The Transport & Mobility Scenario in Kochi: Past & current Trends.... Challenges.....
The transport and mobility scenario in Kochi - the past...

- Kochi has a long history of its own in the annals of history. The city was so well known across the civilized world for the hospitality of its rulers and its produce, primarily spices, that it had robust trade links with practically the entire civilized world even before the Common Era.

- Kochi thus came to be called the Queen of the Arabian Sea.

- So much so that it eventually led to the colonization of the Indian Subcontinent.

- Kochi being a city that is surrounded practically on all sides by water bodies, be it the sea, or the amazing lengths of backwaters and associated canals, it did not take long for the boats and rafts and vanchis and vallams similar to the gondolas to take to the waters, which even today is the primary mode of mobility in the neighbouring town of Alleppy, called the Venice of the East.
Kochi did indeed have trade and social connections between people across the Indian subcontinent via the narrow dusty and often rocky, and hilly terrains in the ancient past, but the mobility and transportation within the confines of the greater Kochi area of the times came to be dominated by and large through the waters.

However during the early 19th and 20th century, Kochi too moved on with the new Modes of Transportation that came to dominate the world, be it Automobiles or Omnibuses.

But development needs mobility and corresponding robust and reliable transportation.
## Current Scenario in Kochi

<table>
<thead>
<tr>
<th>Geographical Area</th>
<th>632 Sq. km</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Highways</td>
<td>NH47, NH17 &amp; NH49</td>
</tr>
<tr>
<td>National Waterway</td>
<td>NW-3</td>
</tr>
<tr>
<td>Registered Vehicles</td>
<td>1.467 M</td>
</tr>
<tr>
<td>Road Length (kms)</td>
<td>948.7 km</td>
</tr>
<tr>
<td>City Buses</td>
<td>Close to 1500</td>
</tr>
<tr>
<td>Public Transport Share</td>
<td>49% (2015) 60.2% (2013)</td>
</tr>
<tr>
<td>Average Trip Lengths</td>
<td>NMT – 2.78 km, 2 Wheeler – 9.44 km, 4 Wheeler – 10.32 km Public Transport – 9.5 km</td>
</tr>
</tbody>
</table>
Transition

Unplanned and disorganised growth due to increased economic activity centred around a niche area led to an almost unmanageable urban sprawl further exerting itself on the absent and/or inadequate infrastructure – (boats, boat jetties, buses, roads, parking spaces, economic hubs)

Inability to meet the growing demands and aspirations of the citizenry be they on the islands to safe and easy access to better healthcare, education, employment also meant a large part of the citizenry was kept out of the mainstream
Transition

Realization of the need to ensure better access to all people to the basics resulted in the improvement of a few roads infrastructure in some places and the introduction of some buses. But at the macro level the problems continued to remain the same.
## UNDERSTANDING KOCHI

### Demography

- Kochi City Region: 21.17 lakh
- Kochi Corporation: 6.02 lakh

### Land Use: Kochi City Region (2009) and Kochi City (2009)

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Kochi City Region</th>
<th>Kochi Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area = 369.72 sq.km</td>
<td>Area = 94.88 sq.km</td>
</tr>
<tr>
<td>Residential</td>
<td>43.43%</td>
<td>53.13%</td>
</tr>
<tr>
<td>Commercial</td>
<td>0.99%</td>
<td>2.23%</td>
</tr>
<tr>
<td>Public &amp; Semi-public</td>
<td>4.16%</td>
<td>4.69%</td>
</tr>
<tr>
<td>Industrial</td>
<td>6.50%</td>
<td>1.83%</td>
</tr>
<tr>
<td>Transportation</td>
<td>4.02%</td>
<td>5.83%</td>
</tr>
<tr>
<td>Park &amp; Open spaces</td>
<td>0.31%</td>
<td>0.70%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>2.04%</td>
<td>0.11%</td>
</tr>
<tr>
<td>Paddy Land/Marshy Land</td>
<td>18.44%</td>
<td>4.65%</td>
</tr>
<tr>
<td>Water Bodies</td>
<td>18.96%</td>
<td>22.64%</td>
</tr>
<tr>
<td>Others</td>
<td>0.06%</td>
<td>4.19%</td>
</tr>
<tr>
<td>Port Land</td>
<td>1.07%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Public Transportation

- Evidently people use the public transportation
- There is not much space for the public transportation to navigate since the infrastructure is inadequate and the private vehicles take off a major part of the right of way
- Increased road width only further clogs the growing numbers of vehicles 1.467M for a population of 2.1M
Result

- While most peoples prefer the public transportation, the lack of availability and reliability of the services and the absence of accountability and the inability to respond from the side of the authorities, even if not proactively, has resulted in large scale migration of persons from the traditional modes of public transport, to privately owned vehicles
- The migration is costly
- Unregulated increase in the number of vehicles on the roads
- Vying for the minimum right of way that is in existence
- Resultant accidents
- Severe loss of life and property
- Highest incidence of death by accidents in India
- Also loss of time, opportunity and degradation of the environment
Kochi’s current transportation system is road & water based, without any sub-urban train service...

**Major Public Transport modes:**

- **City buses, Taxis, Auto rickshaws and Ferry boats**
  
  As per RITES Survey in 2001

- Buses - 14% of vehicular traffic carry 73% of the passenger traffic
- Cars - 38% of vehicular traffic carry 15% of the passenger traffic
- Two wheelers - 35% of vehicular traffic carry 8% of passenger traffic
- Auto rickshaws - 13% of vehicular traffic carry 4% of passenger traffic

- Presently **no suburban train service**
Metro as the Saviour

• An MRTS with a route length of 25.6km with 22 elevated stations along a linear path that goes right through the centre of the most congested roads in Kochi

• Only brownfield development in the first phase; now understanding the dynamics of the MRTS, the need to develop further to greenfield areas commenced
KOCHI METRO RAIL NETWORK

1. ALUVA - PETTA (PH-I) (25.612KM)
2. ALUVA- ANGAMALY (18.28M)
3. JLN STATION - INFO PARK VIA KAKKANAD (10.90KM)
4. PACHALAM /JOS JUNCTION) - FORT KOCHI (19.8KM)
5. PETTA - TRIPUNITHURA (3.45KM)

LEGEND
METRO LINE PHASE-I
METRO LINE PHASE-II
Metro Alone Not the Saviour

• Mobility needs are increasing
• Health concerns are rising
• Healthcare cost shoots up through the roof
• Access to goods and services means better network requirements
• Economic development requires timely seamless connections with all resources
Integrated Public Transport...

... a possible solution to Kochi’s transportation problems

Integration with Bus and Water Bus based Public Transportation with last mile connectivity provided by the Para Transport and Non-Motorised Transport
Challenges

• Multiplicity of Independent Authorities in city development and transportation
• what, when, where and how of every possible issue in mobility and transportation. And a why to boot that can stall any initiative
• Road infrastructure
• Moveable transport infrastructure
• Transport operators
Challenges

- Multiplicity of laws
- Often with overlapping and in some cases absence of control areas
- Confusion in the roles and responsibilities
- Conflicting objectives and procedures
- Multiplicity also leads to issue of accountability
- Result No one is responsible
An Example from the existing Water Transport System

- State Water Transport Department owns and operates boat services
- Kerala State Inland Navigation Corporation also operates boats
- Private operators operate public transportation often with dilapidated boats with no safety equipment to boast of
- It also has shipping lines crossing

![Map of Functional Jetties](image-url)
… is managed by multiple agencies, creating problems related to overlapping functions & resulting lack of accountability.

**Governance Mechanism for Transportation system:**

- Presently, facilitation and management of traffic & transportation is done by multiple agencies/departments like Local Bodies, GCDA, GIDA, Roads and Bridges Corporation, PWD, NHAI, RTO, Police, KINCO, KSRTC, Railways, Road Fund Board, Inland Waterways Authority of India...

- **No single agency is solely accountable** for providing transport services as well as transport infrastructure, resulting in overlapping functions, functional and spatial fragmentation.

Hence, the need arose for establishing Unified Metropolitan Transport Authority, in place of these agencies to be able to provide Kochi with an integrated multi-modal transport system
UMTA has been designed considering National Urban Transport Planning guidelines and global best practices.

**Key Design Considerations for UMTA**

<table>
<thead>
<tr>
<th>Review of Laws &amp; Authority governing Urban Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity in Roles &amp; Responsibilities of UMTA</td>
</tr>
<tr>
<td>Governed by clear non-overlapping objectives</td>
</tr>
<tr>
<td>Embedded with strong customer service culture</td>
</tr>
<tr>
<td>Improved Governance and Accountability</td>
</tr>
<tr>
<td>Replacement of plethora of agencies, operating in this space</td>
</tr>
<tr>
<td>Uniqueness of the City driving the Agency’s mandate</td>
</tr>
</tbody>
</table>
UNIFIED METROPOLITAN TRANSPORT AUTHORITY (UMTA)

Umbrella Body to oversee and steer the transformation of Kochi’s Urban Transport
Its key functions are defined as follows:

**Key Functions of UMTA**

- ✔ Strategic Planning & Programming
- ✔ Project Preparation
- ✔ Project Implementation
- ✔ Operation & Management
- ✔ Policy Formulation
- ✔ Regulatory Functions
- ✔ Financing Functions

UMTA will be the ONE AGENCY responsible for planning, coordination & integration, management of Urban Transport Fund & Regulatory oversight.
Passenger Centric Plans

Signages for improved access

Disabled friendly Infrastructure

Intelligent Transport System

Feeder modes - small occupancy
NMT Master Plan

Strategies and interventions

- Placemaking
- Shaded Walkways
- Inclusive Accessibility
- Bike Sharing
- Signages

- NMT Master Plan
- Public Bicycle Sharing
- Urban Place Making
Introduction of Park and Ride Facility

ROTARY CAR PARKING SYSTEM

AUTOMATED CAR PARKING SYSTEM
Introduction of Feeder Bus Services
A Shift Towards Non-motorised Transport...

At present

Our goal
KOCHI'S PREPAREDNESS FOR TRANSFORMING PUBLIC TRANSPORT

OVERVIEW OF 'MY KOCHI' MOBILE APP

- Kochi Metro App
- Transport Services
  - Live train schedule
  - Route map
  - Fare details
  - Integrated Mobile ticketing
  - Location sharing
- City Information
  - City calendar
  - Weather forecast
  - Tourist destinations
  - Merchant Directory
- Public services
  - Emergency alerts
  - Hospital speed dials
  - Utility bill payments
  - Suspicious activity reporting
- Infotainment
  - Free Wifi
  - Music/video streaming
  - Live cricket scores
  - Restaurant search
- M-commerce
  - Cab bookings
  - Click & Collect
  - Mobile recharge
  - Bus/ train ticketing
  - Hyper Local
- Value added services
  - Wallet services
  - Concierge services
  - Shared cab services
  - Tourism services

PREPAREDNESS FOR TRANSFORMING PUBLIC TRANSPORT

Kochi Metro App

Transport Services

City Information

Public services

Infotainment

M-commerce

Value added services
Change in outlook

- The National Urban Transport Policy (NUTP, 2006) has recommended setting up of Unified Urban Metropolitan Transport Authorities (UMTAs) in million plus cities.

- Government of India (GoI) encourages the setting up of umbrella bodies that regulate the overall performance of the public transport systems and ensure that the city has a comprehensive public transport system.

- Government of Kerala (GoK) has constituted the UMTA committee for Greater Kochi area which is chaired by the MD, KMRL.

- Statutory backing through appropriate legislation needs to be provided to UMTA.
Key Issues which UMTA is designed to address (1/2):

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Strategic Planning**       | • Urban Transport Planning is not assigned to any one agency & responsibility is diffused  
                               | • No agency prepares consolidated multi-year integrated Urban Transport programs  
                               | • Route & integration decision is based on commercial viability         |
| **Project Preparation**      | • Performed either by public or private agencies  
                               | • Responsibility of respective implementation agency  
                               | • Lack of design guidelines & standards for many components of urban transport |
| **Project Implementation**   | • Responsibilities are clearly defined for center, state & city for individual mode of transport, however no clear responsibility for multi-model integration & facilities |
| **Operation & Management**   | • Performed either by public or private agencies  
                               | • Need or the agency to manage common ticketing, coordination for multi-modal terminals & public information systems  
                               | • Requirement of adequate staff & skill                                   |
Key Issues which UMTA is designed to address (2/2):

<table>
<thead>
<tr>
<th>Category</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Formulation</strong></td>
<td>• Policy formulation performed by national &amp; state governments can be improved</td>
</tr>
</tbody>
</table>
| **Regulatory Functions** | • Performed by multiple agencies  
                            • Performance issue in enforcement of regulations |
| **Financing Functions** | • Financing is done through annual budgetary processes  
                            • Government budgetary allocations or urban transport is unknown, uncertain & unpredictable  
                            • Can be used to ensure compliance with plans & programs |
Urban Transport requires heavy investment and the current sources of funding are insufficient and unsustainable

<table>
<thead>
<tr>
<th>Budgetary Allocations</th>
<th>Direct Sources</th>
<th>Indirect Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conlicting demands on the general exchequer</td>
<td>Tendency to charge subsidized rates has led to poor cost recovery, poor maintenance and inadequate investments. Cross subsidies are usually hidden.</td>
<td>Revenue such as betterment levies are not fully explored</td>
</tr>
<tr>
<td>Budgetary allocations are uncertain and unpredictable</td>
<td></td>
<td>Revenue from commercial activities such as advertising, selling/leasing, etc. are not fully realized</td>
</tr>
</tbody>
</table>

Unsustainable  Insufficient  Limited exploitation
Urban Transport should have a prudent mix of funding sources, so as to meet its requirements while not putting undue pressure on funding sources.
WHEN ?

1. Approval of Legal Framework for UMTA - January 2016
2. Implementation of Parking Policy - December 2016
3. Implementation of SMART card based ticketing system Under progress. First on Metro Rail, gradually on other modes - October 2016
4. Implementation of Non-Motorized modes of transport - 3 pilot projects were identified, viz., Aluva, Kalamassery & Fort Kochi. Walkway project contract at Panampilly Nagar, Kochi has been awarded. Planning & stake holders discussions for MG Road & Hospital roads are underway. December 2016
5. Implementation of IT based control - Tender for ITS ready, would be floated as part of Water Transport project under financial assistance of KfW - June 2017
6. Notification of Integrated Time-Table - October 2016
8. Adoption of Integrated Tariff policy - October 2016
9. Adoption of Master Transport Plan - December 2017
Vision of Kochi UMTA: “One Network- One Timetable-One Fare”
HOW ? - INSTITUTIONAL ARRANGEMENT

Authority/ UMTA Board

Executive Committee/ Executive Council

Southern Railway
Port Trusts
AAI

Corporate Management Wing
- Finance & Programming
- Administration
- Legal
- System Planning & Integration
- Project Management
- MIS/ IT
- Public Liaison

UMTA Commissionerate

Road Transport Division
Rail Transport Corporation
Metro Transport Division
Water Transport Corporation