



Ice-management in the Saimaa Canal

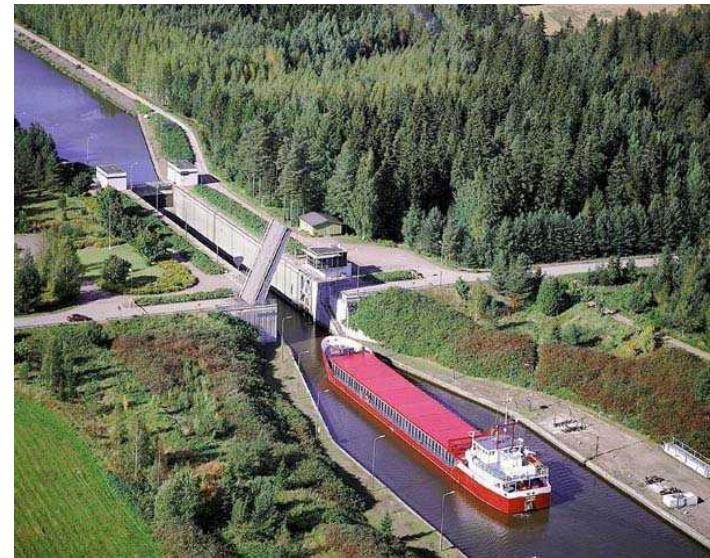
23.9.2015

The Saimaa Canal

- Length 42,5 km
- 8 locks (3 in Finland, 5 in Russia)
- 14 bridges, 7 of which are moveables
- 3 security weirs
- 2 dams of class 1
- Difference from the Baltic Sea to the Lake Saimaa 76 m
- Navigation period 9,5 months
- First built in 1856, the modern canal has been in use for 45 years
- In recent years 1,5 million tons/year, in 2009 only 1,05 Mtons.

Vessel:

- Length 82,5 m
- Beam 12.6 m
- Airdraft 24,5 m
- Draught 4,35 m
- Max cargo 2 500 tons

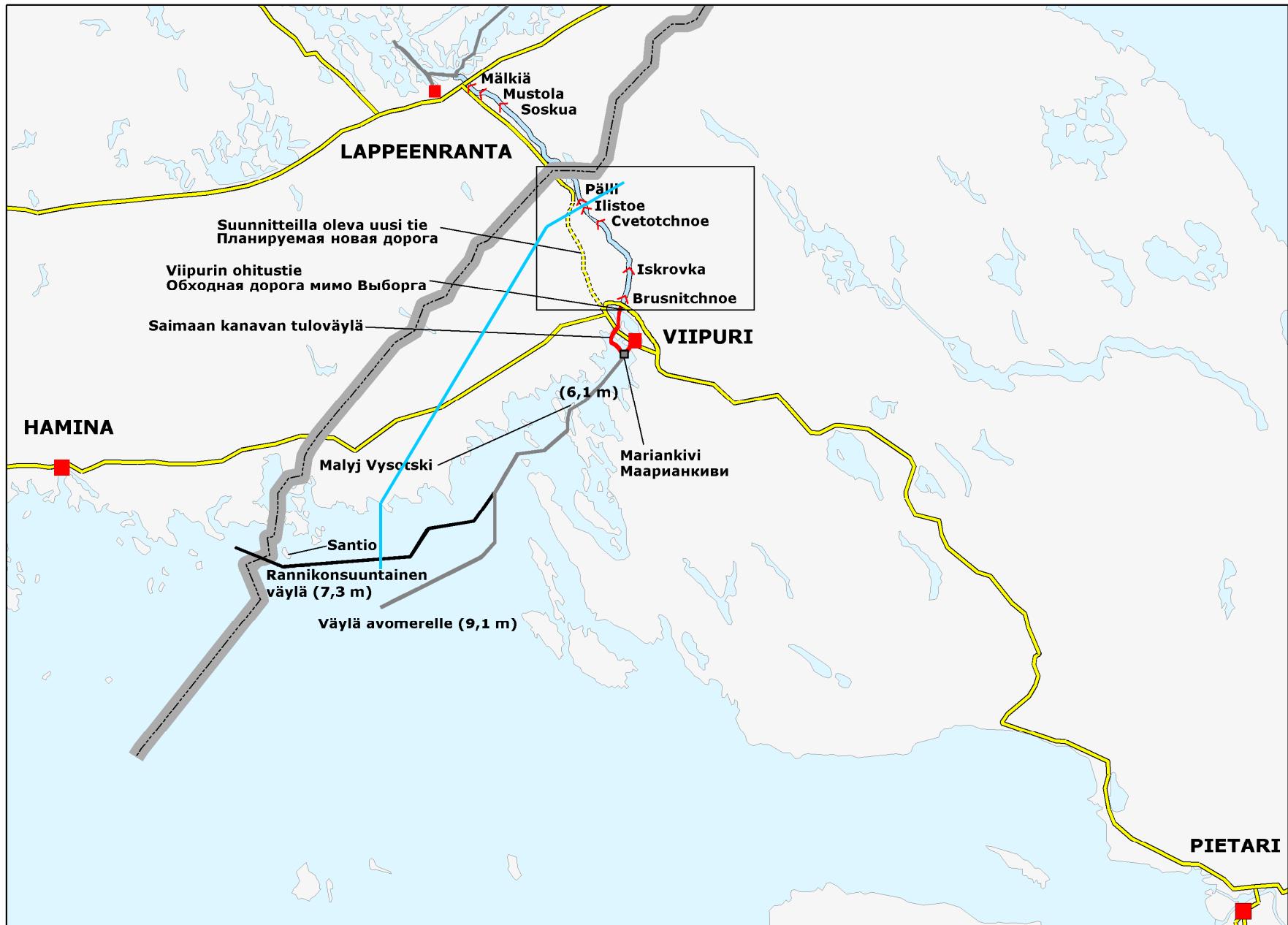


In Finland and in Russia

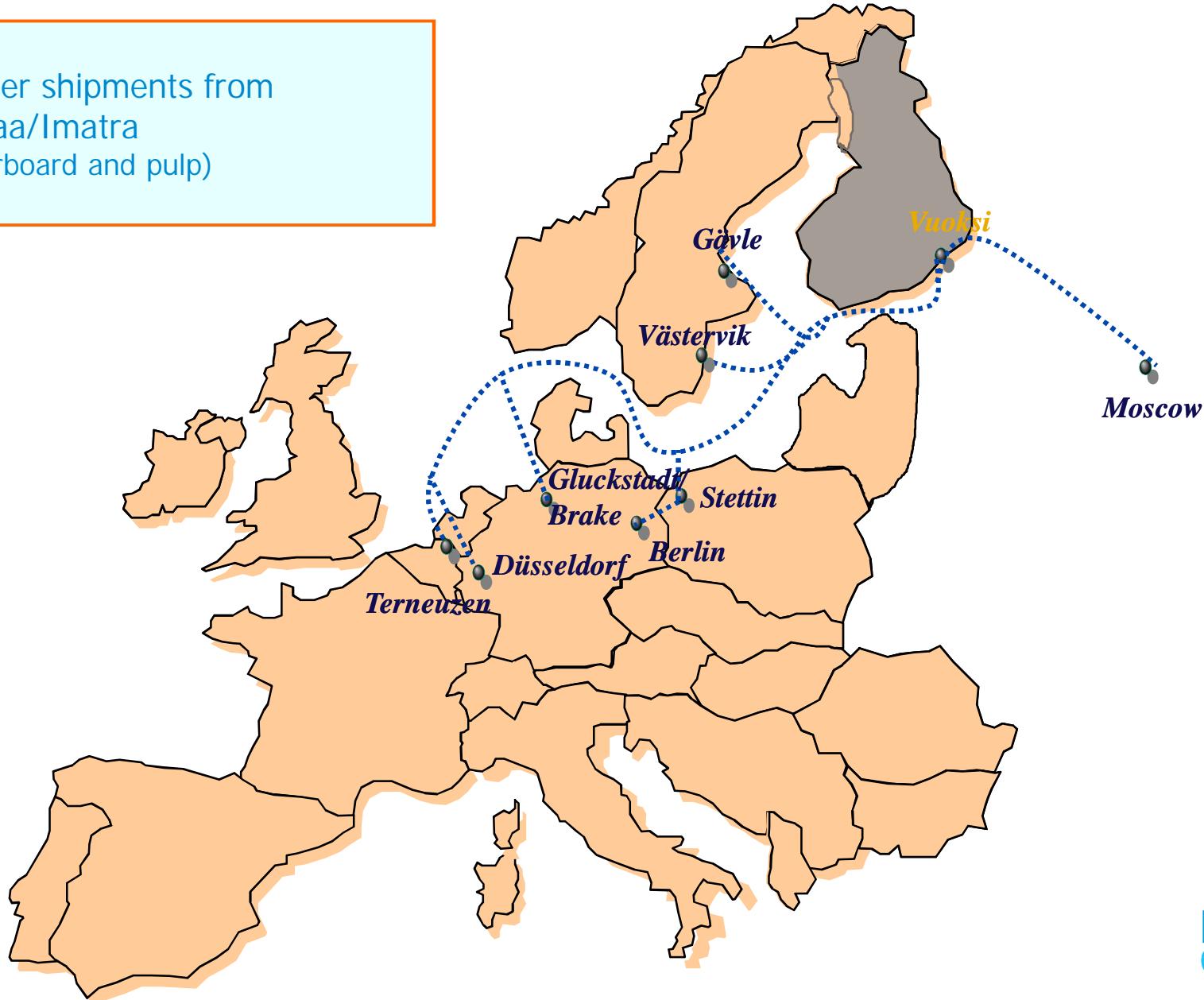
- 3 locks in Finland, 5 in Russia.
- Finland operates the whole canal
- Russia takes care of the fairway from the Bay of Vyborg to the 1st lock
- In 1963, Finland rented the Russian part of the canal for 50 years
- Negotiations of the new rental agreement started 2005
- New agreement since 15.8.2012, next 50 years



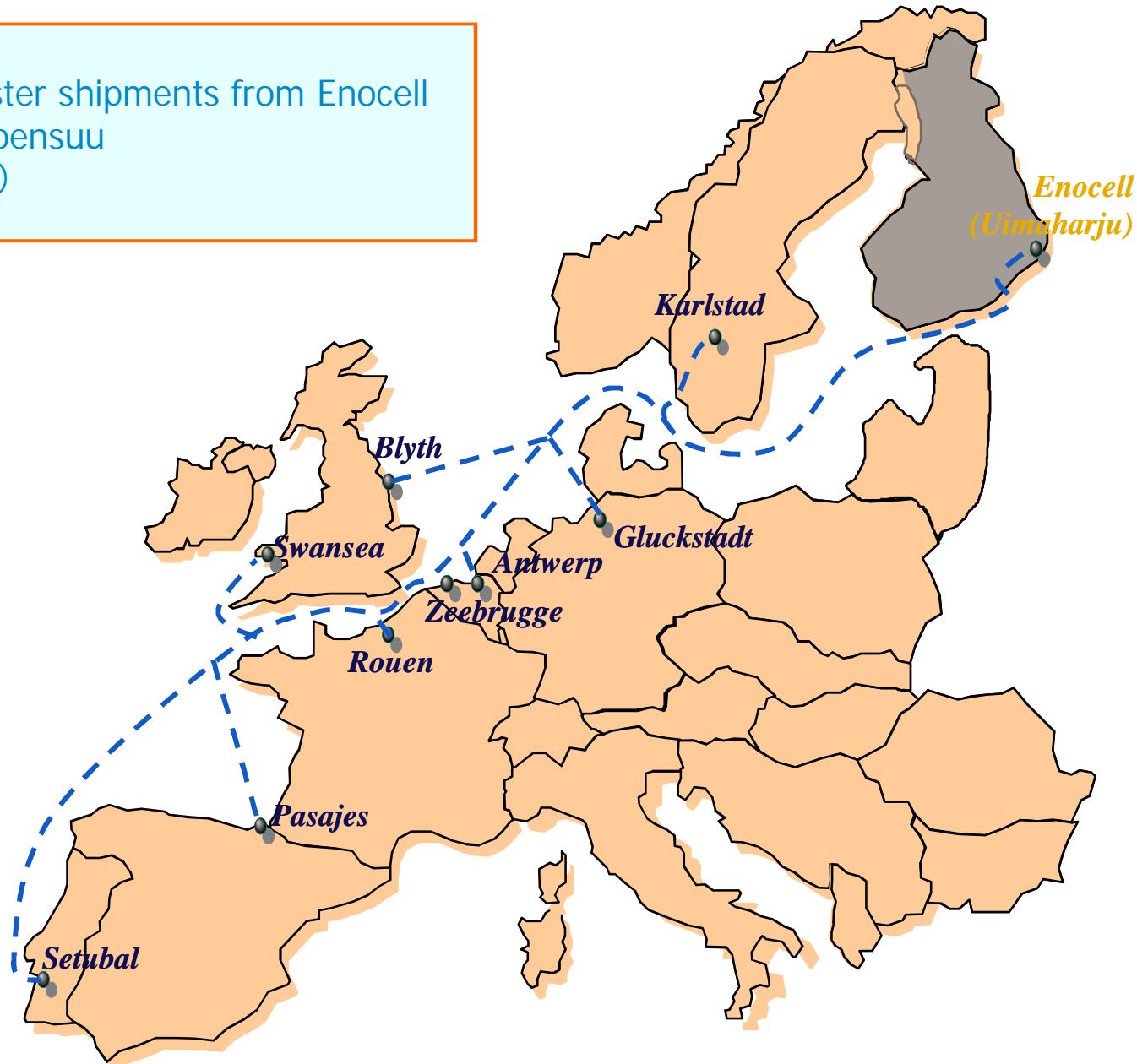
Passenger ship Carelia on her way to Vyborg



Coaster shipments from
Saimaa/Imatra
(paperboard and pulp)



Coaster shipments from Enocell
ex Joensuu
(pulp)



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Väylänpito

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Making winter traffic possible

Technical :

- Bubbling tubes along the lock walls (model Trollhättan)
- Air burst at gate chambers
- High-flow air screening in front of upper gates
- Guiding currents to movable parts and isolation in the lower gates
- Electrical heating in guiding walls
- Electrical heating in the rails of the floating bollards



Winter traffic in Christmas 2012

Bubbling tubes along the lock walls (model Trollhättan) and High-flow air screening in front of upper gates



Electrical heating in guiding walls



Making winter traffic possible

Operational :

- Russia takes care of the ice-breaking from the sea to the 1st lock
- 2-4 ice breakers operating in Saimaa Canal and Lake Saimaa area

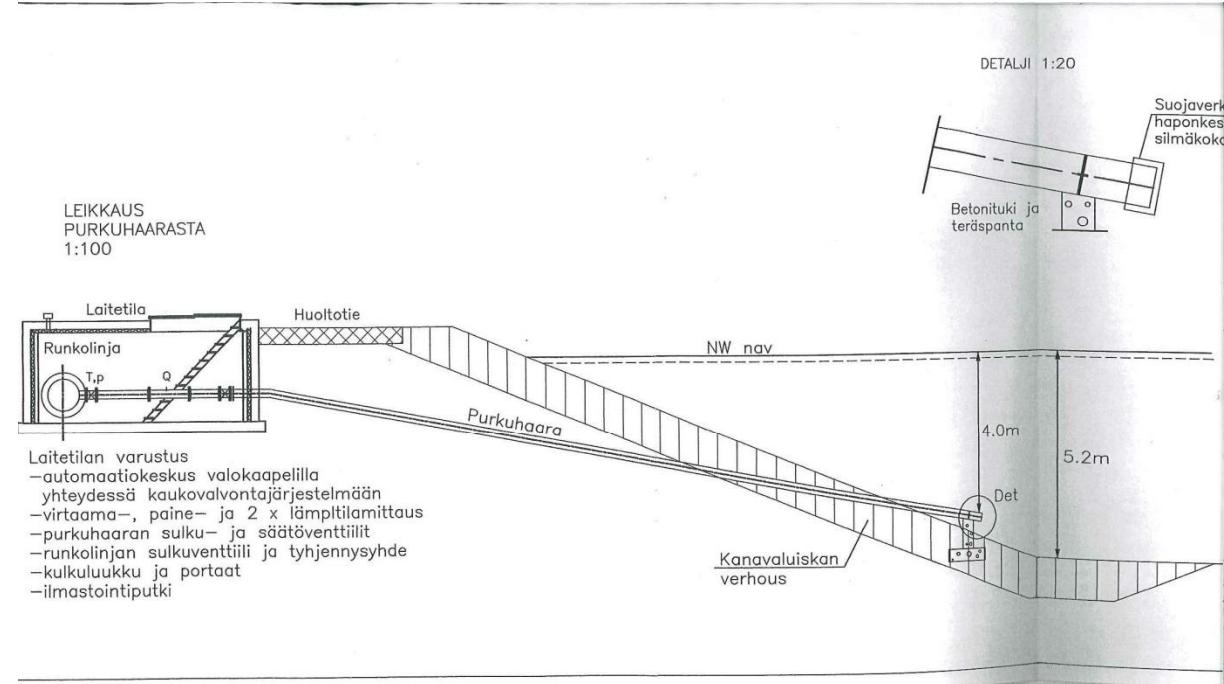
- Movable hot water inducers to melt the caulks and the joints of the gates
- Making the lower gates tight after every locking
- Water level kept on the upper level in the lock
- Additional staff (manual removal of ice)
- Discharge of water from Lake Saimaa used at the end of traffic period
- Experience of the staff in gate operations (lockmasters and pilots)



Winter traffic in Christmas 2012

Operating in the winter time?

- In the recent years we could have operated canal year round every 5th year because of the weather conditions.
- If we want to guarantee winter traffic we need extra energy in to the canal to melt the ice
- 1 m³/s of 30 degree water
- Distributed in 31 locations



Thank You!

https://www.youtube.com/watch?feature=player_detailpage&v=T9fn8SUqBDU