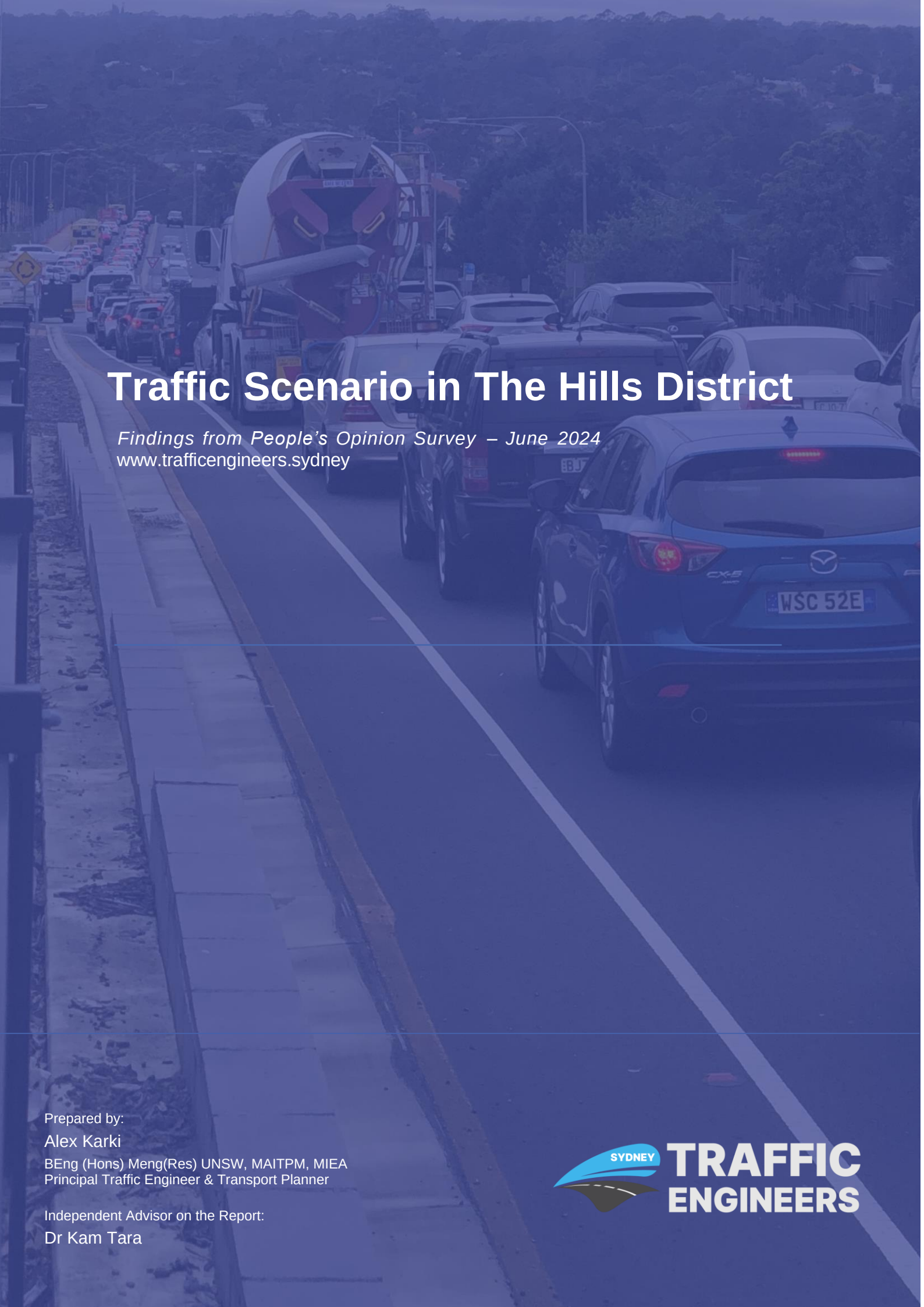

Traffic Scenario in The Hills District

Findings from People's Opinion Survey – June 2024

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Executive Summary

This report discusses the findings from a People's Opinion Survey which was circulated within the Kellyville Electorate – The Hills Shire in 2023. The survey included questions on the participants current travel situation and what changes could be made to improve the traffic conditions in The Hills District. A total of 758 participants responded in the survey. Some key findings of this report are:

- A high car ownership in The Hills District which is two motor vehicles servicing a family of three in an average household
- At least 42,000 vehicle trips generated by The Hills District each day, mostly during peak hours, which lead to excessive traffic congestion on the major arterials within The Hills District
- Windsor Road, Old Windsor Road, Samantha Riley Drive, Green Road have been predominantly identified as the worst roads in The Hills District by the participants due to much higher travel times, traffic congestion
- 48% of the participants report their commute travel times between 30-60 minutes with another 30 minutes having a commute time of at least 1-hour
- There is significant travel time variability on major arterials within The Hills District forcing people to alter their time of departures in order to avoid the peak rush
- 45% of the participants use the cheaper tolls routes to cut down their commute time
- 85% of the participants agreed to vote in favour of improved traffic conditions through infrastructure upgrade and policies. Changes desired include cheaper tolls, better roads, etc.

The issues identified in this report could be followed up by detailed investigations to resolve them and provide better road infrastructure and policy to the residents within The Hills Shire district.

1. Introduction

The Hills District which comes under the administration of The Hills Shire Council is located in the North-West region of the Sydney Metropolitan Area. The district, alongside neighbouring postcodes, has seen a rapid growth in the urban sprawl in the past decade. As a result, the rate of construction of residential and commercial establishments have continually outpaced transport infrastructural developments leading to day-to-day problems such as traffic congestion, extended peak hour traffic, loss of productivity and environmental concerns.

During the 2023 NSW state elections, the mandate within The Hills Shire emphasised improvement in traffic conditions in the form of infrastructure upgrade, toll relief, etc. The electorate results saw a swing of 12.1% in favour of the mandate which was significantly higher than the state average TPP swing of 3.7% (ABC, 2024)

A Peoples Opinion Survey was undertaken prior to NSW state elections to understand their views and opinions on the traffic situation within The Hills Shire district. This report presents the findings from the Peoples Opinion Survey which would assist policy makers and councils in identifying the pinch points, and other traffic issues faced by the residents within The Hills Shire district. The issues identified in this report could be followed up by detailed investigations to resolve them and provide better road infrastructure and policy to the residents within The Hills Shire district.

2. Traffic Demand

Table 1 shows some statistics for the Hills District which have been taken from the Australian Bureau of Statistics data (ABS, 2021).

Table 1: Statistics for The Hills District

Statistic	Value
Population	191,876
All private dwellings	64,041
Average number of people per household	3.1
Average number of motor vehicles per dwelling	2.1
Working population (15 years and above)	96,090
Using cars (driver or passenger)	37.3%
Using Public Transport	3.3%
Not working + Working from Home + Walk only	59.4%

The table indicates higher car ownership per household, i.e. an average dwelling owns two motor vehicles to service a family of three (mostly parents and a child). For example, while one of the cars is used for commute, the other could probably serve

school pickup/drop-off, shopping, etc. In comparison, ABS data reveals an average car ownership of 1 for an average family size of 2.1 across 177,715 private dwellings under the Sydney City and City South Statistical area (ABS 2021). The potential reasons behind such high car ownership could be mainly attributed to the lack of public transport infrastructure, especially for first and last-mile connections.

Looking further into the statistics, the total number of cars owned in the Hills District is around 135,0000 (64,041 * 2.1). Around 37% of the people use cars for travel to work as drivers which equates to approximately 36,000 (96,090 * 37.3%) cars. Furthermore, children pickups/drop-offs contribute to at least 9%, which equates to additional 5,000 vehicles (HTS, 2013). In other words, around 42,000 cars worth of traffic is generated by the dwellings in the Hills District every day especially during peak hours. In current scenario, this number is expected to be much higher as more workplaces shift towards back-to-office post-COVID which are not reflected in the latest ABS statistics.

A roadway capacity is defined as the maximum number of vehicles that a road can service during a given time and a given direction. Table 2 shows the capacity value of different road types which have been taken from the Austroads Guide to traffic Management (Austroads, 2021).

Table 2: Urban Roadway Capacity

Type of Road	Free Flow Speed (km/h)	Capacity (pcu/h/lane)
Divided and Undivided Roads	60	1,800
	70	1,900
	80	2,000
	90	2,100
Freeways	90	2,250

Table 3: Vehicles Serviced by Major Arterials in The Hills District

Road	Lanes per direction	Vehicles Serviced
Old Windsor Road	2	2*3*2000 = 12000
Samantha Riley Drive	2	2*3*2000 = 12000

Based on Table 2, the number of vehicles traversing some major arterials within the Hills District is shown in Table 3. The number of vehicles traversing correspond to the AM peak period between 6-9AM. While the numbers are high, the actual numbers are expected to be even higher as the numbers below do not include additional traffic generated from neighbouring postcodes (e.g. postcodes in Blacktown City Council). Hence, the above calculations demonstrate higher reliance on cars for travel (especially commute) is leading to major traffic congestion around The Hills District resulting in longer travel times, prolonged peak hours, etc.

3. Opinion Survey

A survey was circulated within the Kellyville Electorate – The Hills Shire in 2023 to gather their views and opinions on the traffic situation within the district. A total of 758 people responded to the survey. The survey comprised a mix of open-ended questions, Yes/No questions and participant details (optional). The average survey completion time was between 5-10 minutes. The survey was circulated among public through intercept surveys and putting the online survey link on social media platforms. Some questions asked in the survey which are analysed in this report were:

1. What is your worst road in The Hills?
2. How long does it take you to get to work?
3. Do you use the cheaper-tolls?
4. Would an improved change in traffic & infrastructure and toll relief influence your vote in the upcoming NSW March election?
5. What would you like to see changed?

4. Results

This section presents the findings from people's opinion survey for the analysed questions

4.1 Worst Road in The Hills District

The data provided by the participants was first cleaned prior to analysis such as removing blank responses, correcting for typos, replacing Rd by Road, etc. Figure 1 shows the word cloud which was created based on the cleaned responses. The larger font-size in Figure 1 corresponds to a majority of the responses received mentioning that keyword.

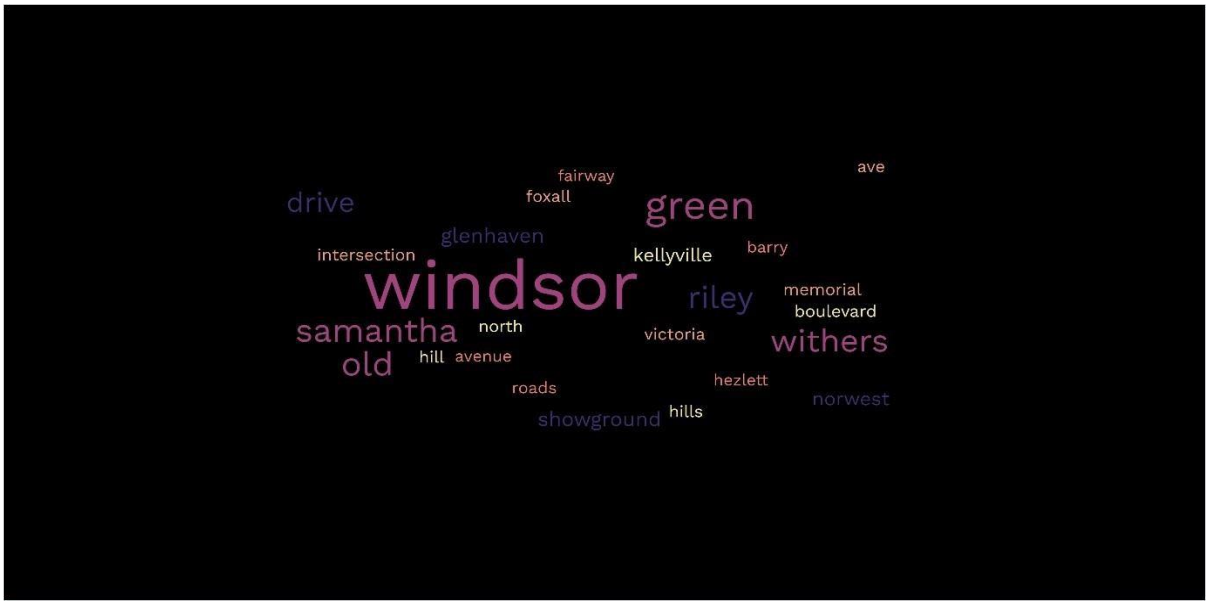

Figure 1: Word Cloud for the Worst Road in The Hills District

Table 4: Top 5 Occurrences in the Worst Roads Question

Keyword	Occurrences
Windsor	262
Green	122
Old Windsor Road	92
Samantha Riley Drive	89
Withers Road	84

Table 4 gives the top 5 occurrences of the keywords shown in Figure 1. Windsor Road was reported as the worst road as it was mentioned 262 times across the responses received from the participants on this question. It was followed by Green Road, Old Windsor Road, Samantha Riley Drive and Withers Road. As can be seen in Table 3, these roads are major arterials which serve a heavy demand of vehicles making them prone to traffic congestion, longer travel times, etc.

4.2 Commute Time

As part of this question, participants provided responses which included their commute times along with other information such as leaving early, variability in time, etc. Prior to analysing the responses, the data was cleaned to clearly identify the travel time bands, and classify the additional information into meaningful categories. Figure 2 shows the commute travel time distribution of the participants, mostly during morning times which corresponds to the journey from Home to Work. A majority of respondents reported their travel time between 30 minutes to an hour.

Figure 2: Travel Time Distribution

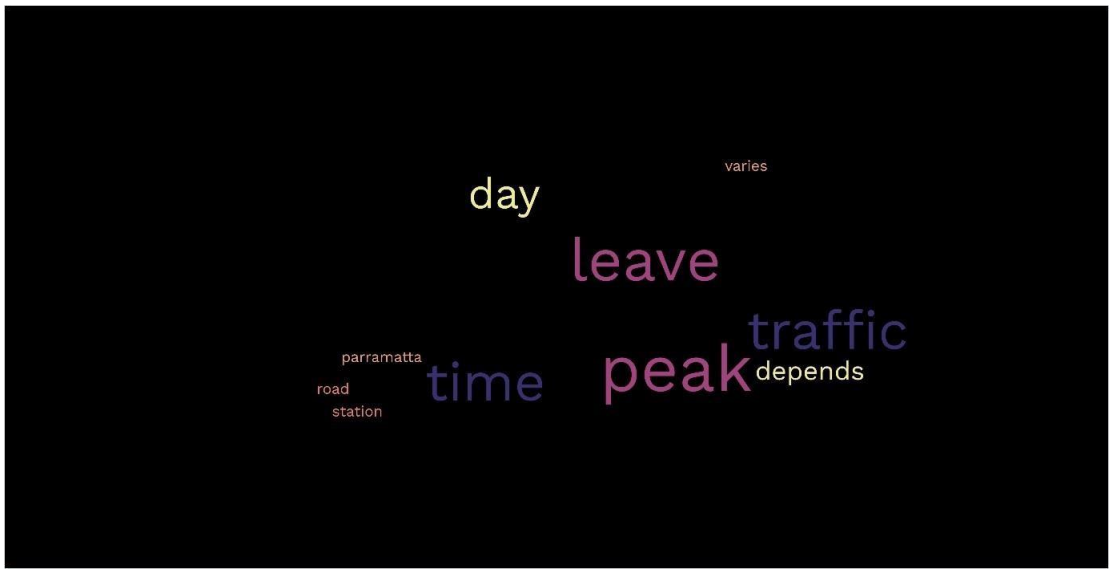

Figure 3: Word Cloud for Commute Travel Time Question

Using the additional information that was provided by the participants, a word cloud is created revealing underlying issues. Figure 3 shows the word cloud formed. The dominant words as reflected in Figure 3 have been specified along with a description and examples given by the participants in Table 5

Table 5: Keywords from Word Cloud with Descriptions

Keyword	Description
Peak	Traffic flow is severely impeded in peak hours leading to longer travel times. E.g. 1-hour for a trip to Parramatta in Peak
Leave early	Respondents leaving early to work in order to dodge the peak hour rush. E.g. When I leave at 7.00am 1/2 hour, anytime after 7.30 up to an hour
Depends	Corresponds to travel time variance due to several factors (time of day, weather, etc.). E.g. Depends on the start time as it differs each day
Time of Day	Significant travel time variability between peak and non-peak hours. E.g. Depending on the time of the day 15-35 minutes

4.3 Using Cheaper Tolls

Figure 4 shows the responses provided by the participants to the question whether they use cheaper tolls for travel. The figure indicates an almost 50-50% split between the participants using and not using cheaper tolls for travel. This near-even divide could be due to reasons such as: 1) the participants not willing to pay any tolls even if they are cheaper (amid cost-of-living concerns), 2) lack of awareness in using cheaper toll alternatives, and 3) not all destinations are closely located near, or accessible through tolled roads thus forcing people to take the non-tolled routes which are often more congested.

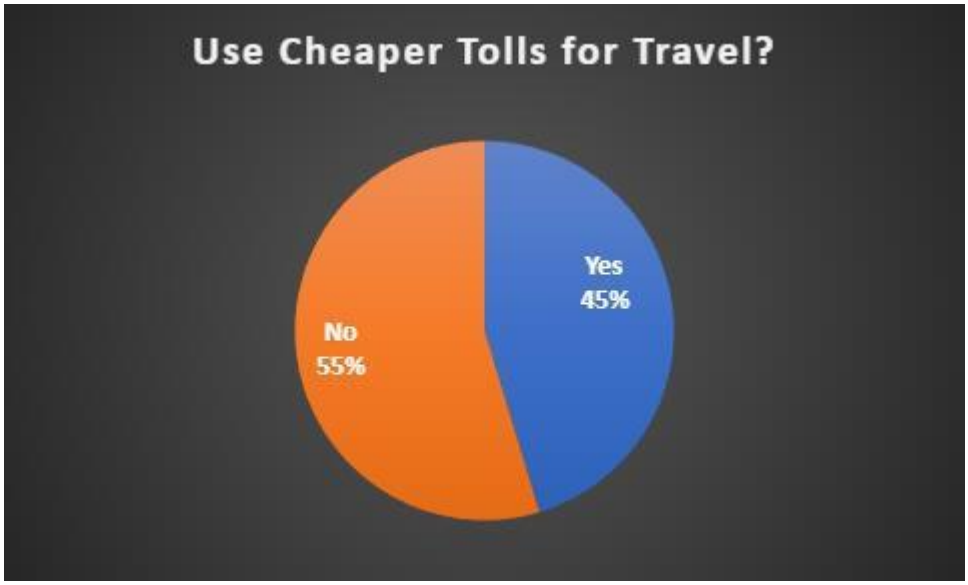

Figure 4: Using Cheaper Tolls for Travel

4.4 Vote for Traffic Infrastructure Improvement

The participants were asked whether improved traffic infrastructure along with Toll relief would influence their vote in the upcoming election. Figure 5 shows the participants opinion on the question which is predominantly towards Yes (85%). Transport plays a vital role in people's day-to-day life with policies and infrastructure having a direct impact on society. The response to this question in a way demonstrates the importance of formulating policies that are people-centric, equitable, sustainable and bring a positive change.

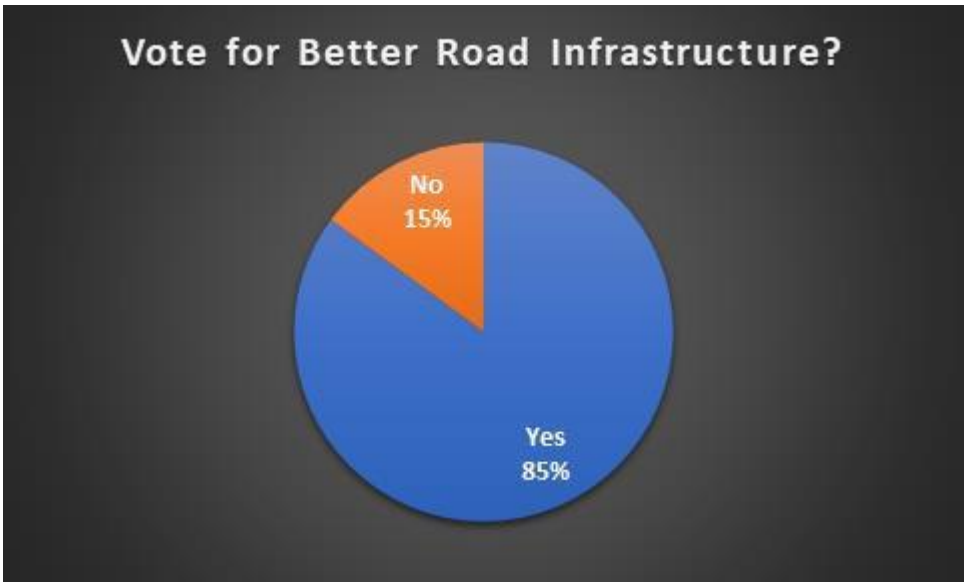

Figure 5: Vote for Traffic Improvement

4.5 Desired Changes

Finally, the participants were also asked, as an open-ended question, what positive changes they would like to see which improves their travel situation.

Figure 6: Word Cloud for Desirable Changes

The responses received are cleaned and a word cloud is formed based on them. Figure 6 shows the word cloud which highlights some keywords which are frequently emphasised by the participants. The participants desired for policies aimed at reducing toll cost which often a significant factor in drivers preferring congested arterials over relatively empty motorways. Better road infrastructure was also considered desirable by many participants (e.g. widening of major arterials, etc.). Reducing traffic load on our roads was also concurred by a majority of the participants which could be alleviated through the above alongside a push for public transport.

5. Discussion

The survey data analysed in this report brings out the following findings:

- There is High car ownership in the Hills district, i.e. two cars servicing a family of three on average. This high car ownership implies more cars on the roads leading to congestion
- Around 50% of the participants of the participants reported their commute travel time between 30-60 minutes with another 30% reporting it to be over 1-hour. This leads to not only loss of productive hours, but also leads to safety and environmental concerns
- There is a significant travel time variability, e.g. peak versus non-peak, which often forces commuters to leave home early and avoid peak hour rush
- Nearly half of the participants are using cheaper tolls for travel, with the remaining half probably finding them expensive, not quite a travel time saving option given the destinations, or are unaware of such policies
- There is a strong correlation between people's vote and improved traffic conditions (in the form of infrastructure upgrade and/or policies). The participants expressed the desired changes to include cheaper tolls, better roads, etc.

The issues identified in this report could be followed up by detailed investigations to resolve

them and provide better road infrastructure and policy to the residents within The Hills Shire district.

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