

# Partner File Processing Spatial Updates

Census Bureau  
Community Addressing Conference  
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U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU

# Feature Processing

**Why** is an accurate road network important?

- Supports the geocoding of addresses
- Allows address ranges to be built

# Establishing a Feature Updating System

- Initially, the Census Bureau is performing a manual process for the first round of partners
- Automated processing for future file evaluations

# Steps within Feature Source Evaluation (FSE) and Updating the MTDB

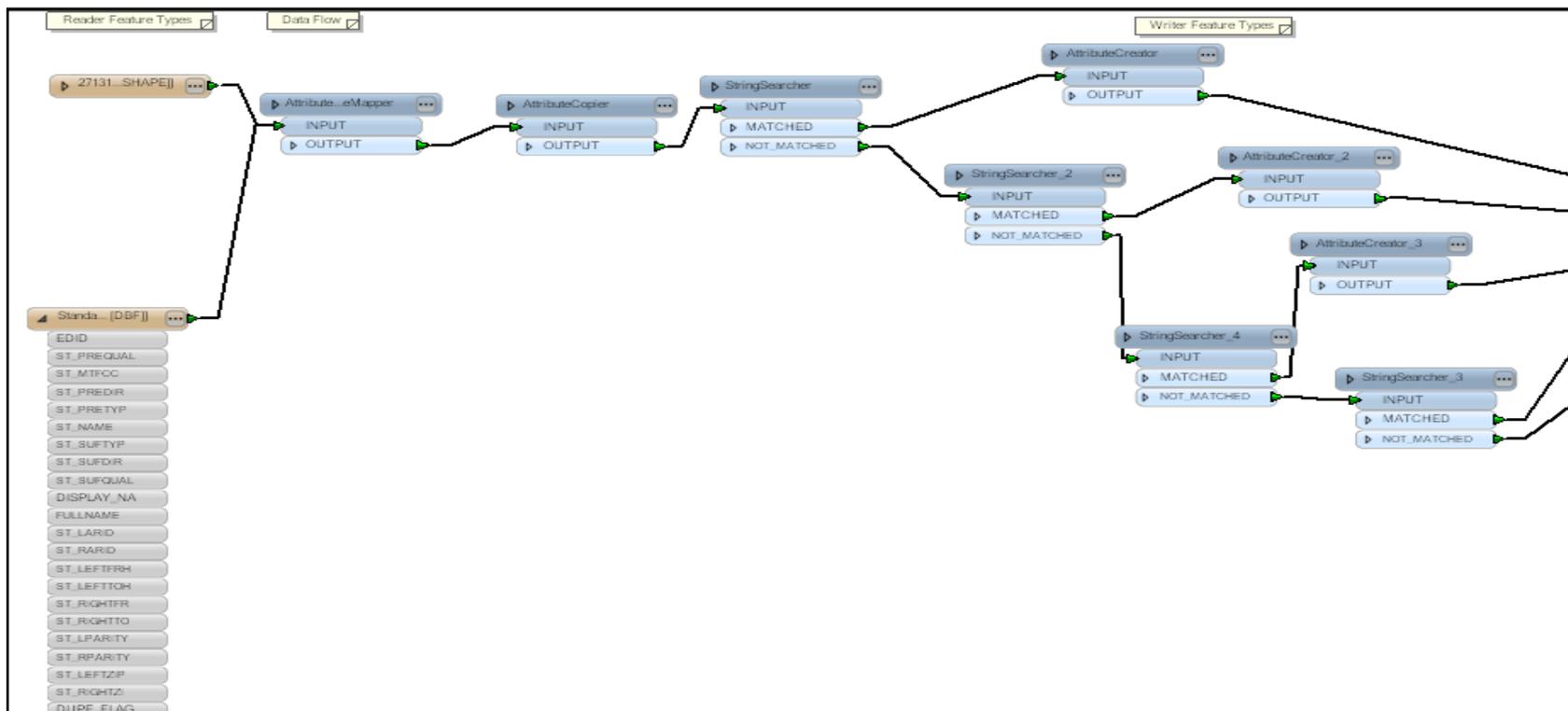
- Pre-Processing (of MTDB)
- Crosswalk
- Evaluate the local/partner file
  - Run automated checks to determine spatial and attribute differences between partner file and TIGER
- Review the differences and determine the implementation path
  - Interactively update
  - Update using coordinate enhancement

# Pre-Processing

- GEO runs edits that identify areas where the MAF/TIGER data needs to be corrected
- Examples of pre-processing edits:
  - Floaters/Overshoots/Gaps
  - Name Chaining
  - MTFCC/Name matching

# Crosswalk

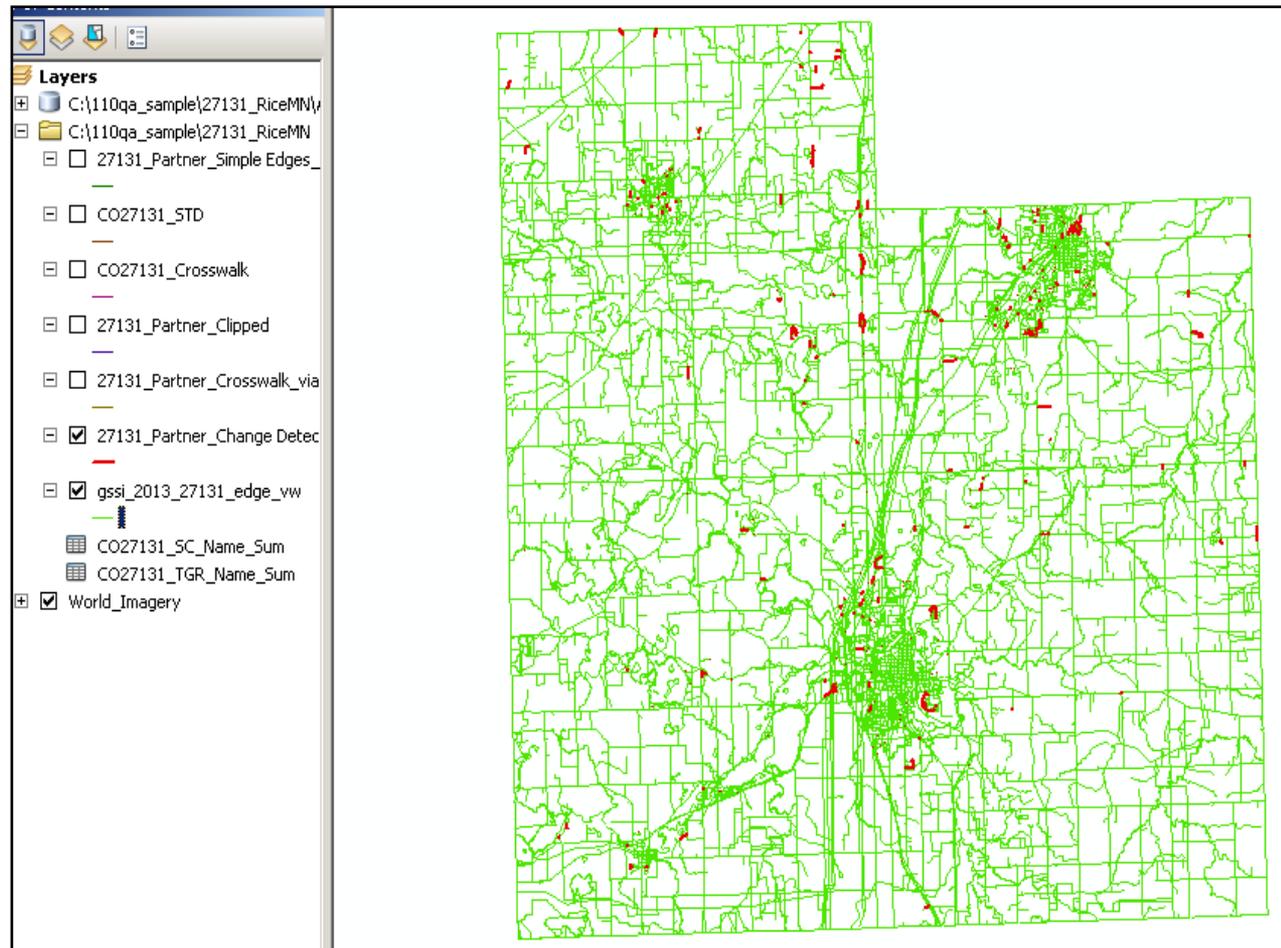
- After Content Verification, the file's attribute data is crosswalked using Feature Manipulation Engine (FME) software



# Spatial Difference Checks

Change  
Detection Edit  
using FME

Display and  
review in Arc  
Map



# Attribute Difference Checks

Road Name  
Verification and  
Completeness  
Check

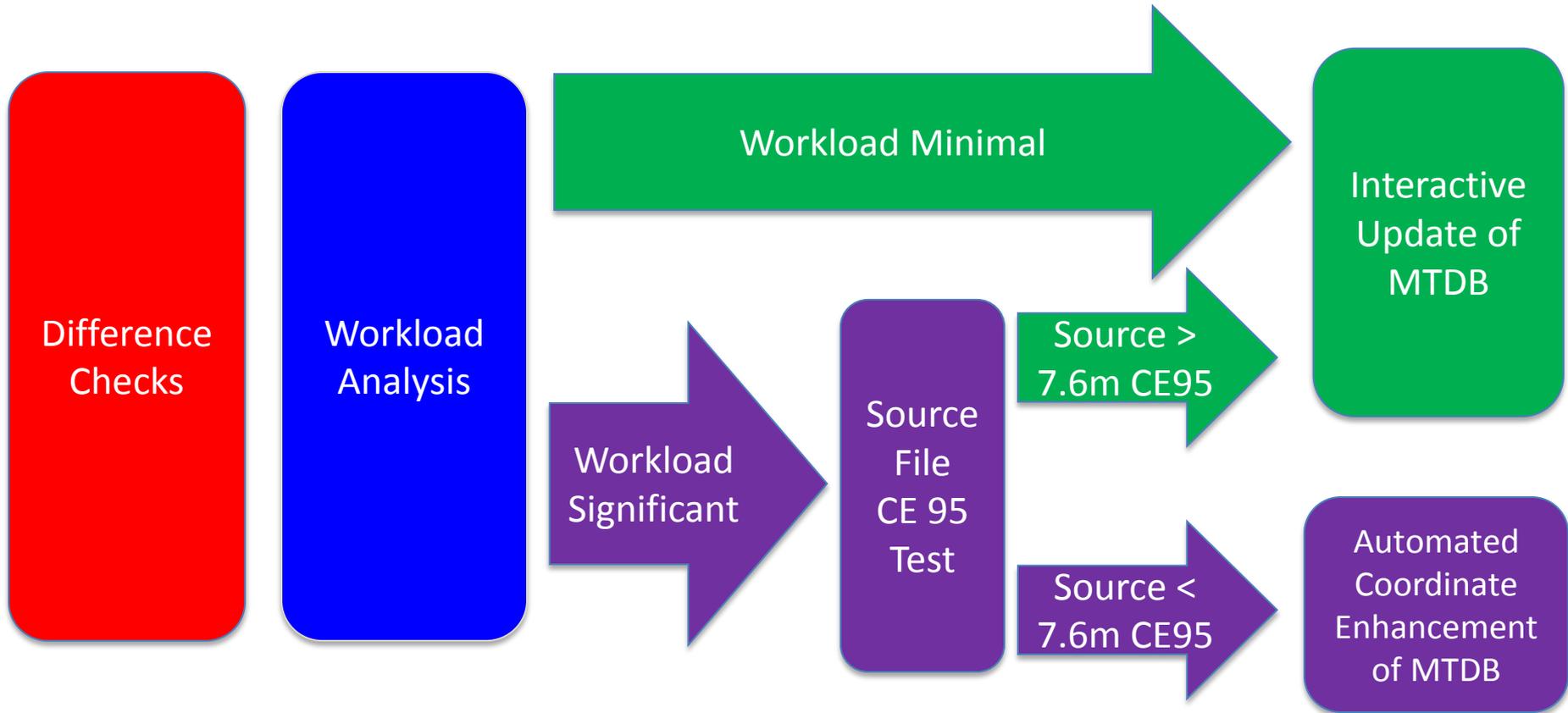
CO27131_SC_Name_Sum			CO27131_TGR_Name_Sum		
OID	DISPLAY_I/A	Count_DISPLAY_I/A	OID	PRIDISPNAME	Count_PRIDISPNAME
0		1	0		5249
1	100th St E	16	1	1	2
2	100th St W	10	2	100th St E	19
3	102nd St W	1	3	100th St W	21
4	103rd St W	1	4	102nd St W	2
5	10th Ave NE	3	5	103rd St W	1
6	10th Ave NW	7	6	10th Ave	6
7	10th Ave SE	6	7	10th Ave NE	1
8	10th Ave SW	1	8	10th Ave NW	4
9	10th St NE	1	9	10th Ave SE	5
10	10th St NW	4	10	10th Ave SW	2
11	10th St SW	10	11	10th St NE	1
12	110th St E	15	12	10th St NW	4
13	110th St W	3	13	10th St SW	15
15	112th Ct W	1	14	11	2
16	113th Ct W	2	15	110th St E	26
17	113th St E	1	16	110th St W	4
18	113th St W	1	17	112th Ct W	1
20	115th St E	7	18	113th Ct W	1
21	115th St W	1	19	113th St E	2
22	117th St W	3	20	113th St W	1
23	118th St E	2	21	115th St E	17
25	11th Ave NE	12	22	115th St W	2
26	11th Ave SE	1	23	117th St W	1
27	11th St NE	1	24	118th St E	2
28	11th St NW	4	25	118th St W	2
29	11th St SW	6	26	11th Ave NE	12
			27	11th Ave SE	1
			28	11th St NE	1

# Determine the Implementation Path

Analyze spatial and attribute differences to determine if:

- 1) Workload is minimal - interactively update
- 2) Changes are significant – perform coordinate enhancement and upload

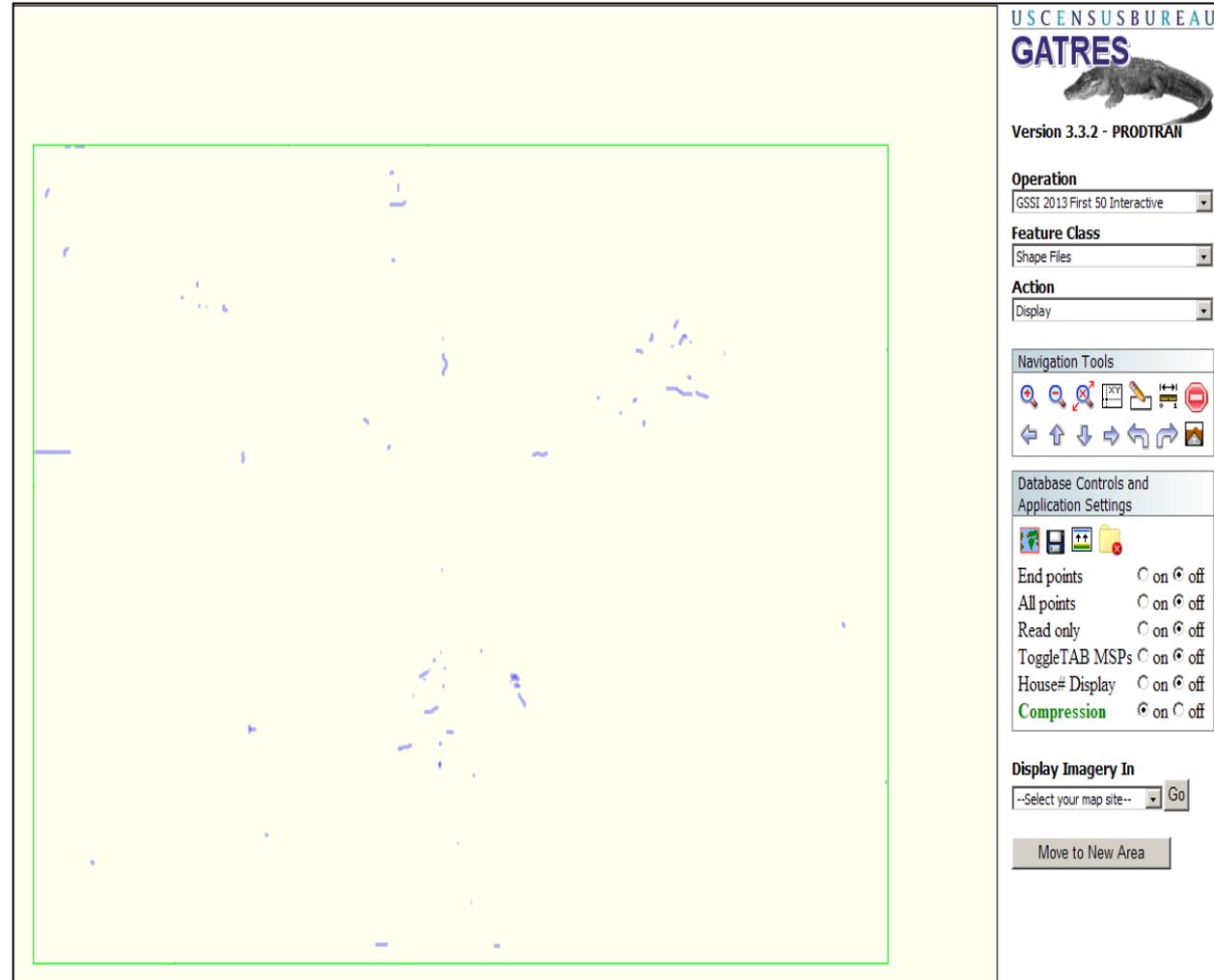
# Determine the Implementation Path



# Interactive Path

Create shape file of partner adds/reshapes  
Use Census

Bureau interactive update software (GATRES) to digitize the updates



The screenshot displays the GATRES software interface. The main window shows a map with several blue lines representing paths or boundaries. The right-hand side contains a control panel with the following sections:

- USCENSUSBUREAU GATRES** logo and version: Version 3.3.2 - PRODTRAI
- Operation:** GSSI 2013 First 50 Interactive
- Feature Class:** Shape Files
- Action:** Display
- Navigation Tools:** Includes icons for zoom in, zoom out, pan, and other navigation functions.
- Database Controls and Application Settings:**
  - End points:  on  off
  - All points:  on  off
  - Read only:  on  off
  - Toggle TAB MSPs:  on  off
  - House# Display:  on  off
  - Compression:  on  off
- Display Imagery In:** --Select your map site-- Go
- Move to New Area** button

# Interactive Path

Extract MTDB's data...

...and overlay imagery



# Interactive Path

Purple- local features

Yellow- MTDB features



# Coordinate Enhancement Path

## What is Coordinate Enhancement?

Matching software will link features based on same name, same attribute, or same spatial shape/location

Once the features are matched, MTDB is rubbersheeted to the same spatial location and shape as the partner file

# Coordinate Enhancement Path

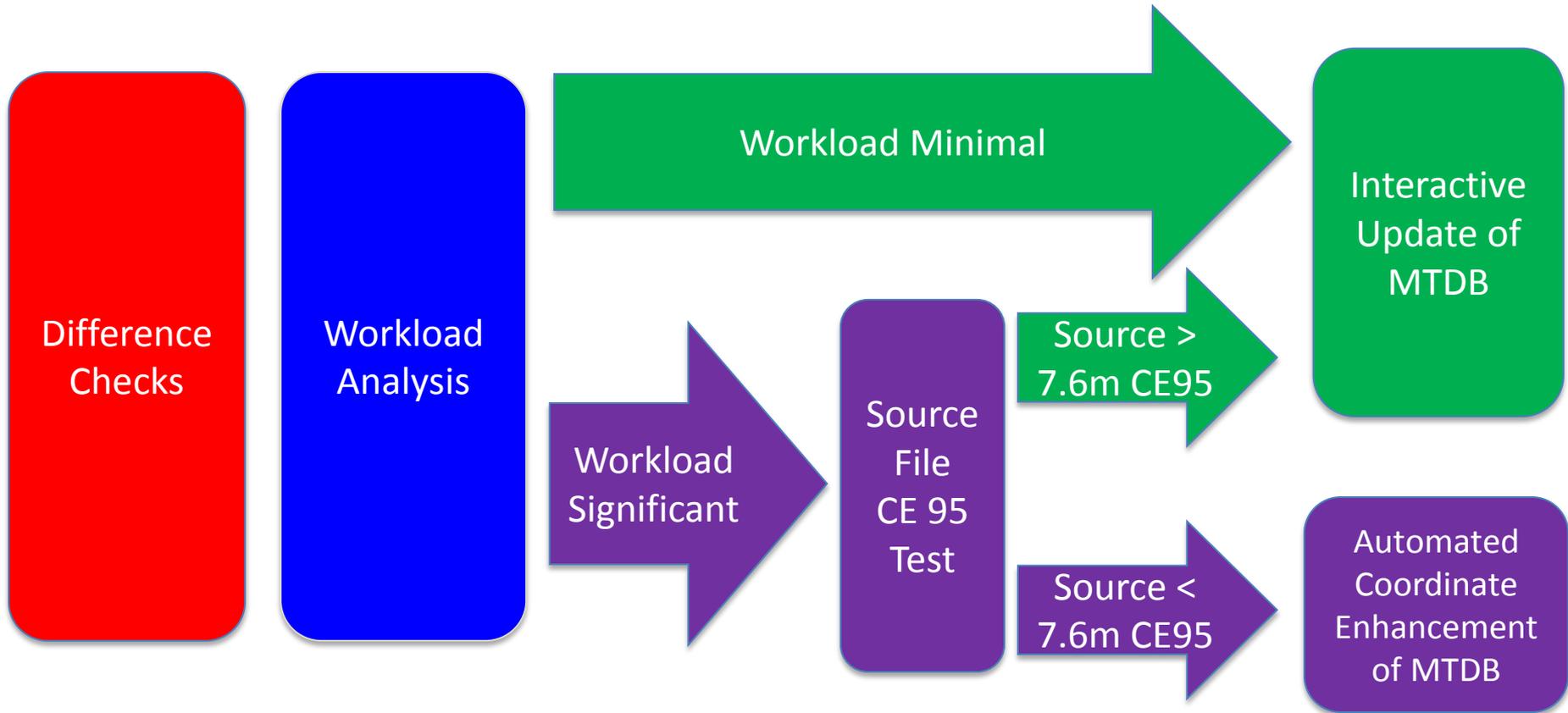
CE95  
Positional  
Accuracy  
Verification  
Check



# Coordinate Enhancement Path

- If the Partner File is within 7.6m accuracy of the CE95 Imagery, the partner file will be used for coordinate enhancement.
- If it is not, the adds will be uploaded to the MAF/TIGER database (MTDB). Name attribute and reshapes will have to be performed interactively.

# Determine the Implementation Path



# Coordinate Enhancement Path

- The file is processed through the matching software, also referred to as conflation
- The output of conflation provides shape file layers and statistics for each fallout category

	mtdb	%	local	%
matched:	13900	.68	7183	.89
exclusive:	5061	.25	350	.04
unresolved:	1624	.08	544	.07
total:	20585		8077	

Resolved percentage: .92

In kilometers

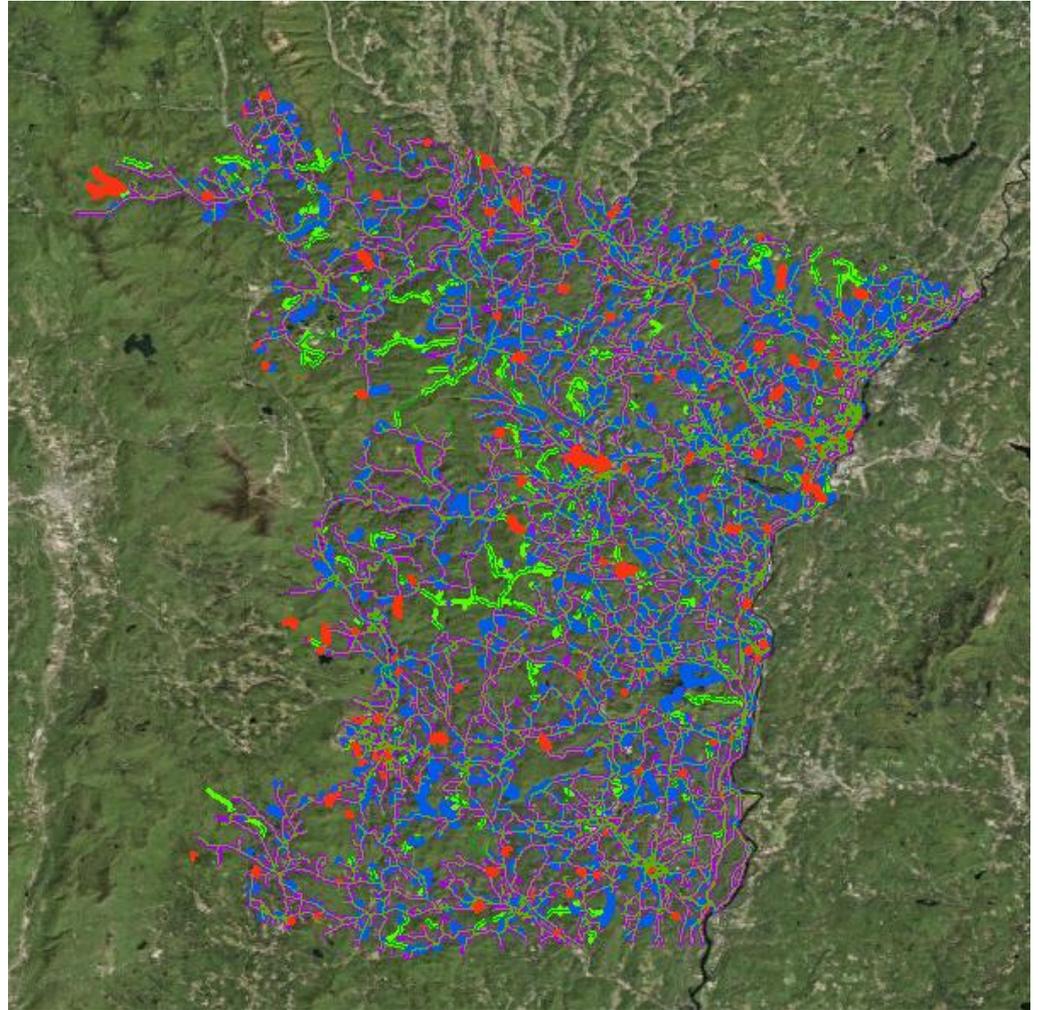
Local exclusive roads (new to MTDB): 89.82  
Local unresolved roads : 346.96  
MTDB unresolved roads : 391.03  
MTDB exclusive roads : 784.34

# Coordinate Enhancement Path

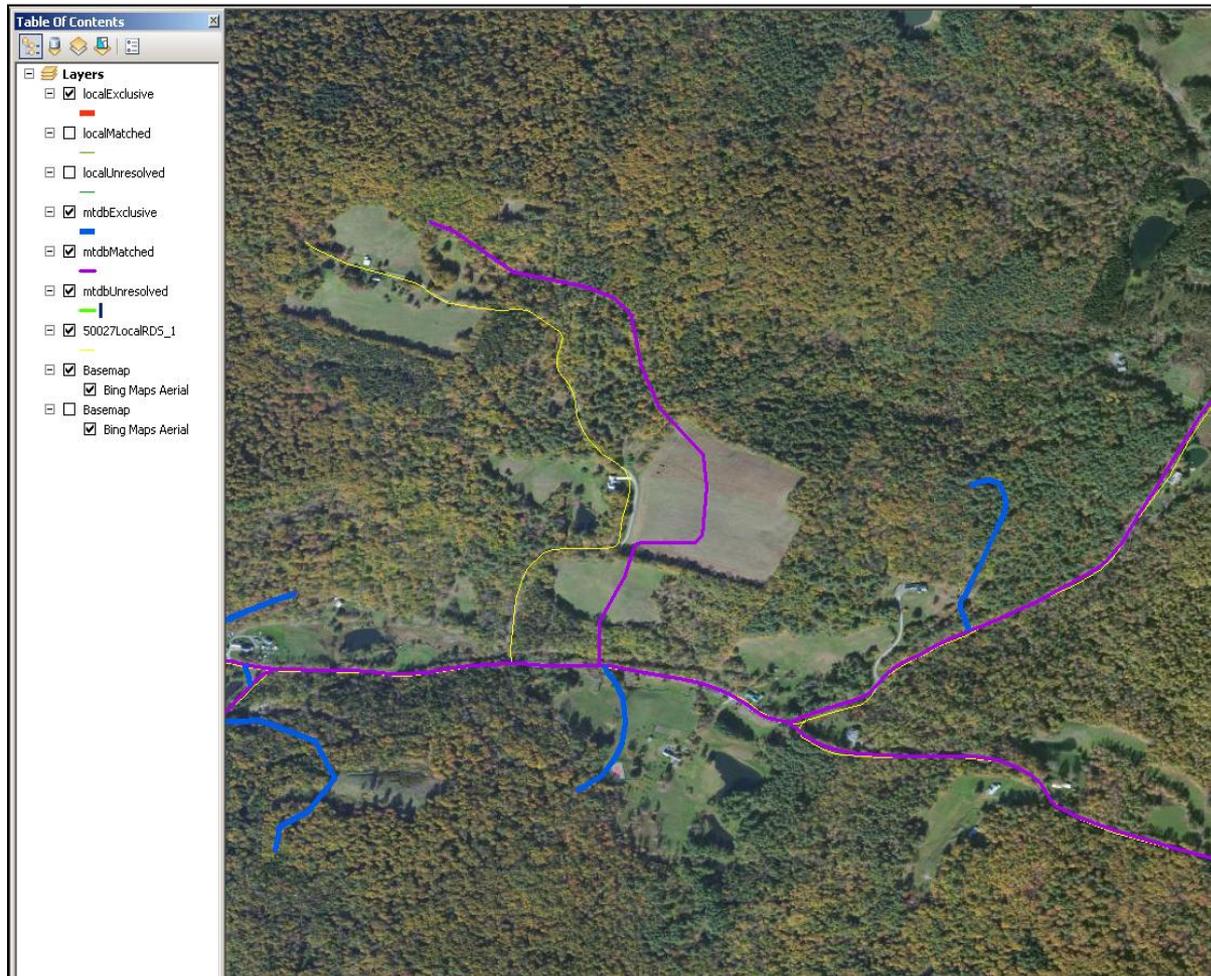
Conflation Results:

Arc Map display of  
the conflation results

- Red- Local Exclusive
- Blue- TIGER Exclusive
- Purple- Matched
- Green- Unresolved



# Coordinate Enhancement Path



# Coordinate Enhancement Path

The green/yellow feature will need to be resolved after coordinate enhancement



# Coordinate Enhancement Path

Final steps for the enhancement process:

- Conflation QC
  - confirming/deselecting transactions
- Coordinate Enhancement
  - inserting the changes into the MTDB
- Post – Coordinate Enhancement
  - cleaning up any features or boundaries that were affected by the reshaping or that were not resolved using the coordinate enhancement software

# Post-Processing Edits

Several edits will be run after the MTDB is updated to verify that no data discrepancies have been introduced

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