



 **Bentley** Sustaining Infrastructure

UPGRADING WITHIN THE BENTLEY® INROADS® FAMILY Moving from InRoads Site Suite® to InRoads Suite V8i®

Bentley InRoads Site Suite is now upgradeable to Bentley InRoads Suite V8i, Bentley's integrated, cohesive solution for road design and site modeling. Combining the best in road, site, survey, and drainage functionality, InRoads Suite V8i runs on MicroStation (DGN) or AutoCAD (DWG), moving project data seamlessly between CAD platforms with no need for translation. Most importantly, InRoads Suite includes Bentley's powerful Roadway Designer for 3D modeling, and support of Machine Control for construction.

Roadway Designer represents the most advanced 3D modeling capabilities available in civil engineering, providing interactive 3D design using constraint-driven typical sections with intelligent components. As a civil engineer or designer, *you* control the entire modeling process—visually, graphically, interactively, and dynamically. Streamlined and intuitive, you don't have to be a software programmer to run Roadway Designer, nor do you require a programmer to create constraints, components, or sections. Be empowered and make your concept a reality!

*From field-to-finish—InRoads Suite V8i—the right tools
for complex, multidiscipline design scenarios*

Streamlined Site Functionality

InRoads Suite robust site design tools enable site engineers to design and construct building sites, landfills and embankments as well as excavate and perform site remediation. Site tools feature comprehensive design, analysis, plan production, and reporting capabilities on MicroStation or AutoCAD. Use flexible coordinate geometry tools and a feature-based digital terrain model to interactively create and edit site features with on-the-spot, onscreen verification.

Comprehensive Survey Tools

InRoads Suite survey tools enable you to process raw survey data to your CAD environment of choice, MicroStation or AutoCAD. Eliminate field-to-office waits. Survey teams can verify data on-the-spot and in the field. Make the most of preferred workflows to capture feature-based survey data and attributes, and automatically annotate each feature in your design file. Then apply industry standard methodologies to produce plot-ready graphics from electronic field book (EFB) and global positioning system (GPS) data.

InRoads Site Suite

Survey
Site Design
Drainage



InRoads Suite

Survey
Site Design
Drainage
Advanced Design
Road Design
Bridge Design

The InRoads Suite Advantage

- Design roads and corridors dynamically with Roadway Designer
- Employ full road and site design capabilities
- 3D modeling
- Fully integrated civil engineering for:
 - Road and site design
 - Design/construction
 - Storm and sanitary design/analysis
 - Bridge geometry
 - Comprehensive quantity management
- Interface to Machine Control

For a limited time, Bentley Civil upgrades include a **subscription of SELECT**, Bentley's premier service contract that provides flexible licensing options and unparalleled support!

Intelligent Storm and Sanitary Networks

InRoads Suite drainage tools enable you to intuitively design, analyze, and manage your storm and sanitary networks on MicroStation or AutoCAD. Use industry standard techniques to create new or expand existing pipes, manholes and inlets in a full 3D environment.

Multi-Function Road Design

From field to design to construction—for road design, corridor modeling, road widening, road resurfacing, landfill design, and building site design—InRoads multi-function, interactive design tools are tailored to the specific requirements of the civil engineering community. InRoads features advanced DTM functionality as well as comprehensive design, analysis, plans production, and reporting capabilities for the world's most popular CAD formats.

NEW FUNCTIONALITY WITH INROADS SUITE V8i

Upgrading to InRoads Suite V8i offers more tools and functionality to better streamline your workflows and help you work faster and smarter than ever before!

Geometry Design

- Horizontal and vertical element tools
- Horizontal and vertical regression

Design Evaluation

- Site visibility tools
- Road visibility tools
- Mass haul diagrams
- Drive virtual roadway

Volumes

- Triangle or prismatic volumes by station

Roadway Designer Typical Sections

- Graphically created
- Parametric constraints
- Component driven
- Assemble components into sections
- Associative relationships
- Interactive testing

Roadway Designer 3D Modeling

- Horizontal and vertical controls
- Dynamic, step, or batch modeling
- Visual highlights of problem areas
- Dynamic volumes
- Virtual command editing
- Transition control
- 4-port viewing, plan, profile, cross section, and superelevation

EXISTING INROADS SITE SUITE FUNCTIONALITY

The excellent tools and functionality provided in your current InRoads Site Suite include:

Data Interoperability

- Seamless integration between CAD platforms in both DGN and DWG environments

Centralized Data Model

- Single data source for all modules within the InRoads family of products

Direct Connection to Survey Equipment

- Direct connection provided to:
 - Electronic Field Books (EFB)
 - Global Positioning Systems (GPS)
- Plot-ready graphics based on customizable feature tables

Extensive Geometry

- Interactive graphical coordinate geometry
- Horizontal and vertical alignments

Feature Based DTM

- Flexible, double-precision
- Intelligent features
- Representation and labeling based on feature definition

DTM Analysis

- Key features analysis with intuitive terrain modeling tools

Feature Editing

- Surface-feature editing from within the plan, profile, or cross section
- Automated commands for updating plans, sections, or profiles

Volume Computations

Production Tools

- Drafting and plan preparation tools
- Plan and profile generation
- Automated cross section plotting

Storm & Sanitary Network Layout

- Interactive network layout relative to digital terrain models and alignments
- Creation of network entities, such as pipes, inlets, manholes, culverts, pumps and channels
- Edit network in plan and profile

Storm & Sanitary Network Analysis and Design

- Manipulation of the drainage system for field or design conditions
- Application of flow rates by point discharge or using demographic data
- Application of design checks to ensure the system meets minimum and maximum design requirements

Industry-Standard Analysis

- Use of the most common hydraulic methods, such as Manning's equation, Darcy-Colebrook methodologies, Bernoulli, and the continuity principles
- Backwater and junction losses from HEC-22 methodologies
- Surface runoff analysis by the Modified Rational method or SCS methodologies
- Interface to popular analysis packages, such as HEC-RAS, WSPRO, and MicroDrainage

Surface Runoff

- Calculation of peak runoff of drainage basins
- Compute time of concentration (Tc)
- Generation of IDF tables from industry-standard formulas or user-specified tables

Construction Stake-Out

- Ability to export road and site design data for upload to data collector for project stake-out
- Export to Machine Control and Machine Guidance

For more information on Bentley Civil Suite deals,
call 1-800-BENTLEY or [request a Sales Representative contact you.](#)