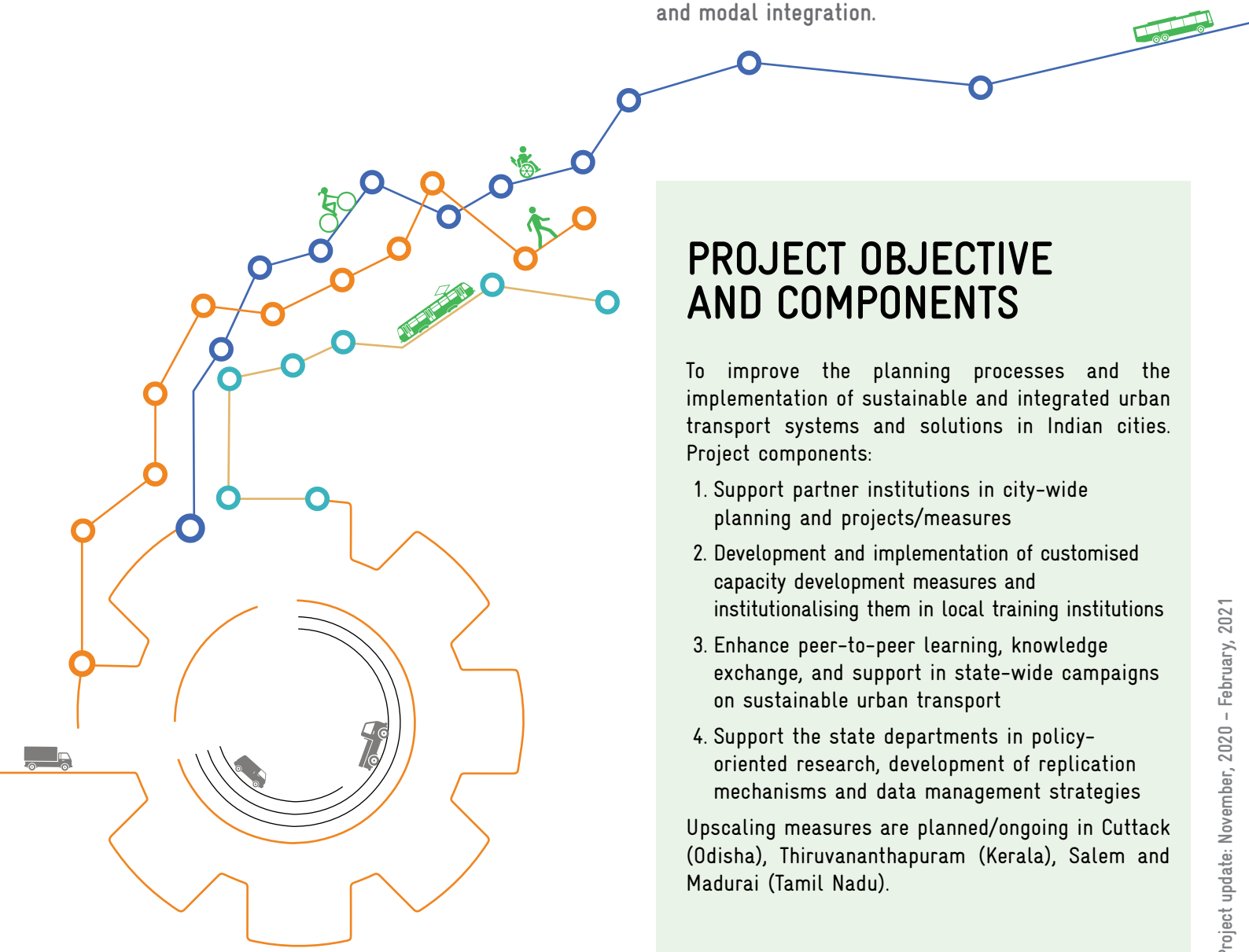
Implemented by

INTEGRATED SUSTAINABLE URBAN TRANSPORT SYSTEMS FOR SMART CITIES (SMART-SUT)

Ministry of Housing and Urban Affairs (MoHUA), Government of India, and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH are jointly implementing the technical cooperation project "Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT)", commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The project works with the three Smart Cities of Bhubaneshwar, Coimbatore, and Kochi and respective state governments of Odisha, Tamil Nadu, and Kerala to promote low carbon mobility planning, and to plan and implement sustainable urban transport projects in the fields of public transport, non-motorised transport and modal integration.



PROJECT OBJECTIVE AND COMPONENTS

To improve the planning processes and the implementation of sustainable and integrated urban transport systems and solutions in Indian cities. Project components:

1. Support partner institutions in city-wide planning and projects/measures
2. Development and implementation of customised capacity development measures and institutionalising them in local training institutions
3. Enhance peer-to-peer learning, knowledge exchange, and support in state-wide campaigns on sustainable urban transport
4. Support the state departments in policy-oriented research, development of replication mechanisms and data management strategies

Upscaling measures are planned/ongoing in Cuttack (Odisha), Thiruvananthapuram (Kerala), Salem and Madurai (Tamil Nadu).

Project update: November, 2020 – February, 2021

CONTENTS

PROJECTS AT NATIONAL LEVEL

National Capacity Building Framework for Urban Transport in Cities 3

SMART-MOVE: Innovative Urban Mobility Challenge

Research on Urban Transport (CEPT University)

Training Needs Assessment (TNA) of e-Buses in India

Creating a Framework for Mobility Data Specifications and Mobility Data Harvesting for Implementing Mobility as a Service (MaaS) in Indian Cities

Evolution of Public Bike Sharing Systems in India

BHUBANESHWAR 4

Individual & Organisational Level Capacity Development for Capital Region Urban Transport (CRUT)-SPV Responsible for Managing Public Transport Operations in Bhubaneswar 5

Parking Policy and Management Plan 5

Low Carbon Mobility Plan (LCMP) 5

Review of Street Design Guidelines 5

Traffic management plan for arterial road named 'Nandankanan Road 5

KOCHI 6

Launching of Shared e-autos in Kochi 6

Redesign of the arterial road named 'Sahodaran Ayyappan' (3.5 km) and its extension 'Church Landing Road' (0.5 km) 7

Institutional Assessment and Strengthening of Kochi Municipal Corporation (KMC) 7

Integrated planning document for transportation projects in Fort Kochi-Mattancherry (FKM) 7

Operationalisation of Kochi Metropolitan Transport Authority (KMTA) 8

Integrated Planning Document for Transportation Projects in Fort Kochi – Mattancherry (FKM) 8

Technical Assistance to Cochin Smart Mission Ltd.(CSML) for Streets for People(S4P) and Cycle for Change(C4C) Challenges Initiated by MoHUA 8

Evaluating Multimodal Transport Integration – a case of Kochi 8

KERALA 8

Route Rationalisation and City Bus Service Improvement for Trivandrum 8

Gender Studies for Improving Women Safety in Public Transport 8

Campaign in Kerala Towards "Use of Public Transport in COVID-19 Situation 8

COIMBATORE 9

Citywide Cycling and Pedestrian Network Plan 9

Safe school precincts 9

Redesign and Pilot Implementation of Big Bazaar Street 10

Tamil Nadu State Transport Corporation (TNSTC) User and Non-user Survey 10

Institutional Change Management for Designing Pedestrian and Cycling Facilities in Coimbatore 11

Complete Streets Through Safe Intersections 11

Other Ongoing/Proposed Projects 11

Coimbatore Route Rationalisation and Bus Improvement Study 12

TAMIL NADU 12

Study of State of Urban Transport in Tamil Nadu 12

Research on Road Safety 12

NATIONAL

National Capacity Building Framework for Urban Transport in Cities

The activity focuses on training need assessment in urban transport followed by capacity building of city officials using various methods (webinars, face to face, e-learning etc.).

- Based on the Training Need Gap assessment, following priority domains and areas are recommended for conducting training:

Public Transport, Urban Bus Transport & Accessibility	Road Network Planning for Active Mobility & Urban Streets	Land Use Transport Integration & Demand Management Measures	Innovation & Technology	Parking Management	Road Safety & Freight Management	Integration & Financing Mechanisms

The proposed structure of the program is:

Active Learning → **Action Learning** → **Cross Learning**

Active Learning
- 22 February to 05 March 2021
- 6 day workshop
- Experiential
- Hands-on exercises
- Case Discussions

Action Learning
- February to June 2021
- Action Project in respective cities, associated with current area of work

Cross Learning
- June 2021
- Learning from international practices

- As part of the training program, six webinars would be organised from March to April 2021 covering various aspects of Sustainable Urban Transportation
- The Ministry of Housing and Urban Affairs (MoHUA), launched the Executive Programme on Sustainable Urban Transport with support from GIZ. The Ministry received a total of 68 nominations from various state and city level government organisations. The final list of shortlisted candidates will be published by MoHUA in the coming days
- CEPT Research and Development Foundation (CRDF) , Institute of Urban Transport (IUT) and Transformative Urban Mobility Initiative (TUMI) would be supporting GIZ and MoHUA in delivering the training programme

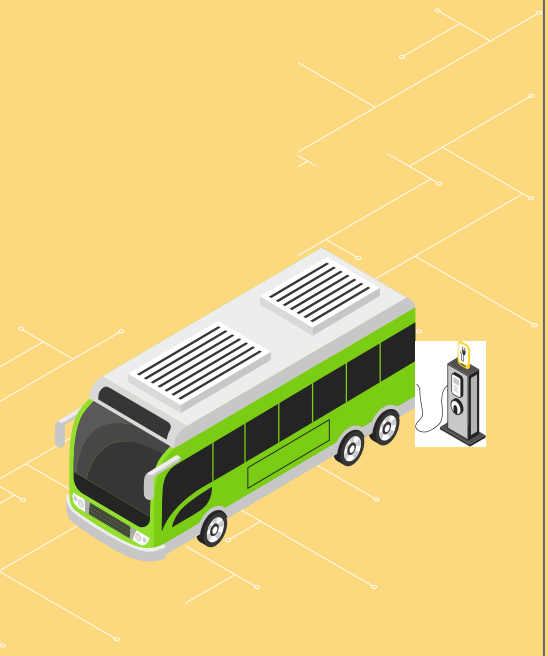
SMART-MOVE: Innovative Urban Mobility Challenge

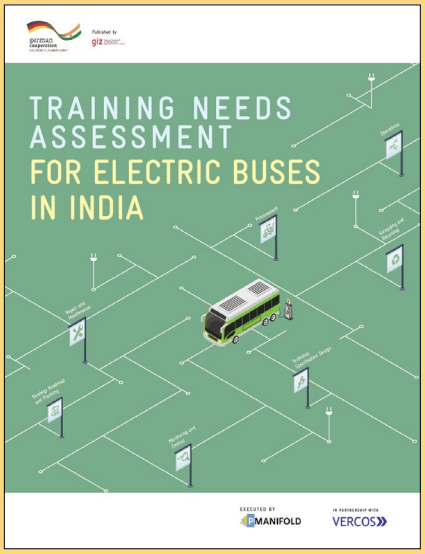
MoHUA, supported by National Institute of Urban Affairs (NIUA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is organising SMART-MOVE: Innovative Urban Mobility Challenge, a global data challenge to reimagine mobility in Indian Smart Cities. MoHUA officially launched SMART-MOVE Challenge during UMI 2020 Conference on 9th Nov 2020, inviting participation from Universities (Open for Global teams) and Individual or a group of individuals or as an organisation. Cities and Private Partners were also invited to share data from a wide range of Sectors and Sub sectors on SMART-MOVE data sharing portal as part of the challenge. The challenge is a huge step towards inculcating the culture of open data in urban mobility and support data and

technology-driven sustainable solutions.

- The initiative focuses to provide students/researchers an opportunity to help the nation in building efficient and resilient urban transport systems and address some of the pressing problems that we as a commuter face every day
- Shortlisting process of concept notes submitted by the participants is under way. In Stage – II shortlisted participants will be using the datasets coming in from multiple sources to produce solutions that can improve our urban transport system's efficiency

Research on Urban Transport (CEPT University)





Training Needs Assessment (TNA) of e-Buses in India

The objective of the study is to undertake training needs assessment of State Transport Undertakings (STUs) across the e-Bus life cycle starting from need, technology selection, procurement, operation, maintenance and disposal at all levels and roles of organisation.

Based on a comprehensive questionnaire, surveys were conducted for STUs as well as supply-side stakeholders (e-bus/ charging infrastructure providers, energy companies, experts etc.), to understand skill gaps and challenges in e-Bus deployments and potential training requirements for improved e-Buses adoption and integration.

- Volume I Report on Training Need & Skill Gap Assessment and Volume II Report on National e-Bus Training Programme Structure will be published in Feb 2021
- Volume III Report on Organisation Structure for Public Transport Authorities will be published in Mar 2021

Creating a Framework for Mobility Data Specifications and Mobility Data Harvesting for Implementing Mobility as a Service (MaaS) in Indian Cities

The objective of the study is to develop a mobility data specification (MDS) framework and a mobility data harvesting guideline for the effective implementation of Mobility as a Service (MaaS) in Indian cities. The study will examine various aspects of data management practices related to urban mobility internationally as well as in Indian context. A training and capacity building toolkit will also be developed as a part of this project which would assist cities/public authorities in India planning to implement MaaS in their respective jurisdiction.

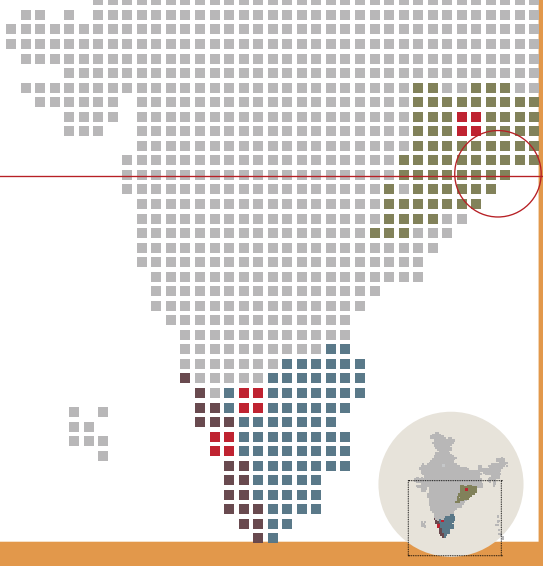
- Findings from global case studies has been completed
- A draft report on status quo of current data management practices and ongoing MaaS initiatives in Indian cities has been submitted and under review

Evolution of Public Bike Sharing Systems in India

The key outcome of this study is to bring out issues and challenges in operation of public bike sharing (PBS) and to develop recommendations for improving existing PBS systems. The study collates experiences from five Indian cities as well as international case studies and investigates overall planning and policy frameworks, designing parameters, business models and regulatory aspects

- The final report incorporating study findings has been completed and ready for publication in upcoming months

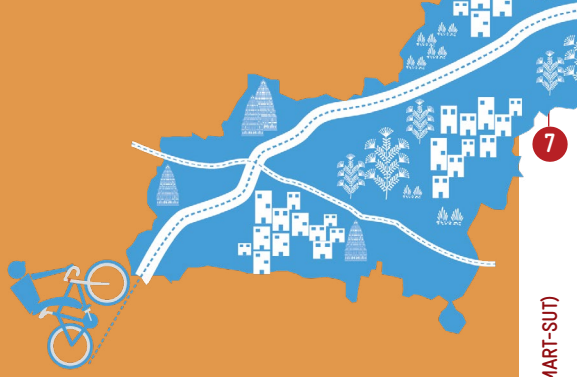
BHUBANESHWAR & ODISHA



Individual & Organisational Level Capacity Development for Capital Region Urban Transport (CRUT)-SPV Responsible for Managing Public Transport Operations in Bhubaneswar

Support extended through a combination of on-the-job technical support, regular training sessions, study tours, printed guidance material and remote support

- 'Route planning regulations' to aid in planning for new routes including addressing public requests for routes – submitted
- Bus service and route planning regulation documentation submitted for creation of bus stops and routes in transport system
- Co-developed draft Request for Proposal for the procurement of Electronic Ticket Issuing Machines(ETIMS) and deployment of its ancillary services for operations of public transit vehicles of CRUT
- Facilitated the launch of cashless mobility card(launched on 6th November 2020). This helps to reduce cash transactions (thereby reducing revenue leakages) and provides a hassle-free travel experience for commuters. This facility is currently available for select bus routes(No.70&50) and is planned to be implemented across other routes and also for other modes like IPT
- Evaluation of SMART-SUT's support to CRUT towards development of systemic, organisational and individual capacities was completed



Parking Policy and Management Plan

- Review of 'Janpath Street Design' including its parking design has been submitted to Bhubaneswar Smart City Ltd (BSCL), as an input to in-built drawing
- Parking policy under finalisation based upon stakeholder feedback and to be submitted to Bhubaneswar Municipal Corporation (BMC) for approval
- PMP for 40kms corridor: strategies are being finalised based on situation analysis for consultation with BMC
- Parking Area Management Plan (PAMP): PAMP: Draft PAMP toolkit submitted to BDA in January 2021. It aims to assist partners in identifying and developing areas through a comprehensive management of parking. The PAMP is being prepared for two pilot areas in Bhubaneswar (KIIT square and Master Canteen).
  - The preparation of PAMP for two identified pilot areas in the city (KIIT Square and Master Canteen) has been is initiated

Review of Street Design Guidelines:

Comprehensive review of the guidelines to ensure it provides a step-by-step approach for developing "Complete Streets"

- Recommendations submitted to partner and (virtual) capacity building sessions on street design guidelines for engineers, planners and other technical staff in the city authorities are planned for the coming months.

Low Carbon Mobility Plan (LCMP),

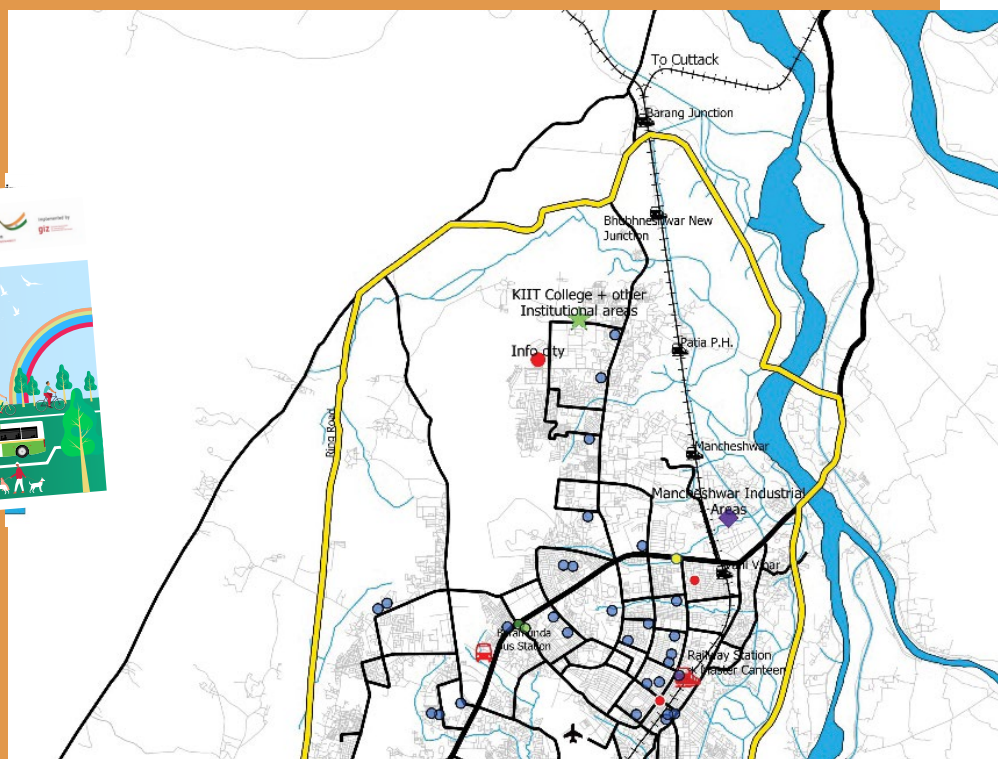
a strategic vision document and mobility blueprint for the city to develop and monitor its transport sector. The plan builds on existing studies & projects and considers national and international policies and goals for sustainable development and mobility to guide Bhubaneswar towards a livable, climate-friendly and transit oriented city by 2040.

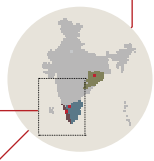
- Finalisation of LCMP is underway as per stakeholder feedback, and is planned to be launched along with a public campaign aimed at sensitising citizens about the plan in February, 2021. A dedicated microsite to be published as part of the campaign.

Traffic management plan for arterial road named 'Nandankanan Road'

Corridor improvement to integrate mobility needs of all road users and to improve traffic circulation and road safety

- Draft proposal is under development for the identified stretch of 3.5km. Consultations for the proposals are planned for February 2021.





KOCHI

Launching of Shared e-autos in Kochi

This project has been envisaged to increase first and last mile solution for Kochi city

- Detailed scoping study prepared for pilot of 100 e-autos with lithium-ion batteries including options for a viable business model, demand analysis, technology selection, cost estimates and supporting infrastructure. Pilot areas are Fort Kochi, Kadavanthara and Elamkulam and is intended to lead to upscaling to other parts of the city - approved by Kochi Municipal Corporation(KMC).
- Joint declaration of intent (JDI) signed between KMC and EJADCS on 06.10.2020, clarifying roles and responsibilities for launching and maintaining e-autos in Kochi (i.e. Fleet procurement, charging infrastructure development, operations, coordination with government organisations etc.)
- Test runs as part of vehicle selection process has been initiated. Checklist for assessment developed and vehicle inspection group formed. Test runs of 3 Original Equipment Manufacturers(Mahindra, Piaggio and Kerala Automobiles Limited, KAL) completed and one more round planned with other interested OEMS.
- Institutional strengthening of Auto society (EJADCS, final beneficiary) is underway to develop both organisational and individual (both society officials and auto drivers) level capacity.

Redesign of the Arterial Road 'Sahodaran Ayyappan' (3.5 km) and its Extension 'Church Landing Road' (0.5 km)

The intention is to redevelop SA road as model road, with high quality safe footpaths with utility provisions, landscaping and creating public spaces, improved access to metro and buses, junction improvement and traffic calming elements for encouraging pedestrian movements

Implementation and funding options are under exploration with stakeholders

Institutional Assessment and Strengthening of Kochi Municipal Corporation (KMC):

- The objective of this activity is to understand the existing capacities within KMC and further capacitate and strengthen them to plan, execute and manage urban mobility projects. An assessment of prescribed, actual and desired roles, responsibilities and processes within KMC impacting urban mobility projects has been completed and findings of the report will be tables in front of the new Council shortly.
- An internal organisational level management tool (Mobility Project Management Tool) for improved identification and management of urban transport projects by KMC is being developed jointly with Centre for Heritage, Environment and Development (an institution functioning as the research and development wing of the KMC).

Operationalisation of Kochi Metropolitan Transport Authority (KMTA) has been requested by the State Government to support in developing the organisational structure and related activities to set up the UMTA in Kochi.

- Immediate functions of KMTA and potential streams for Urban Transport Fund(UTF) submitted
- Organisational chart and JDs developed and submitted to KMTA for their consideration

Integrated Planning Document for Transportation Projects in Fort Kochi – Mattancherry (FKM)

A strategic planning document for Fort Kochi –Mattancherry area that looks at integration of various modes, way finding measures, an NMT network and promotion of public transport.

- Concept note approved by KMC and draft report under preparation. Virtual engagement with stakeholders is underway for collating feedback on the planning document.
- Discussions underway with Cochin Smart Mission Ltd.(CSML)on including the recommendations on roadway design and NMT prioritisation in the MoHUA's streets for people and cycle for change challenges
- 5 measures (street design toolkit, shared mobility, non-motorised transport (NMT) network, public bike sharing (PBS), Local connectivity & transit map and tactical urbanism) identified for immediate implementation and are being detailed out and discussed with KMC. Concept notes have been approved by KMC and submission is planned for the coming months.

Technical Assistance to Cochin Smart Mission Ltd.(CSML) for Streets for People(S4P) and Cycle for Change(C4C) Challenges Initiated by MoHUA

- Support for C4C includes Identification of potential streets for pilot, conceptual design alternatives on incorporating bicycle lanes on identified streets. Planning and implementing a tactical event to demonstrate the developed designs is planned for the end of this month. Development of a scale-up strategy is also underway.
- Support for S4P challenge extended in identification of pilot locations, development of competition design briefs and public engagement & outreach activities. Selection and finalisation of designs and demonstration is planned for the coming month.

Evaluating Multimodal Transport Integration – a case of Kochi

Multimodal integration (MMI) has been defined as a system that provides alternative travel options integrated in such a way that it provides a seamless and door-to-door connectivity for passengers. MMI has been recommended by NUTP and CMP guidelines to be adopted in Indian cities.

The objectives are:

- Development of a framework for analysing the level of multimodal integration in the cities
- Identification of a set of indicators for performance evaluation and monitoring of the multimodal transport systems/ initiatives on a continual basis
- Analysis of the level of multi-modal integration achieved and identification of the gaps and challenges
- Outline a set of strategies and policy interventions for facilitating multi-modal integration in the city.

- Results, strategies and policy interventions will be presented and discussed with city officials in February / March 2021

KERALA

Route Rationalisation and City Bus Service Improvement for Trivandrum

- Preparation of route rationalisation plan and service and operational plan by assessment of traffic demand in the city to suggest possible new routes and improve coverage of the bus service.
- Developing an interactive online toolkit which can provide insight towards various operational and financial parameters.
- Existing Situation Analysis report submitted and discussed virtually with the partners.
- Concept route submitted. Discussion with KSRTC on concept route pending.
- First discussion with nodal officer, KSRTC on the route rationalisation approach and the routes identified undertaken in the third week of January 2021
- Discussion with CMD, KSRTC for approval towards implementation of the rationalised routes pending

Gender Studies for Improving Women Safety in Public Transport

- Draft recommendations for the Transport Department through assessment of the existing institutional and legislative framework in place for ensuring women's safety in PT, undertaking focused group discussions to identify issues faced by women and assessing infrastructure adequacy for transit stations.
- Primary survey and online survey to be initiated in last week of November for the Existing Situation Analysis
- Face to face survey and online survey for user perception study undertaken
- Discussion with stakeholders expected by March 2021

Campaign in Kerala Towards "Use of Public Transport in COVID-19 Situation

- The objective of the campaign is to make people aware of the precautions to be followed while travelling public transport, the measures taken by PT authorities for ensuring passenger safety, and promote cycling and walking using online and offline platforms.
- One month long online campaign concluded in June.
- Posters and standee showcasing the precautions to be followed for use of various transportation modes put up at bus terminals and bus stops in Kochi

COIMBATORE & TAMIL NADU

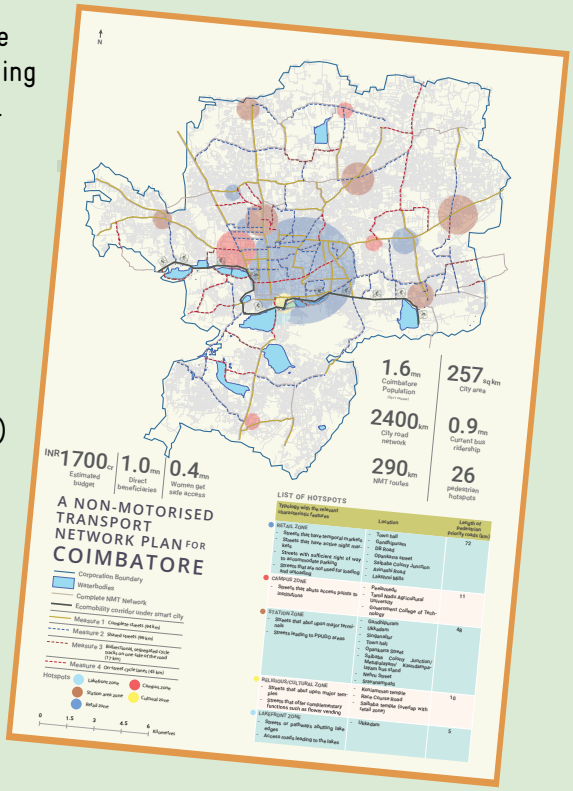
Citywide Cycling and Pedestrian Network Plan

The prime purpose of the plan is to prepare a comprehensive approach to building a network of cycling and pedestrian routes in the city and to set forth a comprehensive set of measures which would put city on a path of achieving sustainable transport goals.

- The plan is divided into five phases with an implementation period of 15 years and estimated budget of INR 1700 Cr
- In addition to the long-term goals, the plan also identified gaps and requirements to

successfully implement the projects, ranging from financial capacities to individual capacities

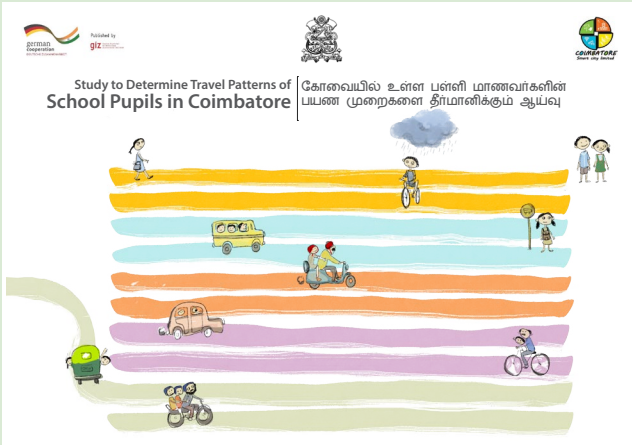
- The plan is approved by CCMC and is available on CCMC's website (Link)

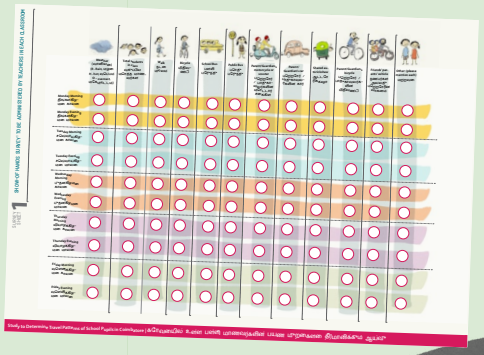


Safe school precincts

School children being one of the most vulnerable group of road users, require safe access to the schools which they attend daily. The project is intended to provide recommendations through design and capacity building of Coimbatore City Municipal Corporation (CCMC) to improve the accessibility of schools zones in the city

- Collaboration with local NGO(RAAC) to carry out the travel dairy surveys initiated. CCMC to facilitate the surveys with government and private schools
- International Road Assessment Programme (iRAP) star rating for schools(assessment ratings for road infrastructure) - assessment completed for 25 private schools
- Sensitisation training conducted (11January, 2021) on IRAP Safe rating for schools(SR4S) for CCMC engineers
- Solutions to be converted as design guidelines to be applied for other schools/ children accessing public space





Redesign and Pilot Implementation of Cross Cut Road Tactical

#Crosscut4Kovai- A temporary makeshift of retail destination to showcase complete street elements

The objective is to redesign Cross cut road to include complete street elements while streamlining the unused street space into various uses like enhanced public space, street furniture, junction improvement and pedestrian plaza.

This project is intended to set a precedent to improve streets with less disruption and make a street retail destination for the city

- The overall project is estimated at INR 5.5 Crore, divided into two packages for ease and preparedness of implementation
- The project is conceived to be implemented through public-private partnership with local shopkeepers association also a part of the implementation.
- A tactical event was carried on Cross Cut Road to pilot the designs and collect public feedback which will be incorporated into the final street designfinal street design
- Public feedback collated by CCMC through social media. The opinion surveys draws attention of Coimbatore citizens to support the projects and to ensure their quick implementation.

- attention of Coimbatore citizens to support the projects and to ensure the quick implementation
- Project is approved and budgeted in 2020-21 city budget. Tendering process is yet to begin

Tamil Nadu State Transport Corporation (TNSTC) User and Non-user Survey:

To support TNSTC in identifying right measures to improve the level of service and to enable people shift towards public transport

- User and non-user survey to identify the gaps in service levels. A comprehensive questionnaire has been developed to assess the existing service levels and to identify key service improvements to attract new users. Framework for qualitative and quantitative analysis of the survey results has also been developed
- Recommendations towards institutionalising periodic user and non user survey for TNSTC
- Recommendations to improve service levels while correlating expectations versus actual scenarios

Institutional Change Management for Designing Pedestrian and Cycling Facilities in Coimbatore:

As part of the capacity development support in tandem to the technical cooperation, CCMC has requested SMART-SUT to help enhance the competencies of its engineers on various street design, junction design, and road safety related topics.

- Training gaps and needs assessment of CCMC engineers was conducted in September-November 2020
- 2 day sensitisation workshop for all 55 engineers and 5-day long deep dive training for 24 engineers from different zones (spread over 3 weeks) was successfully completed during December 2021 and January 2021. The topics included road safety, NMT planning, standards, designing, implementation and monitoring. The modules were highly interactive and involved field work and data collection which was taken up will all safety precautions.
- In collaboration with TNIUS (Tamil Nadu Institute for Urban Studies) and Coimbatore City Municipal Corporation, training modules on NMT will be finalised based on the learnings from the training, which will be shared with Commissionerate of Municipal Administration and TNIUS as a resource for future trainings in cities Tamil Nadu. Training modules cover planning, design, implementation, operation and maintenance of NMT infrastructure.
- Recommendations are being developed to improve institutional capacity to implement street design projects

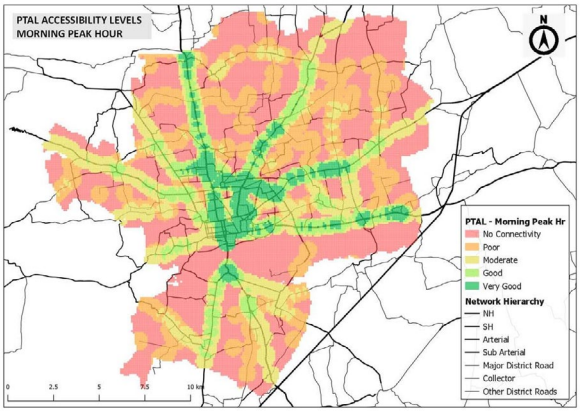
Complete Streets Through Safe Intersections:

To resolve network level safety issues by redesigning intersections to be safe for pedestrians and cyclists

- Intersection being major interchange points for pedestrians, priorities to improving them will benefit large user group
- Two major commercial streets (Big Bazaar street and Cross Cut road) in the city have been selected by CCMC.
- Draft designs prepared in consultation with Coimbatore Smart City Limited and Coimbatore City Municipal Corporation
- A tactical urbanism event on Cross Cut road is implemented and opened for public on 31 January 2021 with the Coimbatore Smart City Ltd., (CSCL) to pilot the designs and to collect public feedback. Tactical intervention is in line with India Cycles4Change and Streets for people challenges.
- Capacity building sessions for officials on intersection re-design has been conducted(as part of the training to CCMC engineers, Dec' 20 – Jan' 2021) and engineers tested their designs temporarily on ground. A customised design toolkit for engineers on intersection design is being developed.

Other Ongoing/Proposed Projects:

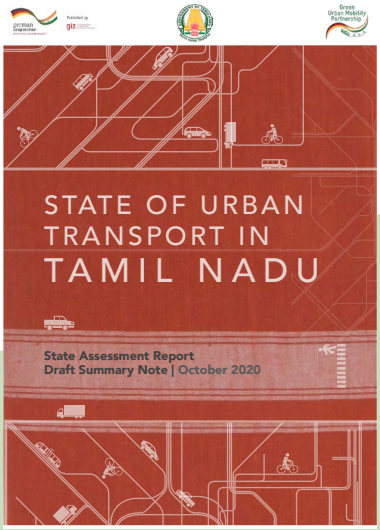
- Eco mobility corridor activity: Proposed to institutionalise the operation and maintenance of smart city initiatives through a prefeasibility study on applicable business models
- Development of 'town hall accessibility plan', to improve the connectivity and visibility of '8 lakes rejuvenation & restoration project' under the Smart city initiative.



Coimbatore Route Rationalisation and Bus Improvement Study

A detailed study has been initiated with TNSTC Coimbatore for assessment of existing city bus services. The objective is to prepare a route rationalisation plan as well as to suggest suitable measures for improving the performance and efficiency of the existing system based on key technical parameters. A training module will also be prepared to institutionalise the route rationalisation process within department.

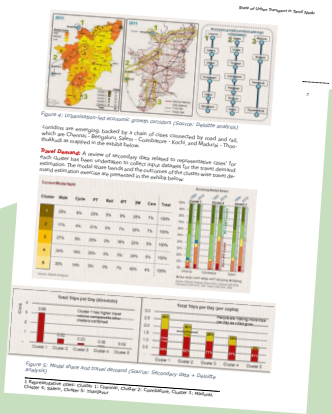
- Existing situation assessment report has been prepared and submitted to TNSTC
- With an aim to assist TNSTC in operationalising proposed electric buses, an open-source tool for selecting electric bus routes has been prepared. The same will be discussed and presented to TNSTC after internal review.
- Preparation of route rationalisation strategy for existing city bus routes is underway which includes identification of core and non-core routes and creation of hierarchical route system for the city.



Study of State of Urban Transport in Tamil Nadu

A detailes study has been initiated with Transport department of Tamil Nadu. This study mainly focuses on assessing the current status of urban transport in Tamil Nadu byidentifying the gaps in terms of capacity, quality, institutional strength, regulation and funding in the Public Transport sector and areas for improvement. An improvement plan will be prepared in specific to address the above gaps by prioritizing the action areas and suggesting measures.

- A draft state and city level assessment reports are completed, based on the inputs from the Transport department, reports will be finalized.
- Development of draft state assessment model is finished and based on the inputs from the Transport department, the report on Priority Action areas ans Suggested Policy Measures will be finalized.



Research on Road Safety

A detailed research work has been initiated with Transport department of Tamil Nadu. The scope to do the research on the key areas of sustainable transportation to identify gaps in the policy framework and to suggest measures.

The new objective of the study is to analyze the road crashes in last 5 years involving vehicles of Tamil Nadu State Road Corporation (TNSTC). Identification of organizational factors that result in road safety concerns, review any existing frameworks for risk assessment and develop a framework for risk assessment.

- Further to the approval from the transport department, on the revised scope of risk assessment for road safety for TNSTC Coimbatore in the discussion with transport secretary, data collection process for primary and secondary data are commenced.
- Already a request on data requirments is submitted MD TNSTC Coimbatore, he may share the necessary data based on the approval from the Transport secretary.

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GIZ is responsible for the content of this publication.