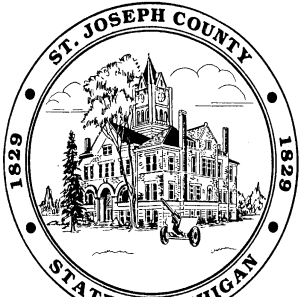


St Joseph County



Land Resource Centre

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Equalization

Geographic Information Systems

Date: 1/29/18

To: Teresa Doerhring, County Administrator

From: Jerry Happel, GIS Director

RE: 2017 Annual GIS Department Activity Summary

Shortly after my arrival in August 2016, it became apparent that the County GIS parcel data lacked sufficient positional accuracy to meet the needs of the growing number of internal and external GIS users. Many parcels were off by 50-100 feet or more. When the County GIS was used primarily internally, staff were able to compensate for these shortcomings and the GIS data worked well enough for most internal needs. However, when the county launched the Fetch Internet Mapping application, a powerful and popular new tool to give the public access to our GIS data, it became apparent that parcel accuracy was a major problem that needed to be addressed. When the public was able to see the parcels overlaid on to accurate air photos, they might see their homes shown on their neighbors parcel, or property boundaries that were dramatically different than what they expected. As users grew, problems grew. Fetch is currently used 300-400 times each business day by County staff and the public, so depicting parcels accurately became priority #1 for our department.

Upon further investigation, I found that the GIS staff was drawing parcels using section corners that had never been updated since originally created in the GIS 20+ years ago. Many of these section corners were far from where they should be on our maps compared to their real-world locations, and subsequently, all parcels drawn from those corners over the last 20 years were equally incorrect. This had been a known problem, but never addressed because of the size and complexity of the problem. Given the current budget climate, it is obvious that outsourcing this task is not an option, so, in 2017, we began the process of accurately redrawing all 28,408+ parcels maintained by the county to a +/- 3-foot tolerance. This will be a lengthy, multi-year process, but with the ever-increasing reliance on GIS to address the needs of both the public and county staff, it is imperative it gets done sooner rather than later.

So with improving GIS data accuracy our primary goal, 2017 activities were as follows:

GIS Director Activities

1. Researched, identified, calculated and entered 1,067 accurate geodetic coordinates for property controlling corners in the county (section corners, etc). This equates to 35.5% of the 3,101 total corners in the county. Prior to this project, only 124 corners (4%) in the county had accurate geodetic coordinates. The total number of corners with accurate geodetic coordinates at years end now stands at 1,191 (38%). This was accomplished, in part, by reviewing 1,394 individual Land Corner Recordation Certificate (LCRC) files, field notes, and records in search of GPS or surveyed corner coordinates.

2. Manually (visually) repositioned an additional 1,141 corners to better reflect believed actual location. This represents an overall improvement, but these corners are still not accurate to within the +/- 3 ft goal. We do not have GPS accurate coordinates for these corners and will need to find a way to obtain this data in the near future. A very high priority for 2018.
3. Adjusted all section and ½ section lines to coincide with new corner locations.
4. Created new ¼ section line layer based on new corners. This new layer is useful when mapping property boundaries.
5. Realigned all 28,408 county parcels to new corners, section, ½-section & ¼-section lines. This is an interim step to reaching the +/- 3-ft. accuracy goal. While better than the previous version of parcels, they are still not up to county standards.
6. Used realigned parcels to generate approximately 1,000 all new Tax Maps for the county. This involved generating completely new map labels, realigning dimension annotation, and printing each map at 18"x16".
7. Used realigned parcels to create and print an all new 2017 plat book.
8. Developed a Positional Accuracy Rating (PAR) for each of the 2,088 ¼-sections within the county. As a result, 324 ¼-sections were identified that had a high-enough PAR to warrant a complete parcel re-draw using Coordinate Geometry (COGO) methods. It is now possible to draw parcels within these ¼-sections to a minimum of a +/- 3 foot tolerance.
9. Redrew 2,733 parcels to +/- 3-ft accuracy, including 100% of the villages of Burr Oak, Mendon, and Constantine. That is nearly 10% of the 28,408 parcels maintained by St Joseph County. Approximately ½ of the 324 ¼-sections were finished by the end of 2017. This work continues.
10. Automated many of the parcel processing procedures. This is an important and ongoing task to standardize and streamline parcel maintenance while significantly reducing staff time.
11. Verified, refined or re-drew all 2,258 county water features to better reflect existing shorelines.
12. Various mapping projects to support county projects
13. Administrative duties as needed.

GIS Cartographers Activities

1. Assigned 111 new addresses within the county.
2. Processed 179 parcel splits/combinations/corrections/transfers/boundary changes (2017)
3. Printed and bound 100+ plat books
4. Realigned dimension annotation on approximately 1000 new Tax maps.
5. Reviewed, printed & bound multiple copies of over 1000 new 18" x 16" Tax maps
6. Updated zoning maps for Florence, Centreville, Nottawa, Lockport, Mendon VLG & Fabius.
7. Worked with City of Three Rivers staff to develop a new, streamlined parcel split process.
8. Produced many custom maps for County and public clients.
9. Assisted customers at the counter & via phone and email.