

TRANSPORT ISSUES / CHALLENGES AND FUTURE REQUIREMENTS OF SRI LANKA



M.M.P.K. Mayadunne
Secretary
Ministry of Transport & Highways

Sri Lanka

An Island situated in the Indian Ocean, off the base of the Indian Sub Continent

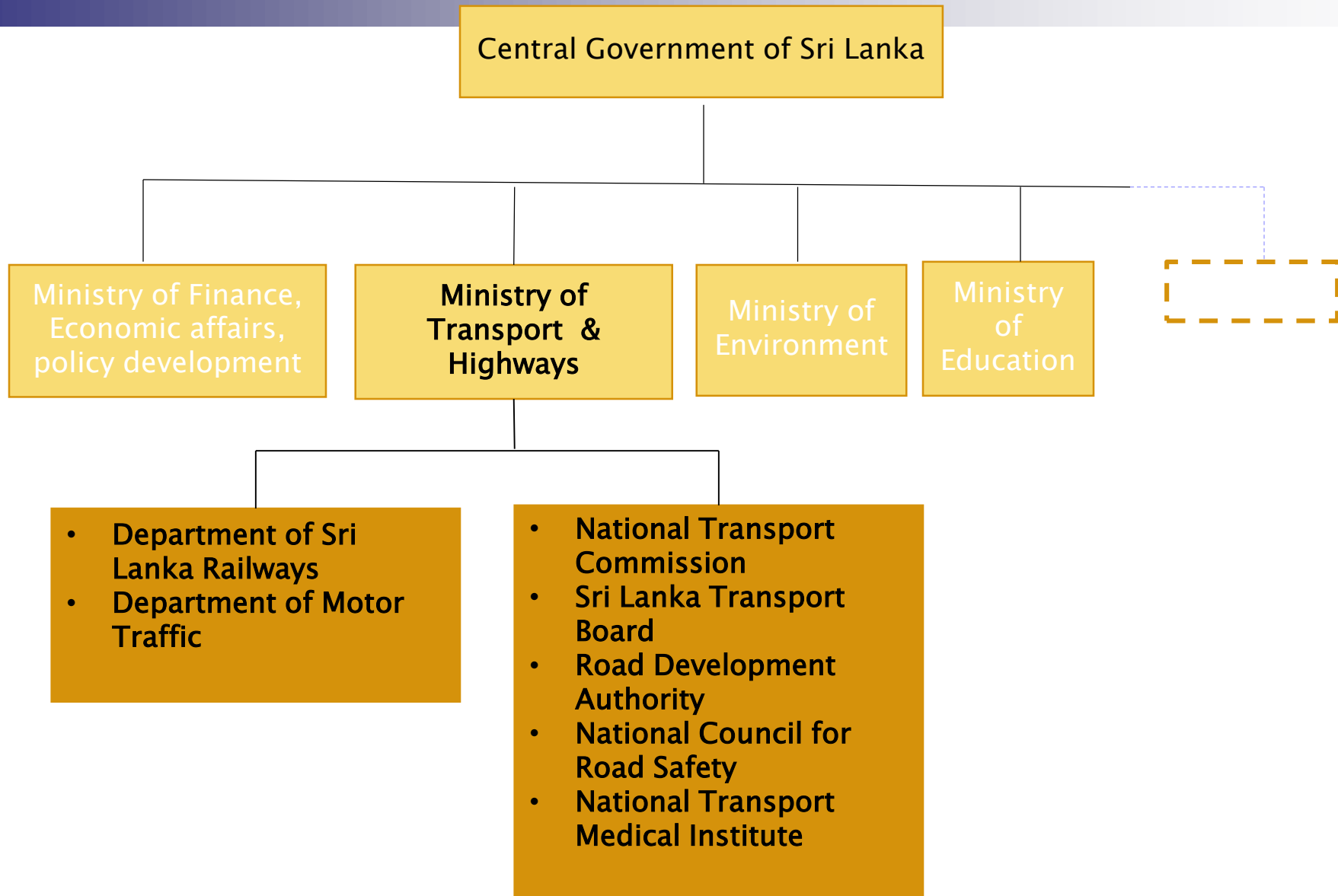
- Total Land Area - 65,610 sq.km
- 433 km long(N-S) and 226 km wide(W-E)
- Commercial Capital – **Colombo**
- Total Population: 22.2 million; Multi ethnic & multi religious
- Population Density 354 persons per Sq.km
- Per Capita GDP US\$ 3,474



Key Economic Indicators:

Key Economic Indicators	2019	2020	2021	2022
GDP Growth Rate (%)	-0.2	-4.6	3.5	-7.8
Unemployment Rate (%)	4.8	5.5	5.1	4.7
GDP Per Capita \$	4082	3858	3997	3474

Sectoral Composition	GDP	Employment
Agriculture (%)	-4.6	26.5
Industries (%)	-16.0	26.5
Services (%)	-2.0	47.0



Transport Infrastructure Facilities

Description	Length
Length of Total Road Network (approximately)	119,370km
Length of Expressways	312.6km
Length of A & B Class National Roads	12,255km
Length of C & D Class Provincial Roads	18,600km
Length of Rural Roads (approximately)	88,200km
Length of Operating Railway Tracks (2020)	1,648km

National Planning Hierarchy

Legal Provision :Town & Country Planning Ordinance No. 13 of 1946, amended by Act No. 49 of 2000

Planning Authority

National Physical Planning Department (NPPD)

Technical Advisory Committee (TAC)

Inter-Ministerial Coordinating Committee (IMCC)

National Physical Planning Council (NPPC)

Regional Planning Committee/ National Physical Planning Department (NPPD)

Technical Advisory Committee (TAC)

Inter-Ministerial Coordinating Committee (IMCC)

National Physical Planning Council (NPPC)

Urban Development Authority

Local Authorities

Mahaweli Development Authority

National Physical Planning Department

Level 1: National Level

National Physical Planning Policy
& National Physical Plan

Level 2: Regional Level

Regional Physical Plan

Sectorial Policies and
Plans/ Action Projects

Level 3: Local Level

Local Physical Plan

Action Projects

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National Physical Planning Policy and Plan 2048

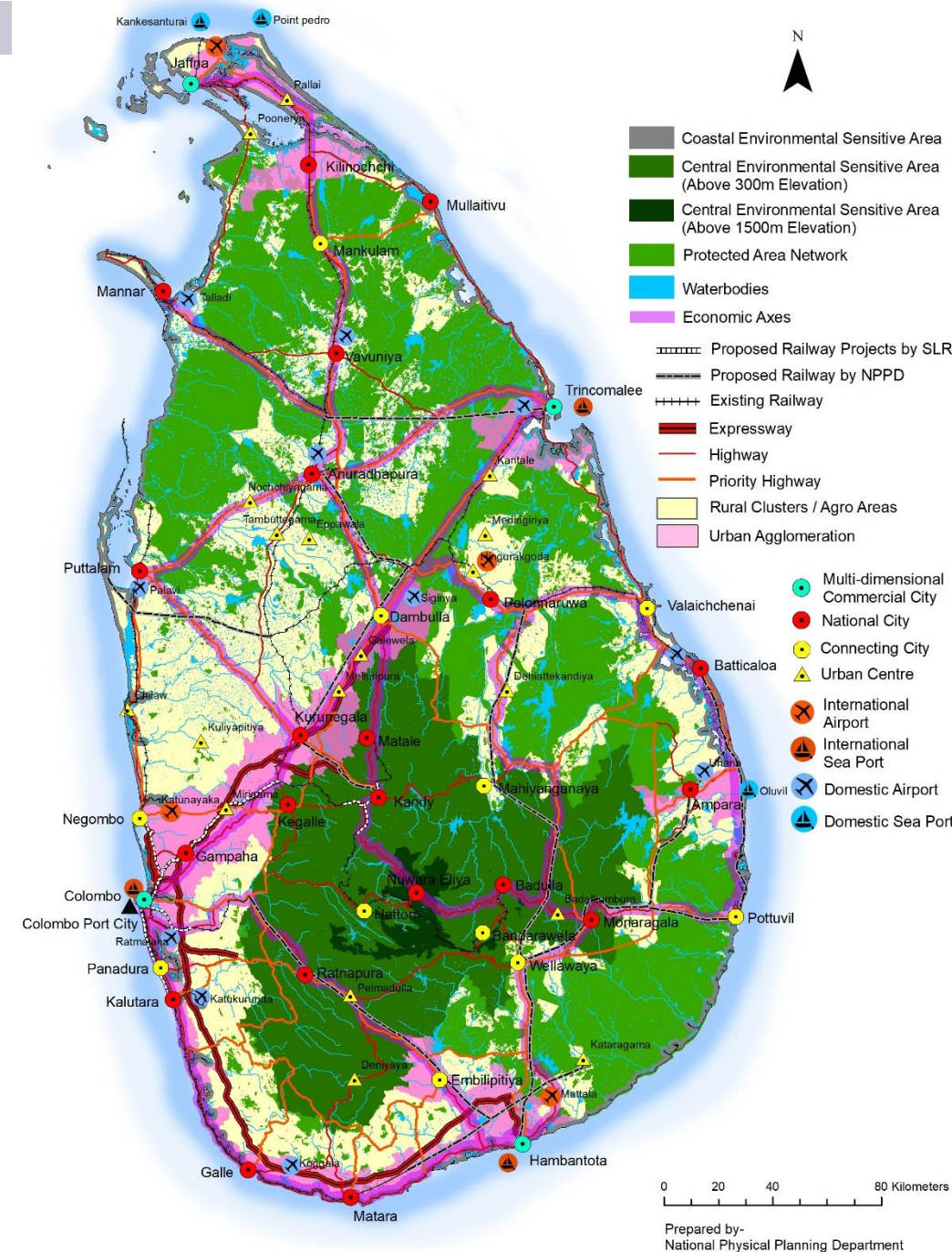
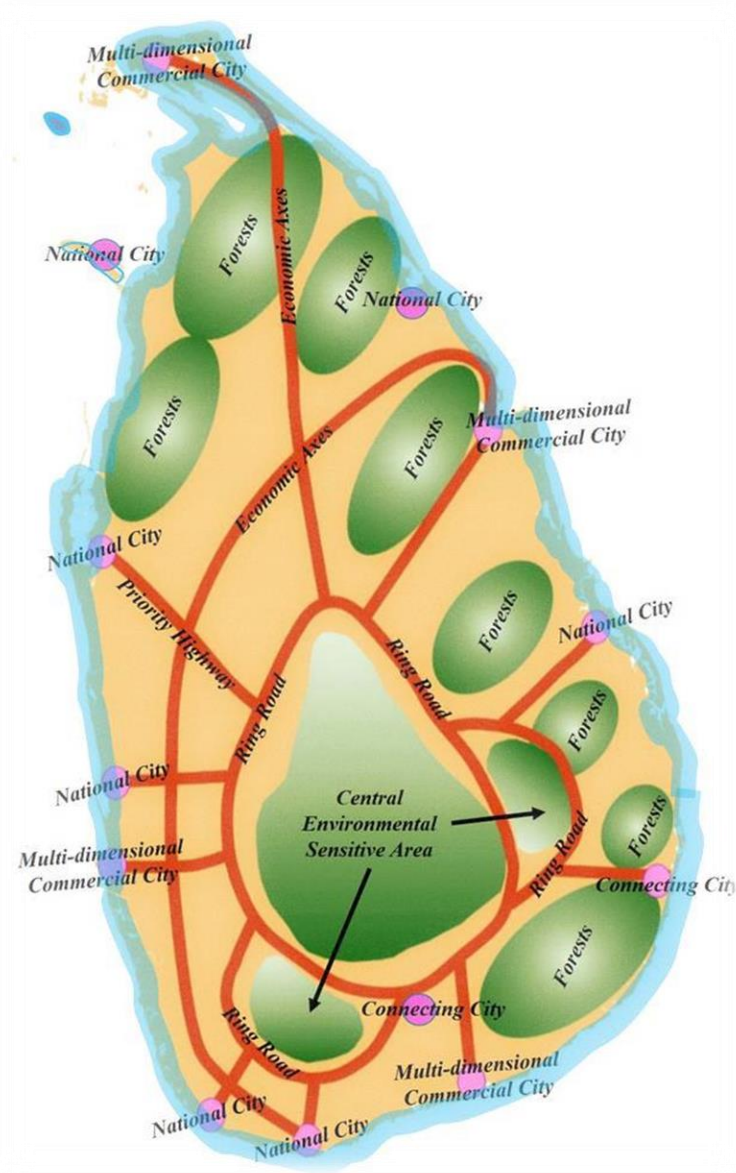
Vision

***“Planned, Sustained
and
Prosperous Nation”***

by 2048

National Spatial Structure Plan - 2048

Conceptual Plan



National Physical Plan ➡ *Transportation Development*

Main Considerations,

- ❑ Pro-active approaches
- ❑ Optimization of the available infrastructure
- ❑ Investment on economically feasible projects
- ❑ Selection of environmentally sustainable modes
- ❑ Introduction of modern technology for efficiency and comfort
- ❑ Equality and Equity in investments



National Physical Plan

1. Environmental Management Strategies
2. Urban Development Strategies
3. **Transportation Development Strategies**
4. Physical Infrastructure Development Strategies
5. Social Infrastructure Development Strategies
6. Agriculture, Plantation and Livestock Development Strategies
7. Fisheries Development Strategies
8. Industrial Development Strategies
9. Tourism Development Strategies
10. Digital Infrastructure Development Strategies
11. Cultural Development Strategies
12. Oceanic Resources Exploration and Development Strategies



Transportation Development Strategies

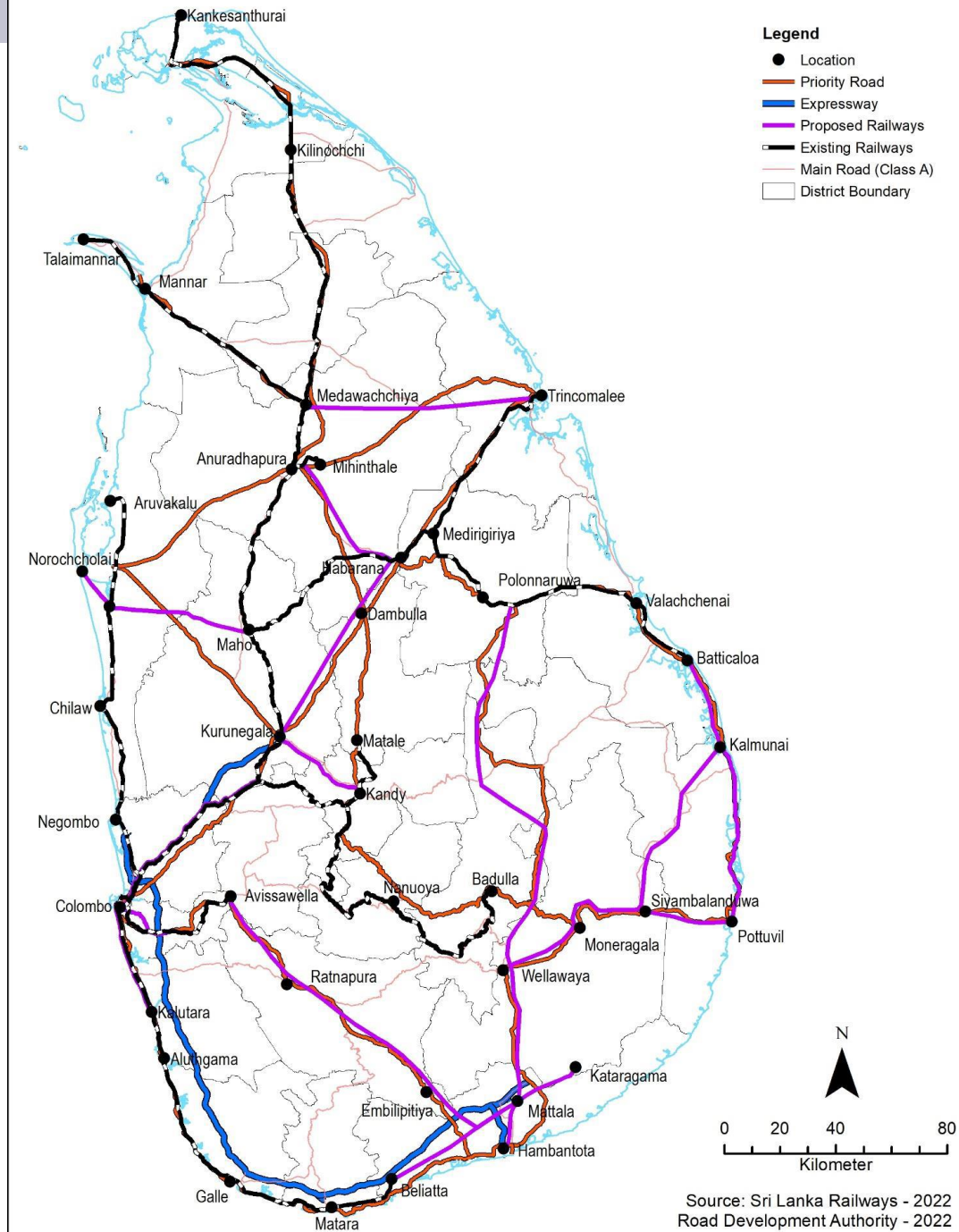
- Ensure the easy and speedy accessibility within the proposed settlement hierarchy
- Expansion of services for passengers and goods transportation
- Improve roads identified as economic axes on priority basis
- Promote integrated transportation modes
- Optimum use of available roads
- Provide underground ducting for Services
- Regulate through national/regional planning and local planning
- Maximize land use at expressway inter-changes

Transportation Development Strategies

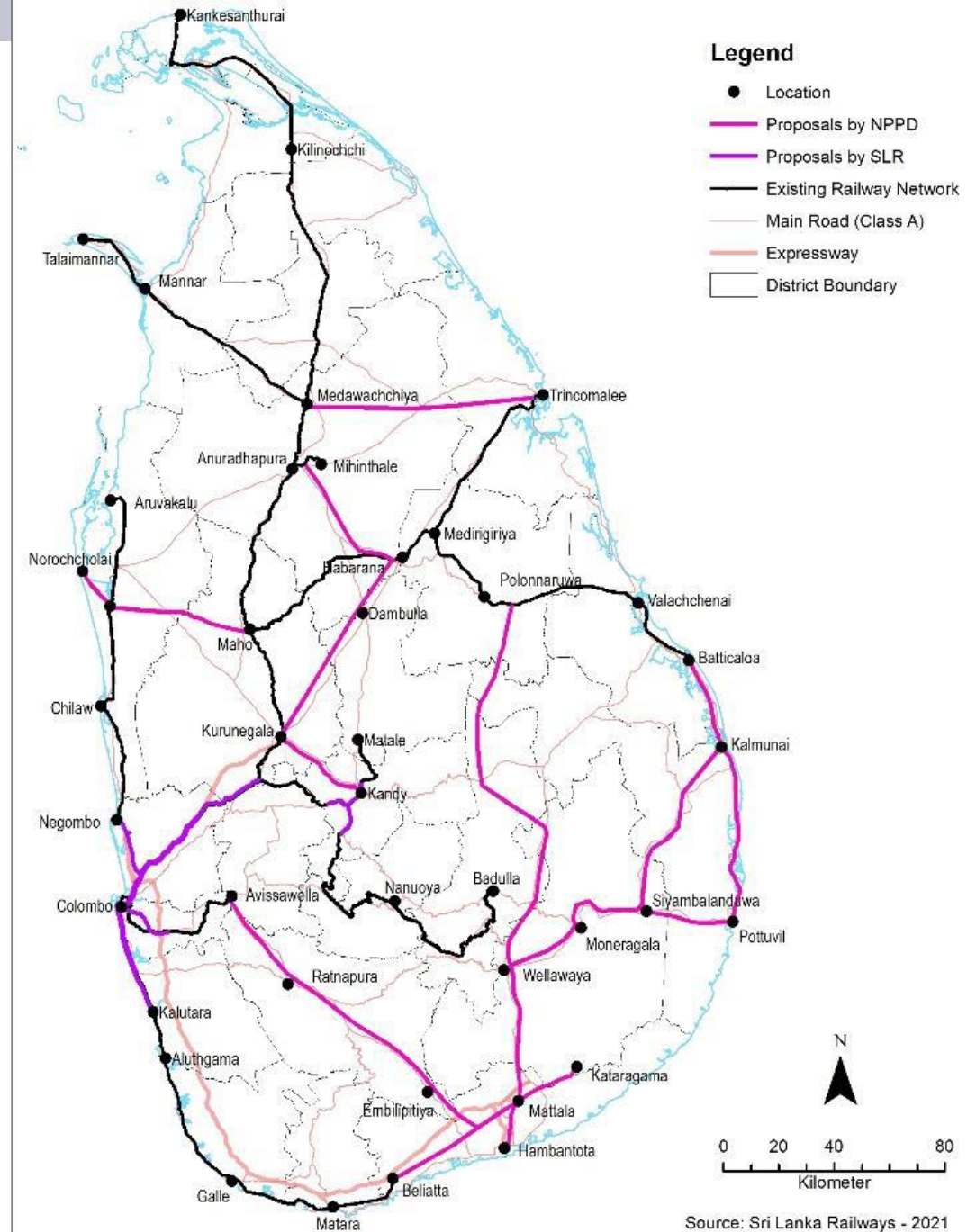


- ***100% Completion of economic infrastructure of the Economic Axes (roads and rails) by 2030***
- ***Ensure connectivity through convenient, efficient and affordable goods and services transportation network throughout the country***

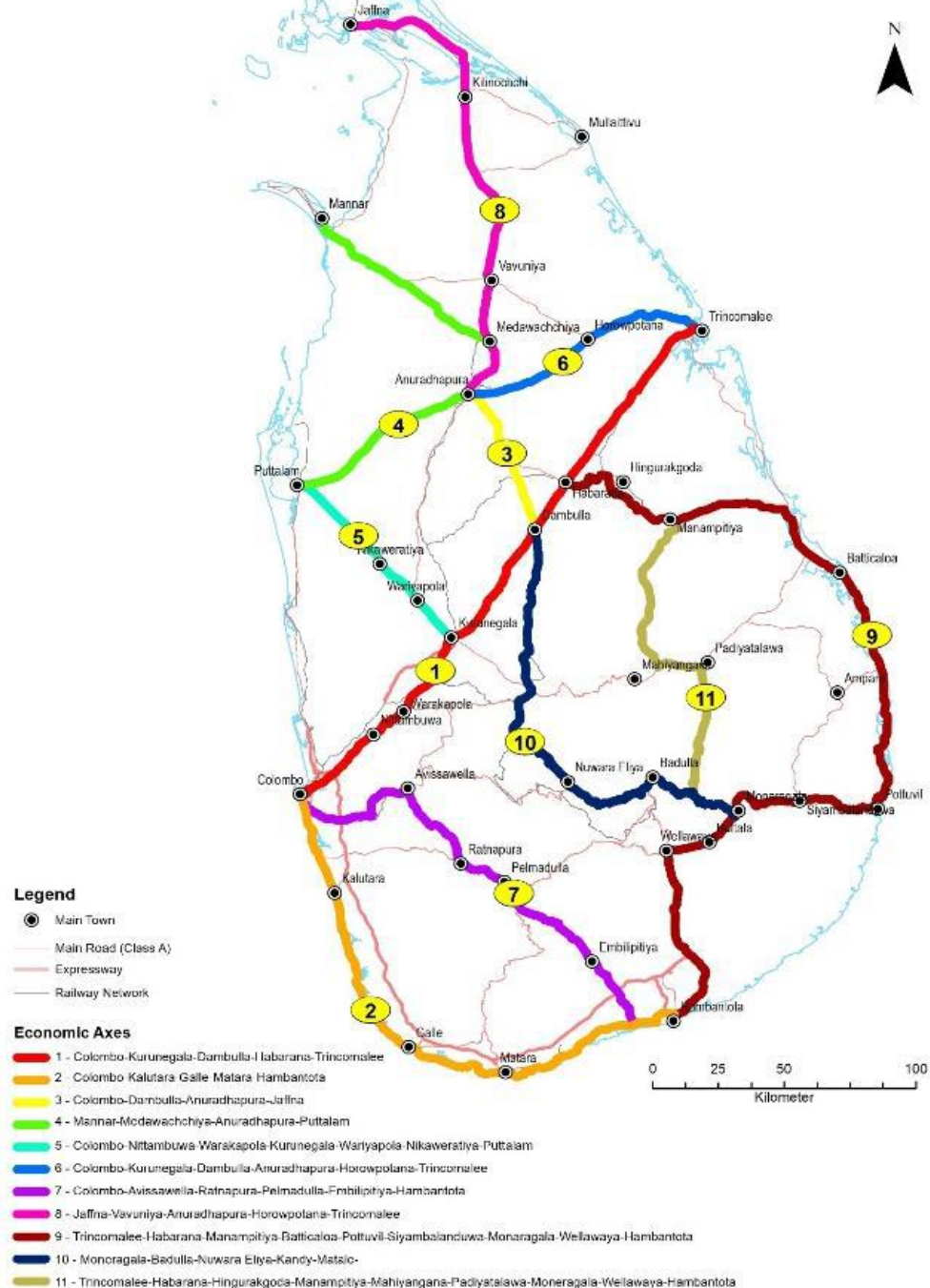
Proposed Economic Axes



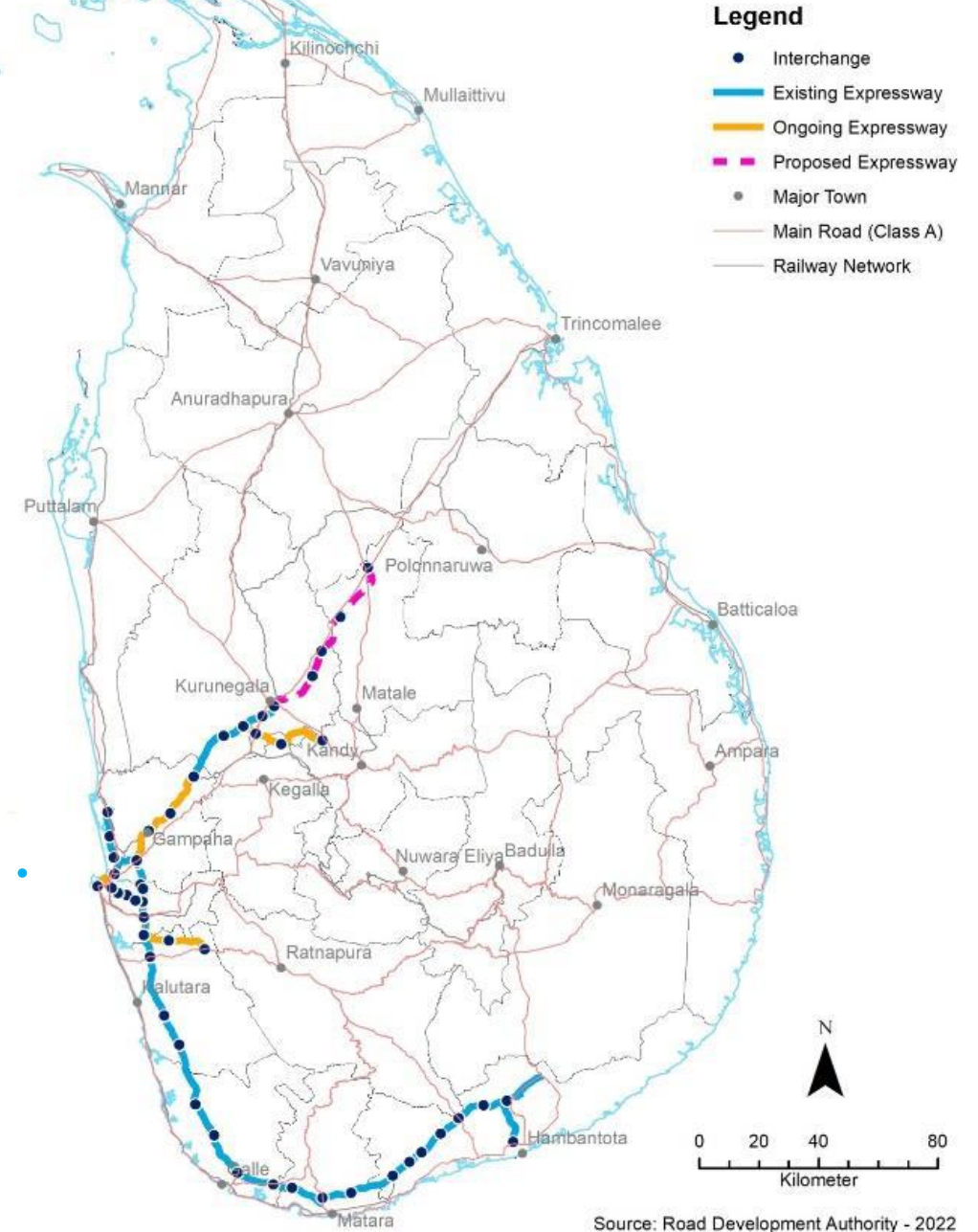
Existing and Proposed Railways to be used as Economic Axes



Existing Roads to be used as Economic Axes



Existing and proposed Expressways to be used as Economic Axes





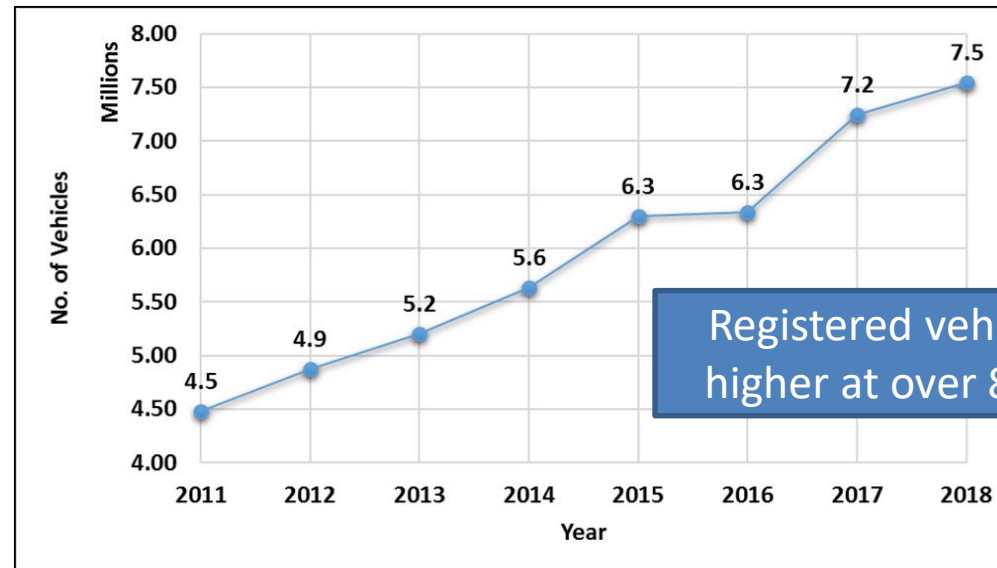
Issues / Challenges in Transportation

- High Private Vehicle Share in Traffic
- Poor Public Transport Facilities
- Poor Reliability in Public Transport
- Lack of Integration between different transport modes
- Lack of advanced technology usage in Public Transport
- High Carbon Emission
- Traffic Congestion in Urban Areas
- Lack of transport-related data availability for Evidence-Based Decision Making (EBDM)

Urban Transport Issues

Main transportation problems in urban areas are;

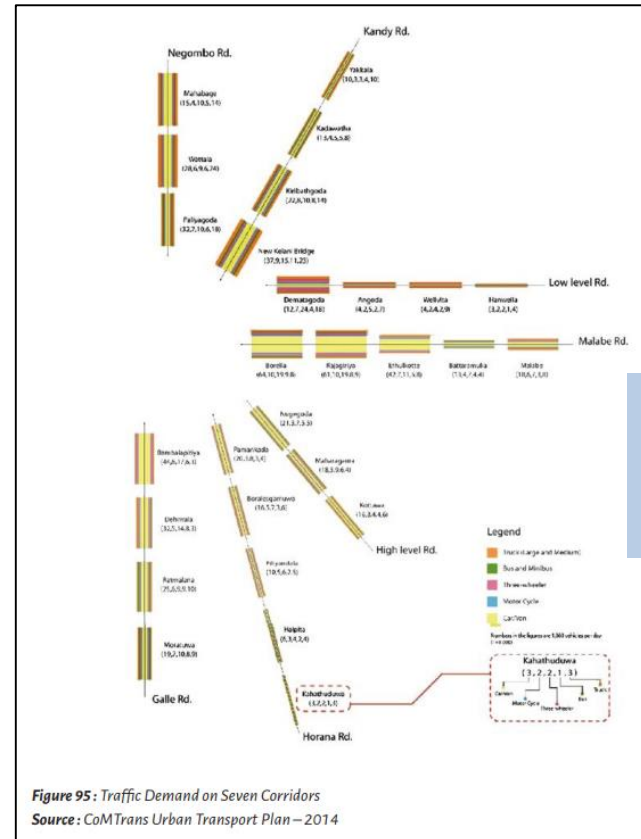
- Traffic Congestion
- Motorization grows, Road space to be increased
- More private vehicles
- Traffic Accidents
- High energy cost (fuel wastage etc)
- Air Pollution



Registered vehicles are higher at over 8M now.

Urban Transport Issues in Colombo

- Colombo City is the center of the economy in Sri Lanka.
- Trip attraction points located within the city induce higher daily regular travel demand towards the city core.
- Large amount of ad-hoc movements since it binds all parts of the country by keeping the country's major road and rail passenger transport node within the center of the city.

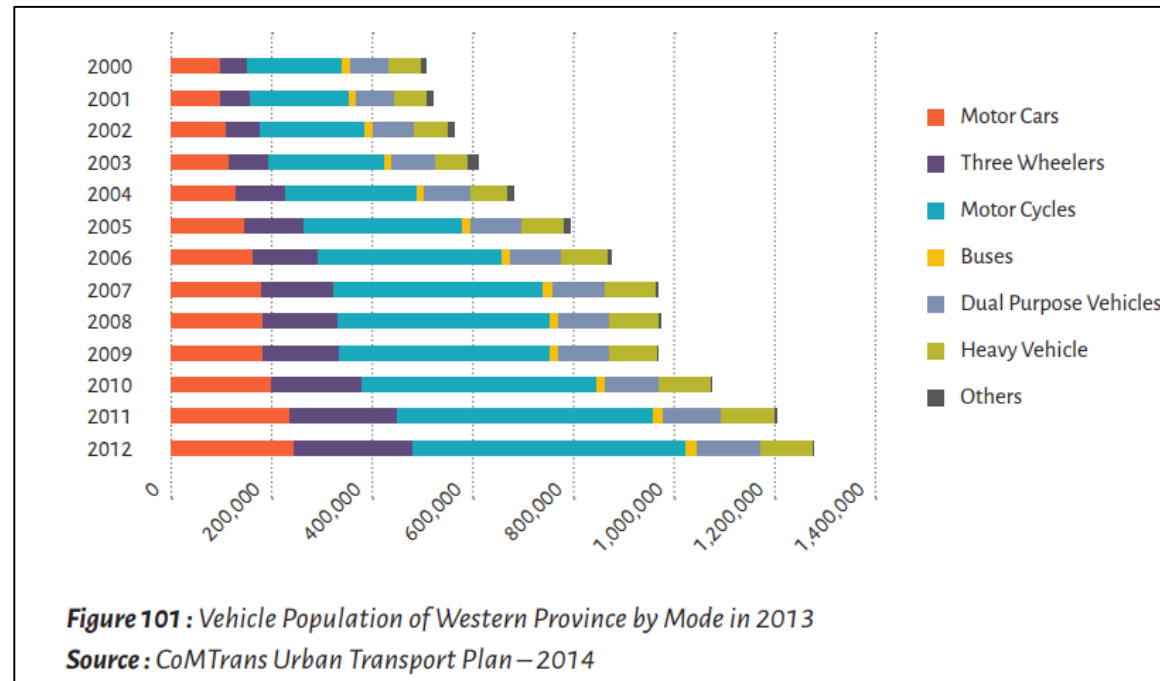


- Heavy traffic flows towards/outward the City
- Rapid increase number of vehicles

Figure 95: Traffic Demand on Seven Corridors
Source: CoMTrans Urban Transport Plan – 2014

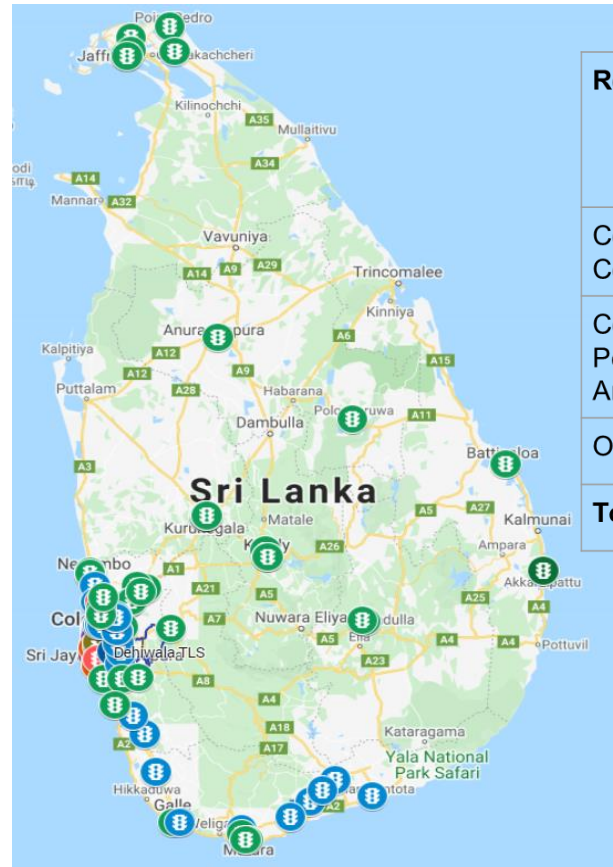
Reasons for traffic Congestion

- Due to poor condition of Public Transportation, passengers are shifting from public transportation to private transportation
- Vehicle Sharing within Colombo city is imbalanced (more private vehicles)
- Considerable goods vehicles movements are within Colombo city during peak hours



Reasons for traffic Congestion

- Uncontrolled road side developments and unauthorized road side parking have reduced the road capacity.
- Number of grade intersections within the city



Region	TLS Junctions on A/B Class Roads	Pelican Crossings on A/B Class Roads
Colombo Core Area	44	11
Colombo Periphery Area	33	24
Outstation	31	41
Total	108	76



Reasons for traffic Congestion

- Traffic demand exceeds the design capacity of most of the road infrastructure
- Inadequate traffic management practices and inadequate enforcement of traffic regulations.
- Poor road user behavior and undisciplined driver behavior.
- Inadequate public parking facilities.

Congestion Countermeasures

Traffic Congestion countermeasures are basically classified into **demand** and **supply** measures.

Demand Strategies

- 1) Develop of Public Transport (PT)
- 2) Congestion Pricing
- 3) Parking Pricing
- 4) Road Pricing
- 5) Restriction on vehicle ownership



PT should be first, then only others will work well.



Supply Strategies

- 1) New expressways
- 2) Road improvements
- 3) Road Rehabilitation
- 4) Junction improvements
- 5) Bridge replacements
- 6) Signal system upgrades.

A Supply Strategy alone is not a sustainable solution and it has limitations in urban areas as

- Acquisition Issues
- More developed area

Public Transport Plays a big role in mitigating traffic congestion



Cities can never provide enough road space to fulfill the transport demands of cars.

The only effective solution is to develop public transport

Reducing Carbon Emissions in Transportation

Sri Lanka is committed to Carbon Neutrality by 2050 in accordance with Published National Determined Contributions (NDCs).

Initiatives for the reduction of Carbon Emissions

- Railway Electrification
- Introduction of Electric Buses
- Introduction of Electric Vehicles 3Wheelers, 2Wheelers
- Promotion of Electric Vehicles Usages
 - Establishment of charging Points to facilitate increasing use of Electric Vehicles
 - Utilization of Solar Electric energy for Charging points
 - Establishment of Electric Vehicle battery recycling ecosystem.



Improvement of Intermodal Connectivity

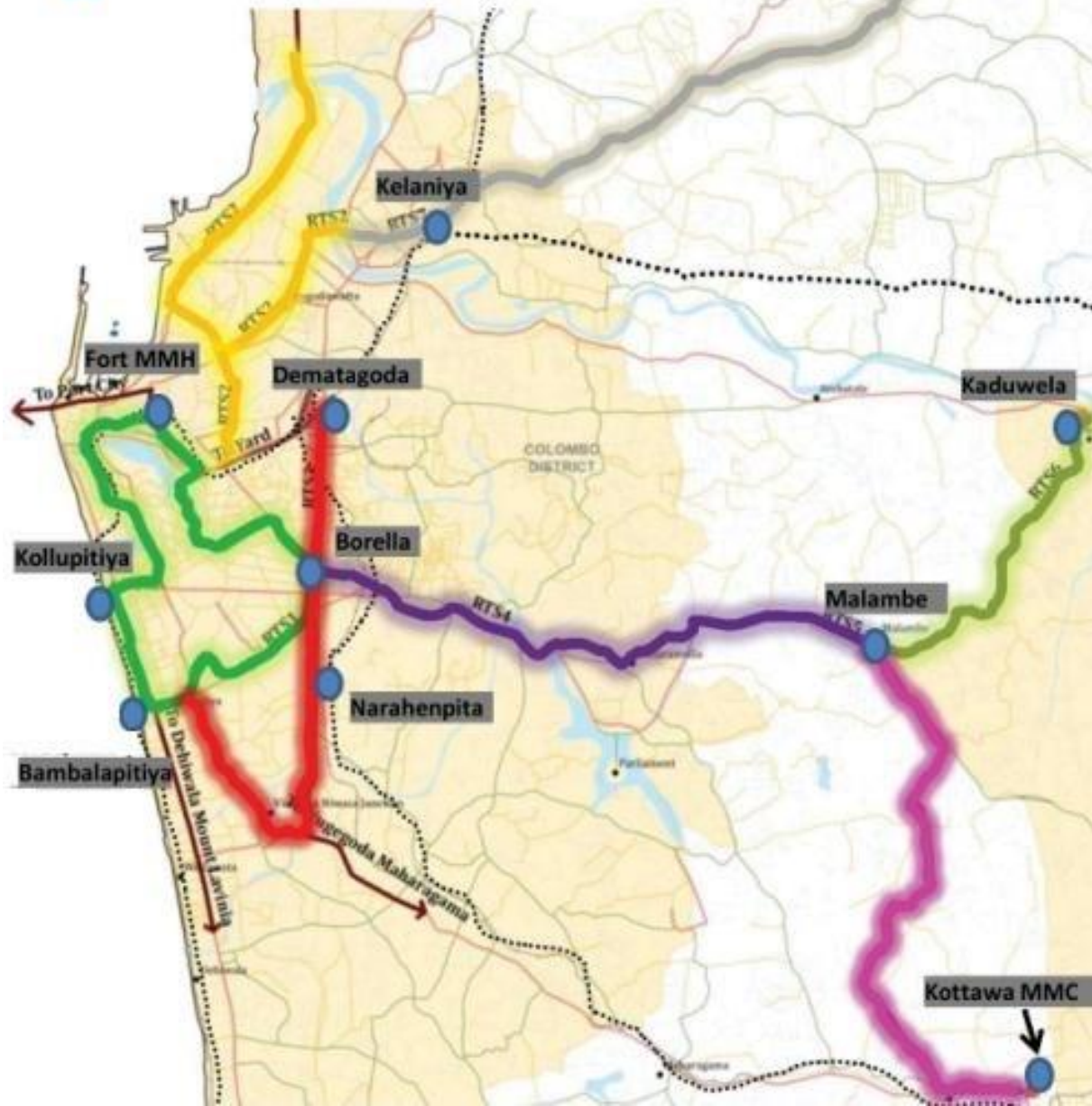
- Establishment of Multi Model Transport Hubs
 - Makumbura Multimodal Center – in Operation
 - Kadawatha Multimodal Transport Hub – in Operation
 - Kandy Multimodal Transport Terminal – Procurement in Progress
 - Proposed Pettah Multimodal Transport Hub
- Provision of Park & Ride Facilities at Multimodal Centers



Urban Transport System Development

- ❑ Numerous studies have been undertaken to assess urban transport issues in Colombo Metropolitan area and finding solutions.
- ❑ **Public transport system development** is the most **sustainable solution** to meet the increasing transport demand thereby **reducing traffic congestion** and **minimizing environmental pollution**.
- ❑ Light Rapid Transit (LRT) has been identified as the most appropriate mode of Rapid Transit System (RTS) along the identified 7 corridors.

PROPOSED LRT NETWORK



Elevated RTS – Line 1 (Green)

Fort – Kollupitiya-Bambalapitiya- Borella-Union Place-
Maradana (15km)

Elevated RTS – Line 2 (Orange)

Fort- Maradana- Mattakkuliya/Peliyagoda (11.5km)

Elevated RTS – Line 3 (Red)

Dematagoda-Borella-Kirulapone-Havelock City-
Bambalapitiya (10km)

Elevated or at grade RTS – Line 4 (Purple)

Borella – Battaramulla (10Km)

Elevated or at grade RTS – Line 5 (Pink)

Battaramulla – Kottawa via Malabe (9.6km)

Elevated or at grade RTS – Line 6 (Olive)

Malabe – Kaduwela (6km)

Elevated or at grade RTS – Line 7 (Ash)

Peliyagoda – Kadawatha (13km)

Intelligent transportation system (ITS)

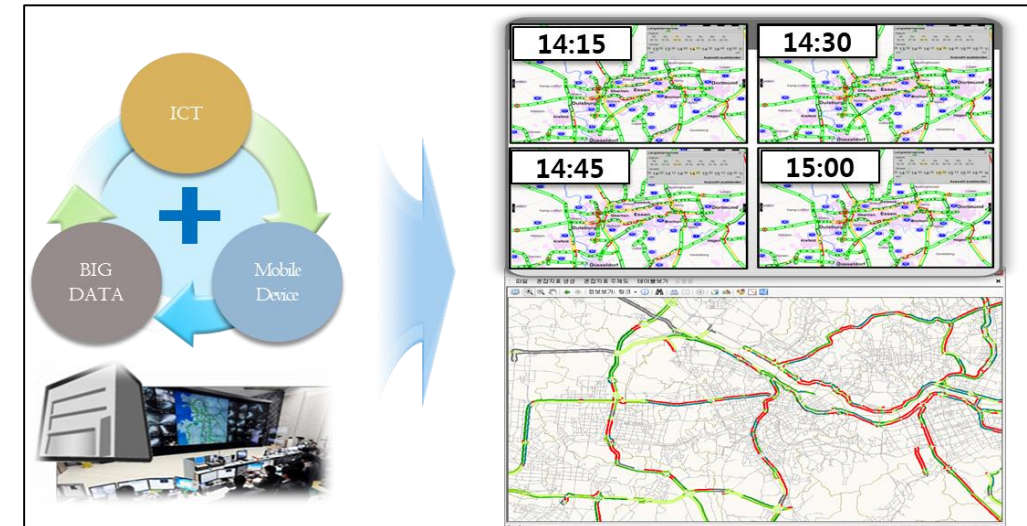
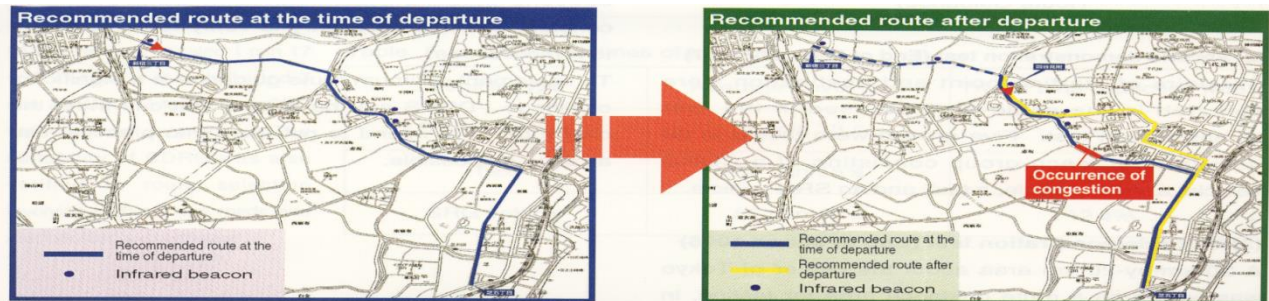
Solutions for Traffic Congestion

□ Demand type ITS tools

- Provision of real-time traffic congestion information (home, work, at shopping centers)
 - Postpone a trip, delay a trip..etc
 - Switch to an alternative route.

□ Supply type ITS tools

- Early incident detection and resolution
- Optimized signal operation (Actuated signal)
- Accident avoidance with variable message sign (VMS)
- Bus information / Management system

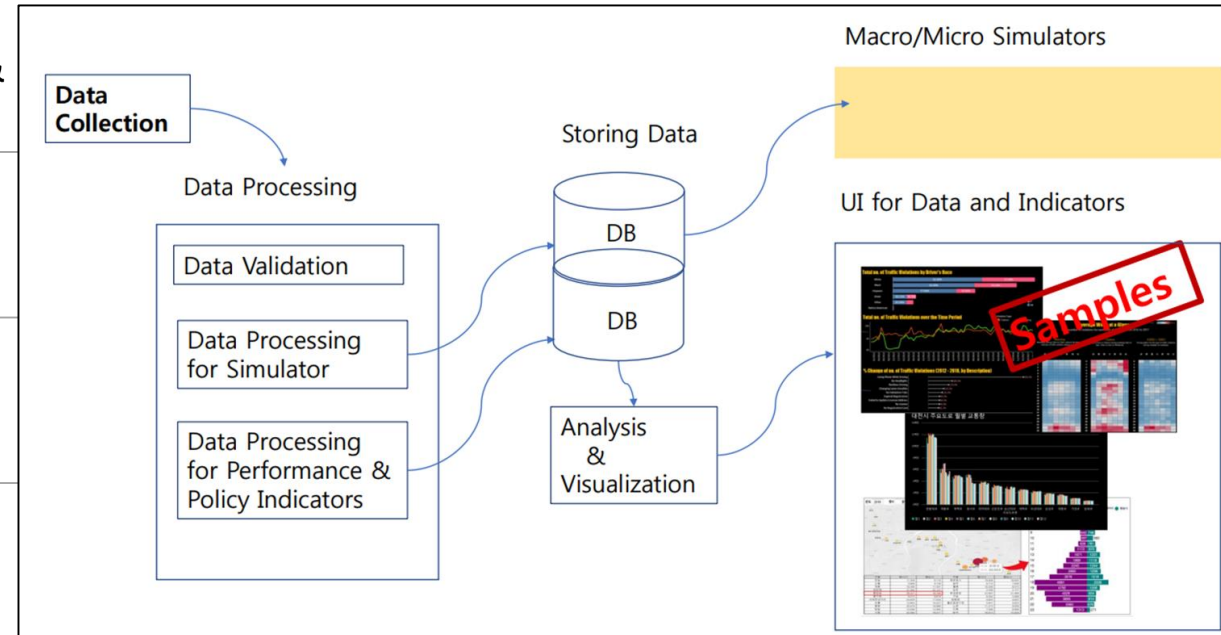


KOICA Project (Ongoing)

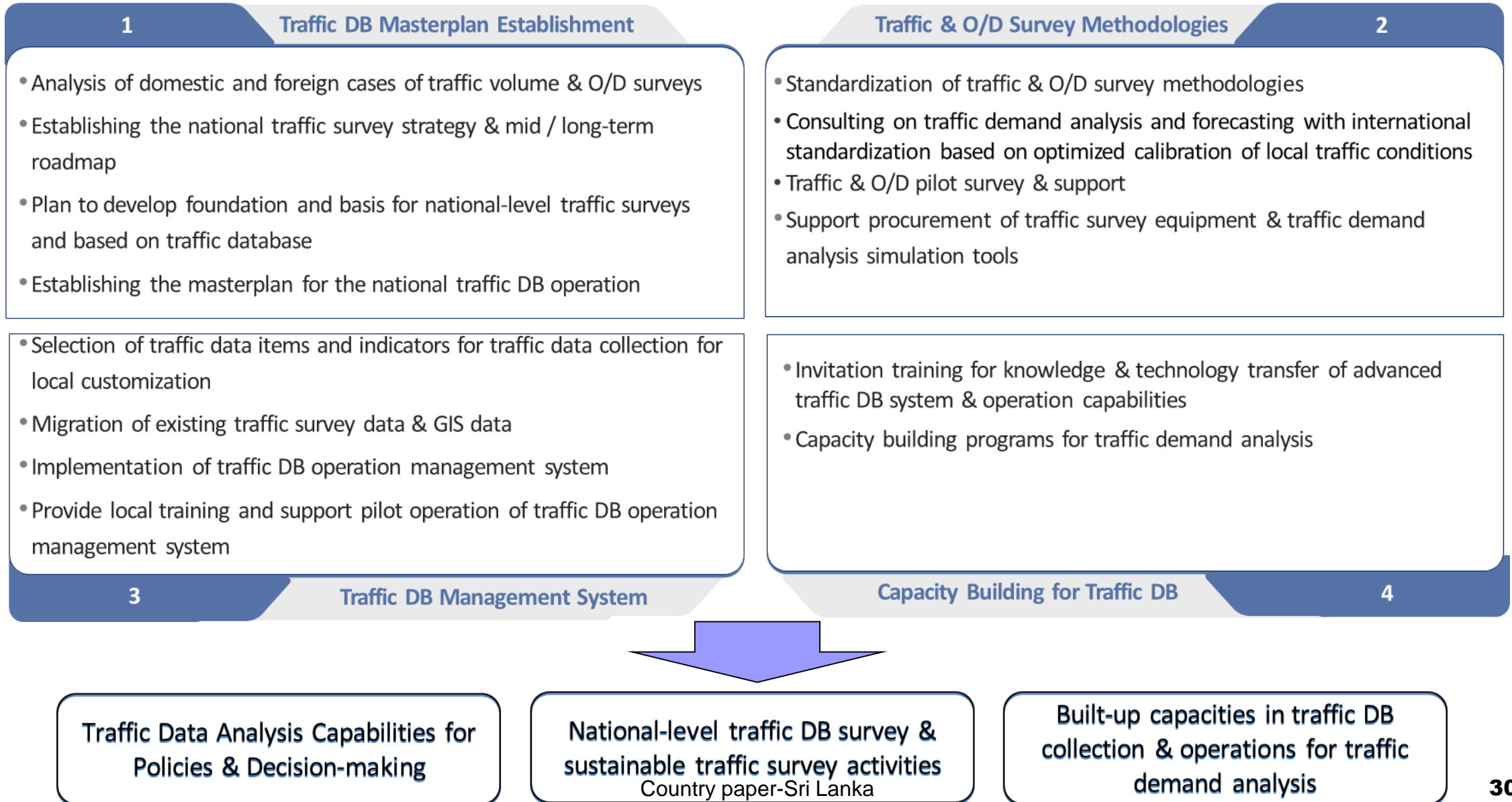
Objective of the Project

Future Transportation infrastructure decisions are based on a data driven process.

Project Title	Enhancement of National Transport Database & Capacity Building
Duration	48 months (2022 – 2025)
Budget	USD 4M (KOICA Grant)
Project Hosts	KOICA, MOTH, RDA



KOICA Project (Summary of Project Outcomes, Outputs & Activities)



Investment Opportunities on PPP Basis

- ❑ Bus Operations
- ❑ Built and Operation LRT Lines
- ❑ Implementation of ITS for Transport
- ❑ Construction and Operation of proposed Rail lines
- ❑ Construction and Operation of identified Expressway links



Thank You