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Data Sets – Descriptions, Citations and Analysis Plan

The focal dataset comprises of the various historic sites in Howard County, Maryland.

Howard County. Department of Planning and Zoning, (n.d.). Howard County historic sites inventory.
Retrieved October 22, 2015, from https://data.howardcountymd.gov/geoserver/
ows?service=WFS&version=1.0.0&request=GetFeature&typeName=general:Historic_Sites_View&outputFormat=csv

In this data set, each site is represented by a unique FID, the link to a document describing the record held by the Maryland Historical Trust, a Howard County ID, the name of the historic site, the address of the site, a commonly used name for the site, the city/region in which it is located, the year of the survey, comments about the site's current state, and a geometrical point describing the location on a map of the Howard County. This dataset is useful for the team project as it provides information about which places most tourists are likely to visit, hence providing insights about the possible locations for the setup of free Wi-Fi.

Two other datasets that can help perspectives to the project are:

a) Restaurants in Howard County assessed by Healthy Howard

Howard County. (n.d). HH_Restaurants. Retrieved October 22, 2015, from
https://data.howardcountymd.gov/geoserver/ows?service=WFS&version=1.0.0&request=GetFeature&typeName=general:HH_Restaurants&outputFormat=csv

This dataset describes the various restaurants in Howard County that have been reviewed and assessed as Healthy Restaurants by Healthy Howard, a non-profit based in Columbia, Maryland. Data for each restaurant comprises of a unique FID, name of the restaurant, address of the restaurant, the city it is located in, its zip code, healthy menu items, and a geometrical point describing the location on a map of the Howard County. This dataset can help identify various locations that have maximum tourist or general activity, which in turn could help ascertain areas that would benefit from free Wi-Fi.

b) Public High Schools in Howard County

Howard County. (2014, November). Schools-High. Retrieved October 25, 2015, from
https://data.howardcountymd.gov/geoserver/ows?service=WFS&version=1.0.0&request=GetFeature&typeName=general:Schools_High&outputFormat=csv

This dataset lists the various public high schools in Howard County, as of November 2014. Each high school is represented by a unique FID, and contains a name, address, the city it is located in, its zip code, and a geometrical point describing the location on a map of the Howard County. Given the location of various public high schools within Howard County, areas requiring free Wi-Fi can be identified as school premises and immediate surroundings in order to help students gain maximum benefits out of such facilities, especially when they might not have access to a reliable Internet connection at their residence.

On combining these various datasets, some questions that can possibly be addressed are:

1. *Which cities have a strong actively engaged population base?* This can be determined by assessing the number of historic sites, restaurants and public high schools in each city, and identifying cities with higher count. This could provide us with cities that require primary focus for expanding the free Wi-Fi system.
2. *Do cities with a higher number of historic sites have more restaurants situated when compared to those with a lower count of historic sites?* This could give valuable insights on basic economic trends associated with tourism, especially how small and medium scale businesses are likely to adapt to tourist locations.
3. *Can high schools provide students with frequent field trips to historic sites and organize exploratory activities like scavenger hunts?* It is essential to ensure that the student population is able to access historic sites within its city, as it allows teachers to experiment with innovative ways of teaching them about local history, using technology and internet aided activities.
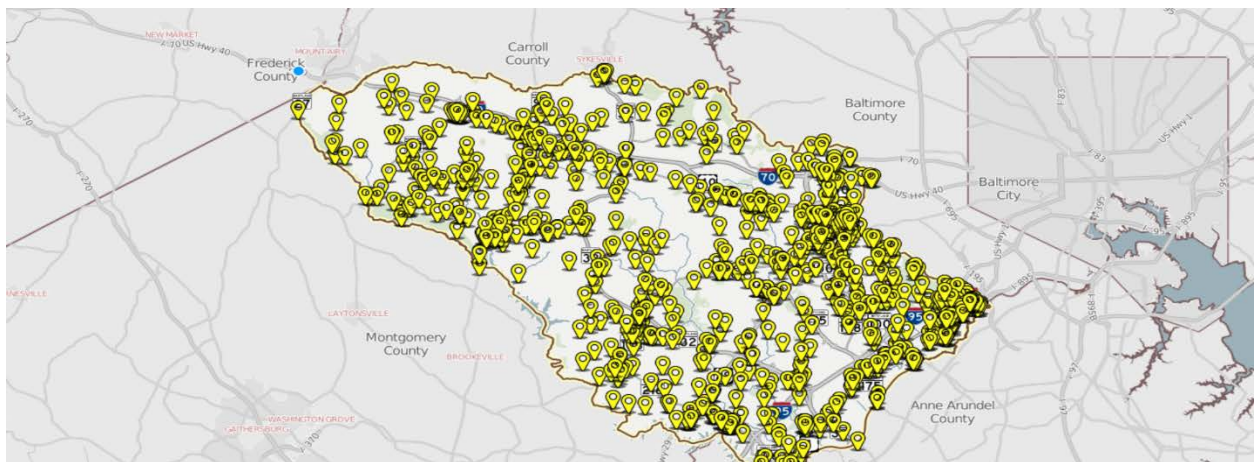
A join operation performed on these 3 datasets is based on the following identical or similar columns:

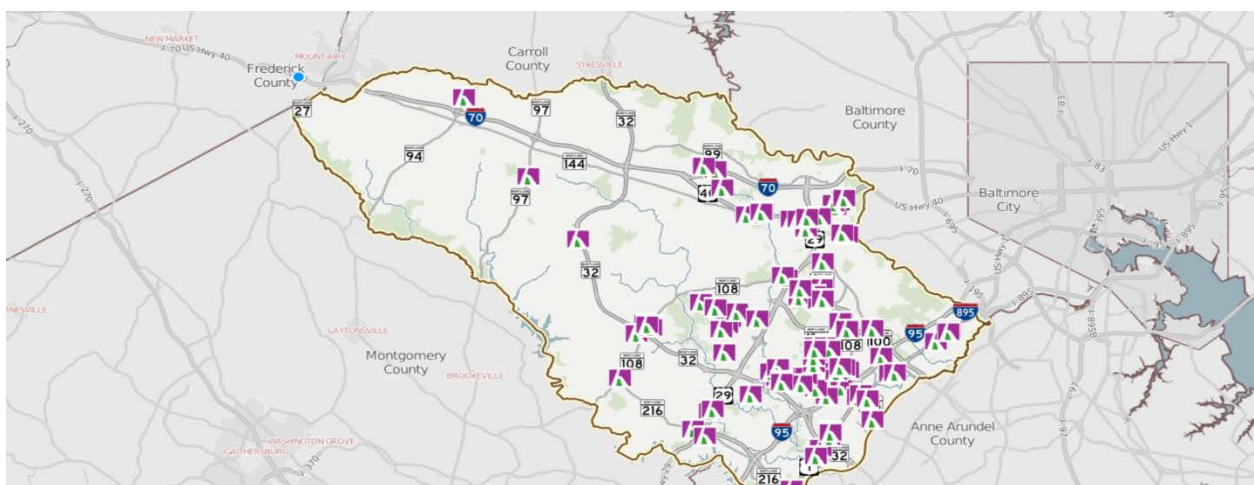| Historic Sites	HH_Restaurants	Schools- High
FID	FID	FID
Name	Name	Name
Address	Address	Address
Location	City	City
Geom	geom	Geom
	ZipCode	Zipcode

After performing an *outer join* on these three datasets, we can obtain a table comprising of the following columns: **FID, Name, Location, geom, ZipCode** - from HH_Restaurants and Schools-High,

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Document – from Historic Sites, **HoCo ID** – from Historic Sites, **Tax Map** – from Historic Site s, **Block** – from Historic Sites, **Parcel** – from Historic Sites, **Lot** – from Historic Sites, **Building Name** – from Historic Sites, **Common Name** – from Historic Sites, **Survey Year** – from Historic Sites, **Comments** – from Historic Sites, **Menu_Item1** - from HH_Restaurants, and **Menu_Item2** - from HH_Restaurants.
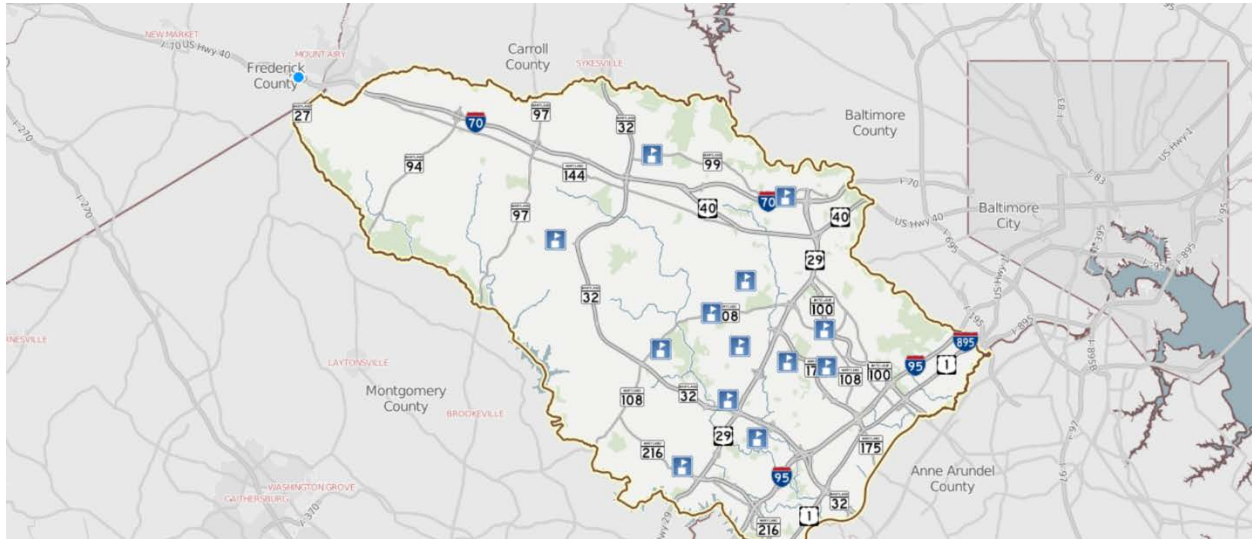
We can plot all these points on a map to identify patterns that can help answer some of the questions pertaining these datasets. The Howard County, Maryland data download and viewer page provides a special mapping tool that helps display these datasets as various layers on the map.

Figure 1: Map depicting various historic sites in Howard County from the Historic_Sites dataset obtained from the Howard County, Maryland data download and viewer page (CC BY 4.0)
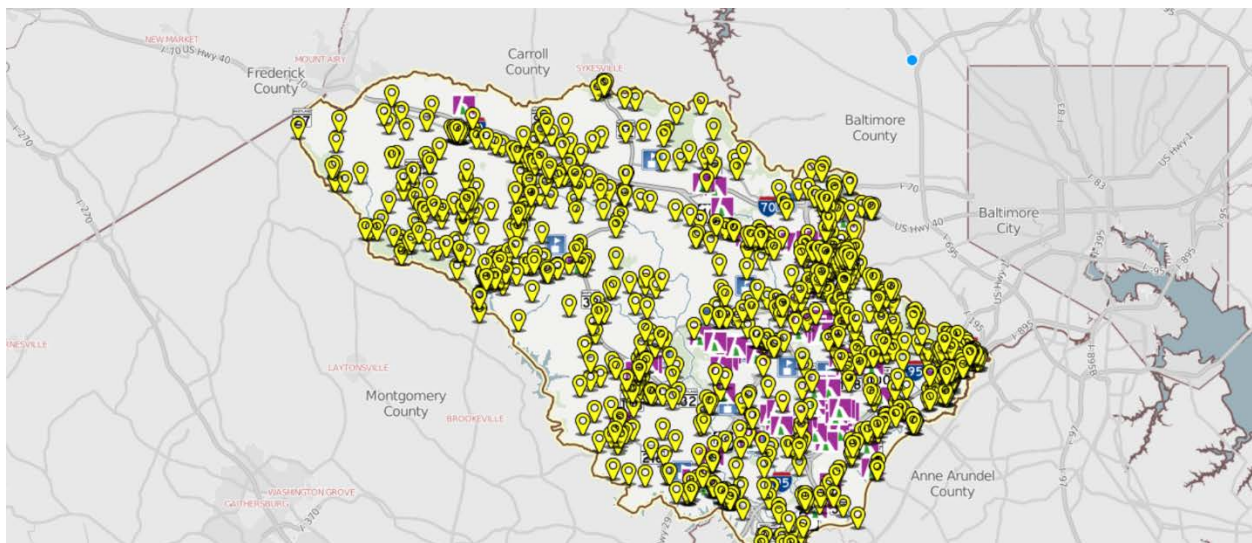

Figure 2: Map depicting various restaurants evaluated by Healthy Howard in Howard County from the HH_Restaurants dataset obtained from the Howard County, Maryland data download and viewer page (CC BY 4.0)

Figure 3: Map depicting various public schools in Howard County from the Schools_High dataset obtained from the Howard County, Maryland data download and viewer page (CC BY 4.0)

These individual maps depict the datasets independently. An overlap of these maps is obtained by adding additional filters to the focal dataset, and the resultant map obtained in depicted in Figure 4. This represents the locations and distribution of various historic sites, restaurants and public high schools across Howard County.

Figure 4: Map depicting various historic sites, restaurants, and public schools in Howard County generated from the Howard County, Maryland data download and viewer page (CC BY 4.0)

A graphical view of the distribution can provide us a fair understanding of which areas are likely to receive more visitors in the form of commuters or tourists, and we can move on to implement Wi-Fi there.