AIM Network
2019 Asset Management Conference

Miawpukek First Nation

Conne River
(2013)

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Miawpukek First Nation - Conne River

Rationale for Study

Climate Change recognized as an important community issue.

Key Needs:

- **Adapt**: To recognize the local risks and how to adapt to the unavoidable impacts of climate change.

- **Mitigate**: To lessen the effects of climate change through green, and other, initiatives.

Site Assessment

- Water and sewer infrastructure system
- Watershed and water quality
- Storm Water drainage patterns
- Transportation network
- Housing and other land development
- Local industry
- Topography and slopes
- Vegetation type and location
- Erosion risks
- Aquatic and marine environment
- Coastal management
- General physiology of the area.

Rationale for Study

Conne River is vulnerable to:

- *storm water discharge,*
- *erosion,*
- *fire*
- *storm activity.*

Geography of Conne River

Physical characteristics of the local land base is a primary determinant in assessing the magnitude of exposure to the potential effects of Climate Change.

Geography of Conne River

The steep slope topography and the local soil profile, are key climate change impact considerations.

Shoreline Classification

Site	Dominant Material	Shoreline Classification	Short Term Risk	Longer Term Risk
Conne River	pebbles, coarse sand	9: Sand & Gravel Beach with Rock Cliff	Low	Moderate
Conne River	Pebbles, coarse sand	18: Steep Sand & Gravel Beach	Low	High
Vyse Cove	Pebbles, coarse sand	9: Sand & Gravel Beach with Rock Cliff	Low	High
Arran Cove	Pebbles, coarse sand, cobbles	18: Steep Sand & Gravel Beach	Low	High
Reuben Point	pebbles, cobbles	9: Sand & Gravel Beach w. Rock Cliff 3: Rock Cliff	Low	Moderate
Morrisville	Medium,-coarse sand, pebbles	17: Narrow Sand & Gravel Flat 18: Steep Sand & Gravel Beach	Low	High

Natural Hazards Risk Assessment + Mitigation Plan

Risk		Description of the risk that threatens the community.
Risk Evaluation Criteria	**Level of Impact:** Rating the magnitude of the natural risk	• **Low:** Affects a localized portion of the community land base; Affects a minimal number of residents or one population cohort; Damage to one type of structural infrastructure systems; Minimal cost for repairs. • **Medium:** Affects several areas of the community land base; Affects most residents or more than one population cohort; Damage to two or three structural infrastructure systems; Moderate cost for repairs. • **High:** Affects most or the entire community land base; Affects all members of the community; Damages to all structural infrastructure systems; High costs for repairs.
	Likelihood : Rating the probability of occurrence	• **Low:** Not likely to occur and highly preventable • **Medium:** Somewhat likely to occur and somewhat preventable • **High:** Very likely to occur and not preventable
	Adaptive Capacity: Rating the Preparedness and ability to react	• **Low:** Little to no access to resources, personnel, and equipment and no partnership identified or established • **Medium:** Limited access to resources, personnel, and equipment with limited partnerships identified or established • **High:** Complete access to resources, personnel and equipment with existing partnerships identified or established.
Suggested Adaption Action		Suggested corrective measures that can be applied to the identified hazard
Overall Priority Level		Based on the Risk Evaluation ratings, an overall priority will be assigned: • **First Priority:** Corrective action to be taken within the first year

Natural Hazards Risk Assessment + Mitigation Plan

Risk		**Over capacity of Stormwater drainage systems and corridor resulting in localized floods or washouts**
Risk Evaluation Criteria	**Level of Impact**	High
	Likelihood	High
	Adaptive Capacity	Medium
Suggested Adaption Action		• Conduct comprehensive mapping inventory of all storm water management and natural drainage systems, including all piped systems and culvert locations ; • Continue ongoing inspection and maintenance of all storm water ditches, culverts, drainage corridors and discharge locations, including removal of sedimentation and impediments; • Prepare an Engineered Infrastructure Standards Manual to establish standards and requirements in the construction and operation of the storm water management system, and all other engineered infrastructure of water, sewer, roads and utilities.
Overall Priority Level		First Priority
Lead Partner		Department of Public Works
Support Partners		Band Council

Community Response Plan

- Data findings/community input integrated into the MFN Community Response Plan.
- Becomes actionable strategy to address management of climate change risks.
- The Plan establishes a chain of command: muster stations, emergency housing, transportation, medical, food and additional supply resources, and alternate routes for evacuation.

2019 Climate Change

- Current Status
- Lessons Learned
- 15 Policy Approaches

Atlantic Canada's Trend

- Huge impacts for coastal communities.
- Sea level rise and storm surges.
- Low lying infrastructure at risk.
- Warming water temperatures.
- Fish stock migration changes.

Province of NL Actions

- Update Provincial Urban and Rural Planning Act.
- Complete North East Avalon Regional Plan.
- Support Integrated Municipal Sustainability, Asset Management and Climate Change Adaption Plans for all communities.

Climate Adaption Policy

- Confirm issues province-wide (NL context) and locally (community context).
- Adopt regional watershed based approach.
- Focus on collaboration, common challenges.
- Integrate climate change, public health, social resilience.
- Recommended actions and focus of policy.

What should local governments do?

What should local governments do?

- Citizens looking for local government take progress action.
- Engage residents - they are local climate change experts.
- Assess vulnerable locations of community to climate change.
- Asset Management and Climate Change Plan cost and prioritize.
- Establish partnerships: business, community groups, MUN, CNA, City, MNL, FCM, etc.

Top 15 Community Policy Approaches

1. Local climate adaptation leadership.
2. Become policy maker, not policy taker.
3. Provincial legislation and fiscal partnerships.
4. Climate lens entire municipal operation.
5. Reduce local GHG emissions (mitigation).

Top 15 Community Policy Approaches

6. Energy audit and retrofit municipal buildings.
7. Pursue energy efficient infrastructure.
8. Alternate fuel municipal vehicle fleet.
9. Refine recycling and capture methane gas.
10. Building for energy efficiency.

Top 15 Community Approaches

11. Enhance local digital mapping capabilities.
12. Tree retention and natural areas preservation.
13. Amend Municipal Plan for smart growth.
14. Utilize zoning for climate land development.
15. Realize economic opportunities of adaptation.

It’s not too late, but it is time to get moving.

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