NCOS Online

• The Port of Brisbane partnering with Seaport OPX

• Innovating new approaches to modelling

• Environmental and financial benefits
Where is the sediment coming from?

➢ What are we doing?
   1. Beneficial reuse
   2. Management and monitoring
   3. Offsite Stormwater
   4. NCOS

3 May 2015 (200mm over 3 days)
NCOS Online is an innovative live forecasting physics based model

- Models ship behavior (Under Keel Clearance and developing Swept Path)
- Models environmental conditions in Moreton Bay 7 days in advance
  - Waves
  - Wind
  - Hydrodynamics
- Updates 4 times a day
- Monitors those conditions
- Compares forecast to actual
Achievements to date

• Given confidence to bring in the largest Container vessel ever to visit Australia

• Won the 2017 DPC Award for most innovative Port Support Service in London and Won the 2018 Australian National Smart Infrastructure Award

• Avoided dredging in the Bay!
What next.....

• Climate Change and Sediment modules underway
What we’ve done so far

• Database of survey and dredging data
• Historic turbidity and TSS measurements from Healthy Land and Water and DES
• Hydrographic surveys (10 years, terabytes of data)
• Dredging records (10 years)
• Historical analysis capability
What are we working on

• Live feed from online wave buoys, tide gauges, rainfall and creek discharge
• Event monitoring data from UQ
• Live model results from the operational navigational model
• Automated forecasts of sediment discharge into the river catchment due to rainfall and river flow
• Detailed forecasts of riverine fine sediment siltation in all port areas
• Scenario based options assessment of dredging
• Automates self-learning of the linkages between key processes affecting siltation
• Infrastructure planning