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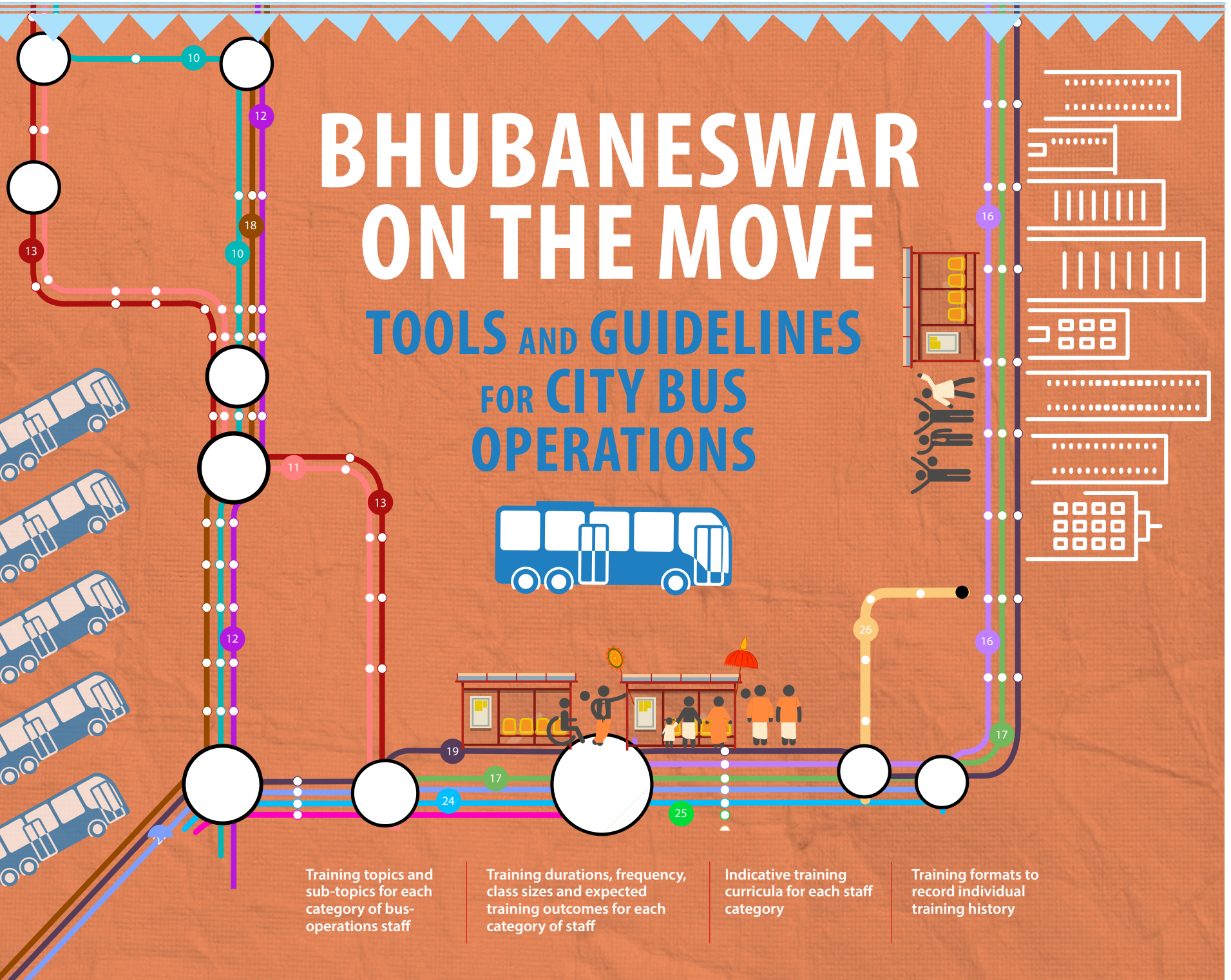
Capital Region Urban Transport

PART THREE

TRAINING AND CAPACITY BUILDING

BHUBANESWAR ON THE MOVE

TOOLS AND GUIDELINES FOR CITY BUS OPERATIONS



Training topics and sub-topics for each category of bus-operations staff

Training durations, frequency, class sizes and expected training outcomes for each category of staff

Indicative training curricula for each staff category

Training formats to record individual training history

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TOOLS AND GUIDELINES FOR CITY BUS OPERATIONS

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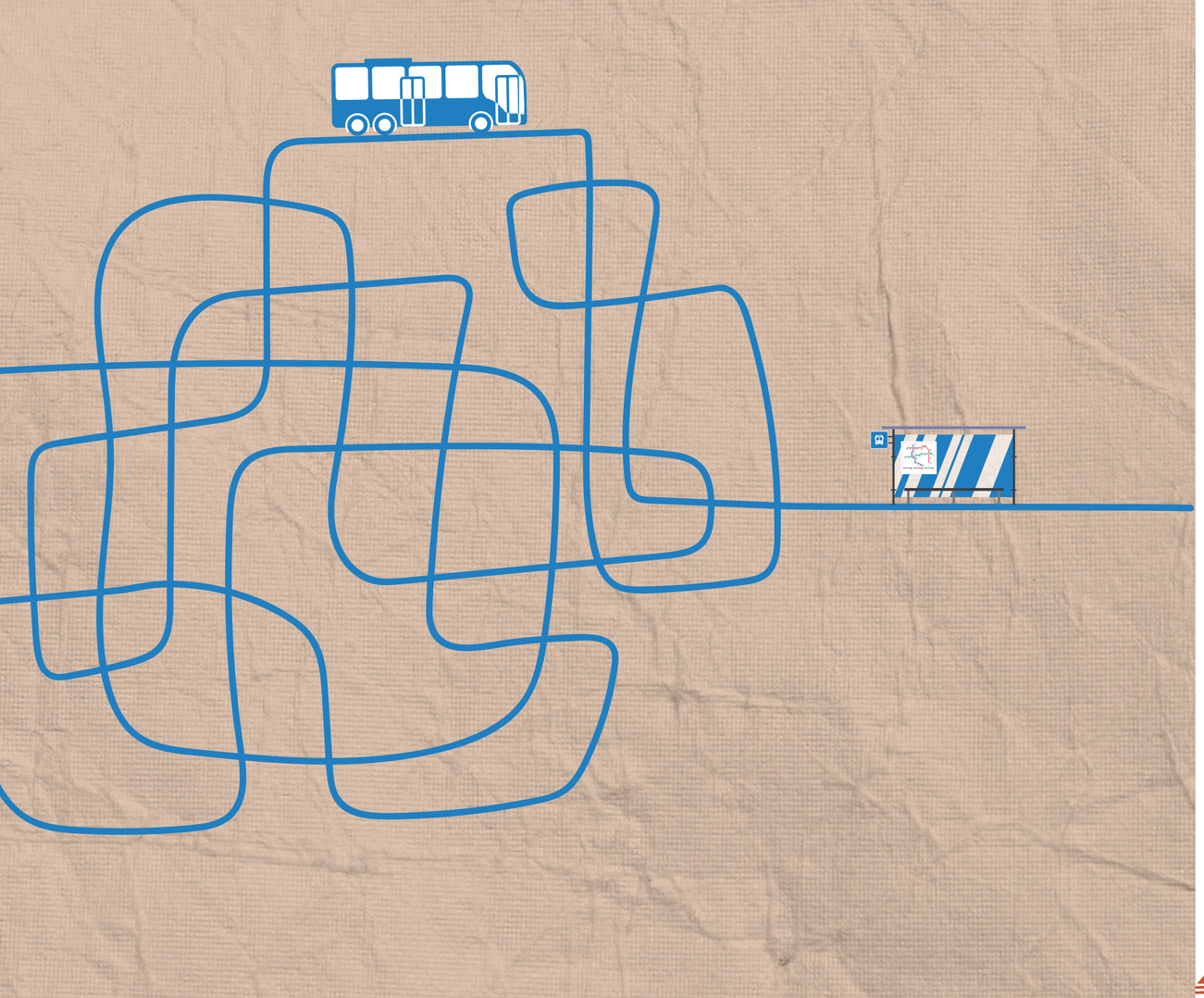

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ABBREVIATIONS

CRUT:	Capital Region Urban Transport
FAME:	Faster Adoption and Manufacturing of Hybrid and Electric Vehicles
ETM:	Electronic Ticketing Machine
ETIM:	Electronic Ticket Issuing Machine
ITS:	Intelligent Transportation System
IUT:	Institute of Urban Transport
KMPL:	Kilometres Per Litre
MoHUA:	Ministry of Housing and Urban Affairs
MORTH:	Ministry of Road Transport and Highways
OSDMA:	Odisha State Disaster Management Authority
MVA:	Motor Vehicles Act
PCV:	Passenger Carrying Vehicle
RAT:	Revenue Assurance Team
RCA:	Revenue Collection Agency
STU:	State Transport Undertaking

FOREWORD

Government of Odisha
Department of Housing & Urban Development

G. Mathi Vathanan, IAS
Principal Secretary
Department of Housing & Urban Development (HUDD)
Government of Odisha

With a vision to create more liveable and sustainable urban centres in the state, and with the objective of providing a comfortable, affordable and environmentally friendly mode of mobility for the people of Bhubaneswar (and Odisha at large), the State launched the "Mo Bus Service" on 6th November 2018. The Capital Region Urban Transport (CRUT), a Special Purpose Vehicle (SPV), was created by the Department of Housing & Urban Development (HUDD) to manage the operations of city bus services (Mo Bus Service) in Bhubaneswar, Cuttack and Puri-Konark urban areas.

In the one year that has passed since its inception, CRUT has taken many initiatives to build infrastructure, streamline its organisational processes, and invest in the skill development and capacity building of its staff. On an average, Mo Buses undertake around 1800 trips each day, serving about 85,000 passengers across 21 routes. I hope that this trend continues in the same direction, and that the people of Odisha increasingly choose public transport as their preferred mode of daily commute, especially over their private vehicles, thereby creating a sustainable mobility culture in the capital region.

I compliment the Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT) project, implemented jointly by the Housing & Urban Development Department (Government of Odisha), the Bhubaneswar Development Authority (BDA), and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, for its efforts towards improving mobility planning in Bhubaneswar.

(G. Mathi Vathanan)

FOREWORD

Arun Bothra, IPS
Managing Director
Capital Region Urban Transport (CRUT)
Bhubaneswar

Just like most other Indian cities, the capital region of Odisha (comprising Bhubaneswar, Cuttack, Khurda and Puri) is also witnessing high levels of economic growth, resulting in increased travel demands. This requirement is largely being met by private motor vehicles, especially two-wheelers. Alarmingly, more than 80 per cent of commuters in Bhubaneswar are dependent on private vehicles. Also, the total number of registered vehicles in the city, pegged at 14 lakhs by the Regional Transport Office, exceeds the city's total population, which was estimated as 10 lakhs in 2019!

Till date, our standard response to increasing traffic problems has been to make new roads, and/or widen the existing roads. With the city's population expected to double in the next 20 years, we need to pause and think whether this is the course of development we would want to take. Should we keep providing for more and more vehicles, or could we consider disincentivising the use of private vehicles and at the same time, incentivise the use of cleaner modes of travel? Do we want Bhubaneswar to be a healthy, beautiful, thriving, and liveable place for all, or a city choked with polluting and noisy vehicles, with no safe places to walk and play?

The answer lies in providing the city's residents with a reliable, fast-moving and high-quality public transport system, which is low-carbon, more energy and space-efficient, and safer than private vehicles. An alternative that does not pose the challenge of finding parking on a daily basis, one that does not eat up public spaces meant for people. Experiences worldwide have demonstrated that cities having high-quality public transit services (buses, metros, etc.) are also the most "liveable". These are cities where it is not just the poor who use public transport out of compulsion, but the well-off also *choose* to use the same for convenience and comfort. In such cities, driving personal vehicles is perceived as a luxury that comes at a very hefty price. Investing in creating a high-quality and cost-efficient public transportation system and developing strategies for increasing its ridership and appeal (so as to move people away from personal modes of travel) needs to take centre stage in the debate on mobility choices today.

The Capital Region Urban Transport (CRUT), which was known as the Bhubaneswar-Puri Transport Services (BPTS) in its earlier avatar, is operating 200 buses (with 100 more to be added) and 2000 cycles (under its public bicycle-sharing programme) in the capital region. CRUT has been improving its services through building transit infrastructure (in terms of new fleets, depots, terminals, bus queue shelters, etc.), adoption of the gross-cost contract (GCC) model of operations, and the installation of Intelligent Public Transportation Systems (IPTS). CRUT is also undergoing institutional strengthening through the enhancement of individual capacities and the development and streamlining of its organisational processes.

The Mo Bus service was launched by Shri Naveen Patnaik, Hon'ble Chief Minister of Odisha, on November 6, 2018. Since then, our focus at CRUT has been on customer service, employee development and the use of technology to bring precision to our work. We have aimed to provide the *best* public transportation possible to our commuters and enhance the quality of life in our cities. We are in the process of evolving and learning from our past and peers, and it gives me immense pride and joy to inform you that ahead of its first anniversary, Mo Bus has already touched a daily ridership mark of 1 lakh! I would like to take this opportunity to congratulate all individuals and teams who made this possible through sheer perseverance and hard work.

On behalf of CRUT, I would also like to warmly acknowledge and compliment the efforts made by the Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT) project. Implemented jointly by the Housing & Urban Development Department (Government of Odisha), the Bhubaneswar Development Authority and the GIZ as a part of the Indo-German technical cooperation, its goal is to make sustainable mobility a reality in our capital region. I especially want to thank all the collaborators for their wholehearted support, expertise and contribution in preparing this document. My hope is that the tools and guidelines shared here serve as a helpful reference for other cities undertaking similar operations.

17/9/19

(Arun Bothra)

PREFACE

Dipti Mahapatro, OAS
General Manager (P & A)
Capital Region Urban Transport (CRUT)
Bhubaneswar

In 2010, the Bhubaneswar-Puri Transport Services was created with a mandate to manage and operate bus services on intra-city as well as inter-city routes within the capital city of Bhubaneswar, and between Bhubaneshwar, Puri, Cuttack and Khurda. On May 4, 2018, the BPTS evolved into the Capital Region Urban Transport, more commonly known as CRUT, with the vision to reorganise public transit services in the city.

As part of their efforts to offer technical and capacity-building support to sustainable mobility projects in Bhubaneswar, Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT), in partnership with the Capital Region Urban Transport (CRUT), Bhubaneswar, have prepared a guidebook called *Bhubaneswar on the Move: Tools and Guidelines for City Bus Operations*. This guidebook documents the tools and practices that Bhubaneswar has adopted over the last one year (since the launch of the Mo Bus services on 6th November, 2018) with the support of SMART-SUT, and with the goal of streamlining its city bus operations. It collates useful information on addressing issues faced during bus operations running on PPP models, specifically the Gross-Cost Contract (GCC) model, and provides detailed insights on a variety of relevant topics, such as the organisational structure of an SPV, job descriptions, the standard operating procedures, processes for the planning and monitoring of bus services, training and capacity building of the organisation's staff, etc.

This guidebook is intended to act as a ready reference for other Indian cities (especially those focussing on gross-cost contract models for their buses) to adapt and use. It does not claim to substitute any existing comprehensive manuals on bus operations planning, management or capacity building. Some aspects in the document are technical in nature, while others can serve as a tactical guide for practitioners on operations planning and as a ready reckoner for understanding the roles, responsibilities and training needs within a city bus agency.

As bus operations is a dynamic field, this guide is expected to be updated regularly to include technological advancements. Bhubaneswar's bus modernisation strategy includes the introduction of e-buses in the coming years, and at that point, the organisational structure proposed here will be modified to include this. This will also lead to the inclusion of new processes, especially those related to bus maintenance, training and capacity building, etc.

I hope this guidebook adds to the existing knowledge on the subject, and that cities find it a useful tool for planning and managing their bus operations.

Dipti Mahapatro

BHUBANESWAR ON THE MOVE: TOOLS AND GUIDELINES FOR CITY BUS OPERATIONS

SUMMARY

Context

As cities become the engines of economic growth, effective mobility becomes more and more of a central requirement. In this context, a decided preference for personal automobiles makes cities major contributors to GHG emissions, air pollution, noise pollution, congestion – not to mention increasing incidences of road accidents, all of which negatively impact the health and productivity of the citizens.

The most common and widespread response of the governments has been to expand the existing road spaces and create flyovers and similar road-based infrastructure, with the hope of accommodating the exponential growth of vehicles. Another response has been to increase the sanctions for rail-based mass-transit projects (like the metro). However, owing to their high costs and limited coverage, these have had low user-appeal, and have not yet succeeded in getting anywhere near their expected ridership targets.

Given that a major share of urbanisation in India is expected to take place in her small and medium-sized towns and cities (which typically have low densities and trip lengths averaging between 4-8km), and given that the road infrastructure capacities in these cities is limited, there is an urgent need to place a road-based, more ubiquitous, and low-cost public transport system (like the bus) at the heart of our plans and policies. This could be a safe, cleaner (less emitting), more space-efficient alternative, and if prioritised, has the ability to perform at par with high-speed rail systems.

The introduction of public-private partnership (PPP) models in urban bus operations in India over the last few years has thrown up a number of challenges as well as opportunities for re-looking at how bus operations can be managed and monitored in cities. An increasing number of cities are procuring fleets (under the aegis of various government schemes), and forming Special Purpose Vehicles (SPVs) for running bus operations. However, due to the absence of suitable guidelines, many of them still follow the practices of State Transport Undertakings (STUs), which may not be an optimal approach for addressing the nuances of city bus operations running on PPP models. These agencies often have limited in-house capacity for estimating

infrastructure requirements, service planning, and setting up of key performance indicators; regular capacity building, though extremely important, is often overlooked, and needs to be institutionalised. This guidebook attempts to address all these aspects of city bus operations.

About CRUT and the Guidebook

Capital Region Urban Transport (CRUT), Bhubaneswar, is a young organisation currently operating 200 buses on 21 routes across Bhubaneswar, Puri, Cuttack and Khurda, using the gross-cost contract (GCC) model. It has successfully recorded a daily ridership of 1 lakh commuters in October 2019. As part of its ongoing efforts to offer technical and capacity-building support to sustainable urban mobility projects in Odisha, SMART-SUT, in partnership with CRUT, has prepared this guidebook, entitled *Bhubaneswar on the Move: Tools and Guidelines for City Bus Operations*. It documents the tools and practices that have helped CRUT set up its

91%
Mo Bus users rated behaviour of on-board staff as very good*

76%
Mo Bus users rated comfort on the bus as high

75%
Mo Bus users rated services as punctual

efficiency of its buses in Bhubaneswar and the capital region over the last one year (since the launch of the Mo Bus services in November 2018).

The guidebook collates useful information on various aspects of city bus operations (especially those operating on the gross-cost contract model). The topics covered range from organisational structure and job descriptions to standard operating procedures, reporting formats, methods to be adopted for service planning, setting up of key performance indicators, and a list of recommended training modules and curricula, all of which can act as a ready reference and offer guidelines for other Indian cities implementing bus operations on similar models.

The guidebook consists of three parts, each focusing on a different aspect of city bus operations.

Part 1: Organisational Structure and Processes

Part 1 of the guidebook proposes a comprehensive organisational structure that can be helpful in managing the large amounts of manpower that GCC operations typically require. Under this model, services need to be procured from multiple private partners, and the city bus agency is required to closely monitor the roles and performances to ensure quality and avoid the duplication of responsibilities. To help with this, a list of Standard Operating Procedures (SOPs) for various functions within a bus organisation has been provided, along with an exhaustive list of job descriptions for all employees. The SOPs have been prepared after extensive and critical study of the practices followed by STUs, bus companies, and bus operators. These generally exist only in memos and internal circulars, and are not readily available in the public domain.

Part 2: Planning, Scheduling and Monitoring

The prime objective of transit agencies is the provision of efficient and cost-effective services, and service planning and monitoring form

* Surveys conducted by GIZ (2019)

32%
MoBus users used to be private vehicles users

85%
women Mo Bus users rated availability of priority seats as very good

98%
elderly Mo Bus users rated ease of boarding and alighting as very good

the key components in achieving this. Besides sharing some key technical terms (related to bus-operations planning) and their meanings, Part 2 also provides step-by-step guidance on subjects like planning bus infrastructure (fleets, depots, terminals and bus stops) and services (networks, bus stops, bus routes, schedules and fares). It also shares guidelines for performance monitoring of technology, demand, supply and fleet-based indicators. This section can serve as a practical reference for any city, for planning, scheduling and monitoring its bus operations.

Part 3: Training and Capacity Building

Organisations investing in and committed to meticulous and consistently high-quality training programmes are known to have better operational efficiency and performance levels. Part 3 of the guidebook talks of the training and capacity-building needs of city bus agencies; it provides detailed guidelines on the categories of staff to be trained, proposes training modules with their ideal durations, class sizes, and the topics to be taught, suggests the frequency of conducting trainings, and lists the expected outcomes. It also includes a list of topics for induction and re-orientation training. These trainings attempt to cover the needs of the various categories of staff ,and can be adapted by a city bus agency based on the staff and resources available to them. The schedules proposed have been designed to ensure that each employee gets the opportunity to undergo training at least once a year.

1. The Need for Training and Capacity Building

Regular capacity building of in-house staff is an extremely important, and unfortunately often overlooked aspect of creating a healthy and successful organisation. It is a way to ensure that the huge amount of urban transport investments being pumped into our cities by way of infrastructure are complemented by sound technical and managerial capacities, and are optimally utilised.

Traditionally, most city bus operating companies were public agencies run by State Transport Corporations. With the PPP models of operations now becoming prevalent in cities, agencies responsible for bus operations find themselves facing issues of inadequate institutional capacities (especially in terms of skilled and knowledgeable manpower). This has a direct bearing on the performance and quality of the services provided. In the absence of dedicated programmes/funds to address capacity building, this crucial aspect is often neglected, or addressed at best in an ad-hoc manner.

Capacity building can be done in a variety of ways, depending on the target audience, the subject matter, the long-term objectives, and the available time and resources. Part 3 of this guidebook focuses essentially on training modules, curricula and the frequency of trainings for bus operations staff. It does not claim to be exhaustive or comprehensive, and does not include details of activities complementary to the trainings, such as carrying out training-needs assessments, or individual performance monitoring of staff before and after the trainings

2. Identifying Capacity Building Needs — The Example of CRUT

Unlike other State Transport Undertakings (STUs), most of CRUT's current staff are outsourced. The key administrative positions, including the ones responsible for hiring, are recruited directly by CRUT, whereas other indirect employees such as bus captains, bus guides, cash-collection staff at the depots, etc. are provided by private partners. Also, the buses and bus captains are currently provided by private bus operators, and the bus guides and cash-collection staff by the RCA.

The present roles and responsibilities for bus operations are divided between the staff at the CRUT head office and at the depots; all the department heads and administrative staff are stationed at the head office, while some personnel are stationed at the depots to supervise the staff provided by the operators and the RCA.

For holistic strengthening of the organisation, it is important to undertake tailor-made capacity-building measures for each target group. The measures can be broadly categorised as:

- Classroom sessions
- On-the-job training for new recruits
- Study tours

Based on training-needs assessments within CRUT, reviews of the existing literature on the subject, and feedback from public transport experts, the following focus areas were identified for training the CRUT staff (and are also applicable to other city bus agencies):

- Bus operations
- Bus maintenance
- Revenue assurance
- Soft skills, like people management, grievance redressal, team-building & motivation, etc
- Energy-efficient, defensive driving practices and techniques

2.1 Classroom Training Activities

2.1.1 Trainings for Officers Responsible for Bus Operations[1]

Table 1: *Trainings for Officers Responsible for Bus Operations*

S. No.	Title	Target audience	Expected outcome	Duration of each session	Group size	Frequency
1	Improvement of the operational efficiency of buses	• General manager • Depot managers • Depot officers (from CRUT) • Bus operator	Knowledge sharing on the good practices/ techniques already adopted in the industry for improving the operational efficiency of buses Adoption of these good practices in the operations of CRUT, as per their suitability	1 day	10	Once a year

1 Organisational chart and job descriptions for these officers have been provided in Part 1 of this guidebook, entitled "Organisational Structure and Processes"

Table 2: *Indicative Training Agenda for Bus Operations Officers*

S. No.	Topic	Duration	Training Resource/ Instructor
1	New policies and schemes that impact urban transport, such as the Motor Vehicles Act (MVA), Electric Vehicles (EV) policies, Urban Transport Schemes, etc.	1 hr	Urban transport experts
2	Soft skills like communication, feedback sharing, etc	1 hr	Industrial experts
3	Emerging practices in city bus operations	2 hrs	Bus operations expert
4	Effective utilisation of ITS in bus operations	1 hr 30 mins	ITS expert
5	Bus operations planning	1 hr 30 mins	Urban transport planners

Training Content for Bus Operations Officers

1. The recent amendments in the MVA, pertaining to the fines and penalties issued for violation of traffic rules
2. A brief description of the FAME-2 Policy[2]
3. The dynamics of public transport
4. Infrastructure development
5. Bus and crew scheduling through the use of the ITS
6. Transport terminologies and the latest STU stats
7. Branding and marketing strategies
8. Strategies for the prevention of revenue leakage
9. Effective bus monitoring through the use of ITS
10. Generating MIS reports
11. Techniques for planning bus operations
12. Analysing the existing schedules and deciding on the improvements required
13. Analysing the routes
14. Incentive schemes for improving productivity
15. Strategies for dealing with bus bunching and punctuality issues

2 Phase-II of the FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) India Scheme, commonly called the FAME 2, was announced in the first week of March, 2019. It proposes to push electric vehicles (EVs) forward in public transport, and to encourage the adoption of EVs through market creation and demand aggregation.

2.1.2 Trainings for officers responsible for bus maintenance

Table 3: *Trainings for Officers Responsible for Bus Maintenance*

S. No.	Title	Target audience	Expected outcome	Duration of each session	Group size	Frequency
1	Bus maintenance	• Maintenance managers • Technical supervisors (from CRUT as well as from the bus Operators)	Knowledge sharing on the good practices/techniques being used in the industry for bus maintenance Adoption of these learnings in the city bus agencies as per their suitability	1 day	15	Once a year

Table 4: *Indicative Training Agenda for Bus Maintenance Officers*

S. No.	Topic	Duration	Training Resource/Instructor
1	Emerging practices in bus maintenance	1 hr 30 mins	Bus operations expert
2	Fleet maintenance concepts	1	Bus Manufacturers (e.g. Ashok Leyland, TATA Motors, etc.)
3	Depot management system (software)	1	ITS expert
4	Maintenance of bus aggregates	1 hr 30 mins	Aggregate manufacturers (e.g. Lucas, Wabco, ZF, Rane, Cummins, TVS, etc.)
5	Tyre & battery maintenance	1 hr 30 mins	Tyre & battery manufacturers
6	Safety in workplace	30 mins	Safety officer

Training Content for Bus Maintenance Officers

1) Infrastructure requirements for maintenance
2) Requirements of new generation depot-equipment
3) Technical manpower requirements
4) The effective use of the Depot Management System (software), using ITS technology
5) Emerging bus maintenance practices
6) Emerging bus technologies
7) Defect diagnosis and remedial actions
8) Fuel-saving techniques used by bus transport organisations
9) Incentive schemes for improving productivity
10) Use of safety equipment, and safety measures to be followed in workshops
11) Store and inventory management
12) Passenger complaints pertaining to the maintenance of the buses, and the corresponding remedial actions

2.1.3 Trainings for Bus Guides (Conductors)

Table 5: *Trainings for Bus Guides*

S. No.	Title	Target audience	Expected outcomes	Duration	Group size	Frequency
1	Task management for bus guides	Bus guides	• Knowledge sharing on the roles and responsibilities of bus guides • Improvement of soft skills • Initiatives for revenue improvement	1 day	30 to 35	Once a year

Table 6: *Indicative Training Agenda for Bus Guides*

S. No.	Discussion Topic	Duration	Training Resource/Instructor
1	Roles and responsibilities of bus guides	1 hr 30 mins	Bus operations expert/ Manager (Operations)/ Depot manager
2	Soft skills	1 hr 30 mins	Industrial expert
3	Analysis of passenger complaints and remedies	1 hr	Manager (Control Centre)/ Depot officer
4	ETIM training & tests	1 hr 30 mins	ETIM manufacturer/ETM supervisor
5	Handling of adverse situations/ untoward incidents	30 mins	Industrial experts/ Driver trainer
6	Standard operating procedures for bus guides (including the applicable rules and regulations)	1 hr	Manager (Training)

Training Content for Bus guides

1) The importance and the dynamics of public transport
2) Optimising the sale of seat kilometres by effectively using ticketing techniques
3) The duties and responsibilities of bus guides
4) Checking the bus before the start of duty
5) Various types of fares and concessions, smart cards, etc.
6) The ticketing process during peak hours and off-peak hours. Employing the "issue and start" method where, in case of heavy passenger loads, the conductor starts issuing tickets before the bus starts, thereby completing ticketing for all the passengers even before the bus reaches the next stop.
7) How to conduct themselves with the passengers
8) Guiding differently-abled passengers
9) The enforcement of seat reservations for various categories
10) Handling of adverse situations/untoward incidents
11) Revenue pilferage and its adverse effects
12) Procedure for taking disciplinary action
13) Standard operating procedures (SOPs) for bus guides
14) Shutting bus windows during the last trip, before the bus is parked at the depot

2.1.4 Trainings for Bus Captains (Drivers)

Table 7: *Trainings for Bus Captains*

S. No	Title	Target audience	Expected outcome	Duration	Group size	Frequency
1	Task management for bus captains	Bus Captains	• Knowledge sharing on the roles and responsibilities of bus captains • Improvement of soft skills • Defensive driving skills • Eco-driving	1 day	30 to 35	Once a year

Table 8: *Indicative Training Agenda for Bus Captains*

S. No.	Discussion Topic	Duration	Training Resource/Instructor
1	Roles and responsibilities of bus captains	1 hr 30 mins	Bus operations expert/ Manager (Operations)/ Depot manager
2	Soft skills	1 hr 30 mins	Industrial expert
3	Addiction and its adverse impacts	1 hr	Medical experts
4	Accident analysis and defensive driving techniques	1 hr 30 mins	Driver trainers
5	Handling of adverse situations/ untoward incidents	1 hr	Driver trainers/Industrial experts
6	Improvements in fuel efficiency (eco-driving)[3]	1 hr	PCRA/ Bus operations experts/ Driver trainer

Training Content for Bus Captains

1) The importance and the dynamics of public transport
2) The duties and responsibilities of bus captains
3) Carrying a toolkit with them at all times, containing their license, PCV (Passenger Carrying Vehicle) badge, log sheet, schedule chart, emergency numbers, etc.
4) How to conduct themselves with the passengers
5) Checking the bus before the start of duty (for all 15 parameters)
6) Driving habits with a focus on reducing breakdowns
7) Eco-driving habits, with a focus on fuel savings, i.e. achieving more kilometres per litre (KMPL)
8) Defensive driving techniques for preventing accidents
9) Handling of adverse situations/untoward incidents
10) Addiction (smoking, drinking, chewing tobacco, etc.) and its adverse impacts
11) How drivers can help in improving bus revenues
12) Traffic rules and regulations, and knowledge of the MVA, esp. pertaining to the imposition of penalties
13) Procedure for taking disciplinary action against violations of rules
14) Strategies and remedial actions for dealing with bus bunching and punctuality issues

3 In bus operations, fuel efficiency is a very important parameter, with both economic and environmental implications. It is greatly impacted by driving technique, and so there is a need to train bus captains on aspects of eco-driving (ecological, economical and safe driving). The aim of eco-driving is to reduce fuel consumption, greenhouse gas emissions, and accidents. *Bus Karo* (Version 2), a WRI India publication, has a complete chapter on the subject ("Chapter 4: Fuel Efficiency Training and Management"), which can be accessed at https://wricitieshub.org/sites/default/files/BUS_KARO_2.0-Case_Studies_from_India.pdf

2.1.5 Trainings for Revenue Assurance Team (RAT)

Table 9: *Trainings for Revenue Assurance Team*

S. No	Title	Target audience	Expected outcome	Duration	Group size	Frequency
1	Task management for the Revenue Assurance Team (RAT)	Inspectors and supervisors of RAT	• Awareness of revenue performances route-wise • Improvement in soft skills • New initiatives for improving revenue generation	½ day	20	Twice a year

Table 10: *Indicative Training Agenda for Revenue Assurance Team*

S. No.	Discussion Topic	Duration	Resource
1	Route-wise presentation on financials, performances and remedies	1 hr 30 mins	Manager (Bus Operations)/ Depot manager/ RAT In charge
2	Analysis of passenger complaints and their remedies	1 hr	Manager (Control Centre)/ Depot manager/ RAT In charge
3	Procedure for reporting against delinquent employees	30 mins	Enquiry officer
4	Soft skills	1 hr	Industrial experts

Training Content for the Revenue Assurance Team

1. Route-wise analysis of the financial aspects, performance, and measures for improvement:
   - Analysis of the schedules being operated on the routes
   - Analysis of the trips and kilometres lost on the route
   - Changes in timetables towards improving ridership
   - Curtailment of trips with low ridership
   - The availability of bus stops on the route
   - Conducting surveys to understand the requirements of the passengers
   - Deviations/extensions of the route towards improving ridership
   - Gauging the requirement of additional buses on high-ridership routes, to prevent the loss of passengers to other modes of transport
   - Understanding how the clandestine operations of Intermediate Public Transport (IPT) services on the routes affect the ridership
   - Improving the ticketing process by introducing ground bookings
2. The procedure for conducting detailed analysis of passenger feedback and complaints, and planning measures for improvement.
3. Procedure for reporting against delinquent employees, deficiencies noticed in reports and in the remedial actions taken
4. Taking new initiatives to prevent fare pilferages, and improve ridership
5. Developing soft skills

2.1.6 Trainings for Technicians (Mechanics, Electricians, etc.)

Table 11: *Trainings for Technicians*

S. No	Title	Target audience	Expected outcome	Duration	Group size	Frequency
1	Task management for technicians	Technical supervisors, mechanics, electricians	•Awareness of the standard maintenance practices and of new technologies •Benefits to CRUT due to improved bus maintenance	1 day	20	Once in year

Table 12: *Indicative Training Agenda for Technicians*

S. No.	Discussion Topic	Duration	Training resource/instructor
1	Good practices in bus maintenance	1 hr 30 mins	Maintenance manager/ Assistant Manager (Maintenance)
2	Preventive and predictive maintenance practices	1 hr	Bus manufacturer (Ashok Leyland, TATA Motors, etc.)
3	Breakdown analysis and remedial measures	1 hr	Maintenance manager/ Bus manufacturer
4	Maintenance of bus aggregates	1 hr 30 mins	Aggregate manufacturers (Lucas, Wabco, ZF, Rane, Cummins, TVS, etc.)
5	Tyre & battery maintenance	1 hr	Tyre & battery manufacturers
g	Safety measures in the workplace (Analysis of accidents and remedial measures)	1 hr	Industrial Safety officer

Training Content for Technicians

1. The different types of preventive maintenance schedules
2. A checklist for inspecting buses for preventive maintenance
3. Equipment, tools, jigs and fixtures required for the proper maintenance of the buses
4. System-wise analysis of en route breakdowns, and deciding upon remedial measures
5. Analysis of driver complaints and remedial measures
6. Maintenance of various aggregates with respect to the bus, such as:
   - Engine
   - Gear box
   - Clutch assembly
   - Propeller shaft
   - Brake system
   - Steering system
   - Electrical system
   - Fuel system
   - Sign boards (LED)
   - ITS components
7. Maintenance of tyres and batteries
8. Ways to improve the performance of low-KMPL buses
9. Attending to buses with smoky exhausts
10. Analysis of issues in buses reported for accidents due to mechanical failures, and possible preventive measures
11. Analysis of accidents reported in a workshop due to poor workmanship and safety measures not being in place

2.1.7 Other Trainings

Table 13: *Other trainings*

S. No.	Target Audience	Training Authority	Expected outcomes	Frequency	Source	Course duration
1	· General Manager · Manager (Bus Operations) · Manager (Maintenance) · Depot managers · Depot officers · Technical supervisors	Central Institute of Road Transport (CIRT), Pune	• Awareness of standard bus operations and maintenance practices	Once a year	Training calendar published by CIRT every year	As specified in the training programme

S. No.	Target Audience	Training Authority	Expected outcomes	Frequency	Source	Course duration
2	•Managing Director •General managers •Manager (Bus Operations) •Depot managers •Finance managers	Leaders in Urban Transport Planning programme (LUTP) conducted by CEPT (Center for Excellence in Urban Transport)	Capacity building of transport department officials in operational, financial, technical and human resource parameters	Once a year	Trainings and capacity-building programmes by the Ministry of Housing and Urban Affairs	As specified in the training programme
3	•General Manager •Manager (Bus operations) •Manager (Maintenance) •Depot managers	Ministry of Road Transport and Highways (MORTH)	Awareness of road safety and accident prevention	Once a year	Training and capacity-building programmes by MORTH	As specified in the training programme
4	•Managing Director •General Manager •Manager (Bus operations) •Manager (Maintenance) •Depot managers	Ministry of Housing and Urban Affairs (MoHUA)	Capacity building of transport department officials in operational, financial, technical, and human resource parameters	Once a year	Training and capacity-building programmes by MoHUA	As specified in the training programme

S. No.	Target Audience	Training Authority	Expected outcomes	Frequency	Source	Course duration
5	•Manager (Maintenance) •Depot managers •Technical supervisors	Bus manufacturers	Enhancement of technical knowledge of bus maintenance, and other emerging bus technologies	Once a year	Training calendars released by bus	As specified in the training program
6	•Managing Director •General managers	WRI India's "Bus Karo Workshops"[4]	Capacity building through peer-to-peer knowledge sharing	Twice a year	As per WRI India's schedule	
7	•Bus captains •Bus guides	Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya	Dealing better with stress, and developing various other soft skills	Once a year	Training calendars released every year by wellness	½ Day
8	•Bus captains •Bus guides	Art of Living Yoga and Meditation	Developing focus on the task at hand, calming and stretching exercises	Once a year	As per request	½ Day

4 In December 2009, WRI India launched Bus Karo: A Guidebook on Planning and Operations, with support from the Ministry of Urban Development, Government of India. This was followed by a series of bi-annual peer-learning workshops on different themes related to bus-operations planning and management. The objective of the workshops was to create a platform for cities to share success stories and learnings with each other, which would in turn help them build their capacities.

S. No.	Target Audience	Training Authority	Expected outcomes	Frequency	Source	Course duration
9	•Depot officers •Bus captains •Bus guides	Differently-abled schools	Learning the skills of communicating with differently-abled commuters	Once a year	As per request	2 hrs
10	•Manager (Bus operations) •Depot managers •Manager (Maintenance) •Technical officers •Supervisors •Bus captains •Bus guides •Security personnel	Institute of Industrial Safety and Fire Management	Safety requirements in the workplace, knowledge and skills related to fire-management	Once a year	As per request	2 hrs
11	•Manager (Bus operations) •Depot managers •Manager (Maintenance) •Technical officers •Supervisors •Bus captains •Bus guides •Security personnel	Indian Red Cross Society/ First-Aid Training Institute	Training for developing the ability to administer first aid to the commuters/ staff during emergencies	Once a year	As per request	2hrs

S. No.	Target Audience	Training Authority	Expected outcomes	Frequency	Source	Course duration
12	•General Managers •Manager (Bus operations) •Depot managers •Manager (Maintenance) •Technical officers •Supervisors •Bus captains •Bus guides •Security personnel	Odisha State Disaster Management Authority (OSDMA)	Training for conducting rescue operations during floods, cyclones, etc.	Once a year	Training calendars released by the OSDMA	2hrs

2.1.8 Induction Training for New Recruits (Bus Captains & Bus Guides)

Table 14: *Training Programme for Bus Captains (New Recruits)*

S. No.	Discussion Topic	Duration	Training Instructor
1	On-wheel training (practice during day, evening, night, peak hours and congested roads)	7 days	Driver trainer (provided by the bus operator)
Classroom Training – Day 1			
1	Roles and responsibilities of bus captains	2 hrs	Manager (Bus Operations) and Depot manager
2	Defensive driving techniques	2 hrs	Driver trainer/ Industrial experts
3	Features of a bus & fuel-efficient driving	2 hrs	Driver trainer (provided by the bus manufacturer)
4	Traffic regulations	1 hr	Officials from the Traffic Department
Classroom Training – Day 2			
1	Soft skills	1 hr 30 mins	Industrial experts
2	Rules & regulations, contract conditions, line notices	1 hr 30 mins	Depot manager (provided by the bus operator)
3	Handling adverse situations/untoward incidents	1 hr	Industry expert/Depot manager
4	Damage to parts (clutch, gear, etc.) due to poor driving habits	1 hr 30 mins	Manager (Maintenance)
5	Addictions and their adverse effects	1 hr	Medical experts

Table 15: *Training Programme for Bus Guides (New Recruits)*

S. No.	Discussion Topic	Duration	Training Instructor
1	Training on ETIM Machines (4 days each for the indoors and the outdoors)	8 days	ETIM supervisor, Manager (RCA), Depot officer (CRUT)
Classroom Training			
1	Roles and responsibilities of bus guides	1 hr 30 mins	Manager (Bus operations), Depot manager
2	Soft skills	1 hr 30 mins	In charge (RAT)/ Industrial experts
3	Handling adverse situations/untoward incidents	1 hr	Industry expert/Depot manager
4	Ticketing methods, types of passes, concessions, reserved seats, luggage tickets, etc.	1 hr	Manager (RCA)
5	Revenue leakage and its consequences	1 hr	Enquiry officer
6	Rules and regulations, contract conditions, line notices	1 hr	Manager (RCA)

3. Training Formats

To ensure that all the various categories of staff in the organisation get opportunities for undergoing trainings at least once a year, the city bus agency needs to have a training department or cell, to diligently maintain individual records. The following formats will be useful in this regard.

3.1 Employee Training Record:

This format will help in recording the individual training history of each employee, and keep track of whether they have undergone or missed one or multiple trainings.

Table 16: *Employee Training Record*

S. No.	Name of the employee	Date of training	Description of the training conducted	Remarks (if any)

3.2 Record of Trainer Details:

This is a list of all the external trainers, and will not only help to ensure proper utilisation of their services, but also act as a ready reference for upcoming trainings.

Table 17: *Record of Trainer Details*

S. No.	Name of the trainer	Designation	Name of the Firm	Target category of staff who would benefit from the training

4. A Typical Training Calendar

An example of a typical training calendar for in-house trainings is proposed below. In its present form, it has been prepared for the use of CRUT in the year 2020. It can however be used year after year, with minor modifications if and when necessary.

Table 18: *Proposed Training Calendar for CRUT (2020)*[5]

S. No	Months	Employee category	Duration of the training	Week No.
1	**Jan 2020**	General Manager, Depot managers, Depot officers (both from CRUT & from the bus operators)	1 day	2nd Week
		Revenue Assurance Team with supervisors	½ day	1st Week (1st batch)
		Revenue Assurance Team with supervisors	½ day	1st Week (Next day 2nd batch)
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
2	**Feb 2020**	Maintenance managers, Technical supervisors (both from CRUT & from the Bus operators)	1 day	1st Week
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
3	**March 2020**	Technical supervisors, mechanics, electricians, tyre men	1 day	1st Week
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week

5 Can be used by any city bus agency running on a gross-cost model, and for any year.

S. No	Months	Employee category	Duration of the training	Week No.
4	**April 2020**	Technical supervisors, mechanics, electricians, tyre men	1 day	1st Week
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
5	**May 2020**	Technical supervisors, mechanics, electricians, tyre men	1 day	1st Week
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week

S. No	Months	Employee category	Duration of the training	Week No.
6	**June 2020**	Technical supervisors, mechanics, electricians, tyre men	1 day	1st Week
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
7	**July 2020**	Revenue Assurance Team with supervisors	½ day	1st Week (1st batch)
		Revenue Assurance Team with supervisors	½ day	1st Week (Next day 2nd batch)
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week

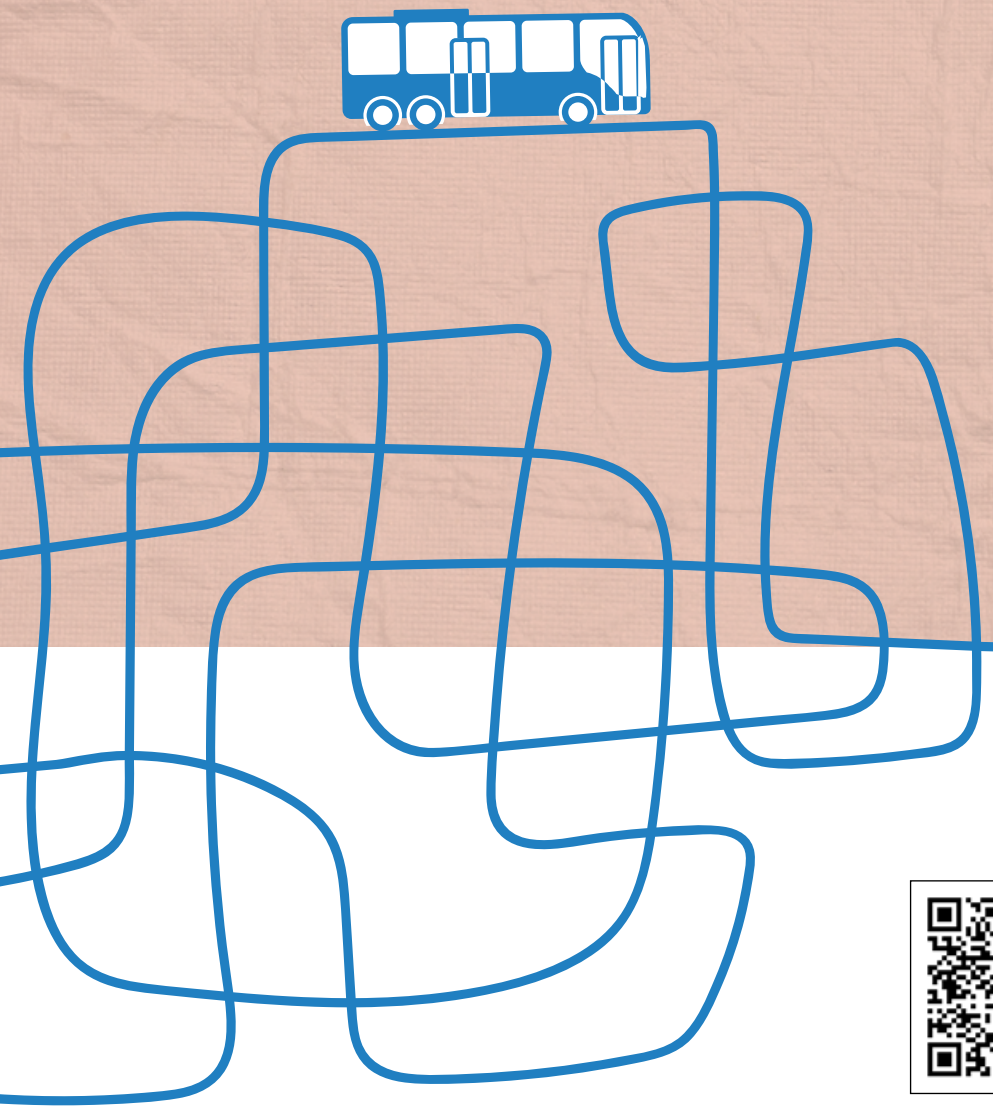
S. No	Months	Employee category	Duration of the training	Week No.
8	**August 2020**	Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
9	**Sept 2020**	Technical supervisors, mechanics, electricians, tyre men	1 day	1st Week
		Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week

S. No	Months	Employee category	Duration of the training	Week No.
10	**Oct 2020**	Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
11	**Nov 2020**	Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week
12	**Dec 2020**	Bus captains	1 day	1st Week
		Bus guides	1 day	2nd Week
		Bus captains	1 day	3rd Week
		Bus guides	1 day	4th Week


REVENUE

PART THREE

TRAINING AND CAPACITY BUILDING



About the GIZ supported SMART-SUT Project

The Integrated Sustainable Urban Transport Systems for Smart Cities (Smart-SUT) project (August 2017 - July 2021) is jointly implemented by the Ministry of Housing and Urban Affairs (MoHUA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The project works with the three Smart Cities - Bhubaneswar, Coimbatore, and Kochi, and their respective state governments, to promote low-carbon mobility, and to plan and implement sustainable urban transport projects in the fields of public transport, non-motorised transport and modal integration. It also supports urban transport agencies to set up the required institutional structures and processes, and enhance their capacities for efficient delivery of services. A consortium comprising GFA, WRI India and the Wuppertal Institute is supporting GIZ in the implementation of this project.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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