WATER SUPPLY TO THE CITY OF COLOMBO

Note on a proposal submitted to the Hon. Prime Minister on 24-6-76 for the augmentation of the water supply to the city of Colombo to meet the emergency created by the failure of the monsoon.

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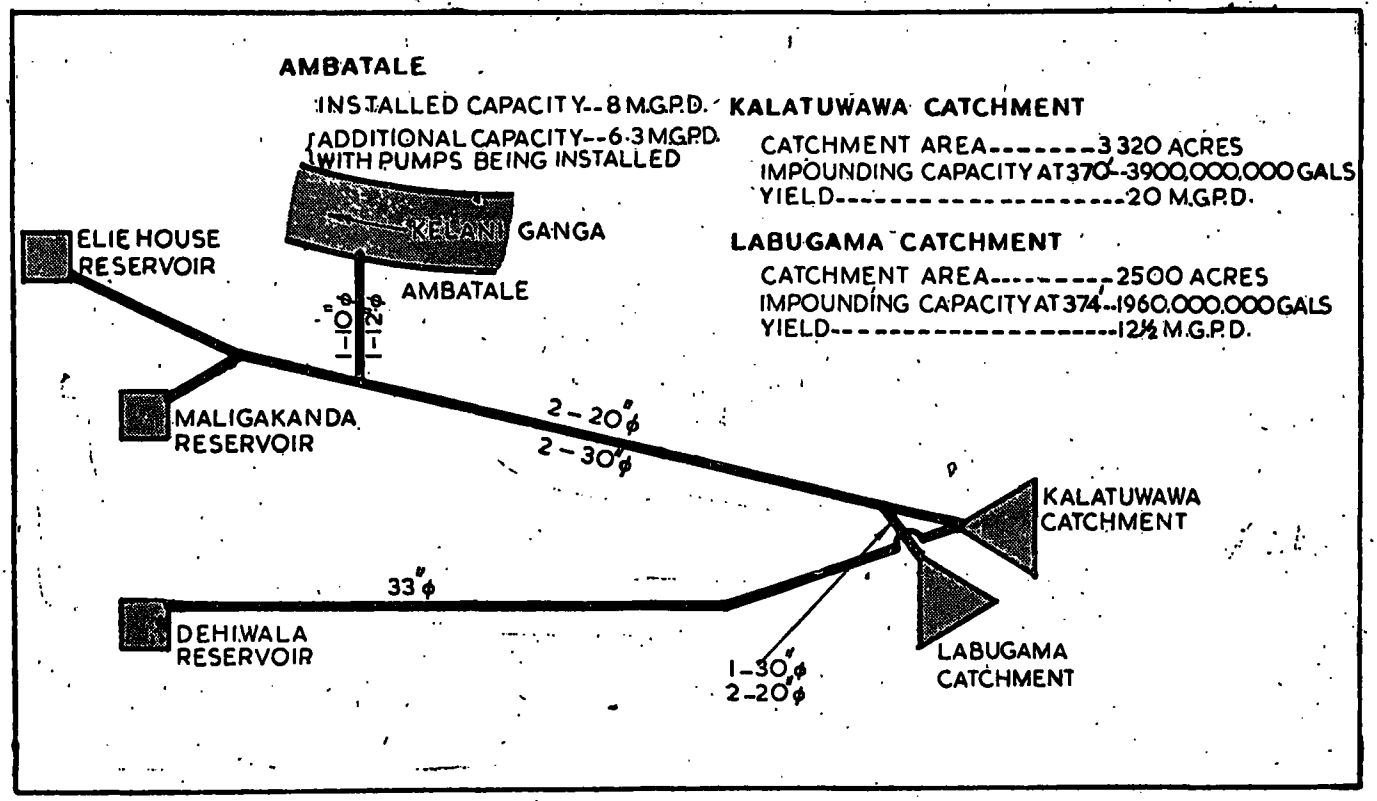
I have examined in detail the facilities available regarding a proposal for pumping water from the Kelani Ganga through the mains running from Labugama and Kalatuwawa to Colombo and attempted to find the best solution to the problem that can also be executed in a very short time. Regarding the proposal for pumping water into the mains, two proposals were examined; one being to pump raw water from the Kelani Ganga from a point near the Kiluaggala junction to the Kalatuwawa reservoir and the other being to pump to one of the reservoirs in Colombo through the mains feeding those reservoirs from a point at Ambatale. A close examination of the first proposal showed that the static head in addition to the frictional head was in the region of 350 ft. for which the pumps available were not quite adequate. It was therefore decided to investigate further the proposal for the pumping of water from Ambatale to Maligakanda reservoir, which was preferred to Elie House reservoir by the Municipal Water Works Engineer. The solution to this problem also depended on the pumps that could be used for this purpose without having to depend on imported pumps which could not be expected within the time available. I was personally aware of the pumps that were available in the Colombo Port Commission and in the State Engineering Corporation as I had built some high capacity heavy duty pumps myself during the period of my service in these two organisations. The most powerful pumps for this operation are available in the Colombo Port Commission. These are two 14 in. Diesel driven pumps, one of which is fitted to the 14 in. Dixie cutter suction dredger and the other available as an independent booster unit for operation along with the dredger. These two pumps connected in series can deliver approximately 7½ million gallons per day from Mulleriyawa treatment works to the Maligakanda reservoir. There are also available 12 in. pumps coupled to 700 h.p. diesel engines in the Colombo Port Commission as well as in the State Engineering Corporation. One complete unit fitted to a cutter suction dredger and one pump without the engine are available in the Port Commission. Two such pumping units fitted to two cutter suction dredgers are available at the State Engineering Corporation and one more should be available as a booster unit as it was in operating condition when I left this organisation. Making use of these pumps in series and parallel, it should be possible to pump another approximately 7½ million gallons a day if required, but I cannot give a precise figure for the capacity of these pumps as I do not have at my disposal the head discharge characteristics of these pumps. A search is still being made by the Colombo Port Commission to obtain this information. A precise figure can be obtained once information regarding the capacities are



available. The construction of the pumps and the way they are to be coupled to the power units is such that their installation at Mulleriyawa or at Ambatale will not present serious difficulties. The pipe work required can also be fabricated from pipes available in the water supply organisations as well as in the Colombo Port Commission and the State Engineering Corporation. These latter organisations have the necessary facilities also for such fabrication work.

I have also examined the proposal for pumping into the Kalatuwawa reservoir from two streams which are closeby but a rough gauging which was carried out with the assistance of Mr. Upali Ranasinghe indicated that under dry weather conditions the flow available is not more than two million gallons a day. It is considered that this amount of water will not justify the expenditure involved in laying pipelines upto a length of approximately 3/4 mile. As such, the solution available now for the augmentation of the supply to Colombo by approximately 15 million gallons per day which is also the capacity available in the two 30 in. mains is to pump this amount from the Mulleriyawa treatment plant which is still not complete, but a sedimentation tank is sufficiently complete for it to be used as the sump for the pumps used.

There is however a problem relating to the supply of raw water from the Ambatale intake to the Mulleriyawa treatment plant. Inquiries revealed that the maximum pumping capacity when all pumps are used is approximately 27 million gallons per day but this full capacity is not available as only half the number of pumps are used at a time and therefore the supply is only about 15 million gallons per day. It is therefore necessary to increase this supply to cater for the additional pumping capacity to be installed for pumping from Mulleriyawa treatment works, unless it is possible to work the pumps continuously to give the desired quantity of water.

There is also the problem of connecting the pumps at Mulleriyawa to the two 30 in. mains and for this purpose it is proposed that the new 40 in. main that is now being laid between the Ambatale intake and the Mulleriyawa treatment works be used for this purpose. The pumps can be installed either at the treatment works or near the intake using the 40 in. main as the discharge or suction of the two 14 in. pumps to be installed. This 40 in. main is being laid and it is estimated that it may be ready in about two weeks. Pipe specials have to be fabricated for making the connections at the treatment works and at the point where the water is injected into the two 36 in. mains. The information regarding the availability of the pumps and their capacities etc., and how they are to be installed have been communicated to the Secretary, Ministry of Local Government and to Mr. L. S. de Silva, Port Commissioner.