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Leveraging Geospatial Analytics in Capacity Management: Visualization Matters

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Learning Objectives

- Discuss the importance of geospatial analytics in decision science
- Explain the use of geospatial analytic visualization to assist in more precise decision-making and decision science

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The Problem: Nearby Hospital Moving

- Emergency Department Overcrowding
- Financial challenges
- Staffing challenges

The Question:

- What impact will the move of a nearby hospital to a new location have on our current capacity issues?
- Explain the use of geospatial analytic visualization to assist in more precise decision-making and decision science.

The Solution: Move the hospital prior to it moving

- What??

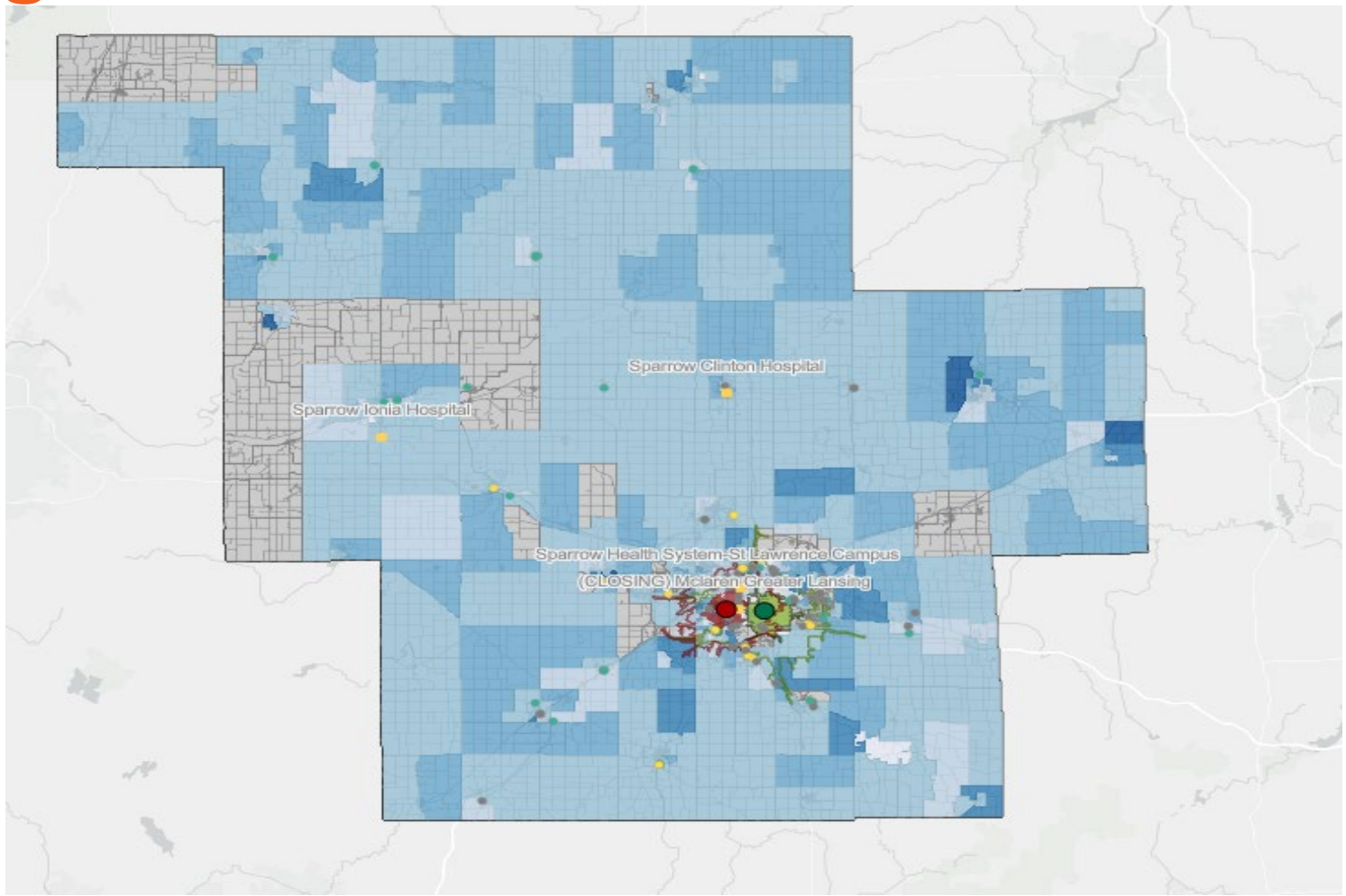
Geospatial Analytics and Information Systems

- Analytic and Dynamic Capabilities related to mapping
- Digital data interacting with spatial data
- Can incorporate other analytic tools including patient data
- Leveraging a base map, can layer other maps and data to hone in on precise decision making

High Level View

Images by Kristen Kurland & Tess Niewood, https://www.arcgis.com/apps/dashboards/32ece7aa927b4923baab272d0751861a

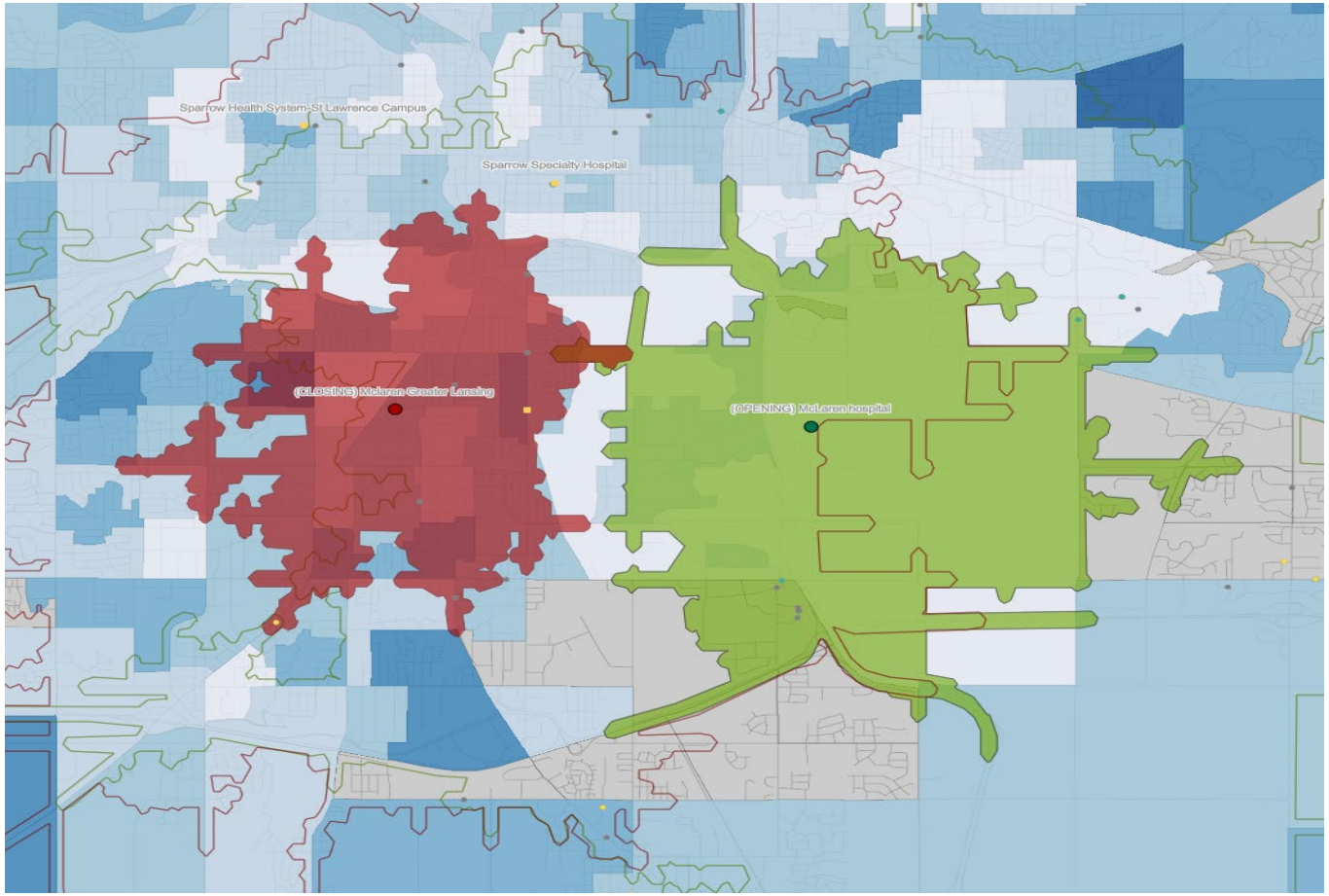
Narrowing View



Source: https://www.arcgis.com/apps/dashboards/32ece7aa927b4923baab272d0751861a

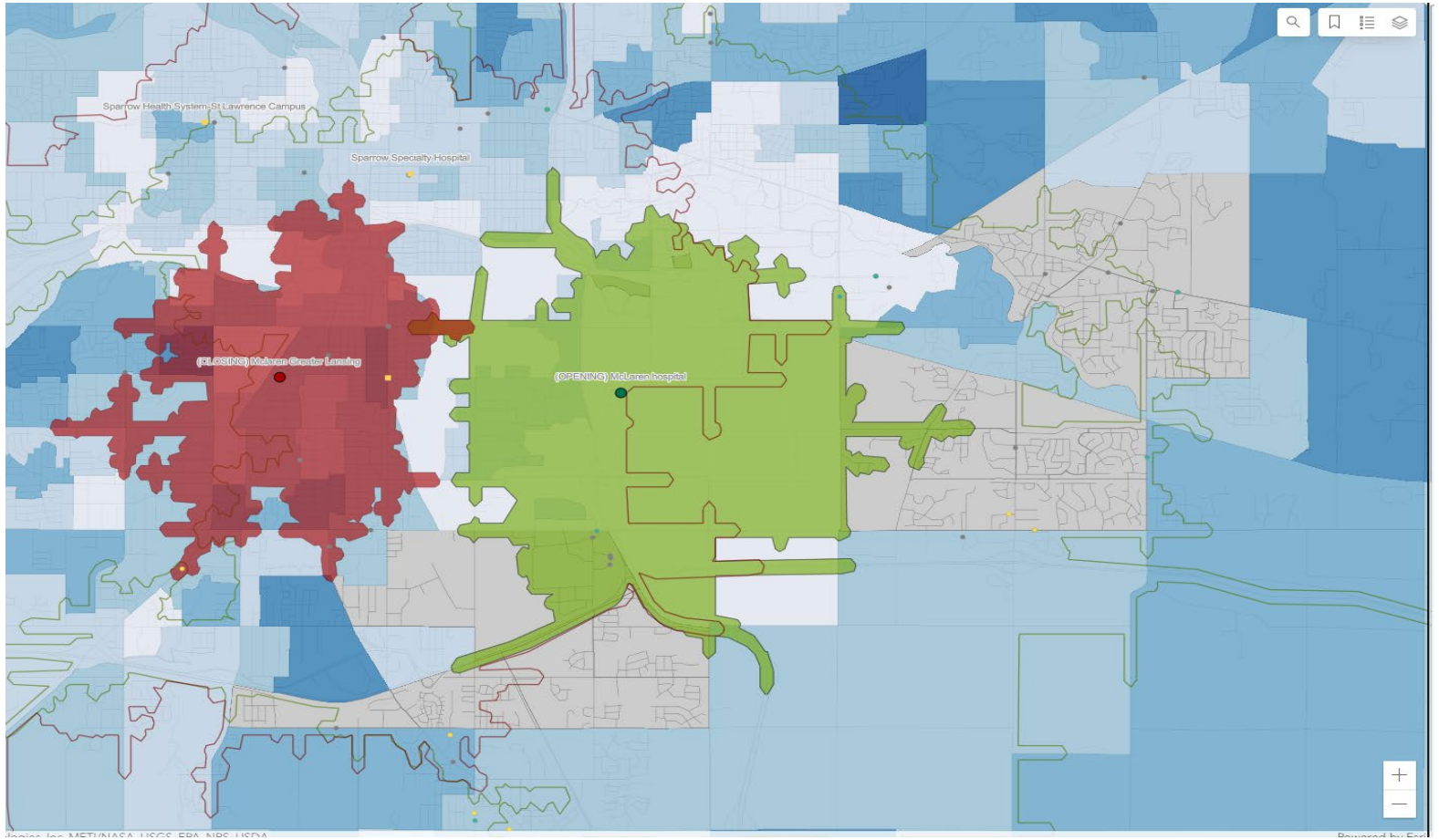
Maroon: Closing

Green: Opening



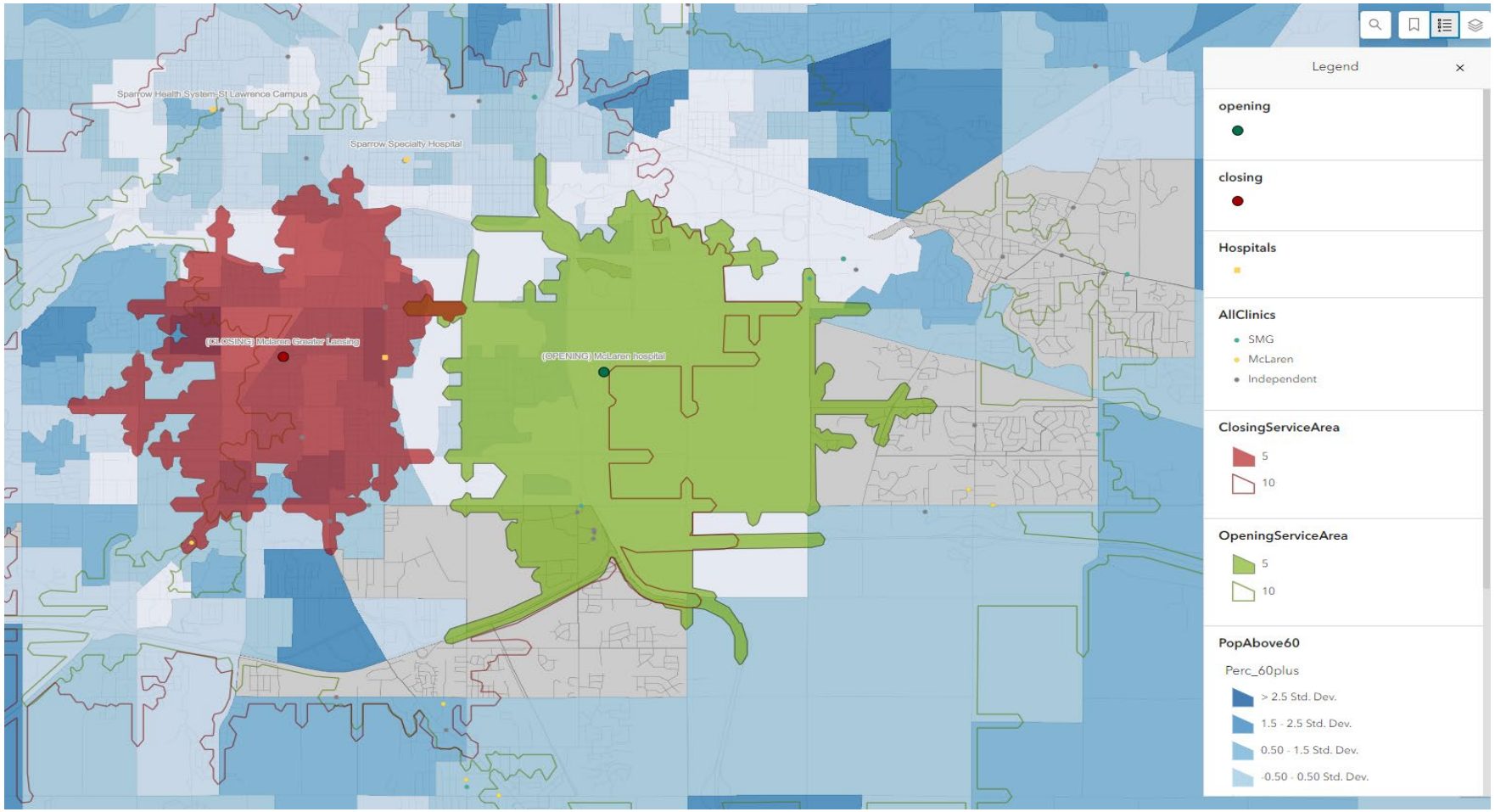
Source: https://www.arcgis.com/apps/dashboards/32ece7aa927b4923baab272d0751861a

Darker Blue: Dense areas of Public Insurance



Source: https://www.arcgis.com/apps/dashboards/32ece7aa927b4923baab272d0751861a

Closing and opening: Travel distance factoring in Social Determinants of Health



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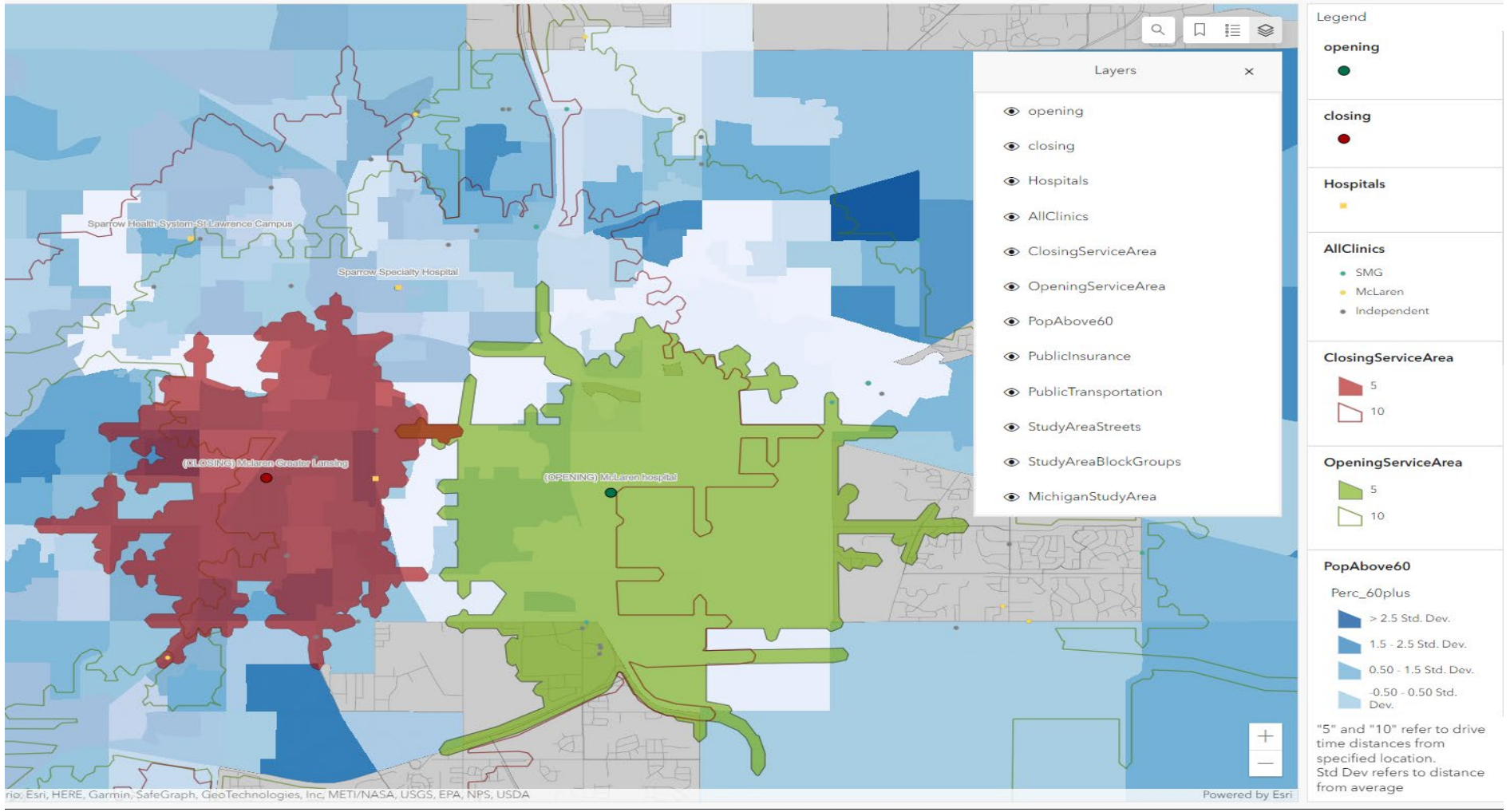
Layers of Maps



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Lessons Learned

- Leveraging Geospatial Analytics, we were able to proactively combine digital data interacting with spatial data to solve a problem
- We were able to actively plan for:
  - More public insurance and patients relying more on public transportation
  - Caring for lower income patients, age >60 with limited access to Primary Care offices in the South Lansing area
  - Opened a Post-Discharge Clinic to proactively address these patients arriving to our ED due to lack of Primary Care services as well as Post-discharge care (to reduce readmissions)

Key Takeaways

- Geospatial Analytics is a powerful way to visually look at problems and making better solutions to the problem through the use of scenarios and “layers”
  - We used it for Capacity Management but can be used for many Healthcare related problems traditionally being solved through descriptive analytics

Questions?

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