MOORE COUNTY, NC

Biofuel Development Opportunity Zone

RATING GRADE: 'A'

Date of Issue: August 26, 2026

A
High Quality

Rating Parameters:

Category	Rated Quantity	Delivered Price	Supply Zone Size
Pulpwood	**625,000 bdt/yr**	**$60-$70/bdt**	**75-mi drive distance**
Forest Residues	**200,000 bdt/yr**	**$60-$80/bdt**	**from Robbins, NC**
Sawmill Residues	**100,000 bdt/yr**	**$55-$75/bdt**	

BDO ZONE ASSETS

- Large rated biomass quantities across pulpwood, forest residues, and sawmill residues.
- Sustainable timber resource, with annual growth exceeding removals.
- Strong pulpwood base supported by loblolly pine plantations, conventional harvesting, and improved thinning operations.
- Private land ownership supporting stable and efficient procurement channels.

BDO ZONE LIABILITIES

- Scale-up capacity needed as the rated quantities require additional crews, trucks, grinders, and chip vans.
- Limited forest residue recovery due to insufficient grinding capacity.
- Haul-distance sensitivity requiring a practical 50-mile procurement drive distance.
- Uncertain sawmill residue availability due to decreasing lumber capacity.

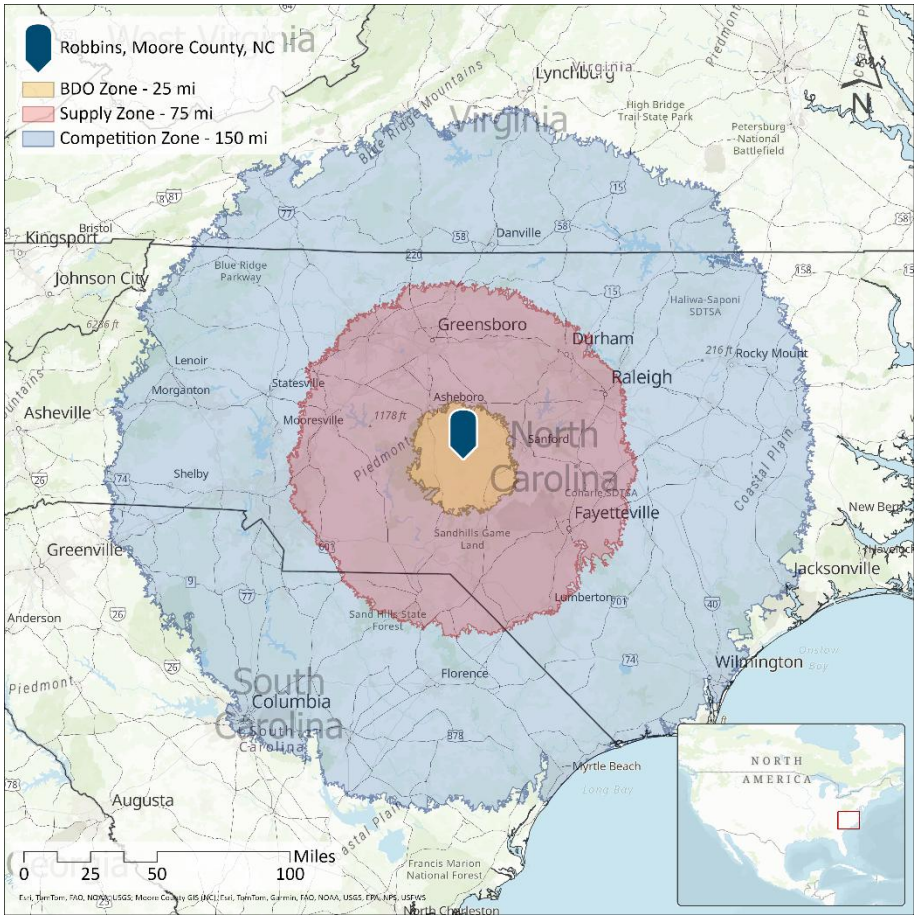
RATING GRADE

The Moore County 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.

MOORE COUNTY, NC BDO ZONE



ANALYST NOTES

The Moore County Supply Zone is defined as the area within a 75-mile drive distance of Robbins, North Carolina, with competitive demand evaluated across a 150-mile Competition Zone. The Supply Zone extends across North Carolina and South Carolina and covers thirty-three counties. It includes approximately 8.2 million acres of land, of which about 2.8 million acres are timberland.

The timber resource is mixed but commercially well established. Hardwoods account for about 60% of standing tree volume, led by oaks, sweetgum, red maple, and other mixed hardwoods. Loblolly pine is the dominant softwood component and represents about 30% of standing volume, providing an important plantation-based pulpwood resource.

The feedstock assessment includes pulpwood, forest residues, and sawmill residues. Pulpwood consists of small-diameter roundwood and upper-stem material generated during conventional logging. Forest residues include tops, branches, and other harvest residuals that are generally piled, burned, or left on site. Sawmill residues include chips, sawdust, shavings, and bark generated from lumber production.

The regional forest-products economy is active but changing. The Competition Zone includes sawmills, pulp and paper mills, biomass electricity facilities, pellet mills, and OSB mills. Recent sawmill closures and a major pulp and paper capacity reduction have affected traditional demand, although pellet mill capacity has absorbed some displaced demand for pulpwood and sawmill residues.

BDO ZONE ASSETS

The Supply Zone has shown overall timber inventory growth, with standing inventory increasing by about 8% between 2015 and 2024. This indicates a generally stable and productive timber base. Moreover, the forest resource supports sustainable harvest levels. Average annual net growth is estimated at about 4.8 million bdt/year, while annual removals are about 3.0 million bdt/year, resulting in a growth-to-drain ratio of 1.6. This indicates that the timber base is adding merchantable fiber faster than it is being harvested.

Another strong asset is the large rated biomass supply. The Supply Zone supports 625,000 bdt/year of rated pulpwood, 200,000 bdt/year of rated forest residues, and 100,000 bdt/year of rated sawmill residues. This provides a sizable and diversified feedstock base for a new bio-project.

The region has a strong pulpwood base, especially in loblolly pine plantations. Timber harvesting is already common across the Supply Zone, and pulpwood is a familiar product for landowners, loggers, brokers, and mills. This gives a new project a practical procurement foundation for the largest rated feedstock stream.

The Supply Zone contains meaningful underutilized low-value material. Outreach indicates that pulpwood, thinnings, tops, and other low-value material are sometimes left in the woods or hauled long distances because local markets are weak or quota-limited. A stable biomass buyer could improve thinning economics and create a more reliable outlet for small-diameter material.

Private land ownership is another important advantage. Approximately 87% of standing timber volume is located on privately owned forests, and about 89% of harvest activity occurs on private forest lands. This reduces exposure to public-land access constraints and allows procurement to be built through landowners, timber buyers, consulting foresters, and established private-sector supply channels.

BDO ZONE LIABILITIES

The most significant liability is scale-up capacity for the full rated supply. The project would require substantial additional operating capacity, including about 14 logging crews and 50 logging trucks for pulpwood, plus 4 grinders and 16 chip vans for forest residues. Existing logging capacity is present, but it is financially stressed and sensitive to market certainty.

The limited local grinding capacity is a related consideration for the forest residue stream. The analysis indicates that forest residues cannot yet be recovered consistently at rated levels without additional grinders and residue-handling infrastructure. A new project would likely need to phase plant ramp-up starting with pulpwood and support investment in grinders, chippers, grapples, trucks, and dedicated residue-handling systems.

Transportation economics are a major procurement constraint. Outreach indicates that long hauls, including 60-to-100-mile movements in some cases, are undermining pulpwood economics. A practical supply model should generally be built around a 50-mile procurement drive-distance to control delivered cost and maintain contractor viability.

The logging workforce and contractor base remain vulnerable. Local foresters indicate that logging capacity exists, but contractors are financially stressed and depend heavily on stable demand. A project that operates with inconsistent intake or quota-like constraints could make it difficult for crews to justify equipment, labor, insurance, and fuel costs.

Sawmill residue availability is uncertain. Although 300,000 bdt/year may be available under competitive terms, the analysis notes that no guarantee exists that this volume will be available when a project is implemented. This uncertainty is increased by reduced regional lumber production capacity and the closure of four sawmills since 2020.

INFRASTRUCTURE PROFILE

The Iron Horse Industrial Park is a 73-acre (55 developable) heavy-industrial site on NC Highway 211 in Aberdeen, Moore County, North Carolina. The site offers strong physical and transportation infrastructure: US-1 is 3.3 miles away, the I-73/74 corridor 23 miles, and I-95 34 miles, with adjacent short-line rail service from the Aberdeen & Rockfish Railroad running along the entire north property line and general-aviation access via Moore County Airport roughly 10 miles distant. Utilities are established and accessible, including Duke Energy electric service (23 kV line, 3 MW, with adjacent three-phase power), Piedmont Natural Gas (8-inch, 150 psig transmission line), Town of Aberdeen water (12-inch line, 100,000 GPD excess capacity) and wastewater (8-inch line, 150,000 GPD capacity), and Windstream fiber and cable telecommunications.

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 (Robbins, NC).

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 Robbins, NC is ***18.9 out of 100, resulting in an 'A' designation.***

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



PROJECT TEAM

PROJECT DIRECTOR
Marian Marinescu
Ecostrat Inc.
marian.marinescu@ecostrat.com

OUTREACH SPECIALIST
Stephen Schofield
Fiber and Biomass Procurement Specialist
Ecostrat Inc.
stephen@ecostrat.com

INFRASTRUCTURE ANALYST
Jaidan Hunt
Manager of Advisory Operations
Ecostrat Inc.
jaidan@ecostrat.com

TECHNICAL CONTACT
Marcin Lewandowski
Senior Director, Operations & Risk
Ecostrat Inc.
marcin@ecostrat.com

BUSINESS CONTACT
Jordan R. Solomon
President & CEO
Ecostrat Inc.
jordan.solomon@ecostrat.com

SECTION A: RISK INDICATOR SUMMARY

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

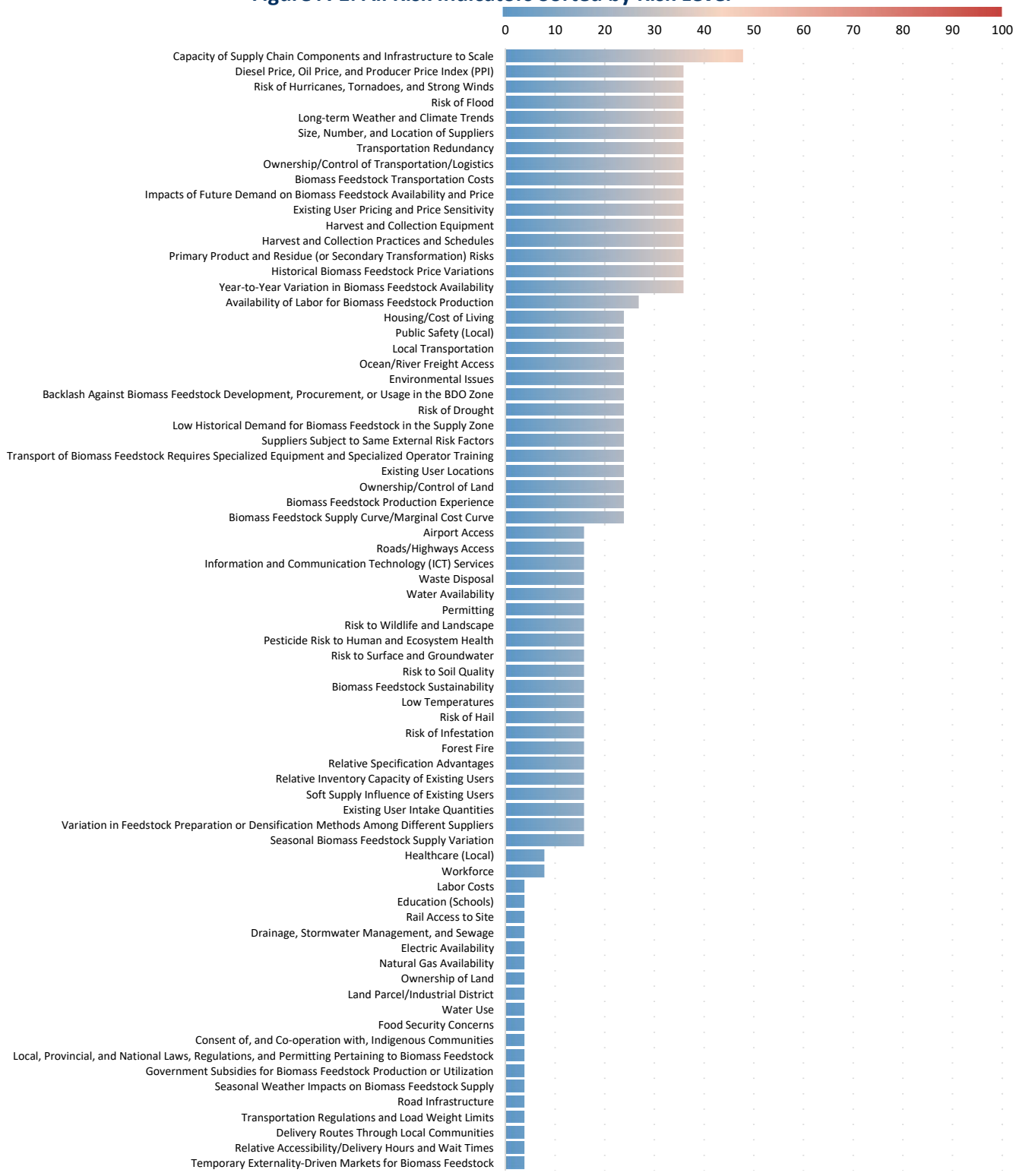


Table A-1. Risk Indicators and Associated Scores

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	4	4	16	NN	16
1.1.3 Year-to-Year Variation in Biomass Feedstock Availability	6	6	36	NN	36
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	4	6	24	NN	24
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	6	6	36	NN	36
1.2.4 Harvesting and Collection Equipment	6	6	36	NN	36
1.2.5 Ownership/Control of Land	4	6	24	NN	24
1.2.6 Variation in Feedstock Preparation or Densification Methods Among Different Suppliers	4	4	16	NN	16
1.3 Risk Factor: Existing Users					
1.3.1 Existing User Locations	4	6	24	NN	24
1.3.2 Existing User Intake Quantities	4	4	16	NN	16
1.3.3 Existing User Pricing and Price Sensitivity	6	6	36	NN	36
1.3.4 Impacts of Future Demand on Biomass Feedstock Availability and Price	6	6	36	NN	36
1.3.5 Soft Supply Influence of Existing Users	4	4	16	NN	16
1.3.6 Temporary Externality-Driven Markets for Biomass Feedstock	2	2	4	NN	4
1.3.7 Relative Inventory Capacity of Existing Users	4	4	16	NN	16
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	6	6	36	NN	36
1.4.3 Transport of Biomass Feedstock Requires Specialized Equipment and Specialized Operator Training	4	6	24	NN	24
1.4.4 Delivery Routes Through Local Communities	2	2	4	NN	4
1.4.5 Transportation Regulations and Local Weight Limits	2	2	4	NN	4
1.4.6 Road Infrastructure	2	2	4	NN	4
1.4.7 Transportation Redundancy	6	6	36	NN	36
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	6	8	48	NN	48
1.6.2 Availability of Labor for Biomass Feedstock Production	6	6	36	25%	27
1.6.3 Low Historical Demand for Biomass Feedstock in the Supply Zone	4	6	24	NN	24
1.7 Risk Factor: Climate and Natural Risks					
1.7.1 Seasonal Weather Impacts on Biomass Feedstock Supply	2	2	4	NN	4
1.7.2 Long-Term Weather and Climate Trends	6	6	36	NN	36
1.7.3 Forest Fire	4	4	16	NN	16
1.7.4 Risk of Infestation	4	4	16	NN	16
1.7.5 Risk of Hail	4	4	16	NN	16
1.7.6 Risk of Flood	6	6	36	NN	36
1.7.7 Risk of Drought	4	6	24	NN	24
1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds	6	6	36	NN	36
1.7.9 Low Temperatures	4	4	16	NN	16
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	4	6	24	NN	24
1.9.4 Consent of, and Cooperation with, Indigenous Communities	2	2	4	NN	4
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	4	4	16	NN	16

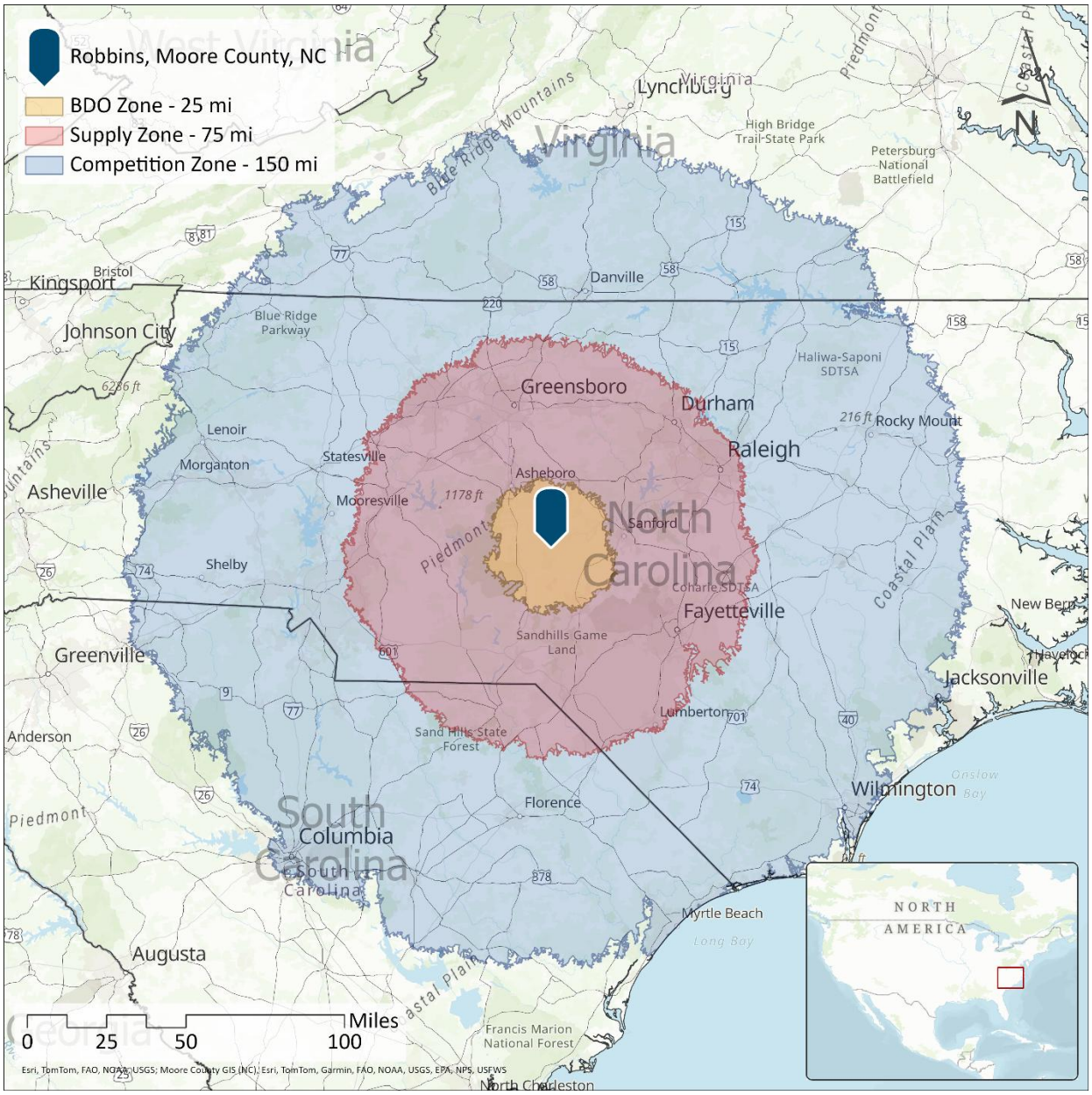
1.10.2 Risk to Soil Quality	4	4	16	NN	16
1.10.3 Risk to Surface and Groundwater	4	4	16	NN	16
1.10.4 Water Use	2	2	4	NN	4
1.10.5 Pesticide Risk to Human and Ecosystem Health	4	4	16	NN	16
1.10.6 Risk to Wildlife and Landscape	4	4	16	NN	16
Category 2.0: Infrastructure Risk					
2.1 Risk Factor: Physical Infrastructure					
2.1.1 Land Parcel/Industrial District	2	2	4	NN	4
2.1.2 Ownership of Land	2	2	4	NN	4
2.1.3 Permitting Description	4	4	16	NN	16
2.1.4 Environmental Issues	6	4	24	NN	24
2.2 Risk Factor: Utilities					
2.2.1 Natural Gas Availability	2	2	4	NN	4
2.2.2 Electric Availability	2	2	4	NN	4
2.2.3 Water Availability	4	4	16	NN	16
2.2.4 Drainage, Stormwater Management, and Sewage	2	2	4	NN	4
2.2.5 Waste Disposal	4	4	16	NN	16
2.2.6 Information and Communication Technology (ICT) Services	4	4	16	NN	16
2.3 Risk Factor: Transportation/Logistics					
2.3.1 Road/Highway Access	4	4	16	NN	16
2.3.2 Rail Access	2	2	4	NN	4
2.3.3 Airport Access	4	4	16	NN	16
2.3.4 Water Freight Access	6	4	24	NN	24
2.4 Risk Factor: Social Infrastructure					
2.4.1 Healthcare (Local)	4	2	8	NN	8
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)	6	4	24	NN	24
2.4.5 Housing/Cost of Living	6	4	24	NN	24
2.5 Risk Factor: Labor					
2.5.1 Workforce	4	2	8	NN	8
2.5.2 Labor Costs	2	2	4	NN	4
				Average	**18.9**

SECTION B: BIOMASS AVAILABILITY AND PRICING

OVERVIEW

The assessment of available forest biomass for a prospective project in Robbins, NC incorporates three distinct zones (Map B-1). The BDO Zone represents the area defined by a 25-mile drive distance from Robbins wherein a new biomass project could be positioned to access rated quantities of biomass. The Supply Zone encompasses the area within a 75-mile drive distance from Robbins from where biomass will be sourced. The Competition Zone is defined by a 150-mile drive distance from Robbins, where biomass consumers/competitors are situated that impact biomass availability within the BDO Zone.

Map B-1. BDO, Supply, Competition Zones, and Center Point (Robbins, NC)



The Supply Zone spreads over the states of North Carolina and South Carolina, and thirty-three counties. Of the approximately 8.2 million acres of land within the Supply Zone, 2.8 million acres are comprised of timberland. Hardwood tree species constitute 60% of the standing tree volume in the Supply Zone. The predominant hardwood species include a large variety of oaks (22%), sweetgum (Liquidambar styraciflua) (8%), red maple (5%), and several other hardwood species such as elms, ash, maples, hickory, hornbeam, and cherry. The softwood species are dominated by loblolly pine (30%).[1] The Supply Zone experienced a steady increase of standing tree inventory, by 8% between 2015 and 2024 (Figure E-1), but a 4% decrease in standing pulpwood size tree inventory (Figure E-2). The vast majority of standing timber volume (87%) is located on privately owned forests (Figure E-3) and 89% of all harvests occur on these privately owned forest lands (Figure E-4).[2]

Forestry represents a significant economic contributor within the region with 33 main operational forest products facilities including fifteen sawmills, five pulp and paper mills, two biomass electricity facilities, six pellet mills, and five OSB mills. However, the total lumber production capacity in the region has decreased by 40 MMBF since 2020 with four sawmills closing during this period. Meanwhile, a large pulp and paper mill located in the Competition Zone reduced its capacity drastically in 2023. However, the demand of sawmill residues from this facility was quickly replaced by increased capacity of two large pellet mills.

EVALUATED FEEDSTOCKS

Pulpwood: Consists of underutilized roundwood logs processed from small diameter trees and the upper stem sections of larger diameter trees during conventional logging operations.

Forest residues: Stem tops, branches, and other woody materials generated during timber harvesting operations. These materials are typically piled and burned, or scattered across harvest areas.

Sawmill residues: Byproducts of sawmill operations (wood chips, sawdust, shavings, and bark/hog fuel) generated from converting sawlogs into lumber.

The rated feedstock quantities presented herein were determined through estimation of potentially harvestable amounts of each biomass type in the Supply Zone, with consideration of anticipated demand for biomass in the Competition Zone. A Biomass Availability Multiple (BAM, i.e. redundancy factor) has been applied to account for the overarching assumptions, uncertainties in underlying data, models, and future operating conditions. The resulting rated quantities represent conservative estimates of biomass availability for new bio-projects. Once supply chains are developed, additional quantities of biomass are expected. Price ranges were established through market analysis and outreach in the Competition Zone and represent current expected delivered prices that a new project will need to pay to secure the rated quantities.

[1] apps.fs.usda.gov/fiadb-api/evalidator
[2] Ibid.

SUPPLY ANALYSIS

Pulpwood

Generally, timber harvesting in the Supply Zone consists of clearcutting (even-aged management) — especially in loblolly pine plantations across the Coastal Plain and Piedmont — while selection systems (single-tree or group selection) are used in hardwood or mountain forests.

Figure B-1. Average Net Growth, Average Annual Removals, and Growth to Drain Ratios in the Supply Zone (2015-2024)[3]

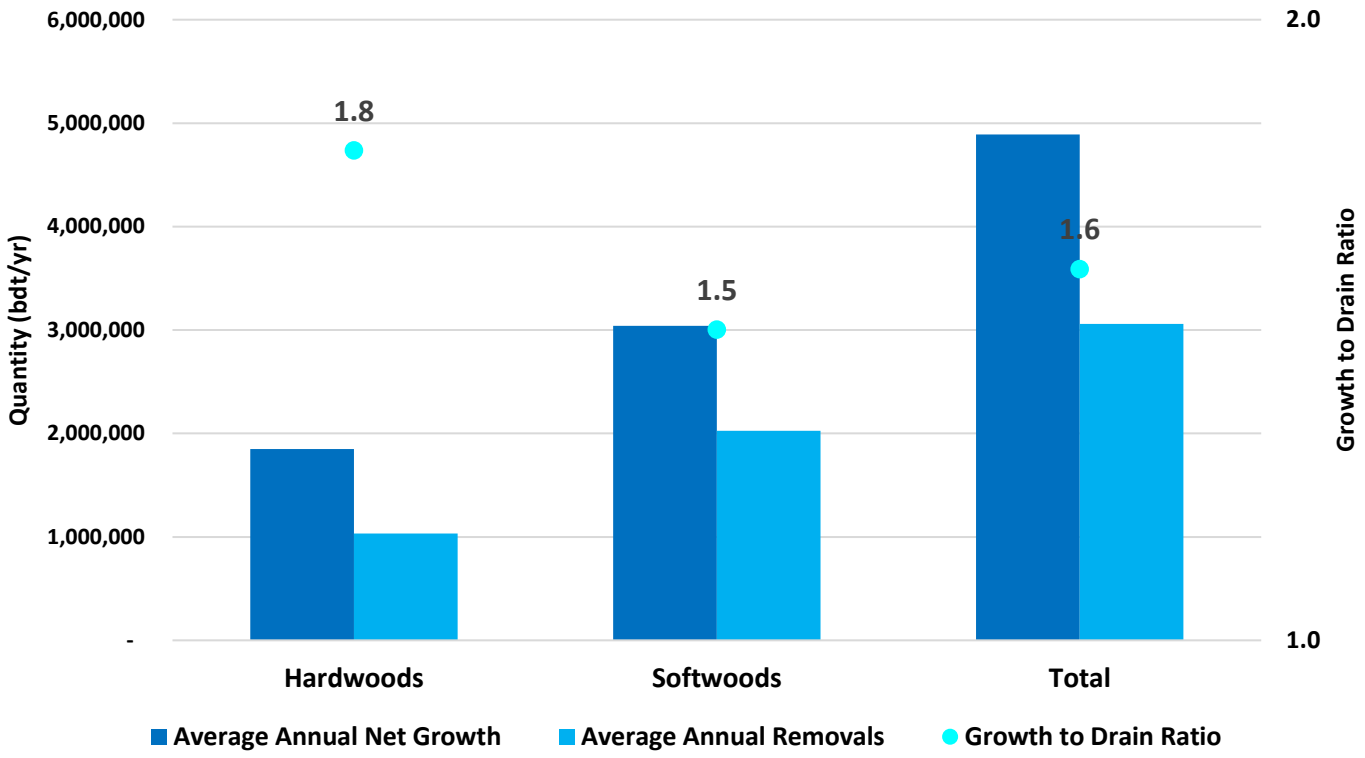


Figure B-1 illustrates the average annual net growth and removals per major species (hardwoods and softwoods). Overall, the forest stands in the Supply Zone exhibit substantial annual net growth (4.8 million bdt/yr), of which 3 million bdt/yr is harvested, resulting in a growth-to-drain (GTD) ratio[4] of 1.6. In other words, each year there is 1.6 times as much merchantable fiber added to the fiber basket in the Supply Zone as it is taken out, providing for sustainable harvesting levels and plenty of room for additional harvest. The FIA data estimated that approximately 1,174,000 bdt/year of pulpwood size trees and 287,000 bdt/yr of pulpwood logs[5] are harvested on average. In total, approximately 1,461,000 bdt/year of pulpwood could be generated in the Supply Zone.

[3] apps.fs.usda.gov/fiadb-api/evalidator. Variables: 574007 Average annual net growth of merchantable bole bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland; 574049: Average annual removals of merchantable bole bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.

[4] The ratio between the annual net growth and removals. A GTD > 1.1 indicates sustainable removals below the net growth measured in a forest area.

[5] A pulp log is a log that is sorted during log processing operations as unsuitable for sawmilling or veneer production due to its size, straightness, knots, rot, or other defects. apps.fs.usda.gov/fiadb-api/evalidator, Variable 574054: Average annual removals of merchantable bole bark and wood biomass above the sawlog of sawtimber trees, in dry short tons, on timberland

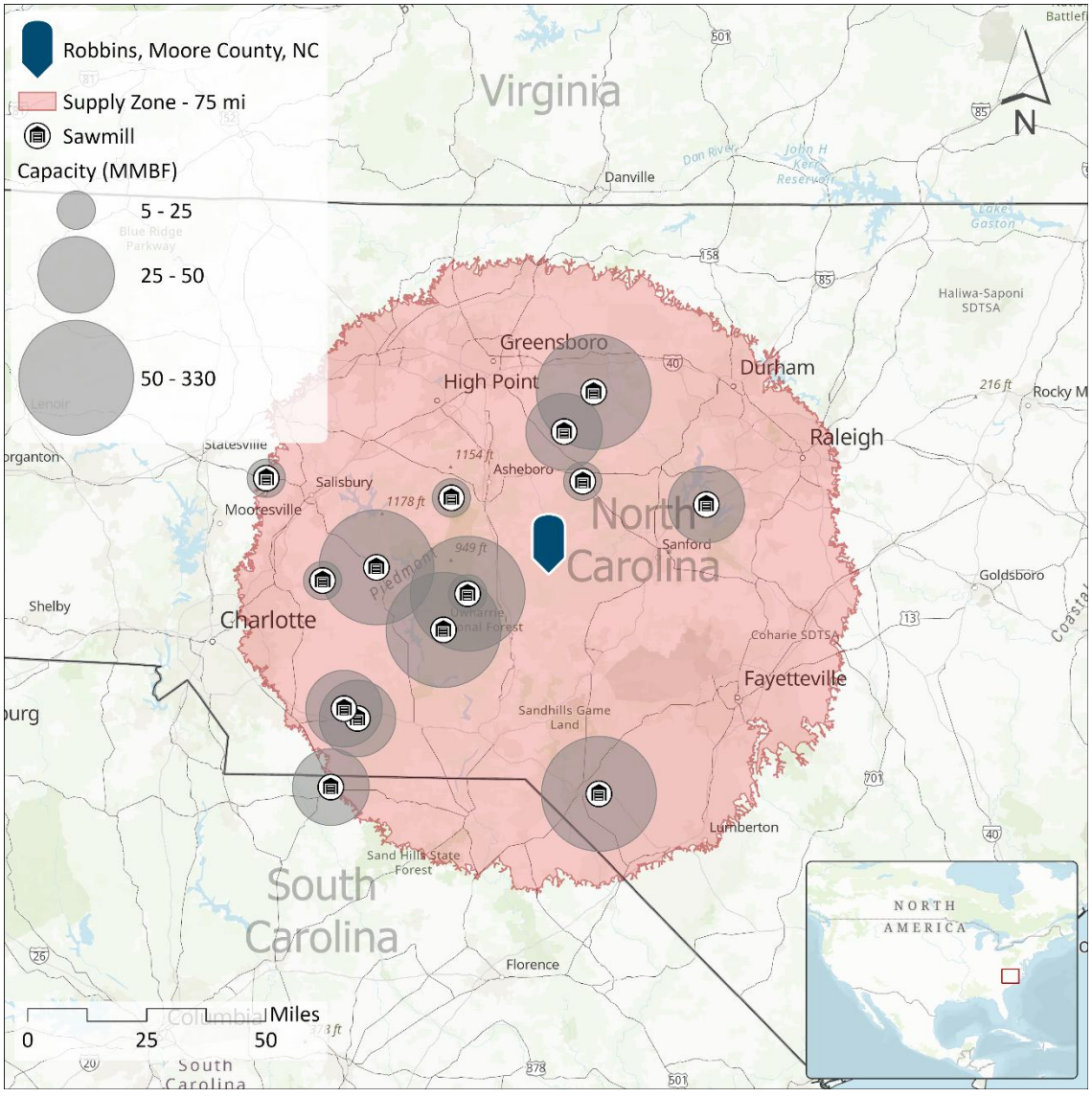
Forest residues

The FIA data estimates that, on average, approximately 800,000 bdt/yr of forest residues[6] are generated in the Supply Zone from harvesting operations. The outreach indicated that currently grinding equipment could not process this large quantity of feedstock. A biomass facility will need to support supply-chain investment in chippers, grapples, trucks, or dedicated residue-handling systems before expecting consistent feedstock deliveries.

Sawmill residues

Fifteen sawmills exist in the Supply Zone (Map B-2) that range in lumber capacity between 5-40 MMBF (hardwood mills) and between 25-330 MMBF (softwood mills).

Map B-2. Operational Sawmilling Facilities in the Supply Zone.



[6] apps.fs.usda.gov/fiadb-api/evalidator, Variables: 574065 - Average annual removals of top and limb bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland. Value rounded to the nearest 1,000 bdt

Sawmill residues generated by the identified sawmills, including wood chips, sawdust, shavings, and bark, are widely utilized in the Competition Zone for pulp and paper, wood pellets, and bioenergy. Overall, the sawmills consume approximately 5.45 million bdt of sawlogs each year to support their full-scale operations.[7] Table B-1 outlines the estimated quantity of sawmill residues generated annually. Our supply and demand analysis, vetted by our outreach to local mills and experts, indicated that, from the total of 1.54 million bdt/yr of sawmill residues, approximately 300,000 bdt/yr may become available under competitive terms. However, no guarantees exist that this quantity will be available at the time a future biomass project is implemented. The risk is also compounded by the fact that the total lumber production capacity in the region has decreased by 40 MMBF since 2020 with four sawmills closing during this period.

Table B-1. Sawmill Residue Production and Availability Estimates in the Supply Zone

Sawmill Residue	Chips	Sawdust	Shavings	Bark	TOTAL
Generated Quantity (bdt/yr) *	900,000	136,000	190,000	314,000	**1,540,000**

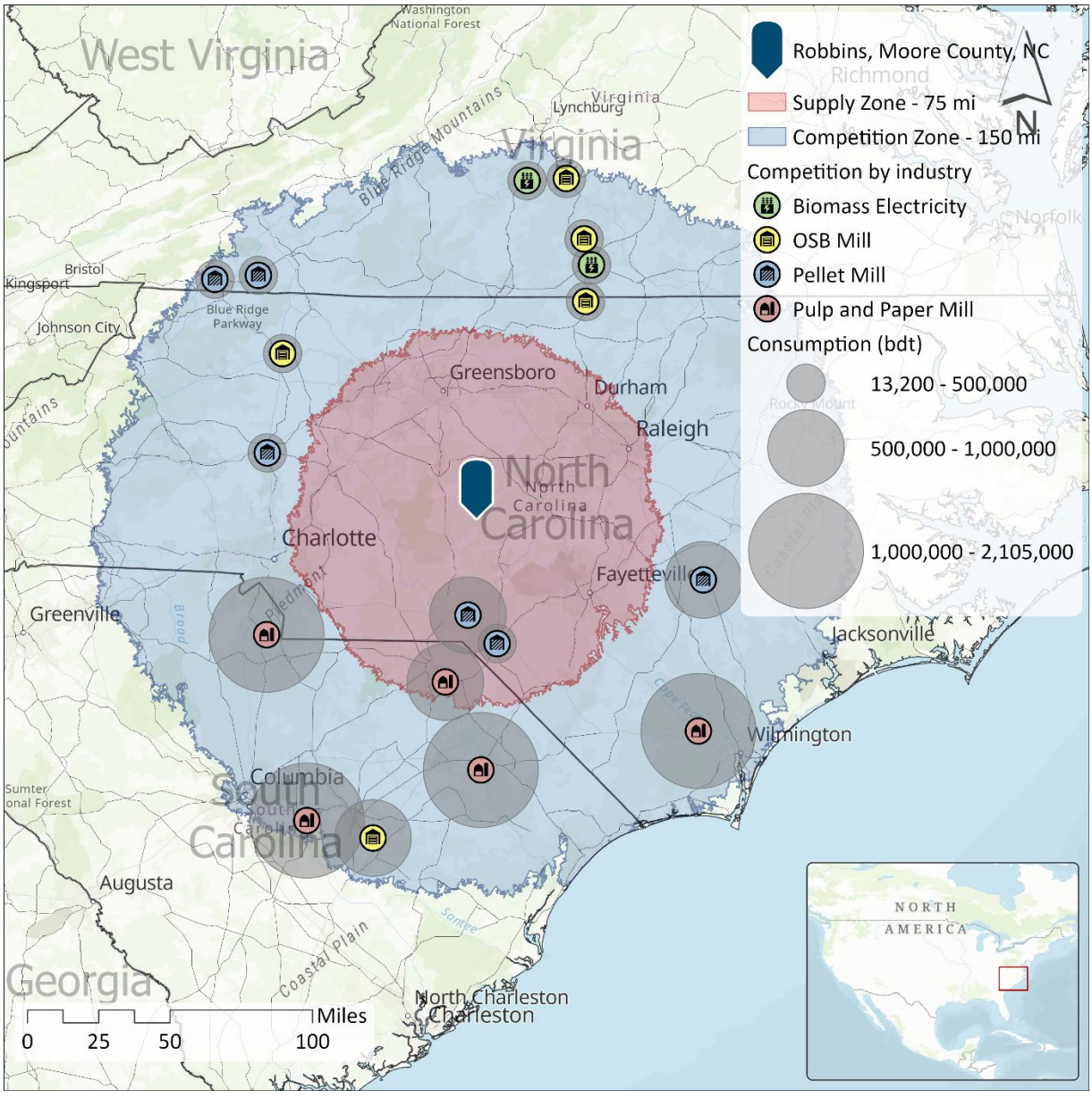
*Estimated based on mill capacities

[7] www.foriskmilldata.com (Q1 2026).

COMPETITION ANALYSIS

Eighteen competitors for biomass exist inside the Competition Zone (Map B-3): five pulp and paper mills, two bioenergy facilities, six pellet mills, and five OSB mills. Historically, a large pulp and paper mill located in the Competition Zone reduced its capacity drastically in 2023. However, the demand of sawmill residues from this facility was quickly replaced by increased capacity of two large pellet mills (Figure B-2). The existing competitors consume an estimated 11.6 million bdt of biomass per year (Table B-2), of which an estimated 1.45 million bdt/yr, mostly sawmill residues, is potentially sourced from the Supply Zone.

Map B-3. Map of Biomass Competitors in the Competition Zone[8]



[8] forisk.com/product/north-american-forest-industry-capacity-database

Figure B-2. Historical Total Woody Biomass Intake and Number of Competing Facilities in the Competition Zone[9]

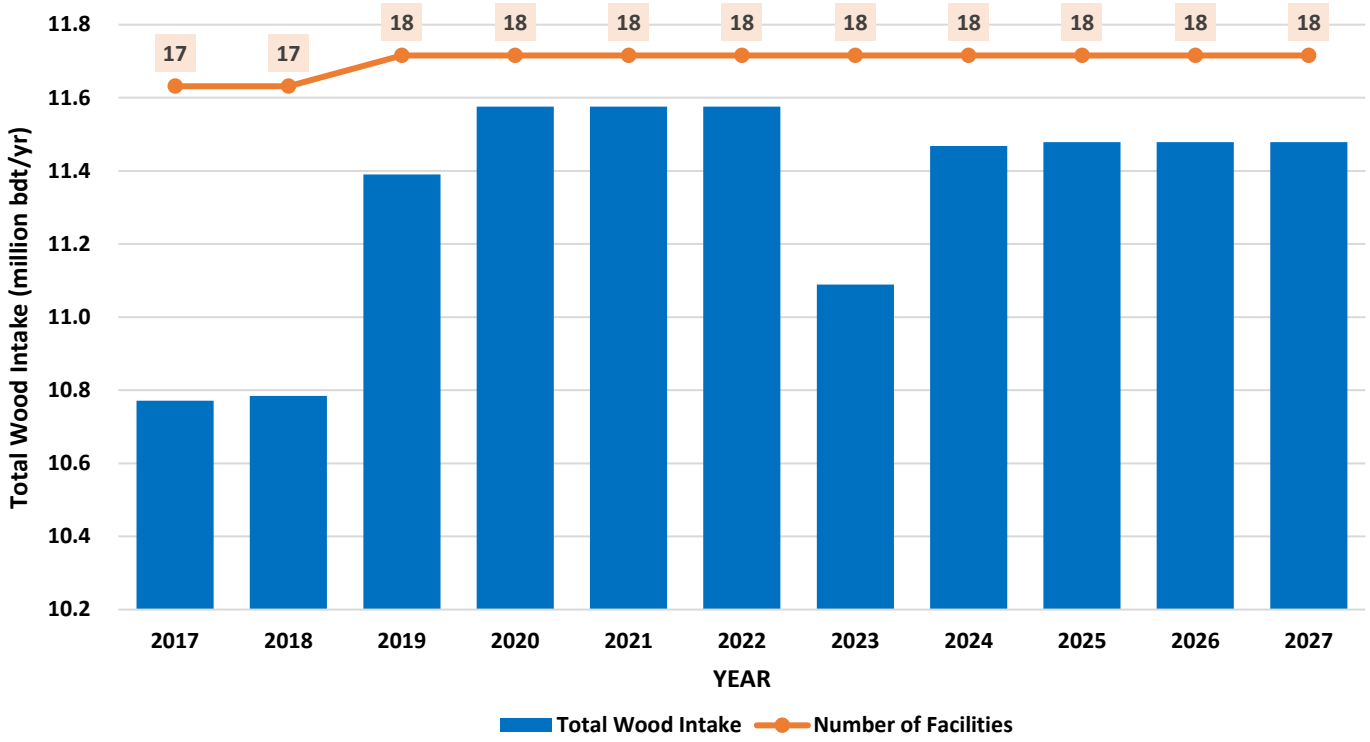


Table B-2. Woody Biomass Demand by Competitor Category*

Competitor Category	Biomass Demand (bdt/yr)	Biomass Demand from Supply Zone** (bdt/yr)	Feedstock Mix
Pulp and Paper Mills	6,410,000	314,000	50% Pulpwood; 50% Sawmill Residues
OSB Mills	2,640,000	53,000	100% Pulpwood
Pellet Mills	2,040,000	1,033,000	100% Sawmill Residues
Bioenergy Facilities	520,000	50,000	100% Sawmill Residues
Total	**11,610,000**	**1,450,000**	

* Values rounded to the nearest 10,000.

** Adjusted proportionally to the distance from Robbins to each competitor.

Table B-3 shows that, after considering the estimated demand of 1,240,000 bdt/yr of sawmill residues, and 210,000 bdt/yr of pulpwood from the Supply Zone, the following quantities are potentially available to a new project in Robbins: 1.25 million bdt/yr of pulpwood, 800,000 bdt/yr of forest residues, and 300,000 bdt/yr of sawmill residues (mostly chips).

[9] Forisk Database

Table B-3. Woody Biomass Production, Demand, and Availability by Feedstock Type

Feedstock Type	Production (bdt/yr)	Demand (bdt/yr)	Availability (bdt/yr)
Pulpwood	1,461,000	210,000	1,251,000
Forest residues	800,000	-	800,000
Sawmill residues	1,540,000	1,240,000	300,000
Total	**3,801,000**	**1,450,000**	**2,351,000**

RATED QUANTITIES AND PRICING

Table B-4 summarizes the technical, rated quantities, and price ranges of pulpwood and forest residues. The Biomass Availability Multiple (BAM) factor accounts for uncertainty in the accuracy of existing inventory, scale-up readiness, historical harvesting practices and volumes, and sudden changes in supply and demand. While scale up readiness currently exists for pulpwood, the lack of grinding operations to sustain collection and processing of forest residues in the region warranted a conservative BAM value of 4. A BAM value of 3 was assigned to sawmill residues due to the current competitive atmosphere and the fact that the total lumber production capacity in the region has decreased significantly, with four sawmills closing since 2020. However, once supply chains for a new biomass project are established, additional volumes will likely become available. Price ranges were estimated based on outreach to local forestry professionals and available data (Table B-5). Pulpwood prices include stumpage, harvesting, and hauling costs. In addition, forest residue prices include chipping/grinding costs (Table B-6).

Table B-4. Rated Quantities and Delivered Price Ranges of Woody Biomass in the Supply Zone

Biomass type	Available Quantity (bdt/yr)	Biomass Availability Multiple (BAM)	Rated Quantity (bdt/yr)	Delivered Price Range ($/bdt)
Pulpwood	1,251,000	2.0	625,000	60-70
Forest Residues	800,000	4.0	200,000	60-80
Sawmill Residues	300,000	3.0	100,000	55-75
TOTAL	**2,351,000**		**925,000**	

Table B-5. Price Estimates*

Feedstock Type	Avg Delivered Price ($/bdt)
Pulpwood (Timber Mart South Q1 2026 – Softwood)	58
Pulpwood (Timber Mart South Q1 2026 – Hardwood)	66
Pulpwood (Outreach - Softwood)	53-55
Pulpwood (Outreach - Hardwood)	64
Forest Residue	60-80
Sawmill Residues (combined, mostly chips, Supplier 1)	70-75
Sawmill Residues (combined, mostly chips, Supplier 2)	55

* Confirmed by the cost-based estimates (Table B-6)

Table B-6. Average Cost Components for Pulpwood and Forest Residues

Feedstock Type	Stumpage ($/bdt)	Collection ($/bdt)	Logging ($/bdt)	Chipping/Grinding ($/bdt)	Transport ($/bdt)	Average Delivered Price (est.) ($/bdt)
Pulpwood	10		35		20	**65**
Forest Residues		10		40	20	**70**

OPERATIONAL CONSIDERATIONS

To supply the rated quantity of pulpwood to Robbins, NC, 14 additional logging crews[10] and 50 logging trucks[11] would be necessary. Local foresters have communicated that logging capacity exists, but it is financially stressed and sensitive to market certainty. In addition to the above considerations, which also apply to forest residue recovery, 4 grinders[12] and 16 chip vans[13] would be necessary to grind and transport the rated quantity of forest residues to Robbins NC. Outreach to local foresters has indicated that chip vans are available currently to transport the additional forest residues to a potential project, but significant investment in both logging and grinding equipment will be necessary.

Producing pulpwood and forest residues for a biomass project will depend less on biological supply and more on whether the project can solve harvest economics, transportation, logger availability, and market reliability. The region appears to have a large surplus of pine pulpwood and thinning material, with net growth outpacing removals and many stands being delayed, skipped, or left unmanaged because traditional pulpwood outlets are weak.

The most important operational consideration is that Moore County and the broader central North Carolina wood basket appear to have abundant pulpwood and low-grade pine fiber, but current markets are weak, quota-limited, and unreliable. Multiple interviewees described pine pulpwood, thinnings, tops, and other low-value material being left in the woods or hauled long distances because local demand is insufficient. A biomass project could therefore provide a needed outlet, especially for small-diameter pine, thinning material, and forest residues that are currently difficult to move.

A project would need to provide a stable, free-flowing market rather than operate like the existing quota-driven pulpwood system. Loggers are currently constrained by mill quotas that can force equipment to sit idle, shorten workweeks, and make it difficult to accept tracts with heavy pulpwood volumes. Long-term demand certainty would be as important as price because contractors need reliable weekly harvests to cover equipment, labor, insurance, and fuel costs.

Transportation economics will be critical. Several forestry professionals emphasized that current long hauls, including 60-to-100-mile haul distances in some cases, are undermining pulpwood economics. A practical supply model should generally be built around a 50-mile procurement drive-distance.

Pricing must be sufficient to restart and sustain thinning and pulpwood removal. Outreach indicated that pulpwood stumpage has fallen to very low levels, while delivered pine pulpwood and chip prices discussed by suppliers were generally in the low-to-mid $60/bdt range. A biomass project would need to pay enough to cover stumpage, harvesting,

[10] Estimates assume an average of 14 truckloads/day/crew, 14 bdt/truckload, 225 work days/year
[11] Estimates assume an average of 4 roundtrips per day
[12] Estimates assume 20 bdt/hr grinder productivity, 225 work days/year, 10 hrs/day
[13] Estimates assume 4 chip vans per grinder

chipping where required, trucking, and contractor margins, or loggers will continue to avoid small-diameter material and marginal thinning jobs.

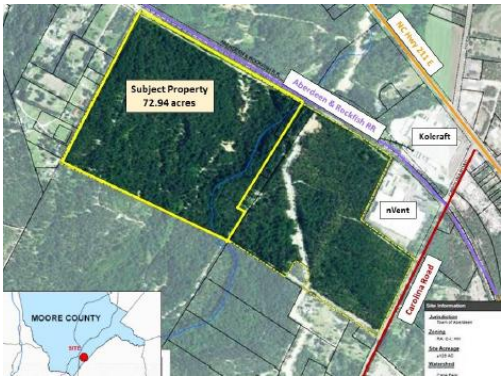
The project should expect stronger opportunity in pulpwood and chip-mill supply than in conventional sawmill residuals. Several sawmills reported that their chips, sawdust, shavings, and bark already have outlets in pulp, MDF, pellet, poultry bedding, mulch, or internal boiler markets. Residuals may still be available from some mills, but the larger regional need is for a dependable buyer of pine pulpwood, thinning material, tops, and residual chips.

Logging capacity exists, but it is financially stressed and sensitive to market certainty. The region has mechanized harvesting capacity and year-round access in many areas, with relatively flat terrain, good roads, limited seasonal restrictions, and fewer severe weather disruptions than coastal areas. However, loggers are under pressure from diesel costs, equipment costs, insurance, mill quotas, and poor pulpwood prices, so a new facility may need to support supplier ramp-up through predictable contracts and consistent intake.

Chipping and grinding capacity should be treated as an operational constraint. Some operators and mills have grinding/chipping capacity or in-woods chipping crews, but chippers can cost over $1 million, that some chip markets have weakened, and that prior chip facilities were shut down after demand disappeared. A biomass project requiring chipped or ground material should verify available equipment, secure dedicated suppliers, and allow ramp-up time.

The project could improve silviculture if it creates a dependable market for first thinnings and small-diameter wood. The lack of pulpwood markets is causing landowners and foresters to delay thinning, skip traditional two-thinning regimes, widen planting spacing, or wait for clear-cutting. A stable biomass market could help restore timely thinning, improve stand quality, reduce leftover debris, support reforestation, and improve tract cleanup after harvest.

SECTION C: INFRASTRUCTURE



PROPERTY OVERVIEW

Site Name:	Iron Horse Industrial Park
Address:	NC Hwy 211 East
City:	Aberdeen
State:	North Carolina
County:	Moore
Acres:	73 (55 developable)
Topography:	Gentle and Rolling
Zoning:	Heavy Industrial

SITE CONTACTS

Economic Development Contact
Darryn Burich
Moore County Economic Development Partnership
910-246-0311
dburich@moorecountyedp.org

ADDITIONAL NON-RATED SITES

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

TRANSPORTATION

The Iron Horse Industrial Park is located on NC Highway 211, with US-1 at 3.3 miles, the I-73/74 corridor at 23 miles, and I-95 at 34 miles. Current site access is via Lockey Drive, a private road. The site is served by the Aberdeen & Rockfish Railroad, a short-line carrier with rail running adjacent along the entire length of the north property line. The Moore County Airport (SOP) is approximately 10 miles from the site, providing general aviation access.

ELECTRIC SERVICE

Electric service is provided by Duke Energy with a 23 kV distribution line with a capacity of 3 MW to the Iron Horse Industrial Park. There is also three-phase power available adjacent to the site at the northwest corner of the property. **Contact:** Tammy Whaley, Senior Economic Development Manager, Duke Energy, (704) 995-4084, tammy.whaley@duke-energy.com

NATURAL GAS

Natural gas provided by Piedmont Natural Gas, with an 8-inch transmission line (150 psig) accessible to the Iron Horse Industrial Park. Additionally, there is a 2-inch line on Carolina Rd. **Contact:** Kevin Fisher, Gas Major Accounts Manager, (910) 624-3763, kevin.fisher@duke-energy.com

WATER

Water service is available at the Iron Horse Industrial Park and is provided by the Town of Aberdeen. There is a 12-inch line with 100,000 GPD current excess capacity adjacent to the site along the eastern property line. **Contact:** Joe Wood, Director of Aberdeen Public Works, Town of Aberdeen, (910) 944-7012, jwood@townofaberdeen.net

WASTEWATER

Wastewater service is available at the Iron Horse Industrial Park and is provided by the Town of Aberdeen. There is an 8-inch line with 150,000 GPD sewer capacity on the site. The Moore County Water Pollution Control Plant is located approximately 5 miles to the southeast. **Contact:** Joe Wood, Director of Aberdeen Public Works, Town of Aberdeen, (910) 944-7012, jwood@townofaberdeen.net

TELECOMMUNICATIONS

Telecommunication services are provided by Windstream, with fiber lines located on Carolina Road approximately 1,800 feet east of the property. Both fiber and cable services are available to the site. **Contact:** Rosalie Brown, Inside Account Business Executive, Windstream, (606) 536-9242, Rosalie.brown@windstream.com

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 Robbins, NC Supply Zone has a strong modeled biomass base, with approximately 1.25 million bdt/year of available pulpwood, 800,000 bdt/year of available forest residues, and 300,000 bdt/year of available sawmill residues before the application of BAM factors (Table B-3). Rated quantities are more conservative at 625,000 bdt/year of pulpwood, 200,000 bdt/year of forest residues, and 100,000 bdt/year of sawmill residues, with delivered pricing estimated at $60–$70/bdt for pulpwood, $60–$80/bdt for forest residues, and $55–$75/bdt for sawmill residues (Table B-4). The marginal cost curves indicate that additional volumes are available across the 75-mile Supply Zone, but forest residues carry greater scale-up uncertainty because grinding capacity is limited (Figure E-6; Section B - Operational Considerations). Due to the fact that biological supply is strong, but delivered cost and forest-residue processing capacity create meaningful procurement uncertainty, the risk was deemed low-medium.

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,[14] which can manifest in shortages and higher costs for Issuers.

Risk Information: Seasonal supply risk is relatively limited compared with northern biomass supply chains because the Moore County region has year-round harvest availability, favorable terrain, good road access, and no spring breakup or

[14] Golecha & Gan, 2016.

frost-law equivalent identified in the outreach notes. Heavy rainfall, hurricanes, and short-duration storm interruptions can still temporarily affect harvesting and trucking, but local forestry professionals indicated that the region generally returns to operating condition quickly after weather events (Section B - Operational Considerations). Due to the fact that the supply zone generally supports year-round operations and lacks major seasonal road restrictions, the risk was 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**

1.1.3 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.

Risk Information: For pulpwood, the assessment identifies a large currently available volume, but also shows a 4% decrease in standing pulpwood-size tree inventory between 2015 and 2024, and outreach indicates that weak pulpwood markets are causing landowners to delay thinnings, skip traditional thinning regimes, or wait for clearcuts (Figure E-2; Section B - Operational Considerations). For forest residues, annual availability will vary with the level and location of timber harvesting activity because residues are generated from tops, limbs, and other material left after harvest operations, and collection is further constrained by limited grinding capacity (Section B - Forest Residues; Section B - Operational Considerations). For sawmill residues, availability will vary with regional lumber production and mill operating rates, and the assessment notes that lumber production capacity in the region has declined by 40 MMBF since 2020, with four sawmills closing during that period (Section B - Sawmill Residues). Due to the fact that all three feedstocks are available in meaningful quantities, but pulpwood inventory trends, harvest-dependent forest residue generation, and sawmill-capacity declines create year-to-year supply uncertainty, the risk was 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**

1.1.4 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 price variation is material because real-term pulpwood prices have changed significantly over the last decade showing softwood pulp log prices rising to approximately $74/bdt in 2021 before declining to approximately $59/bdt in 2025, while hardwood pulp log prices declined from approximately $84/bdt in 2021 to approximately $65/bdt in 2025.[15] The 2026 price estimates indicate current delivered pulpwood pricing of $58/bdt for softwood and $66/bdt for hardwood under Timber Mart-South Q1 2026 data, while outreach-based estimates are slightly lower for softwood at $53–$55/bdt and broadly similar for hardwood at $64/bdt (Table B-5). Forest residue pricing is less historically established in the local market and is estimated at $60–$80/bdt because it includes additional collection, chipping, grinding, and transport costs (Table B-4; Table B-5; Table B-6). Sawmill residue prices are estimated at $55–$75/bdt, but pricing and availability are exposed to competition from pulp, MDF, pellet, poultry bedding, mulch, and boiler markets (Table B-4; Section B - Sawmill Residues). Due to the fact that pulpwood prices have shown meaningful historical fluctuation, forest residue pricing is based on a less mature local supply chain, and sawmill residue pricing is influenced by competing established markets, the risk was 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**

1.2 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 forest residue supply chains where forestry producers may have no previous experience.
Risk Information: The region has extensive experience producing pulpwood, sawlogs, and sawmill residues, and the logging workforce is largely mechanized. Pulpwood production is an established part of the local forest products supply chain, but forest residue recovery is less mature and would require additional grinding, chipping, handling, and transportation capacity (Section B - Operational Considerations). Due to the fact that pulpwood production experience is well established, but forest residue collection and grinding are less developed, the risk was deemed low-medium.

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**

[15] Timber Mart South Q1 Data, North Carolina Region 2

1.2.2 Primary Product and Residue (or Secondary Transformation) Risks

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

Risk Information: All three rated feedstocks are tied to broader forest-products market activity, but the dependency differs by feedstock. Sawmill residues and forest residues are strongly linked to sawtimber harvest levels, sawmill operating rates, and lumber demand, while pulpwood is also linked to dedicated low-grade markets such as pulp and paper, pellet, OSB, MDF, and chip-mill demand (Section B - Evaluated Feedstocks; Section B - Competition Analysis). Historical data show that total timber removals and pulpwood removals have fluctuated over time, and the assessment notes that regional lumber production capacity has declined by 40 MMBF since 2020, with four sawmills closing during that period (Figure E-5; Section B - Sawmill Residues). Current external market conditions reinforce this exposure: housing starts remained soft in 2025, which can affect lumber demand and sawmill residue generation, while southern wood-using pulping capacity has continued to decline, which can weaken pulpwood demand.[16] At the same time, the Competition Zone includes significant pellet and OSB demand, which provides alternate outlets for pulpwood and residues but also increases exposure to shifts in those markets (Table B-2). Due to the fact that feedstock generation and demand are influenced by multiple downstream markets, including lumber, housing, pulp and paper, pellet, OSB, and MDF markets, the risk was 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**

1.2.3 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 forestry biomass, unsightly clear-cuts and slash piles (even on plantation forests and especially when located near communities) can provoke unwanted public backlash even when suitable and sustainable replanting regimes are followed.

Risk Information: Harvesting in the Supply Zone is generally based on even-aged pine management, commercial thinning, and final harvest systems, especially in loblolly pine plantations across the Coastal Plain and Piedmont (Section B - Supply Analysis). However, weak pulpwood markets are causing landowners and foresters to delay first thinnings, skip traditional thinning regimes, or wait for later clearcuts, which can affect the timing and regularity of pulpwood and

[16] U.S. Census Bureau, New Residential Construction, www.census.gov/construction/nrc/, National Association of Home Builders, Overall Housing Starts Inch Lower in 2025, www.nahb.org/news-and-economics/press-releases/2026/02/overall-housing-starts-inch-lower-in-2025, University of Georgia, Timber Situation and 2025 Outlook, fieldreport.caes.uga.edu/publications/AP130-3-13/timber-situation-and-2025-outlook/.

forest residue generation (Section B - Operational Considerations). Due to the fact that the harvest system is familiar but current market weakness has disrupted normal thinning schedules, the risk was 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**

1.2.4 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: Mechanized logging equipment is available in the region, and outreach indicates that logging capacity exists. Pulpwood can be produced with existing logging systems, and sawmill residues are generated through existing mill operations, but forest residues require grinders, chippers, chip vans, grapples, trucks, or other dedicated residue-handling systems. The assessment estimates that four grinders and 16 chip vans would be required to supply the rated forest residue quantity (Section B - Operational Considerations). Due to the fact that logging and sawmill infrastructure exist but dedicated forest-residue grinding and chipping capacity requires additional capital investment and supplier commitment, the risk was 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**

1.2.5 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: The Supply Zone is dominated by private forest ownership, with private lands accounting for 87% of standing merchantable biomass and 89% of timber removals (Figures E-3 and E-4). This ownership structure supports broad procurement opportunities for pulpwood and forest residues, but it also requires aggregation across many private landowners, consulting foresters, timber dealers, sawmills, and logging contractors. Sawmill residues are more concentrated at mill sites, but availability remains subject to mill operating rates and existing buyer relationships. Due

to the fact that private ownership supports broad market access but requires aggregation across many counterparties, the risk was deemed low-medium.

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**

1.2.6 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. The size of wood fiber processed in a grinder is less homogenous than if a chipper is used. 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.[17]

Risk Information: Feedstock may be delivered as roundwood pulpwood, clean chips, dirty chips, grindings, sawmill chips, bark, or mixed forest residues, each with different moisture, bark, ash, particle-size, and contamination characteristics (Section B - Evaluated Feedstocks). Pulpwood is the most standardized of the three feedstocks, sawmill residues are relatively consistent but vary by mill process and residue stream, and forest residues are likely to be the most variable because grinding and collection methods differ among suppliers. Due to the fact that preparation methods and feedstock quality will vary across suppliers and feedstock types but a new project is assumed to manage this risk through feedstock specifications and receiving-system design, the risk was 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**

1.3 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.

[17] Huhnke, 2018.

Risk Information: The Competition Zone contains 18 biomass competitors, including five pulp and paper mills, two biomass electricity facilities, six pellet mills, and five OSB mills (Map B-3; Section B - Competition Analysis). These users affect all three rated feedstocks because pulpwood can move to pulp and paper, OSB, MDF, pellet, and chip-mill markets, sawmill residues can move to pulp, pellet, bioenergy, panel, bedding, mulch, or boiler markets, and forest residues may compete with lower-value energy or chip markets where specifications allow. Due to the fact that competitors are present across the 150-mile Competition Zone but local pulpwood market weakness creates an opening for a stable new buyer, the risk was deemed low-medium.

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**

1.3.2 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: Existing competitors consume an estimated 11.61 million bdt/year of woody biomass across the Competition Zone, of which approximately 1.45 million bdt/year is estimated to be sourced from the Supply Zone (Table B-2). After accounting for estimated demand, the assessment identifies approximately 1.25 million bdt/year of available pulpwood, 800,000 bdt/year of forest residues, and 300,000 bdt/year of sawmill residues in the Supply Zone (Table B-3). Consequently, the current competitor consumption does not constrain access to the rated quantities, especially of pulpwood and forest residue, and presents a low risk to feedstock availability for a new project.

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**

1.3.3 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: Existing users appear highly price sensitive and quota-driven, with outreach describing reduced intake, low pulpwood stumpage, buyer shutoffs, and uneconomic long-distance hauling. Sawmill residues generally have functioning outlets, but pulpwood and residual chips are frequently constrained by delivered-cost economics, mill quotas, and changing market conditions (Table B-5; Table B-6). Due to the fact that a new project can compete effectively with stable demand but must price above unstable low-margin markets to secure reliable supply, the risk was 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**

1.3.4 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 (in the case of a sawmill adding a shift or pulp mill potentially expanding into the production of renewable chemicals, for example), 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: Future demand could change if pellet, pulp, bioenergy, MDF, OSB, or other industrial wood users expand, contract, or modify procurement behavior. The assessment notes that demand lost from a large pulp and paper facility was quickly replaced by increased capacity at two large pellet mills, demonstrating that regional demand shifts can occur quickly and affect biomass availability and pricing (Section B - Competition Analysis; Figure B-2). Current housing and timber-market information also indicates continued uncertainty in housing starts and southern timber

demand, which can affect sawtimber harvest levels, sawmill residues, and pulpwood markets.[18] Due to the fact that current oversupply reduces near-term risk but future mill, pellet, panel, pulp, or bioenergy demand changes could tighten supply and increase prices, the risk was 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**

1.3.5 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: Existing mills, chip mills, and residue users have long-standing relationships with loggers, timber dealers, sawmills, and landowners. However, outreach indicates significant supplier frustration with quotas, weak prices, and unreliable intake, particularly for pulpwood and residual chips. Due to the fact that incumbent relationships exist but current supplier dissatisfaction creates an opening for a stable new buyer, the risk was 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**

1.3.6 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.

Risk Information: Temporary markets could arise from storm cleanup, land clearing, wildfire fuel reduction, animal bedding and mulch use. These markets may temporarily divert residues or create short-term surges of available material, but they do not appear to provide consistent long-term demand for the rated feedstocks. Due to the fact that these temporary markets are unlikely to structurally displace a stable biomass project, the risk was deemed very low.

Raw Risk Likelihood (RRL)	**Score**

[18] U.S. Census Bureau, New Residential Construction, www.census.gov/construction/nrc/, University of Georgia, Timber Situation and 2025 Outlook, fieldreport.caes.uga.edu/publications/AP130-3-13/timber-situation-and-2025-outlook/.

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**

1.3.7 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: Existing pulp, pellet, MDF, and OSB plants use inventories and quotas to manage intake, and outreach indicates that some mills do not purchase excess wood simply to hold it in their yards. Due to current quota practices in the market, a new entrant offering steady, reliable intake should be able to secure consistent volume despite incumbents' larger storage capacity. The 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**

1.3.8 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: Outreach indicates that existing buyer intake can be slow, quota-limited, and unpredictable, causing loggers to shorten workweeks, wait for quota, or haul to distant alternate markets. A new facility with predictable delivery hours, fast unloading, and consistent receiving capacity would have a procurement advantage across pulpwood, chip, and residue supply streams. Due to the fact that the current system creates supplier pain points that a well-designed facility can mitigate, the risk was 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 No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**Score** **4**

1.3.9 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: Existing users often prefer clean sawmill chips, debarked chips, or specific pulpwood grades, while tops, dirty chips, mixed grindings, bark-bearing material, and lower-quality residues have fewer reliable outlets (Section B - Evaluated Feedstocks). A biomass project with flexible specifications could access more underutilized material, but it would need to manage higher variability in moisture, ash, bark content, particle size, and contamination risk. A new project is assumed, however, to set and enforce clear feedstock quality standards. With these specifications in place from the outset, feedstock quality can be controlled directly, keeping this risk low.

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

Risk Information: Transportation is a major cost component of delivered biomass, and the assessment estimates transport at approximately $20/bdt (Table B-6). Outreach repeatedly identified a 50-mile haul drive distance as the practical "sweet spot," while some loggers described 60- to 100-mile hauls as economically difficult or uneconomic. The risk was deemed medium.

Raw Risk Likelihood (RRL) The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**Score** **6**
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 36 out of 100.	**Score** **36**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**Score** **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 forests or 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: A new entrant is expected to rely heavily on third-party logging contractors, truckers, chip vans, and supplier-controlled logistics. The assessment estimates that supplying rated pulpwood and forest residue volumes would require 50 logging trucks and 16 chip vans (Section B - Operational Considerations). Due to the fact that third-party logistics are normal in the sector but additional truck and chip-van capacity must be secured, the risk was 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**

1.4.3 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 requirements vary by feedstock type. Pulpwood can move on conventional log trucks. Forest residues and sawmill residues delivered as chips, grindings, bark, or hog fuel require chip vans, walking-floor trailers, or similar bulk-hauling equipment. The assessment estimates that 16 chip vans would be needed for the rated forest residue quantity. Outreach indicated that chip vans are currently available. Due to the fact forest residue streams still require specialized bulk-hauling equipment and coordinated hauling capacity, the risk was deemed low-medium.

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**

1.4.4 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 Supply Zone is located in an established forestry region, and outreach indicates that local communities are accustomed to timber harvesting, log trucking, and forest-products activity. No delivery-route constraint through local communities was identified (Map B-1; Section B - Operational Considerations). Due to the fact that the local population is familiar with forestry activity and no specific community routing constraint was identified, the risk was deemed very low.

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**

1.4.5 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: North Carolina has established truck weight rules that allow higher gross weights for certain multi-axle vehicles, including configurations above the standard 80,000-pound federal interstate limit under specified conditions.[19] These rules indicate that forest-products hauling is recognized in regional transportation regulations. The Moore County outreach did not identify seasonal road-weight restrictions, frost laws, or local hauling limits as a material constraint, and local sources described the region as having year-round access and no significant road-weight issue (Section B - Operational Considerations). Due to the fact that applicable transportation regulations appear manageable, and no seasonal or local weight-limit constraint was identified in outreach, the risk was deemed very low.

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**

1.4.6 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.

[19] North Carolina General Statutes, G.S. 20-118, Vehicle size and weight limits, www.ncleg.net/enactedlegislation/statutes/html/bysection/chapter_20/gs_20-118.html.

Risk Information: The Moore County supply area has favorable road infrastructure for forest-products transportation. Outreach describes the region as having good road access, relatively flat Sandhills terrain, and no major trucking gradients or access constraints. North Carolina's state-maintained route network includes interstates, U.S. routes, NC routes, secondary roads, and ramps, which supports rural timber movement from dispersed forest tracts to industrial users.[20] South Carolina also maintains established freight highway systems in adjacent regional markets, including interstate, primary, and secondary road networks that support heavy truck movement.[21] Due to the fact that the Supply Zone has suitable road access, favorable terrain, and connection to established state and regional freight networks, the risk was 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**

1.4.7 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: Transportation redundancy appears achievable but will require deliberate contracting because the rated supply case requires substantial additional truck capacity. The assessment estimates that supplying rated quantities would require 50 logging trucks for pulpwood and 16 chip vans for forest residues, while outreach indicates that chip vans are available but that the broader logging and trucking sector remains financially stressed (Section B - Operational Considerations). Due to the fact that redundancy appears achievable but must be contracted and protected against driver, equipment, and supplier availability risks, the risk was 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**

[20] North Carolina Department of Transportation, State Maintained Roads dataset, www.nconemap.gov/maps/157dbc4ef33f4db4aa1ecc1a3182a375.
[21] South Carolina Department of Transportation, Statewide Freight Plan Update, projects.scdot.org/Multimodal/pdf/SCDOT_Freight%20Plan%20Update_2022_Final_FHWA%20Approval_3.3.23%20%28Low%20Res%29.pdf.

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: The Supply Zone includes a broad supplier base consisting of private landowners, consulting foresters, logging contractors, timber dealers, sawmills, chip mills, and existing residue producers. This diversity reduces dependence on a single supplier, but aggregation complexity remains high because private lands dominate the supply base and sawmill residues are concentrated at specific facilities (Figures E-3 and E-4; Section B - Operational Considerations). Due to the fact that supplier diversity is favorable but procurement will require active aggregation across many counterparties and feedstock types, the risk was 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**

1.5.2 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: Many suppliers are exposed to common external risks, including weak pulpwood markets, mill quotas, housing and lumber cycles, logging labor shortages, transportation costs, and weather events. However, the 75-mile Supply Zone covers a broad geography and includes multiple supplier types, which reduces exposure to a single localized disruption. The risk was deemed low-medium.

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: The assessment indicates that supplying the rated quantity of pulpwood would require 14 additional logging crews and 50 logging trucks, while supplying the rated quantity of forest residues would require four grinders and 16 chip vans (Section B - Operational Considerations). Scale-up readiness is stronger for pulpwood than for forest residues because existing logging systems can handle pulpwood, while forest residue recovery requires additional grinding, chipping, and handling capacity. Sawmill residue scale-up is limited by existing mill operating rates, buyer commitments, and recent sawmill closures (Section B - Sawmill Residues). Due to the fact that pulpwood supply chains can scale more readily but forest residue and sawmill residue availability face infrastructure and market constraints, the risk was 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**

1.6.2 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: The regional logging workforce is mechanized and capable, but it is financially stressed by weak pulpwood markets, quotas, high fixed costs, and reduced operating days. Labor risk affects pulpwood and forest residues most directly because both depend on logging crews, equipment operators, and truck drivers. Sawmill residues depend on continued sawmill operations and mill labor availability. Online information specific to North Carolina also indicates forestry-sector employment pressure, with NC State reporting that the state's forestry sector lost about 10,000 jobs in 2020 and that the logging industry declined by about one-third over the prior two decades.[22] More recent NC State Extension data show that North Carolina forest-sector employment declined by 1.9% from 2023 to 2024, representing about 2,700 fewer jobs.[23] Due to the fact that the workforce exists but is shrinking, financially fragile, and sensitive to reliable demand, the risk was deemed medium.

Raw Risk Likelihood (RRL)	**Score**

[22] NC State College of Natural Resources, What a Post-Pandemic Future Looks Like for NC's Forestry Sector, cnr.ncsu.edu/news/2022/10/the-future-of-nc-forestry-sector/.

[23] NC State Extension, Economic Contribution of the Forest Sector in North Carolina, content.ces.ncsu.edu/economic-contribution-of-the-forest-sector-in-north-carolina.

The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
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 36 out of 100.	**Score** **36**
Mitigation/Notching *RRL Mitigation (Notch)* Existing North Carolina training programs can help mitigate this risk. The North Carolina Forestry Association's ProLogger program provides training in safety, business, and environmental awareness, with participation from the NC Forest Service, Department of Labor, State Highway Patrol, and FMIC Insurance.[24] North Carolina also has forestry workforce training through community college and credential programs, including Montgomery Community College's Forest Management Technology program and the ForestryWorks Forest Worker Certificate Program.[25] These programs support workforce development, but they do not fully offset near-term shortages or the financial pressure on existing contractors. *RRI Mitigation (Notch)* No adjustment. The Total Notch (RRL Notch) X (RRI Notch) is 25%.	**Notch** **25%**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 27 out of 100.	**Score** **27**

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. This can be particularly true for forest residues, where, typically, the infrastructure for collection, processing, and delivery is immature.

Where supply chains are not well-established, risk can be mitigated when new bio-based plants control a higher degree of feedstock processing. For example, if a BDO Zone rating is issued for clean wood chips and the historical demand in the Zone has been exclusively for pulpwood, then supply chain risk will be decreased for new bio-based plants that intake pulpwood and manage log debarking and chipping internally, rather than requiring inexperienced suppliers to deliver debarked wood chips.

Risk Information: The Supply Zone has existing experience generating and supplying all three rated feedstocks. Pulpwood has historically moved into pulp and paper, pellet, OSB, MDF, and chip-mill markets. Forest residues have been generated through ongoing harvesting activity, even though dedicated collection and grinding markets are less developed. Sawmill residues are routinely produced and marketed through existing sawmill operations (Section B - Evaluated Feedstocks; Section B - Competition Analysis). Current markets for pulpwood and forest residues are weakened and quota-constrained, but the underlying supplier experience has not disappeared. The main issue is therefore not lack of historical production knowledge. It is the need to restore reliable demand and support collection, grinding, and hauling capacity for underutilized material (Section B - Operational Considerations). Due to the fact that

[24] North Carolina Forestry Association, ProLogger Program, www.ncforestry.org/prologger.
[25] Montgomery Community College, Forest Management Technology, www.montgomery.edu/programs/forest-management-technology/, ForestryWorks, Forest Worker Certificate Program - North Carolina, forestryworks.com/north-carolina/forest-worker-certificate-program.

supplier experience exists for all three feedstocks, but weakened pulpwood and forest residue markets have reduced active utilization and scale-up readiness, the risk was deemed low-medium.

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**

1.7 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 risk is comparatively low for pulpwood, forest residues, and sawmill residues in the Moore County Supply Zone. Outreach indicates that the region has year-round harvest availability, favorable terrain, good road access, and no major seasonal road-weight restrictions or spring breakup conditions. Heavy rain or short-duration wet periods can temporarily affect harvesting, residue recovery, and trucking, but these conditions are not expected to create recurring seasonal supply shortages. Larger weather events, including hurricanes, inland floods, drought, wildfire, and strong winds, are addressed separately below. Due to the fact that normal seasonal conditions are not expected to materially disrupt annual feedstock production or transportation, the risk was 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**

1.7.2 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: The main long-term risks are heavier rainfall events, more intense storm impacts, drought stress, wildfire risk, and periodic disruption to harvesting, trucking, and mill operations. North Carolina has experienced a higher recent frequency of billion-dollar weather and climate disasters, with NOAA reporting an annual average of 7.4 events during 2020–2024 compared with 2.7 events during 1980–2024.[26] NOAA also projects that tropical cyclone rainfall rates will increase as the climate warms, which is relevant because hurricanes and tropical storm remnants can disrupt inland forestry operations even when the project is not located on the coast.[27] While climate trends are not an immediate constraint on modeled feedstock availability, but the increasing risk of severe rainfall and hurricane-related disruption could affect harvest access, trucking, and supply-chain reliability over the project life, the risk was 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**

1.7.3 Forest Fire

Rationale: Forest 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: Fire risk is relevant in North Carolina, where the Forest Service regularly tracks wildfire activity, and fire can affect standing timber, harvest access, and transportation. However, outreach did not identify wildfire as a dominant current supply constraint in the Moore County supply area, and prescribed fire is already part of some regional forest management practices. Consequently, the risk was 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**

[26] NOAA National Centers for Environmental Information, Billion-Dollar Weather and Climate Disasters: North Carolina Summary, www.ncei.noaa.gov/access/billions/state-summary/NC
[27] NOAA Geophysical Fluid Dynamics Laboratory, Global Warming and Hurricanes, www.gfdl.noaa.gov/global-warming-and-hurricanes/

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

1.7.4 Risk of Infestation

Rationale: Risk of future infestation, including its estimated consequences on feedstock supply, should be calculated into the overall risk profile.

Since forest insect populations are influenced by environmental conditions, future changes in climate can be expected to significantly alter the outbreak dynamics of certain forest insect species. In some cases, larger and more frequent insect outbreaks may occur, but in other cases, recurring outbreaks may be disrupted or diminished. As the climate continues to change, we can expect more situations, particularly at the margins of tree ranges, where sub-optimal conditions for tree growth and reduced tree vigor can lead to outbreaks of forest insects.

Risk Information: Forest pests and disease can affect pine and hardwood productivity, but the assessment and outreach did not identify an active infestation as a near-term constraint on pulpwood, forest residue, or sawmill residue supply.[28] The risk remains relevant because a pine-dominated supply chain can be exposed to southern pine beetle and other forest health threats. However, because forest health risks are monitored and not presently constraining supply, the risk was 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

1.7.5 Risk of Hail

Rationale: 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 can damage standing timber, but neither the literature, nor the outreach identifies hail as a material driver of feedstock risk in the Moore County Supply Zone. The risk was 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**

[28] North Carolina Forest Service, Forest Health, www.ncagr.gov/divisions/nc-forest-service/forest-health.

The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**Score** **16**

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: Flooding can temporarily disrupt harvesting, road access, trucking, and deliveries of pulpwood, forest residues, and sawmill residues. The Moore County supply area is inland and outreach indicates generally favorable year-round operating conditions, but inland flooding has occurred in North Carolina and remains a credible regional risk. NOAA reported that Hurricane Helene caused catastrophic inland flooding in western North Carolina in 2024, with heavy rainfall washing out roads and damaging communities far from the coast.[29] The North Carolina State Climate Office also reported that Helene's remnants caused historic flooding in the Mountains and southern Foothills, demonstrating that inland forestry and transportation networks can be disrupted by tropical rainfall events.[30] Due to the fact that inland flood events have occurred in North Carolina but are not expected to be a persistent constraint in the Moore County supply area, the risk was deemed medium.

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

1.7.7 Risk of Drought

Rationale: Droughts can cause significant disruptions to feedstock supplies across entire BDO Zones for extended periods of time. Tree species are adapted to specific moisture conditions. Having less water available through drought has a range of negative impacts on the health of forest ecosystems. Direct impacts include reduced growth, increased tree mortality, and failure to regenerate. Indirect impacts include reduced ability to defend against insects and disease and increased fire risk. These impacts can affect the availability of wood fiber for an Issuer.

Risk Information: Drought can reduce forest growth, increase tree stress, elevate fire risk, and affect long-term biomass productivity. Outreach did not identify drought as a current material constraint on pulpwood, forest residue, or sawmill residue supply in the Moore County Supply Zone, and the assessment shows positive growth-to-drain conditions for the regional timber base (Figure B-1). However, online sources indicate that drought is a relevant North Carolina forest-health risk. NC State Extension reported in 2026 that many areas of North Carolina were in severe or extreme drought

[29] NOAA Climate.gov, Hurricane Helene's Extreme Rainfall and Catastrophic Inland Flooding, https://www.climate.gov/news-features/event-tracker/hurricane-helenes-extreme-rainfall-and-catastrophic-inland-flooding.
[30] North Carolina State Climate Office, Rapid Reaction: Historic Flooding Follows Helene in Western NC, https://climate.ncsu.edu/blog/2024/09/rapid-reaction-historic-flooding-follows-helene-in-western-nc/.

and that the Forest Drought Response Index showed abnormal dry to extreme drought conditions in forested areas.[31] The North Carolina State Climate Office also reported that at least 20% of the state was classified in drought during 33 of 52 weeks in 2025.[32] Due to the fact that drought was not identified by outreach as a current feedstock-supply constraint, but online information indicates recurring drought conditions that can affect forest health and long-term productivity, the risk was deemed low-medium.

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**

1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds

Rationale: Hurricanes, tornadoes, and strong winds can destroy timber stands and feedstock piles. They can also delay forestry 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: Hurricanes, tornadoes, and strong winds can damage standing timber, delay harvesting, disrupt trucking, reduce mill operating time, and temporarily redirect equipment toward storm cleanup. Moore County is inland, which lowers coastal storm-surge exposure, but tropical systems can still affect inland forest supply chains through wind, heavy rainfall, road closures, and salvage conditions. NOAA states that tropical cyclones can produce widespread torrential rainfall and destructive inland flooding, and Hurricane Helene demonstrated that severe hurricane impacts can occur far inland in North Carolina.[33] NOAA also projects that tropical cyclone rainfall rates will increase as the climate warms, which increases the relevance of hurricane-related disruption over the life of the project.[34] Due to the fact that the inland location reduces coastal exposure, but hurricanes, tornadoes, strong winds, and tropical-rainfall events remain credible regional risks to harvest access, trucking, and feedstock continuity, the risk was deemed medium.

Raw Risk Likelihood (RRL)	**Score**

[31] NC State Extension Forestry, Managing Trees Under Drought Conditions, forestry.ces.ncsu.edu/news/managing-trees-under-drought-conditions/.
[32] North Carolina State Climate Office, The Weather Year in Review: Dry Days, Plus a Few Storms, in 2025, climate.ncsu.edu/blog/2026/01/the-weather-year-in-review-dry-days-plus-a-few-storms-in-2025/.
[33] NOAA National Hurricane Center, Hurricane Preparedness - Hazards, https://www.nhc.noaa.gov/prepare/hazards.php, NOAA Climate.gov, Hurricane Helene's Extreme Rainfall and Catastrophic Inland Flooding, https://www.climate.gov/news-features/event-tracker/hurricane-helenes-extreme-rainfall-and-catastrophic-inland-flooding
[34] NOAA Geophysical Fluid Dynamics Laboratory, Global Warming and Hurricanes, https://www.gfdl.noaa.gov/global-warming-and-hurricanes/.

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**

1.7.9 Low Temperatures

Rationale: Low temperatures can have adverse impacts on the operations of feedstock processing equipment in Northern BDO Zones.

Risk Information: Low-temperature risk is limited in the Moore County Supply Zone. Occasional winter storms, freezing rain, and short-duration freezing conditions can occur in North Carolina, and the North Carolina State Climate Office maintains a statewide winter storm history showing that major winter events have occurred in the state since 1959.[35] However, outreach did not identify cold weather as a constraint on pulpwood harvesting, forest residue collection, chip-van hauling, sawmill residue movement, or mill operations. NOAA climate normal tools also indicate that central North Carolina has a temperate climate rather than prolonged severe cold conditions.[36] Due to the fact that low temperatures and winter storms can occur but are not expected to materially affect feedstock production or transportation in central North Carolina, the risk was 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**

1.8 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: Harvesting, chipping, grinding, and trucking are exposed to fuel and producer-cost inflation. This affects all three feedstocks, but the exposure is highest for pulpwood and forest residues because they require woods operations and hauling. The assessment shows that delivered feedstock cost includes major collection, logging, grinding, and transportation components, especially for forest residues (Table B-6). Figure E-7 also shows that Lower Atlantic diesel prices have fluctuated sharply, including elevated levels in 2022 before moderating in later periods. EIA data also

[35] North Carolina State Climate Office, Winter Storm Database, https://products.climate.ncsu.edu/weather/winter/database/.
[36] NOAA National Centers for Environmental Information, U.S. Climate Normals, https://www.ncei.noaa.gov/products/land-based-station/us-climate-normals.

confirm continued regional diesel-price volatility, while BLS data show that the Producer Price Index remains elevated compared with pre-2021 levels.[37] Due to the fact that diesel, oil, and producer-cost inflation directly affect contractor margins, hauling costs, and delivered feedstock prices for all three rated feedstocks, the risk was 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**

1.8.2 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: Feedstock procurement is expected to occur within the United States and be paid in U.S. dollars. No cross-currency sourcing requirement was identified for pulpwood, forest residues, or sawmill residues in the Robbins, NC supply chain. Due to the fact that there is no expected currency mismatch in the feedstock supply chain, this indicator was deemed irrelevant.

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**
No adjustment.	**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: The Supply Zone and Competition Zone are domestic U.S. regions. Feedstock is expected to be sourced from North Carolina and South Carolina, with no international border crossing required. Due to the fact that the project is not expected to rely on cross-border feedstock movement, this indicator was deemed irrelevant.

[37] U.S. Energy Information Administration, Lower Atlantic No. 2 Diesel Retail Prices, www.eia.gov/dnav/pet/hist/LeafHandler.ashx?f=M&n=PET&s=EMD_EPD2D_PTE_R1Z_DPG, U.S. Bureau of Labor Statistics, Producer Price Index - Logging, www.bls.gov/regions/mid-atlantic/data/producerpriceindexlogging_us_tables.htm

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**
No adjustment.	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: The rated feedstocks (pulpwood, forest residues, and sawmill residues) do not depend on direct production subsidies; federal cost-share programs such as EQIP have historically supported reforestation and stand management in the region but do not underpin current feedstock availability, so changes to these programs would not directly cut the rated supply. The risk is 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

1.9.2 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 forest residues, allowable cut limits, 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: North Carolina's Forest Practices Guidelines Related to Water Quality set statewide performance standards under the Sedimentation Pollution Control Act, and forestry operations that follow the associated best management practices retain a regulatory exemption from further sedimentation permitting; no unusual feedstock-

specific permitting barrier was identified.[38] Standard air-quality, stream-crossing, and storage permits would apply to any collection, chipping, or storage infrastructure the project builds. Thus, 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**

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: Forestry itself is a long-standing, broadly accepted regional industry, but North Carolina's wood pellet and biomass-export sector has drawn sustained, organized opposition over the past decade from groups such as the Dogwood Alliance and the Southern Environmental Law Center, centered on environmental justice, air-quality, and forest carbon concerns; a proposed pellet plant in nearby Robeson County was withdrawn after community opposition and permitting scrutiny.[39] A new biomass project in the region should expect potential public and regulatory scrutiny of a similar nature, even where a pulpwood consuming facility differs materially from an export pellet mill. While these concerns will not likely affect the biomass supply for a new project in Robbins, NC, to account for the potential scrutiny that this project could attract, the risk is elevated to low-medium.

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**

1.9.4 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.

[38] N.C. Forest Service, Forest Practices Guidelines Related to Water Quality, 02 NCAC 60C, and Forestry Best Management Practices Manual to Protect Water Quality, ncagr.gov/divisions/nc-forest-service/water-quality.
[39] Dogwood Alliance, "15 Reasons NC Leaders Should Reject the Wood Pellet Industry," dogwoodalliance.org (2021).

Risk Information: There are no tribal lands within the 25-mile BDO Zone around Robbins; the Lumbee Tribe of North Carolina, the largest tribe east of the Mississippi and newly federally recognized under the Lumbee Fairness Act (December 2025), holds its territory and membership base in Robeson, Hoke, Cumberland, and Scotland Counties, roughly 60 or more miles to the southeast and within or near the outer Supply and Competition Zones.[40] Direct project impacts on tribal land or resources are therefore unlikely, though the tribe's new federal status and proximity within the wider draw area warrant routine outreach if procurement extends into those counties. Thus, assuming a new project will conduct outreach to tribes, 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**

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: Feedstock is woody biomass drawn from timberland rather than food cropland, so direct food-security or land-use conflict is minimal; the Supply Zone's competing land-use pressure is primarily between timberland and pine-plantation management rather than displacement of food production. Due to the fact that the project relies on forest byproducts and low-grade wood rather than agricultural food crops, the risk was 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 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.

[40] N.C. Department of Administration, American Indian Affairs – Lumbee Tribe (I-96), doa.nc.gov; Lumbee Tribe of North Carolina, lumbeetribe.com.

Risk Information: The Supply Zone is harvested well below net growth (GTD of 1.6), which supports a sustainability case for the rated feedstocks (Figure B-1). Third-party certification (e.g., SFI/FSC) and transparent sourcing data help substantiate sustainability claims. Overall, a new market could support thinning, forest health, and improved forest management, but residue-removal standards and certification or sustainability verification should still be documented. Due to the fact that growth conditions are favorable and sustainability verification and residue-removal practices will most likely be formalized, the risk was 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**

1.10.2 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 forest 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: Pulpwood harvesting and sawmill residue use are established practices in the Supply Zone, and forest residue recovery can be managed through site-specific residue-retention and soil-protection practices. North Carolina forestry BMPs provide guidance for protecting soil productivity, reducing erosion, managing skid trails and landings, and limiting sediment movement during forestry operations.[41] Due to the fact that soil risks can be effectively mitigated through established BMPs and proponent-enforced supplier requirements, the risk was 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**

[41] North Carolina Forest Service, Best Management Practices Manual, www.ncagr.gov/divisions/nc-forest-service/water-quality/best-management-practices-manual.

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: Pulpwood harvesting and forest residue recovery can create water-quality risks if forestry operations are poorly managed, particularly through sedimentation, rutting, stream crossings, road construction, and landing placement. North Carolina forestry BMPs provide established practices for protecting surface water and groundwater during forestry operations, including streamside management zones, erosion control, road stabilization, and proper stream-crossing design.[42] Due to the fact that water-quality risks can be effectively mitigated through established BMPs and proponent-enforced supplier requirements, the risk was 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**

1.10.4 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: Water-use risk would be more relevant to the biofacility's industrial process than to feedstock procurement. Due to the fact that feedstock supply does not depend on incremental water use, the risk was 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**

[42] Ibid.

1.10.5 Pesticide Risk to Human and Ecosystem Health

Rationale: Application of pesticides (i.e., herbicides, fungicides, and insecticides) on forest 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: Herbicide or pesticide use may occur in pine plantation management, site preparation, invasive control, or reforestation, but feedstock procurement does not appear dependent on unusually intensive chemical treatment. Standard forestry practices and BMPs provide a mitigation framework for chemical-use risks.[43] Due to the fact that pesticide use exists in forestry but is not a defining requirement of the rated feedstock supply chain, the risk was 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**

1.10.6 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: Pulpwood harvesting and forest residue recovery can affect wildlife and landscape values if operations are poorly planned, particularly through excessive residue removal, inadequate habitat retention, poorly timed harvesting, or visually sensitive clearcuts. North Carolina forestry BMPs and standard forest management practices provide a framework for protecting riparian areas, maintaining site stability, reducing erosion, and limiting avoidable disturbance during forestry operations.[44] Due to the fact that wildlife and landscape risks can be mitigated through established BMPs, responsible harvest planning, and proponent-enforced supplier requirements, the risk was 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**

[43] Ibid.
[44] Ibid.

CATEGORY 2.0: INFRASTRUCTURE RISKS

2.1 Risk Factor: Physical Infrastructure

2.1.1 Land Parcel/Industrial District

Risk Information: Iron Horse Industrial Park comprises 73 total acres (approximately 55 developable acres) located in Aberdeen, NC. The site is zoned Heavy Industrial and has a generally rectangular shape with gentle, rolling topography. The site has been cleared on 55 acres and 15 acres have been graded. Undevelopable wetlands are present along the eastern perimeter. The property can accommodate up to 600,000 square feet of building space or multiple smaller buildings. Adjacent land uses include light industrial to the north and east, agricultural to the south, and residential/light industrial to the west. A $1.1 million access road from NC Hwy 211 is planned, and NCDOT plans to widen NC 211 to a 4-lane highway between Aberdeen and Raeford (construction to be completed by 2034). The site is only 30 miles from Fort Bragg Army base. The combination of heavy industrial zoning, cleared and partially graded condition, funded access road, and highway widening project positions this 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**

2.1.2 Ownership of Land

Risk Information: The property is owned by the Moore County Economic Development Partnership (MCEDP) and is available for purchase. Lease arrangements are not available. Public ownership by the county's economic development organization ensures a motivated seller aligned with industrial development goals. The MCEDP has invested in site preparation (clearing, grading) and access road construction, demonstrating institutional commitment. The purchase-only model provides clear title transfer. 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**

2.1.3 Permitting Description

Risk Information: The site currently holds no active permits. The property is located in the Town of Aberdeen's extra-territorial jurisdiction (ETJ) and is zoned Heavy Industrial. If the proposed use is permitted by right under HI zoning, the

permitting timeline is estimated at 2–3 months. The existing HI zoning eliminates the need for rezoning, and the defined 2–3 month permitting timeline is manageable. The risk is assessed as 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**

2.1.4 Environmental Issues

Risk Information: Comprehensive environmental due diligence has been conducted, including a Phase I Environmental Site Assessment (May 2024), Wetland Delineation Report (December 2024), Subsurface Geotechnical Investigation (July 2005), Electromagnetic Evaluation (August 2025), Archaeological & Cultural Resources Review (September 2005), and Endangered Species assessment (2022). MCEDP is currently conducting additional Phase II environmental testing. Importantly, the groundwater at the site has been impacted by nearby EPA Superfund sites, which may require a vapor barrier under foundation slabs. Due to this contamination and the Town of Aberdeen's development ordinance, facilities must connect to the municipal water system. There are currently 12 groundwater monitoring wells on-site. Moore County is in a federal NAAQS air quality attainment zone. While the completed assessments are comprehensive, the Superfund-related groundwater contamination and potential vapor barrier requirement elevate this indicator to a low-to-moderate 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 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**

2.2 Risk Factor: Utilities

2.2.1 Natural Gas Availability

Risk Information: Natural gas service is provided by Piedmont Natural Gas. An 8-inch transmission line at 150 psig is present on the site. Additionally, a 2-inch distribution line is located on Carolina Road adjacent to the property. The on-site 8-inch, 150 psig transmission line provides substantial industrial-grade natural gas capacity suitable for energy-intensive operations. 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

2.2.2 Electric Availability

Risk Information: Electric service is provided by Duke Energy. Three-phase power at 23 kV distribution voltage is available adjacent to the site at the northwest corner of the property on Carolina Road. The current capacity is 3 MW, upgradable to 5 MW. 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

2.2.3 Water Availability

Risk Information: Water service is provided by the Town of Aberdeen via a 12-inch water main adjacent to the site along the eastern property line. The current excess capacity of the line is 100,000 GPD. Due to Superfund-related groundwater contamination, all facilities must connect to the municipal water system. While the 100,000 GPD excess capacity is moderate, the requirement for municipal water connection ensures reliable, treated water supply. For water-intensive industrial operations, coordination with the Town of Aberdeen on capacity availability would be advisable. The risk is assessed as 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

2.2.4 Drainage, Stormwater Management, and Sewage

Risk Information: Wastewater service is provided by the Town of Aberdeen via an 8-inch sewer line on-site with a capacity of 150,000 GPD. The nearest wastewater treatment plant is the Moore County Water Pollution Control Plant in Addor, located approximately 4.75 miles southeast. Stormwater management requires permits from both the Town of Aberdeen (Chapter 6 of the UDO) and the North Carolina Department of Environmental Quality. The on-site sewer

line with 150,000 GPD capacity and proximity to the treatment plant provide adequate wastewater infrastructure. Standard stormwater permitting requirements apply. 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**

2.2.5 Waste Disposal

Risk Information: The Moore County Landfill is located at 456 Turning Leaf Way in Aberdeen, approximately 5 miles from the site. The close proximity of the county landfill (5 miles) ensures convenient and cost-effective waste disposal for both construction and operational waste streams. The risk is assessed as low, as the closure year is unknown.

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**

2.2.6 Information and Communication Technology (ICT) Services

Risk Information: Telecommunications services are provided by Windstream, with fiber lines located approximately 1,800 feet east of the property on Carolina Road. Fiber and cable services are available. The availability of both fiber and cable services ensures multiple connectivity options. The risk is assessed as 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**

2.3 Risk Factor: Transportation/Logistics

2.3.1 Road/Highway Access

Risk Information: The site is located on NC Highway 211 (0.3 miles), with US-1 at 3.3 miles, the I-73/74 corridor at 23 miles, and I-95 at 34 miles. Current site access is via Lockey Drive, a private road. A public access road via Crestline Drive extension from NC-211 is planned and funded at $1.1 million. NCDOT plans to widen NC Hwy 211 to a 4-lane highway between Aberdeen and Raeford, with construction expected to be completed by 2034. Moore County is centrally located in North Carolina, 1 hour south of Raleigh-Durham, 2 hours east of Charlotte, and 2 hours west of Wilmington. While the current private road access and distance to interstate highways (23+ miles to I-73/74) are moderate limitations, the funded access road and NC-211 widening project substantially improve the outlook. The risk is assessed as 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**

2.3.2 Rail Access

Risk Information: The site is served by the Aberdeen & Rockfish Railroad, a short-line carrier with rail running adjacent along the entire length of the north property line. The Aberdeen & Rockfish provides direct interchange connections to both CSX Transportation in downtown Aberdeen (approximately 4 miles) and Norfolk Southern in Fayetteville (approximately 43 miles), offering tenants access to Class I rail networks serving East Coast and Midwest markets. The adjacent short-line rail with dual Class I interchange connections is a significant transportation asset. 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**

2.3.3 Airport Access

Risk Information: The Moore County Airport (SOP) is approximately 10 miles from the site, providing general aviation access. The nearest commercial airports are Fayetteville Regional Airport (FAY) at approximately 45 miles, Raleigh-Durham International Airport (RDU) at approximately 70–75 miles, and Charlotte Douglas International Airport (CLT) at approximately 114 miles. The 45-mile distance to Fayetteville Regional and 70-mile distance to RDU provide reasonable

commercial air access. RDU is a major hub with extensive domestic and international service. The risk is assessed as 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**

2.3.4 Water Freight Access

Risk Information: The Port of Wilmington is approximately 100–115 miles southeast of the site, and the Port of Morehead City is approximately 115 miles east. Both are accessible via NC highway networks. While the site is not directly on navigable water, the approximately 100-mile distance to the Port of Wilmington—North Carolina's primary deep-water port—is manageable via truck and rail. The adjacent Aberdeen & Rockfish Railroad provides rail connectivity that can be routed to port facilities through CSX and Norfolk Southern interchanges. The risk is assessed as medium-low.

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 Risk Factor: Social Infrastructure

2.4.1 Healthcare (Local)

Risk Information: Moore County has an exceptional regional healthcare system. FirstHealth of the Carolinas operates flagship facilities including the Moore Regional Hospital, located 6 miles from the site. Moore Regional Hospital is the only hospital in North Carolina ranked in the 2023 Fortune/PINC AI 100 Top Hospitals in the nation and was ranked #5 in NC in U.S. News & World Report's Top Hospitals. This nationally recognized healthcare infrastructure, located at a 6-mile distance from the site, positions healthcare as a low-very 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 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**

2.4.2 Education (Schools)

Risk Information: Moore County offers robust educational infrastructure. There are 22 public schools, 3 charter schools, and 9 private schools in the county. Sandhills Community College (SCC), located approximately 15 minutes from the site, provides customized workforce training through the Palmer Advanced Manufacturing Center. The SCC Sandhills Promise program offers two years of tuition-free community college for qualifying high school graduates. Within a 70-mile radius of Moore County, there are 32 colleges and universities including 5 public universities, 12 private colleges and universities, and 15 community colleges—including Duke University, UNC Chapel Hill, and NC State University. NCWorks and Apprenticeship NC programs provide free employer services. Moore County Schools' Career & Technical Education (CTE) program partners directly with private industry. Additionally, approximately 7,000 service members transition annually from nearby Fort Bragg, providing a steady pipeline of disciplined, skilled workers. 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**

2.4.3 Local Transportation

Risk Information: Personal vehicle travel is the predominant transportation mode in Moore County, with 77% commuting alone via car, truck, or van. Public transportation options are limited, consistent with mid-size North Carolina communities. The strong highway network (NC-211, US-1) facilitates commuting from surrounding counties. Therefore, this results in a medium-low risk score.

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: Moore County is served by the Moore County Sheriff's Office, the Aberdeen Police Department, and local fire departments. The Aberdeen Fire Department has an ISO score of 2, indicating great fire suppression capability.

Moore County ranks 59th percentile for safety, meaning it is safer than 59% of counties in the US. This results in a medium to low-risk score.

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**

2.4.5 Housing/Cost of Living

Risk Information: The BDO Zone consists of six counties, including Moore, Montgomery, Randolph, Chatham, Lee, and Richmond. Most of the population within the BDO Zone resides in Moore County (66%) and Montgomery County (23%). Moore County's cost of living score is approximately 6.1% below the national average, and 3.2% higher than the state average. However, the housing market presents some challenges. The median home sales price was $452,500 in January 2026, up 3.4% year-over-year, reflecting the area's desirability. Critically, the 2024 Moore County Housing Needs Assessment projects a housing gap of 1,916 rental units and 5,808 for-sale units between 2024 and 2029. While the cost of living is moderate overall, the high home prices relative to the area's income levels and the projected housing gap represent workforce recruitment challenges. Moore County was the 7th fastest growing county in NC (2022), and the population is projected to increase 60%+ by 2050, which will further strain housing. The risk is assessed as low-to-moderate.

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**

2.5 Risk Factor: Labor

2.5.1 Workforce

Risk Information: In 2025, the BDO Zone had a population of approximately 96,837 people, with an average unemployment rate of 3.6% in September 2025, compared to the national average of 4.1%. There are approximately 6,150 active job seekers in Moore County. Within a 60-mile radius of Moore County, there are 3.4 million residents. Educational attainment is strong: 93.7% of residents 25+ have a high school degree or higher, and 41.0% have a bachelor's degree or higher—well above national averages. Moore County is home to nearly 60 manufacturing companies. The Pinehurst-Southern Pines micropolitan has been rated the #1 micropolitan in NC for economic strength for six consecutive years. Approximately 7,000 service members transition annually from nearby Fort Bragg, providing a steady pipeline of skilled workers. The strong educational attainment, growing population, Fort Bragg military

transition pipeline, and access to 3.4 million people within 60 miles position the workforce as a low to very 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 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**

2.5.2 Labor Costs

Risk Information: North Carolina's minimum wage is $7.25/hour, mirroring the federal minimum. Moore County's average weekly wage for Q3 2025 was $1,070, Montgomery County $932, Randolph $1,002, Chatham $1,051, Lee $1,121, and Richmond $889. All of these are lower than the national average of $1,459/week, however, Lee, Moore, and Chatham are among the highest in the state. In 2024, the average median household income across the six counties within the BDO Zone was $68,246, compared to the national average of $81,604. Notably, Chatham and Moore County are among the highest, with median household incomes of $94,317 and $86,080, respectively. Moore County and the Town of Aberdeen offer local incentive policies reimbursing a portion of real and personal property taxes over a 5-7 year period for eligible companies. Property tax rates are low: Moore County $0.33 and Town of Aberdeen $0.42 per $100 of valuation. The competitive wage structure, low taxes, and generous incentive programs position labor costs 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**

SECTION E: TABLES AND FIGURES

Figure E-1. Above Ground Biomass of All Live Trees in the Supply Zone (2015-2024)[45]

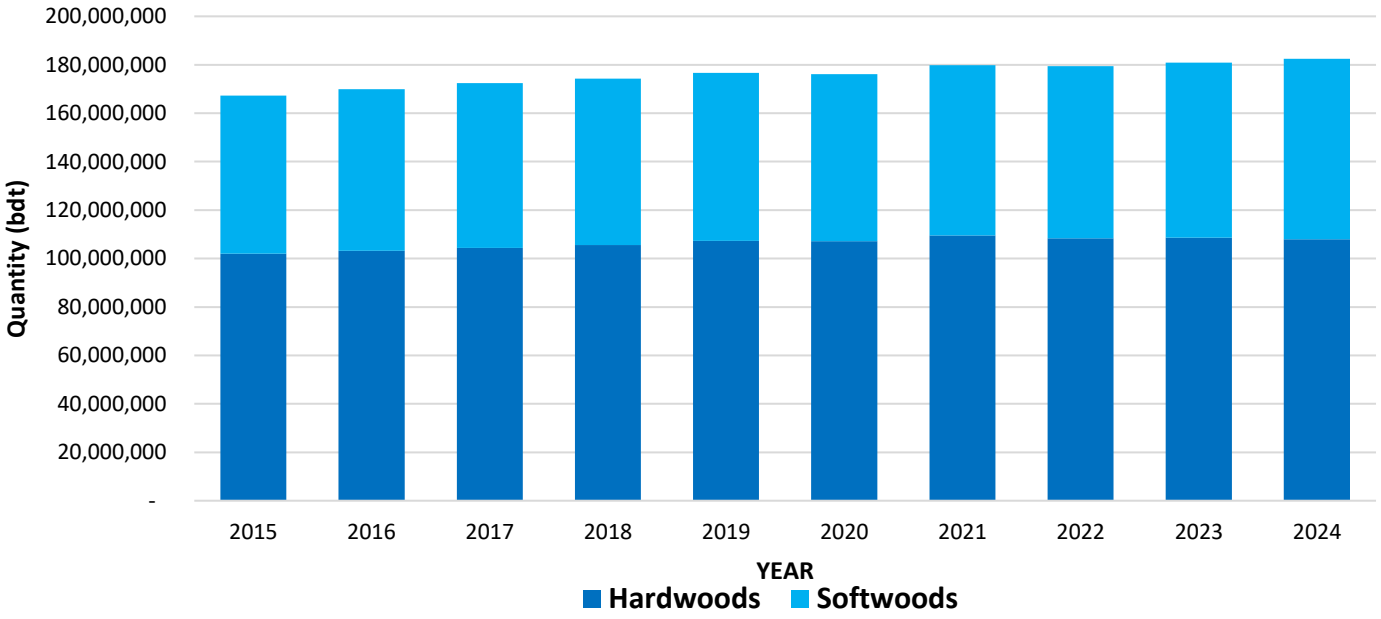
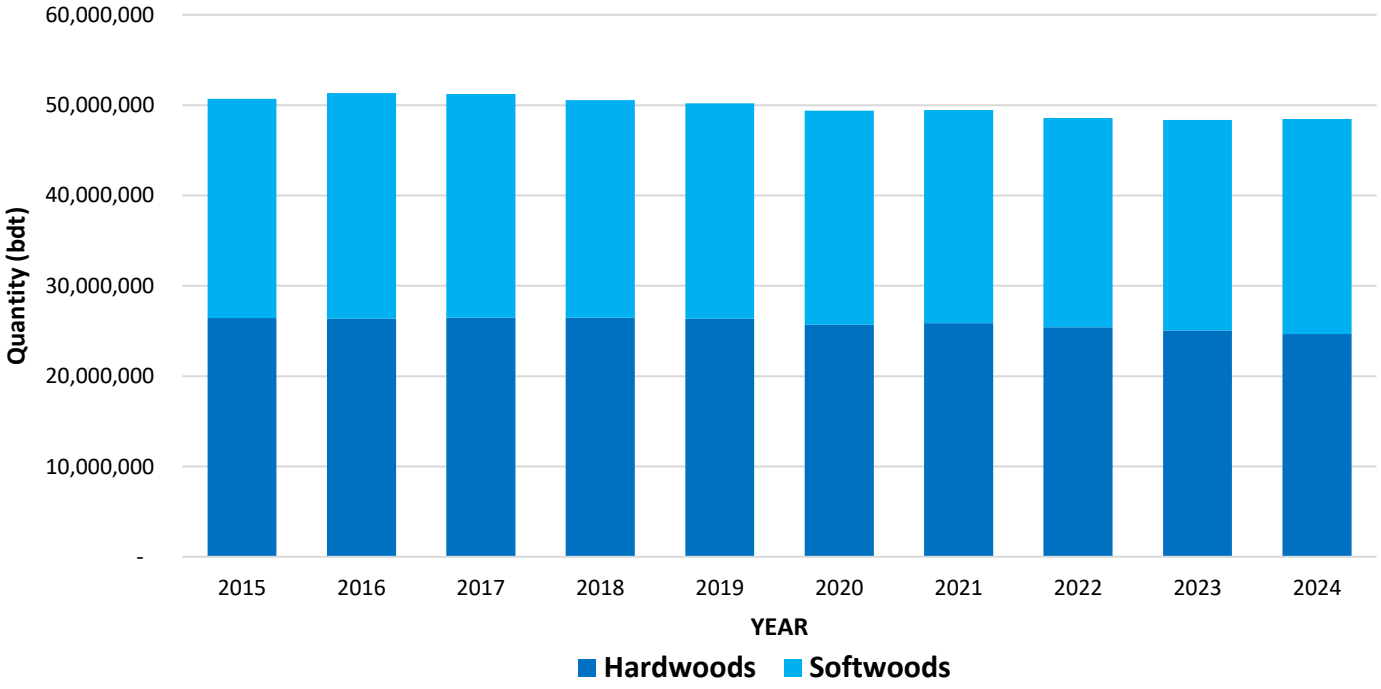


Figure E-2. Above Ground Biomass of Live Pulpwood Size Trees in the Supply Zone (2015-2024)[46]



[45] apps.fs.usda.gov/fiadb-api/evalidator
[46] Ibid.

Figure E-3. Percent Merchantable Biomass of Standing Live Trees by Ownership [47]

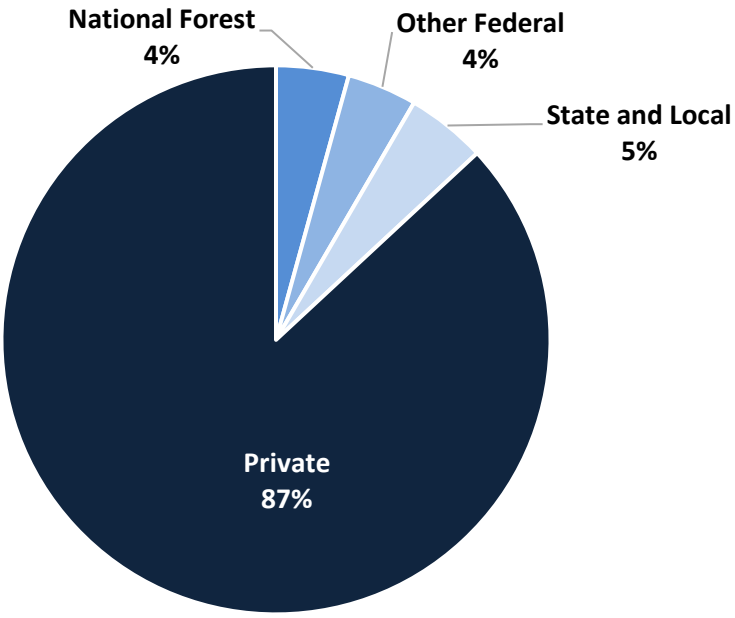
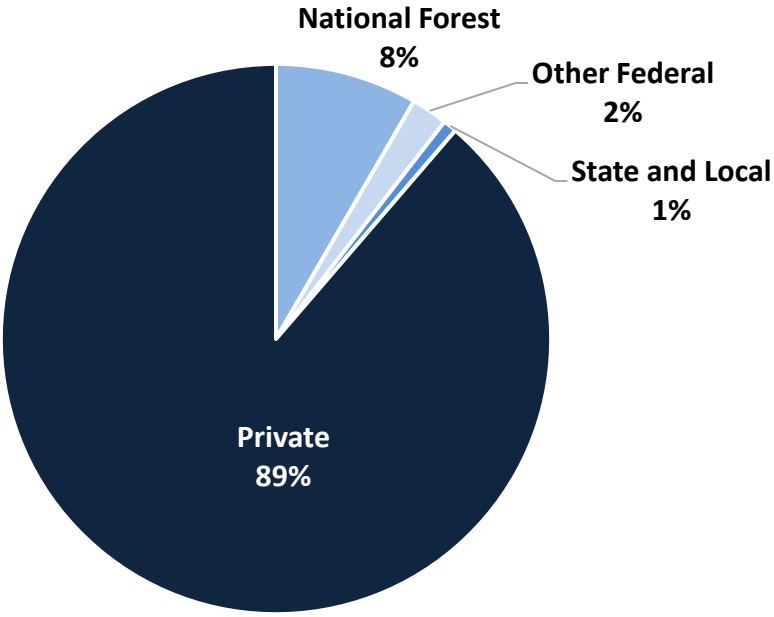
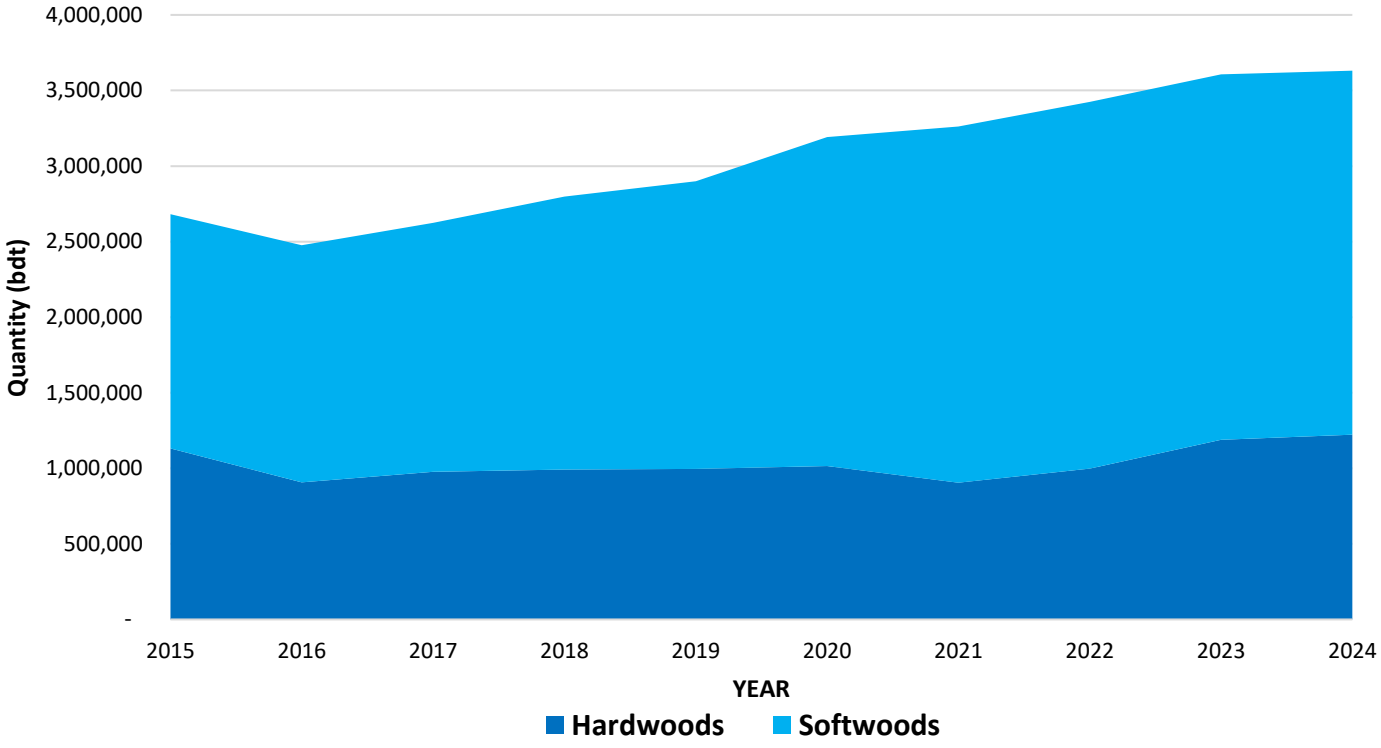


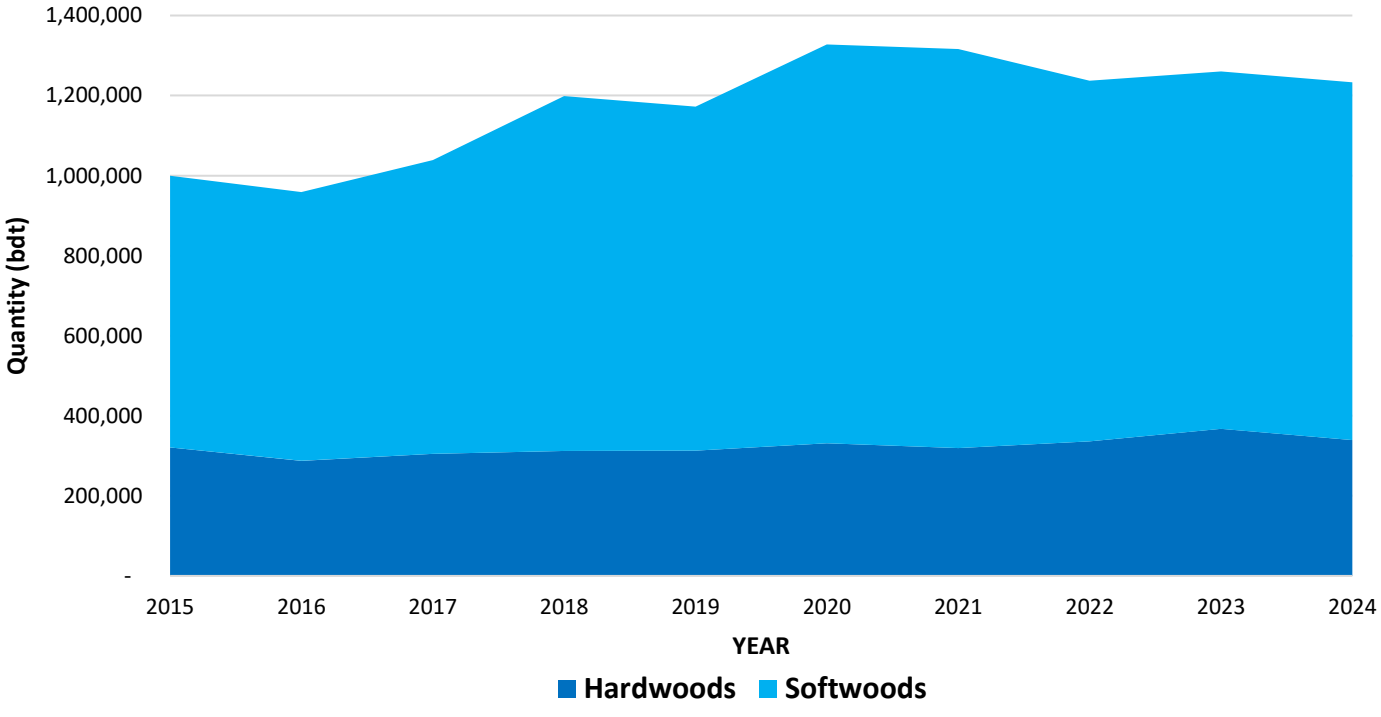
Figure E-4. Percent Timber Removal by Ownership[48]



[47] Ibid.
[48] Ibid.

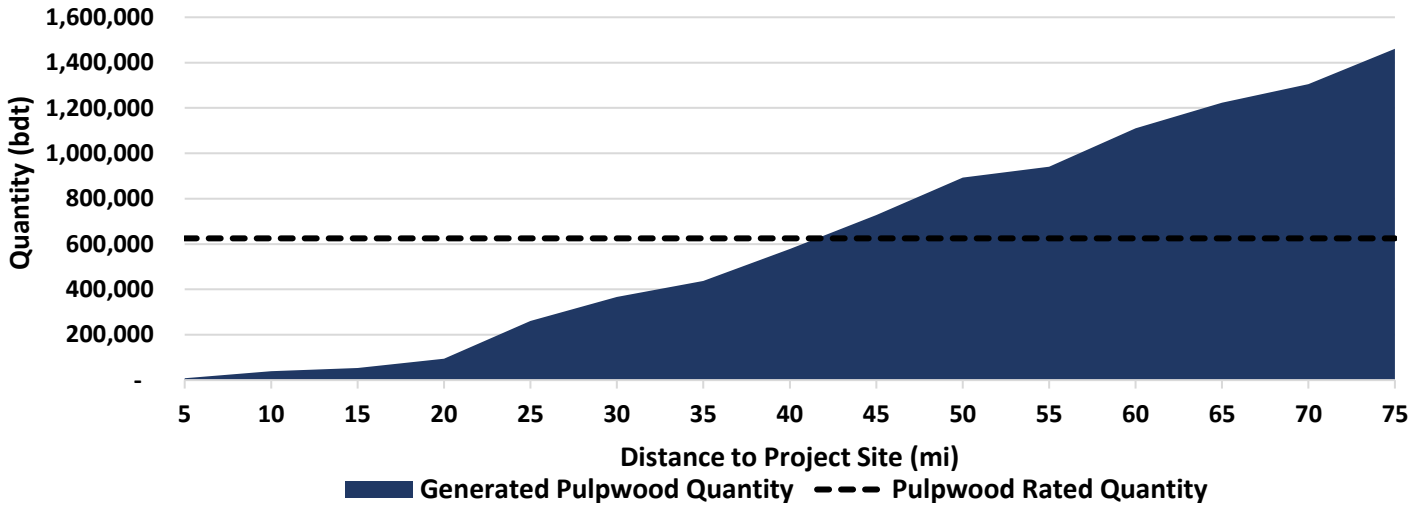
Figure E-5. Average Annual Removals of Timber (top) and Pulpwood (bottom) in the Supply Zone [49]

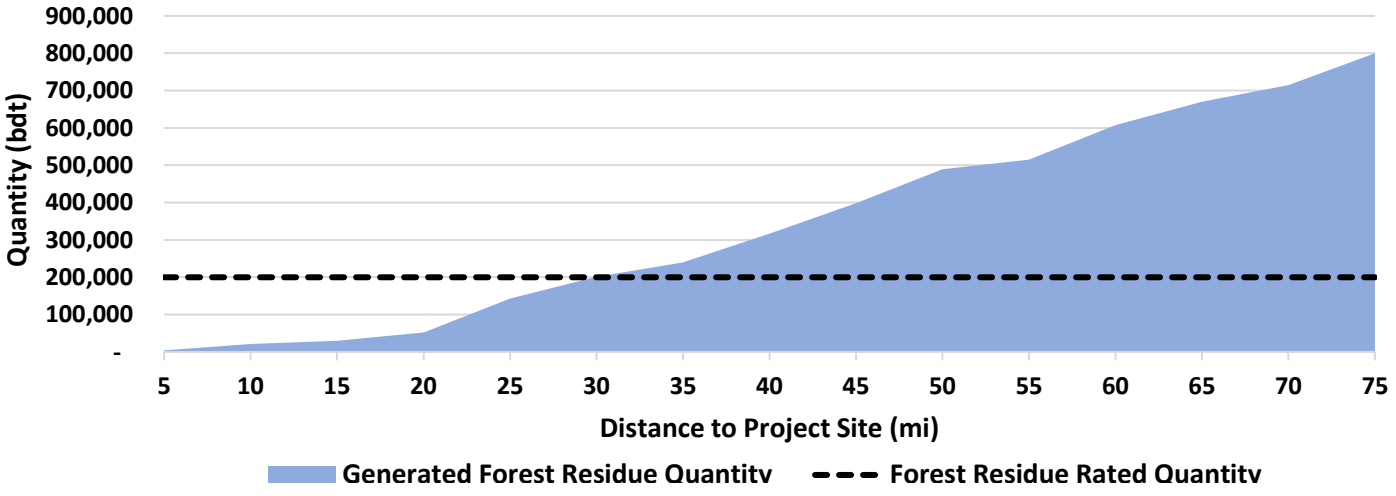




[49] Ibid.

Figure E-6. Supply Curves for Pulpwood (top), Forest Residues (middle), and Sawmill Residues (bottom)





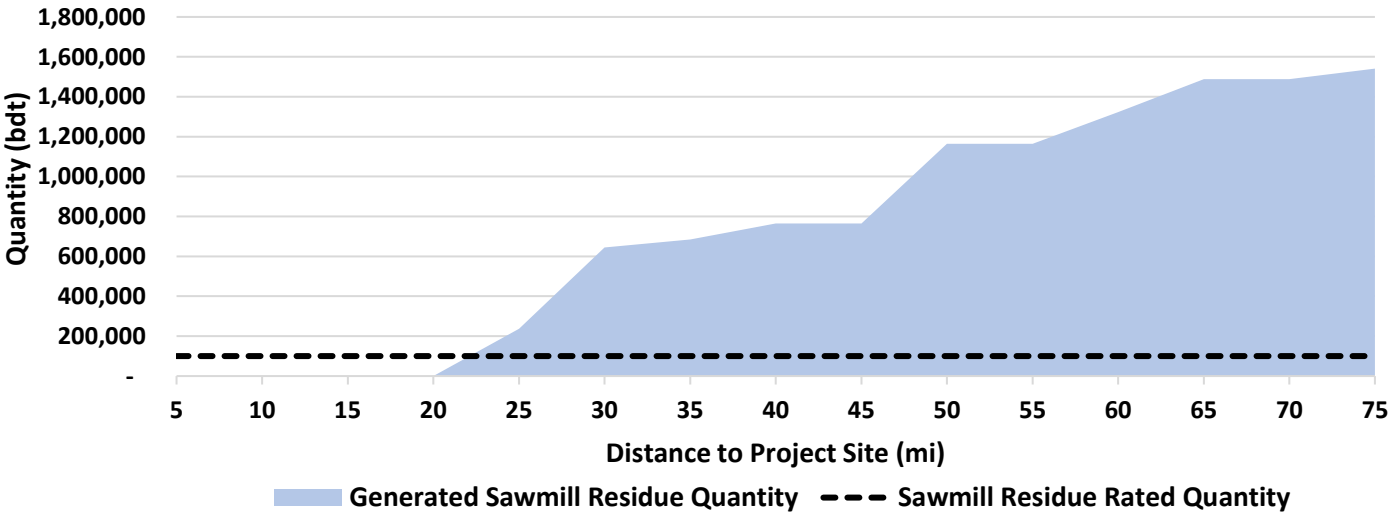
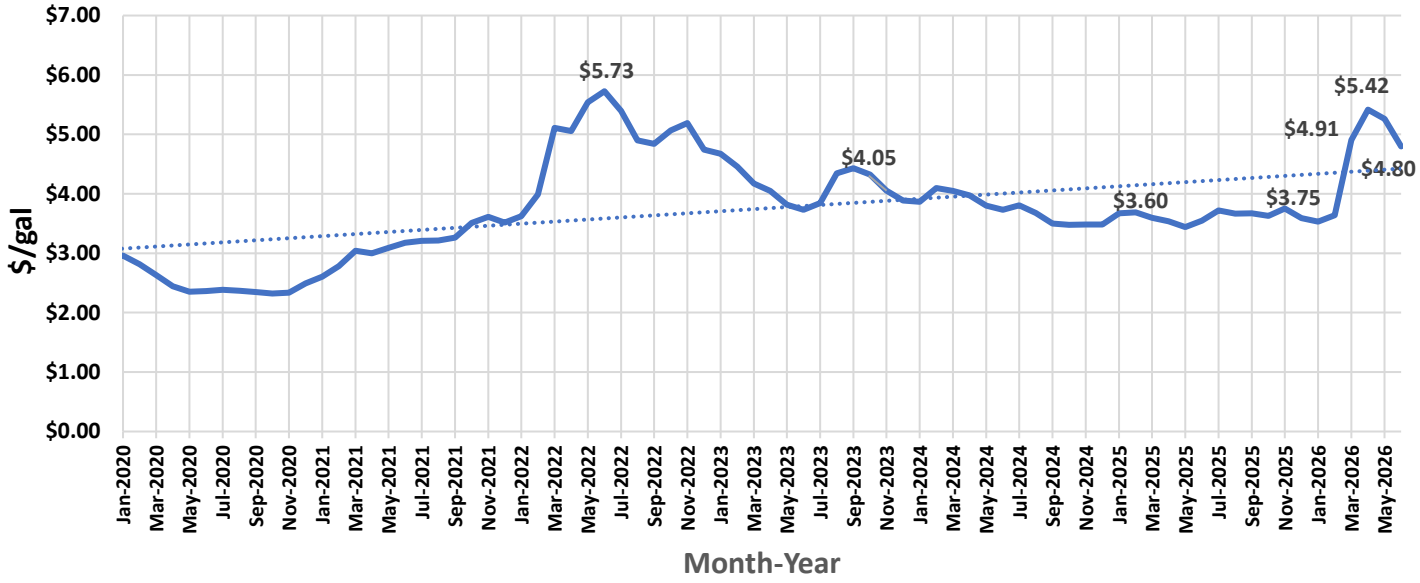


Figure E-7. Historical Monthly Lower Atlantic (PADD 1C) No 2 Diesel Retail Prices



SECTION F: LEGAL DISCLAIMER

This BDO Zone Rating (the "Rating") is prepared for and provided to Moore County Economic Development Partnership and is intended to be read and used in its entirety and not in parts. Separation or alteration of any section or page from the main body of this Rating is expressly forbidden. In preparing this Rating, Ecostrat has used information obtained from third parties or otherwise publicly available. All such information has not been independently validated, verified, or confirmed by Ecostrat (except where otherwise specifically indicated) and Ecostrat makes no representation or warranty as to the accuracy or completeness of any information provided by third parties or otherwise publicly available.

Neither Ecostrat nor the members of the BDO Zone Advisory Committee make any representation or warranty as to the accuracy or completeness of the information and content in this Rating and shall have and accept no liability for any statements, opinions, information, or matters (expressed or implied) arising out of, contained in or derived from this Rating or any omissions from this Rating, or any other written or oral communication transmitted or made available to any other party in relation to the subject matter of this Rating. Any use which a third party makes of this Rating, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Decisions made, or actions taken based on or resulting from Ecostrat's work product shall be the responsibility of the parties directly involved in those decisions or actions. There are no third-party beneficiaries with respect to this Rating, and Ecostrat expressly disclaims any liability whatsoever (whether in contract, tort, or otherwise) to any third party. Ecostrat makes no representation or warranty (express or implied) to any third party in relation to this Rating. A decision by any entity to disclose this Rating to the public or privately to a limited number of potential institutional accredited investors or other qualified investors shall not constitute any permission, waiver, or consent from Ecostrat for any third party to rely on this Rating except for informational purposes, and as such, is provided on such basis. Access to this Rating and its use by any third party implies acceptance by the third party of the terms and conditions contained in this section and other parts of this Rating.

All information included is based on information available on the date hereof and neither Ecostrat nor the members of the BDO Zone Advisory Committee are under any obligation to update the information herein. No investor, security holder, or other person should rely on the content of this report in any way in connection with the purchase or sale of any security.