

Epidemiological Analysis of 19th Century Cholera Outbreaks in Rochester, New York

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Background

Cholera is a water-borne disease that originated in India. Its causes for most of the 19th century were unknown but it was eventually discovered to be spread through contaminated food and water. Cholera is a gastrointestinal disease and would lead to dehydration and then death within a matter of hours. At the beginning of the 19th century, cholera started to expand westward out of Asia, eventually making its way to the United States in 1832 (Richmond, 1961). Its first instance in North America was in Quebec and Montreal, via emigrant ships. It then made its way to New York State (Richmond 1961). Cholera officially reached Rochester on July 12 (“Letters on Yellow Fever, Cholera and Quarantine; Addressed to the Legislature of the State of New York: With Additions and Notes” 1852). Throughout the 19th century, Rochester had several cholera outbreaks, most notably in 1832, 1849, 1852, and 1854, which amassed hundreds of deaths (Goler 1960). Due to the lack of sanitation during this time, cholera cases were spread through public wells, and by people near the Erie Canal and Genesee River (Richmond 1961). This study will address the possible correlations of the spread of cholera from a specific area in Rochester by using information from Mt. Hope and Riverside Cemetery records. This research will attempt to determine if the incidence and spread of cholera has correlations to specific areas in Rochester where the cholera victims lived.

Methods

Data for this project was collected through Mt. Hope and Riverside Cemetery’s historical records, which were made available by Rush Rhees Library of the University of Rochester. The online database includes Mt. Hope’s cemetery records from May 1, 1837, to February 17, 2002. The records, which are written by hand, were transcribed from the database into an excel document and then later compiled into a master list, which includes 13,251 transcriptions across different years from previous and current researchers. The cemetery records were analyzed according to year of death, location, age, and gender, with the goal of finding patterns and connections in them, such as proximity to a certain location. The cholera deaths were analyzed initially based on major outbreaks in Rochester, in 1849, 1852, and 1854, and then by location and proximity to water sources, like the Erie Canal and Genesee River. The location of the cholera deaths were analyzed through QGIS to look for patterns or concentrations of the deaths to certain areas. Additionally, information about the cholera outbreaks as well as the cholera outbreaks specific to Rochester were found through an analysis historical sources. These historical sources were found through a search on online library and journal databases.

Results

Figure One shows demographic information about the total research sample, which was derived from the Mt. Hope Cemetery Records master list, which includes all of the transcribed incidences of cholera in Rochester in the 19th century, and from Monroe County New York Genealogy, which includes the data from the 1832 outbreak, which was not included in the cemetery records (Halsey 2000). Figure Two displays the location of cholera deaths in Rochester from the 1849 outbreak. Figure Three shows the location of cholera deaths in Rochester from the 1852 outbreak. Figure Four includes the location of cholera deaths in Rochester from the 1854 outbreak. Data from figures, two, three, and four come from the Mt. Hope Cemetery records master list. After an analysis of the data sample, it was found that males and females were affected by cholera relatively evenly, and the age group that was most impacted was 19-39, which amassed a total of 102 deaths. The data on the maps showed that there was a very heavy concentration of deaths downtown and near the Erie Canal in 1849, with 1852 and 1854 being more widespread, but still relatively close to the Erie Canal and Genesee River.

Demographic Information	Total
Total Sample	244
# of Females	104
# of Males	127
0-5 years	40
6-10 years	25
11-18 years	12
19-39	102
> 40 years	57
No age recorded	8

Figure One

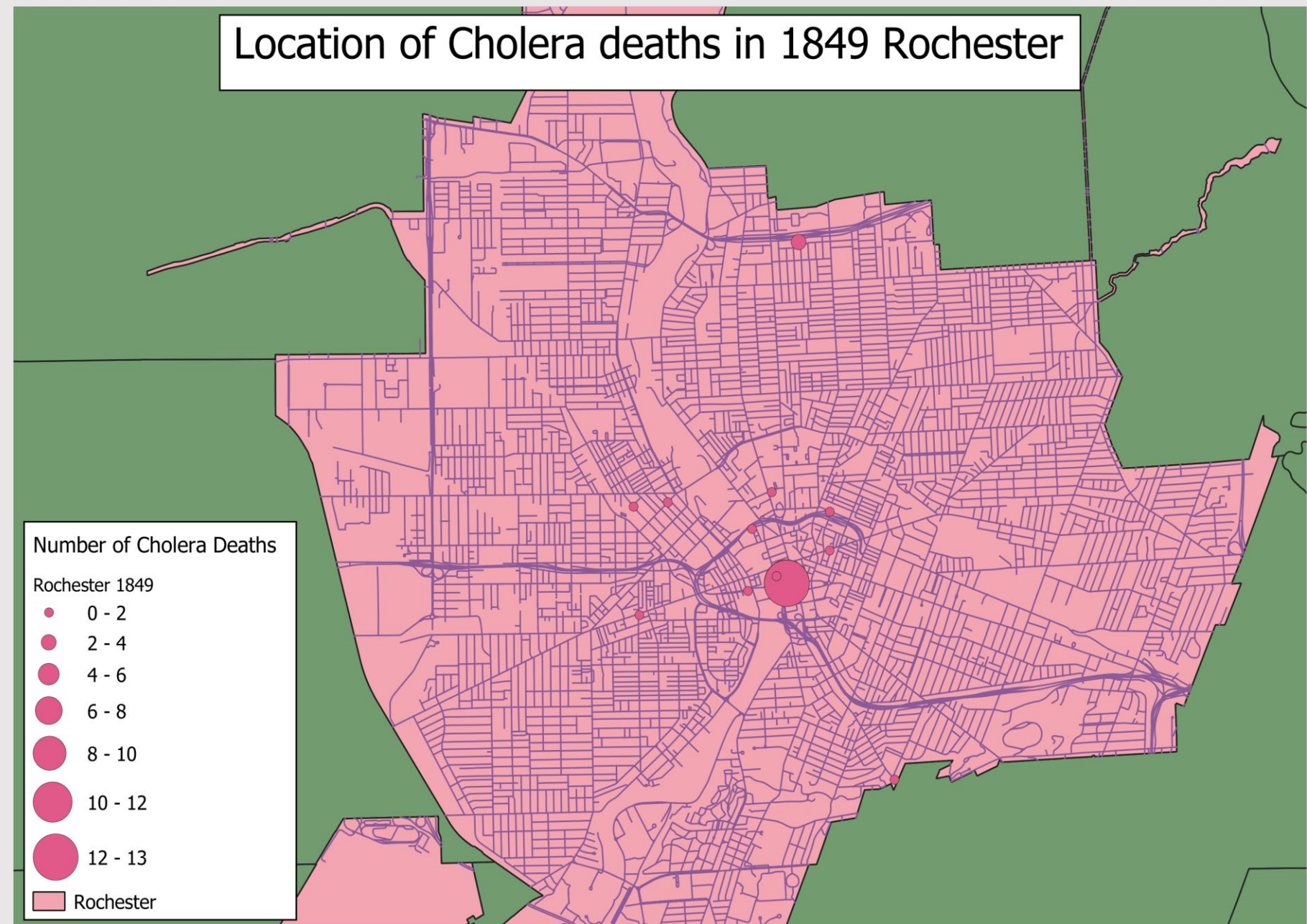


Figure Two

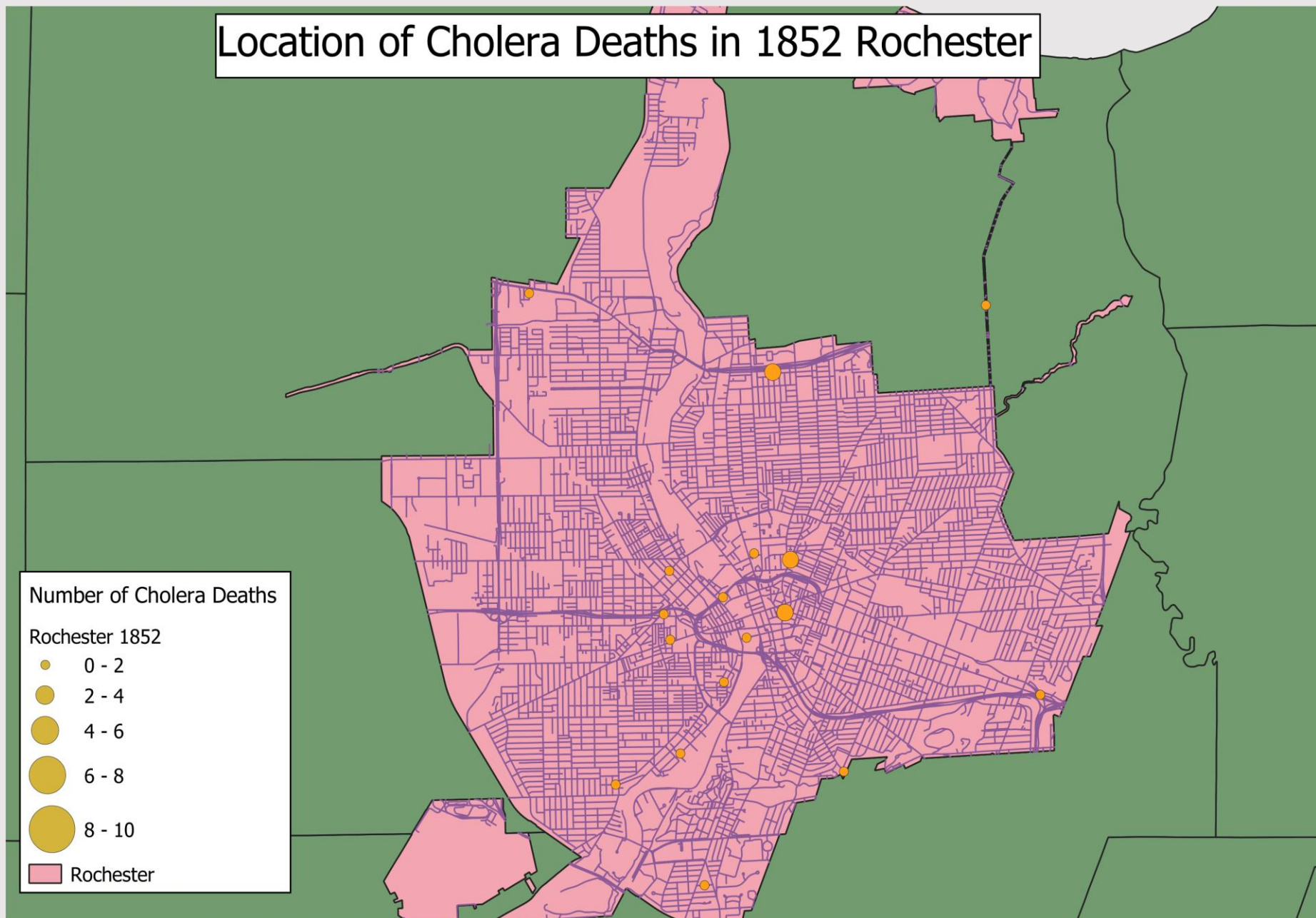


Figure Three

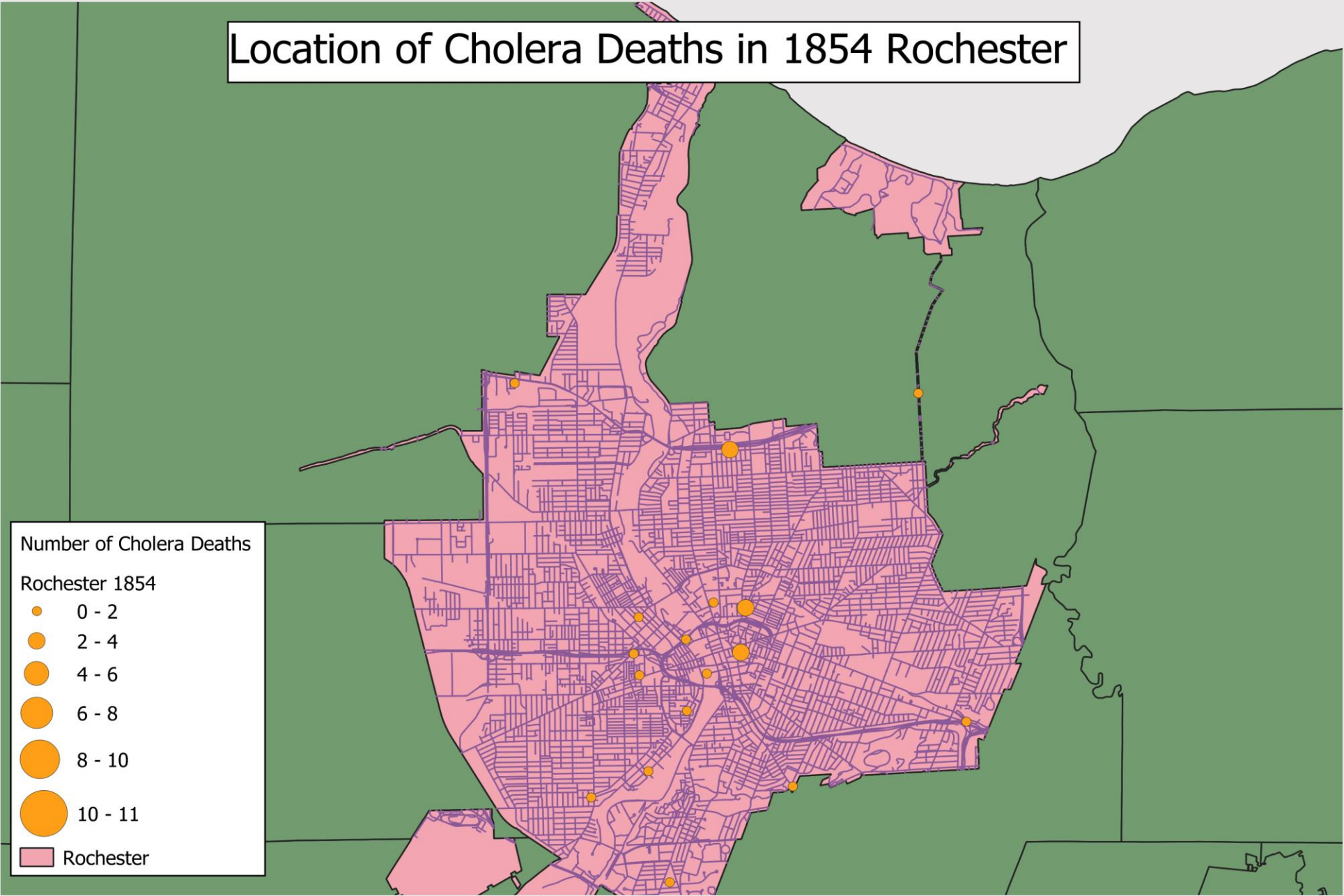


Figure Four

Discussion

Based on the location of the cholera deaths seen on Figures Two, Three and Four, it is clear that the incidence of cholera in 19th century Rochester was closely linked to location, relative to the Genesee River, the Erie Canal, and downtown Rochester since most of the deaths were concentrated around these areas. The proximity to the water sources is telling that they were contaminated with cholera and contributed to its spread during the outbreaks. There was a concentration of deaths downtown and close to the canal in 1849, whereas in the following years the deaths had a wider geographic distribution. This could be due to lack of sanitation during that time in crowded areas, which increased the spread of cholera as well (Johnson 2006). Additionally, based on demographics of the sample, it can be concluded that adults aged 19-39 were most vulnerable to cholera. Overall, after the data from Mt. Hope Cemetery records was analyzed via QGIS, it was found that the incidence of cholera in 19th century Rochester was concentrated around major water sources, like the Genesee River and Erie Canal, proving that the spread of cholera in Rochester has correlations to certain locations.

References

- Goler, George W. 1960. *Health in Rochester 1834-1911*. Rochester: Rochester Public Library. http://libraryweb.org/~digitized/books/Health_In_Rochester_1834-1911.pdf.
- Halsey, Richard T. 2000. “The Cholera Epidemic of 1832 in Rochester.” Monroe County New York Genealogy. <https://mcnygenealogy.com/vr/cholera.htm>.
- Johnson, Steven. 2006. *The Ghost Map: The Story of How London’s Most Terrifying Epidemic—and How It Changed Science, Cities, and the Modern World*. New York: Riverhead Books.
- “Letters on Yellow Fever, Cholera and Quarantine; Addressed to the Legislature of the State of New York: With Additions and Notes.” 1852. New York: McSpdon & Baker. Contagion - CURIOSity Digital Collections. <https://curiosity.lib.harvard.edu/contagion/catalog/36-990057783390203941>.
- “Mt. Hope & Riverside Cemetery Records: Search”. n.d. Rare Books, Special Collections and Preservation River Campus Libraries. 2018. <https://rbscp.lib.rochester.edu/3310>.
- “New York State GIS Clearinghouse.” New York State Civil Boundaries. <https://gis.ny.gov/civil-boundaries/>.
- Richmond, Phyllis A. 1961. *Asiatic Cholera in Rochester*. “University of Rochester Library Bulletin: <https://rbscp.lib.rochester.edu/3353>.