



Kugluktuk flood 2007

# Developing a drainage standard for northern Canada

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# Relevance of Community Drainage Standard

## Spring 2013 in Iqaluit

Spring melt and rain have exposed the weaknesses in Iqaluit's roads and sidewalks – an initiative is underway to rebuilt roads in Iqaluit with clear plans for a drainage system to carry water run-off out of the city.



## Spring 2013 in Rankin Inlet

The accumulated snowfall during Rankin Inlet's May 14 to 16 blizzard may have broken records for the area. Environment Canada reported that close to a year's worth of snow (92 cm) fell over those three days.



# Relevance of Community Drainage Standard

## 2012 Kimmirut flash flood

**Posted: May 7, 2012 3:11 PM**

Rain and warm weather over the weekend caused a flash flood in Kimmirut, Nunavut.

A public housing duplex was damaged, and the families inside have been moved out.

A torrent of slush and snow rushed down a hill near the airport at about 2 p.m. local time on Sunday.



**March 28, 2013** Kimmirut is worried about huge piles of snow in the community. Increased snowfall this year has led to a build-up on roadsides and on top of local lakes. Last year, there was a flash flood, and community members worry the same thing may happen again. The hamlet insists it is taking precautions to avoid a similar situation this year. It's hired workers to dig ditches near the airport, and clear snow away from the duplex that was flooded last year.

# What drainage systems exist today ?

## Kugluktuk drainage system

Kugluktuk has developed a rudimentary surface water management system to collect surface water and convey it to the ocean in a series of ditches and culverts.

Kugluktuk suffers from the broad range of challenges associated with the operation and maintenance of a drainage system, such as damage to culverts and ditch systems.



Surface drainage system in Kugluktuk NU



# Who is responsible for what in drainage ?

## 2012 Qikiqtarjuaq flooding and erosion

**Jun 25, 2012 9:16 AM CT**

The costs of repairing the airport runway in Qikiqtarjuaq, Nunavut, keeps climbing as there is more flooding in the area and poor drainage. The damage will now cost about a quarter of a million dollars.

Earlier this month, a flush of water flooded down from a hill near the airport and damaged the gravel runway. "The culverts hadn't been cleaned in a while and that created an issue. **Maintaining culverts is the hamlet's responsibility.**"



# Long term success of standard application

## Operation and Maintenance

The ultimate success of the standard may be judged on the application of the document.

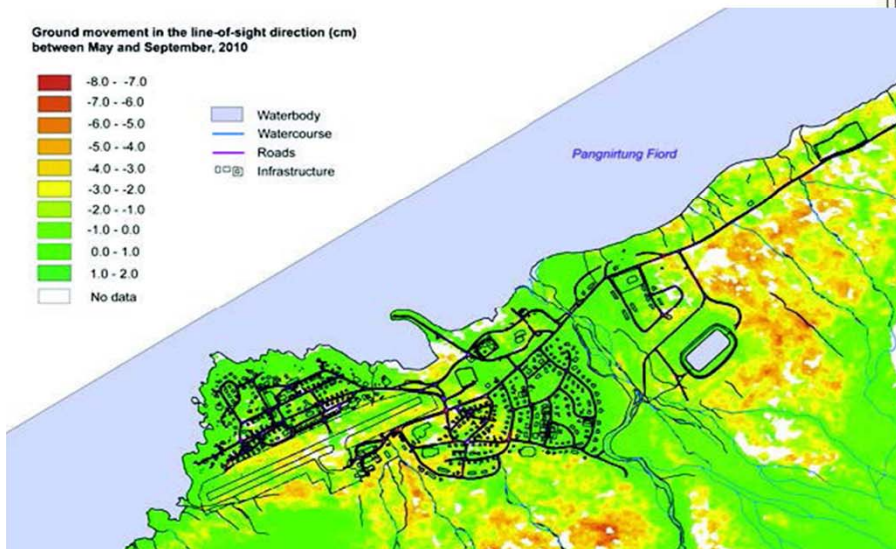
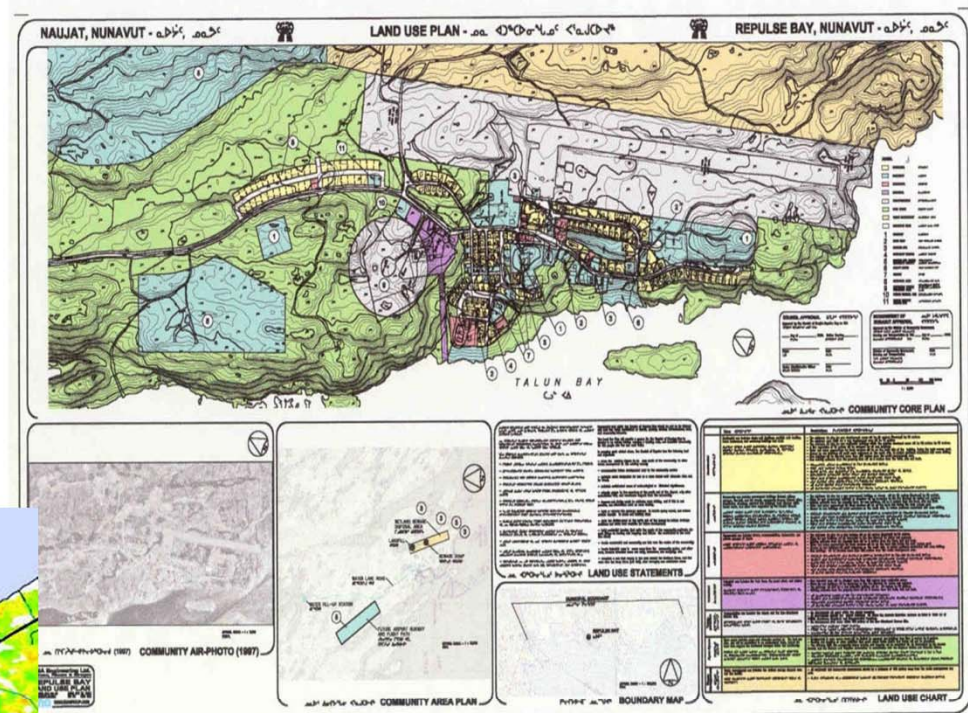




## Integration of existing information

## Land use plans in the north

Land use plans, in communities such as Repulse Bay, provide an natural opportunity for conveying drainage planning information.

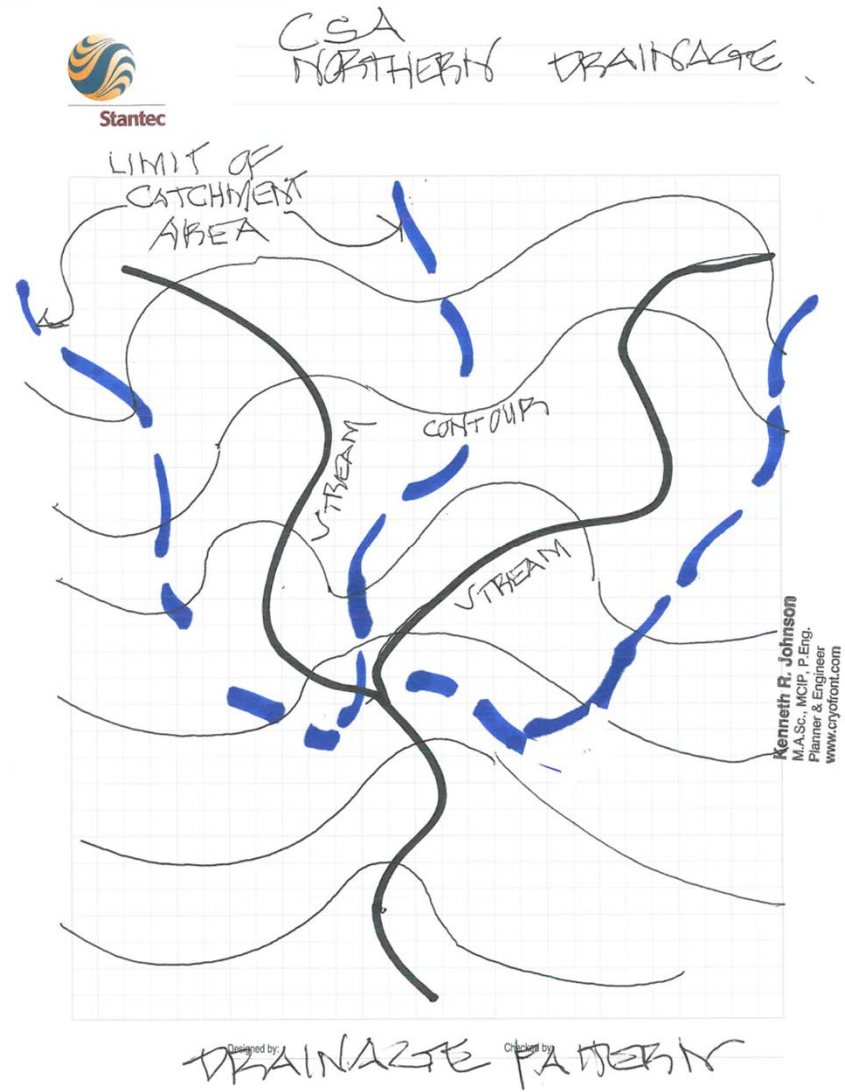


## Terrain hazard maps in the north

Terrain hazard maps, for communities such as Pangnirtung, provide valuable information for drainage planning and design.

# Current stage of standard development

- Images to convey planning, design and maintenance
- Standards Language for planning, design, and maintenance
- Appendices, including maintenance and other relevant check lists





## **Acknowledge Committee Members**

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# **QUESTIONS ?**

