InRoads Quantity Manager

Mike Wilson
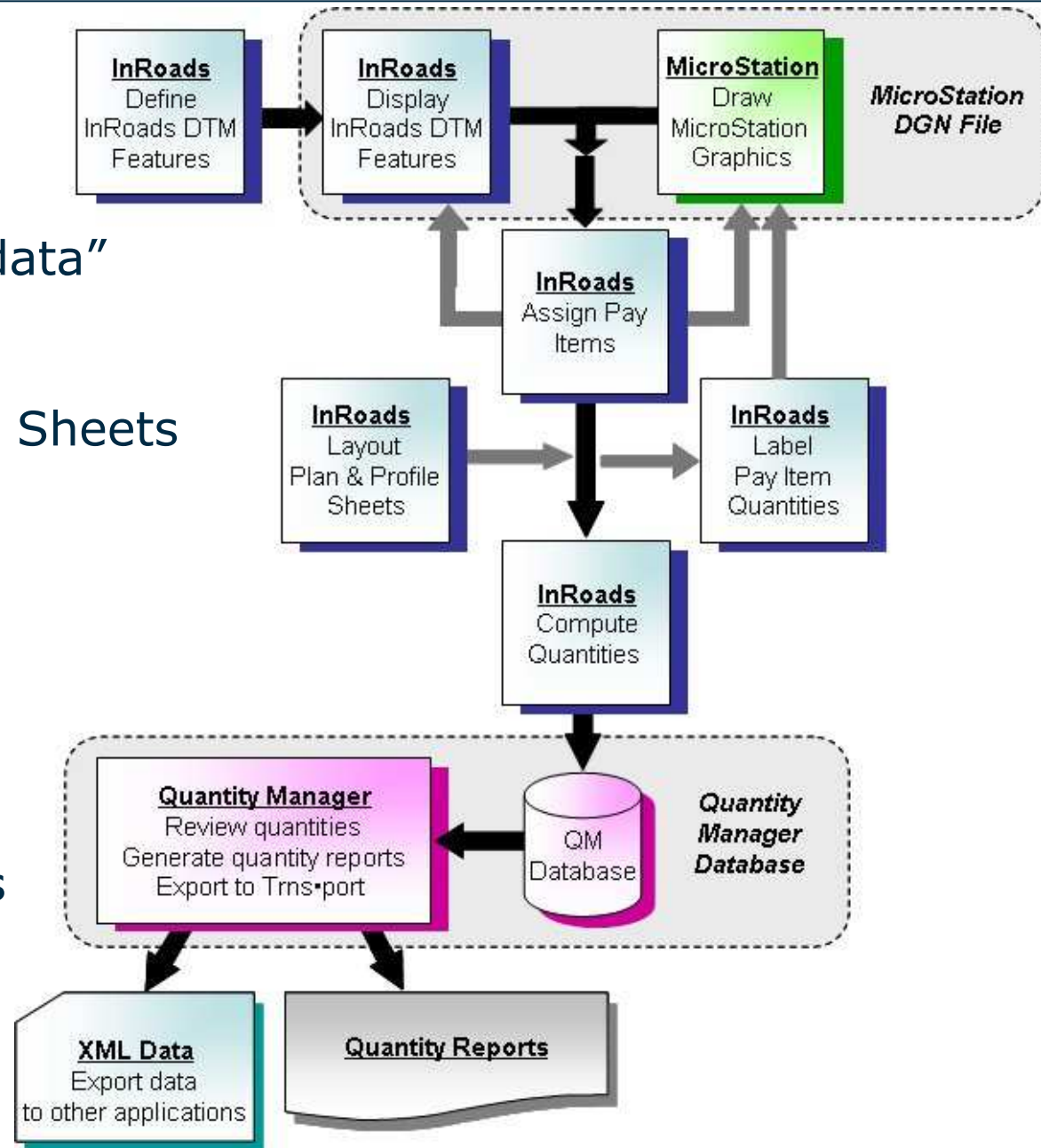
www.bentley.com

InRoads + Quantity Manager = Results

- ## InRoads Quantity Tools
  - Define pay items
  - Assign pay items to "engineered" data
  - Compute quantities
  - Create quantity database

- ## Quantity Manager Application
  - Read quantity database created by InRoads
  - Assign bidding and funding parameters (optional)
  - Export quantity information to external applications such as Trns*port (optional) (US Only)
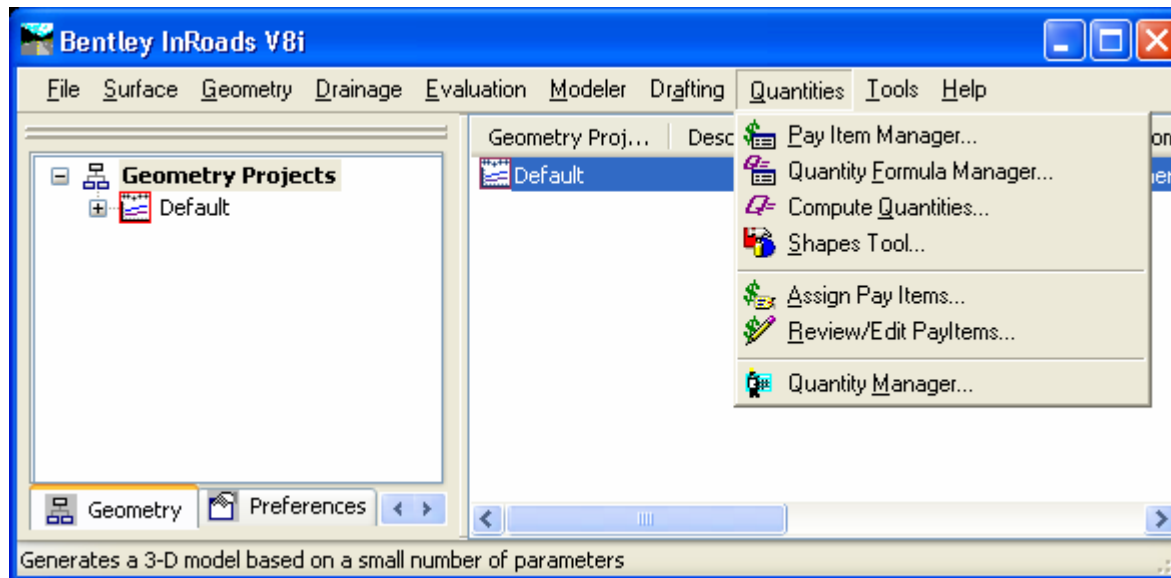 - Create quantity reports

Bentley®

Quantity Workflow

– Define "engineered data"

– Assign Pay Items

– Layout Plan & Profile Sheets (Optional)

– Compute Quantities

– Label Quantities

– Quantity Reports

– Export Quantities to External Applications

InRoads Quantity Tools

- Available as Add-in Application

- Appear on Quantities menu once enabled

Pay Item Database

- **Intelligence** behind quantity calculations
  - Pay Item Name
  - Pay Item Code
  - Description
  - Unit
  - Formula for computing quantity
    - Each
    - Linear
    - Area
    - Volume
  - Rounding and deduction parameters

Assigning Pay Items

- Assign Pay Items tool

  – Quantities > Assign Pay Items

  – Point and click graphical assignments

  – Assign to DTM Feature or MicroStation Graphics

Bentley®

DTM Features

Graphics

Advantages

Accidental modifications less likely

Easy to redisplay

DTM file does not need to be loaded

Quantity overrides can be used

Disadvantages

DTM file must be loaded

Quantity overrides cannot be used

Pay item assignments lost if DTM surface is recreated

Graphics can be easily modified, copied, or deleted

Graphics may not be drawn as accurate as InRoads data

Bentley®

Assigning Pay Items

- Live Demonstration
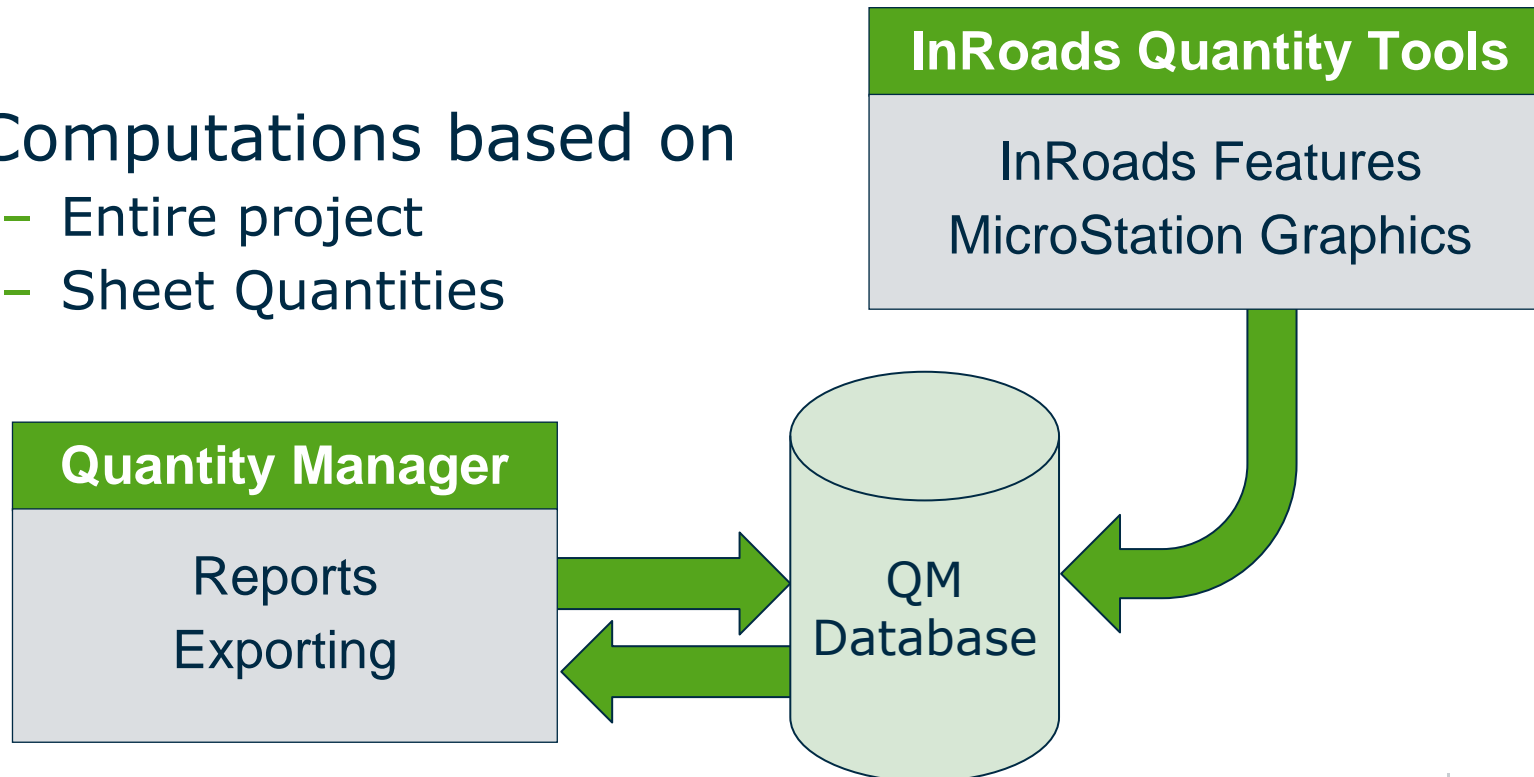
Advanced Pay Item Assignments

- Formulas
  - Make Pay Items More Flexible
    - Material Thickness
    - Material Weight
    - Etc.

- Override Computed Quantities
  - Assign quantity to graphic overriding its measured value
  - Cannot be assigned to DTM Features

Lets take a look...

Computing and Extracting Quantities

- Computes Quantities -> QM Database
  - From DTM Features and Graphics

- Computations based on
  - Entire project
  - Sheet Quantities

InRoads Quantity Tools

InRoads Features

MicroStation Graphics

Quantity Manager

Reports

Exporting

QM Database

Bentley®

Time to Compute our Quantities

Quantity Manager Application

- Reports

- Export

- Funding Participation and rules

- Phasing

Report and Export Contents

- Quantity items displayed in the Quantity pane (upper right) controls report and export content

- To select all Quantities
  - Manual Mode
    - Expand and individually select all Pay Items in left pane

  - Automatic Mode
    - Enable *View > Expand Quantity Categories*
    - Select **root** in the left pane

Bentley®

Reporting

Name	Description	Unit	Unit Cost	Total Quantity	Total Cost
201-010A	CLEARING & GRUBBING	LS	0.0	1.00	0.00
654-005A	PERM PAV MK TAPE (OVLY WHITE)	SF	0.0	13749.00	0.00
654-010A	PERM PAV MK TAPE (OVLY YELLOW)	SF	0.0	13741.00	0.00
619-005A	ILLUMINATION TY 1	LS	0.0	1.00	0.00
612-005A	METAL GUARDRAIL	FT	0.0	1190.50	0.00
612-055A	METAL TERMINAL SECTION TY 1A	EACH	0.0	4.00	0.00
612-050A	METAL TERMINAL SECTION TY 1	EACH	0.0	3.00	0.00
608-065A	36" APRON FOR PIPE	EACH	0.0	4.00	0.00
608-075A	42" APRON FOR PIPE	EACH	0.0	2.00	0.00
608-055A	30" APRON FOR PIPE	EACH	0.0	2.00	0.00
608-045A	24" APRON FOR PIPE	EACH	0.0	2.00	0.00
602-065A	36" PIPE CULV	FT	0.0	318.00	0.00
602-075A	42" PIPE CULV	FT	0.0	249.00	0.00
602-055A	30" PIPE CULV	FT	0.0	354.00	0.00
602-045A	24" PIPE CULV	FT	0.0	644.00	0.00
621-010A	SEEDING	ACRE	0.0	14.90	0.00
621-015A	MULCHING	ACRE	0.0	14.90	0.00
621-035A	FERTILIZING	ACRE	0.0	14.90	0.00
621-045A	WATERING	AU	0.0	636685.80	0.00
613-005A	CONC SIDEWALK	SY	0.0	474.80	0.00
615-250A	CURB TY D 10	FT	0.0	807.00	0.00
610-005A	FENCE	FT	0.0	6560.00	0.00
405-240A	MISC PAV	SY	0.0	45.00	0.00
303-021A	3/4" AGGR TY A FOR BASE	TON	0.0	155.00	0.00

- Generated from Quantity Manager Application

- Built in Formats
  - HTML and CSV Formats
  - Customizable with some XML Programming

Bentley®

Quantity Reports

- Demonstration

Exporting Quantity Data

- Trns*port
  - Part of AASHTO Estimator software suite for bid processing

  - Data exports directly from Bentley Quantity Manager to AASHTO Trns*port software

  - Use *View > Export > Export* tool

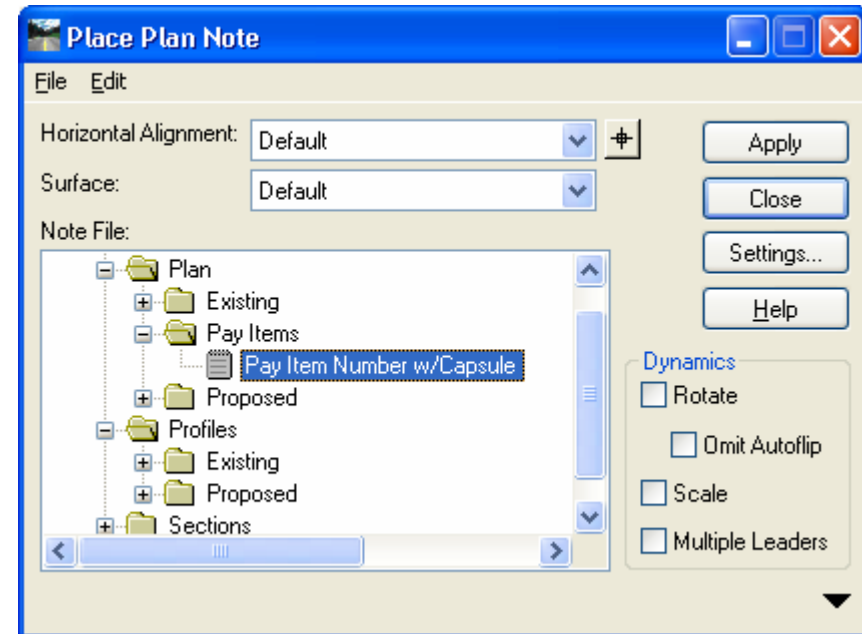 - Use **aecXML** export style
    - Phase Name = DesignEstimate

Exporting Quantity Data

- Demonstration

Labeling Quantities

- Place Plan Note Tools

  – Customizable Formats

  – Uses Computed Value Text Inserts

  – Automated leaders and frames

  – Multiple Leaders

  – Updatable

Labeling Quantities

- Demonstration

Bentley®

Want to Learn More?

- Official Bentley Institute Training Course

- Instructor led

- onDemand eLearning

- Available December 2008!

InRoads Quantity Calculations
Bentley Institute Course Guide
First Edition
InRoads XM Edition 8.9 with MicroStation

Bentley Institute

TRN011130-1/0001