

# Xylem Water Solutions for Flood Protection



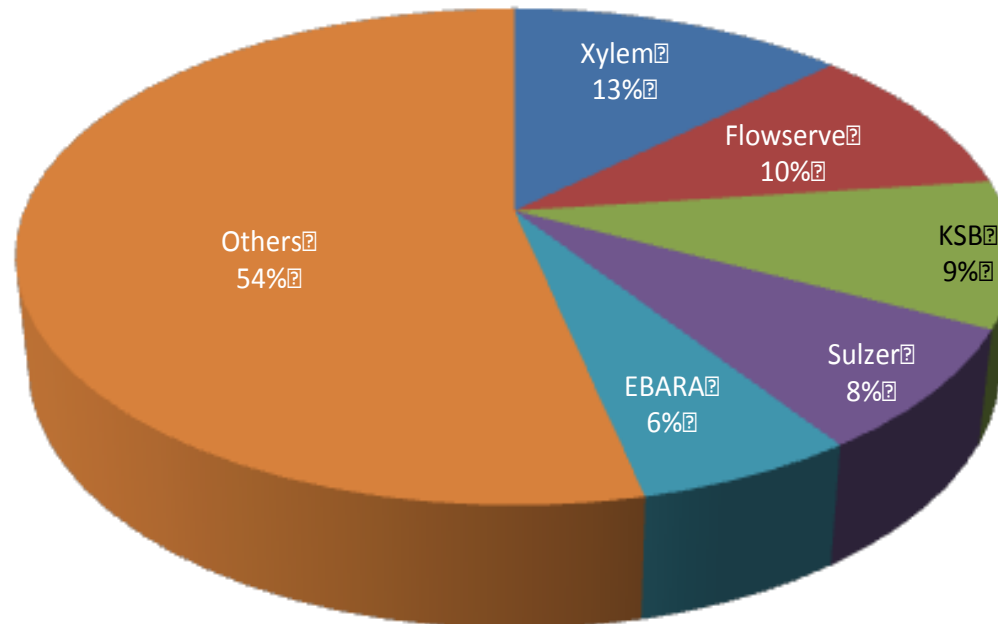
# Global Leader in the water industry



- Focus in water & wastewater management products & services
- USD 3.2 Bln. revenue in 2010 & NYSE listed company
- 140 countries, 12,000 employees, 12 manufacturing sites worldwide.
- World's Largest pump manufacturer & world's largest Dewatering Pumps & Services Company
- Over 100 years of history
- Inventor of world's first submersible pump



# #1 Market share - Global Centrifugal Pump Market



Total Centrifugal Pump Market 2009 Revenue: 19,43 US\$ Billion

Source: "Strategic Analysis of World Centrifugal Pumps Market" by Frost Sullivan, August 2010

# At a glance: Extreme technology for flood management

- **Flygt submersible patented N-technology self-cleaning pumps:** World's #1 brand with **lowest cost-of-ownership**.
- Unrivalled **Computational Fluid Dynamic (CFD)** excellence for optimal pump station and drainage flow design.
- **Centralized Monitor & Control System:** management of all pumping stations and flood alert systems from anywhere at anytime
- **Emergency dewatering and flood control solution** with Godwin mobile diesel-driven pumps.

# Flood management & emergency response track record



## International presence

- Over 10,000 installations worldwide.
- Preferred vendor to the **US Federal Emergency Management Agency (FEMA)** and **US Army Corps of Engineers (USACE)** for storm and flood water management.

## Regional presence

- Thailand: first installation in 1947 for Sri Nakarin Dam project.
- Singapore: pumps and flood gate installations in Orchard area & Changi airport.
- Malaysia: flood mitigation with over 100 installations of Xylem pumps and pump stations to date.





# High flow pumping solution for flood control





# US Hurricane cases



- Hurricane Irene, New Jersey

Fast delivery of **350 Dri-Prime diesel-driven pumps** from eight of its East Coast branches

- Hurricane Katrina, New Orleans

Quick responses of over **100 large, medium and small submersible pumps and diesel engine driven pumps**



# US river flooding cases

- Midwest rivers flood, 2010

Fast delivery of **400 diesel-driven pumps** from eight of its East Coast branches



# Shanghai EXPO PU Ming PS China

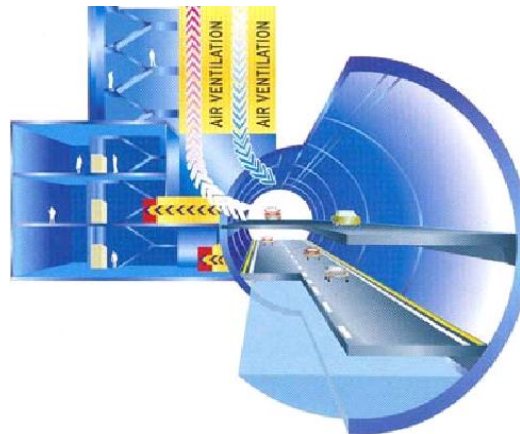
## Stormwater application installed in 2006

- 6 PL 7121 propeller pumps – 4.5 m<sup>3</sup>/s
- 8 PL 7101 Propeller pumps – 2.6 m<sup>3</sup>/s





# Kuala Lumpur Flood Mitigation – Flood Tunnel SMART Project



**All submersible Xylem's Flygt pumps**

# Malaysia's Flood Mitigation – Pumps and Pump Stations



- State-of-art, reliable, cost-saving, and neat pump and pump station design are plausible with our technology.



# First large order to Thailand

- Year 1963
- Project : Sri Nakarin Dam in Kanchanaburi
- Purchased by : The Royal Irrigation Department
- 24 units of Bibo 5 and 8 units of B200's



# Thailand's flood protection critical installations



Bangkok's MRT Underground Train System: 105 Pumps

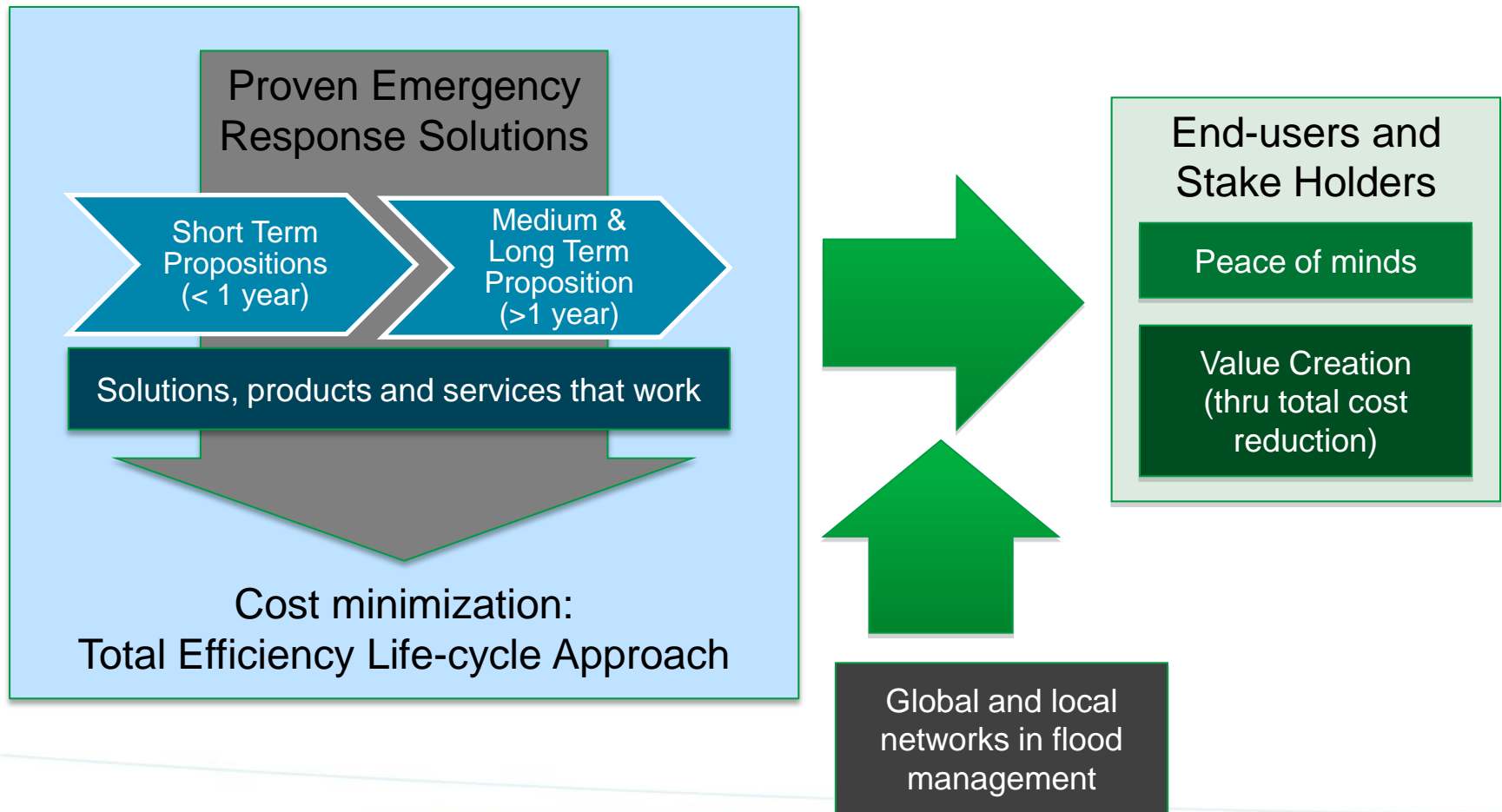
Suvanabhumi International Airport:  
199 Pumps







# Our approach





# 1 - modular approach: short term that that translates into long term approach (<1 year)

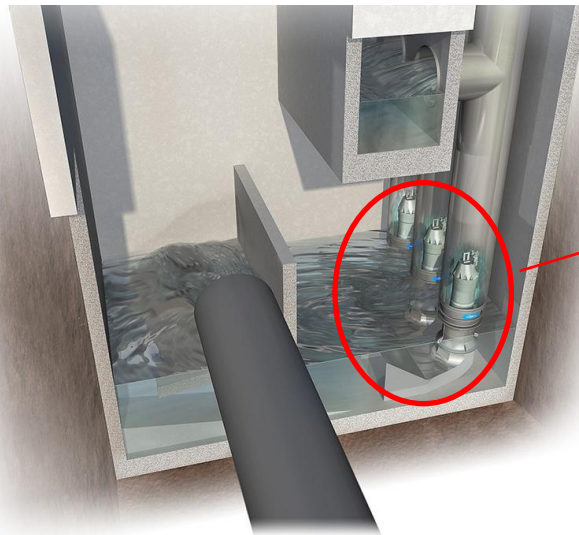
- Expand large pump fleet for efficient emergency response
- Pump fleet that can be utilized in permanent installations when infrastructure is built



## 2 – Gap analysis on current pumping station infrastructure for improvement upgrade (<1 year)

- Analysis & recommendations to upgrade that leads to high reliability & efficient the pumping station.

*“Pump stations are the beating heart of a flood protection system: Can we afford a heart failure when we need to run from the angry tiger?”*



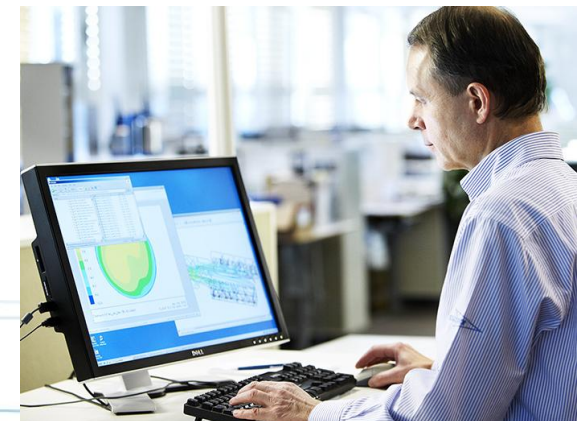
# 3 – Recommendations on flood prevention **FLYGT** a xylem brand

- Flood prevention in key areas such as industrial estate, business centers, governmental agencies, etc.
- Wide arrays of experience and product portfolio that can be introduced.



## 4 – Long term solutions that are reliable, efficient, cost saving, and peace of mind.

- State-of-art fluid analysis and simulation for
- Optimal set up of pumping stations and drainage system.
- Lowest cost of ownership approach for unrivaled cost and energy saving for water transport
- Cooperation with existing networks of local, regional, and international water consultants at end-user's preference for flood management solutions.





***We would like to help to reduce the risk of future flooding events and reduce the total cost of ownership***

