

Lesotho Highlands Tunnel closure will not affect water availability

Water and Sanitation Director-General, Dr Sean Phillips, has assured Gauteng residents that the planned closure of the Lesotho Highlands Water Tunnel for six months will not affect water supply to Rand Water and the availability of raw water.



Image: Mphahle Dam, part of the Lesotho Highlands Water Project - David Love, Public domain, via Wikimedia Commons

Phillips was briefing the media in Pretoria on Friday on the planned maintenance work on transfer and delivery tunnels of the Lesotho Highlands Water Project (LHWP), which is scheduled to start from 1 October 2024 to 31 March 2025.

The tunnel system includes a transfer tunnel, linking Katse Dam with Muela Power Station and Muela Dam, and a delivery tunnel linking Muela Dam with the Ash River Outfall Works between Clarens and Bethlehem.

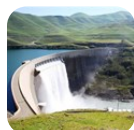
Phillips said the inspections and maintenance of the tunnels must be conducted at intervals between five and 10 years.

Planned maintenance

“The last maintenance was conducted in 2019. During the shutdown of 2019 it was found that the steel liners in the tunnel urgently need extensive maintenance on both the Republic of South Africa and Lesotho side,” Phillips said.

The planned maintenance work is being overseen by the Lesotho Highlands Water Commission, a joint governance body between South Africa and Lesotho and will be jointly undertaken by the Lesotho Highlands Development Agency (LHDA) and the Trans Caledon Tunnel Authority (TCTA), which is an entity under Water and Sanitation Department.

Phillips said the work required to be undertaken during the shutdown period includes grit-blasting the steel-lined section around the entire circumference and re-applying corrosion protection on the tunnel lining, and other maintenance and repair work identified during the 2019 maintenance shutdown.



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27 Oct 2022



Phillips reiterated that the work to be undertaken requires a lot of time as it is expected to protect the infrastructure for another 20-30 years.

“This much-needed maintenance is critical to maintain the integrity of the delivery tunnels as a tunnel failure will risk the transfer of the 780 million m³/annum of water to the Integrated Vaal River System (IVRS), from which Rand Water draws water to supply its customers. The six months period required to conduct maintenance is thus crucial to avoid any catastrophic event which may result from a lack of maintenance.”

On the impact of the maintenance work on the Integrated Vaal River System (IVRS) and Rand Water, Phillips noted that 700 million m³ per annum will be transferred in 2024, a shortfall of 80 million m³ from the normal annual transfer volume.

After the shutdown period, he said, the water transfers will be increased to enable the shortfall in transfers to be recovered.

Risk assessment

The Director-General said an analysis was undertaken in May 2023 to assess the risk to the IVRS’ performance due to the outage, and to determine the impact of the shutdown on water availability to users in South Africa.

“The analysis indicated the impact of the outage on the overall IVRS will be insignificant considering that dams in the IVRS such as the Sterkfontein Dam and others are relatively full.



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“This means that the closure of the tunnel for maintenance will not result in any disruption of water supply to Rand Water, and to the municipalities in Gauteng and other provinces which are customers of Rand Water.

“The standard operating rule is that Sterkfontein Dam releases water to the Vaal Dam when the Vaal Dam reaches a minimum operating level of 18%. The department’s analysis indicates that this is unlikely to occur at any probability level in the 2023-2024 operating year. Hence, releases from Sterkfontein Dam to support the Vaal Dam are not envisaged for the

current 2023-2024 operating year and Sterkfontein Dam remains full to date,” Phillips explained.

He said further analysis will be undertaken in May 2024 to ensure there are no likely risks to water supply from the IVRS in the 2024-2025 operating year.

Supply reserves

“The fact that the Sterkfontein Dam is full means that it can provide a reserve supply of water to top up the Vaal Dam as needed.

“The shutdown will also not have any significant water supply implications for domestic users along the Liebenbergsvlei River and its tributaries in the Free State during that period.

“Licensed irrigators along the Liebenbergsvlei River and its tributaries will be provided with notices to restrict their abstraction during the shutdown period to certain days of the week, so that they abstract water from rivers fed by the Saulspoort Dam in a sustainable way during the tunnel closure,” Phillips said.

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