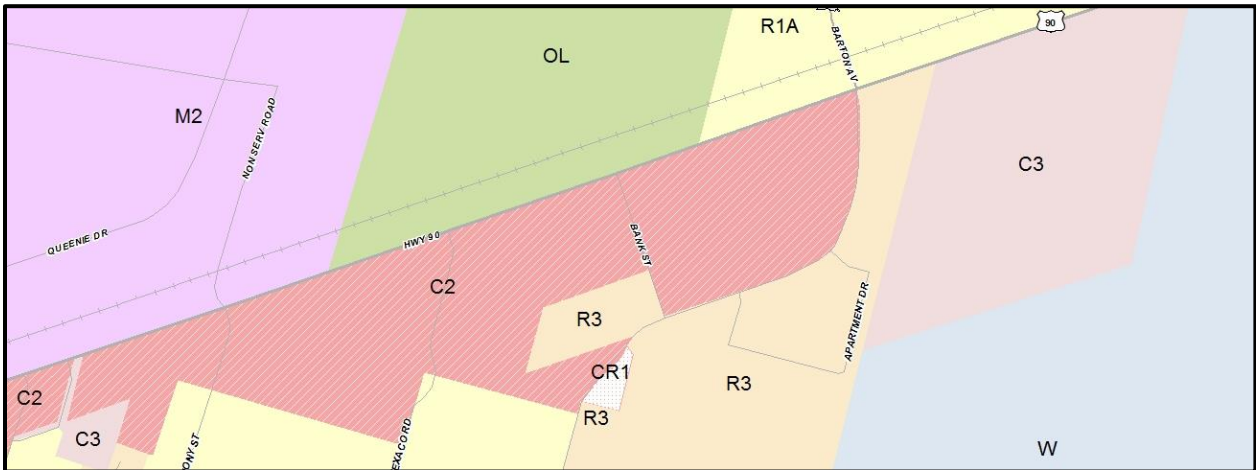


# Zoning Map Digitization



St. Charles Parish relies on its zoning map to guide development and provide important information to Parish residents, officials, staff, and our partners in the business community. Since the adoption of the St. Charles Parish Zoning Ordinance of 1981, zoning information has mostly come from hard copy paper maps, specifically the “St. Charles Parish Zoning District Maps” and the “St. Charles Parish Aerial Zoning District Maps”. These maps were designated the official zoning maps of the Parish under Ordinance No. 83-8-13. More recently, the advent of digital mapping technology, specifically Geographic Information Systems (GIS) software, has allowed the Parish to utilize a digital version of the zoning map. This leaves the Parish with three separate zoning maps.

Using three separate zoning maps presents the Parish and the Planning Department specifically, with several issues. While the digital map is the most frequently used to provide immediate and timely zoning information, the maintenance of the paper maps must continue in order to fulfill the requirements of the ordinance which adopted and designated them as the official zoning maps of the Parish. This creates productivity and cost inefficiencies as three separate maps are required to be maintained and updated. The paper maps are aging, difficult to repair and maintain, and are far less accurate than modern digital mapping.

For this reason, the Department of Planning and Zoning in conjunction with the Parish’s GIS Office initiated a project to convert the Parish’s official maps to a digital format. This conversion aims to allow the Department of Planning and Zoning to operate more efficiently when it comes to productivity and cost, eliminate the inconveniences of using paper zoning maps, and take advantage of the benefits of digital mapping software.

## Projected Impacts

While consolidating the Parish’s zoning information into one official map is the main goal of this project, there are several benefits the Parish can take advantage of by making a digital zoning map the official zoning map of the Parish. These benefits are most evident when looking specifically into the subjects of access, accuracy, clarity, and maintenance.

### Access

There are several factors which hinder the accessibility of paper zoning maps to Parish officials, staff, and the general public. The Parish’s paper maps are represented in two separate sets containing multiple sheets and kept within a file cabinet in the Planning Department office. A separate map index must be consulted in order to know which panel is needed. Locating map sheets takes time and the process confusing to anyone not familiar. Additionally, the hard copy maps are difficult to copy, scan, or print, and doing so could lead to the deterioration of their condition. This limits the paper map’s usefulness and the Planning Department’s ability to provide information from them.



Digital zoning maps are considerably more accessible. Physical copies of the map can be printed from any printer in multiple formats and provided to those requesting the map in a timely fashion. A specific property can be located and the zoning determined by a quick search of the address or parcel identification. Through email and by posting an updated version on the Parish's website, the digital zoning map of St. Charles Parish can be seen literally anywhere with an internet connection.

### **Accuracy**

Despite the meticulous process that goes into updating the zoning information on the paper maps, the information is subject to scaling challenges. Issues with the accuracy of the paper maps were identified at the time of their adoption. Due to the Parish's two official paper map sets being represented at significantly different scales it is difficult for both sets to accurately show the same zoning information. For this reason the 1981 zoning ordinance in Section V(2) states that if discrepancies occur, the St. Charles Parish Aerial Zoning District Maps set at the scale of one to two hundred take precedent.

Having to update the maps by hand at the scale the maps are shown naturally leads to variations in accuracy. Achieving accuracy with the zoning information proves to be even more difficult when considering the changes are made against decades old aerial photographs.

Digital maps can be rendered to be nearly 100% accurate. The ability to zoom in to a smaller scale and snap zoning district lines to align perfectly with parcel lines allows for precision placement of zoning information. Survey and site plan information can be scanned and integrated through geoprocessing, a tool provided in GIS software. The digital aerial photographs displayed with zoning data can easily be updated and with greater frequency, further improving the accuracy of the information displayed on a digital zoning map.

### **Clarity**

Paper maps do not convey zoning information as clearly as digital maps. While there are examples of paper zoning maps using color, most use different shades of grey along with textures to display zoning districts. In the Parish's case, the St. Charles Parish Aerial Zoning District Maps are shown on a transparent sheet, black lines depict zoning boundaries, and labels designate specific zoning districts within the boundaries. This sheet is then attached on top of a matching black and white aerial photo to display the zoning of that area. It is easy to see how the Parish's paper maps are difficult to visualize and understand.



Information displayed in digital maps is shown with significant gains in clarity. A wide range of colors can be used to make the zoning districts stand out from one another. Digital mapping software allows for specific zoning districts and parcel lines to be turned on and off, manipulated, and highlighted for particular situations.

### **Maintenance**

Whenever a zoning change occurs in St. Charles Parish, no matter how big or small, members of the Planning Department staff are required to take part in a multi-step process to update both the paper and digital zoning maps. Updating the paper maps involves a particularly dated and time consuming process. It requires the use of tools, materials, and equipment that is costly to replace. A side effect of having to perform so many updates to paper maps over time is the deterioration of their physical condition which can cause accuracy issues and more time spent in upkeep.



Digital zoning maps do not have these issues. A trained and designated member of the Planning or GIS staff with access to a permitted work station can make zoning updates quicker and using a simpler process. The unnecessary cost and time spent in maintaining the paper maps is eliminated and being that the maps are digital, their condition will not deteriorate over time. Improvements in digital mapping software will allow for the possibility of improving the condition and quality of the digital zoning map.

## **Project Process**

The process of converting the maps began with the Planning and GIS departments working to ensure that the existing digital zoning map is fully up to date, accurate, and matching what is shown on the official Parish zoning map. This was achieved when a member of the Planning Department staff reviewed each rezoning application over the past ten years and confirmed it is reflected on both the paper and digital GIS zoning maps. If a rezone was not changed on either map, it was noted in an attached Excel spreadsheet and researched further. Once it was confirmed the zoning change was not properly reflected on either/or the paper or digital zoning maps it would be passed on to the members of the Planning Department staff responsible for updating either map and change would be made. This process took place until both the official hard copy and digital zoning maps were fully up to date and matching.

Bringing the digital zoning map up to date allows it to seamlessly become the official zoning map of the Parish. Once the paper maps are brought fully up to date, they will be laminated and archived. These maps will act as a historical reference to what the zoning of St. Charles Parish was as of May 2016.

While the Planning Department has been working to ensure the accuracy of the zoning information on the paper and digital maps, the Parish's GIS Office is working to bring other information in the Parish's GIS system up to date. This includes ownership and address information but most importantly to the Planning Department's efforts with the zoning data, updated and accurate parcel boundaries. The GIS Office's efforts to improve parcel data will allow the Planning Department to align zoning boundaries and parcel lines with greater accuracy. With updated and accurate parcel lines and zoning boundaries, the two can be integrated and zoning codes can be assigned to individual parcels.

## **Future Land Use Map Update**

The FLUM was adopted as a component of *St. Charles 2030*, the Parish's comprehensive land use plan, and acts as a supplement when making zoning decisions. Since its adoption five years ago the FLUM has been modified by approved acts of rezoning but the map as a whole with said changes has yet to receive an official update approved by the Parish Council. The Department of Planning and Zoning and GIS Office are working on a subsequent update to the FLUM that will be based on the new digital zoning map. With the Council's consideration, the updated FLUM map will be able to replace the one adopted as part of *St. Charles 2030* five years ago.

## **Conclusion**

Establishing the digital zoning map as the official zoning map of the Parish will provide significant benefits to the departments involved in using and maintaining the zoning maps and to the Parish as a whole. The conversion will improve productivity and provide opportunities for cost savings. Updates and maintenance can occur on a more frequent basis leading to a more accurate Parish zoning map. With this conversion, the Parish has the opportunity to make a significant technological leap by abandoning a decade's old process for providing zoning information and taking advantage of the technological gains that come with using digital maps.