GREATER TORONTO AREA ANALYSIS:

Visualizing Foursquare Data to Map City Activities and Changes.

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I. GENERAL INTRODUCTION

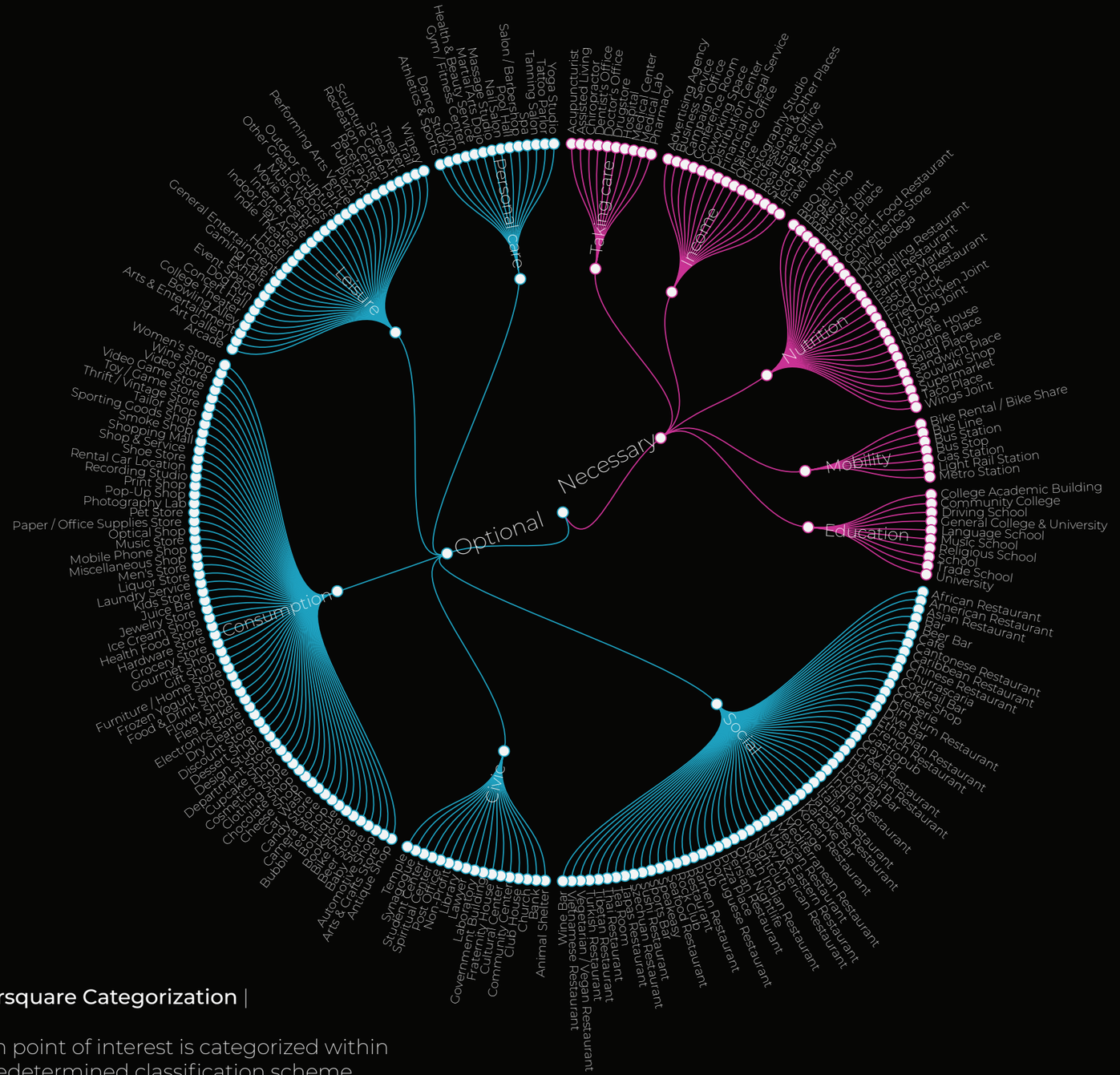


This report aims to **identify activity trends and land-use changes in the Greater Toronto Area (GTA)** through **Foursquare Data visualization.**

The first maps depicts the different type of activities in the GTA to illustrate to understand a) the urban morphology and b) its dynamics .

The second part of the analysis will build on the first, to understand the land-use changes of the site of ex-Blockbuster shops and how the appearance of Coffee shops may indicate changing neighborhood.

III. METHODOLOGY



Foursquare Categorization |

Each point of interest is categorized within a predetermined classification scheme. Each category can be spatially layed out to provide a comprehensive visual picture of its geographic disstribution

To better understand Foursquare Activities three different spatial distribution were defined i.e. Axial, Polycentric and Homogenous Distribution:

Axial Distribution |

Activities predominantly distributed along major arteries.

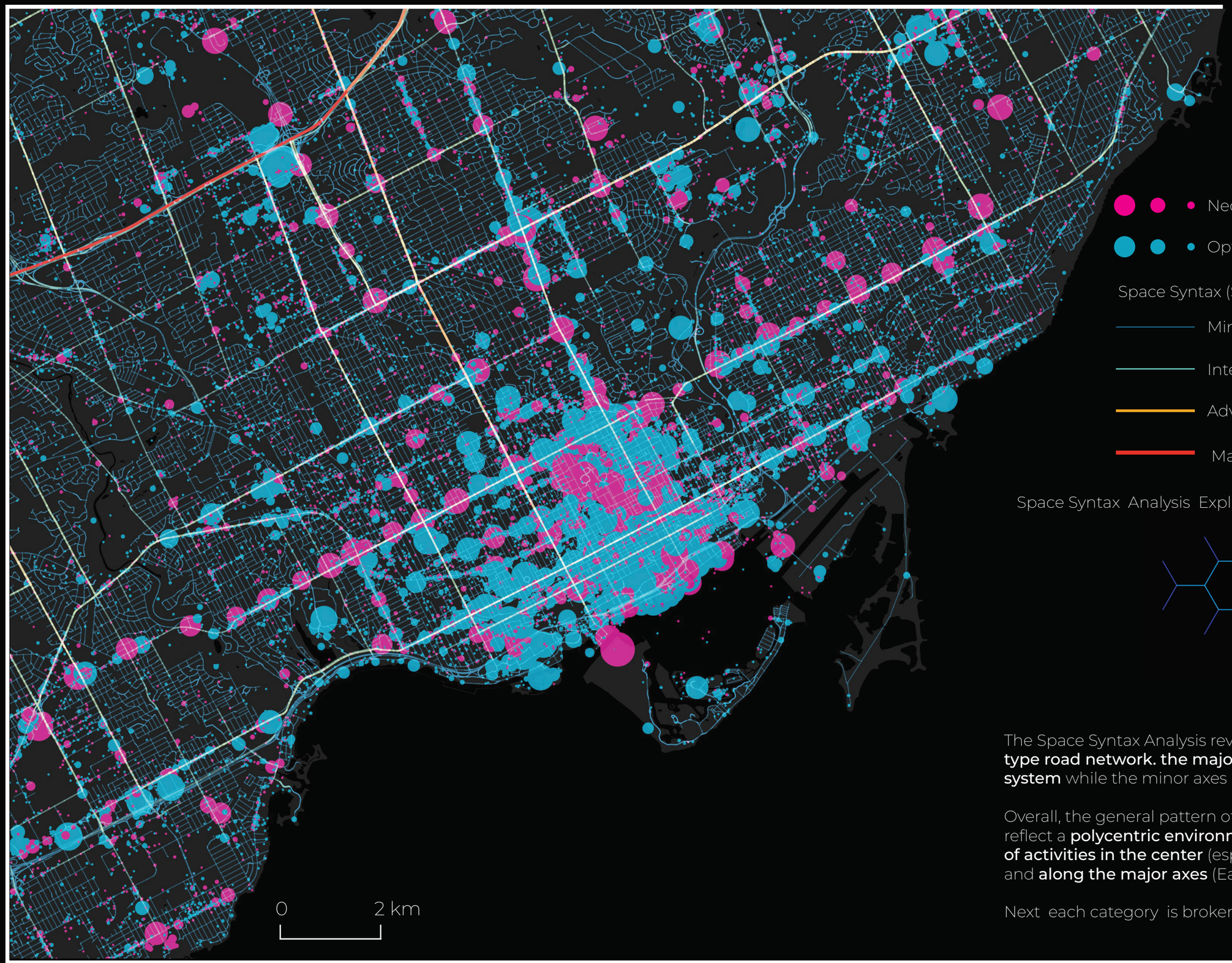
Polycentric Distribution |

Pocket of denser activities spread accross various locations.

Homogenous Distribution |

Relative even distribution of activities accross GTA.

II. GENERAL ACTIVITY PATTERN



Necessary | 0 - 280K Visit Counts

Optional | 0 - 280K Visit Counts

Space Syntax (SS) Analysis Global Choice |

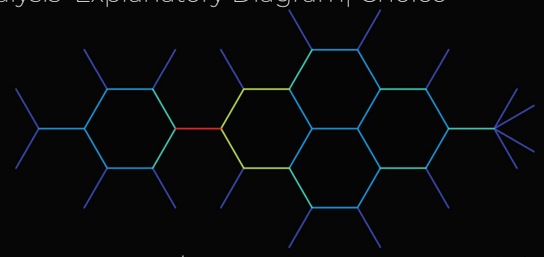
Minor Axis

Intermediate Axis

Advanced Axis

Major Axis

Space Syntax Analysis Explanatory Diagram| Choice

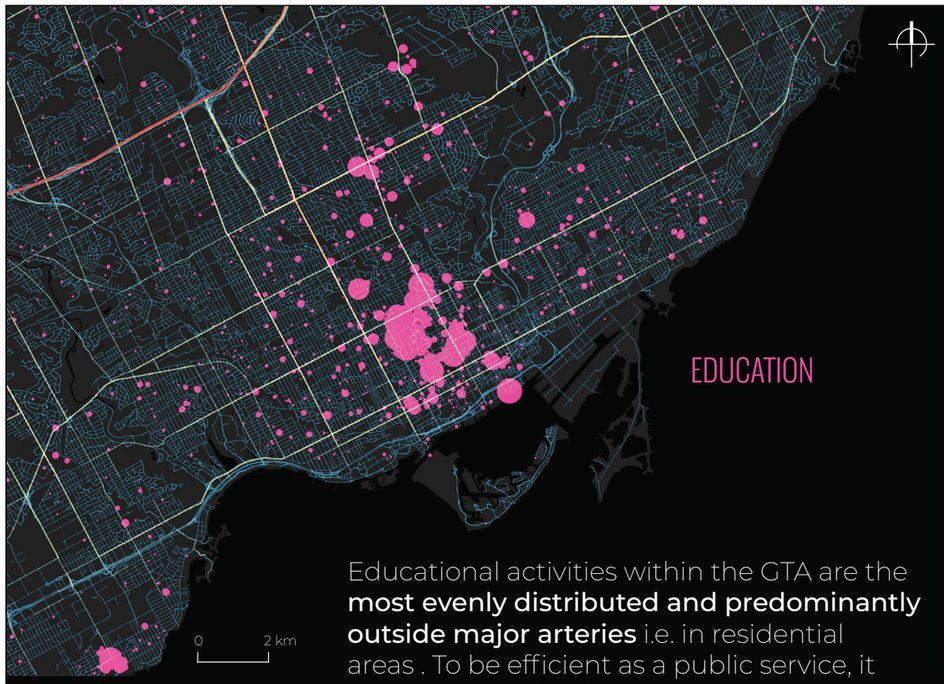


The Space Syntax Analysis reveals a **clear North-American type road network. the major arteries forming an even grid system** while the minor axes located in between.

Overall, the general pattern of Foursquare activity in the GTA reflect a **polycentric environment with a predominant focus of activities in the center** (especially for Optional activities), and **along the major axes** (East-West, and North-South).

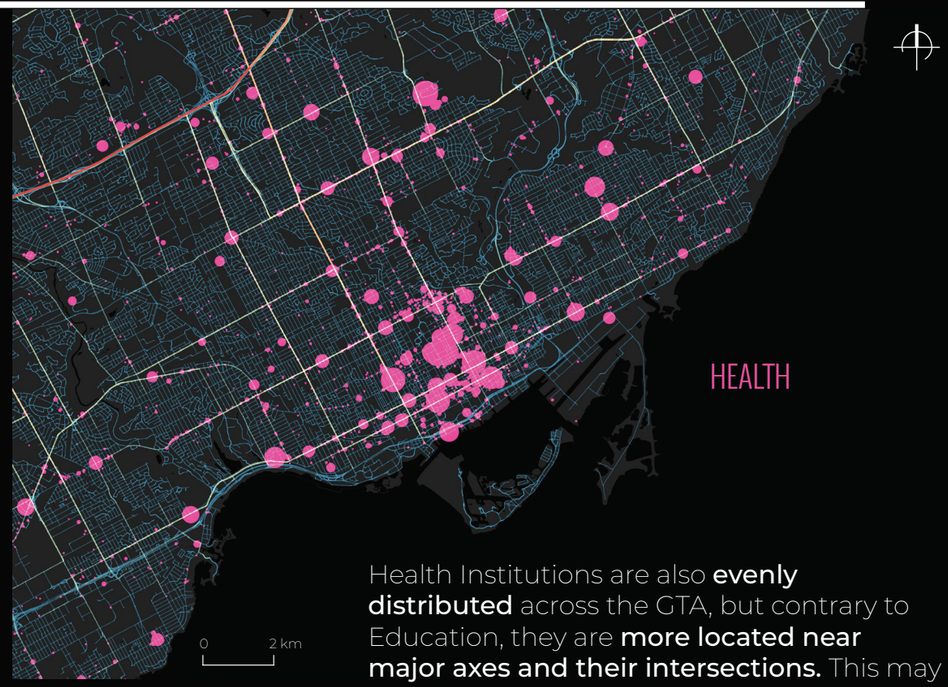
Next each category is broken down to get a clearer picture.

III. BREAKING DOWN ACTIVITY PATTERN- NECESSARY



EDUCATION

Educational activities within the GTA are the **most evenly distributed and predominantly outside major arteries** i.e. in residential areas . To be efficient as a public service, it demands **maximal coverage** accross the GTA and needs to be located close to people's homes



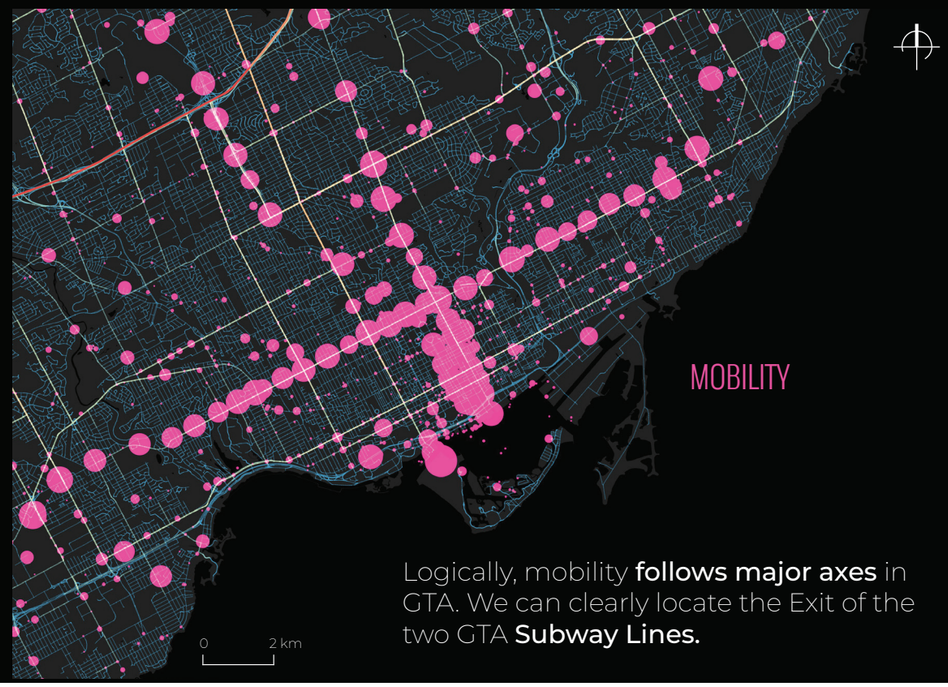
HEALTH

Health Institutions are also **evenly distributed** across the GTA, but contrary to Education, they are **more located near major axes and their intersections.** This may be related to the need to be easily accessible in case of **emergency**.



INCOME

We can observe **pockets of employment** and business districts at various location across GTA.



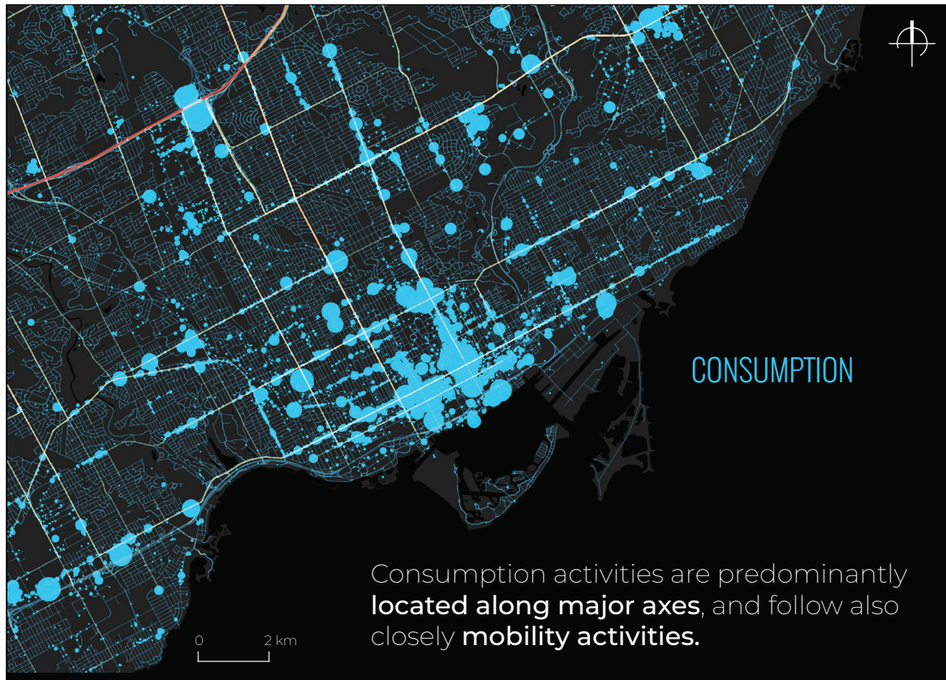
MOBILITY

Logically, mobility **follows major axes** in GTA. We can clearly locate the Exit of the two GTA **Subway Lines.**

Summary |

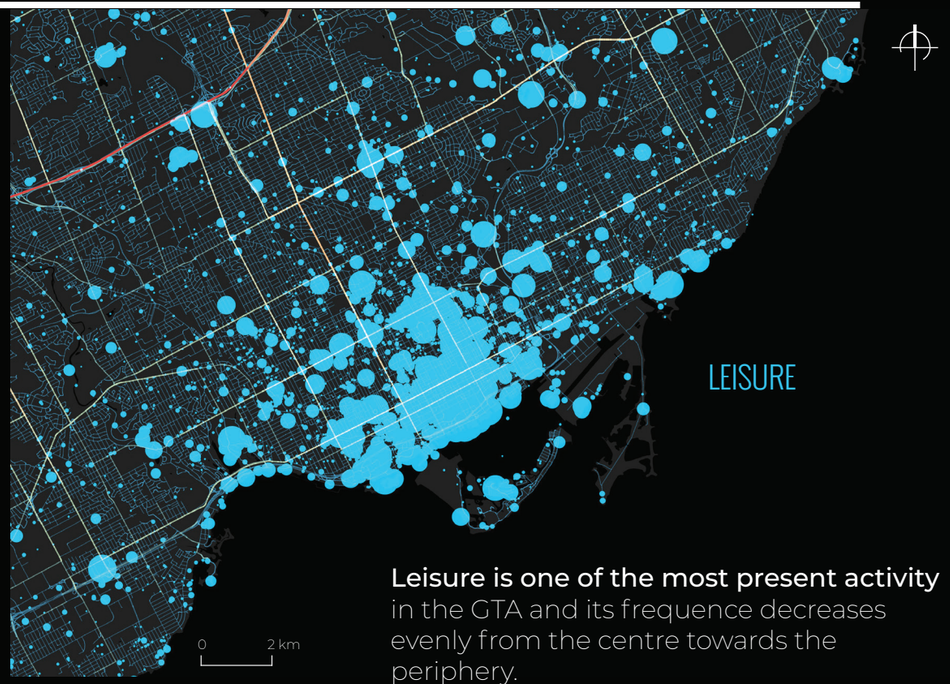
We have observed from this analysis that most Necessary activities are evenly distributed across the GTA. These observations make sense as location of jobs, public services and even transportation needs to be strategically located to cover a maximum of space and reach an optimum amount of citizens.

III. BREAKING DOWN ACTIVITY PATTERN- OPTIONAL



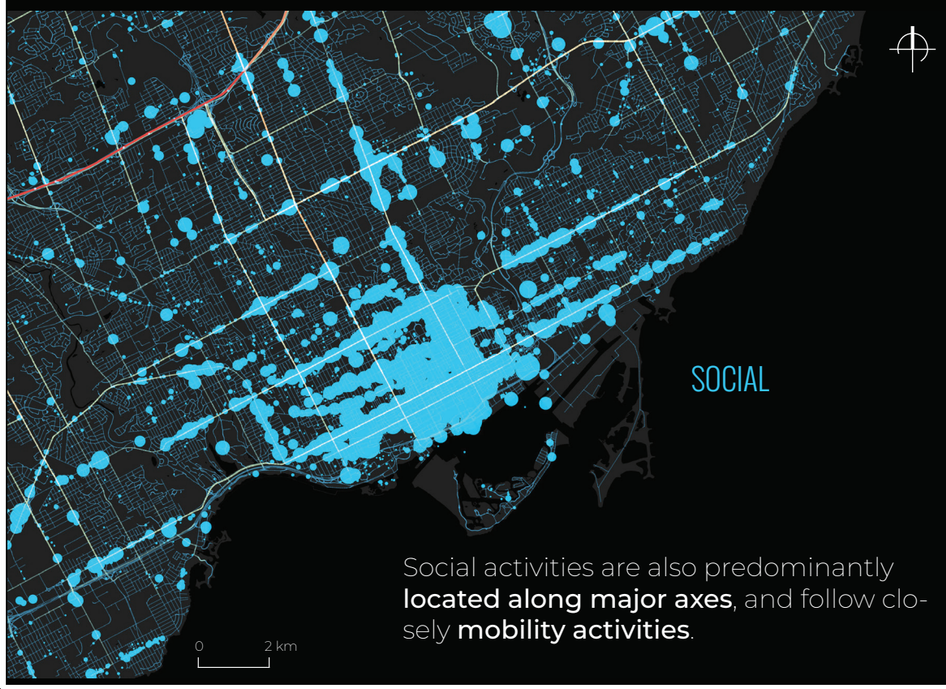
CONSUMPTION

Consumption activities are predominantly **located along major axes**, and follow also closely **mobility activities.**



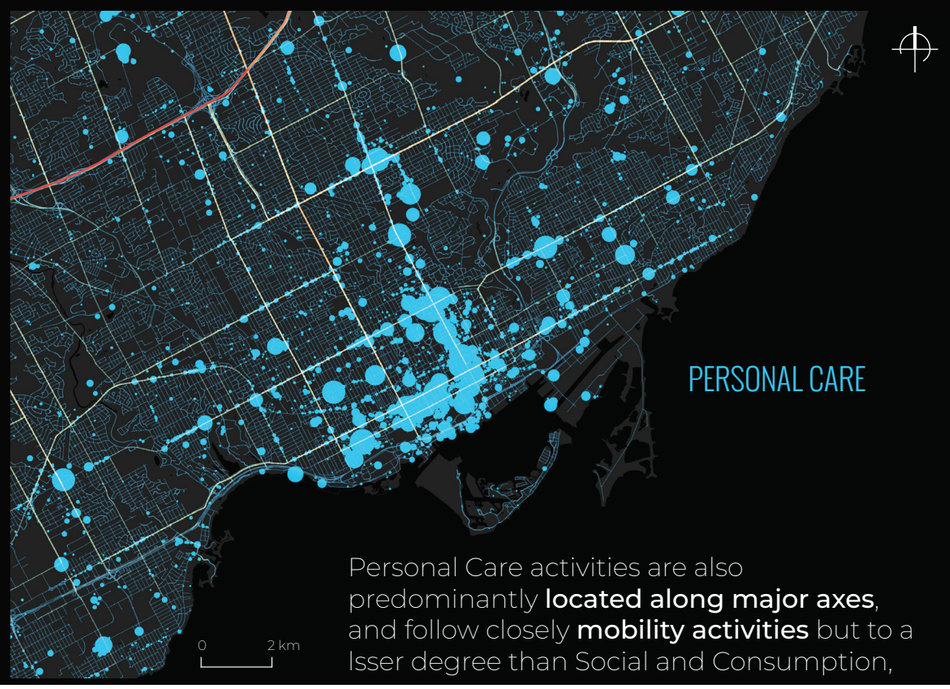
LEISURE

Leisure is one of the most present activity in the GTA and its frequence decreases evenly from the centre towards the periphery.



SOCIAL

Social activities are also predominantly **located along major axes**, and follow closely **mobility activities**.



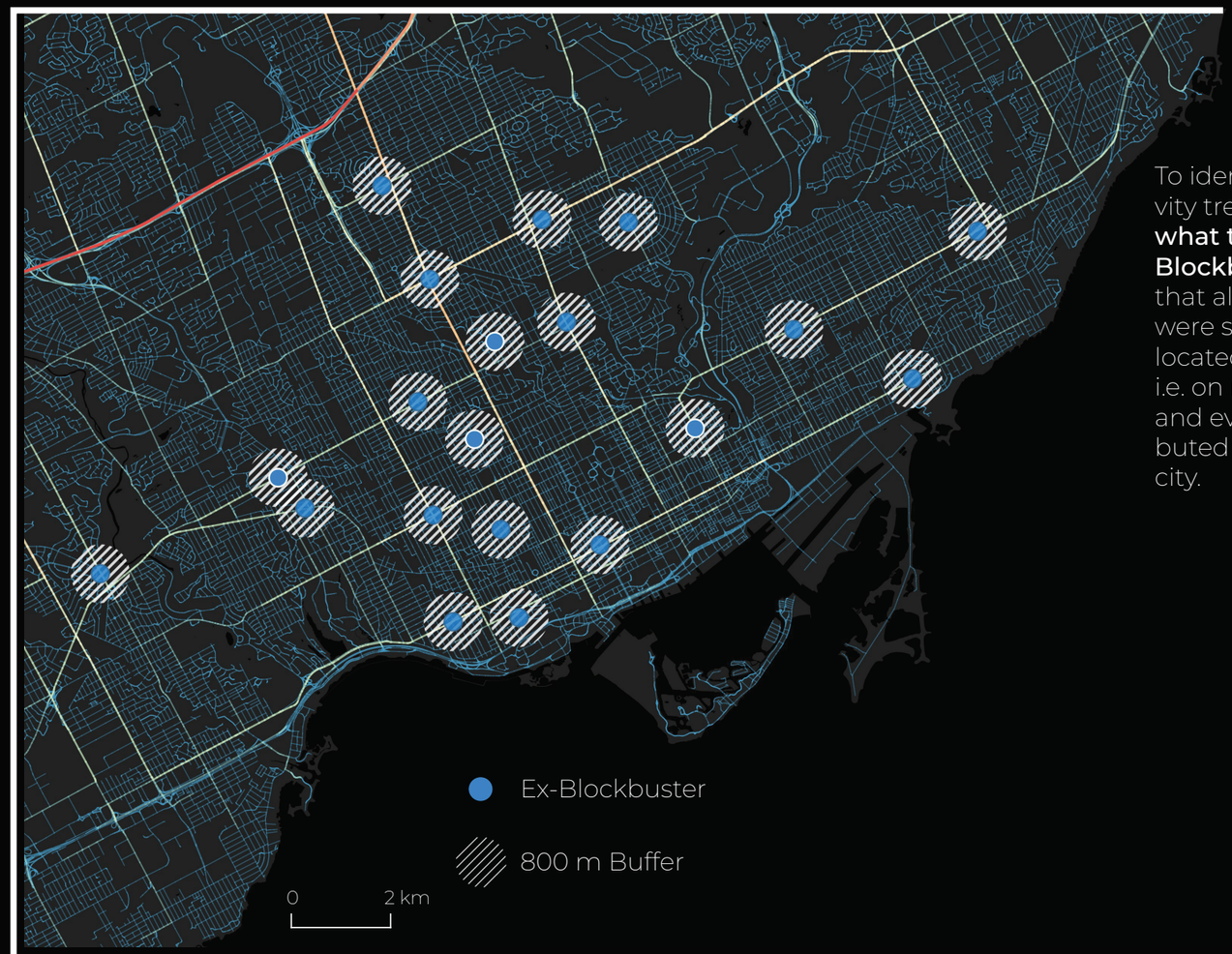
PERSONAL CARE

Personal Care activities are also predominantly **located along major axes**, and follow closely **mobility activities** but to a lsser degree than Social and Consumption,

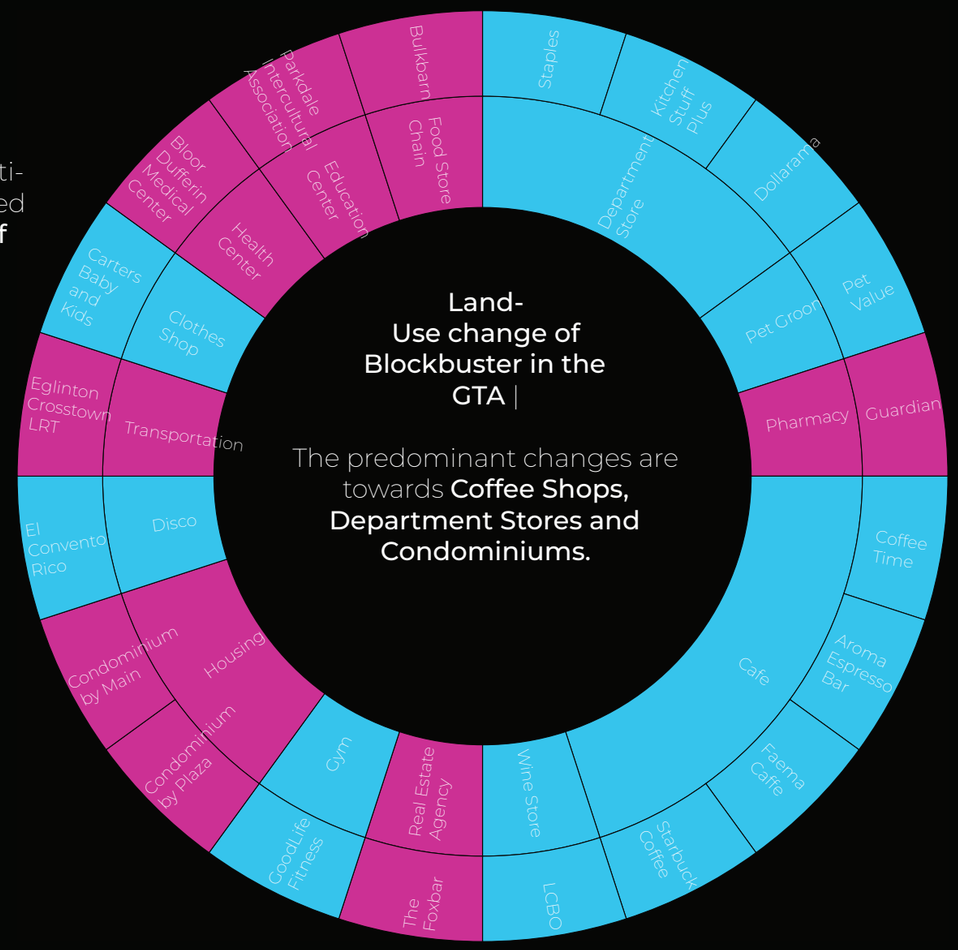
Summary |

We have observed from the previous analysis that most commercial (Optional) activities in the GTA are located alongside major axes and/or close to Transportation nodes. These observations make sense as location, transportation, density and traffic intensity are important variables to predict commercial success.

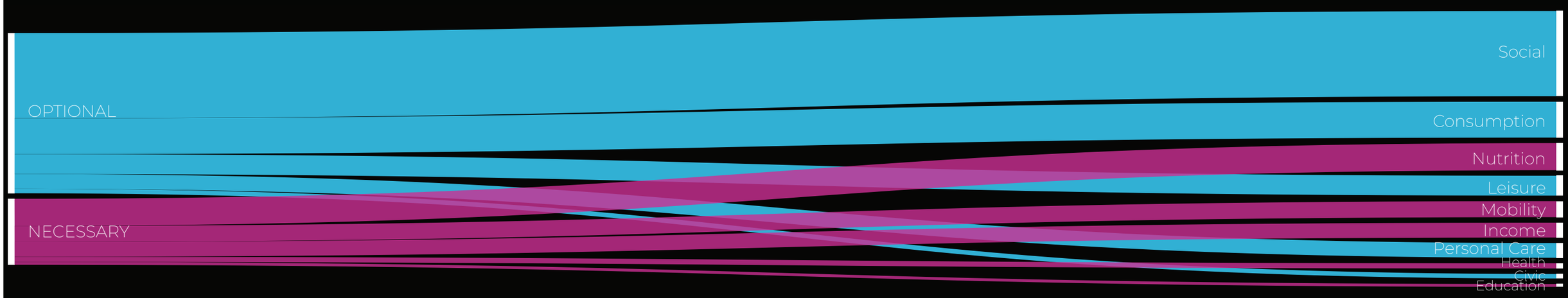
IV. BLOCK-BUSTER NEW LAND-USE



To identify new GTA activity trends, we examined **what took the place of Blockbusters**, given that all these shops were strategically located in the GTA i.e. on major axes and evenly distributed accross the city.



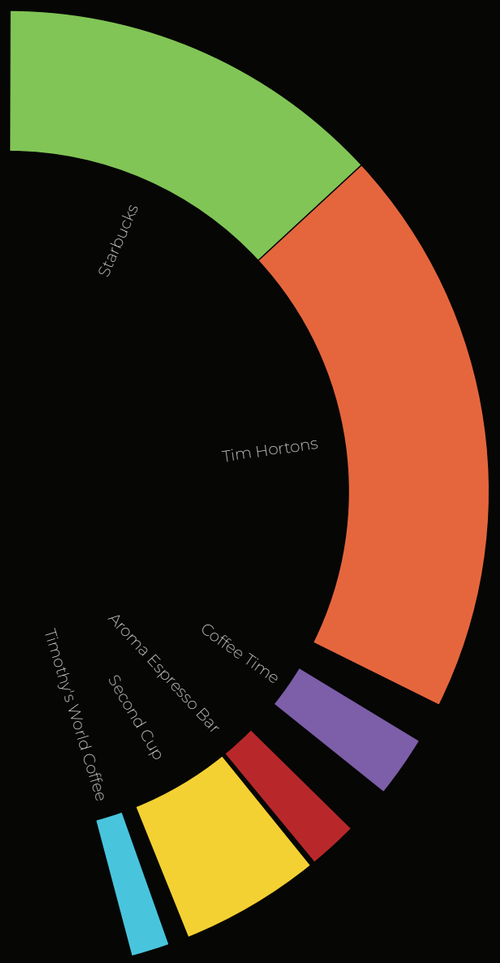
A visualization of the Foursquare activities around the location of ex-Blockbusters points (800 meter buffer) was also done to observe the distribution of activities in close proximity. We can see that **Social and Consumption activities are the predominant force within these areas.**



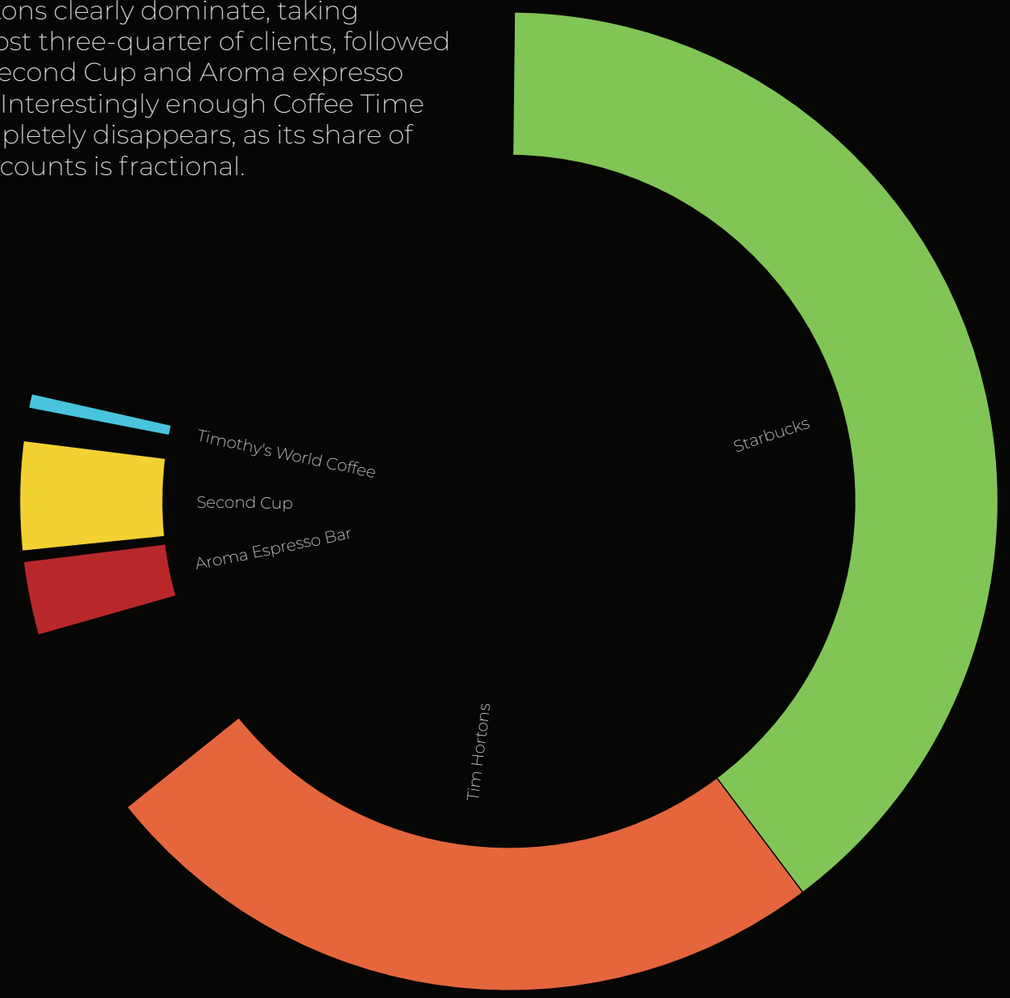
V. COFFEE CHAIN ANALYSIS - INTRO

Given the **predominance of Coffee Shops** taking the place of Blockbuster, it seemed interesting to look closer at Coffee Shop chains, and their distribution within the GTA. Indeed they could be **potentially indicators of neighborhood change and investment.**

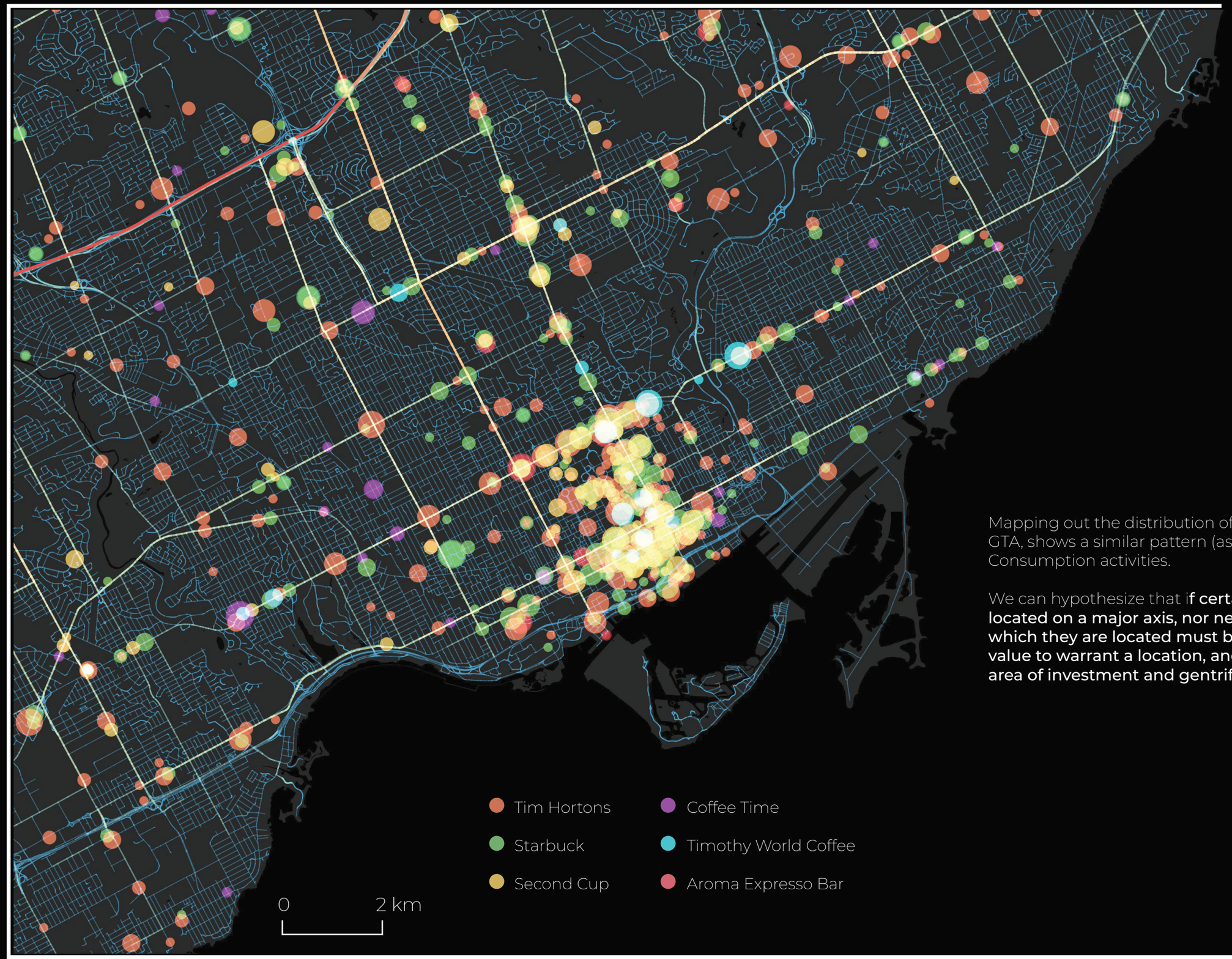
In terms of **shop number** we can observe that the 7 predominant Coffee Chains in the GTA are Starbucks, Tim Hortons, Coffee Time, Aroma Expresso Bar, Second Cup and Timothy World Coffee.



We can also look at **the share of Foursquare visit count** between Coffee Shops in the GTA. Starbuck and Tim Hortons clearly dominate, taking almost three-quarter of clients, followed by Second Cup and Aroma expresso Bar. Interestingly enough Coffee Time completely disappears, as its share of visit counts is fractional.



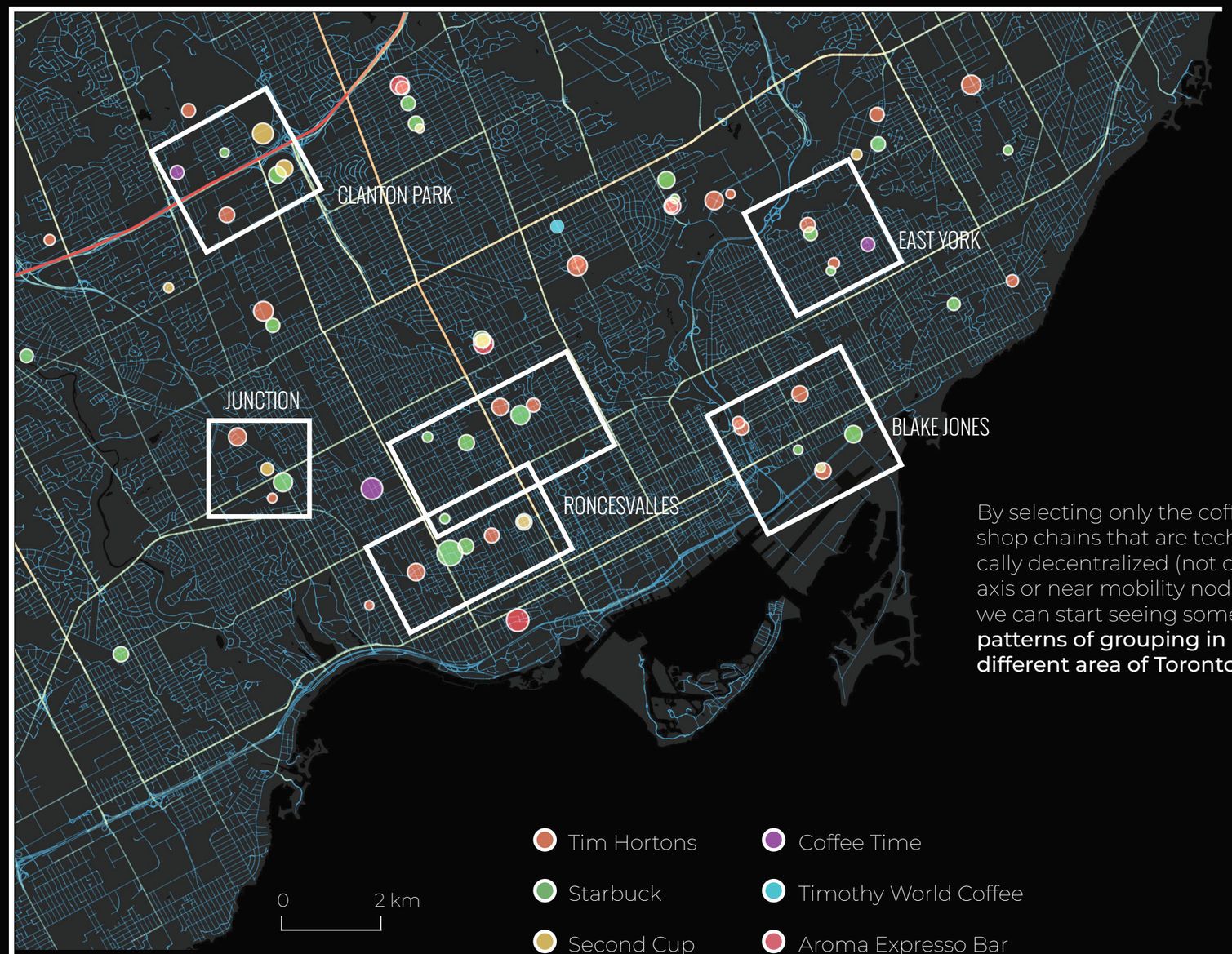
V. COFFEE CHAIN ANALYSIS - GENERAL DISTRIBUTION



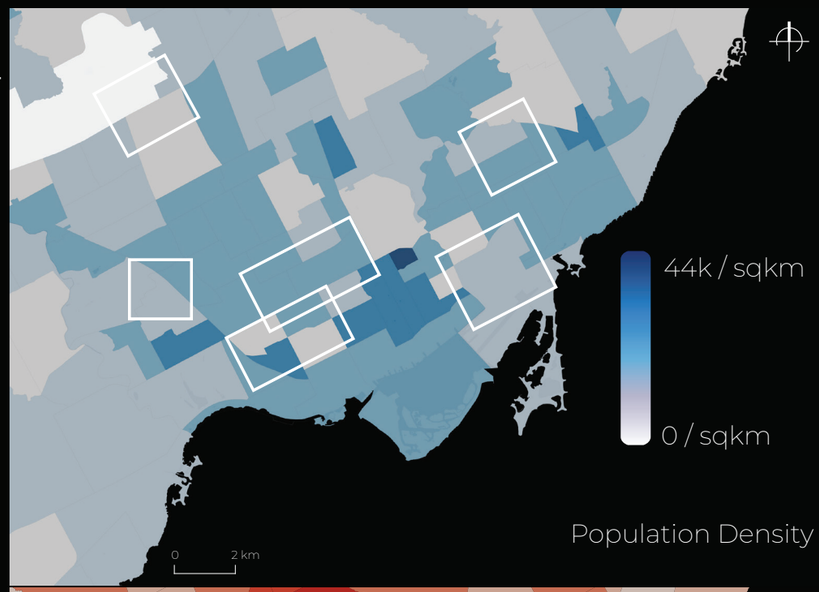
Mapping out the distribution of Coffee Shops across the GTA, shows a similar pattern (as expected) as Social and Consumption activities.

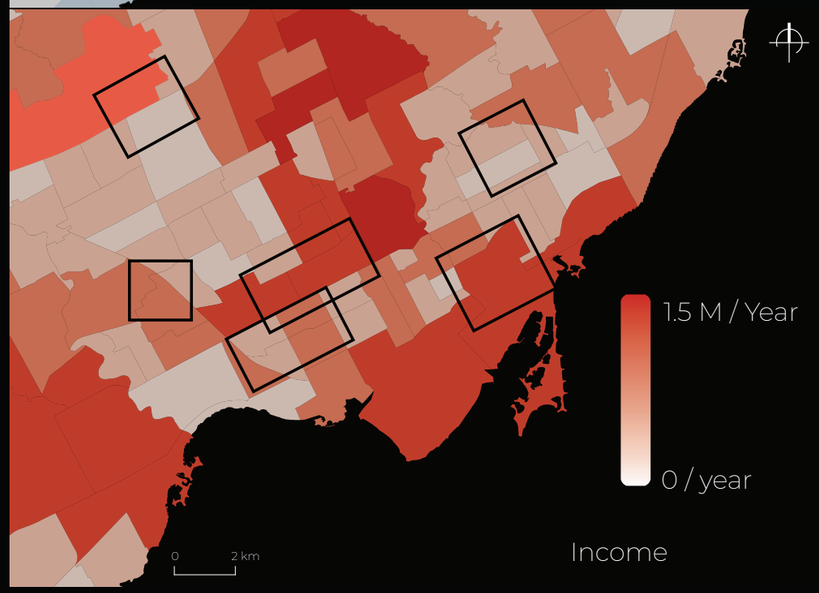
We can hypothesize that i**f certain coffee chains are neither located on a major axis, nor near a Mobility Node, the area in which they are located must be of high enough commercial value to warrant a location, and could indicate future/current area of investment and gentrification.**

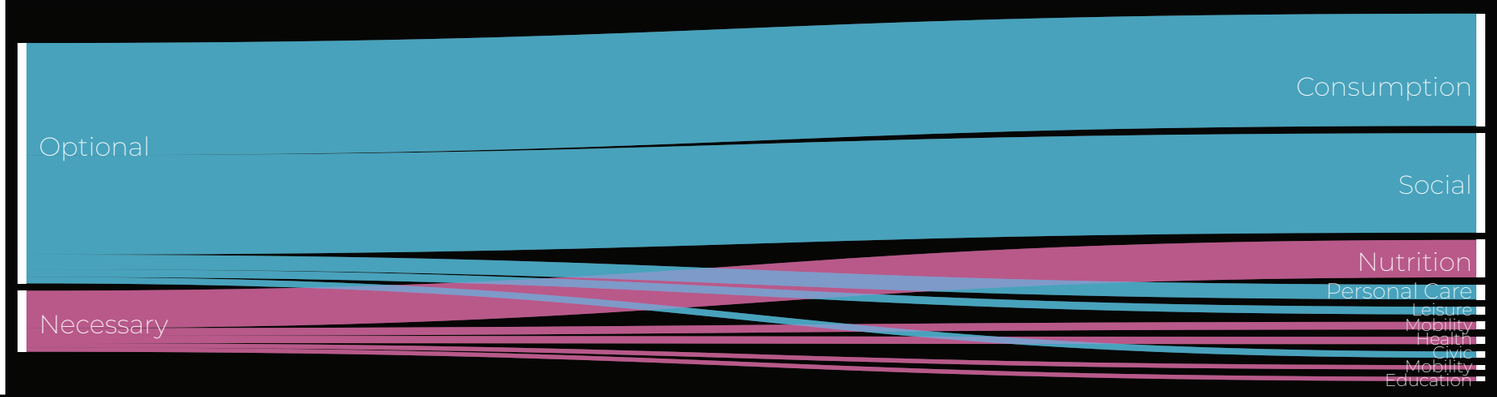
V. COFFEE CHAIN ANALYSIS- SELECTED ANALYSIS



By selecting only the coffee shop chains that are technically decentralized (not on an axis or near mobility nodes) we can start seeing some **patterns of grouping in different area of Toronto**







When Census information are layed out, we can observed that these area have **relatively higher income and are not necessarily the most densely populated**. Additionally, other sources i.e. King (2016), also identify these specific areas as places **with high change in average household income and thus gentrifying.**

Furthermore, activities surrounding these shops i.e. 800 meter buffer, indicate that these areas are still **more commercially oriented** (Social and Consumption Activity) even though they are not central location.

Our approach indicates that thus following the distribution of certain chains may indicate gentrification and areas of decreasing activity diversity. .

King, R. 2016. The hidden pockets in Toronto where gentrification is really happening. The Star.