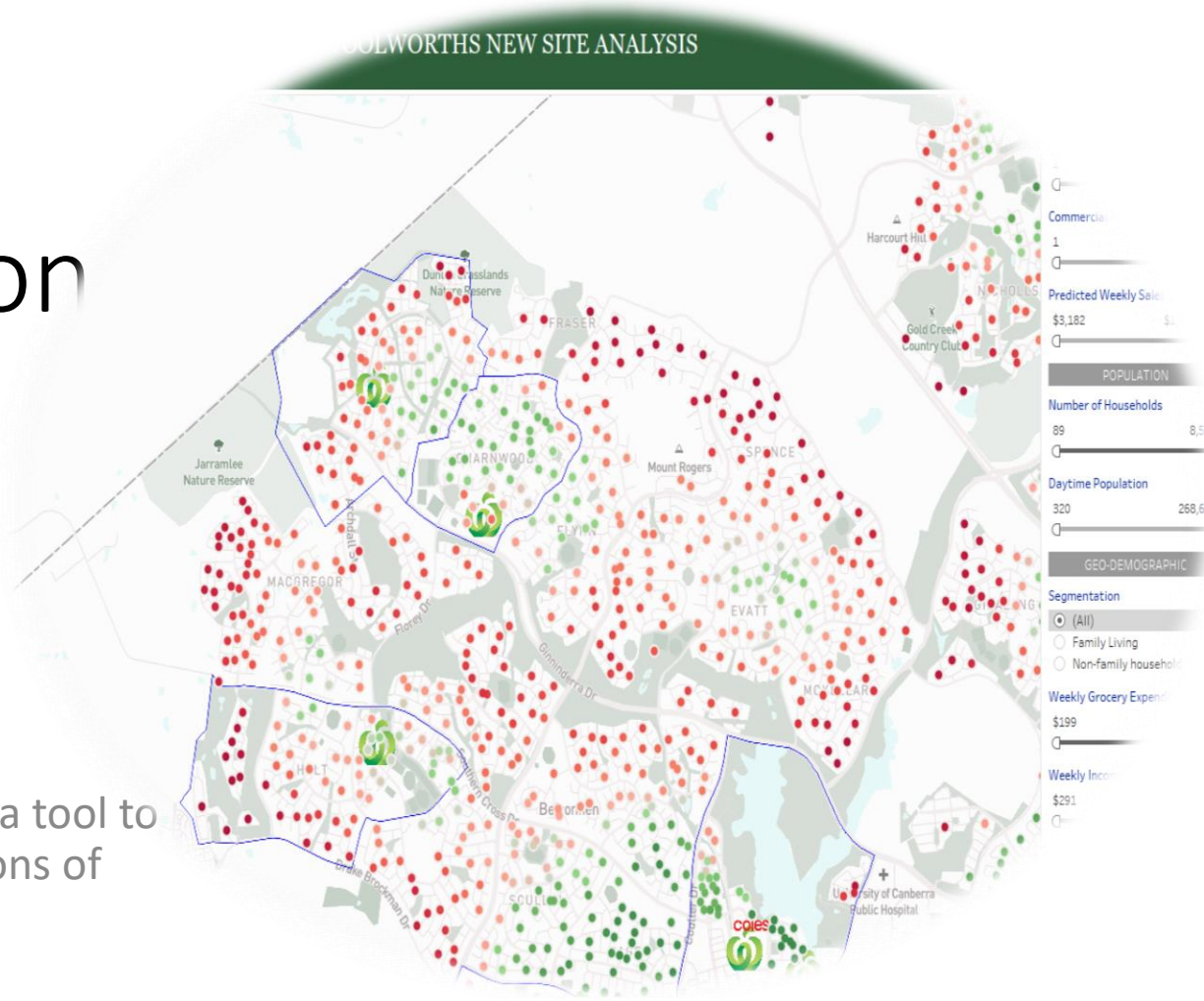
Tableau Demonstration Dashboard



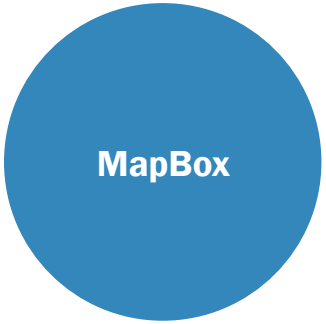
Focus of this analysis is to create a tool to assist in selecting new site locations of future store builds

Data Assets

- Woolworths National Supermarket Directory
- https://www.wowlink.com.au/wps/portal/topic_centre?WCM_GLOBAL_CONTEXT=/cmgt/wcm/connect/Content%20Library%20-%20WOWLink/WOWLink/Topic%20Centre/B2B/GLN/WOWSupermarketsDirectory

- PSMA's G-NAF dataset contains all physical addresses in Australia. It's the most trusted source of geocoded addresses for Australian businesses and governments.

- Census data
- Expenditure Survey
- Geographical Boundaries of Statistical areas (MB, SA1, SA2, etc)



- Creating custom background maps for Tableau

“Hackathon”

Introduction to the business issue

For this project I came up with a common business need (and one I have tackled in the past)

The solution is built entirely from the ground up and specifically for this project

All data are actuals; Household count, catchment sizes, Geo-demographic profiles, etc

Business Need	Build New Stores
Problem Statement	How to use data and analytics to assist non technical team members make informed decisions.
Specific questions to answer	1. How much **revenue** will the store generate? 2. **Rank potential site locations:** Where to build first? 3. **Catchment size:** How close to current Woolworths’ stores should we build? What areas are we currently underserving? 4. How many **potential customers** will the store reach 5. Where are our **competitors** located
Solution	An interactive Dashboard / visualization that integrates these requirements, simply.

How much revenue will the store generate?

In its most simple form, we can characterise the main factors that influence revenue as follows:

$$Revenue = Population + demographics - competitors*$$

note: competitors can be other Woolworths stores

- ***Population:*** *This can be further broken down into*
  - *Daytime population: This is the number of people who work within the stores catchment. Lets assume that this* ***increases sales by $15 per person****, per week (additional groceries, lunch, snacks, etc.)*
  - *Households: These are people that live withing the stores catchment area. On average,* ***each household spends $270 per week*** *on groceries***

- ***Demographics*** assuming that: household composition, education, occupation, age, etc effect a persons income level, then we can summarise the effects from demographics using the following table

	EQUIVALISED DISPOSABLE HOUSEHOLD INCOME QUINTILES					
	Lowest	Second	Third	Fourth	Highest	**All households**
Food and non-alcoholic beverages	198.84	214.63	258.05	291.75	346.48	270.89

- **Competitors** At a macro level, Woolworths has 33% market share*

http://www.roymorgan.com/findings/8336-fresh-food-and-grocery-report-december-2019-202003230634

How much **revenue** will the store generate?

As an example, Assume 1,000 hh in each quintile within the **catchment.** Then,

Revenue =

Expend.		HH's
198.84	x	1,000
214.63	x	1,000
258.05	x	1,000
291.75	x	1,000
346.48	x	1,000

+ Daytime x 15 *x 0.33*

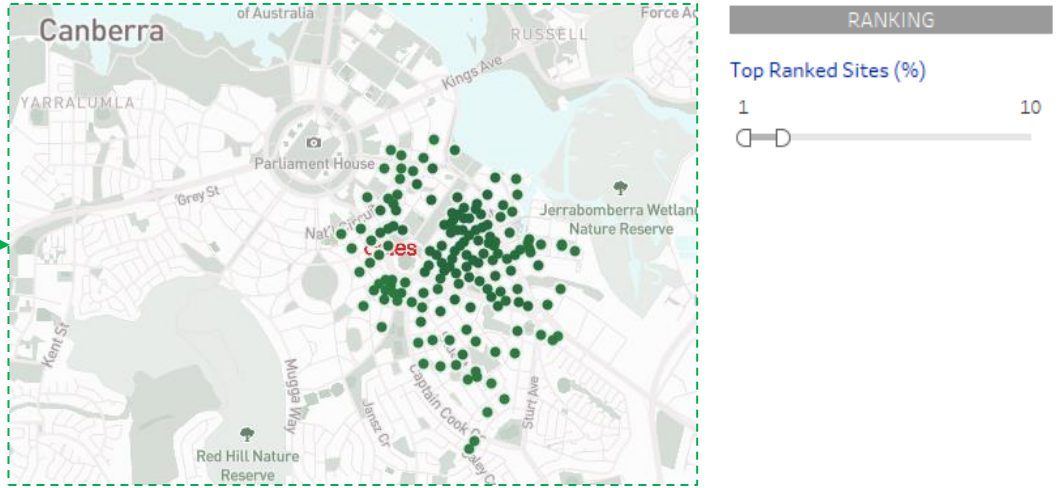
Note: In a production version of this dashboard we would be modelling a **known** revenue number against **all available demographics**, such as Household composition, Age, Education, Occupation, Ethnicity, etc.

Rank potential site locations:

- There are **4,790 meshblocks** evaluated in this model. These are grouped into percentiles and ranked in descending order. For example,
  - 1 = top 1% of all potential sites, and
  - 100 = top 100% (ie ranked very last)

The dashboard allows the ability to quickly highlight the top potential sites to focus in on.

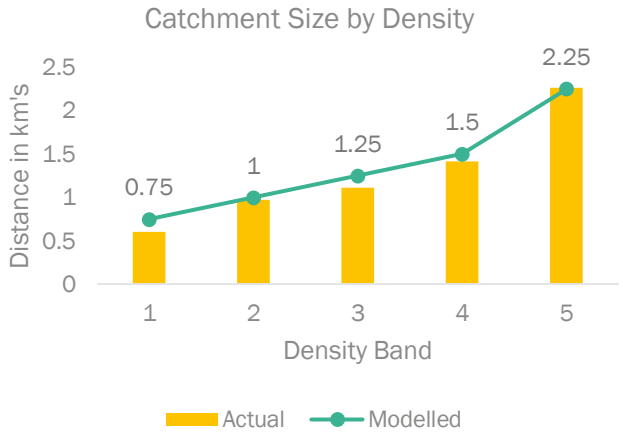
Shown here are the top 10% of sites in Canberra. We can quickly see that the area around Manuka has high potential.



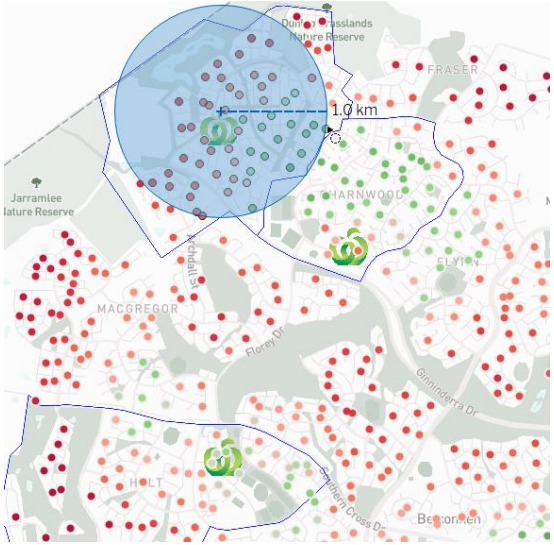
Catchment size

- An **approximation** to the optimal size of catchments can be made by using the **actual distance between current stores**.
  - A key consideration is that this number will vary depending on the density of an area. Eg smaller in the city and larger in suburban / rural areas.

ACTUAL



DASHBOARD



Geo-demographic variables

Once we know which Meshblocks are contained within each catchment we can then;

- Add in Household counts from G-NAF
- Append ABS data
  - Household Composition
  - Income
  - Grocery Expenditure
  - Destination zones for “Daytime Population”