



**PROWEST**  
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GIS CONSULTING | DATA SERVICES | APPLICATIONS

# Introduction to the Parcel Fabric

Lisa Schaefer

Pro-West & Associates, Inc.

# Parcel Fabric

## Why Parcel Fabric?

**Parcel Workflows**

**New Subdivision from CAD**

- Search For Work Area
- Add the CAD File To The Map
- Select CAD Lines For The Subdiv...
- Copy And Paste Selected Lines
- Construct Subdivision Parcel
- Create Parcel Reminders
- Update Attributes
- Select CAD Lines For The Lot Par...
- Copy And Paste Selected Lines
- Construct Lot Parcels
- Name Lot Parcels
- Update Attributes And Parcel Typ...
- Create Tax Parcels
- Name Tax Parcels
- Update Attributes
- Annotate Tax Pl...
- Update Annotat...

**Parcel Workflows**

- Merge Parcels
- Parcel Split: Metes And Bounds
- Parcel Split: Area Description
- Parcel Split: Parent Parcel
- New Subdivision
- New Subdivision from CAD
- Boundary Line Adjustment

Run

Use the Find dialog box to search for and zoom to your work area.

You can search by parcel identification number or by address under the Location tab.

Click Proceed.

1

**Feature Class Properties**

2 Coordinate System: NAD83 / North Carolina State Plane (NAD83) - FIPS 3140 (US Feet)

3

Update these fields when a feature is created

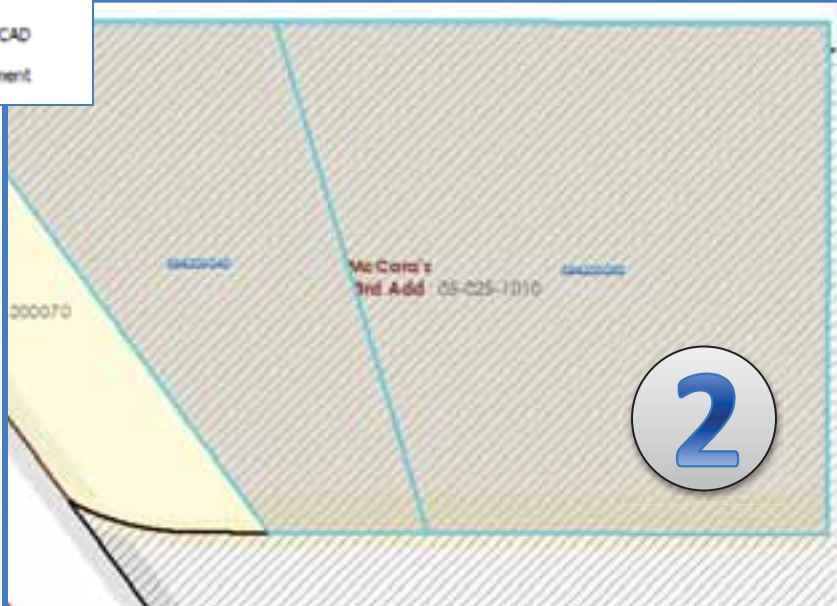
Create Field: CreatedBy  
Create Date Field: NonDate

Update these fields when a feature is edited

Edit Field: ModifiedBy  
Edit Date Field: ModifiedDate

Record Store In:  UTC  Database View

The existing dates in create date and edit date fields will be considered to be in the specified time zone. UTC is recommended if there are no dates. See the on-line help for more information.



**Adjust Coordinates**

Report values larger than

Settings threshold: 5000 Seconds  
Distances threshold: 6.300 US Survey Feet

Adjustment rule if a computed residual is more than three times the above values

Line points offset: 3.838 US Survey Feet  
Close points within: 8.636 US Survey Feet

Report type: Standard report

4

Use the points (recommended)  
 Bend lines to fit line points that are offset beyond 3.381 US Survey Feet

Use dependent lines in adjustment

Post processing

Force line points onto lines if within 6.338 US Survey Feet

Straighten road centerlines  
4.338 US Survey Feet

Run

**Attributes**

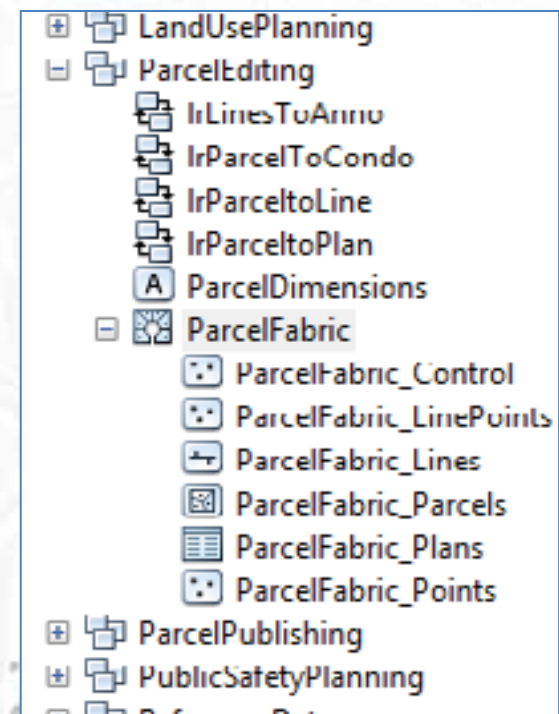
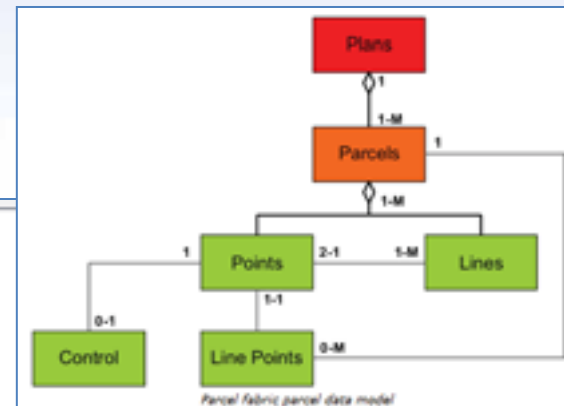
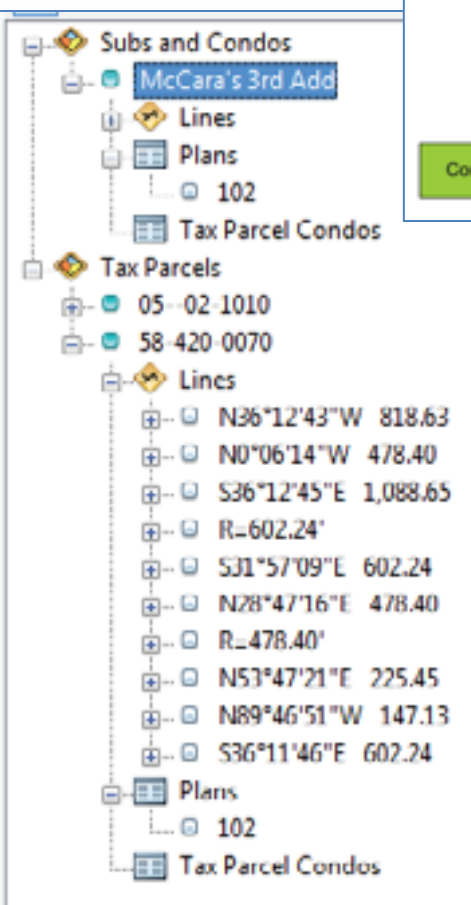
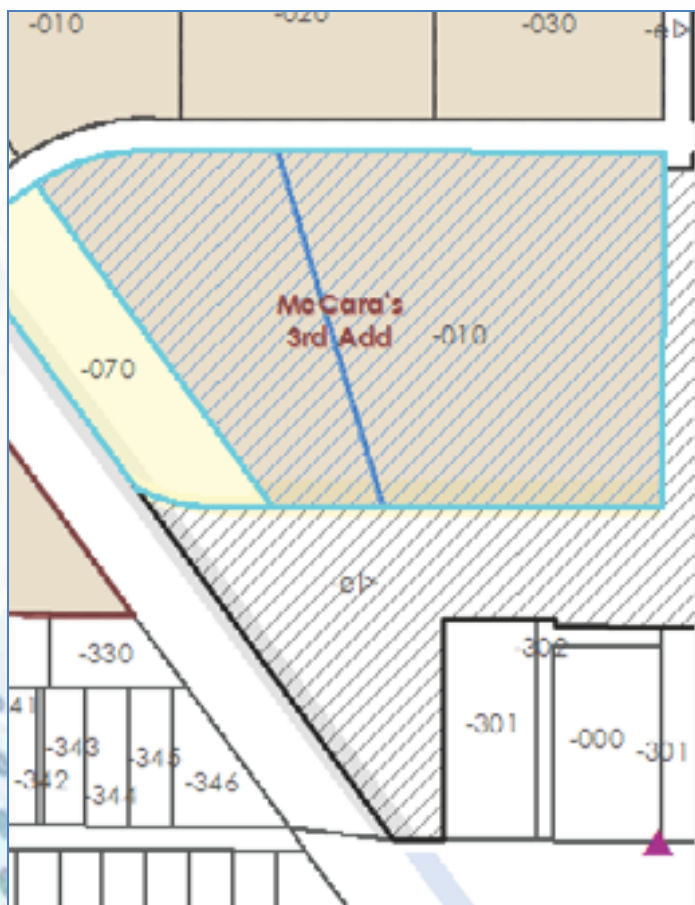
Historic Parcels

- 584200040
- 584200050

Parcel Identification Number	584200050
Reason Parcel Retired	Retired Tax Parcel
Parcel Type	Tax
StatedArea	20.0200814955343
Compiled From Records	No
Historical	1
SystemStartDate	1/31/2013
SystemEndDate	9/18/2013
LegalStartDate	<Null>
LegalEndDate	<Null>
Accuracy	2 - After 1980
CreatedBy	<Null>
Modified By	lchuff
Modification Date	11/31/2013 4:56:43 PM
PlanName	<Null>
Document	<Null>
Comments	PLAT 779

# Parcel Fabric Overview

What is a Parcel Fabric?





# Parcel Fabric Overview

## How is it used?

**Parcel Workflows**

**New Subdivision from CAD**

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- Create Parcel Remainers
- Update Attributes
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- Copy And Paste Selected Lines
- Construct Lot Parcels
- Name Lot Parcels
- Update Attributes And Parcel Typ...
- Create Tax Parcels
- Name Tax Parcels
- Update Attributes
- Annotate Tax Parcels
- Update Annotation Placement

**Run**

Use the **Find** dialog box to search for and zoom to your work area.

You can search by parcel identification number or by address under the **Location** tab.

Click **Proceed**.

**Parcel Workflows**

- Merge Parcels
- Parcel Split: Metes-And-Bounds
- Parcel Split: Area Description
- Parcel Split: Parent Parcel
- New Subdivision
- New Subdivision from CAD
- Boundary Line Adjustment

**Adjust Coordinates**

Report values larger than:

Roundings: minutes: 3.000 Seconds: 0.200 US Survey Feet

Adjustment rule if a computed result is more than three times the above values:

Line points offset: 0.400 US Survey Feet Close points offset: 0.400 US Survey Feet

Report base: Standard report

Use the points (recommended):

Round lines to fit the points that are offset beyond:

3.200 US Survey Feet

Use dependent lines in adjustment:

Post processing:

Parcel line points onto lines if within:

0.200 US Survey Feet

Straighten road centerlines:

0.200 US Survey Feet

**Run** **OK** **Cancel**

Enable editor tracking

Update these fields when a feature is created:

Create Field: **CreatedBy**

Create Date Field: **CreatedDate**

Update these fields when a feature is edited:

Edit Field: **ModifiedBy**

Edit Date Field: **ModifiedDate**

Save if Date is:  UTC  Database Time

The existing dates in create date and edit date fields will be considered to be in the specified time zone. UTC is recommended if there are no dates. See the on-line help for more information.



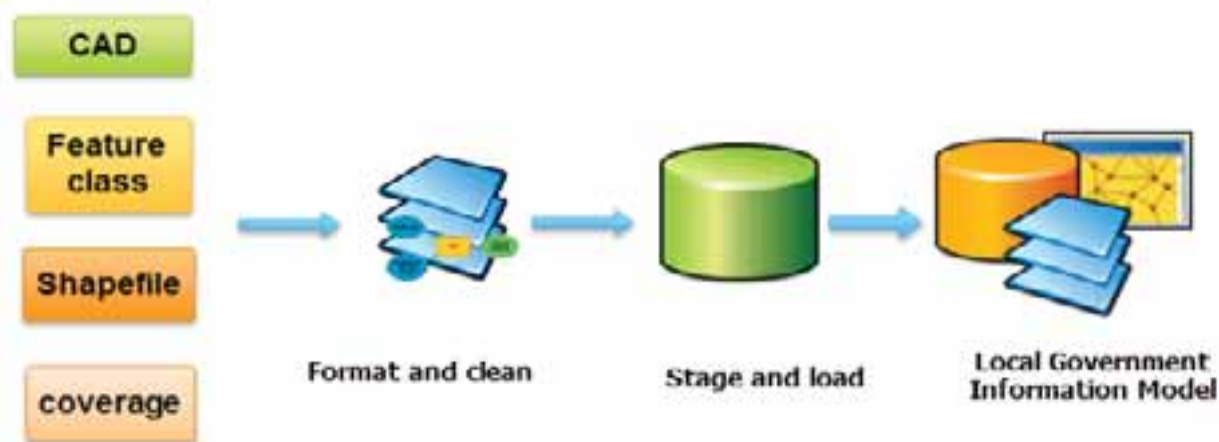
- AdministrativeArea
- AssessmentInformation
- CadastralReference
- ControlCorner
- PLSSBoundary
- PLSSQuarterSection
- PLSSSection
- PLSSTownship
- CapitalPlanning
- CitizenService
- Demography
- ElectionAdministration
- ElectionResults
- Elevation
- EmergencyOperations
- FacilitiesStreets
- FieldCrew
- InfrastructureOperations
- LandUseOperations
- LandUsePlanning
- ParcelEditing
- ParcelPublishing
- Block**
- ConveyanceDivision
- ConveyanceDivisionPoint
- Encumbrance
- OwnerParcel
- SimultaneousConveyance
- TaxMapIndex
- TaxParcel
- TaxParcelPoint
- PublicSafetyPlanning
- ReferenceData

# Migrating to the Parcel Fabric

- Cerebral preparation
- Source data preparation
- Staging preparation
- Target fabric preparation
- Post-load review

# Cerebral Preparation

## 4 Stage Migration Model



Source  
data

'Working'  
source  
data

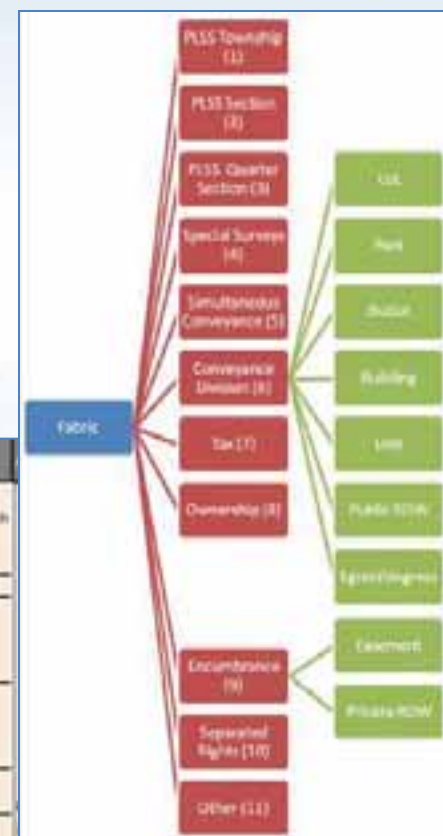
Staging  
data

Target  
Location

# Cerebral Preparation

## Know Your Data & Make Decisions

Feature Class	Original Count	Original Fields	Target Fields	Action	Status	Client Notes	PWA notes:	
Parcels	28,856	RACEL_ID	Delete this one	Add "Name" to staging	Done	My joins are on numeric, but fabric Name field is a string.	Used the PIN field to calc to Name - no dots, just digits and it is currently a text field. Push to Publishing will need to be scripted to handle the text format coming in.	
		PIN	Delete this one	Calc PIN to Name				
		REGION		I need	N/A	Do not need this field		
		EDIT_DATE		ModifyDate	Add to Staging Check the dates are all real dates Field calculate it over	No		Changed & calc'd to <b>ModifyDate</b> to match fabric.
		SECTION			I need	N/A		
		EDWARDS			I need	N/A	- don't think we need to keep these fields	
		RANGE			I need	N/A		
		DOCUMENT		Same	Add to fabric	No		OK
		COMMENTS		Same	Add to fabric	No	Client or PWA?	Will convert right in to the fabric Comments since it's lot, SO
		CALC_ACREAGE		MatchArea	I need	T	An acreage field is always nice to have, another thing to maintain - is there a better way to get acreage utilizing the fabric - UDM?	For GIS acres, the <b>MatchArea</b> field will be used to replace the Acreage field. Deleting perimeter field.
		CALC_PERIMETER			I need	N/A		
		ACCURACY		Accuracy	Review current values - are they correct?	No	I don't think there is anything here... all Null	<b>To be calculated - Done (2)</b>
		HISTORIC			will auto-populate - don't need to load	N/A		
		CALC_AREA			I need	N/A	Do not need these fields	
		STAGING_ID		same	Add to fabric	N/A		
SECT_NUMBE			I need	N/A				
		Type	Add to staging Calc 'T'	No		OK		

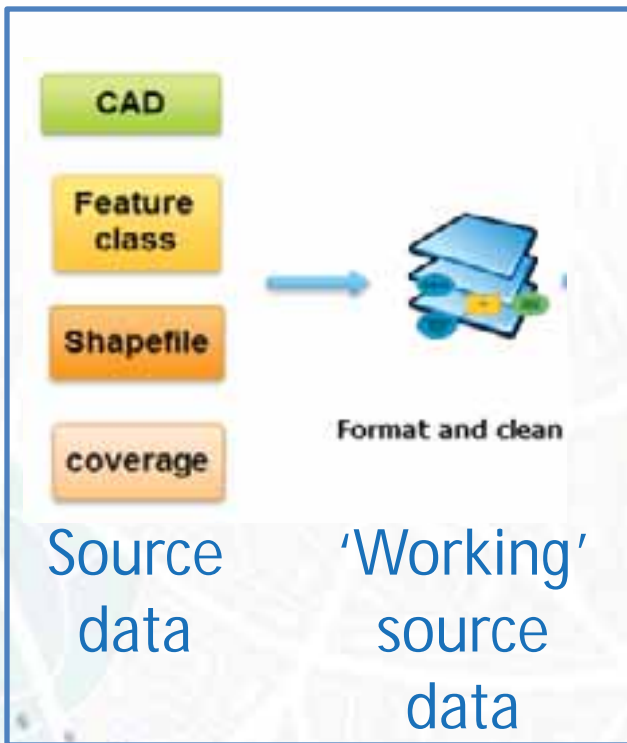


Overlapping parcels in various locations.



# Source to Working Source Data Preparation

## What to migrate?



Code	Description
1	PLSS Township
2	PLSS Section
3	PLSS Quarter Section
4	Special Survey
5	Simultaneous Conveyance
6	Conveyance Division
7	Tax Parcel
8	Ownership
9	Encumbrance
10	Separated Right
11	Other

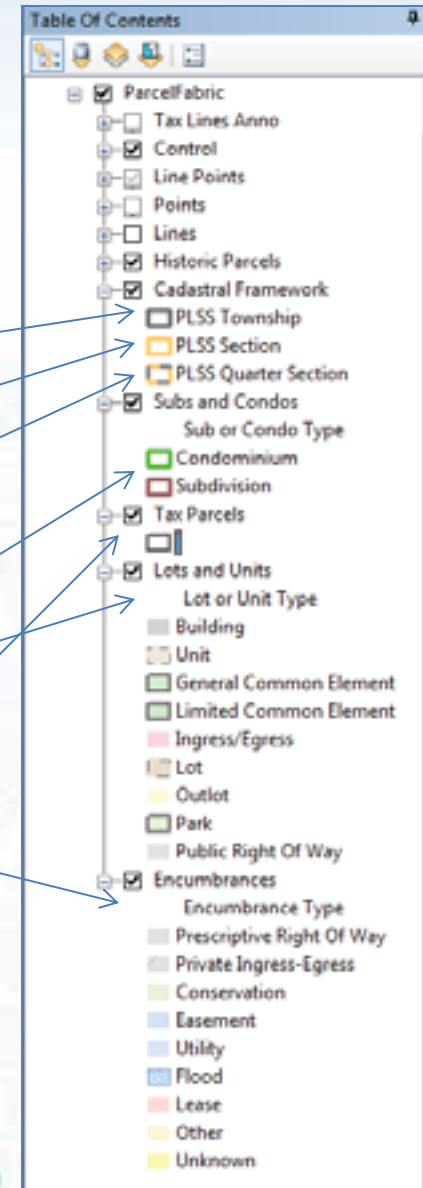


Table Of Contents

- ParcellFabric
  - Tax Lines Anno
  - Control
  - Line Points
  - Points
  - Lines
  - Historic Parcels
  - Cadastral Framework
    - PLSS Township
    - PLSS Section
    - PLSS Quarter Section
  - Subs and Condos
    - Sub or Condo Type
      - Condominium
      - Subdivision
  - Tax Parcels
  - Lots and Units
    - Lot or Unit Type
      - Building
      - Unit
      - General Common Element
      - Limited Common Element
      - Ingress/Egress
      - Lot
      - Outlot
      - Park
      - Public Right Of Way
  - Encumbrances
    - Encumbrance Type
      - Prescriptive Right Of Way
      - Private Ingress-Egress
      - Conservation
      - Easement
      - Utility
      - Flood
      - Lease
      - Other
      - Unknown



# Working Source Data Preparation

## Prep Geometry & Attributes

**Check Geometry (Data Management) (Tool)**  
Generates a report of the geometry of the features in a feature class.

**Repair Geometry (Data Management) (Tool)**  
Inspects each feature in a feature class and repairs any geometry errors.

Feature Class	Original Count	Original Fields	Target Fields	Notes	
Parcels	28,656	PARCEL_ID	Delete this one		
		PIN	Delete this one		
		BLD	Delete this one		
		REGION		2-need	N/A -Do not need this field
		EDIT_DATE	ModifyDate	Add to Staging	Check the dates are all real dates Field calculate it over
		SECTION		2-need	N/A
		TOWNSHIP		2-need	N/A
		RANGE		2-need	N/A -I don't think we need to keep these fields
		DOCUMENT	Same	Add to fabric	No
		COMMENTS	Same	Add to fabric	No
		CALC_ACREAGE	StatedArea	2-need	?
		CALC_PERMITS		2-need	N/A
		ACCURACY	Accuracy	Review current values - are they correct?	Yes
HISTORIC		Will auto-populate - don't need to load	N/A		
CALC_AREA		2-need	N/A		
TAXINFO_URL	same	Add to fabric	N/A		
SECT_NUMBER		2-need	N/A		

**Split into 2 point curves and lines**

Distance units: Foot\_US

Split at bend points, defined by:

Central offset tolerance:

Minimum line length:

Create circular curves that satisfy the central offset

Choose a field to flag results for new or changed geometry:

Buttons: Cancel, Split

**Topology Properties**

General | Feature Classes | Rules | Errors

Feature Class	Rule	Feature Class	Description...
sublines3	Must Not Self-Overlap		
sublines3	Must Not Self-Intersect		
sublines3	Must Not Intersect Or Touch Interior		
sublines3	Must Be Covered By Boundary Of	parcels	
parcels	Boundary Must Be Covered By	sublines3	
sublines3	Must Be Single Part		

Buttons: Add Rule..., Remove, Remove All

**ArcToolbox**

- 3D Analyst Tools
- A Parcel Source Data Prep tools**
  - 1 Fix Geometry
    - 1 Basic Line geometry Cleanup
    - 2A Fixed Lined and bad Polygons to good polygons
    - 2B Good Polygons to good lines
  - 2 Fix Bad COGO attribution
    - 1 Strip Bad Characters from DIRECTION Field in Quadrant Bearing format
    - 2A Flag Source Lines with Bad Distance on Selected Lines
    - 2B Flag Source Lines with Bad Bearings on selected Lines
    - 3 Null Flagged COGO Fields where Calculated = 1
  - 3 Attribution
    - 2 Calculate PlanName Using a Plan Feature Class
- Analysis Tools
- B Parcel Fabric Loading Tools
  - 1 Add Topology to Staging
  - 2 Iteratively Load Parcel Topology into Parcel Fabric
- C Parcel Fabric Tools
  - Create Radial Lines From Parcel fabric
  - Select Fabric Lines with Bad Bearings on selected Lines
- Cartography Tools

# Staging GDB Preparation

## Prepare Staging Data

Staging.gdb

- + Control\_Points
- + Type1\_Townships
- + Type2\_Sections
- + Type3\_QuarterSect
- + Type5\_Subdivision
- + Type6\_LotsUnits
- + Type7\_HistoricalTa
- + Type7\_TaxParcels
- + Type9\_Encumbran

- Type5\_Subdivisions
  - +  Type5Topology
  - +  Type5Arcs
  - +  Type5Parcels
- Type6\_LotsUnits
  - +  Type6Topology
  - +  Type6Arcs
  - +  Type6Parcels
- Type7\_HistoricalTaxParce
  - +  Type7HTopology
  - +  Type7HistoricArcs
  - +  Type7HistoricParcels
- Type7\_TaxParcels
  - +  Type7Topology
  - +  Type7Arcs
  - +  Type7Parcels

- OBJECTID
- SHAPE
- Name
- PlanName
- type
- StatedArea
- Historical
- LegalStartDate
- LegalEndDate
- FloorDesignator
- BlockDesignator
- SimConDivType
- SHAPE\_Length
- SHAPE\_Area

Topology Properties

General Feature Classes Rules Errors

Feature...	Rule	Feature Clas
sublines3	Must Not Self-Overlap	
sublines3	Must Not Self-Intersect	
sublines3	Must Not Intersect Or Touch Interior	
sublines3	Must Be Covered By Boundary Of	parcels
parcels	Boundary Must Be Covered By	sublines3
sublines3	Must Be Single Part	

# Target Fabric Preparation

## Prep Target Fabric & Load Data

Feature Class Properties

General Editor Tracking XY Coordinate System  
Subtypes Feature Extent Relationships Representations  
Z Coordinate System Domain, Resolution and Tolerance Fields Indexes

Field Name	Data Type
SecondDivisionNumber	Text
SecondDivisionSuffix	Text
SecondDivisionType	Text
SpecialSurveyNumber	Text
SpecialSurveySuffix	Text
SpecialSurveyType	Text
SpecialSurveyNotes	Text
FloorDesignator	Short Integer
CreatedBy	Text
ModifiedBy	Text
ModifyDate	Date
NEW FIELD	Text

Click any field to see its properties.

Field Properties

Alias		
Allow NULL values	Yes	
Default Value		
Domain		
Length	50	

Import...

To add a new field, type the name into an empty row in the Field Name column, click in the Data Type column to choose the data type, then edit the Field Properties.

OK Cancel Apply

Load a Topology to a Parcel Fabric

Target Parcel Fabric  
C:\Cadsoft\Editor\Latest\MapandGeodatabase\LocalGovernment.gdb\ParcelEditing\ParcelFabric

Input (Topology) Feature Class  
C:\Cadsoft\Editor\LandBase.gdb\test\parcel\_polygon

Input Point Features (optional)

Minimum Line String Segment Count (optional) 300

Control Match Tolerance (optional) 0.1 Feet

Import Parcels as Upjoined Group

Direction Units (optional)  
DEGREES\_MINUTES\_SECONDS

Direction Type (optional)  
QUADRANT\_BEARING

Compute Area for New Parcels

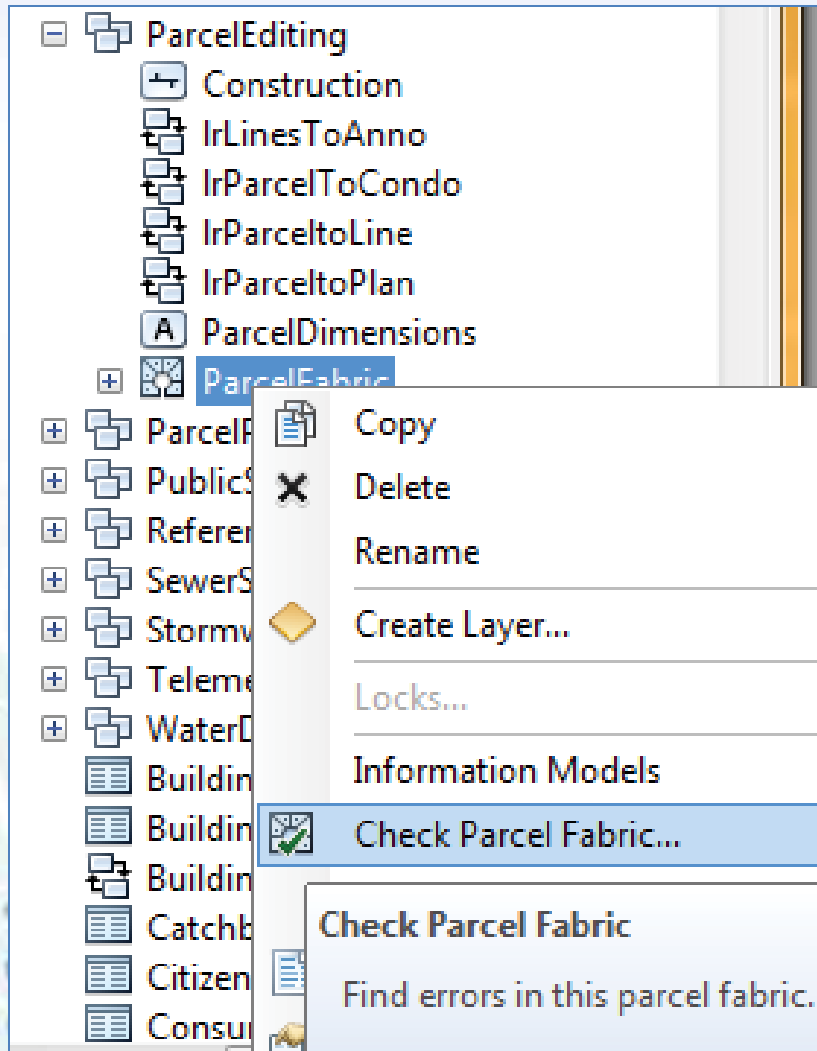
Area Units (optional)  
SQUARE\_FEET

Radial Point Tolerance (optional) 0.3 Feet

Accuracy Category for Inverted Lines (optional)  
4\_1800

OK Cancel Environments... Show Help...

# Post-Load Review



## Review the Fabric Migration

- Editing Map
- Check Fabric
- Merge Courses
- Merge Curve Center Points
- Inventory
- Attributes
- etcetera . . . . .



# Migrating to Parcel Fabric

- ✓ Cerebral preparation
- ✓ Source data preparation
- ✓ Staging preparation
- ✓ Target fabric preparation
- ✓ Post-load review

# Now What?

## Work with your new parcel fabric!

- ParcelFabric
  - Tax Lines Anno
    - 1:1200
  - Control
  - Line Points
  - Points
  - Lines
  - Historic Parcels
  - Cadastral Framework
    - PLSS Township
    - PLSS Section
    - PLSS Quarter Section
  - Subs and Condos
    - Sub or Condo Type
      - Condominium
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  - Tax Parcels
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  - Lots and Units
    - Lot or Unit Type
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      - Unit
      - Building
      - General Common Element
      - Limited Common Element
      - Lot
      - Ingress/Egress
      - Outlot
      - Park
  - Encumbrances



- ### Parcel Workflows
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