

# ***CAD/GIS Interoperability***



**Rebecca Barber**  
**Geographic Mapping Specialist**

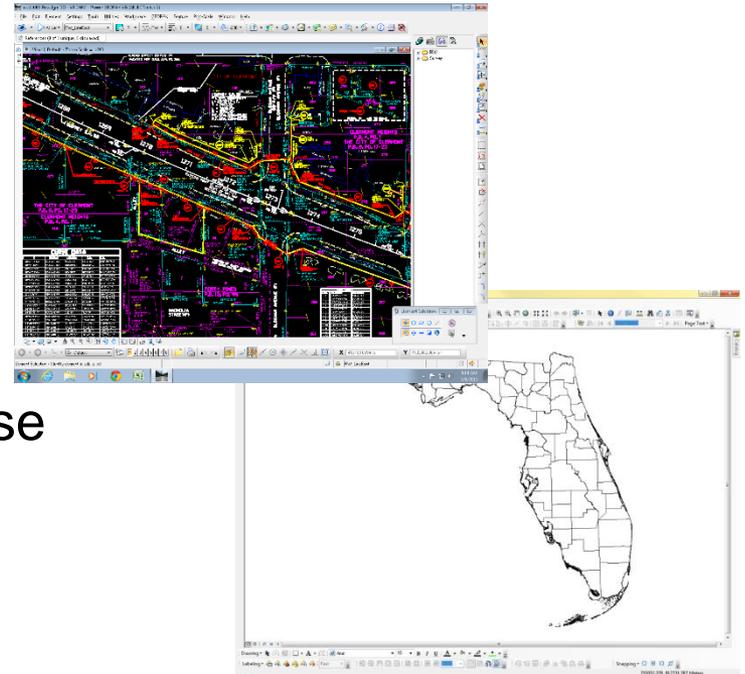
# *Presentation Overview*

- ✓ Background
- ✓ Research
- ✓ Interoperability
- ✓ Examples
- ✓ Drafting GIS Features in MicroStation
- ✓ Processing Parcel Line Work
- ✓ Interoperability Tools
- ✓ Beta Testing
- ✓ Summary

# Background

The Florida Department of Transportation (FDOT) requires standardized electronic delivery of Design Plans through CADD.

With the advancement of the GIS Enterprise View (GEV) utilizing the FDOT Enterprise GIS Framework and the technology upgrades to CADD platforms supporting the interoperability between these environments, a path for sharing data has evolved so that users in both environments can benefit.



# Background

- ❑ In 2011 FDOT started looking for a way to put everything Right of Way (ROW) related into the new enterprise GIS framework looking backward to historic records
- ❑ There was some success in manipulating the CADD line work for ROW acquisitions into a GIS environment, but the work was tedious and time consuming
- ❑ Utilities (a highly desired data set) would be even more tedious

# Research

- ❑ Texas A&M Transportation Institute (TTI) was brought in to examine FDOTs current system, practices and processes
- ❑ To develop a strategic implementation plan that would manage ROW parcels and utility data
- ❑ Including a process, workflow and a tool to hopefully “**automate**” bringing this historical data (CADD line work) into a GIS environment and to give it intelligence

This research project was completed in May of 2013

# Research

## □ Overview

- ✓ They conducted site visits and collected CADD Files and Documents. From this they developed
  - lists of levels, cells, and attributes
  - database tables, routines, and menus, to extract CADD information desirable to the GIS environment

## □ Recommendations:

- ✓ Use of existing survey and GEOPAK data to generate parcel shapes
- ✓ Use a database approach for managing design libraries and levels in MicroStation to be able to
  - link information
  - and add attribute data
- ✓ Created steps for integrating existing parcel and utility data into FDOT's enterprise GIS framework

# Research

- ❑ But, there is no true “automation” available
- ❑ There is too much drafting cleanup needed on the historical data
- ❑ So getting the historical data into a GIS environment will be mostly manual, even with the tools developed by TTI
- ❑ So where do we go from here?
  - ✓ We can begin to gather new data,
  - ✓ while trying to come up with a plan for the old data

# Interoperability

- ❑ What does that mean?
  - ✓ It means that you can take line work from a CADD application, give it intelligence and export it into a GIS application
  - ✓ Or take intelligent data from a GIS application and import it into a CADD application
- ❑ Since this data has intelligence you can do queries, its not just about turning off layers/levels
  - Say you only want to see roadways that have a speed limit of 55mph.....you can do that
  - Or say you only want to see parcels over/under a certain acreage...you can do that too

# Interoperability

- ❑ FDOT anticipates that one day the ability to reference all or some amount of historical layers such as
  - ✓ Survey Control,
  - ✓ Parcels,
  - ✓ Aerials,
  - ✓ ROW,
  - ✓ Roadway,
  - ✓ Easements,
  - ✓ Utilities, and Permit Agreements
- ❑ In both CADD and GIS platforms
- ❑ FDOT sees this information as having great value in areas of informed decision making or maybe even those creating high amounts of public record requests
- ❑ Technology is moving in that direction with both the Bentley and AutoCAD platforms now supporting importing and exporting of GIS data

# *Interoperability*

- ❑ So.....
- ❑ How can we integrate CADD Survey/Engineering data that's symbolized specifically to create a set of design plans for construction so that elements of that design can be visualized/attributed and thereby successfully used in a Geographic Information System?

# Interoperability

## Requirements

- ❑ Before we can begin to answer that question we must first have an understanding of what it is that GIS requires in order to visualize and geospatially query information
  - ✓ GIS uses relational tables of records that are geospatially aware
  - ✓ Along with linked attribute data
- ❑ In short---

## **Attributes    Data    Intelligence**

- ❑ So that means that we must somehow create outputs in the CADD environment to meet these requirements

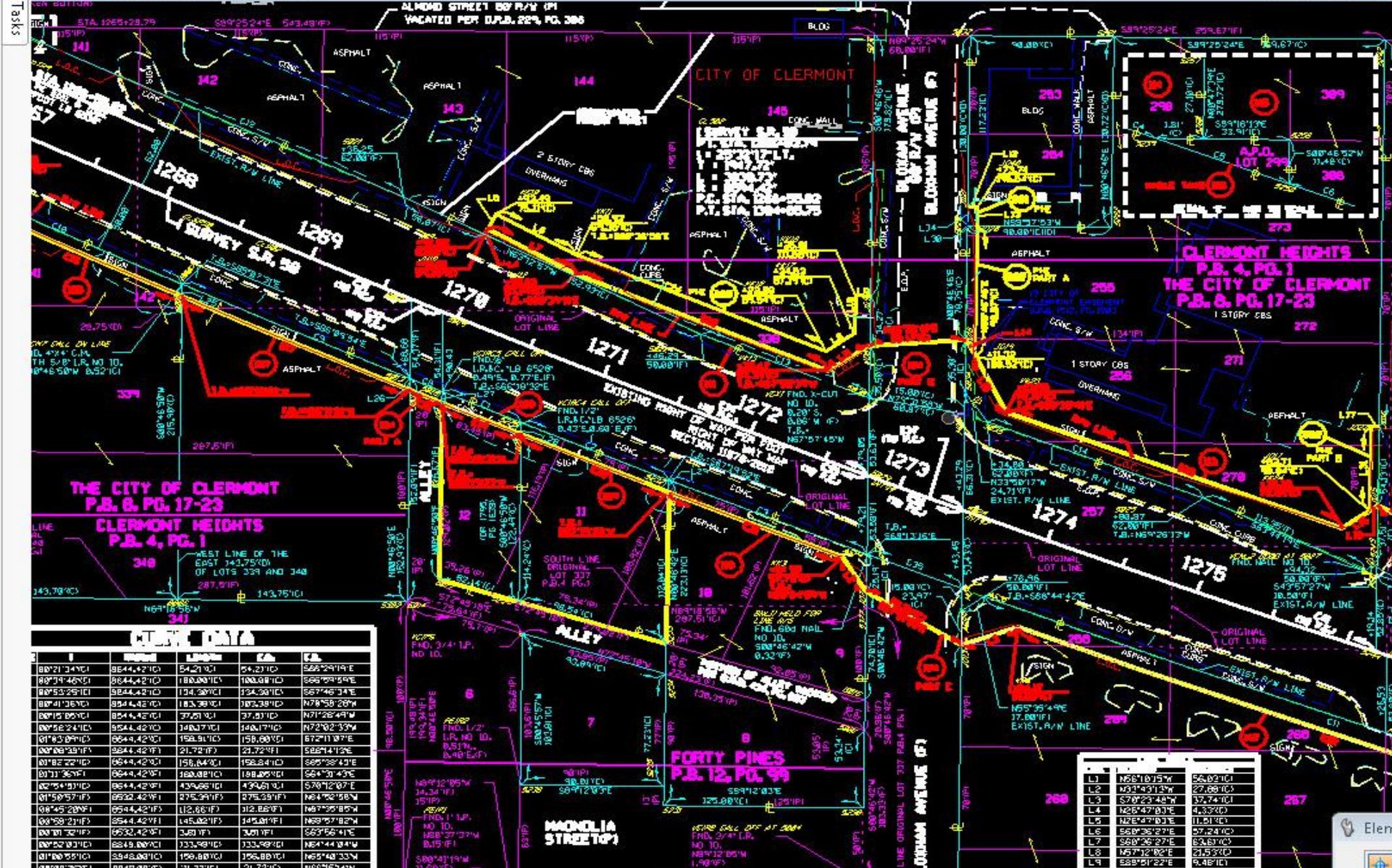
# Interoperability

## □ Goals

- ✓ Use existing licensed products (both CADD and GIS)
- ✓ Reach out and determine all potential stakeholders to data
  - There may be some who traditionally were not interested or didn't have a need to mine CADD data from design plans as they were not CADD users and the data had no intelligence
- ✓ User assessment to identify initial need and priority of GIS features
  - Start small
    - Right of Ways
    - Parcels (both right of way and excess)
    - Alignments
- ✓ Determine workflows, and
- ✓ Build tools and workspaces in FDOT CADD platforms for creating these GIS features

# Interoperability

- ❑ Incorporating GIS workspaces into the current FDOT workflow
- ❑ Creating intelligent data is data that is both
  - ✓ Geospatially aware, and
  - ✓ Has attributes
- ❑ Following is an example showing the FDOT tool CADD designers can use to create intelligent features in a CADD environment by either
  - ✓ Placing or
  - ✓ Promoting existing CADD elements



**THE CITY OF CLERMONT  
P.B. 6, PG. 17-23  
CLERMONT HEIGHTS  
P.B. 4, PG. 1**

**CURVE DATA**

STATION	CHORD	CHORD BEARING	CB	CB
00+00.00	8844.4210	S42.2100	24.2100	S89.281914E
00+04.42	8844.4210	180.0000	100.0000	S55.994594E
00+08.84	8844.4210	134.3010	134.3010	S67.961347E
00+13.26	8844.4210	183.3810	103.3810	N78.582878W
00+17.68	8844.4210	37.0100	37.0100	N07.284949W
00+22.10	8844.4210	140.0710	140.0710	N72.782355W
00+26.52	8844.4210	158.0010	158.0010	87.211071E
00+30.94	8844.4210	21.7210	21.7210	S88.141736E
00+35.36	8844.4210	158.8410	158.8410	S89.381401E
00+39.78	8844.4210	188.0010	188.0010	S64.314390E
00+44.20	8844.4210	43.6610	43.6610	S78.121071E
00+48.62	8844.4210	275.3910	275.3910	N64.782158W
00+53.04	8844.4210	112.6810	112.6810	N67.351850W
00+57.46	8844.4210	145.0210	145.0210	N69.071820W
00+61.88	8844.4210	3.0010	3.0010	S67.561414E
00+66.30	8849.8810	733.9810	733.9810	N64.441841W
00+70.72	8849.8810	158.0010	158.0010	N65.441333W
00+75.14	8849.8810	21.7210	21.7210	N65.151144W

L1	N66.181515W	56.821000
L2	N33.491313W	37.681000
L3	S78.231484W	37.741000
L4	N26.471813E	4.331000
L5	N26.471813E	11.511000
L6	S68.361272E	57.241000
L7	S68.361272E	64.811000
L8	N67.321824E	21.531000
L9	S89.811231E	6.481000
L10	N03.281352E	28.141000

**FORTY PINES  
P.B. 12, PG. 99**

**MONOLIA  
STREET TOP**

Elem

# Example

## CADD Components Exported as GIS Features

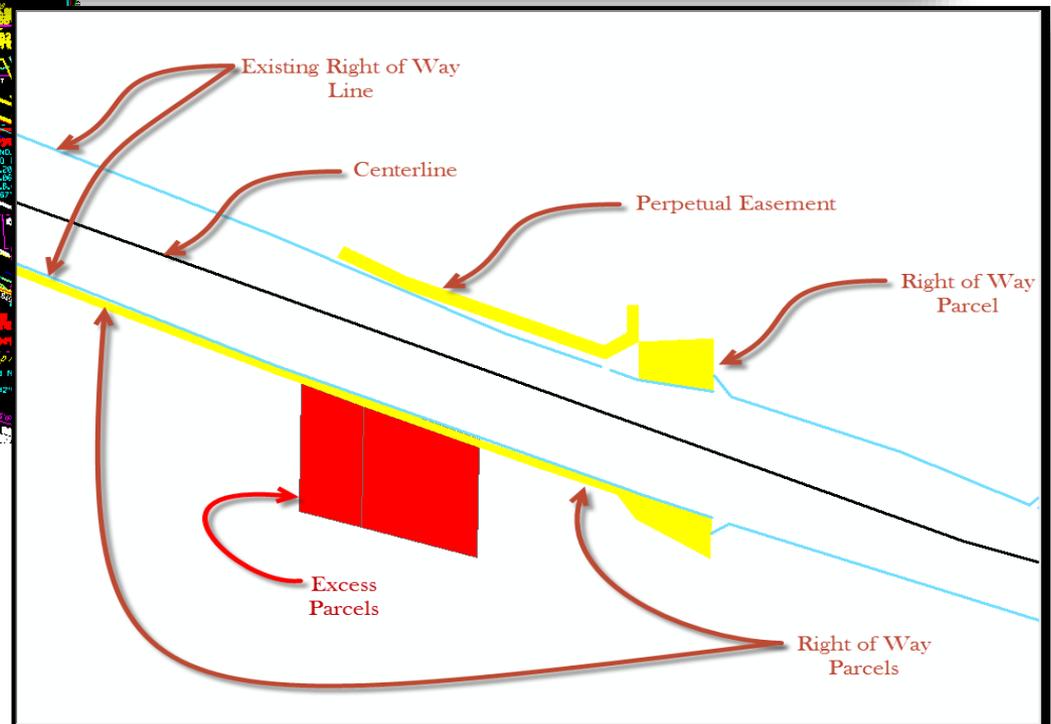
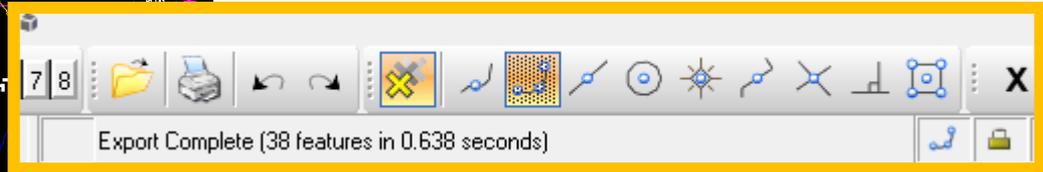
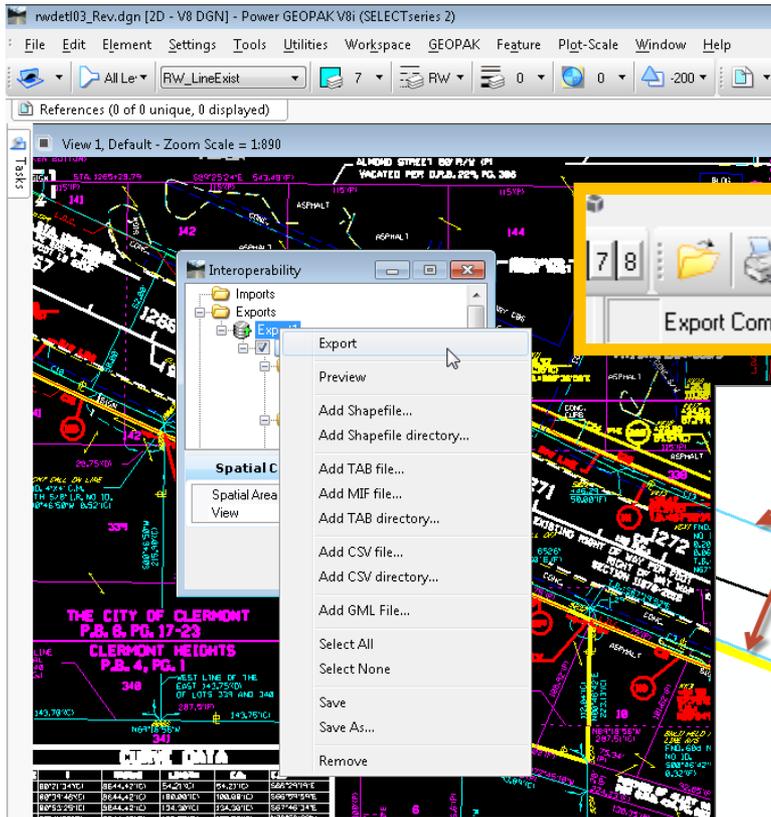
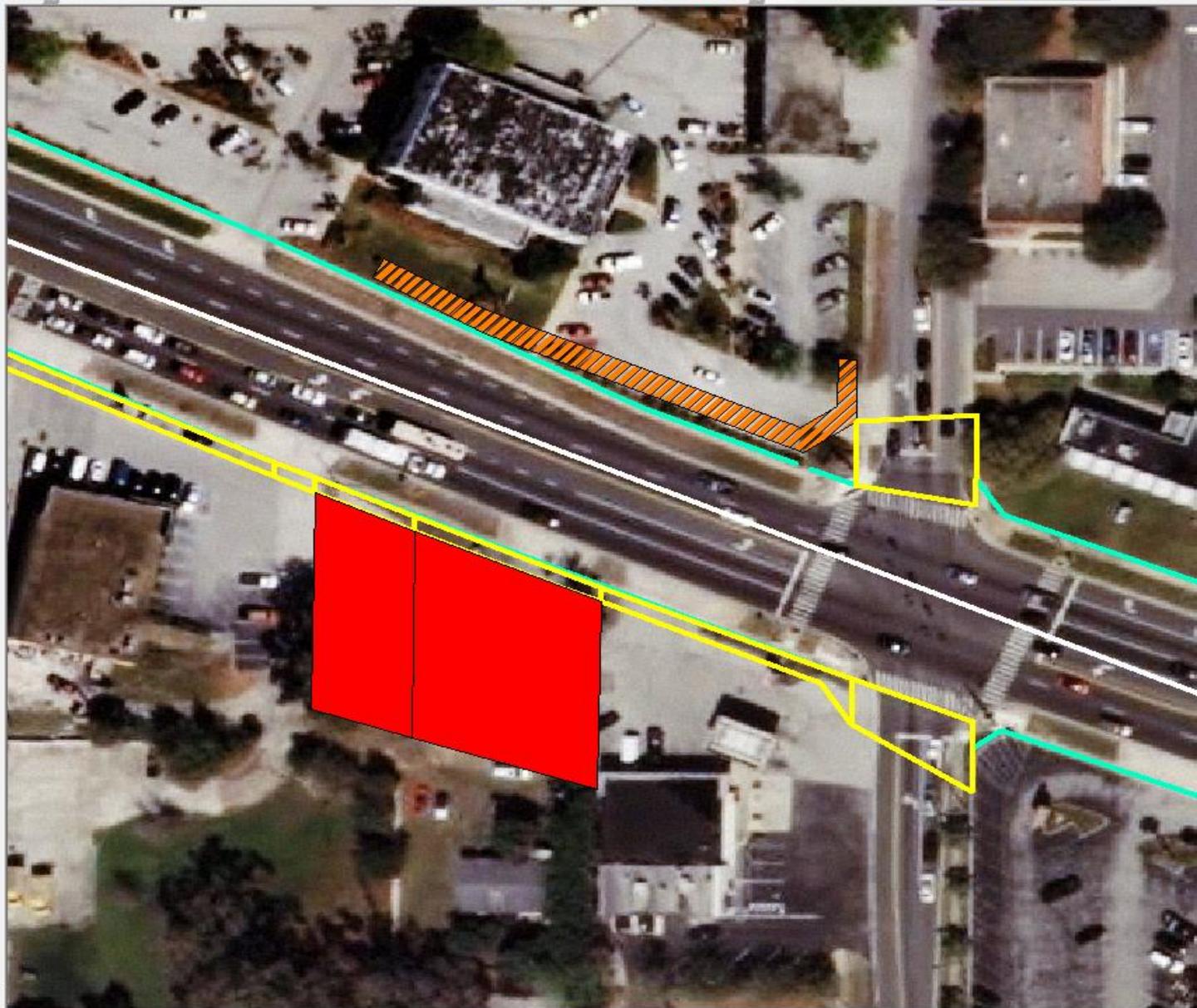


Table Of Contents

- Layers
  - CL\_Alignment
  - Parcel
    - Parent, ,
    - Take, Right of Way, Fee Simple
    - Take, Right of Way, Perpetual Easement
    - Take, Excess,
    - Take, Excess, Surplus
  - RightOfWay\_Line
  - Lake\_2011



# Baby Steps

## □ Using Bentley Geospatial Administrator

✓ A FDOT GIS workspace was created and released with FDOTSS2 MR1 (Feb 14, 2014). This workspace enables the:

- Creation of GIS Features With Attributes (intelligent data)
  - Parcels (polygons)
  - Right Of Way Lines (line)
  - Alignment (line)

# Baby Steps

- ❑ The biggest problems are:
  - ✓ Drafting quality
    - No more sloppy drafting
      - Closed polygons
  - ✓ Data Cleanup
    - Good clean data is needed in order to Promote the line work into GIS Features
- ❑ Using the information already in the GeoPak project .gpk files and the Design & Computation Manager to visualize elements and then Promote into GIS Features
  - Polygons must be a **Complex Shape**
    - **NOT a Complex Chain**

# ***DRAFTING GIS FEATURES IN MICROSTATION***

# Bentley Map

## ❑ Power GEOPAK V8i Select Series 2 with FDOTSS2 MR1 (released Feb 14, 2014)

✓ Includes new geospatial tools:

### - **Interoperability tools**

#### - **Map Manager**

- Attaches files and features from any supported graphical source (such as vector maps and raster images) and manage feature display

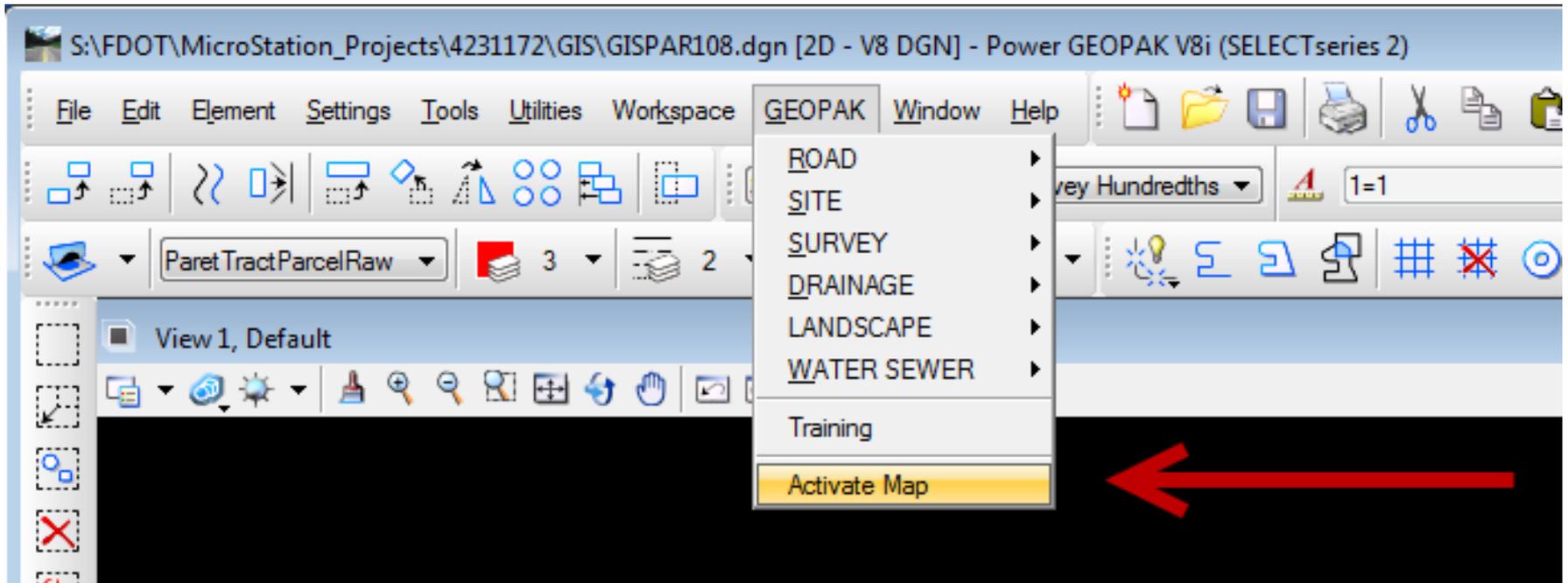
#### - **Feature Menu**

#### - **Command Manager**

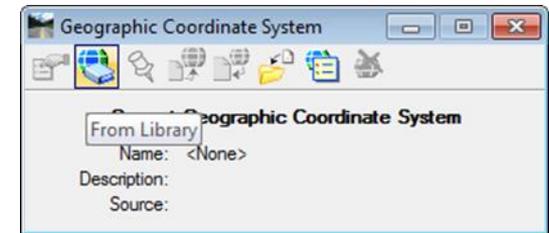
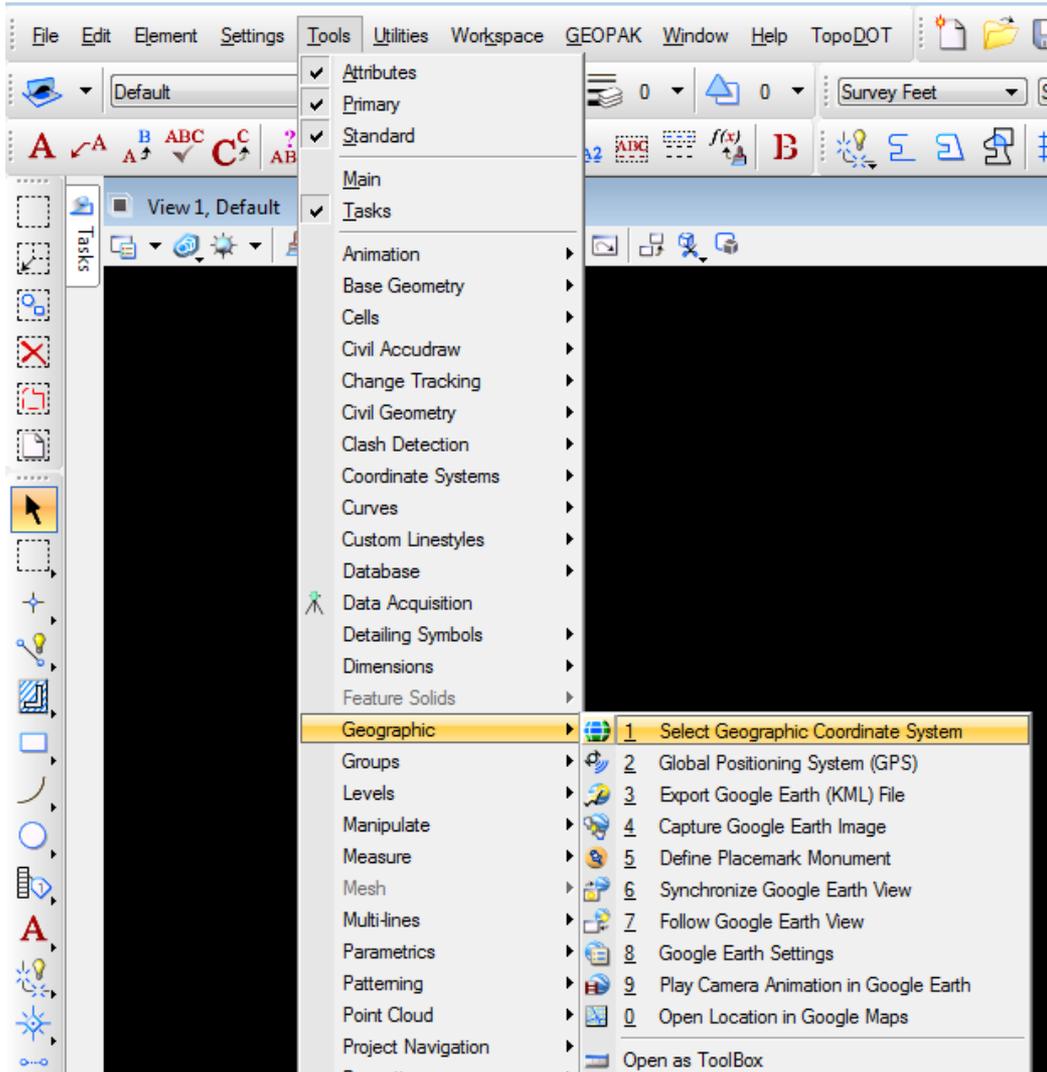
- Allows for the placing, editing, promotion, analyzation and browsing of feature attributes



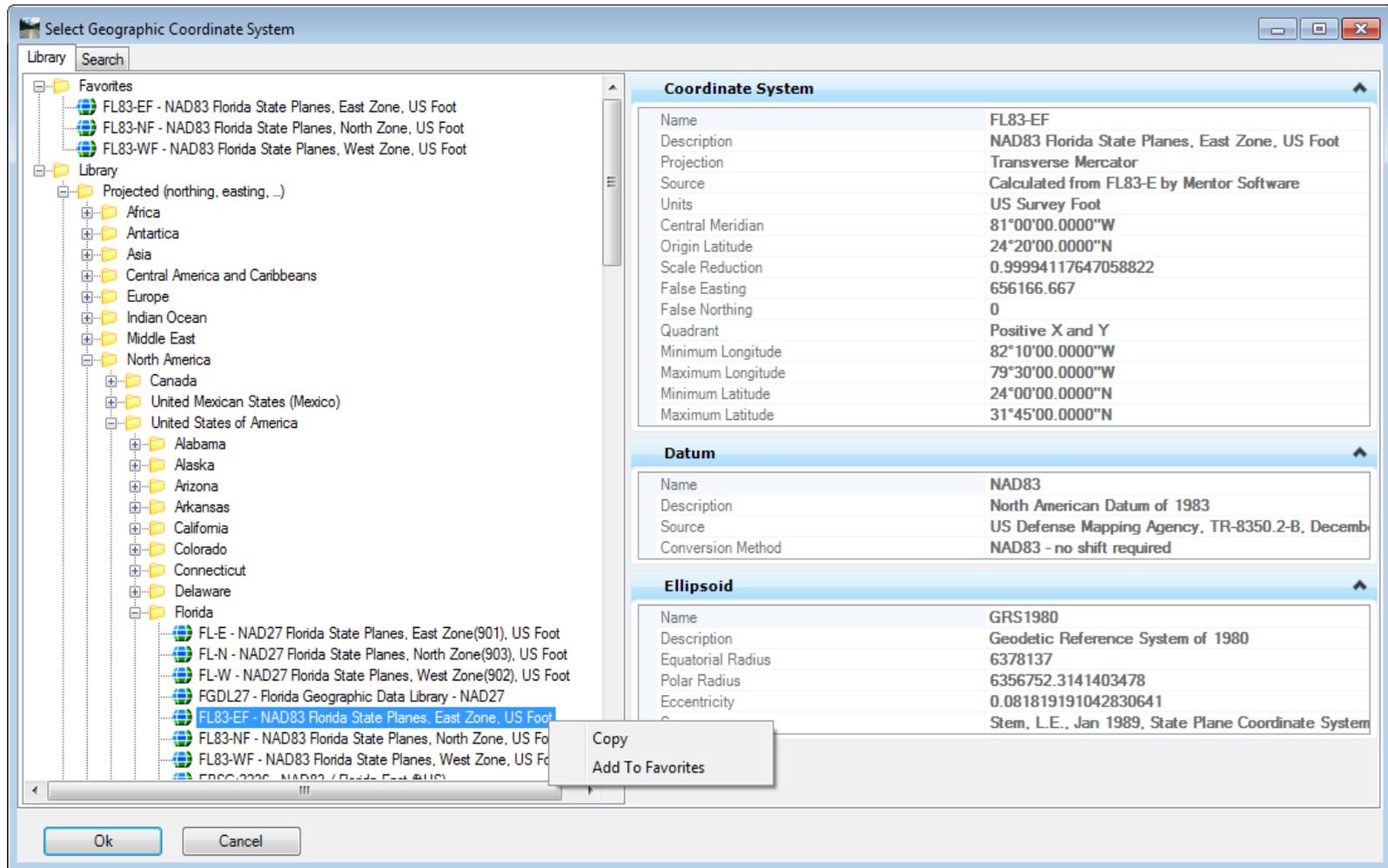
# Activate Map



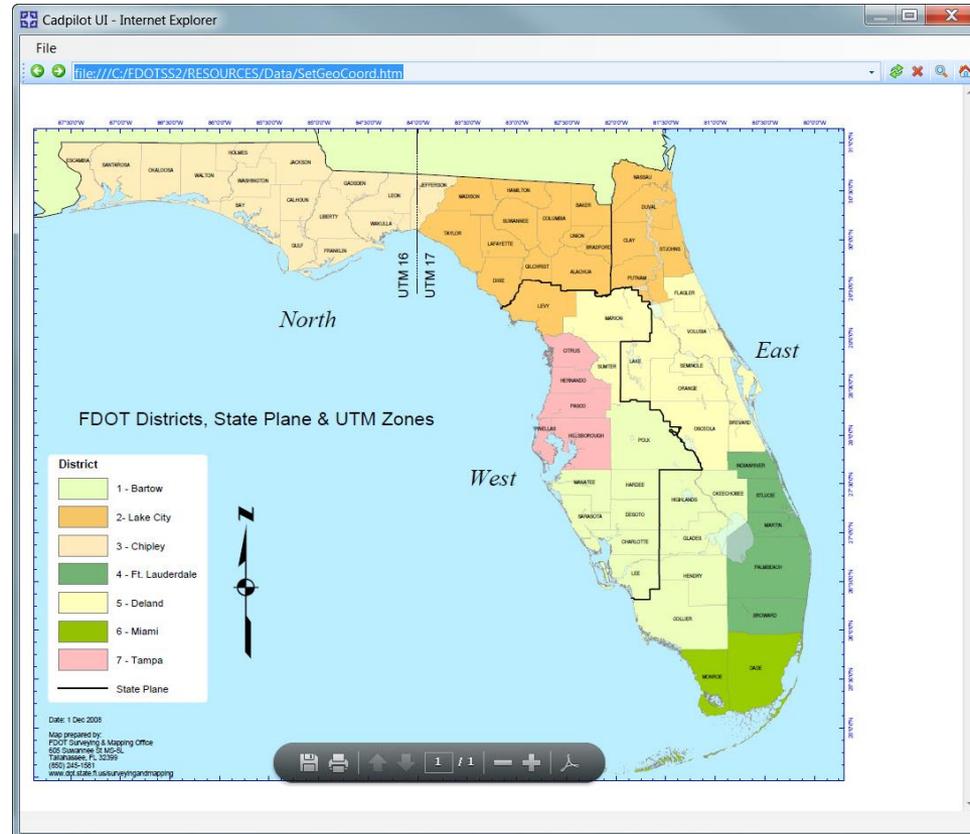
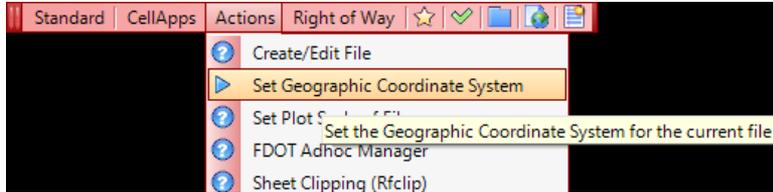
# Set Coordinate System



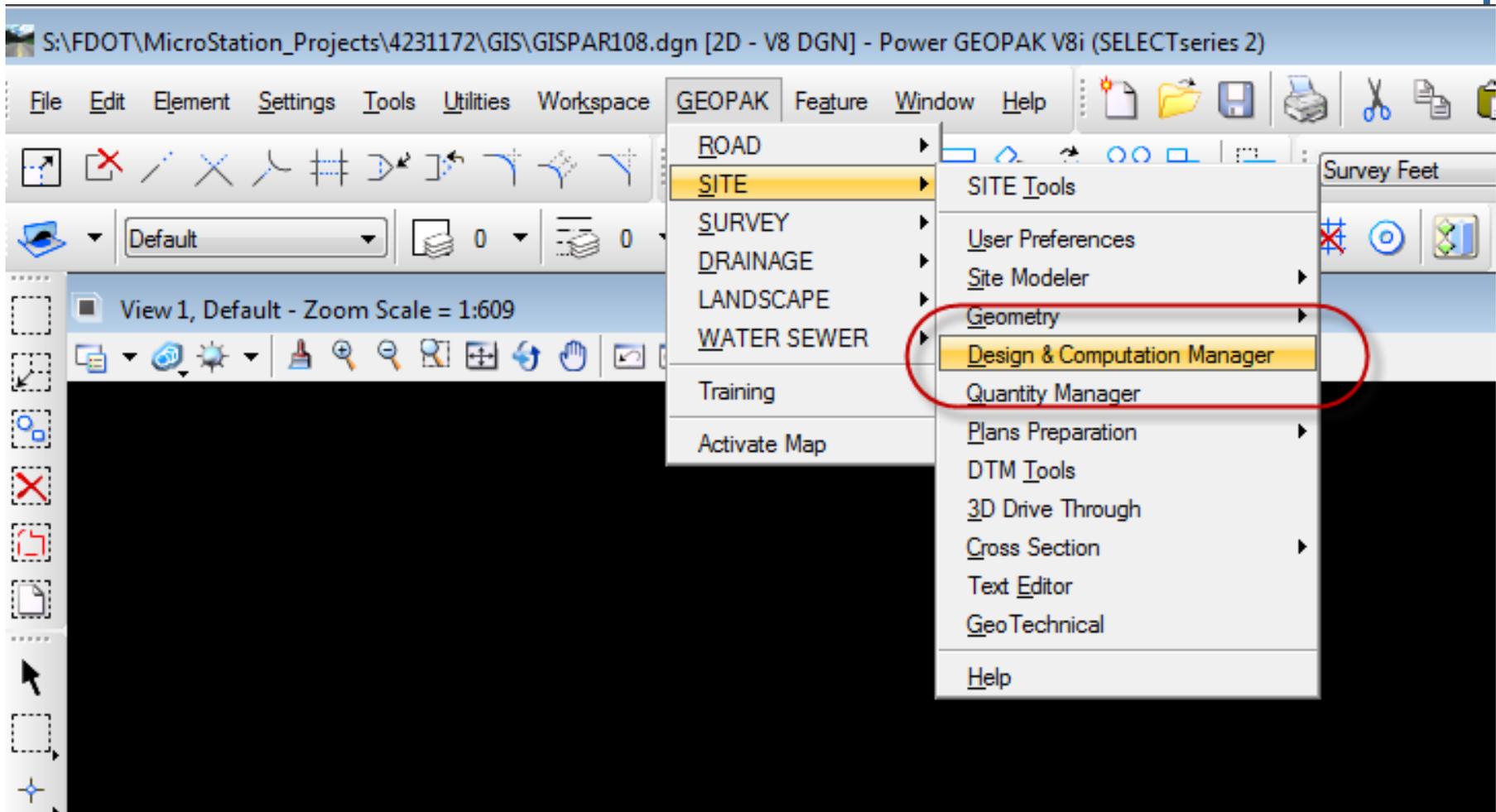
# Set Coordinate System



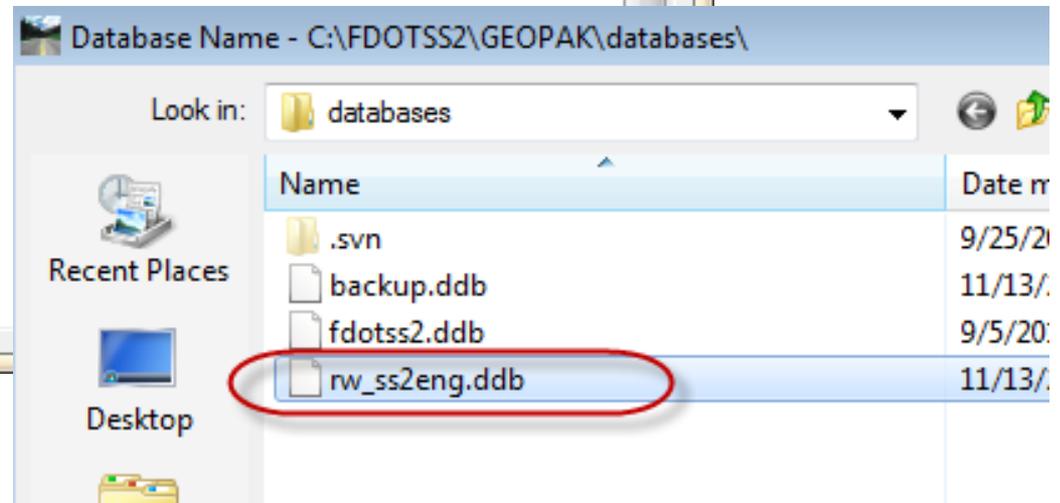
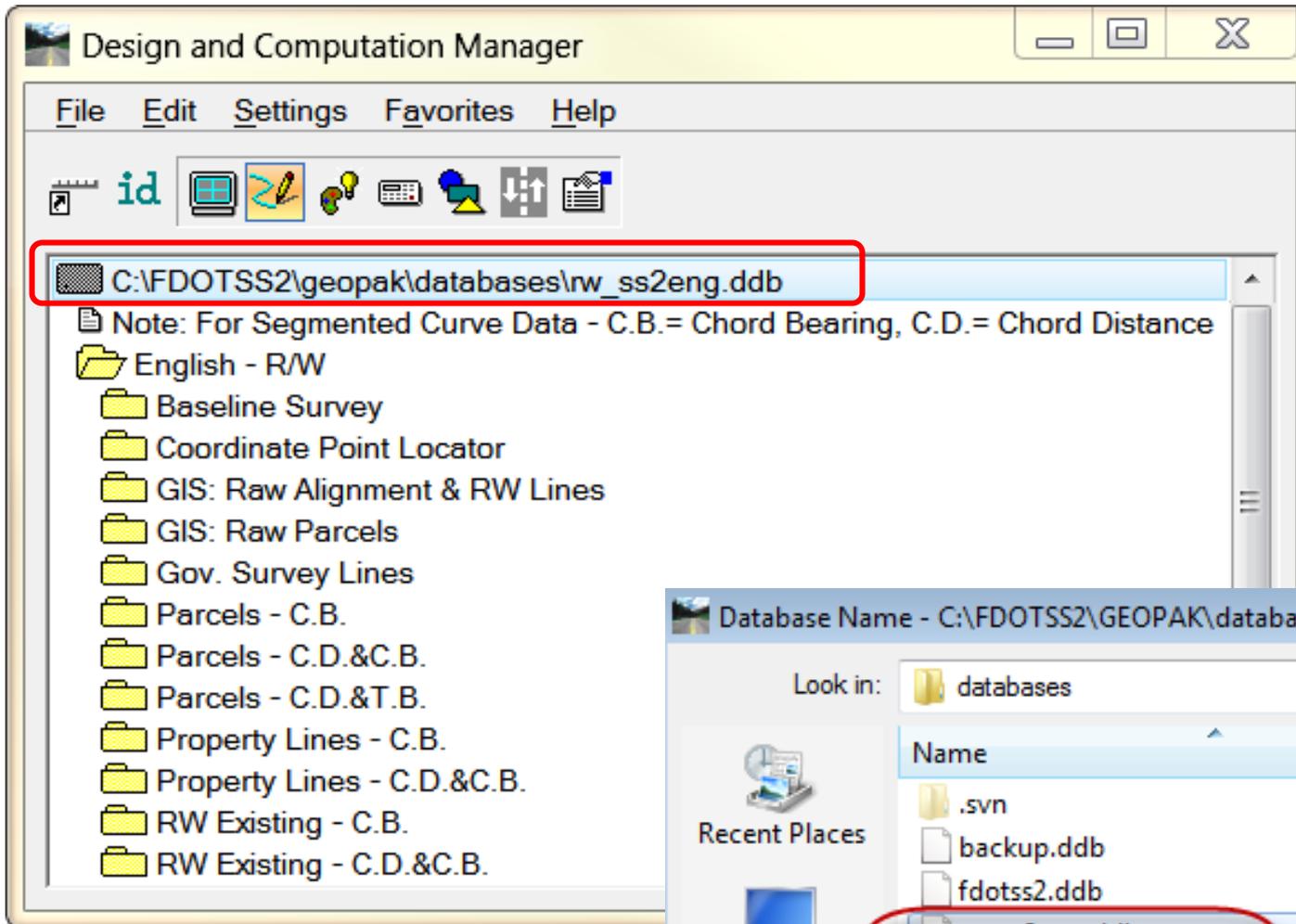
# Set Coordinate System



# Design & Computation Manager



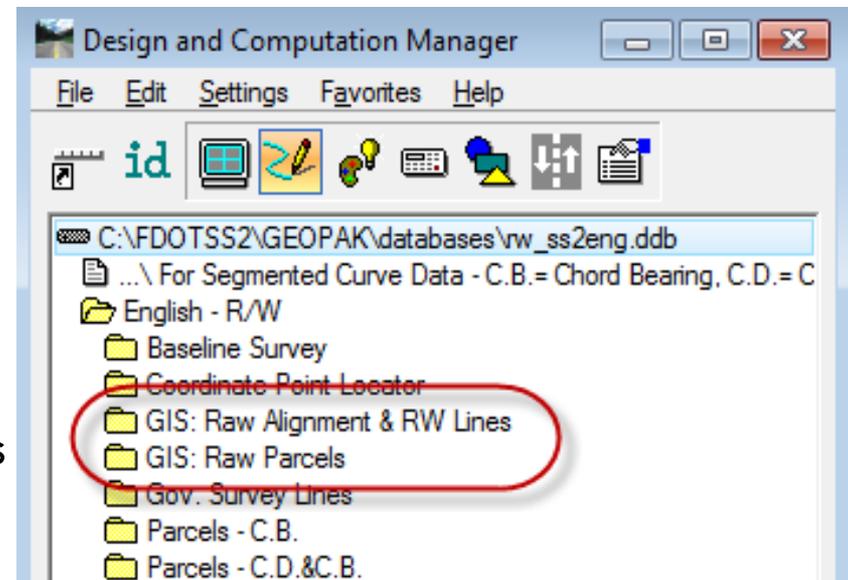
# Design & Computation Manager



# Design & Computation Manager

Two GIS Categories have been added to the Design and Computation Manager:

- ❑ Use these GIS categories to visualize “raw” line work for promotion to Bentley Map GIS features.
- ❑ Once plotted and before being promoted to a Bentley Map GIS feature, line work like:
  - ✓ **Alignments and Right Of Way lines**
    - Need to be turned into continuous poly-lines.
  - ✓ **Parcels**
    - Need to be turned into polygons before being promoted.



# Design & Computation Manager

-  GIS Fee/Perp Raw Parent Tract/Fee Take/Perpetual Easement Parcels for Promotion
-  GIS Fee/Temp Raw Parent Tract/Fee Take/Temporary Easement Parcels for Promotion
-  GIS Fee/License Raw Parent Tract/Fee Take/License Agreement Parcels for Promotion

When visualizing parcels; choose the category that best fit the type of take that will be promoted.

Generally choose the category based on the type of easement involved in the take.

*Note: **Do not visualize labels. Labels are not necessary and will not be carried over to GIS when the lines and parcels are promoted.***

# Design & Computation Manager

As an example here is a parcel that includes a temporary easement, parcel 708, and is used to visualize the raw parent tract, fee take (108) and the temporary easement (708) all at the same time.

The screenshot displays the 'Design and Computation Manager' software interface. The left pane shows a file tree for the project 'C:\FDOTSS2\GEOPAK\databases\vw\_ss2eng.ddb'. The file 'GIS Fee/Temp Raw Parent Tract/Fee Take/Temporary Easement Parcels for Promotion' is selected, indicated by a red arrow. The right pane shows the 'Select Parcel to Draw' list with parcel numbers 101 through 707. A red box highlights the 'Property Lines', 'Taking Lines', and 'Easement Lines' options, which are checked. A red arrow points from the selected file in the left pane to the 'Select Parcel to Draw' list.

Design and Computation Manager

File Edit Settings Favorites Help

id

C:\FDOTSS2\GEOPAK\databases\vw\_ss2eng.ddb

Note: For Segmented Curve Data - C.B.= Chord Bearing, C.D.= Chord Distance

English - R/W

- Baseline Survey
- Coordinate Point Locator
- GIS: Raw Alignment & RW Lines
- GIS: Raw Parcels
  - GIS Fee/Perp Raw Parent Tract/Fee Take/Perpetual Easement Parcels for Promotion
  - GIS Fee/Temp Raw Parent Tract/Fee Take/Temporary Easement Parcels for Promotion
  - GIS Fee/License Raw Parent Tract/Fee Take/License Agreement Parcels for Promotion
- Gov. Survey Lines
- Parcels - C.B.
- Parcels - C.D.&C.B.
- Parcels - C.D.,C.B.&T.B.
- Property Lines - C.B.
- Property Lines - C.D.&C.B.
- RW Existing - C.B.
- RW Existing - C.D.&C.B.

Item: GIS Fee/Perp Raw Parent Tract/Fee Take/Per

Element Type: Parcels Label Scale: 1

Key-in Points:

Select Parcel to Draw

- Property Lines
- Taking Lines
- Easement Lines
- Occupied Lines
- Buildings
- Property Line Labels
- Taking Line Labels
- Easement Line Labels
- Occupied Line Labels
- Parcel Number Labels
- Owner Names
- Parcel Quantities

101

102

103

104

105

106

107

108

109

110

111

707

# GIS Levels: Raw Line Work

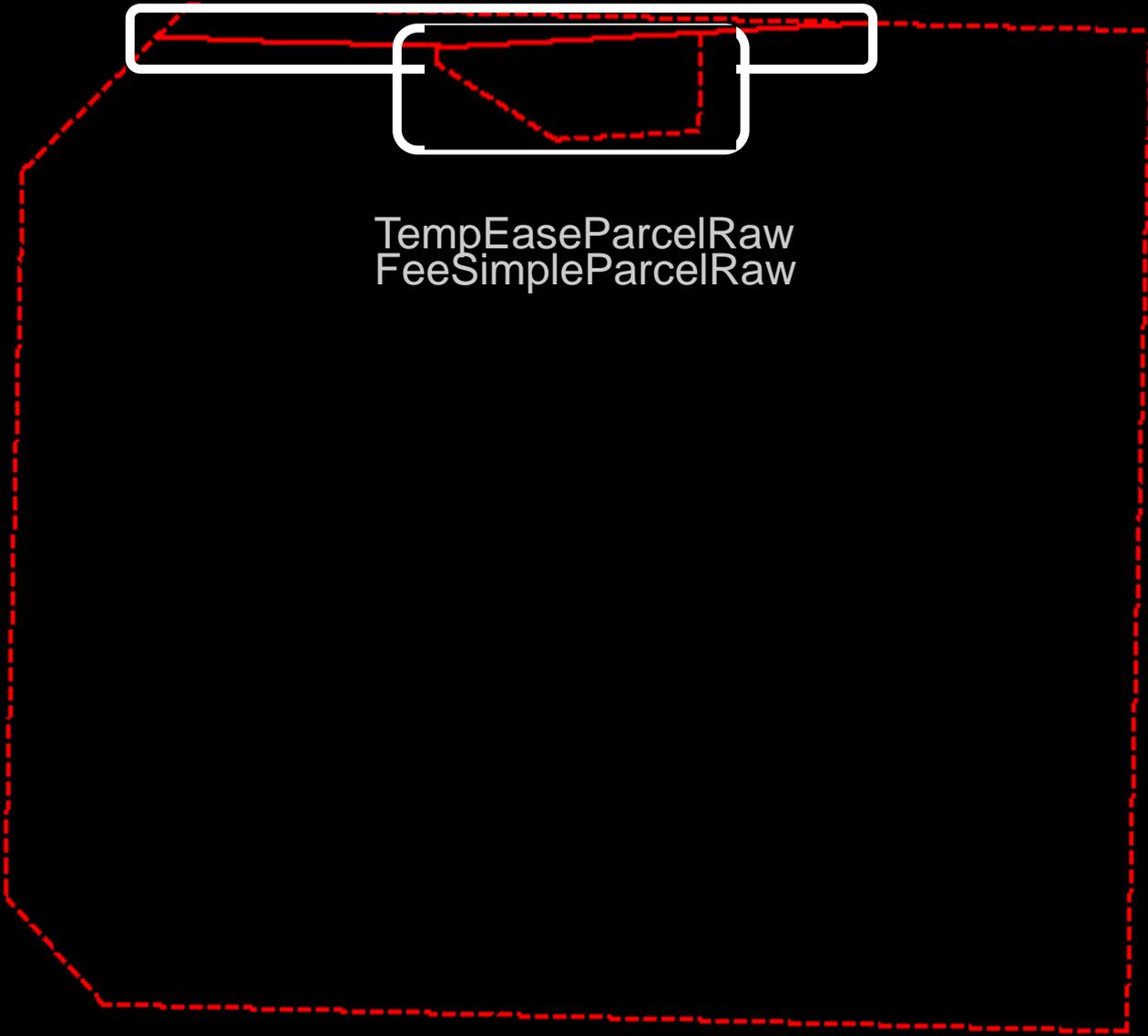
Name	Number	Description
AlignmentRaw	400	GIS: Raw Centerline/Baseline/Digitized Alignment
ExcessParcelRaw	403	GIS: Raw Excess Parcel
FeeSimpleParcelRaw	405	GIS: Raw Fee Simple Take Parcel (100s)
ParetTractParcelRaw	407	GIS: Raw Parent Track Parcel (Existing)
LiceseParcelRaw	409	GIS: Raw License Agreement Parcel (900s)
PerpEaseParcelRaw	411	GIS: Raw Perpetual Easement Parcel (800s)
TempEaseParcelRaw	413	GIS: Raw Temporary Easement Parcel (700s)
RightOfWayLineRaw	415	GIS: Raw Right of Way Lines (After Acquisition)
LARightOfWayLineRaw	417	GIS: Raw Limited Access Right of Way Lines (After Acquisition)
SurplusParcelRaw	419	GIS: Raw Surplus Property Parcel

# GIS Levels: Create/Promote Features

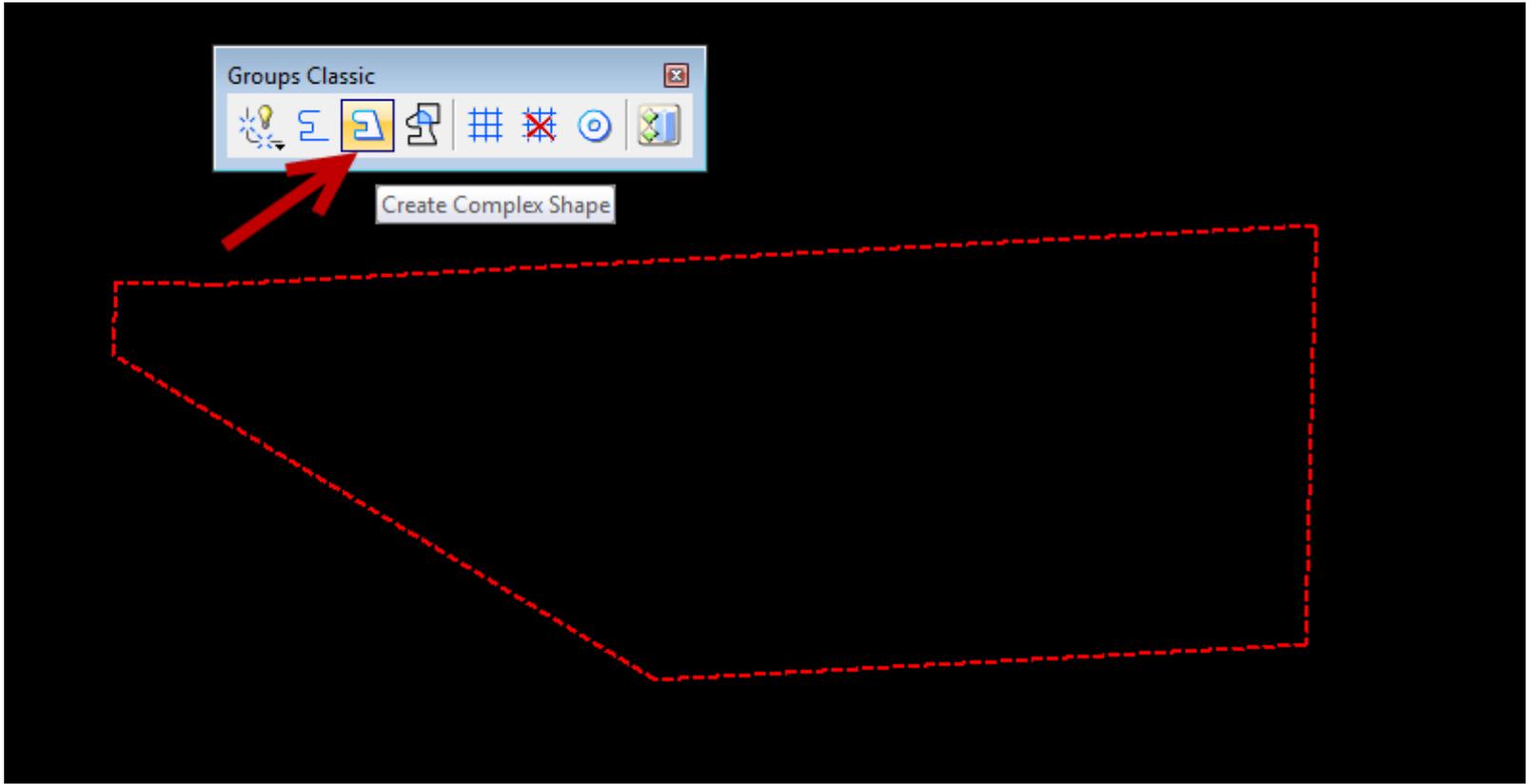
Name	Number	Description
Alignment	401	GIS: Created/Promoted Centerline/Baseline/Digitized Alignment
ExcessParcel	404	GIS: Created/Promoted Excess Parcel
FeeSimpleParcel	406	GIS: Created/Promoted Fee Simple Take Parcel (100s)
ParentTrackParcel	408	GIS: Created/Promoted Parent Track Parcel (Existing)
LicenseParcel	410	GIS: Created/Promoted License Agreement Parcel (900s)
PerpEaseParcel	412	GIS: Created/Promoted Perpetual Easement Parcel (800s)
TempEaseParcel	414	GIS: Created/Promoted Temporary Easement Parcel (700s)
RightOfWayLine	416	GIS: Created/Promoted Right of Way Lines (After Acquisition)
LARightOfWayLine	418	GIS: Created/Promoted Limited Access Right of Way Lines (After Acquisition)
SurplusParcel	420	GIS: Created/Promoted Surplus Property Parcel

After the parcels are visualized from the D & C Manager, now what?

# ***PROCESSING PARCEL LINE WORK***



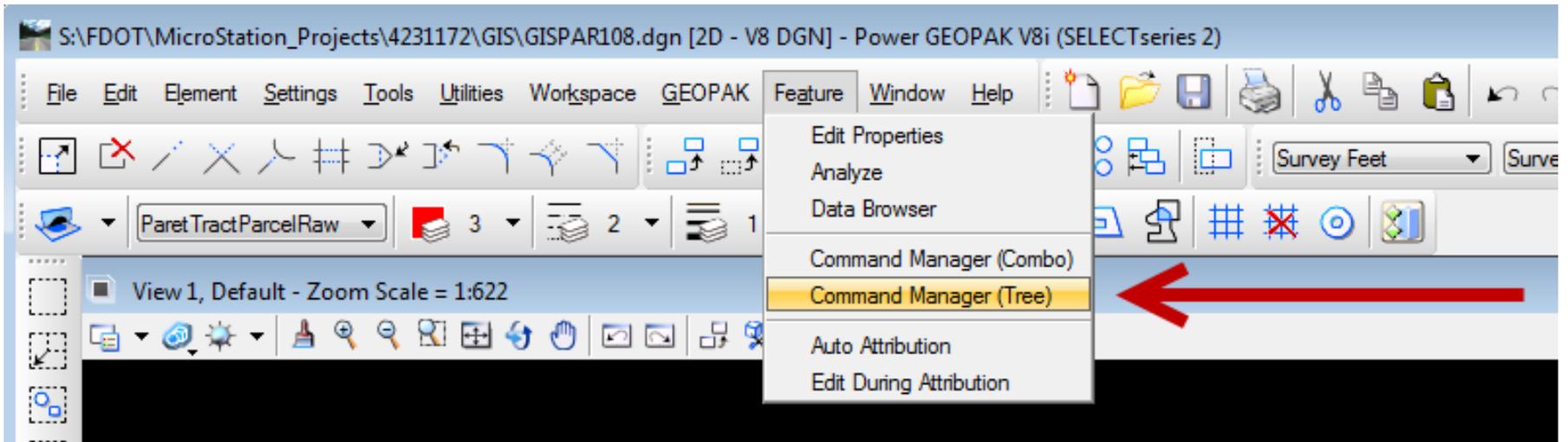
TempEaseParcelRaw  
FeeSimpleParcelRaw



Command Manager

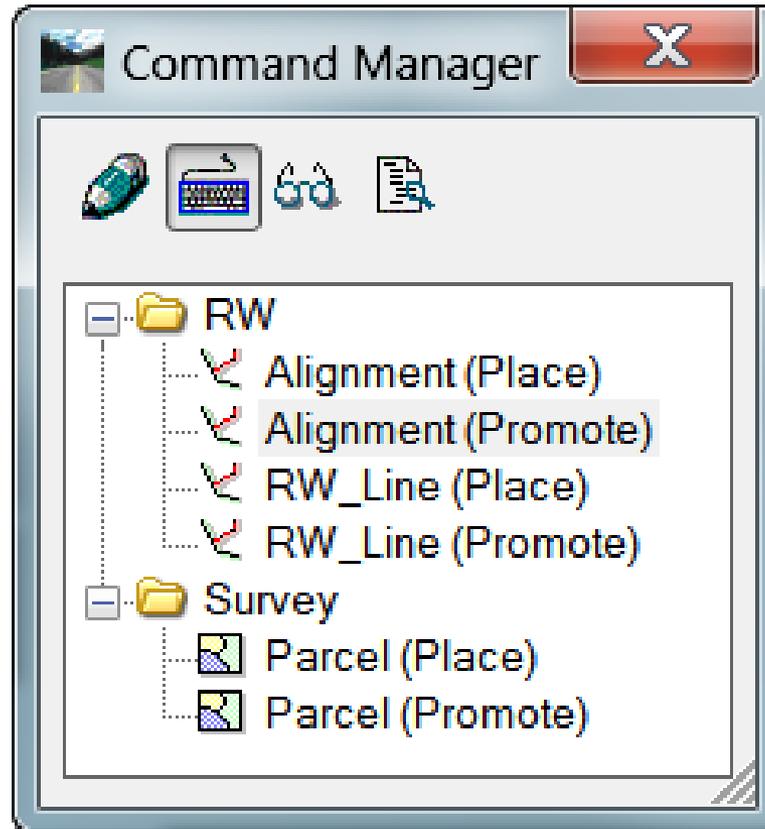
# ***INTEROPERABILITY TOOLS***

# Feature Menu



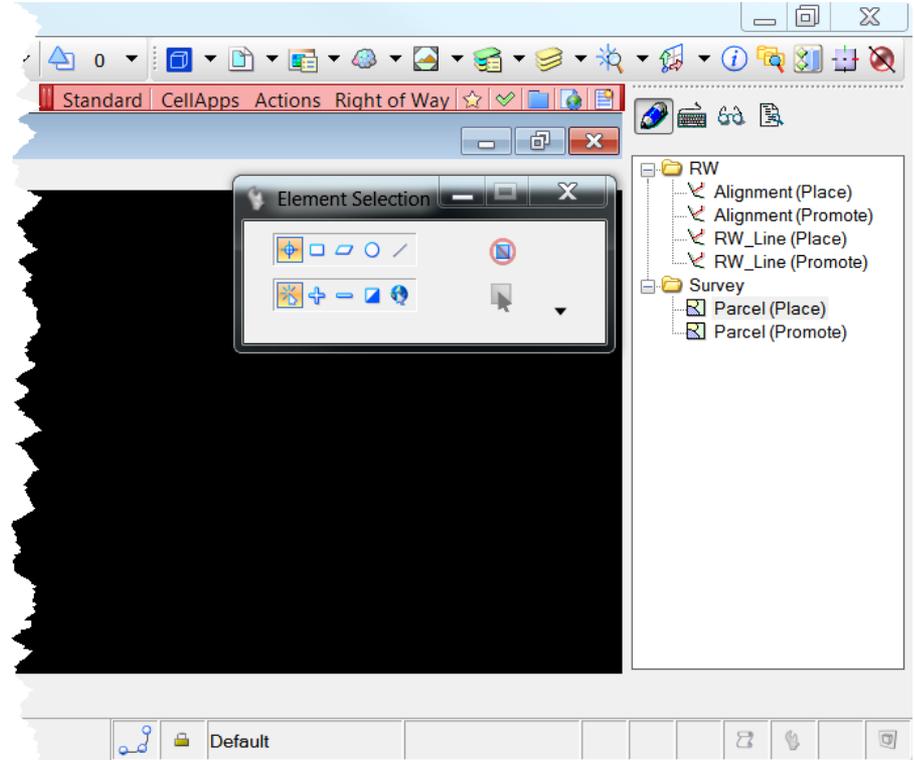
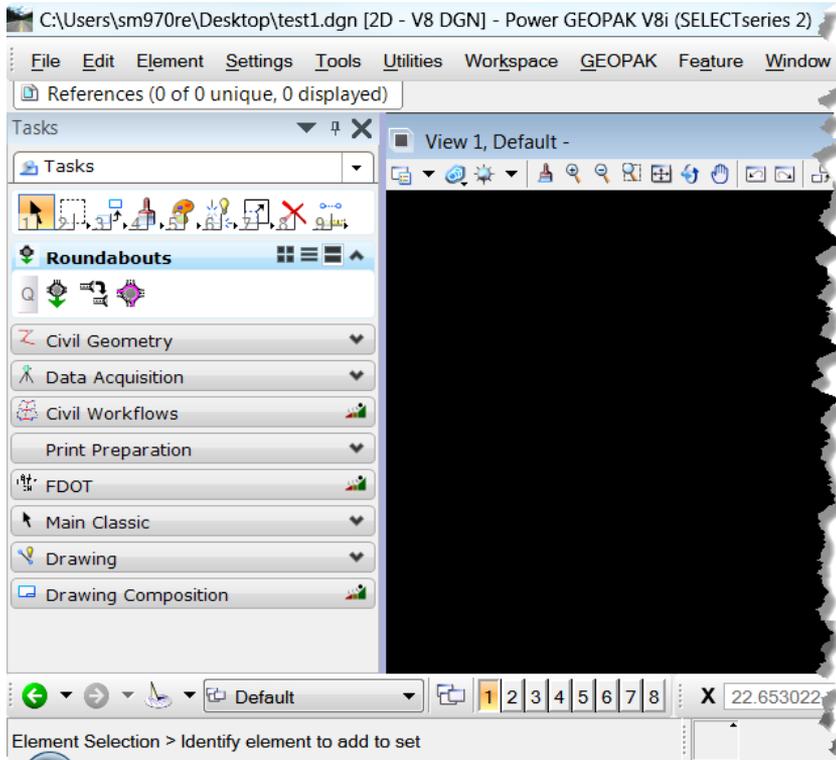
# Command Manager

Tree



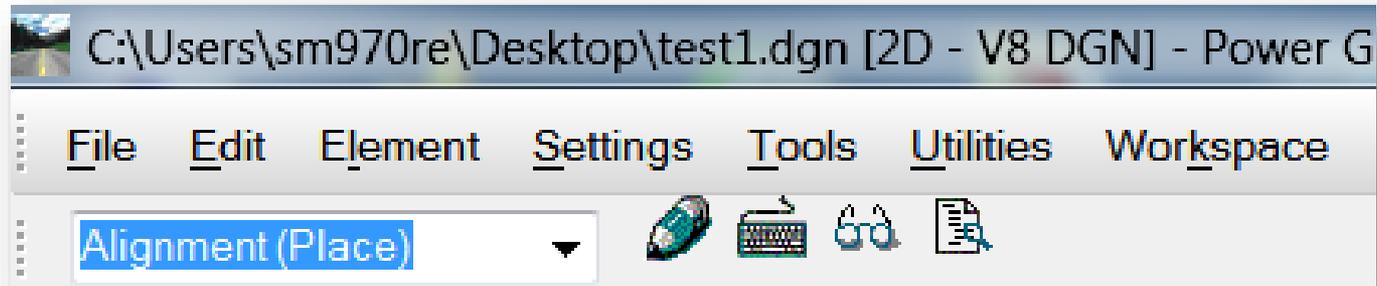
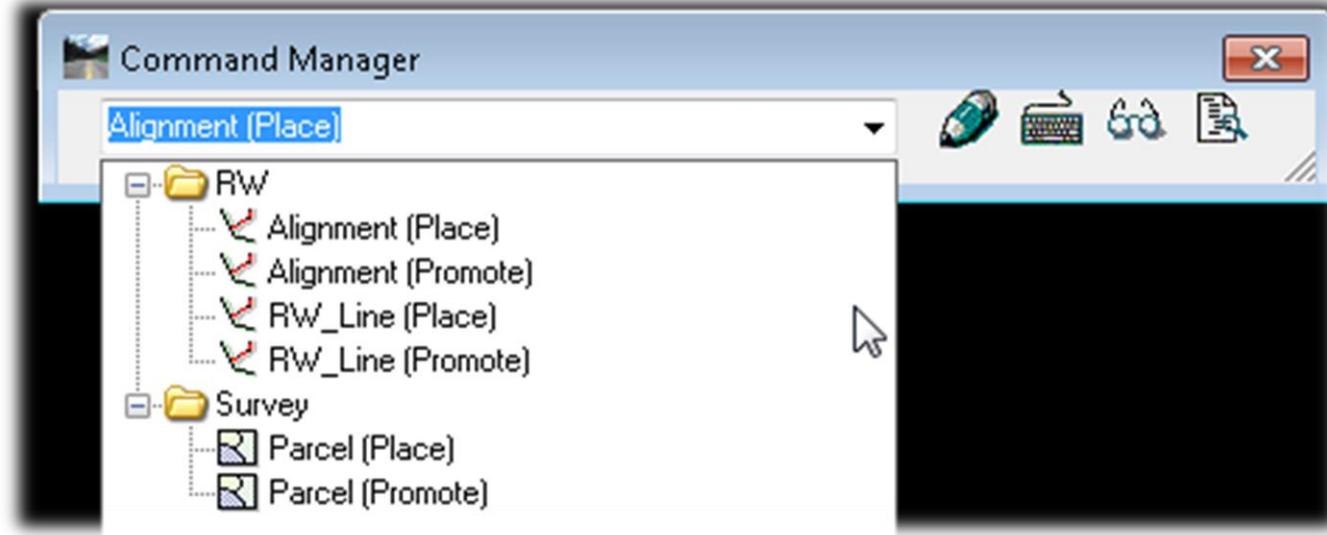
**Note: Commands are categorized by discipline in this example, but could be categorized/organized in other ways.**

# Command Manager



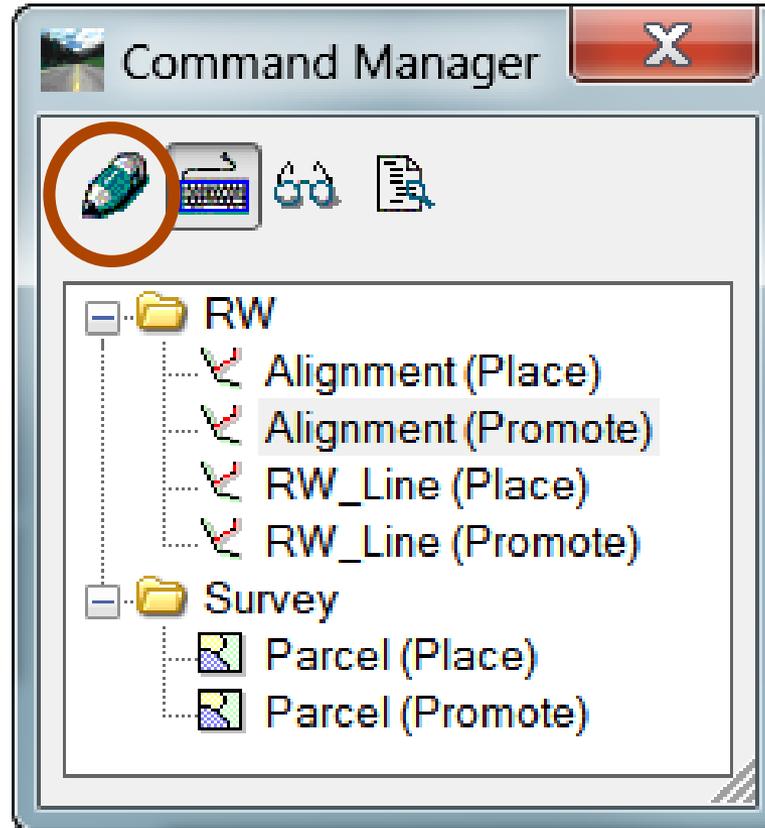
# Command Manager

Combo Box



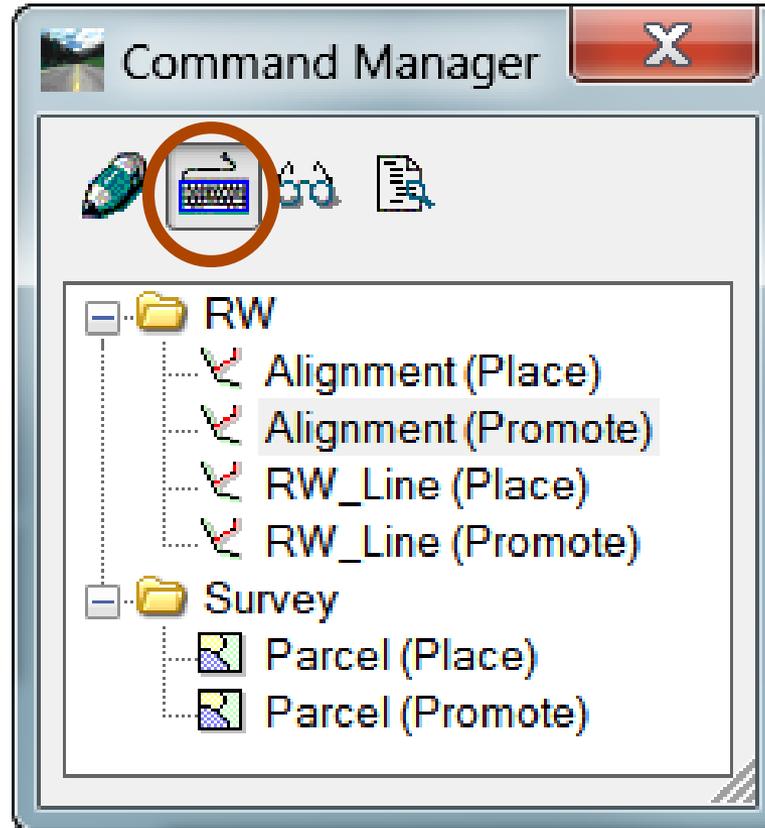
# Command Manager

Place

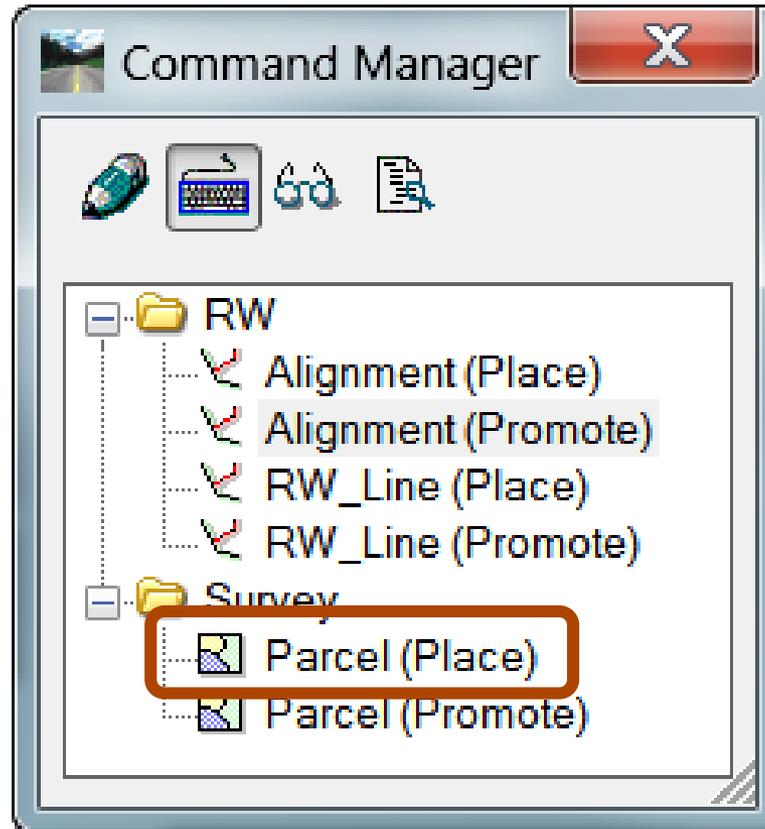


# Place

Edit



# Parcels



Place Parcel

District: 1

County: Charlotte

FPID #:

Road Number/Name:

Parcel Type: Parent

Take Type:

Right of Way Type:

Property Appraiser ID Number:

Date Of Acquisition: Jun -04-14

ORBandPage:

Owner:

Grantee:

FDOT Parcel ID:

Federal Aid Number:

Section:

Township:

Range:

Apparent Access:

Access Road:

Category:

Appraised Value:

Use Encumbrances

Description:

Comments:

Command Manager

- RW
  - Alignment (Place)
  - Alignment (Promote)
  - RW\_Line (Place)
  - RW\_Line (Promote)
- Survey
  - Parcel (Place)
  - Parcel (Promote)

Y 10.748289

# Parcels

## Place/Create/Edit

**Place Parcel**

District: [Dropdown]  
County: [Dropdown]  
FPID #: [Text]  
Road Number/Name: [Text]  
Parcel Type: [Parent] [Dropdown]  
Take Type: [Dropdown]  
Right of Way Type: [Dropdown]

Property Appraiser ID Number: [Text]  
Date Of Acquisition: [Text]  
ORBandPage: [Text]

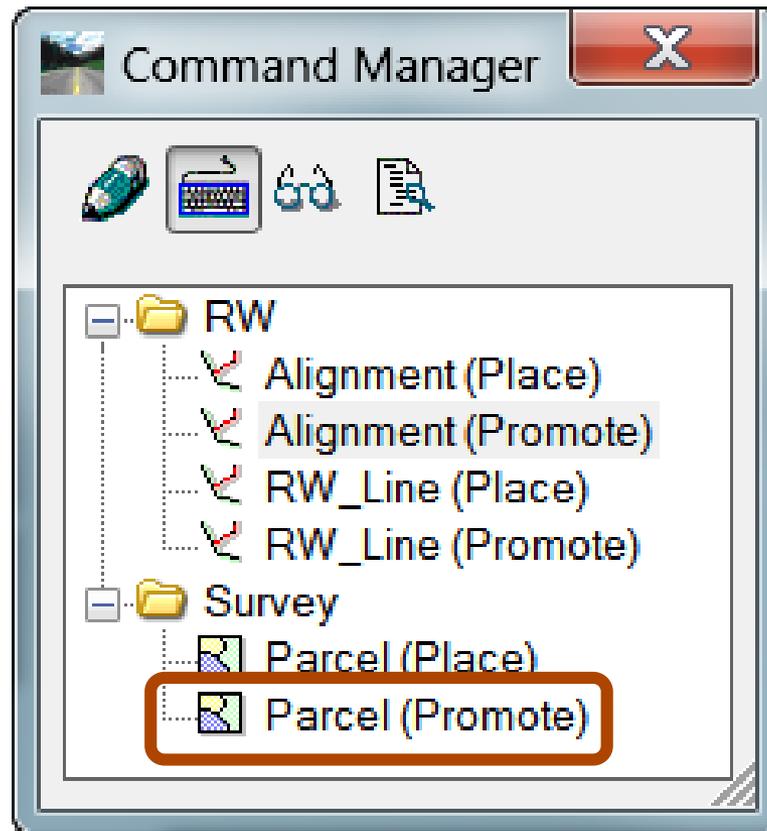
Owner: [Text]  
Grantee: [Text]

Parcel ID: [Text]  
Number: [Text]  
Section: [Text]  
Township: [Text]  
Range: [Text]  
Access: [Dropdown]  
Is Road: [Text]  
Category: [Dropdown]  
Bid Value: [Text]

Use Encumbrances

Description: [Text Area]  
Comments: [Text Area]

**Parcel Type Options:**  
Fee Simple  
Jurisdictional Transfer  
Perpetual Easement  
Tempory Easement  
License



# Parcels

## Promote Existing to Parcel

Promote to Parcel

Single Element

Fence

Selection Set

Delete existing element(s) after promote

District:

County:

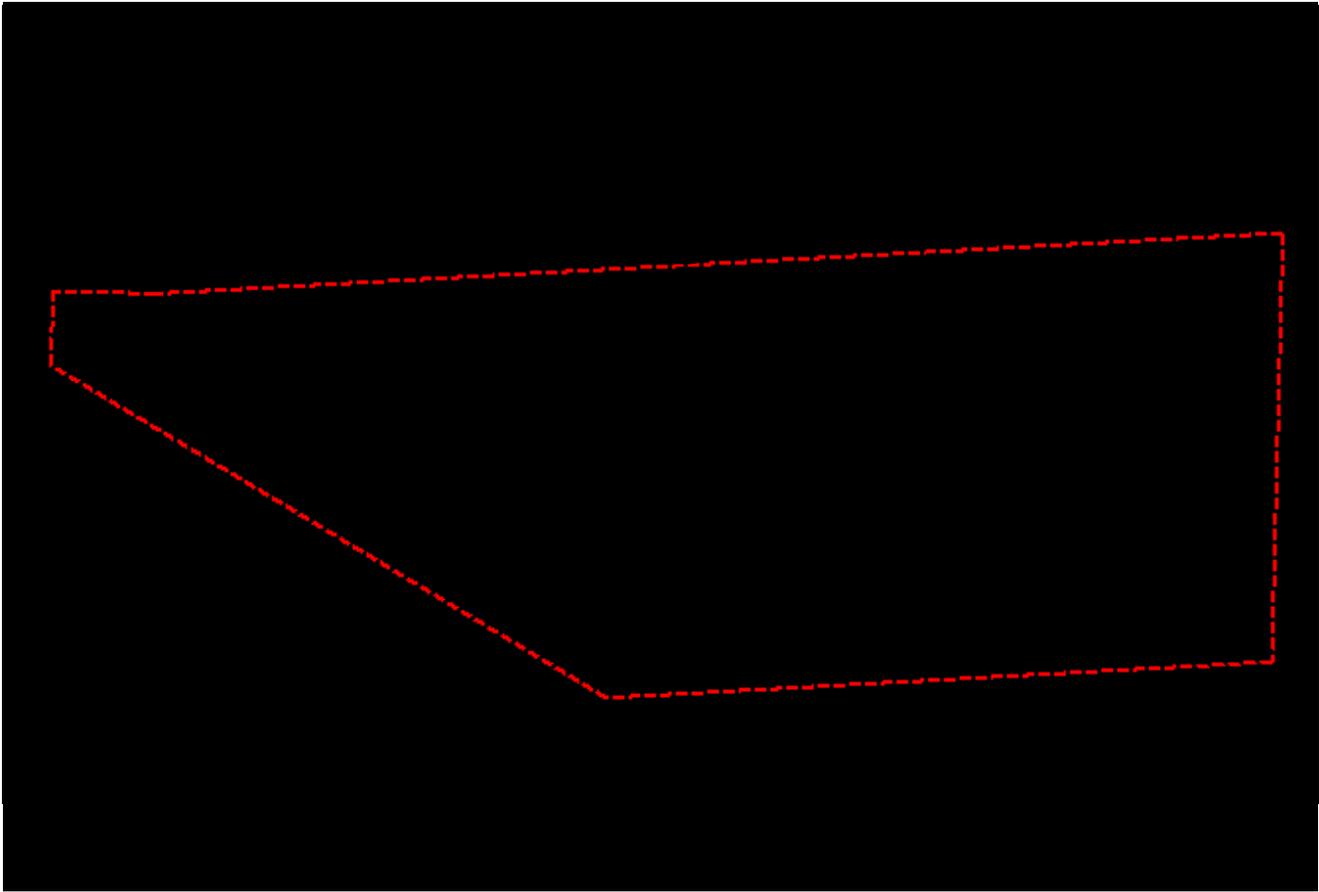
FPID #:

State Road Number:

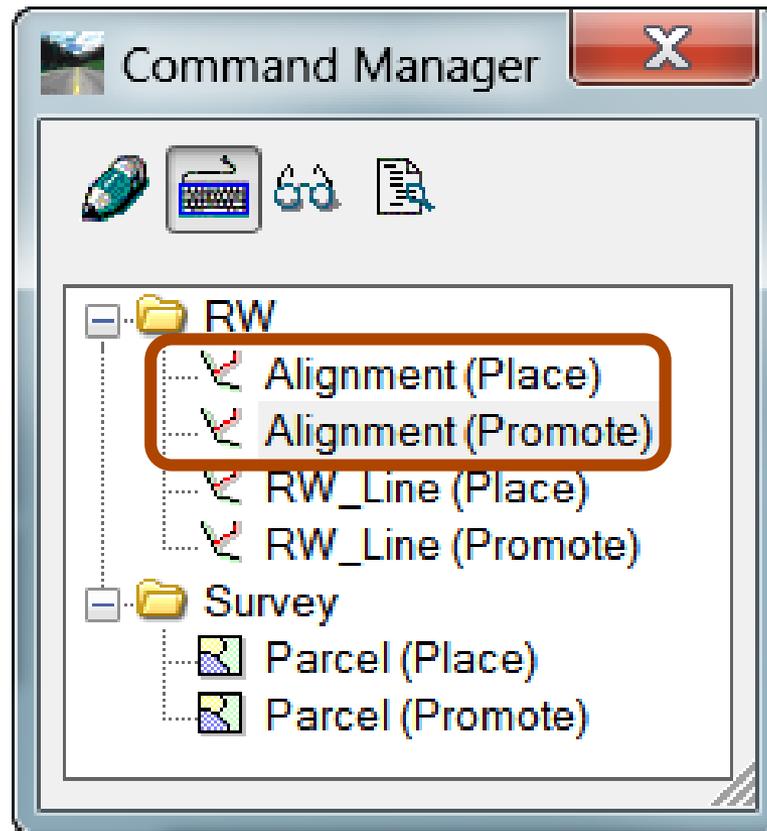
Parcel Type:

Take Type:

Right of Way Type:







# Alignment

Place Alignment

Segment Modes



Allow Offset

Use Offset Distance:

Use Arc Radius:

Use Arc Length:

Revert To Linear  Force Tangent

FPID #:

Road Number/Name:

Alignment Type:

Promote to Alignment

Single Element

Fence

Selection Set

Delete existing element(s) after promote

FPID #:

Road Number/Name:

Alignment Type:

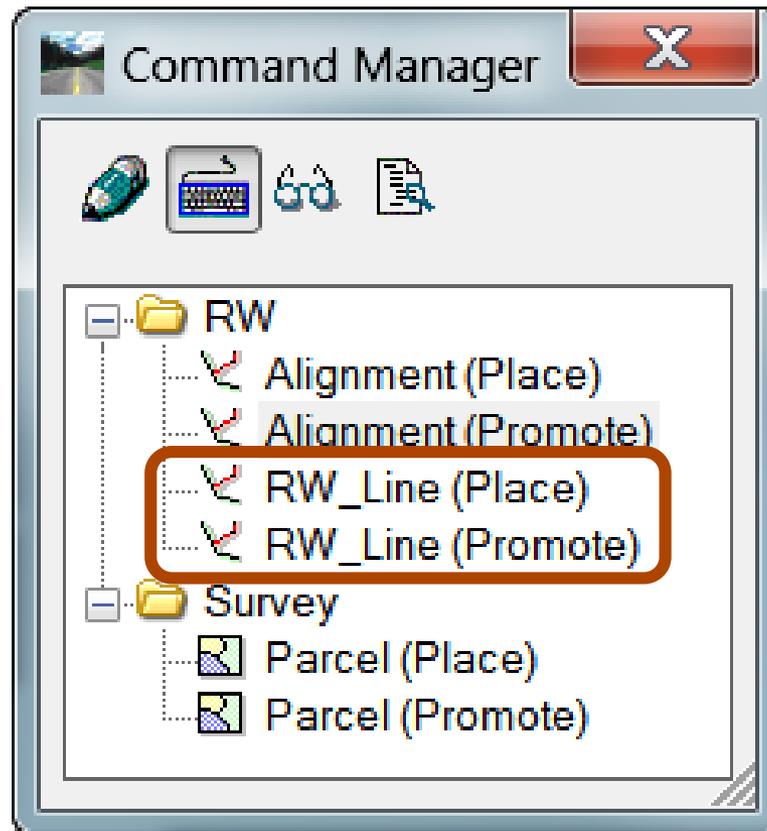
Edit Alignment

FPID #:

Road Number/Name:

Alignment Type:

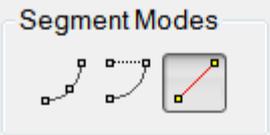
OK Cancel



# Right Of Way Lines

Place RW\_Line

Segment Modes



Allow Offset

Use Offset Distance: 0.000000

Use Arc Radius

Use Arc Length: 539.719765

Revert To Linear  Force Tangent

FPID #:

Road Number/Name:

Right OfWay Type:

Right of Way  
Limited Access Right of

Promote to RW\_Line

Single Element

Fence

Selection Set

Delete existing element(s) after promote

FPID #:

Road Number/Name:

Right OfWay Type:

Right of Way  
Limited Access Right of

Edit RW\_Line

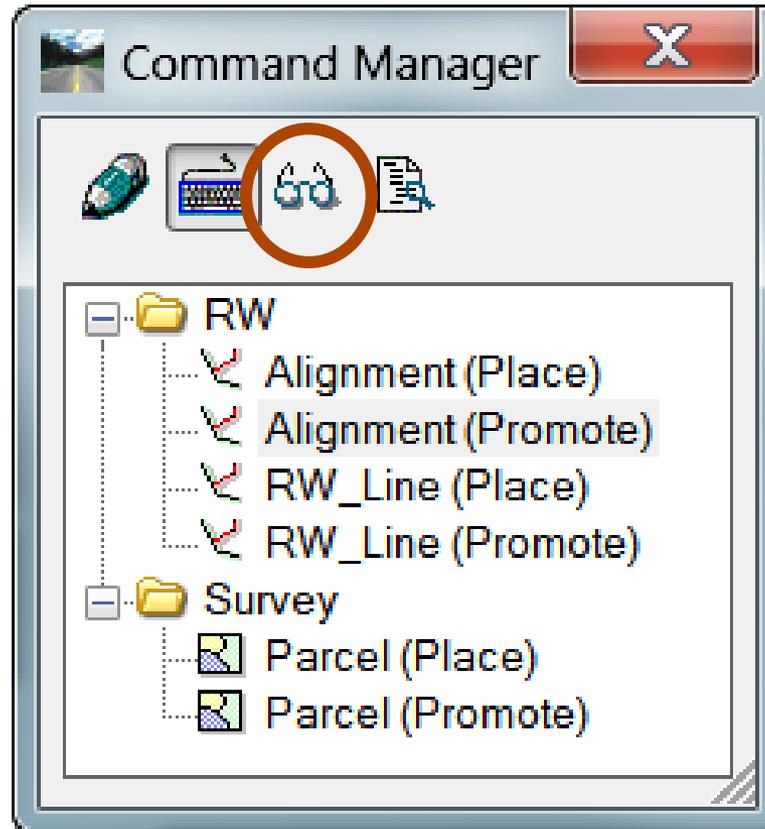
FPID #:

Road Number/Name:

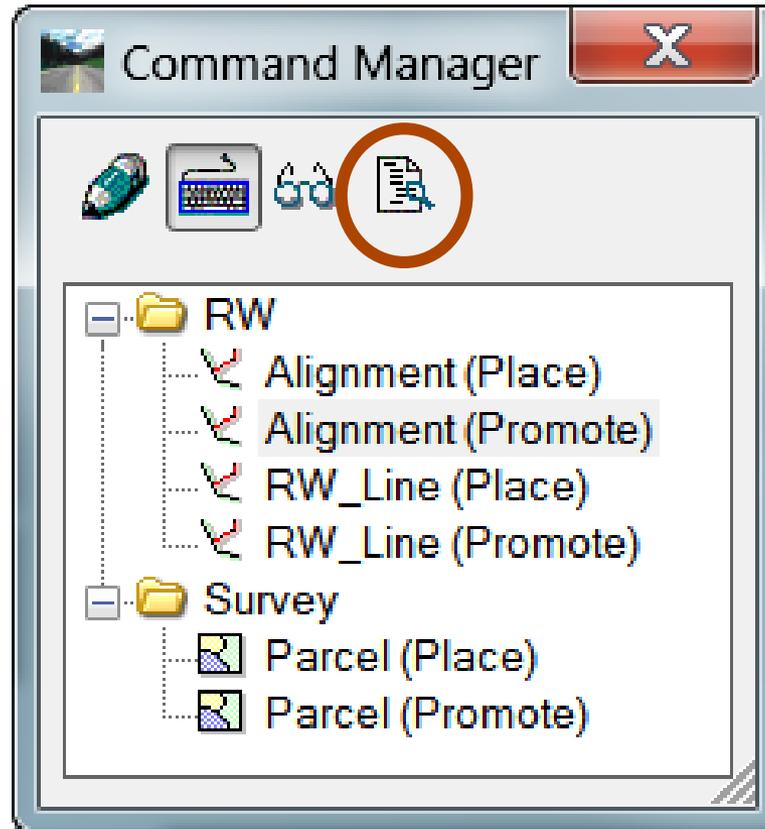
Right OfWay Type:

OK Cancel

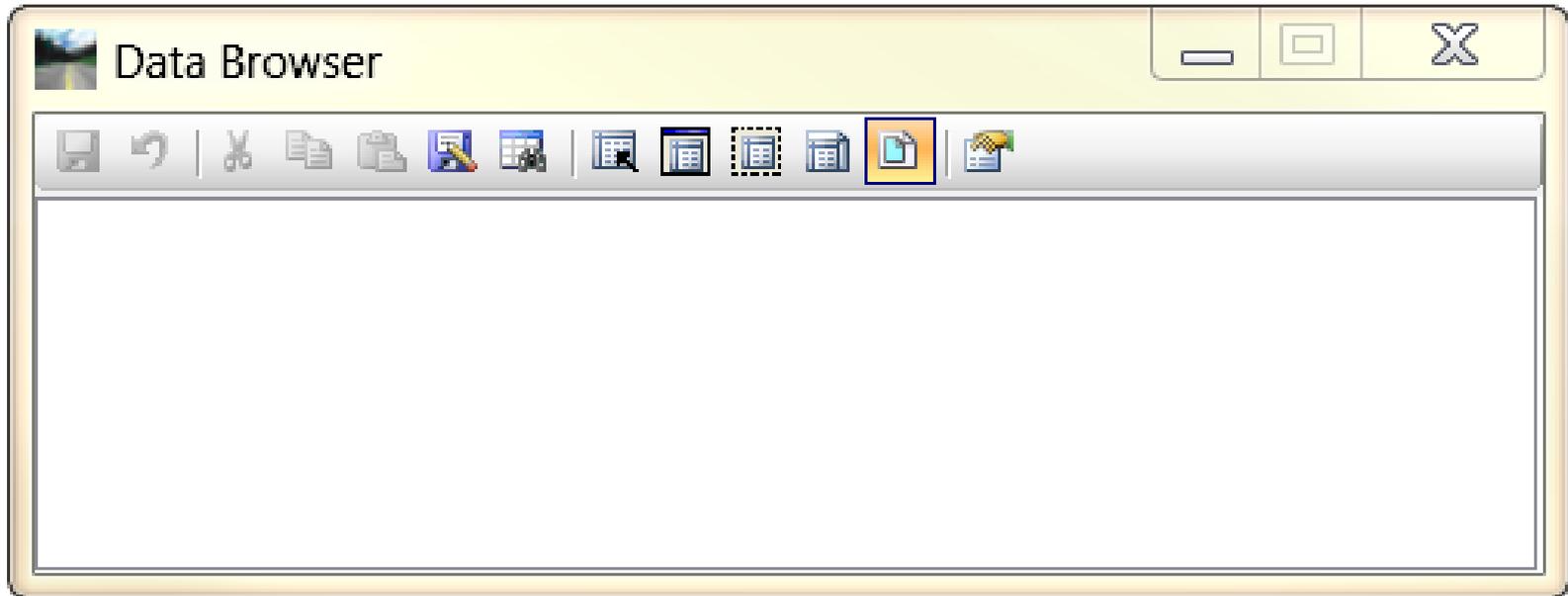
# Analyze



# Data Browser



# Data Browser



# Data Browser



Save Changes

Undo Changes

Cut

Copy

Paste

Save As

Find

Load Selection

Load View

Load Fence

Load All

Load Reference Files

Zoom Preferences

# Data Browser

The screenshot shows the 'Data Browser' window with a toolbar and a table. The 'Alignment' tab is highlighted with a red box. The table contains three rows of data with columns for 'Geometry\_Length' and '809'.

	Geometry_Length	809
▶ 423117-2	1529.336734	809
423117-2	3199.996592	809
423117-2	10616.573588	809

Row: 1 of 3

# Data Browser

The screenshot shows the Data Browser window with the 'Alignment' tab selected. The table displays the following data:

FPID	SR_Num	Geometry_Length
423117-2	809	1529.336734
423117-2	809	3199.996592
423117-2	809	10616.573588

Row: 1 of 3

The screenshot shows the Data Browser window with the 'RW\_Line' tab selected. The table displays the following data:

FPID	State	LimitedAccessR...	Geometry_Length
4231172-1	Existing	False	1582.408585
4231172-1	Existing	False	101.080938
4231172-1	Existing	False	2037.278863
4231172-1	Existing	False	613.365641
4231172-1	Existing	False	1263.892192
4231172-1	Existing	False	69.413234
4231172-1	Existing	False	1584.335687

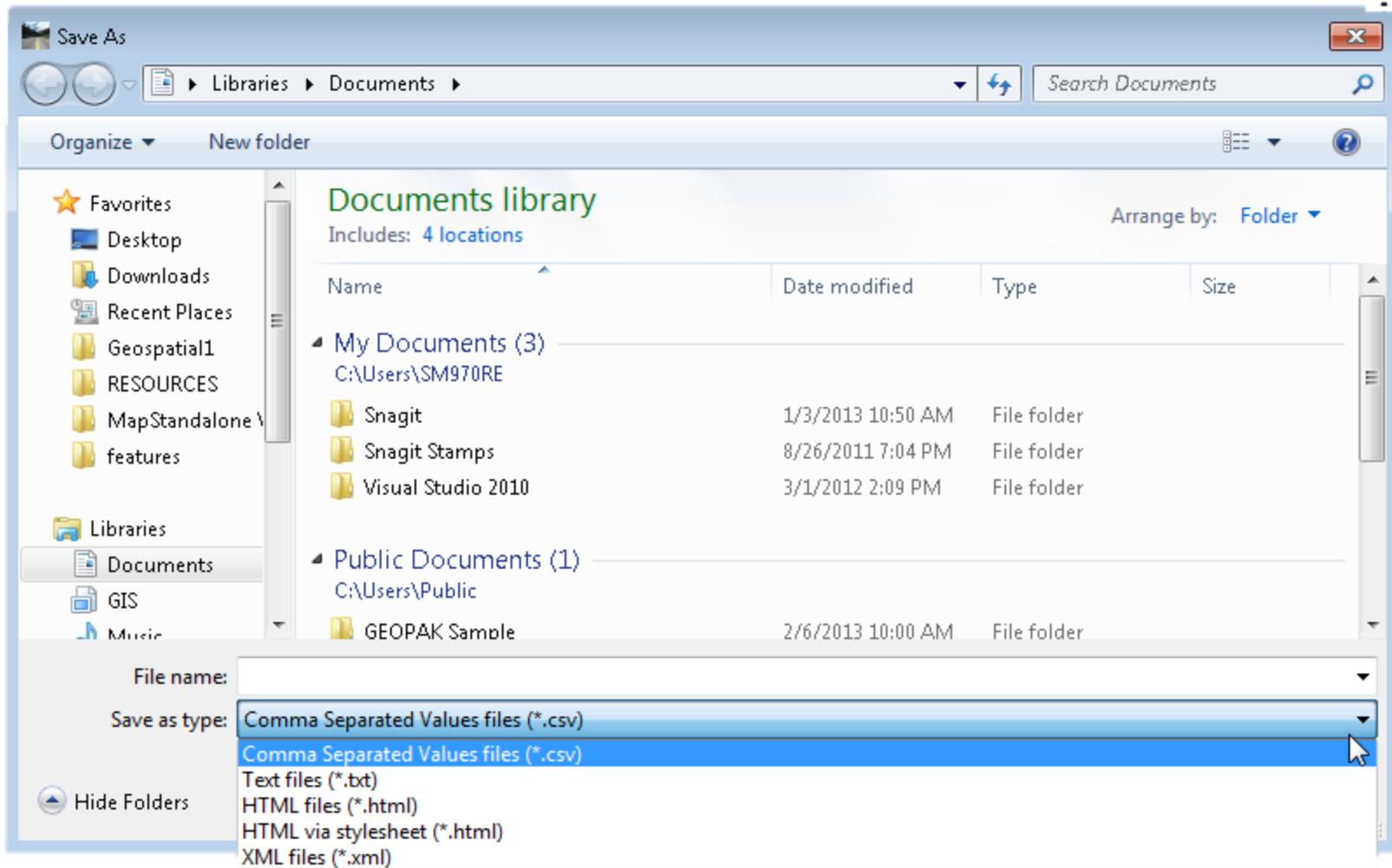
Row: 1 of 7

The screenshot shows the Data Browser window with the 'Parcel' tab selected. The table displays the following data:

District	County	FPID	State Road Nu...	Type	Take Type	Right of Way Ty...	Property Apprais...	Date Of Acquisit...	Official Rec
4	Palm Beach	4231172	809	Take	Right of Way	Fee Simple			09000/507
4	Palm Beach	4231172	809	Take	Right of Way	Tempory Easement			09000/508
4	Palm Beach	4231172	809	Parent			0042431301001...		25547/867
4	Palm Beach	4231172	809	Take	Right of Way	Fee Simple			09000/0508
4	Palm Beach	4231172	809	Take	Right of Way	Fee Simple			09000/508
4	Palm Beach	4231172	809	Parent			00-42-43-25-02-0...		23277/115
4	Palm Beach	4231172	809	Take	Right of Way	Tempory Easement		11/18/2013	09000/504
4	Palm Beach	4231172	809	Take	Excess				09000/508
4	Palm Beach	4231172	809	Parent			0042431301001...		26136/1439
4	Palm Beach	4231172	809	Parent			7442432400000...		
4	Palm Beach	4231172	809	Parent			7442432400000...		14576/1609
4	Palm Beach	4231172	809	Take	Right of Way	Tempory Easement			09000/500
4	Palm Beach	4231172	809	Take	Right of Way	Perpetual Easem...			09000/505

Row: 1 of 34

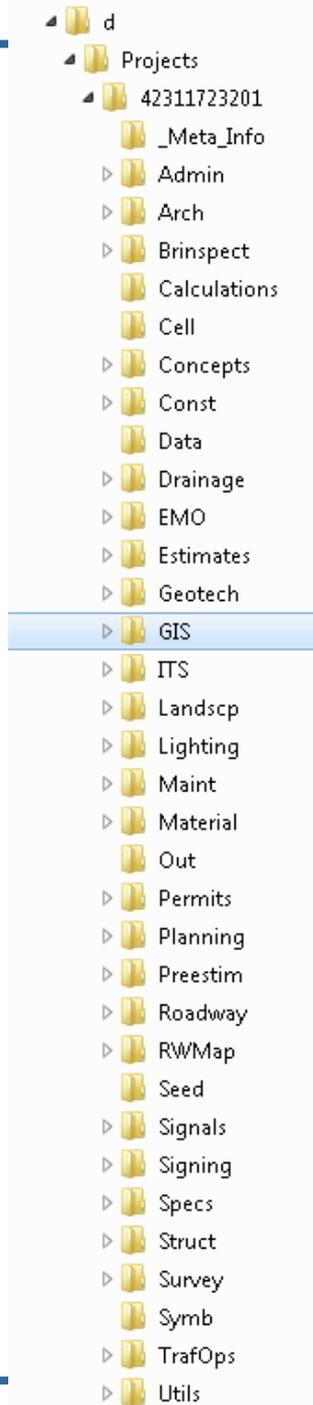
# Data Browser



Where does this fit into my project?

Everything GIS no matter the discipline will go into a single GIS folder that will be added to the project template.

That way as more features are added they will all be contained in a single area.



# GIS File Names

**GIS** **PAR** ###

Shows this is  
a GIS file

Shows this is  
a Parcel

The three digit  
FDOT Parcel  
Number

# GIS File Names

**GISRWDT##**

Shows this is  
a GIS file

Shows this is  
a Right of  
Way Line

Sequence  
Number

# GIS File Names

**GISALG###**

Shows this is  
a GIS file

Shows this is  
an Alignment

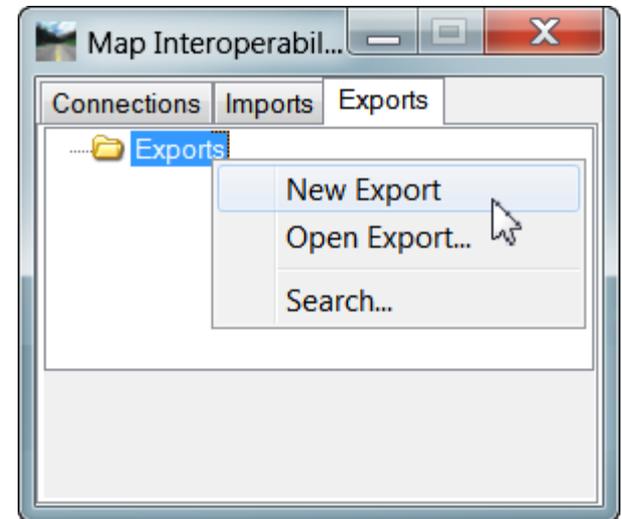
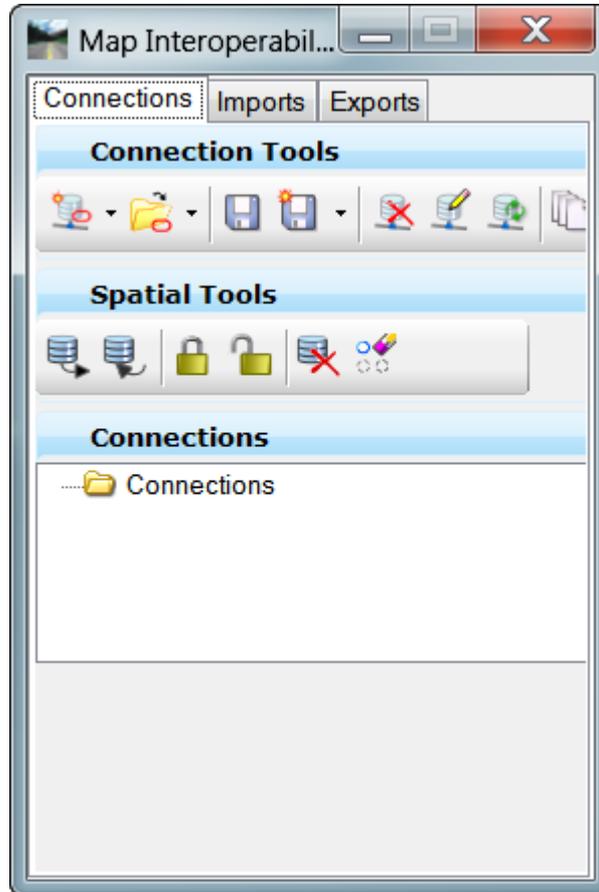
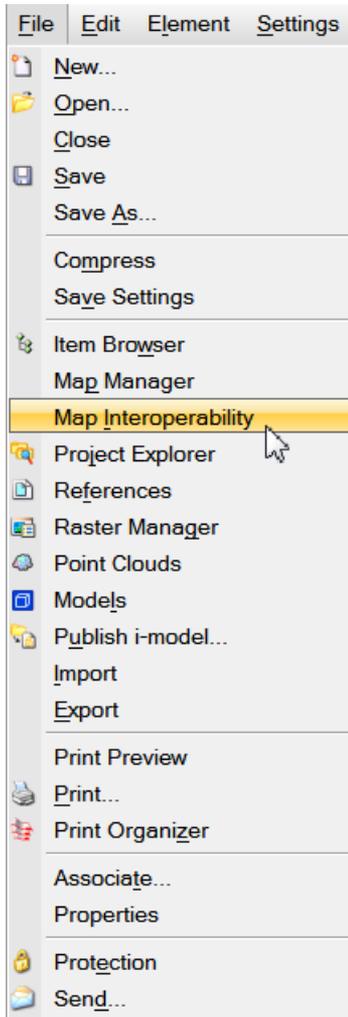
Sequence  
Number

## *GIS File Names*

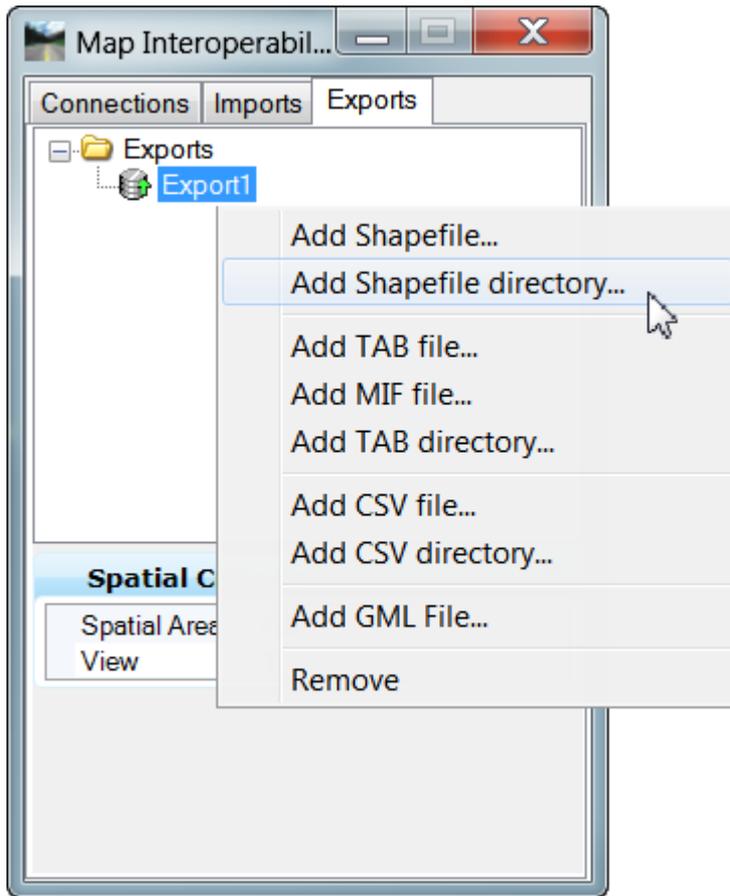
# GISMASTER

Shows this is a GIS file      All parcels, Alignments and Right of Way lines referenced into a single file

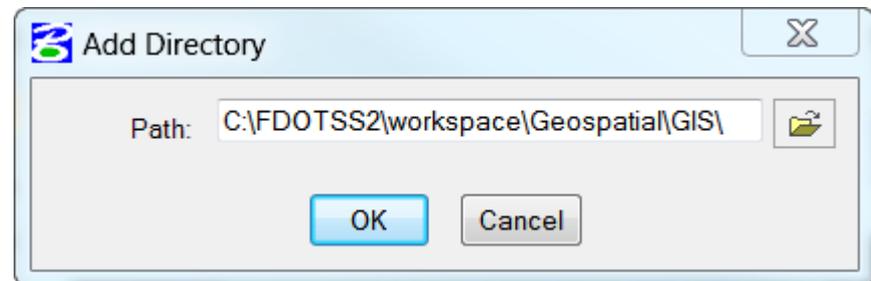
# Export to GIS



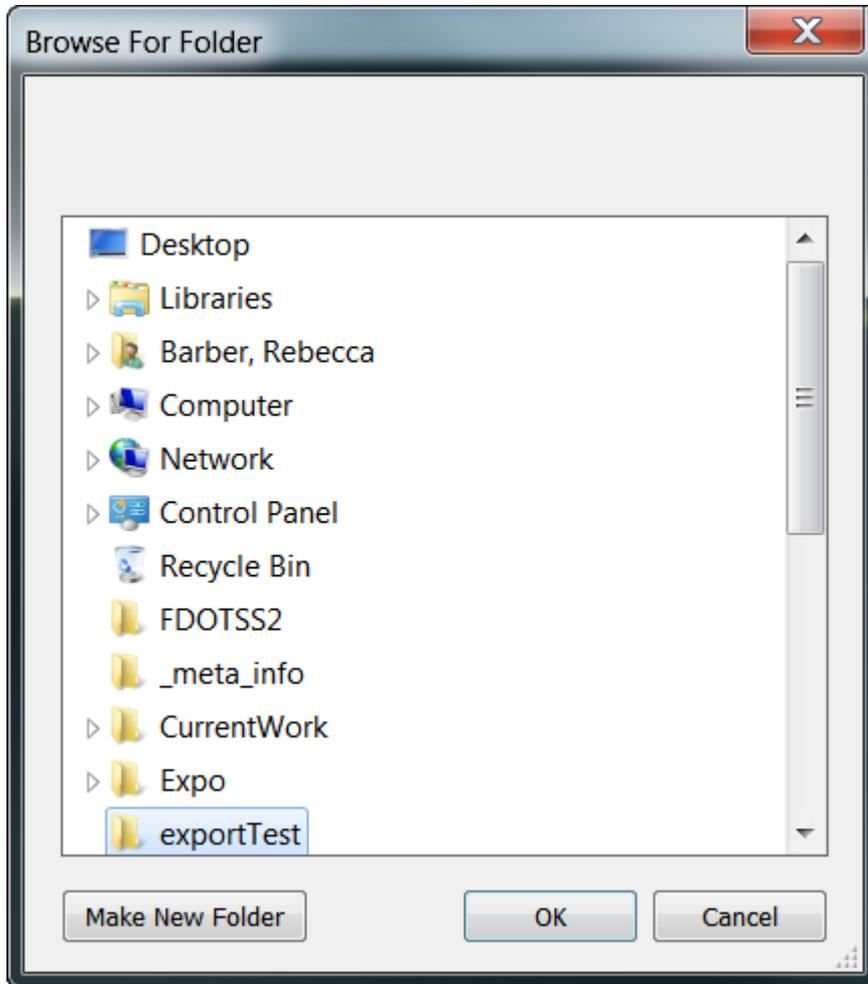
# Export to GIS



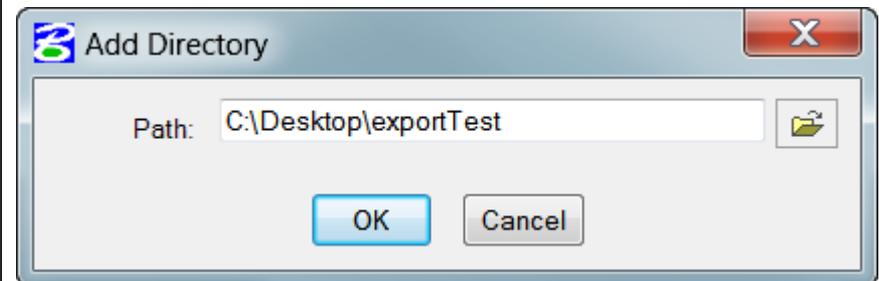
Default location:  
C:\FDOTSS2\workspace\Geospatial\GIS\



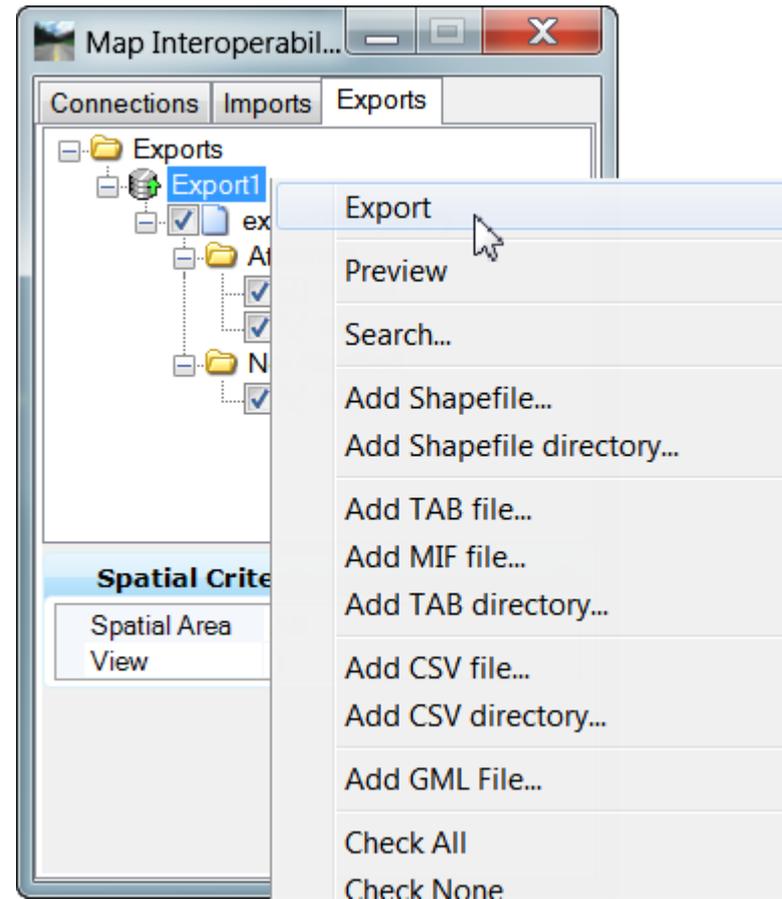
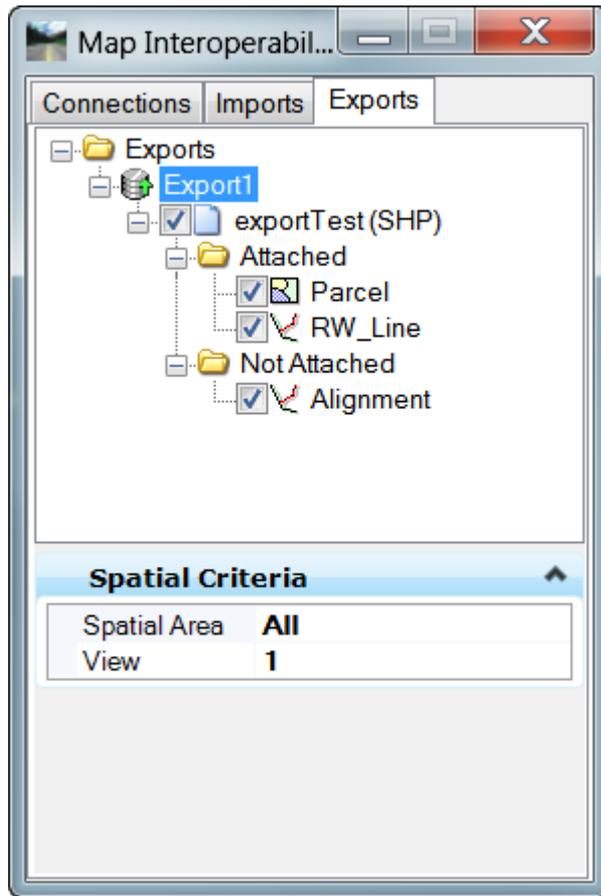
# Export to GIS



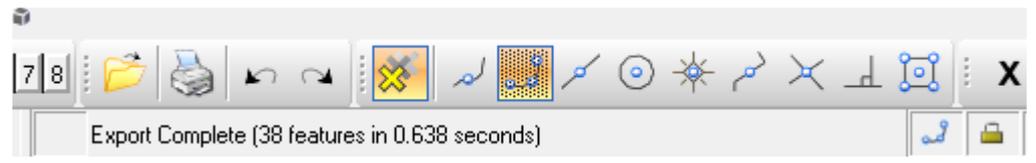
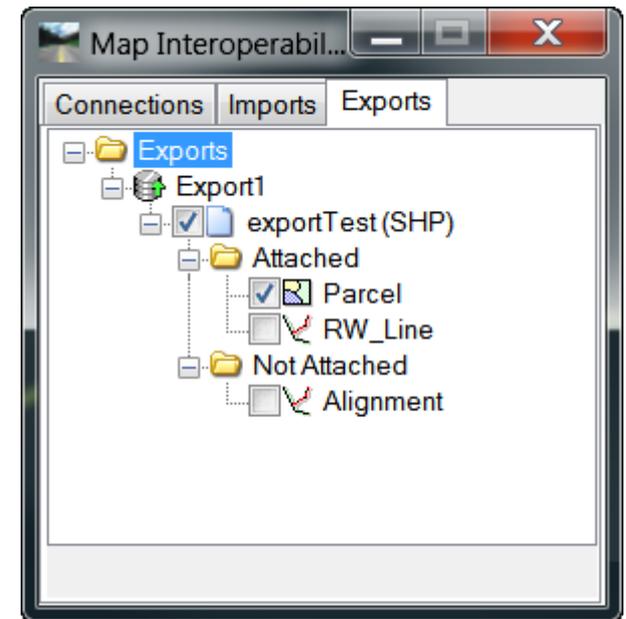
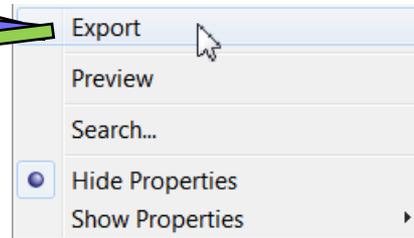
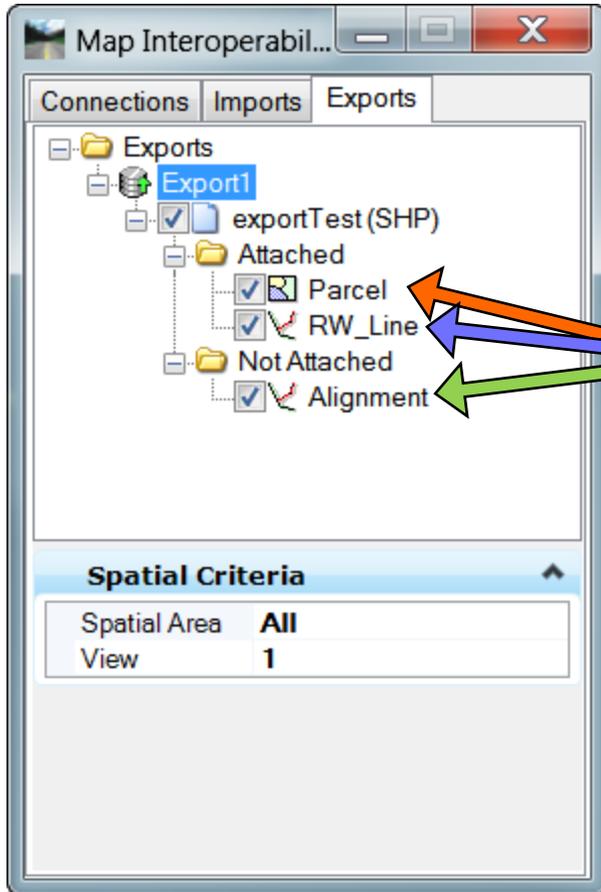
Now location is:  
Desktop\exportTest



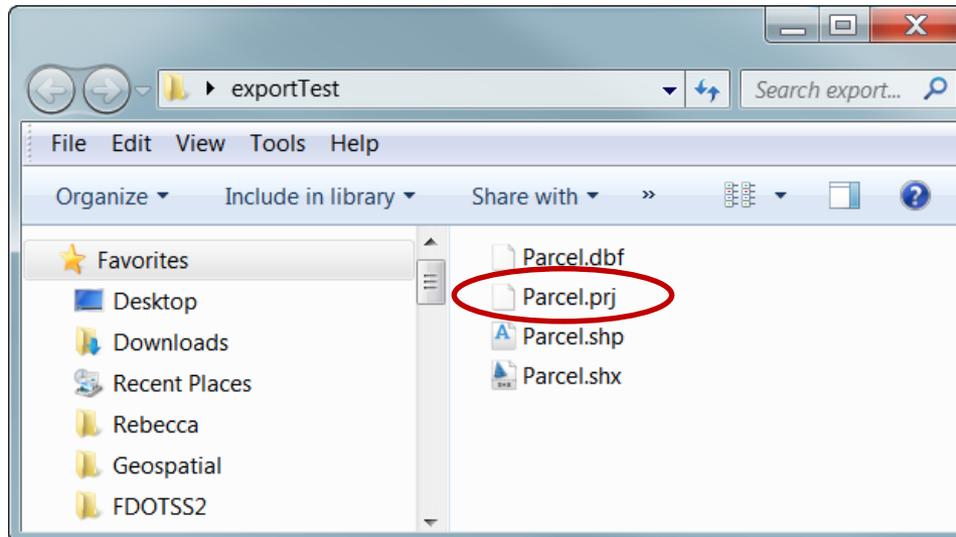
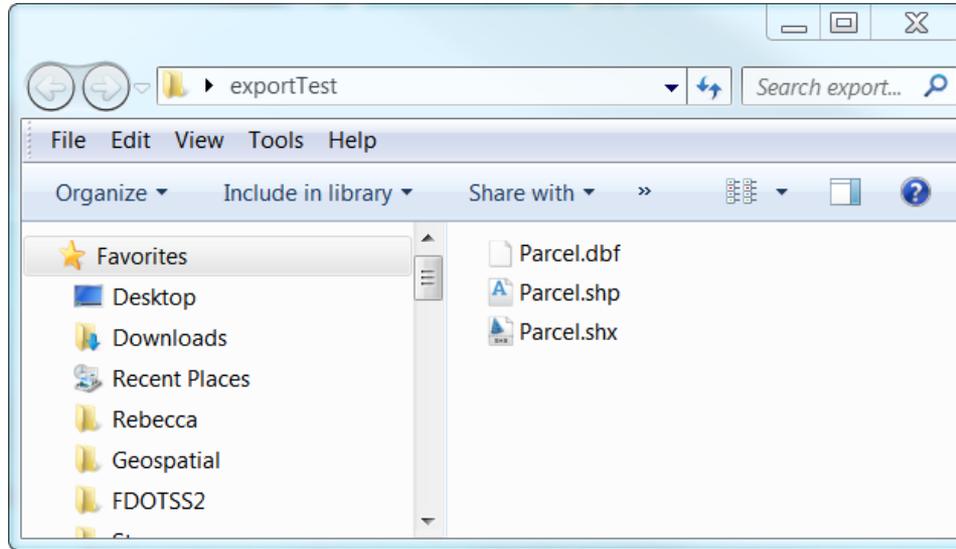
# Export to GIS



# Exporting Options

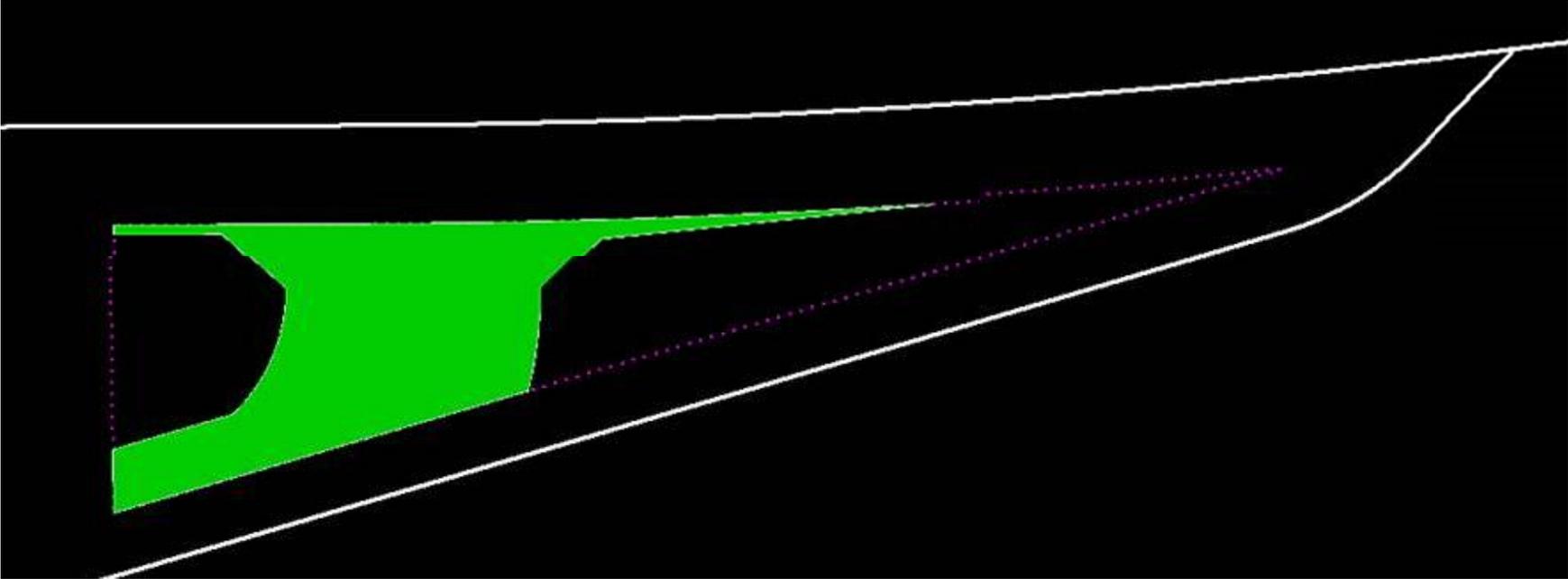


# Shapefiles

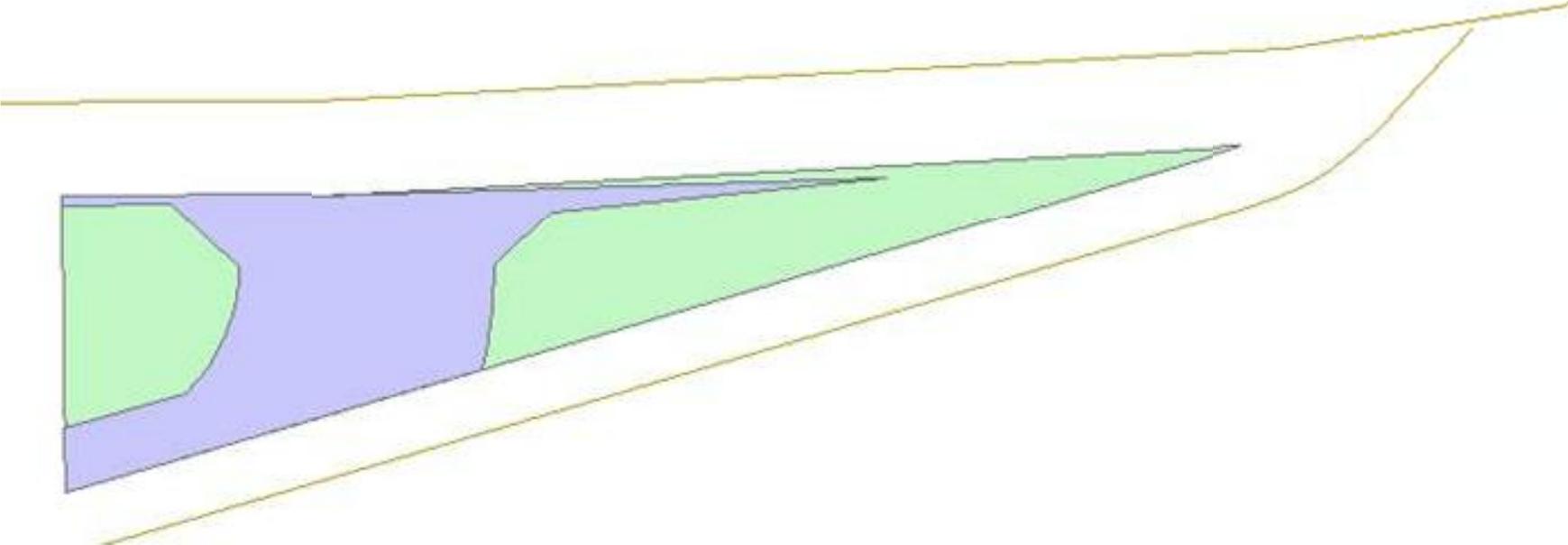


# ***BETA TESTING***

# Curve Problem



# Curve Problem



# Curve Problem: Bentley

- ❑ Regarding the curves in GIS. This has been an issue for years and is one of the fundamental differences between CAD and GIS.
- ❑ ESRI now supports arcs but the transfer tool (SHP) does not.
- ❑ However, in the next release of Map (*Bentley release not FDOT release*) and eventually the civil tools, the ESRI file geodatabase will be supported. That format does support arcs and some level of curves so this whole process should be simplified.

*(This is referring to the exportation of the line work into shape files)*

# Curve Solution

- ❑ Modify the FDOT SS2 Workspace
  - ✓ Add a variable to the end of the GIS.txt
- ❑ Default value is 0.0 = no stroking = Curve Problem
- ❑ A value of 1 will produce stroking but not enough to produce a curve in GIS
- ❑ Lowering the variable means that the stroking would increase but also increases file size
- ❑ Currently not worried about the files size
- ❑ So variable is set to 0.1 (No more Curve Problem)

# Missing Data/Null Values

District	County	FPID	RD_Num	Type	Take Type	ROWType	DateOfAcqu	FDOT_Parce	FederalAid	Section	Township	Range	ApparentAc	AccessRD	AppraisedV	Geometry_A	Geometry_P
1	Hardee	123	SR 636	Parent			5/21/2014								0	46048.829516	1427.663361
1	Hardee	123	SR 636	Take	Right of Way	Fee Simple	5/21/2014	0100		3	34S	26E	Public Road	SR 64	100000	21321.771343	1227.434062

Navigation: 1 (0 out of 2 Selected)  
Parcel New Parcel Old

District	County	FPID	RD_Num	Type	Take Type	ROWType	DateOfAcqu	FDOT_Parce	FederalAid	Section	Township	Range	ApparentAc	AccessRD	AppraisedV	Geometry_A	Geometry_P
1	Hardee	123	SR 636	Parent			<Null>	0							0	0	0
1	Hardee	123	SR 636	Take	Right of Way	Fee Simple	<Null>	0		3	34S	26E		SR 64	0	0	0

Navigation: 0 (0 out of 2 Selected)  
Parcel New Parcel Old

Fixed by Bentley Map SS3 V08.11.09.107

Release expected for the FDOT load is this summer

# Working Units

- Do not change the Working Units in the MicroStation file that are set to Survey Feet, because it **WILL** make a difference when projecting to State Plane Coordinates.

Design File Settings

Category

- Active Angle
- Active Scale
- Angle Readout
- Axis
- Color
- Data Acquisition
- Element Attributes
- Fence
- Grid
- Isometric
- Locks
- Snaps
- Stream
- Views
- Working Units

Modify Working Unit Settings

Linear Units

Format: MU

Master Unit: Survey Feet Label: FT

Sub Unit: Survey Hundredths Label: HU

Accuracy: 0.123456

Custom

Advanced Settings

Resolution: 304800 per Distance Survey Foot

Working Area: 5.59683E+006 Miles

Solids Area: 2.66877 Miles

Solids Accuracy: 1.40911E-007 Survey Feet

Edit

Focus Item Description

Select category to view.

OK

Cancel

# Summary

## ❑ Process/Workflow

- ✓ Develop a process/workflow allowing both CADD and GIS environments to interchange/share data

## ❑ This information could become:

- ✓ A one stop shop for public records requests, and
- ✓ Allow for better collaborative decision making tools with stakeholders,
  - whether through technical (data only in the form of tables or queries) or having a GIS/Thematic look (for display)

# Summary

- ❑ Enhanced querying activities to quickly support FDOT's consultants, partners, and customers
- ❑ Knowing what is located within the ROW by going to **ONE** place, with links to:
  - ✓ maps,
  - ✓ aerials,
  - ✓ documents and
  - ✓ metadata
- ❑ Resulting in cost savings in the areas of:
  - ✓ record management,
  - ✓ staff hours, and
  - ✓ informed decision making

# Questions:



## Contact:

Florida Department of Transportation  
Surveying and Mapping Office  
Tallahassee, FL

Rebecca Barber

Geographic Mapping Specialist

[rebecca.barber@dot.state.fl.us](mailto:rebecca.barber@dot.state.fl.us)

(850) 414-4389

Copy of presentation at:

<http://www.dot.state.fl.us/officeofdesign/innovation/>