Prosperity Fund

GLOBAL FUTURE CITIES PROGRAMME

MELAKA

CITY CONTEXT REPORT

Foreign & Commonwealth Office

UN HABITAT
FOR A BETTER URBAN FUTURE

Prosperity Fund

GLOBAL FUTURE CITIES PROGRAMME

MELAKA

CITY CONTEXT REPORT

December 2018

Foreign & Commonwealth Office

UN HABITAT
FOR A BETTER URBAN FUTURE

Global Future Cities Programme
MELAKA
City Context Report

UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME
P.O. Box 30030, Nairobi 00100, Kenya
www.unhabitat.org

Funded by: United Kingdom Foreign and Commonwealth Office (UK FCO)
Lead executive agency: UN-Habitat: Urban Planning and Design Lab
Academic partner: International Growth Center (IGC)
Professional partner: United Kingdom Built Environment Advisory Group (UKBEAG).

Acknowledgments

City context report coordinators (Melaka): Charlotte Mohn, Stephanie Gerretsen, Riccardo Maroso (UN-Habitat)

United Kingdom Foreign and Commonwealth Office (UK FCO)

Project Management	Elizabeth Milsom
Kuala Lumpur Office	Carol Koh

United Nations Human Settlements Programme (UN-Habitat)

Project Coordination	Laura Petrella
Project Manager	Rogier van den Berg
Project Supervisors	Klas Groth, Naomi Hoogervorst
Local City Specialist	Syahriah Bachok, Mariana Mohamed Osman

Urban Planning and Design LAB
Niina Rinne, Jonathan Weaver, Sara Thabit, Gabriela Aguinaga, Dongni Niu, Riccardo Maroso, Charlotte Mohn, Ban Edilbi, Jean-Noé Landry, Katherine Cashman, Princesse Samba, Yabework Kifetew, Nadia Mourid, Yumi Neder, Stephanie Gerretsen, Shegufta Newaz, Helen Yu, Francesco Tonnarelli

International Growth Center (IGC)

Project Coordination	Astrid Haas

Contributors
Priya Manwaring, Victoria Delbridge, Michael Blake, Oliver Harman, Shah Rukh, Sebastian Kriticos

United Kingdom Built Environment Advisory Group (UKBEAG)

Project Coordination and Strategic Advisor	Peter Oborn
Project Lead	Adrian Mallesom
Contributor and City Visiting Expert	Camilla Ween

CONTENTS

GLOBAL FUTURE CITIES PROGRAMME

Introduction

ABOUT THE GLOBAL FUTURE CITIES PROGRAMME

In 2015, the UK government created a new Cross-Government Prosperity Fund worth £1.3 billion from 2016-2021, in order to help promote economic growth in emerging economies. Its broad priorities include improving the business climate, competitiveness and operation of markets, energy and financial sector reform, and increasing the ability of governments to tackle corruption.

Emerging Economies still face considerable challenges such as uncontrolled urbanisation, climate change and high and persistent inequality which can lower long-term growth prospects. The Prosperity Fund supports the broad-based and inclusive growth needed to build prosperity and reduce poverty, but also make development overall more sustainable through the strengthening of Institutions and Improvement of the global business environment.

The Global Future Cities Programme (GFCP) is a specific component of the Prosperity Fund which aims to carry out targeted interventions to encourage sustainable urban development and increase prosperity whilst alleviating high levels of urban poverty. The programme will also create significant short and long-term business opportunities in growing markets, forecast to be regional growth hubs, including for UK exporters who are world recognised leaders in urban innovation.

The overall strategy of the Global Future Cities Programme is to deliver the Programme in two phases; a strategic development phase (2018), followed by an implementation phase (2019-2021). UN-Habitat, in collaboration with the International Growth Centre (IGC) and the UK Built Environment Advisory Group (UKBEAG), has been mandated by the UK Foreign and Commonwealth Office (UK FCO) to develop and undertake the strategic development phase. This in turn, will inform and shape the implementation phase, and collectively provide further evidence for the overall programme.

The Programme builds upon a coherent series of targeted interventions in 19 cities across 10 countries, to support and encourage the adoption of a more sustainable approach to urban development. In general, the proposed interventions aim to challenge urban sprawl and slum developments, thereby promoting more dense, connected and inclusive cities that in combination contribute to prosperity, achieving the Sustainable Development Goals (SDGs) and implementing the New Urban Agenda (NUA).

The Global Future Cities Programme builds upon three integrated pillars, that will address key barriers to prosperity, in selected cities:

- **Urban planning** – technical assistance for spatial restructuring (Public space, Heritage and urban renewal, Urban strategies and plans, Data systems for integrated urban planning);
- **Transportation** – technical assistance to support cities to develop integrated transport systems (Multi-modal mobility strategies and plans, Data systems for multi-modal mobility);
- **Resilience** – technical assistance to develop strategies to address the impact of climate change and ensure development is sustainable (Flood management plans and systems).

In order to capitalize on the proposed interventions and to ensure sustainability and impact in a longer-term perspective, the programme has a strong focus on technical support and institutional capacity development.

In many of the interventions, there is a particular focus on the potential of embedding smart/digital technology and data analysis platforms in urban governance and management processes. Integrating smart technologies is recognized as an instrumental area that significantly can improve the efficiency in the provision of key infrastructure services, enhance urban resilience, support evidence-based plans and strategies and promote integrated planning approaches across sectors.

INTERVENTION DEVELOPMENT AND VALIDATION

Based on initial scoping studies and government-to-government engagement carried out by UK FCO, the UN-Habitat team worked with partner local authorities and wider stakeholders to corroborate their city development strategies, and to confirm, enhance and develop the intervention proposals.

In each city, a Local City Specialist, supported by the national and regional country offices of UN-Habitat

and in liaison with the FCO local posts, took the lead in identifying stakeholders in a series of bilateral meetings, interviews and focal group discussions. This has collectively gathered information and provided more detailed knowledge and information on the City's visions and goals.

Based on this initial phase, a Charrette (planning workshop) involved high-level decision-makers from the public and private sectors together with civil society representatives. This facilitated discussion on the proposed and possible alternative interventions, related individual interests, technical opportunities and constraints, as well as political objectives. The outcome of the Charrette provided clarity on where stakeholders stand in relation to the strategic potential of the discussed projects and it allowed for the mobilisation of support.

At the same time, the Charrette allowed for the technical teams to proceed with the development of a Terms of Reference, outlining the specific scope and activities of each intervention. A final Validation Workshop assured consensus on the proposed projects and document's endorsement by the authorities.

Parallel to preparing the Terms of Reference, an evaluation of the interventions was initiated, aiming to address its feasibility within the local strategic context, identify potential impact on prosperity barriers and to explore the optimal delivery models. This process resulted in a set of City Context Reports as well as an analysis of the technical viability of the interventions. The analysis aimed at both informing the development of the Terms of Reference and the future implementation phase of the Programme.

THE CITY CONTEXT REPORT

Objectives

A City Context Report is provided for each city of the Global Future Cities Programme. It serves as a tool to frame the proposed Programme interventions within the characteristics and pre-conditions of each city.

The Report targets a variety of stakeholders in the Programme: administrators, city managers, policy makers, legislators, private sector actors, donors, and local as well as international researchers and knowledge generators. The Reports also provide UKFCO the contextual setting of each proposed intervention, and can in addition, be used by the Service Providers as an entry point for the implementation phase.

By addressing the specific challenges facing each city, the Report illustrates how the interventions can work towards inclusive prosperity and sustainable urban development. The benefits of each intervention, however, cannot be achieved without certain enabling conditions to ensure its success. Therefore, critical aspects for the delivery of the proposed interventions and its success from a long-term perspective are outlined. Using thematic

best practices and evidence from global learnings and research, contextualised recommendations are provided on the conditions necessary for the intervention to be viable and to reach a maximum impact.

Essentially, the City Context Report serves to ensure that all actors within the Global Futures Cities Programme are aware of the specific conditions to be considered in the delivery of the proposed interventions, on a case-by-case basis.

Set-up and Scope

The first part of the City Context Report (General Overview) provides an overview of the Global Future Cities Programme and introduces the city from the perspective of the urban challenge which the proposed intervention intends to address.

The second part of the Report (Urban Analysis) more critically and technically analyses a selection of factors which need to be considered or to be in place for the intervention to succeed, addressing its feasibility, potential impact on prosperity barriers from a long-term perspective.

The third part of the Report (International Alignment and Technical Recommendations) presents short–and mid-term expected outcomes as well as long-term potential impacts. It further elaborates the contribution of the intervention to the achievement of the SDGs and the implementation of the New Urban Agenda as well as the programme objectives of the Prosperity Fund.

As the City Context Report is tailored directly to the Programme interventions, the analysis does not aim to comprehensively present all aspects of urban development. It does not elaborate on long term planning and transformation strategies, the effectiveness of policy or urban legislation, nor the entire municipal financial system. As such, it also excludes urban policy recommendations.

However, the Report has the scope to illustrate the general capacity of the city for project delivery, and in this regard, make recommendations to support implementation of the interventions and reaching set goals. The City Context Reports will be part of knowledge management for the Programme to generate local information and data on the cities as well as identify gaps in knowledge, systems or governance.

Methodology

Urban Analysis

The City Context Report provides a general analysis of the spatial, financial and legal conditions in the city that can either facilitate or hinder the implementation and the long-term sustainability of the proposed interventions in transport, resilience and urban planning.

This framework follows UN-Habitat's three-pronged approach, recognising the three essential components for a successful and sustainable urbanisation: 1. urban planning and design; 2. urban economy and municipal finance; 3. urban legislation, rules and regulations.

Firstly, the spatial analysis describes the existing urban context specific to the intervention. Urban mobility systems, vulnerability of the built environment, spatial form and trends are considered as possible challenges in urban management that the intervention can address.

Secondly, the financial analysis aims to identify the mechanisms in place by which the intervention could be sustainably financed in the long-run. This section outlines the city's municipal capacity, existing regional, national and international financial ecosystem and existing financing mechanisms at the municipal level.

Thirdly, from a legal perspective, the Report critically analyses how the intervention could be facilitated or challenged by the vision of the city and its governance hierarchy. Enablers and obstacles resulting from any relevant legislation, as well as sectoral frameworks (e.g. strategies, policies, planning frameworks and development plans, detailed plans of relevance) are also described.

This approach aims to offer implementing partners, stakeholders and donors a general context of the city and, with it, demonstrate the appropriateness of the intervention from a spatial, financial and legal point of view, while at the same time informing about potential barriers and enablers for its implementation.

Potential Impact to the Program Objectives and the SDGs

The Report also outlines the potential impact of the interventions, based on the specific activities and outputs proposed. Impact can arise from a complex interaction of context-specific factors, rather than as result of a single action, which makes it difficult to empirically quantify longer-run effects that go beyond the identification of program outputs. An empirical, comprehensive impact assessment is therefore not part of the scope of this report.

Nevertheless, the report outlines potential benefits that are only achievable under certain preconditions and activities. Thereby, short-, medium- and long-term outcomes are defined with reference to a project-cycle approach, which considers all the project phases from

Planning and Design through *Building*, to *Operating and Maintaining.*

Short-term outcomes are directly achieved through the implementation of the technical assistance support, within the 2-3 years scope of the Global Future Cities Program.

Mid-term outcomes are only realised once the intervention is executed through either capital investment, implementation of pilot projects or the actual enactment of legal documents, plans or masterplans, within a possible timeframe of 3 to 7 years.

The broader long-term impact of the interventions is linked to the sustainability of the interventions in a 7-15 years timeframe and relates to the operation and maintenance phase of the project cycle.

The City Context Reports further connect potential impacts to the Programme's objectives, taking into account also the Cross-cutting issues at the core of UN-Habitat's mandate from the UN General Assembly. Consequently, the Programme's objectives are summarized into five principles:

- Climate Change;
- Gender Equality;
- Human Rights;
- Youth;
- Sustainable and Inclusive Economic Growth.

Cross-cutting issues are addressed with explicit reference to the 2030 Sustainable Development Goals (SDGs) and the New Urban Agenda, in an attempt to ensure that the proposed interventions are in line with the design, implementation, review and success of the 2030 Agenda for Sustainable Development. Consistent with UN-Habitat's mandate, the SDG 11 Sustainable Cities and Communities is linked with the urban dimension of the other 16 goals as an essential part of the localisation of the SDGs. In this way, interventions can support localisation processes, to support local ownership and ensure SDG integration in sub-national strategies and plans.

Technical Recommendations and International Best Practices

The interventions proposed in the various cities of the Global Future Cities Programme were grouped into clusters according to their thematic entry-point, as an elaboration of the thematic pillars of Urban Planning, Transport and Resilience.

These clusters are:

- Public space
- Heritage and urban renewal
- Urban strategies and plans
- Data systems for integrated urban planning
- Multi-modal mobility strategies and plans
- Data systems for multi-modal mobility
- Flood management plans and systems

Combining the international experience in urban policy and project implementation of UN-Habitat and the leading academic research of IGC, each cluster was analysed to offer evidence-based recommendations for a successful Implementation and a maximised impact of the intervention. Specific reference was given to implemented plans and international best practices.

The recommendations inform the Planning and Design phase which coincides with the timeframe of the Global Future Cities Programme, and always aim for long-term sustainability of the interventions.

Fig. 1. Melaka Aerial View (Source: Flickr)

Melaka

GENERAL CONTEXT

Melaka State is located on the southwestern coast of the Malaysian peninsula, facing the Straight of Melaka. It lies between the capital, Kuala Lumpur, and Johor Bahru, which connects to Singapore. Melaka State is one of the smallest of Malaysia's 13 states, by population and area. It occupies c. 1,720 km^2, nearly two-thirds of which are categorised as environmentally-sensitive areas (ESAs) based on ESA Phase Criteria and Integrated ESA.[1] Melaka State has a population of 910,000 and an average annual population growth rate of 1.3%.[2]

Administratively, the state is divided into three districts, governed by four municipal councils, as shown in Figure 3. The Central Melaka district (also called Melaka Tengah) is governed by Melaka Historical City Council and Hang Tuah Jaya Municipal Council (HTJMC).[3] Central Melaka is the most urban district with a population density of 1,703 persons per hectare, compared to 200 persons per hectare in Jasin.[4] The other two districts, Alor Gajah and Jasin, are host to Melaka's rich natural assets.

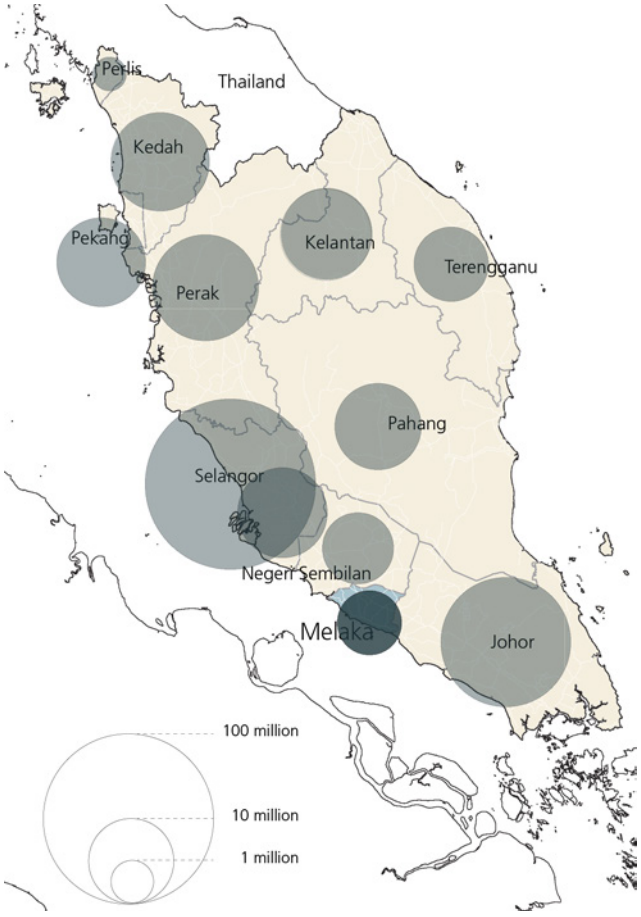


Fig. 2. Malaysia and States by population

Strategically located on the Malaysian peninsula and one of Malaysia's oldest cities, Melaka was a prominent historic trading post that eventually turned into a vibrant commercial centre. As a former linkage between the Global East and West, Melaka became a multi-cultural city, influenced by Indian, Chinese, and European culture, which manifested itself in the area's unique architecture. Melaka was established as a core historic tourism destination in Malaysia. The historic city centre was inscribed on the list of UNESCO World Heritage Sites in 2008.

Between 1970 and 1975, Melaka was one of the poorest states in Malaysia, considering its GDP per capita. As the country's commodity exports declined during the mid-1980s, the national government invested in tourism for development, which led to a strong initiative to expand the heritage tourism sector in Melaka. While many Malaysian states experienced economic growth based on the changes within the manufacturing, services, and agricultural sectors, Melaka's economic growth, was largely impacted by the construction sector.

Particularly in the early 2000s, Melaka's property values increased overall as historic buildings were re-adapted and re-used into heritage hotels, museums, art galleries, restaurants, and tourist centres.[5] The aspiration to secure Melaka City as a designated heritage tourism area and attract half of all tourists visiting Malaysia by 2020,[6] led

3 Districts	4 Local Governments
Central Melaka	- Melaka Historical City Council - Hang Tuah Jaya Municipal Council (HTJMC)
Alor Gajah	- Alor Gajah Municipal Council
Jasin	- Jasin District Council

Fig. 3. Three districts of Melaka State governed by four municipal councils [Source: ADB (2014) Green City Action Plan]

to further forms of development outside of Melaka City.

The Town of Ayer Keroh in particular attracted several government and administrative offices, and tourism development projects. Ayer Keroh lies north of Melaka City and is the main entry point into Melaka State and the city from the North-South Expressway. Ayer Keroh's institutions, recreational parks, attractions and facilities such as the International Trade Centre and the Melaka Zoo, attract both tourists and other visitors, particularly during weekends. Figure 4 provides a visual overview of the position of the transport corridor and its relative distance to Melaka City.

PROBLEM STATEMENT

Melaka is exposed to several transport and environmental issues; it experiences high levels of traffic congestion that stem from a mobility system unable to effectively accommodate the travel demands of the burgeoning tourism industry. Heavy reliance on private motorised transport and the associated traffic congestion are a cause of concern for the economic, social and environmental health of Melaka State and City. The road network has reached its carrying capacity for private vehicle access into and within the historic core, causing delays to service deliveries, local commuters, tourists and other visitors.

As the usage of private transport throughout Melaka State has surpassed the use of public transportation, there is an increased vulnerability in the sense of mobility and connectivity for those with limited access and ability to pay for private transportation, including children, the elderly, women, and low-income groups. Limited choice in travel reduces the accessibility to jobs, education, medical facilities, and other services and amenities.

Furthermore, the limited access to public transportation also risks to detract tourists and negatively impact the tourism industry by limiting mobility and creating a traffic dominated urban environment. Greenhouse gas (GHG) emissions and air pollution also have adverse effects on both the environment and human health.

Melaka State previously engaged in several types of public transport projects to mitigate traffic congestion and the negative economic and environmental impacts that are directly related to the heightened presence of motor vehicles in the region. The Melaka Aerorail was a 1.8 billion MYR proposed monorail line to be built in two phases extending from Alor Gajah and the Jasin district. Intended to be completed by 2010, the project failed to capture appropriate funding and thus never materialised. Access to and within Melaka City are key challenges the state government and the local authorities ought to tackle in order to ensure sustainable urban development and to capitalise the benefits thereof. Balancing economic, heritage, environmental and local residents' priorities, requires large investments for the delivery of an adequate mobility system at state and city level.

The vision of Melaka is to become a world class smart city through green technology. A framework for the vision to materialise was set in the 2014 Green City Action Plan, and in summer 2018 a Smart City Advisory Council was set up for the Chief Minister's Economic Planning Unit. To enhance the sustainability of the mobility system within Melaka, and thereby also that of the local economy, there is a vital need to improve public and non-motorised transport provisions and trigger behavioural change among residents and tourists.

At the state level, this means searching for opportunities to integrate a high capacity public and non-motorised transport system that connects Melaka City with the strategic road network. At the city level, comprehensive plans are needed to support a modal shift away from private motorised vehicles to effectively protect urban environment and the UNESCO World Heritage Site.

INTRODUCTION TO THE INTERVENTIONS

Two mobility interventions are proposed for Melaka; (i) a Green Transport Corridor Implementation Plan, and (ii) a Heritage Area Integrated Mobility Plan. In combination, the two interventions address mobility challenges faced by the state and the city at strategic and local scale.

Intervention 1: Green Transport Corridor Implementation Plan, will be undertaken with the aim of enabling Melaka to implement the right infrastructure and mobility system to promote sustainable travel along one of Melaka's key access routes. Key elements comprising the intervention are a feasibility and success factor study and the development of a detailed technical implementation plan.

The proposed route alignment of the corridor is along the M29/ M31 dual carriageway. Currently, the route attracts a considerable amount of private vehicles, is served by a number of bus lines but lacks non-motorised transport provisions. Through the implementation of the Green Transport Corridor, the route would be transformed into a sustainable access route served by an efficient low-carbon bus system, encouraging non-motorised modes of transport, and offering new green and public spaces. The corridor would be designed to enable the roll-out of innovative public transport technologies such as smart traffic management and smart ticketing.
Some of the expected benefits of this intervention include improvements to public and non-motorised transport,

and to green and public spaces along the corridor. This in turn is expected to improve environmental and socioeconomic conditions through a reduction in pollution, the encouragement of healthier lifestyles, and a reduction in travel times and cost to and from Melaka City.

Intervention 2: Heritage Area Integrated Mobility Plan, links in directly with the proposed Green Transport Corridor to ensure sustainable travel not just to and from Melaka but also in the city's central area that is classified as a UNESCO World Heritage Site. The aim of the Mobility Plan is to alleviate the heritage area from the many stresses caused by traffic congestion, unmet parking demand and the poor provision for alternative modes of transport.

The Mobility Plan will consider and propose alternative modes of transport to the private and motorised vehicle, with a focus on intelligent transport systems (ITS), public, water and non-motorised transport. It will outline strategies for the internal mobility system of the heritage area as well as its connection with the wider transport network at regional level, including a comprehensive strategy to reduce pressure at the periphery of the centre where visitors will be encouraged to switch to public or non-motorised transport.

Some of the expected benefits of the intervention include improvements to the environmental and socioeconomic health of the city in the form of reduced GHG emissions, reduced air and noise pollution, a safer and calmer urban environment, heritage protection and a more sustainable local economy.

Lastly, two **Pilot Projects** will serve as catalysts and first steps towards the implementation of the interventions, and **Capacity Building** will ensure the long-term sustainability of the interventions through the sharing and localising of skills and knowledge.

In combination, the two interventions have the potential to increase the provision and uptake of alternative modes of transport, while reducing the trips of private vehicles. The anticipated modal shift towards public and non-motorised transport is expected to have positive social, economic and environmental impacts. The interventions are expected to trigger a spatial transformation of some of the streets and roads in Melaka. A shift towards non-motorised travel including cycling and walking can change the urban realm by freeing up space for other social and economic activities, thereby allowing the intervention to act as an enabler for sustainable urban lifestyles and a sustainable urban economy that benefits local urban dwellers, tourist and other visitors alike.

Main Stakeholder

- Melaka State
- Malaysian Industry-Government Group for High Technology (MIGHT)
- Melaka Green Technology Corporation

Possible Project Partners

- Melaka Historical City Council
- Hang Tuah Jaya Municipal Council
- Public transport operators Panorama Melaka and MARA Liner
- Think City

Thematic Cluster

Multi-modal mobility strategies and plans

Keywords

Transport corridor, Mobility plan, Public transport, Non-motorised transport, multi-modal transport

URBAN ANALYSIS

Spatial Analysis

ACCESS TO MELAKA CITY

Through the centre of Melaka State passes one of Malaysia's most strategic roads, the E2 North-South Expressway. This toll road connects the capital Kuala Lumpur in the northwest with Johor Bahru, and by extension Singapore, in the southeast. The completion of the Kuala Lumpur-Ayer Keroh section of the Expressway in the early 1990s, improved the city's accessibility for domestic and international tourists and visitors, in effect, transforming Melaka into an ideal stop-over between Singapore and Kuala Lumpur.

In total, five radial routes serve the city, as shown in Figure 10. The city is connected to the North-South Expressway at three toll stations, namely Simpang Ampat, Lipat Kajang and Ayer Keroh. Melaka City is also served by Federal Route 5, which provides a north-south connection more closely aligned to the coastline. The five routes are all designed for private motorised vehicles with little to no provision for alternative modes of transport, adding to traffic congestion. During peak periods at weekends and during holidays, traffic congestion increases exponentially as an influx of private vehicles enter Melaka City, exceeding the road carrying capacity. Along all major roads in Melaka State, the vast majority of trips are made by car. The large number of motorised vehicles causes congestion not just on the main access routes into Melaka City, but also along its periphery and within the city centre itself.

Ayer Keroh to Melaka City – Proposed Green Transport Corridor

The Ayer Keroh to Melaka City road corridor (M29/ M31) is an approx. 16km long dual carriageway proposed for redevelopment into a Green Transport Corridor. The toll station at Ayer Keroh is one of the main turn off points from the North-South Expressway for travellers visiting Melaka City. The corridor passes through the Town of Ayer Keroh, where many administrative and governmental offices, including the Chief Minister's residence, and conference facilities such as the Melaka International Trade Centre are located. Ayer Keroh, sometimes referred to as the green belt of Melaka, also attracts tourists and visitors for its nature parks, the Melaka Zoo, and other tourist attractions.

The proposed corridor falls within HTJMC and connects to Melaka Historical City Council. It traverses one of the most densely populated areas, comprising residential, commercial and industrial land uses. The corridor passes by Melaka Sentral, a multimodal public transport station, several tourist attractions such as Melaka Golf and Country Club, Hang Tuah Mall Convention Centre (HTMCC), the Lagoon and Park Resort and many more. Along the southern end of the corridor lie the main access routes into the heritage area.

Studies undertaken for the Draft State Structure Plan 2035 and the Local Plans show concerning trends in Level of Service (LOS) on all major access roads. LOS F was reported on the main exits from the tolled North-South Expressway, including Ayer Keroh. To ease congestion, construction of a flyover has already started on top of several parts of the proposed corridor close to the Ayer Keroh toll station. Anecdotal evidence suggests that poorly controlled signalling phases of the many traffic lights along the corridor are one of the causes of congestion. Long waiting times at major junctions, are forcing road users to stop and wait multiple times when travelling along the corridor.

In the Draft Local Plan 2003-2015, the same corridor was chosen for the development of an Aerorail, which failed to materialise due to a lack of adequate funding. [7]More cost-effective alternatives are therefore needed, including low-carbon buses with adequate feeder services and non-motorised transport provisions.

ACCESS AND MOBILITY WITHIN MELAKA CITY

The area of Melaka City dedicated as a UNESCO World Heritage Site comprises 288.1 hectare, 45.3 of which are designated as the core zone and 242.8 hectare as the buffer zone. The combination of residential, commercial, and civic uses within the historical city contributes to its vibrancy. The numerous historic sites on both sides of the Melaka River are connected by a network of narrow and winding roads, two motor vehicle bridges and one pedestrian bridge. Originally designed as local residential access roads, many of the roads must cope with traffic beyond their capacity. Melaka has yet to address the challenges of idle buses that stop to drop-off and pick-up tourists on the narrow streets, private cars that cruise the centre in search of parking spaces, and the poor provision of public and non-motorised transport in a comprehensive manner.[8]

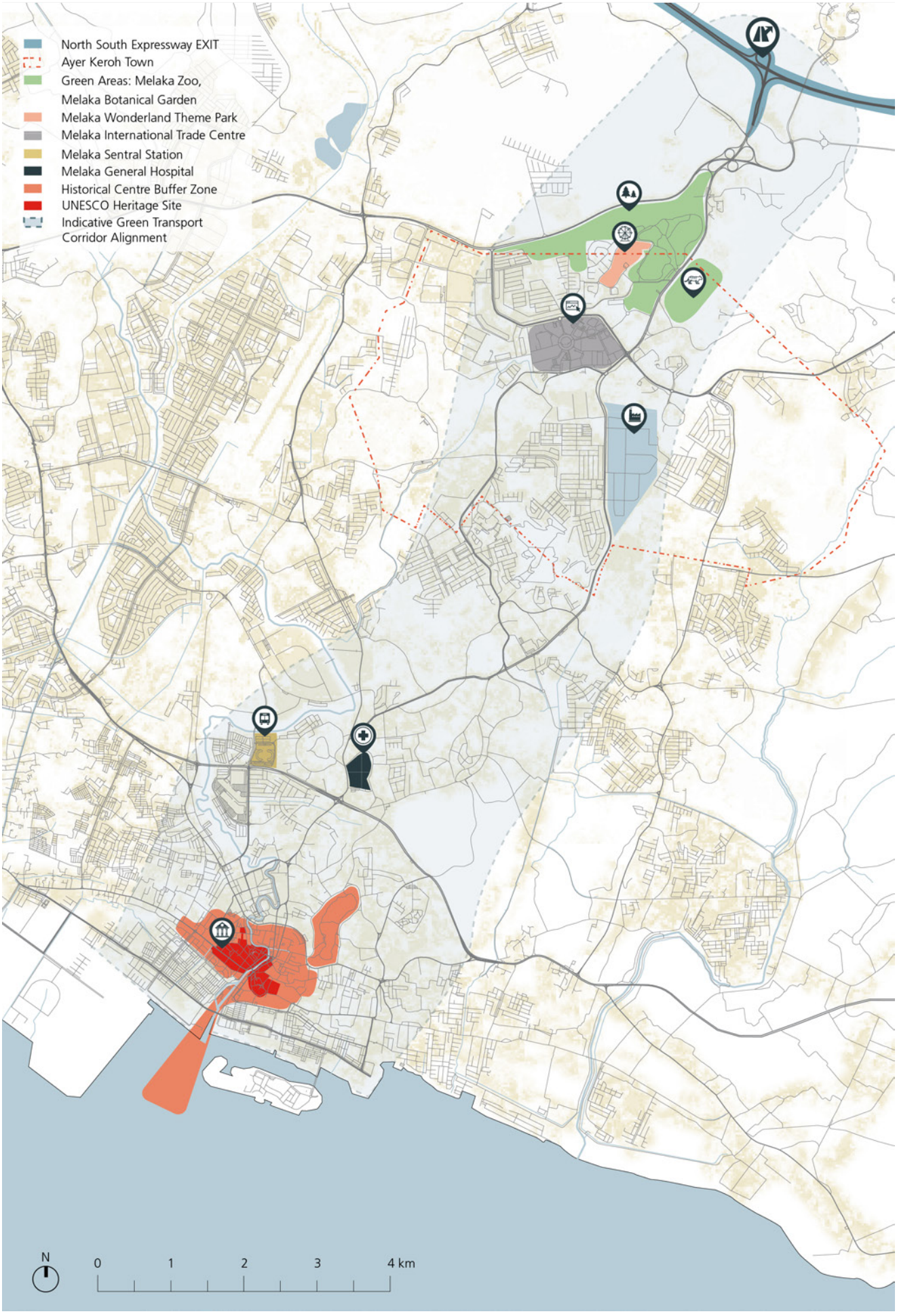


Fig. 4. Indicative Green Transport Corridor alignment and main urban components

Non-motorised Travel

Long stretches along the Melaka River have successfully been turned into shared cycle and walkways, attracting tourists and locals to the numerous cafes, shops and restaurants along the river. Similarly, a large section of the road leading from the Stadthuys and around St Paul Hills is closed-off for motorised vehicles. However, especially the historic area to the west of Melaka River is still experiencing a conflict between motorised vehicles, pedestrians and trishaws. The narrow streets that are densely lined with small shops and cafes cause pedestrians to spill into the streets. Pedestrians, including families with small children and other vulnerable groups, are forced to dangerously manoeuvre among cars, exposed to air and noise pollution. Jonker Walk, which in the evenings turns into a night market, is one of the busiest streets and exposed to the greatest conflicts between cars and pedestrians.

The Draft Local Plan 2003-2015 acknowledges the need for non-motorised modes of transport. It identifies areas for pedestrianisation near some of the historic landmarks in the heritage area, as shown in Figure 5.

Public Transport

Melaka is served by a network of public buses with the main hub located at the bus terminal Melaka Sentral. MARA Liner, a private bus operator, is focused on rural connectivity, whilst Panorama Melaka, a privately held firm, owned by the Melaka State Government, serves the key routes in, out of, and within the city. Most of the city's historical sites, shopping malls, and hotels are served by Panorama Melaka's London Bus, a service primarily designed for tourists and visitors. Aside from the London Bus, taxis, informal rickshaws and the riverboat cruises are popular among tourists. Especially the tri- and rickshaws and the riverboat cruise are primarily for entertainment rather than serving as true alternative modes of transport. Nevertheless, despite the availability of several alternative modes of transport, there is an immense influx of private motorised vehicle trips as domestic and international tourists begin to arrive in Melaka on weekends and holidays.

With the launch of a free bus service in August 2018, Panorama Melaka aims to assist 290,000 locals annually.[9] The three routes served by the free service

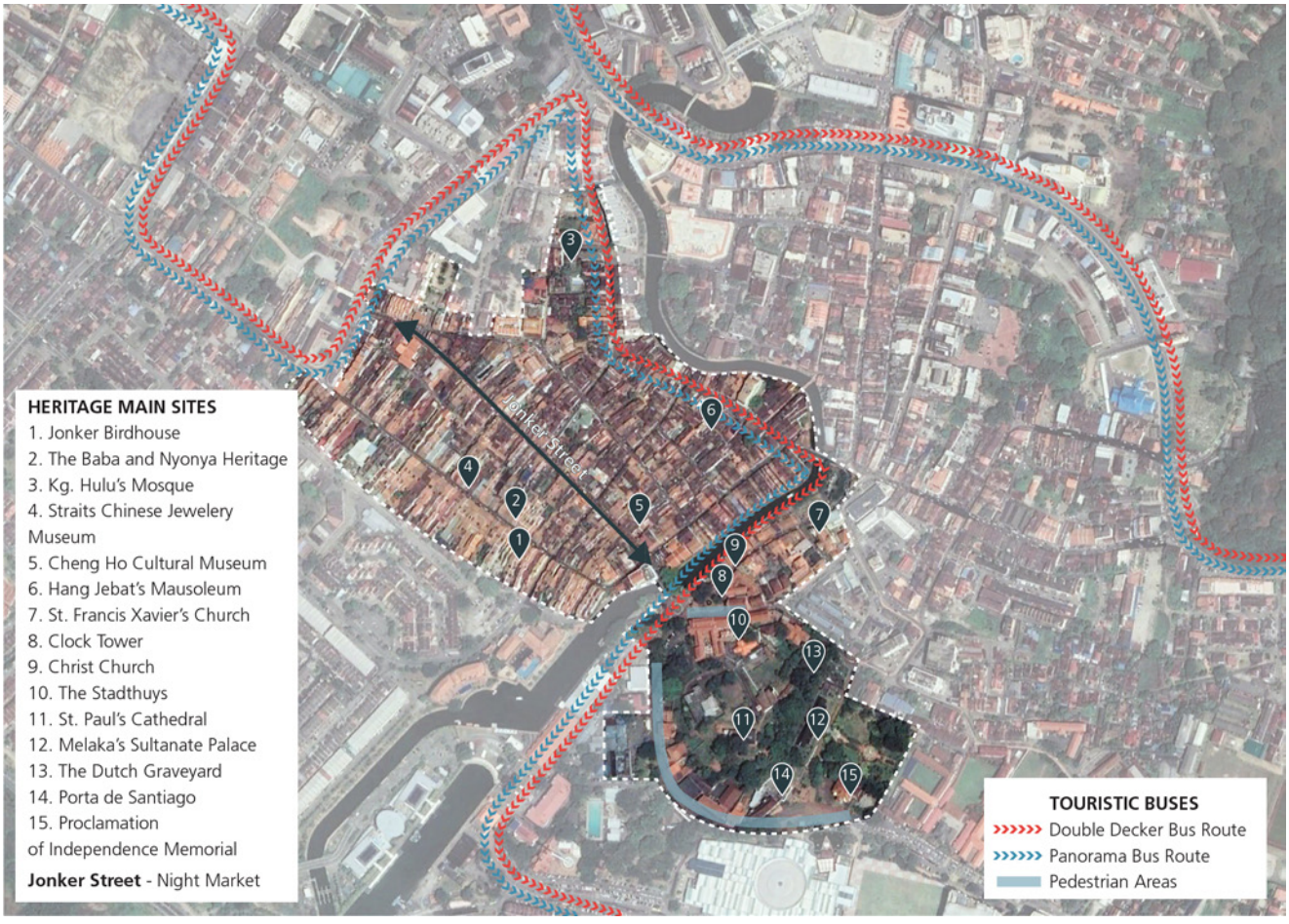


Fig. 5. Melaka UNESCO World Heritage Site

include Melaka Sentral to Mydin Hypermarket at Ayer Keroh via Simpang Kipmart, Melaka Sentral to Mydin via Melaka Hospital, and Melaka Sentral to Bachang Transit Wet Market.[10] While the electric and NGV buses are free for locals, they come at a small cost for tourists. The estimated cost of providing the free bus services is 1.4 million MYR and will be made available by various governmental agencies and private firms through the Melaka State Government Public Transport Fund.[11]

The Fund is managed by the state-owned subsidiary Panorama Melaka. One of the free bus routes runs along the dual carriageway proposed for the development of the Green Transport Corridor. The proposed corridor is served by the largest number of bus services, indicating the high travel demand on this route. Anecdotal evidence suggests that the buses are primarily used by individuals with lower socio-economic standing, including migrant workers.

URBAN CHALLENGES

Melaka faces urban challenges that are multi-fold, particularly in terms of mobility. Three of the most notable urban challenges include a lack of environmental sensitivity in land consumption, the increase in traffic congestion, and the limited usage of public transportation.

Land Consumption

Over the last two decades, Melaka has urbanised rapidly, reaching an urbanisation rate of 86.5%.[12] The city's population is expected to increase by 120,000 people to nearly one million residents between 2011 and 2020.[13] Furthermore, while total employment numbers increased, particularly urban employment, rural employment has seen a steady decline, as shown in Figure 6.[14]

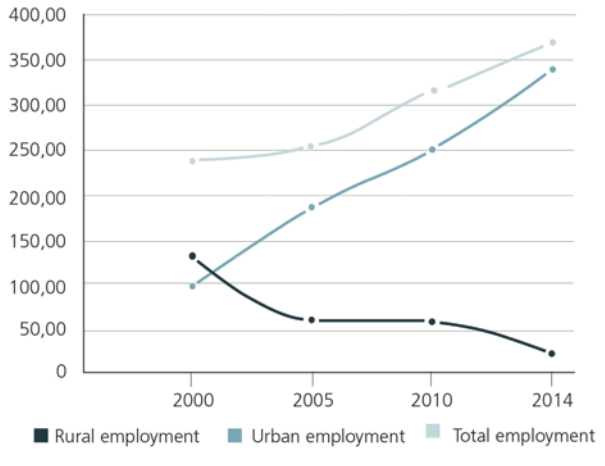


Fig. 6. Melaka urban and rural employment 2010-2014 (Source: GPSC 2018)

The trend of rapid urbanisation, coupled with population and urban employment growth has led to large scale and sprawling land developments, which threaten Melaka's rich natural assets and compromise sustainable urban development.[15] The developable land identified in the Structure Plan and listed in Figure 7, is 1.2 times the area of Singapore and 0.8 times the area of Hong Kong, both cities with significantly larger populations.[16]

	Population	Built-up Land
Melaka Structure Plan 2035	1.7 million	Developable land: 848 km2
Singapore 2015	5.8 million	284 km2
Hong Kong 2015	7.2 million	270 km2

Fig. 7. Comparison of Built-up Land

Expansion of built-up areas as envisioned in the Melaka Structure Plan 2035, could lead to a one third reduction of protected and agricultural land.[17] Furthermore, Melaka has recently focused on the development and reclamation of coastal areas.[18]

In a state where nearly two thirds of land are classified as ESAs, local government officials are limited in their capacity to cope with complex issues in providing services and stewardship of the urban environment. As a result of the land consumption trends and increasing urban sprawl, the Melaka State and its local governments must address issues such inequities in service provisions, and encourage the widening of mobility options as a decrease in density will most likely increase trip numbers and trip lengths. A need for more sustainable urban development that integrates with transport planning is evident.

Traffic Congestion

Melaka's UNESCO World Heritage area has been one of the state's greatest assets, including for economic growth. However, the growing number of tourists it attracts has also been one of the major challenges Melaka faces, particularly regarding its mobility system. The exponential increase in traffic congestion has not only affected Melaka's competitiveness in attracting tourists, but also the profitability of small businesses, shopping malls, and entrepreneurial business ventures.

The current levels of tourist and visitor arrivals are straining the mobility system and are causing congestion along key access routes as well as in the central area. Weekends, holidays and peak hours experience the greatest volumes of traffic and result in traffic congestion. For example, the average daily traffic volume on the M29/ M31, the proposed Green Transport Corridor, is over 28,000 vehicles, of which 3,000 travel during peak

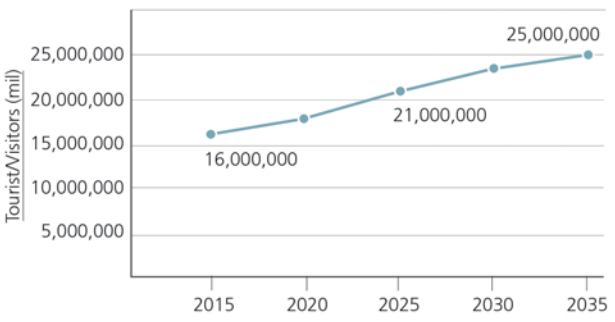


Fig. 8. Melaka planned tourist arrivals 2015-2035 (Source: Melaka Structure Plan 2035)

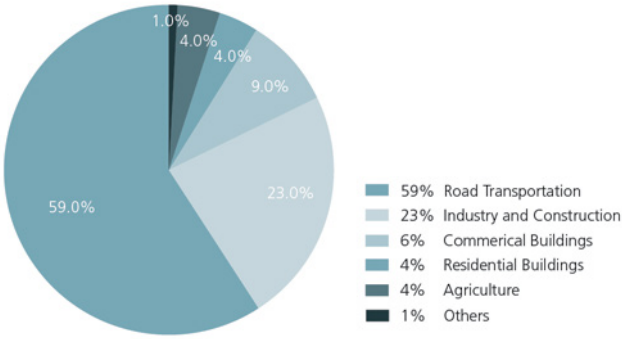
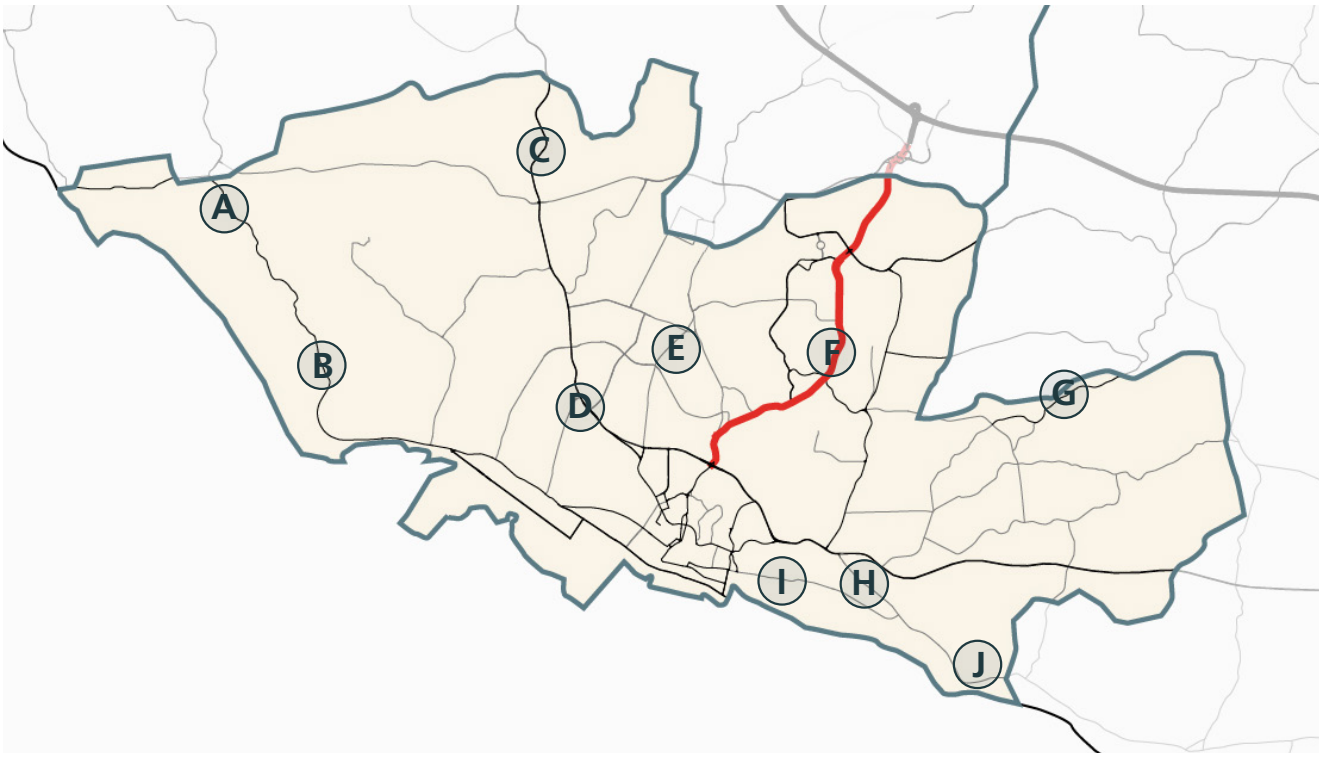


Fig. 9. CO2 emissions in Melaka (Source: GPSC 2018)

hour.19 As predicted in the Melaka Structure Plan 2035 traffic congestion will only worsen with the increase from 16 to 25 million tourists and visitors between 2015 and 2035, if no action is taken. Congestion is further amplified by Melaka's low public transport mode share of approximately 2%.20 On key radial routes in and out of the city, the modal share of public transport varies between 1 and 4%. Along the road proposed for the Green Transport Corridor intervention, cars have the greatest modal share at 57%, followed by motorbikes at 30%, while buses comprise only approximately 1%, as shown in Figure 10.[21] Furthermore, low public transport and high car modal shares contribute to congestion and are also the primary sources of GHG emissions in Melaka. Figure 9 illustrates that road transport causes 59%of all CO2 emissions in Melaka.[22]

Fig. 10. Trishaws in Melaka's Heritage Area (Source: Charlotte Mohn, UN-Habitat)



MAIN RADIAL ROUTES

- (A) Luan Persekutuan 5 (Melaka - Masjid Tanan)
- (B) Luan Persekutuan 5 (Melaka - Sungai Udang)
- (C) Luan Persekutuan 19 (Melaka - Alor Gajah)
- (D) Luan Persekutuan 19 (Melaka - Kendong)
- (E) Jalan Negeri M2 (Melaka - Durian Tunggal)
- (F) Jalan Negeri M31 (Jalan Bukit Kati)
- (G) Jalan Negeri M27 (Melaka - Bemban)
- (H) Luan Persekutuan 5 (Melaka - Muar)
- (I) Jalan Negeri M100 (Bandar Hilir -Kampung Kendong)
- (J) Luan Persekutuan 5 (Melaka - Muar)

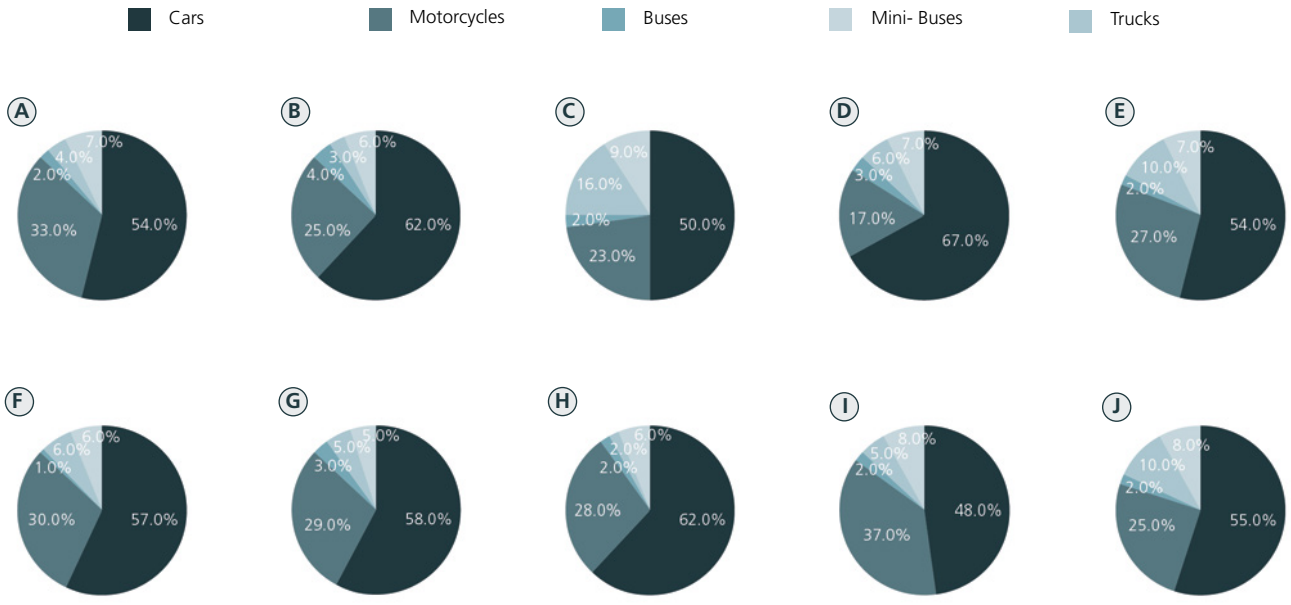


Fig. 11. Modal share on key radial routes [Source: Melaka Structure Plan 2035]

Financial Analysis

FINANCIAL CAPACITY

Melaka State raises a significant amount of own source revenues, yet the country is still reliant on transfers from the federal government and Foreign Direct Investment (FDI). The state's revenue is estimated to be around 374 million MYR (approximately USD 90 million), 41% of which is expected to come from own-source tax revenues. For 13 consecutive years there has been a budget surplus with local revenue collection increasing by 6.6% between 2016 and 2017.[23] Local government own-revenues are primarily made up of property taxes, which represents 70-80% of the total local generated revenues. Moreover, the State of Melaka's efficiency in collecting taxes is high as it manages to recoup around 83% of total tax which is much higher than the Malaysian average of 60%.[24]

Melaka's projected expenditure in 2018 is 374 million MYR, with operating expenditures surmounting to approximately 72% of the expenditures. Capital investments will compose approximately 28% as seen in Figure 12.

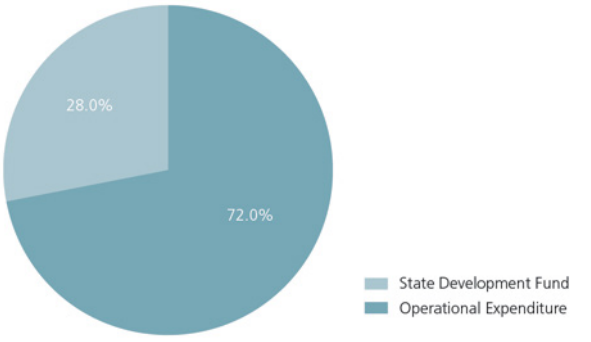


Fig. 12. Projected 2017 Melaka State Management Expenses

The various Malaysian states have borrowing restrictions, as they typically can only borrow from the federal government. Exceptional borrowing cases must receive the approval of the federal government and cannot last longer than five years. Melaka State stopped borrowing from federal government in 2013 in order to gradually begin repaying its debts which have surmounted to approximately 824 million MYR (or $275 million USD). Ultimately, the goal of the State of Melaka is to become self-reliant and attract FDI.

FINANCING MECHANISMS

The State of Melaka employs land-based financing instruments, which can be used as a potential revenue stream. Through the land value capture mechanism, future increases of land value within and near surrounding Intervention areas can be used as a financing tool. The city is aware of the land capture mechanism as it is outlined within the city's Green City Action Plan. The plan calls for a feasibility study to set up a tax increment financing district in the heritage area. This would mean determining future revenues that derive from property taxes ensuring more sustainable financing of urban renewal projects.

Additionally, the interventions can be financed through associated fees and taxes. For example, parking fees can be reinvested into the transport corridor and the heritage area's mobility network. Given that 90% of travel throughout Melaka is completed by car, park and ride facilities have particularly high revenue potential.
The additional benefit of fees is that they can encourage the use of public transport to and from the heritage site. This could also potentially have a positive environmental impact. However, given that parking fees at certain times have recently been abolished, it might be politically difficult to reintroduce them.

Green Public Transport Corridor

Melaka's aspirations to become a 'Green State' by 2020 suggests that the state has been able to attract funding and expertise from international organisations such as the Asian Development Bank, primary funder of the Green City Action Plan, and the Rockefeller Foundation, which supports Melaka's development through the 100 Resilient Cities programme. As Melaka seeks to develop a Green Transport Corridor, one potential financing method is carbon financing. Yet, to access climate-based financing, up-front investments are both extremely high and required in order to become gold-standard certified.

Some of the necessary investments include the collection and monitoring of environmental data to certify emission reductions and other potential outcomes of the project.

As Melaka currently sets up a GHG Carbon Inventory and Eco Budget programme as a key element of its Green City Action Plan, the State might be in a good position to fulfil these criteria.

Heritage Area Integrated Mobility Plan

It can be expected that several elements of the Heritage Area Integrated Mobility Plan will require capital investment in order to be implemented. While some components can be financed through the city's internal revenues, some investments such as physical infrastructure may be too costly for the Melaka Historical City Council. If the Council struggles to find adequate revenue streams, it can request funding from the federal government. There is high potential for the State of Melaka to access national funds, such as federal level grants as it aligns with the Prime Minister's 2017 plans to enhance the State's tourism potential.

Funding is also available from the World Heritage Fund, which is comprised of both compulsory and voluntary contributions from UNESCO member states. The rules for the protection and preservation of UNESCO World Heritage Sites are detailed in an international treaty, namely the 'Convention concerning the Protection of the World Cultural and Natural Heritage' adopted in 1972.[25] It states that the duty of conservation and protection is primarily that of the state – through its own resources and international assistance and cooperation. It is also mentioned that the 'World Heritage Fund' can be applied for by the state for emergency assistance, conservation, and management as well as preparatory assistance. Applications can be made to the fund through the federal government. As a UNESCO World Heritage Site, Melaka is also eligible to apply for funding from the Conservation Trust Fund.[26]

Given that Melaka receives about 17 million tourists per year, tourism and associated taxes and user fees may be used to raise revenue to operate and maintain the heritage area. There is a heritage tax of 2 MYR (0.50 USD) per person per night that is levied on hotel guests (dependend on the category of hotel), as well as a 10 MYR (2.40 USD) tourism tax that came into force on the 1st of July 2017. The revenue from the tax is meant to be reinvested in the marketing of the heritage sites overseas. It is important to attract more tourists as well as restore the sites. There is also precedence in Melaka for collecting entrance fees for specific buildings and using this for heritage protection purposes.

Legal Analysis

URBAN PLANNING AND TRANSPORT GOVERNANCE STRUCTURE

National Level

PlanMalaysia is the federal department of town and country planning, under the Ministry of Housing and Local Government, which acts as the main advisor to the state government in all planning matters, including the use and development of land. PlanMalaysia creates and monitors the national development plans which inform the regional and local plans. Malaysia's second National Physical Plan (2015-2020) sets out guidelines, shaping the direction and pattern of land use, environmental conservation and development for Peninsular Malaysia.

At the federal level, the Land Public Transport Commission (SPAD) has the most prominent role in transport planning and implementation and has played a significant role in improving the quantity and sustainability of public transport in Melaka. Furthermore, the Ministry of Public Works' Road Planning Division is responsible in the development and maintenance of infrastructure, building and road networks.

State Level

The Melaka State Government has the strongest mandate over urban planning. The state government develops the State Structure Plan and Sectoral Plans and has the mandate over fund allocations to local authorities as well as planning approval. The Melaka State Economic Planning Unit (EPU) coordinates, monitors, and evaluates policies, including land development projects undertaken by state agencies. EPU's review of policies and strategies ensures their alignment with Malaysia's 5 Year National Development Plan.

Melaka's state-level apparatus of the Land Public Transport Commission is responsible for coordinating and planning for the state's road public transport planning and development. In Melaka State, public buses are operated by Panorama Melaka. The operator has already commissioned a fleet of electric buses with the goal of becoming more sustainable. Additionally, some of these bus routes have recently been made free of charge to encourage greater use.

Local Level

The Town and Country Planning Act of 1976 (Act 172) designated plan development and control systems and mandated the local government to act as the local level physical planner.[27] Thus, Melaka State is divided into four local authorities (municipalities) under separate jurisdictions.

Planning decisions for Melaka City are guided by the Central Melaka Local Plan developed by local authorities and approved by the state government. However, it is noted that these local plans are not updated frequently enough to provide a sense of certainty and transparency in development control.[28] The most recent available plan is from 2015.

Concerning transportation at the local level, Melaka Historic City Council (MBMB), one of Melaka State's four municipalities, encourages the creation of new cycling routes and regulations to provide equal opportunity to electric bicycle and trishaw riders in the historic centre.[29] However, in contradiction to this policy, free parking was recently instituted in the historical centre on weekends and public holidays which counteracts this by encouraging greater vehicle use and traffic.

Institutional Coordination between National, State, and Local Planning

The National Council for Local Government (NCLG) coordinates federal, state and local planning,[30] while the Implementation Coordination Unit (ICU) of the Ministry of Federal Territory, aims to ensures effective delivery of policy, programmes and projects in order for the public to enjoy the benefits and objectives of the national development plans.

Despite the instituted coordinating bodies, in practice there appears to be a lack of coordination between the different levels of government as well as between the different local governments, causing inefficiencies. For example, the development process can be stifled by requiring planning permission from the state level, the Melaka Economic Planning Unit (EPU), and building capacity among the local authorities (MBMB, HTJMC). For example, the inefficiency of the planning administration system and unresponsive development control system have been cited as the reasons behind the struggles with coastal land reclamation in Melaka.[31]

Intervention's Alignment to Existing Plans and Policies

SPAD is preparing the southern region Integrated Public Transport Master Plan, setting the standard for upgrading public transport nationwide. The Plan is going to be implemented in stages depending on financial capabilities of each state; Melaka is mentioned as one of the states with this capacity.[32]

Melaka has already made efforts towards sustainable urban growth through the region's 2014 Green City Action Plan, which is not a legally binding document but rather guiding principles, outlining the goal to increase the public transport mode share to 60%. The Plan includes Green Technology Blueprints, a comprehensive vision to transform Melaka into a Green Technology City State by 2020, and the establishment of a Green Technology Council to oversee its sustainability efforts.

Moreover, the Sustainable City Development effort that Malaysia' initiated in 2017 is a 5-year project that will support urban planning and management to account for sustainability and related economic, social and environmental matters, as well as assist in climate risk mitigation and in the adaptation of technologies. It is a collaboration between the United Nations Industrial Development Organisation (UNIDO), several local government ministries, the Malaysian Industry Government Group for High Technology (MIGHT), and the Melaka state government. There is strong political will for 'smart city' interventions, supported largely by the Melaka State government and the Malaysian Industry-Government Group for High Technology (MIGHT).

In July of 2018, the State of Melaka announced that they were to set up a Smart City Advisory Council – managed by the State Economic Planning Unit (UPEN) and with the Melaka Chief Minister's Department (JKMM) – acting as a mediator between the government and the people.Data coordination is currently limited, and most data capture is done manually as there is no automated system in place.

Furthermore, the Rockefeller Foundation's 100 Resilient Cities is funding the development of a resilience strategy for Melaka City. The programme has appointed a resilience officer to identify major resilience stresses and risks, working across government departments and with civil society.

Melaka's primary focus on sustainable development is shown through the high level of involvement from both the public sector as well as numerous international agencies.

LEGAL FRAMEWORKS RELEVANT TO THE INTERVENTIONS

Land Ownership

National Legislation provides the federal government with ultimate ownership over land and strong powers of compulsory acquisition. According to the National Land Code of 1965 (Act 56), all land belongs to the state if it has not been alienated or declared as reserved or mining land. It is rented out on up to 99-year leasehold agreements.[33]

The Land Acquisition Act of 1960 gives the state government compulsory purchase powers for land needed for any "public purpose."[34] Therefore, the government has a large scope to implement a socially beneficial project, which may help facilitate the acquisition of land where necessary such as for the Green Transport Corridor. Under the Federal Constitution 1957, Article 13 stipulates that no land shall be taken without payment of adequate amount of compensation to the affected landowners. However, neither the Land Acquisition Act, nor the Constitution define compensation, and there have been instances of landowner dissatisfaction regarding the disturbance caused by the Land Acquisition Act.[35]

Road Network Administration

In Malaysia, road management is determined by the federal or state authority. Federal roads include expressway (tolled), national highways, regional road schemes and minor access roads, whereas state roads include intra-state and local authority roads.

At a federal level, roads are planned, designed, constructed and maintained by the Ministry of Work (MOW), in accordance to Ministerial Function Act 1969. State roads are the responsibility of the Department of Work (Jabatan Kerja Raya (JKR)).

The Malaysia Highway Authority (MHA) administers all highways and expressways, while other federal and state roads are administered by JKR. Furthermore, local roads are administered by the respective local authorities.

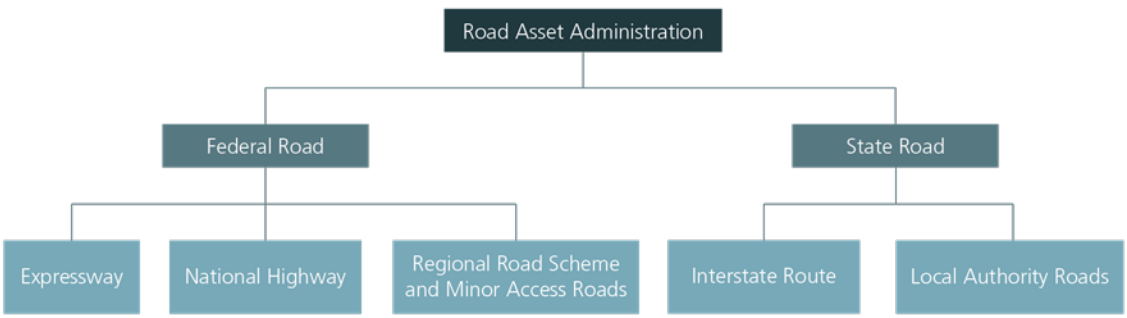


Fig. 13. Road Network Administration in Malaysia (Source: Regional Land Public Transport Master Plan, 2017)

INTERNATIONAL ALIGNMENT AND TECHNICAL RECOMMENDATIONS

Potential Impact

The potential impact analysis outlines the main benefits that can potentially be attained through the Global Future Cities Programme in each city under the assumption of three time points: short, medium and long term. Nevertheless, as impact can arise from a complex interaction of context-specific factors, rather than as a result of a single action, an empirical impact assessment is out of the scope of this report.

Short-term outcomes refer to those that can be achieved through the implementation of the technical assistance support within the 2 to 3-year scope of the Global Future Cities Programme. Mid-term outcomes are only achievable once the intervention is executed at the city level either through capital investments or the legal validation of key polices and plans. Long-term impact of the interventions is linked to the sustainability of the interventions in a 7 to 15-year timeframe and is related to project operation and maintenance.

SHORT-TERM IMPACT

Devising a Green Transport Corridor Implementation Plan and a Heritage Area Mobility Plan will bring together diverse stakeholders from the private, public and third sector to work in an inclusive and participatory manner to jointly improve Melaka's mobility system.

The integration of different transport modes at the scale of the city and the state, will allow an improvement of the mobility network's governance and will promote better coordination and cooperation between different levels of government and public departments.

Through their capacity-building component, the interventions will positively impact technical and managerial capacity at city and state level, while increasing citizens' inclusion in the development of plans and decision-making processes. The interventions will increase awareness among stakeholders about the challenges and opportunities of Melaka's mobility network, which is the basis for any future improvements.

The interventions will also encourage stakeholders to think about potential answers to the currently unsustainable land consumption patterns by planning high capacity public transport that connects residential, economic and civic areas along the Green Transport Corridor. By setting out a clear plan for improving mobility to, from and within Melaka City, the interventions define a path to achieving mid- and long-term impact related to mobility. The pilot project(s) will serve as an initial catalyst to encourage behavioural change in favour of sustainable modes of transport and create momentum for the interventions.

MEDIUM-TERM IMPACT

In the medium-term, once completed, the interventions will contribute to resilient infrastructure and the fostering of innovation. The Green Transport Corridor and the Heritage Area Integrated Mobility Plan will provide quality, reliable, sustainable and resilient mobility options, and will be designed to support innovative public transport technologies such as smart ticketing and smart parking.

Serving as a key access route in and out of Melaka City, the Green Transport Corridor, in combination with the Heritage Area Integrated Mobility Plan will encourage the use of low-carbon public and non-motorised transport, reducing traffic congestion, air and noise pollution and the associated negative environmental and socio-economic impact.

As the interventions aim to provide an integrated approach to delivering sustainable mobility options, the likelihood of a decrease in travel costs and time savings for local employees and businesses is considerable.

Connectivity will be improved within the State and City, particularly for rural and low-income groups. This has the potential to create more equal access to employment opportunities as individuals are less restricted by locality and private vehicle access.

The provision of alternative modes of travel, will also reduce the dependence of tourists on private motorised transport. While this reduces congestion further, it also creates opportunities for a more sustainable tourism economy. Bus operators, tri- and rickshaw drivers, boat operators and other tourism businesses are likely to see increased business opportunities.

Lastly, the addition of green space along the Green Transport Corridor and potentially also within the heritage area, will mark a first step towards increasing biodiversity and countering the loss of green areas and tree canopies caused by urban sprawl.

LONG-TERM OUTCOMES

If the interventions are successful at acting as catalysts for cultural and behavioural change in favour of the use of public and non-motorised transport, there are substantial potential long-term impacts.

The interventions have the potential to serve the advancement of Melaka as a smart and sustainable State, City and Community. From an increase in green and public space along the Green Transport Corridor to urban realm improvements in the heritage area through freeing-up road space for non-motorised transport and public use, the interventions have the potential to create lasting effects within Melaka in social, economic and environmental terms.

A mobility network that is sustainable and inclusive can improve quality of life for all communities in Melaka by increasing connectivity and accessibility across the State and the City, and reducing environmental impacts. Increased usage of public transport offers the potential for efficiency gains and cost reductions, thereby making mobility more affordable and inclusive. In a context of heavy reliance on private motorised transport, those with complex travel paterns for example due to caregiving responsibilities and those who cannot or do not drive are most likely to enjoy the greatest benefits in terms of connectivity and accessibility, which could result in reduced inequalities, for example regarding women and low income groups including migrants.

Simultaneously, the interventions can also help sustain Melaka's attractiveness to tourists and thereby one of its main economic pillars. By supporting heritage protection and a cleaner, safer and more liveable urban environment. Increased green space, and lasting reductions in air and noise pollution and GHG emissions from transport can improve Melaka's natural environment and contribute to climate action, whilst improving citizens health and well-being.

Contribution to Sustainable Urban Development

2030 SUSTAINABLE DEVELOPMENT GOALS

The Global Future Cities Programme aims to contribute to the implementation of the 2030 Agenda for Sustainable Development, mobilising efforts to tackle poverty, fight inequalities and combat climate change.

SUSTAINABLE CITIES AND COMMUNITIES

The overall objective of the interventions is aligned with SDG 11, which aims to "make cities and human settlements inclusive, safe, resilient and sustainable".
More specifically, the interventions contribute to the adoption and implementation of integrated policies and plans towards the provision of "access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons" (SDG11.2).
Moreover, as part of the interventions, a capacity building programme aims to train the state and local governments to conduct participatory, integrated and sustainable transport and urban planning and management (SDG 11.3).
Efficient planning can lead not only to improving the environmental impact of the mobility network and the urban system (SDG 11.6), but also positive economic and social development, integrating and connecting all urban areas: urban, peri-urban and rural (SDG 11.a).

RESILIENT INFRASTRUCTURE AND GREEN DEVELOPMENT

Additionally, the interventions have a potential impact on SDG 9 through the development of quality, reliable, sustainable and resilient infrastructure, improving the performance of public transport (SDG 9.1). The Green Transport Corridor and the Heritage Area Integrated Mobility Plan can have a specific effect on reducing traffic congestion, the correlated number of annual death and injuries (SDG 3.6, 3.9) and air pollution (SDG 13.3).

ACCESS TO JOBS AND REDUCED INEQUALITY

Improving the efficiency of travel within and out of Melaka will result in cost and time savings for local employees and businesses and support a sustainable tourism economy. The interventions will facilitate access to decent work and economic growth (SDG 8). By improving connectivity and accessibility for those who cannot or do not drive in a context of heavy reliance on private motorised transport, gender equality will be promoted (SDG 5) and social inequalities reduced (SDG 10).

INCREASED COORDINATION

Finally, the interventions are aligned with SDG 17, by bringing together State and City level actors, different local authorities, and the general public in the development and execution of the interventions.

NEW URBAN AGENDA ALIGNMENT

The United Nations Conference on Housing and Sustainable Urban Development (Habitat III) held in Quito, Ecuador, in 2016 adopted the New Urban Agenda, a new framework that lays out how cities should be planned and managed to best promote sustainable urbanisation.

The New Urban Agenda encourages UN-Habitat and others "to generate evidence-based and practical guidance for the implementation and the urban dimension of the SDGs in close collaboration with Member States, local authorities, major groups and other relevant stakeholders, as well as through the mobilisation of experts."

The interventions in Melaka are directly related with UN-Habitat's draft Action Framework for Implementation of the New Urban Agenda (AFINUA). This framework is organised into five categories: (1) national urban policies, (2) urban legislation, rules and regulations, (3) urban planning and design, (4) urban economy and municipal finance and (5) local implementation.

Both interventions have a direct relation to the AFINUA and are mutually reinforcing each other across the five categories. While the Green Transport Corridor most directly relates to (4) urban economy, the Heritage Area Integrated Mobility Plan is mostly related to (2) urban legislation, rules and regulations and (3) urban planning and design.

A key component of the Green Transport Corridor is to ensure that transport, as one of the main urban services, will be delivered as an integrated service and will go to underserviced and marginalised groups (AFINUA key item 5.4). Together with the Heritage Area Integrated Mobility Plan, the corridor design will aim to promote a multimodal transport system integrated with walking and cycling options that decreases the time, cost and environmental impact of travel.

The interventions will thereby promote compactness and accessibility, social cohesion and economic productivity and can help balance the public and private domain (AFINUA key item 3.4). Furthermore, both the Green Transport Corridor and the Heritage Area Integrated Mobility Plan will assume that roads, streets, intersections and corridors need to be conceived as public spaces, and the quality of their services is central to liveability, efficiency and equity in urban areas (AFINUA key item 2.3).

Finally, the interventions will focus on the financial sustainability of the proposed mobility options, through the development of a fare structure and revenue collection system and a structured business plan.

They will consider "the entire budgetary cycle including income, expenditures, current capital, capital investment plans, etc, link to the local financial management system and be anchored in local economic development potential including the role of local government to provide and distribute public goods and services and enhance local economic productivity" (AFINUA key item 4.2).

Moreover, both interventions will be based on the assessment of the existing infrastructure, future travel demands and respective capital planning, that can help to guarantee efficient basic services and networks and their maintenance, and meet backlogs and anticipated demands (AFINUA key item 4.5).

ALIGNMENT TO CROSS-CUTTING ISSUES AND PROGRAMME OBJECTIVES

The Global Future Cities Programme seeks to achieve higher rates of sustainable and inclusive growth while increasing long-term investments in sustainable urban projects. Moreover, it will provide greater awareness, capability and confidence, while establishing regulatory frameworks resulting in higher incentives for partnerships and financial mechanisms.

The four Cross-Cutting Issues of UN-Habitat, as identified in the Strategic Plan 2014-2019, are mainstreamed to ensure that all UN-Habitat work targets those with the most need and promotes socially and environmentally sustainable cities.[36] In this regard, the interventions detailed for Melaka are shaped under the mainstreaming of environmental safeguards, youth, gender equality and human rights.

The interventions' overall aim is to improve the mobility system in Melaka by increasing connectivity and accessibility in a green, i.e. environmentally sustainable, and smart, i.e. technologically advanced, manner. Building on these two key components of environmental sustainability and innovation, the interventions will be designed to improve the accessibility and attractiveness of public and non-motorised transport for all social groups, with attention to the youth, women and elderly persons.

The lack of adequate public and non-motorised transport provision affects all genders, yet there is a greater negative impact on women. Due to their caregiving and economic responsibilities, women tend to have more complex commuting patterns than men and therefore tend to be most affected by transport provisions. The interventions will provide special focus to issues of personal safety and security regarding transport as a major step towards gender equality.

Moreover, the interventions will promote professional empowerment for women, both reducing the time for travel and supporting female inclusion in a male-dominate work environment.

Potential Benefit	Short term	Medium Term	Long term	SDG Alignment		New Urban Agenda	Programme Objectives and Cross-cutting issues
				GOALS	TARGETS	AFINUA KEY ITEM	1. Climate change; 2. Gender equality; 3. Human Rights; 4. Youth; 5. Sustainable and inclusive economic growth
Increased capacity to prioritize strategies and improved tools for decision making based on informed demographic, economic, cultural, environmental and other holistic projections.				11, 17	11.a; 17.18	1.1, 3.1	Climate change; Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Integrated plans, frameworks and approaches to promote more sustainable, resilient, and socially inclusive cities				11, 13, 16	11.3; 13.2; 16.7	2.1, 2.3, 5.1, 5.3, 5.4	Climate change; Gender equality; Human Rights; Youth
Better Governance & Integrated Management of cities including better coordination and cooperation between different levels of government.				17	17.14; 17.15	1.4, 1.6, 2.5	Climate change; Human Rights; Sustainable and inclusive economic growth
Encouraged and/or promoted effective public, public-private and civil society partnerships				17	17.17	5.6	Sustainable and inclusive economic growth
Sustainable financing models for urban developed, that enable the city to finance provision of basic services and local infrastructure.				16	16.6	4.2, 4.6	Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
More secure, safe, and accessible public transport, particularly for women and elder.				3, 11	3.6; 11.7	3.3, 5.4	Gender equality; Human Rights; Youth
Lower costs of transporting goods and increased efficiency of the transportation system				9, 12	9.1; 12.2	3.3, 4.5, 5.1	Climate change; Sustainable and inclusive economic growth
Increased creation of job opportunities, particularly for women, youth, and disadvantaged groups.				1, 5, 8	1.1; 1.2; 8.3; 8.5; 8.6	3.4, 3.8, 4.4, 4.5	Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Increased ability to access employment and services, particularly for women and lower income groups				8	8.3	3.4, 3.8, 4.4, 4.5	Gender equality; Human Rights; Youth; Sustainable and inclusive economic growth
Increased efficiency, quality, and reliability of public infrastructure and basic services.				9, 12	9.1; 12.2; 12.c	2.3, 4.2, 4.5, 5.4	Climate change; Human Rights; Sustainable and inclusive economic growth
Increased mobility and accessibility for poor women and men and other marginalised groups.				9, 11	9.1; 11.2	3.3, 5.4	Gender equality; Human Rights; Youth
Improved access to basic services in peri-urban areas				9, 11, 16	9.1; 11.2; 16.6	4.5, 5.4	Climate change; Gender equality; Human Rights
Reduction in traffic congestion and in air pollutant emissions				3, 13	3.9; 13.2; 11.6	3.5	Climate change
Higher rates of sustainable and inclusive economic growth, greater investments flows & greater trade flows				9, 17	9.a; 17.3; 17.6, 17.9	4.1, 4.2, 4.3, 4.4, 4.5	Human Rights
Protected and safeguarded cultural and natural heritage				11, 15	SDG-11.4 ; SDG-15.1.2	2.1, 2.2, 3.2, 3.6	Climate change; Human Rights

Fig. 14. Potential Impact and Programme Objective Alignment

Success Factors

The following statements are considered as evidenced success factors, based on international best practices, that should be considered for the interventions in Melaka in order to achieve the maximum impact on the Programme Objectives, as well as to ensure the sustainability of the interventions throughout their whole life-cycle.

SPATIAL CONSIDERATIONS

Linking Transport and Land-Use Planning

In Melaka, transport and land-use planning are carried out by different institutions and as a result have generally been detached from one another. This is inefficient as it often results in urban sprawl. Infrastructure has been retrofitted to fit the needs of commuters and other travellers without considering the implication of planning on mobility. This is also not cost effective as estimates show that retrofitting infrastructure, including for transport, where cities have already been built, can be three times more expensive than building new.[37] Proactively planning for transport can determine where urbanisation will occur and ensure the city grows efficiently.

More specifically, transport and land-use planning complement each other in two ways: (i) Together, land-use and transport determine accessibility to jobs, commerce and services. Intensive land-use facilitates high population density which, in turn, makes transport systems more cost effective. (ii) The implementation and integration of the public transport system should be based on a rigorous spatial analysis to understand past, current and future land-use configuration. This process should focus on the Draft Structure Plan 2035 Local Plans and the Green City Action Plan.

Sustainable urban development should be promoted through transit-oriented development (ToD) corridors. These are development corridors that are specifically planned around transport nodes, with a mix of housing and commerce as well as employment opportunities. Governments can facilitate these types of developments through permissible zoning and other regulatory instruments as well as providing anchor infrastructure investments. Locating these amenities close to public transport improves connectivity, as people can access their residences and jobs more easily, and thus may lower transport costs for household, as they will not have to spend as much on traveling long distances. ToD can also reduce congestion, incentivising public transport in connection with non-motorized modes to cover first/last mile access.

Integration of Non-Motorised Transport

A sustainable Transport Green Corridor and Heritage Area Integrated Mobility Plan will encourage non-motorised transport (NMT) elements integrated with motorised forms of transport in an accessible and safe way. This also contains benefits for female users of public transport.

Additional benefits of encouraging NMT lie in decreased congestion. Proper sidewalks, bicycle lanes and other similar networks can act as a feeder system to the main public transport modes for short and medium distances and to improve last-mile-connectivity, avoiding the need for motorised transport means.

However, research has shown that walking is always perceived as more onerous, both in time taken and safety for the individuals. Attractive design of NMT infrastructure and adequate promotion are needed to trigger a behavioral change.

Improved Data[38] for Realistic Designs and Assessing Impact of Investment[39]

In order to design and implement a realistic evidenced integrated multimodal transport plan, cities will require data. Data can be costly to collect on a regular basis. However, with new technologies, such as mobile phones and smart ticketing systems, data can be generated relatively easily. Regular data will also allow for continuous monitoring and the evaluation of the plan and its implementation, enabling evidence-based improvements to be made to the system. For example, integration may lead to changes in how people travel which, in turn, should be reflected in the operation and design of the transport system. This will require an iterative process to achieve optimisation but also needs data analysis capacities.

The implementation of mobility plans can require major investment; therefore, it is also important that the city understands the overall impact once the investments have been made. For example, impacts of investment can include direct effects on travel time as well as

indirect effects on employment, land and property values or commuting responses. Impact assessments are needed to outline where further improvements need to be made to unleash the previously outlined benefits, as well as to inform future investment.

Assessing impact, however, requires rigorous methodologies to isolate the actual portion of the outcome that can be attributed to the intervention itself. Among other factors, this requires the availability of high-quality historical and future data. Therefore, as part of an integrated transport planning exercise, understanding what data is available, what will need to be collected, as well as having a detailed strategy for collecting this data is critical in ultimately understanding whether the intended outcomes and benefits have been achieved.

FINANCIAL CONSIDERATIONS

Multimodal Transport is More Effcient and Cost-effective

For improvements in effciency and in cost effectiveness of the transport network, systems need to be integrated along:

- All modes and routes of the network;
- All physical and operational elements, such as ticketing and fares.

This is particularly important as most passengers use more than one mode of transport to get anywhere, which means transfers between both services and across space and so effciency improvements will only occur with proper integration. Integration is important to minimize passengers overall travel time and cost. Aspects to consider for coordination include: individual routes, stop locations, amounts and frequency of nodes and schedules

Integrated Public Transport can Provide Efficiency

Gains and Other Benefts Public transport is an economic system that, if well integrated, can provide larger effciency gains and other benefts than if each system operates individually.

Improvements in connectivity in a city is one of the main ways that urbanization can support economic growth in the long-run. Firms can be connected to their labour, markets and other frms for input as well as the fact that people can be connected to their residences. The more seamless the connectivity will work; the higher productivity will be. In the long perspective linking landuse planning to transport policy also enables cities to recoup investments in transport through land-value capture as transport investments will raise land values in surrounding areas.

Realistic Financing and Funding Strategy for Anticipated Investments, Programmes and Projects

Public transport is an economic system that, if well integrated, can provide larger efficiency gains and other benefits than if each system operates individually. Improvements in connectivity in a city is one of the main ways that urbanisation can support economic growth in the long run. Consistently, one of the major barriers to the implementation of transport plans is that they include financially-unsustainable projects[40] or the lack of a proper long-term strategy. This is one of the most evident issues for the City of Melaka, in which ambitious plans have failed in the past because of unforeseen financial barriers. For example, the railway route along the north-south corridor failed in the implementation phase. This can result in the stalling of the implementation of overall plans due to the integrated nature of the mobility. Therefore, if the Heritage Area Integrated Mobility Plan sees the need for new, particularly large-scale investments, a critical assessment of their financial feasibility is essential.

A cost-benefit analysis of each of the individual investments should be used to help decide what to include in the plan. Coupled with this is the need for affordability studies to understand how high ticket fares can be and thus the likelihood of scaling the funding from this source.

Large-scale transport investments will require a mix of financing sources and will most likely involve borrowing, either at a national or international level. This is particularly the case during the initial capital investment phases of infrastructure investments. However, where borrowing is involved, a clear funding stream should be determined from the outset, to ensure that the city can pay back the loan.

Administratively, land is easier to tax than other more mobile factors. Furthermore, given that the investments in the integrated multimodal public transport plan will likely be accomplished by the government, it is fair that the increase in land values that arises as a result should not accrue to private individuals.

Available Funding Mechanism

The City of Melaka has used PPPs, yet the lack of expertise and the poor estimation of final costs has often led to problematic process management. With PPPs, it is important that the city has a clear funding stream linked to pay back the initial upfront capital investment from the private sector. In mobility systems, part of this may be through revenues generated by ticketing such as farebox recovery. In some Asian and Latin American cities operations of transportation systems are fully covered by the user fees. However, this requires high ridership with the risk of making the system unaffordable

and therefore discouraging use. For these reasons close collaboration with involved stakeholders and with the operator is required to achieve the most sustainable solution. Moreover, evidence from other cities shows that, mostly, user fees only cover 35 to 65% of the operations of any system.

The city should also strongly consider other financing mechanisms. This is because the suitability of PPPs will vary on a project-to-project basis; yet all projects will require an associated financing and funding strategy to be implemented and sustained. Therefore, in deciding on the form of contracting, the city government should evaluate the potential costs and benefits from each mode and select the one that maximises benefits compared to costs.

In terms of procurement, these are other methods that can be considered:

- Direct public provision – the city would take on all the aspects of financing and managing the project;
- Contracting out – the city would pay a private company to design and build a project; the final project would then be transferred back to the city, which would have responsibility to run it.

Strengthen Municipal Capacity for Land Value Capture and Financing Mechanisms

Evidence shows that transport investments can raise land values in surrounding areas. For example, estimates from Bogota indicate a 15 to 20% increase in nearby land values in response to BRT extensions. Land value capture is an efficient instrument as land is in fixed supply and therefore taxing it should not have adverse effects on investments.

Land-value uplift can be taxed in various ways to fund the transport investments, which created it, including:

- Imposing development fees to nearby landowners to fund the infrastructure built[41];
- Charging developers for additional density allowances near the transport link, which works particularly well for a ToD approach[42];
- Using tax increment financing to enable property taxes to recoup revenues from increasing property values, although evidence shows this has in general only had limited success[43]; and
- Buying up land around transport nodes in anticipation of land-value increase, to later sell off and fund the project.

For land value capture to provide a potential financing and funding stream, enabling legislation and sufficient data needs to be available before the plans are in place and investments are made.

Cost-Benefit Analyses for Modal Choices, to Ensure Investments Reflect Value for Money

To ensure the investments required represent value for money for a city, cost-benefit analyses need to be undertaken.

This analysis compares the monetised benefits and costs of a project. In this context, value for money aims to achieve a favourable balance between costs and quality (economy), outputs and inputs (efficiency) as well as anticipated outcomes (effectiveness).[44] Furthermore, it is important to note that cost-benefit analyses are also where aspects of sustainability as well as social justice should be weighed upon.

The anticipated benefits to consider include, for example, time and cost savings for commuters as well as wider impacts on the environment and health, through the reduction of pollution or road accidents.

Pedestrianization and Land Value

As the interventions consider pedestrianizing the area, there is the potential that this can increase land and property values. Given that Melaka already employs land-based financing instruments, there is a potential revenue increase from value capture. In pedestrian zones, although property values increase overall, there tends to be a higher increase for retail space than residential space. The pedestriarization can lead to the increase of tourists and visitors in the area and a consequent growth of the commercial opportunity for Melaka's inhabitants and for investors.

Nevertheless, to ensure that the pedestrian zone is well connected there need to be parking facilities as well as bus stops on its peripheries. The use of these facilities can lead to the collection of user fees that can be reinvested into the site itself.

Given that 90% of travel in Melaka is completed by car, park and ride facilities have particularly high revenue potential. The additional benefit of parking fees is that they could discourage the use of private motorised vehicles, which has a positive impact on the environment as well.

As of June 2018, parking has been made free in the historical centre on weekends and public holidays to encourage visitors to the tourist sites. However, given that these are peak times to visit the sites, this potentially reflects both a loss of revenue for the city and will also increase traffic. There are several considerations that will need to be made if the city wants to re-institute the parking fee, particularly the cost and the fee structure (i.e. hourly or daily).

Given that parking fees were recentrly abolished, it might prove politically difficult to reinstate them. As most tourists visiting Melaka in 2018 arrived from Singapore by car, parking fees should not be too high to still encourage tourism. Instead they should encourage visitors to use the park and ride facilities instead of on-street parking, thereby generating revenue for the city.
If the funds from the park and ride are meant to be re-invested in the site, there needs to be some budget provision to earmark for this

Heritage Site as National Good
In several cities around the world, which have had the whole city or certain zones classified as World Heritage Sites, municipalities have correctly argued that the urban heritage actually belongs to the whole country and therefore its preservation is a responsibility for regional or national governments.

In Cuenca (Ecuador), for example, as municipal funds are often insufficient to maintain Cuenca, the city relies on national transfers and international funds, e.g. Spanish Agency for International Cooperation, which the city can access due to its UNESCO World Heritage Site status.

In Ouro Preto, (Brazil), to protect the city from heavy traffic, they built a bus terminal was built outside the confines of the city, which included a stop for tourist buses. The potential for Melaka to access national funds, such as federal level grants, is high as it aligns with the visions of the Prime Minister's 2017 plans of enhancing its tourism potential.

Tourism as a Source of Revenues
Given Melaka attracts about 17 million tourists a year, tourism and associated taxes and user fees may be used to raise revenue to operate and maintain the heritage site and its mobility network. User fees to enter specific buildings within the heritage area can be collected to reinvest in those respective buildings. There is already precedence for this in Melaka.

- A heritage tax already exists which is levied on hotel guests. The revenue is then reinvested into the heritage site
- 1st July 2017 is the date for which the tourism tax came into effect. The tax is a fixed rate tax, with different rates depending on the category of the hotel. The revenue from the tax is meant to be re-invested in marketing Melaka overseas, therefore attracting more tourists, as well as in restoration of the sites themselves.

World Heritage Fund
Funding is also available from the World Heritage Fund, which comprises both compulsory and voluntary contributions from UNESCO member states. The total amount available in this fund is not large, with 1.4 million USD available in 2018 and Malaysia's contribution standing at 10,513 USD.

Applications can be made to the fund via the national government, to help with conservation and management of designated World Heritage Sites as well as preparatory assistance in applying to submit a new site.

Potential Carbon Financing
As Melaka looks to further develop the Green Transport Corridor, one method of financing is through carbon financing. There are new initiatives that have been set up to ensure that cities can access climate finance.

A Carbon Credit is defined as one unit of carbon dioxide or other greenhouse gas (GHG). These emissions are regulated internationally through the Kyoto Protocol and other instruments. Excess credits can be sold on markets to buyers who want to off-set their own emissions. Moreover, the Gold Standard, which is an international certification body for carbon credits, launched its Cities Programme in 2016. This is a results-based financing framework through which cities that are launching green programmes can tap into the climate market for financing, funding, and future investments.

The framework accounts for both direct emission reductions through investments but also other contributions that are made under the Sustainable Development Goals. Cities in India, China, the Middle East and Turkey are in the process of joining the programme.

Although climate-based finance is a new innovative source of both financing and funding investments like Green Corridors in cities, there are several challenges that are associated with it as well. These include:

- Carbon markets are extremely volatile, as they are dependent on global economic trends outside the city's direct control.
- Prices of carbon credits have been steadily declining over time and forecasts that these carbon credits will improve, is quite low.
- To access this type of financing, the up-front investments are extremely high in becoming gold-standard certified.
- It includes investments in data that need to be made to certify emissions reductions and other potential outcomes of the project.

Melaka seems to be in a good position to potentially fulfill these criteria as it is currently setting up a GHG Carbon Inventory and Eco Budget programme as a key element of its Green City Action Plan.

LEGAL CONSIDERATIONS

Integration Across all Relevant Government Institutions

Multiple levels of government have different authorities over various parts of transport planning. This often creates overlap in jurisdiction and unclear mandates, increasing difficulty in coordination. This can be one of the major challenges for designing and implementing the interventions in Melaka considering by first the involvement of two local governments, Melaka Historical City Council (MBMB) and Hang Tuah Jaya Municipal Council, and second, the different transport modes and the formal and informal transport operators that will be involved. Thus, effective coordination mechanisms, such as joint planning authorities, should be managed.

Adequate Compensation for Compulsory Land Acquisition

Land acquisition by governments is necessary to increase resilience and safer environments or improve land use efficiency through vital infrastructure projects or placement of large job-creating industries. Where possible, this should be facilitated through voluntary market exchanges. Compulsory land acquisition is also justified if adequate compensation is given to those displaced.

The capacity-building programme should consider the necessary strategies for the inclusion of affected residents in nearby areas when compulsory land acquisition happens. If this option is not viable then adequate compensation mechanisms that ensure social integration and provision of livelihoods for displaced communities are needed.

Adequate compensation includes payment of the market value of land (before redevelopment projects are announced) as well as an amount to cover the loss of social networks and disruption of livelihoods due to relocation. Investment in legal and administrative capacity to run a smooth appeals process is also necessary to limit social unrest and ensure land ownership rights are observed. Relocation areas should be well connected to avoid socio-economic exclusion and informal settlement.

Participatory Planning can Help Understand the Different Requirements from a Diverse Consumer Group

A city's mobility network must serve multiple travel needs from diverse sectors of society. It is crucial to understand the specific needs of the potential stakeholders, including their income levels, where they will travel, and at what time of the day.

This can be done by involving as many of the relevant stakeholders as possible in a participatory planning process to ensure that the resulting plan addresses their requirements. A more participatory process from the outset will also have the additional benefit of ultimately generating support for the implementation of the plan.

Incorporating Existing Informal Private Operators

Integrated transport plans are more likely to succeed if they incorporate existing informal operators; at the same time, failing to incorporate them can be a costly mistake – turning what could be a useful partner into a powerful opposition group.

Cities that have ignored the integration of operators have faced numerous challenges in implementing transport reform. For example, in Dar es Salaam, Tanzania, resistance to a new BRT from informal transport operators contributed to a seven-year delay between design completion and the start of construction. This is because operators were concerned about lost profitability on key transport routes and the loss of employment of their drivers.[45] In Quito, Ecuador, informal operators were not included in the first BRT line in 1995, yet due to difficulties in co-ordinating the BRT with feeder services, in 2005, the government included informal operators in the third line.

The two interventions in Melaka should include a multi-stakeholder engagement processes during design and implementation. The ability to effectively incorporate informal transport operators depends not only on political will within government but also on the internal organisation of transport operators themselves. Where governments can collaborate with clearly defined and well-organised collectives, this can help to facilitate the co-ordinated shift in practices required from current operators, for example redirecting existing routes towards feeder routes or agreeing to trade in low-capacity minibuses for higher capacity buses.

Where existing operations are fragmented and competitive, such co-ordinated shifts of practice can be challenging. Therefore, understanding the incentives for how these cooperatives can be formed will also need to be considered as part of transport reform.[46]

ENDNOTES

1 State Structure Plan, Melaka 2035.

2 Department of Statistics Malaysia (2018). Retrieved from: <https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=TmlOYTJZTEJJZXg5QUZQMUxrRVFKUT09> [accessed 22.10.2018].

3 Williams, O. S., Hamid, R. A., & Misnan, M. S. (2018). Accident Causal Factors on the Building Construction Sites: A Review. International Journal of Built Environment and Sustainability, 5(1).

4 Asian Development Bank (2014). Green City Action Plan.

5 Ahmad, A. G. 1998. "Urban Tourism in Malaysia: Heritages Cities of Georgetown, Malacca and Kota Bahru. Paper presented at the". In 2nd International Seminar on European Architecture and Town Planning Outside Europe (Dutch Period), Melaka 2–5. Malaysia November 1998.

6 Melaka Tourism Promotion Division (2018). Retrieved from <https://www.melaka.gov.my/en/jkmm/departments-units/deputy-state-secretary-development/torism-promotion-division> [accessed 09.11.2018].

7 Previously failed attempts at instituting a public transportation network between Ayer Keroh and Melaka City include the Melaka Aerorail. The Aerorail was a proposed monorail line that would have been built in two phases. The first phase would have included the construction of 9.5km of rail line costing approximately 586 million MYR with 10 transit stations with stopover hotels managed by the Leisure Group Hotels and Resorts Sdn Bhd. The second phase would have included 8.7km extending from Alor Gajah and the Jasin district and was costed at 807 million MYR. The entire project was estimated to cost 1.8 billion MYR. According to i)Lukeman, I. (2008) "Pembinaan Aerorel Melaka diteruskan." Utusan Malaysia. Retrieved from: <http://ww1.utusan.com.my/utusan/info.asp?y=2008&dt=0315&pub=Utusan_Malaysia&sec=Selatan&pg=ws_04.htm> [accessed 09.11.2018]. and ii) Bernama (2008) Kerajaan Melaka Diminta Kaji Semula Projek Aerorail 1.5 billion MYR.

8 Asian Development Bank (2014). Green City Action Plan.

9 Bernman (2018) Melaka free bus service will benefit 290,000 locals annually. Retrieved from: <http://www.bernama.com/en/news.php?id=1634510> [accessed 04.11.2018].

10 Ibid.

11 Mahorn (2018) Free bus service in historic city. The Star Online. Retrieved from: <https://www.thestar.com.my/metro/metro-news/2018/08/23/free-bus-service-in-historic-city-initiative-by-state-government-aimed-at-addressing-ailing-public-t/> [accessed 04.11.2018].

12 Global Platform for Sustainable Cities (2018) Melaka Sustainability Outlook: Rapid Assessment Diagnostic.

13 Asian Development Bank (2014) Green City Action Plan.

14 Global Platform for Sustainable Cities (2018) Melaka Sustainability Outlook: Rapid Assessment Diagnostic.

15 Asian Development Bank (2014) Green City Action Plan.

16 Ibid.

17 Global Platform for Sustainable Cities (2018) Melaka Sustainability Outlook: Rapid Assessment Diagnostic.

18 Syafa'ah Ishak, et. al (2016). "Review on the Significance of Local Plan for Coastal Reclamation Development: The Case of Malacca, Malaysia." MATEC Web of Conferences. 66. 00050. 10.1051/matecconf/20166600050.

19 Melaka Draft Structure Plan 2035.

20 Global Platform for Sustainable Cities (2018) Melaka Sustainability Outlook: Rapid Assessment Diagnostic.

21 Melaka Structure Plan 2035.

22 Ibid.

23 Astro Awani, Melaka Tables Budget 2017, http://english.astroawani.com/business-news/Melaka-tables-budget-2017-rm348-78-million-120375, [accessed 30 November 2018.

24 Property tax is levied annually as a percentage of the value of the property. The maximum rate of property taxes is 35% but may vary depending on use and holding location. Unused or uninhabited land is also charged 10%, fining those who do not use or develop their land and buildings.

25 UNESCO, Convention concerning the protection of the world cultural and natural heritage, https://whc.unesco.org/archive/convention-en.pdf,1972.

26 ADB, Green City Action Plans Melaka, https://www.adb.org/sites/default/files/related/41571/imt-gt-green-city-action-plan-melaka-april-2014.pdf, [accessed 30 November 2018.

27 http://www.mbmb.gov.my/en/businesses/legal/acts

28 http://www.thesundaily.my/news/2018/07/18/celebrate-our-cultural-heritage

29 https://www.nst.com.my/news/nation/2017/08/268994/new-routes-and-laws-regulate-electric-bicycles-melaka

30 http://www.clgf.org.uk/default/assets/File/Country_profiles/Malaysia.pdf

31 Yusup, M., Arshad, A. F., Abdullah, Y. A., & Ishak, N. S. A. (2016). Coastal Land Reclamation: Implication towards development control system in West Malaysia. Environment-Behaviour Proceedings Journal, 1(1), 354-361.

32 http://www.theedgemarkets.com/article/anthony-loke-govt-drafting-quality-standard-public-transport-terminals

33 http://www.fao.org/gender-landrights-database/country-profiles/countries-list/land-tenure-and-related-institutions/en/?country_iso3=MYS

34 This document outlines the process for land acquisition: https://

www.jkptg.gov.my/en/guidelines/land-acquisition

35 Omar, I., & Ismail, M. (2009). Kotaka's Model in land acquisition for infrastructure provision in Malaysia. Journal of Financial Management of Property and Construction, 14(3), 194-207.

36 UN-Habitat Cross-Cutting Report 2017

37 Fernandes, E. (2011). Regularization of Informal Settlements in Latin America. Boston: Lincoln Institute of Land Policy.

38 For further information on data for transport reform, see: Graham, D.J., Hörcher, D. and Carbo Martinze, J. (2018) Dataoriented urban transport reform in developing cities. London: International Growth Centre.

39 For further information see: Luk, J. and Olszewski, P. (2003) "Integrated public transport in Singapore and Hong Kong." Road and Transport Research 12:4.

40 de Gramont, D. (2015) Governing Lagos: Unlocking the Poltics of Reform. Washington D.C.: Carnagie Endowment for International Peace.

41 See example of Hong Kong: Murakami, J. (2011) "Transit Value Capture: New Town Co-Development Models and Land Market Updates in Tokyo and Hong Kong." In Ingram, G.K. and Hong, Y.H (2011) Value Capture and Land Policies. Boston: Lincoln Institute for Land Policy

42 Hong, Y-H.,Murakami, J, Suzuki, H., and b. Tamayose (2015), "Financing transit-oriented development with land values" Washington, DC: The World Bank.

43 Jason, W. (2018) Why Tax Increment Financing Often Fails and How Communities Can Do Better. Boston: Lincoln Institute for Land Policy.

44 Jackson, P. (2012) Value for money and international development: Deconstructing myths to promote a more constructive discussion. Paris: OECD.

45 Rizzo, M. (2015) "The political economy of an urban mega project: The Bus Rapid Transit Project in Tanzania." African Affairs, 114:455, pp. 249-270.

46 Luk, J. and Olszewski, P. (2003) "Integrated public transport in Singapore and Hong Kong." Road and Transport Research 12:4.

Foreign &
Commonwealth
Office

UN HABITAT
FOR A BETTER URBAN FUTURE