



SS-21: Designing a Sustainable  
Community with Passive Design  
and Modular Housing

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B.E.S Planning

*Designing a Sustainable Community with Passive Design and Modular housing*



M.A. Coastal Communities and Regional Development

*ᐃᐱ ᓂᓄᓴ - Our Land: On Policies and Guidelines Regarding Sustainable Community Design and Inuit Self-Determination in Nunavut*





Cambridge Bay



Iqaluktuuttiaq (Cambridge Bay), Nunavut





UNIVERSITY OF  
**WATERLOO**



Canada

- Junior Technical Co-op (2019)
- Clean Energy and Infrastructure
- Liaison with the Hamlet of Cambridge Bay

# Key Figures

Population: ~ 2000

Inuit: More than 80%

Food subsidisation: 20%-60%

Km-mi to nearest community: □ □ □□ (Qingaut,  
Bathurst Inlet) – 280km/174mi

□ □ □ □ □ □ (Uqsuqtuuq, Gjoa Haven) – 370km/230mi

Topography: +/- 3m, fairly flat, small water bodies and  
rocks

Ground: Permafrost: 3-12m /10-39ft

Average Temperature Range: -40C/-40F to 15C/59F

“Settled” in 1921

First known existence of humans in area was 1800BCE  
(4000 years ago)

Classified as a remote and isolated community



# Cambridge Bay Community Plan

By-law No.288  
2015 to 2035

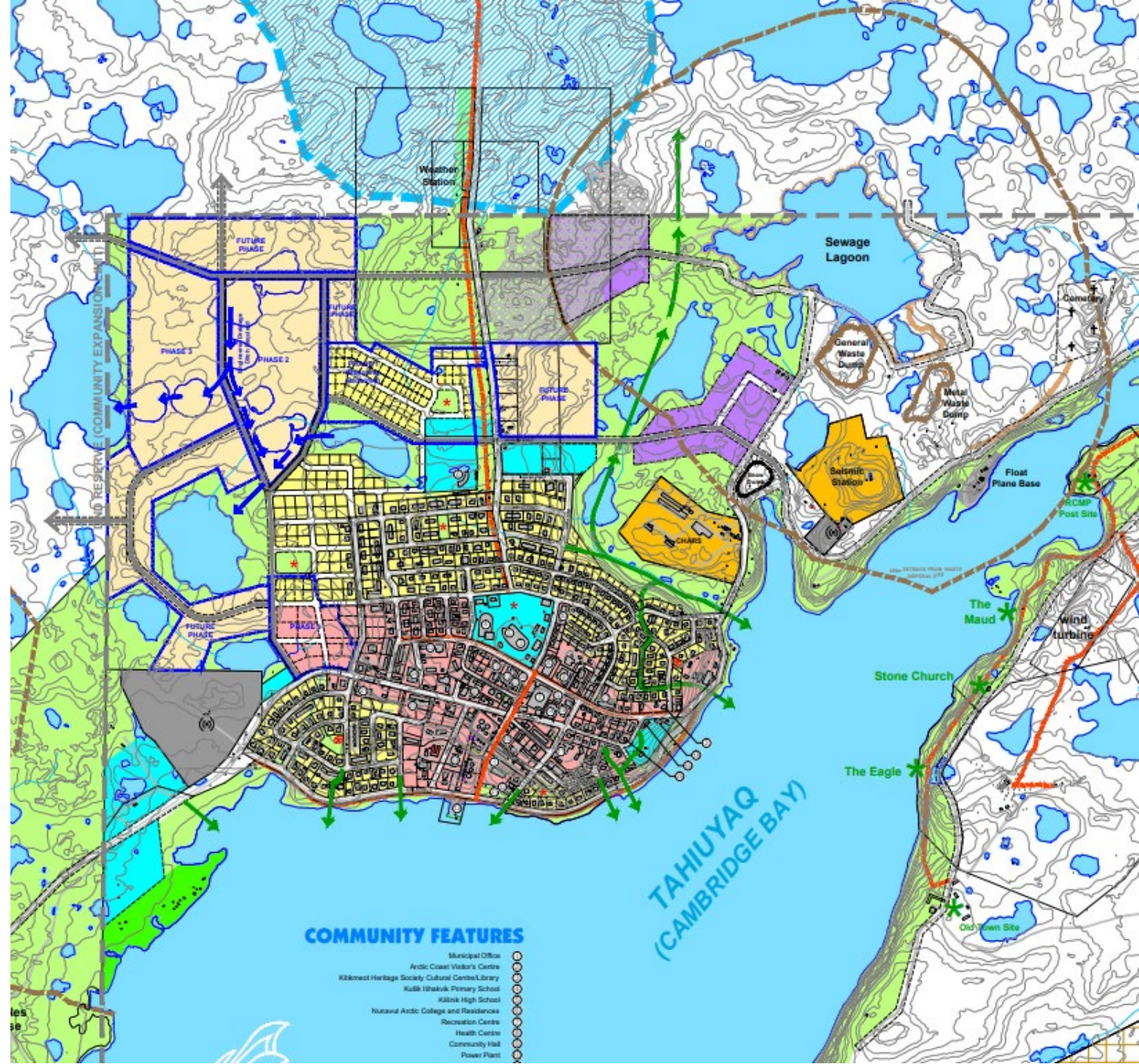
Planning our Future

Table 1: Population Projection Scenarios, 2015 to 2035

Year	LOW growth	MEDIUM growth	HIGH growth
2015	1,700	1,700	1,700
2020	1,800	1,810	1,870
2025	1,880	1,920	2,050
2030	1,940	2,050	2,250
2035	1,970	2,180	2,480

Table 2: Housing Projections

Projected population 2035	Total units needed by 2035	Estimated Current supply of units (2015)	Additional units needed by 2035	Average units / year
2,500	800	530	270	13



## Nunavut Planning and Project Assessment Act

S.C. 2013, c. 14, s. 2

Assented to 2013-06-19

An Act respecting land use planning and the assessment of ecosystemic and socio-economic impacts of projects in the Nunavut Settlement Area and making consequential amendments to other Acts



## DRAFT NUNAVUT LAND USE PLAN

The Nunavut Land Use Plan (NLUP) is a legal requirement under Article 11.5.1 of the Nunavut Agreement and Part 2 of the *Nunavut Planning and Project Assessment Act* to guide and direct short-term and long-term development in the Nunavut Settlement Area and reflect the priorities and values of residents.

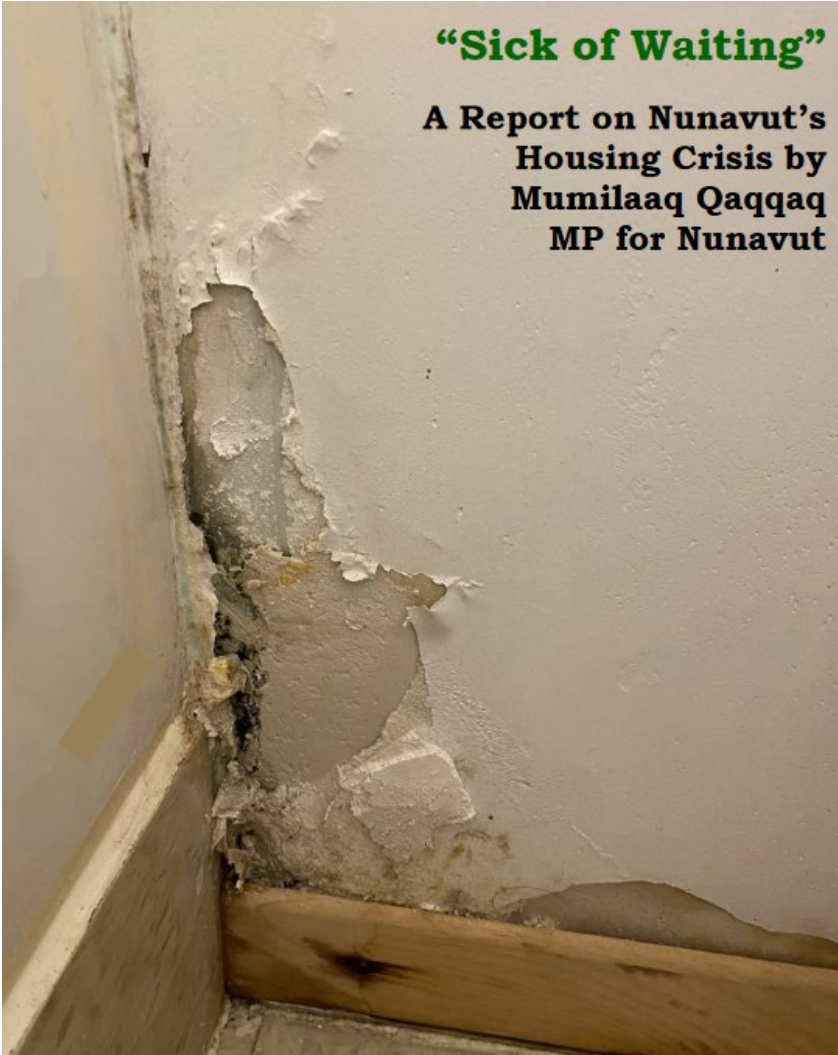




# Housing Challenges



Mumilaaq Qaqqaq



In this home, the window could no longer close. The bent window was now held with a rope, leaving a major gap that allowed in cold air, rain and snow.

## Rapid spread of COVID-19 spurs plea for 'true action' on Nunavut's housing crisis | CBC News

"We know that overcrowding is contributing to the rapid spread of COVID-19 in our communities," Premier P.J. Akeeagok said Thursday, noting that the pandemic "has exemplified the urgency for true action and it's felt right across the territory."

January 6



## Nunavut housing crisis | CBC News

Long lists for public housing and homes crammed with friends and relatives, John Van Dusen reports from Igloolik

October 10, 2017



## POLITICS APR 8, 2022 – 3:16 PM EDT

# GN, Inuit organizations welcome federal budget's housing, mental health investments

Plan unveiled this week addresses infrastructure shortfalls, says Nunavut Finance Minister Lorne Kusugak

## POLITICS DEC 3, 2021 – 2:30 PM EST

# Lori Idlout calls for mental health and housing support in Inuktitut House of Commons speech

Nunavut NDP MP says she feels she can work with Crown-Indigenous Relations Minister Marc Miller on mutual goals

## \$60M for housing in Nunavut a 'down payment' for territory's needs, says minister | CBC News

The money will be used by the Government of Nunavut to address its most pressing housing and infrastructure needs, but it won't go far.

April 13



## Nunavut MP presses minister on 'desperately needed' housing in the North | CBC News

"What rationale does the federal government have for promising only 100 housing units when thousands are desperately needed?" Lori Idlout asked Housing Minister Ahmed Hussen Thursday.

March 24



## HEALTH MAR 11, 2022 – 10:58 AM EST

# Nunavut Housing Corp. minister announces plan to clean 52 units of mould

More than 150 units have been cleaned in 14 communities since 2016

## NEWS MAY 26, 2022 – 5:14 PM EDT

# Housing is a key priority in Nunavut's \$2.5B budget

Finance minister says he's willing to spend budget surplus on more housing

## 'People need help': Nunavut MP gathering firsthand stories of housing crisis | CBC News

Nunavut MP Mumilaaq Qaqqaq says a lack of housing in the territory is the primary concern she hears from residents. About half of Nunavut's 38,000 residents live in overcrowded homes.

August 7, 2020



## The waiting game: social housing crisis in Nunavut | CBC

More than 3,000 households in Nunavut are estimated to be homeless and waiting for social housing, according to the Nunavut Housing Corporation.

October 2, 2015



## Employed and homeless: Housing crisis in Nunavut hamlet forces shelter to expand | CBC News

Despite working full time at a grocery store in Cambridge Bay, Nunavut, Donny Angulalek is one of eight men living in a new homeless shelter. A housing shortage in the hamlet is so dire, the shelter is already planning to expand its operations.

May 2, 2017



# Tiny Homes and Modular Housing

NEWS AUG 13, 2019 – 9:30 AM EDT

## Cambridge Bay considers using tiny homes to address housing crunch

“The overcrowding situation is pretty dire in the North”



The tiny house pilot project working group gathers for a groundbreaking ceremony in Cambridge Bay last week. (Photo courtesy of Marla Limousin.)

NEWS SEP 24, 2019 – 9:30 AM EDT

## Western Nunavut hub plans for big growth spurt

Cambridge Bay's landscape is changing with the construction of new buildings and roads



Cynthia Ene of Cambridge Bay's Illu Inc. points to the new modular eight-plex now going up quickly on the outskirts of Cambridge Bay. It's designed for energy efficiency, she said, and they plan to watch that over the coming winter. (Photo by Jane George)

# Qallunaat Biases

SCIENCE / RESEARCH

## An Inuit Critique of Canadian Arctic Research



AUTHORS  
Pitseolak Pfeifer



DANIEL TAUKE (NUNAVUT TUNNGAVIK INCORPORATED) EXAMINES A MEAT SAMPLE TO DETECT THE MICROSCOPIC TRICHINELLA PARASITE (IQALUIT, 2017). PHOTO CREDIT: JAMAL SHIRLEY



DAVID NAKASHUK RECORDS FIELD OBSERVATIONS FOR A WATERSHED HYDROLOGY STUDY (IQALUIT, 2011). PHOTO CREDIT: JAMAL SHIRLEY

# IK, IEK, IQ, Sovereignty



## Strengths

- Improved efficiency
- Federal promise
- RE ready

## Weaknesses

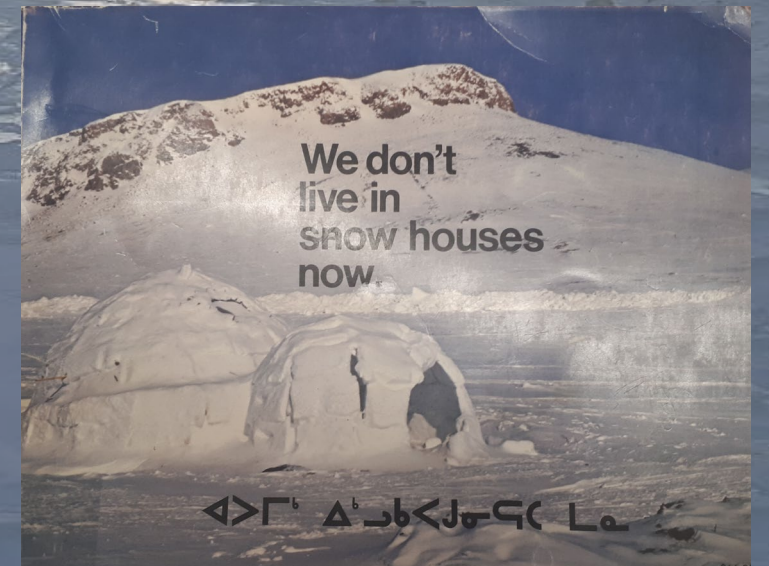
- High initial cost
- Outsourced manufacturing and most of assembly

## Opportunities

- Monitoring
- Expandable
- Culturally appropriate
- Asset Based Community Development (ABCD)

## Threats

- Design limitations
- Permafrost thaw and flooding





Findings



# Recommendations and Next Steps



Quana, È ê Ꞗ §, Thank you, Merci,  
Huy chexw, Kúkwstum'ckacw!

