LAFAYETTE COLLEGE TECH CLINIC

FINAL REPORT

FALL 2020

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Meet the Team

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Meet the Team

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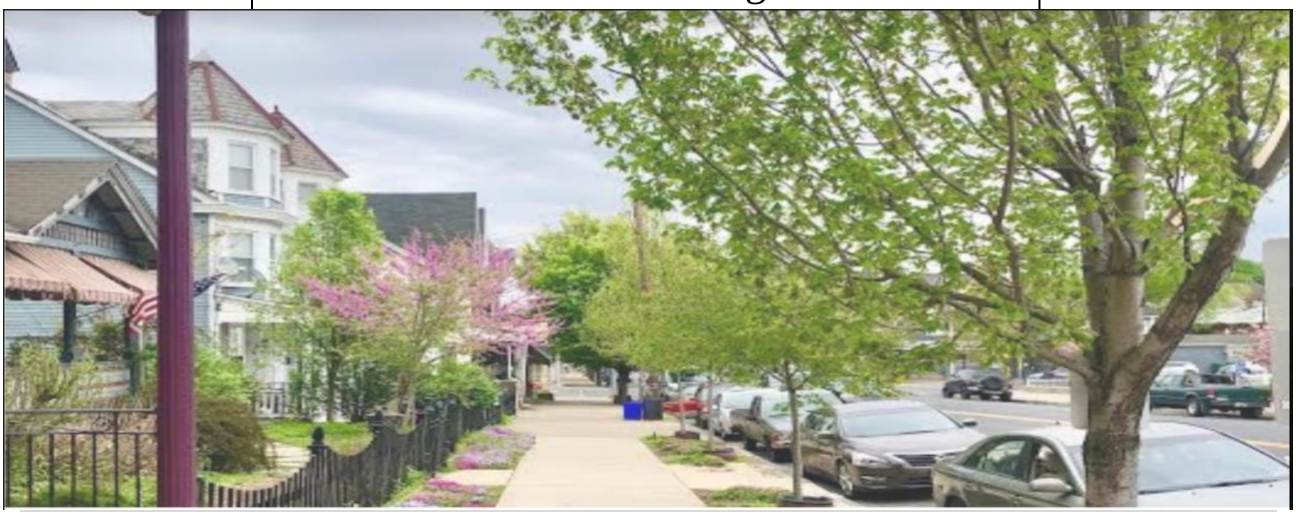
Mission

As a team, we seek to collaborate with members of the West Ward community, at all levels, to enhance access to socio economic opportunity in the neighborhood. By working in conjunction with the city, community organizations, and residents, we aspire to support the advancement of the West Ward's developmental framework, and in doing so, strive to identify and aid both individuals and commercial businesses who are working to achieve the same goals.



OBJECTIVES

The primary objectives of the 2020 Tech Clinic are as follows:

1. Develop an asset map of the West Ward.
2. Identify socio-economic drivers and opportunities within the West Ward.
3. Identify tangible assets which actively contribute to socioeconomic incentives.
4. Visually articulate the findings in a comprehensive and accessible manner to effectively indicate viable avenues of opportunity.

Background

This Tech Clinic team is the second of two clinics that engaged in research and projects that will support community and economic development in the West Ward. The 2020 team's objectives and methodological approaches have been shaped by the 2019 team's recommendations which provided considerable direction for the current year's project. The prior team adopted and followed a central paradigm of reinforcing the agency of West Ward community members. As the second year project has progressed, the 2020 team focus has shifted from understanding the needs of the West Ward to identifying and documenting assets in the West Ward and exploring potential platforms for asset mapping.

In early spring, the Tech Clinic team met with representatives from the Greater Easton Development Partnership (GEDP) and West Ward Community Initiative (WWCI) leaders to discuss the GEDP's running agenda as it pertains to West Ward. The conversation centered around the agenda's current areas of strength and the ways in which the Tech Clinic could partner with the GEDP to further facilitate the achievement of its objectives. The purpose of the initial briefing was to brainstorm and identify specific areas within the West Ward that could most effectively generate the greatest amount of measurable change.

The 2020 team project is to develop an asset map and user's manual that will be used to assist the GEDP and WWCI with the completion of their short-term goals while potentially providing a foundation for later team project development.

2020 Project

What we achieved:

The Lafayette Tech Clinic developed an asset map of the West Ward. The map is viewable in QGIS and the data comes from Northampton County.

During the Spring and Fall semesters, members of the Lafayette Tech Clinic met with GEDP and WWCI leaders to discuss the asset mapping project and receive feedback.

The asset map development began in Spring 2020. The Lafayette Tech Clinic members gathered data by walking the streets of the West Ward and recording vacant and filled commercial lots, residential lots, open green spaces, and parks. The data was uploaded to google MyMaps. Halfway through the Spring work, the team had to become remote due to COVID-19.

Throughout Fall 2020, the Tech Clinic communicated with members of the City of Easton and Northampton County to determine the best source of data that could keep the map up to date. The data was developed into layers in QGIS with some expert advice coming from John Clark, GIS Librarian at Lafayette College.

The team developed demo videos and a user's manual to train users on the software. The demo videos and manual were tested on people who had never used QGIS before to ensure that they clearly explained the lessons. The user's manual and report will be given to the WWCI staff to continue to advance efforts in the West Ward.

Project Overview

Why did we start working on an asset map?

After touring the neighborhood, speaking with residents, and debriefing with members of the GEDP and WWCI– it became clear that it has been difficult to make clear data-driven decisions because there is a lack of easy access to the assets and distribution of assets in the community. The GEDP and WWCI hopes to be able to incentivize home ownership, advise and encourage start-ups in the West Ward, and to track past/present/future programs.

Considering that humans can understand visuals more intuitively than any other medium, we decided to create an asset map that would not only display resources but also allow for search of sites to identify surrounding assets.

The map format is beneficial for many grant applications for assets such as facades or lights.

What is QGIS?

QGIS is a geographic information system software that can analyse and edit spatial information and export the product in a geographical map format. In terms of this asset map, the QGIS software displays information in the form of coloured shapes that correspond with real geographic maps, thus allowing the user to see a simple visualisation of complex and extensive data with ease.

How did we obtain data for our asset map?

We contacted Northampton County as well as the City of Easton to obtain the parcel data as well as their metadata (description of acronyms and headers in the data files). These files were then imported into QGIS for processing and visualization. Layers were created from the tax form information and the GIS information in said files.

After collecting data from both the City and County, it was determined that Northampton Country is the best source for the data for the West Ward map.

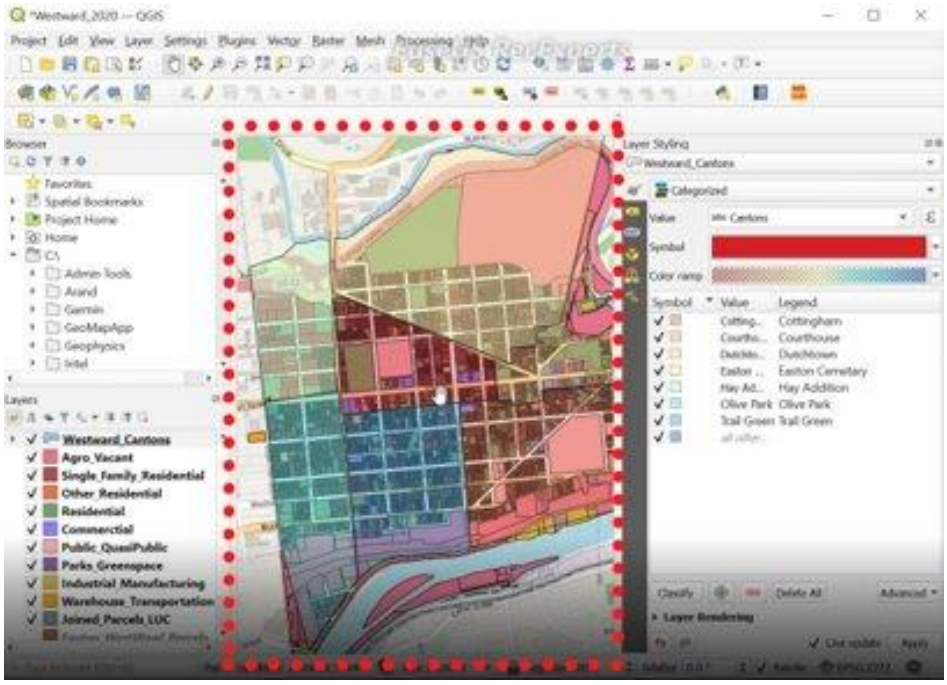


Figure 1: Asset Map Showing Canton Sections and Layers. The layers are color-coded by property type and usage.

How does the map work?

This map provides a visual representation of the assets located in the West Ward section of Easton, PA, using a combination of Northampton County data and internal GEDP data. When accessed in QGIS, the map is largely editable and can be viewed in different capacities. Layers can be viewed in isolation of in specific combination with others. Data can be reorganised based on different land use code categorisation. Additionally, the map can be used as a starter tool for acquiring additional information about West Ward assets. Please refer to the Guidebook for step by step instructions to interact with the asset map.

What does the asset map do?

Our asset map showcases the relative distribution, location, and property details of various property parcels by type and layers. The following are a few of the key functionalities of the asset map.

1. Locate free spaces that are can be used for businesses and city initiatives
2. Track and record porch city program coverage

    a. i.e.: distribution of porch lights in particular neighborhoods
3. Separate and highlight city assets by layers with distinguished colors
4. Search for a plot of land and read into its tax form history
5. Obtain the space usage of a plot of land

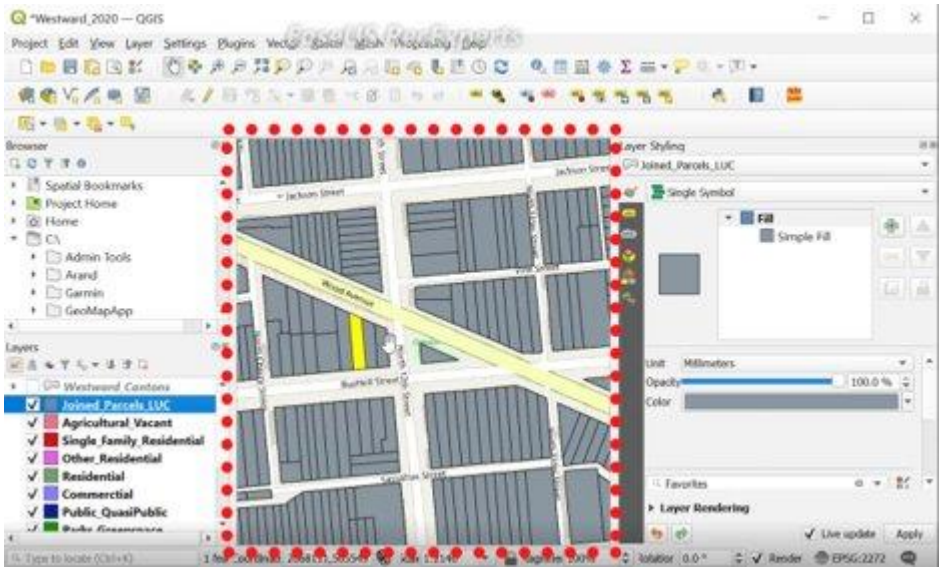


Figure 2: Search For Details And Location of An Address

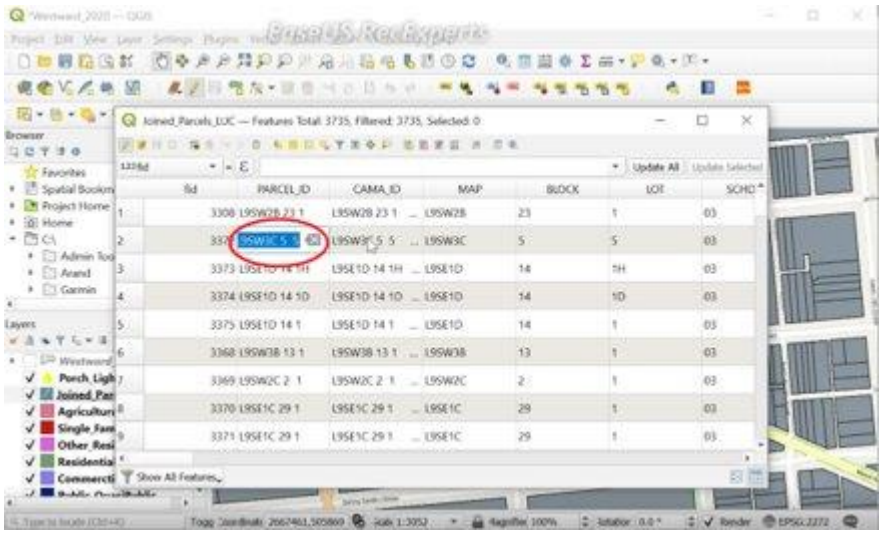


Figure 3: Pull Up Attribute Table to Look into Property Details. This table can also be directly edited and updated.

Choice of Asset Mapping Medium

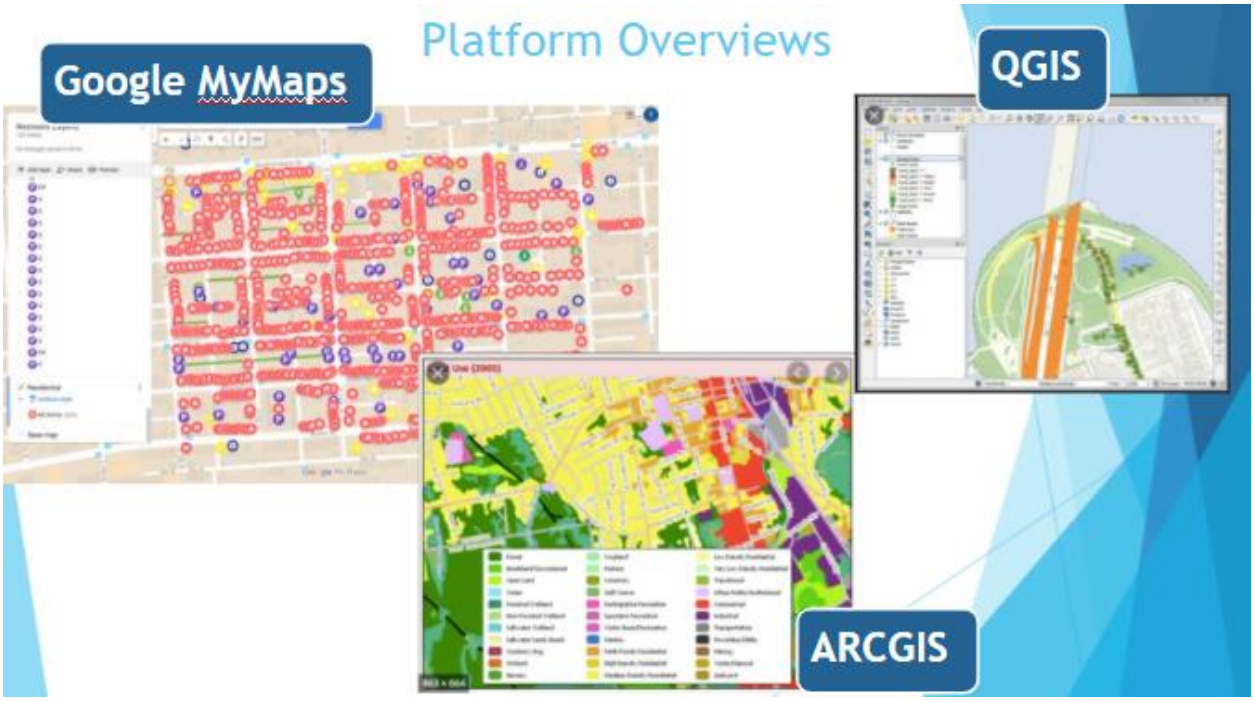


Figure 5: GIS Platform Overview

Originally, we chose Google MyMaps because it was free and easy to use for the general audience. As we dove deeper into the project, it became clear that there were limitations to MyMaps. MyMaps allowed us to show the sites as points and paths. However, if we want to characterize the points or incorporate additional information MyMaps was not designed for these intricacies.

To visualize land usage by property types, it may be helpful to incorporate tax form and city data into the asset maps. MyMaps doesn't allow that.

The goal of the map is to help business owners find an ideal site to set up shop, it would be necessary to calculate and visualize accessibility to parking, public transit, and potential pedestrian traffic. This would require analysis of land parcel data with Excel based calculations. Once again, MyMaps was not built with any of these functionalities in mind.

Therefore, we investigated QGIS and ARCGIS. These are mapping software with the ability to analyze data points and generate powerful visuals.

An easy way to think about QGIS versus ARCGIS is that QGIS is a free open-source software while ARCGIS is a subscription based commercial software. Both are very capable of dealing with the data at the level of analysis and visualization that the project seems to be demanding.

The main point of bringing up these two platforms is that each excels in a certain area for a certain purpose. And each is most cost effective for a certain purpose.

	Site as Points	Land Usage	Tax Form Analysis	Usefulness for End Users	Interactive Ease	Easy to Maintain	Available to Public	Cost
MyMaps	✓	✗	✗	?	✓	✗	✓	Free
QGIS	✓	✓	✓	?	✓	✗	✗	Free
ARCGIS	✓	✓	✓	?	✓	✗	✓	$100/yr access $500/yr creator

Table 1: GIS Platform Comparison

QGIS is a cloud-based software that is free and can be accessed from multiple computers and can feed into websites, apps and therefore can be viewed from these apps and websites easily. However, ARCGIS has a cost and can only be edited through computers and accounts with paid membership.

In the end, QGIS was chosen because the primary users would be the corresponding maintenance team at GEDP and WWCI. For private access, there is no need to use ARCGIS which has a higher cost to maintain.

Lessons Learned

- It is beneficial to realize what already exists rather than reinventing the wheel. Communities everywhere using mapping software for town and city planning. Rather than creating a whole new map and data system for the West Ward, we were able to adapt the QGIS platform and integrate existing data. This provides easy data maintenance since the data is collected for the county. This addresses the concern for data maintenance that was discussed at the end of our presentation last Spring.
- A map does not need to be accessible to everyone on a website to generate enormous benefits for programs in a community. Originally, we had planned for the map to be available to anyone but then we realized there were technological and learning curve limitations. The benefits will still be reaped by all in the community since façade and lighting grants and community green spaces and businesses will now be optimized.

The Asset Map and Guidebook

The asset map provides visual representation of the assets located in the West Ward section of Easton, PA, using a combination of Northampton County data and internal GEDP and WWCI data.

The QGIS platform is a geographic information system software that can analyze and edit spatial information and export the product in a geographical map format. In terms of this asset map, the QGIS software displays information in the form of colored shapes that correspond with real geographic maps, thus allowing the user to see a simple visualization of complex and extensive data with ease.

When accessed in QGIS, the map is largely editable and can be viewed in different capacities. Layers can be viewed in isolation of in specific combination with others. Data can be reorganized based on different land use code categorization. Additionally, the map can be used as a starter tool for acquiring additional information about West Ward assets.

This asset map developed uses a combination of Northampton County and internal GEDP and WWCI data to visually present information on the following categories:

- Residential Space
- Commercial Space
- Green Space
- Porch Light Initiative Data
- Façade Grant Distribution

The asset map produced by this team has the potential to facilitate the enhancement of commercial and community opportunities in the West Ward and serve as a platform to identify business corridors and vacant spaces for commercial activity.

The West Ward Asset Map Guidebook located at the end of this report provides detailed instructions and videos outlining how the asset data set can be utilized to find locations for commercial activities.

Suggestions for the Future:

The main users of this asset map are GEDP and WWCI staff who can assist business owners, community members as well as researchers looking into the properties and assets of the West Ward. Listed below are potential ways to use the map:

- Identify areas in need of façade grants by searching up the address that is requesting said grant and briefing through its tax form and history.
- Track the porch light distribution program by marking the properties that benefited from putting said lights to use.
- Identify greenways or bicycle freeways or connections that could potentially be developed in the future to increase walkability
- Business owners can find open parking lots and thereby optimize where they open shop.

The main advantage of using a map is the ease of spatially visualizing the data points. It is much easier to take control and optimize grants when public organizations have a feel for the relative distribution of various properties. The current asset map can be extrapolated beyond the West Ward by adding in additional data through the county.

GEDP and West Ward Initiative Goals that Could Be Achieved Through Asset Mapping

1. Incentivize ownership over rental property
    a. Identify key areas to award facade grants based on asset distribution and property information
2. Provide statistical and visual medium to advise new business owners on where to have the business take root
    a. Intuitively see the spread of parking, green space, and city assets near freed property parcels
3. Track programs occurring in the neighborhood
    a. Porch light distribution
    b. Streetlight distribution
    c. Park programs
    d. Food distribution

City-Centric Goals that Could Be Achieved Through Asset Mapping

1. Walk and Bike Ability Map
    a. Potential historical walking paths through the cemetery and this could be a partnership with the Siegel Museum on Northampton Street
2. Street-scaping Initiative
    a. Identify areas where safety and security could be improved through the incorporation of street lights and arts projects

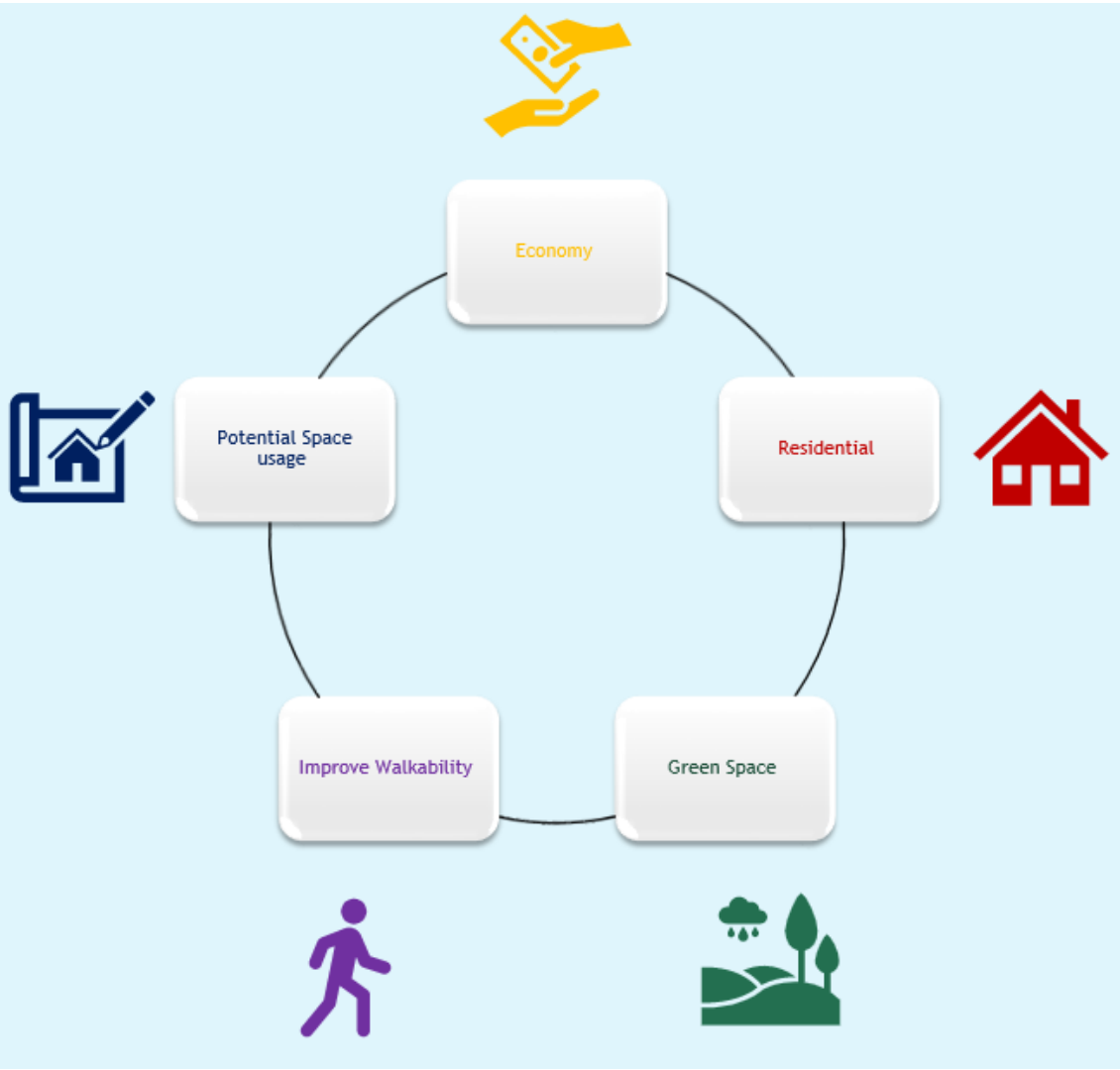


Figure 4: Opportunities Framing in Various Fields

Acknowledgements

Thank you to all those who partnered with us including

(add titles of who they are)

Amy Boccadoro, WWCI Manager

John Clark, GIS Librarian at Lafayette College

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Jared Mast, Executive Director at GEDP