2.4.1 Guidelines for Monitoring and Reporting of Operational Capacity

Maintaining historical records of key operational parameters such as;

- Pumping station flows;
- Pump running hours;
- Surcharging & flooding; and
- Asset operational issues.

Such records will be compiled through either of the following;

- Continuous flow monitoring by magnetic flowmeter on rising mains
- SCADA records on pump running hours
- Manual recording of flowmeter readings (if no auto readings)

In addition, and where appropriate, temporary flow monitoring equipment will be deployed and maintained at predetermined strategic points in the system, to record flows for hydraulic modeling purposes.

Reporting of the operational capacity will determine any risk to the required Levels of Service (LOS), the Key Performance Indicators and forecasting the requirement to invest in extending the system assets.

2.4.2 Measurement of Pump Performance

Pump performance shall be monitored and in particular, by;

- Measurement to monitor the electrical power taken from the electricity supply against station flow for all duty pump operating combinations;
- Monitoring of station system curves against that measured at station commissioning, and the operating points of all pump sets on that curve for all duty pump operating combinations; and
- Measurement to monitor the pump set characteristic curves - head/flow, absorbed power & overall efficiency for each pump set.

Comparison of theoretical/new pump performance against actual performance will be made using the following criteria:

- Manufacturers flow/energy data
- Installation/commissioning data
- Actual flow/energy data determined by temporary or permanent flow/energy meters against variety of heads
- Pump reliability
- Maintenance costs

The above measurements will be reported to the DMAT, who will determine through hydraulic modeling and demand forecasting, any risk to the Levels of Service, and when would be the need to invest in extending the system assets.