

Collecting and sustaining a voting unit GIS layer

Geo-Enabling Elections

May 13, 2021

Housekeeping

- **Slides** are available on the registration page
- Use the **chat panel** to say hello, chat with other attendees, and ask questions

What we'll cover today

- Identify the steps to build a voting unit GIS layer
- Implement a plan for updating precinct boundaries using GIS software
- Develop documentation to maintain your voting unit GIS layer

Today's agenda

- Introduction (5 minutes)
- Building a voting unit GIS layer (15 minutes)
- Planning to update precincts (15 minutes)
- Developing a maintenance plan (10 minutes)
- Q&A (10 minutes)
- Wrapping up and course survey (5 minutes)

Hello, there!



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NSGIC

National States Geographic Information Council

Best Practices for Geo-Enabling Elections



Starting with the basics

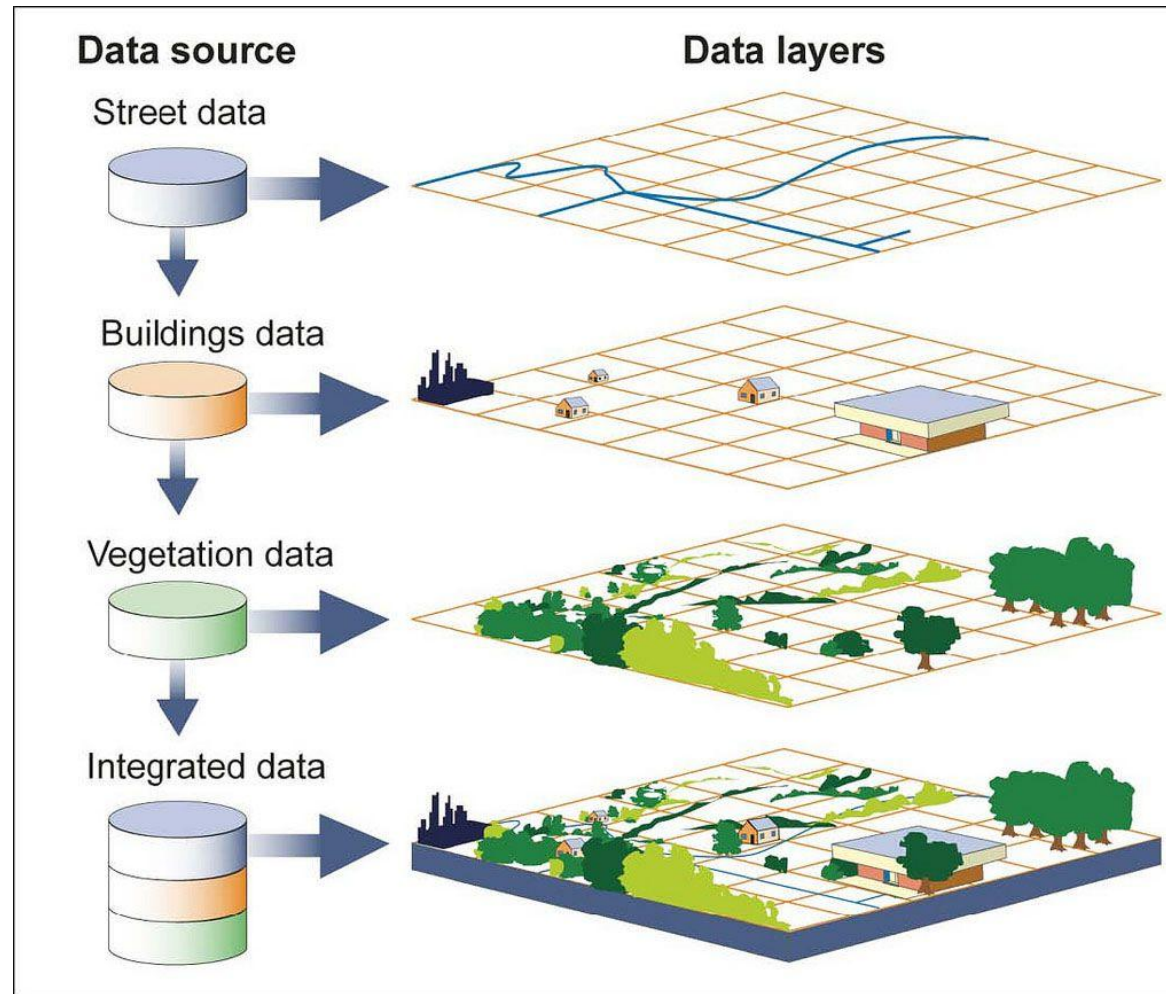
Building a voting unit GIS layer



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What is a GIS layer?

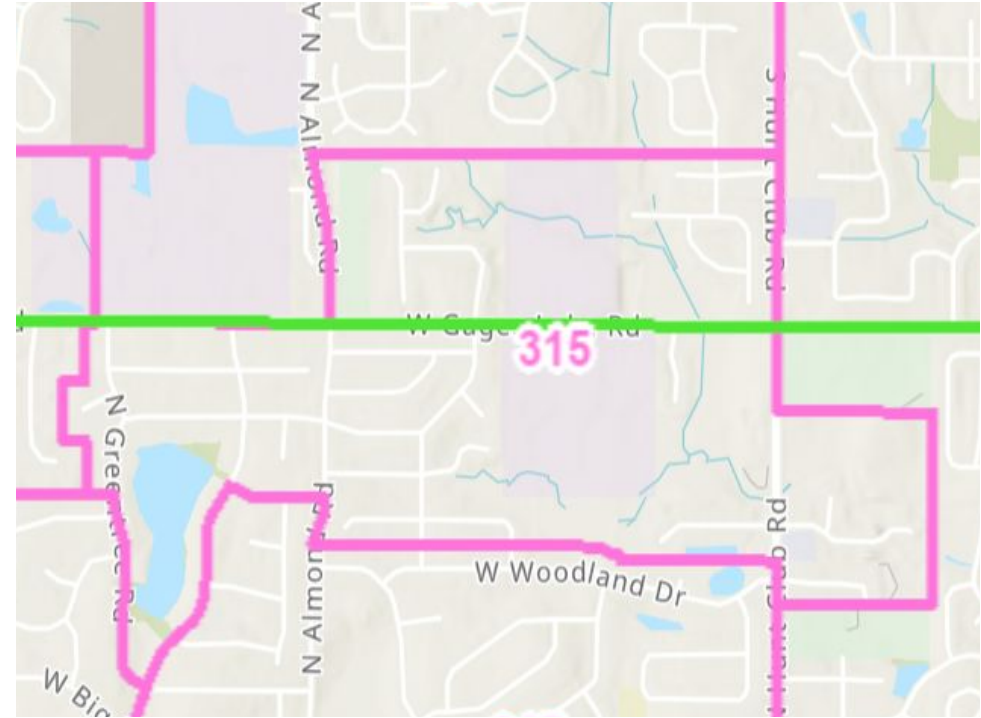
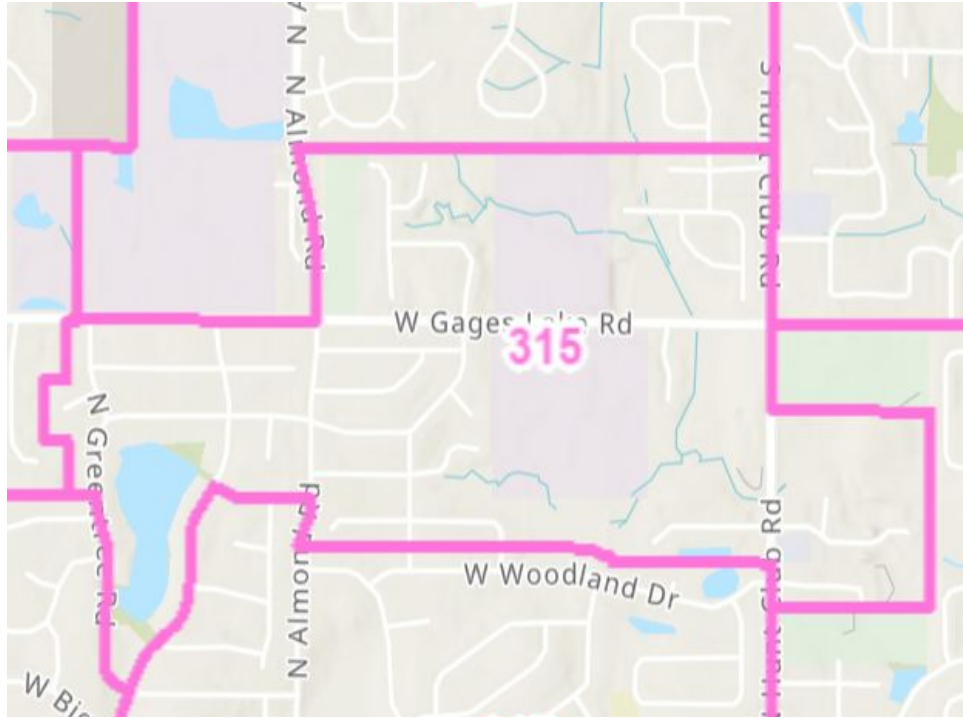


Source: US General Accounting Office 2021

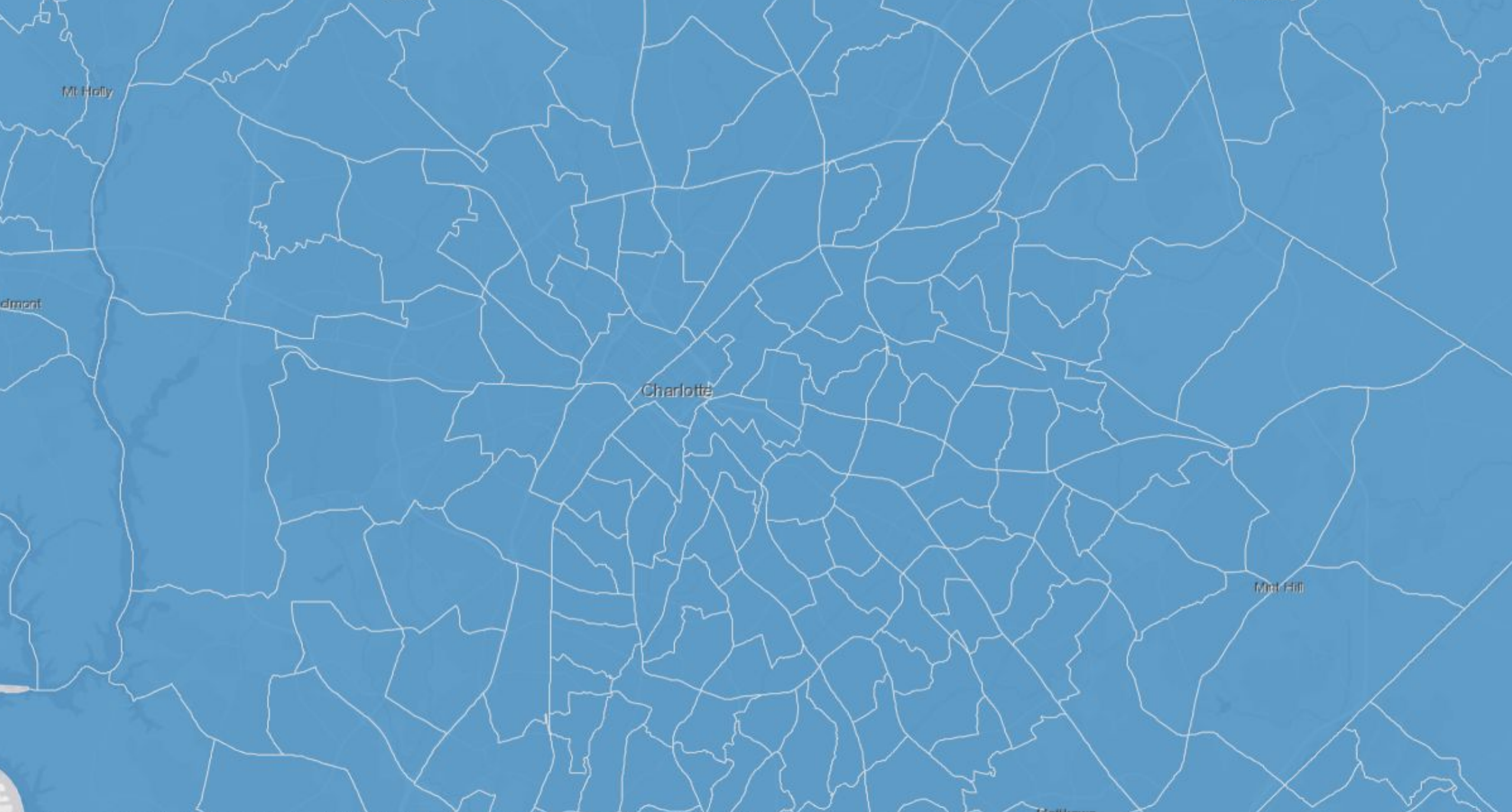
Voting unit GIS layer

A GIS layer that overlays voting boundaries created by federal, state, and local districts and includes precincts

Precinct splits or subs



-  Precinct boundary
-  County board district



Where do I start?

- Locate existing boundary information from the **authoritative source**. These boundaries should include:
 - Congress
 - State legislatures
 - County commissions
 - City council
 - Local service districts
 - Tribal boundaries

Translate boundaries to GIS

Legal descriptions

Starting at the Northeast corner of S
Thence North 89 degrees 54 minutes 24
To the true point of beginning.
(1)Thence South 89 degrees 54 minutes
(2)Thence North 33 degrees 24 minutes
(3)Thence North 33 degrees 8 minutes
(4)Thence North 33 degrees 41 minutes
(5)Thence North 31 degrees 40 minutes
(6)Thence North 32 degrees 43 minutes
(7)Thence North 32 degrees 54 minutes
(8)Thence North 33 degrees 41 minutes

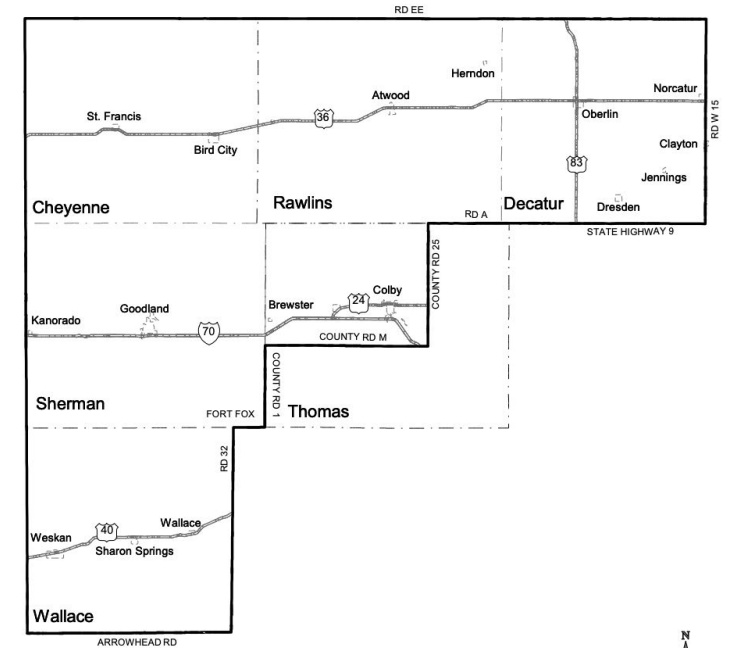
Source: Maricopa County Recorder 2021

Block equivalency files

```
BLOCKID,SLDL
370010201001000,063
370010201001001,063
370010201001002,063
370010201001003,063
370010201001004,063
370010201001005,063
370010201001006,063
370010201001007,063
370010201001008,063
370010201001009,063
370010201001010,063
370010201001011,063
```

Source: US Census Bureau 2021

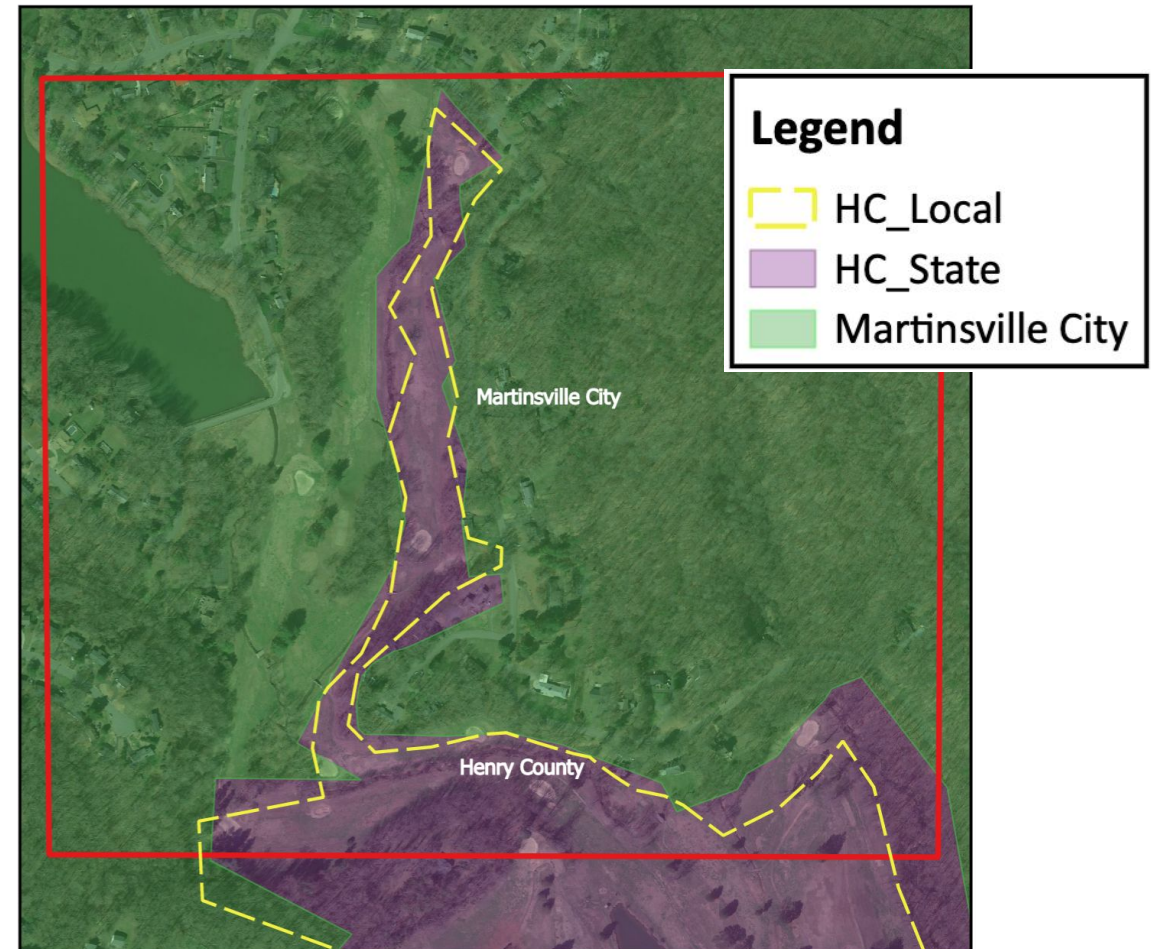
Print & digital maps



Source: Kansas Legislative Department 2021

Spatial data standards

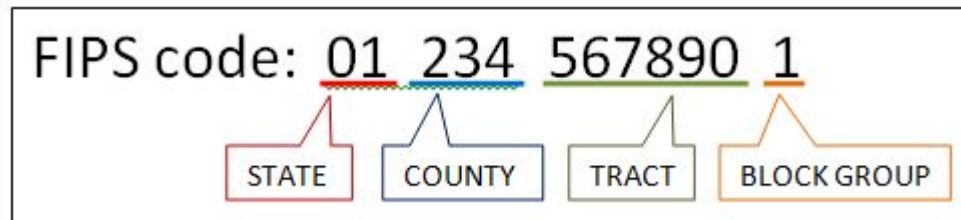
- Build seamless boundaries
- Use a standard reference coordinate system



Source: CTCL 2021

Assign unique identifiers

- Internal identifiers
 - Unique to your system
- Open civic data identifiers (OCD-ID)
 - Example:
Ocd-division/country:us/state:il/county:cook/council_district:8
- FIPS codes
 -



Source: Policy Map 2012

Include metadata

Summarize your data

- What is the dataset?
- What is the purpose of the data?

Describe your data

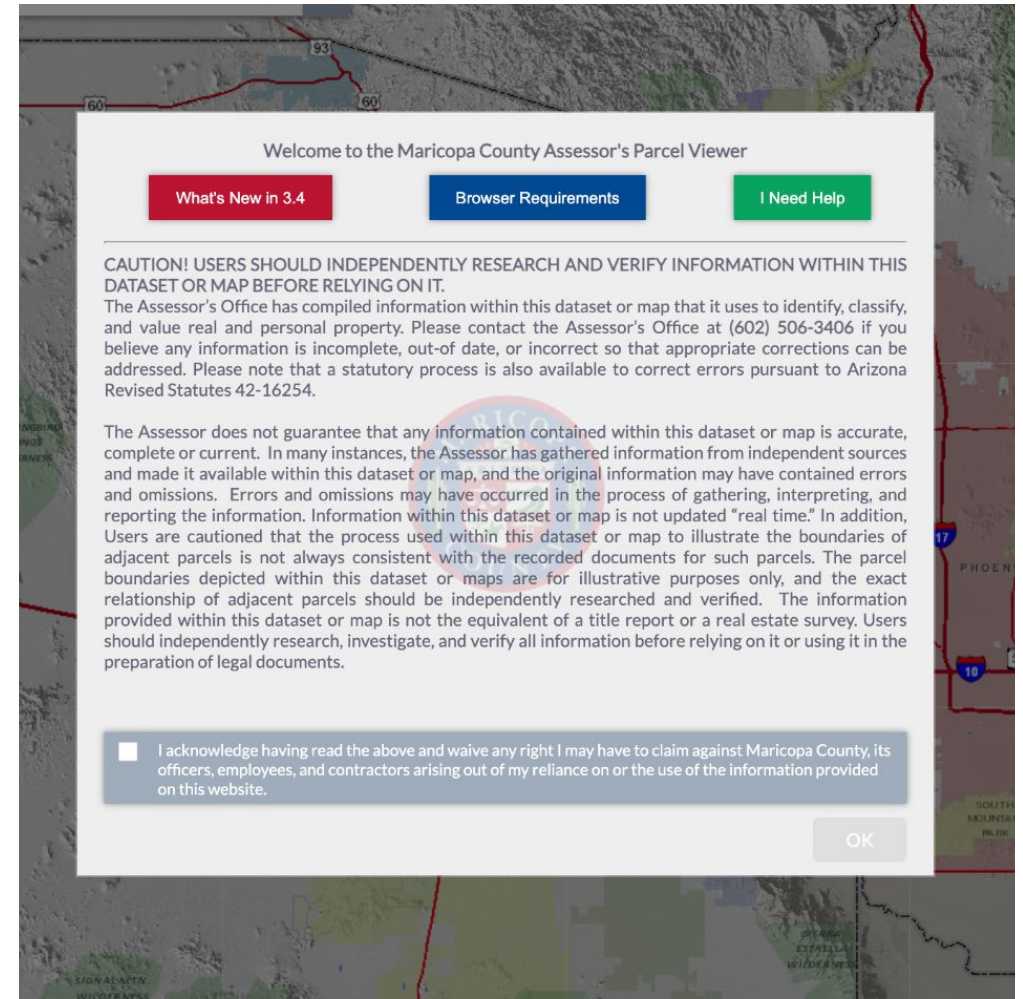
- How was the data created?
- How often is the data updated?

Establish contact information

- Who created the dataset?
- Who is the point person for questions?

Publish data online

- Publish voting unit layer online
- Publish images of boundaries for voters
- Include a disclaimer



Source: Maricopa County Assessor 2021

Voter tools

You selected Pinal County, Precinct 51

If that doesn't seem right, select a different location on the map to accurately show where you are registered to vote. Otherwise, scroll down for results.

What kind of voting location are you looking for?

Election Day Voting Locations

Early Voting Locations

Ballot Drop Boxes

Emergency Voting Locations

We found 1 polling place.

Vote in-person on Election Day: Tuesday, November 3 from 6:00 AM to 7:00 PM. As long as you are in line before 7:00 PM, you will still be able to vote. Voter identification is required. Find out more about [what you need to bring to vote in person](#).

At these locations, you can also drop off the ballot you received by mail.

St. Mary'S Center (Your Precinct)

100 Sunset Dr, Superior, AZ 85173

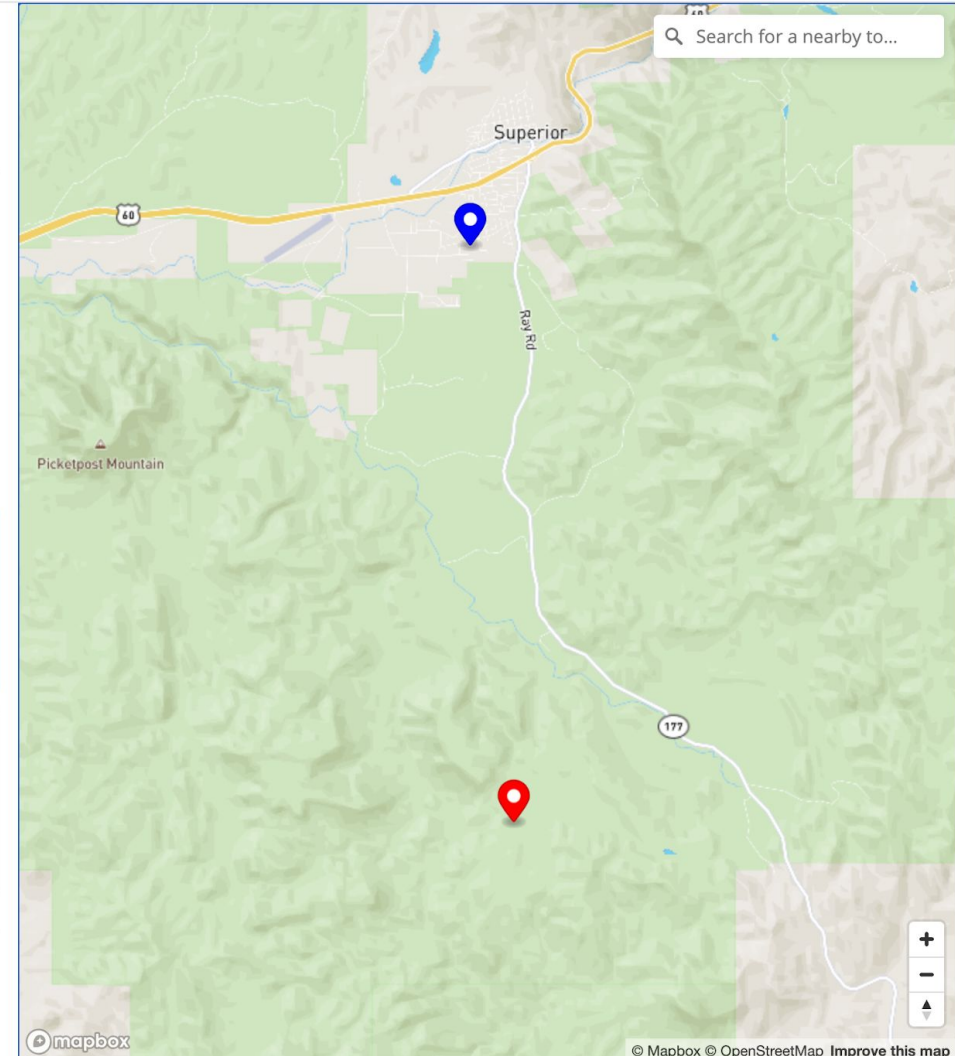
11/3: Tuesday

6AM - 7PM

[Open in Google Maps](#)

About this tool

This is not a voter registration tool. It is also not a way to find out where to vote in Tribal Elections. This tool is to help people find out where and when they are able to vote for the US General Election. The data is provided by the ASU Law Indian Legal



How can I build a process to make updates?

Drawing precinct boundaries



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Reprecincting

The process of redrawing precinct boundaries to align with federal, state, and local district lines and evenly distribute population

Example redistricting timeline



How does reprecinting work?

Paper and printed maps



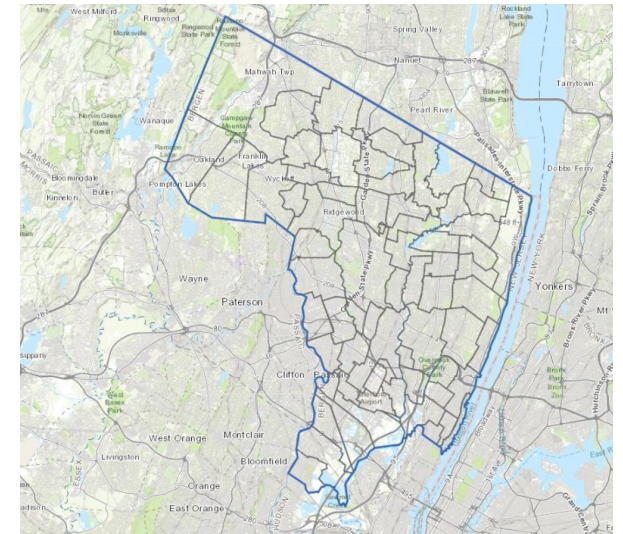
Source: Cheyenne County, Colorado

Address ranges

STDIR	STNAME	STSFX	STTYPE	ALIGN	FMDLMT
E	SUPERSTITION		DR	4205	2835
E	RYAN		RD	4410	2830
S	164TH		ST	2800	4287
S	165TH		WAY	2855	4373

Source: Maricopa County, AZ

GIS format



Source: County of Bergen, NJ 2021

Best practices for drawing precincts

- Follow legislative & congressional boundaries
- Follow natural geographic boundaries
- Minimize precinct splits
- Compact
- Continuous
- Keep communities with similar interests together

Develop a plan

- Identify and document a process
 - Who will lead the process?
 - How will you identify which voting records need to be updated?
 - How will precinct assignments be updated?
- Proactively train your team
- Be clear about the timeline

Reprecincting with GIS

Case study: Marion County, FL

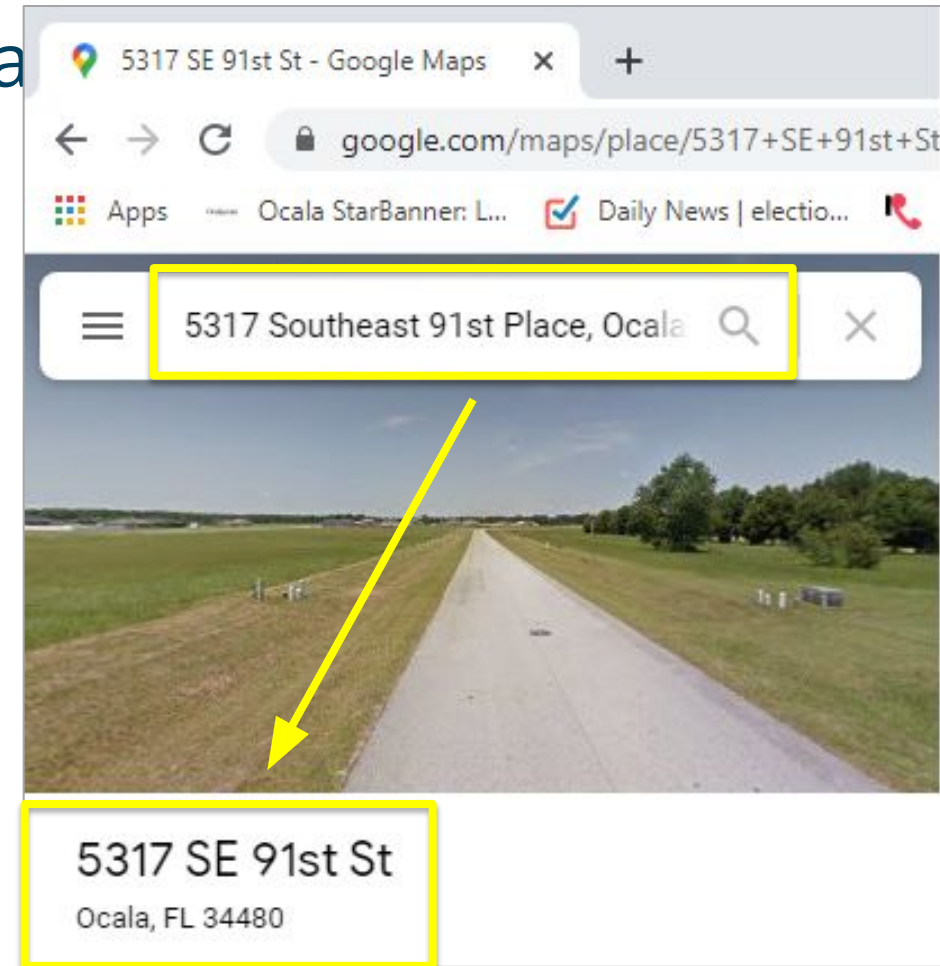


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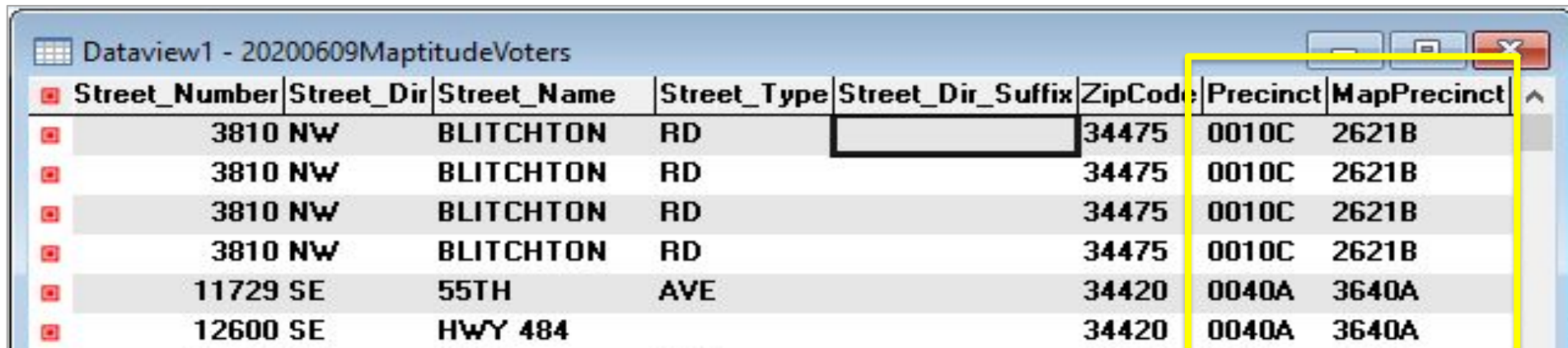
Prepping your data

- Get prepped before the census data is released.
- Start the process now with your existing data.
- Don't let the map make assumptions.
- Find the anomalies and get the two datasets in sync before one changes.



Two systems: VRS and GIS

- Export a voter file from the voter registration system (VRS), import it into GIS, and geocode.
- Compare the geocoded precinct field (MapPrecinct) to the Precinct field from the VRS file.
 - Review all anomalies and correct errors.
- Make sure every address matches exactly.



Street_Number	Street_Dir	Street_Name	Street_Type	Street_Dir_Suffix	ZipCode	Precinct	MapPrecinct
3810 NW		BLITCHTON	RD		34475	0010C	2621B
3810 NW		BLITCHTON	RD		34475	0010C	2621B
3810 NW		BLITCHTON	RD		34475	0010C	2621B
3810 NW		BLITCHTON	RD		34475	0010C	2621B
11729 SE		55TH	AVE		34420	0040A	3640A
12600 SE		HWY 484			34420	0040A	3640A

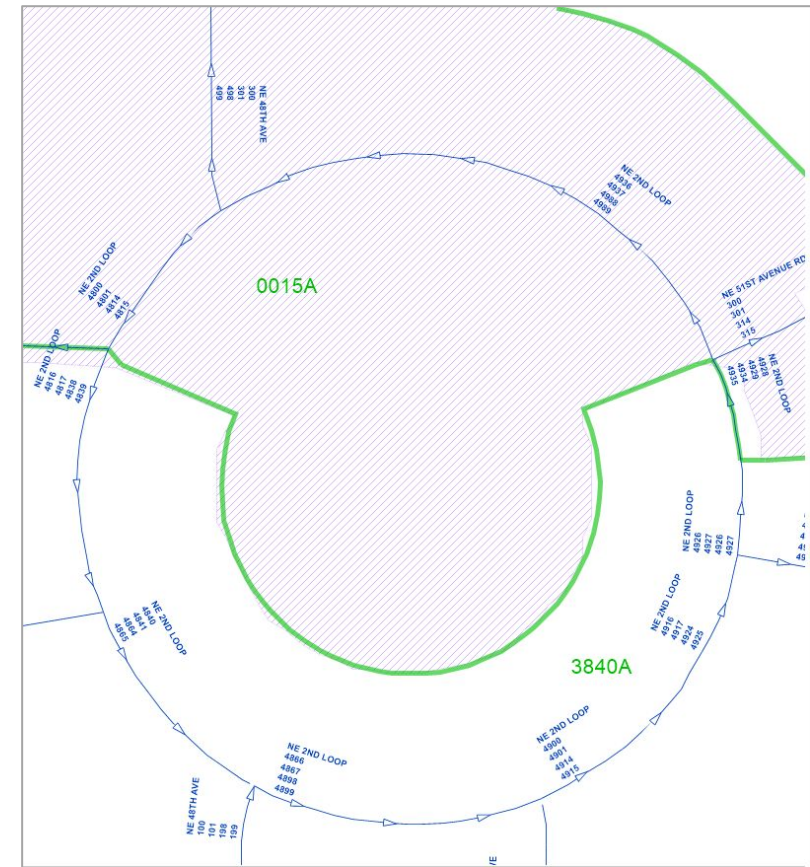
Maps vs. tables

- A table lists the street ranges located in a municipality.
- A map shows where the municipality line falls.

Street Segment Maintenance

New Find Save Delete Prior Next Print Reports Utilities

Name	Range	# Vtrs	Prct	City	City-Zip
NE 2ND LOOP	4800-4814(E)	4	0015A	15,Ocala	OCALA, 34470
NE 2ND LOOP	4937-4989(O)	8	0015A	15,Ocala	OCALA, 34470
NE 2ND LOOP	4801-4815(O)	4	0015A	15,Ocala	OCALA, 34470
NE 2ND LOOP	4929-4935(O)	4	0015A	15,Ocala	OCALA, 34470
NE 2ND LOOP	4936-4988(E)	6	0015A	15,Ocala	OCALA, 34470
NE 2ND LOOP	4841-4865(O)	0	3840A	0,County	OCALA, 34470
NE 2ND LOOP	4866-4898(E)	4	3840A	0,County	OCALA, 34470
NE 2ND LOOP	4867-4899(O)	4	3840A	0,County	OCALA, 34470
NE 2ND LOOP	4900-4924(E)	5	3840A	0,County	OCALA, 34470



Ready for GIS

- If interested in geo-enabling, start now.
- Don't reinvent the wheel, reach out for help.
- Don't be intimidated, no matter your county size.
- Invest in data preparation: ensure your VRS data agrees with your GIS data.

Ensuring the two separate systems match will put you on a path to success.

Final steps



Where should I start?

Developing a maintenance plan



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Leverage your team of specialists

- Ensure shared understanding
- Avoid duplicate effort between agencies



Who is responsible for documenting the process?

- Identify a designated person or team to document and update the documentation
- Clarify where the documentation can be found



How often will data be updated?

- Designate a key contact person
- Establish a regular system of communication to make updates to the voting unit layer



How will these changes be documented?

- Be clear about who will update the documentation
- Develop a version control system



Develop a shared calendar

- Include major deadlines and events for GIS and election teams. These might include:
 - Election days
 - Deadlines for making precinct changes
 - Election certification dates
 - State deadlines
 - Major projects



Let's talk

Discussion



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Next steps

- Have a conversation with NSGIC about building a voting unit GIS layer
- Identify authoritative sources for political boundaries
- Translate political boundaries to GIS format
- Develop spatial data standards
- Proactively plan for reprecincting
- Put together a spatial data maintenance plan
- Develop a shared calendar for elections and GIS
- Ask an expert questions to learn more about a voting unit GIS layer
- I'm not sure

Share your thoughts

- What resonated with you from today's webinar? (Any "ah-ha" moments?)
- What questions do you have about what we covered today?
- What questions do you have about what we didn't cover today?

We've covered a lot of ground

Wrapping up



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What was your experience with today's webinar?

- Quick poll
- Please complete now to provide feedback and improve the webinar for future participants

Geo-Enabling Election Series: Up next

- Convening a team of specialists
- Collecting & sustaining a voting unit GIS layer
- Implementing a geocoding strategy
- Assembling best available contextual layers
- Defining & implementing data validation processes

techandciviclelife.org/course/geo-enabled-elections/

Thanks!

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