

FROM THE EDITOR...

In line with the United Nations' Sustainability Goals, providing safe drinking water has been one of the priorities of the Sri Lankan Government. As of 2020, the National Water Supply and Drainage Board (NWSDB) has a water supply coverage of about 44% in the Gampaha district and expects to increase it up to 88.3% under several Water Supply Projects identified under the Corporate Plan of NWSDB. The Gampaha, Attanagalla and Minuwangoda Integrated Water Supply Scheme (GAMIWSS) is one such Water Supply Project proposed by the NWSDB. The project provides approx. 18,975 water connections under the Stage I and 29,400 water connections under the Stage II.



As there is difficulty in finding feasible water sources to cater to the increasing pipe-borne water requirement of the district, it has been found that the construction of a dedicated reservoir across the Attanagalu Oya would be the optimal solution. Accordingly, the plans have been set out to construct a dedicated reservoir with a capacity of 5.51 million m³ across the Basnagoda Oya which is a tributary of Attanagalu Oya at Basnagoda as the "Basnagoda Reservoir Project".

The construction work of the reservoir has been assigned to the Irrigation Department (ID) through a Memorandum of Understanding (MOU). As per the MOU, NWSDB has been assigned to the ID through a MOU. As per the MOU, NWSDB has an allocation for extracting 85,000 m³/day of water from the Basnagoda Reservoir, once completed. The project area falls into two administrative districts, Gampaha and Kegalle, and spans over 6 Grama Niladhari Divisions, which are located in the Attanagalla Divisional Secretary Division of Gampaha District and the Ruwanwella Divisional Secretary Division of the Kegalle District.

The dam located at GPS coordinates LB 134153 E 212274 N, has a maximum height of 20.3 meters, a crest length of 136.5 meters and a bandwidth of 5 meters, making it an earth dam. The reservoir has a catchment area of 37.6 square kilometers. The full supply level (FSL) is set at 65 hectares, while the dam top level is 76 hectares. Key operational heights include a high flood level (HFL) of 45.73 meters above mean sea level (MSL) and a minimum operating level of 48.74 MSL, with the reservoir bed level set at 46.90 MSL. The area inundated at FSL is approximately 34.00 hectares, while the area at HFL is around 28.18 hectares, which is crucial for understanding potential flood impacts. Additionally, the spillway is equipped with three radial gates, each measuring 3.29 meters by 6.0 meters, functioning as a WES weir to effectively manage excess water during high-flow events. With construction of Basnagoda reservoir, the government of Sri Lanka has solved the drinking water issue in Gampaha district to a greater extent.

Eng. (Dr.) P.A.K. Karunananda
BSc. (Eng.) (Hons.) (Peradeniya), MPhil. (Peradeniya), MEng. (Ehime),
DEng. (Ehime), C.Eng, FIE(SL)
Editor, 'ENGINEER', Journal of The Institution of Engineers