

# Whitesand First Nation Community Sustainability Initiative Building a Biomass Energy Economy



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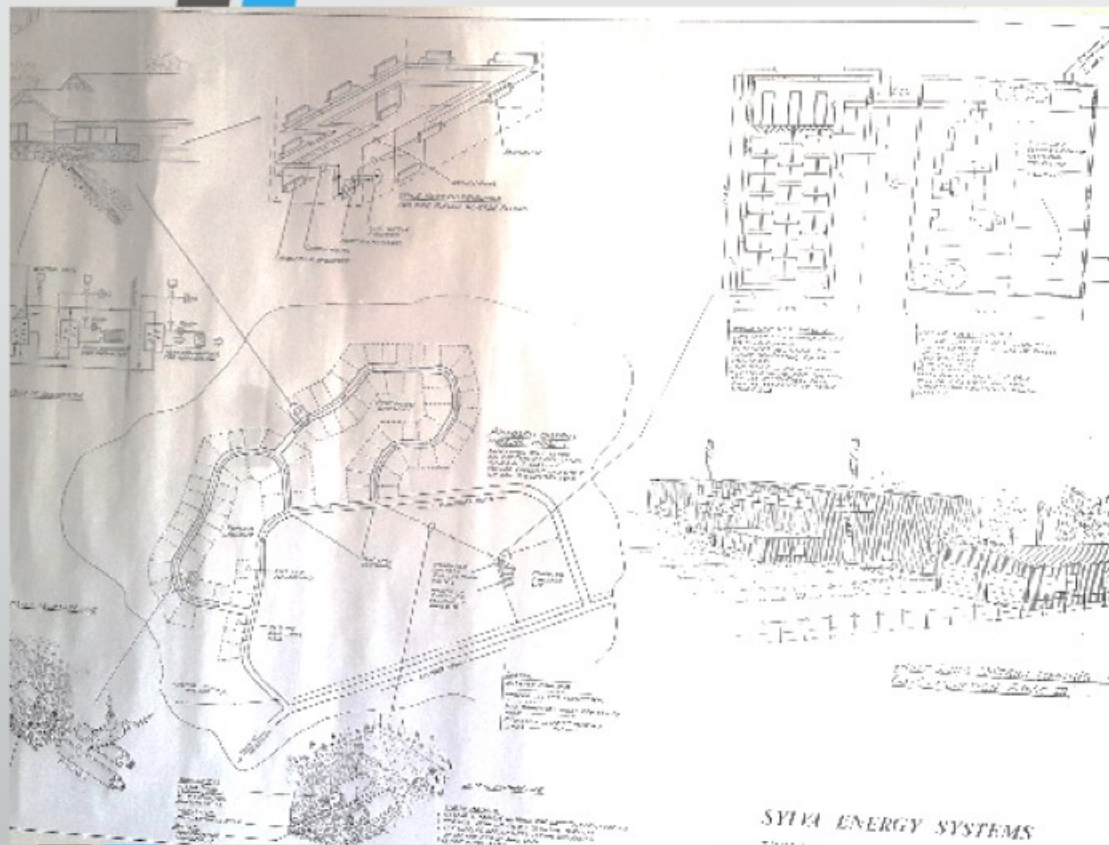


## Whitesand First Nation

- Whitesand First Nation is located approximately 250 km north of Thunder Bay, Ontario, and is adjacent to Armstrong, near the northern tip of Lake Nipigon.
- Whitesand and Armstrong have a population of approximately 500.

# Community Sustainability Initiative

- 2009 Whitesand First Nation created the Community Sustainability Initiative (CSI) .
  - Forward Thinking
  - 5 Equally Valued Pillars Representing Sustainability
  - Principled Solutions Based Blueprint for Change
  - Recognizes Current Issues (internal reflection and external influences)
  - Address Long Standing Systemic Problems (economic despair, social inequity, cultural fragmentation, education gaps, environmental degradation, community health)
- How Can Biomass Energy Production;
  1. create meaningful employment?
  2. better social development and growth?
  3. raise prosperity through inclusion into Ontario's and Canada's economy?
  4. begin to address climate change directly at the community level?



## Key Project Driver #1 Community Vision & Commitment

- Whitesand's vision of displacing the primary use of diesel generated electricity has been a long standing goal.
- In 1992 Armstrong, ON and Whitesand submitted a proposal for a community forest which included a bio-mass cogeneration facility.
- This proposal was not accepted but the community kept its vision alive and waited many years for a **window of opportunity** to open.

# 2017 The CURRENT SITUATION

Internal  
Reflection

- \* High unemployment rate with little or no chance for meaningful work.
- \* High on-reserve population is in receipt of social assistance.
- \* Many of social assistance recipients are without a grade twelve education. Poor secondary retention rates.



Nearing Max  
Power  
Generation  
Future Housing  
or other  
Infrastructure  
Jeopardized

No power available for economic development



Diesel Generated Power  
Hydro One Remotes has provided a  
secure and stable power supply

Little Community Benefits



Local  
Forest

Local Forest was abandoned by industry and is now a Crown Forest.

# 5 Pillars of Sustainability

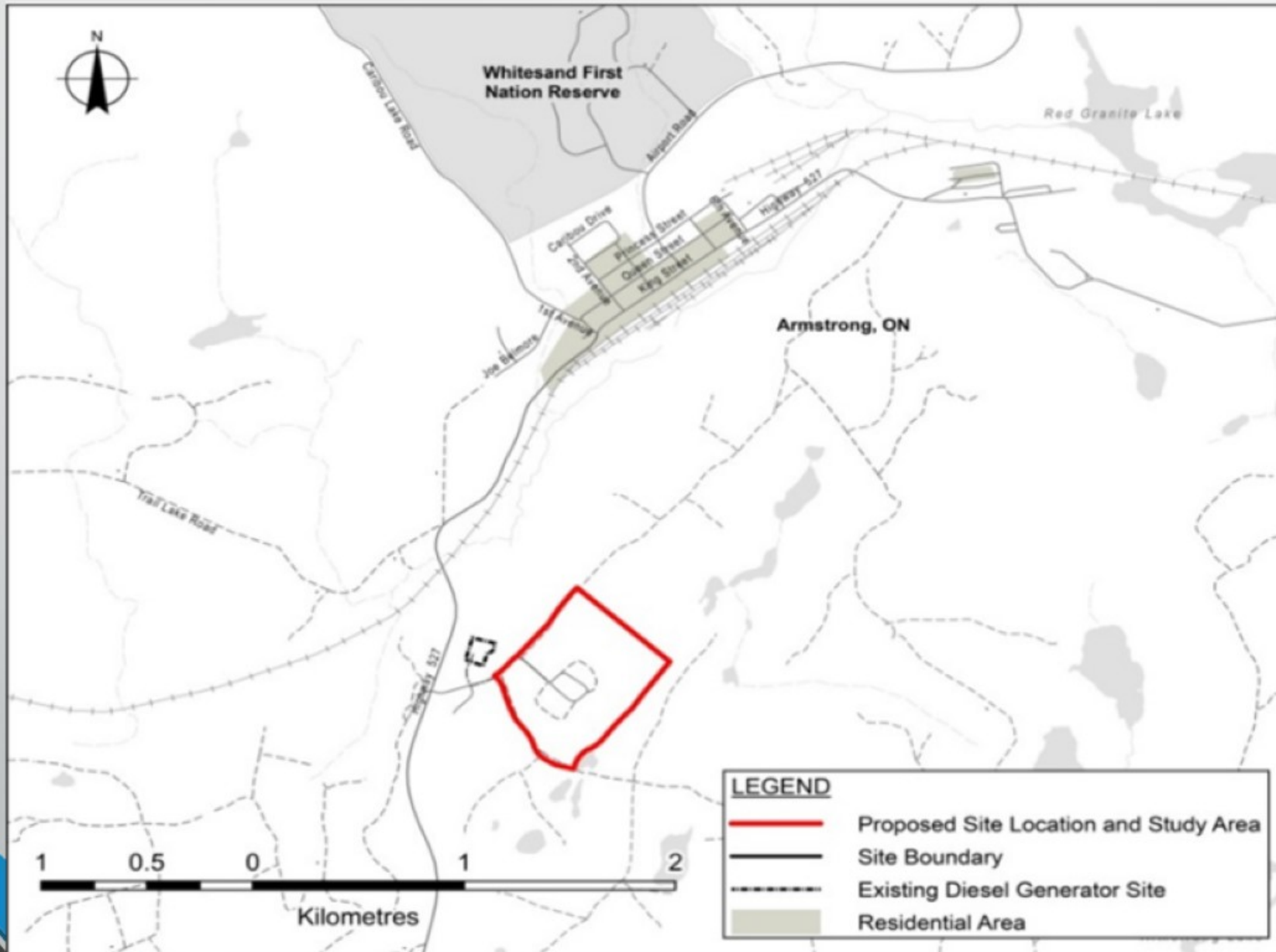




## Key Project Driver #2 Provincial Wood Supply Competition

- In 2008 the meltdown of the Northwestern Ontario forest industry removed harvesting pressure on the Armstrong Forest which triggered a series of critical events.
  1. Led to the abandonment of the Sustainable Forest License and re-designation of the Armstrong Forest as a Crown Forest.
  2. Created the Provincial Wood Supply Competition (WSC).
  3. Opened the window for Whitesand to plan, propose and implement a “New Bio-Economy”.
  4. In 2011 Whitesand was awarded fibre to begin the development of the project including engineering, land acquisition, environmental approvals, and the creation of biomass workforce.

# Overview of CSI Biomass Project



- Completed Class Ten Opinion of Costs WSP Engineering
- 65 million (cdn) construction costs
- Opportunity for Canadian and American suppliers
- Planned construction late fall 2017.





## Key Project Driver #3

### Ontario Ministry of Energy: Long Term Energy Plan

- The LTEP identified Whitesand as one of four communities that would not be connected to the Ontario transmission grid.
- However, opportunities to pursue local renewable energy projects that would allow benefit from economic development opportunities was possible.

# Key Project Driver #4

## Ministry of Environment - Climate Change



The breakdown of CO<sub>2</sub> emissions per Remote Community is illustrated in **Table 5-2** and **Figure 4**. In most cases, emissions reflect the electricity output or demand in the community, with the largest stations (e.g. Sandy Lake) responsible for the largest share of emissions.

Refer to **Section 3.3** of this report for the GHG emission intensity summary.

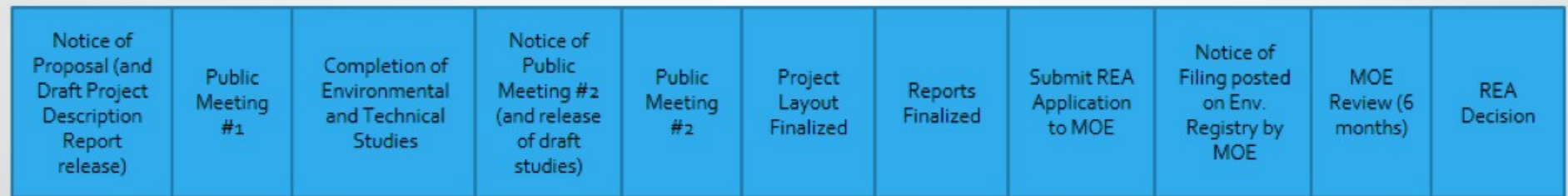
Table 5-2: Total Direct CO<sub>2</sub>e Emissions per Remote Community

Remote Community	2013 tCO <sub>2</sub> e	% of Total CO <sub>2</sub> e Emissions
Thunder Bay	47	0.10%
Armstrong	3,565	7.39%
Bearskin Lake	2,139	4.43%
Big Trout Lake	4,856	10.06%
Bisco	463	0.96%
Deer Lake	3,475	7.20%
Fort Severn	2,178	4.51%
Gull Bay	1,132	2.35%
Hillsport	304	0.63%
Kasabonika	3,564	7.38%
Kingfisher	2,370	4.91%
Lansdowne	1,723	3.57%
Marten Falls	1,672	3.46%
Oba	278	0.57%
Sachigo	2,518	5.22%
Sandy Lake	9,323	19.32%
Sultan	411	0.85%
Wapekeka	2,189	4.53%
Weagamow	3,612	7.48%
Webequie	2,449	5.07%
<b>TOTAL</b>	<b>48,267</b>	<b>100.00%</b>

- Minister of Environment Climate Change Discussion Paper goal of **“new economic growth that result from moving to a low carbon economy.”**

# Renewable Energy Approvals (REA)

The Project is subject to the REA process, subject to the provisions of the *Environmental Protection Act* and Ontario Regulation 359/09. The REA process entails consideration of environmental aspects, natural heritage features and water bodies as well as heritage and archaeological resources. In addition, the REA process includes, public, agency and First Nation consultations.



Sept 2013

Dec 23 2015

- [Renewable Energy Approval was](#) issued December 23, 2015. First of its kind in Ontario.
- [Environmental Compliance Approval](#) for the pellet mill was also recently issued.

## Key Project Driver #4 Power Purchase Agreement

- After nearly 2 years of project analysis and valuation a Minister of Energy Directive was issued on December 14th, 2015.
- The Directive was a set of instructions to the Independent Electricity System Operator (IESO) to complete a 20 year renewable Power Purchase Agreement.
- The Directive is based on set of principles and instructions to assist the project towards construction.
- The directive states *"Once developed, the project will support Ontario's goal of encouraging Aboriginal community participation in the energy sector. The project will also have a number of benefits including local job creation and reduced diesel use leading to reduced green house gas emissions."*
- Began PPA contractual negotiations with IESO January 18th 2016 and are just finalizing the contract.

# Led Through Biomass



Shawn Shapwaykeesic  
Power Engineering Program

Environmental Technician  
Program

Jermaine Nodin  
Forest Ecosystem Technician  
Program

Burk Doni  
Welding and Fabrication

# Life Changing Opportunity

# Benefits

## MUCH MORE

- \* Pride of Ownership
- \* Environmental Integrity
- \* Empowerment
- \* Community Reinvestment
  - \* Social
  - \* Health
  - \* Education
  - \* Employment
  - \* Culture

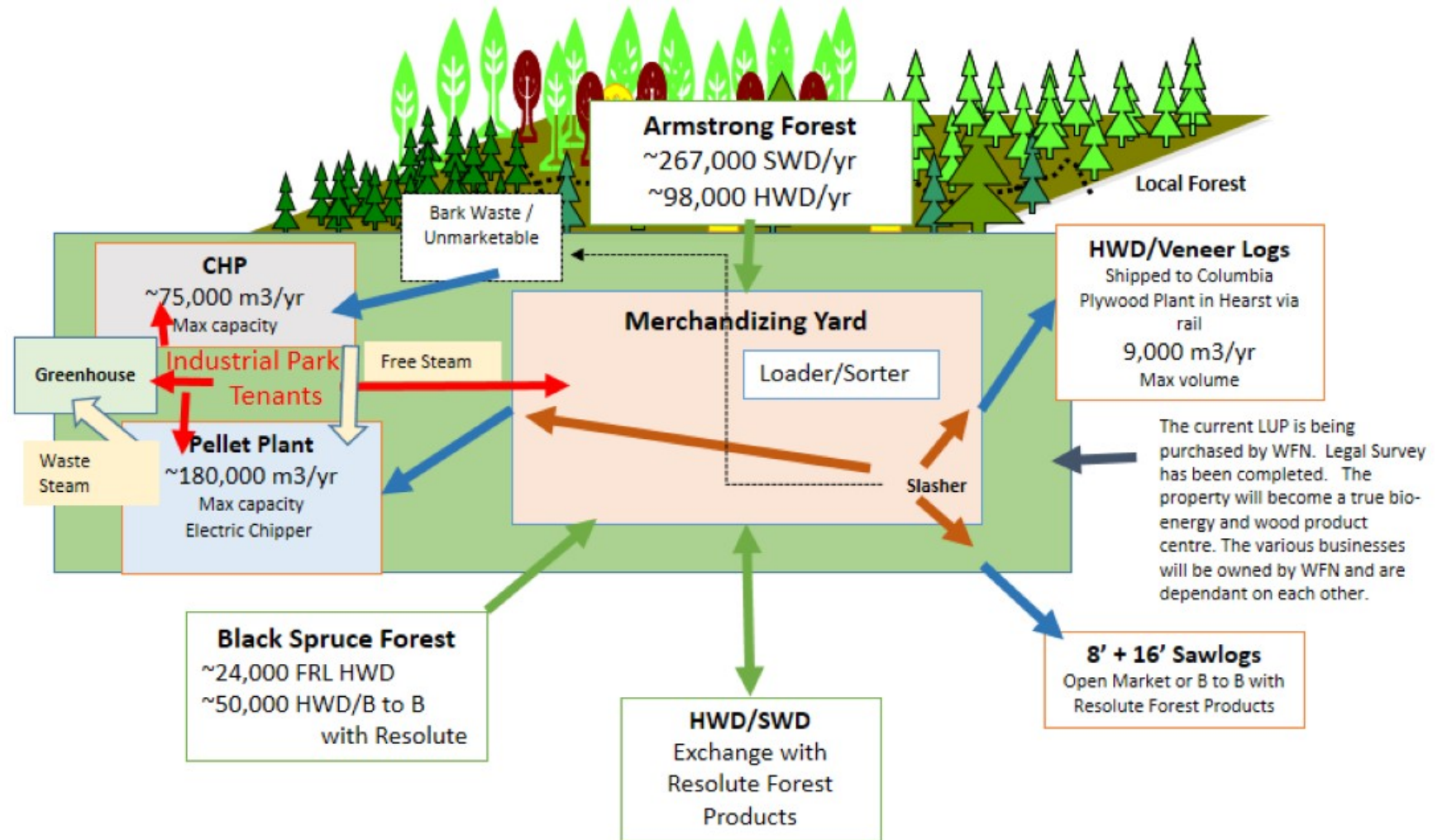


## Biomass Opportunity

- There are approximately 175 Aboriginal and northern off-grid communities across Canada.
- Electricity is only one part of the equation as home heating currently accounts for a high amount of diesel fuel use in remote communities.
- A combination of small CHP, district heating systems and home conversion to pellet stoves and boilers can help to achieve this goal.
- Some communities may not have a readily available source of biomass but if we can transport diesel fuel we can transport wood pellets.

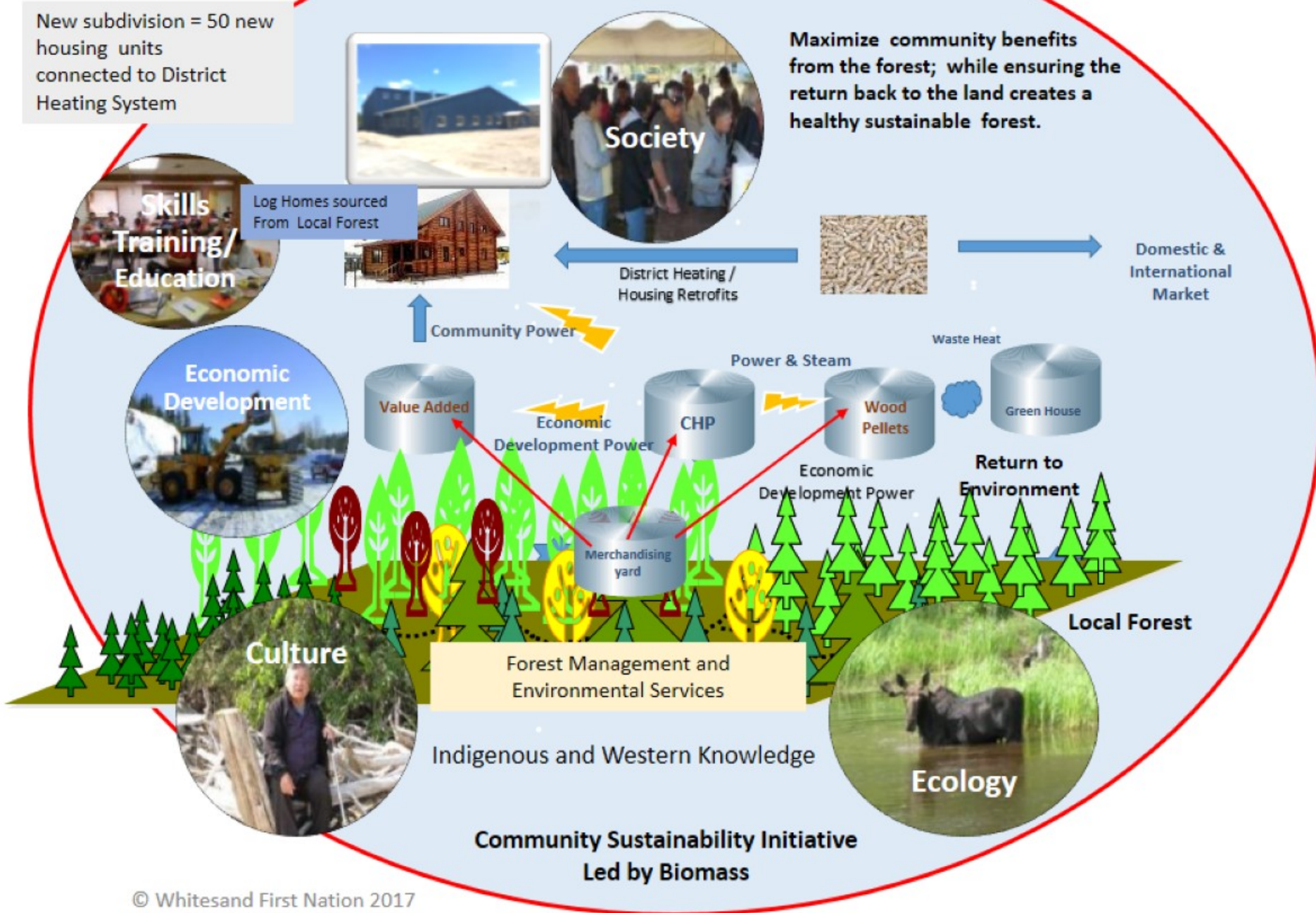
# Wood Merchandizing Yard

- Original design was to chip in the forest. With the merchandizing yard we will bring in tree length and chip as part of the pellet plant.
- Replace 150,000 Litres of Diesel that would be used in the Forest
- Create more employment opportunities





# Looking Forward 2025



# Closing

- In the end, the *Community Sustainability Initiative* is about the long-term responsibility and accountability for Whitesand's economic, cultural, social, and environmental future which is led by a "New Biomass -Economy".
- Ownership for that future can only rest with the Whitesand itself; however, Whitesand has sought and continues to seek expertise and partners to help us accomplish this vision.

**Thank you**

# Contact

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