

# *From devastation to resilience: Sharing learnings from Lytton*

*Yellowknife, NWT, April 24<sup>th</sup>, 2025*



# What we do today determines our collective future!

Thank you, creator, for the gifts of life and choice.

Thank you to the indigenous peoples of the NWT, the original custodians of lands and waters which we are situated on today.

Thank you, NWTAC for bringing us together so we can listen, share and learn.

Thank you, participants, for your time.



2020 AFN Video: The Next Thousand Years

<https://www.youtube.com/watch?v=6md2Ld5lChw>

# What could Canada's Hotspot and Canada's North have in Common?





What else do we have in common?

- Water
- Animals
- Fish
- Birds
- Plants
- Insects
- Relationships with the same



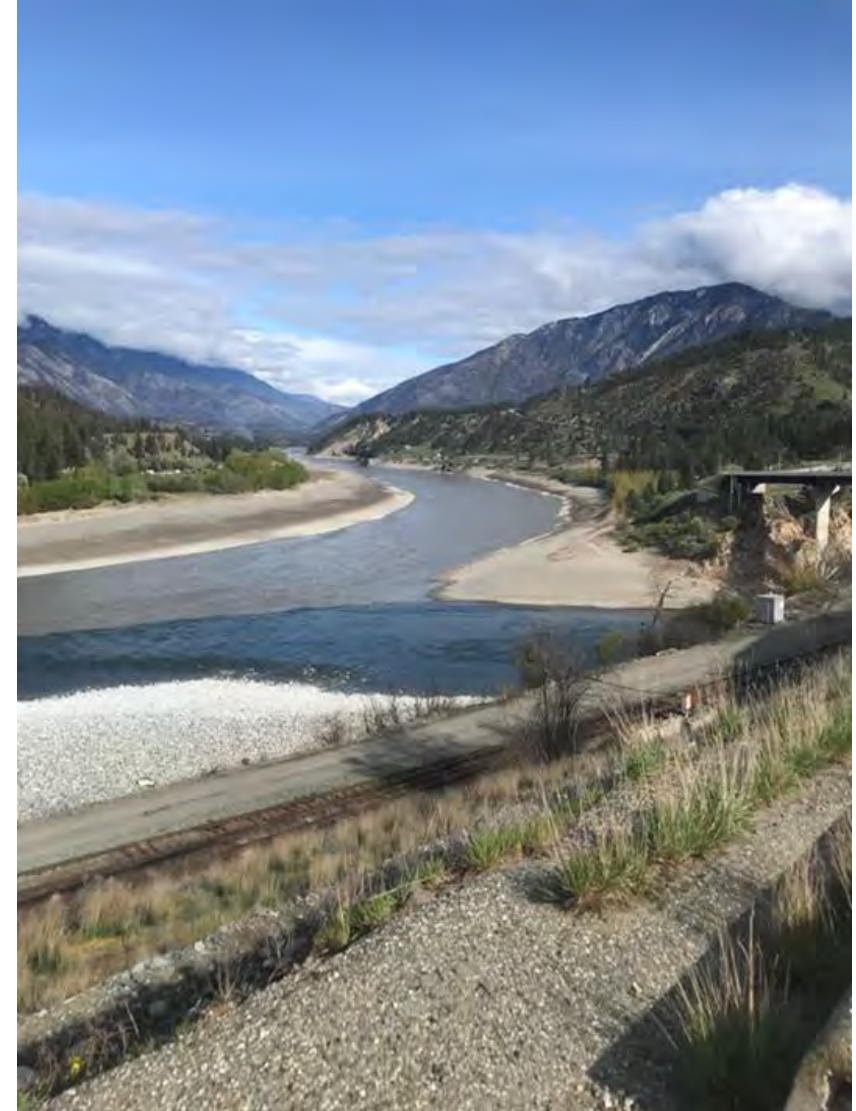
# Can you think of anything else?

- People
- Communities
- Leadership
- Country
- Relationships with each other



# Maybe we might overlook!

- History
- Buildings
- Infrastructure
- Communication
- Transportation
- Waste Management
- Economy



# Then there is:

- Weather
- Seasons
- Climate

## CLIMATE CHANGE

&

## The impacts to all of the above!



# *Nlaka'pamux* Wisdom

What you do to the land, you do to yourself.



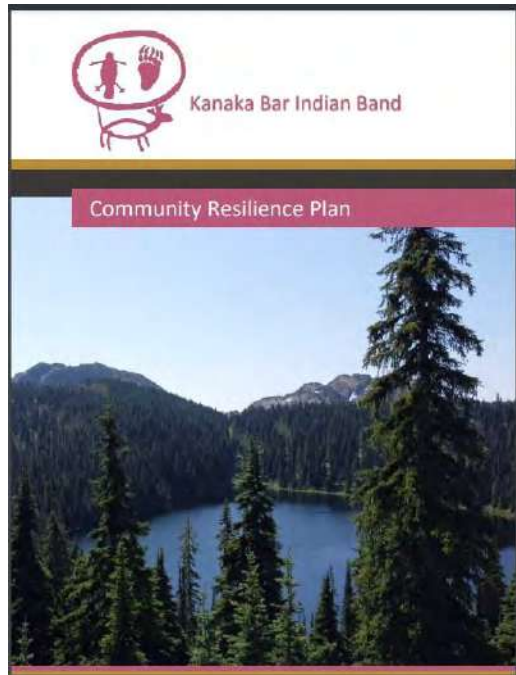
1963



1953

# Is Climate Change Real? For the Nlaka'pamux - YES

2021



## AWARE and ACCEPT

- The world's air, land and water is warming at an unprecedented pace.
- A warmer planet changes
  - Weather
  - Seasons
  - Impacts

2024



Extreme Weather is creating regional and site-specific impacts growing in ***“frequency, duration and intensity”***.



# A little Climate History

10,000 years of “*normalcy*”.

1988 World Scientist raise the alarm.

1992 Climate Gathering in Rio.

2019 BC First Nations and Canada declare a Climate Emergency.

2023 Canada Releases a National Adaption Strategy:

<https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/national-adaptation-strategy.html>

2023 AFN releases National Climate Change Strategy:

<https://afn.ca/environment/national-climate-strategy/>



Video: When youth speak – LISTEN!

<https://www.youtube.com/watch?v=oJJGuIZVfLM>



# 2019

Climate change is happening!  
What can we do about it?

It is not just a matter of reducing our greenhouse gas emissions:

1. Harm Reduction
2. Harm Reversal

But also, of our ability to:

3. Transition and
4. Adapt

to a new normal.

**New Normal:** *We are not dealing with the weather and emergencies of yesterday.*

Video (Nov 25, 2021): Climate Change's wolves

<https://www.youtube.com/watch?v=2aRQ9DbNhY4&t=34s>



### **Site Specific Impacts**

- Rain and snow (or none),
- Temperature swings (too hot, too cold),
- Drought
- Wind (tornados and derecho)
- Wildfires and smoke
- Food insecurity
- Energy and communications insecurity
- Building loss and road closures
- Land erosion and flooding
- Permafrost Melt
- Ice Road Safety

**with *more and more* human displacement.**

# Climate Change Consequences

- Evacuation Alert
- Evacuation Order
  - Do you stay or do you go?
- Evacuation
  - return after danger has passed
- Displacement
  - loss of home and hometown
- Recovery
- Rebuild



BBC's the town that burned down in a day: <https://www.bbc.com/news/av/world-us-canada-59227915>  
or the Guardian video: <https://www.youtube.com/watch?v=5iBeH2R98H4&t=160s>

# LFN Communications

## Consistent, Transparent and Honest

### December 2023 Newsletter:

<https://acrobat.adobe.com/id/urn:aaid:sc:va6c2:40a17eab-3060-48db-8982-118c7cbd5062>

Hope for the best, prepare for the worst.

Since the June 2021 Fire, LFN has successfully completed 62 recovery projects with wrap around services. This all happened despite 2021's November atmospheric river that closed our roads and wiped-out intakes and then December 2021's extreme cold and snow that closed roads and trapped us in our homes without running water. Complicating LFN recovery further was 2022's heat, drought and then the Nohomeen fire and then 2023's heat and drought brought 3 more wildfires with debilitating regional smoke.



*Tl'kemsin Strong - 3 years of evacuation alerts and orders!*

Regardless of the curveballs, LFN leadership, EOC & ESS staff, Recovery Managers, and membership, regardless of residency, worked together to get most of our family's home (albeit into temporary builds). As we transition to rebuild, we don't know what 2024 will bring, that's ok though, LFN is ready!

March 26, 2025, Report to Council

### Community Engagement:

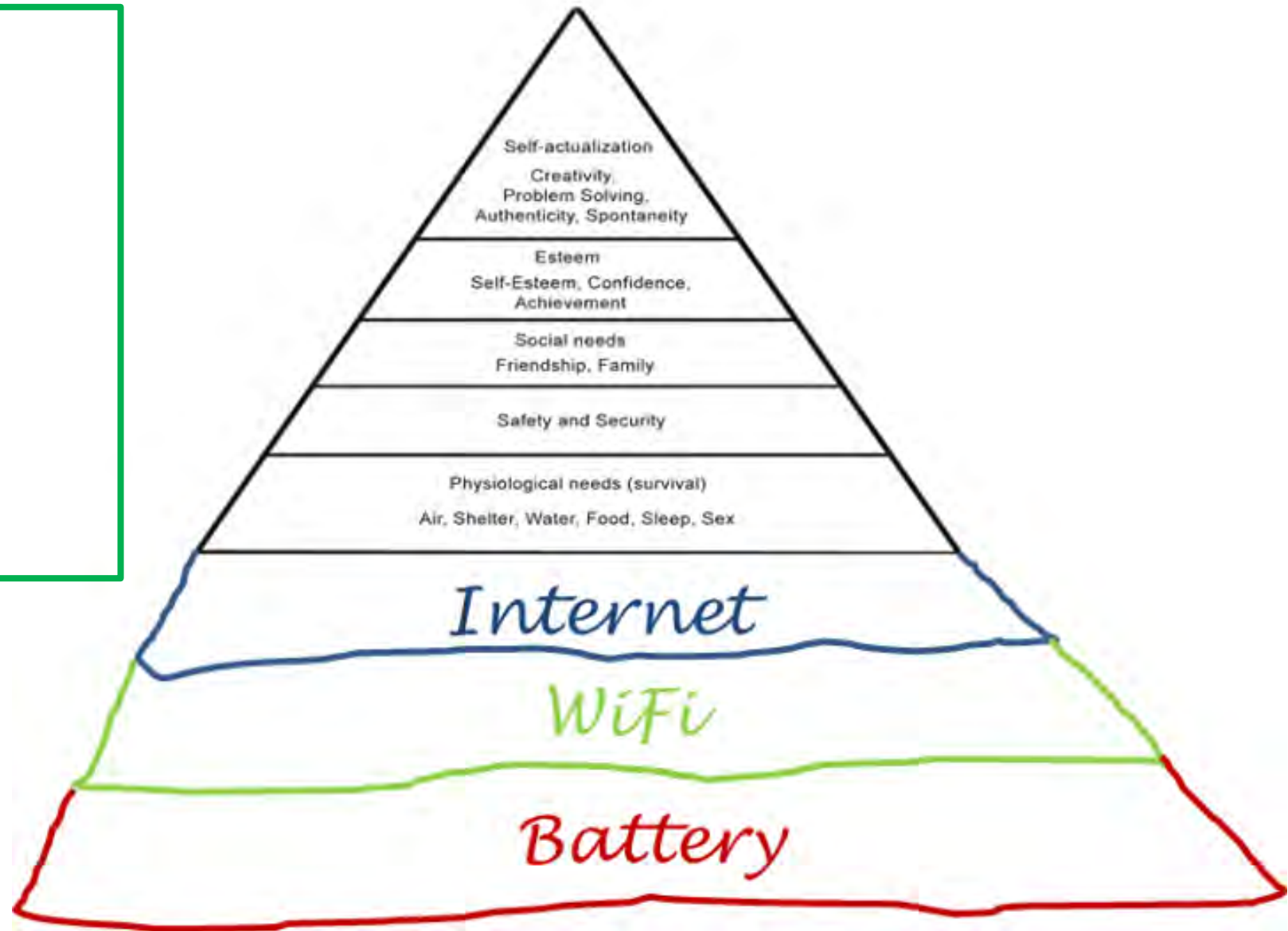
- a. **Integral to immediate and sustainable recovery and rebuild is LFN membership input, regardless of residence.**
- b. **Rebuild is committed to meeting, sharing and listening to membership through email, texts, calls, group sessions and one on one meetings.**
- c. **Rebuild newsletter submission are made monthly.**
- d. **LFN Website has a Rebuild Page updated regularly.**
- e. **In person group meetings are held at Battlefield Hall and at LFN Boardroom**
- f. **Virtual meetings are occurring as often as needed.**
- g. **Online Surveys are been used.**
- h. **Social Media: Rebuild has no formal presence online but works with LFN communication to get Rebuild information out to membership through Facebook**

## Physiological Foundations

- Air (Weather)
- Water
- Food
- Shelter

## Resilient Systems

- Energy
- Transportation
- Communication
- Waste



Nlaka'pamux are developing and implementing foundational programs and projects based on **known risk and trends!**

**What's happening today is scary, and while we can't eliminate the risk, **together**, we can reduce the impacts.**

Rekindling Hope:

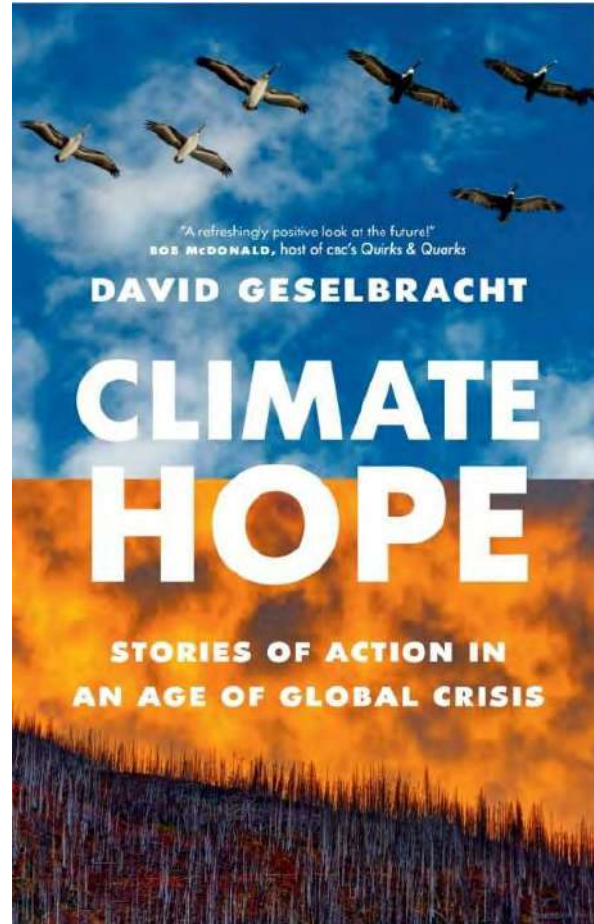
<https://canadiangeographic.ca/articles/rekindling-hope-b-cs-climate-evacuees/>

Hope flows from Action:

<https://climateinstitute.ca/publications/hope-flows-from-action-rebuilding-with-resilient-foundations-fraser-canyon-region/>

**We know what to do!**

Can't do it alone – working together, pooling of resources and getting things done **so that we ALL have a chance.**



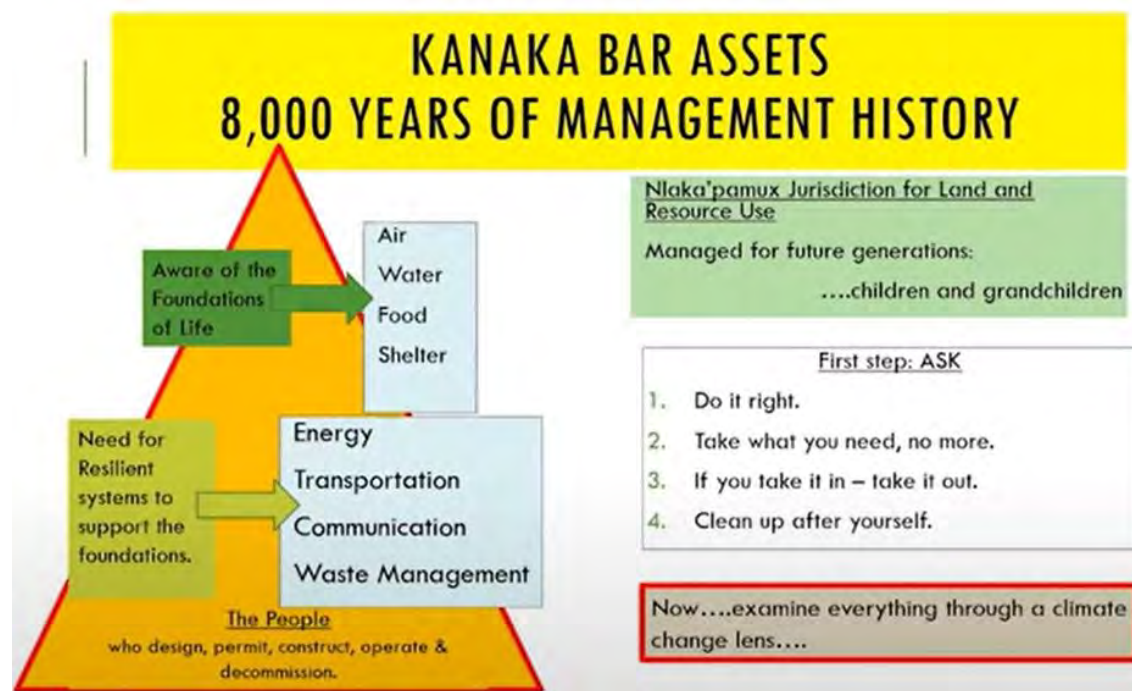
Kanaka and LFN are working today with professionals

- Architects.
- Civil, structural, mechanical, electrical and environmental engineers

to create and implement community programs and projects that give our future generations the best chance for a safe, sustainable and resilient life, and lifestyle.

# Kanaka “Working together”

1. To create operations and maintenance plans for the 8 planning areas (priority)
2. To generate a five-year community transition and adaption plan (schedule).
3. To implement projects that are sustainable, break dependency and resilient (results).
4. To ensure the community is ready for the next event.



## COMMUNITY RESILIENCY PLAN 2021

Projects and programs for the next 5 years!

Made by Kanaka, for Kanaka, by Kanaka

To establish certainty, and resilient, foundations in:

- \* air,
- \* water,
- \* food,
- \* shelter and

The systems that create a quality of life for our everyone!

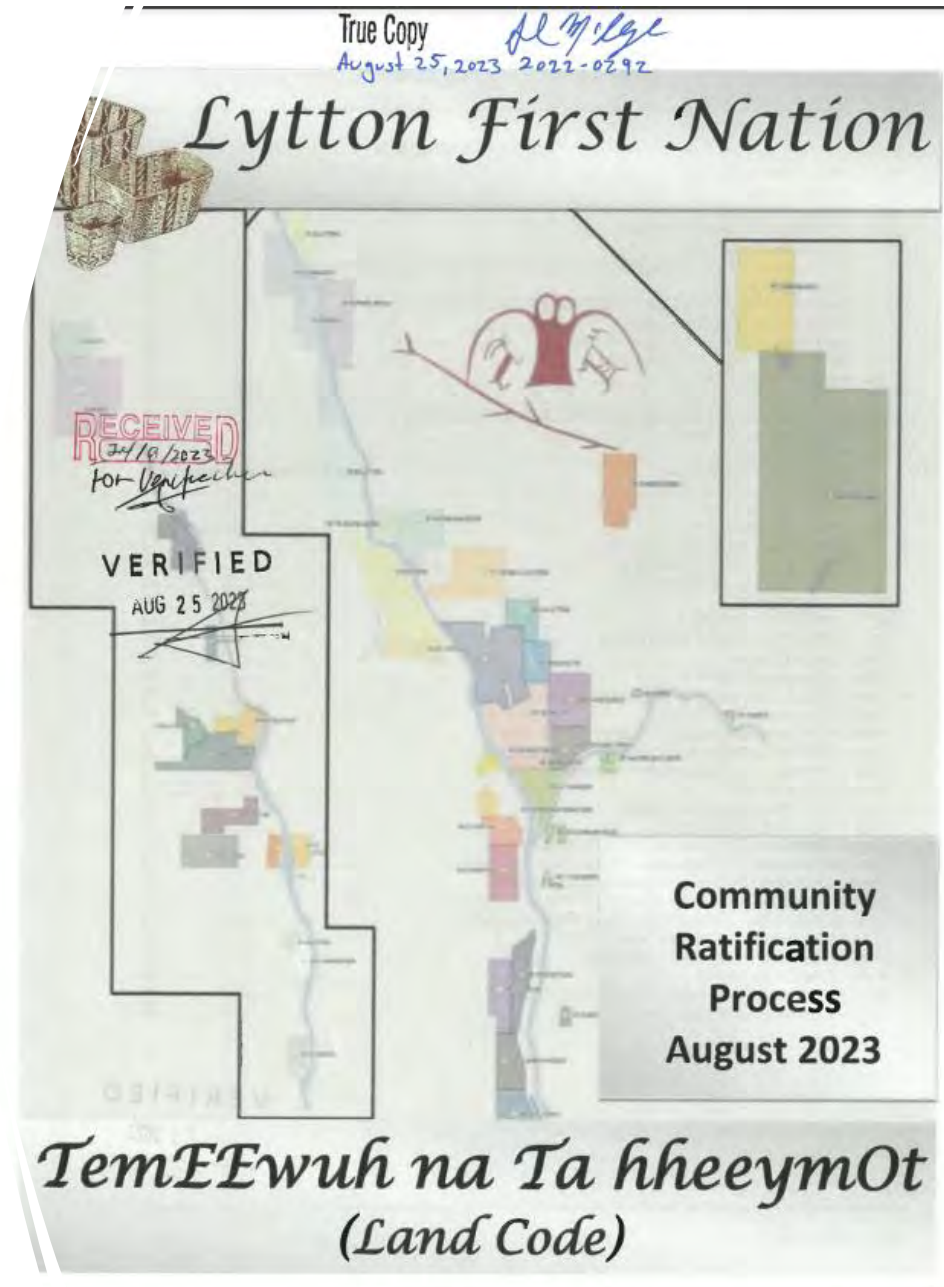
Scalable  
Replicable  
And its working!



Clean50 2021 National Project of the Year

# TL'Kemstin (*Lytton First Nation*) is also leading the way

- 2152 members
- 56 reserves over 60 km of the Fraser River
- 193 standing homes, 80 new homes in next 2 years. 175 homes over next 10 years
- Active participant in AFN, BCAFN and Union of BC Indian Chiefs
- 2021 Lytton Fire (June), Atmospheric River (November) and a Deep Freeze (December)
- 2022 Nohomeen Fire
- 2023 Stein Mountain, Ponderosa and Kookipi Fires
- 2024 Shetland Creek Fire
- 2024 (November 1): Climate Change & Environmental Monitoring Report
- 2025 – TBD (*see above*)



# Lytton First Nations Recovery

## Since June 30, 2021

- LFN took over and now runs its own ESS and EOC
- LFN established its own Emergency Preparedness and Response Department
- LFN sits at the municipal, regional, provincial and federal tables.
- 42 displaced families are out of hotels and into modular homes
- 10 Serviced RV sites
- LFN set up a temporary Café, Store and Hardware store
- LFN relocated Post Office, RCMP, Ambulance and Medical Clinic Relocated to reserve Lands
- LFN set up worker camp, concrete batch plant and gravel pit.
- LFN set up a temporary Community Hall & Band Office
- LFN Donation Centre
  - Essential food and clothing
- LFN Recycling Depot (in works)



# Coming in 2025

## Made by LFN, For LFN at LFN

### 1. Climate Resilience Plan

Outline of the known climate hazards facing the LFN today and trending into the future, the risks they pose, and how LFN can adapt to become more resilient.

### 2. Infrastructure Plan

Locating the current infrastructure, investigate the need for upgrades and identify new infrastructure required for the climate hazards allowing LFN to be shelter in place rather than evacuate.

### 3. Housing Plan

Identify the current residences and their condition and future permanent housing LFN needs and where they could be built and ensure that all homes are at a “resiliency” standard which will be higher than Canadian codes currently.

### 4. Tl’kemtsin Design Plan

An illustrated design vision and concept plan showing where new housing and community facilities could be developed on our core reserves and potentially the Village of Lytton.

# Climate Change & *Fire Resistance*

## *Protecting community Foundations and Systems*

2016

We all became acutely aware of bad fire risk, trends and potential consequence!

2018

The New Normal (Abbott Chapman Report):  
<https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/bc-flood-and-wildfire-review-addressing-the-new-normal-21st-century-disaster-management-in-bc-web.pdf>

2021

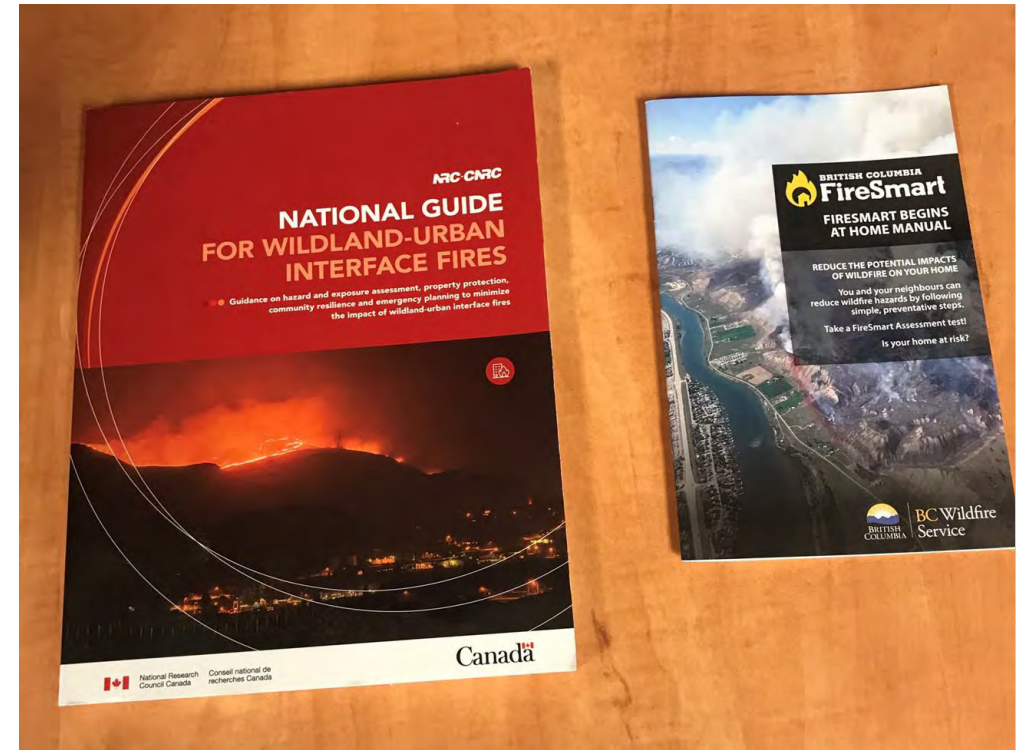
**The Lytton Fire.**

- Homes and a Town lost.

2023

**The NWT Fire.**

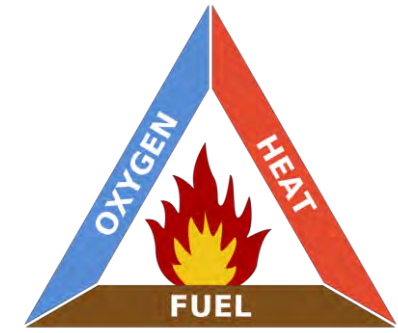
- 2/3 of population is evacuated.



**AWARENESS and a WHY!**

# Risk & Trend

## Bad Fire and More of them!



1. Awareness (risk, trend and consequence).
  - External fire, temperature and air quality.
  - Increasing in frequency, duration and intensity.
2. Acceptance
  - No time for second guessing now
3. Four fire resistance planning areas.
  - Watershed Management
  - Proximal Management
  - Renovations (buildings and infrastructure)
  - New Builds
4. Easily understandable steps within each planning area.
  - Low hanging fruit
  - Followed by logical and incremental next steps

Remove the Fuel

Fire needs fuel, oxygen and heat.

Fire spreads via direct flame, ember storm and radiant heat.

Air Quality never seen before

Community Hall and Café – August 21, 2023

# AWARENESS

## Frequency, Duration and Intensity

We are not dealing with the wildfires of yesterday!

- Too much fuel
- Fuel is tinder dry and preheated
- Increased regional heat, drought, and wind
- Holdover fires from previous year

Experiencing fast and hot fires never seen before.

- Large distances in minutes
- Fire now down hill and against the wind.
- Embers travelling kilometers.
- Melting windows, trucks and tractors.

Double (quadrupling) down on your effort!

- Prioritize Fire resistance.
- An investment, not a cost.

All in approach (community)

- Lead (hope flows from action).
- Fire Resistance – as strong as your weakest link.
- Start somewhere – success builds on Success.



Build up fire resistance over time  
Its overwhelming to try and do all at once!

# Before getting out of AWARENESS

## CAUTION

### Fire Resistance & False Sense of Security

- Can't eliminate the risk!
  - External fire risk reduction
    - Is achieved by burning, chipping or removing fuel.
  - Reducing the opportunity for fire to move through the landscape and buildings.
- Retreat the areas
  - Watershed, proximal public areas and on lease, owned or rented property
  - remove barriers to efficient retreatment
    - rocks, fences, wires, topography

### Fire Smart Assessment:

- homes and businesses are evaluated, an action list, and a reevaluation schedule.



### 2023 treated area (temporary store)

- Grew back in 2024
- Still has barriers (fence and wire)
- Low hanging tree branches (ladder)
- Chipped pile can be removed

1

# Watershed Forest Fuel Management

## You can defend against a ground fire!

### Broadcast Burns (fighting fire with fire)

- Prescribed or cultural – burn the fuel when safe to do so.
- DO when cooler, moist and use fireguards. Watch that wind!
- Challenge: dependency, permissions, liability, cost and experience

### Polygons

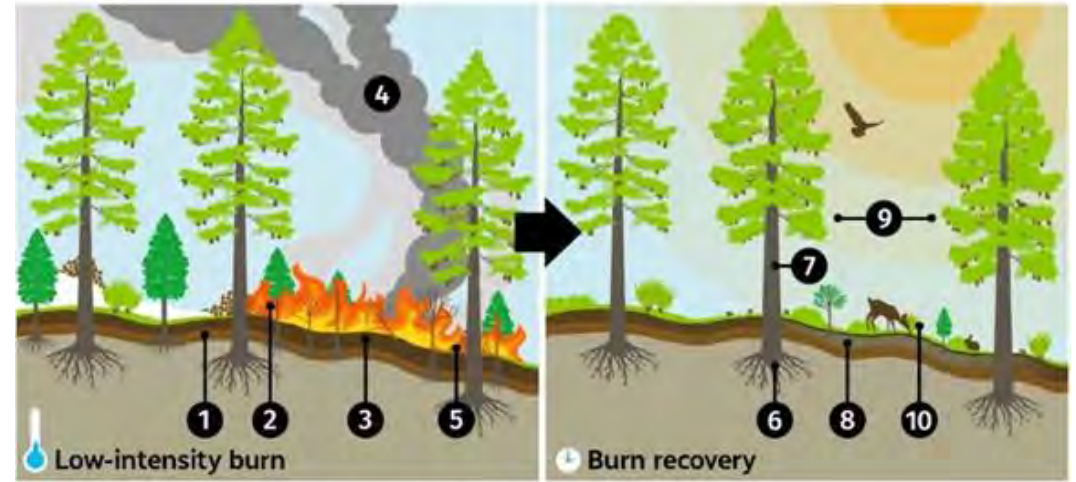
- Map to show locations, progress and post fire results
- Prune, thin, burn and chip (remove the fuel)
- Prioritize access routes?

### Right of ways (Eliminate the dynamite fuse)

- Roads, Railway, pipelines and hydro lines

### Berms and Fireguards

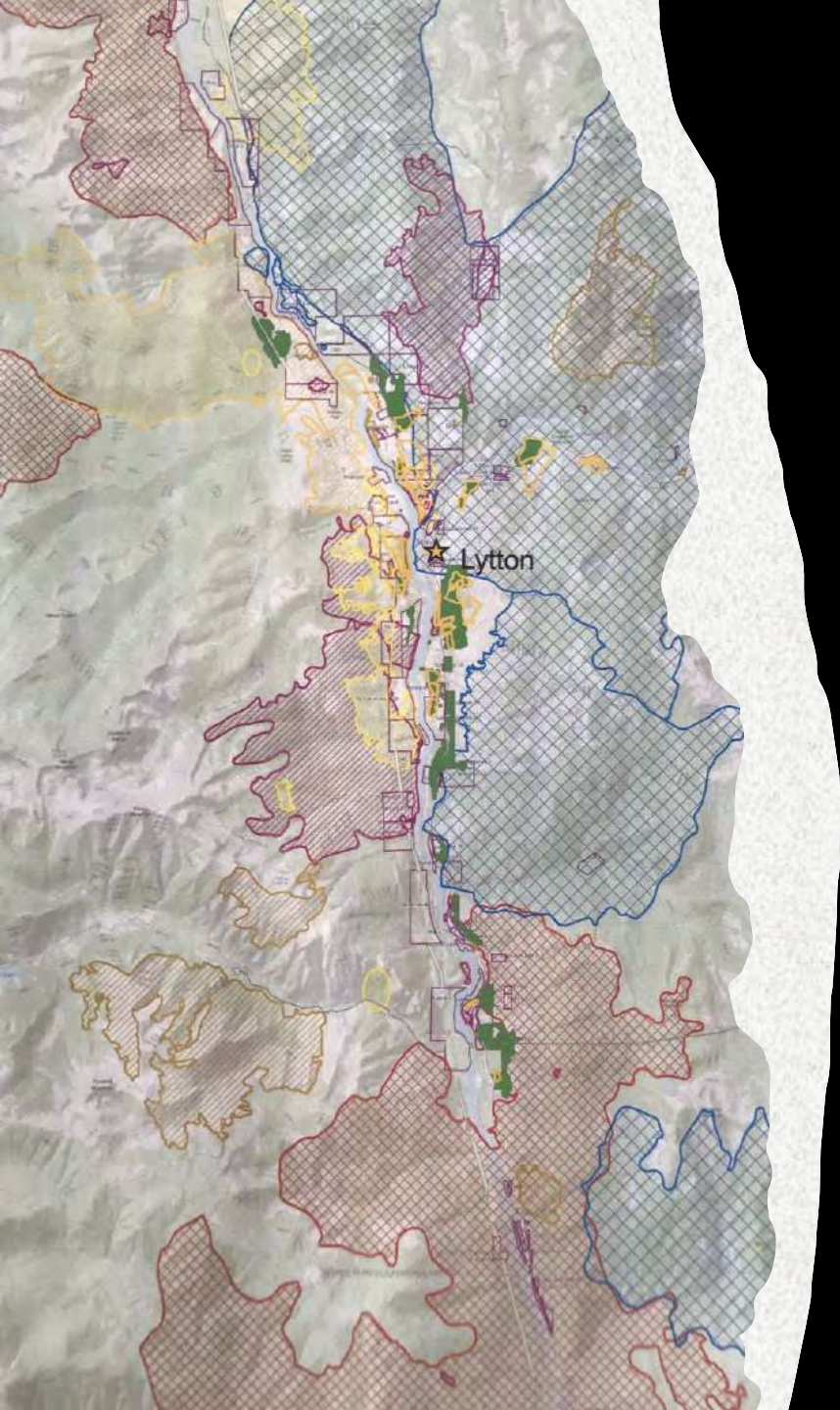
- Build and maintain natural and anthropogenic barriers to ground fire to reduce crown fires (build gaps - daylighting)



### Low-intensity fire

- |  |                              |
|--|------------------------------|
| ① Mineral soil                         | ⑥ Carbon storage             |
| ② Ladder fuels (e.g. branches)         | ⑦ Thicker bark               |
| ③ Duff layer intact                    | ⑧ Nutrient-rich mineral soil |
| ④ CO <sup>2</sup> release              | ⑨ Fire break                 |
| ⑤ Fine fuels (e.g. twigs, dead leaves) | ⑩ New plants                 |

# Watershed Fuel Reduction – Really Works



## Legend

- Lytton Area Burns 2010-
- Treatment Polygons 200
- First Nation Reserves
- ▨ 1991-2000 fire perimeters
- ▨ 2001-2010 fire perimeters
- ▨ 2011-2020 fire perimeters
- ▨ 2021 fire perimeters
- ▨ 2022 fire perimeters
- ▨ 2023 fire perimeters

leted Fuel Management

0 1.25 2.5

2

# Yards and Common Areas

## Burn, chip or **remove the fuel!** ←

- Ditches, fence lines, fields & gullies.
- Remove dead and combustible vegetation (i.e. coniferous trees and hedges)
- Prune (ladder fuels)
- Thin vegetation (spacing to reduce crown fire spread)
- Remove dead cars and move woodpiles.
- Abandoned buildings (deconstruct).

**Its hardest the first time.**



**Retreatment is easier and faster – start somewhere!**



Cut, stack and remove



Before  
and  
After





Before and After





Remove proximal fuel when safe to do so



That 2023 Area: retreated in 2024 and last obstacles removed.

# Renovations and Retrofits

## Fire “risk” evaluation & implemented resistance!

LFN has 193 homes that survived the 2021 fire.

- Not the best quality, “aged out” and “renovation” money pits.
  - Asphalt roofs
  - Vinyl and cedar siding.
  - So much “wood” everywhere!
- Fixed income and low-income families.

Seven more LFN homes were lost in 2022 and 3 more were deemed unsafe after post fire assessments were done (tear down and redo)

LFN is working together to **reduce external fire risk (direct flame, embers and radiant heat)** on existing built homes and businesses:

- metal roofs
- proper soffits and facie board
- Repairing exhaust vents
  - stove, bathroom and dryer
- better windows and doors
- Siding removal and replacement
  - Hardie Board or AAC cladding.
- Alternatives to flammable materials
  - decks, fencing, woodsheds, storage etc



**AND EMPOWERING OWNERS AND TENANTS**

# Anyone know how the Lytton Parish Hall and adjacent area survived?



- Buildings were superheated, super dry and faced the same wind driven:
  - Direct flame....
  - Sparks....
  - Radiant Heat....
- What was different from the rest of town?
  - Metal roof on hall
  - New asphalt roof on the church and rectory
  - Hardie Siding
  - Vegetation managed and lawn cuts
  - Distance from other buildings

# Lahaina Beach Fire 2023

## FireSmart Principles



100-year-old wooden house survives:

<https://globalnews.ca/news/991460/1/100-year-old-miracle-house-in-lahaina-survives-deadly-maui-fire/>

### Recently Renovated

- Vegetation was trimmed back
- New metal roof
- New siding
- Landscaping was changed to stone

# New Buildings

## *Stop building things that burn!*

We build with what **we are aware** of or **can afford**.

- After disaster – rebuild options are often impacted by lenders and insurance companies.
- Everyone thinks capital (or the cost to build)
- Shift thinking to designed resistance and durability (aka investment)

**Are there BC and National fire resiliency codes?**

- No one likes it when one of the “5 states” start telling voters, owners and tenants what to do.

**What then are our new build options?**

- What we lost: stick built 2x4 and 2x6
- or
- Hempcrete, mass timber, CMU, Concrete, ICF, Hardie Board, AAC, SIP, rammed earth (to name a few).

Cost Benefit Analysis (CBA) or Multi Criteria Decision Analysis (MCDA).

Fire resistant homes and businesses have:

- Insurability (can get and affordable)
- Resilience: shorter “downtime” and recovery schedule (asset is still there after an event)
- Energy efficiency (operational savings)
- Thermal mass (cool in summer, warm in winter)
- Increased resale, lease or rental value
- Durability (last generations)

# 274 Laguna Beach California (1993)

<https://lakewaymud.org/update/wildfires-dont-be-scared-be-prepared/>



With awareness of wildfire risk, homeowner chose to build maximizing fire resistance.

The firestorm then passed by with little structural damage.

ABC News reiterates wildfire risk, speaks to the owner and segways to a fireproof product known as AAC:

[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_www.youtube.com\\_watch-3Fv-3DprSIV0AVqdQ&d=DwlCAG&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A\\_CdpqnVfiiMM&r=NL3KA3Cd4IOwX5KEIGXi6Yyb7b88fbOKQopRMNrByxM&m=bp7hOaefY1dPF1Y2v3bfM5WkHxM-ftNP6ddlQfgh31VTYlWw-cbZNP3gvAglcNH1&s=0blMwGr1I623hUwTEekmLeYU6lO7tHnTgrAwF6QKK2A&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.youtube.com_watch-3Fv-3DprSIV0AVqdQ&d=DwlCAG&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpqnVfiiMM&r=NL3KA3Cd4IOwX5KEIGXi6Yyb7b88fbOKQopRMNrByxM&m=bp7hOaefY1dPF1Y2v3bfM5WkHxM-ftNP6ddlQfgh31VTYlWw-cbZNP3gvAglcNH1&s=0blMwGr1I623hUwTEekmLeYU6lO7tHnTgrAwF6QKK2A&e=)

# We don't need miracles; we need planned for and then implemented fire resistance.

'Built to burn.' L.A. let hillside homes multiply without learning from past fires - Los Angeles Times:

- <https://www.latimes.com/california/story/2025-02-09/built-to-burn-a-history-of-development-of-los-angeles-hillsides>

I can offer no defensible explanation as to why AAC as a product is not used more in Canada?

How then do we get Canada to:

1. Rebuild with AAC and
2. retrofit the homes that are built?

Get a proof of concept in the ground, be visible in doing so and don't cut corners.

## Canada's Architects and Engineers

- Is AAC been introduced in our places of learning?
- Customers need options to make informed choices.



Xella History (1923 to 2025): [Who we are - Our history](#)

Xella Brands:

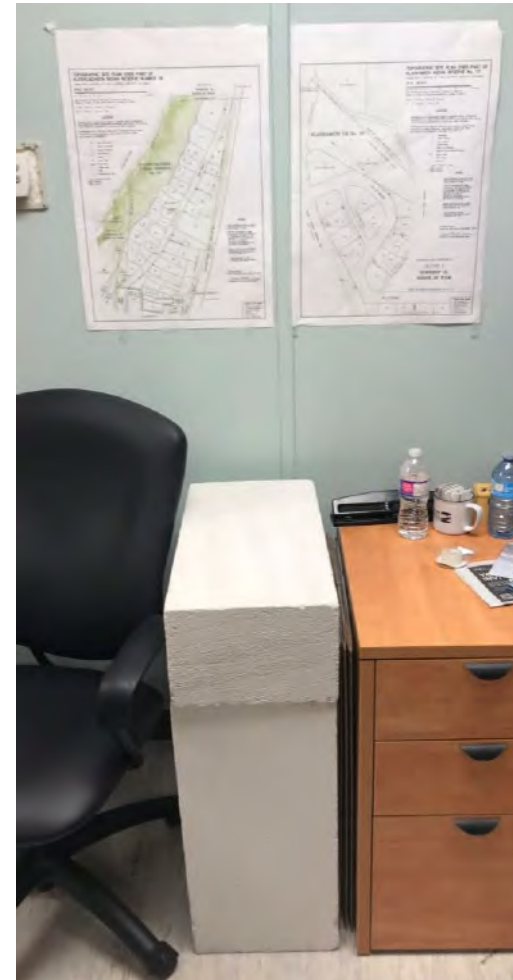
- Ytong
- Hebel
- Silka
- Multipor

# Building Back Smarter



## New LFN Cultural Centre

- Hardie cladding (panel)
- Solar and battery storage planned.
- Testing after construction planned.



## LFN replacement homes

- Families have asked that external fire resilience be a priority
- AAC Block is a minimum 4 hours
- Hardie Board and mineral wool (1 hour)
- Hardie Board alone – 20 minutes



Yesterday



3 days ago



Today



# Wisdom

Together we will be ok.

Canadians need to make climate resiliency investments now.

Creators gift of life and choice

- What are your options?

Our future is not predetermined

- What will you do today?

Our children and grandchildren are worth it.

- Investment, not a cost!

We can't do it alone!

Feb 24, 2023: Nature of Things – True Survivors: <https://www.cbc.ca/documentaries/the-nature-of-things/we-have-an-extraordinary-ability-to-adapt-and-survive-sarika-cullis-suzuki-1.6748120>