Ship channels, flood risk and deltas: NL and Houston, a reflection

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150 years of “Niew Waterweg”
Plan B / Backup plan required?

In face of rising sea levels the Netherlands ‘must consider controlled withdrawal’

This is the Dutch story – where the climate crisis threatens the very existence of the country itself.
Rotterdam region – flood risk

• Current strategy: dikes + barrier
• Reliability of current Maeslant barrier is “just sufficient” (1/100 per demand)
• Closure frequency will increase
• Flooding frequency of unembanked area will increase
• Options: upgraded or new barrier, dam, dike reinforcements Rdam area, ……..
Hollandkering: stronger together

Move from: four “cartoon” strategies for NL

- Protection (closed)
- Protection (open)
- Seaward expansion
- Accommodate
To: regional strategies

Open but protected

Closed

Open and natural
Houston – Galveston Bay

- Reduce flood risk
- Limit ecosystem impacts
- No hindrance for shipping
- Etc.

Delta Design 2.0!
Houston begins $1.1bn ship channel widening
Challenges / broader transitions
Different perspectives

- “International cross road of global nature”
- “economic enabler and powerhouse”
- Historical narrative
- River and dredging sediment budget perspective
Closing remarks

- Not just a ship channel or flood protection
- Opportunity to combine transitions
- Multidisciplinary perspective, social, technical, planning, ecological
- Need for research by design and analytics