Bentley®
Advancing Infrastructure

PRODUCT DATA SHEET

OpenFlows™ WaterSight®

Real-time Insights and Capital Planning for Water Supply and Distribution Systems

OpenFlows WaterSight, the water infrastructure digital twin application, brings SCADA, GIS, hydraulic modeling, client information, and historical failure data into a connected data environment to deliver cost-effective, real-time operations strategies. A scalable environment provides your entire utility access to critical system and individual asset performance along with risk information, which enhances operations, maintenance, and capital planning decisions. The application alerts you to nonperforming assets or anomalous network conditions, and provides efficient analysis of present, historic, and forecasted performance for all assets to better support the evaluation of the expected benefits and consequences of operational and maintenance actions. Additionally, OpenFlows WaterSight allows you to perform multiple "what-if," risk, and planning scenarios with the goal of improving service levels and performance while minimizing risk.

TYPICAL QUANTITATIVE BENEFITS OF OPENFLOWS WATERSIGHT

- 20% reduction of nonrevenue water loss
- 10% increase in water network availability
- 20% increase in energy efficiency in pumps
- 25% reduction of network service interruptions

ACTIONABLE INSIGHTS FOR THE ENTIRE UTILITY

Whether you are an operator, asset manager, engineer, or a network modeler, you need to work in an environment that integrates federated data spread across multiple systems with the power of real-time analysis. OpenFlows WaterSight connects all data sources and creates a continuous, consistent digital representation of your operated assets. The solution's secure, browser-based portal provides an easy framework to visualize and communicate with stakeholders from any device.

Proactive Network Management: Monitor various parameters at any point in the system and visualize current data for each asset in the context of historical trends.

Identify Where Your Water Is Going and at What Cost: Reduce nonrevenue water using live water audit calculations and improve energy efficiency.

Early Warning and Emergency Management: Receive real-time anomaly detection system trigger alerts whenever real data is outside the expected operational behavior.

Maximize Value from Capital Investments: Use flexible and customizable rules by querying across multiple datasets to support the best capital planning decisions.

Connected Data Environment: Leverage a connected data environment that provides a cloud-provisioned open framework for collaboration and asset information management throughout the lifecycle of water infrastructure.

Integrating water system data with SCADA provides real-time modeling.

Simulate events such as pipe breaks, fires, or pump failures.

SYSTEM REQUIREMENTS

MINIMUM: 720 x 480 resolution, Windows 8.1 or higher, Internet connection
RECOMMENDED: 1920 x 1080 resolution, Windows 10
BROWSER COMPATIBILITY: Current version of Google Chrome, Mozilla Firefox, or Microsoft Edge

OpenFlows WaterSight Capabilities At-A-Glance

NETWORK MONITORING

- Real-time monitoring of flow, pressure, level, and other measured variables
- Define zones flow as a combination of inflows, outflows, and storage sensors
- Graphical, thematic view of measured data
- Navigate time-series history
- Trend charts showing measurement points overlaid upon expected behavior and patterns
- Customizable demand patterns and forecasts automatically calculated by the software
- User-defined tags allows grouping of sensors and zones
- Incorporate your weather stations or directly connect with Bentley Weather Services
- Side-by-side comparison of trend charts for multiple sensors
- Minimum nightly flow monitoring
- Fills data gaps
- Tabular data of measurements with view and export options

CAPITAL PLANNING

- Define the aspects that can drive the likelihood and consequence of failure (LOF and COF)
- Create queries across multiple datasets, including logic-based decision tree interface
- Calculate risk by combining LOF and COF in a risk matrix
- Create and compare different risk scenarios
- Graphical and map display of the assets based on risk grades (low, medium, and high)
- Combine risk with asset performance to drive capital planning decisions
- Compare different action plans

REAL-TIME SIMULATION

- Automated background run of the hydraulic model using real-time boundary conditions from SCADA
- Graphical, thematic display of modeling results for hydraulic grade line (HGL), pressure, flow, velocity, water quality (chlorine, water age, other constituents), and other characteristics
- Easily compare modeled and measured data to assess the accuracy of the model
- Provide real-time model results assessment with 24-hour forecast
- View a trend chart of current and projected results
- Automatic calculation and adjustment of demand patterns for forecasting
- Display any GIS data
- Hydraulic model for offline analysis

PUMP PERFORMANCE AND ENERGY MANAGEMENT

- Evaluate individual pump and/or total pump station performance
- Determine best operation point, energy efficiency, and energy cost
- Compare pump operations over historical time periods
- Assess variable speed pumps

TANKS ASSESSMENT

- View trends in tank operation
- Receive low- and high-level alerts
- Calculate turnover time and mix performance ratio

ISSUE RESOLUTION

- Raise issues from any data displayed in the application
- Track and manage issues (assign, comments, update status, and attach images)

WATER AUDIT

- Compute water balance audit based on production and billing data
- Audit computation customizable by time frame and zone
- Different methods available to calculate real and apparent losses
- Graphical comparisons of water balance for multiple zones
- See water balance components evolution along time for any zone
- Automatically calculate key performance indicators, minimum night flow per connection, and ratio between minimum and average flow
- Compare background leakage between different zones

EVENT MANAGEMENT AND EMERGENCY RESPONSE

- Automatic alerts for sensors or zones based on user-defined rules
- Notifications through email
- Calculate volume lost and loss duration for each event
- Events management – update status, category, and edit comments
- Highlight events in the sensor or zone graphs
- Add manual events
- Define and analyze impacts of events throughout the network such as pipe breaks, fires, pump shutdowns, and valve operations

EASY ADMINISTRATION

- Set alerts for anomalous conditions
- Incorporate new sensors, pumps, tanks, or zones into the system
- Client billing and numerical model upload option
- Upload GIS data and numerical model
- Customizable general settings
- Manage users and access to cloud application
- Customizable definition of thematic displays for all users
- Refresh/modify links to external data
- User-customizable reports with Power BI