Expert Group Meeting on Planning and Assessment of Urban Transportation Systems

Eng./Plnr. Nihal Somaweera
Secretary
Ministry of Transport and Civil Aviation
Sri Lanka

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About Sri Lanka

Sri Lanka
• Total area of the country - 65,610 km²
• Two climate Zones - wet and dry
• Mean temperature - 26 – 28 °C
• Total population - 21 million
• 25 Administrative districts are under 9 provinces
• Road network of the country consists of 112,997 km
• Rail network of the country consists approximately 1,450 km
• Per capita GDP – US $ 3,818
Ministry of Transport and Civil Aviation

Key role: Establishment and maintenance of an efficient National Public Transport System.

Institutions under the purview of the Ministry

- Department of Sri Lanka Railway
- Sri Lanka Transport Board
- Department of Motor Traffic
- National Transport Commission
- National Transport Medical Institute
- Civil Aviation Authority
- Airport and Airport Services (Sri Lanka) Ltd.
- Lakdiva Engineering Pvt. Ltd.
- National Council for Road Safety
Background and Status of National Transport System

- Main passenger transport modes: Bus transport & Rail transport
  Three wheelers, Private taxies, cars, vans etc

- Travel demand by all modes of motorized transport around 80 billions passenger km annually

- Passenger transport: undertaken by both Public and Private buses.
- Bus transport share: 61% of the country’s total passenger transport.

  Total number of buses (approximately) : 30,000
  Average number of private buses operated daily : 24,000
  Average number of government owned buses : 6,000

- Percentage of road transport method for freight : 98%
  (vans, Lorries, Larger trucks, containers etc )
Existing Road Network System

- Roads are the backbone of the transport sector in the country.
- About 90 percent of passengers and 98 percent of freight are carried by the road.
- The road network of the country consists of 116,000 km. Roads are divided into National, Provincial, Rural and other roads in terms of the responsibility.
- Sri Lanka has experienced in expressways lines
Road Network 116,000 km

<table>
<thead>
<tr>
<th>Type of roads</th>
<th>km</th>
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<tbody>
<tr>
<td>National Highways</td>
<td>12,334</td>
</tr>
<tr>
<td>Provincial Roads</td>
<td>15,975</td>
</tr>
<tr>
<td>Rural Roads</td>
<td>83,765</td>
</tr>
<tr>
<td>Other roads</td>
<td>4,000</td>
</tr>
<tr>
<td>Road density</td>
<td>1.76 km/sq. km</td>
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National Highways

<table>
<thead>
<tr>
<th>Type of roads</th>
<th>km</th>
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<tbody>
<tr>
<td>Expressways</td>
<td>161</td>
</tr>
<tr>
<td>A Class Highways</td>
<td>4,215</td>
</tr>
<tr>
<td>B Class Highways</td>
<td>7,958</td>
</tr>
<tr>
<td>Bridges</td>
<td>4200</td>
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</table>
Expressway Network

- Southern Expressway (126.1km)
- Colombo – Katunayaka Expressway (25.8km)
- Outer Circular Expressway (29.2km)
Existing Rail Network System

• The total route length of Sri Lanka Railway is 1,450km, consisting 172 major stations and 161 sub stations that covers most of the country except the southeast.

• Except for 126km double –track lines around Colombo, rest of the network is single track line.

• The present railway system provides the suburban railway service from suburbs to the city centre.

• Policy Perspectives and Strategic Investment programme 2016 – 2021 was prepared for Railway sector in 2015 covering all parts of the country.
Background and status of Urban Transport System

- Colombo is the Capital of the Sri Lanka
- Colombo and its metropolitan area — referred as the Colombo Metropolitan Region (CMR) — fall within the Western Province
- Total area of the western province is 3593 square kilometers.
- The Colombo Metropolitan Region (CMR) is defined as 80% of the land area of the Western Province where total population approximately 5.8 million.
• Colombo attracts around 1.7 million people enter and leave the city for daily work, business, education, shopping, entertainment and recreation, of these people, approximately 55% arrive by buses, while 12% arrives by trains.

• Colombo Metropolitan Region has experienced 5% of annual increase in the number of persons arriving to the city on a daily basis.
### Migration from Public to Private Transport

**Unit:** 1,000 Passengers per day, Both Direction

<table>
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<th>Year</th>
<th>Private</th>
<th>Bus</th>
<th>Rail</th>
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<tbody>
<tr>
<td>1985</td>
<td>1,061</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>1995</td>
<td>1,679</td>
<td>33%</td>
<td>26%</td>
</tr>
<tr>
<td>2004</td>
<td>1,697</td>
<td>33%</td>
<td></td>
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<tr>
<td>2013*</td>
<td>2,066</td>
<td>42%</td>
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**Average Annual Growth Ratio (AAGR) 1985-2013**

- **Public Transport (Bus and Railway):** 1.5% (58%)
- **Private Modes:** 4.2% (42%)

**All modes:** 2.2%

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*Total passengers at CMC boundary at all survey location was 2.1 million passengers per day (both direction). For the comparison purpose, survey locations surveyed in '85, '95 and '04 were selected.*
The travel demand in urban transportation is rapidly increasing due to:

- Increased mobility of the people with the dawn of peace after the civil war in the country
- Ongoing massive urban development projects
- Increased number of privately owned vehicles with economic growth

The number of vehicles increased a factor of 2.5 in 12 years.

*The number of motor vehicles with valid revenue licenses.*
The share of private car will be almost one third of total inter-zonal motorized trip due to increase of high income groups.

The share of public transport by income group slightly increases due to public transport system development.
Railway Coverage

**Railway Network – 230 km**

**Puttalam Line**
30 trains/day/both dir. (Negombo-Ragama)

**Train Operation Frequency per day**

Note: Peak hour frequency will be added later.

**Main Line**
116 trains/day/both dir. (Gampaha-Ragama)
Approx. 30km/h

**Busiest Section**
[Fort-Maradana]
287 trains/day/both dir. Only 16km/h

**Kelani Valley Line**
18 trains/day/both dir. (Homagama-Maradana)
Approx. 25km/h

**Coast Line**
92 trains/day/both dir. (Dehiwala-Fort)

**3km buffer from Railway Lines**

Source: CoMTrans
Institutional arrangements and agencies involved in planning, development, assessment and monitoring of sustainable transport and urban transport systems/projects.

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<td>Road Development Authority</td>
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<td>Sri Lanka Police</td>
<td>Traffic Police</td>
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<tr>
<td>Ministry of Megapolis and Western Development</td>
<td>Urban Development Authority</td>
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<td>Megapolis Project</td>
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<tr>
<td>Provincial Councils</td>
<td>Provincial Passenger Transport Authorities</td>
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<tr>
<td>Municipal Government</td>
<td>Colombo Municipal Council</td>
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National Urban Transport Policies and Plans

- The Ministry of Transport and Civil Aviation with the technical assistance of Japan International Cooperation Agency (JICA) completed a Master Plan for Urban Transport System Development for Colombo Metropolitan Region and the Suburbs in 2014.

- Same Technical Assistance a feasibility study for the implementation of a monorail system was completed.

- A prominent University of Sri Lanka a study was undertaken to study the Implementation of Bus Rapid Transit system in a congested transport corridor

- Recently established Ministry of Megapolis and Western Development was used the above two comprehensive studies data and developed Western Region Transport plans with collaborating all the transport sector involvement agencies
Ongoing and Planned Major Urban Transportation Projects

- A feasibility study to construct a Multimodal Transport Hub in Colombo Fort so as to integrate all transport modes for the convenience of both rail and bus passengers.
• Ministry of Transport and Civil Aviation conduct feasibility study for identifying the issues and projects to modernize urban railway system under the Technical Assistant from Asian Development Bank.

• The Ministry of Transport and Civil Aviation with the Ministry of Megapolis and Western Development, has initiated project preliminary works for several transport projects; such as Urban Rapid Transit system (LRT)
• With the commissioning of Kottawa-Matara and Kottawa-Kadawatha express highways Kottawa has become as a major transport hub. Therefore upgrading of KV line at least up to Kottawa is a basic requirement to attract private car passengers to the public transport.

• Upgrading of KV line will also helps to ease the traffic problem on High level road.
Multi modal centers development as traffic Nodes

Detailed locations of proposed transport facilities and network alignments will be examined and identified in the pre-feasibility or feasibility study stage.
Kandy City Development

- Kandy City records 40,000 registered vehicles, a high vehicle ownership rate of 255 vehicles per 1,000 persons.
- Around 325,000 people enter the Kandy City during the 12 hour day time of a weekday
  - around 90,000 arrive for employment
  - 60,000 for education.
- Share of public transport is around 64% of motorized trips of which the railway share is only 2%; well below that of Colombo and also the national modal share.
- Around 19% continue their travel through the city.
- Buses entering the city are estimated to make 5,000 trips carrying 200,000 passengers.
To improve mobility within the Kandy City (Kandy Municipal Council area) and its environs initially included the following subcomponents:

- Public transport improvements
- Traffic and parking management
- Enhanced and safe pedestrian movements
- Strategic road improvements

Ongoing and Planned Major Urban Transportation Projects

- around 1,000 school vans entering the city on school days carrying over 16,000 passengers. The balance made up of nearly 45,000 private vehicles that dominate the traffic flow, carry around 100,000 passengers in to the city.
Issues and challenges faced by the Urban Transport System

Issues relating to Road Transport

• The conditions of the balance roads are unsatisfactory contributing to unnecessary delays and accidents.
• New roads cannot be built in urban areas and roads, cannot be widened due to old settlements closer to the roads.
• There is a dis-connectivity in the cross-sectional configuration of the road.
• Unsustainable increase in other modes of transport such as three wheelers, Motor bikes, Lorries, Vans containers aggravated the situation.
• Due to traffic congestion in recent years on the roads bus-operating speeds in peak periods have been decreasing. It has led to a lower level of bus service.
Issues relating to the Railway Transport

• The existing railway network in Colombo and other cities cannot cater to the needs of the growing population. Sri Lanka does not have electric trains/Metros or Monorails to reduce urban traffic congestion.
• The present railway system provides the suburban railway service from suburbs to the city Centre.
• Outdated rolling stock, weak rail tracks and outdated signaling system caused frequent delays to railway passengers.
• Absence of close connections on railway, road and air.
• New technological changes in the industry have not been appropriately adopted in to the Sri Lanka Railway activities
• Absence of inner circular railway track in Colombo Metropolitan Region to cater for the traffic congestion.
Issues and challenges faced by the Urban Transport System

Other issues relating to the Transport sector

- Inadequate attention of Multimodal Transport - Lorries, Constrainers and other modes of freight transport is conducted through roads causing traffic congestion in Colombo and other areas.
- Rapid motorization and Frequent Road Traffic Accidents
- Insufficient para transport infrastructure facilities
- Lack of comfort, efficiency and safety in public transport services
- Issues in accessibility and mobility of transport for all
- Depending on national budget for Transport Services
- Scare space for infrastructure development in the city areas (eg:- shortage of parking facilities, lack of bus stop facilities, absence of walking space for pedestrian)
- Unavailability of land use plan
Way Forward

• Suggestion on selection of key indicators for evaluation and assessment of urban transport systems and improve data collection
  ➢ Promotion of Public Transport Use
  ➢ Alleviation of Traffic Congestion
  ➢ Reduction of Air Pollutants/Traffic Noise and Promotion of Health
  ➢ Reduction of Transport Accidents and Improvement of Security

• Suggestions to improve planning and evaluation of urban transportation systems
  ➢ Strengthening the coordination mechanism among the related stakeholder Institutions.
  ➢ Promote Public Private Partnership (PPP) Implementation for mobility financial resources.
  ➢ Capacity development of officers in the transport sector.
• Suggestions on policies and strategies to improve urban transportation systems

➢ Extensive Development of Quality Public Transport Networks
➢ Enhancement of Inter-modality (Development of Multi-modal Transport Hubs, Multi Modal, Centers and Park and Ride Facilities)
➢ Modernization of Sri Lanka Railway Main Line, Coast Line and Puttalam Line (Electrification, Direct Operation, Improvement of Existing Railway Facilities)
➢ Development of New Transit Systems
➢ Introducing a Bus Rapid Transit (BRT) System
➢ Transit Oriented Development (TOD) in the Areas Surrounding Railway Stations
➢ Construction of Arterial Roads to accommodate BRT
➢ Reformation of the Bus Operation Regime
➢ Improvement of Management of Railway Operation
Cont.. Way Forward

• Suggestions on tackling issues and challenges to enhance sustainability of urban transportation systems in your country/cities

- Road Widening to increase Road Traffic Capacity
- Construction of Flyovers and Underpasses at Bottleneck Intersections
- Arterial Road Development in Suburban Areas
- Urban Expressway Network Development
- Transport Demand Management (TDM)
- Traffic Control Improvement
- Secure Lands for Road Development (Road Network Master Plan)
- Separation of Heavy Vehicles from General Traffic (Port Access Road)
- Enhancement of Vehicle Inspection and Maintenance Programs
- Low Sulphur Diesel Program
Cont..  *Way Forward*

- Promotion of Hybrid Cars and Electric Vehicles
- Promotion of Natural Gas Vehicles
- Promotion of Walking and Bicycles for Health
- Education on Traffic Safety
- Rehabilitation and Installation of Traffic Signals
- Rehabilitation of Railway Signal System
- Analysis on Causes of Traffic Accidents
- Provision of Sidewalks and Pedestrian Crossings
- Establishment of Urban Road Design Standard including Sidewalks
- Improvement of the Security of Women and Children in Public Transport
Thank You..!