Memorandum

Hillsborough County TPO Health Risk Assessment

Introduction

The Hillsborough County TPO intends to improve public health outcomes while supporting community development, bicycle and pedestrian safety, and sustainability. The TPO would like to understand how implementation of Complete Streets treatments identified in its Long Range Transportation Plan (LRTP) may impact public health conditions and potentially reduce risk levels. The first step in this process is a countywide health risk assessment to establish a baseline.

Health Outcome Introduction

Within the United States, health outcomes are largely dependent on socioeconomic and environmental factors with health care only shaping 20 percent of a community's overall health[i]. The built environment, such as access to jobs, cultural institutions, healthcare, housing and active transportation; community design conducive to walking; and environmental pollutants can support healthy behaviors or create obstacles that contribute to health inequities, leading to populations with a disproportionate burden of chronic disease.

Six chronic diseases are included in the geographic comparison as well as the Hillsborough County health risk assessment, discussed below. These chronic diseases are:

1. **High Blood Pressure**- also known as hypertension, high blood pressure is a risk factor for heart disease. Environmental factors that have been found to influence blood pressure include lead exposure and air pollution. Environmental factors can also influence related behavioral factors such as diet, stress, and lack of physical activity.[ii]
2. **Asthma**- An inflammatory condition of the lungs and one of the most common long-term diseases in children. Environmental factors that influence asthma include air pollution exposure, and exposure to allergens and pests. Other related factors include weight.[iii]
3. **Coronary Heart Disease**- A type of heart disease where the arteries of the heart cannot deliver enough oxygen rich blood to the heart and is often caused by high cholesterol. Air pollution, physical inactivity, stress, and unhealthy diet can all increase risk for coronary heart disease.[iv]
4. **Diabetes**- A chronic health condition that influences how the body produces or uses insulin and therefore how the body's cells have access to energy. Risk factors for diabetes include being overweight, physical inactivity, stress, and exposure to pollution.[v]
5. **High Cholesterol**- When total blood cholesterol for adults who have been screened in the past 5 years is greater than 200 mg/dL. This is a risk factor for heart disease and stroke. Physical activity and healthy weight and eating can help prevent high cholesterol. It has also been found that fine particulate matter can contribute to high cholesterol levels. [vi]
6. **Obesity**- A chronic disease defined as an excessive amount of body fat, that puts people at risk for other diseases including those listed above as well as others. Environments lacking health food options, that do not promote physical activity, and that contribute to high stress have been found to influence obesity. [vii]

Other population health outcomes and behaviors that are closely linked to environmental conditions were also included in the geographic comparison:

7. **Physical Inactivity**- Defined by the CDC as adults reporting no physical activity in their leisure time. This may not cover physical activity undertaken commuting or in daily life but may capture much of the population that is not

getting the CDC recommended amount of exercise. Physical inactivity increase risk for heart disease, diabetes, colon cancer, high blood pressure, obesity, osteoporosis, muscle and joint disorders, and symptoms of anxiety and depression.[viii]

8. **Poor Physical Health**- Defined by the CDC as adults who spend more than 14 days a month with poor physical health, including physical illness and injury. This self-reported measure may overlap with Chronic Disease, but also capture other aspects of health.
9. **Mental Health**- Defined by the CDC as adults who spend more than 14 days a month with poor mental health, which includes emotional, psychological and social wellbeing.

Population Health Outcomes Geographic Comparison

VHB conducted an assessment to understand how Hillsborough County population health outcomes compare on average to that of the State and Nation. The results of this assessment are included in **Table 1**. The county population has higher rates of asthma, diabetes and obesity than Florida overall. However, the county population has lower rates of high blood pressure, coronary heart disease, and high cholesterol than Florida overall. The county also has slightly higher prevalence of physical inactivity, poor physical and mental health days than Florida overall.

Table 1 Prevalence of Health Conditions by Geography

	Crude Prevalence (% of Overall Population)		
Chronic Disease	Hillsborough[1]	Florida	National
High Blood Pressure	30.9	33.5	32.6
Asthma	8.1	7.3	8.9
Coronary Heart Disease	5.7	7.6	6.2
Diabetes	11.8	11.8	11
High Cholesterol	30.4	33.4	33.6
Obesity	30.4	28.4	31.3
Physical Inactivity	27	26.5	26
Poor Physical Health	13.5	10.3	12.5
Poor Mental Health	14.7	12.3	13.6

1 Green highlighted cells show where the county population has better health outcomes than that of the state, while yellow highlighted cells show where the population has worse outcomes.

Sources: CDC, Division of Population Health. PLACES Data [online]. 2021. URL: https://www.cdc.gov/PLACES.; CDC, Division of Population Health. BRFSS Prevalence & Trends Data [online]. BRFSS Prevalence & Trends Data: Home | DPH | CDC.

Hillsborough County Health Risk Assessment

A county-specific assessment was also conducted for Hillsborough County to understand the geographic distribution of census tracts that are overburdened by chronic disease. This health risk assessment is intended to establish a baseline understanding of health conditions in the county. A map of combined risk is shown in **Figure 1**. This combined risk takes the percent change from the county average of each of the 6 chronic diseases outlined above and adds them together for a combined score. The combined score is distributed along a normal curve. Tracts categorized as "good" are greater than 1.5 standard deviations above the average combined score, and tracts categorized as of "concern" are 1.5-2.5 standard deviations below the combined average score, with tracts identified as "poor" with combined scores lower than that. Maps of each assessed chronic disease are also included below in **Figure 3** through **Figure 8**.

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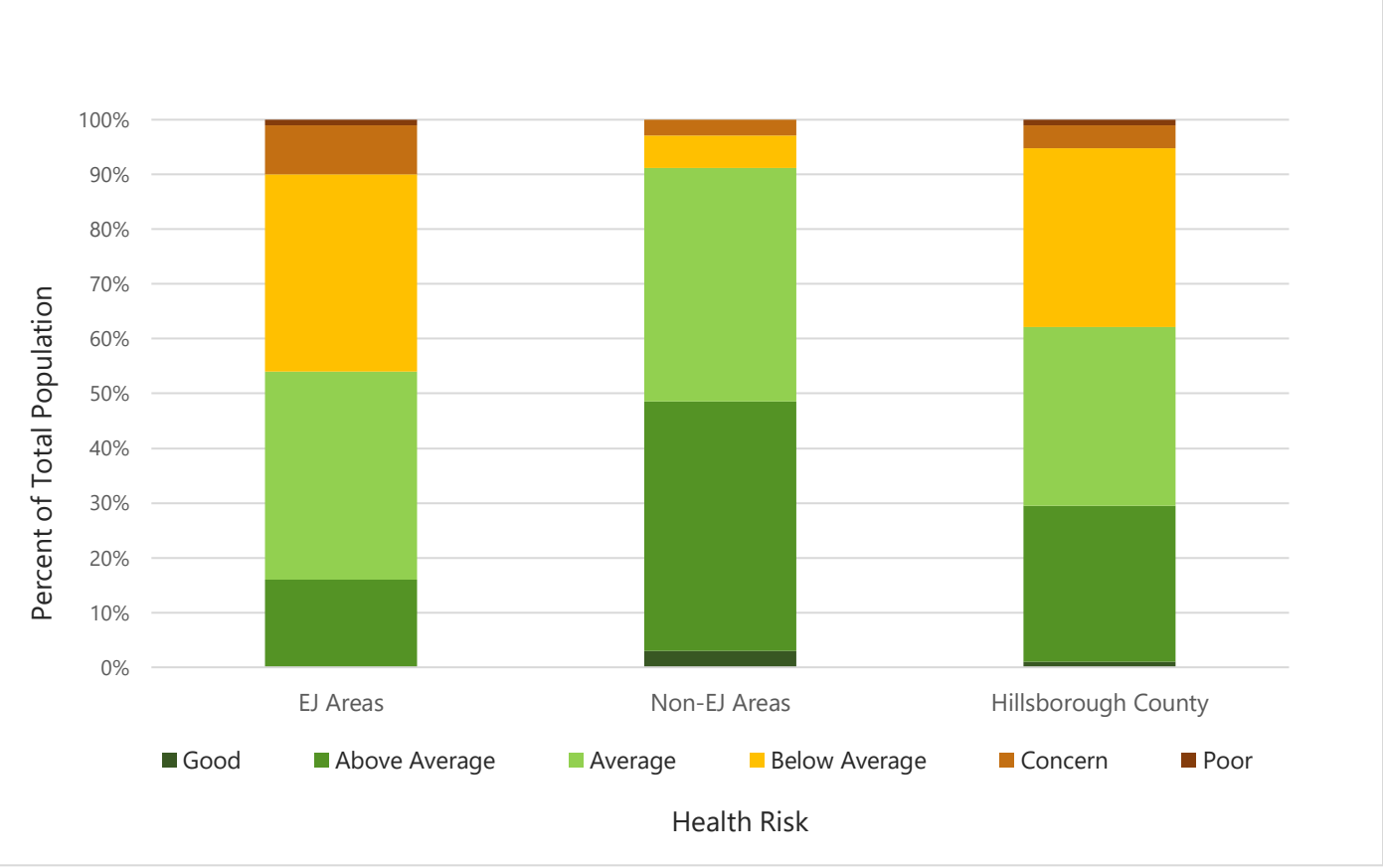
Environmental Justice Areas

Environmental Justice (EJ) Areas are included in **Figure 2** with the baseline health assessment. EJ Areas as defined in the Plan Hillsborough Nondiscrimination and Equity Plan, are block groups in the top 10th percentile of low-income households or racial/ethnic minority populations. EJ Areas are concentrated in the neighborhoods of East Tampa, West Tampa, Sulphur Springs, Egypt Lake, Drew Park, Twelve Oaks, Town N' Country, East Lake- Orient Park, University Area, Progress Village, Palm River-Clair Mel, south Plant City, Ruskin, and Wimauma. Many of these neighborhoods also have populations with below average health outcomes, especially in East and West Tampa, Drew Park, Town N' Country, Progress Village, Sulphur Springs and Ruskin. **Table 2** shows combined health assessment categories for census tracts with at least one block group defined as an EJ Area and compares health risk across EJ and Non-EJ Areas. Approximately 46% of the population in census tracts with EJ areas are categorized as below average, concern or poor in terms of health risk, and only 16% of the population in these tracts have above average health outcomes. By comparison, only 7% of the population in tracts that do not contain EJ areas have below average health risk, and 33% of the population in these tracts have above average or higher health outcomes.

Table 2 Environmental Justice Area Health Risk Assessment



Note: The Share is based on the number of tracts within each area category (EJ, Non-EJ or County)

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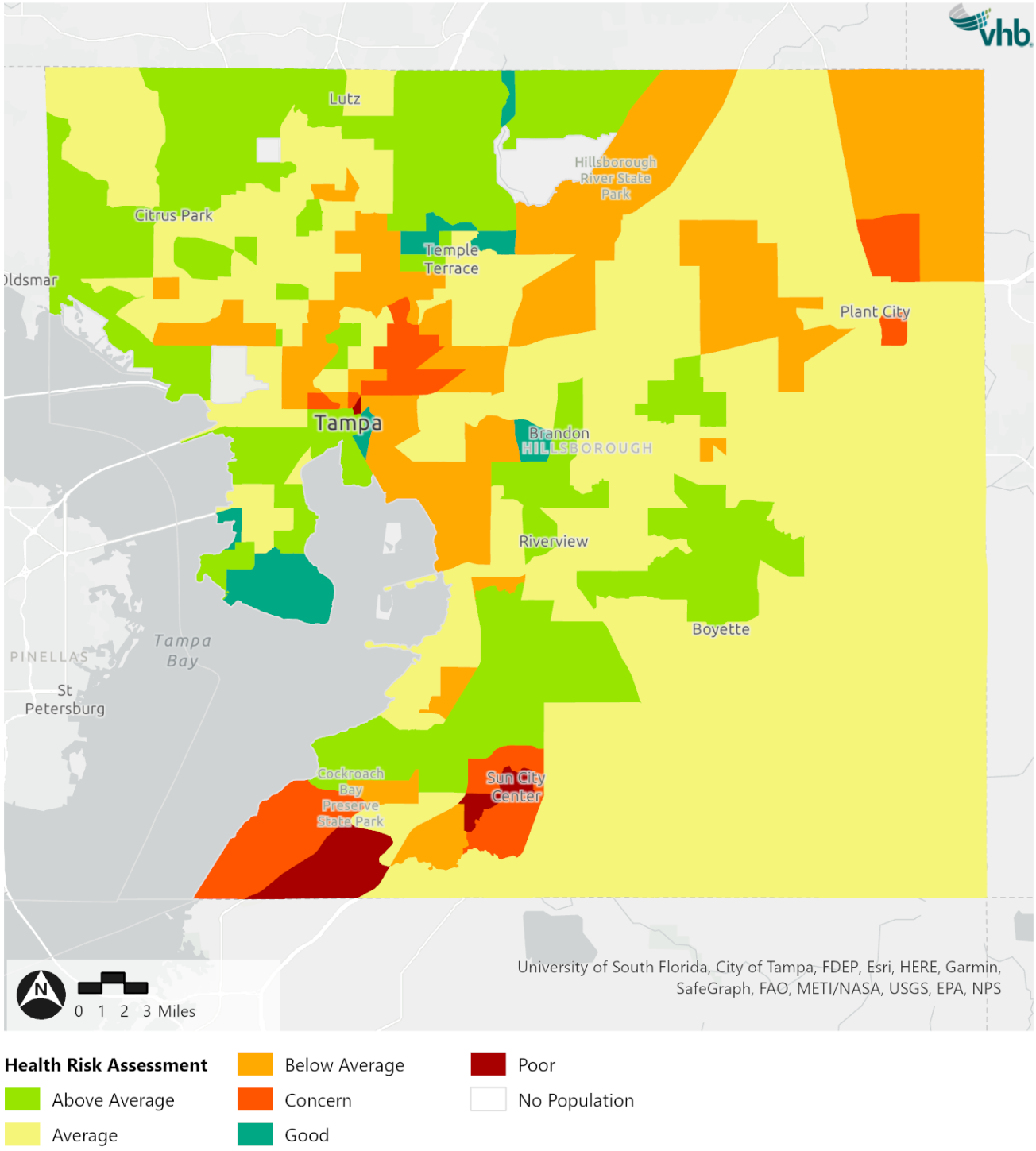
Next Steps

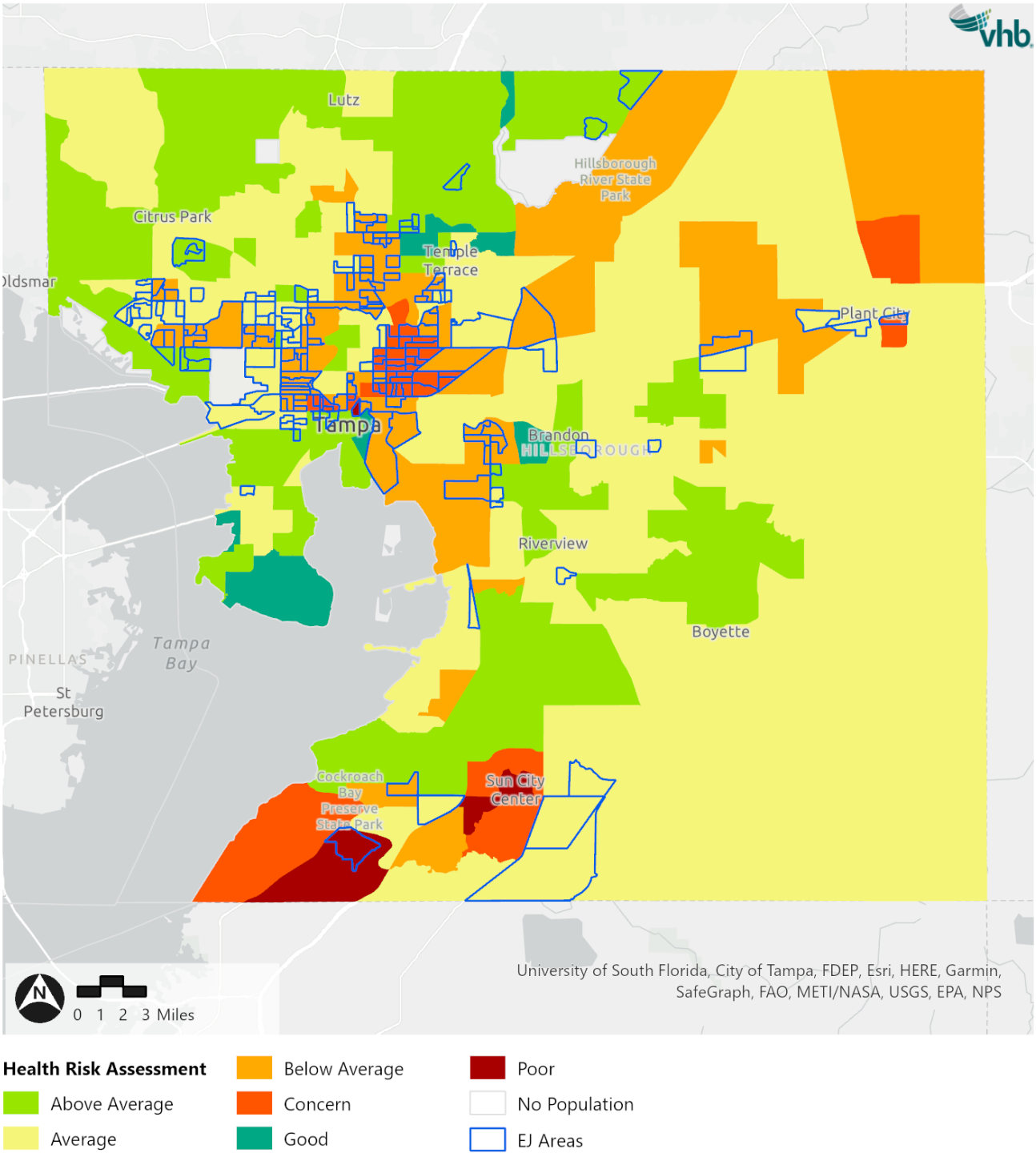
- Methodology Meeting with Hillsborough County TPO to identify five Complete Street locations and typical treatments
- Statistical analysis on variables that may affect community health risk assessment.

Figure 1 Combined Health Risk Assessment



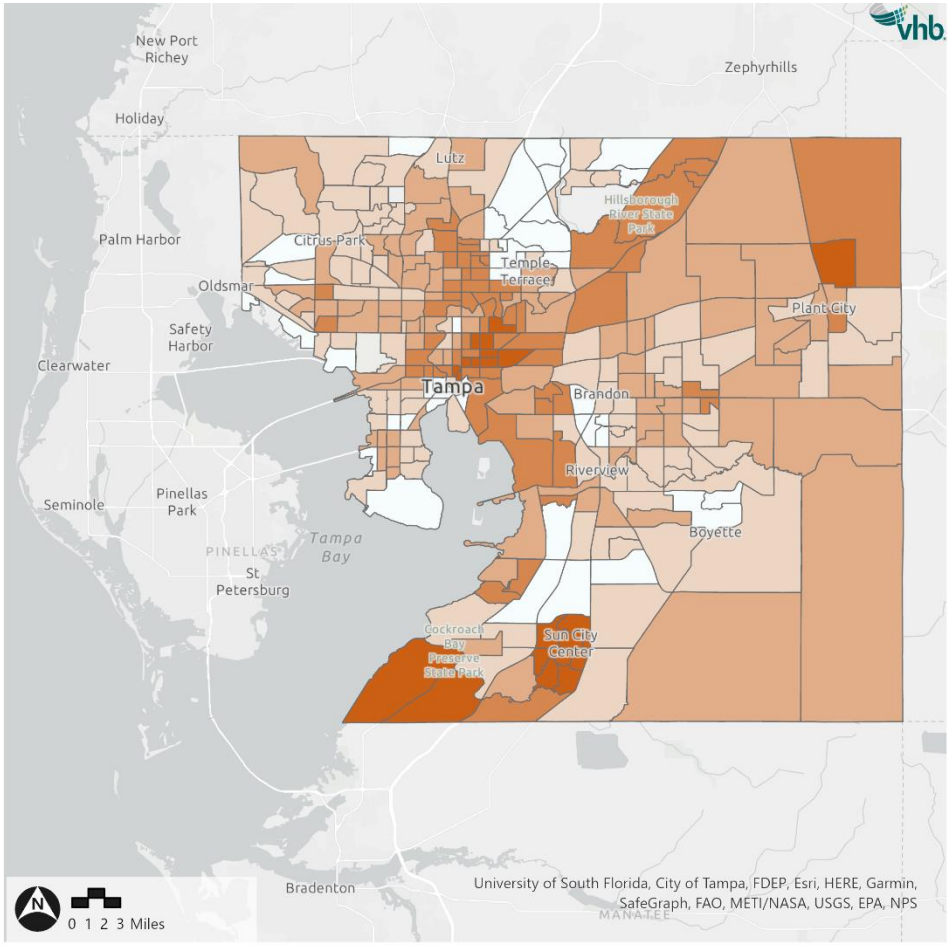
Source: CDC Places Data 2021, Plan Hillsborough Nondiscrimination and Equity Plan

Figure 2 Combined Health Risk Assessment- with EJ Areas



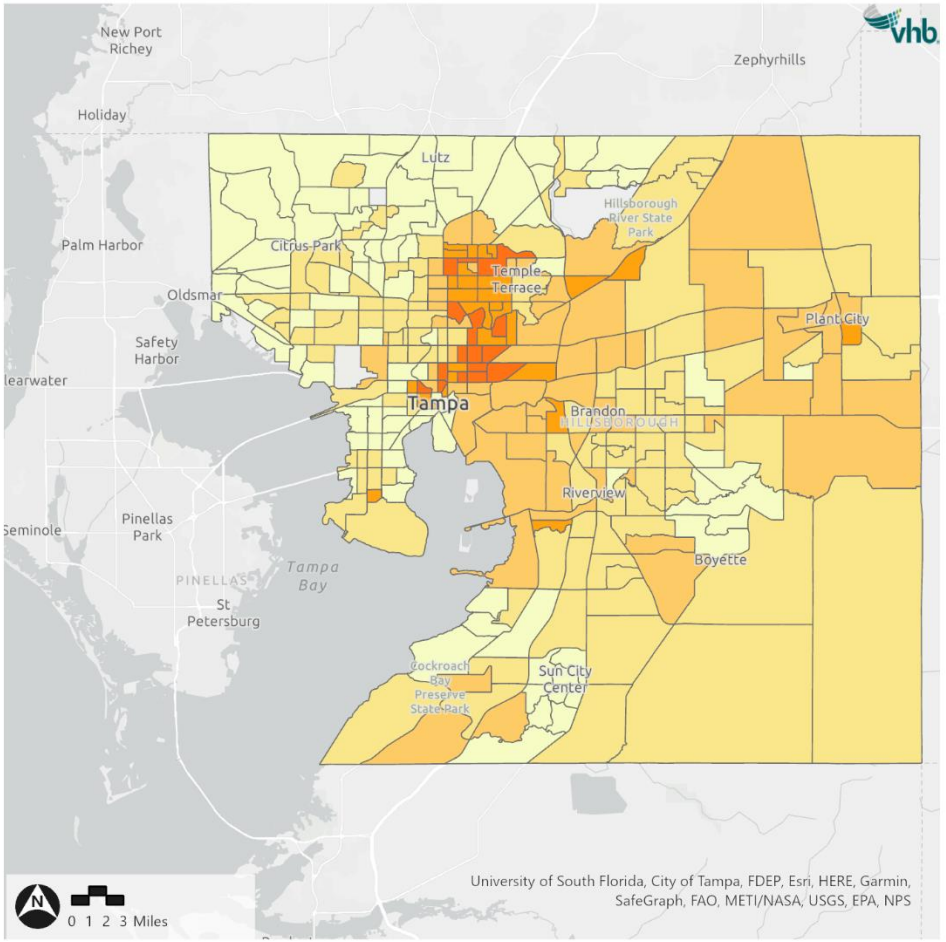
Source: CDC Places Data 2021, Plan Hillsborough Nondiscrimination and Equity Plan

Figure 3 High Blood Pressure Prevalence



Source: CDC Places Data 2021

Figure 4 Asthma Prevalence



Source: CDC Places Data 2021

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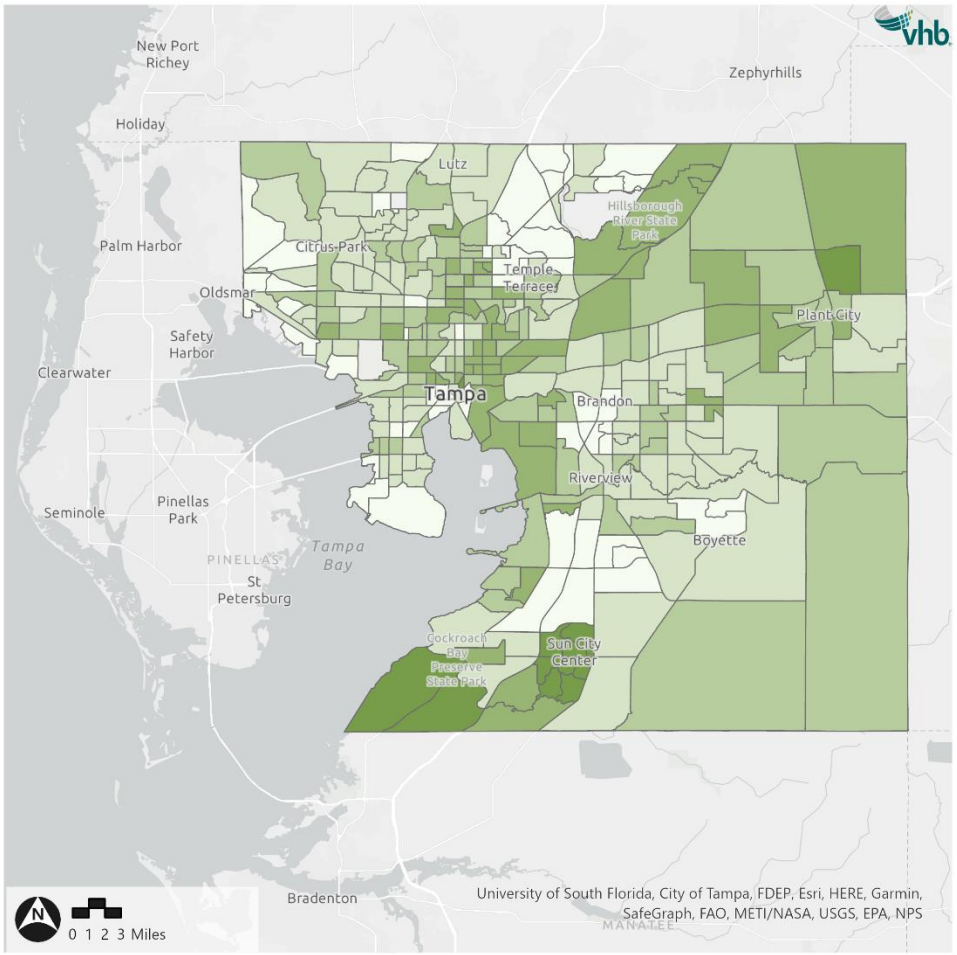
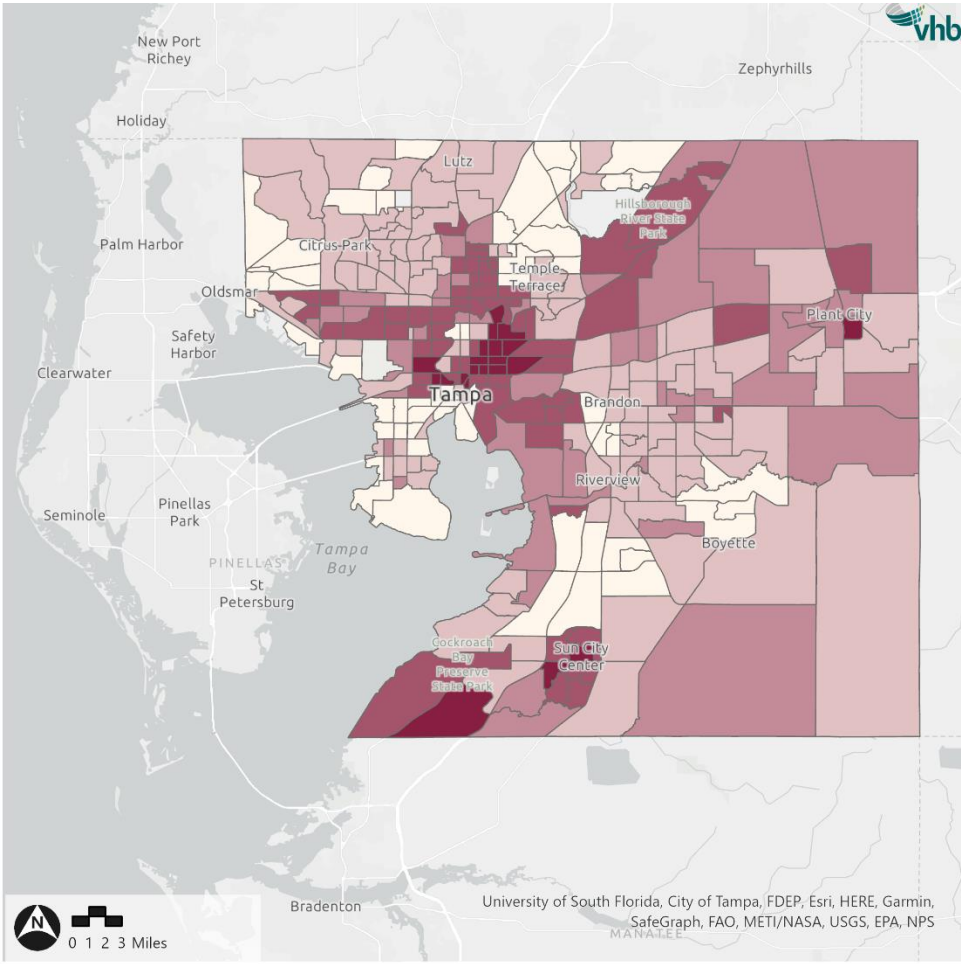
Figure 5 Coronary Heart Disease Prevalence



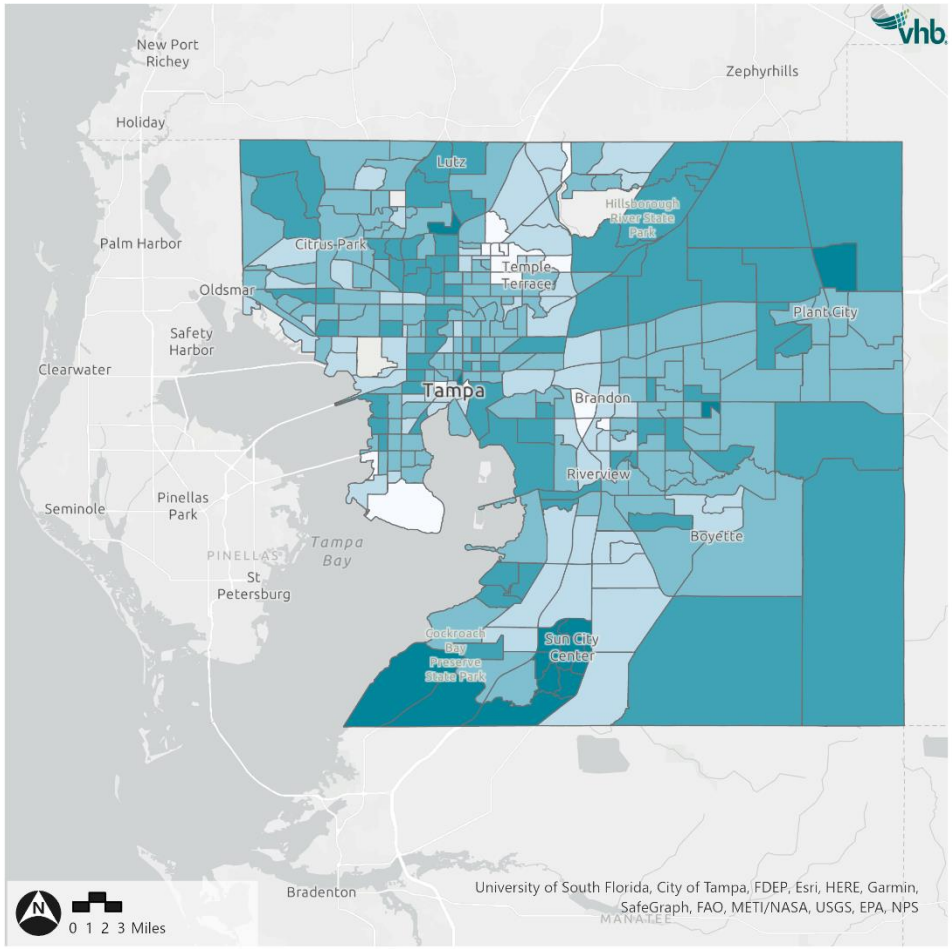
Source: CDC Places Data 2021

Figure 6 Diabetes Prevalence



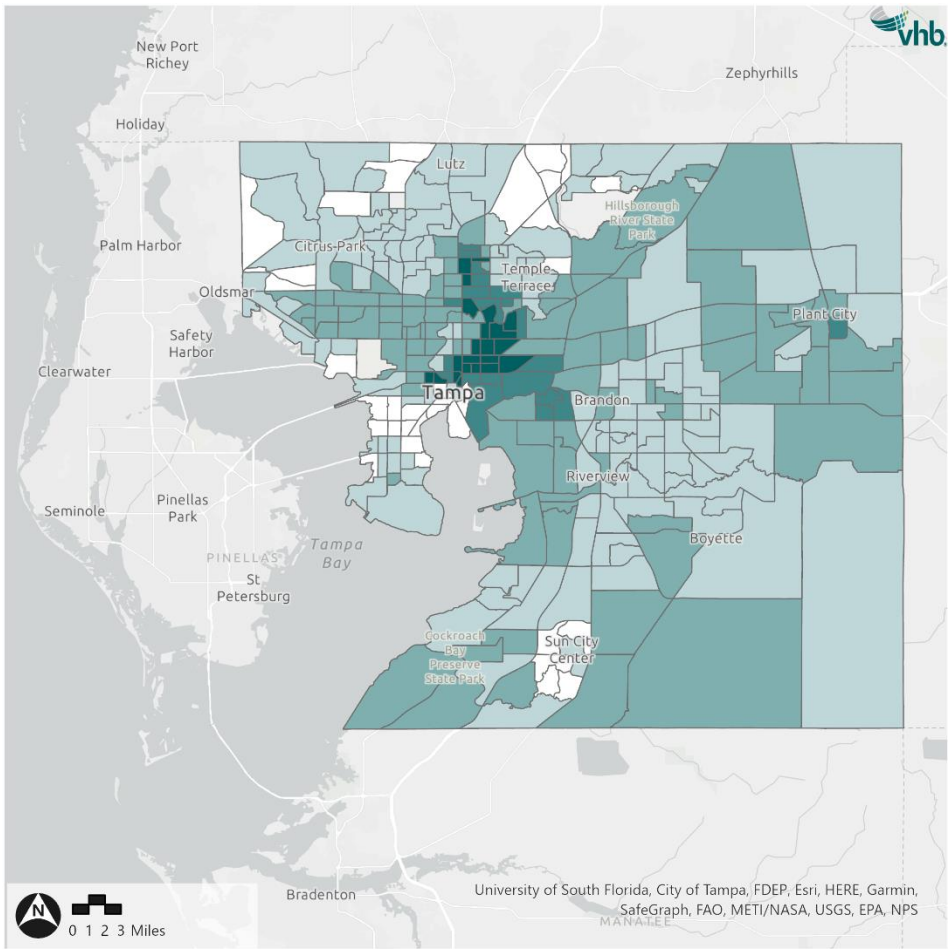
Source: CDC Places Data 2021

Figure 7 High Cholesterol Prevalence



Source: CDC Places Data 2021

Figure 8 Obesity Prevalence



Source: CDC Places Data 2021

[i] University of Wisconsin Population Health Institute and Robert Wood Johnson Foundation, County Health Rankings Model | County Health Rankings & Roadmaps

[ii] High Blood Pressure References: How Cumulative Risks Warrant A Shift In Our Approach To Racial Health Disparities: The Case Of Lead, Stress, And Hypertension | Health Affairs; Environmental Hypertensionology The Effects of Environmental Factors on Blood Pressure in Clinical Practice and Research (umich.edu); Prevent High Blood Pressure | cdc.gov

[iii] Asthma References: Asthma | CDC; Understanding How Environmental Factors Affect Children's Asthma | US EPA

[iv] Coronary Heart Disease - Causes and Risk Factors | NHLBI, NIH

[v] Diabetes References: Environmental Risk Factors for Developing Type 2 Diabetes Mellitus: A Systematic Review - PMC (nih.gov); What is diabetes? | CDC

[vi] High Cholesterol References: Cholesterol Information | cdc.gov; Study Shows Possible Link Between Air Pollution and Higher Cholesterol Levels | US EPA

[vii] Social and Environmental Factors Influencing Obesity - Endotext - NCBI Bookshelf (nih.gov)

[viii] Monthly Estimates of Leisure-Time Physical Inactivity -- United States, 1994 (cdc.gov)