

February 2023



TRANSITIONS  
Project



HIGH VOLUME  
TRANSPORT  
APPLIED RESEARCH




DT Global

# TRANSITIONS Routemap and City Self-Appraisal

Proposing a route to low-carbon, affordable  
and safe mobility





*This document is based on Section 2 of the TRANSITIONS Informal Public Transport Routemap & City Comparative Analysis Report full report and online knowledge resource, to provide readers with a quick and easy-to-print version of the city self-appraisal.*

The central spine of the Routemap is based upon a sequence of steps that are, in essence, about getting the basics right. These steps, referred to as Route Markers, could form the basis of smaller scale pilot projects, involving public authorities working with the IPT industry to understand what actions will support the sector to operate to its best potential. Equally, in situations where IPT involvement in major public transport schemes such as Bus Rapid Transit (BRT) is already envisaged[1], then selected steps can be viewed as both: instrumental to the eventual success of the main project; and preconditions for professionalisation of the existing IPT industry. Moving from the current context and operational model of IPT to the types of contracts typical of formalised public transport can involve a huge leap

● What IPT objectives and plans have been agreed?

● Are core aspects of regulation and enforcement in place?

● Do we have the basic infrastructure for IPT in place?

● Are we supporting IPT business development?

● What are we doing to support improved fleet maintenance?

● Can we provide improved passenger services?

● How can we upscale success stories and improve?

While on the surface each of these Route Markers may seem simplistic, in the sections below we briefly explain why they are so important. Each Route Marker is accompanied by one or more self-appraisal questions, that will enable a practitioner to quickly gauge what they consider to be the current situation in a city or metropolitan area, and what they consider to be the most important actions to take.

We also provide links to the more in-depth background material and cross-city comparisons in Sections 3 – 5 of the full report.

The Route Markers are arranged in a logical sequence, with emphasis first on actions where a public authority could take the lead, followed by those where the IPT industry also take on greater responsibilities. In reality, the sequence followed will depend on local circumstances, such as the existing condition of infrastructure and level of professionalisation of the IPT industry.



## Route Marker 1 – Objectives & Plans: What objectives and plans have been agreed by the IPT industry and public authorities?



It is evident from the TRANSITIONS research that there are numerous potential causes of mistrust between public authorities and the IPT sector. These can include a combination of factors that accumulate over time, including: differing political alignments; a perception that governments wish to eliminate the sector; a perceived 'imposition' of regulations and major public transport schemes, with limited consultation; a lack of enforcement of existing regulations and/or corruption; a lack of transparency of cash-based businesses (with implications for taxation); and carrying out of illegal (non-licensed) IPT operations, etc.

From the perspective of public authorities, there is a need to recognise the value and benefits the IPT sector delivers in terms of affordable mobility, employment, etc.; and the cost effectiveness of working with the sector to overcome problems (e.g. air pollution, road safety).



This should be undertaken taking into account the comparative costs of alternative options. Section 3 of this report sets out background information and evidence of benefits and externalities of the IPT industry.

For the IPT sector itself there is an opportunity to benefit from improved infrastructure and vehicle investment opportunities, while also providing more stable income and long-term job prospects for the workforce, as addressed in Sections 4 and 5 of this report.

**For further background information please see:**

- Section 3.1 of the full document – 'Attitudes towards IPT and existing policy positions'.

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## Objectives & Plans:

What objectives and plans have been agreed by the IPT industry and public authorities?

### Q1. HOW WOULD YOU CLASSIFY THE CURRENT POLICY POSITION AND PLANS FOR IPT IN YOUR CITY? (SELECT ALL THAT APPLY)

- There are plans to replace all (or a substantial proportion) of IPT with formal Public Transport schemes.
- There are plans to replace IPT services with formal Public Transport on one or more key corridors, which will be operated by former IPT associations/unions (IPT may also continue to provide feeder services)
- There are plans to support operational improvements of IPT through fleet improvements/renewal
- There are plans to support operational improvements of IPT through deployment of digital technology (e.g. journey planning apps, Cashless Fare Collection etc.)
- There are plans to replace IPT with formal Public Transport on one or more key corridors (IPT may continue to provide feeder services)
- There are plans to support operational improvements of IPT through infrastructure improvements (terminals, road, roadspace prioritisation)
- There are plans to support operational improvements of IPT through business development and/or staff welfare schemes

### Q2. HOW WOULD YOU ASSESS THE RELATIONSHIP AND EXTENT OF ENGAGEMENT BETWEEN THE GOVERNMENT AND THE INFORMAL TRANSPORT OPERATORS IN YOUR CITY? ENGAGEMENT BETWEEN PUBLIC AUTHORITIES AND THE IPT SECTOR ROBUSTLY ADDRESSES: (SELECT ALL THAT APPLY)

- Fare setting
- IPT regulation
- Development of mobility objectives and plans for the city
- Introduction of formal public transport schemes
- Fleet renewal schemes
- Professionalisation of the ITP sector

### Q3. DOES THE IPT SECTOR HAVE AN UMBRELLA UNION OR ASSOCIATION THAT CAN REPRESENT ITS INTERESTS AT A METROPOLITAN OR NATIONAL LEVEL?

- Yes     No    Other (describe)

We have suggested that these Steps could form the basis of a pilot project within a city. In the context of large metropolitan areas with diverse informal transport operators, it would be necessary to shape a collaboration amongst relevant stakeholders for a suitable scale and geographic area, such as a selected mobility corridor. This needs to be undertaken taking into account the areas of overlap and competition amongst IPT unions/associations and the degree to which 'illegal' (non-licensed) operations occur.



## **Route Marker 2 – Regulation: Do we have core aspects of IPT regulation and enforcement in place?**

IPT is typically subject to different forms of quantity (route licensing) and quality (driver licensing and vehicle inspections) regulation, although the adequacy of enforcement can vary substantially. Establishing route (and in some instances area) licensing and enforcing this well is viewed as a fundamental element of a well-functioning system, whether a public authority intends to undertake a smaller scale pilot project or introduce new formal public transport services on specific corridors. As the experience from Accra and Kumasi suggests, inadequate enforcement of route licensing results in illegal operations, over-supply on popular routes, and loading of passengers on congested roadsides to skip queues at terminals/stations. All of this means that the operational and business model of established IPT associations and unions is badly undermined. Further background and city case studies of regulation are provided in Section 4.

**For an introduction to IPT regulatory frameworks, please see:**

- Section 4.1 of the full document – 'IPT regulation & enforcement'

# SELF APPRAISAL

## Regulation:

Do we have core aspects of IPT regulation and enforcement in place?

### Q4. HOW WOULD YOU CLASSIFY THE CURRENT REGULATORY FRAMEWORK FOR IPT IN YOUR CITY? (SELECT ALL THAT APPLY)

- IPT is prohibited/banned from operating in a substantial portion of the city.
- IPT operates in the city subject to route (or area) licensing that is well enforced.
- IPT operates in the city subject to driver licensing and vehicle inspection regimes that are well enforced.
- IPT operates in the city subject to route (or area) licensing that is poorly/unevenly enforced.
- IPT operates in the city subject to driver licensing and vehicle inspection regimes that is poorly/unevenly enforced.
- IPT operates in the city in a situation of very limited or no regulatory oversight.



Cape Town, Accra, Kumasi and Maputo all have experience of setting and enforcing route licensing. One challenge that remains is that of monitoring IPT operations at timescales that allow for suitable increases (or decreases) in the number of vehicles licensed to operate, in order to balance supply with demand. A further related issue to be addressed, as raised during a TRANSITIONS workshop with representatives from seven cities, is finding an approach to ensure that IPT services are available in less profitable, off-peak periods.

## Route Marker 3 – Infrastructure: What basic infrastructure improvements would deliver the greatest benefits for IPT?



IPT operators and passengers have to contend with issues of substandard infrastructure on a daily basis. Relatively basic measures within the competence of highways and traffic authorities, include:

- Ensuring adequate road surfacing – Poor road surfaces reduce vehicle speeds, fuel efficiency and lifespan, as well as causing discomfort to passengers. IPT associations/unions often deploy older vehicles to routes with poor roads and the motivation to invest in new vehicles is reduced when their condition could quickly deteriorate.
- Providing space and basic services at terminals – Where terminals/stations have established sites, then support for provision of appropriate surfacing (to avoid muddy conditions), and provision of lighting, toilets, seating and shelter (from sun and rain) for passengers and IPT crews, would make a substantial difference. In many cases, then terminals occupy areas at and around highway junctions, in which case designated space could be planned and provided.
- Enabling trading activities, while preventing obstruction – Provision should be made for trader activities and storage of materials at terminals, while preventing encroachment on to roadways.
- Preventing flooding and designing for sustainable drainage – Regular maintenance and desilting of drains is required to avoid needless flooding, while new road and terminal surfacing should be designed according to Sustainable Urban Drainage System (SUDS) principles.



**Further infrastructure actions and case studies for consideration are presented at:**

- Section 5.1 of the full document – 'Infrastructure and operations improvement'. These include, for example, the provision of priority lanes and measures for IPT that enable improved journey times for public transport services.

# SELF APPRAISAL

## Infrastructure:

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What basic infrastructure improvements would deliver the greatest benefits for IPT?

### Q5. BASED UPON A KEY IPT CORRIDOR THAT YOU KNOW WELL, HOW WOULD YOU QUANTIFY AND RATE THE QUALITY OF INFRASTRUCTURE?

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Percentage of route benefitting from a good quality of road surface, that is well maintained

Percentage of terminals and popular bus stops with all-weather paving (e.g. preventing muddy conditions)

Percentage of terminals and popular bus stops benefitting from seating and shelter

Percentage of terminals and popular bus stops with lighting



# Route Marker 4 – IPT Business Development: How can the business case and professionalisation of the IPT industry be supported?



The IPT industry tends to be organised in Unions and/or Route Associations that operate from specific terminals. These often have a formal status, undertaking negotiations with public authorities on behalf of their membership, and sometimes taking on roles relating to the licensing and inspection of vehicles. Some well-organised unions also seek to provide for the long-term welfare of vehicle crews, such as purchasing land for them to construct houses. Growth of cities, combined with lack of regulatory enforcement, has resulted in the formation of large numbers of unions and associations. A wide range of organisational competency levels can therefore be assumed.

Unions and 'businesses' are not the same and this can complicate the situation when we consider means to encourage professionalisation within the sector. IPT operators, who carry the primary financial risk, are typically the individual drivers who pay rent to a 'passive' owner. The first commercial priority is to pay the vehicle rent, fuel costs, taxes and fees, as well as essential maintenance. Surplus cash generated then constitutes the income of the driver and crew members. Taking into account that IPT operators generally pay license fees to public authorities (and do not benefit from public subsidies), and also face increasing fuel prices, the business case for operating can be tenuous. The union may charge a fee for membership, but its role is to represent its members and help manage operations at a terminal, not run a profitable business. It may, however, provide a valuable role in organising collective activities such as training and vehicle maintenance.

Professionalisation and support for unions or associations may be initiated by a 'top-down' initiative, such as the potential for a union or association to operate a new formalised PT system (as sometimes forms an objective of schemes funded by international lenders); or through a more organic, 'bottom-up' approach, that would complement the pilot scheme approach proposed here. If it is found that defined roles and professional capabilities of the union and route association are not suitably well developed and aligned, then proposing a large and fast 'leap' to formal public transport operators (as advocated in the top-down approach) is very ambitious and negotiations may be strained due to different stakeholders (vehicle owners, drivers, unions and associations) having competing expectations. Equally, the success of fleet renewal initiatives may be compromised where professional development has not occurred. The following self-appraisal questions seek to highlight some key competencies and capacities to consider.

## Further background information and cross-city comparison can be found at:

- Section 4.3 of the full document - 'Organisational and financial models of the IPT sector'

## Actions for consideration are presented at:

- Section 5.4 of the full document - 'Business development'
- Section 5.5 of the full document - 'Digital passenger services'



# SELF APPRAISAL

## IPT Business Development

How can the business case and professionalisation of the IPT industry be supported?

**Q6. BASED UPON A WELL-ESTABLISHED UNION OR ROUTE ASSOCIATION THAT YOU KNOW WELL, WHICH OF THE FOLLOWING COMPETENCIES AND CAPACITIES ARE IN PLACE? (SELECT ALL THAT APPLY)**

- The organisation can provide an up-to-date list of vehicles, owners and drivers registered with the union/association.
- The organisation has an approach/mechanism to restrict the number of vehicles operating on a specific route, to limit competition and congestion (either independently or in relation to a regulatory role).
- The organisation has an approach/mechanism in place to ensure that services are provided during off-peak periods.
- The organisation provides for the long-term welfare of staff, such as through pension, health insurance and/or housing schemes.
- The organisation has a role in supporting fair income and salaries for all drivers and crew (for example, through collection of income and redistribution as basic salaries).
- The organisation has a defined business role and is therefore has ultimate responsibility for paying salaries, as well as procuring and maintaining vehicles.



The points presented in this question, together with those relating to fleet maintenance below will help to build key information to support improved understanding of IPT business case: supply of vehicles in relation to demand; fair salaries and welfare provision; vehicle fuel consumption.

## Route Marker 5 – Fleet maintenance and driver training: What can we do to achieve our objectives in the short-term, with existing vehicles?



A primary objective of TRANSITIONS is to consider how Greenhouse Gas (GHG) Emissions, as well as locally harmful air pollutants, can be reduced. This can be achieved through a combination of measures, including better operational efficiency (e.g. reduced congestion and idling at terminals), improved driving practices, better road conditions, and through improving the fuel efficiency of vehicles. Good practice from a climate protection perspective also makes good business sense. Fuel is invariably the single largest cost item in public transport in developing/emerging economies, accounting for as much as half of the total cost.

As explained in further detail in Section 3.7, IPT operators often rely on imported, second-hand vehicles, hence fleet renewal schemes are an attractive option. There are, however, substantial improvements that could be achieved in the short-term, through improved maintenance of existing vehicles. As commented during a TRANSITIONS workshop, there is an important difference between the vehicle repair that is undertaken (to ensure it can operate) and vehicle maintenance (to prevent break-downs and improve performance)! It is considered that, through a combination of operational efficiency, driver behaviour, improvements to roads and vehicle maintenance, efficiency improvements in the order of 20% could be achieved.

Embedding good vehicle maintenance practices would have the added benefit of developing this capacity amongst operators, unions and associations, helping to secure the success of fleet renewal schemes and prevent the rapid deterioration of new vehicles in the medium to long term.



### Further background information, cross-city comparison and actions for consideration relating to IPT fleets are presented at:

- Section 3.7 of the full document – Context and evidence relating to ‘Air Quality and GHG Emissions’
- Section 5.3 of the full document – Actions relating to ‘Fleet & Fuel’

### Related matters covering employment conditions and training for crew members are covered in:

- Section 4.4 of the full document – Background and cross-city comparison relating to ‘Labour conditions and remuneration’
- Section 5.4 of the full document – Actions relating to ‘Business development’, including safe and efficient driving

# SELF APPRAISAL

## Fleet maintenance and driver training

How can the business case and professionalisation of the IPT industry be supported?

### Q7. WHAT DATA IS BEING COLLECTED ON IPT FUEL CONSUMPTION AND RELATED AIR QUALITY IMPACTS, TO INFORM IMPROVEMENTS, COST-BENEFIT ANALYSIS AND IPT BUSINESS CASE REVIEW? (SELECT ALL THAT APPLY)

- Fuel consumption and emissions standards at time of vehicle purchase
- Actual fuel consumption and emissions during the operating life of the vehicle
- Proportional IPT consumption and emissions compared to other motorised transport
- Overall transport contribution to city air quality and GHG emissions

### Q8. BASED UPON THE PRACTICES OF A WELL-ESTABLISHED UNION OR ROUTE ASSOCIATION YOU KNOW WELL, WHICH OF THE FOLLOWING ARE UNDERTAKEN TO IMPROVE FUEL EFFICIENCY ? (SELECT ALL THAT APPLY)

- Tyre inflation is checked on a regular basis (to reduce friction losses)
- Wheel alignment is checked on a regular basis (to reduce friction losses)
- Engine and drive-train servicing is undertaken (to ensure best fuel efficiency for age/condition of vehicle)
- Drivers are provided with training to understand how they can achieve the best fuel efficiency
- Drivers are monitored (tracked) and offered incentives to help ensure consistent improvements in driving practices.

## Route Marker 6 – Passenger information & services: What are the priority improvements that can be made for passengers?



It is often necessary for the residents of large and rapidly expanding African metropolises to make long, multi-stage journeys to reach their destinations. Results from the TRANSITIONS passenger opinion surveys showed that improvements to basic infrastructure, in particular at the terminals, as well as more comfortable vehicles, are high on passengers' priority lists. These aspects of improving the journey experience are addressed at Route Markers 3 and 5.

Further important opportunities relate to two main aspects of passenger care: firstly, the provision of information for journey planning, which can involve application of digital mapping of the route network and delivery of journey planning websites and apps. This may evolve to include provision of efficient on-demand ride-pooling services for passengers, helping to connect and provide transport services for passengers located away from main routes or that need to travel in off-peak periods. And secondly, in relation to providing a welcoming and safe environment for all passengers, including meeting the needs of the mobility impaired (disabled), and proactively addressing issues of sexual harassment. Sexual harassment is a proven problem in relation to all forms of collective transport (this is not limited to IPT and SSA) and can have a major impact on the travel decisions of women, and therefore life decisions (such as where they undertake training or employment options).



### Further information on digital network mapping approaches and journey planning apps can be found at:

- Section 3.2 of the full document – providing context information on 'IPT Network characteristics'
- Section 5.5 of the full document – covering actions for 'Digital passenger services'

### Gender dimensions in transport and issues of sexual harassment are further explained in:

- Section 3.5 of the full document – 'Passenger safety, sexual harassment and personal security'
- Section 3.6 of the full document – 'Mobility for disabled people'

# SELF APPRAISAL

## Passenger information & services

What are the priority improvements that can be made for passengers?

### Q9. WHICH OF THE FOLLOWING PROCESSES ARE IN PLACE TO INFORM TRANSPORT PLANNING AND TO DELIVER INFORMATION AND CONVENIENT SERVICES PASSENGERS? (SELECT ALL THAT APPLY)

- IPT route network mapping, involving onboard surveys and vehicle tracking
- Preparation and publication of IPT network maps in 'static' form (as paper versions and/or online)
- Development of web-based, dynamic journey planners (by public authority or in collaboration with private sector) enabling passengers to plan end-to-end travel with formal PT and IPT
- Provision of digital payment systems for IPT services
- Provision of on-demand ride-pooling services, in particular for routes or times where passenger numbers are lower
- Integration of fares and payment systems for formal Public Transport and IPT
- Development of customer care and complaints services, with staff contact points at popular terminals an stops, or online through a website or app (such as crowd-sourced safety apps).

### Q10. WHICH OF THE FOLLOWING ACTIVITIES ARE UNDERTAKEN IN ORDER TO ENSURE INCLUSIVE AND SAFE SERVICES, WHERE PEOPLE ARE TREATED WITH RESPECT AND DIGNITY? (SELECT ALL THAT APPLY)

- Provision is made for those that need to travel with goods, such as traders
- Training is provided to drivers and crew on the problem and impacts of sexual harassment, and actions that can be taken to minimise problems
- Training is provided to drivers and crew on the needs of mobility impaired and how these can be accommodated in daily operations
- Vehicles are adapted or procured in order to improve accessibility for mobility impaired people

## Route Marker 7 – Transfer & upscaling: What are the next stages working with IPT?



The TRANSITIONS Routemap sets out a proposed approach to foster cooperation between public authorities and IPT stakeholders. The stages could be envisaged as a relatively small-scale pilot working with specific unions or associations, with potential for transfer and upscaling to other parts of the city in the future in order to achieve more widespread benefits. In order to make the self-appraisal scheme more straightforward to answer without further information gathering, some of the questions ask you to focus on transport corridors and unions about which you already have some knowledge. Should the prospect of proceeding with a pilot of this nature be attractive, there are several considerations to take into account in selecting suitable pilot areas, including:

- Unions/associations with capacity and capabilities – Route Marker 4 and Question 6 provide an understanding of the competencies that are important to consider in the professionalisation process. Certain unions/associations may already be considered well advanced candidates, but an open call for expressions of interest would present a fair means for selecting good cooperation partners.
- Geographies and routes – Certain routes/transport corridors may present better opportunities for infrastructure improvements, such as space availability for terminals, or locations with poor road conditions where significant advances could be made. The degree of overlap (and therefore potential for competition) between the operations of unions/associations should also be taken into consideration.

In this section we have provided a brief overview of stages and activities that could be taken forward collaboratively with the IPT sector. In other sections we provide further detail on the background knowledge and actions that could be taken, based on research undertaken by the TRANSITIONS project partners. There remain many areas of research and practice that need to be investigated and developed further, which could be well advanced in collaboration with cities that seek to collaborate with the IPT sector in the manner envisaged, and that subsequently share their experiences can refine the Routemap further.

