A GIS Approach to Automated Redistricting of LDS Church Ward Boundaries
in the St. Louis Missouri North Stake

ABSTRACT

Redistricting is typically a very time-intensive process. Software packages available to aid in redistricting, either available commercially or to government, can aid in the redistricting process, but most can only handle optimizing or balancing a single parameter. Due to the multiple parameters and complexity of the process required to reorganize ward boundaries of The Church of Jesus Christ of Latter-day Saints (LDS Church), current redistricting software packages cannot fulfill the requirements and the process is still undertaken by hand.

The current ward boundaries of the St. Louis, Missouri North Stake are not optimized to take advantage of new ward meetinghouses that have been built to accommodate concurrent attendance by two wards, nor are they aligned with school district boundaries. It is possible for children in one ward to attend as many as three different school districts. This can make it difficult to plan youth activities because the children are all on different schedules.

For this thesis, a GIS approach to the recreation of ward boundaries for wards in the LDS Church was developed. This was done by gathering and creating digital versions of the same data currently utilized when determining new boundaries for wards (current stake boundary, current school district boundaries, natural boundaries, etc.). After the data was
gathered, models and scripts were written to further prepare and eventually summarize the data, taking into consideration all the same factors that are currently used when doing this by hand.

After the data had been properly prepared and attributed, it was used in re-creating the current boundaries as a baseline and then was used in creating a newer, more geographically compacted version of the boundaries. The new, updated boundary plan was created in a fraction of the time that it would normally take to create or allocate new boundaries. Not only would this process be immediately applicable to other LDS Church stakes, but because of the boundary sub-unit creation process, it provides a benefit for other redistricting operations, not just for redistricting LDS Church ward boundaries.