

# BENTLEY® WASTEWATER™

## An intelligent geospatial solution for managing wastewater systems

Bentley® Wastewater™ 2004 Edition is a robust geospatial solution for managing wastewater systems. All functions of a typical wastewater maintenance operation—from mapping and design to maintenance and record keeping—are addressed through an integrated geospatial environment.

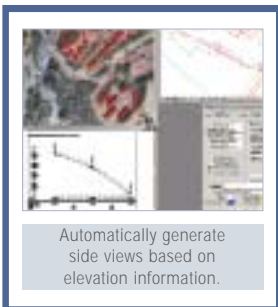


### Connectivity/Network Model

Using Bentley Wastewater, you can create a detailed model of storm water, sanitary, and combined systems, while maintaining crucial network connectivity. The placement and edit functions create and maintain network connectivity, as well as distance, depth, and connectivity of pipes and manholes.

### Plan/Profile Generation

Bentley Wastewater provides the tools to automatically generate plan and profile diagrams. You can explode views of manholes by selecting them and placing automatically generated diagrams. You can create profile views of pipes by selecting the pipe and placing the diagram. A dialog box provides you with options to control the text and graphic content of the pipe profiles.



### Image Support

Bentley Wastewater provides access to a wide range of image data, including aerial photographs, satellite imagery, and scanned maps and drawings. The high-performance Raster Manager™ image engine supports the display of bitonal, grayscale, and continuous tone images (up to 24-bit) that supplement vector maps and provide additional visual information for design or analysis.

### Data Import/Export

Bentley Wastewater provides robust and flexible import and export functions for sharing facility data—including the network model. The export function further enables the system to interface with external analysis programs, such as third-party hydraulic analysis packages that calculate network pressure and flow. Data from other sources may be associated with facility graphic types and displayed within the Bentley Wastewater environment.

### Data Verification

Bentley Wastewater verifies basic drainage rules during placements and edits, supplying constant feedback and checking the consistency of terrain and manhole elevations. Warnings are provided for terrain over cover, pipe over cover, and backslope conditions.

### Display Options

Display functions are provided for facility/attribute combinations, allowing you to find and resymbolize facilities to produce thematic presentations. Display options include saving generated graphics, building a MicroStation® selection set with located facilities, and listing components found during search and query functions.

### Customizable Wastewater Facilities and Editing Workflows

Bentley Wastewater provides a complete set of customizable water facilities. You can define additional component types. Dialogs for placing and editing facilities can be extended by adding columns to the attribute tables.

### Oracle Integration

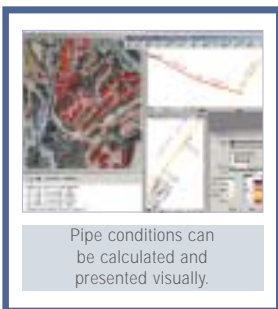
Support for Oracle Spatial provides flexibility for storing Bentley Wastewater data in Oracle to OpenGIS® standards. You may opt to store your data in Oracle Standard Edition or Oracle Enterprise Edition with the Spatial option.

### Publishing

By using Bentley® Geo Web Publisher™, Bentley Wastewater data can be published through a Web browser to internal and external constituents requiring various levels of access to the data.

### Extensibility

Bentley Wastewater leverages the features and functions of MicroStation GeoGraphics®, providing a common platform for you to build customized applications to support your wastewater networks.



## BENTLEY WASTEWATER AT-A-GLANCE



Users can define custom database attributes and display them on menu dialogs.

### Standard Place, Update, Delete Features

- Nodes
- Pipes
- Components (valves, pumps, catchment areas)
- User-customizable features, attributes, and dialogs

### Data Exchange

- Export (ASCII format)
- Import (ASCII format)

### Automatic Features

- Rule-based annotation
- Database updates
- Cell placement with annotation
- Bulk assignment of attributes to like elements
- Automatic maintenance of network model
- Automatic plan and profile generation
- Automatic flow calculations

### Engineering

- Sideviews/pipe terrain profiles and diagrams
- Node diagrams
- Manhole diagrams
- Thematic presentation of data
- Capability to import video inspection data used for preventive maintenance planning

### Facility Management

- Group features into a work order
- Isolation of valves to close
- Generation of list of consumers out of service based on valve state (open/close)

### Network Tools

- Analysis of directed, weighted, linear networks
- Creation and editing of network entities
- Support for shortest path, radial searches, trace-forward, trace-back
- Provides for "what-if" scenario analysis

### Analysis Tools

- Annotate graphic objects automatically from database attributes
- Generate buffers and zones for analysis
- Measurement tools provide for distance, area, and volume calculations
- Query spatial and ancillary data for selected graphic elements
- Utilize Oracle Spatial data for enhanced enterprise data access

### Presentation Tools

- Add grids and legends to mapping data
- Utilize powerful raster tools for image backdrops
- Thematic representation of attributes and graphics
- Supports high-resolution output to printers and plotters

## BENTLEY WASTEWATER SYSTEM REQUIREMENTS

- Processor: Intel® Pentium®-based or AMD-based PC or workstation
- Operating System: Microsoft® Windows® 2000 (SP2 or higher recommended†), Windows XP, Windows NT® 4 (SP6 recommended†), Windows 98 (Second Edition recommended)††, Windows Me
- Prerequisite Application: MicroStation GeoGraphics
- Memory: 128 MB (256 MB or more typically results in better performance).
- Hard Disk: 200 MB minimum free disk space
- Input Device: Mouse or digitizing tablet
- Output Device: Most industry-standard devices are supported. Works with output devices supported by Windows.
- Video: Supported graphics card. Dual-screen graphics supported with vendor-supplied drivers for Windows NT 4. Multi-monitor configurations supported with Windows 98, Windows 2000 and Windows XP.

## ABOUT BENTLEY

Bentley Systems, Incorporated provides software for the lifecycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial vertical markets spans architecture, engineering, construction (AEC) and operations. With 2003 revenues reaching \$260 million, Bentley is the leading provider of AEC software to the Engineering News-Record Design 500 and major owner-operators.

For more information, visit [www.bentley.com](http://www.bentley.com) or call 1-800-BENTLEY.

Bentley Worldwide Headquarters  
Bentley Systems, Incorporated  
Exton, PA, USA  
+1 800 BENTLEY  
+1 610 458 5000

### GeoModeling

Ilica 191F  
HR-10 000, Zagreb  
CROATIA  
tel: +385-1-3775-411  
fax: +385-1-3775-412  
info@geomodeling.hr  
www.geomodeling.hr

