

Joburg's acid water timebomb

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City could become an urban wasteland

A top water expert has warned that Joburg could become an urban wasteland if authorities don't start urgently addressing failing infrastructure and poor water quality.

"Ultimately, because we happen to live up on a watershed [in Joburg], we can either continue to maintain that infrastructure or ultimately we're going to have to move away from that watershed," Dr Anthony Turton, a senior water researcher at the Council for Scientific and Industrial Research, said in an interview with the environmental television programme *50/50* this week.

"And when we move away it's going to be a catastrophic thing because businesses are going to fail and houses are going to become uninhabitable. If you travel anywhere in Europe, you find these ancient cities that are destroyed. They're rubble in the ground. That's what Joburg will become."

Massive amounts of money needs to be invested in the "hard stuff" such as pipelines, pump stations and power stations, all of

which have limited lifespans, he said.

"We need to understand what's about to break and what we're going to do about fixing it. That's something we really need to get on the agenda."

A quarter of South Africans drink water provided by Rand Water. "More importantly," Turton said, "the area that Rand Water services - Gauteng - generates 10% of the entire economic output of the African continent. Turn off those taps for 48 hours, and the economy is gone. Ten percent of Africa's economy is gone in one snap overnight. This is serious strategic stuff, because we're now going to play catch-up very fast."

But Turton told the *Saturday Star* that Joburg need not become a wasteland if the resources are managed correctly.

"That means having an accountable government that understands the fundamental water constraints we live under. It will only become a wasteland if we continue our current trajectory of skills loss."

Water experts like Turton are worried about failing municipal infrastructure, which has resulted in the inadequate treatment of domestic and industrial effluent across the country, leading to the spread of toxic cyanobacteria, a blue-green algae found in most of South Africa's river and reservoir systems. The build-up of salts, nutrients, heavy metals, endocrine (hormone) disrupters, carcinogens and radioactivity in rivers from unregulated industrial use is another critical threat.

Several studies, Turton reveals, suggest most areas downstream of gold mining tailings dams are contaminated in "some form or another" with mining waste, including the three major river systems draining Joburg - the Wonderfontein spruit on the West Rand, the Klip River system in Soweto and the Blesbokspruit flowing through Springs.

But authorities are dealing with the national crisis of acidic mine water pollution, which arises from closed-down gold mines

where the water table has returned to pre-mining levels, but polluted water is now flowing out onto the surface in a "piecemeal" fashion, according to Turton.

The mine void under the Witwatersrand is the same volume as eight Kariba dams at full supply level, he pointed out.

"Think about what this means when the void fills completely and starts to decant acidic water. Then think about what we could do with such a volume of water as a city if it was clean and useful."

This acidic water is already decanting at an old mineshaft in Krugersdorp, and Turton warns that the East Rand is next.

"The next decant point will be on the East Rand. The energy crisis is putting mines under financial pressure and they can longer pump water ... the decant on the East Rand will likely occur a decade or so earlier than originally anticipated, which means a massive volume of bad quality water will be suddenly flowing into the Vaal system, which is already stressed. That will create a crisis that we already know about and that we can change if we get our ducks in a row."

See below left for update on Kruger Park crocodiles