Lessons from New Orleans

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The annual water exhibition is called WEFTEC and it is a huge event, says ex Water New Zealand Chair Brent Manning, this year drawing over 22,000 delegates.

"Myself, Raveen Jaduram of Watercare and Onno Mulder of City Care were provided a briefing by the mayor of New Orleans on the recovery measures the city has taken, and Onno and I were fortunate to get a tour of some of the affected areas and remedial works, including some parts that have been restored since Hurricane Katrina, or are still under repair.

"I have to say there are huge parallels between what New Orleans experienced, and is still experiencing, and our own Christchurch.

"For a start there was a lot of criticism of a lack of communication between central and local agencies and the time taken to resolve issues, especially insurance claims.

"Those in the most vulnerable flooded areas didn't have the means to evacuate and some 1400 people died.

"The SuperDome ended up being a staging point but was built for 75,000 people to watch a game for two hours and go home, not to sleep and accommodate thousands of people for a long period of time. All the wastewater systems blocked and caused more issues."

Katrina occurred 11 years ago in August 2005 and there are some areas that are still effectively 'red zones' that are devoid of houses or buildings, says Brent.

"Many of these areas will remain permanently abandoned to be used as soakage basins for future flooding situations."

There are still a lot of funds to be spent restoring the city, he adds and the US government has spent US$14 billion to mitigate the levees (bunds) to contain the Mississippi River where it outlets via canals to the Gulf.

"Total property damage has been estimated at US$108 billion and no doubt the city itself has spent billions on repairs and funds to raise houses on the flood zones. They are also building new subdivisions on green-field sites. It is interesting that the cost of these new houses, including the land is the equivalent to NZ$230,000-$260,000, and the average home is 190 square metres on a large section. So, they are getting that right over there."

Brent says he picked up on the fact the authorities do not refer to Katrina as a natural disaster – rather a 'manmade' one.

One of the museums had an exhibition on the hurricane, which he visited during some downtime and there were models demonstrating the impact of the loss of estuarine,

Typical New Orleans levee construction – many failed due to piping and scour under the concrete walls, or over-toppling of the walls due to the hydraulic lateral load.

Red Zone? A suburb yet to be rehabilitated.

offshore atolls around the delta and the lack of buffering against sea surges.

"The big issue is not the river anymore but the sea surge. The city is about 300 years old and until the late 1880s the river used to flood the area and deposit silt that encouraged the development of offshore islands and pushed the delta forever outward.

"Once the river was confined and trained to flow as a channel that did not 'over-top', the buffer zone was destroyed and the sea surge and salt water pushed inland, killing off vegetation and leaving nothing to hold the soil, so the buffer islands were gradually eaten away."

Most people think Katarina was a one-off but it wasn't says Brent. Not long after, hurricane Rita hit a little further up the coast and was almost as powerful.

"The exhibition demonstrated that the city gets force three to five hurricanes off the Caribbean every three or four years."

The city celebrates its 300th birthday next year and was originally built on the only area near the river that didn't flood, known as the French quarter.

"You can't change the past but decisions made years ago greatly impacted on the city's vulnerability.

"As the city has developed and spread over a high water table (below sea level) they have also been pumping and de-watering, which makes the ground settle further and consolidates, compounding the problem as the city sits even lower.

"It is a sombre lesson in not messing with nature without knowing the long-term effects and consequences."

Some 1.7 million people were evacuated from the city as a result of Katrina and it has taken a long time for them to attract people back. However, as a result of the disaster, the state and federal governments now have better control over the management of the canals and levees, says Brent.

"And a big change is that they are being more transparent about the risks, and the fact it could happen again. They have learnt a lot about emergency response and management.

"They are saying they need to learn to live with water and accept that sometimes some places are going to get wet and we should not treat water as an evil and try to get rid of it.

"They have admitted it was a manmade disaster and are going to get used to living with nature rather than working against it." **WNZ**

A CITY THAT LIVES WITH WATER

The impacts of water still loom large in New Orleans, a city that mostly sits on ground below sea level, and has the Mississippi River running through its midst, with stop-banks (or levees as they are called) keeping the river in its course, albeit some feet above the city. The consequences of Hurricane Katrina are still being put right as the city enters its 11th year of the recovery phase.

Their risks therefore are: flooding from the river, although by and large this is contained now by the levees and upstream dams and controls; sea storm surge forcing sea water to top the levees and canals and thence into the city; sinking ground levels as a result of dewatering of ground water through over pumping; and deteriorating water quality as a result of all of the above.

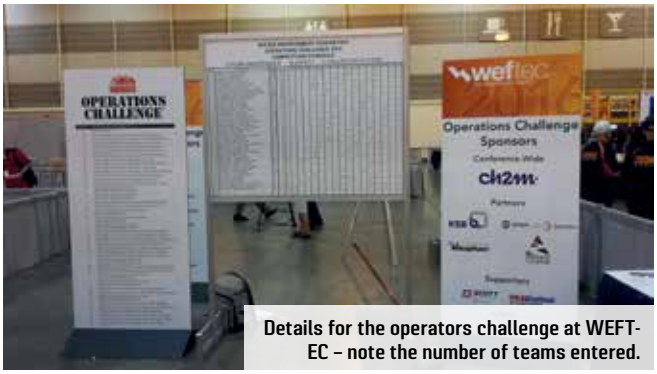
Hurricane Katrina was a Caribbean-borne force three to five hurricane. New Orleans and environs has typically experienced similar strength hurricanes every three to four years throughout its 300-year existence.

Katrina is universally referred to by the mayor and his staff as a 'manmade disaster' as the flooding that engulfed the city resulted from the actions of man; namely overtopping and failure of the levees (through poor design and sometimes poor construction); through poor coordination between the agencies that control and operate the levee and canal systems, eg, the main cuts from the Mississippi River were built and are controlled by the US Army Corps of Engineers, however, the interconnecting canals and pumps that pump into them are controlled by the city!

The US Government has funded the rebuild of the main levees – to the tune of US$14 billion and its Federal Emergency Management Agency (FEMA) has developed better coordination for operation of the levee system with greater New Orleans and city as a result.

The city accepts that flooding will occur from time to time and is attuning its citizens to accept that fact and prepare to 'live with water'. The city has established incentives for home owners to raise houses onto poles (where possible), and has embarked with the Federal government on a programme of new home building in green-fields suburbs to attract residents back. New homes are being built on sizeable flat sections and good quality single level homes of 1700-1800 square feet (about 180-190 square metres) cost between US$160,000-$180,000.

New Orleans residential soakage basin (formerly a residential site).



Details for the operators challenge at WEFTEC – note the number of teams entered.