A Practical Guide to GIS in AutoCAD Civil 3D

Rick Ellis

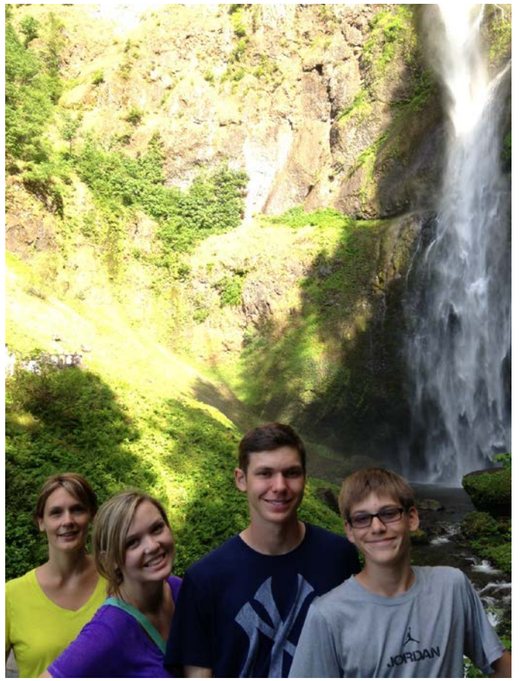
President, CADapult Software Solutions

@theRickEllis

rick@cadapult-software.com

Who am I…

- Rick Ellis
- Portland, Oregon
- Originally a CAD Manager and Civil Designer
- I've been teaching AutoCAD, Civil 3D, and AutoCAD Map since mid-90's
- Consultant
- Author
- 11th year teaching at AU
- Member of the Autodesk University Advisory Council



Introduction

- Welcome
- Who am I
- Who are you
- Class surveys

Lab Assistants

- Tony Carcamo
  - Civil Infrastructure Technical Specialist,
    Civil Engineering Design Concepts
- Sam Lucido
  - Civil Designer and CAD Services Manager, Haley and Aldrich
- Brian Hailey
  - Technical Specialist, CAD-1

Course Agenda

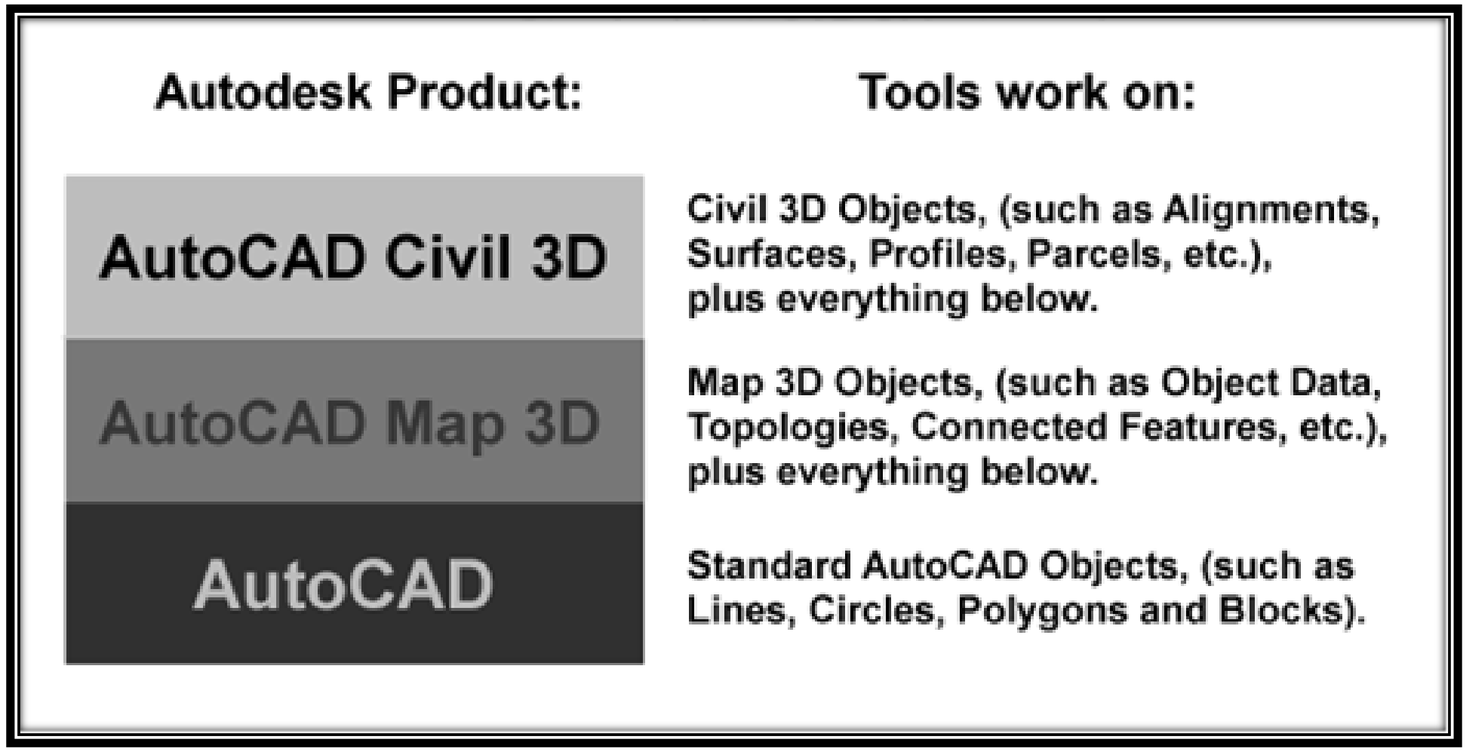
- Introduction to GIS in Civil 3D
- Using GIS Data from other Formats
- Label Objects with Annotation Templates
- Exporting GIS Data

What About Questions???

- Lab Assistants are here to help you
- Short time for questions at the end of each topic
- After the session
- Via email rick@cadapult-software.com

Introduction to GIS in Civil 3D

- It’s really 3 programs in 1
  - So what data can I create and who can use it?



Using GIS Data from other Formats

- Three ways you can bring GIS data into Civil 3D:
  - Importing GIS Data as AutoCAD Objects
  - Importing GIS Data as Civil 3D Objects
  - Connecting to GIS Data

- Important to understand how GIS data is structured
  - Feature Classes

Importing GIS Data as AutoCAD Objects

AutoCAD Civil 3D can import the following types:

- Autodesk SDF
- ESRI ArcInfo Coverage
- ESRI ArcInfo Export (E00)
- ESRI Shape file
- GML
- MapInfo MIF/MID
- MapInfo TAB
- Intergraph/MicroStation Design (dgn)
- OS (GB) MasterMap (GML 2)
- Spatial Data Transfer Standard (SDTS)
- Vector Product Format Coverage (VPF)

Exercise

Annotation Templates

Several types of data can be used to drive an Annotation Template. These include:

- Object Data
- Linked data sources
- Object properties

Exercise

Importing GIS Data as Civil 3D Objects

There are two types of Civil 3D objects that can be created directly from GIS data.

- Surfaces
- Pipe Networks

Exercise

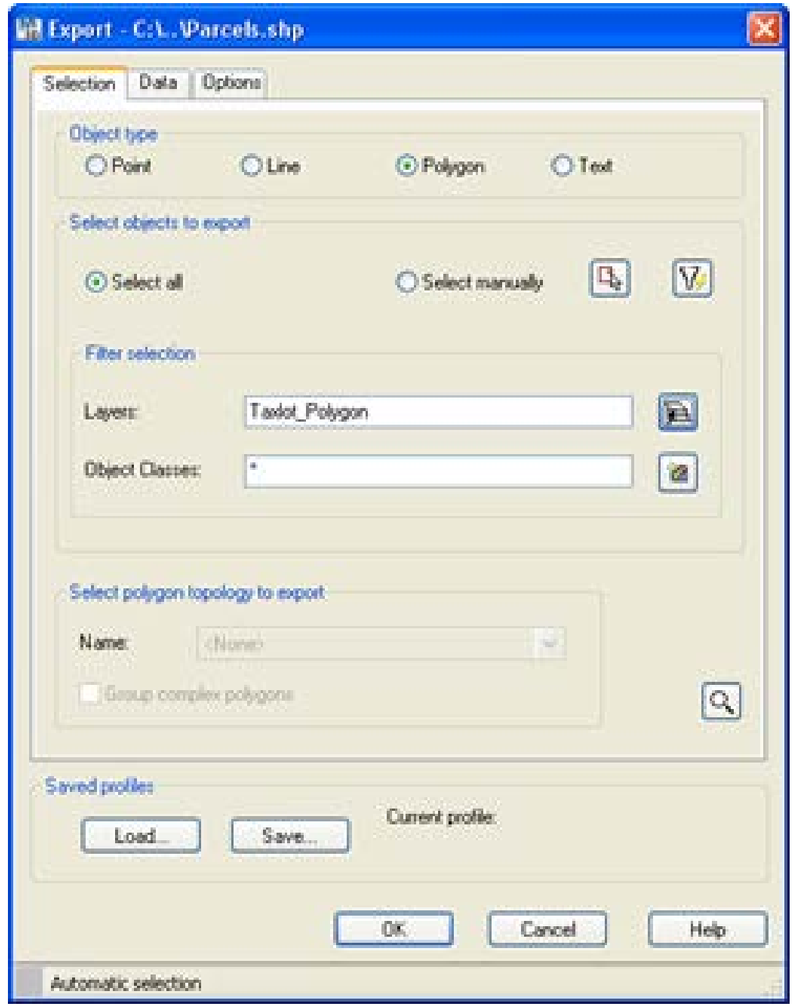
Connecting to GIS Data

- Direct Connection
- Not an Import
- Creates Map Features not AutoCAD Objects
- Stylized in the Display Manager

Exercise

Exporting CAD Data

- MAPEXPORT command
- Exports AutoCAD Objects
- Does not export Civil 3D Objects
- Must export each Feature Class individually



Exporting Civil 3D Objects as GIS Data

Types of Civil 3D objects that can be exported:

- Points
- Alignments
- Parcels
- Pipes
- Structures

Exercise

Other useful GIS tools in Civil 3D

- Drawing Cleanup tools
  - Automate the process of cleaning many common geometry errors
- Thematic Mapping
- Dynamic North Arrows, Scale Bars and Legends
- Map Books

Still Have Questions???

email rick@cadapult-software.com

Don’t forget Class Surveys

- Your class feedback is critical. Fill out a **class survey** now.
- Use the AU mobile app or fill out a class survey online.
- Give feedback after each session.
- AU speakers will get feedback in real-time.
- **Your feedback results in better classes and a better AU experience.**

Thank you for your time and attention!

Rick Ellis
rick@cadapult-software.com