

# BENTLEY® INROADS®



## Powerful tools for the design of civil infrastructure

Bentley® InRoads® is a multi-function set of design tools tailored to the specific requirements of the civil engineering community. Use InRoads to create the content required to design, construct and maintain transportation infrastructure. InRoads features comprehensive design, analysis, plans production and reporting capabilities for the world's most popular CAD formats.

Ideal for large-scale transportation projects where multi-user access to design data is critical, InRoads enables an extended project team to work as one design unit, while contributing mission-critical design content. Bentley InRoads is the core of an integrated family of civil engineering products that addresses almost every aspect of the civil engineering workflow.

### Road Layout and Design

InRoads offers extensive tools for the interactive design of roadway alignments and design features. These tools are designed to be flexible and intuitive in order to automate multiple workflows. With the ability to automate repetitive design and layout tasks, Bentley InRoads is a valuable asset to any project team.

### Profiles and Cross-Sections

The creation of profiles and cross sections is a vital part of the roadway design process. InRoads streamlines these design tasks and permits easy, interactive manipulation of created data. A dynamic link is provided for elements between cross section and plan view so you can make edits in either view and automatically update them in the other.

### Intelligent 3D Modeling

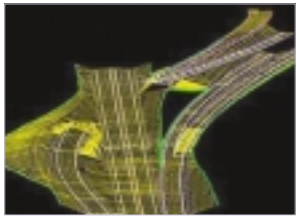
At the core of InRoads is a feature-based digital terrain model (DTM) that tracks every aspect of the design-model surface. As you create features, the DTM tracks the three-dimensional data of the elements, as well as the feature type. This added intelligence enables InRoads to represent the feature properly, regardless of the design expression, be it in plan, profile or cross-section. In addition, you can create customizable data reports based on features from the DTM.

### Advanced Plans Production

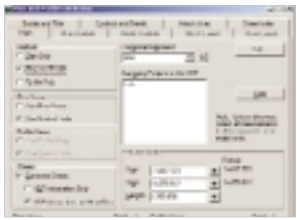
Once the design model has taken shape, InRoads offers significant advances in the production of design deliverables. The automated creation of plan, profile and cross-section sheets is completely configurable to the individual standards of your project. Additionally, the inclusion of drafting tools makes labeling critical design data much easier. As you alter the design model, the labels retain the intelligence required to regenerate values that may have changed. This significantly reduces errors and improves the overall quality of design deliverables.



## BENTLEY INROADS AT-A-GLANCE



The InRoads Roadway Modeler produces complete surface models.



Use the InRoads Plan and Profile Generator to produce plot ready sheet drawings.



XML Reports can be easily shared among project participants through a simple browser.

### BENTLEY INROADS SYSTEM REQUIREMENTS

- Software: MicroStation® V8.1 or higher, AutoCAD® 2000i & 2002
- Processor: Intel® Pentium® II 400Mhz minimum; 500Mhz recommended
- Operating System: Microsoft® Windows® XP Professional, Microsoft Windows 2000, Microsoft Windows NT® (SP6), Microsoft Windows Me, Microsoft Windows 98 (2nd edition)
- Memory: 128 Mb minimum, 256 Mb recommended
- Disk Space: 75 Mb minimum, 100Mb or more recommended
- Input Device: Mouse

### Data Interoperability

- Seamless integration between CAD platforms—in both DGN and DWG environments
- Data can be imported from almost any source

### Centralized Data Model

- Single data source for all modules within the InRoads family of products
- All InRoads modules interoperate directly and seamlessly
- Multi-user access to data facilitates workgroup collaboration

### Interactive Coordinate Geometry

- Robust sets of interactive geometry tools for generation on screen
- Tools using methods and principles specific to civil engineering
- Check Integrity tool for location and removal of discontinuities
- Design feature development using automated COGO commands
  - Center lines, horizontal and vertical alignments
  - Right-of-way, property boundaries and property takes
  - Interchanges, intersections and cul-de-sacs
  - Multi-centered curves with support for delta angles greater than 180°
  - Spiral transition curves

### Regression Analysis Tools

- Horizontal and vertical alignments from survey data using least squares solutions
- InRoads Curvature Diagram for establishing transition points
- InRoads Connection Editor for regressing individual or multiple elements simultaneously
- Use of regressed alignments to accurately establish existing conditions
- Creation of realigned geometry from regressed alignments

### Profile Generator

- Easy profile creation across multiple surfaces
- Display and annotation of the profile and the associated data, such as vertical curves, superelevation diagrams and DTM features

### Typical Section Libraries

- Creation of custom typical sections that generate cross sections on-the-fly
- Special section conditions can be established using cut-fill tables and decision tables that will automatically adjust the model when user-defined conditions are present

### Roadway Definitions

- Integrate design features into one model
- Ability for horizontal and vertical alignments to combine with the typical sections and superelevation rates to define your design
- Establishment of the control points necessary to model the project

### Volume Computations

- Generation of volume computations with various methods, including triangle by station, grid and end-area

### Style, Pen and Pencil Locks

- Ability to repeatedly create the graphics to the specifications of a project
- Design graphics are created temporarily or permanently, allowing for graphic regeneration without the need to delete and redraw

### Production Tools

- Drafting and plan preparation tools that automate the project delivery process
- Smart labeling as well as plan, profile and cross section sheet cutting tools for improved productivity

### Integration with Bentley Content Management and Publishing Solutions

- Tight integration with Bentley content management and publishing solutions to bring collaborative design data to the entire project team in a secure environment
- Integration of Digital InterPlot™ at the production end, enabling automated plot set generation and Web-based access to plot archives

### LandXML Support

- Support of industry standards, such as LandXML
- Exporting of alignments, surfaces and other pertinent design information to other systems via XML

## CALL TODAY FOR MORE INFORMATION

Bentley Systems, Incorporated, is a global provider of collaborative software solutions that enable our users to create, manage and publish architectural, engineering and construction (AEC) content. As a part of those solutions, Bentley provides professional services including implementation, integration, customization and training.

Visit us on the Web for more information about Bentley solutions and services. [www.bentley.com](http://www.bentley.com)

#### Bentley North American Headquarters

Bentley Systems, Incorporated  
685 Stockton Drive  
Exton, PA 19341 USA  
Phone: +1 800 BENTLEY (+1 800 236 8539)  
Outside the US +1 610 458 5000  
Fax: +1 610 458 1060

#### Bentley International Headquarters

Bentley Systems Europe B.V.  
Wegalaan 2  
2132 JC Hoofddorp  
THE NETHERLANDS  
Phone: +31 23 556 0560  
Fax: +31 23 556 0565

To find a local Bentley office, please visit [www.bentley.com/corporate/contacts](http://www.bentley.com/corporate/contacts).

