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| GIS Final Project |
| Condemnations and Health/Lead Complaints |

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# Project Summary

Complaints are submitted to the city every day, covering a variety of topics from lack of heat, to noise complaints, to building code violations. It can be difficult to see the implications of each complaint when looking at such a large data set. Luckily, GIS lets us visualize these complaints spatially along with any other data set we have, such as, FEMA flood zones, local park locations and zoning data. Through data visualization, we can draw conclusions that would otherwise be impossible to see in the raw data alone. This project aims to bridge the gap between data and the real world through connecting complaints submitted to the city and demographic and locale data.

# Hypothesis

The location of condemnations and health and lead reports submitted to the city is directly correlated to the proximity FEMA flood zones within the city.

# Methods

Data was provided by Professor Church. This data set included information such as:

* Complaints submitted to the city
* Census tract data
* Basemaps
* Zoning data

The first step was to join the complaint data to the basemap in GIS. This allowed for easy searching and highlighting of certain complaint types within the city. For example, in ArcGIS, the basemap can be searched for the complaint type “Condemnations”. This returns a basemap of only the buildings which have been condemned. This new map was then exported as a separate layer. These layers could then be compared to other data sets like the FEMA 500 Year Flood Zone layer. This process was repeated for different complaint types and different data sets. For this study, condemnations and health/lead reports were chosen because they are often signs of an extreme problem within a building. This basemap layer was then compared proximity to water bodies and FEMA flood zones. Since this project did not include statistical analyses, the limitation is in how accurate the correlation between the basemap data and secondary data set is. Since the FEMA flood zones and water bodies did not seem to be related to the condemnations and health/lead reports, this study then shifted focus. Professor Church explained that the oldest buildings in the city are typically located in the lower corner of the city, encompassing a large number of the buildings that were condemned or had health/lead reports.

# Conclusions

After finding that proximity to water bodies and FEMA flood zones was not indicative of condemnations and health/lead reports, this study concluded that age of the buildings was the best indicator for these reports. Since twenty-two of the thirty-three buildings that reported these complaints were located in the oldest region of the city, it is safe to assume that these buildings were reported due to their age. Without performing a statistical analysis, we cannot be sure that this is exactly the case, but common sense indicates that older buildings were likely built with lead piping or have another health hazard and are usually further along in their life cycle, meaning that the older buildings are more likely to have either a condemnation or health/lead report.

# References

All data included in this project was provided by Professor Church.

# Map

