

Local Election Officials'  
**Guide to Redistricting**



**U.S. Election Assistance Commission**  
633 3rd Street NW, Suite 200 | Washington, DC 20001  
[www.eac.gov](http://www.eac.gov)

## Contents

Introduction .....	3
Purpose .....	3
Preparation .....	4
Create a Calendar .....	4
Assess Current Boundaries .....	4
Take Inventory of District Maps .....	5
Document the Process.....	6
Addresses and Street Files.....	6
Street File Audits .....	7
Geocoding .....	8
List Maintenance .....	11
Outreach and Public Hearings.....	11
Public Notice and Outreach .....	12
Public Comment .....	13
Making Changes to Boundaries.....	13
Precinct Boundary Changes .....	14
District Boundary Changes.....	15
Review for Accuracy .....	15
Checklists .....	16
Redistricting Glossary .....	19
Additional Resources.....	20

## Introduction

Federal, state, and local laws require certain elected offices, such as the U.S. Congress, state legislators, and County Commissioners, represent about the same number of people. Every 10 years, the United States is constitutionally required to conduct a count of the general population, known as the U.S. Census. Redistricting is the process of re-examining and making changes to political boundaries, to account for changes in population. For election officials, this process includes preparing and analyzing electoral data, developing maps, and updating district boundary information in election records. In some jurisdictions, soliciting public input is also delegated to the local election official. Redistricting laws, and the officials responsible for each step in the process, vary by jurisdiction.

## Purpose

Redistricting applies to all levels of government where district elections are held, although not all jurisdictions will be subject to or require new boundaries to be redrawn. Although election officials share basic responsibilities for updating newly redrawn political districts in their records, there are variations among the size of their offices, technical abilities, budgets, and the resources available to update and audit precinct and district boundaries. In addition, because redistricting usually only occurs once every 10 years, it is possible the officials responsible for managing redistricting have only overseen the process one or fewer times. The purpose of this document is to provide general guidance to assist election officials when making technical changes to precinct and district information in election systems.

For election officials to certify every vote is counted correctly, they must first make certain that every voter receives the correct ballot. This is a complicated procedure of analyzing voter addresses, and then determining which addresses are located within a voting district. Federal, state, local, and district boundaries rarely coincide with each other and often have overlapping dividing lines. Boundary lines are defined in a variety of ways including metes and bounds, voting precincts, census blocks, public maps, and other methods.

Prior to the advent of computer databases, election officials kept track of which voters resided in which districts using a combination of paper maps, lists of addresses, and paper records of voter registration information. Today, many election officials use computerized election management systems (EMS), geographic information systems (GIS), electronic voter registration systems, and other technology tools to help maintain voter and associated district boundary information. Although technology has allowed election officials to refine the accuracy of voting data, the process of redistricting still requires meticulous data entry and careful manual oversight.

Many jurisdictions will solicit public input when drafting new political boundaries. Gathering public comments can be a function assigned to local election officials in some jurisdictions. This document also provides a broad overview of items to consider when planning public hearings during the redistricting process.

## Preparation

There is a limited amount of time for election officials to make changes to election systems after census data is released and before subsequent elections occur. Preparation for redistricting can begin months before updated district boundaries are finalized. This section lists areas jurisdictions can focus on early in the redistricting process.

### Create a Calendar

Creating a calendar of events can help ensure that all legal requirements and deadlines are met, even if some dates are not yet finalized. Beginning with the last possible date and working backwards, a plan can be developed in advance to prepare for contingencies when more time may be needed for a specific task. The following examples are not intended to be a comprehensive list and may not apply in every jurisdiction.

Items that should be considered for inclusion in a redistricting calendar include:

- Auditing existing street files
- Auditing existing precinct boundaries
- Auditing existing district boundaries
- Meeting with other departments to support redistricting changes (e.g., IT or GIS)
- Obtaining training materials from the EMS vendor
- Outreach to local districts to coordinate redistricting plans and communicate deadlines and requirements
- Release date of census data
- Public hearing outreach dates
- Public hearing notice deadlines
- Publishing draft maps
- Adoption of final boundary maps
- Possible legal challenges to final maps
- Making changes to precinct and district boundaries in the EMS
- Auditing changes to data in the EMS to ensure accuracy
- Required legal notifications after changes are made
- Candidate filing periods for new district boundaries

Forward planning is the key to solving organizational challenges, especially with shortened timelines. Having a plan with key dates and deadlines identified early in the process of redistricting can help reduce errors or omissions of legal requirements and make the process of updating boundary changes more manageable.

### Assess Current Boundaries

Understanding and reviewing current district boundaries is essential when preparing for redistricting. This review should include locating the latest set of district legal descriptions, which are written geographical descriptions identifying districts' precise locations and boundaries for legal purposes. Once located, familiarize yourself with the types of descriptions districts use to define their boundaries. Some districts are contained wholly within a single jurisdiction, while others cross jurisdiction lines. It is a best practice to identify officials responsible for the redistricting process for shared districts and to collaborate where appropriate.

For districts that are defined with metes and bounds descriptions—which are detailed and very specialized descriptions using specific geographic features, street directions, intersections of roads, distance between points, and other land surveying methods—it is helpful to identify professionals who can help read and interpret land survey data. Many agencies have surveying departments that may be able to assist election officials who are unfamiliar with these types of descriptions. Metes and bounds legal descriptions often refer to property records, like subdivision maps, so it is a good idea to know where to find property records in a jurisdiction, in case they will need to be referenced when reviewing these types of legal descriptions.

For districts that are defined with census tracts, which are small areas similar to neighborhoods established by the U.S. Census Bureau for analyzing populations, it is helpful to review the latest census tract maps located on the U.S. Census Bureau website: <https://www.census.gov/>. These maps show and label federal and state American Indian reservations, Alaska Native Regional Corporations, states (or state equivalents), counties, county subdivisions, consolidated cities, and places. Additionally, these maps display a base feature network including roads, railroads, and water bodies.

For districts that are defined using voting precincts (or precincts for short), which is a term election officials use to describe a geographic area that determines where a voter resides for election purposes, locate the latest set of precinct boundary definitions, which may themselves be metes and bounds or rely on census data.

Election officials should locate and find any current legal descriptions not in their possession. Without the underlying data, it will be difficult or impossible to verify the accuracy of current boundaries.

### Take Inventory of District Maps

Districts maps may be filed with election officials in regular intervals prior to elections, or they may be held in archival map vaults. Boundary maps may be displayed and maintained in GIS systems, or they may be on file with another department within a local organization. It is a best practice to verify with district representatives that current maps in your custody, or displayed within GIS systems, are accurate prior to beginning the redistricting process.

Historically at-large districts, where their members are elected by all voters within a political subdivision, may have changed to voting by districts in recent years. Reach out to all local jurisdictions to ensure their boundaries are up to date and that all annexation data is on file.

Gather current district maps not in your possession, and request GIS shape files, if available. Congressional and state legislative districts may be available from state redistricting organizations. The U.S. Census Bureau also maintains a repository of states' congressional and state legislative district boundaries. Examples of departments that keep and maintain local shape files are information technology, building and safety, planning, Assessors, or dedicated GIS departments.

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A shapefile is a vector data storage format for storing the geometric location and attribute information of geographic features. Geographic features in a shapefile can be represented by points, lines, or polygons (areas). Precinct and district shape files will contain polygons that can be overlaid with topography maps, roads, parcels of land, aerial photography, and other useful features to visualize boundaries in a map format.

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### Document the Process

It is best practice to obtain signatures, dates, and names of the district representatives who confirmed the boundary data to document all information provided by districts. Jurisdictions should also keep a detailed inventory of where every record is stored, who is responsible for maintaining the records, and where to find the documentation of who provided the boundary information. The inventory should also include who created boundary information in an election management system or GIS database and when the last update was made to these systems.

Street Name	Former	Revised	Reason	Updates in EMS
Pine Street	100-198 even District 1	100-198 even District 2	Boundary change adopted by Commission on October 12, 2021, resolution #2021-68	Update was completed by K. Smith on 12/01/21

Know in advance what information should be kept for archival purposes. Identify who the custodian of the current and new boundary information is, and where documents should be stored. Save copies of all existing boundaries to archive historical precinct and district level election results, clearly marked with the date. Precinct and district level election results are only useful if they can be compared to the boundary lines associated with specific elections.

Know your record retention laws, and ensure no data is destroyed before allowable by law.

### Addresses and Street Files

The most common way election officials determine which district a voter resides in are by maintaining lists of addresses and street segments, which are portions of a street located between a range of addresses. This is done by associating a numerical range of addresses with each precinct. Precincts are then associated with districts. In practice, implementing changes to district boundaries from the redistricting process is accomplished by updating the precinct and districts associated with addresses and street segments. The database of addresses and associated districts is often referred to as a street file or street index.

<b>Pine Street</b>	<b>Precinct</b>	<b>District 2</b>
100-198 even.....	41	Precincts 41,42 & 43
101-199 odd.....	42	<b>District 3</b>
200-300.....	43	Precincts 44 & 45

## Street File Audits

Auditing street file accuracy will save time when boundary changes are made. Correcting the street file will require updating addresses, so it is recommended that jurisdictions identify other departments and agencies that maintain addresses to coordinate corrections. Examples of agencies that maintain addressing records are the U.S. Postal System, U.S. Census Bureau, public safety offices, health departments, Assessors or property tax departments, land records agencies, building and safety, or any departments that file property maps, assign addresses, or are responsible to maintain road signs.

Items to review when examining a street file:

- Even and odd sides of the streets
- Incomplete addresses
- Incorrect road types (e.g., Street vs. Lane)
- Missing prefix or suffix (e.g., apartment or space numbers)
- Incomplete or missing compass directions (e.g., North vs. Northwest)
- Overly long address ranges (e.g., 1-10,000)

All street segments should be reviewed to make sure addressing standards are consistent and duplicate street segments should be removed or combined. For example, *Ocean View Ave.* vs. *Oceanview Ave.*, *HWY 95* vs. *Highway 95*, *2<sup>nd</sup> St.* vs. *Second St.* should be examined to determine if they are the same street. To verify which version of the street name should be used, it is helpful to review property records, postal service addresses, and voter registration applications which often reflect what is on street signs. If there are inconsistencies in street names, efforts should be made to create standardized, complete,<sup>1</sup> and uniform addresses among agencies. This may require updating databases or installing new street signs to correct for errors.

Auditing street files includes identifying proper address unit abbreviations. States or jurisdictions may have their own specific guidelines for address standardization, so it is a best practice to review all state and local address rules, prior to making changes to street addresses. Listed below are the most common U.S. Postal Service abbreviations, but a complete list can be found at [www.usps.com](http://www.usps.com).

Apartment	APT
Building	BLDG
Floor	FL
Suite	STE
Unit	UNIT
Room	RM
Department	DEPT

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<sup>1</sup> The Postal Service defines a *complete address* as one that has all the address elements necessary to allow an exact match with the current Postal Service ZIP+4 and City State files to obtain the finest level of ZIP+4 and delivery point codes for the delivery address. A *standardized address* is one that includes all required address elements and that uses the Postal Service standard abbreviations (as shown in this publication or in the current Postal Service ZIP+4 file), per USPS Publication 28, Postal Addressing Standards June 2020

Validating street lists against postal service data can streamline the process of identifying non-conforming addresses. Other items to consider are eliminating the use of # signs and looking for addresses with an unusually high number of voters. It is a best practice to identify all business and private mail collection facilities in your jurisdictions, to make sure voters are not registering to vote using these locations.

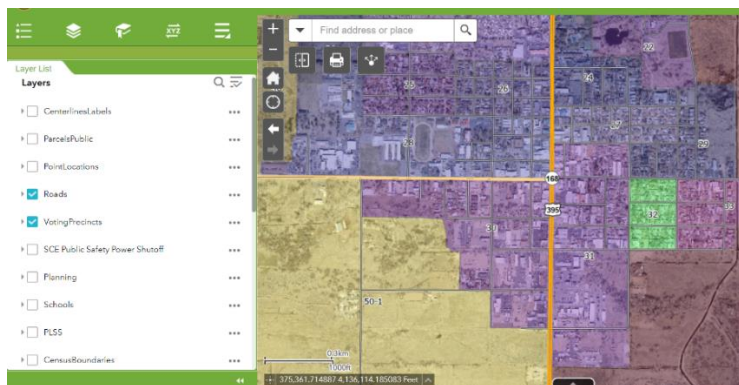
Another common mistake is when multiple streets have the same or similar name in different cities or towns within a jurisdiction, and voters accidentally get assigned to the wrong street segment. Common examples are Park, Main, Oak, Pine, Maple, Cedar, Elm, View, Washington, Lake Hill, and numerical streets First-Ninth.<sup>2</sup> When auditing the street file, identify voters with the same last name and numerical address who are assigned to different cities or towns with the same street names.

Once changes are made, there should be a comprehensive review process to make sure changes made are accurate. It is a best practice for a different person to conduct the review than the person who made the initial changes. Auditing street files can be a time-consuming process, but the more accurate a street file is prior to redistricting, the easier it will be to update databases once new boundaries are finalized. In addition, jurisdictions who regularly audit their street file will have greater confidence that their elections are accurately configured.

## Geocoding

Using GIS, addresses, precincts, and districts in an election management database can be compared with GIS shape files to review for discrepancies. If an elections office does not have familiarity with using GIS, it is a best practice to identify other qualified individuals within their organization or hire a private contractor who may be able to assist with creating a voting precinct layer, if one does not already exist. Once the voting precinct shape files are created, it may require additional periodic assistance to audit street lists, but usually once shape files are created, they only need to be updated when boundary changes are made.

Using GIS, streets, addresses, parcels, districts, precincts, township/range lines, and aerial photos can be overlaid in a single database to interactively examine addresses, precincts, and districts for accuracy.

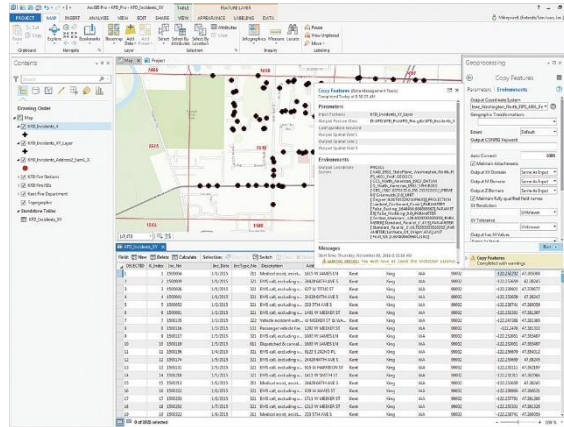


This is an example of a shapefile layer with voting precincts in a GIS workspace

<sup>2</sup>See: <https://www.nlc.org/resource/most-common-u-s-street-names/> (accessed July 29, 2021)



It is recommended that election officials use a process known as geocoding to audit voting records in GIS. This will assign a point on the map for every address in a street file. These points can be compared to other information contained in the GIS workspace. For instance, you can compare the associated districts of address points on the map, to the districts for those same addresses in the GIS shape file to test whether there are any conflicts.



This is an example of geocoding in a GIS workspace<sup>3</sup>

The first step in the geocoding process involves extracting a tab-delimited file from the EMS and uploading the file into an existing GIS database with address point data. Steps should be taken to protect all personal identifying voter information when creating this extract. The only fields necessary are residential address, precinct, and district data.

Sources of address point data for comparison within the GIS workspace can include the U.S. Census Bureau's Topologically Integrated Geographic Encoding and Referencing (TIGER/Line) data and the U.S. Postal Service. Parcel data from Assessor or property records offices can be used to create an address point data set by creating centroids (geometric centers) of the parcel polygons (a sequence of individual lines forming a closed loop to define a polygon) and assigning the parcel addresses to the address point.

Next, the EMS addresses are compared with other address points in the GIS workspace. An EMS address is successfully geocoded where both the address and town match (to account for duplicate addresses in different towns). If there are EMS addresses that do not match an address within the GIS workspace, those addresses have to be geocoded with a different dataset.

The U.S. Census Bureau has a robust address dataset, and easy-to-use online geocoding application, but there are other commercially available geocoding solutions. Unmatched addresses can be run through additional geocoding applications, or they can be layered into a single database to resolve the remaining addresses. There might be a small number that are unable to be geocoded. A manual review of the un-geocoded addresses can be accomplished by visually locating where the address should be, given known address ranges for streets and aerial imagery that shows unaddressed buildings. Any internet mapping tool (e.g., Google) can be used for the manual review by entering an address directly into the search engine.

<sup>3</sup> See: <https://www.esri.com/about/newsroom/arcuser/efficient-geocoding-with-arcgis-pro/> (accessed July 29, 2021)

Once all the addresses are converted to coordinates and GIS point data (i.e., geocoded), then the geocoded addresses can be used to audit the precincts and districts in the GIS workspace. Using GIS analysis tools, you can export a table that lists the addresses and each address' associated voting precincts and districts into two tables - one produced by the EMS, and one produced by GIS.

The final step compares the two tables for discrepancies. With thousands of address points, it is not recommended that this process be done manually. A program can be written to perform several tests designed to expose any discrepancies. The only test that can reasonably be performed without writing code is to compare the total number of addresses in each table. If the totals do not match, the reason for the difference will be discovered in further tests.

Examples of coded tests can include, but are not limited to:

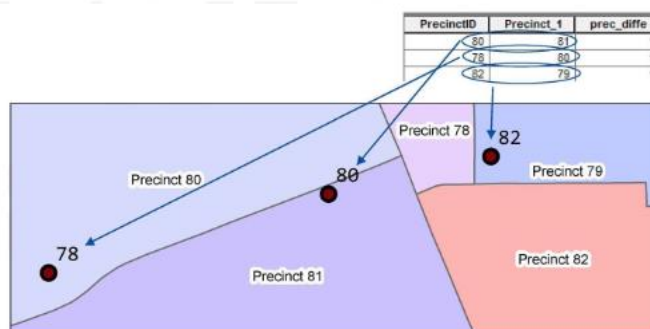
- Counting the number of addresses in each precinct according to each table.
- Making sure that the addresses of each precinct in a table match the addresses in that precinct in the other table. In other words, one table may show that a given precinct has 400 addresses, which is what the other table also shows, but the specific addresses have to be compared to make sure that it's the same 400 addresses in each table.
- Double-checking every address to make sure the assigned precincts and districts match in each table. If the previous tests have been run and discrepancies resolved there should be no problems found in this test.

Outputs for each test can be text lists of problematic addresses, precincts, or districts. Resolving these issues will require looking closely at each discrepancy and determining the possible problem. It could be an error in data in the EMS or it could be an error with the address, precinct or district polygons in the GIS workspace. The only way to tell is with close scrutiny of both systems. When conducting a visual inspection, it is helpful to color code the address points and voting precincts. If a portion of a street segment is assigned the wrong precinct, it will be more obvious to discover. For example, in the adjacent image you can see there were discrepancies between the EMS address points and GIS precinct shape files, based on the mis-matched color coding. This could be an error in either dataset. By reading the written description of where the precinct boundaries are supposed to be, and then visually inspecting the GIS workspace, it can be determined if the GIS precinct boundaries are correct or not. If they are correct, then the problem is with the EMS precinct assignment.



In this example, the pink, green and gold dots should match the pink, green and gold polygons

Once the erroneous data has been repaired at the source, it is advisable to go through the testing process again to make sure all discrepancies have been resolved.



This is an example of discrepancies in precinct data found with geocoding

Once a GIS workspace is created, it can be used to geocode EMS data after making changes due to redistricting. The workspace can also be used to create other tools that GIS can facilitate, such as polling place look-up and election night reporting tools.

### List Maintenance

After the street file has been audited and all address data verified, efforts should be made to maintain the accuracy of the database in the EMS. It will be easier to succeed with address list maintenance if the number of people who are responsible for adding, changing, removing, or combining street addresses or segments is limited. It is a best practice to develop a written plan with standards and steps taken when making changes to a street file. A written plan should include at a minimum:

- A log of who updated the data, what data was updated, the date the change was made, and the reason for the change
- The steps required to verify the address is a valid residence address for voting purposes (e.g., the address is recognized by the U.S. Postal Service and is not a business address)
- The steps taken to verify the associated precinct with the address or street segment
- Requirements to notify other agencies of changes made - if applicable
- Steps taken to verify that the address or street segment does not already exist, under another spelling or name (e.g., 2<sup>nd</sup> Street vs. Second Street) when adding new street segments

### Outreach and Public Hearings

Elected representatives make decisions important to the lives of everyone who lives in their districts. Involving the public in the process of redrawing political boundary lines, helps to ensure the diversity of populations are represented within new district boundaries.

Many jurisdictions require the local election official to collect public input, prior to adoption of final maps. This usually applies when making changes to smaller local districts like counties, cities, towns,

schools, and hospitals that are elected by district. This section will focus on gathering public input generally but is not meant to be a comprehensive guide for every scenario.

Public hearings benefit from broad community participation. This can be challenging during times of natural disasters or public health emergencies, when they limit in-person gatherings. Determining how public comments will be adequately recorded, when to hold public hearings, whether they should be conducted in-person or electronically, and how to ensure adequate notice is given to invite participation are all part of the planning process to gather public input.

### Public Notice and Outreach

Adequate notice can be challenging to achieve in a crowded news or social media environment. There is the basic legal threshold of meeting a requirement which might be publishing notice in an adjudicated newspaper, but there are additional steps that can be taken to assure meaningful public engagement.

Additional outreach programs, including language interpretations, drafting promotional materials for use on social media, radio, television, and direct mail are strongly encouraged to invite public participation. Before the meeting, solicit constituents' questions via social media, or host digital town hall sessions. During official hearings, make a livestream video available, and provide contact information for individuals who still have questions afterwards.

Public notice for hearings held online should include instructions for public access and how comments can be formally submitted for consideration. Remote meeting platforms should be accessible and comply with the American Disabilities Act (ADA) and Section 508 of the Rehabilitation Act. Participants should be able to accessibly communicate and submit comments. Press releases and legal notices should direct the public to websites where they can find more information about the redistricting process. Redistricting information should be posted conspicuously on websites, along with a timeline of events related to the redistricting process and clear guidance on how hearings will be conducted. All notices should include a phone number where citizens may request to receive information and provide comments, outside of public hearings.

To the extent possible, governing bodies should seek to provide more than one platform to submit public input. In some areas, limited access to computers (e.g., disadvantaged and economically stressed communities) or limited internet infrastructure (e.g., in rural areas) could hinder public notification of and participation in public hearings. In-person hearings are still an important way to conduct outreach to communities. In person locations should be accessible and in compliance with ADA requirements. Assistive listening devices should be made available along with ASL interpreters, real-time captioning, or other accommodations that are requested in advance. Large print agendas and other alternative forms should be made available. If video streaming is available, consider partnering with local news media to broadcast hearings live and make a recording available for later viewing. It is a best practice to engage local community leaders to explore solutions to potential barriers, such as designating a satellite location (e.g., a public library or community center) where the public can gather to participate remotely. The greater access to public hearings, the more likely it will be to receive meaningful engagement.

## Public Comment

Jurisdictions should have detailed written procedures on how public input will be collected, stored, made available, and considered for inclusion in final decisions. A written plan should include at least the following:

- How members of the public can submit comments, such as via email, online forum, teleconference, or in-person
- Whether members of the public will be required to pre-register to directly participate or show visual aids
- Any constraints on the length of content or comments, such as a maximum word count or limit of oral testimony length
- When the public comment portion of the hearing will take place, such as the beginning of a meeting or at a certain time
- How public comments will be captured and how the public can access the information
- How the comments will be evaluated for inclusion in the final redistricting plan

Commentors may wish to share visual aids that were not shared with the governing body in advance, to help communicate or demonstrate their message. For meetings held electronically, there should be established protocols to make visual aids provided by commenters available for viewing, similar to in-person meetings. If the electronic platform only provides a record of written or oral testimony, there should be written procedures on how visual aids can be submitted via alternative method. Written procedures should include whether additional documents submitted will be made publicly available prior to the close of the comment period, where they can be located, or how they can be requested.

If multiple hearings are conducted, the public should be notified of the entire schedule in advance. There should also be clear detailed information if there will be comment periods or if hearings will be conducted before or after draft redistricting maps are published.

## Making Changes to Boundaries

After district boundaries are finalized, and all legal challenges (if any) are resolved, the process of making changes to boundaries in election management systems will begin. If election officials planned ahead, they will already be familiar with the current boundaries. If reviewing precinct and district boundaries for the first time, it is advisable to revisit the section of this document titled ***Planning Ahead***.

The process of making changes to election management databases will vary considerably, depending on the software and design of the program. Contact your EMS vendor and request training materials or manuals on how to make changes like splitting, merging, or adding new street segments and the proper order of making changes to precincts and districts. Know which reports should be run to audit the database, after changes are made.

Plan ahead to ensure adequate staffing is available to assist with making changes after redistricting maps are finalized. Be sure to coordinate with other supporting departments, such as information technology and GIS departments, well in advance so they can also plan to allot staff time to assist.

This section will cover general best practices and is an overview of the types of changes that need to be made to update newly drawn boundaries. A more comprehensive summary can be found in the section of this document titled *Planning Ahead*.

### Precinct Boundary Changes

With district boundaries changing, it may be appropriate to evaluate whether precinct boundaries should be updated, if legally permissible. Precincts are usually established at the local level and are used to organize voters into groups that share geography and political commonality. From a practical perspective, precincts are used to provide an orderly way to issue correct ballots to voters. If new district boundaries cut through precincts, it may require splitting or changing precinct boundaries.

To begin the review process, look for areas where precincts have been spilt by district boundaries lines or where they cut through parcels, dwellings, or developments. School districts and other special districts can have overlapping electoral boundaries that require election officials to split precincts when creating unique ballot styles for voters. These “precinct splits” (subsets of an established voting precinct) can create privacy concerns if district boundaries overlap in particular ways. For example, if a special district extends into just one parcel of a voting precinct, only voters living at that address will receive that particular ballot style. When election results are reported by precinct, it may be possible to discover how these voters voted in an election. In these scenarios, it may make sense to move the household or sub-sets of households into neighboring precincts to protect voter privacy.

Renumbering precincts may also be a consideration, if the current numbering system is illogical or missing consecutive numbers. However, changing the numbering sequence may make it difficult to track trends over time. If changes to numbering schemes are made, keep a detailed log of the changes and why the changes were made.

Making the changes in EMSs will be dependent on the specific software and design. Some things to keep in mind when making changes include:

- What is the proper order of tasks to make changes?
- Do any street segments need to be split, merged, or added in the EMS?
- Have any voters been disassociated from precincts or districts from changes made in the EMS?
- Have all addresses associated with precincts been updated in the EMS?
- Have all districts associated with precincts been updated in the EMS?
- Have all districts that use precincts in their legal descriptions been informed and updated?
- Have new maps been drawn to reflect changes?
- Have your website, GIS, or other public documents been updated to reflect the changes?
- Have all appropriate agencies been notified of the changes? (e.g., state election directors)

Any changes to precincts should meet all legal requirements and be adopted by the appropriate governing bodies. Precincts should not cross district boundaries as a rule, and in some cases by law. Identify who needs to be involved in the adoption of new precincts early on and keep them informed of any changes.

## District Boundary Changes

The process for updating district boundaries is similar to the process for updating precinct boundaries outlined in the section titled **Precinct Boundary Changes**.

For congressional and state legislative districts, ensure that you have enough information to make all needed changes. If the address or boundary information is unclear, contact the agency providing the files and request clarification. If the new boundaries overlap with neighboring jurisdictions, coordinate street files at the intersection, to confirm they line up with each other.

When coordinating with school, hospital, community services and other local districts, communicate with district representatives early on in the process. Be specific when requesting items needed to make changes to boundaries and the deadlines for submitting maps, legal descriptions, and shape files. As documentation is received from districts requiring boundary changes, review each jurisdiction's submissions to determine if the information is complete enough for changes to be made in the EMS. Legal descriptions should be carefully proofread for errors or omissions. If a new map is submitted, determine if there is enough information to clearly identify all addresses within the new boundary. If not, contact the district representative and request clarifying documentation.

Make a list of precincts, streets, and addresses that will be affected by the boundary changes for each district. Carefully follow the written materials provided by the EMS vendor to make changes. Be sure updates are made in the proper order in the EMS. Run reports to verify the accuracy of all adjustments.

After changes are finalized, send lists of addresses associated with the new boundaries to the local district representative to review for accuracy. Incumbent office holder addresses should be reviewed to determine if their residence addresses are within the new district boundary lines. Since incumbent office holders may be required to live in their district, notify the local district governing body if an elected representative no longer resides within the new boundary lines.

Review laws to familiarize yourself with all legal notification requirements, such as informing affected voters of boundary changes. Send updated maps and associated data to persons and agencies outlined in statute, such as other departments in an organization or state redistricting agencies.

## Review for Accuracy

Having complete and updated boundaries, carefully reviewed, and implemented, will provide reassurances to election officials, candidates, and voters that elections are properly configured, and outcomes are reliable. All of the same steps outlined in the sections of this document titled **Street File Audits** and **Geocoding** should be completed again after any changes are made to EMS data.

Because redistricting takes place infrequently, precinct and district boundaries may not be reviewed on regular intervals. It is important that once precinct and district boundaries are adjusted, they are carefully reviewed for accuracy. Every effort should be made to procure adequate training, staffing, and resources to oversee the process. The fewer the errors in election administration, the greater public confidence in the integrity of elections.

## Checklists

This section has example checklists of tasks related to preparing for redistricting, soliciting public input, and making changes to district and precinct boundaries in election records and systems.

Preparation	Date Completed
Will there be adequate staffing for the time period changes will be made to addresses in election management systems and/or GIS?	
Have other departments that need to be involved in making changes due to redistricting been contacted? (e.g., Information technology or GIS departments)	
Is there budget to cover over-time, third-party contracts, or additional temporary staffing if needed to make changes due to redistricting?	
Have all cities, towns and districts been contacted to assess their plans for redistricting?	
Has a complete calendar of all legal requirements and deadlines been created?	
Have public hearing dates been scheduled, if required?	
Has a public outreach plan been drafted?	
Has a copy of the latest election management system manual for updating addresses, precinct and district boundaries been obtained?	

Assess Current Boundaries	Date Completed
Have precinct legal descriptions been located?	
Have precinct maps been located?	
Have precinct shape files obtained, if applicable?	
Have district legal descriptions been located?	
Have district maps been located?	
Have district shape files been obtained, if applicable?	
If election staff is unable to read and interpret the legal descriptions, has additional personnel been identified with this skillset?	
Has a detailed inventory of items been recorded?	



Address and List Maintenance	Date Completed
<p>Has an assessment of current street file been made, and addresses corrected if needed?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Even and odd sides of the streets</li> <li><input type="checkbox"/> Incomplete addresses</li> <li><input type="checkbox"/> Incorrect road types (e.g., Street vs. Lane)</li> <li><input type="checkbox"/> Missing prefix or suffix (e.g., apartment or space numbers)</li> <li><input type="checkbox"/> Incomplete or missing compass directions (e.g., North vs. Northwest)</li> <li><input type="checkbox"/> Overly long address ranges (e.g., 1-10,000)</li> <li><input type="checkbox"/> Abbreviations</li> </ul>	
Has the street index been compared against other databases for accuracy?	
Have precinct boundaries been audited for accuracy in the election management system?	
Have district boundaries been audited for accuracy in the election management system?	
Have all changes been documented and a detailed record created?	
Has a list maintenance plan been written?	

Outreach and Public Hearings (if applicable)	Date Completed
Have websites been updated with all relevant information?	
Have legal requirements for holding public hearings been identified?	
Have all promotional materials for the public outreach plan been written, drafted, or produced?	
Have public hearing dates been set?	
Have all legal publication requirements been met?	
Are public hearings accessible?	
Has a written plan to capture and respond to public comment been written?	

Making Changes to Boundaries	Date Completed
Have new precinct legal descriptions been drawn?	
Have new precinct maps been created?	
Have new precinct shape files been created and obtained, if applicable?	
Have new district legal descriptions been obtained from all districts that adopted new boundaries, and are they complete?	
Have new district maps been obtained from all districts that adopted new boundaries, and is there enough information to act on?	
Have new district shape files been created and obtained, if applicable?	
<p>Have all required changes been made in the election management system?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Do any street segments need to be split, merged, or added in the EMS?</li> <li><input type="checkbox"/> Have any voters been disassociated from precincts or districts from changes made in the EMS?</li> <li><input type="checkbox"/> Have all addresses associated with precincts been updated in the EMS?</li> <li><input type="checkbox"/> Have all districts associated with precincts been updated in the EMS?</li> </ul>	
Has a detailed inventory of changes made been recorded?	
Have changes been audited for accuracy?	
Have all required legal notices been sent and/or published (e.g., voters who have either been added or removed from districts or other agencies that rely on district boundary information)	
Have websites, GIS, or other public documents been updated with new boundary information?	

## Redistricting Glossary

**Apportion** - the process of dividing membership or voters.

**Boundary** - the line that divides a precinct, city, or other political unit from another.

**Census** - a complete count or enumeration of the population; the federal census is mandated by the U.S. Constitution in Article 1, section 2.

**Census block** - the smallest and lowest level of geography defined for decennial census tabulations.

**Census tract** - a small area similar to neighborhoods established by the United States Census Bureau for analyzing populations. Generally, census tracts have between 2,500 and 8,000 residents and boundaries that follow visible features.

**District** - a political subdivision established within a specific geographic area.

**Geocode** - the process of taking a text-based description of a location, such as an address or the name of a place, and returning geographic coordinates, frequently latitude/longitude pair, to identify a location on a map.

**GIS** - abbreviation for a geographic information system that creates, manages, analyzes, and maps all types of data.

**Legal Description** - a written geographical description identifying a district's precise location and boundaries for legal purposes.

**Metes and Bounds** - a detailed and very specialized description using specific geographic features, street directions, intersections of roads, distance between points and other physical descriptors.

**Precinct** - election administration division corresponding to a contiguous geographic area that is the basis for determining which contests and issues the voters legally residing in that area are eligible to vote on.

**Public Notice** - A notice issued by a government agency or legislative body to make the public aware of the various government activities, hearings, public bids or other actions.

**Redistricting** - the process by which seats in a legislative body are distributed among administrative divisions based on changes in population.

**Shapefile** - a vector data storage format for storing the geometric location and attribute information of geographic features. Geographic features in a shapefile can be represented by points, lines, or polygons (areas). Precinct and district shape files will contain polygons that can be overlaid with topography maps, roads, parcels of land, arial photography and other useful features to visualize boundaries in a map format.

## Additional Resources

- QGIS – A free and open-source Geographic Information System (GIS): <https://qgis.org/en/site/>
- National Conference of State Legislatures (NCSL) resource page for redistricting: <https://www.ncsl.org/research/redistricting.aspx>
- National Conference of State Legislatures (NCSL) Redistricting Starter Kit: <https://www.ncsl.org/PORTALS/1/DOCUMENTS/ELECTIONS/REDISTRICTING-STARTER-KIT.PDF>
- RedistrictingOnline.org - <https://redistrictingonline.org/>
- U.S. Census Bureau geocoding tool: <https://geocoding.geo.census.gov/>
- NSGIC's Geo-Enabled Elections project: <https://elections.nsgic.org>
- National Institute of Standards and Technology (NIST) process diagrams: <https://pages.nist.gov/ElectionModeling/diagrams.html>