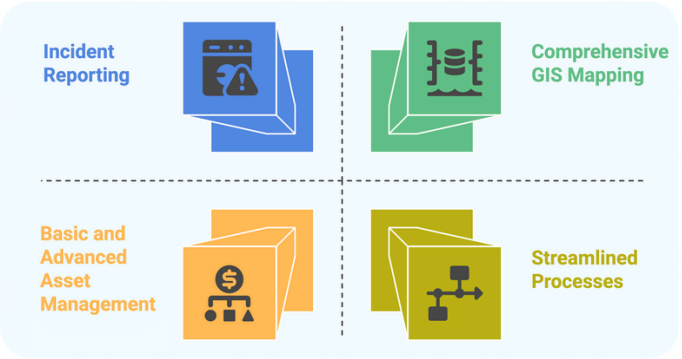
waternet
waterschap amstel gooi en vecht
gemeente amsterdam

MAPKIT

A Fit-For-Purpose Water and Sanitation Data Tool



MapKit is a web-based GIS application that facilitates comprehensive GIS mapping, asset management, and incident reporting, ultimately streamlining processes and improving operational efficiency for drinking water and wastewater companies, and municipalities.

Mapkit has been in use since 2012 at the largest drinking water company in the Netherlands with 5 million connections. Since then, mainly due to its user-friendliness, quite a few customers have been added in the Netherlands, England, Germany, Uganda and Kenya. In the meantime, there are more than 5000 specialist users.

MAPKIT'S JOURNEY: FROM NETHERLANDS TO GLOBAL IMPACT

This platform has great potential for future deployment in Non-Sewered Sanitation (NSS), as it can be seamlessly integrated into the Enterprise Resource Planning Systems within utilities and municipalities responsible for NSS service provision.

Dev-Afrique Development Advisors developed this document as part of the Gates Foundation-funded project called Public Service Data Systems: Landscaping, Learning, and Technical Assistance now known as WSH Data Labs. The project aims to strengthen WSH public data systems - focusing on non-sewered sanitation – for informed decision making, effective performance management, and optimized service delivery at the municipal and utility levels in selected countries across Africa.

MAPKIT'S FUNCTIONALITLES

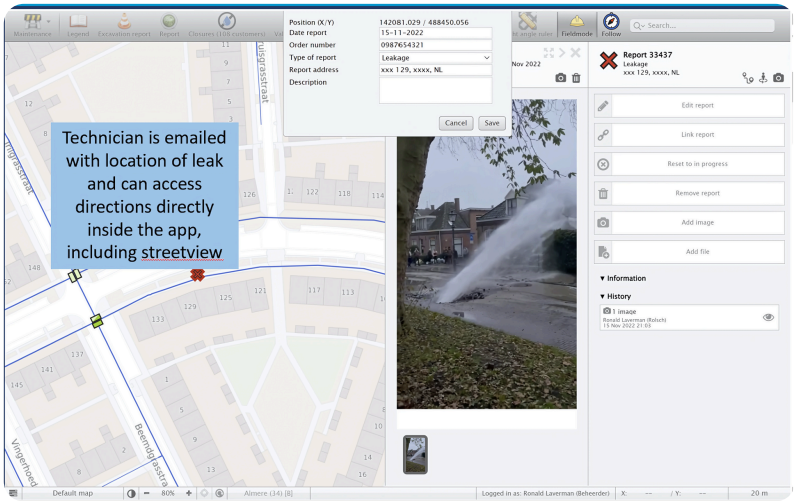
MapKit offers a robust suite of functionalities, with available features tailored to a company's interests, data maturity, and strategic priorities. Notable capabilities include:

1.GIS MAPPING

MapKit enables users to accurately map existing infrastructure (assets).

This significantly reduces GIS data inaccuracies, and the costly expenses often associated with obtaining satellite images. It empowers users not only to document new assets in real-time—like adding a sewer line extension with all its attributes—but also to rectify historical oversight.

Companies with incomplete historical records use MapKit to locate and map previously missing assets, creating a complete and reliable asset registry that informs improved decision-making.



2. ASSET MANAGEMENT

Effective asset management relies on knowing the real-time condition of the infrastructure. MapKit moves beyond simply locating an asset to capturing its operational state.

Is a valve functional, damaged, or missing? Are a manhole's step irons rusted away, compromising safety? Users can document these critical details effortlessly.

MapKit also uses color-coding to instantly flag assets that need attention, transforming static data points into a dynamic, prioritized maintenance plan. Furthermore, it can generate a maintenance schedule for all assets.

3. INCIDENTS REPORTING

MapKit enables users to instantly report field issues such as leaks, manhole overflows, brown water complaints, broken pipes, water outages, or damaged fire hydrants.

Once reported, supervisors can formulate, and dispatch work plans to address each problem. The platform provides complete visibility into the workflow, allowing stakeholders to see when an incident was reported, repair status, who performed the work, response times, and the exact actions taken to resolve it. In doing so, it also provides a historical record of each asset.

MapKit was developed by Rolsch Assetmanagement, a Dutch consultancy specializing in infrastructure asset management for wastewater and drinking water networks. The software has been successfully deployed since 2012 at Waternet, the largest water company in the Netherlands serving 1.3 million people in Amsterdam and surrounding areas.

4.REAL-TIME INSIGHTS

MapKit provides senior management staff like CEOs, managers, and directors with an immediate, high-level view of daily, weekly, monthly, or yearly operational performance in real-time. This allows executives to quickly assess KPIs and make informed, data-driven decisions for the company.

5. WORKFORCE MANAGEMENT

MapKit provides an objective measure of work-force productivity.

By capturing every action completed in the field, it creates an objective and verifiable record of individual and team contributions. Human Resource officers and managers can leverage this data for fair and accurate staff appraisals, progress reports, and contract renewals. This eliminates reliance on subjective self-reporting, ensuring that performance is measured by tangible results rather than mere claims.

As a Software as a Service platform, MapKit is accessible from any smart device, including smartphones, tablets, desktops, and laptops. Users have different profiles and can access the platform using a standard web browser, unique login credentials, and an internet connection.

1. DATA GENERATION

Users can add assets on their smart devices via the 'sketch' tool on MapKit. Data generation directly from the field is made effortless using a mobile-optimized 'Field Mode' designed for smartphones. This mode provides a user-friendly interface with larger and simpler controls, making on-site data capture easier.

Users can easily sketch new assets, attach photos, and report on their current condition. This capability ensures that when a new asset is added, its operational status is captured simultaneously. Once the user confirms, the new sketch is automatically routed to the company's GIS department. The sketch also serves as a standalone shapefile source for clients, which helps reduce costs associated with procuring GIS licenses.

2. DATA ANALYSIS AND VISUALIZATION

MapKit ensures data accuracy through a two-step verification process. First, MapKit integrates with standard base maps from platforms such as Google and Esri, which are precisely geo-referenced to the company's local coordinate system. This ensures that any asset sketched and added by a user is automatically aligned with its real-world location. Second, a GIS officer reviews every new sketch for accuracy and completeness. In case of discrepancies, the officer liaises directly with the field user to clarify the information. If an error is confirmed, the GIS officer can modify the shapefile, ensuring the final dataset is correct.

MapKit also generates daily, weekly, monthly, quarterly, and annual reports, and features interactive, custom-built dashboards designed for the ongoing analysis of KPIs, providing real-time operational insights as the data is collected. For ad-hoc inquiries or unique analytical needs that fall outside of routine monitoring, the platform offers seamless data export. Users can easily download raw data for deep analysis in external business intelligence or GIS platforms such as PowerBi, ArcGIS, or QGIS.

3. DATA OPERATIONALIZATION

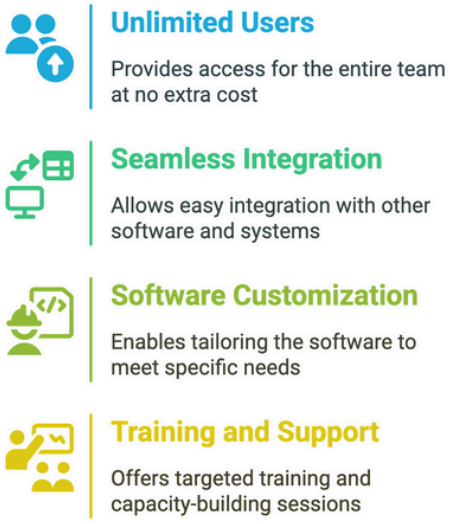
MapKit transforms raw field data into actionable insights that supports strategic planning and operational decision-making. It provides companies with clear real-time evidence to justify budgets for maintenance and asset replacement, support proper allocation of resources and optimize response times through streamlined workflows, track progress against strategic targets, and monitor teams' performance, thereby promoting enhanced performance and accountability.

4. ANNUAL LICENSE FEE

The license cost is based on the number of connections within the company. All interested clients can always request a price from Rolsch Asset management that is specific to them.

The license unlocks:

1. **Unlimited Users:** Companies can equip their entire team with access at no extra cost.
2. **Seamless Integration:** Companies can effortlessly integrate MapKit with other software and systems.
3. **Software Customization:** Companies can tailor the software with specific features to meet their unique operational needs.
4. **Training and Support:** Companies benefit from targeted training and capacity-building sessions designed around identified needs.



This document was developed by Dev-Afrique Development Advisors in collaboration with Rolsch Assetmanagement, Waternet, the Eastern and Southern Africa Water and Sanitation Regulators Association (ESAWAS), and Global Water Operators' Partnerships Alliance (GWOPA).