Technical Report

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Examples of good practice for the management of assets of water supply and wastewater systems —

Part 2: Wastewater systems

Exemples de bonnes pratiques de la gestion d'actifs de systèmes d'approvisionnement en eau potable et d'assainissement —

Partie 2: Systèmes d'eaux usées

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Foreword

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This document was prepared by Technical Committee ISO/TC 224, *Drinking water, wastewater and stormwater systems and services*.

A list of all parts in the ISO 24589 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is written within the overall concept of asset management which is an activity all organizations undertake in some manner and to some degree. It focusses on the details of managing the physical assets at the operational level rather than the organizational (corporate management) level.

Water services are reliant on their assets to deliver their services to the resident populations in their jurisdictions. The assets (underground pipes, reservoirs, storage tanks, treatment plants, etc.) collectively form the physical infrastructure of the water services and are the consequence of the accumulated capital investments and operational expenditures on maintenance and rehabilitation over many years. In many of these services, the replacement value of these past investments amounts to many millions (even billions) of dollars depending on the size of the community served. Therefore, the infrastructure represents a major societal investment in essential services contributing to public health and the protection of the environment.

In many countries, these assets have been identified as critical infrastructures and programs are in place to assure their protection or their sustainability. Like many other organizations having assets, water services undertake programs of activities to manage the assets to ensure they continue to meet the needs of the community for reliable delivery of potable water. These management activities can be at the strategic, tactical or operational level. The activities can be part of a formal management system, or the result of specific legislative requirements, or ultimately just the result of due diligence by the service operators and managers.

This document is expected to serve as a supporting document for utilities operating management of assets in accordance with ISO 24516.

In many countries there is a sustainability problem, sometimes referred to as the infrastructure gap: for various reasons, the infrastructure has not been maintained over the years on a truly sustainable basis, in other words funding of rehabilitation and replacement programs has been postponed, with a focus instead on short term repairs, or an allowed decrease in the level of service provided.

The condition of water infrastructures greatly influences the adequacy of the water service, specifically its quantity, pressure, quality, safety, reliability, environmentally friendly, degree of purification and economic efficiency. System condition-based rehabilitation approaches serve to meet these requirements with a focus on a holistic approach of condition-based, risk-oriented maintenance.

Once the installation and development of water assets is almost completed, the optimization of networks will become necessary in many places in order to respond to changing societal and economic conditions. Networks are subject not only to ageing as well as wear and tear, but also to adaptation processes resulting from growth, new legislative requirements, or changing customer service level expectations. This requires water utilities to focus increasingly on the growing need to rehabilitate existing water networks rather than removing and replacing the networks. Rehabilitation will thus become essential in asset management, with ever more stringent requirements on the design and execution of rehabilitation.

In recent years, much effort has been applied to the whole issue of asset management on two levels: what are the principles and structure of an asset management system, and what are the good practices that can be implemented on a technical level to assess the condition of the assets and help decide when asset interventions (repair, rehabilitation or replacement) take place.

This document offers examples on how to define an asset management strategy with regard to the overall performance expected by the owner. It includes several aspects of the operations and maintenance, including asset condition assessment and investment (new assets, rehabilitation and renewal) strategies.

The focus will be on the following selected activities of the management of assets of wastewater systems as addressed in ISO 24516-2 and ISO 24516-4).

— Clause 4 covers the principal aspects of the management of assets, including examples of:

  — objectives;

  — strategies;