

Fort Yukon Wood Energy Program: Wood Boiler Deployment

Fort Yukon, Alaska

Project Lead: David P. Anderson
Project Manager: David P. Anderson

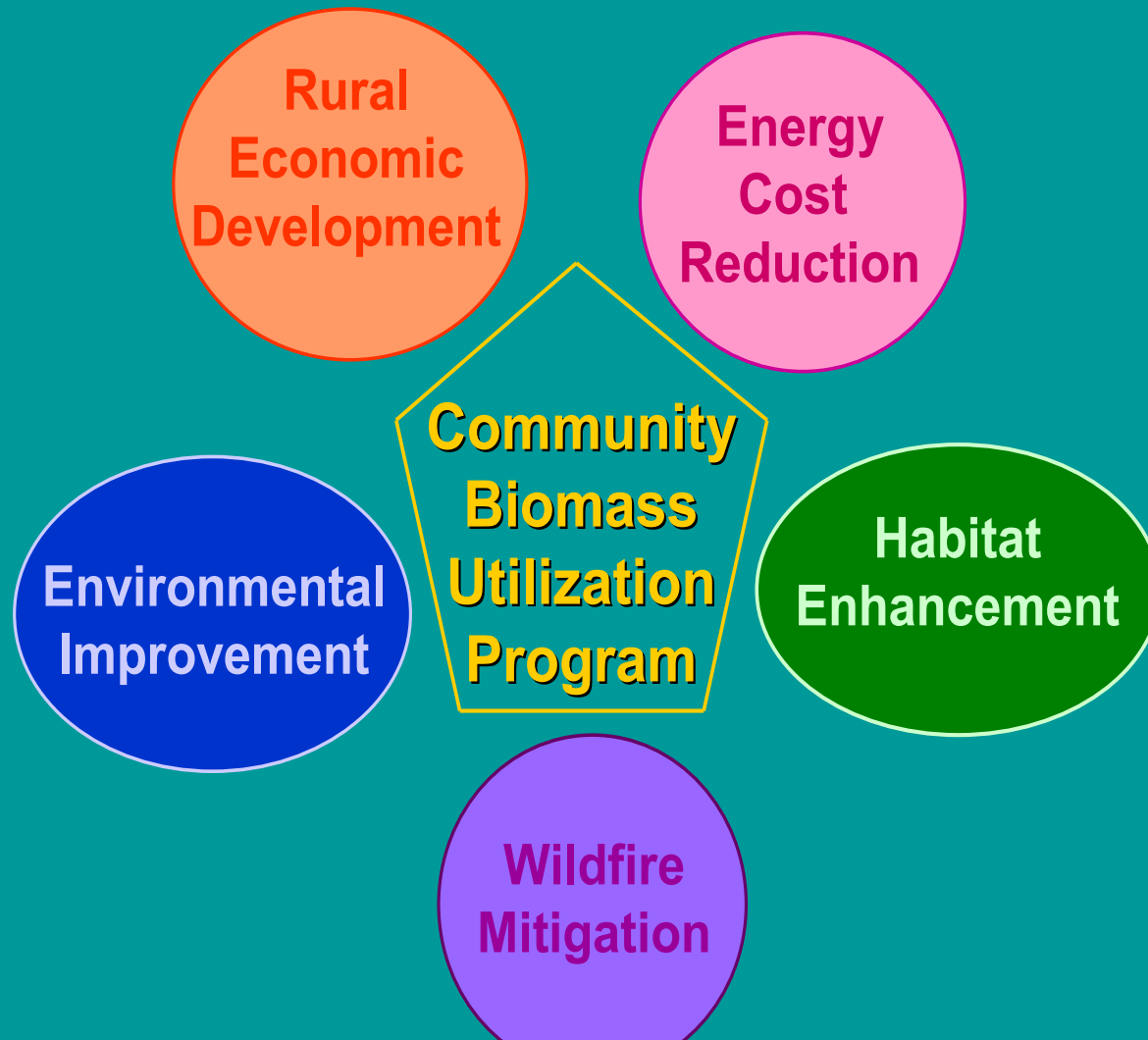
Organizational Overview:

-  ndp

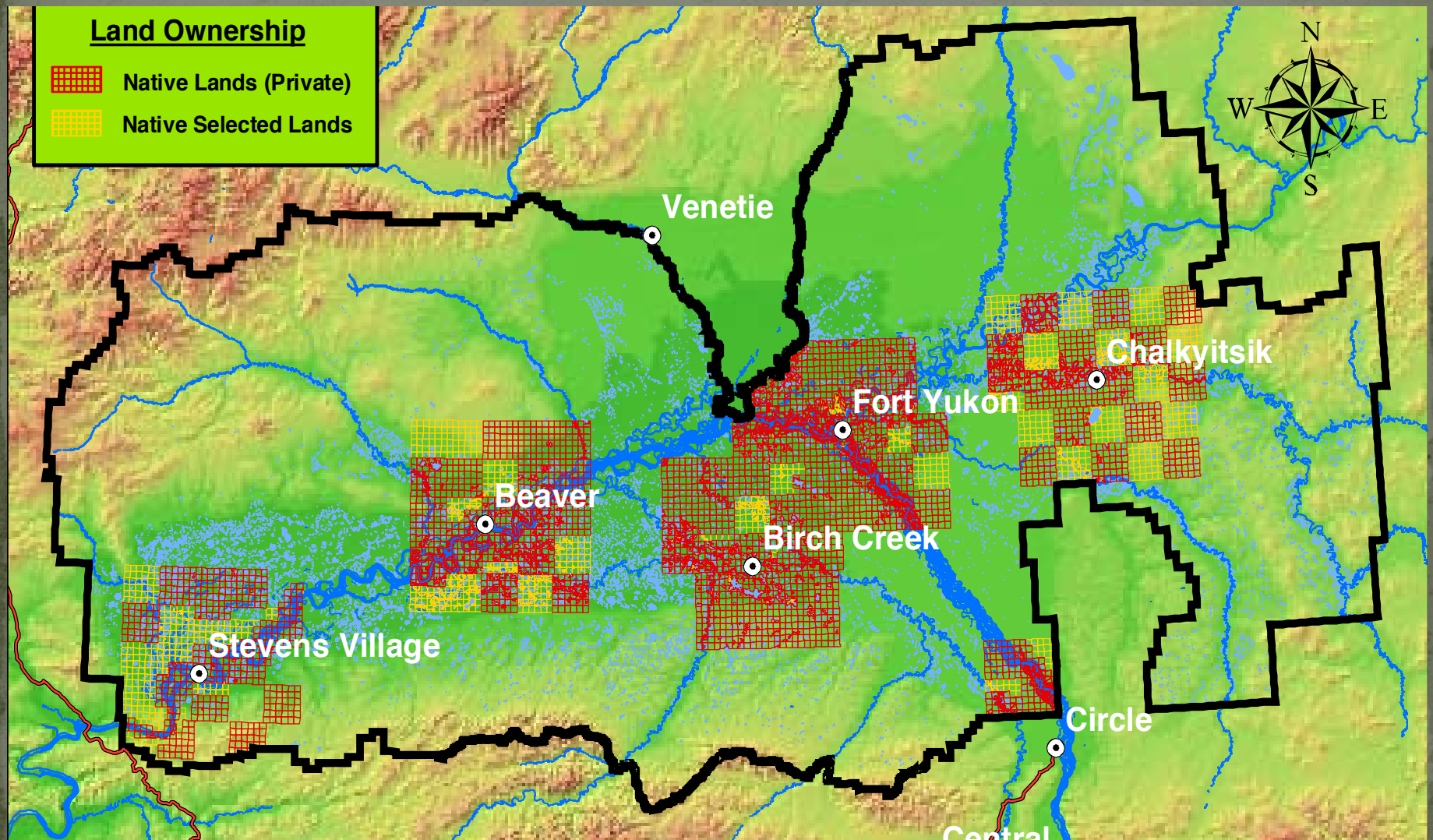
Overview of Project:

- P.K. ' : P. l. ' ? ?KkKa P a K K ? ? ? d o ? ?
i : p ?
 - Sa P K d : o ? ? ? o ? ? ? : o P P P . p
- ? ? ? i ? ? n k ?
- ? ? ? ? B ? ? P ? ?
- ? K : P o ? ? o d ? ? B B : h P ? d ? ? ? o ? ? a a ? ? P p
? n P ? d ? K ?
 - ? ? u ? ? ? p ? ? ? l ? ? ? P ? o ? o P d l ? ? o ? ? p d d l ? ? p d P ? ? ? u ?

Integrated Biomass Program



Land Ownership: It's complicated!



How much money will be spent?

Funder/Grantee	Amount	Source	Scope
Denali Commission (DC)/Alaska Energy Authority (AEA)	\$ 808,805	Round "zero" Renewable Energy Fund	Grant Secured - Match in place - Harvest Equipment
DC/Alaska Village Initiatives (AVI)	\$ 258,300	Economic Development Program	Training and Tech Support and Harvest Plan
DC/AEA	\$ 60,000	Energy Program Planning/Design	Comprehensive Energy Business Plan including Rural Power System Upgrade (RPSU), heat utility/wood harvest, biomass diesel hybrid power and integrated district heat system. 1st draft completed
AEA	\$ 210,000	Final Design Funds AEA	In conjunction with DOE and is match
DOE	\$ 210,000	Phase 1 80% design DOE	In conjunction with AEA and is match
DOE/CATG	\$ 990,000	Renewable Energy DOE	Construction or other support functions needs 1:1 Match
AEA/GZ	\$ 2,300,000	REF Round (3) AEA	Construction Funds
GZ Cash	\$ 300,000	Cash GZ	Company start up funds
DC/AEA	\$ 280,000	RPSU Program	Diesel powerhouse design & CHP BOP
AEA/Power House funding	\$ 3,500,000	Awarded from USDA - NEPA needs to be done	Diesel powerhouse construction
GZ Match Land and Building	\$ 400,000	GZ Corp	
	\$ 9,317,105	Total Funding Secured	

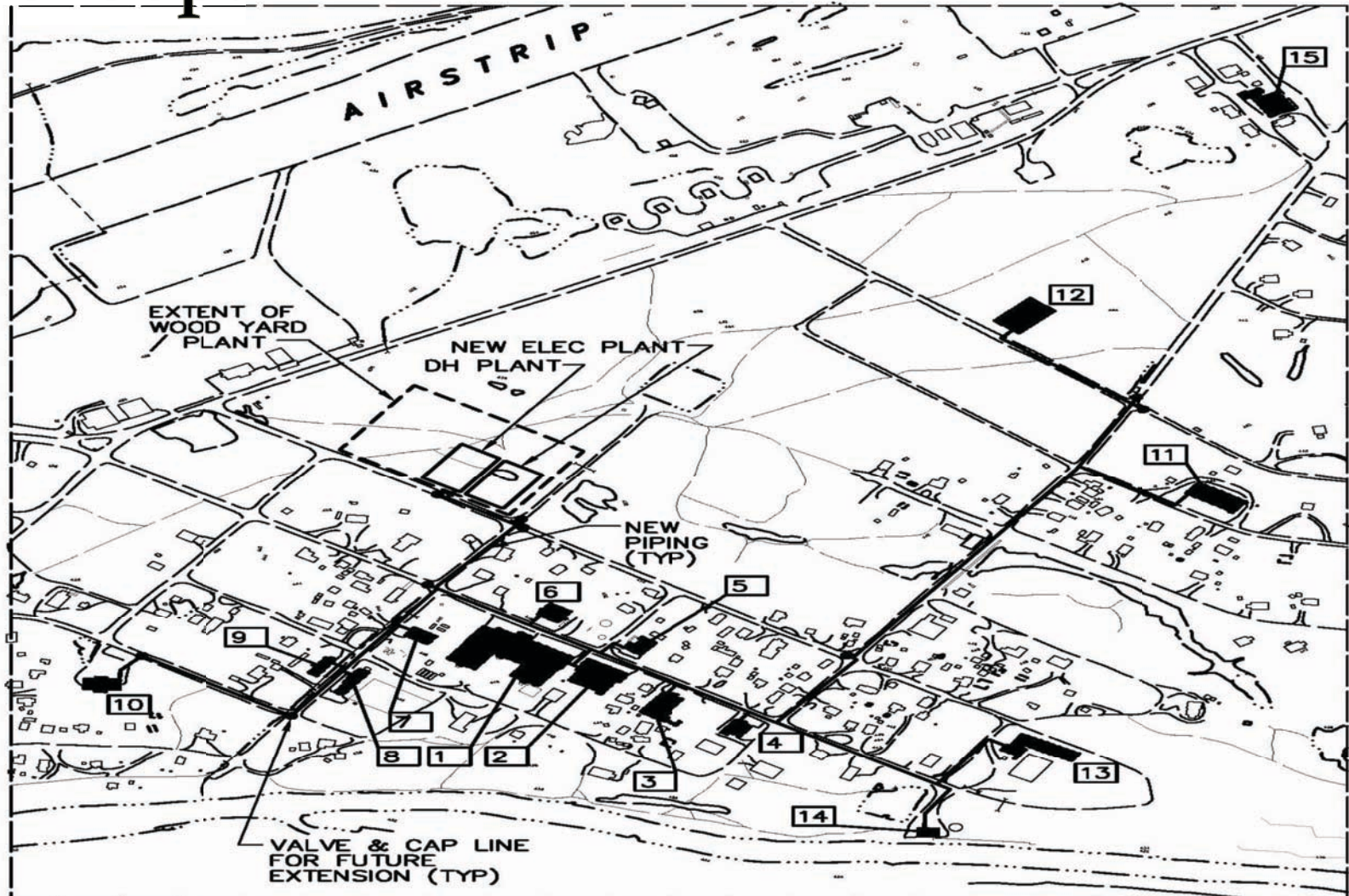
Products thus far:

- $\mathbb{Q}$ d**B** on**Q**p**Q** $\mathbb{R}$ p**d**Q
- $\mathbb{Q}$ Rd**d**Q**P**p**Q** d**Q**p**kK**K**S**Q**Q**
 - v $\mathbb{Q}$ $\mathbb{U}$ ($\mathbb{Q}$ $\mathbb{Q}$ $\mathbb{Q}$ p**d**c $\mathbb{Q}$ m**w**($\mathbb{Q}$ $\mathbb{Q}$ b d**Q** R**Q**Q**N** z $\mathbb{Q}$ P**K**p**Q**a $\mathbb{Q}$ o**Q**Q**S**($\mathbb{Q}$ $\mathbb{Q}$ $\mathbb{Q}$ p**Q** $\mathbb{Q}$ B**Q**k**Q**Q**Q**e**Q**d**Q**k**Q** : K**Q**
- $\mathbb{Q}$ p**Q** $\mathbb{Q}$ n**K**d**Q** K**Q**p**d**Q
- $\mathbb{Q}$ i $\mathbb{Q}$ $\mathbb{Q}$ n**K**Q**Q**n**K**d**Q** K**Q**p**d**Q
- $\mathbb{Q}$ a $\mathbb{Q}$ Rd**Q** $\mathbb{Q}$ n**K**d**Q** K**Q**B**p**d**Q**
- $\mathbb{Q}$ $\mathbb{Q}$:h**Q** o**Q**p**d**Q
- $\mathbb{Q}$ B**Q** $\mathbb{Q}$ o**P** d**K**Q**p**d**Q**
- $\mathbb{Q}$ dh**P** da $\mathbb{Q}$ o**Q**p**Q** K**Q** K**a** $\mathbb{Q}$ o**Q**
- $\mathbb{Q}$ $\mathbb{Q}$:h**Q** o**Q**yn**Ba** $\mathbb{Q}$ o**Q**

Power Costs: among highest in nation

- $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
- $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
 - $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
 - $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
 - $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
- $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
- $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$
- $\mathbb{K} \subseteq \mathbb{R} \subseteq \mathbb{C}$

The loop:



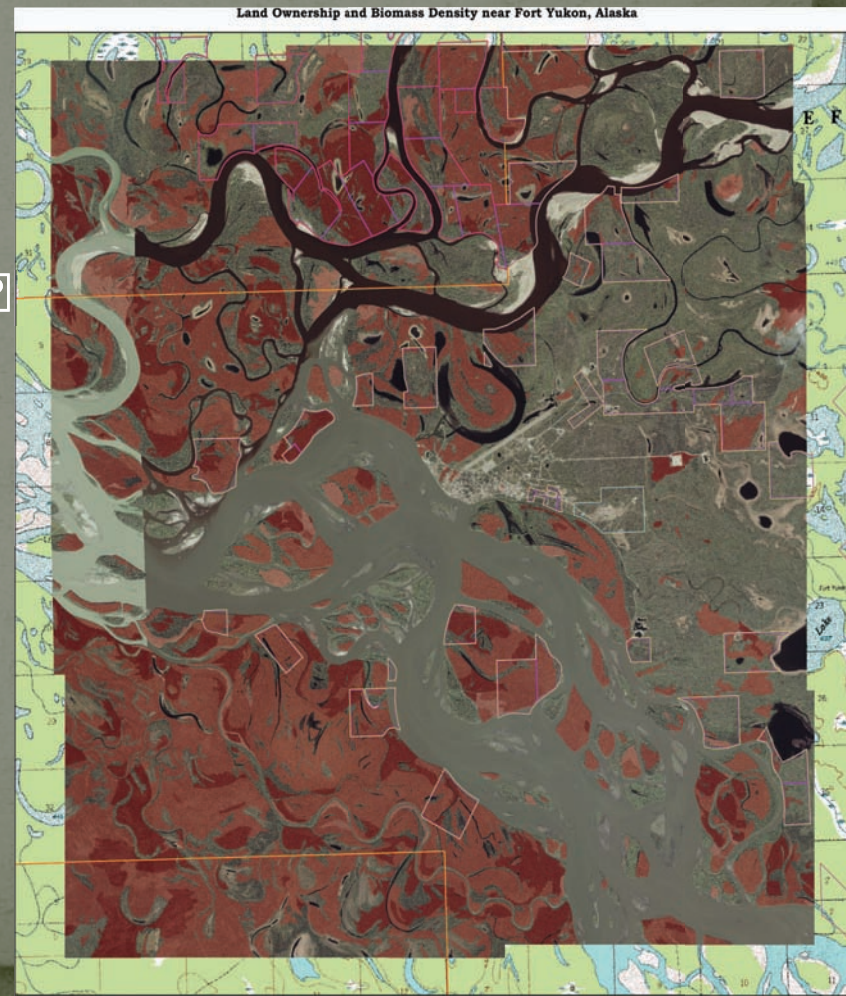
MAX PLANT 1
NTS



- | | | |
|----------------|--------------------|---------------------|
| 1. SCHOOL | 6. STATE BLDG | 11. CITY BLDG |
| 2. GYM | 7. SHOP | 12. NEW CATG CLINIC |
| 3. STORE | 8. DISTRICT OFFICE | 13. TRIBAL OFFICES |
| 4. POST OFFICE | 9. CHURCH | 14. WATER TREAT |
| 5. CATG OFFICE | 10. YUKON FLATS | 15. OLD CATG CLINIC |

Implementation Plan

- ? P a ?K?? ? : hK o?
 - ? Pa ? Rd??
 - ?dhP. da ? o?pp d?pkK??
 - ?ynBa ? o?::h?pp
 - ?p? :??o :??? K?? ?
 - ??:a RoRd??? :??d? Rd???R? ??
 - ? ? ?p B?d? Rd?o ???:hK o?K??
 - ? ? :h?K?? P??:???
 - ? B? ?oP dK??



Implementation Plan

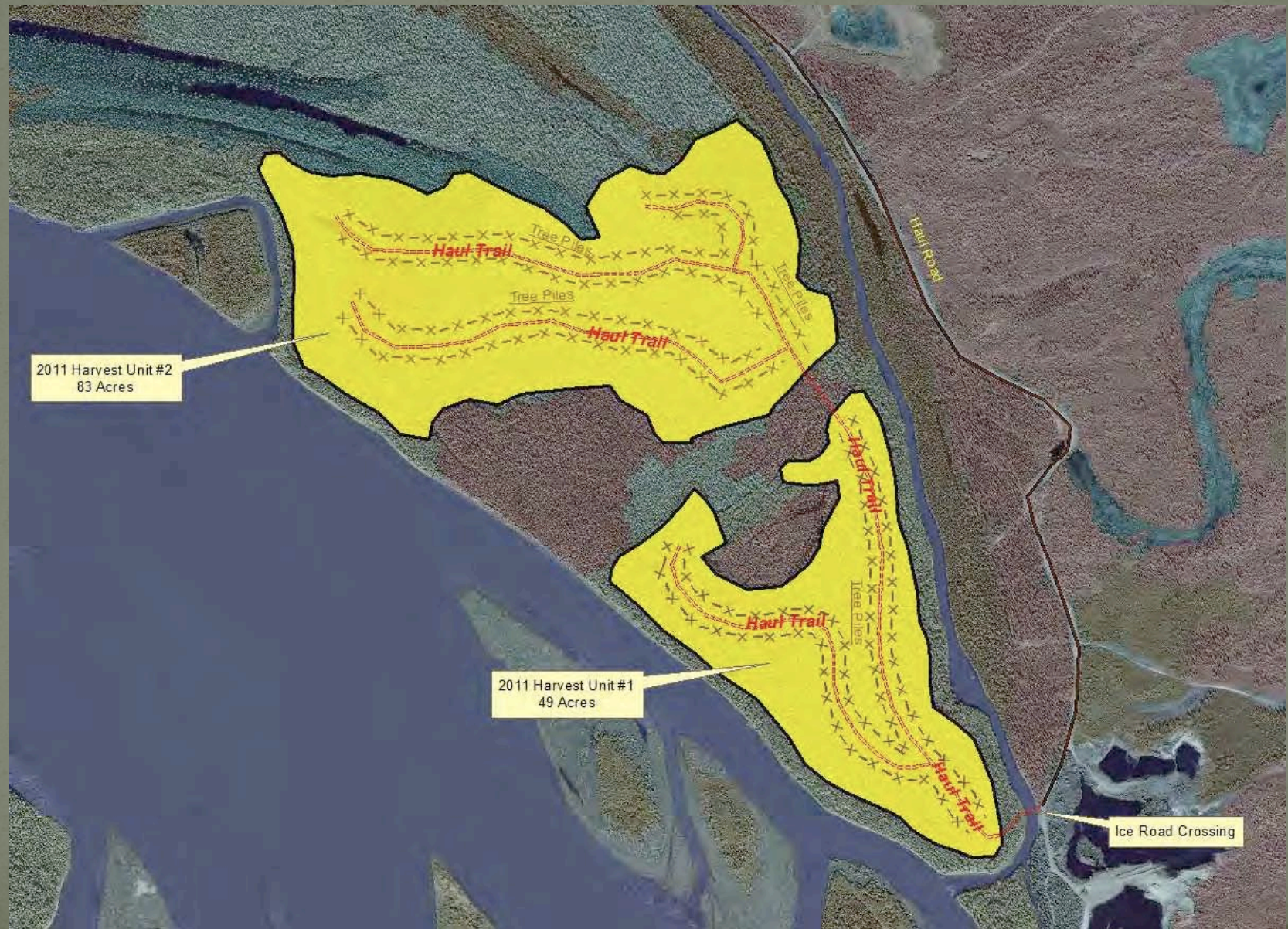
- The project will be implemented in three phases:
 - Phase 1: Initial Assessment and Planning
 - Phase 2: Data Collection and Analysis
 - Phase 3: Implementation and Evaluation



Implementation Plan: Harvest Area's



Year 1 Harvest Area



Implementation Plan

- The project is a high-level overview of the project and its objectives.
- The project is a high-level overview of the project and its objectives.
- The project is a high-level overview of the project and its objectives.
- The project is a high-level overview of the project and its objectives.
- The project is a high-level overview of the project and its objectives.



Implementation Plan:

- 2017-2018 da 1 000 dkk
- 2019: 000 000 hK 00
- 2017-2018 K 000

?



Lesions:

- 2 noRyn? Ma K?
- 2d??B? 2? d?B: r? d? 2d??a 2 d?
- 2? 2k n:?? dKnp?doKbB?:od? Kf?
2

