WAMTech Bulletin 3, Volume 1
02 December 2014

Water and Sanitation in the News

MIG Projects worth R20 million in progress

The Oudtshoorn Municipality says its Technical Services Directorate is making strides in the implementation of the Municipal Infrastructure Grant (MIG) valued at R20 million for the current financial year ending in June 2015. In a statement released recently the municipality listed its achievements, some of which include the upgrading of the Oudtshoorn Waste Water Treatment Works (WWTW) worth R 5.5 million which has been completed within the first half of the 2014/15 financial year. It added that the upgrading of the De Rust's WWTW which commenced in the previous financial year has also been completed. The value of this project was R3.3 million. Listing some of the municipality's future plans the upgrading of the Dysselsdorp WWTW valued at R7.2 million will be done in the 2015/16 and 2016/17 financial years. …The rehabilitation of roads and storm water valued at R2 335 266 is scheduled for the current financial year and will be focusing on the previously disadvantaged areas. …The construction of a 2ML reservoir pipe work and pump station in De Rust valued at R4 127 940 is 75 % complete the directorate has reported.

Source: Infrastructurene.ws, 01 Dec. 2014

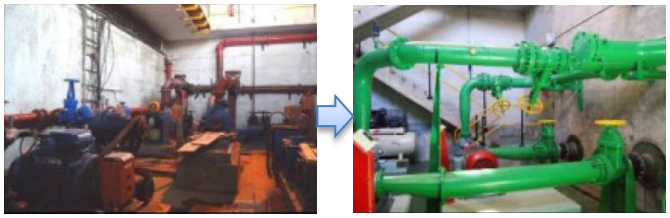
Background

According to the Department of Water and Sanitation, South Africa would need to invest about R700 billion in the next 10 to 15 years to refurbish the nation's water infrastructure and improve water supply. Currently, only between 42% and 45% of the funding needed to finance the water infrastructure development was available from existing sources. In 2013, Water Affairs Minister Edna Molewa cited a report by WRP Consulting Engineers, which pegged South Africa's annual supplied water loss at about 1.58-billion cubic metres, with a value of about R7.2 billion a year.

Given the financial (and other) implications of system water losses, as well as the huge costs involved in replacing broken infrastructure, it is critical for water and waste water treatment plants to implement the **correct maintenance strategies.**

Basic maintenance strategies

The most basic approach to maintenance is **reactive or corrective maintenance** also known as '**run to failure'**. Here, the asset is used until it fails. It is then repaired or replaced. This strategy is only acceptable for equipment with low costs and low consequences of failure. For example, if a kitchen light bulb burns out, the cost is low: a new bulb; and the consequence is low: diminished light. If the cost or the consequences of failure are high, run to failure is generally unacceptable.



A reactive maintenance approach can be detrimental to your organisation because it means that preventive maintenance will get put aside due to constant emergency maintenance work. Furthermore, reactive maintenance is more costly than proactive maintenance. This is because reactive maintenance tasks tend to be complex, whereas preventive and predictive maintenance tasks are relatively simple.

Adverse consequences of reactive maintenance include:

- Compromised safety or environmental compliance
- Collateral damage where failure increases the cost of repair
- Loss of product quality
- Loss of process availability
- Reduced throughput
- Increased waste and rework cost

If equipment failure makes any of these consequences likely, run to failure is not recommended.

Preventive Maintenance is typically used on equipment that has a high cost of failure. For this purpose, "failure" means more than when equipment ceases to function—it also covers situations where the equipment is unable to perform its intended function at needed quality, cost, and

throughput. To avoid high cost of failure, preventive maintenance often includes periodic lubrication, adjustment, replacement of parts, and cleaning. It is often based on the assumption that wear is a slow and continuous process that accelerates over time. Preventive maintenance is intended to stop the acceleration of wear, and return it to a low level.

prevents

Detecting a potential source of trouble before it happens or a failure soon after it occurs can often prevent damage to other parts of the equipment and also may lessen the danger of plant unbalance. Therefore a preventive maintenance program is of the utmost importance for the workmen at water and wastewater treatment plants.

Predictive maintenance improves on preventive maintenance by using actual equipment performance to determine when maintenance should occur. With this strategy, periodic or continuous monitoring detects the onset of wear or degradation, and the information is then used to predict potential problems and the best time for maintenance. Predictive maintenance is typically used where failure cost is high. Monitoring for predictive maintenance is available for rotating equipment, electrical equipment, process equipment, transmitters and valves, and other equipment types.

Read the full reports at: http://www.infrastructurene.ws/2014/12/01/mig-projects-worth-r20-million-in-progress/; http://www.dpsi.com/blog/is-your-maintenance-management-rogram-reactive-or-proactive/; http://www.engineeringnews.co.za/article/water-infrastructure-funding-requirements-rise-to-r700bn-2013-07-30; http://mg.co.za/article/2014-03-27-averting-water-load-shedding; http://www2.emersonprocess.com/siteadmincenter/PM%20Central%20Web%20Documents/Bus%20Sch-op-maint101.pdf and http://www.amrclearinghouse.org/Sub/SCARLIFTReports/ErnestMine/Chapter%206.pdf

The South African water infrastructure assets are between 30-50 years old, so maintenance of assets should be the key objective of all municipalities.

The WAMTech **Municipal Assistant™** System focusses on operational management, which has asset management as its core functionality. **The Municipal Assistant™ System includes all 3 levels of maintenance**:

1. Reactive Maintenance logging – this is reacting to failed equipment by restoring its intended function.

2. Preventive Maintenance scheduling – this consists of formal procedures and tasks that help prevent unplanned breakdowns and insure equipment is operating properly.

3. Predictive Maintenance scheduling – these are tasks that can indicate deterioration conditions, rates of decay and clues to tasks and frequencies needed in the preventive maintenance schedule to slow it down, or eliminate it and maximize remaining useful life.

Preventive Maintenance schedules can save as much as 12% -18% over Reactive Maintenance methods.

Predictive Maintenance schedules can save as much as 8% - 12% more than Preventive Maintenance schedules and 30% - 40% over Reactive Maintenance schedules, depending on asset condition.

Preventative Maintenance Presentation in flipbook Format

Follow this link to view

CONTACT US:
Tel: +27 (0)21 887 7161
Fax: +27 (0)21 887 7162

WAMTech are specialists in implementing technology systems for improved governance, focussing on Water and Public Health Information Systems

Visit our websites:

www.wamsys.co.za
www.municipalassistant.co.za
www.ewisa.co.za