



MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING MALAYSIA'S INFRASTRUCTURE PRIVATISATION

ENGINEERS

Malaysia's Engineering DNA



20 JULY 2020



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Registration No. 201501003232 (1128564-U)



**MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING
MALAYSIA'S INFRASTRUCTURE PRIVATISATION**

1. BACKGROUND

2. KEY PUBLIC TRANSPORTATION PROJECTS IN MALAYSIA

3. ECONOMIC VS FINANCIAL

➤ *PUBLIC TRANSPORTATION (going back to basics)*

4. SUSTAINABLE PRIVATISATION MODEL IN MALAYSIA

5. CONCLUSION

BACKGROUND

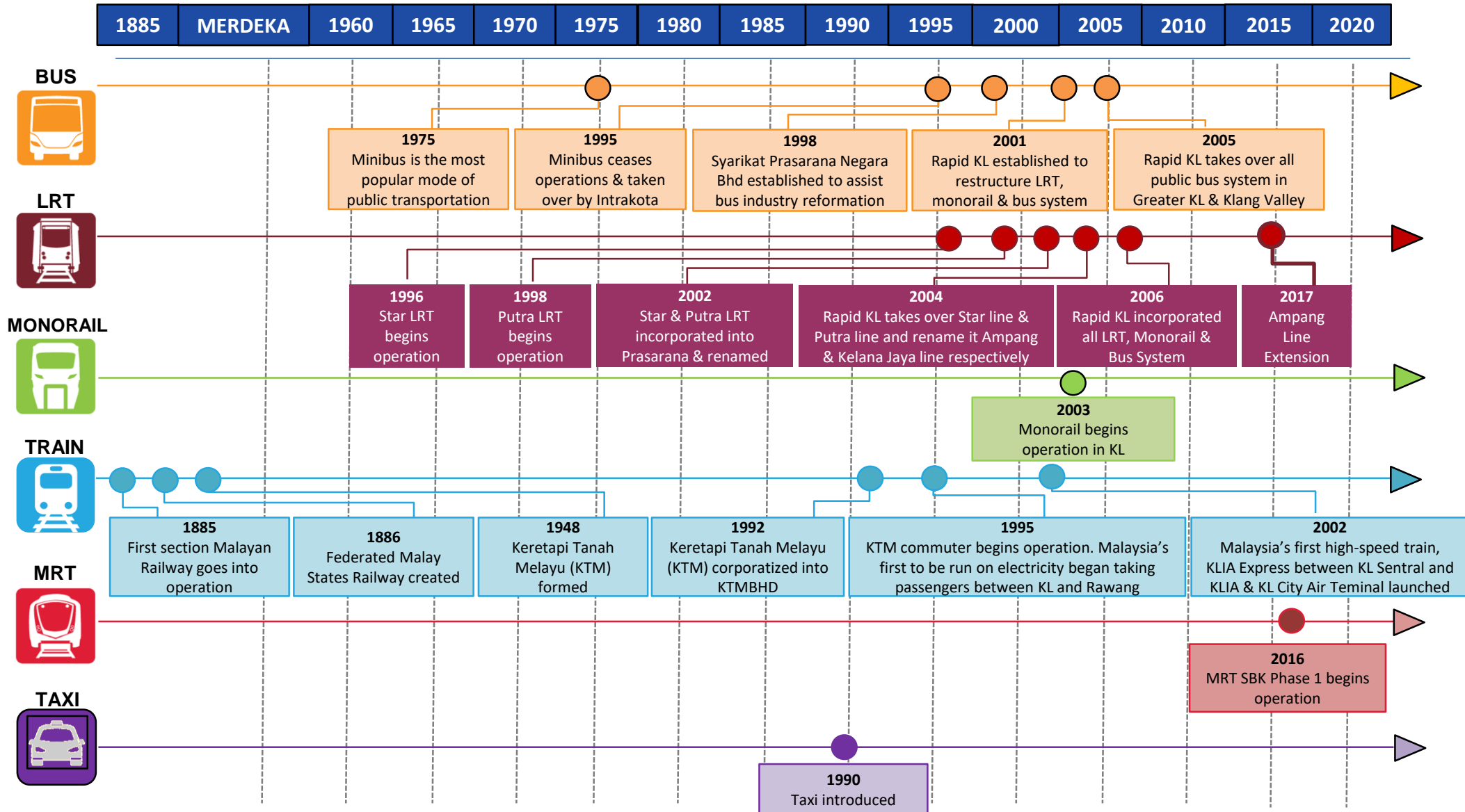


MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING MALAYSIA'S INFRASTRUCTURE PRIVATISATION

HISTORY OF PUBLIC TRANSPORT IN MALAYSIA

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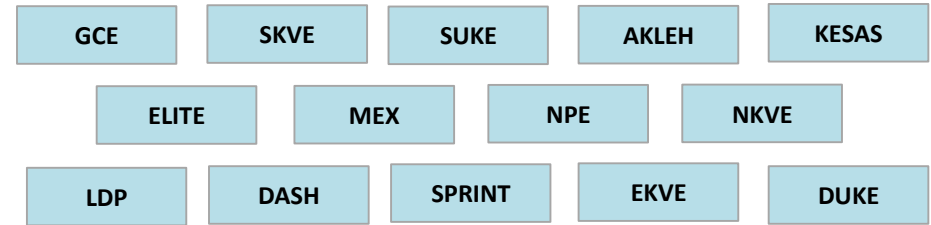
PUBLIC TRANSPORT IN THE KLANG VALLEY, MALAYSIA

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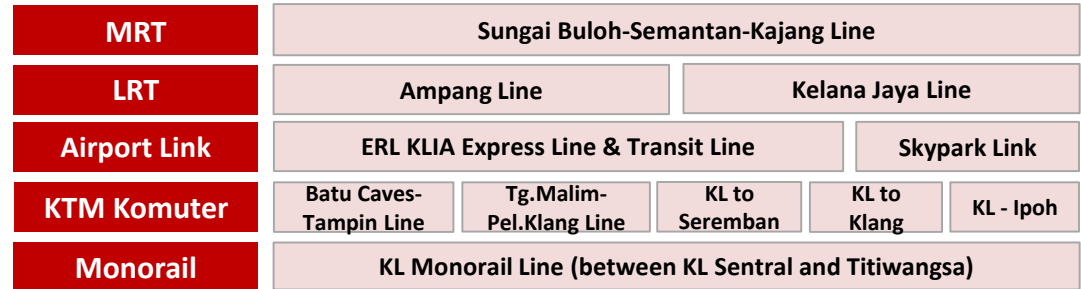
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VARIOUS MODES OF TRANSPORTATION SERVE THE GREATER KLANG VALLEY.

Private Vehicles via
Extensive Road Network
(Expressways, Federal
State and Local Roads)



Railway Network



BRT / Bus Network



Rapid KL Bus Network



KL Hop-On Hop-Off Bus
Line



BRT Sunway Line

Taxis



Ride Hailing Services



CURRENT SCENARIO IN URBAN KLANG VALLEY

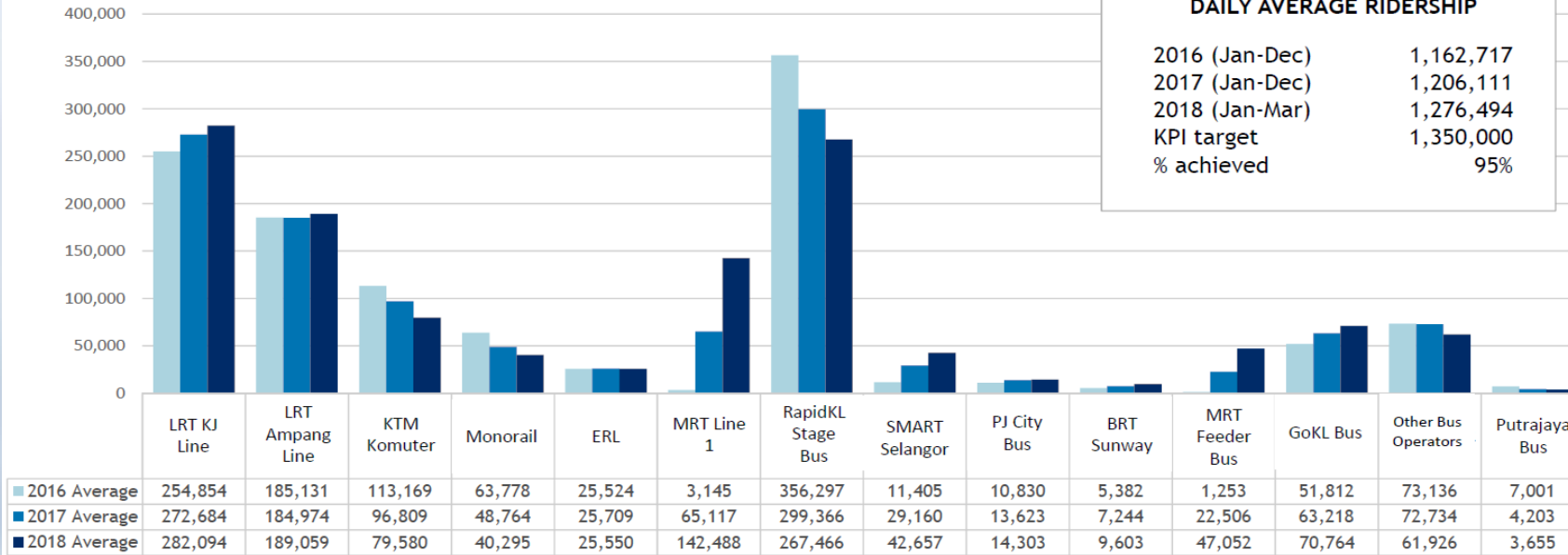
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Daily Average Ridership for Rail & Bus Services

DAILY AVERAGE RIDERSHIP

2016 (Jan-Dec)	1,162,717
2017 (Jan-Dec)	1,206,111
2018 (Jan-Mar)	1,276,494
KPI target	1,350,000
% achieved	95%



Modal Share 20%

(85% - 90% Are Work, Business & Student Journeys - Mon - Fri)

Economic

The cost of congestion in GKL:

1.1% - 2.2% of GDP in 2016 equivalent to **RM6,144** person/year

In Kuala Lumpur, **10%** of household income is used for transport

Compared to **4%** in Tokyo and Hong Kong

Environment

Total carbon emission:

7.9 tonne/capita in 2011 in Malaysia compared to average for higher middle income countries at **5.4** tonne/capita

The carbon emission in the transport sector is largely from land transport, constituting **90%** (48,200 ktonne) & **67%** is from cars

Safety

Total fatality:

24

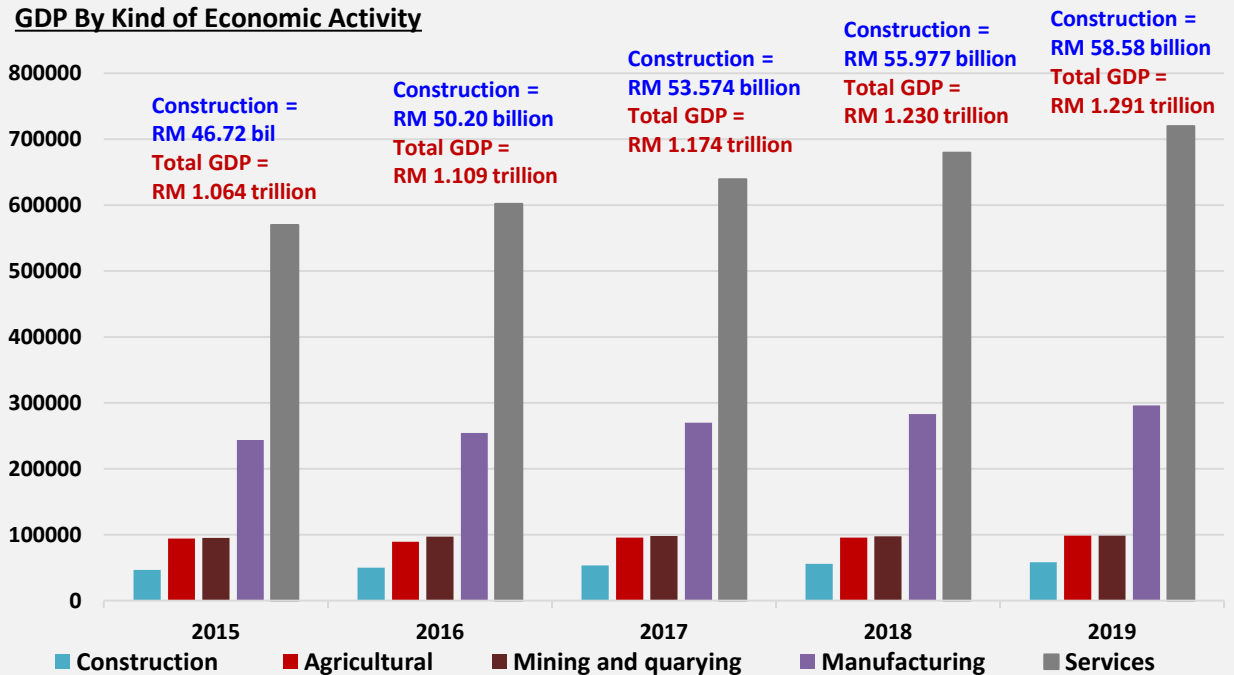
Fatality rate for every **100,000** population

Compared to:
10.7 in Korea
33.5 in Thailand
19.7 in Indonesia

National Transport Policy

- Urban population in Malaysia was 75.37%. (2016)
- GDP growth & population expansion : Unprecedented growth - Urban transportation landscape.
- Klang Valley - Focus of urban transport schemes. Penang/ Johor Bahru (BRT, RTS) are under planning / implementation.

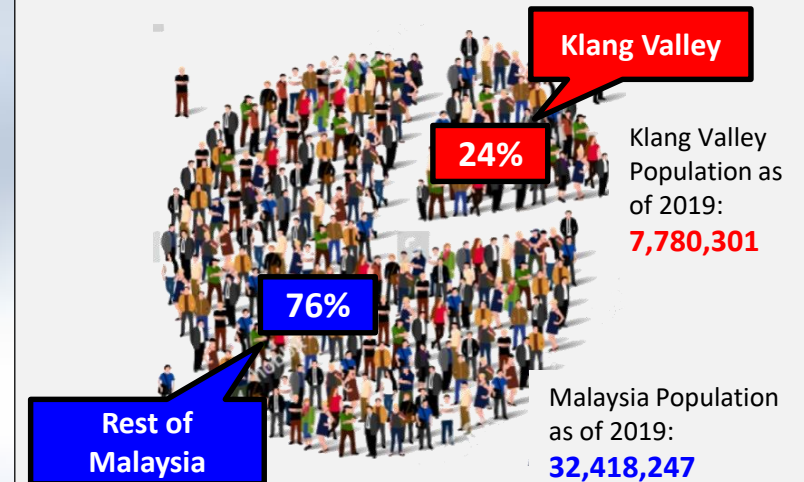
GDP By Kind of Economic Activity



**Can increase GDP by reducing Journey time?
(Predictable journey times to enhance modal shift)**

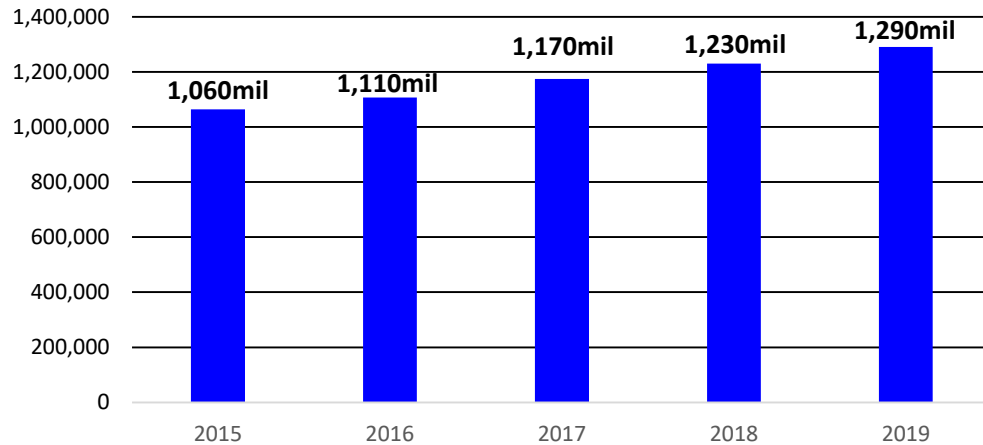
Source: Economic Outlook 2019, MOF

POPULATION DISTRIBUTION IN MALAYSIA 2019



Source: World Population Review 2019

Malaysia Economic Growth (GDP Growth)



- % p.a GDP growth from 2015 to 2019

- Forecast GDP growth of 4.9% in 2019

- High levels of congestion - Impact on GDP

- Serious toll on the quality of life and urban productivity.

Top 5 States with Highest GDP Contribution to Malaysian Economy

State or Federal Territory	2010 GDP (RM Mil)	2011 GDP (RM Mil)	2012 GDP (RM Mil)	2013 GDP (RM Mil)	2014 GDP (RM Mil)	2015 GDP (RM Mil)	2016 GDP (RM Mil)
Selangor	177,718	187,434	200,906	212,645	226,964	239,968	280,698
Kuala Lumpur	113,095	122,890	131,514	140,534	152,380	160,388	190,075
Sarawak	87,131	92,700	94,013	98,089	102,318	106,063	121,414
Johor	74,102	78,946	84,050	87,974	93,665	98,880	116,679
Penang	52,946	55,827	58,353	61,324	66,200	69,844	81,284

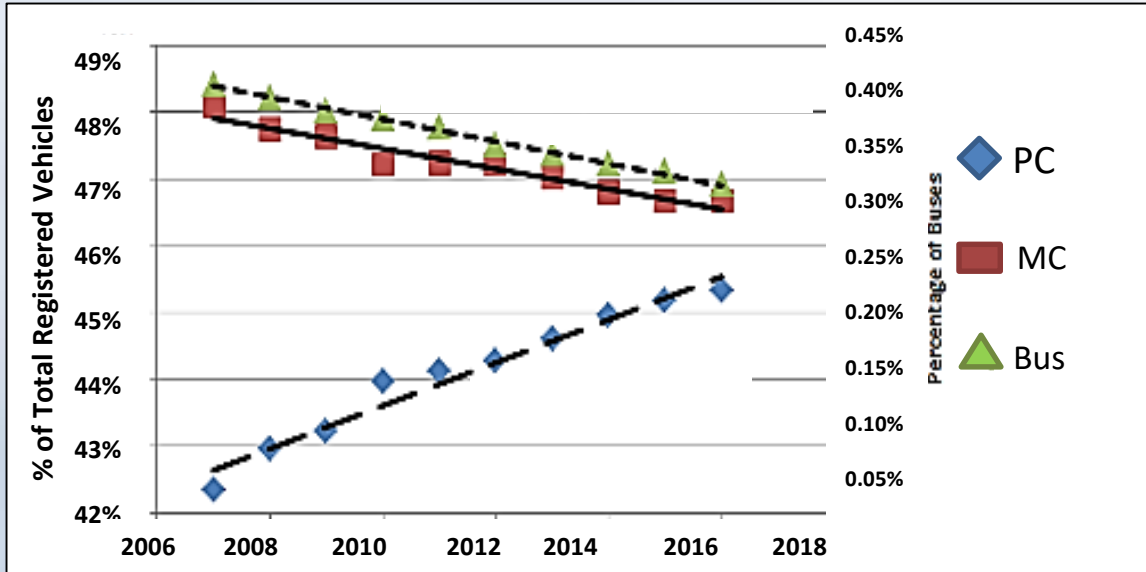
Source :

- Department of Statistics, Malaysia
- Analyzing Vehicular Congestion Scenario in Kuala Lumpur Using Open Traffic, Journal of Electrical Engineering Vol. 10, No. 3 June 2018

Urban Cities contributed a majority portion of 62% of the overall Malaysian GDP in 2016

Best Targets to increase GDP through journey time savings

TRAFFIC GROWTH IN URBAN CITIES IN MALAYSIA

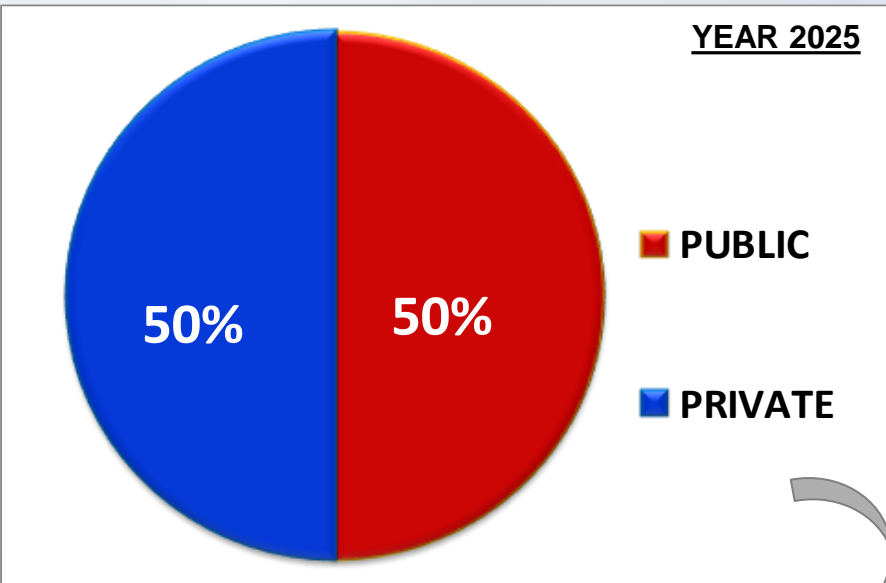

Top 5 States in Malaysia with Highest No. of Registered Vehicles in 2018

State	Private Cars	Public Service Vehicles (PSV)	Goods Vehicles
Johor	1,498,587	20,365	66,183
Federal Territories	3,987,468	78,752	122,509
Selangor	1,157,268	24,273	104,724
Penang	1,130,601	9,586	26,710
Sarawak	813,569	5,834	71,782
Others	4,701,304	46,225	813,836
Total	13,288,797	185,035	1,205,744

Urban Cities Contributes to 56.3% of Registered Vehicles

- Significant population and economic growth-increase in the number or registered vehicles.

Source :
 i. Ministry of Transport Malaysia
 ii. Journal of Traffic and Logistics Engineering Vol. 3, No. 1



- Expected Total Person Trips – 14 million per day with 3 million cars per day

- Public Transport, road and highways must be planned together to complement one another

- Modal Shift - Planned & Driven by Policies

- **Public Transport as the People's Choice for Mobility**

- **National Target**

➤ *Modal share currently 20-25%; target at 40% by 2030 (NKRA) - Greater KL*





KEY PUBLIC TRANSPORTATION PROJECTS IN MALAYSIA



MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING MALAYSIA'S INFRASTRUCTURE PRIVATISATION



KLANG VALLEY DOUBLE TRACKING PHASE 1



Total Length	: 42 km
Stations	: 16 Stations
Phase 1A	: Rawang – Simpang Batu
Phase 1B	: KL – Simpang Bangsar
Phase 2	: Simpang Batu – KL
Phase 3	: Sentul – Simpang Batu
Phase 4	: Simpang Bangsar – Salak Selatan

GEMAS TO TUMPAT REHABILITATION



Package A Gemasp – Mentakab	: 122KM
Package B Mentakab – Gua Musang	: 199KM
Package C Gua Musang – Tumpat	: 206KM

MASS RAPID TRANSIT (MRT) 2



Location:	: Malaysia
Total Length:	: 52.2km
Stations	: 36
Speed	: 80kph
Elevated:	: 38.75 km (24.08 mi)
Underground	: 13.5 km (8.4 mi)
	1,435 mm (4 ft 8 1/2 in) standard gauge
Track Electrification	: Third rail, 750 VDC

LIGHT RAIL TRANSIT (LRT) 3



Travel Time	: < 60Min
Total Length	: 37KM
Stations	: 20
Provisional Stations	: 5
Integrated Stations	: 2
Modular	: 3 Cars Accessible End to End
Speed	: 80 km/h Operational Speed
Capacity	: 18,630 Passengers P/H Per Direction
Frequency	: 6 Minutes during peak hours

KLANG VALLEY DOUBLE TRACKING PHASE 2



Number of stations	: 16 stations
Traction	: Electric
Formation	: Double-track
Route Length	: Package A - 43.20km
	: Package B - 59.20km
	: Package C - 46.30km

GEMAS-JOHOR BAHRU RAIL (DOUBLE TRACKING & ELECTRIFICATION)



Travel Time - KL Sentral-JB Sentral:	: 3 hours and 30 minutes
Frequency	: 22 train services a day
Seating Capacity	: 346 passengers per train
Track Distance	: 192km
Stations	: 11 stations
Designed Speed	: 160Km/h

ISKANDAR BRT



Transit type	: Bus rapid transit
Number of lines	: 72 (3 trunk, 26 direct and 42 feeder BRT route)
Began operation	: Expected 2021
Operator(s)	: Causeway Link, Maju, S&S International, City Bus, JB Central Line, Kembara City
Number of vehicles	: Articulated 18m (Trunk route), 12m bus (Direct route) and 8m bus (Feeder route)
System length	: 51 km (32 mi) First Phase

MASS RAPID TRANSIT (MRT) 3



Total Stations	: 26
Elevated Stations	: 7
UG Stations	: 19
Services	: Orbital
Conduction system	: Automated and driverless
Line length	: 40 km (25 mi)
Elevated	: 8 km (5.0 mi)
Underground	: 32 km (20 mi)
Track gauge	: 1,435 mm
Operating speed	: Max 100 km per hour

JOHOR – SINGAPORE RTS



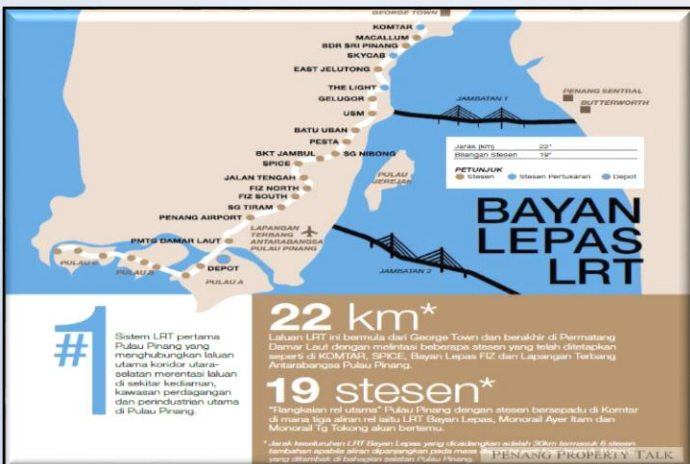
Stations	: 2
Services	: 1
Daily ridership	: 10,000 passengers per hour
Line length	: 4.2 km (2.6 mi)
Number of tracks	: 2
Track gauge	: 1,435 mm (4 ft 8 1/2 in) standard gauge
Electrification	: 750 V DC Third Rail
Operating speed	: 80 km/h (50 mph)

KL – SINGAPORE HIGH SPEED RAIL (HSR)



Elevated	: 91.6 km
At-grade	: 256.1 km
Tunnel	: 2.3 km
Station	: 8 stations
Line length	: 350 km
Operating speed	: 320 km/h (200 mph)
Rolling stock	: 10-car trainsets capacity for up to 100 passengers per car

BAYAN LEPAS LRT



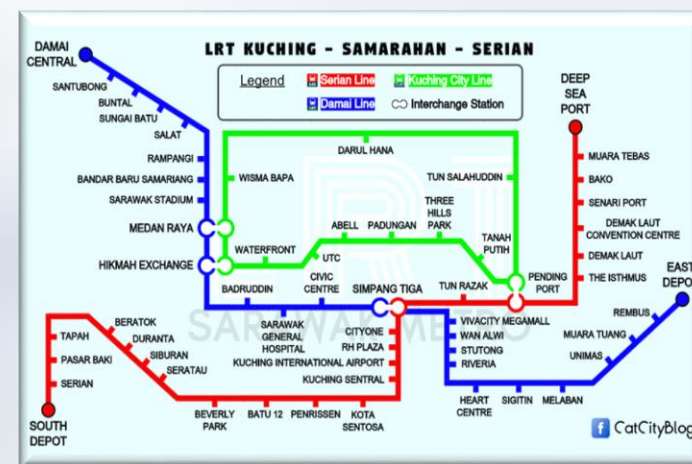
Stations	: 27
Services	: George Town – Bayan Lepas
Planned opening	: 2024; 4 years' time
Owner	: Penang state government
Character	: Elevated
Depot(s)	: Island A
Line length	: Phase 1: 23.5 km (14.6 mi) : Phase 2: 6.4 km (4.0 mi)

NORTH & SOUTH FREIGHT BYPASS



Total Length	: Total Length – 138 km <i>Serendah to Port Klang – 60km</i> <i>Port Klang to Seremban – 78km</i>
Type of Gauge	: Meter Gauge
Track	: Double Track
Traction	: Electric
Operating Speed	: 90kph (freight service) : 140kph (commuter service)

KUCHING TRANSIT



Elevated	: 104.71 km
At-grade	: 52.38 km
Tunnel	: n/a
Station	: 67 stations
Line 1:	: Kota Samarahan to Damai via Sungai Batu, 62.4 km, 28 stations.
Line 2:	: Serian to Senari via Siburan, 82 km, 26 stations
Line 3:	: City Dispersal Line, 12.8 km, 13 stations, tram system.



ECONOMIC VS FINANCIAL PUBLIC TRANSPORTATION- going back to basics



***MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING
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ECONOMIC VS FINANCIAL PUBLIC TRANSPORT AND THE ECONOMY

**Improvements to overall accessibility
and connectivity**



Increases

1. Productivity
2. Employment
3. Business activity
4. Property values
5. Investment and tax revenues



Improves

1. Provision of goods & services
2. Access to education & employment
3. Transportation costs
4. Travel time
5. Vehicle operating costs



Multiplier effect

GDP and overall economy



Public Transportation
(Government Objectives – Economic, Environment & Safety)

ECONOMIC CASE (CAPEX)

- Accessibility & Connectivity
- Direct Impact (Improves Transportation Cost / Travel Time / VOC / Reduces Carbon Omission)
- Indirect Impact (Productivity Employment / Business Activity / Property Values / Investment)
- GDP & Overall Economy (Multiplier Effect)
- Environment (Carbon Emissions)
- Safety (Accidents)

VS

FINANCIAL CASE (CAPEX)

- Heavy Reliance on Fare Box Revenues
- Low Ridership
- High Operations & Maintenance Cost
- Reliance on short term bank loans

Possible Business Case for O&M

X

LVC?

Government Policies to drive demand

ECONOMIC VS FINANCIAL SUPPLY AND DEMAND – GOVERNMENT POLICIES

**Government Policies to check imbalance in between
supply and demand & vice versa**

- **Private Vehicle Ownership**
- **Congestion Charges/Area Road pricing**
- **Urban Parking Charges**
- **Property Taxes within Urban Transport Corridor**

**Can only be done in
Stages with Improved
Public Transportation
(*Last Mile Connectivity*)**

Target Modal Shift (In stages) (TVM)

- Motorcycles?
- Private Cars

ECONOMIC VS FINANCIAL LAND VALUE CAPTURE

• MECHANISM A

➤ *VALUE CAPTURE THROUGH THE MAINSTREAM TAXATION SYSTEM*

• MECHANISM B

➤ *SPECIAL FEES & LEVY*

• MECHANISM C

➤ *DIRECT PROPERTY—RAIL AGENCY AS DEVELOPER IN THE 'EAST ASIAN' STYLE*

• MECHANISM D

➤ *AUCTION OF DEVELOPMENT RIGHTS*

• MECHANISM E

➤ *A COMPREHENSIVE TOD AGENCY (WITH VALUE CAPTURE CAPABILITIES)*

➤ Identify project with Best Economic Value (Direct/In-direct/Induced)

➤ Possible Business Case - "O&M"



Sustainable Privatization Model
(A case for Private Sector Operators)

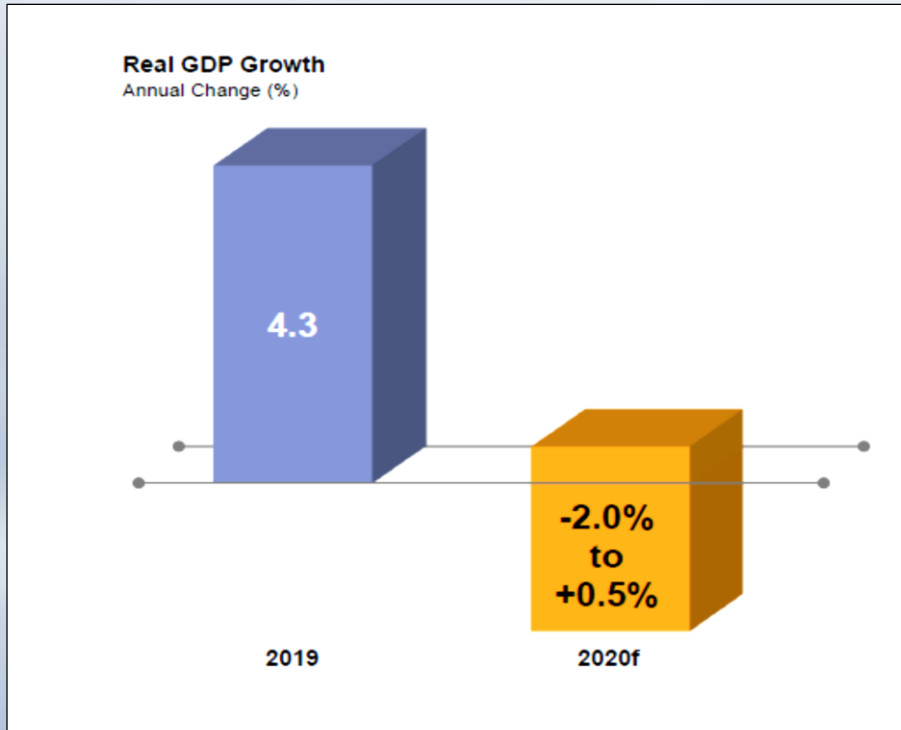


SUSTAINABLE PRIVATISATION MODEL IN MALAYSIA

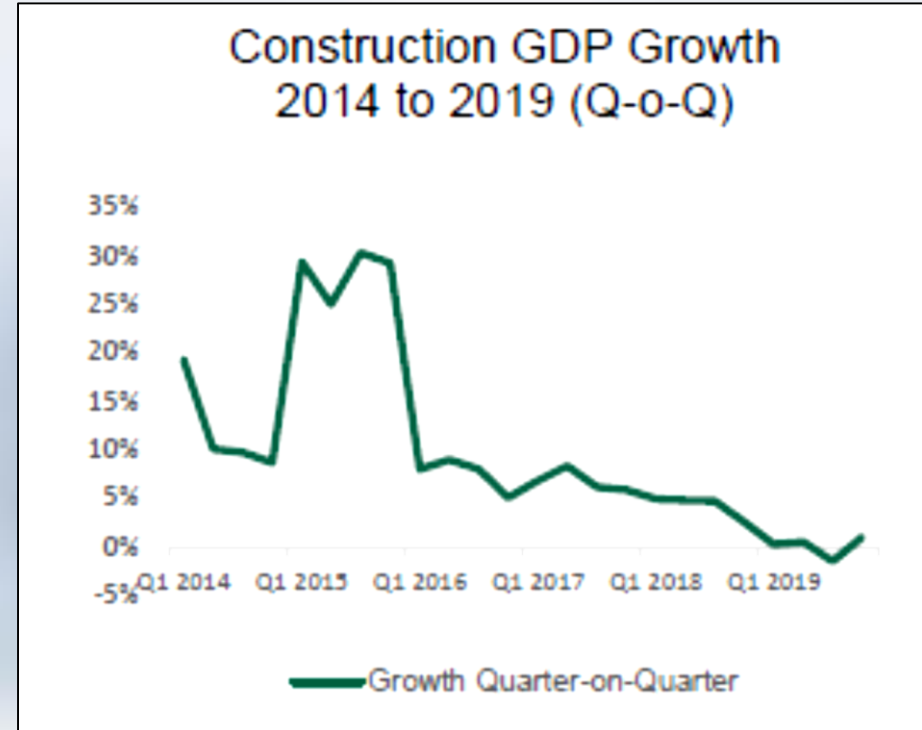


***MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING
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Malaysia's economic growth is projected to be between -2.0% and +0.5% in 2020



Prior to COVID 19, the construction sector is already distress



Before 2018 GE	Feb 2020
Value of major contracts	Value of major contracts
RM418.7B	RM192.4B

KLCI Construction Index from 2018 till 25th Feb 2020

-37%

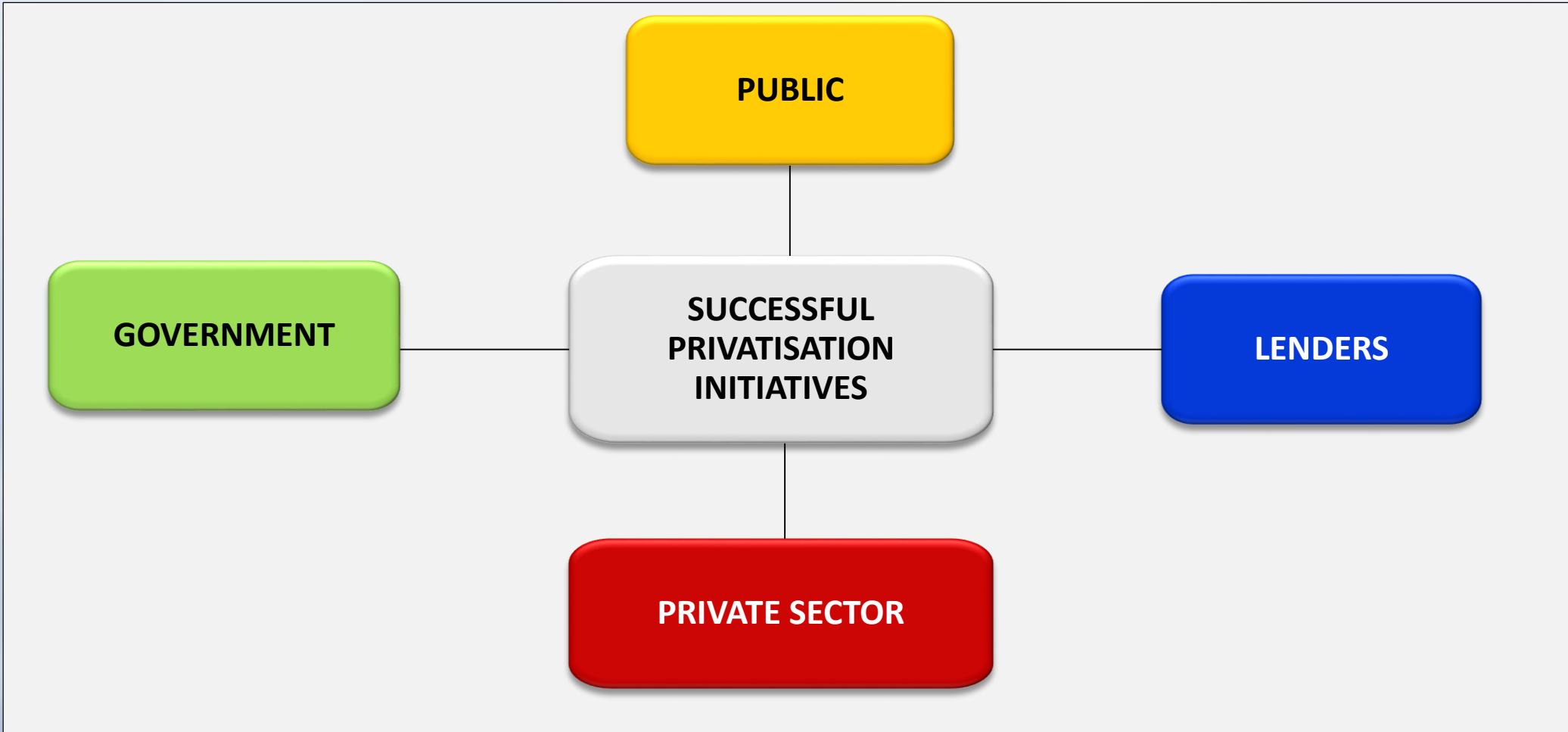
- Covid-19 pandemic - Additional strain on the Government's financial resources.

- Relook at privatization of urban public transport infrastructure projects - without straining financial resources.

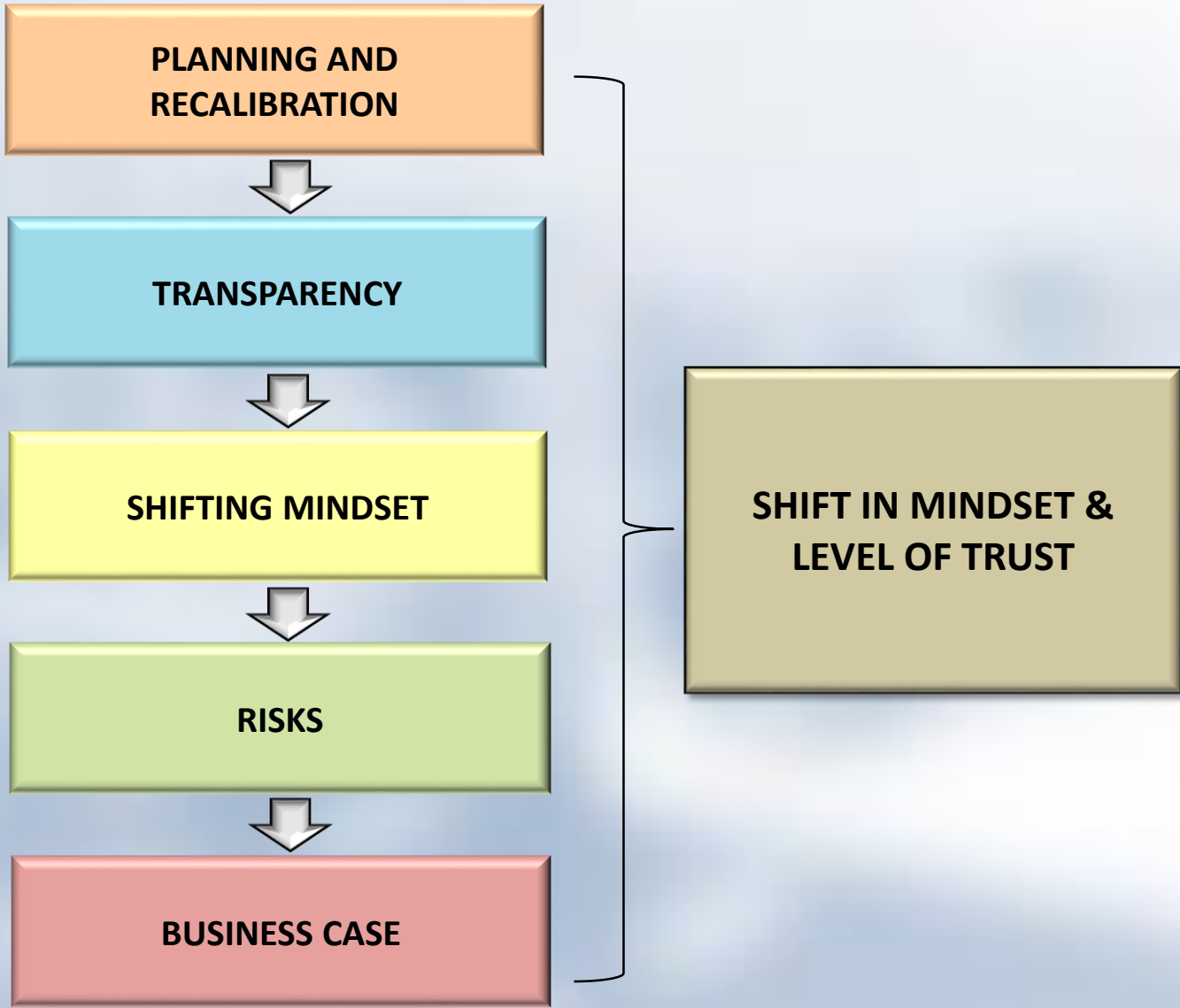
- Government spending and private sector investment will drive the economy.

- Prioritization of 'Business Case' Infrastructure Projects





KEY STAKEHOLDER INVOLVEMENT



SUSTAINABLE PRIVATISATION MODEL IN MALAYSIA

PLANNING & RECALIBRATION



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Policies at Federal, State and Local Government levels

Short Term Planning
(Detailed & more definitive plans)

5 – 10 Years



Medium Term Planning
(More Macro Level)

5 – 15 Years



Long Term Planning
(More Macro Level)

10 – 25 Years

Consistent &
Correlate



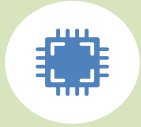
SUSTAINABLE PRIVATISATION MODEL IN MALAYSIA

PLANNING & RECALIBRATION

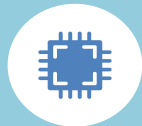


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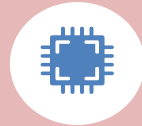
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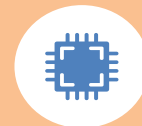
**Policies :- Adjust Gaps “ Demand vs Supply”
(Need to Recalibrate every five (5) years**



- **Development Plan Basis**
- **Government agencies - essential requirements (leading to formulation of 5-year plan).**



Recalibrated at all levels :- planned demand and planned supply within acceptable range



Scenario planning :

- **Low case**
- **Base case**
- **High case**

Effect strategy and timeline for implementation of planned supply

SUSTAINABLE PRIVATISATION MODEL IN MALAYSIA

TRANSPARENCY



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- In line with Federal, State & Local Government plans (Short, medium and long term)
- Tendered out (External experts / consultants)
- Baseline business case for commercial evaluation.
- Appointed consultants must be retained (concession period) – “Check & Balance”
- Post Signing of Concession Agreements (CA) - Public viewing

- **Mindset Change-** Traditional supplier of debt to that of a transitional equity holder.
- **Remove element of 'pre-borrowing'**

- **"Arms length" relationship (Segregation of Roles)**
 - Investment, contracting, operations and maintenance (O&M).

- **Planning & governance (Procurement to operations).**
- **Government - 'enabler' rather than a mere regulator.**
- **Assistance**
 - Monetary grants (Low or zero interest).
 - Non-monetary grants (Guaranteed Off-take clauses)
 - Assist developer to negotiate loans with more favorable terms
- **CESS collection :- Dedicated Infrastructure Fund**

LENDERS

PRIVATE
SECTOR

GOVERNMENT

PUBLIC TRANSPARENCY

RISKS

Notional transference of risks

Acceptable returns - concessionaires “behave” professionally.

“Decent/ acceptable” profits - mitigating & managing risks – appropriate reward

- **Continuous Identification of projects:- Range of 'Business Cases'.**
- **Roll Out – Consider Short / Medium & Long term horizon**
- **All levels of Government - Coordinated Actions**
- **Suitable, well designed with sufficient returns Projects - Attract private sector investments.**
- **Suitability of Projects – Guidance from the Consultants**

• Privatization Considerations

- Financially acceptable to Private Sector ?
- Adequate financial incentive to participate ?
- Benefits, returns and costs to private and public investors ?
- Benefits, returns and costs of a project - Four primary stakeholders ?

• Review of Business Case

- Capital expenditure (CAPEX) – Does not apply for most if not all “Urban transport”
- Operating expenditure (OPEX) – Partial or Full
- Government support instruments – Grants and subsidies. (Policy?)

• Independent consultants reviews are critical

- Complex web of stakeholders
- Calibrated Money flows (Financially Viable & Economically Beneficial)
- Professional project assessment with clarity for decision makers

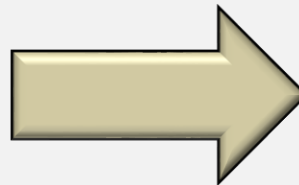
CONCLUSION



MALAYSIA'S PUBLIC TRANSPORTATION SECTOR & REVIVING MALAYSIA'S INFRASTRUCTURE PRIVATISATION

- **Financial Case for Public Transportation – Applies for O&M only , NOT for CAPEX (Mostly)**
- **Government Support Models (Policies & Funding) - Essential for Projects with Economic Case**
- **Land Value Capture (LVC) – Possible Future Funding ??**

- **Planning & Recalibration**
- **Transparent Structured Approach**
- **Shifting and Changing Mind-sets**
- **Assigning Appropriate Risks to Relevant Primary Stakeholders**
- **Viable Business Case**



**Sustainable Infrastructure
Privatization Model**



**INVEST
MALAYSIA 2020**
THE CAPITAL MARKET CONVERSATION



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