



TRAFFIC REPORT FOR PROLINTAS INFRA BUSINESS TRUST

September 2023

Prepared by:



PERUNDING TRAFIK KLASIK SDN. BHD.
(Co. No. 300560-H)
Transportation Planning • Traffic Management

TRAFFIC REPORT FOR
PROLINTAS INFRA BUSINESS TRUST



PERUNDING TRAFIK KLASIK SDN. BHD.

(Co. No. 300560-H)

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Our Ref: PTK/J2047/NR/L22177nr/23

19th September 2023

PROJECT LINTASAN KOTA HOLDINGS SDN BHD

Peti 2, Tingkat 12, Menara PNB 201-A,
Jalan Tun Razak 50400, Kuala Lumpur
Tel: 03-2164 2450 Fax: 03-2164 2795

Dear Sir/Madam,

TRAFFIC REPORT FOR PROLINTAS INFRA BUSINESS TRUST

Perunding Trafik Klasik Sdn Bhd have prepared this Traffic Report for Prolintas Infra Business Trust for Prolintas Sdn Bhd.

This report is a comprehensive overview of the project, including the methodology used, the findings, and the recommendations. The report was prepared by a team of qualified and experienced traffic engineers who employed widely accepted industry standard in projecting the tollable traffic volume on the Highways.

We are confident that the traffic projections in this report will be valuable to Prolintas Sdn Bhd Infra Business Trust.

Thank you.

Yours faithfully
PERUNDING TRAFIK KLASIK SDN BHD

.....
Ir. Chew Choon Aik
General Manager

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1. INTRODUCTION

Perunding Trafik Klasik Sdn Bhd (PTK SB) was commissioned to undertake a traffic study to review the projection of the tollable traffic volume on the Ampang – Kuala Lumpur Elevated Highway (AKLEH), Guthrie Corridor Expressway (GCE), Lebuhraya Kemuning - Shah Alam (LKSA), and Sistem Lingkaran Lebuhraya Kajang (SILK) for Prolintas Infra Business Trust. The four highways will be referred to as 'the Highways' hereon.

Perunding Trafik Klasik Sdn Bhd (PTK SB) is a transportation consulting firm in Malaysia that was founded in 1994. The company has grown from a team of 5 to 26 personnel and has become a leading transportation consulting firm in Malaysia. PTK's team is well-qualified and experienced in transport planning, traffic management, transport information system technology, transport project economic analysis, and highly technical and advanced computing skills. They have extensive local and international experience and are constantly keeping abreast with developments in the transportation and associated information technology disciplines.

Ir. Chew Choon Aik has an impressive career spanning 22 years in the field of professional traffic engineering. He holds a Professional Engineer with a Practicing Certificate (PEPC) qualification granted by the esteemed Board of Engineers Malaysia. His career has been marked by active engagement in a multitude of Highway Privatisation Projects, strategically positioned in and around the vibrant hub of Klang Valley.

Ir. Chew's pivotal contributions extend far beyond the confines of highway projects. His active involvement in Transport Masterplan Studies, meticulous Traffic Impact Assessment Studies, and a diverse array of Transport and Traffic Management Studies has afforded him a keen insight into the intricate dynamics between infrastructural developments and the resultant traffic demands on highways. This nuanced understanding has further illuminated the reciprocal relationship between highway expansion and urban development.

In addition to his extensive experience in highway projects, Ir. Chew's acumen in public transport demand projection and strategic planning has proven invaluable. His proficiency in this area seamlessly complements his work in highway development, recognizing the symbiotic relationship between highway and public transport traffic projections.

1.1 OVERVIEW OF THE AKLEH, GCE, LKSA AND SILK HIGHWAY





The Highways are operated by Projek Lintasan Kota Holdings Sdn Bhd (PROLINTAS).

The Highways are major highways in the Klang Valley operated by Projek Lintasan Kota Holdings Sdn Bhd (PROLINTAS). They provide a vital link between the city of Kuala Lumpur and the surrounding suburbs. These highways are all important traffic links in the Klang Valley. They help to reduce traffic congestion and improve the flow of traffic. They also help to connect the different parts of the Klang Valley and make it easier for people to get around.

Below are the snapshots of these highway: -

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The Highway	Ampang – Kuala Lumpur Elevated Highway (E12)	Guthrie Corridor Expressway (E35)	Lebuhraya Kemuning – Shah Alam (E13)	Sistem Lingkar Lebuhraya Kajang (E18)
Highway Length	7.4 km	25 km	14.7 km	37.0 km
Type of Toll & Toll Collection	<ul style="list-style-type: none"> - Open Toll - Electronic Toll Collection (Touch 'n Go card, SmartTAG, RFID and Bankcard (starting 1st September 2023)) 	<ul style="list-style-type: none"> - Open Toll - Electronic Toll Collection (Touch 'n Go card, SmartTAG, RFID and Bankcard (starting 1st September 2023)) 	<ul style="list-style-type: none"> - Open Toll - Electronic Toll Collection (Touch 'n Go card, SmartTAG, and RFID) 	<ul style="list-style-type: none"> - Open Toll - Electronic Toll Collection (Touch 'n Go card, SmartTAG, and RFID)
Location of Highway	- Kuala Lumpur	- Selangor	- Selangor	- Selangor
Toll Plaza	<ul style="list-style-type: none"> - 1 toll plaza - Datuk Keramat Toll Plaza 	<ul style="list-style-type: none"> - 3 toll plazas - Lagong Toll Plaza, Elmina Toll Plaza & Bukit Jelutong Toll Plaza 	<ul style="list-style-type: none"> - 2 toll plazas - Alam Impian Toll Plaza & Sri Muda Toll Plaza 	<ul style="list-style-type: none"> - 4 toll plazas - Sungai Balak Toll Plaza, Sungai Ramal Toll Plaza, Bukit Kajang Toll Plaza & Sungai Long Toll Plaza
Interchanges	- 7 interchanges	- 8 interchanges	- 6 interchanges	- 14 interchanges
Catchment Area & Committed Development & Highways	<ul style="list-style-type: none"> - continuous growth of traffic in the KL central business district - new development along the corridor such as Semarak Residence, Datum Jelatek and Picasso Residence Jelatek - Connectivity with SPE and SUKE 	<ul style="list-style-type: none"> - Bukit Subang 3 - Elmina East - Elmina West - Elmina Green - Lagong Mas - development of a commercial area within the City of Elmina - Connectivity with DASH 	<ul style="list-style-type: none"> - mixed development of Bandar Rimbayu (adjacent to Kota Kemuning Shah Alam) - Alam Impian township - 192-acre TTDI mixed development projects 	<ul style="list-style-type: none"> - current development of Mutiara Heights, Palm Hill Residence, and Setia Eco Hill - Connectivity with EKVE

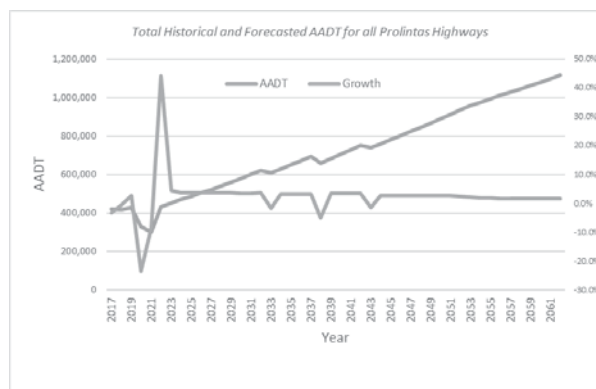
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1.2 OVERVIEW OF THE COMBINED TRAFFIC VOLUME PROJECTION FOR AKLEH, GCE, LKSA, AND SILK

The study projects the traffic demand along the Highways based on the future growth of the region, taking into consideration the various proposed developments and new roads in the region.

Between 2017 and 2023, the Highways reported a CAGR of 1.3% in total. This was primarily attributed to the decline in growth during the Covid-19 Movement Control Order period.

Table 1.2 tabulates the historical and projected Annual Average Daily Traffic (AADT) volume (excluding motorcycles) and yearly growth for the Highways.



Year	AADT	%	Year	AADT	%	Year	AADT	%
2017	418,989	-	2033	609,672	-1.8%	2049	867,753	2.7%
2018	417,277	-0.4%	2034	629,649	3.3%	2050	890,982	2.7%
2019	427,142	2.4%	2035	650,303	3.3%	2051	914,269	2.6%
2020	327,850	-23.2%	2036	671,664	3.3%	2052	936,935	2.5%
2021	299,451	-8.7%	2037	693,752	3.3%	2053	957,065	2.1%
2022	433,457	44.8%	2038	658,477	-5.1%	2054	975,588	1.9%
2023	452,264	4.3%	2039	680,654	3.4%	2055	994,675	2.0%
2024	468,750	3.6%	2040	703,604	3.4%	2056	1,011,145	1.7%
2025	485,852	3.6%	2041	727,361	3.4%	2057	1,027,127	1.6%
2026	503,599	3.7%	2042	751,946	3.4%	2058	1,043,607	1.6%
2027	522,005	3.7%	2043	740,974	-1.5%	2059	1,060,603	1.6%
2028	540,770	3.6%	2044	760,687	2.7%	2060	1,078,132	1.7%
2029	560,224	3.6%	2045	780,949	2.7%	2061	1,096,208	1.7%
2030	579,436	3.4%	2046	801,769	2.7%	2062	1,114,851	1.7%
2031	599,356	3.4%	2047	823,161	2.7%			
2032	620,737	3.6%	2048	845,152	2.7%			

Note: The AADT from 2023 and onwards are based on PTK SB's projections

An annual growth rate ranging from 1.7% to 3.7% provides a fair representation of the organic traffic expansion in the Klang Valley, taking into consideration the potential for reduced growth in the initial year following a toll increase.

2.0 STUDY METHODOLOGY

The approach adopted in this highway modelling study is to evaluate the existing travel patterns and movement characteristics of drivers in the Klang Valley by way of a transport model. The transport model will sufficiently represent all major roads, highways, and public transportation services. The study projects the traffic demand along the Highways based on the future growth of the region, taking into consideration the various proposed developments and new roads in the region.

The foundation for the forecast incorporates its objectives, evaluation date, constraints, and the duration covered for each highway. It's presumed that SCA terms will be adhered to and that no new gazette rates will be introduced.

2.1 TRAVEL DEMAND PROJECTION AND TRANSPORT MODELLING PARAMETERS

The projection of the future traffic volume in the study area is based on socio economic factors of the study area (i.e. Klang Valley). The following factors have been found to influence the traffic growth and have been identified and incorporated in the model projection procedures:

i. Gross Domestic Product (GDP) and Vehicle Registration Growth

The interplay between Gross Domestic Product (GDP) and the growth of vehicle registrations is characterised by a dynamic relationship. Broadly speaking, an uptick in GDP tends to influence traffic growth in a particular way. When GDP increases, individuals typically find themselves with more disposable income at their disposal. This, in turn, can translate into a heightened propensity for people to acquire and own vehicles, consequently resulting in an increase in traffic volume.

Nevertheless, it is essential to consider the exceptional circumstances introduced by the COVID-19 pandemic, which disrupted this conventional pattern. The pandemic's adverse economic impact led to a temporary downturn in both GDP and traffic growth, as widespread lockdowns, reduced economic activity, and travel restrictions had a stifling effect on the movement of people and vehicles.

As the global situation gradually stabilizes and pandemic-related constraints are alleviated, GDP is projected to rebound and regain its pre-pandemic levels. This resurgence in economic activity is anticipated to be accompanied by a corresponding resurgence in traffic growth. It is estimated that by 2024, GDP will have largely recovered to its previous levels, setting the stage for a potential resurgence in vehicle registrations and increased traffic on the roadways. In fact, traffic has mostly returned to pre-pandemic levels, even higher along most roads.

ii. Population and Employment Growth

The population and employment growth rates within the study area between 2010 and 2020, which have averaged at 3.0% and 2.7% per year, respectively, are closely correlated with the average traffic growth experienced in the same geographic region.

The 3.0% annual population growth rate signifies a consistent increase in the number of residents living in the study area over this decade. A growing population often leads to an augmented demand for transportation services and infrastructure, such as roads, public transit, and parking facilities. More people living in the area can also result in increased traffic on the roadways, as individuals commute to work, school, and other destinations. This upsurge in population is a critical factor contributing to the overall traffic growth observed in the study area.

Similarly, the 2.7% annual employment growth rate indicates a steady rise in the number of people actively engaged in the workforce within the study area. As employment opportunities increase, people from within and outside the region may seek employment in the study area, leading to more commuters and business-related travel. These workers contribute to the daily traffic flow, further accentuating the traffic growth trends.

The synergy between population and employment growth is integral to understanding the overall traffic growth dynamics in the study area. The higher the number of residents and employed individuals, the greater the demand for transportation, which results in increased traffic volume. Hence, the population and employment growth rates serve as reliable indicators of the average traffic growth patterns within the study area.

iii. Historical Traffic Growth

The study in question has relied on historical data to establish traffic growth rates in the Klang Valley, which is a crucial component of the research. These historical growth rates were obtained from the "Road Traffic Volume Malaysia 2020" report published by the Highway Planning Unit (HPU) under the Ministry of Works. The data covers traffic trends from the year 2010 to 2019, offering a comprehensive and credible dataset for analysis.

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To enhance the robustness and reliability of the historical traffic growth rates, the study also conducted primary on-ground surveys in 2020, specifically focusing on the areas adjacent to the MRR1 and MRR2 boundaries. These surveys were instrumental in capturing real-time traffic patterns, which provided additional empirical evidence to support the historical data.

The primary purpose of incorporating these historical traffic growth rates is to serve as a benchmark or reference point for evaluating the outcomes of the projection exercise. By comparing the projected traffic growth rates with the established historical data, the study can assess the reasonableness and accuracy of the projections. If the projected growth rates align closely with the historical trends, it lends credibility to the projections, indicating that they are in line with the past performance of traffic growth in the region.

In summary, the study has taken a rigorous approach by utilising a combination of historical data and contemporary on-ground surveys to validate the reliability and reasonableness of the projected traffic growth rates. This ensures that the research findings are anchored in a solid foundation of real-world data and can be considered a valuable resource for future planning and decision-making in the Klang Valley.

iv. **Committed major developments in the study area.**

The future traffic projection conducted in the region was undertaken via a comprehensive and inclusive approach by incorporating the traffic impact of all significant developments, both local and regional, within the study area. This approach ensures that the projection exercise accounts for the full spectrum of factors that can influence traffic patterns and demands.

1. **Localised Developments Along Highway Corridors:** The study considered local developments that are situated along specific highway corridors. These developments can include residential, commercial centers, or industrial zones. By including these developments, the projection exercise can accurately estimate how traffic patterns and congestion might evolve in areas immediately adjacent to these projects.
2. **Major Developments in Klang Valley:** In addition to localised developments, the study also factored in major developments in Klang Valley. These can encompass large-scale infrastructure projects, urban expansions, business hubs, and other significant initiatives that are expected to bring about substantial changes in the traffic landscape of the entire region. Incorporating these major developments into the projection is crucial for understanding how they will shape the broader traffic flow and transportation network.

For example, some of the major developments considered in the model include redevelopment of Kampung Baru within the vicinity of AKLEH, which encompasses 83 million square feet of development floor area, and the 5,000-acre City of Elmina, Kota Elmina, and the connection via DASH for GCE. Please refer to Sections 3 to 6 below for further details of the developments contributing to the traffic volume for each Highway respectively.

By considering both localised and major developments, the future traffic projection captures a holistic view of the region's generated traffic. It allows for a more accurate assessment of how these developments will impact traffic volume, congestion levels, and infrastructure requirements.

v. **Proposed Future Highways and Public Transport**

The future scenario model incorporated the start of operations for all the new highways as well as public transport lines:

- Year 2023: West Coast Expressway, Damansara – Shah Alam Highway, Setiawangsa Pantai Expressway, Sungai Besi – Ulu Kelang Elevated Expressway.
- Year 2025: East Klang Valley Expressway, Shah Alam LRT Line
- Year 2028: DUKE 2A (Istana Link), KL-NODE, Bangi Putrajaya Expressway, New Pantai Expressway Extension
- Year 2030: MRT3 (Circle Line)

3.0 THE AMPANG-KUALA LUMPUR ELEVATED HIGHWAY

The Ampang-Kuala Lumpur Elevated Highway functions as an alternative route to Jalan Ampang; facilitating access between Kuala Lumpur – Jelatek / Setiawangsa – MRR1 and Ampang. AKLEH spans 7.9km and starts eastward from Jalan Sultan Ismail and ends at Taman Ampang Utama in Ampang. The highway provides a 3-lane carriageway for both directions from Jalan Sultan Ismail interchange to Jalan Lingkaran Tengah 2 interchange while the journey to Jalan Ampang interchange thereafter offers a 2-lane carriageway in each direction. AKLEH's open system toll plaza located along AKLEH near Jalan Datuk Keramat.

3.1 AKLEH: TOLL CHARGES AND TRAFFIC PROJECTION-

The current and proposed toll charges and traffic composition for AKLEH are as follows.

Table 3.1: Toll Charge for AKLEH

Segment	Class 1	Class 2	Class 3	Class 4	Class 5
	Car	Light Truck	Heavy Truck	Taxis	Buses
2022	2.50	7.00	10.50	1.80	1.50
2023 - 2037	2.13	7.00	10.50	1.53	1.28

Toll Plaza	Class 1	Class 2	Class 3	Class 4	Class 5
Plaza Tol Keramat	98.57%	0.37%	0.02%	0.90%	0.14%

Table 3.2 tabulates the projected AADT volume (excluding motorcycles) that will pass the toll plaza.

Table 3.2: Projected AADT Volume (Keramat Toll Plaza)

Year	AADT	%	Year	AADT	%
2017	51,642	-	2028	46,540	3.0%
2018	48,006	-7.0%	2029	47,936	3.0%
2019	45,094	-6.1%	2030	48,415	1.0%
2020	30,937	-31.4%	2031	48,899	1.0%
2021	25,792	-16.6%	2032	50,122	2.5%
2022	38,215	48.2%	2033	51,374	2.5%
2023	40,145	5.1%	2034	52,659	2.5%
2024	41,349	3.0%	2035	53,975	2.5%
2025	42,590	3.0%	2036	55,324	2.5%
2026	43,868	3.0%	2037	56,708	2.5%
2027	45,185	3.0%			

Note: The AADT from 2023 and onwards are based on PTK SB's projections

From 2013 to 2018, the traffic volume on AKLEH was influenced by various factors, including lane widening construction in 2014, opening of Besraya Eastern Extension in 2014, a toll increase in 2015, and opening of DUKE2 in 2017, and the impact of the Movement Control Order (MCO) in 2020. Looking ahead to 2023, it is anticipated that the Average Annual Daily Traffic (AADT) will experience an uptick due to improved dispersibility resulting from the connection to SUKE (fully opened on 16 June 2023) and SPE (opened on 3 November 2023).

This growth is well supported by an estimated annual traffic increase of 2.5% to 3.0%, a reasonable projection based on the consistent traffic growth observed in the Klang Valley. Contributing to this growth are significant developments within the Kuala Lumpur Central Business District, particularly in the vicinity of AKLEH, such as the redevelopment of Kampung Baru, which encompasses 83 million square feet of development floor area. It's worth noting that a 3% growth rate translates to just an additional 120 vehicles during the peak hour, demonstrating the reasonableness of this growth.

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Figure 3.1 shows the Historical and Projected AADT Volume for AKLEH

The following observations and recommendations are made.

- The pandemic has decreased traffic on AKLEH by 32% (2020) and 16% (2021) due to the Movement Control Order which caused a major impact to the movement of office workers ie the main users of AKLEH.
- In 2022, the traffic volume on AKLEH has made a recovery but has yet to reach 2019 traffic volume levels of around 45,000 AADT as some offices still practice the work from home scheme.
- As highways do rely on other highways 'feeding' traffic into each other, the 2023 AADT is expected to rise as due to additional volume from SPE and SUKE. SPE connects to AKLEH via the Jelatek Interchange while SUKE connects to AKLEH at the Ampang Interchange.
- The projected traffic volume growth on AKLEH of 1.0% to 3.0% is reflective of the increasing development demand in future and the potential impact from the future MRT lines.
- The MRT3 Circle Line is expected to lower the traffic growth on AKLEH in 2030 and 2031 where the traffic volume growth is projected to be 1.0% for both years.

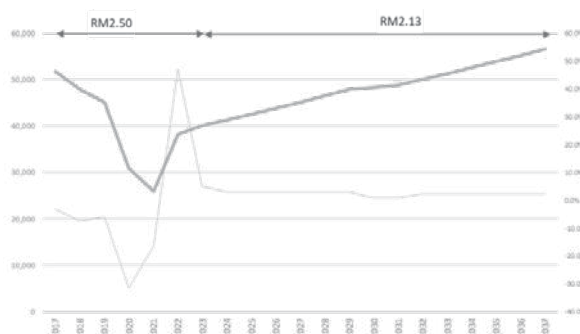


Figure 3.1: Historical and Projected AADT Volume for AKLEH

4.0 THE GUTHRIE CORRIDOR EXPRESSWAY

The Guthrie Corridor Expressway, which has been operating since Year 2005 provides a rapid means of travel between the existing township of Klang, Shah Alam, Bukit Jelutong, Subang, Sungai Buloh and Rawang. The 25km highway was also built to alleviate traffic congestion along the existing North-South Expressway. The open toll highway consists of three mainline toll plazas namely Bukit Jelutong, Elmina, and Lagong toll plazas and it connects to New Klang Valley Expressway (NKVE), North South Expressway Central Link (ELITE), Damansara – Shah Alam Highway (DASH), North South Expressway (NSE), and the Kuala Lumpur – Kuala Selangor Expressway (LATAR).

4.1 GCE: TOLL CHARGES AND TRAFFIC PROJECTION

The current and proposed toll charges and traffic composition for GCE are as follows.

Table 4.1: Toll Charge for GCE

Segment	Class 1	Class 2	Class 3	Class 4	Class 5
	Car	Light Truck	Heavy Truck	Taxis	Buses
Year 2022	1.90	3.80	5.70	0.90	1.40
Year 2023 - 2032	1.75	3.80	5.70	0.83	1.29
Year 2033 – 2042	2.59	5.20	7.80	1.23	1.91
Year 2043 - 2062	3.40	7.00	10.50	1.70	2.83

Toll Plaza	Class 1	Class 2	Class 3	Class 4	Class 5
Bukit Jelutong	93.0%	3.6%	2.9%	0.3%	0.2%
Elmina	89.2%	5.7%	4.6%	0.3%	0.2%

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Lagong	89.7%	5.5%	4.3%	0.3%	0.2%
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Table 4.2 tabulates the projected AADT volume (excluding motorcycles) that will pass the toll plaza.

Table 4.2: Projected AADT Volume (All GCE Toll Plaza)

Year	AADT	%	Year	AADT	%	Year	AADT	%
2017	106,430	-	2033	172,591	-2.2%	2049	277,218	3.1%
2018	107,844	1.3%	2034	179,521	4.0%	2050	285,716	3.1%
2019	112,603	4.4%	2035	186,732	4.0%	2051	294,475	3.1%
2020	84,049	-25.4%	2036	194,238	4.0%	2052	303,505	3.1%
2021	71,676	-14.7%	2037	202,050	4.0%	2053	312,812	3.1%
2022	117,735	64.3%	2038	210,180	4.0%	2054	322,409	3.1%
2023	123,537	4.9%	2039	218,644	4.0%	2055	332,302	3.1%
2024	128,530	4.0%	2040	227,453	4.0%	2056	339,302	2.1%
2025	133,726	4.0%	2041	236,622	4.0%	2057	345,524	1.8%
2026	139,133	4.0%	2042	246,166	4.0%	2058	351,951	1.9%
2027	144,759	4.0%	2043	231,316	-6.0%	2059	358,593	1.9%
2028	150,616	4.0%	2044	238,398	3.1%	2060	365,451	1.9%
2029	156,708	4.0%	2045	245,700	3.1%	2061	372,534	1.9%
2030	163,050	4.0%	2046	253,224	3.1%	2062	379,852	2.0%
2031	169,649	4.0%	2047	260,979	3.1%			
2032	176,518	4.0%	2048	268,976	3.1%			

Note: The AADT from 2023 and onwards are based on PTK SB's projections

Figure 4.1 shows the Historical and Projected AADT Volume for GCE

The following observations and recommendations are made.

- During the two years of the Movement Control Order (MCO), the traffic volume on GCE dropped by 25% because of the lower commuter volume and interstate travel. GCE serves as a connector between ELITE and North South Expressway and thus cater for interstate travel as well.
- Upon the end of the MCO and opening of borders in 2022, GCE recorded tremendous recovery in traffic volume with a positive growth of 64% to record a AADT of 117,782 which is has also surpassed the pre-pandemic 2019 AADT of 112,618
- The traffic on GCE is expected to continue to grow in anticipation of the connectivity with DASH and the development progress of Elmina. Another contributing factor in the attractiveness of the GCE is its similar function to NKVE linking between ELITE and NSE (northern section).
- An annual traffic growth ranging from 2.0% to 4.0% takes into consideration both the organic growth in traffic and the continued development projects in the area. The primary sources of increased traffic are expected to be the 5,000-acre City of Elmina, Kota Elmina, and the connection via DASH.

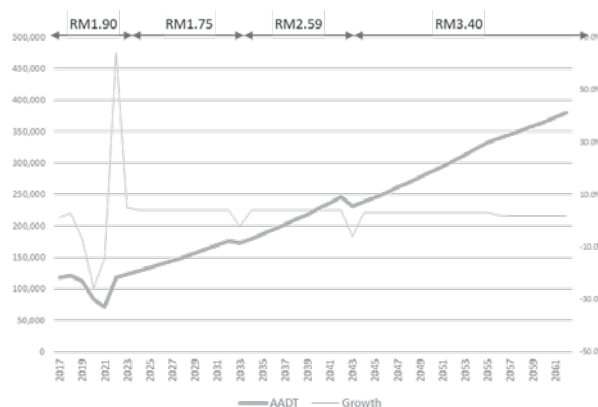


Figure 4.1: Historical and Projected AADT Volume for GCE

5.0 THE LEBUHRAYA KEMUNING SHAH ALAM

Lebuhraya Kemuning Shah Alam, also known as LKSA, is a 14.7-kilometer expressway opened in 2010. It connects Shah Alam and Kemuning and serves as a major link between the Federal Highway and the Shah Alam Expressway (KESAS). LKSA was built to alleviate traffic congestion in the Shah Alam and Kemuning areas, which were experiencing rapid development and population growth at the time. In addition to reducing congestion, LKSA has also helped to spur economic development in the surrounding areas by improving accessibility and connectivity. The expressway has two toll plazas namely Alam Impian and Sri Muda Toll Plazas.

5.1 LKSA: TOLL CHARGES AND TRAFFIC PROJECTION

The current and proposed toll charges and traffic composition for LKSA are as follows.

Table 5.1: Toll Charge for Alam Impian Toll Plaza, LKSA

Segment	Class 1	Class 2	Class 3	Class 4	Class 5
	Car	Light Truck	Heavy Truck	Taxis	Buses
Year 2022	0.90	1.80	2.70	0.90	0.60
Year 2023 - 2032	0.83	1.80	2.70	0.83	0.55
Year 2033 – 2042	1.23	3.00	4.50	1.23	0.81
Year 2043 - 2062	1.82	4.80	7.20	1.82	1.21

Table 5.2: Toll Charge for Seri Muda Toll Plaza, LKSA

Segment	Class 1	Class 2	Class 3	Class 4	Class 5
	Car	Light Truck	Heavy Truck	Taxis	Buses
Year 2022	1.70	3.40	5.10	0.90	1.20
Year 2023 - 2032	1.56	3.40	5.10	0.83	1.10
Year 2033 – 2042	2.31	6.00	9.00	1.23	1.63
Year 2043 - 2062	3.42	9.40	14.10	1.82	2.41

Toll Plaza	Class 1	Class 2	Class 3	Class 4	Class 5
Alam Impian	95.2%	3.4%	0.8%	0.2%	0.4%
Sri Muda	93.7%	3.5%	1.7%	0.3%	0.8%

18. TRAFFIC CONSULTANTS' REPORT (Cont'd)

TRAFFIC REPORT FOR PROLINTAS INFRA BUSINESS TRUST

Table 5.3 tabulates the projected AADT volume (excluding motorcycles) that will pass the toll plaza.

Table 5.3: Projected AADT Volume (All LKSA Toll Plaza)

Year	AADT	%	Year	AADT	%	Year	AADT	%
2017	71,454	-	2033	120,331	-2.0%	2049	181,360	2.0%
2018	74,667	4.5%	2034	124,545	3.5%	2050	184,988	2.0%
2019	78,730	5.4%	2035	128,904	3.5%	2051	188,099	1.7%
2020	64,389	-18.2%	2036	133,416	3.5%	2052	190,000	1.0%
2021	62,697	-2.6%	2037	138,085	3.5%	2053	190,000	0.0%
2022	80,824	28.9%	2038	142,919	3.5%	2054	190,000	0.0%
2023	84,818	4.9%	2039	147,920	3.5%	2055	190,000	0.0%
2024	88,374	4.2%	2040	153,097	3.5%	2056	190,000	0.0%
2025	92,081	4.2%	2041	158,455	3.5%	2057	190,000	0.0%
2026	95,945	4.2%	2042	164,001	3.5%	2058	190,000	0.0%
2027	99,971	4.2%	2043	161,042	-1.8%	2059	190,000	0.0%
2028	104,165	4.2%	2044	164,264	2.0%	2060	190,000	0.0%
2029	108,537	4.2%	2045	167,549	2.0%	2061	190,000	0.0%
2030	113,092	4.2%	2046	170,899	2.0%	2062	190,000	0.0%
2031	117,841	4.2%	2047	174,318	2.0%			
2032	122,788	4.2%	2048	177,802	2.0%			

Note: The AADT from 2023 and onwards are based on PTK SB's projections

Figure 5.1 shows the Historical and Projected AADT Volume for LKSA

The following observations and recommendations are made.

- During the Covid-19 Pandemic MCO, LKSA recorded the least impact in terms of reduction in traffic with a drop of 18% and 2% for Year 2020 and 2021 respectively. LKSA serves a highly industrial catchment and is a vital link for dispersal of Port Klang traffic between KESAS and Federal Highway. The industry sector was there first few sectors to reopen after the MCO thus the quick recovery of the traffic volume to the highway.
- Year 2022 traffic volume on the highway recorded an AADT of 80,779 which has surpassed the Year 2019 AADT of 78,914. This shows the attractiveness of the highway in catering for the travel demand in the area.
- The traffic on LKSA is expected to continue to grow due to the development in Alam Impian as well as the catchment in the Rimbayu area. The largely undeveloped area at the southern catchment of LKSA will continue to propel the traffic growth on the highway at around 3.6% over the next 10 years. Thereon, traffic growth will start to stabilize and finally plateau around 2052 where both sections of the highway are expected to reach capacity.

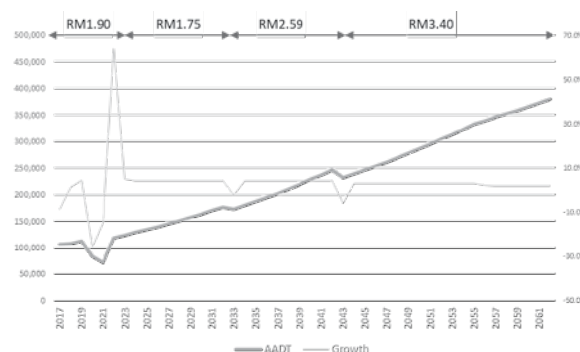


Figure 5.1: Historical and Projected AADT Volume for LKSA

6.0 THE SISTEM LINGKARAN LEBUHRAYA KAJANG (SILK)

The Sistem Lingkaran Lebuhraya Kajang, also known as the SILK Highway, is a 37-kilometer expressway that runs from Kajang to Sungai Long, passing through the towns of Balakong and Cheras. The SILK Highway was built to provide an alternative route for commuters travelling between Kajang and Cheras. It has four toll plazas namely Sg. Ramal, Sg Balak, Bukit Kajang, and Sg. Long Toll Plazas.

In addition to easing traffic congestion, the SILK Highway has also helped to stimulate economic growth in the surrounding areas by improving accessibility and facilitating the movement of goods and services

6.1 SILK: TOLL CHARGES AND TRAFFIC PROJECTION

The current and proposed toll charges and traffic composition for SILK are as follows.

Table 6.1: Toll Charge for SILK (each toll plaza)

Segment	Class 1	Class 2	Class 3	Class 4	Class 5
	Car	Light Truck	Heavy Truck	Taxis	Buses
Year 2022	1.80	3.60	5.40	0.90	1.00
Year 2023 - 2032	1.66	3.60	5.40	0.83	0.92
Year 2033 – 2042	2.10	4.80	7.20	1.05	1.17
Year 2043 - 2062	2.30	4.80	7.20	1.20	1.48

Toll Plaza	Class 1	Class 2	Class 3	Class 4	Class 5
Sg. Balak	95.0%	3.1%	1.3%	0.4%	0.2%
Sg. Ramal	94.7%	3.0%	1.4%	0.4%	0.5%
Bukit Kajang	94.1%	3.5%	1.9%	0.3%	0.2%
Sg. Long	95.8%	3.0%	0.8%	0.2%	0.2%

Table 6.2 tabulates the projected AADT volume (excluding motorcycles) that will pass the toll plaza.

Table 6.2: Projected AADT Volume (All SILK Toll Plaza)

Year	AADT	%	Year	AADT	%	Year	AADT	%
2017	189,463	-	2033	265,376	-2.2%	2049	409,175	2.7%
2018	186,760	-1.4%	2034	272,924	2.8%	2050	420,278	2.7%
2019	190,715	2.1%	2035	280,692	2.8%	2051	431,695	2.7%
2020	148,475	-22.1%	2036	288,686	2.8%	2052	443,430	2.7%
2021	139,286	-6.2%	2037	296,909	2.8%	2053	454,253	2.4%
2022	196,683	41.2%	2038	305,378	2.9%	2054	463,179	2.0%
2023	203,764	3.6%	2039	314,090	2.9%	2055	472,373	2.0%
2024	210,497	3.3%	2040	323,054	2.9%	2056	481,843	2.0%
2025	217,455	3.3%	2041	332,284	2.9%	2057	491,603	2.0%
2026	224,653	3.3%	2042	341,779	2.9%	2058	501,656	2.0%
2027	232,090	3.3%	2043	348,616	2.0%	2059	512,010	2.1%
2028	239,449	3.2%	2044	358,025	2.7%	2060	522,681	2.1%
2029	247,043	3.2%	2045	367,700	2.7%	2061	533,674	2.1%
2030	254,879	3.2%	2046	377,646	2.7%	2062	544,999	2.1%
2031	262,967	3.2%	2047	387,864	2.7%			
2032	271,309	3.2%	2048	398,374	2.7%			

Note: The AADT from 2023 and onwards are based on PTK SB's projections

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Figure 6.1 shows the Historical and Projected AADt Volume for SILK

The following observations and recommendations are made.

- During the two years of the Covid-19 pandemic MCO, SILK recorded a total drop of 23% in traffic volume due to restricted travel demand however, the impact is not as great as the SILK catchment caters for travel related to industries which were among the few sectors to reopen after the MCO.
- Upon the end of the MCO, traffic on SILK recovered encouragingly to record a total AADT of 196,683 for Year 2022, a 40% increase from year 2021.
- SILK is expected to continue to grow albeit in a moderate pace due to the presence of alternative toll-free routes and the future Putrajaya Bangi Expressway. However, positive traffic growth is still expected from SILK which will benefit from the link to EKVE and will form part of the Kuala Lumpur Outer Ring Road.
- Apart from that, the continuous development in Bangi and Semenyih will continue to provide the traffic volume demand on SILK in the future years.

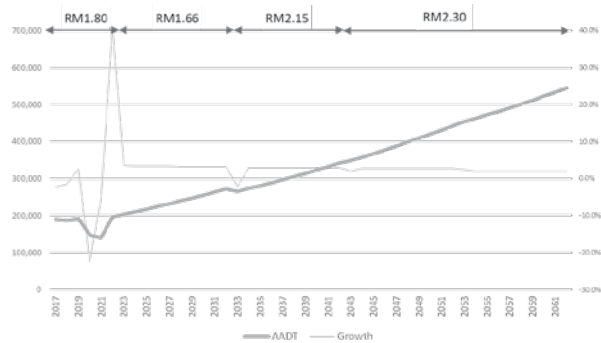


Figure 6.1: Historical and Projected AADT Volume for SILK

7.0 CONCLUSION

In conclusion, the traffic projections presented in this report represent the most accurate projections based on the current available data. It is crucial to understand that forecasting, by nature, involves a degree of uncertainty. However, the methodologies used and the sources of information utilised have been meticulously vetted to ensure the utmost precision. As with all forecasts, it is essential to revisit and revise these projections periodically in light of new data or changes in underlying conditions. Stakeholders are encouraged to consider these findings as a reliable guide, but also to remain adaptable and responsive to future data updates and changes in traffic patterns.