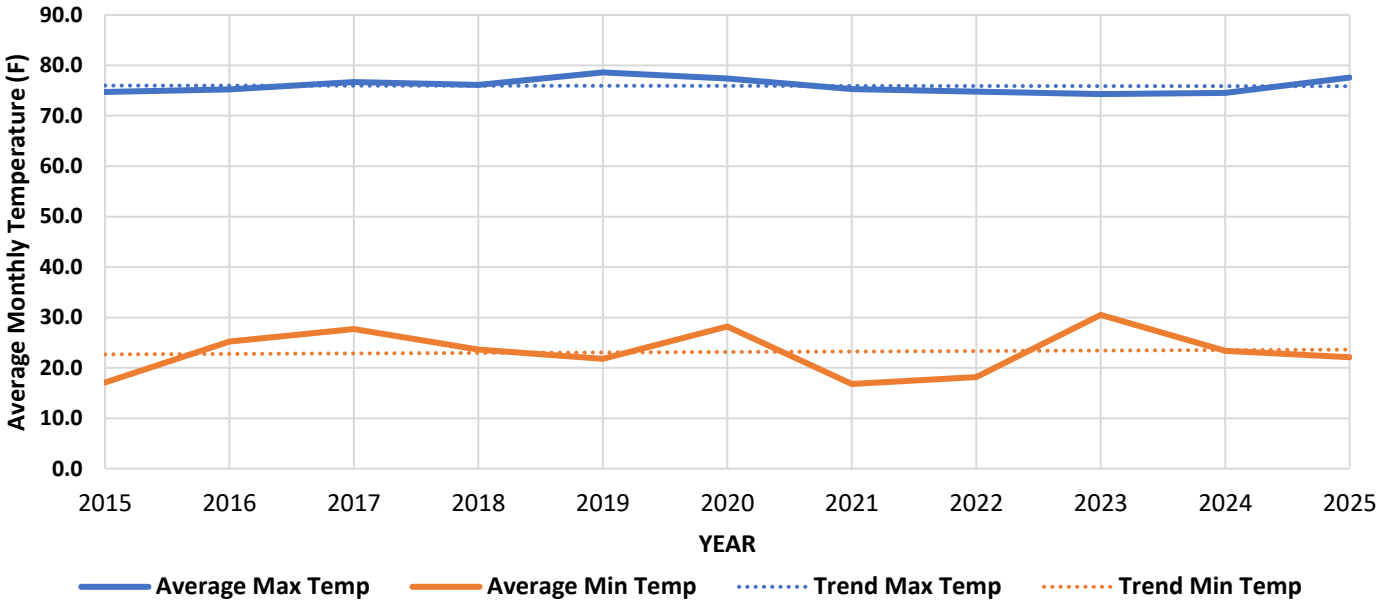
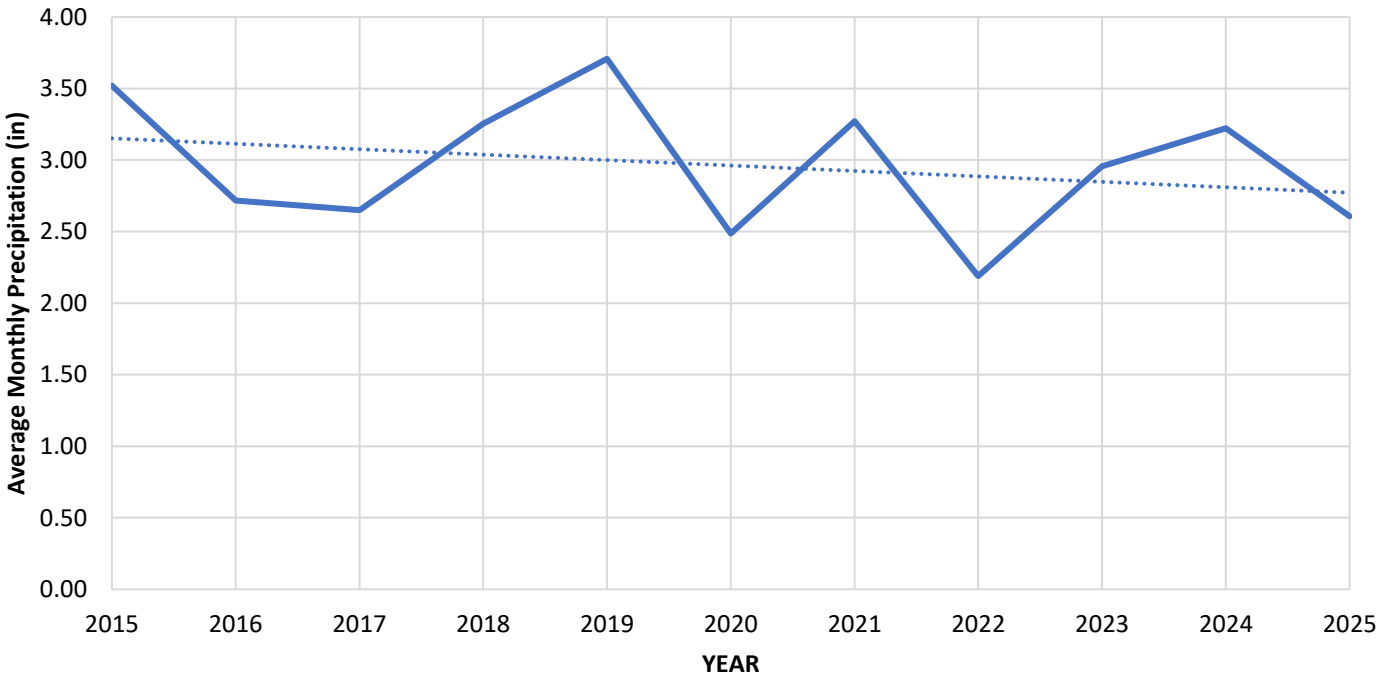


Figure E-11. Historical Average Monthly Precipitation (Burlington, IA Area)[37]



[36] www.weather.gov/wrh/Climate?wfo=dvn
[37] Ibid.

SECTION F: LEGAL DISCLAIMER

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