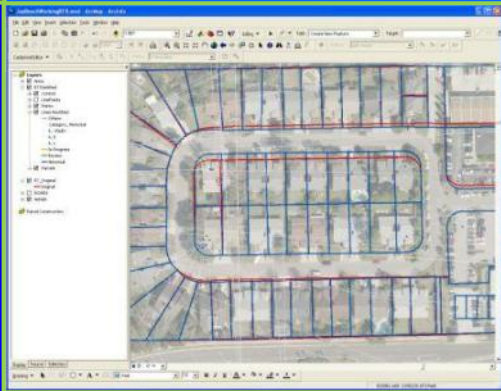


**RS&H**  
IMPROVING YOUR WORLD.



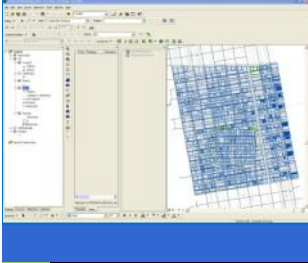
# Landbase Accuracy with Cadastral Editor

**City Makes Enhancements for Improved Planning**



*By Kristy M. Capobianco, GISP, RS&H  
Donald Terrell, GISP, City of Jacksonville Beach  
and  
William C. Mann, AICP, City of Jacksonville Beach*

*SERUG: April 28, 2009*

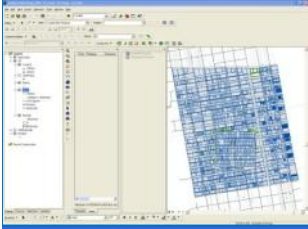


## Project Background

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- ❖ City of Jacksonville Beach in Northeast Florida Desired to Correct the Spatial and Attribute Inaccuracies in their Landbase and ROW
- ❖ Nearly 15,000 Parcels between Neptune Beach and Jacksonville Beach
- ❖ Major Problems with Inaccurate Landbase:
  - Delays with Infrastructure Projects due to ROW Boundary Issues
  - Disputes over Property Lines
  - Issues with E911



# Project Location and Area Description

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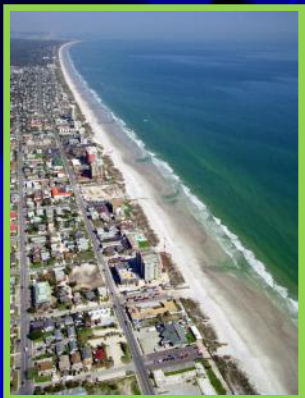
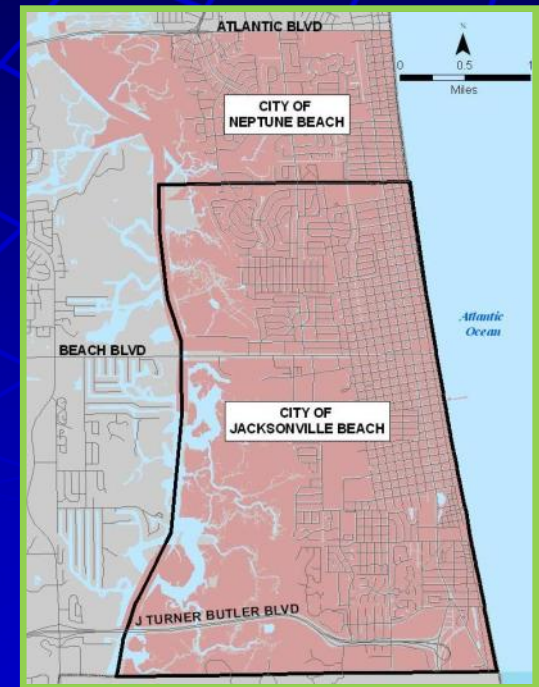
## ❖ Demographics

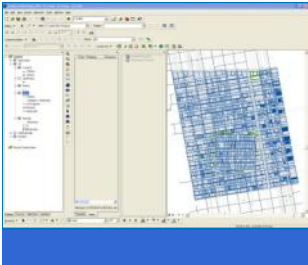
- City of Jacksonville Beach

- Area: 9.0 Square Miles
- Population (2000): 20,990

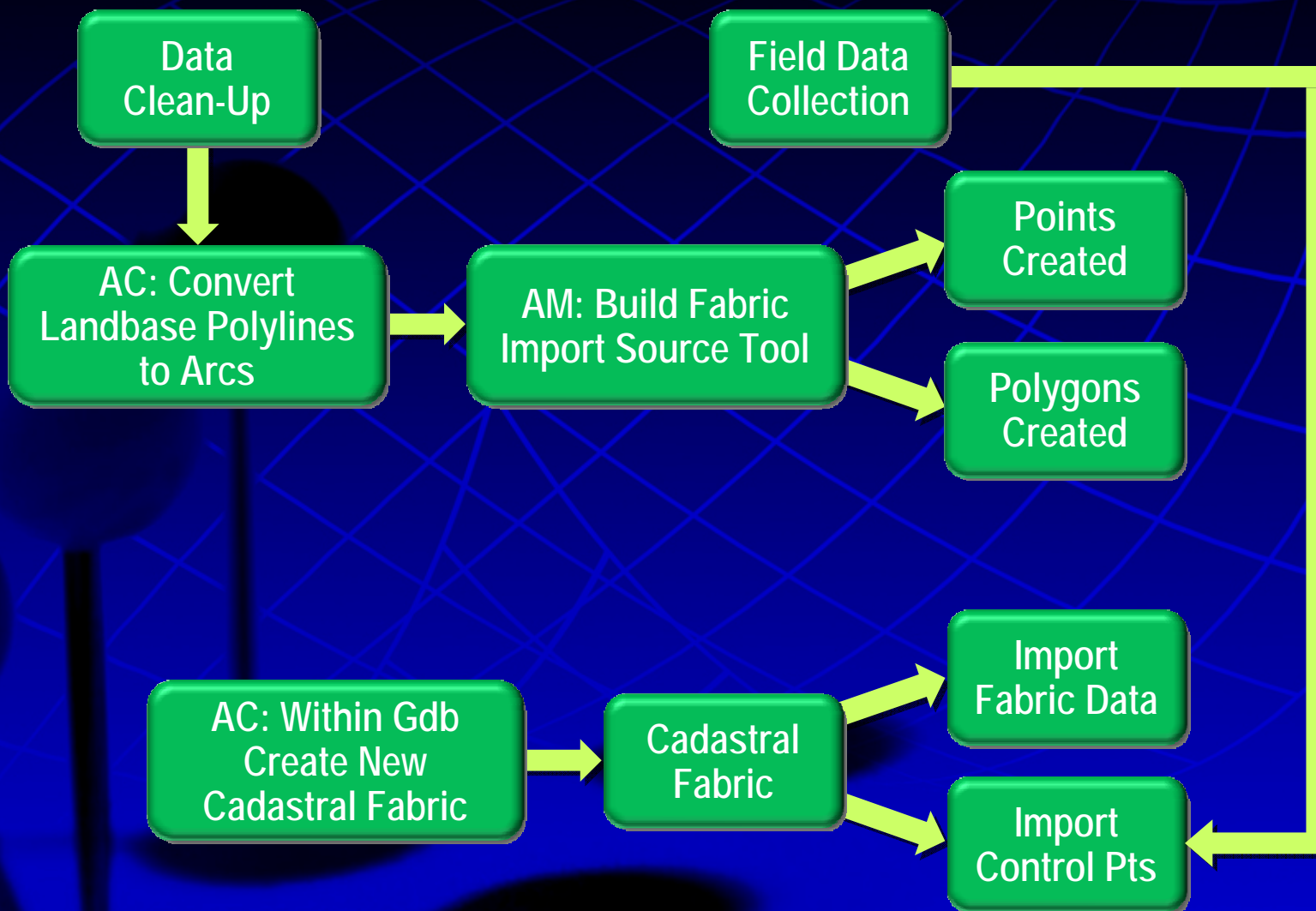
- Neptune Beach

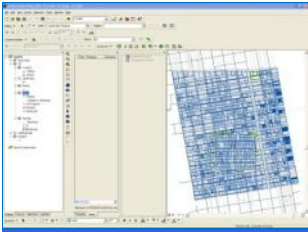
- Area: 2.45 Square Miles (Land)
- Population (2000): 7,270



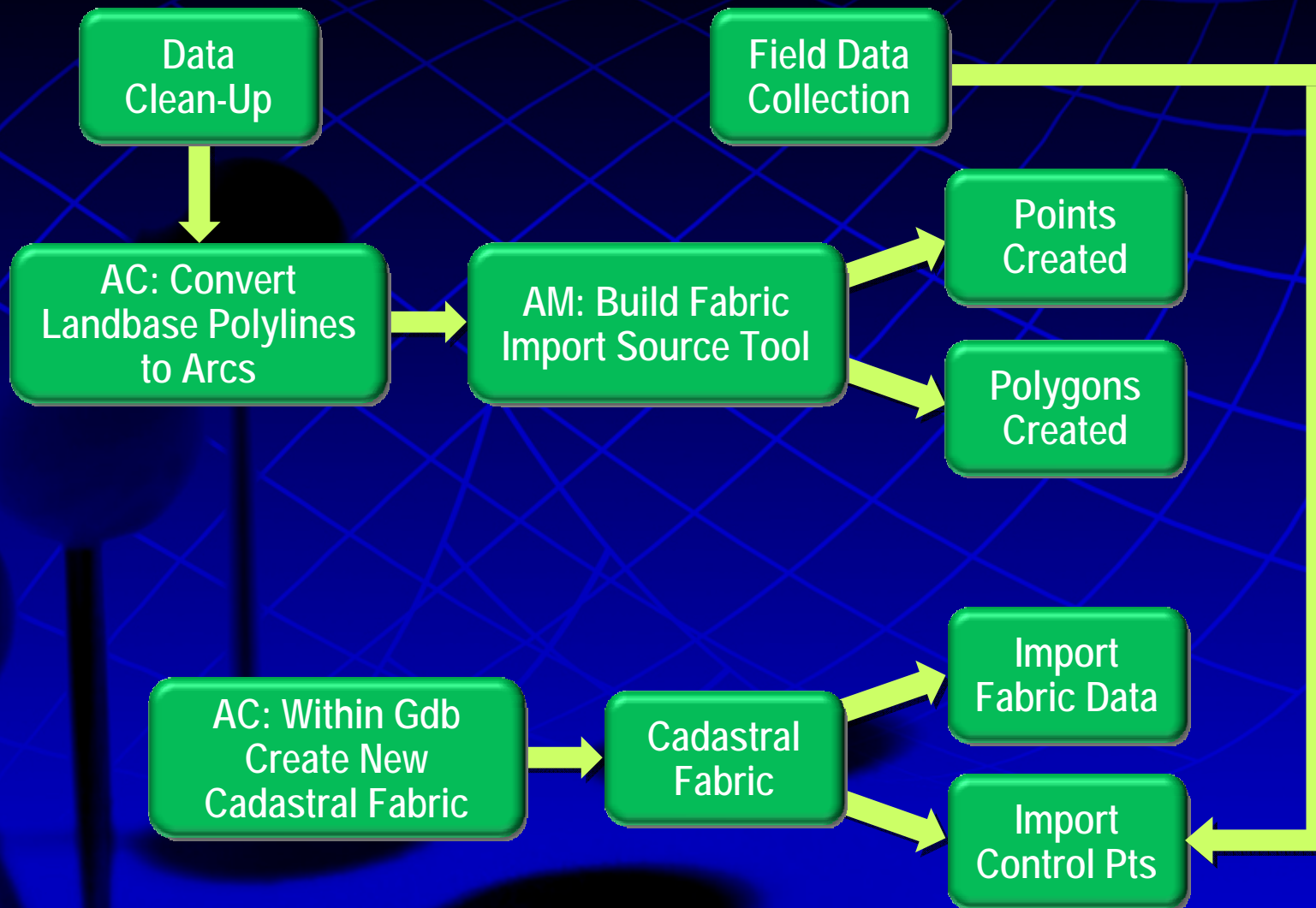


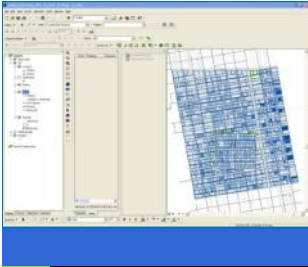
# Project Flowchart





# Project Flowchart

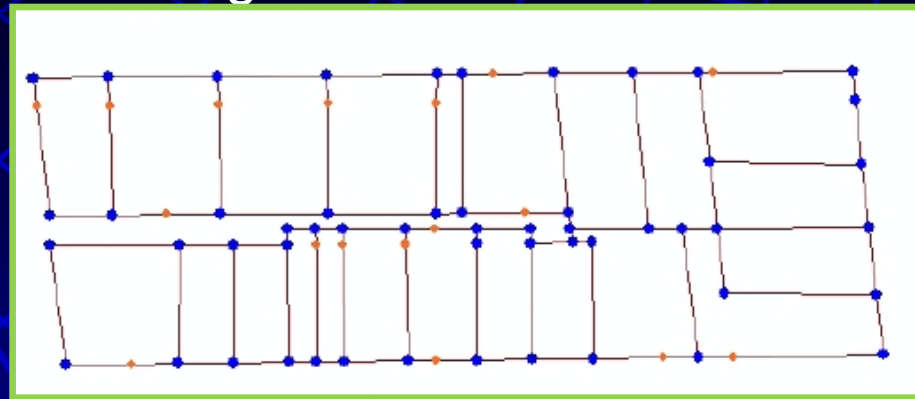
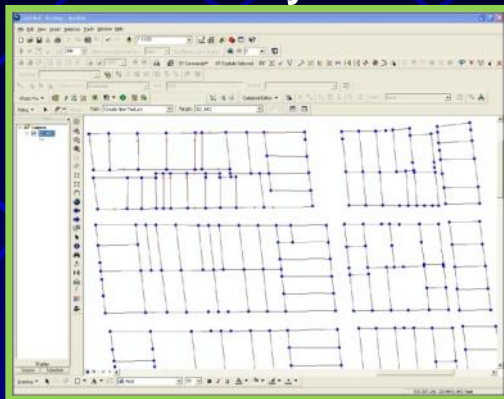




# Data Clean-Up

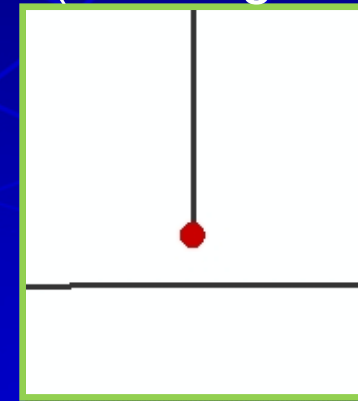
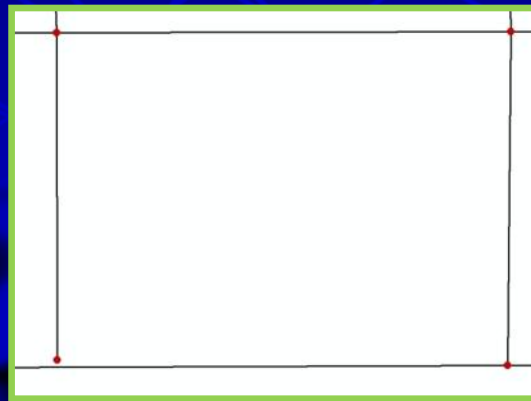
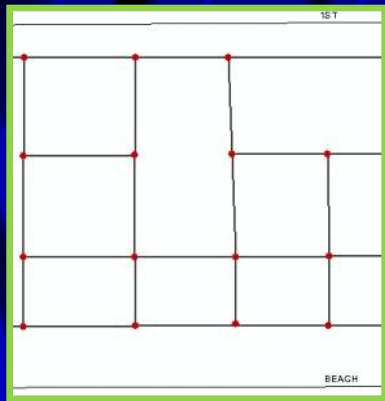
## ❖ Pseudo Nodes

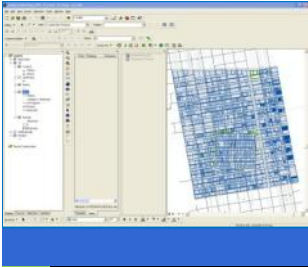
- Arbitrary Nodes Located Along the Parcel Vertex



## ❖ Undershoots

- Parcel Line Doesn't Connect to Another Line (Leaving Gaps)



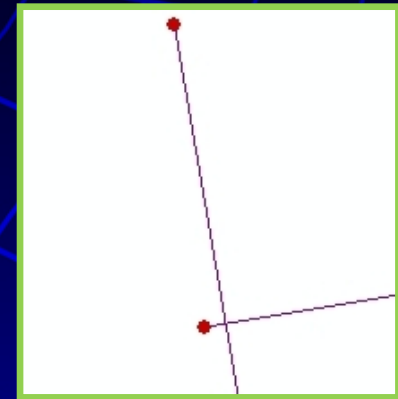
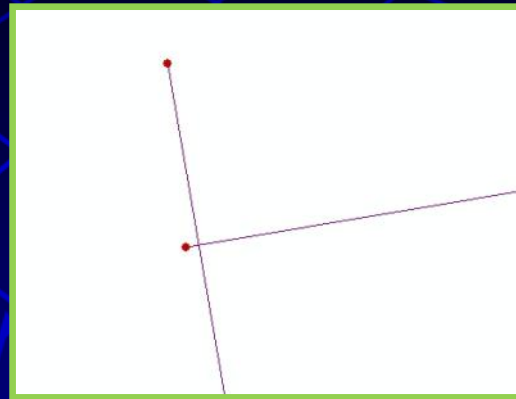
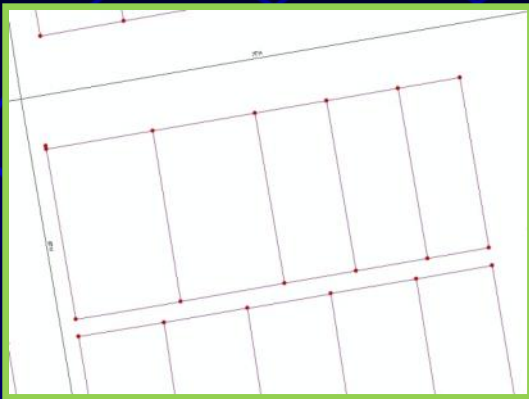


# Data Clean-Up



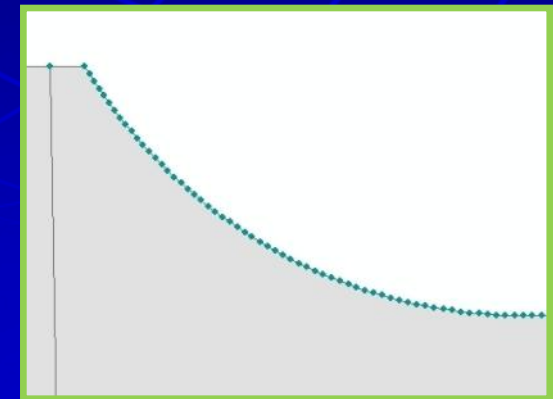
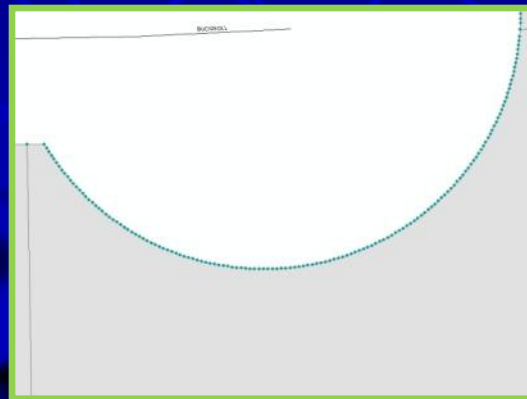
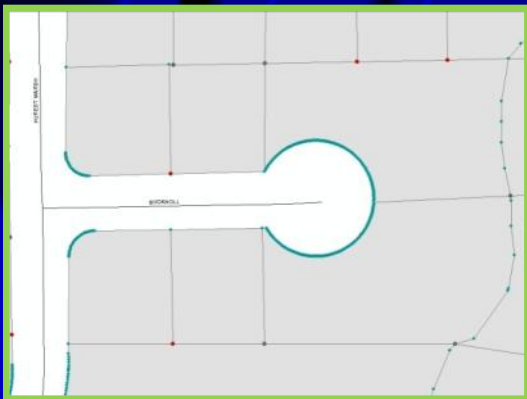
## ❖ Overshoots

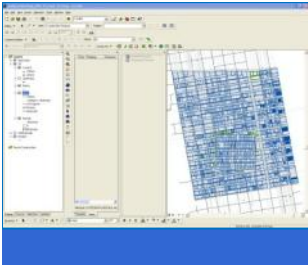
- Parcel Line is too Long (Leaving Dangling Nodes)



## ❖ Densified Arcs

- Sequence of Many Straight Lines to Make a Curve

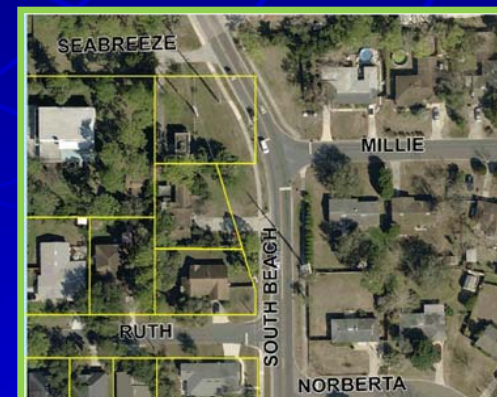
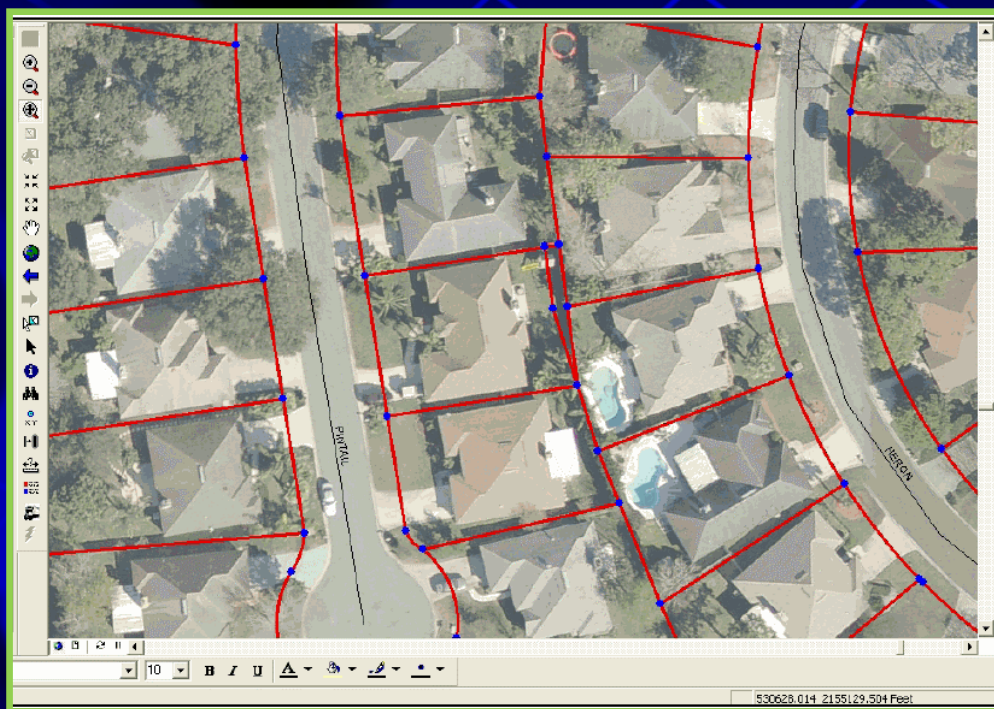




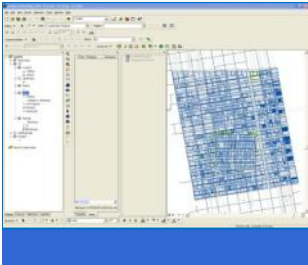
# Other Data Clean-Up Issues



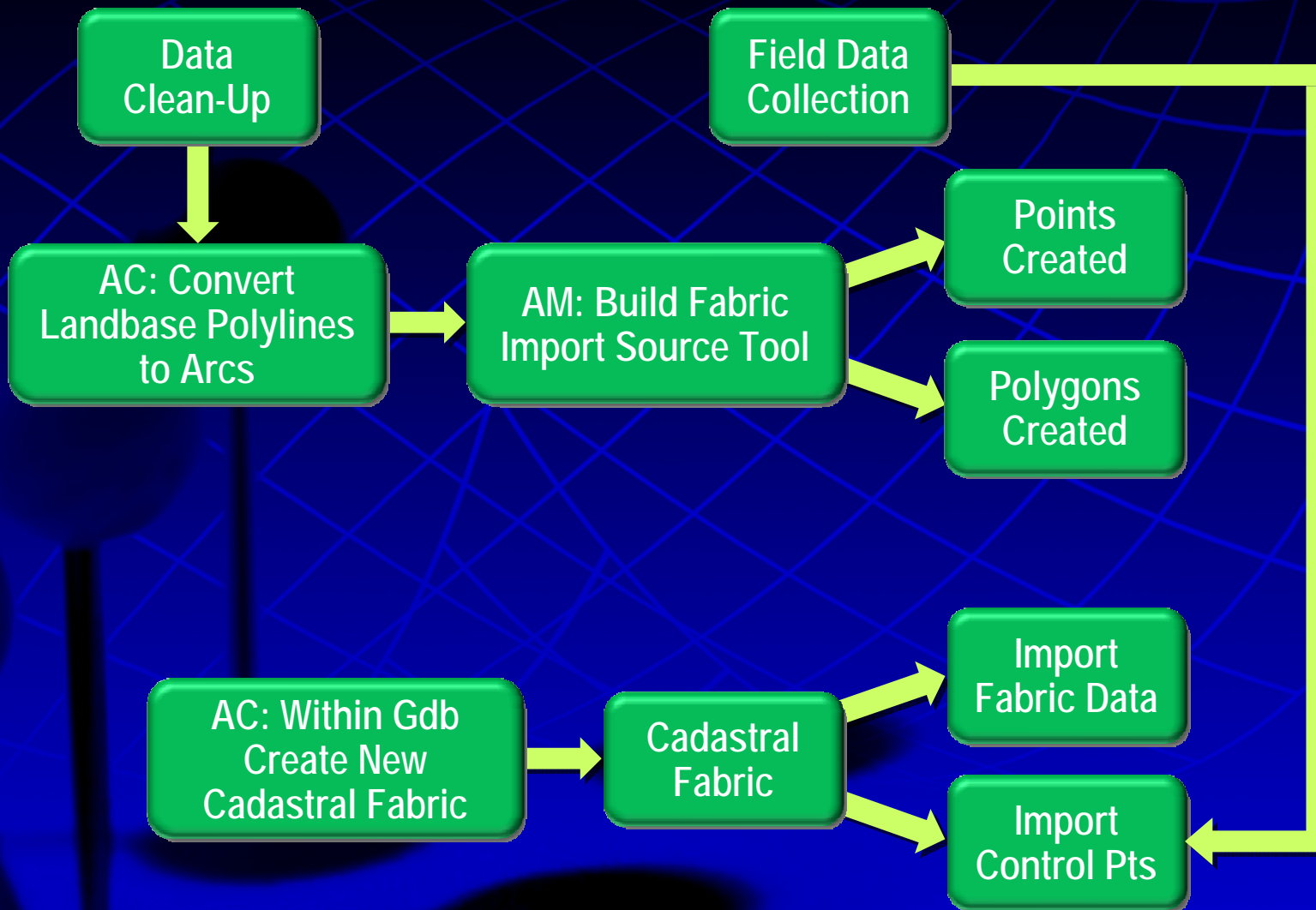
- ❖ Inaccurate Parcel Splits/  
Extra Parcel Lines
- ❖ Missing Parcels or Parcel Dimensions
- ❖ Parcel Size/Shape Issues

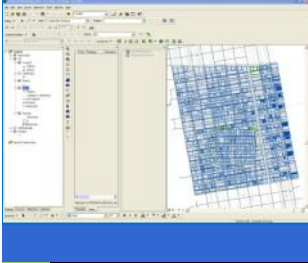






# Project Flowchart



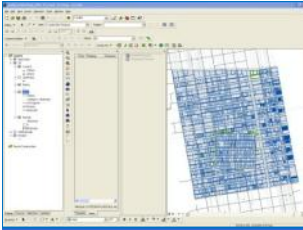


# Field Data Collection



- ❖ Divided Project Area into 14 Grid Sections
  - Collected Minimum of 2 Points per Grid Section
- ❖ Trimble GeoXH handheld
  - Benchmarks
  - Fire Hydrants
  - Light Poles
- ❖ Survey Control Points of Lot Corners

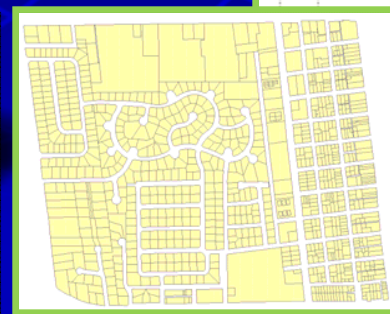
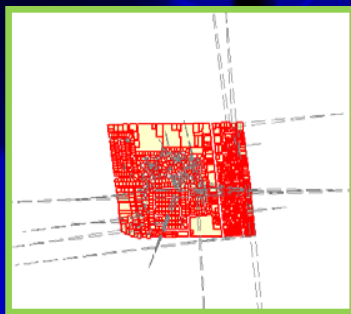
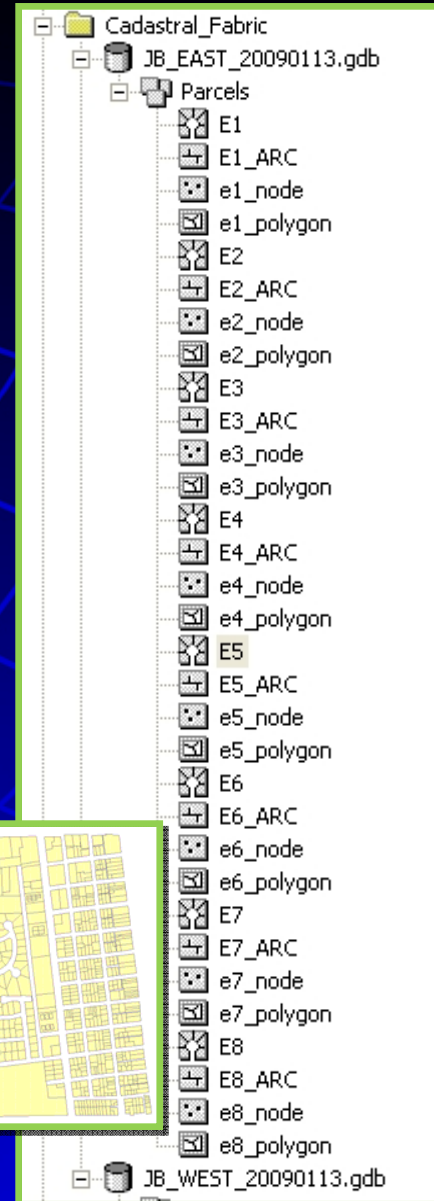


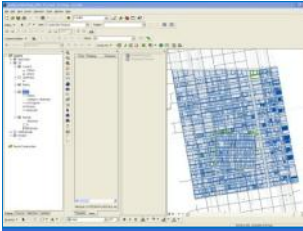


# Cadastral Fabric Defined

- ❖ A cadastral fabric is a seamless parcel boundary network, which is created and maintained using data from survey records. Parcels are represented by parcel line features, parcel point features and parcel polygon features, referred to in aggregate as parcel features. Parcel topology in the cadastral fabric is stored explicitly through shared or common parcel point features.

ESRI 2009: <http://www.esri.com/software/arcgis/geodatabase/data-storage.html>

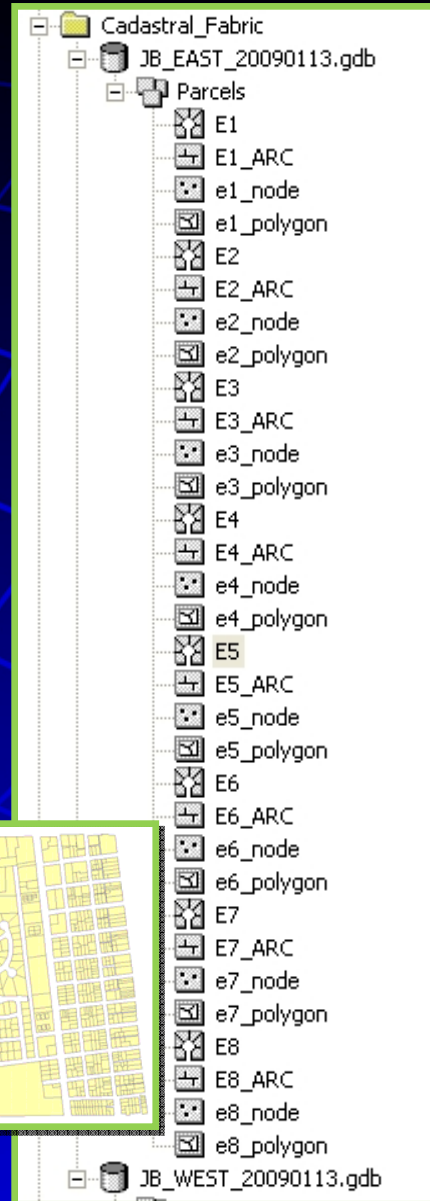
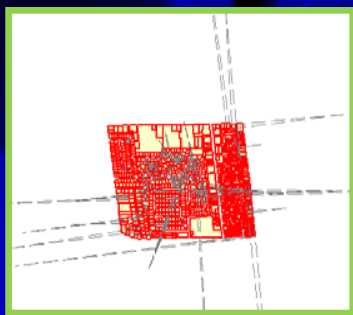


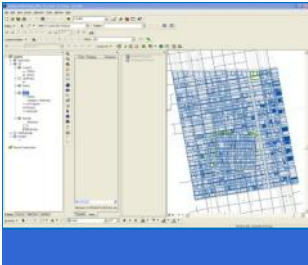


# Cadastral Fabric Defined

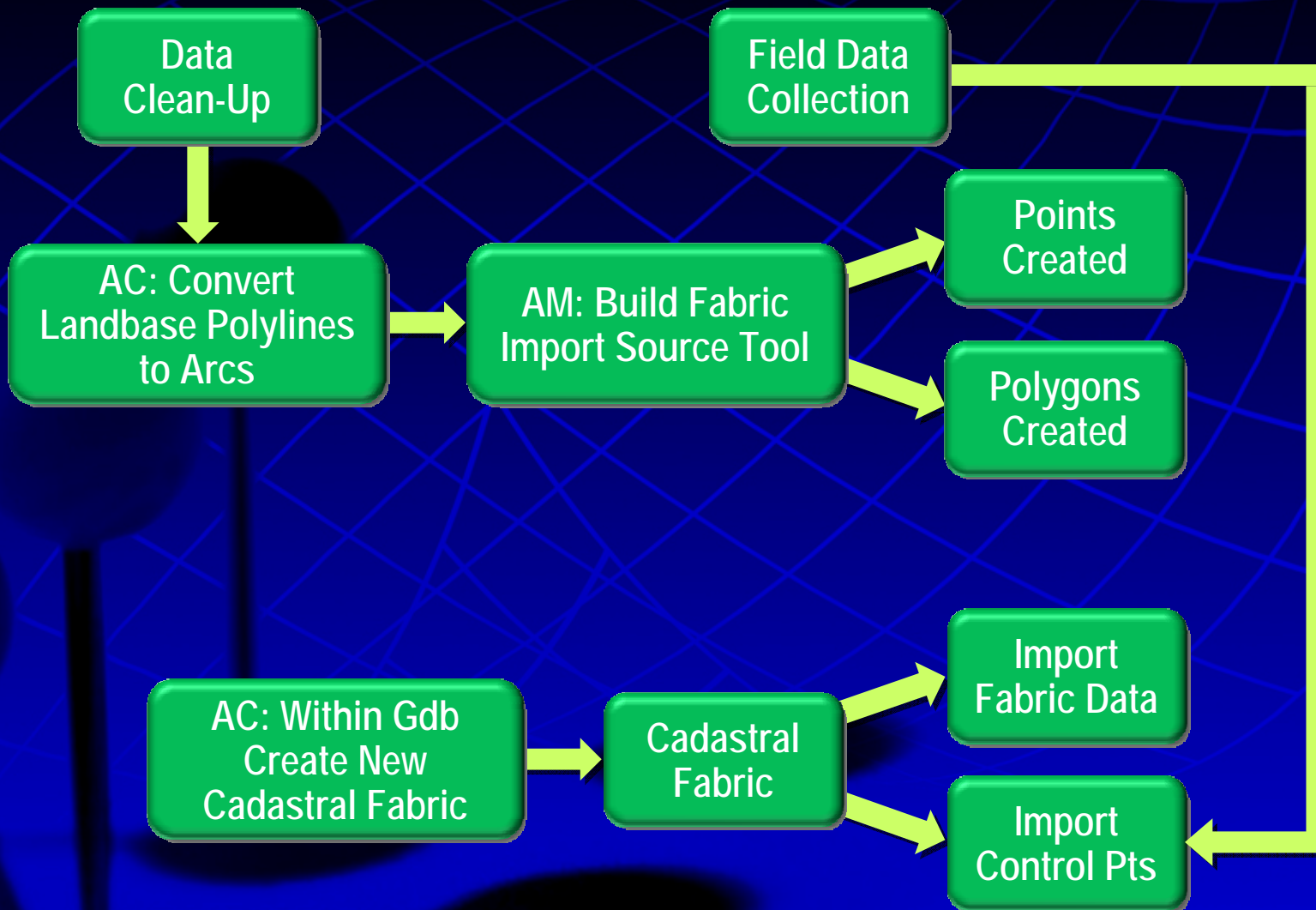
## ❖ 4 Methods for Adding Parcel Data into the Fabric:

- Migrate Existing Data
- Create New Parcels with the Parcel Traverse
- Build Parcels from Construction Lines
- Append Parcel Data from a Cadastral XML file

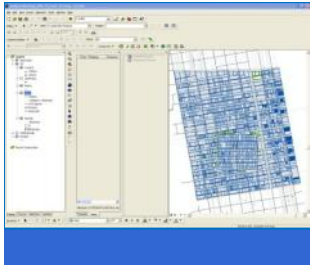




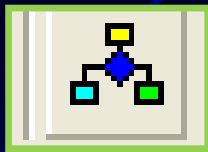
# Cadastral Fabric Construction



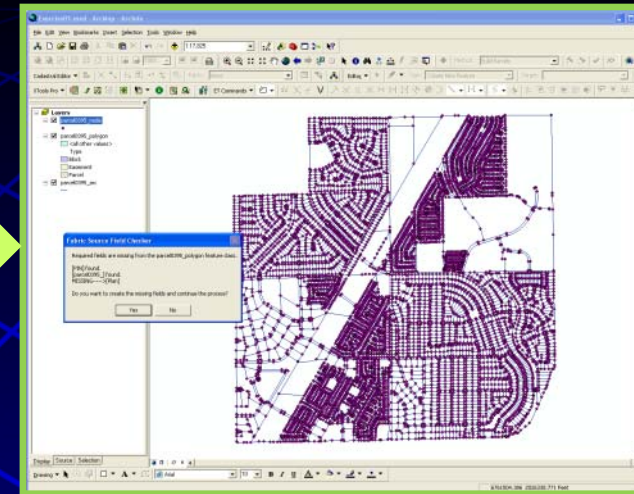
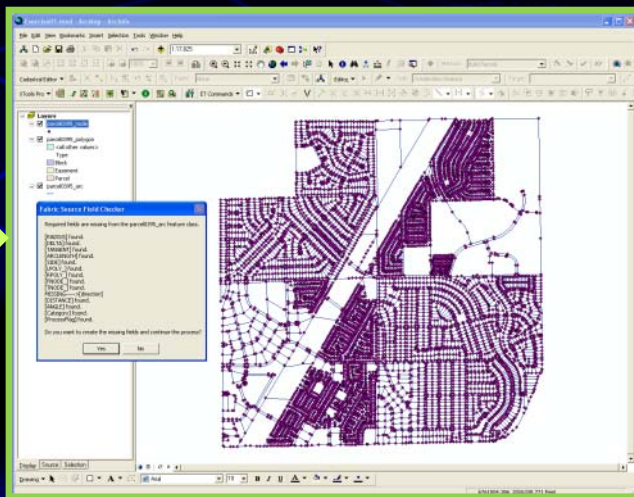
# Cadastral Fabric Construction



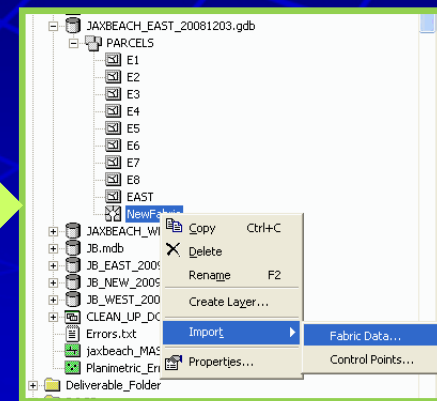
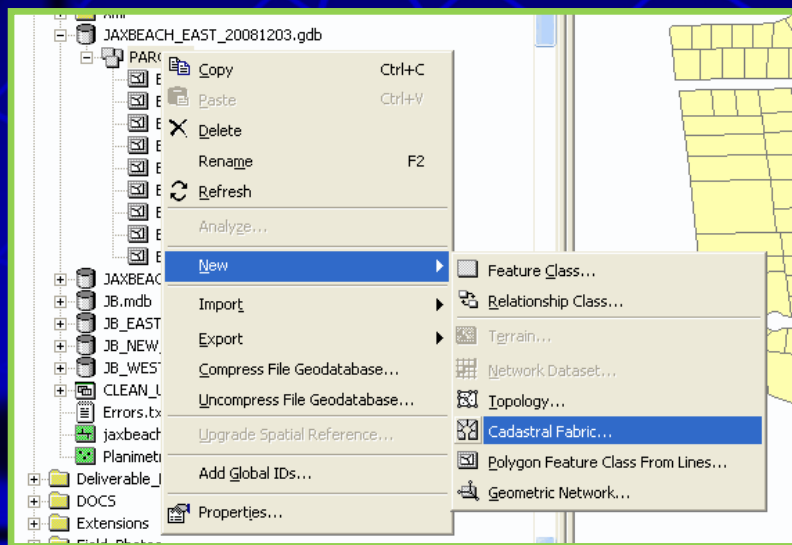
## ArcMap

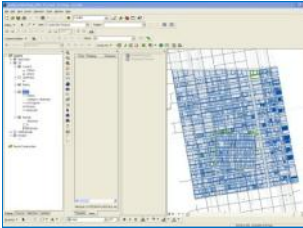


Build Fabric Import  
Source Tool



## ArcCatalog



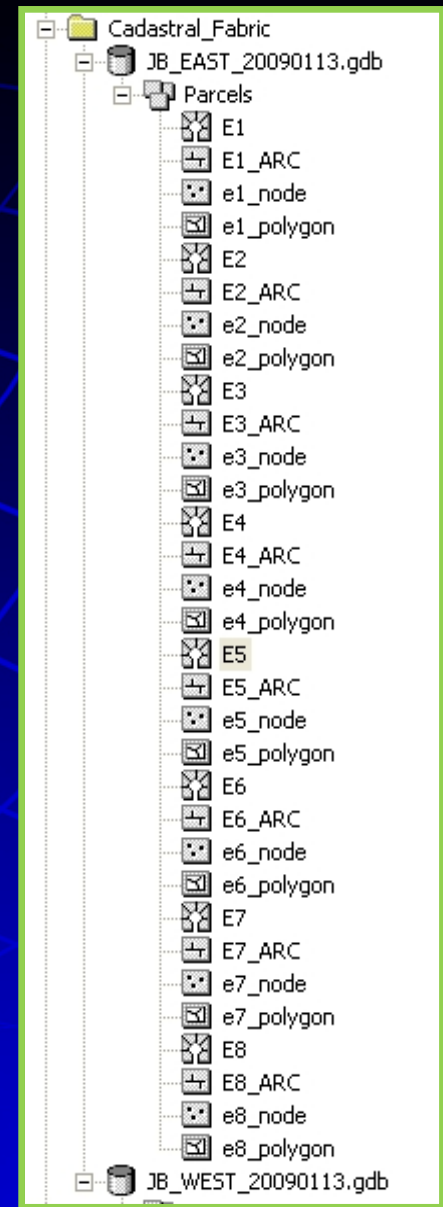
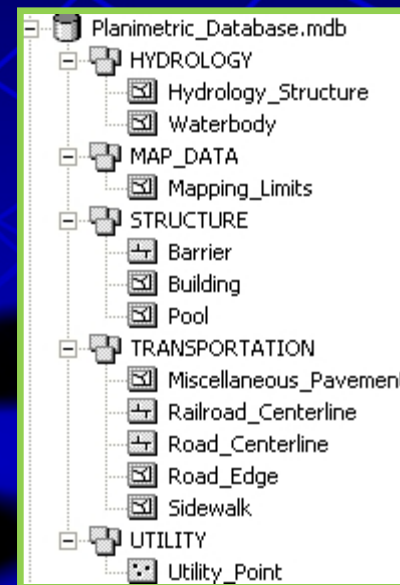


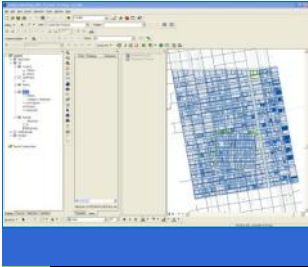
# Parcel Rectification



## ❖ Datasets

- Parcel Annotation
- High-Resolution Aerials
- Existing Landbase
- Control Points and Survey Data
- Planimetric



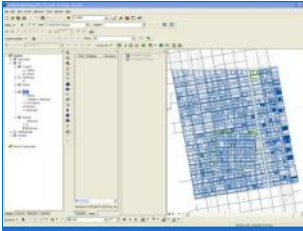


# Parcel Rectification

## ❖ Identify Errors





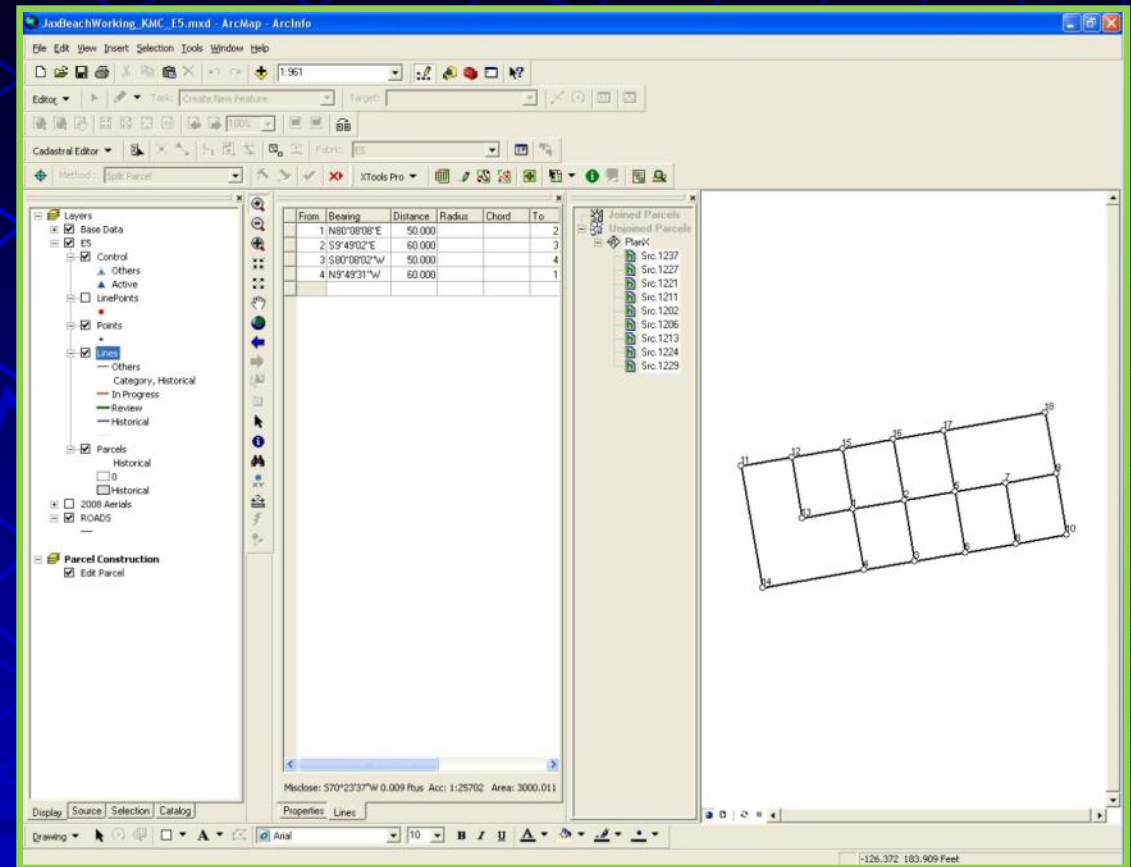


# Parcel Rectification



## ❖ Discrepancies Located

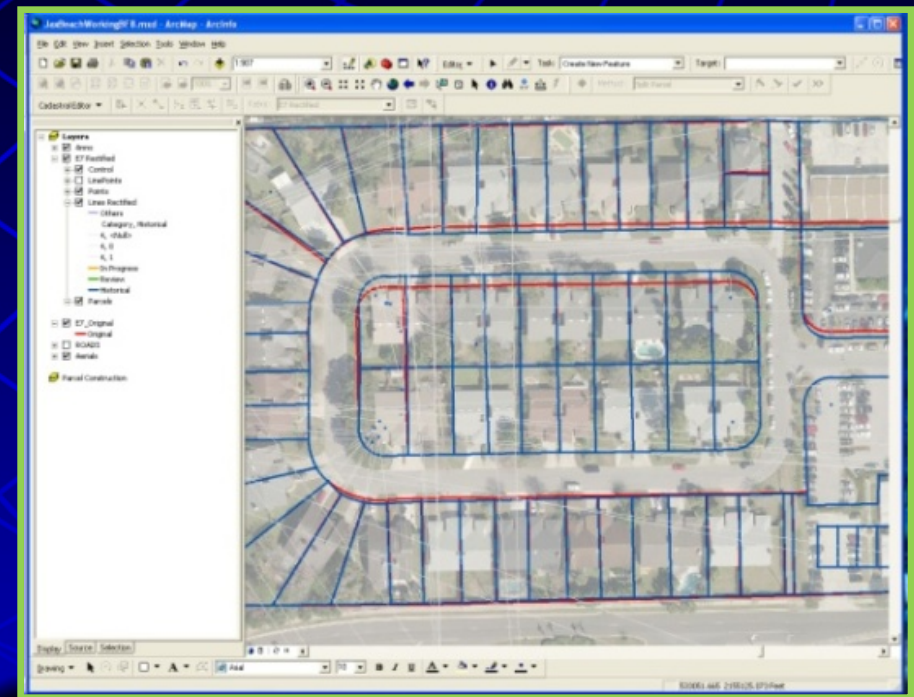
- Start Edit Session
- Select Parcel Block
- Cadastral Editor Toolbar
  - Modify Feature
  - Select Parcels
  - Unjoin
  - Edit Dimensions
  - Accept Changes
  - Finish Job

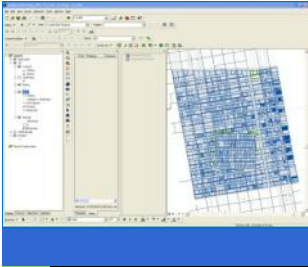




# Parcel Rectification

## ❖ Comparison of Old Landbase to New Landbase

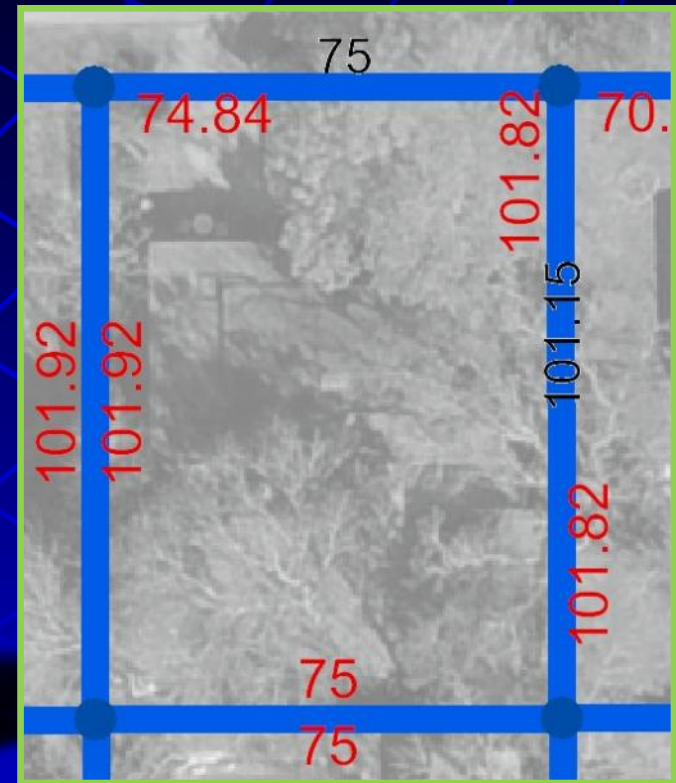
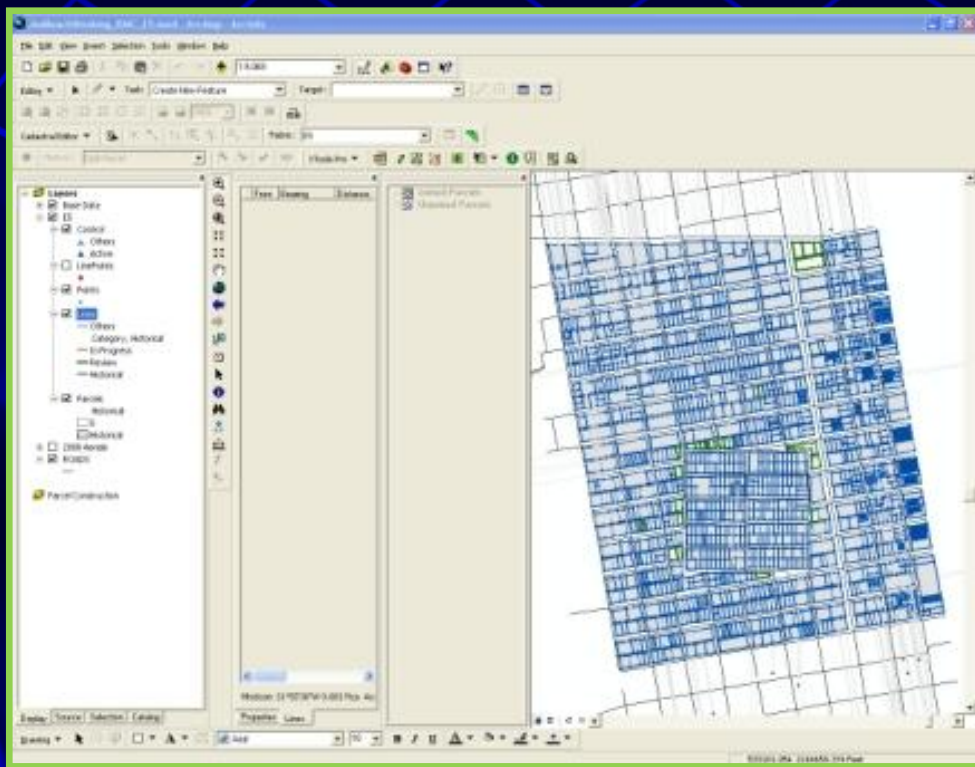


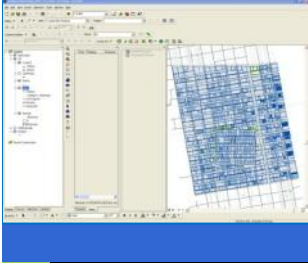


# Parcel Rectification



## ❖ Corrected Parcels



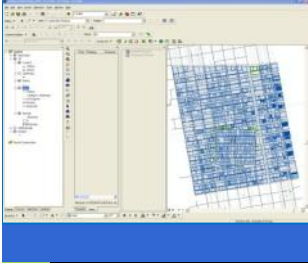


## Project Highlights

**RSH**  
IMPROVING YOUR WORLD.



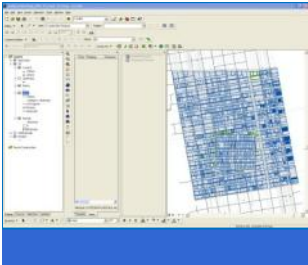
- ❖ Advanced Parcel Editing Tool Offers New Solution for Improving Property Line and Right-of-Way Information
- ❖ Incorporating GPS Benchmarks and Control Points Collected in the Field, the Team Improved Existing Parcel Information with their Known Locations and Dimensions
- ❖ Landbase Enhancements have led to Improved Planning and Public Safety Services for the City



## Next Steps



- ❖ Incorporate Zoning Boundaries
  - Interactive Web-Mapping Application Available to the Public
- ❖ Update Centerline Data
  - Improved E911 Services
- ❖ Incorporate Electric Data



# Thank You



## Questions/Comments Please Contact:

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904-247-6231