

Loss of Jet Aircraft Service to Arctic Communities Imminent



Retirement of “Gravel Kit” equipped aircraft over the next 5 to 10 years will eliminate Jet service to all gravel surface runways.

There is a solution

**The solution to preventing the
loss of Jet Aircraft Service
to Arctic Communities**

A HARD SURFACE RUNWAY

**Concrete and Asphalt
are expensive to install
and costly to maintain**

**Aluminum
durable, quickly installed
and easy to maintain**

Concrete and Asphalt Issues

Concrete and Asphalt suffer from cracking, chipping and heaving due to freezing and thawing of the permafrost and harsh climate changes.

Result:

- frequent runway closures,
- Constant, costly repairs and frequent resurfacing.



Cost to lay and maintain a 5,000 x 100 ft Asphalt runway over 35 years with a 3% inflation rate

Laying the base and 6” of asphalt @ \$34/sq ft - (Southern Canada prices)	\$ 17.0M
<u>Resurfacing with 2” asphalt every 7 years</u> Cost over a 35 year period	\$ 41.0M
<u>\$200,000 Average annual maintenance over 7 year period</u> Cost over a 35 year period	\$ 11.0M
<u>Approximate cost for asphalt runway over 35 years</u>	\$ 70.00M*

* This cost does not include cost of asphalt disposal after each resurfacing or the cost of asphalt & aggregate plants.

Cost to lay and maintain a 5,000 x 100 ft Aluminum Runway
over 35 yrs with a 3% inflation rate

Laying the base \$8/sq ft -	\$ 4.0 M
Purchasing & laying the Aluminum Runway -	<u>\$40.0 M</u>
Resurfacing with 2" asphalt every 7 years	Not Required
Annual crack filling	Not Required
Estimated recycling value of scrap aluminum in 2049 - (500,000 sq ft x 7 lbs/sq ft x \$3.25/lb)	\$11.0 M
Approximate cost of aluminum Runway (\$44.0M Runway installation - \$10.71M scrap value)	\$33.29M
Cost savings (\$70.05 - \$33.29)	\$36.76M

Aluminum Runway System

- Minimal surface preparation
- No change in maintenance equipment required
- Easy to install and remove
- No environmental impact
- No resurfacing
- Minimal annual maintenance cost
- Service all aircraft types/weights
- Eliminates weight restrictions





Matting Surface



A4 CE Infra 5

Next Step: Testing of the runway panels in the Arctic conditions

Sources of Funding

- PPP - 25% private funding (Aluminum producers, native communities, investors)
- Sustainable Development Technology Canada (SDTC)
- Industry Canada
- Consortium for Research and Innovation in Aerospace (CRIAQ)
- Transport Canada – ACAP
- DND – Northern Runway Placement and Improvement Plan
- Government backed no interest loans/government bonds
- Airline ticket charges for alternate runway(s) for polar routes
- Other sources to be identified (Lease to own)
- Leasing with airport fee charge to pay lease.

Contact

Robert Kendall

robertkendall@fraserinternational.ca

1-613-406-5005