Place Intelligence®

Place Index

Chapel St

Measuring patterns of activity, place magnetism, and dwell times.

Prepared for Hassell & City of Stonnington

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This document has been prepared as a technical note for the City of Stonnington for internal usage and for subject matter experts involved in Chapel St Redevelopment project for council.

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1.0 Project Context

Chapel St is the Metropolitan Centre of the City of Stonnington, and one of Melbourne's most iconic shopping districts.

To help guide development and provide council with necessary metrics track change over time, Place Intelligence was engaged to develop as series of location based studies and data driven metrics to enhance community centric planning, urban design, and transport strategies across the Chapel St Precinct.

This report provides a summary of a multi-year remote sensing audit on place use and utilization for the Chapel St redevelopment area.

Report metrics include a number variables including:

- Daytime Demand Profiles
- Nighttime Demand
- Visitor Segmentation
- Precinct Profiles
- Dwell Times
- Visitor Points of Origin (Place Magnetism)

Each variable study is intended to provide a unique insight into how people use the spaces within the study area. Insights are provided to translate data into actionable intelligence and to describe findings relative to best practice urban and place making strategies.

Place Intelligence Studies

Category	Indicators	Indicator Summary
Activity Index	Footfall	This indicator refers to the number of pedestrians walking and strolling in an area regardless of their reasons for doing so. Footfall is often a measure of an areas attractiveness and its ability to satisfy customer and visitor needs. A higher footfall generally indicates an areas ability to attract community participation.
	Buildings, Roads and Features Analysis	This indicator refers to the index of distinct place features within the study area. It provides insights into when different locations are used and who the users are. It enables the creation of insights around the value of place typologies and their role in the context of the site.
Dwell Time Index	Dwell Time Spatial Distribution	This indicator reveals the locations across the study area where people spend different amounts of time. Geospatial maps are used to highlight places based on the number of people seen spending time orgainised into time ranges or bins between 1 and 30+ minutes
	Dwell Time Statistical Distribution	This indicator monitors the total duration of time spent in each location as range of time bins. This information highlights the variances in places that are 'sticky' versus those that are used as a pass through location.
Arrivals, Origins and Catchments	Audience Origins	This indicator provides insights into the suburbs of origin for visitors to the study area based on ABS state suburbs. Knowledge of where different user groups live, provides the opportunity to align census level demographic and income data and to link origin data to footfall data. This in turn allows for a deeper understanding of who users are and how they use each location within the study area.
	Catchments	This indicator uses the spatial distribution of Audience Origins by suburb and the related distances that people must travel to reach the study area. Knowing how far people travel enables us to better plan for transport services and to understand destinations of choice.

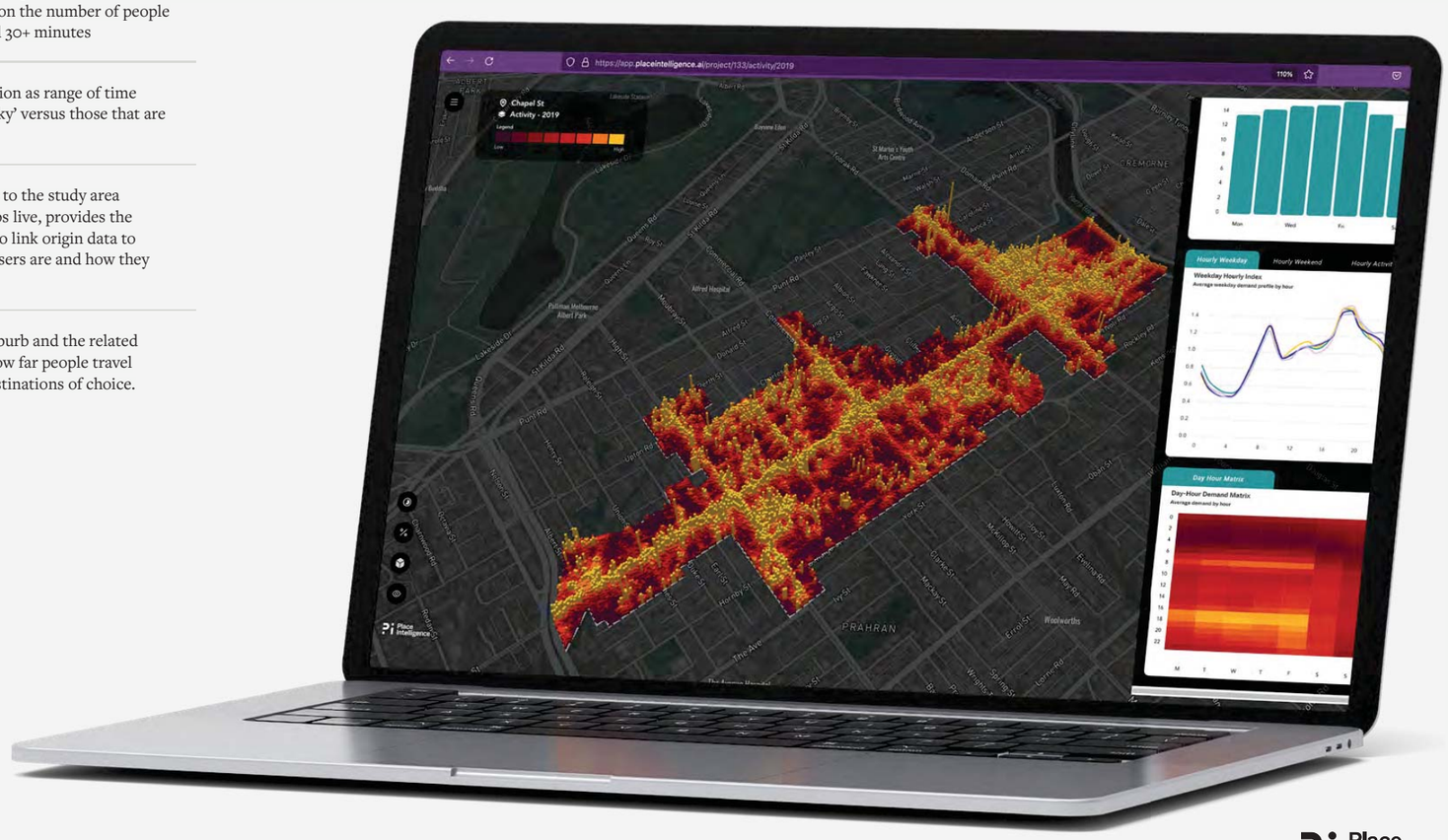
Place Intelligence - GeoData Studio

Interactive Data Dashboard - Place Intelligence GeoData Studio

As part of this project council was granted access to the PI GeoData Studio. The studio provides interactive geo-data as spatial maps and associated data charts.

The following data layers have been unlocked in the GeoData Studio

Data Files	Time	App Data	Off line data
Precinct Activity	2019-2021	Yes	No
Sub Zone Activity	2019-2021	Yes	No
Road Activity	2019-2021	Yes	No
Parcel Activity	2019-2021	Yes	No
Car Parks Activity	2019-2021	No	No
Audience Origins - Precinct	2019-2021	Yes	No
Audience Origins - Buildings	2019-2021	No	No
Dwell Time	2019-2021	Yes	No



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Data Models, Methods and Calculations

Purpose

The purpose of this study was to develop a data model to discover spatial and time based use patterns of the Chapel Street precinct.

For this project, we assess a historic (pre-COVID) index of place usage from 2019 as well as 2020, 2021 and 2022 data to illustrate patterns of change as a result of the pandemic lock-down and rebound.

Place Intelligence is a specialist provider of mobile device, connected car and Internet of things (IOT) data streams, with a specific focus on mobility and place usage analytics in urban areas.

Data used in the model

Place Intelligence Metro Data is a proprietary and fully de-identified data set derived from a combination of primary source types. These include data obtained from Global System for Mobile Communications (GSM) Global Positioning System (GPS) enabled devices (included floating car data, handheld devices, wearables, other Location-aware technologies (LATs), Internet of Things (IOT) sensors and Low-power Wide-area Network devices (LPWAN). In aggregate the PI Metro Data sample represents between 30-40% of the Australia adult population, depending on coverage areas and population density. This means that results are statistically relevant and increasingly representative of patterns of place use and movement over long periods of time (eg 12 months or greater).

Calibration and control data are derived from Australian Bureau of Statistics, traffic control system (TCS) data, and high resolution population data published by Meta Labs. Proprietary GIS datasets were developed for the study, including telemetry derived historical movement network models from 2019 onwards as well as custom place of interest data sets linked to building polygons, VIC cadastre data and ABS land zone classifications.

Calculated Metrics

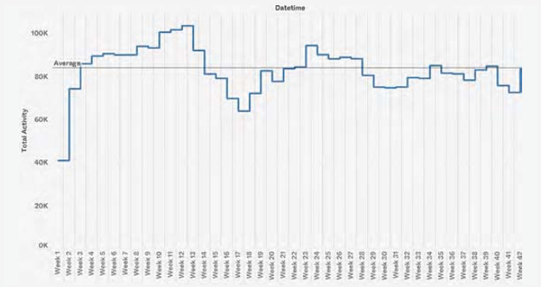
Each model class has its own metric framework. In general, the following models apply:

- Activity Measures - revealing time based usage patterns and levels are presented as a as percentage of total usage for each graph or as an index graph;
- In some instances a 'normalized activity value' is presented which is the modeled base value of time normalized activity at a per device per hour level.
- Dwell Time Measures - revealing duration of rest in any location and are presented as time spent in minutes.
- Catchments - revealing where audiences come from are presented as a percent of total audience based on ABS Local Government Area boundary and State Suburb boundary. Catchment distances are expressed in meters distance from the study area.
- Connections and Flows- reveal the time based journey patterns are expressed as a percent of total journeys between any location pairs. Journey distances are expressed in meters.

More about percentage based models

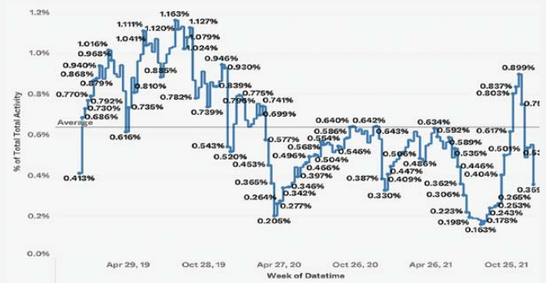
This study provides a high level index of patterns of place use and movement at a macro scale. Data in this document are presented via percentage values, indexing the percent demand for each analytical process against the total demand in the time series. In this way the total demand of 100% is broken into the component parts of the study. This study does not includes a regression (or data up-scaling) process to covert relative demand, into 1:1 user counts or vehicle counts.

Absolute value - the measure of exactly how many units of measurement are seen in the measurement period e.g. 50 cars per hour, or 100 persons per day. This is the most accurate method, but requires a high level of metric definitions (eg what to measure) and is computationally expensive to produce. Expanding sample sizes have a high margin of error when looking across long time periods and model error range and does not easily allow to cross measure different asset types (eg streets vs buildings).



(Image and example of an absolute vale line chart)

Percentage value - the measure of how activity distributes over the time period e.g. 50% of all traffic occurs between 2 pm and 5pm, or 80% of visitors are local. Percentage values require a high level of processing to create time normalized model results (eg year on year continuous), but enable an easy means to measure different asset classes based on 'total activity' levels.



(Image and example of an percent of total line chart)

Index value - the measure of change against a reference value, which is a measure (ratio) that describes change in a nominal value relative to its value in the base value. The index point figure for each point in time tells what percentage a given value is at that point in time of its respective value at the base point in time.

(Image and example of an index value line chart)

Data Engineering and Data Science

Place Intelligence uses proprietary data processing tools and data engineering pipelines to build longitudinal telematics models and population estimation models.

This study leveraged Place Intelligence *Mercury data engineering pipelines and data processing algorithms for data cleaning, model validation, data management, time normalization, regression, user classifications, and telematics variables including journey times, speed, directionality, trip distances, trip start and end points.

Additional data models were developed to disaggregate populations into user groupings including international visitors, interstate visitors, intrastate visitors and locals.

Place Intelligence uses an array of big data processing tools including:

- Machine Learning Processes
- Statistical Analysis
- Geospatial Analytics
- Data Visualization Tools
- Pattern Analysis Processes and Protocols
- Data De-duplication and Verification Methods

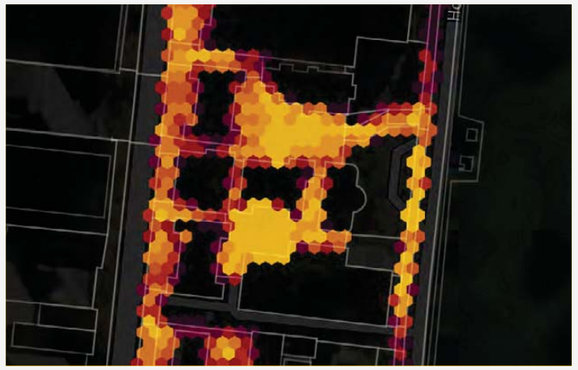
Data are processed using super-computer scale computational resources including Amazon Web Services, Google Cloud Computing and Microsoft Azure.

How is the data shared?
Data are shared as dynamic spatial files delivered via the Place Intelligence GeoData Studio, custom filtered CSV files and a select number of off-line licensed data files.

What has been computed
Models have been created for each data layer as defined in the project brief. Data are presented in two formats:

- Spatial Data: Pre-computed geospatial data for visualizing activity patterns in each layer class
- Statistical Data: Pre-computed time interval data for generating insights on each layer class.

Report Data Representations

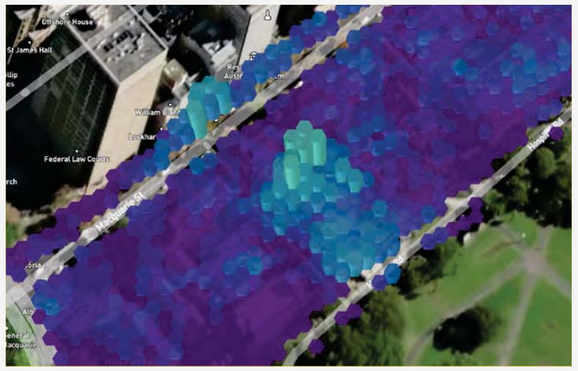


Activity Heat Map

A spatial representation of the locations in the data model with the most and leased usage at any given moment in time. Cells in the model are rendered based on the total count of users seen, weighted based the movement distribution of each user across the cellular matrix in 1 hour intervals. Activity heat maps use quantile based colour grading, with 8 stops, where yellow is the highest and purple is the lowest. 3d extrusions are based on activity sums per cell.

Polygon Demand Map

A spatial representation of the locations in the data model with the most and leased usage at any given moment in time. Polygons in the model are rendered based on the total count of users seen, weighted based the movement distribution of each user across the cellular matrix in 1 hour intervals. Polygon heat maps use quantile based colour grading, with 8 stops, where yellow is the highest and purple is the lowest. 3d extrusions are based on activity sums per cell.

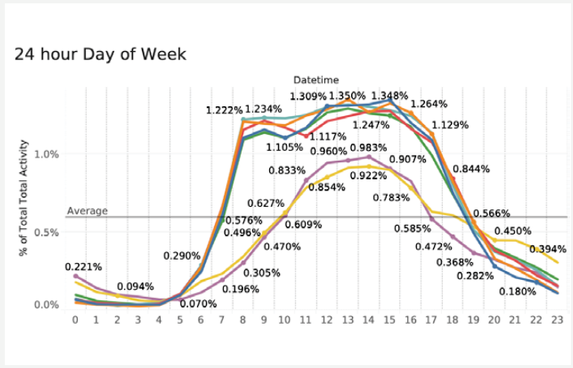


Dwell Time Map

A spatial representation of the locations in the data model with the most and leased usage at any given time interval in the model. Cells in the model are rendered based on the total count of users seen, weighted based the movement distribution of each user across the cellular matrix in 1 hour intervals binned based on the duration of time spent in each cell. Dwell maps use jenks based colour grading, with 8 stops, where blue is the highest and purple is the lowest. 3d extrusions are based on activity sums per cell.

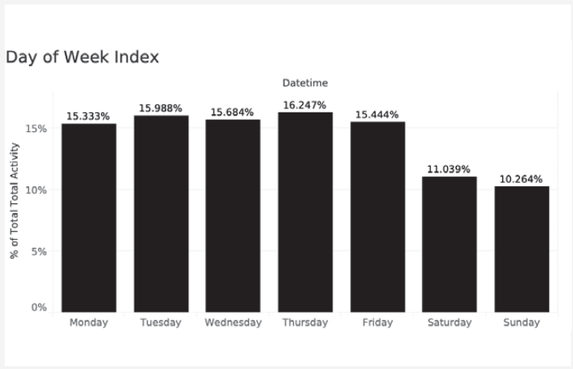
Connections Map

A spatial representation the hierarchy of movement between locations. Lines and start/end points are scaled based on the frequency of movement between each location. The thicker the line the greater the number of journeys that occur between the origin and destination pair versus all other movements in the model.



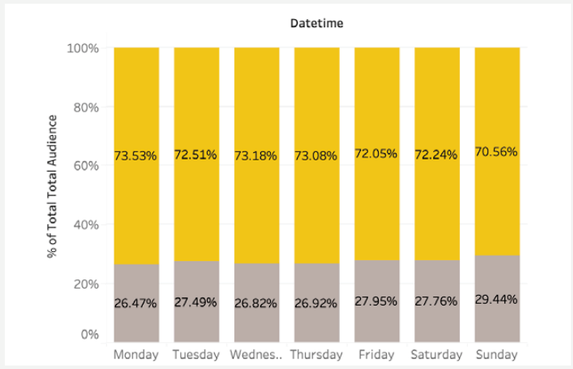
Percentage line chart

Line charts are used to express the average distributions of total activity between different data points to reveal what percent of total activity the data point represents in the model. Values in this chart type always add to 100% across all data in the series. In the chart left, colored lines represent weekdays plotted over a 24 hour period. Data points for weekdays and hours are isolated to show what percent of total activity occurs that this exact interval (eg 1.22% of all activity occurs at 8am on a Tuesday). Percentage charts show relative demand differences.



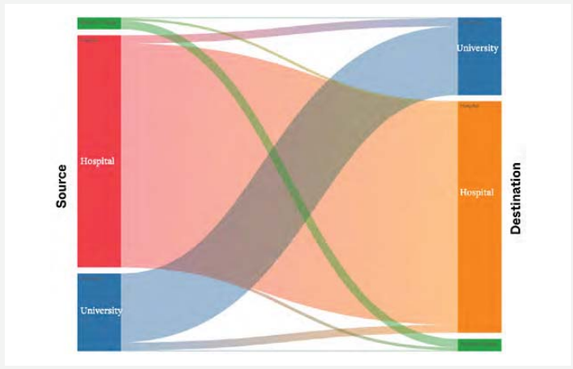
Percentage bar chart

Bar charts are used to express the average distributions of total activity between different data points to reveal what percent of total activity the data point represents in the model. Values in this chart type always add to 100% across all data in the series. In the chart left, bars heights represent the total demand in the are split by weekday. Data points for weekdays are isolated to show what percent of total activity occurs that this exact interval (eg 16.2% of all activity occurs on Thursdays). Percentage charts show relative demand differences across the model time range.



Stacked bar chart

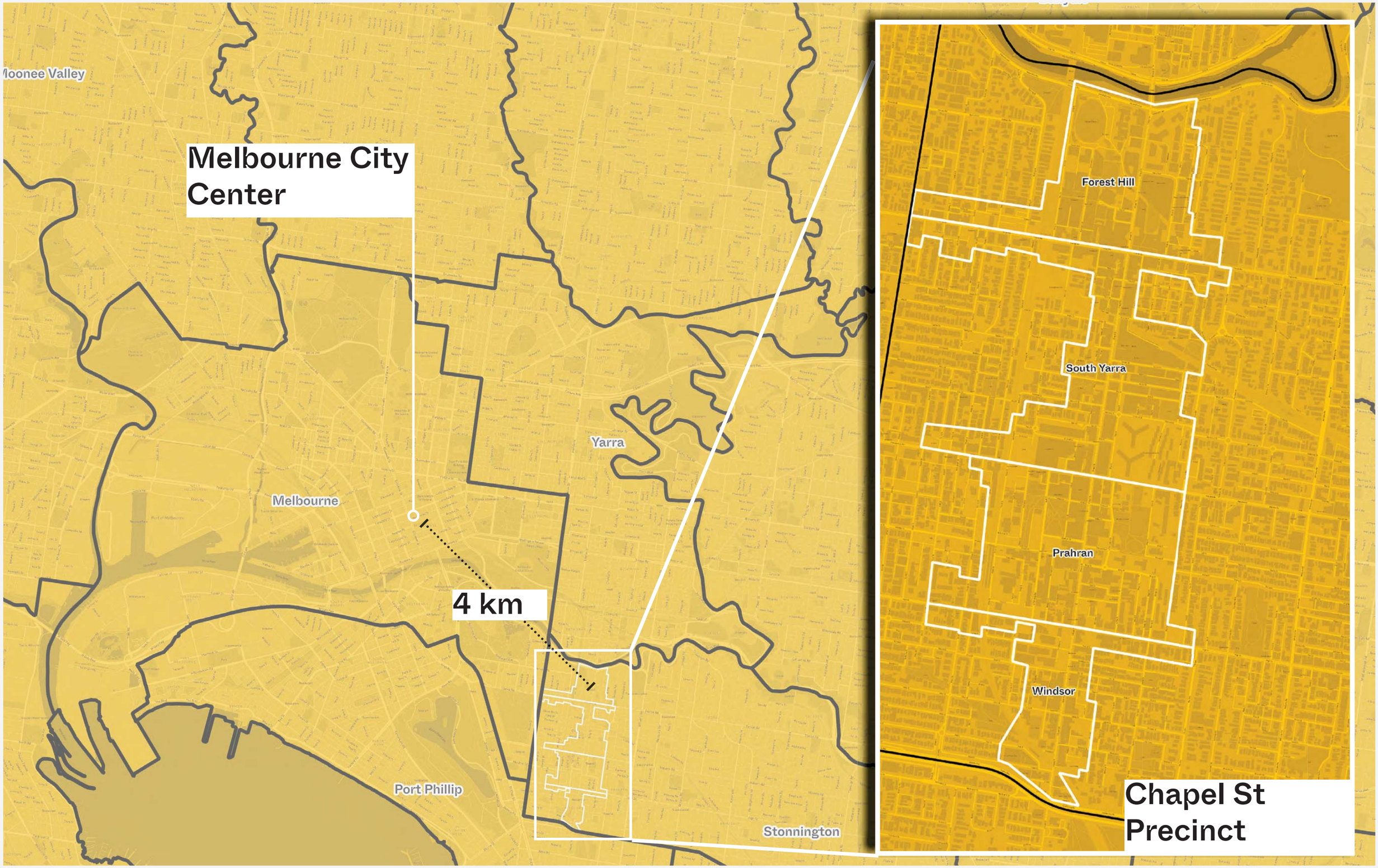
Stacked bar charts reveal the segmentation of activity in each column, where each column adds to 100%. This method allows to quickly understand what percent of activity is occurring in a given data series, and are typically used when combining two data variables. In the chart left, bars represent the split of users as either locals or visitors by day of the week in the precinct, where each weekday bar equals 100% of activity on the day split by the percentage of activity generated by a user group.



Sankey diagram

Sankey diagrams are used to visualize the magnitude of connections between multiple locations. In this report, sankey diagrams are used to understand the hierarchy of movement patterns between locations in the model. Line weights are based on the number of journeys between each location and scaled against all values in the model.

Geographic Context



2.0 Model Results

What is an activity baseline and how can it be applied?

The measure of how active a place is a reflection of the role and purpose as well as the value of a place to a community.

Activity measures are a quantitative means to understand place performance and are a key element of a site audit. Quantitative analysis provides longitudinal information on place use, reveling invisible trend patterns that are difficult or near impossible to obtain using traditional public life studies. The measure of activity is expressed in two forms, in spatial activity maps and in statistical charts.

All statistical expressions in the report use a percentage value to represent activity levels, describing the value distributions out of 100% of the total and/or as the percent change against a previous data point in the model (eg COVID 19 lock-downs reduced total demand by 80% over a two week period versus the average baseline in 2019).

Spatial expressions reveal when and where activity has occurred and is also expressed as a percent of total demand in visual means.

The establishment of an activity baseline has many use cases and applications. The following questions are not comprehensive, but are intended to provide end users with examples of how this index can be applied to different use cases:

Question	Overlay /Analysis	Potential Metrics	Value/Benefit
Which locations are driving activity in the precinct?	Overlay place features against activity models. Filter maps and charts to understand which locations have the most usage.	Year on Year Change, Day of the Week Change, Hour of the Day of Week Change	The knowledge of usage linked to location types allows for rapid understanding of the primary, secondary and tertiary drivers of a place. Introducing new offers can reference the place baseline to track impact and performance.
How have activity patterns changed over time?	Spatial analysis is a simple means to understand where people are seen across the precinct, and time filtering can reveal activity hot-spots at different times of day, for example.	Year on Year Change, Day of the Week Change, Hour of the Day of Week Change	Understanding the spatial temporal dynamics of place usage is a valuable in that it can reveal how different time based offers align to audience demands and can inform strategies and solutions to match demand patterns.
How do major events drive precinct activity?	Spatial and temporal combine to reveal where people are seen on the time periods of events and how these events change patterns activity. Overlay opening hours of businesses (for example) can reveal if event demands are in line with operational hours.	Year on Year Change, Day of the Week Change, Hour of the Day of Week Change	Major events, both programmed or natural have impacts on precincts. Understanding how activity changes as the result of a pandemic can help inform planning for future events. Measuring the uplift of a major gallery event can also help to validate strategies for repeat events programs in the knowledge that they are benefiting the wider precinct.
What role does the precinct play in the city?	The discovery of activity of precinct users in the city, when matched to key location types (such as buildings, roads, and public spaces) provides intelligence on the role and function of the precinct relative to usage of other destinations on the same day. Is the precinct a connector to other locations? What services are in the precinct that don't exist else where?	Year on Year Change, Day of the Week Change, Hour of the Day of Week Change	The knowledge of how the precinct is related to the city and surrounding offers can provide key insights into the value of the place by revealing why people come, in addition to reveal what may be missing.
Are marketing and outreach strategies having an impact?	Overlay marketing campaigns against the year on year timeline to see if campaigns are aligning to demand changes.	Week of Year Line Chart	Mapping trend data over many years can provide intelligence on the impact of outreach strategies and if they are worth investing in.
Are the most used locations safe and equitable?	Overlay site condition assessments, lighting and CPTED principles, accessibility metrics to reveal if the most used places are in keeping with best practice.	Spatial activity maps, daily hourly demand charts.	Often the most used spaces do not cater to all user groups. Identifying the most used spaces with time series analysis can provide an easy means jump start site studies and analysis.
Which asset should be invested in next?	Overlay place usage data against asset age, condition and depreciation to prioritize investment decisions. High usage values may be a reflection of demand for the service of the asset, however low usage may also reflect desirability levels.	Year on Year Change, Day of the Week Change, Hour of the Day of Week Change	The knowledge of usage data against traditional asset management variables provides an easy means to build prioritization matrices to weigh and select options for investment.
Are physical and programmatic upgrades having an impact?	Compare historical time series baseline data against real-time and updated data sets for the precinct to reveal changes in demand as the result of improvements.	Year on Year Change, Day of the Week Change, Hour of the Day of Week Change	The place index baseline should be used as reference point for comparison for future improvement strategies. The knowledge of past performance can be used to compare change resultant from upgrades both physical or programmed.
Are we best practice and how do we compare to our peer locations?	Comparing relative demand between locations is an easy means to understand if your precinct is over our under indexing. The knowledge of place and population density in reference locations is a key data point, as high density locations with high populations will generally over index against other locations. It is also valuable to discover the offering program, hours of operation, alignment to major transport nodes and other key precinct drivers when making a comparison.	Hour of the day, Month of the year	Comparison values are valuable in that they reveal the usage patterns of best practice locations.

CUSTOM INTERACTIVE DATA MODEL METRICS

Model Time Range - 2019 to 2022 May
Data Source - Place Intelligence Metro.
Model Sample Size: Unique devices seen: 1.5 million
Number of Signal Events Processed: 50 million+

Model Metric - Percent of Total Activity

Metric Description - Percent of total activity is the representation of all site users seen at any given time range and location type. Data have been normalized using VIC control data from a variety of open data sources, including ABS population data, traffic control systems counts, city pedestrian counts as well as proprietary data normalization protocols developed by Place Intelligence. Each chart should be read as equaling 100% of the total usage of the location by time interval.

Model Sections Definitions

The following metrics have been computed and can be extracted on request if not included in this report.

Global Dashboard - Provides a summary of the precincts total activity with the ability to filter data by time.

- 24 hour day of week line chart- Provides the ability to identify place usage by hour and day of the week.
- Day hour highlight table - Provides the ability to see groupings of activity by day and hour.
- Day of week index- Shows which day of the week accounts for what percent of all activity.
- Yearly by week number - Reveals longitudinal change over the year by week number.
- Month of year - Reveals longitudinal change over the year by month.
- Total activity by category - Shows which category accounts for what percent of all activity.
- Total activity by type - Shows which place type accounts for what percent of all activity.
- Total activity by name - Shows which place name accounts for what percent of all activity.
- Month and week of year, continuous - Provides longitudinal multiyear change over time for all selected categories, types or names combined.
- 24 hour profile by month of year - Shows the average 24 hour profile by month of the year.

Place Category Dashboard - Provides a summary of the activity filtered by place categories.

- 24 hour profile by category - Shows how each component part ranks over 24 hours on average.
- Category Index - Shows how each component part ranks out of all activity.
- Day of week stacked bar chart - Reveal the total percent of activity by day and the percent of activity for each component part.
- Week of year by category - Shows change over time by week of year for each component part individually.
- Month of year by category - Shows change over time by month of year for each component part individually.
- Day of week by hour of day comparison - Shows a 24 hour profile for each day of the week for each component part.
- Interactive map with percent of total - Identifies the total activity of each component part selected.

Place Type Dashboard - Provides a summary of the activity filtered by place types.

- 24 hour profile by type - Shows how each component part ranks over 24 hours on average.
- Type Index - Shows how each component part ranks out of all activity.
- Day of week stacked bar chart - Reveal the total percent of activity by day and the percent of activity for each component part.
- Week of year by type - Shows change over time by week of year for each component part individually.
- Month of year by type - Shows change over time by month of year for each component part individually.
- Day of week by hour of day comparison - Shows a 24 hour profile for each day of the week for each component part.
- Interactive map with percent of total - Identifies the total activity of each component part selected.

Place Name Dashboard- - Provides a summary of the activity filtered by place names.

- 24 hour profile by name - Shows how each component part ranks over 24 hours on average.
- Name Index - Shows how each component part ranks out of all activity.
- Day of week stacked bar chart - Reveal the total percent of activity by day and the percent of activity for each component part.
- Week of year by name - Shows change over time by week of year for each component part individually.
- Month of year by name - Shows change over time by month of year for each component part individually.
- Day of week by hour of day comparison - Shows a 24 hour profile for each day of the week for each component part.
- Interactive map with percent of total - Identifies the total activity of each component part selected.

PRECINCT QUICK STATS

Metric	Result
Year on Year (Including roads and parcels)	Peak year: 2019 2020 percent variance from 2019: (-30%) decrease 2021 percent variance from 2019: (-15.9%) decrease
Year on Year (parcel activity only)	Peak year: 2019 2020 percent variance from 2019: (-40%) decrease 2021 percent variance from 2019: (-30%) decrease 2021 percent variance from 2020: (+16%) increase
Month of the year (parcel activity only)	Peak month: August (2019), October (2020), November (2021) Low Month: January (2019), April (2020), August (2021)
Leading Feature Class	Roads - 80% of all Activity
Hour of the day (parcel activity only)	Peak Hour (Yearly Average): 5pm (2019), 5pm (2020), 3pm (2021)
Leading End Destinations	By Building Name South Yarra Housing Estate Outdoor Gym,South Yarra Preschool 6.37% South Yarra Train Station 5.73% Fairbairn Boxing and Fitness,Melbourne High School,The Unicorn Club 3.50% Grilled,Hunky Dory,Frozen,Middle South East,Amazing Accommodations,Harvest,Xynergy Realty Group 3.32% 1R Gym,Amity Property Group,HSBC,Bistro Omnia,One Point Seven Four,Dior 1.71% Harper Bar,Huxtaburger 1.68% Soda Rock Diner,Boost Juice,Cotton On Fashion,Finerrings 1.56% Hello Sam South Yarra 1.52% Sam Hibbins MP,Wholesale Beads,Dominos,Sam Hibbins MP 0.94%

Featured Discoveries

Between 2019 and 2021, the precinct has seen a major reduction in usage, dropping by as much as 30% against the baseline year of 2019 as the result of the changes in human behaviors primarily linked to Covid19 lock-downs. This value is further extended when looking only at the destination areas inside the precinct boundary (excluding surrounding roads) with a drop in activity by more than 40%. Irregular usage patterns have created a-typical peak demands by month of the year, with all three years having a different peak and low usage month. In most instances the site hourly usage peaks around mid-day, with the baseline peak being at 5pm in 2019. Roads are the most used asset class on the site accounting for up to 80% of all activity in the model. However only 50% of all users of the road network stop in end destinations in the precinct.

Understanding Precinct Activity

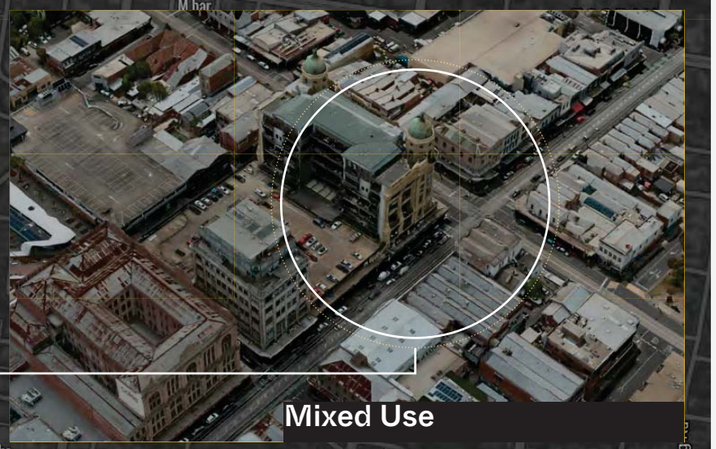
Identifying Precinct with Activity Hot Spots

A hexbin heatmap from 2019 is used to reveal where activity occurs across the precinct. Bright areas represent the most visited locations over time, including roads, buildings and public spaces.

Density of Activity

Low — Highest

Train and High Density

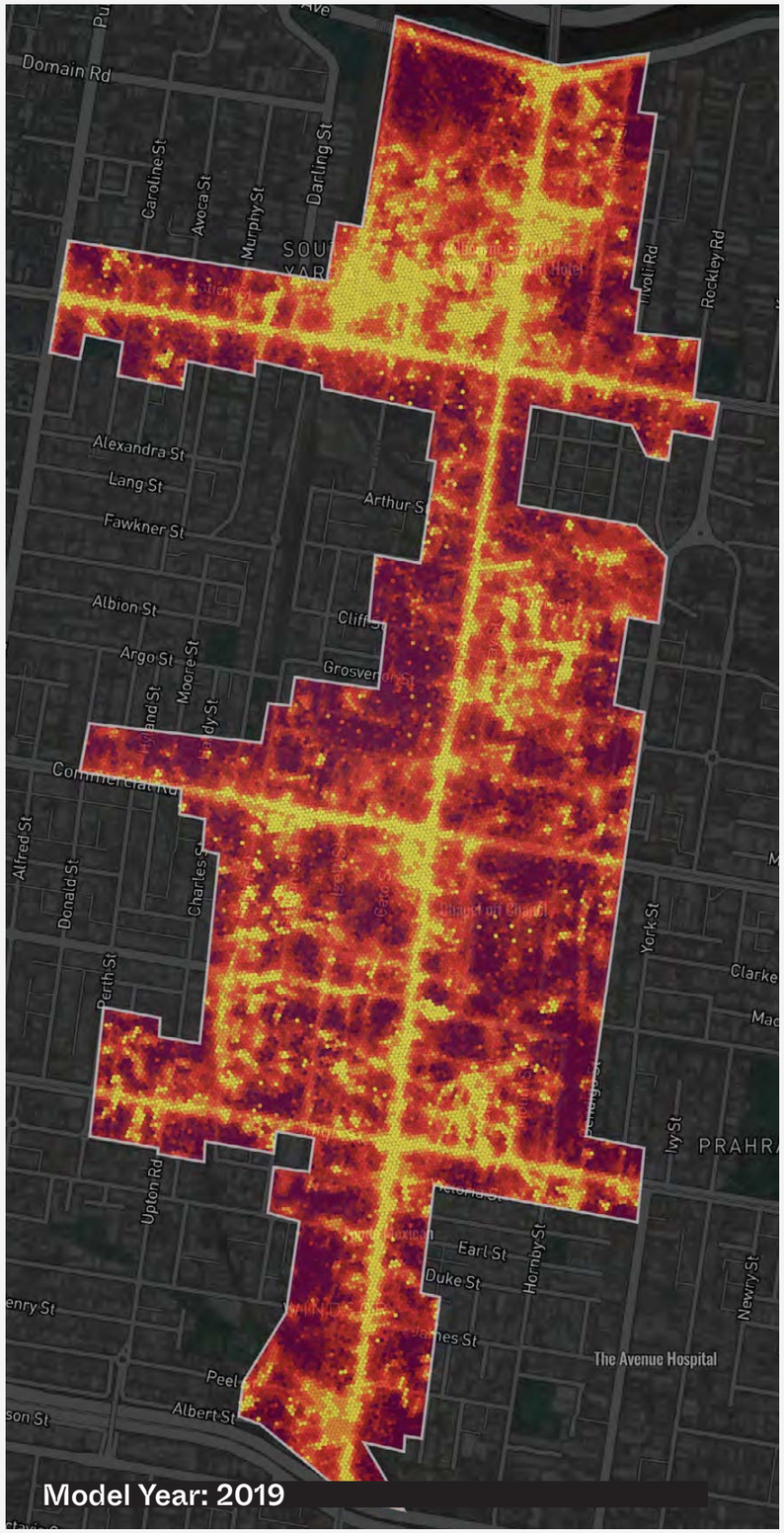


Mixed Use

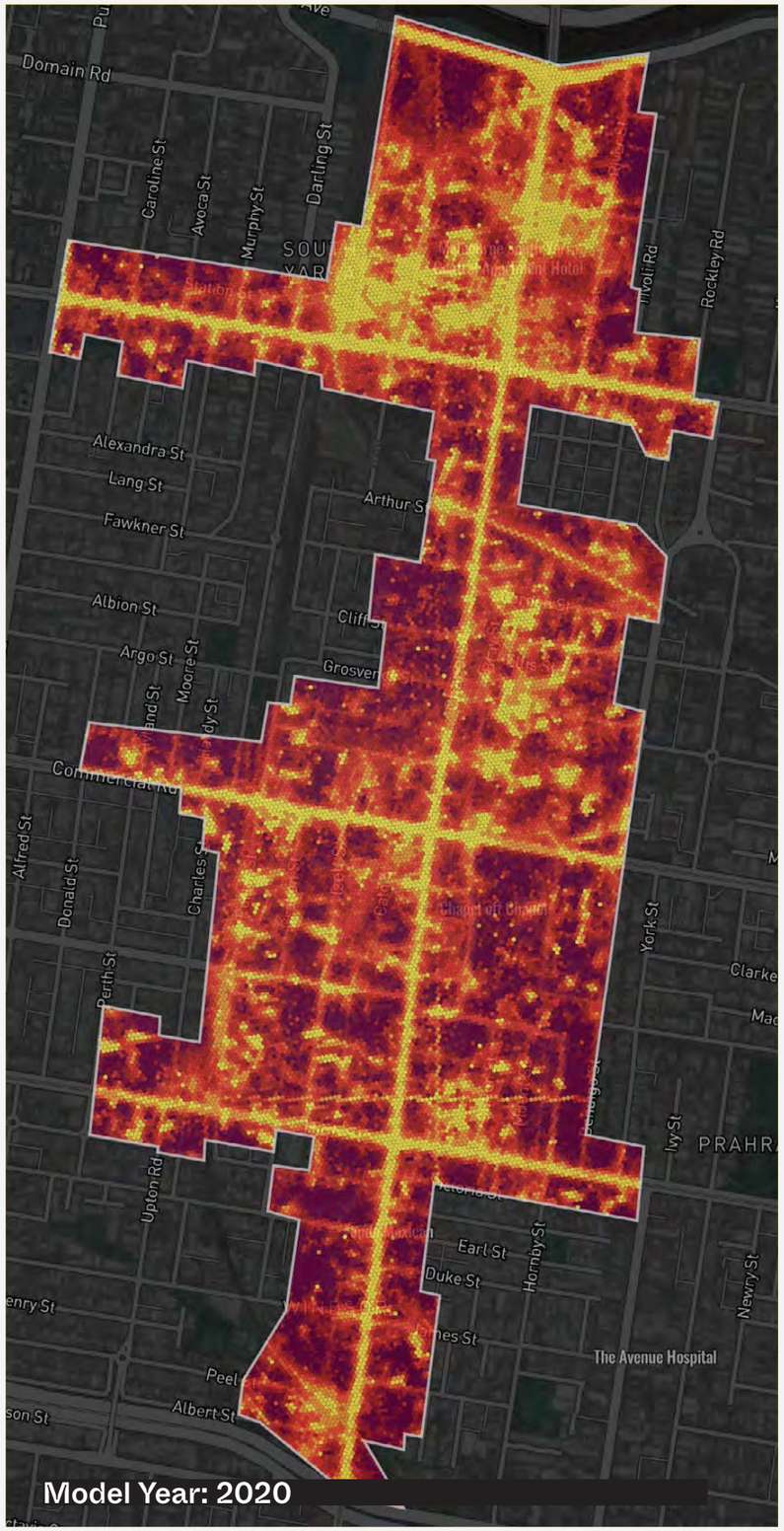
Affordable Housing

Select Actvity Centers

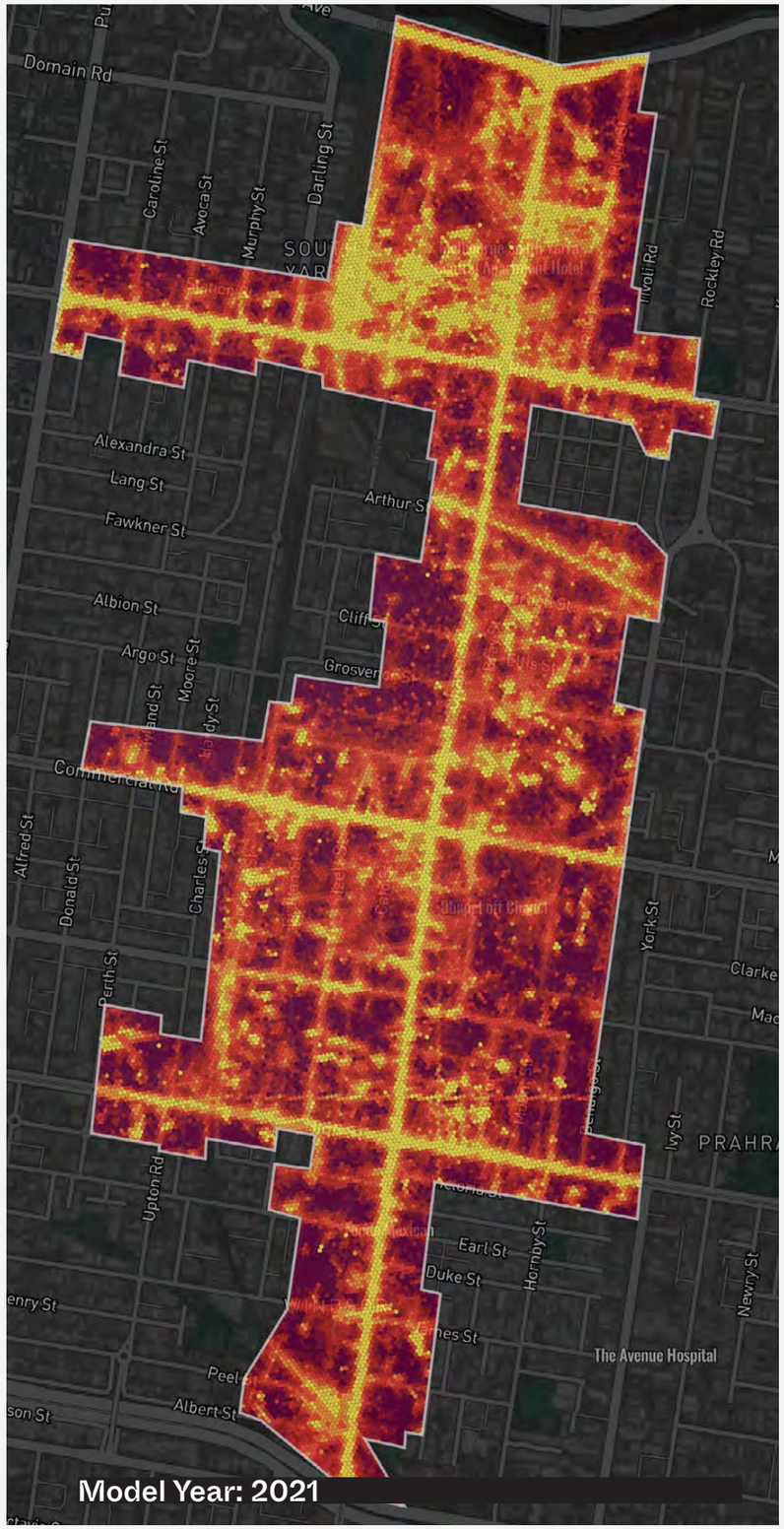
Yearly Activity Aggregated Activity



Model Year: 2019



Model Year: 2020



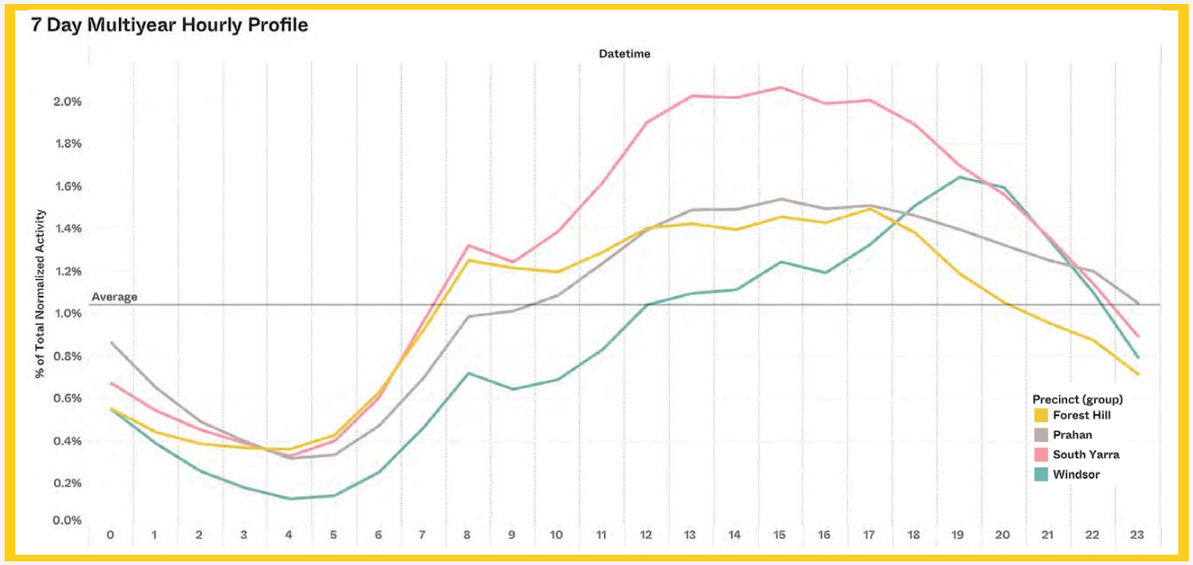
Model Year: 2021

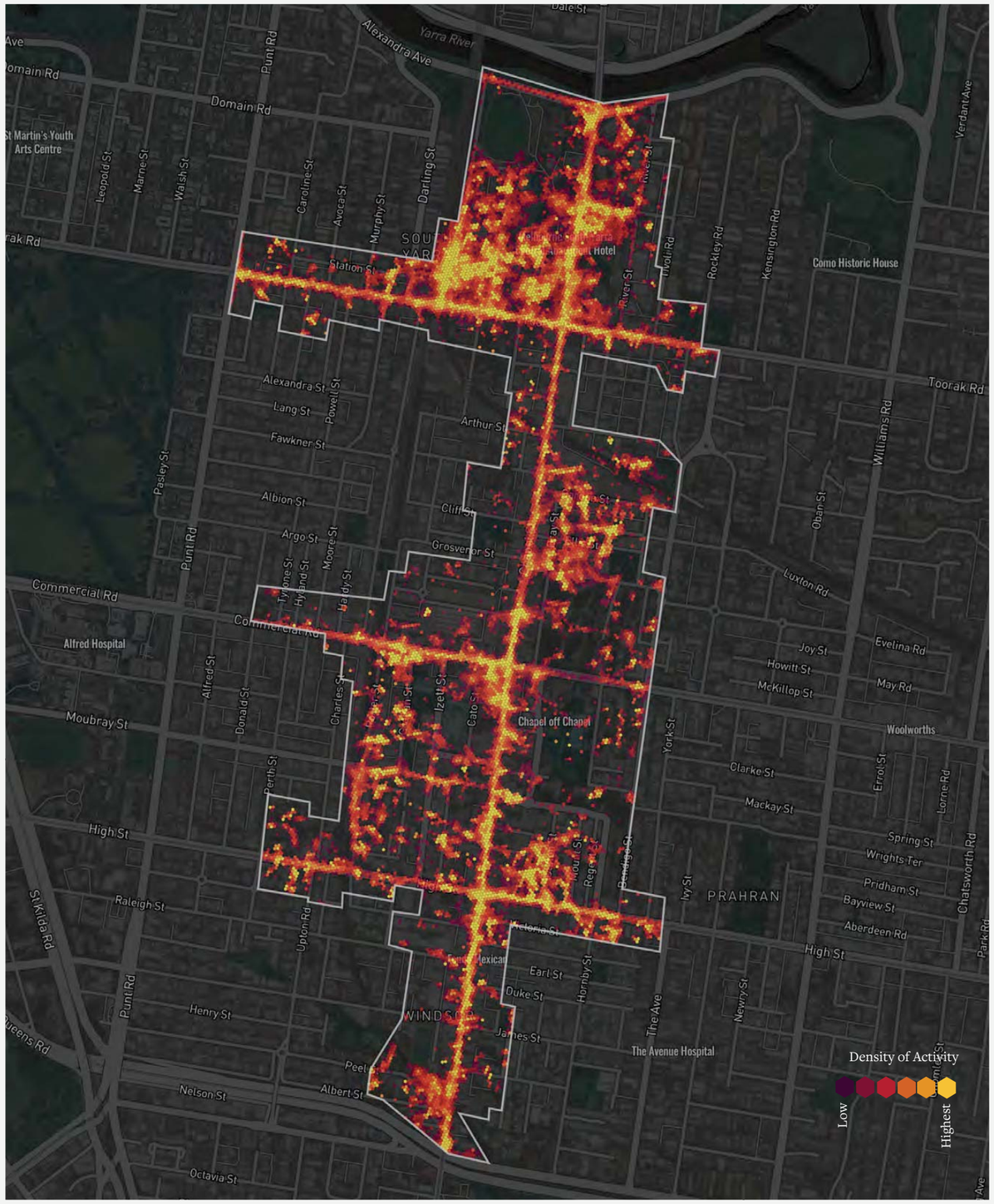
Key Insights About the Precinct

Select Precinct Metrics

Precinct metrics provide a quick means to understand the high level dynamics of the precinct.

Metric	Value	Note
Total Activity by Precinct Zone Multi Year Average 2019- 2022	Forest Hill 23.89% Prahran 25.23% South Yarra 30.55% Windsor 20.33%	Summing all person hours spent in each zone provides an objective means to identify which location has the greatest or least popularity and usage across all asset types. 77% of all activity is in the movement network (including the foot-paths)
Busiest Day of Week by Precinct Zone Multi Year Average 2019-2022	Forest Hill Friday South Yarra Friday Prahran Friday Windsor Saturday	Fridays are the busiest day in nearly every time period in the model. Saturdays are only slightly busier in Windsor than fridays with a +1% difference in activity.
Busiest Hour of Day Multi Year Average 2019- 2022	Forest Hill 5 PM Prahan 3 PM South Yarra 3 PM Windsor 7 PM	Across all areas, the daily peak activity level is at 5pm.
Busiest Month of Year 2019 Per Pandemic Baseline	Precinct March Forest Hill May Prahran March South Yarra March Windsor March	For the pre pandemic baseline year, March was the busiest month.

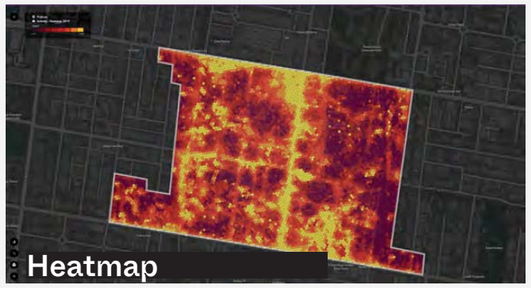




Precinct 60th-100th Demand Profile

A pre pandemic activity heat map from 2019, filtered to the top places where people are seen over time reveals critical infrastructure and places.

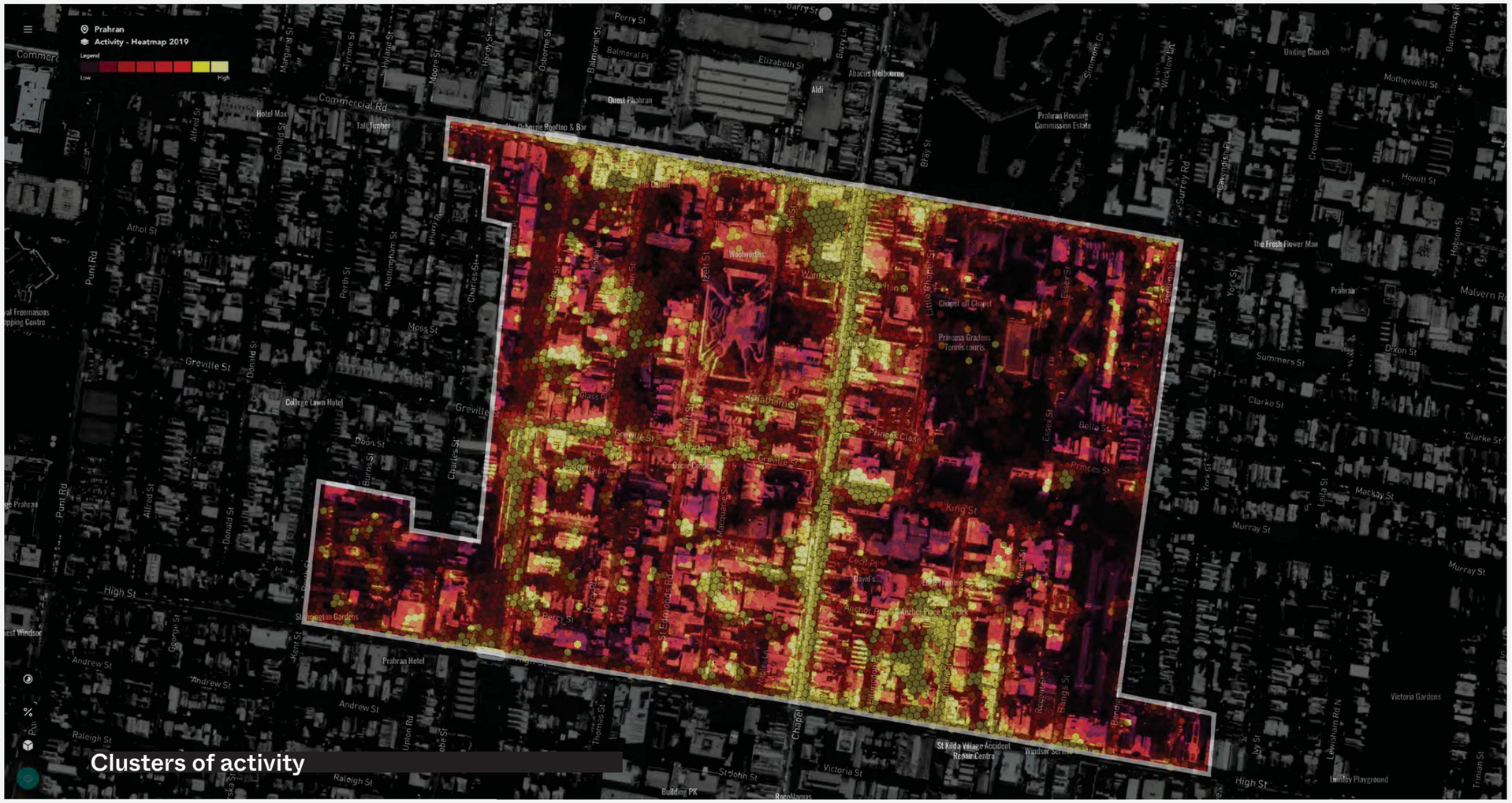
Example Multi Layer Analysis in Photoshop



Spatial Analysis

Blending data in Adobe Photoshop provides a simple means it isolate high usage areas for visual analsyis.

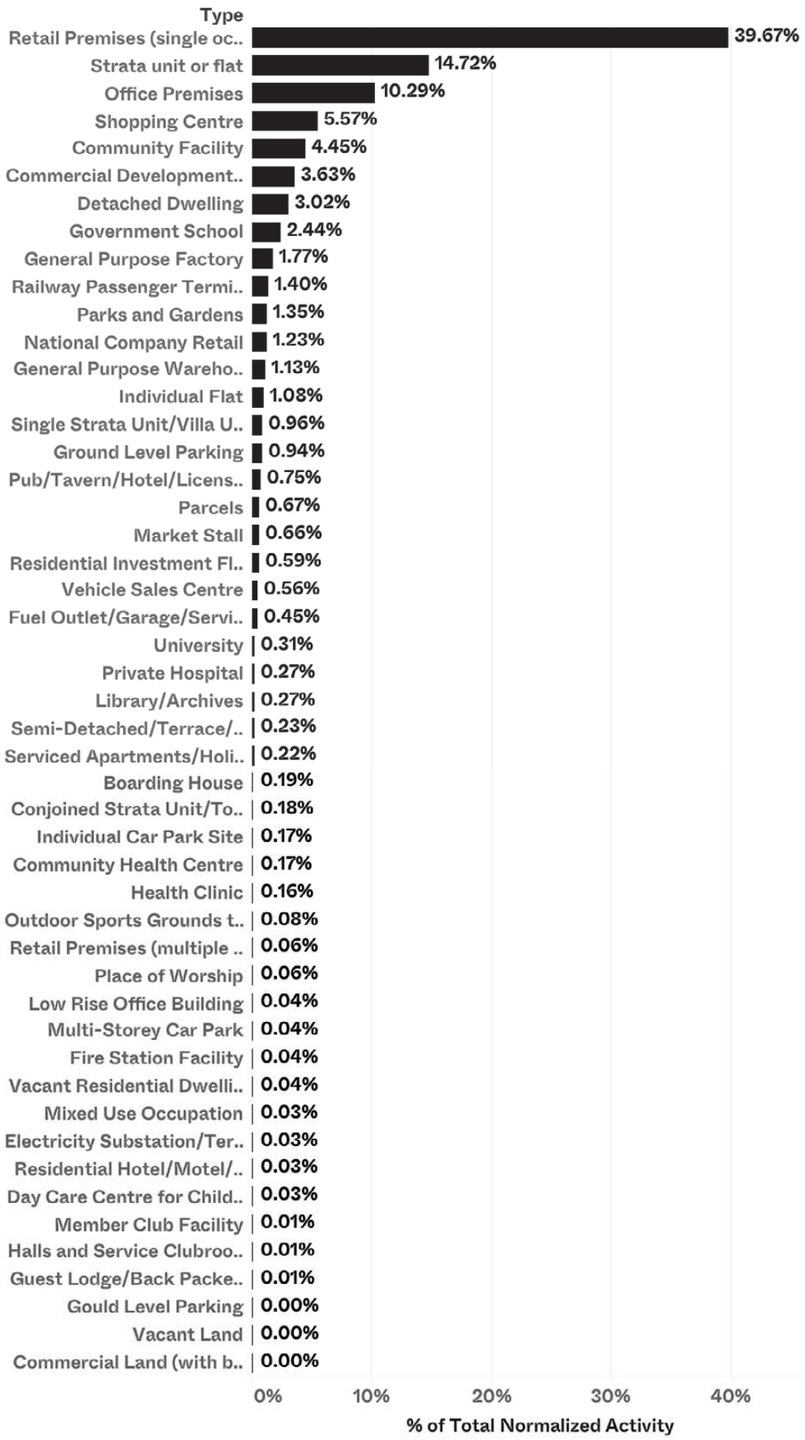
Data in the Place Intelligence GeoData studio can be filtered to a relevant demand percentile and desired date range prior to multilayer anaysis.



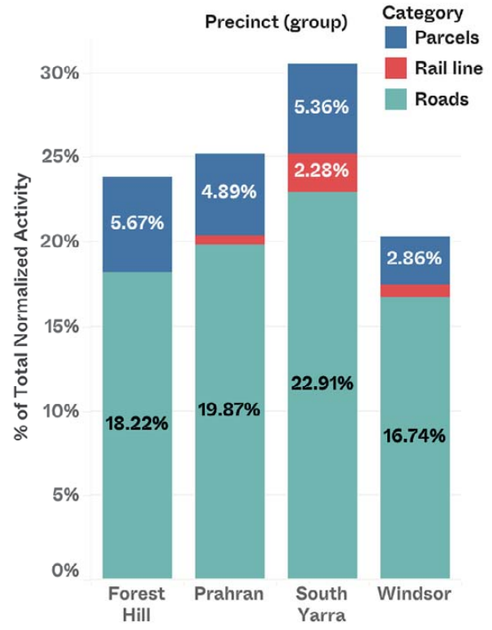
Place Intelligence

Global Stats

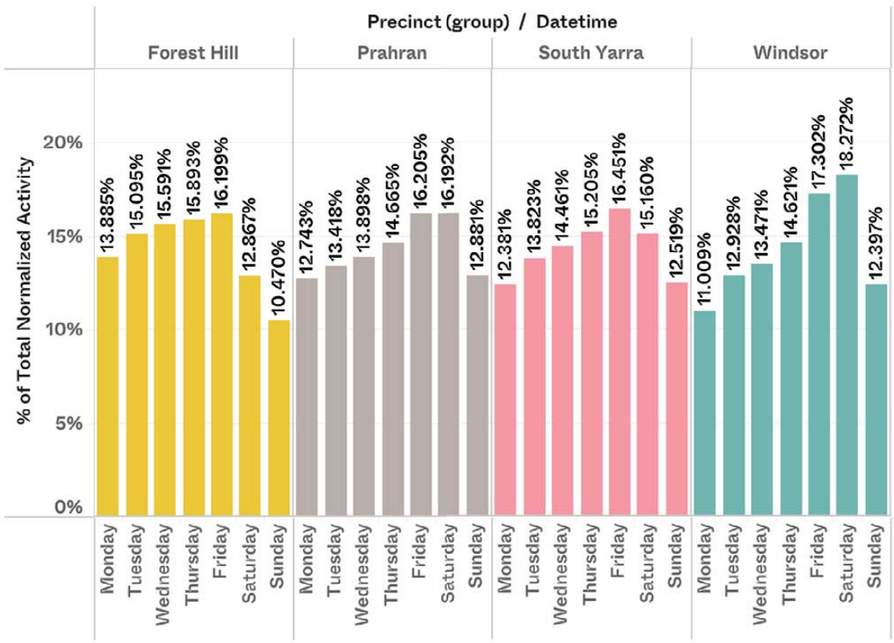
Type Rank



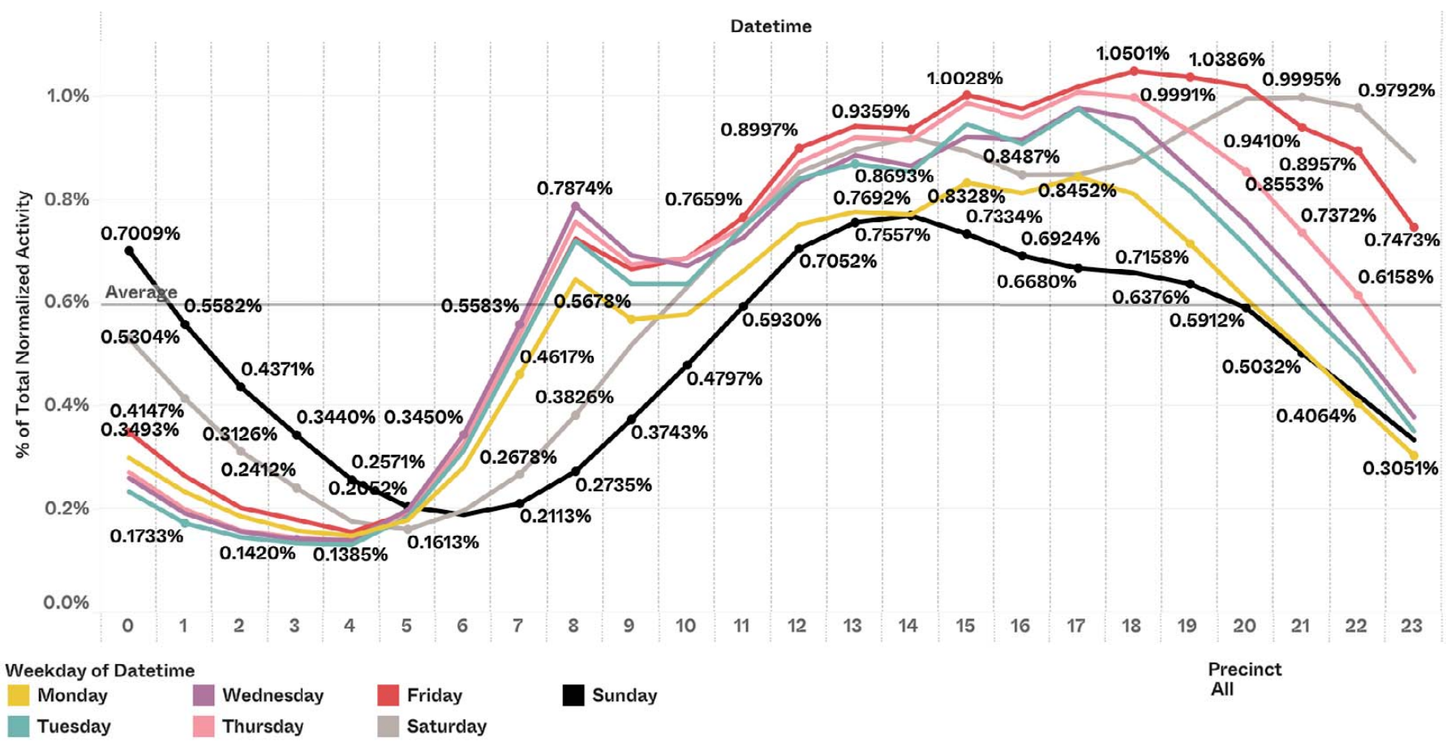
Total Activity by Precinct



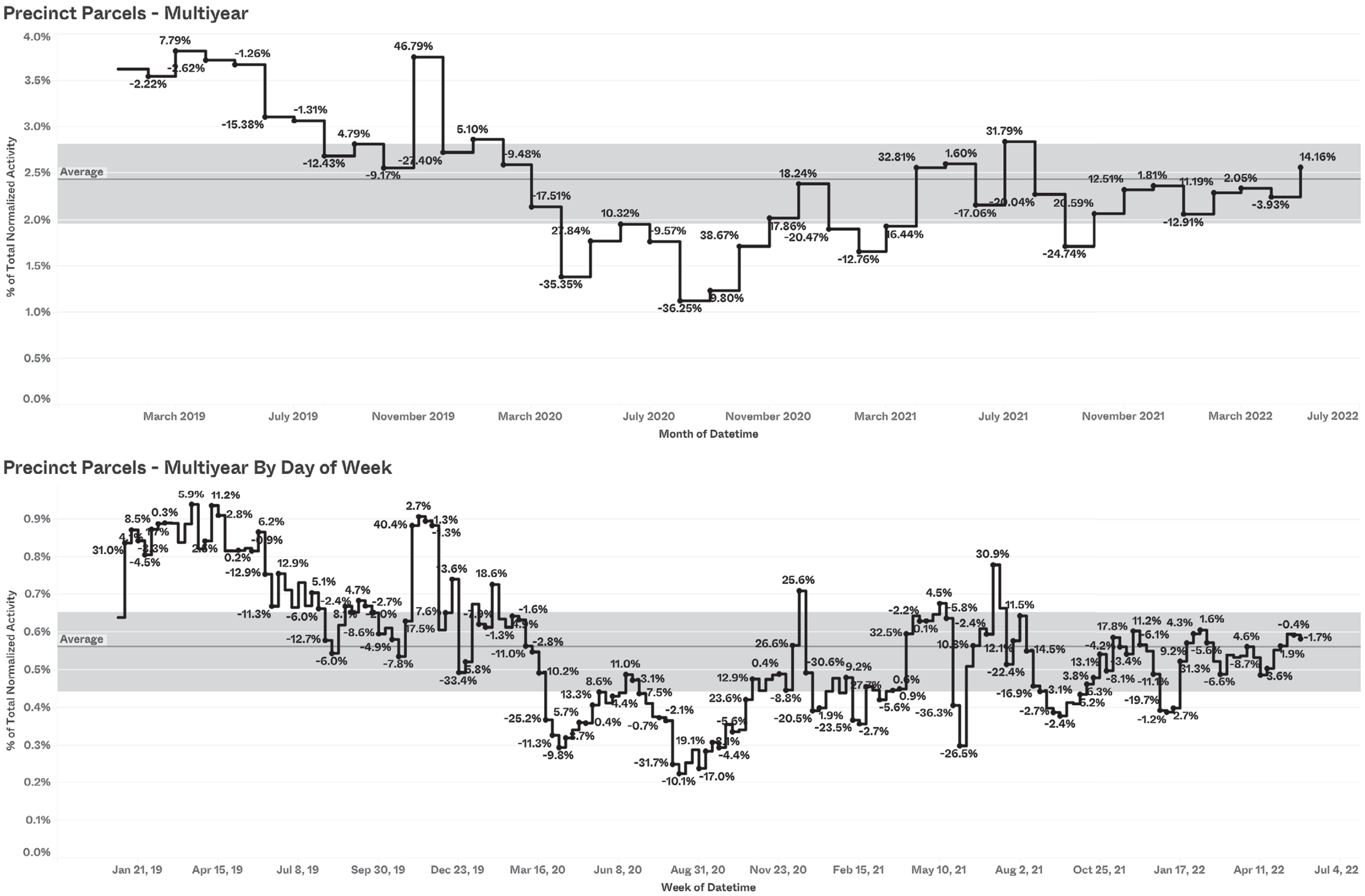
Day of the Week by Precinct



7 Day Multiyear Hourly Profile by Day of week

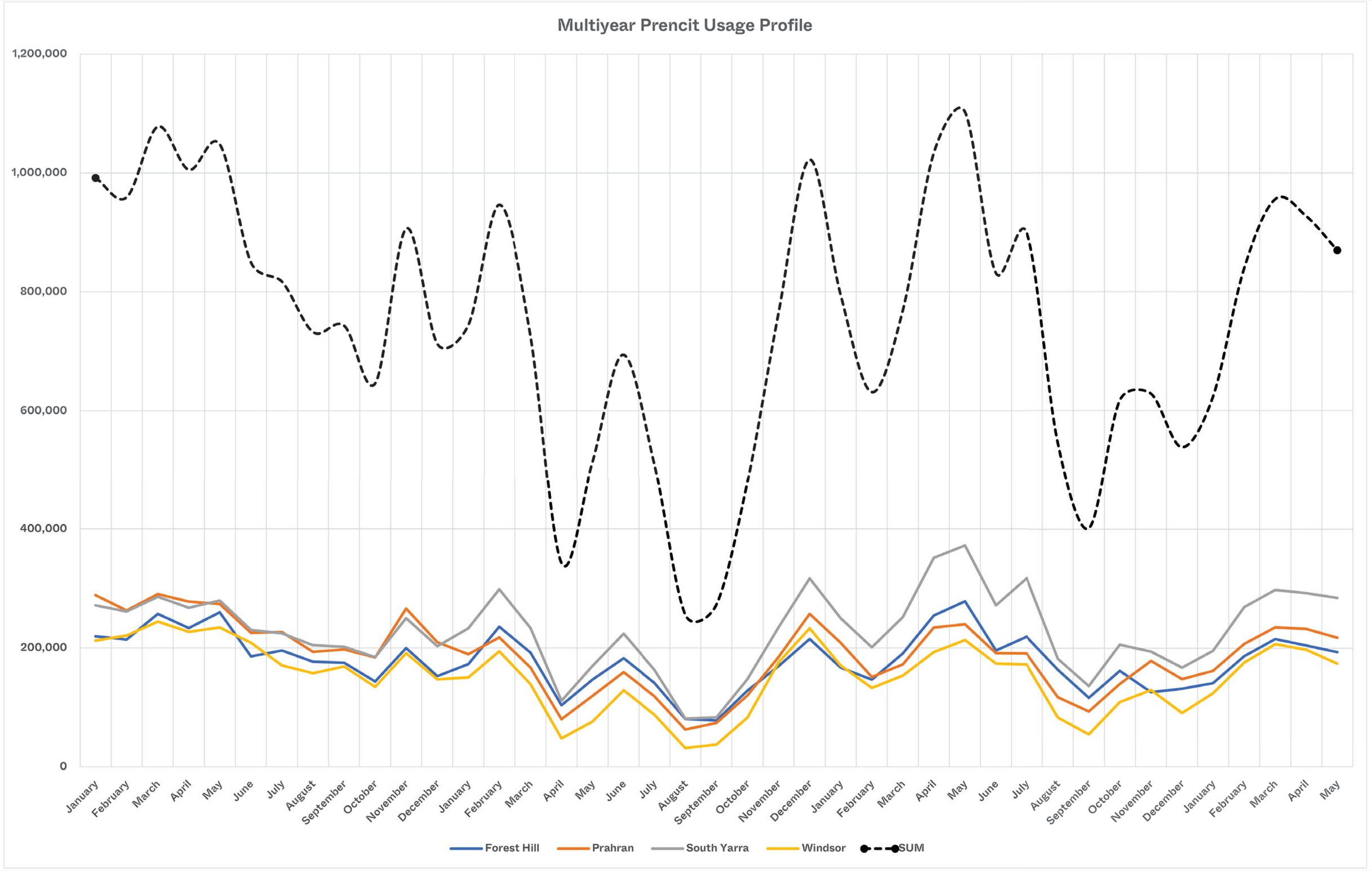


Destination Index - By Month and Week Number, Multi year Average



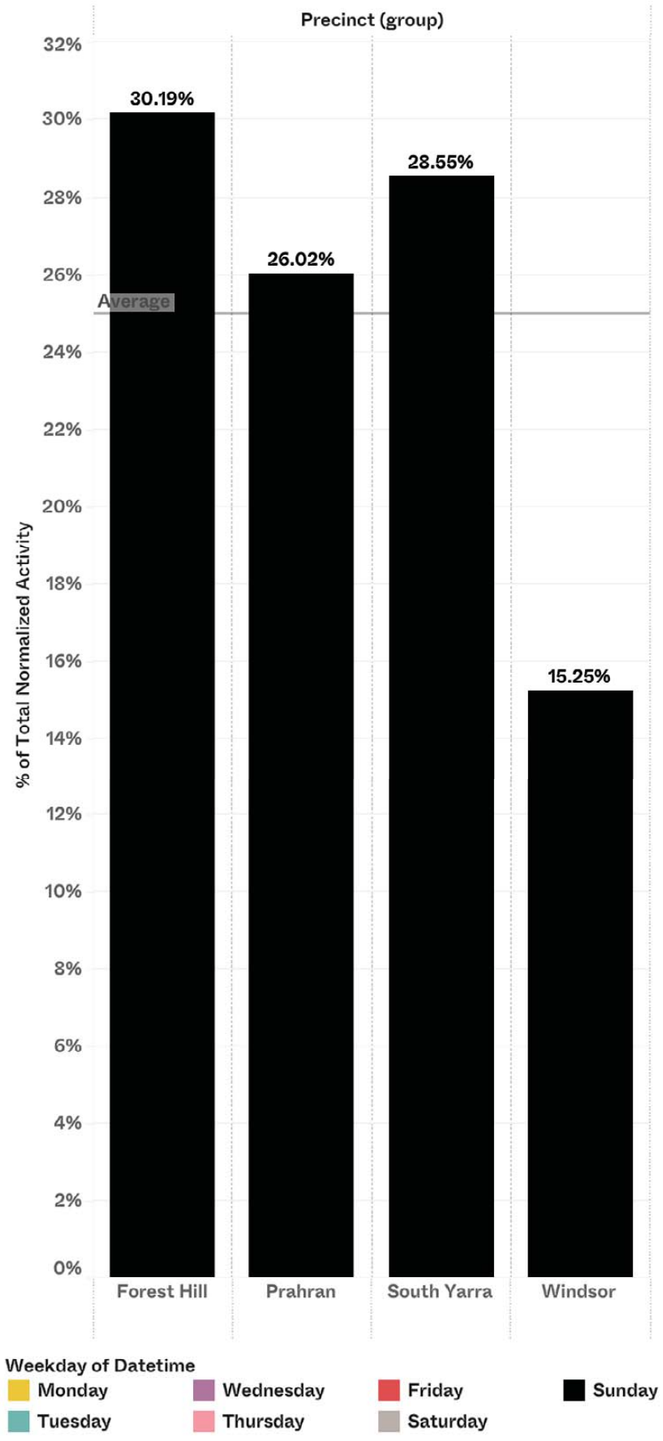
Place Intelligence®

Precinct Multi year Continuous Profile (Activity Sum)

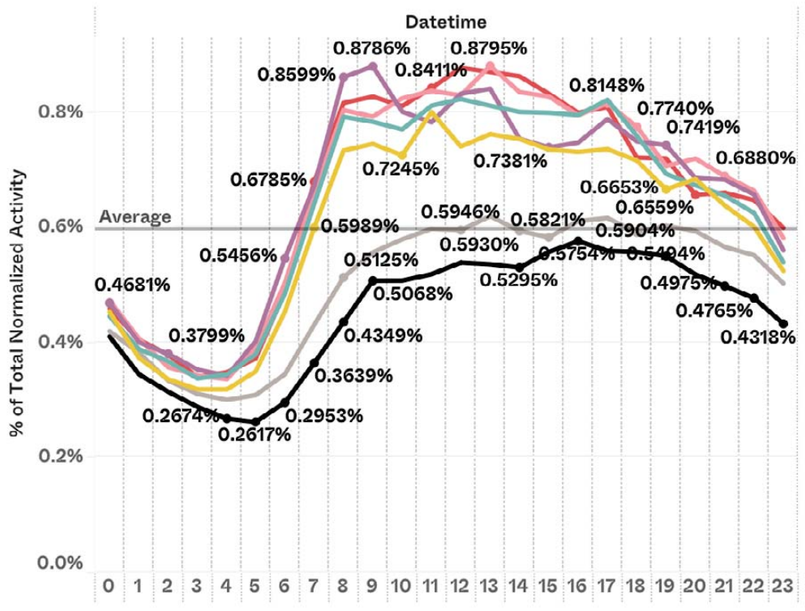


Destination Index - By Hour, Multi year Average

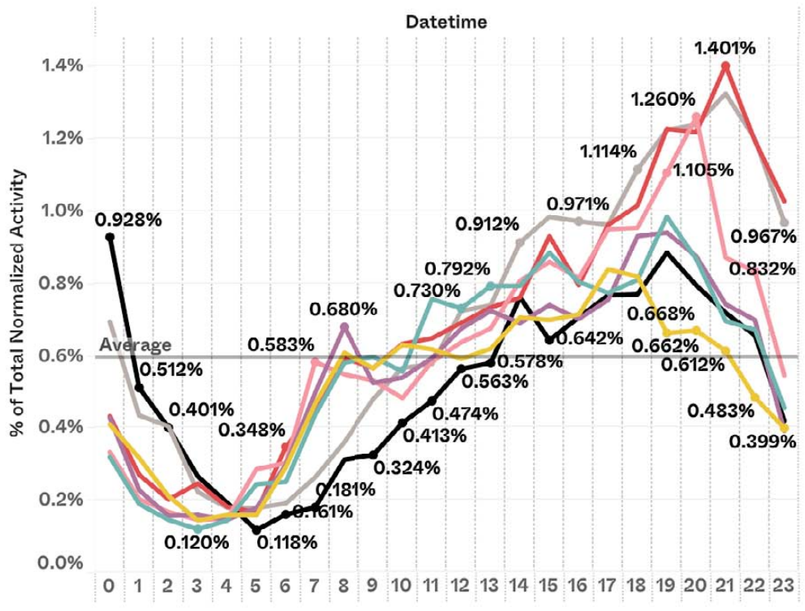
Compared Precincts



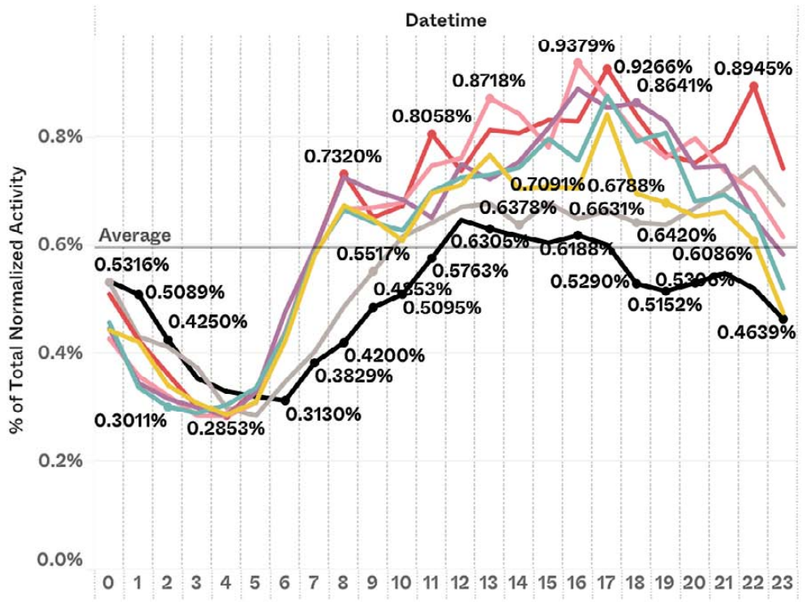
7 Day Multiyear Hourly Profile by Day of Week - Parcels Forest Hill (excl train station)



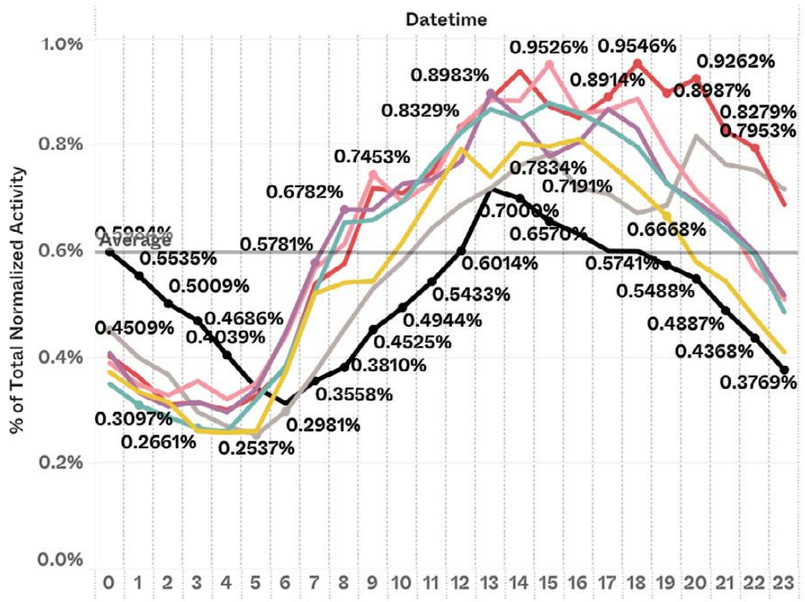
7 Day Multiyear Hourly Profile by Day of Week - Parcels Windsor



7 Day Multiyear Hourly Profile by Day of Week - Parcels Prahran

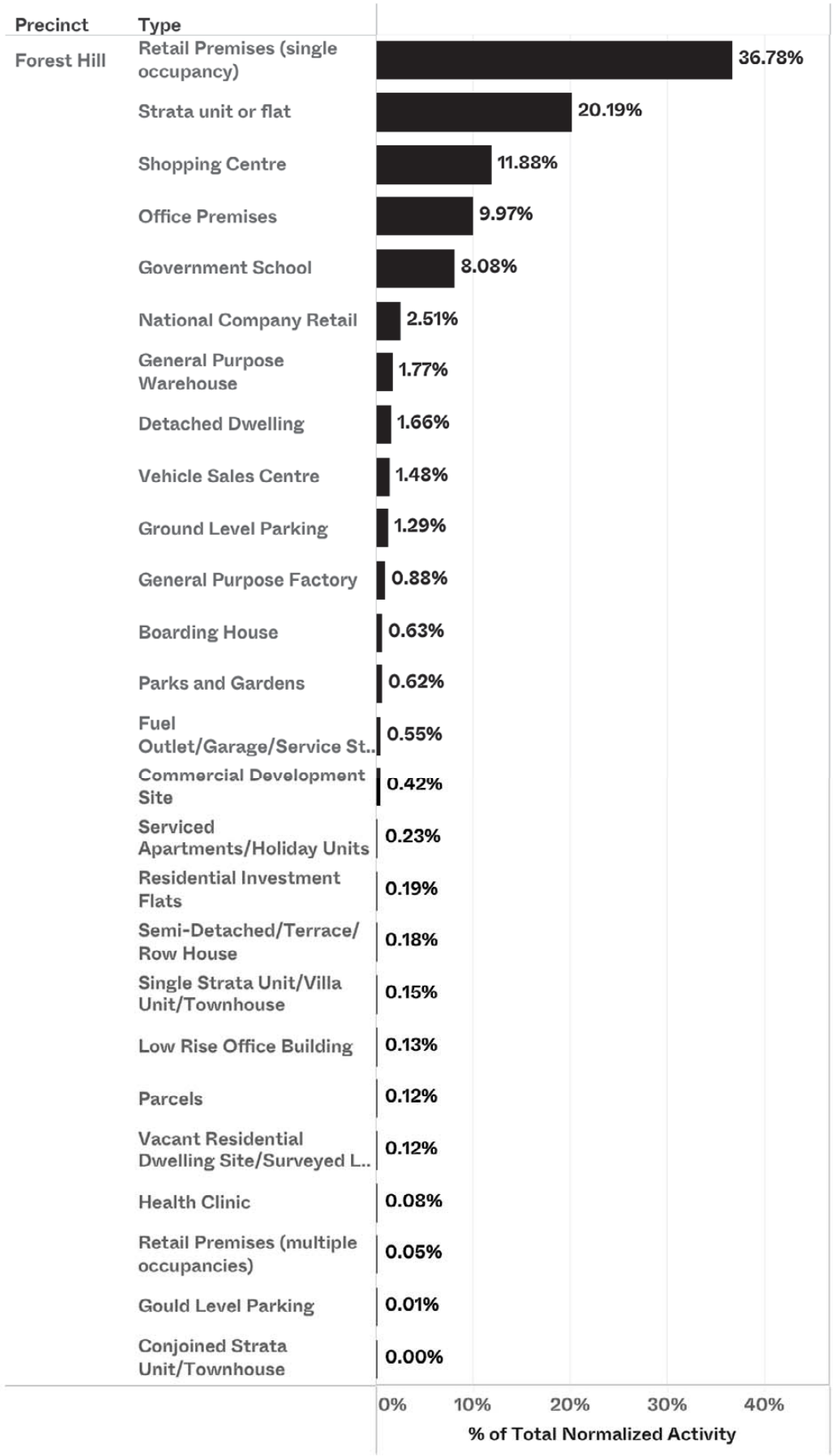


7 Day Multiyear Hourly Profile by Day of Week - Parcels South Yarra

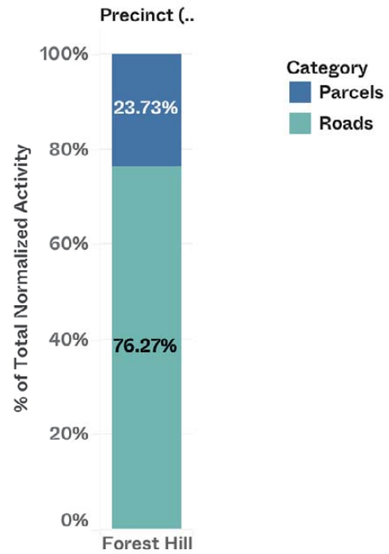


Global Stats - Forest Hill Multi year Average

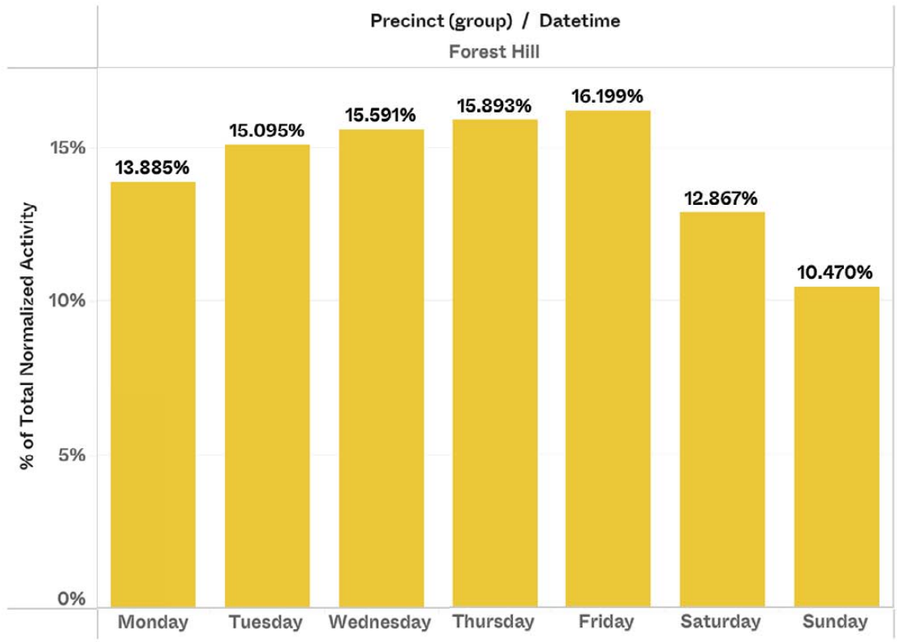
Type Rank



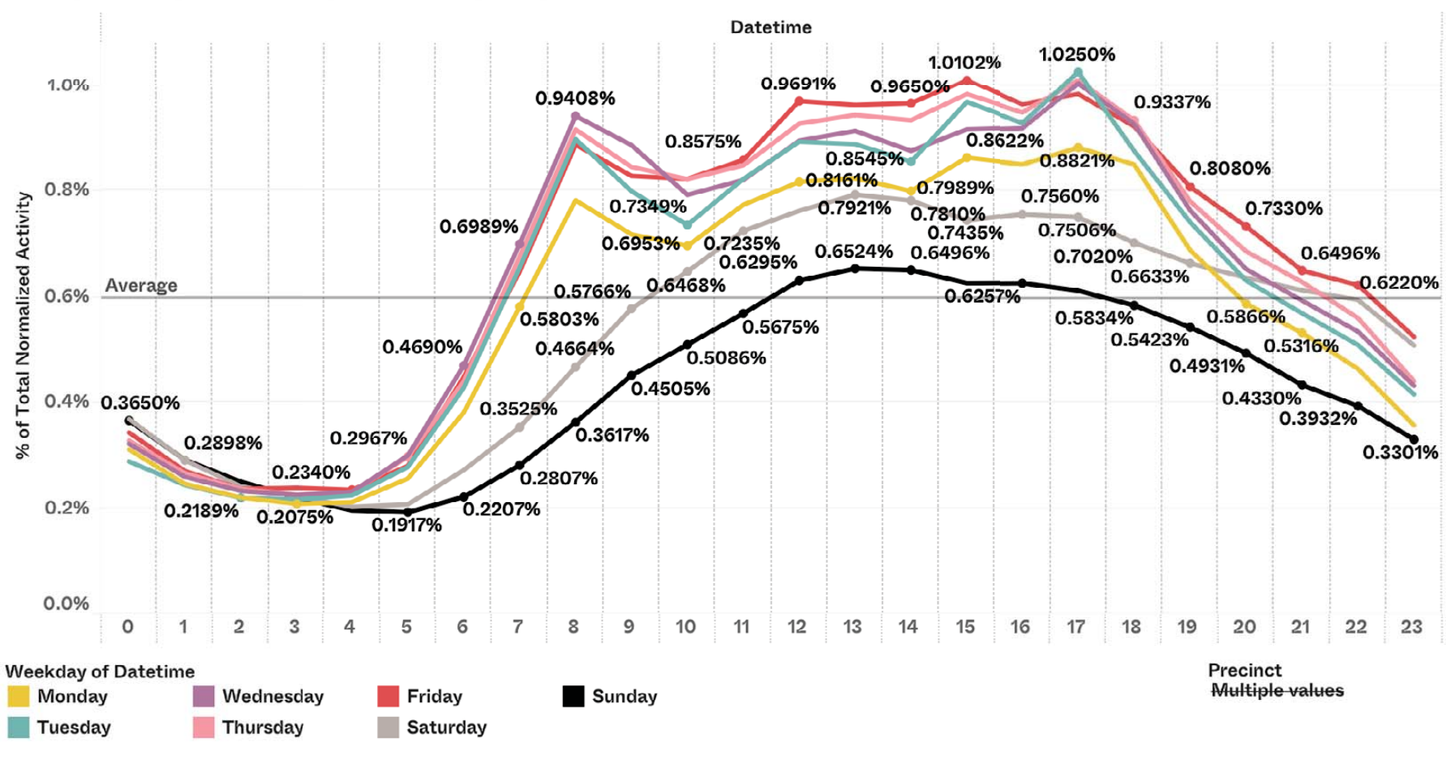
Total Activity by Precinct



Day of the Week by Precinct



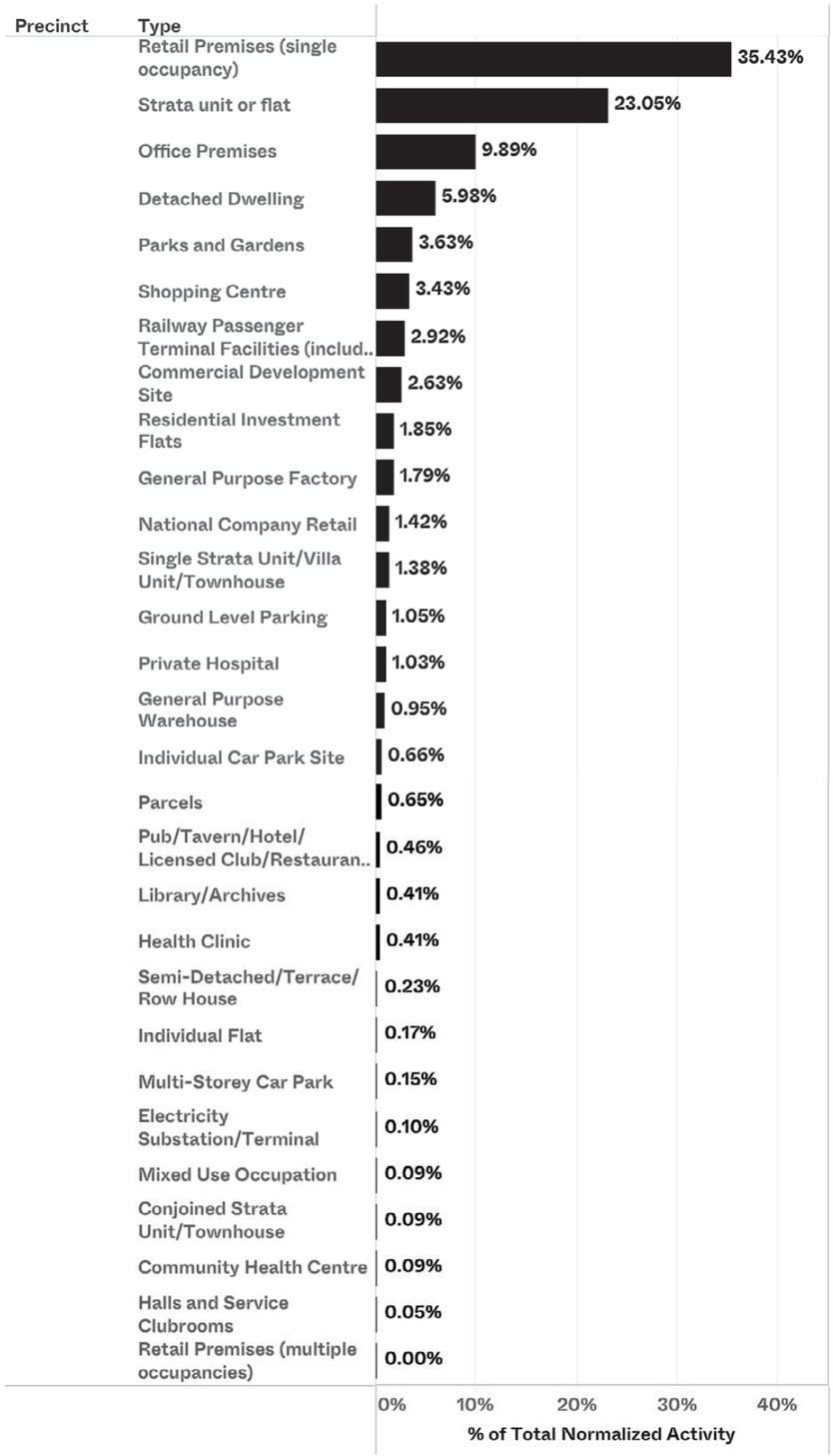
7 Day Multiyear Hourly Profile by Day of week



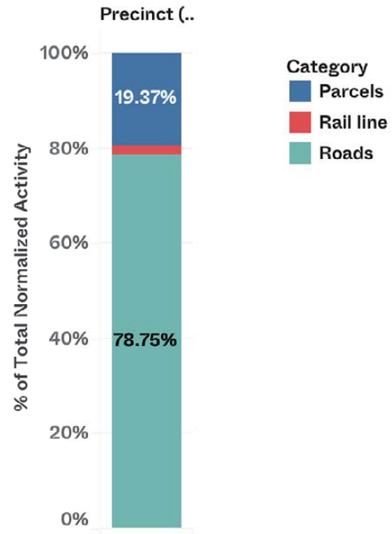
Place Intelligence

Global Stats - Prahran Multi year Average

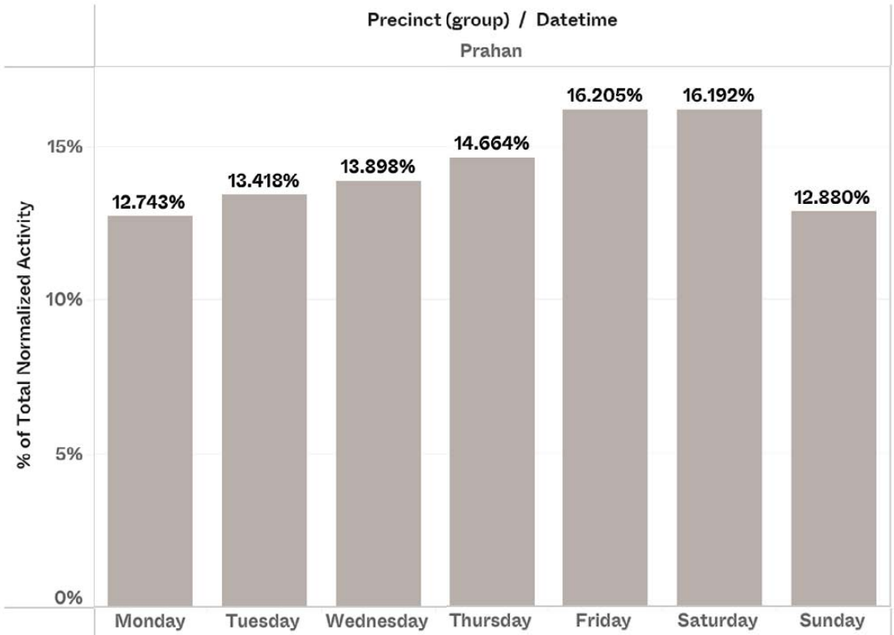
Type Rank



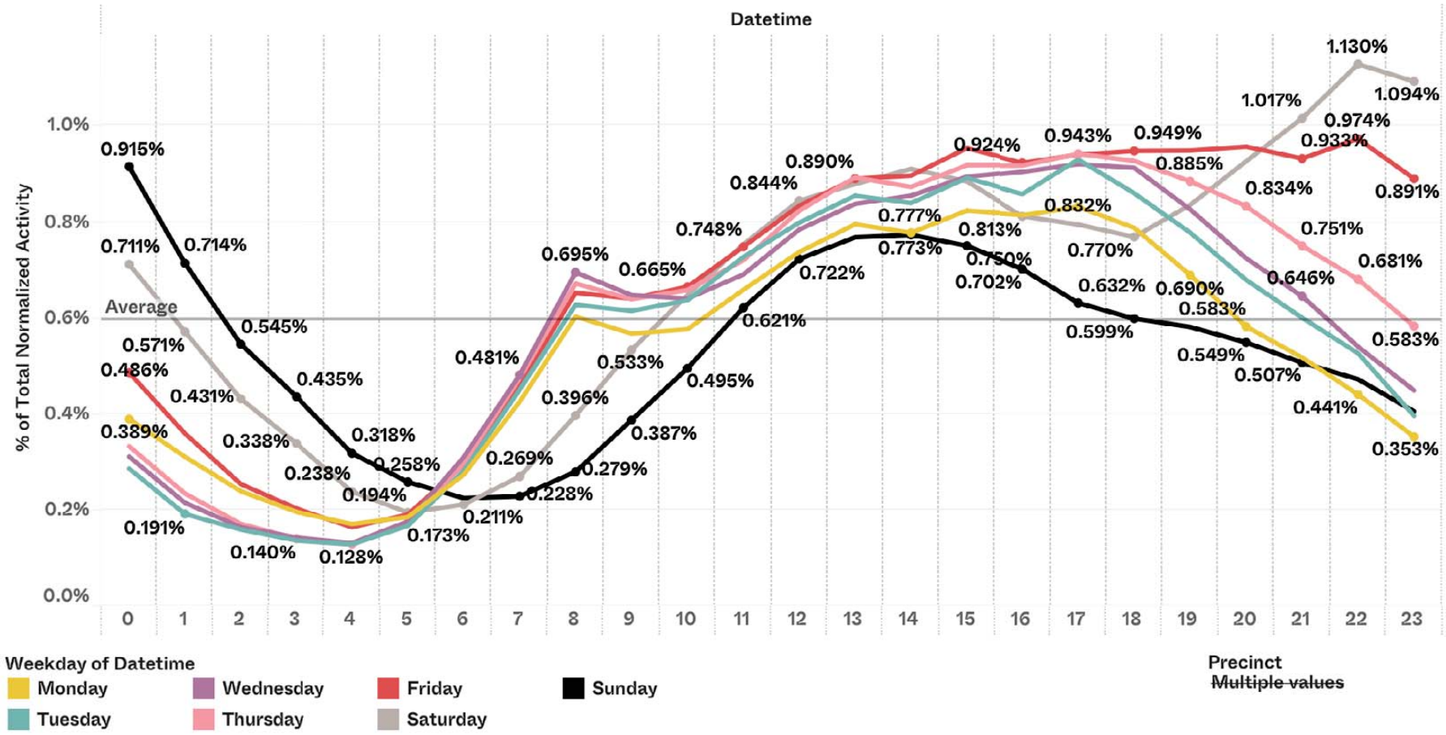
Total Activity by Precinct



Day of the Week by Precinct

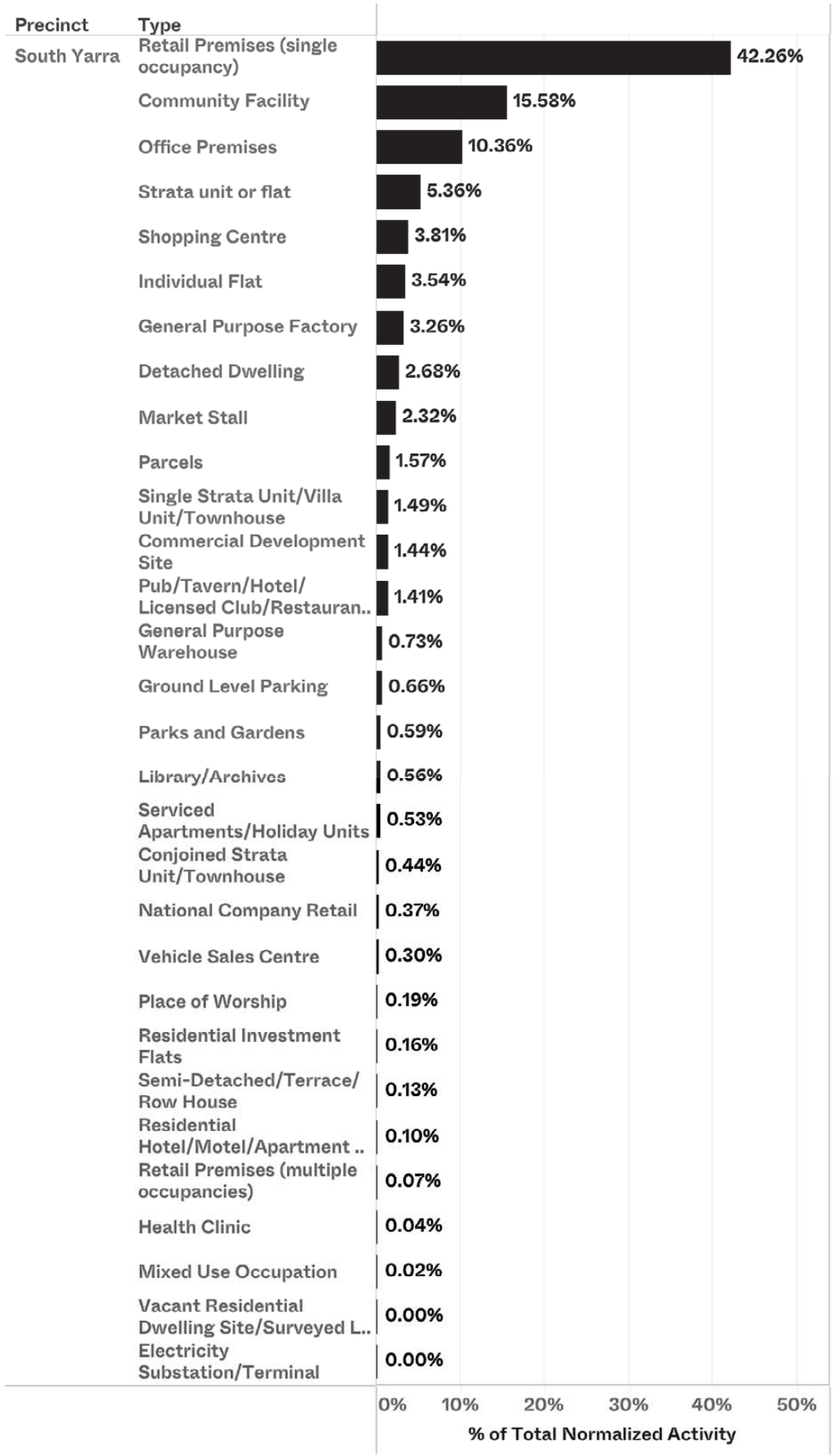


7 Day Multiyear Hourly Profile by Day of week

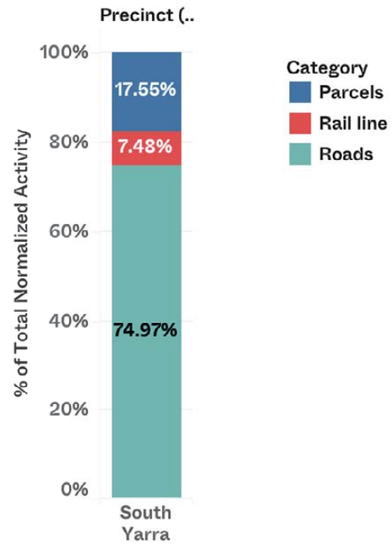


Global Stats - South Yarra Multi year Average

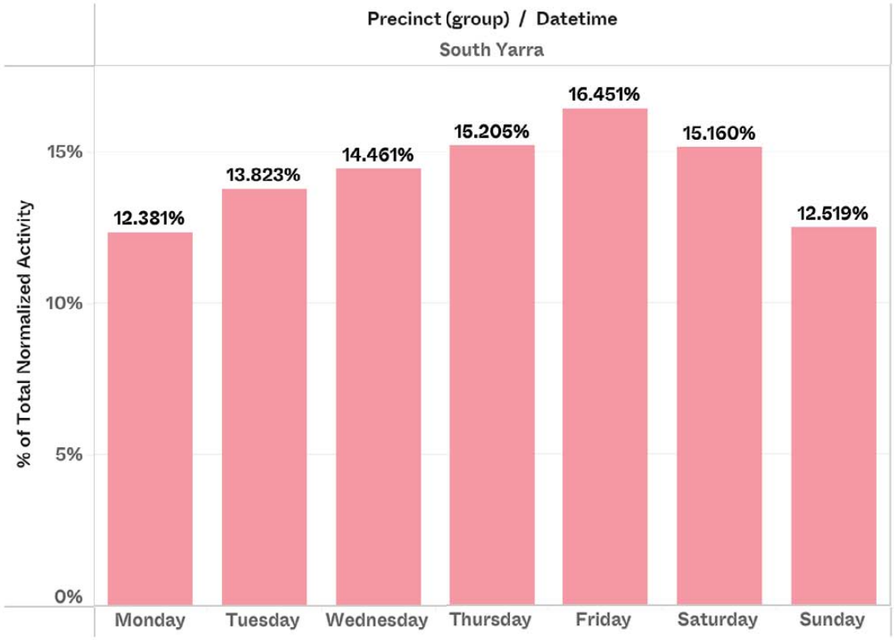
Type Rank



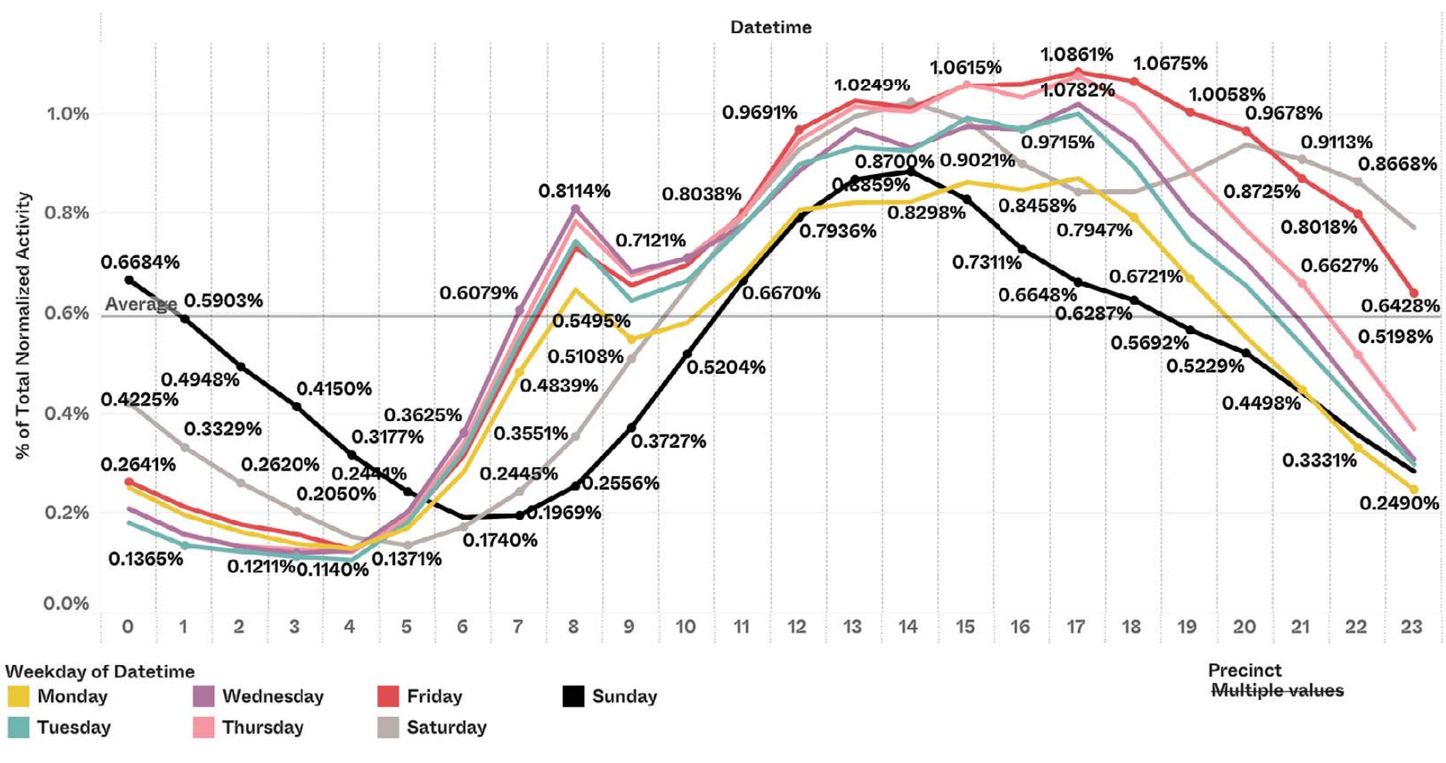
Total Activity by Precinct



Day of the Week by Precinct



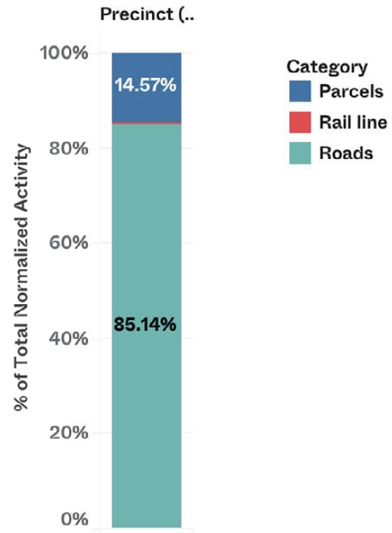
7 Day Multiyear Hourly Profile by Day of week



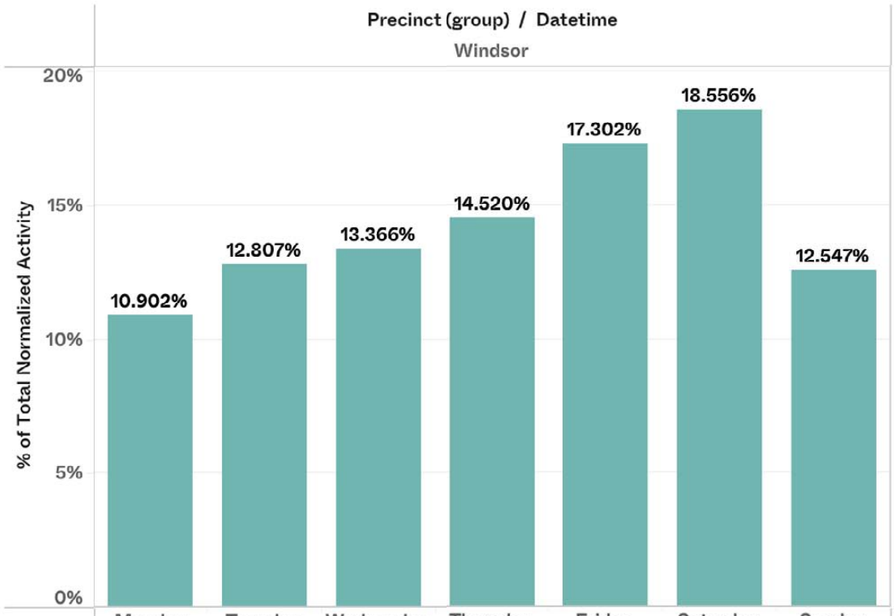
Global Stats - Windsor Multi year Average

Type Rank

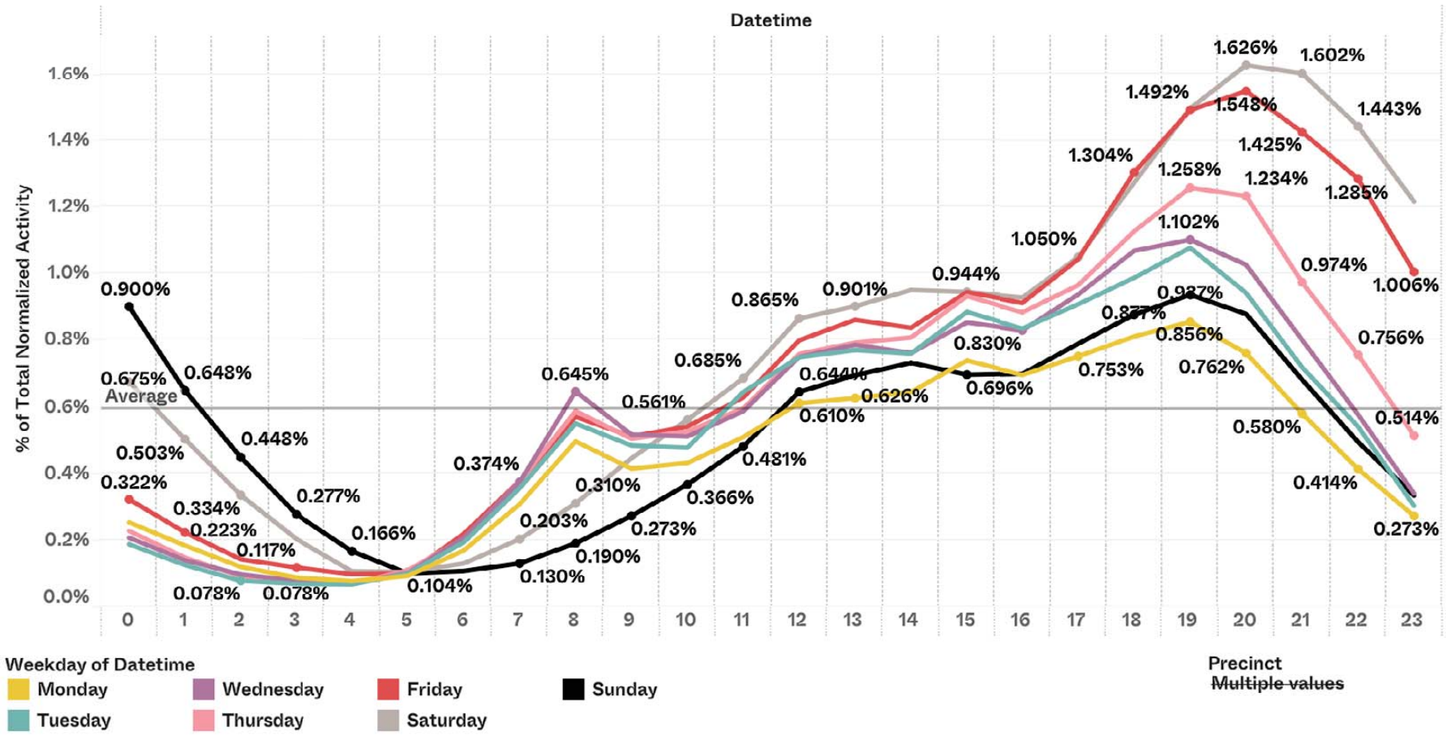
Total Activity by Precinct



Day of the Week by Precinct



7 Day Multiyear Hourly Profile by Day of week



Car Parks

Ranking Car Parks by Year

Address	Name	Precinct	2019	2020	2021	2022
Macfarlan St Car Park	Macfarlan St Car Park	Forest Hill	32.56%	11.86%	18.58%	12.36%
9 Elizabeth Street SOUTH YARRA	Care Park - 9 Elizabeth Street, South Yarr..	South Yarra	10.18%	19.00%	16.70%	22.11%
Car park 3-7 Darling Street SOUTH YA..	Car park 3-7 Darling Street SOUTH YARR..	Forest Hill	22.58%	9.40%	7.17%	8.18%
Car park 3-5 Princes Close PRAHRAN	Car park 3-5 Princes Close PRAHRAN	Prahan	6.52%	7.69%	6.68%	9.17%
Surrey Road Car Park	Surrey Road Car Park	Forest Hill	3.59%	5.98%	7.39%	7.54%
8-14 King Street PRAHRAN	Car Park,parking	Prahan	2.37%	5.12%	9.22%	3.96%
Car park 28 Chapel Street WINDSOR	Parking	Windsor	3.53%	6.07%	5.09%	6.65%
Caroline St Car Park	Caroline St Car Park	Forest Hill	0.88%	13.64%	3.70%	3.64%
Car park 2-4 Market Street SOUTH YA..	Car park 2-4 Market Street SOUTH YAR..	South Yarra	2.57%	4.90%	4.12%	4.80%
Car park 225-227 Chapel Street PRAH..	Car park 225-227 Chapel Street PRAHRA..	Prahan	4.67%	1.73%	2.76%	4.35%
11-15 James Street WINDSOR	11-15 James Street WINDSOR	Windsor	2.37%	4.21%	3.50%	5.50%
7 Little Chapel Street PRAHRAN	7 Little Chapel Street PRAHRAN	Prahan	2.11%	1.72%	2.16%	2.46%
62 Arthur Street SOUTH YARRA	62 Arthur Street SOUTH YARRA	South Yarra	0.75%	2.61%	3.44%	2.44%
3 Bowling Green Street WINDSOR	3 Bowling Green Street WINDSOR	Windsor	1.36%	0.84%	3.65%	1.09%
Car park 13-17 Murphy Street SOUTH Y..	Car park 13-17 Murphy Street SOUTH YA..	Forest Hill	1.50%	1.67%	2.13%	1.76%
108 Commercial Road PRAHRAN	108 Commercial Road PRAHRAN	Prahan	0.69%	2.36%	2.09%	2.32%
99 Bendigo Street PRAHRAN	99 Bendigo Street PRAHRAN	Prahan	1.03%	0.28%	0.59%	0.36%
Powell St Car Park	Powell St Car Park	Forest Hill	0.38%	0.58%	0.63%	0.71%
21 Bowling Green Street WINDSOR	21 Bowling Green Street WINDSOR	Windsor	0.37%	0.36%	0.40%	0.60%

Datetime

0% 10% 20% 30% 40%

% of Total Normalized Activity

Ranking Car Parks

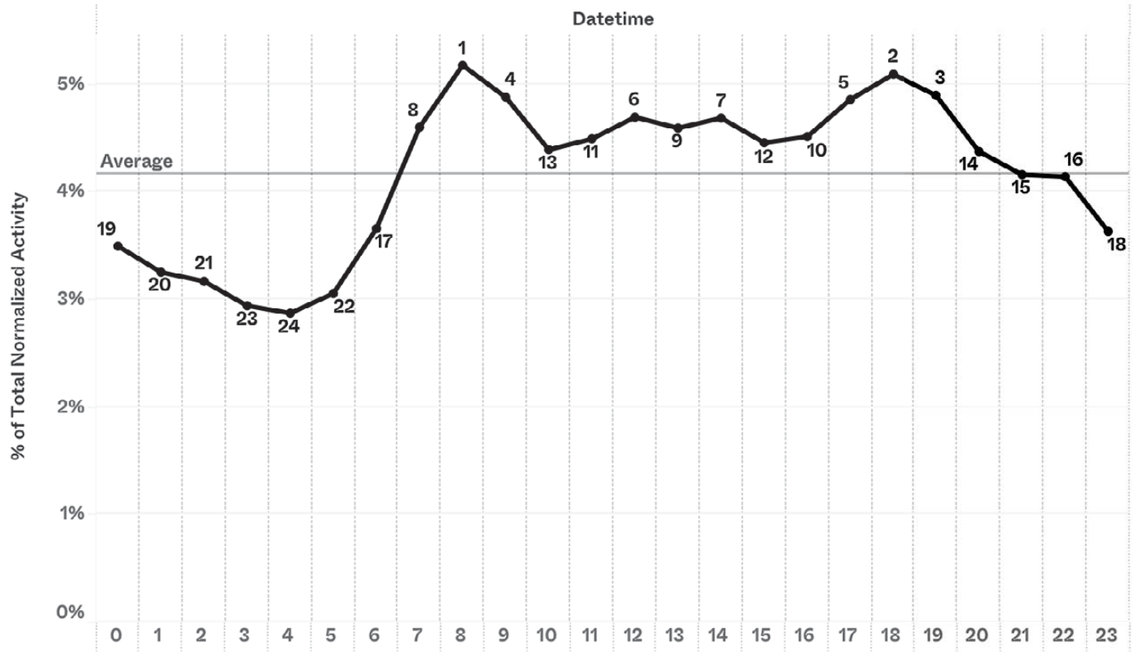
Address	Name	Precinct	
Macfarlan St Car Park	Macfarlan St Car Park	Forest Hill	1
9 Elizabeth Street SOUTH YARRA	Care Park - 9 Elizabeth Street, South Ya..	South Yarra	2
Car park 3-7 Darling Street SOUTH YARR..	Car park 3-7 Darling Street SOUTH YAR..	Forest Hill	3
Car park 3-5 Princes Close PRAHRAN	Car park 3-5 Princes Close PRAHRAN	Prahan	4
Surrey Road Car Park	Surrey Road Car Park	Forest Hill	5
8-14 King Street PRAHRAN	Car Park,parking	Prahan	6
Car park 28 Chapel Street WINDSOR	Parking	Windsor	7
Caroline St Car Park	Caroline St Car Park	Forest Hill	8
Car park 2-4 Market Street SOUTH YAR..	Car park 2-4 Market Street SOUTH YAR..	South Yarra	9
Car park 225-227 Chapel Street PRAHRA..	Car park 225-227 Chapel Street PRAHR..	Prahan	10
11-15 James Street WINDSOR	11-15 James Street WINDSOR	Windsor	11
7 Little Chapel Street PRAHRAN	7 Little Chapel Street PRAHRAN	Prahan	12
62 Arthur Street SOUTH YARRA	62 Arthur Street SOUTH YARRA	South Yarra	13
3 Bowling Green Street WINDSOR	3 Bowling Green Street WINDSOR	Windsor	14
Car park 13-17 Murphy Street SOUTH YA..	Car park 13-17 Murphy Street SOUTH Y..	Forest Hill	15
108 Commercial Road PRAHRAN	108 Commercial Road PRAHRAN	Prahan	16
99 Bendigo Street PRAHRAN	99 Bendigo Street PRAHRAN	Prahan	17
Powell St Car Park	Powell St Car Park	Forest Hill	18

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20% 22%

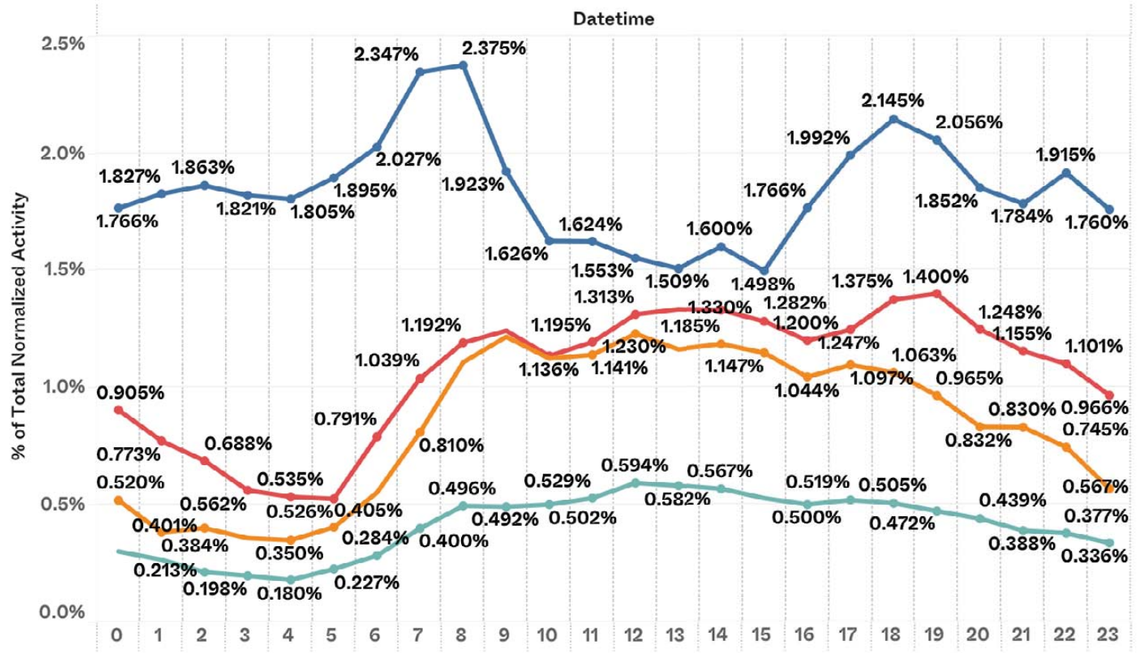
% of Total Normalized Activity

Car Parks

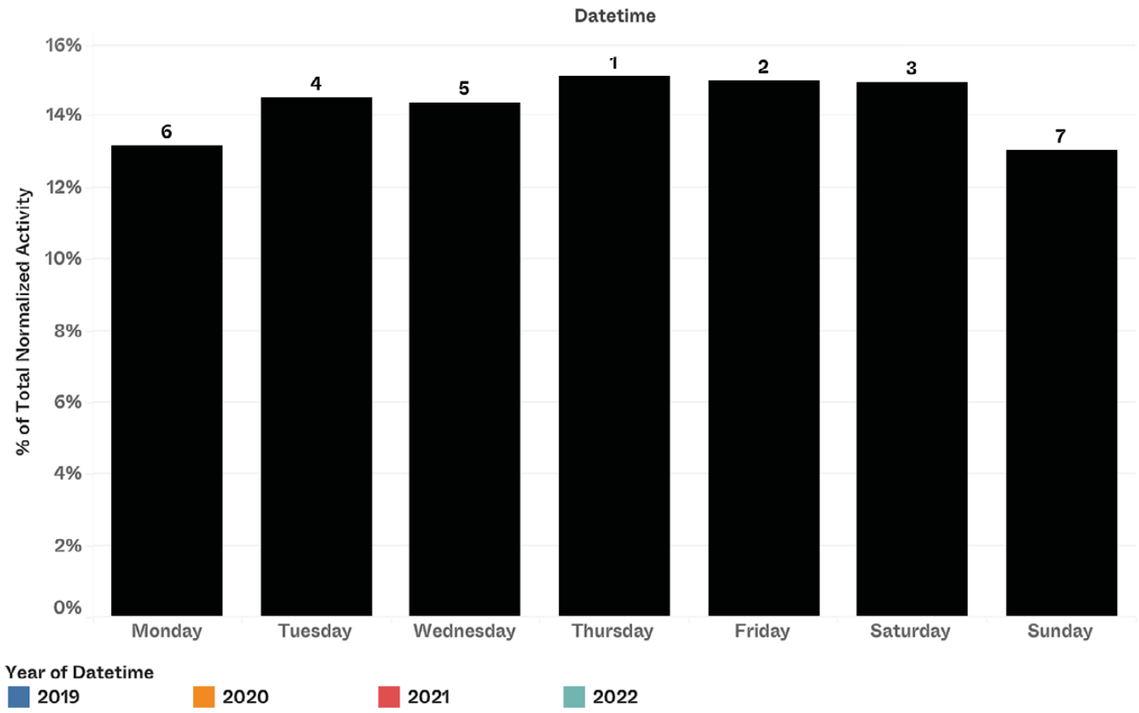
Car Parks Averaged Usage Curve - Multiyear Average



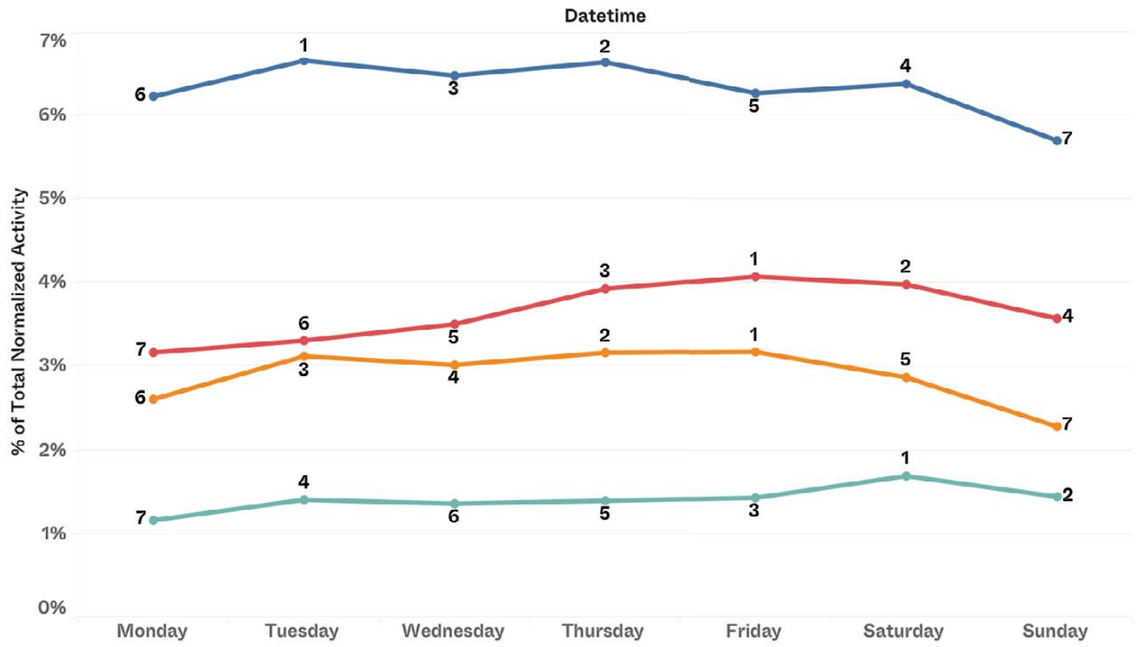
Car Parks Averaged Usage Curve by Hour and Year



Car Parks Averaged Usage Curve - Multiyear Average Day of Week Rank

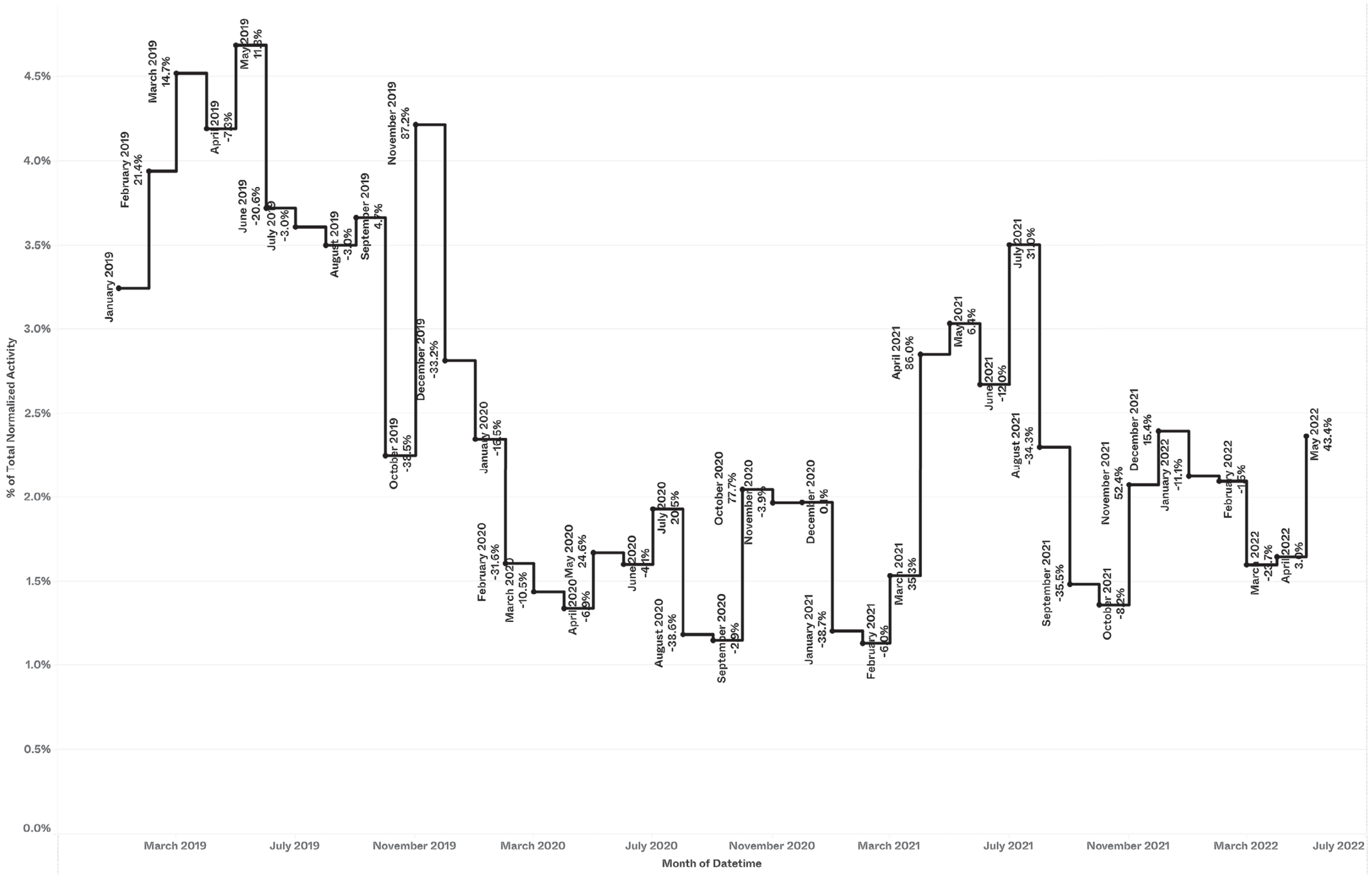


Car Parks Averaged Usage Curve Day of Week Rank by Year



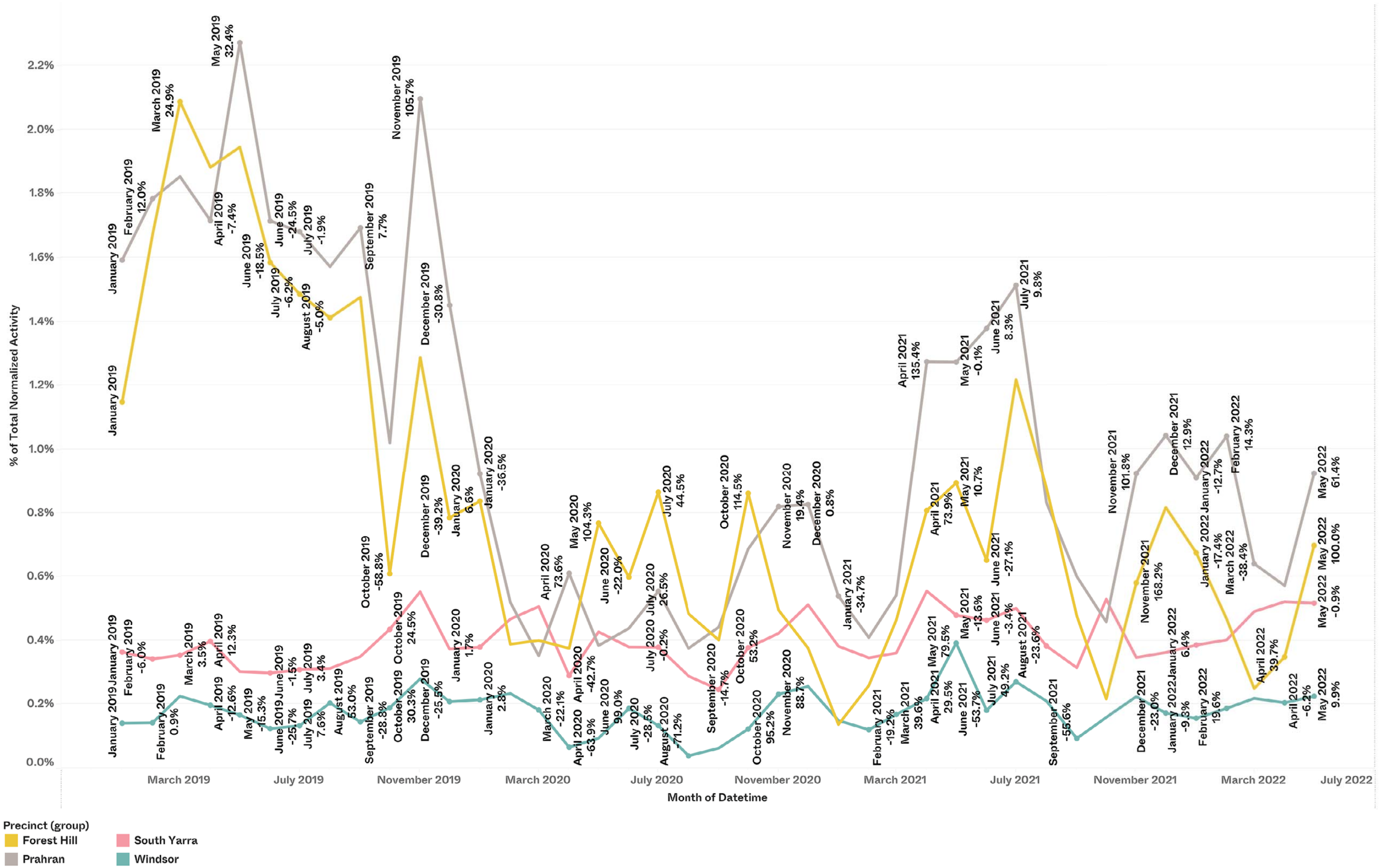
Car Parks

Car Park Usage 2019 - 2022 with Percent Chagne by Month



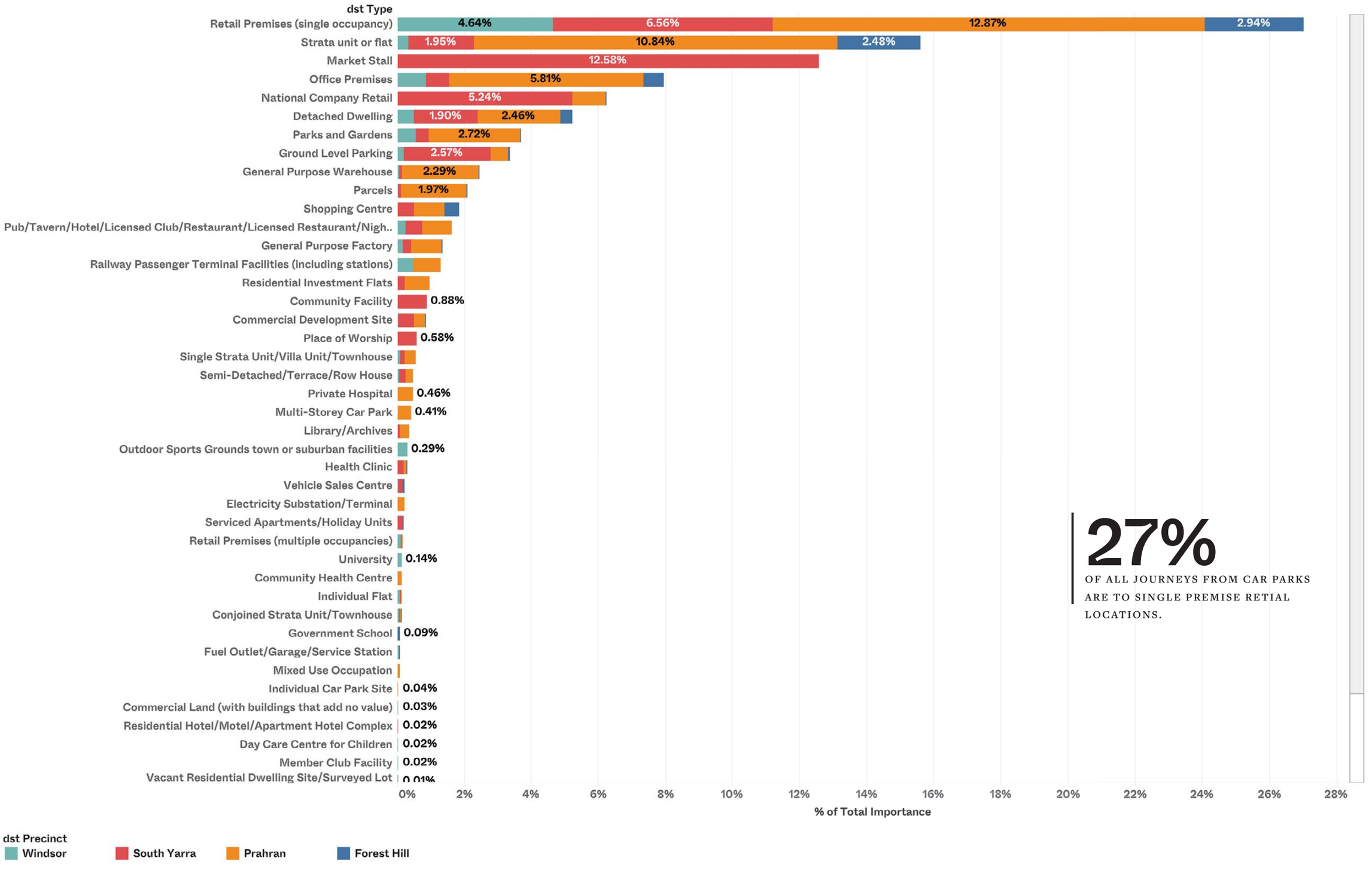
Car Parks

Car Park Usage 2019 - 2022 with Percent Chagne by Month and Precinct



Car Parks

Car Park Destinations

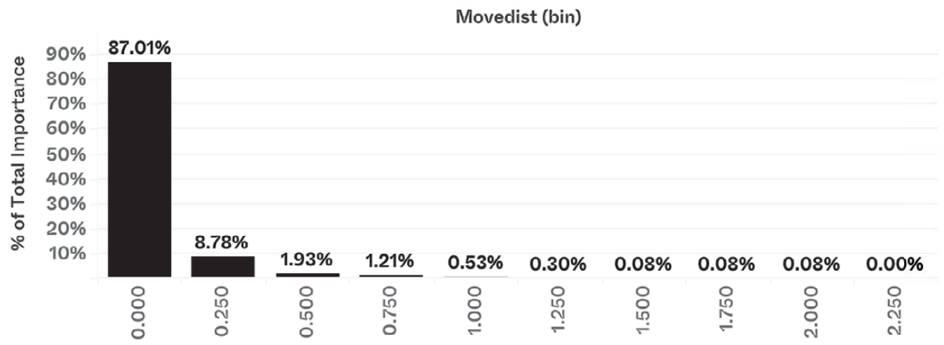


27%

OF ALL JOURNEYS FROM CAR PARKS ARE TO SINGLE PREMISE RETIAL LOCATIONS.

Car Parks

Trips from Car Parks - Distance Travelled



Destinations from Car Parks

dst Name	
Prahran markets	12.49%
ALDI,Fuji Mart Melbourne	5.24%
89/108 Greville Street PRAHRAN	2.67%
Minimalistic Prahran Apartment with Balcony	2.61%
Harper Bar,Huxtaburger	2.43%
Revolver Lane	1.97%
Jb-Hi-Fi,Dan Murphys Cellar,Jb-Hi-Fi	1.75%
Cafe Pixxina,MELBOURNE H2O SWIMMING CLUB,Princes Gardens	1.71%
Thrills,Better Choice,Oishi,Rebel Sport	1.66%
15/60 Arthur Street SOUTH YARRA	1.48%
Vacant	1.17%
Edge Training Prahran,Humming Puppy,Prahran Gym	1.15%
Train Station	1.14%
Vacant,Gorman,Amici,Handworks Nouveau Paperie,Vacant	1.08%
Car park 2-4 Market Street SOUTH YARRA	1.06%
Michael Sharp Legal,SENSE PRODUCTS MASSAGE CLINIC,Trumble Szanto	0.99%
Grattan Gardens	0.98%
Veronika Maine,Laser Clinics Australia,Kaya,Eb Games,Wittner Shoes,Optus,CUE,AN..	0.90%
South Yarra Housing Estate Outdoor Gym,South Yarra Preschool	0.88%
90 Greville Street PRAHRAN	0.84%
1-5 Little Chapel Street PRAHRAN	0.81%
Sam Hibbins MP,Wholesale Beads,Dominos,Sam Hibbins MP	0.80%
Hawker Hall	0.80%
510/6 Murphy Street SOUTH YARRA	0.79%
Care Park - 9 Elizabeth Street, South Yarra,Claringbold's Seafoods,Prahran Market Pa..	0.77%
Vision	0.74%
12-16 Cecil Place PRAHRAN	0.73%
Casa Nom,Brother Wolf	0.73%
401/8 Murphy Street SOUTH YARRA	0.66%
Next Practice,Urban Express,Vacant,Pizza Hub,Pisces Flower,Next Practice	0.65%
102/25 King Street PRAHRAN	0.64%
Eurotrash,Mancini'S Hair,Jane Doe,Chapel St Bazar Antiques	0.57%

Trips from Car Parks - Distance Travelled to Destination Type

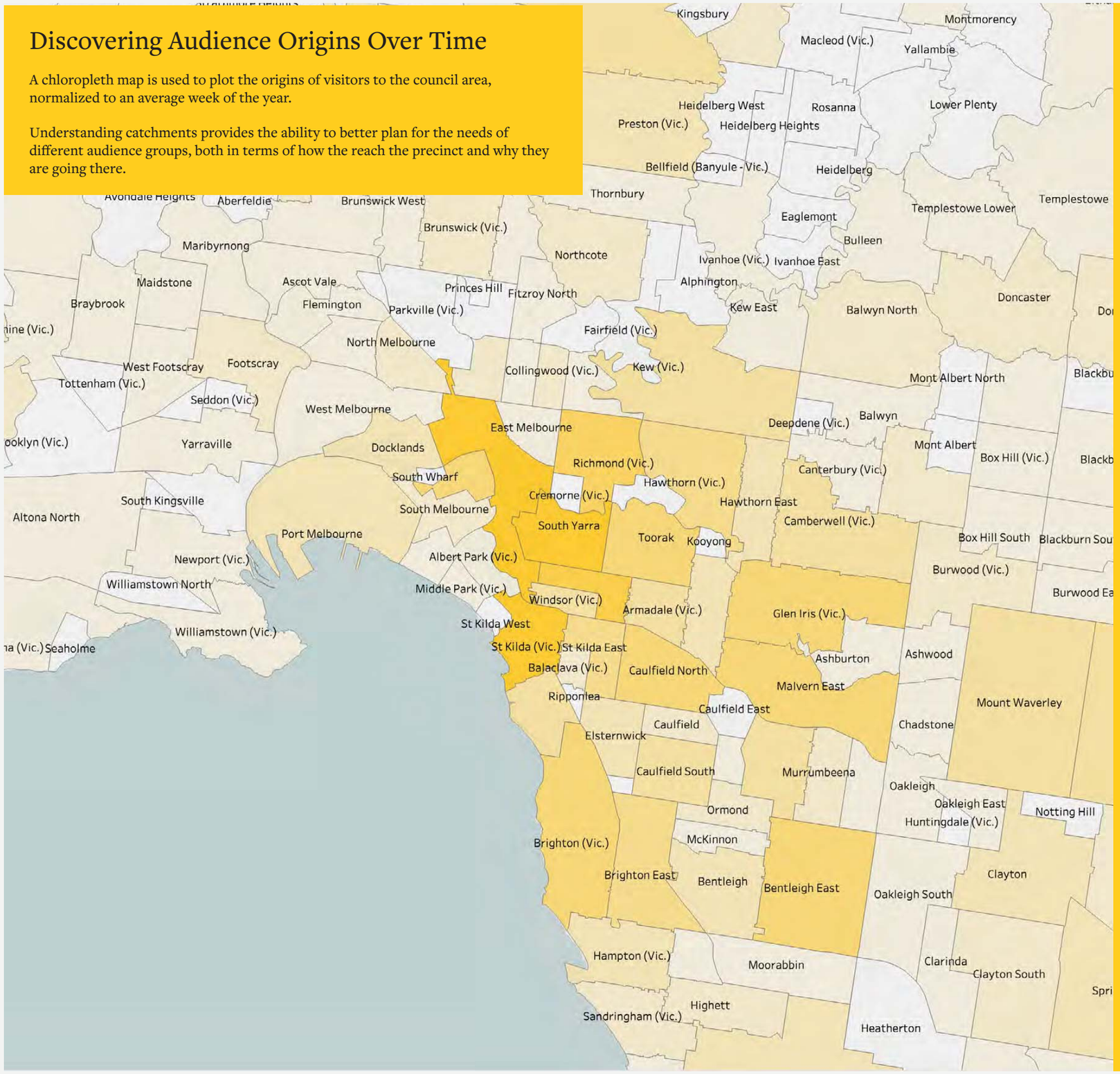
	Movedist (bin)								
dst Type	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000
Retail Premises (single occupancy)	26.51%	28.65%	32.80%	31.29%	35.20%	39.92%	42.19%	46.48%	55.22%
Strata unit or flat	16.16%	10.80%	16.43%	11.18%	14.57%	11.46%	17.19%	12.68%	7.46%
Market Stall	14.30%	1.18%	0.98%	0.68%	0.67%	0.40%			
Office Premises	7.89%	8.49%	7.45%	8.84%	8.52%	6.32%	6.25%	18.31%	
National Company Retail	6.64%	4.69%	0.86%	1.46%	2.47%	1.58%			7.46%
Detached Dwelling	5.53%	3.09%	3.97%	3.11%	3.59%	0.79%		4.23%	
Parks and Gardens	3.43%	7.18%	1.53%	1.36%	2.24%	0.79%			
Ground Level Parking	3.62%	1.56%	1.16%	2.53%	0.90%	1.19%		4.23%	
General Purpose Warehouse	2.64%	1.21%	1.04%	0.97%	0.67%	1.19%			
Parcels	2.29%	0.12%	2.75%	1.17%		1.58%	1.56%		
Shopping Centre	0.88%	6.38%	8.80%	14.87%	13.45%	19.37%	6.25%	8.45%	16.42%
Pub/Tavern/Hotel/Licensed Club/Restaurant/Licensed Re..	1.61%	1.79%	1.22%	1.75%	2.02%	1.98%			1.49%
General Purpose Factory	1.11%	3.54%	1.47%	1.46%	0.45%	1.19%	1.56%		
Railway Passenger Terminal Facilities (including stations)	1.12%	1.17%	5.01%	9.82%	2.47%				
Residential Investment Flats	0.97%	0.91%	1.53%	0.10%	0.22%	0.79%			
Community Facility	0.17%	7.80%	2.02%	0.29%	0.67%				
Commercial Development Site	0.62%	2.52%	2.87%	0.58%	1.79%	1.98%	4.69%		
Place of Worship	0.62%	0.38%	0.24%	0.19%					
Single Strata Unit/Villa Unit/Townhouse	0.58%	0.31%	0.98%	0.97%	0.22%				
Semi-Detached/Terrace/Row House	0.46%	0.55%	0.61%						
Private Hospital	0.43%	0.82%	0.43%	0.10%					
Multi-Storey Car Park	0.45%	0.22%	0.18%						
Library/Archives	0.26%	0.59%	1.34%	2.14%	2.69%	0.79%		1.41%	
Outdoor Sports Grounds town or suburban facilities	0.31%		0.49%		1.35%				
Health Clinic	0.24%	0.62%	0.55%			0.40%	1.56%		
Vehicle Sales Centre	0.06%	1.72%	0.24%	1.36%	0.22%	0.79%			
Electricity Substation/Terminal	0.24%	0.07%							
Serviced Apartments/Holiday Units	0.19%	0.04%	0.24%	0.19%					
Retail Premises (multiple occupancies)	0.15%	0.07%	0.37%	0.10%	0.22%				
University	0.02%	1.30%		0.78%					
Community Health Centre	0.13%	0.30%		0.10%					
Individual Flat	0.09%	0.17%	0.55%	0.19%	0.45%		3.13%		
Conjoined Strata Unit/Townhouse	0.08%	0.23%	0.37%	0.10%					
Fuel Outlet/Garage/Service Station	0.03%	0.17%	0.49%	1.46%	0.90%	3.95%		4.23%	4.48%
Government School		0.51%	0.18%		3.81%	2.37%	15.63%		2.99%
Mixed Use Occupation	0.07%	0.12%	0.18%	0.10%					
Individual Car Park Site	0.00%	0.38%							
Commercial Land (with buildings that add no value)	0.04%								
Residential Hotel/Motel/Apartment Hotel Complex		0.12%	0.43%	0.10%					
Day Care Centre for Children	0.02%								
Member Club Facility	0.00%	0.12%	0.06%	0.19%					
Vacant Residential Dwelling Site/Surveyed Lot	0.01%	0.04%		0.19%	0.22%				
Halls and Service Clubrooms		0.03%	0.18%	0.10%					
Boarding House		0.03%		0.19%		0.79%			
Fire Station Facility	0.00%					0.40%			1.49%
Low Rise Office Building									2.99%
Guest Lodge/Back Packers/Bunkhouse/Hostel	0.00%								
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

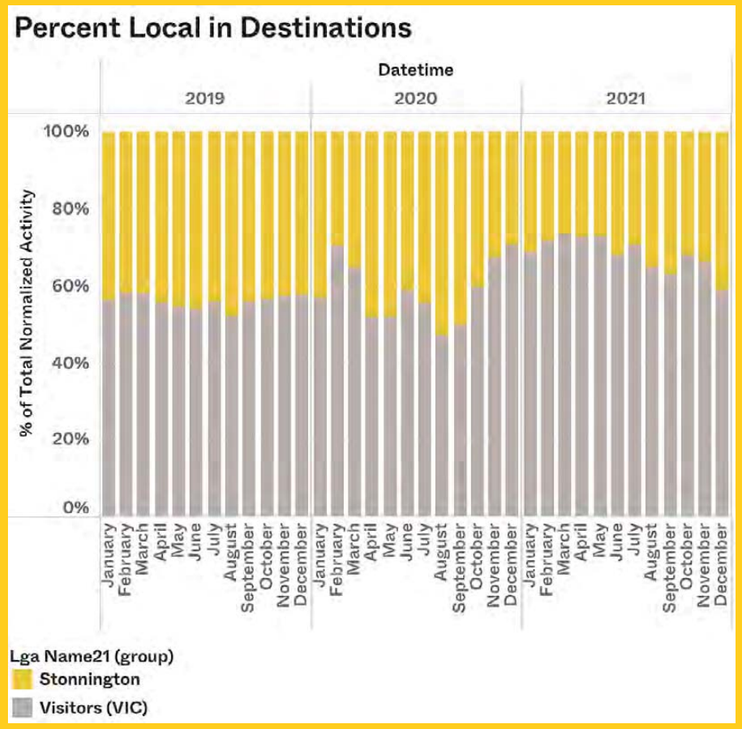
Understanding Catchments

Discovering Audience Origins Over Time

A chloropleth map is used to plot the origins of visitors to the council area, normalized to an average week of the year.

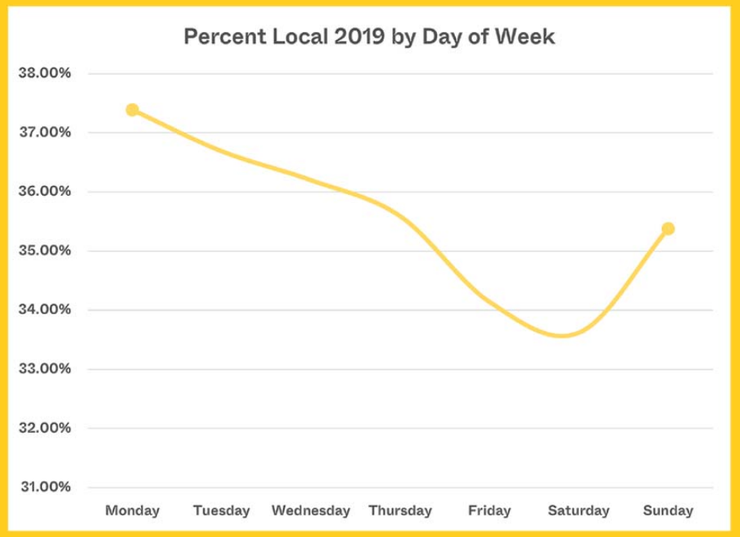
Understanding catchments provides the ability to better plan for the needs of different audience groups, both in terms of how the reach the precinct and why they are going there.





Percent of Audience by Month

The percent of visitors are shown for the 2019 pre pandemic baseline by month.



Percent of Audience by Weekday

The percent of Study Area visitors are shown for the 2019 pre pandemic baseline by weekday.

There are more non locals in the area on weekends vs weekdays.

Key Insights
Audience Origins

28%

OF ALL ACTIVITY IN THE PRECINCT IS GENERATED BY LOCALS (INCLUDING DESTINATIONS AND MOVEMENT NETWORKS) BASED ON 4 YEARS OF CONTINUOUS DATA.

37%

OF ALL ACTIVITY IN THE PRECINCT IS GENERATED BY LOCALS (LIMITED TO DESTINATIONS) BASED ON 4 YEARS OF CONTINUOUS DATA.

Metric	Value	Insight
Precinct Average - Percent Local	28% - All Areas 37% - Destinations Only 25% - Movement Networks	63% of all end destination users in the precinct come from other LGA's within Victoria.
Precinct Average - Percent Residents by Weekend & Weekends in End Destinations	37% Local on Weekdays 38% Local on Weekends	The difference between weekdays shows that the precinct is highly dependent on outside council visitors.
Primary External LGA of origin	Port Phillip - 7% Glen Eira -5.3% Melbourne- 5.07% Moroondara - 3.4%	Competing offers in Port Phillip and Glen Eira may have a significant impact the centers economic resilience if these audiences no longer come.
Percent of Origins by State	Victoria 88.92% New South Wales 4.83% Queensland 2.95% South Australia 1.23% Western Australia 0.94% Tasmania 0.64% ACT 0.33% Northern Territory 0.15%	Victoria will likely remain the primary origin state in the coming decade.

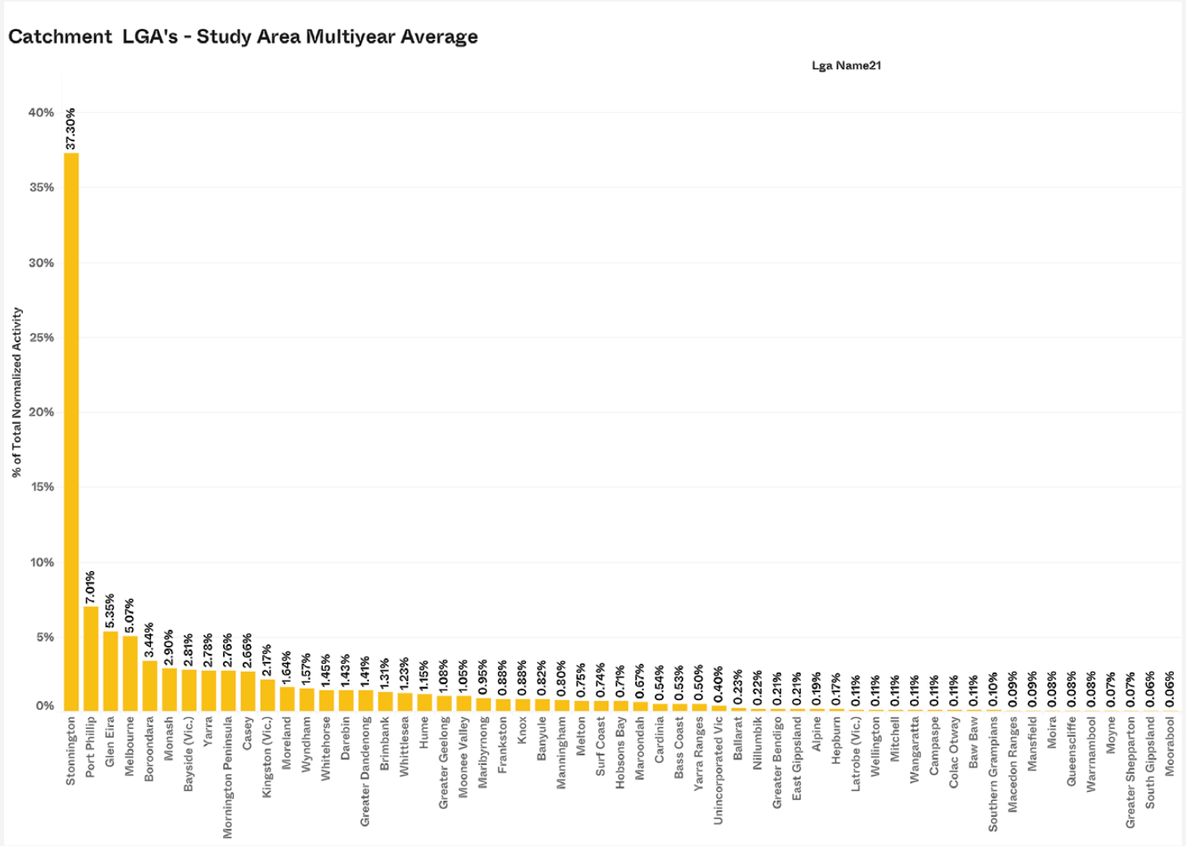


Image: Origins Rank by LGA for Activity in Land Parcels

Multi-year origins by LGA averaged across the study area are shown in the chart above. This averaged view reveals the distributions of origins for audiences seen in end destinations within the precinct. This model excludes activity in the road network.

Origins by Year and Month by LGA

Catchment LGA's - Study Area Multiyear Average

| | Datetime | | |

Understanding Parcel Footfall

Ranking Parcels by Total Footfall

A parcel demand map is used to index buildings across the study area. Bright, tall polygons represent the most visited locations over time. Dark red, low polygons are buildings with low footfall.

Precinct Usage by Type and Category

Precinct	Type	Category 2	Sub category	
Forest Hill	General Purpose Factory	cafe	cafe	8,470
	Office Premises	Food & Beverage	Bakery	1,364
			Cafes and Restaurants	284
		Food & Beverage,Retail	Liquor,Hair/Beauty	1,138
	Retail Premises (single occupancy)	bakery	bakery	42,342
		Food & Beverage	Other Food	230,979
			Cafes and Restaurants	5,721
			Bar	547
			Take Away	213
		Retail,Food & Beverage	Giftware,Cafes and Resta..	3,372
			Optometrist,Cafes and R..	970
	Strata unit or flat	bakery	bakery	2,962
		cafe	cafe	9,634
		restaurant	restaurant	61,299
Prahran	Commercial Development..	cafe	cafe	4,634
	Detached Dwelling	restaurant	restaurant	270
	General Purpose Factory	bakery	bakery	380
	General Purpose Wareho..	cafe	cafe	281
	Individual Car Park Site	Other,Fashion,Retail,Foo..	Art Gallery,Bridalwear,Ac..	9,948
	Individual Flat	Food & Beverage	Cafes and Restaurants	309
	Mixed Use Occupation	Food & Beverage,Retail	Cafes and Restaurants,H..	875
	National Company Retail	Food & Beverage	Liquor	4,389
	Office Premises	Fashion,Food & Beverage	Jeaneries/Streetwear/Su..	1,335
		Fashion,Food & Beverage..	Jeaneries/Streetwear/Su..	16,456
		Food & Beverage,Retail	Bar,Footwear	2,962
		Retail,Food & Beverage	Accessories/Costume Je..	2,096
	Pub/Tavern/Hotel/ Licensed Club/ Restaurant/Licensed Restaurant/Nightclub	Food & Beverage	Cafes and Restaurants	3,921
			Pub	793
			Bar	178
		Pub/Tavern/Hotel/Licens..	Pub/Tavern/Hotel/Licens..	2,015
	Retail Premises (single occupancy)	Accommodation,Food & ..	Accommodation - Hotel,..	9,464
		cafe	cafe	1,617
		Fashion,Food & Beverage	Apparel Mens,Take Away	422
		Food & Beverage	Cafes and Restaurants	20,275
			Bar	2,862
			Other Food	2,162
			Cafes and Restaurants,Ta..	1,296
			Take Away	1,246
			Bakery	1,090
			Liquor	343
		Food & Beverage,Fashion	Take Away,Apparel,Ladies	602
Windsor	General Purpose Factory	Food & Beverage	Bakery	1,196
		restaurant	restaurant	566
	Individual Flat	Food & Beverage	Cafes and Restaurants	637
	Office Premises	Food & Beverage	Cafes and Restaurants	995
			Bar	498
			Other Food	449
			Bar,Cafes and Restaurants	211
		Food & Beverage,Retail	Cafes and Restaurants,H..	650
	Pub/Tavern/Hotel/ Licensed Club/ Restaurant/Licensed Restaurant/Nightclub	Food & Beverage	Pub	4,160
			Liquor	2,665
		Food & Beverage,Retail	Pub,Other Retail Services	3,757
		Pub/Tavern/Hotel/Licens..	Pub/Tavern/Hotel/Licens..	2,458
	Retail Premises (multiple ..	Food & Beverage	Cafes and Restaurants	664
	Retail Premises (single occupancy)	bakery	bakery	1,483
		Food & Beverage	Cafes and Restaurants	21,437
			Cafes and Restaurants,Bar	3,785
			Bar,Cafes and Restaurants	3,417
			Bar	3,368
			Take Away	2,834
			Cafes and Restaurants,O..	1,047
			Take Away,Cafes and Res..	769
			Liquor	289
			Bakery	130
		Food & Beverage,Fashion	Cafes and Restaurants,Je..	370
		Food & Beverage,Retail	Cafes and Restaurants,O..	1,211
			Bakery,Other Retail Servi..	759
		Retail,Food & Beverage	Electrical/Communicatio..	243
	Single Strata Unit/Villa U..	Food & Beverage	Cafes and Restaurants	2,509
	Strata unit or flat	Food & Beverage	Cafes and Restaurants	6,754
		Food & Beverage,Retail	Cafes and Restaurants,H..	2,938
			Take Away,Other Food,H..	2,403

0K 50K 100K 150K 200K 250K
Normalized Activity

			Take Away	381
		Food & Beverage,Fashion	Liquor,Cafes and Restaur..	3,762
		restaurant	restaurant	339
		Retail,Food & Beverage	Other Retail Services,Tak..	1,343
			Other Retail Services,Caf..	1,337
			Music/Video/Games,Opt..	1,034
			Hair/Beauty,Bar	366
		Retail,Food & Beverage,F..	Footwear,Cafes and Rest..	2,417
		Retail,Food & Beverage,V..	Hair/Beauty,Bar,Homewa..	1,844
Windsor	General Purpose Factory	Food & Beverage	Bakery	1,196

Place Intelligence®

Understanding Parcel Footfall

Ranking Parcels by Total Footfall

A parcel demand map is used to index buildings across the study area. Bright, tall polygons represent the most visited locations over time. Dark red, low polygons are buildings with low footfall.

*Graphic based on 2019 footfall

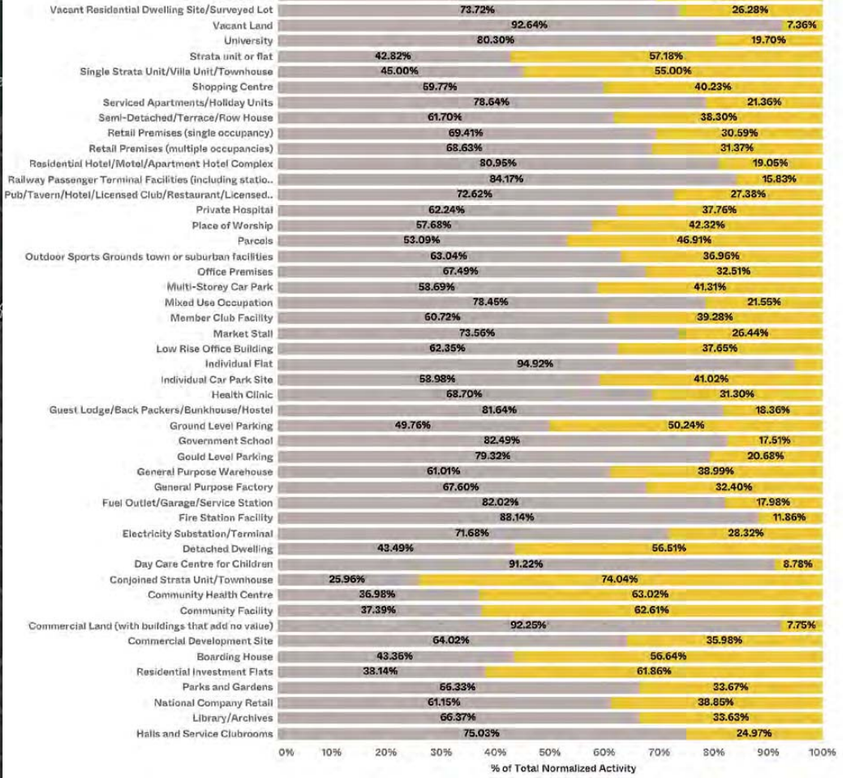
Precinct Usage by Type and Category

Precinct	Type	Category 2	Sub category	Normalized Activity
Windsor	General Purpose Factory	Food & Beverage	Bakery	1,196
		restaurant	restaurant	566
	Individual Flat	Food & Beverage	Cafes and Restaurants	637
	Office Premises	Food & Beverage	Cafes and Restaurants	995
			Bar	498
			Other Food	449
			Bar,Cafes and Restaurants	211
		Food & Beverage,Retail	Cafes and Restaurants,H..	650
	Pub/Tavern/Hotel/ Licensed Club/ Restaurant/Licensed Restaurant/Nightclub	Food & Beverage	Pub	4,160
			Liquor	2,665
		Food & Beverage,Retail	Pub,Other Retail Services	3,757
		Pub/Tavern/Hotel/Licens..	Pub/Tavern/Hotel/Licens..	2,458
	Retail Premises (multiple ..	Food & Beverage	Cafes and Restaurants	664
	Retail Premises (single occupancy)	bakery	bakery	1,483
		Food & Beverage	Cafes and Restaurants	21,437
			Cafes and Restaurants,Bar	3,785
			Bar,Cafes and Restaurants	3,417
			Bar	3,368
			Take Away	2,834
			Cafes and Restaurants,O..	1,047
			Take Away,Cafes and Res..	769
			Liquor	289
			Bakery	130
		Food & Beverage,Fashion	Cafes and Restaurants,Je..	370
		Food & Beverage,Retail	Cafes and Restaurants,O..	1,211
			Bakery,Other Retail Servi..	759
		Retail,Food & Beverage	Electrical/Communicatio..	243
	Single Strata Unit/Villa U..	Food & Beverage	Cafes and Restaurants	2,509
	Strata unit or flat	Food & Beverage	Cafes and Restaurants	6,754
		Food & Beverage,Retail	Cafes and Restaurants,H..	2,938
			Take Away,Other Food,H..	2,403

0K 50K 100K 150K 200K 250K

Normalized Activity

Percent Local by Type



Place Intelligence

Total Activity by Place Name

Precicnt Activity by Place Name

Name	
South Yarra Housing Estate Outdoor Gym,South Yarra Preschool	6.371%
South Yarra Train Station	5.727%
Fairbairn Boxing and Fitness,Melbourne High School,The Unicorn Cl..	3.499%
Grilled,Hunky Dory,Frozen,Middle South East,Amazing Accommodat..	3.318%
Vacant,Vacant,1R Gym,Amity Property Group,HSBC, ,Vacant,Vacan..	1.710%
Harper Bar,Huxtaburger	1.682%
Vacant,Vacant,Soda Rock Diner,Boost Juice,Cotton On Fashion,Vac..	1.559%
Hello Sam South Yarra	1.519%
Schnitz,Koko Black,Australian Alpaca Connection,Designer Outlet,V..	1.369%
House of Lulu White	1.304%
Veronika Maine,Laser Clinics Australia,Kaya,Eb Games,Wittner Sho..	1.279%
89/8 Perth Street PRAHRAN	1.262%
Pro Photo Lab	1.252%
Urban Provedore,Anne Gallery,Clear Skin Care South Yarra,Yi Fang	1.238%
90 Greville Street PRAHRAN	1.087%
Claremont Supermarket (Asian),Gotcha Fresh Tea - South Yarra,The..	1.085%
Manor House,Cinze & Prodigal,E*Hive Gallery	1.060%
Fuumi Baker	1.050%
709 Chapel Street SOUTH YARRA	0.957%
Sam Hibbins MP,Wholesale Beads,Dominos,Sam Hibbins MP	0.937%
167 Peel Street WINDSOR	0.922%
Anytime Fitness South Yarra,Axis Consulting Group,Corporate Keys,..	0.894%
Anatolia Gozleme Kitchen,Aroma Bakery Cafe,Clara Flowers Melbou..	0.868%
Cafe Pixxina,MELBOURNE H2O SWIMMING CLUB,Princes Gardens	0.783%
Shell	0.646%
Surrey Park	0.643%
Dermaq Aesthetics,Dr. Aileen Alegado,Melville Lawyers,ONYX Creat..	0.639%
89/108 Greville Street PRAHRAN	0.610%
Yarra Medical & Cosmetic Centre,Soak Bar,Maven Dental	0.567%
Grattan Gardens	0.564%
516/42 Porter Street PRAHRAN	0.510%
Dineamic Foodstore,Bottle House,Emmanuel Ammo,Bank Of Melbou..	0.498%
Lululemon,Vacant,Melbourne Red Sparrow,Vacant,Vacant,Beauty B..	0.492%
Ashbrooke Anti-Ageing & Cosmetic Medicine	0.483%
Adrian Harper Naturopathy,Canine Kinetics,CLIFTON STREET MAR..	0.465%
Suan,Cose Ipanema,Cose Ipanema,Kings Domain,Save Our Souls,La ..	0.464%
48 Caroline Street SOUTH YARRA	0.456%
Prahran Square,Prahran Square Electric Car Parking,Prahran Square..	0.453%
Tatts,Australia Post	0.450%
26-34 Ellis Street SOUTH YARRA	0.432%
17A Stables Lane SOUTH YARRA	0.418%
Thrills,Better Choice,Oishi,Rebel Sport	0.408%
102/25 King Street PRAHRAN	0.393%
Development Site	0.393%
Appleton Matt,Bell Chris,Down Stuart DR,Dr Andrew Ball,Dr Trefor ..	0.384%
Spoon Bill,Vacant,The Olsen	0.382%
2/72-76 High Street WINDSOR	0.370%

Precicnt Activity by Place Name

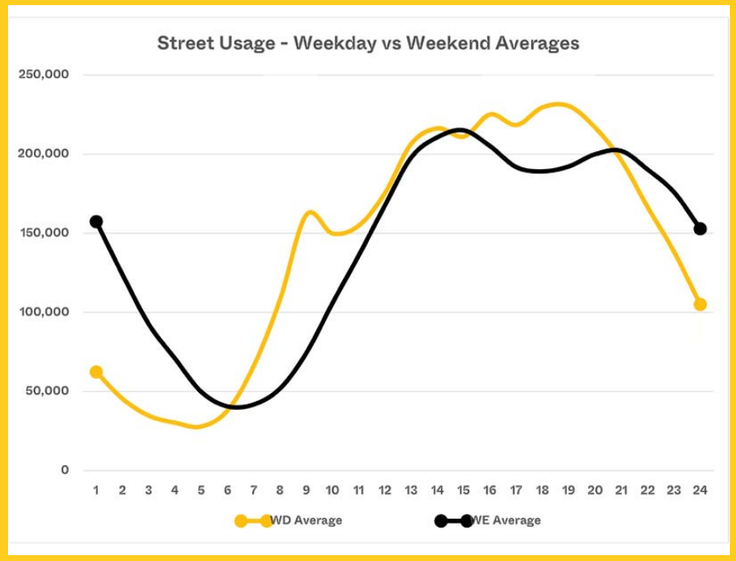
Name	
Spoon Bill,Vacant,The Olsen	0.382%
2/72-76 High Street WINDSOR	0.370%
302/20 Garden Street SOUTH YARRA	0.370%
2601/18 Claremont Street SOUTH YARRA	0.359%
Charter Towers Financial Services,Sands Hotel by Nightcap Plus	0.335%
Orangetheory Fitness	0.316%
6/16 Porter Street PRAHRAN	0.302%
CATAPULT ACCOUNTING SERVICES,DMA Clinical Pilates & Physio..	0.295%
Vacant, ,	0.290%
MB Consulting,No Time For Grace,Suds Laundrette	0.278%
District Apartment Hotels South Yarra	0.276%
Arian Young,AssetManager Pro,Clinic of Cosmetic Medicine,Cosmet..	0.275%
Hotel Claremont,Siricco House Of Leather,Chemist Warehouse,Che..	0.272%
8 Claremont Street SOUTH YARRA	0.270%
Chapo's Deli,Dentist Deneral Cosmetic Dentistry,Max Biocare Clinic,..	0.270%
347 Toorak Road SOUTH YARRA	0.267%
Australian Clinical Labs,Australian Vein Clinics,cosmetic surgery and..	0.265%
51A Porter Street PRAHRAN	0.256%
Modern Chic Claremont - Rejuvenate Stays,Urban Eden in South Yar..	0.255%
Macfarlan St Car Park	0.255%
502/101 River Street SOUTH YARRA	0.254%
1/77 River Street SOUTH YARRA	0.249%
Cignall,South Yarra Barber,Lord of the Fries,Medusa Espresso,Guzm..	0.248%
Fezilla,Jane Hill,Jane Hill,Plant Space,Chronic Fix,Wink Wink,In.cube..	0.247%
Revolver Lane	0.242%
Good Bean Espresso Bar - South Yarra,Punthill Apartment Hotels | S..	0.239%
The Cullen,Hu Tong Restaurant & Bar,Golda,GMH	0.234%
Findlay Arthur Phillips,Threadgold Plummer Hood PTY Ltd.,Top300 ..	0.234%
Hawker Hall	0.231%
Kin Vietnamese Restaurant,TREK Bikes,Quality Fresh Products,Cas..	0.223%
Dresden,Vacant,Vacant,Barber Time,Vacant	0.223%
1/8 Porter Street PRAHRAN	0.221%
Functional Fitness Facility	0.221%
8/16 Essex Street PRAHRAN	0.220%
Vacant,Gorman,Amici,Handworks Nouveau Paperie,Vacant	0.219%
Quest Prahran	0.218%
Woolworths Prahran	0.218%
1104/661 Chapel Street SOUTH YARRA	0.217%
6 James Street WINDSOR	0.216%
Bubble Space	0.210%
Vacant,Angle	0.205%
La Tienda Food,Vacant	0.204%
274 High Street WINDSOR	0.204%
Coles	0.204%
4S/29 Claremont Street SOUTH YARRA	0.203%
Gardens,Inauro Wealth Management	0.200%
112 Charles Street PRAHRAN	0.200%

An external spreadsheet is provided with activity counts for off-line usage.

Understanding Road Usage

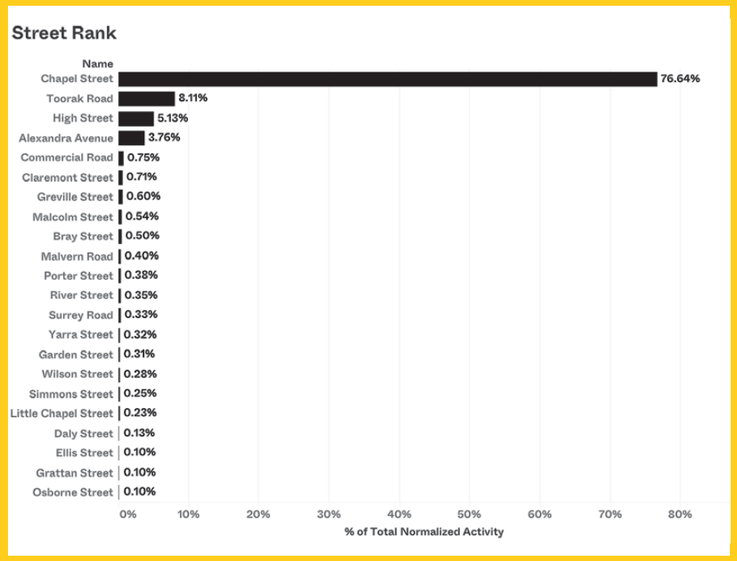
Ranking Street and Street Segments

A road segment model is used to identify the most and least used street segments over time. The brighter the colour and higher the extrusion, the greater the amount of use.



Total Activity in Movement Networks by Hour

The averaged sum of all activity of in the study area road network are shown by hour of day type.



The Most Uses Streets

Activity in street networks is used to index the total usage of each street in the model. Chapel Street is the most used and accounts for 76% of all street based activity including footpaths.

Key Insights About Roads

32%

OF ALL USAGE IN HIGHSTREET IS GENERATED BY COUNCIL LOCALS, THE HIGHEST RATIO IN ANY OF THE TOP 4 MOST USED ROADS.

Metric	Value	Insight
Number of Roads	180	Out of 180 roads in the model, 91% of all activity occurs in only 4x streets.
Percent of Total Precinct Activity in Roads	77%	Road based activity accounts for 77% of all human movement in the precinct. Use this value to set precinct wide reductions or track increases over time.
Percent of Usage by Residents	26% of all trips	Local residents account for less than half of the demand in the study area movement network.
Percent of Usage by Visitors	74% of all trips	External residents are the main users of the study are movement network.
Most Used Road	Chapel St - 76% of all trips	Chapel St is one of the most critical pieces of network infrastructure in the city centre.
Busiest Day of Week	Friday- 16% of all usage	The pm peak on Friday between 4pm and 8pm is the busiest window of usage in the city center road network.
AM, PM Peak Weekdays	8(AM) 5-6pm (PM)	Is the am and pm peak on weekday averaged over 3 years in all roads combined.

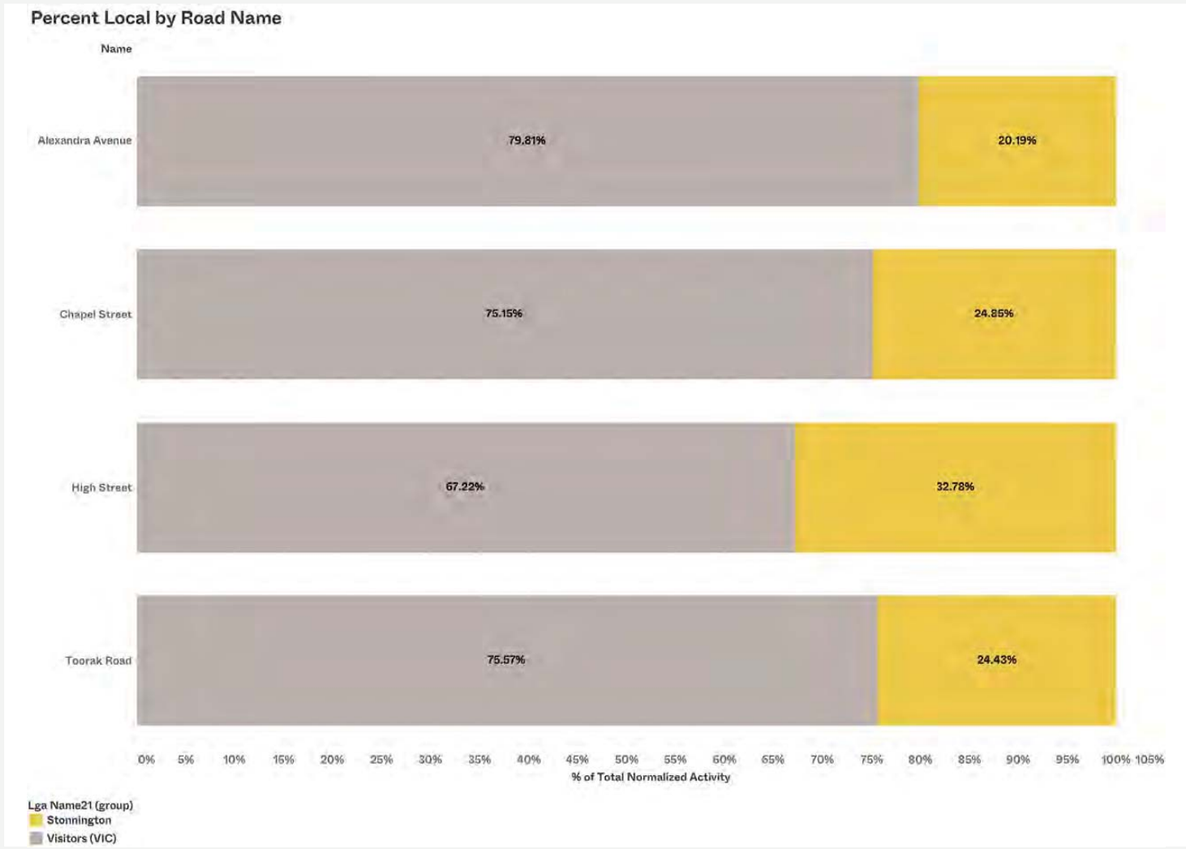


Image: Percent local by road name.

Street Networks in the Study Area

The study area is currently reliant on external audiences to support work and commerce within the precinct, with more than 70% of all activity coming from out of the council area.

There is a direct correlation between the level of activity in buildings and the number of trips in the street network. This indicates that the majority of out of council visitors rely on car trips to reach the precinct. Mode shift is a key issue that will enable council to release parking areas for conversion into higher use functions, particularly for land areas located within the city centre.

Understanding Dwell Time

Identifying Sticky Places with Dwell Time Maps

A polygon dwell time map is used to reveal where people spend more than 15 minutes occurs across study area. Bright, tall zones represent the most visited locations where people spend over 15 minutes. Dwell times are a key indicator of the places that people value.

Which Location Do People Dwell The Longest by Type

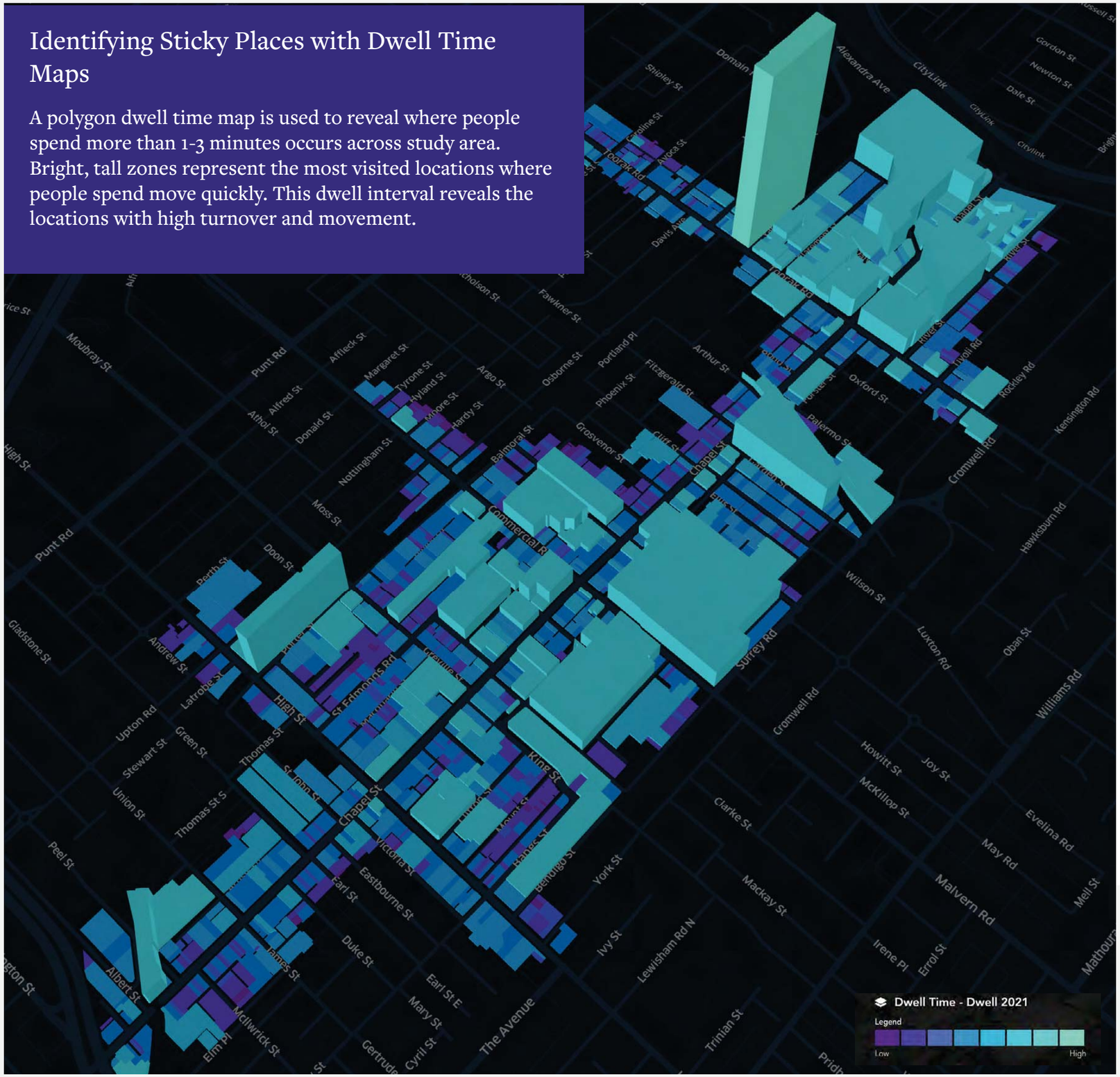
Places of High Dwell Times

The measure of how many people are observed in each location type exhibiting a dwell behavior of 31+ minutes is shown in the table above. This dwell interval represents places of high dwell time.

Understanding Dwell Time

Identifying Sticky Places with Dwell Time Maps

A polygon dwell time map is used to reveal where people spend more than 1-3 minutes occurs across study area. Bright, tall zones represent the most visited locations where people spend move quickly. This dwell interval reveals the locations with high turnover and movement.



In Which Location Do People Dwell The Least?

Name	
Train Station	Retail Premises (single occupancy)
90 Greville Street PRAHRAN	Railway Passenger Terminal Facilities (including stations)
Grilled,Hunky Dory,Frozen,Middle South East..	Shopping Centre
Vacant,Vacant,Soda Rock Diner,Boost Juice,C..	Shopping Centre
Fairbairn Boxing and Fitness,Melbourne High..	Government School
South Yarra Housing Estate Outdoor Gym,So..	Community Facility
Vacant,Vacant,1R Gym,Amity Property Group..	Strata unit or flat
Schnitz,Koko Black,Australian Alpaca Connec..	Shopping Centre
Veronika Maine,Laser Clinics Australia,Kaya,E..	Shopping Centre
167 Peel Street WINDSOR	Railway Passenger Terminal Facilities (including stations)
Anatolia Gozleme Kitchen,Aroma Bakery Cafe..	Market Stall
Prahran Square,Prahran Square Electric Car P..	Retail Premises (single occupancy)
Cafe Pixxina,MELBOURNE H2O SWIMMING CL..	Parks and Gardens
Shell	Fuel Outlet/Garage/Service Station
Pro Photo Lab	Office Premises
Care Park - 9 Elizabeth Street, South Yarra,Cl..	Ground Level Parking
House of Lulu White	Strata unit or flat
Grattan Gardens	Parks and Gardens
Development Site	Commercial Development Site
Hello Sam South Yarra	Strata unit or flat
Coles	National Company Retail
Ashbrooke Anti-Ageing & Cosmetic Medicine	Office Premises
Thrills,Better Choice,Oishi,Rebel Sport	Office Premises
Harper Bar,Huxtaburger	Strata unit or flat
Ghanda,Vacant,Platypus,Sportsgirl	Retail Premises (single occupancy)
Suan,Cose Ipanema,Cose Ipanema,Kings Do..	Retail Premises (single occupancy)
Dineamic Foodstore,Bottle House,Emmanuel ..	Retail Premises (single occupancy)
Urban Provedore,Anne Gallery,Clear Skin Car..	Retail Premises (single occupancy)
Woolworths Prahran	National Company Retail
Daqua,Politix,General Pants	Retail Premises (single occupancy)
Australian Clinical Labs,Australian Vein Clinic..	Strata unit or flat
Spoon Bill,Vacant,The Olsen	Retail Premises (single occupancy)
ALDI,Fuji Mart Melbourne	National Company Retail
Good Bean Espresso Bar - South Yarra,Punthi..	Strata unit or flat
Manor House,Cinze & Prodigal,E*Hive Gallery	Retail Premises (single occupancy)
709 Chapel Street SOUTH YARRA	Retail Premises (single occupancy)
Claremont Supermarket (Asian),Gotcha Fresh..	National Company Retail
Yarra Medical & Cosmetic Centre,Soak Bar,M..	Retail Premises (single occupancy)
Dan Murphy'S	National Company Retail
Tatts,Australia Post	Shopping Centre
Hotel Claremont,Siricco House Of Leather,Ch..	Retail Premises (single occupancy)
2601/18 Claremont Street SOUTH YARRA	Strata unit or flat
Sam Hibbins MP,Wholesale Beads,Dominos,S..	Strata unit or flat
Dermaq Aesthetics,Dr. Aileen Alegado,Melvill..	Vehicle Sales Centre
Car park 3-5 Princes Close PRAHRAN	Ground Level Parking
Surrey Park	Parcels
The Cullen,Hu Tong Restaurant & Bar,Golda,..	Retail Premises (single occupancy)
Country Road	Retail Premises (single occupancy)
Anytime Fitness South Yarra,Axis Consulting ..	Retail Premises (single occupancy)
Teamoo,Egg Station,Master Roll Vietnam,Dun..	Retail Premises (single occupancy)
Toorak/South Yarra Library	Library/Archives
Jb-Hi-Fi,Dan Murphys Cellar,Jb-Hi-Fi	Retail Premises (single occupancy)
Officeworks	Retail Premises (single occupancy)
102/25 King Street PRAHRAN	Residential Investment Flats
Council Office	Library/Archives
17A Stables Lane SOUTH YARRA	Single Strata Unit/Villa Unit/Townhouse
Chapo's Deli,Dentist Deneral Cosmetic Denti..	Retail Premises (single occupancy)
Fuumi Baker	Retail Premises (single occupancy)
Arian Young,AssetManager Pro,Clinic of Cos..	Office Premises

Places of High Footfall Turnover

The measure of how many people are observed in each location exhibiting a dwell behavior of 1-3 minutes is shown in the table above. This dwell interval represents places of movement.

Key Insights About Dwell Time

16 min

IS THE AVERAGE DWELL TIME IN COMMERCIAL AND RETAIL BUILDINGS IN THE CITY CENTRE

Metric	Value	Insight
Area Average Dwell Time per Location Visited (Buildings + Parks)	16 minutes	16 minutes is a significant dwell time and reflects that people remain more local than transient when visiting locations. Busy city centers such as the Sydney CBD have an average dwell time of under 8 minutes per location.
Leading Locations Types of Dwelling more than 10 minutes	Retail, Residential	As expected the major destination magnets are the leading locations for dwell times greater than 10 minutes.
Average time spent by Residents	13.78 minutes	Residents and visitors alike spend a significant amount of time on average in commercial shops and destination locations.
Average time spent by Visitors	17.3 minutes	
Dwell time in Summer (Average minutes spent) Indoors	21.2 minutes	Summer dwell times in indoor locations are higher than winter locations.
Dwell time in Winter (Average minutes spent) Indoors	12.6 minutes	
Most dwelled in location	Unit 4 167 Toorak Road	This location includes Grilled, Hunky Dory, Frozen, Middle South East, Amazing Accommodations, Harvest, Xynergy and the Realty Group

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This document has been prepared as a technical note for Stonnington Council for internal usage and for subject matter experts involved in Chapel Street project for council.

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