



Students

Why THIS project for THESE students?

G261 is required for Geography minors, Sustainability-related majors, Intelligence Analysis, and Cybersecurity majors. In the final weeks of the semester, students applied GIS skills acquired earlier in the course to address a real-world community issue. This project was completed by Environmental and Sustainability Studies majors who enrolled in GIS 261 Introduction to GIS, a High-Impact Practice and Innovation (HIPI) course that fulfills any constellation. It showcases one of the many signature projects students accomplished in the semester, demonstrating the power of GIS in solving complex, real-world challenges.



Learning Outcomes- Skills Gained

What skills did students develop through completing this course?

Problem-Solving

Students identified key mapping datasets, designed GIS analysis workflows, applied query methods, and spatial analysis tools to generate meaningful maps that inform local communities about trends, patterns, and potential solutions.

Database Analysis and Management

Students created, edited, and managed spatial databases, integrating diverse data sources to support decision-making.

Technical Skills

Students used spatial analysis methods and geoprocessing tools, such as buffering, overlay/suitability analysis, spatial query, and ModelBuilder to produce insightful and visually effective data-driven GIS outputs.



Context

How does this project support the community?

Lead poisoning remains a critical public health challenge in York because of adverse effects on childhood development, longitudinal impacts, and overall community well-being. This project leveraged GIS mapping to analyze elevated blood lead levels alongside structural age data to reveal spatial distribution patterns and pinpoint high-risk census tracts. This project provided valuable insights for targeted mitigation efforts. The findings are a crucial resource for policymakers and public health professionals, supporting data-driven strategies to address lead exposure in York City.