

GIS In Elections, NCSBE



BALU CHEPURI
ADVANCED DATA ANALYST





Task: Correct Ballot to the Voter

Most Important Task: Getting the right ballot to the Voter

- I. Audits, Data and Tools
- II. CBOE Partners
- III. State Partners



I. Audits and Data Tools

- Jurisdiction Audits – Weekly and On Demand
- Address points, Jurisdiction layers, Census layers
- Geo Point Interactive Map



I. Weekly Audit

1. Voter Registration Data is based on Street Ranges.
2. GIS Overlays
3. Audit Results- KMZ, SHP are copied to secure FTP and published as WFS service for Geo Pt Map.
4. Any un-mapped address “Non-Plotted” addresses mapped in Geo Pt Map.



I. GIS On Demand Audit

1. Local Jurisdictions – Municipalities, Wards, School board, County Commissioners, Fire, Water, Sewer districts etc.
2. County user will upload shp file to portal.
3. Email with FTP-link of results is sent to the user.



I. Geo Pt Map

1. This application is used to correct location of address points flagged by SBE GIS Precinct Audit.
2. An address point is flagged because of either of two issues below:
 - Address point is incorrectly mapped or
 - Address point is at correct location but has been assigned to an incorrect jurisdiction.
3. Map Non-plotted Address points.



I. GIS Software

Open Source

QGIS

PostGIS, Geoserver

PostgreSQL

OpenLayers

Python, OGR (GDAL)
Library



II. CBOE

1. Team of 101 – 100 counties and NCSBE
2. SST – Security and Support Technicians.
A team of 8 working with 12-15 counties each.
3. SST work with counties on many things including GIS audits and Tools.



III. STATE PARTNERS

1. Our precincts layer is hosted on NC One Map.
2. CGIA - Address Points, Geocoding Service.
3. NC Geodetic Survey – Surveyed County Boundary



REDISTRICTING – A COUNTY
PERSPECTIVE
(GRANVILLE COUNTY)

February 23, 2022



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Granville County

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CREATE A CLONE IN GEOCODE

Geocode Editor (Granville)

File Reports Admin Window Help

Geocode Tables

Existing Geocode Clones

Clone Name	Description	Type	Mass Change	Activation Date	Operator	Creation
REAVIS ROAD	EXTEND EVEN RANGES	BACKUP	NO	2/1/2022 9:25:47 AM	tburnette@ncsbe-ap	2/1/2022 9:
REAVIS ROAD	EXTEND RANGES	BACKUP	NO	2/1/2022 9:02:10 AM	tburnette@ncsbe-ap	2/1/2022 8:
PRECINCT UPDATES	MEETING 01/27/22	BACKUP	NO	1/28/2022 4:33:26 PM	tburnette@ncsbe-ap	1/28/2022 1
HOUSE UPDATES	MEETING ON 01/27/22	BACKUP	NO	1/28/2022 11:00:52 A	nvelazquez@ncsbe-	1/28/2022 5
OUT OF COUNTY STAT	MEETING 01/27/2022	BACKUP	NO	1/28/2022 9:24:39 AM	nvelazquez@ncsbe-	1/28/2022 5
DUTCHESS TO DUCHE	CHANGE NAME OF STREET	BACKUP	NO	1/27/2022 3:45:49 PM	tburnette@ncsbe-ap	1/27/2022 3
SASSAFRAS LANE	EXTEND RANGE	BACKUP	NO	1/26/2022 9:45:11 AM	tburnette@ncsbe-ap	1/26/2022 5
CORRECTIONS 1/19/2	OVERVIEW COURT PINE TREE HOLLOW POC	BACKUP	NO	1/19/2022 5:05:09 PM	tburnette@ncsbe-ap	1/19/2022 4
WILTON AVENUE	ROAD CHANGES	BACKUP	NO	1/14/2022 10:31:53 A	ccrowder@ncsbe-ap	1/14/2022 5
STONEWALLS WAY TC	ROAD CHANGES	BACKUP	NO	1/13/2022 4:24:03 PM	ccrowder@ncsbe-ap	1/13/2022 2
ORPHAN CORRECTION	ORPHANS AND ROAD CHANGES	BACKUP	NO	1/13/2022 1:23:10 PM	tburnette@ncsbe-ap	1/11/2022 1
CORRECTIONS	CORRECTIONS COC SCH LAKE DEVIN RD TO	BACKUP	NO	1/6/2022 4:31:00 PM	tburnette@ncsbe-ap	12/30/2021
US Hwy 15 N TO ZEBE	COC SCH	BACKUP	NO	12/22/2021 9:34:02 A	ccrowder@ncsbe-ap	12/21/2021
SHADY BROOK DR TO	COC SCH	BACKUP	NO	12/21/2021 12:35:04	ccrowder@ncsbe-ap	12/20/2021
RANGE RD TO SHADO	COC SCH	BACKUP	NO	12/20/2021 4:44:44 F	ccrowder@ncsbe-ap	12/20/2021
OLD ROXBORO RD TO	COC SCH	BACKUP	NO	12/17/2021 1:24:14 F	nvelazquez@ncsbe-	12/16/2021

Open

Delete

New

Update Geocode

Check Update Status

Refresh

Print Street Changes

Print Voter Changes

Close

GEOCODE SEARCH – ORANGE STREET

Geocode Editor (Granville) [View Geocode Backup -- REAVIS ROAD]

File Reports Admin Window Help

REAVIS ROAD -- Single Change

Search Display

Street

Low House # High House # O/E Direction Street Name Type Suffix City State ZIP Code

ORANGE

Jurisdictions

All

Results List

	Low	High	OE	Dir	Street Name	Typ	Sfx	City	St	Zip	PCT	MUNI	CONG	SUPCT	JUD
▶	100	606	E		ORANGE	ST		OXFORD	NC	27565	S00X	0X	02	09	09
	101	605	D		ORANGE	ST		OXFORD	NC	27565	S00X	0X	02	09	09

[Full-screen View](#)

GEOCODE – ORANGE STREET (CONTINUED)

Search Display

Street

Low House #	High House #	O/E	Direction	Street Name	Type	Suffix	City	State	ZIP Code
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	ORANGE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Jurisdictions

All

Results List

	NCSEN	NCHSE	CCOM	BDED	PROS	VTD
▶	13	032	CC#4	SCH4	11	S00X
	13	032	CC#4	SCH4	11	S00X

Full-screen View

GEOCODE SEARCH – US HIGHWAY 15

Geocode Editor (Granville) [REDACTED]

File Reports Admin Window Help

View Geocode Backup -- REAVIS ROAD

REAVIS ROAD -- Single Change

Search Display

Street

Low House # High House # O/E Direction Street Name Type Suffix City State ZIP Code

US HWY 15

Jurisdictions

All

Results List

	Low	High	OE	Dir	Street Name	Typ	Sfx	City	St	Zip	PCT	MUNI	CONG	SUPCT	JUD
▶	8680	9624	E		US HWY 15		N	BULLOCK	NC	27507	SASS		02	09	09
	8681	9625	O		US HWY 15		N	BULLOCK	NC	27507	SASS		02	09	09
	1000	1677	E		US HWY 15		S	CREEDMOOR	NC	27522	CRDM		02	09	09
	1001	1676	O		US HWY 15		S	CREEDMOOR	NC	27522	CRDM		02	09	09
	1678	1690	E		US HWY 15		S	CREEDMOOR	NC	27522	CRDM		02	09	09
	1679	1689	O		US HWY 15		S	CREEDMOOR	NC	27522	CRDM		02	09	09
	1691	2009	O		US HWY 15		S	CREEDMOOR	NC	27522	CRDM		02	09	09
◀	1692	2008	E		US HWY 15		S	CREEDMOOR	NC	27522	CRDM		02	09	09



GRANVILLE COUNTY BOARD OF ELECTIONS
Geocode Search Results

STREET NAME	BEGIN END	SD	CITY ZIP	ST	PCT	MUNI	CONG	SUPCT	JUD	NCHSE	CCOM	BDED	PROS	VTD	
US HWY 15 N	8880 9824	E	BULLOCK 27507	NC	SASS		02	09	09	13	032	CC#2	SCH2	11	SASS
US HWY 15 N	8881 9825	O	BULLOCK 27507	NC	SASS		02	09	09	13	032	CC#2	SCH2	11	SASS
US HWY 15 S	1000 1677	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#7	SCH7	11	CRDM
US HWY 15 S	1001 1678	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#7	SCH7	11	CRDM
US HWY 15 S	1678 1690	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#7	SCH7	11	CRDM
US HWY 15 S	1679 1689	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#7	SCH7	11	CRDM
US HWY 15 S	1691 2009	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#7	SCH7	11	CRDM
US HWY 15 S	1692 2008	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#7	SCH7	11	CRDM
US HWY 15 S	2010 2050	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2011 2049	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2225 2237	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2228 2236	E	CREEDMOOR 27522	NC	CRDM	CR	02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2238 2238	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2239 2239	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2240 2244	E	CREEDMOOR 27522	NC	CRDM	CR	02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2241 2245	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2246 2254	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2247 2255	O	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM
US HWY 15 S	2256 2286	E	CREEDMOOR 27522	NC	CRDM		02	09	09	13	032	CC#5	SCH5	11	CRDM

US HWY 15 N - US HWY 15 S

Search tools

- Create PDF
- Combine Files
- Edit PDF
- Request Signatures FEATURED
- Fill & Sign
- Export PDF
- Organize Pages
- Send for Comments NEW
- Comment
- Scan & OCR
- Protect
- Share
- More Tools

Get e-signatures fast
Send PDFs for signing. Recipients sign online without Acrobat.

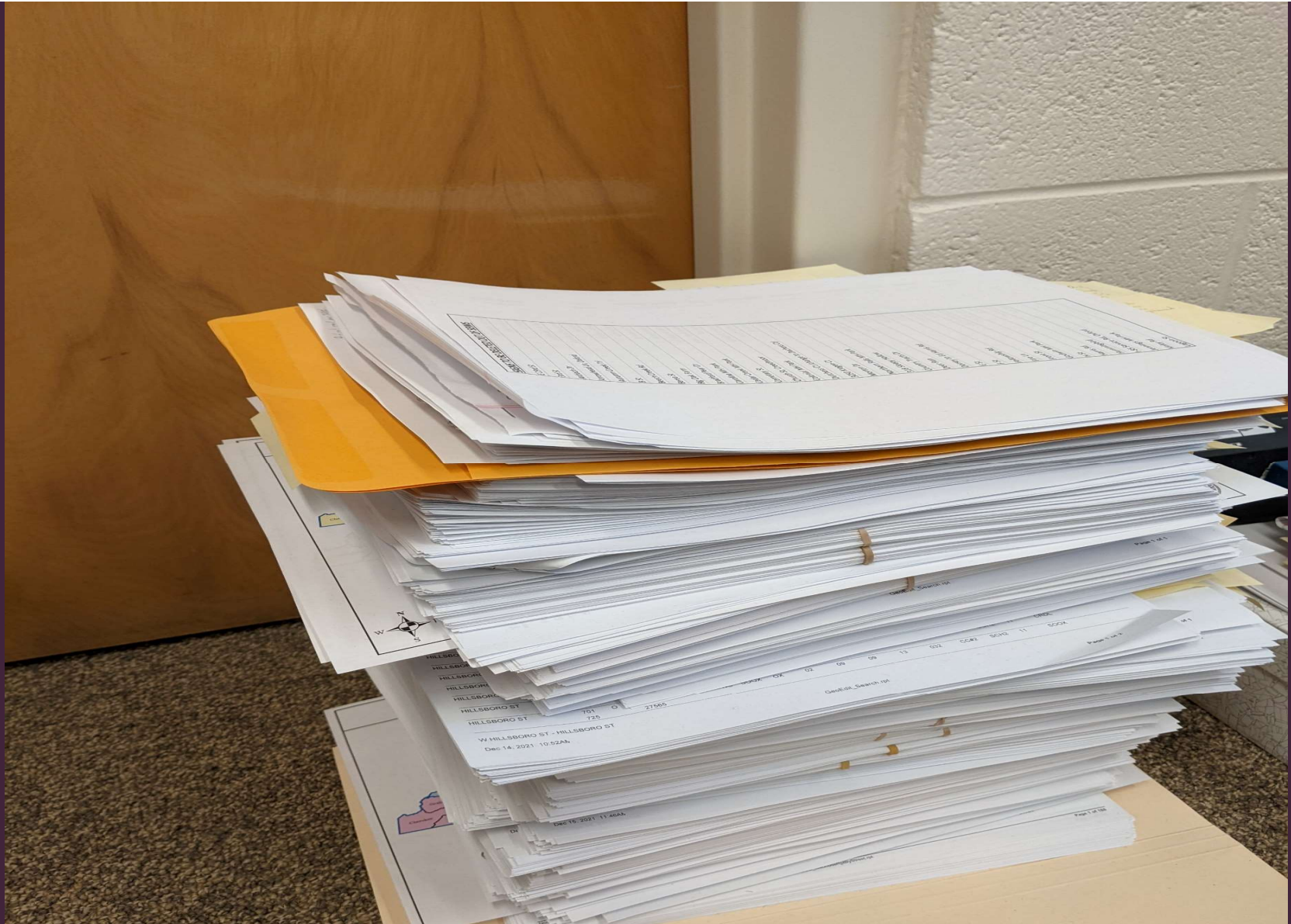


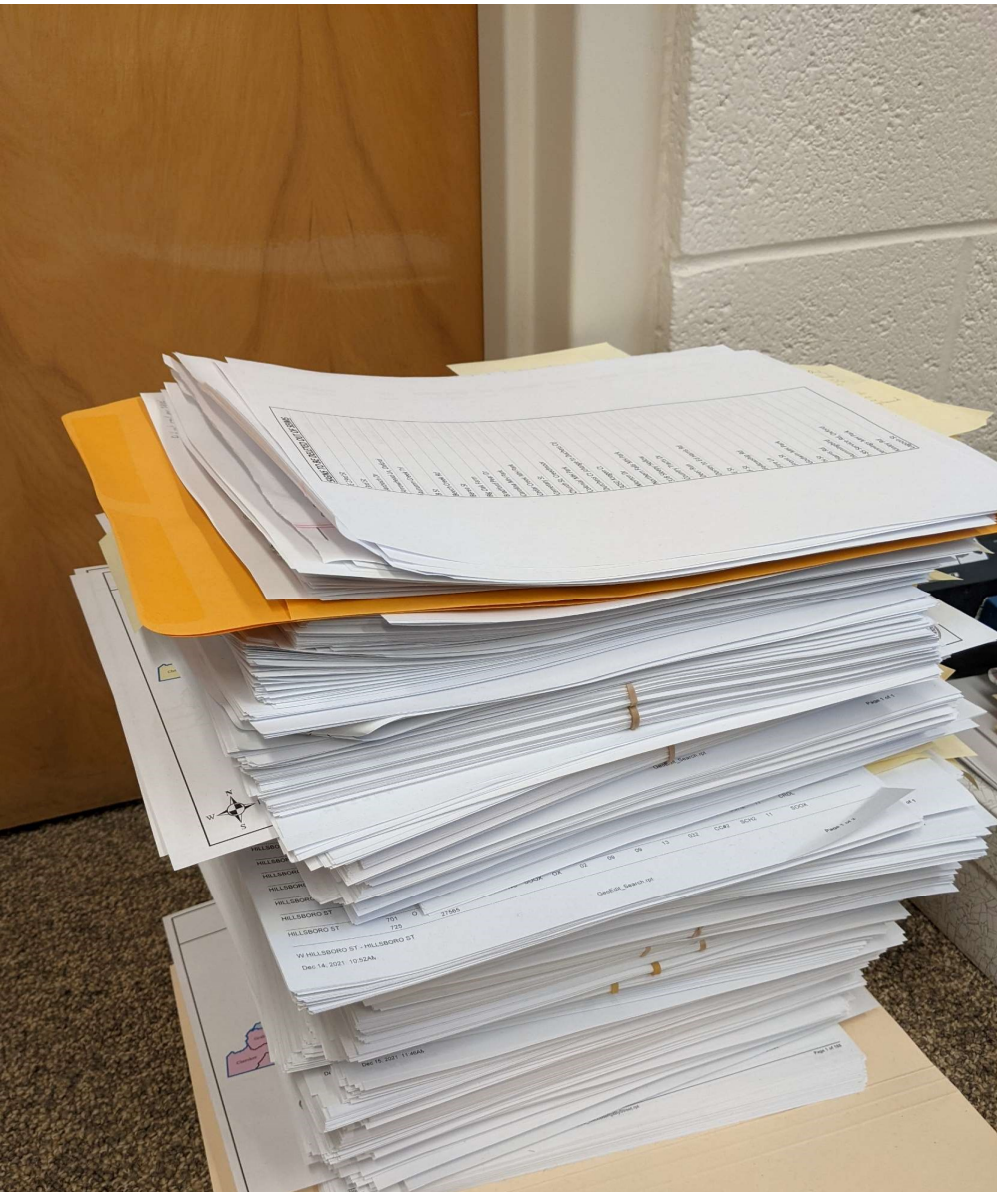
TABLE WITH 10 COLUMNS AND 10 ROWS



HILLSBORO
HILLSBORO
HILLSBORO
HILLSBORO
HILLSBORO ST
HILLSBORO ST
W HILLSBORO ST - HILLSBORO ST
Dec 14, 2021 10:52AM

Dec 16, 2021 11:46AM





This was a lot of work. It took us from late November to early February to complete and edit based on weekly audits and numerous additional audits.

STATE BOARD OF ELECTION AUDIT TOOLS

This is a team effort. The State Board of Elections works closely with the County Board of Elections, and county GIS staff.

1. Weekly audits are run and provided to counties. We forward this to our Addressing GIS Manager, Sandy Woody, each week.
2. GeoPts Map Tool. Sandy Woody will talk about this tool.
3. On Demand Audit Tool. Sean Pumphrey, Security & Support Technician, with the State Board of Elections, will talk about this tool.

These tools are easy to use and very helpful to ensure that our voter registration database districts and precincts are accurate.

GEOPT MAP

NORTH CAROLINA STATE BOARD OF ELECTIONS

Interactive GEO Points Map

Search: Go!

Layers Basemap

County: GRANVILLE [Color Key](#)

- Voter Address Points
- Non-Voter Address Points
- Non-Plotted Address Points

Address Attribute

VR Street	VR Zip	VR City	Status
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0 Matching Records

First Prev 1 Next Last

CONFIRM **IGNORE (VR ADJUSTMENT)** **RESET POINT**