STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

FAIRBANKS-DELTA AREA FORESTRY
DRAFT FOREST LAND USE PLAN FOR A LONG-TERM NEGOTIATED TIMBER SALE (AS 38.05.123)

AURORA ENERGY SOLUTIONS, LLC

NC-1971-F
ADL# 422196, NOVEMBER 2023

ABBREVIATIONS

Agencies

ADF&G	Alaska Department of Fish and Game
DEC	Alaska Department of Environmental Conservation
DMLW	Alaska Division of Mining, Land and Water
DNR	Alaska Department of Natural Resources
DOF	Alaska Division of Forestry & Fire Protection
OHA	Alaska Office of History and Archeology
FNSB	Fairbanks North Star Borough
SHPO	State Historic Preservation Office
UA	University of Alaska
USFS	United States Forest Service

DOF Specific

AS/AAC	Alaska Statute/ Alaska Administrative Code
AAC	Annual Allowable Cut
BIF	Best Interest Finding
CF	Cubic foot volume
CCF	Hundred cubic feet
ETAP	Eastern Tanana Area Plan
FLUP	Forest Land Use Plan
FRPA	Alaska Forest Resources and Practices Act
FYSTS	Five-Year Schedule of Timber Sales
MBF	Thousand board foot volume
MMBF	Million board feet
SY	Sustained Yield
TVSF	Tanana Valley State Forest
YTAP	Yukon-Tanana Area Plan

Contents

I. Introduction

Project File Number: NC-1971-F

Division of Forestry & Fire Protection Office: Fairbanks-Delta Area
Area Forester: Kevin Meany
Forest Practices Geographic Region (AS 41.17.950): Region III

This Forest Land Use Plan (FLUP) covers proposed forest operations on approximately 1,500 acres of land located west and southwest of Fairbanks near Murphy Dome and the Parks Highway. It is intended to provide the best available information regarding the proposed harvest of timber, and management of other non-timber uses in compliance with AS 38.05.112 and AS 41.17.060, and must be adopted by the DNR before the proposed activity can occur.

☐ This [Draft] Forest Land Use Plan is for timber sale(s) which have been determined to be in the best interest of the state pursuant to AS 38.05.035 (e) and AS 38.05.945; [Best Interest Finding, Timber Sale name/number (date of Final Finding) available at [hyperlink if available]]. This FLUP does not determine whether or not to access and sell timber within the timber sale area, nor the method of sale. Those decisions have been made previously in the [date] Best Interest Finding and are not appealable under this FLUP.

☒ This Draft Forest Land Use Plan is for timber sale(s) for which a Preliminary Best Interest Finding is currently out for review. A final best interest finding must be completed prior to adoption of a FLUP pursuant to AS 38.05.035 (e) and AS 38.05.945; [Preliminary Best Interest Finding, Timber Sale name/number (date of Preliminary Finding) available at [hyperlink]].

☐ This [Draft] Forest Land Use Plan is for timber to be harvested that does not require a final finding pursuant to AS 38.05.035 (e) and notification under AS 38.05.945.

A draft of this plan gets distributed to the Alaska Department of Fish & Game (ADF&G) and the Department of Environmental Conservation (DEC) for their review consistency of this proposed project with the statutes governing forest land use plans (AS 38.05.112) and the requirements of the Alaska Forest Resources & Practices Act (AS 41.17) and its Regulations (11 AAC 95).

The public and agencies are invited to comment on specific requirements for harvest, access, and reforestation operations in this draft FLUP. The decision on whether or not to offer timber for sale is made through the best interest finding process and is not subject to review under the FLUP. Objections or comments pertaining to the draft FLUP must be received in writing by the DOF Fairbanks-Delta Area Office by _____ in order to ensure consideration for DOF review. Written comments may be submitted in person or mailed to the State of Alaska, DNR Division of Forestry & Fire Protection, 3700 Airport Way Fairbanks, AK 99709, or by email to kevin.meany@alaska.gov. For more information you may contact the Fairbanks-Delta Area Forester, Kevin Meany, 907-451-2602. To be eligible to appeal the final decision, a person must be affected by the decision, and must have submitted comment this preliminary decision during the comment period.

After public and agency review of the draft FLUP, the DOF will review comments, make changes

as appropriate, and adopt the FLUP. An eligible person affected by this decision, and who provided timely written comment to the department, may appeal the decision to the DNR Commissioner per AS 44.37.011 and 11 AAC 02.]

☒ Other Documents are referenced in this FLUP. This timber sale is designed to be consistent with the management intent of the following documents:

Tanana Valley State Forest Management Plan, Yukon-Tanana Area Plan, Interagency Wildland Fire Management Plan, The Fairbanks North Star Borough Comprehensive Plan

The administrative record for this sale is maintained at the Division of Forestry & Fire Protection Fairbanks Office filed as NC-1971-F

A. Legal description

Unit Number	Township, Range, Meridian	Sections
1	T 1 S, R 6W F	32,33
2	T 1 S, R 6W F	22, 27, 28
3	T 1 S, R 6W, F	24
4	T 1 S, R 6W F	13, 24
	T 1 S, R 5W F	18
5	T 1 S, R 5W F	17, 18, 19
6 (3 smaller units)	T 1 S, R 5W F	10, 15, 16
7	T 1 S, R 5W F	2, 11, 12
8	T 1 N, R 4W F	15, 22, 23
9	T 1 N, R 4W F	24

B. Operational Period

The contract term will be for 10 years from the "effective date" specified in the contract. DOF anticipates contract will be signed by both parties in 2023 and completed in 2034.

C. Timber Disposal

☒ Timber will be sold and will have a contract administrated by the State.
☐ Timber will be available to the public; permits obtained by the public will be issued by the State.
☐ Other

D. Objectives and Summary

The management objectives for the proposed timber sales are:

- Harvest the commercial sawtimber and poletimber before significant decrease in vigor occurs.
- Return the site to a young productive mixed stand forest to include balsam poplar, birch, aspen, and white spruce.
- Provide stable supply of raw timber for a local business to meet the demand and future production needs and continue to offer a source dry firewood for the community benefiting the local and State economy.
- Provide access to future commercial timber sales in the Fairbanks Management Area.

II. Affected Landowners/Jurisdictions

A. State

Activity on ownership:	Access Easement	Harvest	Written Representative Approval
☒ Tanana Valley State Forest	☒	☒	☐
☒ Other state land managed by DNR	☐	☒	☐
☒ University of Alaska	☐	☐	☒
☐ Mental Health Trust	☐	☐	☐
☐ School Trust	☐	☐	☐

B. Other Land Ownership

	☐	☐	☐

Landowner:

Landowner Representative:

III. Harvest Methods, Silvicultural Actions, and Management of Non-timber Resources

Forest operations will be designed to:

- Protect fish habitat and water quality in compliance with the best management practices in 11 AAC 95.260-.370,

- Manage for the other land uses and activities identified in AS 41.17.060 and the Best Interest Finding for this timber sale, and
- Ensure prompt reforestation and maintenance of site productivity in compliance with AS 41.17.060(c) and 11 AAC 95 .375-.390.

Harvest and Silvicultural Methods:

☒ The silvicultural actions are described in this document, and no prescription was written or is necessary.

☐ A silvicultural prescription has been written and is attached to this document in Appendix B.

A. Timber Stand Description and History

The historic uses of the land in the general area have been logging, hunting, trapping, and general trail use. The current uses of the area are recreation, wood cutting, hunting and trapping. Much of the heavy hunting traffic is seasonal for specific game hunts. These birch stands are upland sites and have very likely burned at some point in time. Often corresponding with stand age, these units are primarily pure birch stands in the pole and sawtimber diameter class. Generally, these stands will have an aspen or spruce component making up roughly 15-20% of stand composition.

B. Timber Harvest Activities

Timber Harvest Activities are displayed in Table 1.

Table 1. Timber Harvest Activities

Unit ID	Acres	Topography	Silvicultural Action	Logging Method
1-9	1,500	Upland, irregular	Heavy partial cut (6”or greater at d.b.h.)	Ground based, whole tree harvesting and processing at the landing

C. Site Preparation

☐ Site preparation will not be necessary. There is either sufficient residual stocking, or because there has been sufficient soil disturbance by logging to forego scarification.

☒ Site preparation will be implemented and described in Table 2:

Table 2. Site Preparation

Unit ID	Acres	Site Preparation Method	Date of Completion
1-9	1500	Mechanical patch sarification	Completed annually following the previous seasons completed harvests

Patch clearcuts and heavy partial harvests in combination with natural seeding and scarification have resulted in good mixed species stand regeneration in the Fairbanks Area and have exceeded Alaska Forest Resources & Practices Act standards of 450 trees per acre in Region III. Partial harvests can result in a wide range of the number of saplings to pole-sized trees per acre depending on timber type and size class. Mechanical site preparation should avoid driving heavy equipment over known den sites greater than 12" in diameter (e.g., dens for fox, wolves, and bears).

D. Slash Abatement

☒ The potential for insect infestations caused by slash accumulations exists. Slash abatement for controlling infestations will be implemented as required by 11 AAC 95.370.
☒ Lop and scatter slash; accumulations will be kept to less than 2 feet in height.
☒ Slash will be disposed of by the operator ☒ Slash will be disposed of by the State.
☒ Other - method of slash disposal: ☐ removal off site ☐ crushing or grinding ☒ burning.
☒ Burn permits necessary from DOF and DEC to be acquired.
☒ The operator will contact the DOF local area office prior to ignition of debris.

E. Soil Stability / Erosion / Mass Wasting

☒ Maximum percent side slopes are ≤50%
☐ Maximum percent side slopes are >50%

Percentage of sale area with slopes >50%: __0__

Maximum percent slopes: _____

☒ There are no indicators of unstable areas.
☐ Indicators of unstable areas were identified and will be mitigated by actions indicated below.

F. Timber Harvest—Surface Water Protection

☒ There are no streams or lakes abutting or within a harvest unit.
☐ Known surface waters and protection measures are described in Table 3 below. *Locations are included in the operational map in the Appendices.*

Table 3. Protection for Known Surface Waters

Unit	Waterbody Name	AS 41.17.950 Classification	ADF&G AWC #	Required Riparian Protection	Site-specific actions to minimize impacts on riparian area

Unit	Waterbody Name	AS 41.17.950 Classification	ADF&G AWC #	Required Riparian Protection	Site-specific actions to minimize impacts on riparian area

Surface waters listed above were reviewed by the Department of Fish and Game:
☐ During the timber sale planning process
☐ During the agency review conducted for the Best Interest Finding for this sale
☐ During the drafting of this Forest Land Use Plan
☐ Stream Crossings (Title 16) Permits are needed per ADF&G Division of Habitat

Surface waters listed above were reviewed by the Department of Environmental Conservation:
☐ During the timber sale planning process
☐ During the agency review conducted for the Best Interest Finding for this sale
☐ During the drafting of this Forest Land Use Plan

Non-classified surface waters are subject to applicable BMPs in 11 AAC 95.

Notes:

G. Wildlife Habitat

☒ Wildlife species and allowances for their important habitats were addressed in writing by the Department of Fish & Game during the Best Interest Finding review.
☐ Wildlife species and allowances for their important habitats were addressed in writing by the Department of Fish & Game during the drafting of this Forest Land Use Plan.

Silvicultural practices to be applied to minimize impacts to wildlife habitat or wildlife management:
☒ Timber retention - concentrations of timber surrounding harvest units or interspersed within harvest units to provide cover.
☐ Snag Retention- snags or isolated trees left for cavity nesting species.
☐ Large Woody Debris – concentrations of downed timber or logging debris interspersed within harvest units to provide cover left on site.
☐ Other actions

Notes:

H. Cultural and Historical Resource Protection

☒ This project was reviewed by the State Historic and Preservation Office (SHPO).
☐ No artifacts have been reported within the project area(s).
☐ Known or likely sites have been identified and a mitigation plan is in place. (Describe the

mitigation actions.)

I. Other Resources Affected by Timber Harvest and Management

☐ There are other resources and areas of concern besides surface water, fish habitat, and wildlife habitat that may be affected. Mitigations actions were addressed in the Best Interest Finding.

Table 4. Other Affected Resources / Areas of Concern

Impacted Resource	Reviewing Agency	Impact/ Mitigation Actions
	.	

☒ There are no affected resources or areas of concern other than surface water, fish habitat, and wildlife habitat, which are addressed in this Forest Land Use Plan.

Notes:

J. Reforestation

Harvest type as it relates to reforestation requirement:

☐ Clearcut

☐ Region I: Partial Harvest leaving more than 50% live basal area (11 AAC 95.375(b)(3))

☒ Region II or III: Partial Harvest relying on residual trees to result in a stocking level that meets standards of 11 AAC 95.375(b)(4).

Season of harvest:

☐ Winter harvest only
☐ Non-winter harvest only
☒ All-season harvest

Regeneration type:

☒ Natural regeneration

List species: Alaska birch, aspen white spuce

☒ Coppice: Alaska birch, aspen

☐ Artificial regeneration

List species:

☐ Seeding: Species and source of seed (general vicinity location of seed source)

_____

☒ Planting: Species: spruce_____ Date of proposed planting: 12 years post harvest_____

Source of seedlings (location of seed source): upland and floodplain sites from the Tanana Valley_____

See Appendix B for further reforestation details.

IV. Roads and Crossing Structures

A. Road Design, Construction, and Maintenance

Roads will be designed, constructed, and maintained to prevent significant adverse impacts on water quality and fish habitat (AS 41.17.060(b)(5)), and site productivity (AS 41.17.060(c)(5)). Roads will comply with the best management practices in the Forest Resources and Practices Regulations (11 AAC 95.285 – 95.335).

Roads or other means required for the access and removal of this timber from the harvest area(s) or unit(s) are listed in Table 5

Table 5A. Road Reconstruction and Use

Road ID	Segment	Harvest Unit	Mile/ Station **	Road Class	Maximum Grade %*	Constructed By	Maintained By
Standard East	5.5 miles	7	5.5	Secondary all season	12	Existing	Purchaser
Standard Creek Rd	10	1-6	MP12-MP23	Primary all season	12	Existing	Purchaser

Table 5B. New Road Construction and Use

Road ID	Segment	Harvest Unit	Mile/ Station **	Road Class	Maximum Grade %	Constructed By	Maintained By
Cache Creek Extension	1.7 miles	1-7	10.7-mile Cache Creek Rd	Secondary all season	12%	Purchaser	Purchaser
Standard Creek/Standard East Spur Roads	>1mile each	3, 4, 7	19, 17,	Spur, all season	12%	Purchaser	Purchaser

Road Class is as defined in the DOF Road Standards.

**Note: Roads must be less than 20% grade per 8 AAC 61.1060 Additional Logging Standards.*

Notes: Typically, roads will be constructed by removing the trees, vegetative mat, and constructing the road using cuts and fills with earth-moving equipment. Surfacing will use native materials on site, and roads will be out sloped to control drainage. Roads will initially be constructed to a 12-to-16-foot width. Some roads are located on side slopes that vary from 5 to 35%. Road grades vary from 0 to 10% with an average of 5%. Debris from the road construction will be placed downhill of the road. Some proposed roads have potential to erode after construction due to the road grades. In these areas water bars will be placed to prevent erosion after log hauling is done and before the sale is closed. The roads are not expected to have erosion that could not be mitigated and will be left open after the sale to facilitate additional forest management of the area. DOF will be responsible for erosion control after the sale is terminated. Roads or other means required for the access and removal of this timber from the harvest areas or units are listed in Table 6. A copy of DOF Bridge and Road Standards (2016) will be given to the Purchaser.

B. Soil Erosion / Mass Wasting

Maximum percent side slopes: ___35%_____

☒ Maximum percent side slopes are ≤50%

☐ Maximum percent side slopes are >50%

☒ There are no indicators of unstable areas where roads will be constructed.

☒ Indicators of unstable areas were identified and will be mitigated by actions indicated below:

Table 6. Road Erosion Control Risk and Mitigation

Road ID	Segment	Mile	Identified Erosion Risk	Risk Level	Mitigation
Cache Creek Forest Road	1	10.6	Bridge crossings – Cache & Fortune Cks	Low	Existing roads & bridges, maintain to DOF Road Standards
Cache Creek Forest Road Extension	2	3.4	Erosion into Fortune Ck	Low	Existing road, maintain to DOF Road Standards
Access Spur	3	0.4	negligible	Low	Existing road, maintain to DOF Road Standards

General Timber Sale Erosion Control:

☐ Grass seeding ☐ Erosion control mats ☒ Wattle ☒ Water bars

☐ Other: _____ ☐ Not applicable

C. Crossing Structures

Are you removing or replacing drainage structures? ☒ YES ☐ NO

☐ No crossing structures are needed within the project area.

☒ Crossing structures will be placed in access roads as described in the table below:

Table 7. Required Drainage and Crossing Structures on Known Surface Waters

Road ID	Segment	Mile/ Station or Point Label	Bridge Length (ft.) or Culvert Diameter (in.)	Structure Type [ex. Corrugated Plastic Pipe, Log Stringer, Fabricated, Ice]	AS 41.17.950 Stream Classification	ADF&G AWC Number	Duration of crossing structure in place
Cache Creek Ext	1.7 mile	Left Fork Creek	2 @ 24”x20’	Corrugated pipe (metal or plastic)	III-C	none	none

D. Road Closure

Roads constructed for the timber sale that are left open will be subject to maintenance standards under 11 AAC 95. 315. Otherwise, roads constructed for the timber sale will be closed, subject to standards under 11 AAC 95.320.

Table 8. Road Closures

Road ID	Segment	Unit	Closure Type All Season/Winter	Estimated Closure Date	Projected Road Use after Timber Harvest

E. Material Extraction

☐ There will be no material extraction sites in the project area.
☒ Material extraction and associated overburden disposal will be located outside of riparian areas and muskegs. Material extraction and disposal will be located as shown on the operation map, in a manner that prevents runoff from entering surface waters.
☐ Other:

F. Other Resources Affected by Roads or Material Extraction

List resources other than water, habitat or cultural resources potentially impacted by road construction, and indicate how impacts will be mitigated. Other affected resources could be, but are not limited to mining claims, scenic areas, recreational trails, etc.

Table 9. Other Affected Resources

Impacted Resource	Reviewing Agency	Impact / Mitigation Actions
TRAILS	DOF	PURCHASER TO KEEP ANY EXITING TRAIL OPEN AND BERM FREE

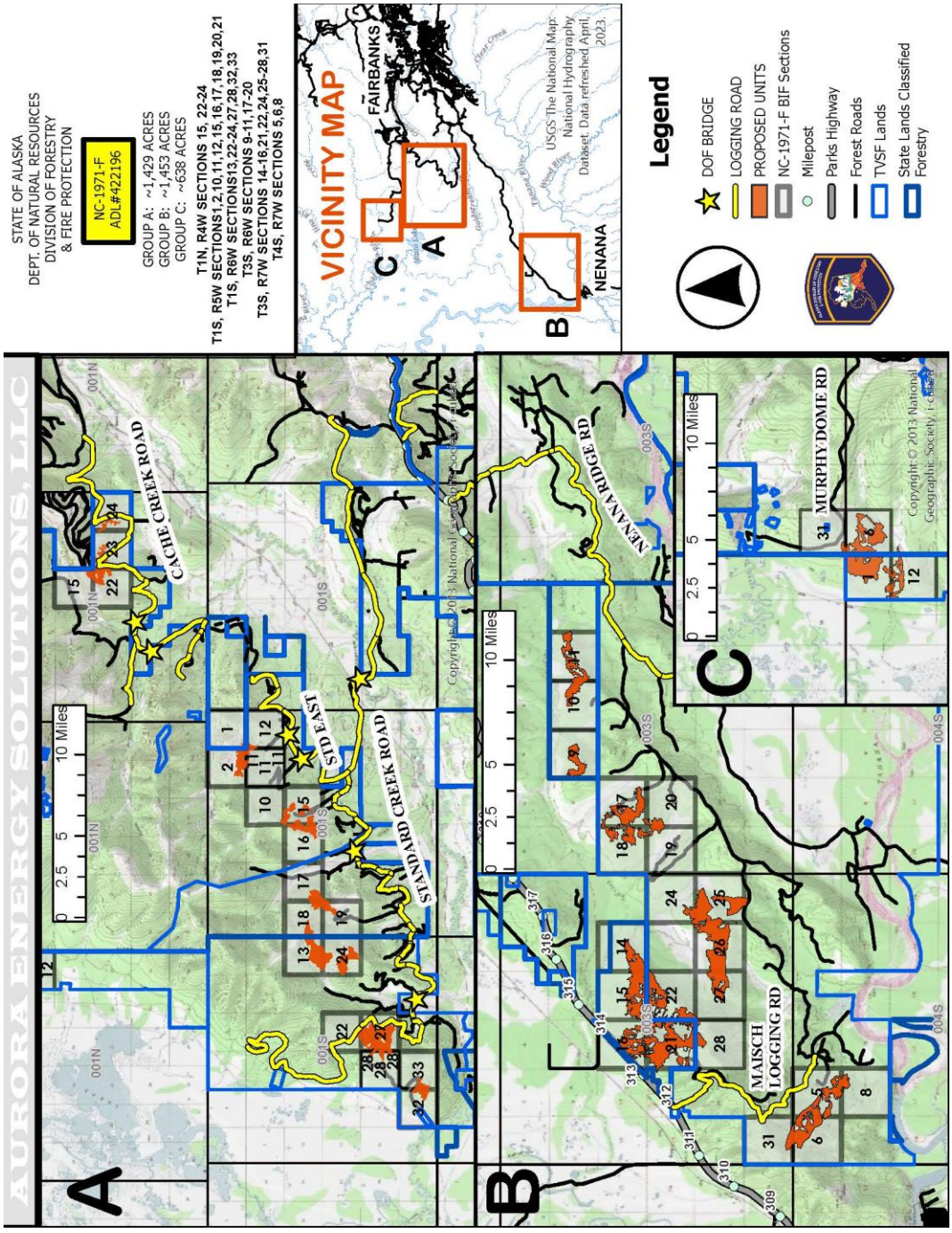
V. Approvals

This Draft Forest Land Use Plan has been reviewed by the Division of Forestry & Fire Protection and provides the information necessary for public and agency review of the project described in this document.

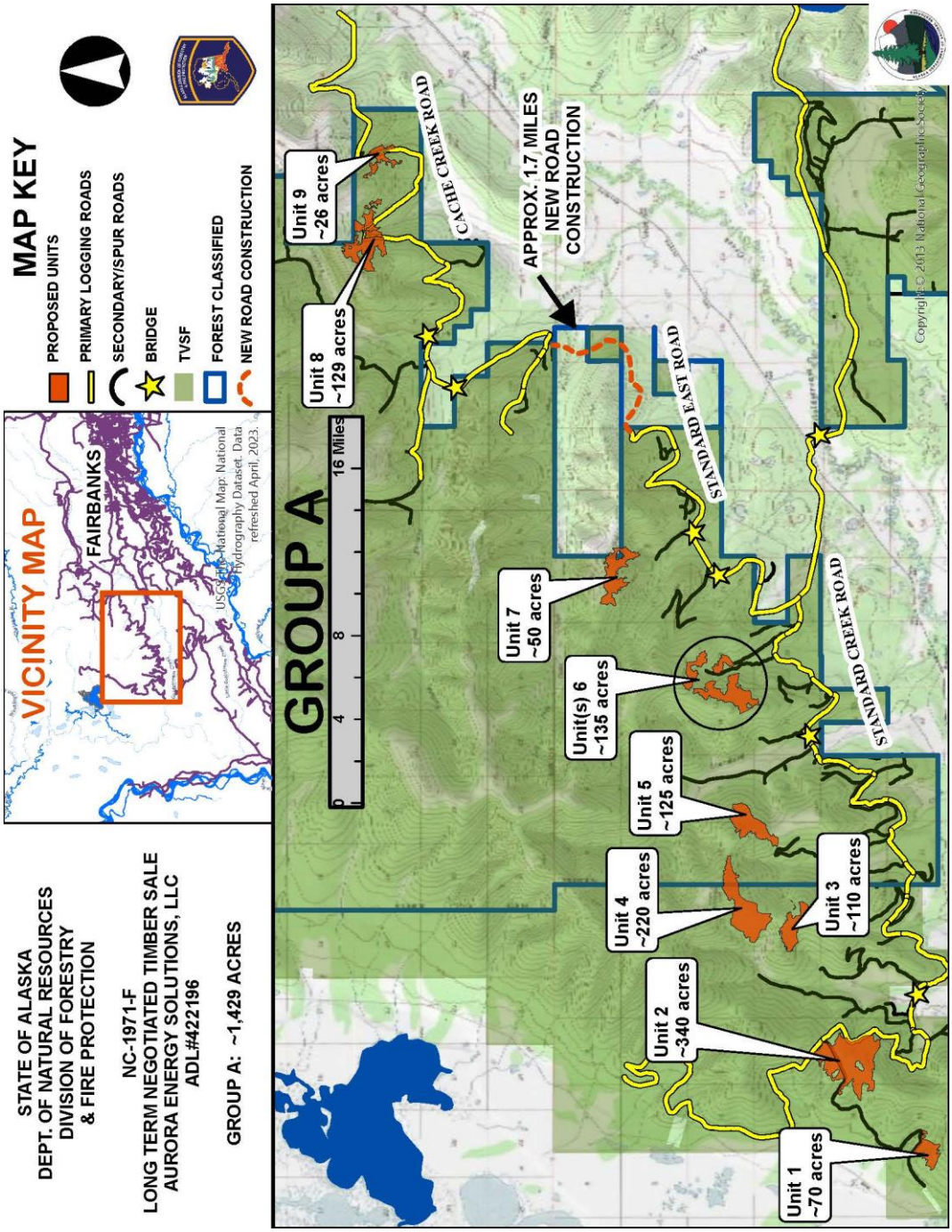
_____	_____
Area Forester	**Date**
_____	_____
Regional Forester	**Date/**

Appendix A: Timber Sale Maps

NC-1971-F Map
(DOF will develop separate FLUPs for Groups B and C)



Group A Map
(units covered in this FLUP)



Appendix B: Supporting Information

Reforestation Supporting Information

For Region II or Region III partial harvest relying on residual trees to result in a stocking level that meets standards of 11 AAC 95.375(b)(4). Stocking levels will be calculated as follows:

Table 1. Stocking Level Requirements

Average DBH (Diameter at breast height)	Residual Trees (Trees/acre)	Minimum Stocking Standard (Trees/acre)	Percent Stocking
≥ 9”	10	120	8%
6” to 8”	10	170	6%
1” to 5”	120	200	60%
Total Residual Stocking			74%

Seedlings Required:

Percentage Under stocked = 100 – Total Residual Stocking %
Percentage Under stocked = 100 – 74_____% = 26_____%

Seedlings/ Acre Required = Percentage Understocked/100 x 450
Seedlings/ Acre Required = _____% /100 x 450 = _____

☐ Artificial regeneration

☐ Seeding: Species and source of seed (general vicinity location of seed source)

_____

☐ Planting: Species: _____ Date of proposed planting: _____

Source of seedlings (location of seed source): _____

☒ Natural regeneration: provide known information on the following indicators of suitability for natural regeneration. If a box is checked “no,” please explain/describe the condition. N/A means “not applicable.

Yes	No	N/A	Unknown	Seedbed and soil conditions suitable for natural regeneration
☐	☐	☐	☒	Moss layers are shallow (≤4”) or absent
☒	☐	☐	☐	Where birch or spruce regeneration is targeted, exposed mineral soil will exist on at least 25% of the harvest area and is well-distributed across the unit

☒	☐	☐	☐	Where aspen regeneration from suckering is targeted, root damage will be minimal and soil exposure will encourage warming.

Yes	No	N/A	Unknown	Seed/vegetative reproduction sources available
☒	☐	☐	☐	Exposure to prevailing winds, if known
☒	☐	☐	☐	Adequate seed trees exist within 3 tree heights of the reforestation site for spruce or within 2 tree heights for birch
☐	☐	☐	☒	Where spruce regeneration is targeted, large seed crop in year prior to harvest or current year
☒	☐	☐	☐	Where vegetative reproduction is targeted the harvest area contains sufficient, well-distributed paper birch, aspen, balsam poplar, western black cottonwood, red alder, or other species known to regenerate vegetatively as approved by the Division

Yes	No	N/A	Unknown	Competition and infestation risk
☒	☐	☐	☐	*Calamagrostis* (bluejoint grass) is not visually evident. If *Calamagrostis* is visually evident, describe abundance and distribution. Note: *Calamagrostis* coverage of more than 1-2% distributed across the site indicates that grass coverage may expand rapidly after harvest without treatment.
☒	☐	☐	☐	*Equisetum* (horsetail) is present prior to harvest
☒	☐	☐	☐	The site is not currently subject to intense herbivory due to peaks in the hare cycle, dense moose populations, or scarcity of browse in the surrounding landscape.
☒	☐	☐	☐	Existing stands are not infested with bark beetles *(Dendroctonus* or *Ips)*
☐	☐	☐	☒	Where spruce regeneration is targeted, harvest areas are free of known incidence of *Onnia tomentosus* root rot. Note: *tomentosus* can kill regeneration of spruce and, to a lesser degree, pine and larch. If *tomentosus* is present, describe the extent of the problem in the notes box below. Design reforestation to minimize continuation or spread of the disease

Appendix C: Public and Agency Comments and Responses [RESERVE

Appendix D. Appeal and Request for Reconsideration Regulations [RESERVE