Green Toronto

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Introduction

-Give Toronto insight on progress

-Future predictions and goals

-Effectiveness of green roofs

-Understand where renewables are needed

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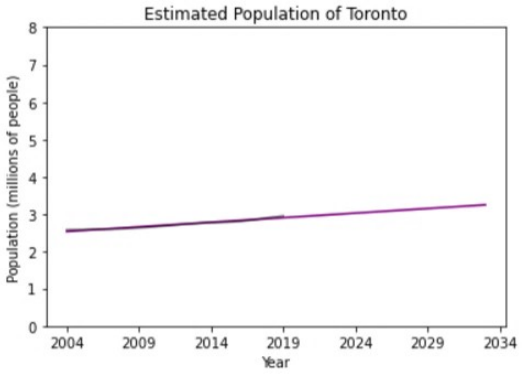
Problem

-Our unsustainable ways threaten the planet

-Toronto's population expected to rise

-Increased population means increased energy demand



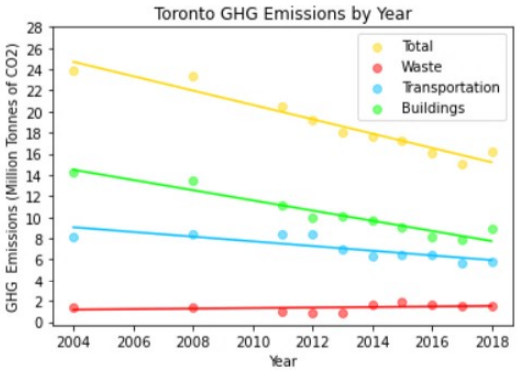
GHG Emissions Trend

-Significant progress

-Buildings decreased most while waste decreased least

-Transportation and waste based more on population

-Waste emissions are important



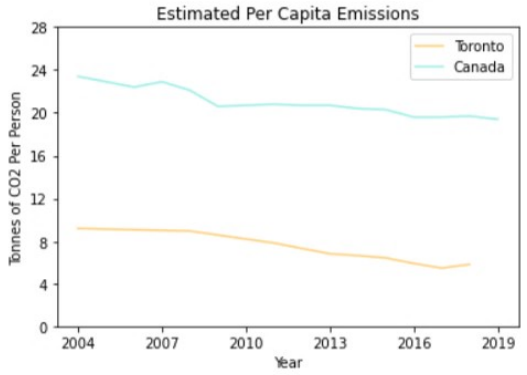
Canadian Comparison

-Toronto ahead of the curve

-Progress slowing down

-Toronto should share ideas

-Toronto should encourage others



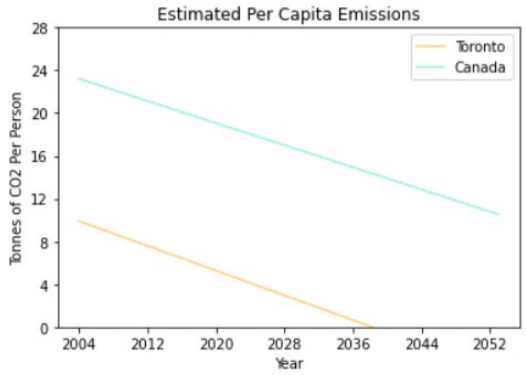
Future Trends

-Trend line from previous graphs

-On track of 2050 goal

-Toronto has steeper trend

-Assumes linear trend



Legend

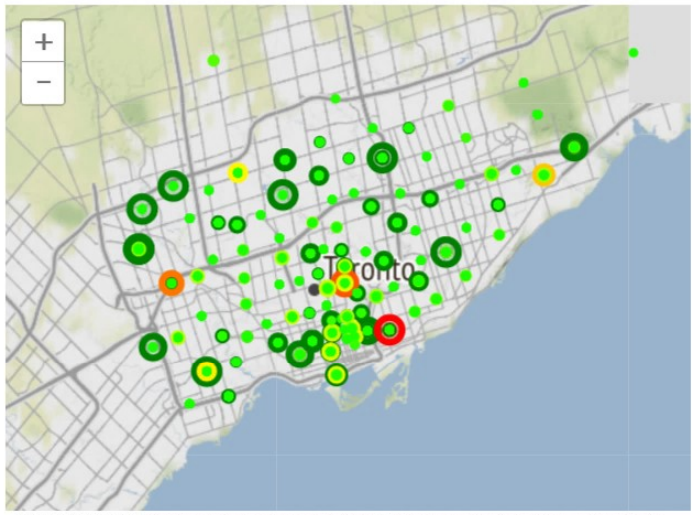
-Dark green indicates green roof location

-Other circles represent energy consumption in kWh/sq ft

-Size of green circle dependant on size

-Size of other circles related to color

-Red means high energy, green means low



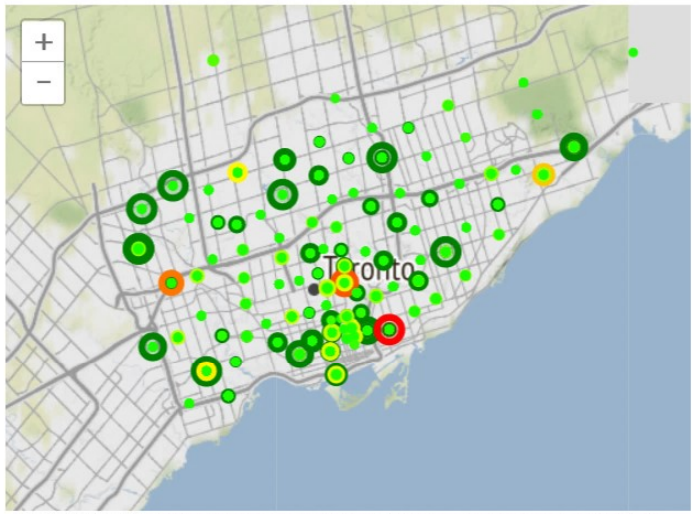
Green Roof Analysis

-Large greenroofs have low energy concentration

-Certain areas lacking green roofs

-Lower height where green roofs are required

-Roof shape affects green roof size



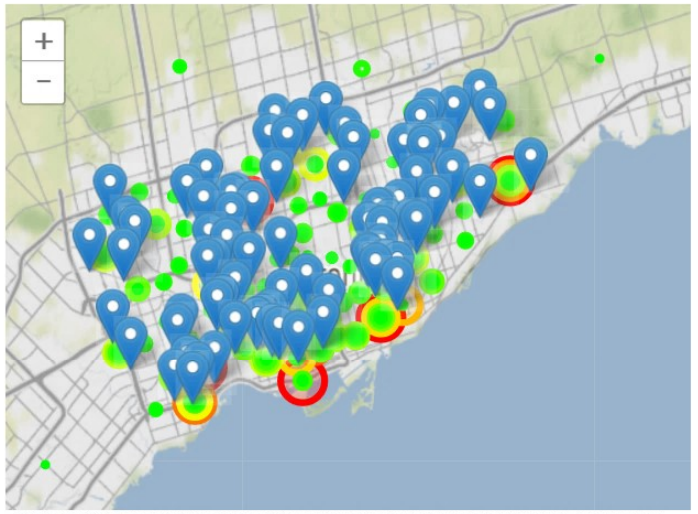
Legend

-Blue plots represent renewable installations

-Circles represent GHG emissions in kg

-Red means higher, green means lower

-Size of circle related to color



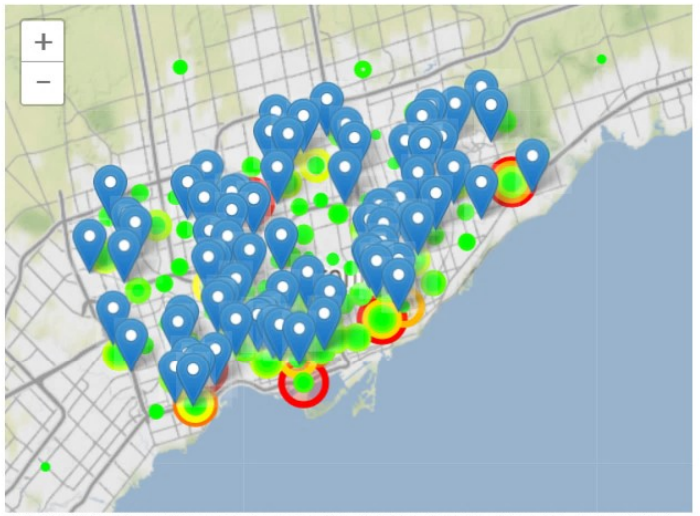
Renewables Analysis

-"Big 5" consist of treatment facilities or public transit

-Big 5 lack renewables installations

-Areas with more green have more renewables

-General indicator for where renewables are needed



Limitations and Assumptions

-We assume the data is comprehensive

-It is assumed that data points are correlated

-For green roofs, it is assumed they play a significant role

-Values are capped so visuals may be inaccurate

-Problems with Pgeocode

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Final Thoughts

-Toronto is doing well

-Green roofs are effective

-Lower height where green roofs are required

-Install renewables in key buildings

-Policies to reduce waste

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