

Penang Overarching Transport Master Plan Strategy

Public Consultation Programme

Public Displays:

Penang Island

3rd Floor Foyer Area Komtar, Pulau Pinang	Mon-Friday Mon-Friday	16 to 20 April, 2012 23 to 27 April, 2012	9.00AM to 5.00PM 9.00AM to 5.00PM
Sunway Carnival Mall	Saturday	21 April 2012	10.00AM to 5.00PM
Sunshine Farlim Mall	Saturday	21 April 2012	10.00AM to 5.00PM

Penang Mainland

Ground Floor Foyer Area MPSP Offices	Mon-Friday Mon-Friday	16 to 20 April, 2012 23 to 27 April, 2012	9.00AM to 5.00PM 9.00AM to 5.00PM
Gurney Mall	Saturday	28 April 2012	10.00AM to 5.00PM
Jusco Perda Mall	Saturday	28 April 2012	10.00AM to 5.00PM

Public Workshops:

Thursday 3rd May 2012	Registration 9.15AM	Workshop 10.00AM to 13.00AM
Saturday 5th May 2012	Registration 10.15AM	Workshop 11.00AM to 14.00AM

Venue for both Workshops: Kompleks Masyarakat Penyayang, Georgetown, Penang

For further information please visit

www.ptc.penang.gov.my

Penang Overarching Transport Master Plan Strategy

Background

AJC Planning Consultants Sdn Bhd, Halcrow (A CH2M Hill Company) and Singapore Cruise Centre were appointed by the Penang State Government and the Northern Corridor Implementation Authority in May 2011 to develop a sustainable Transport Master Plan Strategy for Penang. The consultants have now released their report setting out the draft form of this Overarching Transport Master Plan Strategy.

The Aims of the Strategy are to:

- adopt an holistic approach to transport, making a shift towards ensuring accessibility and “moving people not cars”
- make roads safe and user-friendly for all
- move towards a private vehicle to public transport modal split of 40% (public transport): 60% (private vehicle)
- ensure integration between transport systems and development plans – delivering a multi-modal system
- integrate the traffic and transport plans of the island and mainland

The Strategy must:

- take account of community / stakeholder needs
- give priority to UN World Heritage Sites
- be realistic, implementable, affordable and fundable
- be justified through an appropriate appraisal process
- be supported by stakeholders and the public

What does the future hold for Penang ?



The Current Issues

Current transport issues have been identified through discussions with representatives of:

- government bodies
- non-government organizations
- interest groups

Surveys were also undertaken to understand current travel patterns

Highways

Key Congestion Problems

There is a need to make better use of the road network addressing:

- illegal parking and hawker activity
- traffic signal control issues
- the needs of pedestrians

There is also a need to address congestion

Key Congestion Points - Penang Island

- Tanjung Tokong and Gurney Drive
- Georgetown at Komtar, Weld Quay and roads leading to the Jelutong Expressway
- Approaches and exits of Penang Bridge - from Jalan Masjid Negeri, Jalan Sultan Azlan Shah and Jelutong Expressway and to Bayan Lepas
- junctions of Jalan Sultan Azlan Shah with Lebuhraya Sungai Nibong, Jalan Tengah and Jalan Mayang Pasir, Bayan Lepas
- In Relau on Jalan Dato Ismail Hasim and at the intersection with Jalan Paya Terubong

Key Congestion Points - Mainland

- North-South Expressway / Butterworth - Kulim Expressway Intersection
- Auto-City / North-South Expressway Intersection
- The approaches to Bukit Mertajam town centre
- Federal Highway 1, in the vicinity of Bukit Minvak

Public Transport

Bus services are much better than previously. There is however still a need for better planning.

- Services are mostly radial, linking George Town and Butterworth to other parts of the State -not linking other communities together
- Bus services generally follow main roads, not entering residential and industrial areas - they are often remote from where people need to be
- there is no bus service between the Bayan Lepas Industrial and residential areas
- In the western part of Penang Island and the rural areas of the Mainland service frequencies are generally low
- Other than the BEST 'Park and Ride' bus service, there is no direct bus service connecting the Mainland and the Island.



Taxis

- Taxis don't operate on meters, more often than not, fares have to be negotiated
- taxis don't cruise the streets for hire, instead they target passengers at fixed locations

All this means local people avoid using taxis and tourists and businesses are poorly served

The Current Issues

The Butterworth - Georgetown Ferry

- The service is in a state of decline, with ferries nearing the end of their operational life
- Service frequencies are reducing year on year and the service operates at a loss.
- Under the current regime this is unlikely to improve. Increasing operational losses are a major concern - the need for new investment adds to this



The Pedestrian Regime

- Can be significantly improved
- At present though, it presents a major obstacle to increasing public transport usage
- Even within Georgetown, Butterworth and Bukit Mertajam the footways, when they exist, are generally narrow, often obstructed by illegal parking, discontinuous and uneven.

This means that usage of public transport is unattractive. If you have a private vehicle you use it - buses are for those without choice

Institutional Management

The division of responsibilities between State and Federal Government hampers improvement of the State's transport systems.

While improvement of local highways is generally done by the State it has limited funds. It also has no control over privately operated Expressways, the Penang Bridge or the Federal Highways - Its ability to plan for the future is limited.

The State's public transport responsibilities are limited to improving the pedestrian regime, providing bus stop facilities and bus terminals and introducing bus priority measures.

All other aspects of public transport provision fall under the jurisdiction of Federal Government.

The operation of Rapid Penang, together with the promotion of new Bus Rapid Transit, Tram, Light Rail Transit or Monorail routes are all outside the State's control.

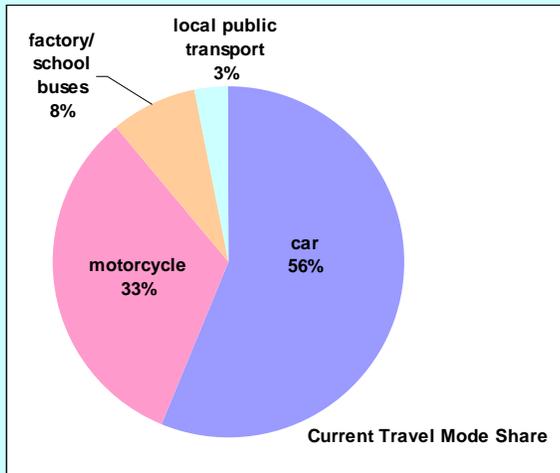
The State also has no say in the operation of taxis, the ferry or any future commuter rail services

If the future Transport Master Plan Strategy is to contain more than simply roads, Federal Government must be engaged.

Travel Patterns - Today and in the Future

Today's Travel Patterns

In the morning peak hour 225,000 person trips are made by private or public transport. Some 3,250 lorries also travel on Penang's roads. Public Transport Mode Share, at State Level, is only 3.2%



To achieve a 40% mode share radical changes need to be made to the way public transport is provided.

Today's Travel Conditions

Travel Speeds, despite concern, are relatively good by other city standards.

Average morning peak travel speeds are:

- 30.75 kph within George Town
- 28.75 kph within the remainder of Penang Island's built-up area
- 32.0 kph within the wider Butterworth area

Accessibility by private vehicle is relatively good. It is easy for residents to travel between their homes, offices, shops and industrial areas.

Travelling by bus however is much slower. Bus users need to walk to the bus stop, the bus needs to pick up passengers and passengers again need to walk to their destination. Often it is also necessary to change buses or to use the ferry - Overall, accessibility by bus is much lower

- **This is why public transport is not the first choice for most travellers.**

Looking into Future

The population of Penang is expected to increase from 1.56 Million to 2.00 Million in 2020 and 2.45 Million in 2030. If Penang is to grow the number of jobs will also have to increase.

By 2030 it is anticipated that:

- 335,000 person trips will be made in the morning peak hour
- 65% more vehicle kilometres will be travelled on Penang's roads.

Without significant changes to the State's highway and public transport systems:

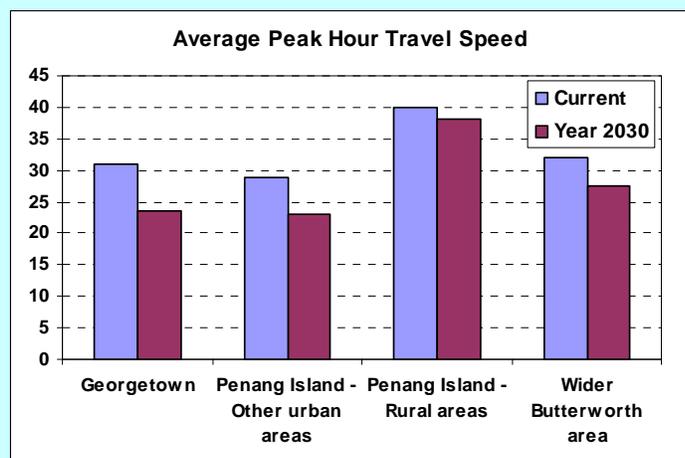
- Public Transport Mode Share in the morning peak hour will stay low, at only 3.8%.

Morning Peak Travel Speeds will reduce to:

- 23.5 kph within George Town
- 23.0 kph within the remainder of Penang Island's built-up area
- 27.5 kph within the wider Butterworth area

Although still not as bad as some other cities in the world, conditions will be much worse than today.

Such changes will reduce overall levels of accessibility, both by private vehicle and public transport. Addressing these issues will be important if Penang is to develop and grow as anticipated.



Identifying a Way Forward - The Core Strategy

There are three main ways to resolve these issues:

- o better management of the highway network and building new roads;
- o significant improvement of the current public transport system; and / or
- o usage of parking controls and /or road user charges to encourage more travelers to use public transport.

The final Overarching Transport Master Plan Strategy is likely to include a mixture of at least two of these, and probably all three.

As a first step in identifying ideas, meetings were held with representatives of:

- o government bodies
- o non-government organizations
- o interest groups

From these and other analysis, a series of ideas were identified. Each has been examined and conclusions have been reached.

Importantly, it has been concluded that the Strategy should be in two Phases:

- o a Core Transport Master Plan Strategy for the next 5 to 8 years (up to 2020)
- o a longer term vision up to 2030.



What is the Core Strategy ?

Make Better Use of the Highway Network:

- reduce traffic signal cycle times
- extend the current Urban Traffic Control system, allowing all traffic signals to be fully co-ordinated
- improve the on-street enforcement regime, reducing illegal parking, loading and street hawker activity
- introduce a road safety accident unit, addressing current and future road safety issues

Define a Functional Highway Hierarchy so as:

- enforcement activity can be better targeted
- development applications can be properly considered
- proper consideration can be given to the needs of pedestrians and public transport

Address Hot-Spot Intersections at:

- Lebuhraya Batu Lancang / Jalan Masjid Negeri
- Jalan Tun Sardon / Jalan Paya Terubong
- Jalan Sungai Dua / Jalan Sultan Azlan Shah
- North-South Expressway / Butterworth - Kulim Expressway
- Auto-City / North-South Expressway

Undertake On-line Highway Improvements

- Bayan Lepas Expressway, State Road P10 and the remaining sections of Federal Highway 6
- southern sections of Federal Highway 1
- Jalan Masjid Negeri
- Jalan Song Ban Kheng and Jalan Kulim on the Mainland
- Jalan Paya Terubong

Improve the Bus System:

- increase bus frequencies, achieving a minimum 10 minute service at peak times
- introduce additional bus routes, ensuring that all communities have access to public transport
- upgrade bus stops, bus terminals and bus interchanges

Improve Access to Public Transport

- improve the pedestrian regime in built-up areas
- minimise the inconvenience of changing from one bus service to another
- encourage private vehicle users to transfer to buses through providing of Park and Ride sites

Strengthen the On-street Parking Regime

- extend parking bays and yellow lines throughout the built up areas and improve the on-street parking enforcement regime
- increase on-street parking charges in key areas to persuade travellers to use public transport

The Core Strategy - Up to 2020

How Does the Core Strategy Perform ?

In Achievability Terms

Implementation of this Core Strategy is:

- Within the control of the State, or could be easily achieved through working with other government bodies
- Non controversial in so far as it is unlikely to involve significant property acquisition and requires no new legislation prior to implementation
- Affordable, particularly if the State mobilizes the private sector through use of developer contributions and sponsorship.

In Performance Terms

In 2020, with this Core Strategy in place:

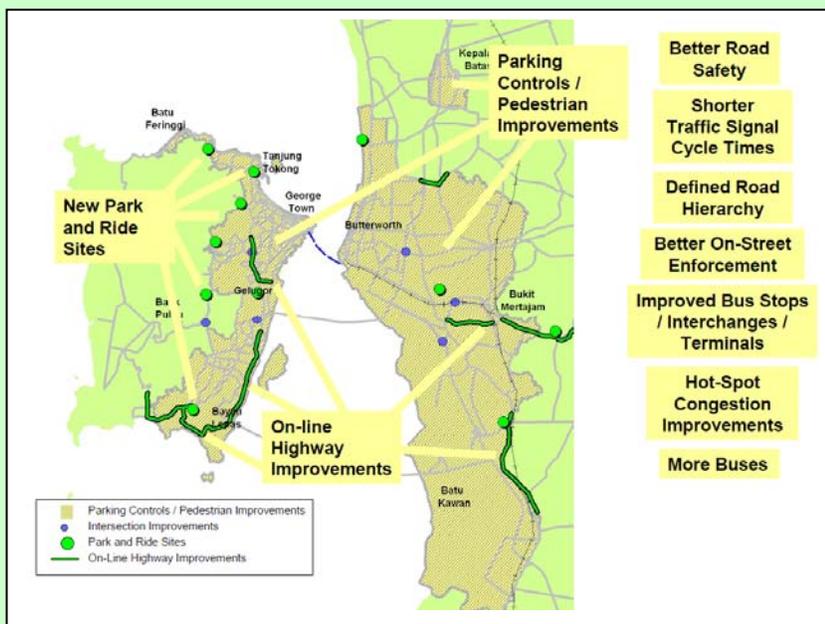
Public Transport Mode Share in the morning peak hour will be:

- 4.5% at a State-wide level (compared with 3.7% if nothing is done and 3.2% today)
- 9.3% to George Town (compared with 7.3% if nothing is done and 6.8% today)

Travel Speeds in the Morning peak hour will be:

- 28.25 kph within George Town (compared with 26.75 kph if nothing is done and 30.75 kph today)
- 30.0 kph within the remainder of Penang Island's built-up area (compared with 25.75 kph if nothing is done and 28.75 kph today)
- 33.75 kph within the wider Butterworth area (compared with 32.0 kph both if nothing is done and today)

The cost of this Core Strategy is estimated at RM 2.5 Billion over the next 5 to 8 years



The Core Strategy

It is Recommended that this Core Strategy be Adopted

In Strategy Objective Terms

This Core Strategy is:

- Good, in that it primarily makes better use of what we have
- It is effective in reducing traffic congestion

However, the traffic congestion relief will be short lived. By 2030 morning peak hour traffic speeds in:

- George Town will be reduce again to 26.25 kph
- those in the other built-up areas on Penang Island will reduce to 27.25 kph
- Those in the wider Butterworth area will reduce to 29.0 kph.

In public transport terms though, this Core Strategy simply improves travel conditions for those who don't have choice. It does little to encourage private vehicle users to change mode

The Longer Term vision - Only Building Highways

Only building highways will directly address traffic congestion issues, but accepts that public transport will only be used by those who don't have the choice of using private vehicles

What are the Highway Options ?

Penang Outer Bypass or the George Town Cross City Link

- Both act as orbital distributors for George Town
- Construction of both is likely to be controversial.
- The Outer Bypass has detrimental impacts in the outer areas of George Town, affecting the edge of the Penang Hills and the setting of the Botanical Gardens
- The Cross City Link involves construction of an elevated road through the inner city - As such, it could increase traffic pollution, traffic noise and pedestrian severance within this area.
- Both reduce traffic activity on other roads within George Town - The Outer Bypass is however more effective - it does not attract unnecessary traffic into the inner City.
- The Outer Bypass could form a natural edge to the City, allowing Park and Ride sites to be provided around it and could even allow road user charges to be imposed for travel inside it.
- Construction of neither is ideal on environmental grounds
- Both could offer the opportunity to transfer road space from private vehicles to public transport, perhaps allowing bus priority, Bus Rapid Transit or Trams to be introduced.
- If either is to be constructed the impacts of each need to be examined in detail - On balance, the Outer Bypass offers the higher opportunities in terms of implementing public transport improvements.

North-South Expressway Link

- Provides congestion relief to the un-tolled section of the North-South Expressway and to minor north-south roads to the east.
- Has the potential to maximize usage of the Butterworth - Kulim Expressway.
- Could provide opportunities to transfer road space from private vehicles to public transport.

If built, this proposal is likely to be financed by the private sector, thus minimising impacts on the public purse.

North Coast and Air Hitam - Relau Pair Roads

If constructed as additional roads

- Both will encourage increased private vehicle usage, particularly to George Town.
- If achieving a 40% public transport mode share is to be a key objective neither can be recommended as part of a Balanced Vision
- It is undeniable however, that the existing roads are unsuited for high volumes of traffic. With planned new development this situation will worsen
- If both were promoted as replacement roads this picture changes:
- Both could offer opportunities to improve pedestrian amenities in Batu Feringgi, Tanjung Bungah and parts of Air Hitam.
- Both existing roads could be utilised primarily for public transport movement
- Nevertheless, construction of each is likely to be controversial as both impact on the Penang Hills.



The Longer Term vision - Only Building Highways

The New Third Tunnel

- Increases cross channel capacity between the Island and Mainland
- In the longer term, if public transport solutions can't be found to reduce private vehicle demand, it is likely to be needed
- Its costs however are very high. Perhaps, if included in the strategy, it should be viewed as a long term objective, rather than an immediate need.

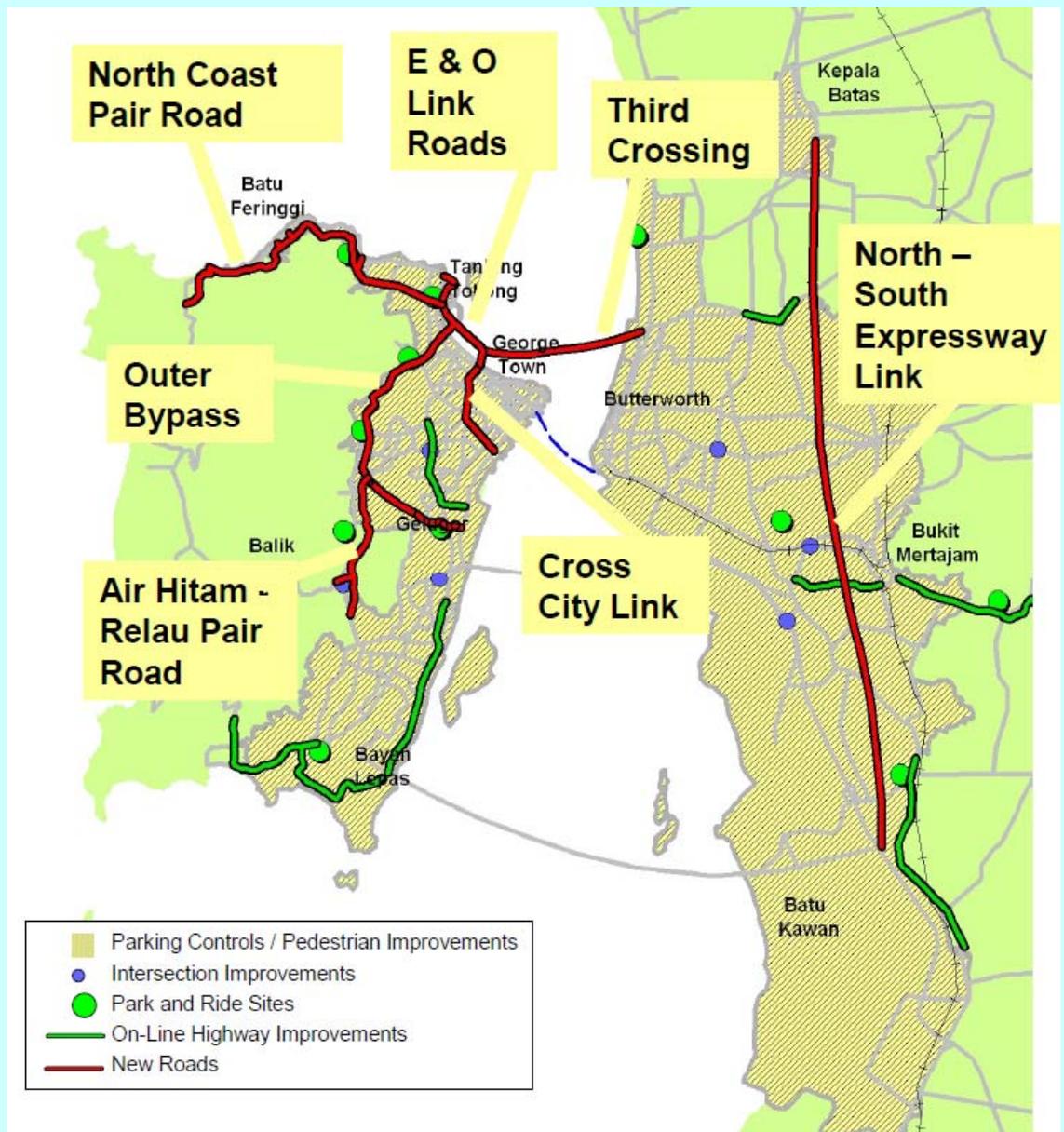
The E and O Link Roads

- Provide traffic congestion relief to Tanjung Tokong, Gurney Drive and Pulau Tikus.
- Could provide an opportunity to transfer road space from private vehicles to public transport.
- Again, this proposal is likely to be controversial as it requires land reclamation at Gurney Drive.

However, this road already has tentative approval as it forms part of the wider E and O development

As such, its costs are likely to be met by the private sector, rather than the public purse.

The Highway Only Vision



The Longer Term vision - Only Building Highways

How Does Only Building Highways Perform ?

In Performance Terms

If a Highway Only Based Vision is Pursued

- All of these highway schemes will need to be constructed, simply to maintain today's traffic travel speeds.
- Even then, it is likely that traffic speeds in the wider parts of the Mainland will remain below today's levels
- Choices will need to be made between providing the Penang Outer Bypass and the George Town Cross City Link - Building both is considered to be unnecessary.

Adopting a Highway Only Based Vision will cost another RM 10.0 Billion after 2020

Adopting a Highway Only Based Vision means that for the foreseeable future public transport will remain a secondary service, provided primarily for those who do not have a choice

The chances are this secondary public transport system will need to be subsidised



In Strategy Objective Terms

Adopting a Highway Only Based Vision

- Encourages the usage of private vehicles and will not resolve congestion problems in the longer term - Moving forward, the State aspires to promote 'moving people not cars'
- Adoption of this Vision means the modal share for public transport trips will remain low



In Achievability Terms

Adopting a Highway Only Based Vision

- Is likely to be relatively easy to achieve, given the current status of the private vehicle within both Penang and Malaysia.
- It is also possibly easy to achieve politically - It minimizing the need for Federal Government involvement and could perhaps be financed through the establishment of a public sector / private sector partnership.
- Although adoption of a 'Highway Only based Vision' does not necessarily preclude the possibility of introducing a better public transport system at a later date, introducing public transport schemes at some future time is likely to be just as difficult as it would be today, particularly if all the State's existing and newly built roads are fully occupied by private vehicles, as they inevitably will be.

The Longer Term vision - Taking a Balanced Approach

This involves taking a more balanced approach, improving public transport, adopting a more limited road building programme, but also introducing road user charges to reduce the attractiveness of using private vehicles, thus encouraging more public transport usage

What are the Public Transport Options ?

There are three ways forward:

- Extensive prioritisation of buses, using Bus Lanes and 'bus and access only' streets.
- Introduction of an at-grade segregated Bus Rapid Transit or Tram system
- Introduction of an elevated Light Rail Transit or MonoRail system

The First two require extensive re-allocation of road space from private vehicles to public transport. The last is much more expensive

Depending on future demand, the Vision could also include the introduction of:

- Catamarans between Butterworth - George Town providing a passenger only, high speed, frequent service
- additional catamaran services between Butterworth and Gurney Drive / Queensbay
- a coastal ferry linking Tanjung Tokong, Gurney Drive, George Town, The Light and Queensbay
- commuter services on the double tracked KTM railway line between Butterworth and towns to the north and south
- a revitalized State Taxi service



What is the Best Public Transport Option ?

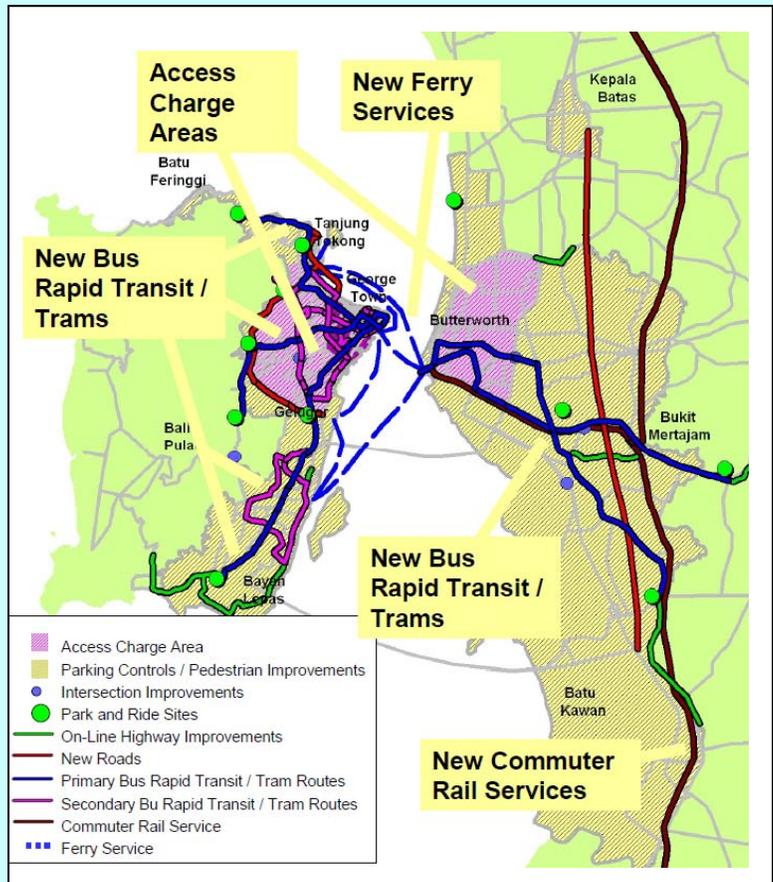
- Introduction of a Bus Rapid Transit or a Tram based system is the best way forward
- Retention of buses on all routes, even in prioritised bus lanes, does not afford public transport the required image to make it a mass people mover
- Moving to a higher quality Light Rail Transit or Monorail system it unlikely to be justified

Nonetheless, in implementing a Bus Rapid Transit / Tram system, there would be merit in migrating from the current situation, through bus prioritisation to the ultimate solution.

The Longer term Vision - Taking a Balanced Approach

Do We Still Need to Build Roads ? - Yes

- The Outer Bypass, E and O Link Roads and North - South Expressway Link will still need to be built.
- Each of these roads would however be introduced to facilitate the reallocation of road space from private vehicles to public transport - They will not be promoted as a means of increasing highway capacity.
- Both of the Pair Roads provide opportunities to enhance public transport and the pedestrian regime. They also facilitate new development. Their costs are however relatively high. Before deciding whether to build these the benefits gained will need to be weighed against the environmental impacts they create
- The Third Crossing may still be needed in the very long term. Its inclusion in this strategy as a road for construction now is nonetheless unnecessary - Its alignment should simply be safeguarded for the future.



The Balanced Vision

Why Is There a Need to Introduce Road User Charges ?

- Public transport won't be sustainable as a mass mover of people unless it is supported. In the longer term this means introducing some form of Road User Charges - relying on parking controls alone is insufficient
- Road User Charges need to be targeted at private vehicles entering George Town and Butterworth. Making it more attractive for travellers to use Public Transport, rather than travelling by private vehicles.
- Alternative approaches - increasing tolls on Penang Bridge or introducing State-wide Distance charges are less effective - They are likely to be less acceptable and will be an unnecessary burden on the public
- Going forward, State Government should set up a Transport Fund, using the income from Road User Charges to support Public Transport. Already, the State has spent RM 2 Million this year alone supporting both the BEST (Bridge Express Shuttle Transit) Park and Ride service and the CAT (Central Area Transit) service. With income from Road User Charges the State could achieve much, much, more.



The Longer term Vision - Taking a Balanced Approach

How Does 'Taking a Balanced Approach' Perform ?

In Performance Terms

Adopting a Balanced Vision will mean that in the 2030 weekday morning peak hour

- At a State-wide level, public transport mode share could be increased to at least 9.1percent (compared with 3.7% in 2030 if nothing is done)
- Public transport mode share to George Town could be increased to over 30.0% (compared with 7.6% in 2030 if nothing is done)

Average travel speeds will be:

- 25.75 kph within George Town (compared with 23.5 kph in 2030 if nothing is done)
- 23.75 within the remainder of Penang Island's built-up area (compared with 23.0 kph in 2030 if nothing is done)
- 27.0 kph within the wider Butterworth area (similar to the situation in 2030 if nothing is done)

Adopting a Balanced Vision will also cost RM 10.0 Billion after 2020

In Achievability Terms

Adopting a Balanced Vision will not be easy

- To succeed it must have the full backing of the public and politicians - The State can't take forward such a strategy on its own. It needs co-operation from Federal Government
- Such cooperation is much more likely to be forthcoming if it can be shown that the proposals are supported at local level

In Strategy Objective Terms

The Adoption of a Balanced Vision will mean that reductions in traffic congestion will be lower.

However, although it will not fully meet the objective of achieving a 40% public transport mode share by 2030, it does nonetheless provide a solid start towards:

- Adopting an holistic approach to resolving transport issues
- ensuring good accessibility for all
- "moving people not cars" and
- it helps make roads safe and user-friendly for all

Indeed, through refining both the public transport proposals and future land use / planning strategies it should be possible to further increase both public transport mode share and average travel speeds

What Should be the Longer Term Vision for Penang ?

Should we concentrate solely on building roads, so as to increase road capacity

OR

Should we take a more balanced approach, improving public transport and reducing car use in core areas such a George Town and Butterworth

Fully supporting private vehicle usage is the easiest way forward.

At some time however it will be too difficult to sustain.

Has the time arrived to think about change?