



SewerCAD®

A Powerful Tool for Effortless Sewer Design and Rehabilitation

SewerCAD is an easy-to-use sanitary sewer modeling and design software that thousands of municipalities, utilities and engineering firms around the world trust to design, analyze, and plan wastewater collection systems. Engineers can model both pressurized force mains and gravity hydraulics with ease, using steady-state analysis with various standard peaking factors, and extended-period simulations.

Model in Stand-Alone, or Within Your Favorite CAD Platform

Out of the box, SewerCAD users can work within stand-alone and MicroStation® platforms, while optional AutoCAD integration means that users can model within their favorite CAD environment. Regardless of the platform used, SewerCAD maintains a single set of modeling files for true interoperability across platforms.

The stand-alone interface offers easy-to-use model layout tools, multiple background support, conversion utilities from CAD, GIS, and databases, and unlimited undo and redo layout.

SewerCAD can import SewerGEMS® models including those created with ArcGIS platform.

The MicroStation interface, included at no additional cost with all SewerCAD versions, provides a geospatial and engineering design environment with unrivaled visualization and publishing tools. AutoCAD users can also add AutoCAD integration features to build, lay out and plot models with engineering precision within an environment they are already comfortable with.

Gravity and Pressure Hydraulics

Engineers can analyze pressure or free surface flow conditions using robust gradually varied, standard-step algorithm in SewerCAD for solving for subcritical, critical, supercritical conditions, and complex composite profiles.

The steady-state simulation analyzes the system under extreme flow conditions. Automated design features are available with a steady-state analysis type to find cost-effective sewer designs.

The Extended Period Simulations (EPS) allow modelers to visualize how the system behaves over time. Results can be animated through time to locate hydraulic jumps and surcharging sections.

Wastewater Loading Allocation and Estimation, and Infiltration and Inflow

The LoadBuilder™ module included in SewerCAD helps engineers allocate sewer loads based on a variety of GIS-based sources such as customer water use billing data, area-wide flow measurement or polygons with known population or land use.

Sewer loading in SewerCAD can also be applied as user-defined hydrographs, pattern-based loads, and unit loads. Modelers can use totally customizable unit load libraries to estimate sanitary flows based on contributing population, service area, total dry weather discharge, or your own customized loading types.

SewerCAD also includes numerous pre-defined extreme flow factor formulas and tables, including Babbitt, Harmon, Ten State, and Federov's – or lets user enter their own formulas and tables.

SewerCAD determines infiltration in gravity pipes, based on pipe length, diameter, surface area, length/diameter, or user-defined data. SewerCAD can also use multiple flow patterns or flow hydrographs for Extended Period Simulations.

Sanitary load control center and Inflow control center make it easy to globally edit or edit a filtered set of elements.

Automatic New Systems Design and Existing Sanitary Sewers Rehabilitation

The constraint-based design features in SewerCAD allow modelers to automatically design gravity piping and structures. The design is flexible enough to allow users to specify the elements to be designed, from a single pipe size to the entire system, or anything in between, by simply entering their design restrictions: minimum and maximum velocities, covers and slopes; pipe and manhole matching offsets; allow (or not) drop structures.

SewerCAD will automatically determine cost-effective pipe sizes and invert elevations avoiding unnecessary pipe trench excavation.

Comprehensive scenario management

SewerCAD Scenario Management Center gives engineers full control to configure, run, evaluate, visualize, and compare an unlimited number of what-if scenarios within a single file. Engineers can easily make decisions by comparing unlimited scenarios, analyzing rehabilitation alternatives for multiple planning horizons, evaluating pump operation strategies, or overflow scenarios with varying future wastewater flows.



SewerCAD's stand-alone, MicroStation, and AutoCAD platforms offer platform freedom and versatility.



SewerCAD provides a broad range of tools for estimating and allocating sewer loadings.



Automatically determine diameters and invert elevations with SewerCAD's constraint-based design.

SEWERCAD SYSTEM REQUIREMENTS

Processor

Pentium III at 750 MHz

Operating System

Windows Vista, Windows XP, Windows 2000 (with latest service packs)

Memory

128 MB or more

Hard Disk

25 MB of free storage space, with additional room for data files

Display

800 x 600 resolution, 256 colors

SewerCAD runs without platform-restrictions using the stand-alone interface.

If integration with CAD platforms is desired, these are the requirements:

- MicroStation V8i
- AutoCAD 2009

Support for older platform software versions is available if required. Contact your Bentley representative for details."

Find out about Bentley at:
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Outside the US +1 610-458-5000

Global Office Listings

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SEWERCAD AT-A-GLANCE

Interface and Graphical Editing

- Stand-alone Windows interface
- AutoCAD-based interface
- MicroStation-based interface
- Unlimited undo and redo
- Element morphing, splitting, and reconnection
- Automatic element labeling
- Scaled, schematic, and hybrid environments
- Element prototypes
- Aerial view and dynamic zooming
- Named view library
- Multiple background-layer support
- Image, CAD, and GIS background support
- Inferencing tool (to interpolate missing elevation data)
- Automatic calculation of elevations on pipe split operation

Interoperability and Data Connections

- Single set of model files for three compatible interfaces
- Bidirectional synchronized database connections
- Bidirectional synchronized Shapefile connections
- Polyline-to-pipe conversion from DXF and DWG files
- Spreadsheet, database, Shapefile, and OLE DB connections
- SewerGEMS model import

Hydraulics and Operations

- Steady-state simulations
- Extended-period simulations
- Flow profile methods: capacity and backwater analysis
- Automatic constraint-based design
- Diversion simulation
- Rule-based or logical controls
- Tractive stress calculations
- Accurate variable-speed pumping
- Pump batteries element
- System head curves

- Totalizing flow meters
- Air valves for high points in force mains
- Complex manifolded pump stations/force mains

Sanitary Load Allocation and Estimation

- Automatic sanitary load allocation from geospatial data
- Geospatial load allocation from billing meters
- Load allocation using flow monitoring distribution
- Land use-based load distribution
- Sewer load assignment based on phased land use projections and population projections
- Dry-weather load assignment using hydrographs, unit loads, and pattern-based loads
- Customizable area-, count-, discharge-, and populationbased unit sanitary loading library
- Pipe length-, diameter-, surface area-, length-diameter-, or user-defined infiltration load type

Model Building

- SewerGEMS model import
- LandXML data import and export
- Polyline-to-pipe conversion from DXF and DWG files
- Spreadsheet, database, Shapefile, and OLE DB connections
- Elevation extraction from contours, points, and Shapefiles
- Elevation extraction from CAD drawings and surfaces
- Interpolating elevations between elements
- Interpolating elevations at split

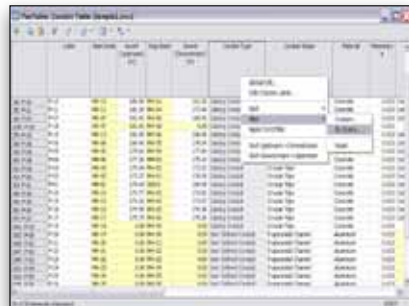
Model Management

- Unlimited scenarios and alternatives
- Comprehensive scenario management
- Diversions displayed as links

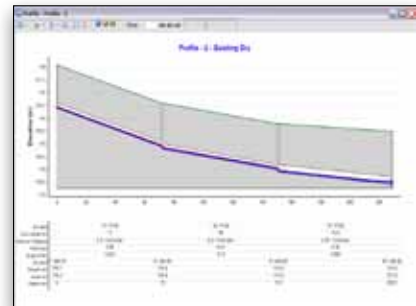
- Active topology (activate or deactivate network elements)
- Tabular reports with global editing
- Sorting and persistent filtering on tabular reports
- Customizable engineering libraries for extreme flow factors, section size, material properties, minor losses, and unit-sanitary (dry-weather) loads
- Dynamic (query-based) and static selection sets
- Element selection by polygon
- Element selection inversion
- Table opening on selection
- Statistical analysis from tabular reports
- Global engineering-units management
- Drawing review tools for connectivity consistency
- Automatic topology review
- Network navigator with dozens of useful predefined queries
- Orphaned node and dead-end pipe queries
- Hyperlink for network elements
- User data extension
- Support of ProjectWise / Geospatial Management

Results Presentation

- Thematic mapping
- Dynamic, multi-parameter, and multi-scenario graphing
- Advanced dynamic profiling
- Advanced tabular reporting with FlexTables
- Property-based color coding and symbology
- Property-based annotation
- Project inventory report
- Scenario summary report
- Element report and graphs
- Hydrograph graphs
- Contouring with export to Shapefile, DXF, and native CAD format



Use FlexTables to sort, filter, manage units and globally edit your data



Locate bottlenecks quickly using thematic mapping, FlexTables, and dynamic profiles.