Western Region Megapolis Transport Master Plan

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- Transport and Land Use
 - Direct impact from
 - Land use Interventions on the Transport
 - Transport Interventions on Land use
 - Integrated Approach
 - Transport Plan needs a
 Structure Plan for its Future forecast



Conceptual Framework

- Define an urban edge
- Densify nodes on periphery of the Core Area
- Link with mass transit and improve connectivity
- Upgrade and densify key existing towns
- Develop specialized economic clusters
 - Colombo CBD financial & service cluster
 - Industrial/manufacturing cluster Airport related activity cluster Science and technology cluster Logistics corridor Plantation related economic cluster Forest related economic cluster Tourism cluster



			-				
		Population					
Planning Area		Extent of Planing Area (Ha)	2,012	2,020	2,025	2,030	
1	CBD	16,465	1,188,686	1,290,278	1,362,422	1,442,657	
2	Colombo Fringe	43,713	1,016,979	1,158,355	1,263,217	1,383,346	
3	Aero City	31,170	484,941	630,330	748,262	892,959	
4	Meerigama Industrial City	17,403	140,057	184,883	220,716	264,277	
5	Horana Industrial City	16,771	178,627	246,734	305,401	381,137	
6	Forest City	73,215	335,373	382,725	418,107	458,885	
7	Gampaha Residential Zone	64,139	815,717	953,820	1,059,692	1,185,259	
8	Knowledge City	15,639	309,234	382,914	440,192	508,185	
9	Logistics Corridor	20,263	380,683	458,761	525,831	617,249	
10	Muthurajawela Tourism Zone	11,048	280,345	359,287	425,139	508,271	
11	Plantation City	16,690	215,019	282,388	337,871	407,137	
12	Southern Tourism Corridor	46,390	504,972	588,179	654,938	736,608	
	Western Region	372,906	5,850,633	6,918,654	7,761,788	8,785,970	







Mobility Issue within the Region (2013)

- **10 Million** Passenger Daily Trips within CMR
- 7.8 Million/day <u>Motorized Trips</u> (2.2 Million Non motorized, eg. Walking)
- **1.9 million Daily Passengers** Entering the CMC limits each Day.
- Average Travel Speed in CMR 17km/h
- Average Travel Speed within CMC 12km/h
- With Population Increase the Need of Travel is going to Increase



Source: ComTrans

Do People Travel by Corridor?

Not Necessarily

Radial Travel Patterns







Design Features of the Master Plan

- Modes to Complement NOT Compete
- Integration of Modes to provide Seamless Travel.
- Selection of Modes
 - practically of implementation
 - Sustainability for the planning horizon
- Rail based Mass Transit to provide the connection to the city and longer trip lengths
 - Priority to Existing Railway
 - Extend Modern RTS to other areas and Inter corridor
- Upgrade and Modernise the total Fleet of Bus Service to Provide connection to Rail base Mass Transport
- Introduction of New Modes to Boost the Supply
- Optimize and Manage Existing Infrastructure
- Focus on Demand Management in Short term

Technologies



* Source: ComTrans Study Tech Report 6

Transport Proposal

1. Public Transport Improvements

- Railway Electrification
- Rapid Transit System
- Inland Waterways
- Bus Modernization
- Multimodal Facilities
- School bus/Taxi Regulations

2. Road Infrastructure Improvements

- National and Urban Expressways
- Improvements of existing and Missing Links

3. Transport Demand Management (TDM)

4. Environmentally Sustainable Transportation

Railway Electrification and Modernization



Proposed Railway Electrification & Modernization Ministry of Megapolis and Western Development

Legend

1st Orde 2nd Orde 3rd Order TOD * Airport

1. Existing Rail Lines (196km)

- Panadura Veyangoda (extension Ι. to Polgahawela) (110km)
- Ragama Negambo and Airport Ш. Connection (26km)
- III. KV Line (60km)

2, New Rail Lines(52km)

- IV. Kottawa Horana (22km)
- V. Kelaniya Dompe Kosgama (Freight Line) (30km)







New Rapid Transit System (RTS) With LRT





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 – Malabe (10Km)

Elevated or at grade RTS – Line 5 (Pink)

Malabe - 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)



Inland water transport

- Comfortable (AC), Safe
 Commuter Service
 - Wellawatte Battaramulla (IW1)
 - Fort Union Place (IW2)
 - Mattakkuliya Hanwella Line (IW3)
- Promote Eco Tourism in Non Peak times



Bus Modernization(Higher Level of Service)

- Better Door to Door Service
- Easy Access and Comfortability
- Integration with RTS and Rail
- Incorporate Existing Operators and providers





ACTIONS

- Institutional Reforms
- Modernization of all buses
 - All Routes
 - Low Floors, A/C, Smart IT systems including GPS,
- Revision of Bus Routes
 - Identification of new routes using expressways for trips within CMR
- Rescheduling of Buses
- Modernize all bus stops and terminals
- Provide bus lane and bus priority where implementable

Multimodal Transport Hub & Centres



Integration of Transportation, Commercial, Logistics & leisure facilities



- Horana, Kottawa, Kaduwela, Kadawatha, Panadura, Negambo, Avissawella
- Gampaha, Meerigama, Ragama, Moratuwa

Proposed Development Area





Public Transport Network

- Modernized Bus
- Electrified Rail
- Modern RTS
- Inland water
- Multimodal Facilities

Improve School and Office transport Services

- Form a regulatory mechanism
- Separate companies to provide higher quality door to door, reliable service with A/C,

monitoring facilities.

• Extend 'Sisusariya' Program





Road Infrastructure Development



- National Expressway Expansion
 - Central Expressway
 - Ruwanpura Expressway
- Improving Existing Roads
 - Horana to Mirigama via Paddukka and Kirindiwela
 - Negombo- Divlapitiya Mirigama
 - Ja-ela to Divlapitiya via Ekala and Minuwangoda
 - RDA On going and identified Projects
- New Urban Expressway
 - Port Access Expressway (New Kelaniya Bridge to Port)
 - New Kelaniya to Pore Via Battarmulla
- Improving Missing Links
 - Baseline Extension
 - Marine Drive Extension to
 - Galle Face
 - Dehiwela
 - Duplication Extension to Hospital Road

Transport Demand Management



- Introduce Flexible and Staggering work hours
- Efficient Traffic Enforcement with CCTV Monitoring/Red Light Camera
- Parking Management Systems
- Signal Light Improvements (Improvements, Upgrades and Synchronization)
- Traffic Flow Management Centre
- Road Pricing (ERP)
 - Once Sufficient Public Transport Improvements are completed .(2025)



Analysis

- Transport Demand Modelling with JICA STRADA model
 - Over 4 months of Run Times
 - Years 2020, 2025 and 2035
 - Do Nothing Cases (as Base)
 - Project Cases for each Year
 - Complete Modelling Process (less 'Expert' Opinion)
 - Key Performance Indices for Economic Analysis

Key Performances in CMR

	2013	2020	2025	2035
Population	5.8 million	6.9 million	7.7 million	9.1 million
Motorized Trips per Day	7.8 million	13.4 million	15.6 million	18.2 million
Public Transport Share (trips)	52%	59%	59%	59%
Public Transport Share (km)	52%	61%	62%	62%
Average Travel Speed (km/h)	17 km/h	28 km/h	28 km/h	27 km/h
Public	-	24 km/h	25 km/h	25 km/h
Private	-	38 km/h	36 km/h	32 km/h
Average Trip Distance	12.0 km	5.94 km	5.91 km	5.91 km
Public	-	6.0 km	6.0 km	6.0 km
Private	-	5.8 km	5.8 km	5.8 km
Total cost of Mobility		Rs 580 Million	Rs 679 Million	Rs 844 Million
Cost of Travel (per km)		Rs 12	Rs 12	Rs 13

- Public Transport Share Up
- Average Speeds Up
- Public Transport Speed Up

Commencement of Interventions/Costs

				Water	Bus/	Para	ММН/			
Period	TDM	RTS	Rail	Transport	Terminals	Transit	ММС	Roads	ES	Total
										USD Millions
6 Months	51	1	1	60	0.20	1		1,669	1	1,785
6m- 3Y	127	1,250	2,342		663	0.35	200	461	228	5,270
3Y-5Y	-	955	364	65			100	32		1,516
5Yrs+	19	1,310	420					1,157		2,906
Total	196	3,516	3,127	125	663	1.77	300	3,319	229	11,477
	2%	31%	27%	1%	6%	0.02%	3%	29 %	2%	100%
	2%			6	57%			29%	2%	
	Transport Demand Management		Public Transport					Road Sector	Env. Sus. Transport	

- USD 11.5 Billion Investment over 20 years
- Pub 67% Road 29%



RTS, Rail, Road Equal Shares (~30%)

Project	PID Ref. Number	Project	Estimated Project Cost (US\$ in Millions)	Project Duration					
	Traffic Demand Management								
	1.1.21	Traffic enforcement through CCTV monitoring	25	1 Year					
	1.1.16	Widening and Improvements of Intersections with signal timing updates	4	1 Year					
Commencement	1.1.20	Improvement of Traffic Flows based on Identified Interventions	20	1 Year					
	1.1.13	Implementation of "Parking Metering System"	0.28	6 months					
	1.1.12	Development of Parking management system, Pricing mechanism, and enforcing time limited parking	1	1 Year					
	1.1.15	Provision of overflow parking facilities for long distance private buses	0.53	1 Year					
	1.1.12	Outsource the towing of unauthorized parking	0.01	6 Months					
	1.1.12	Identification of three-wheel parking locations	0.01	6 Months					
Immodiata	1.1.29	Study on Flexible working hours and implementation	0.05	6 Months					
Immediale	Public Transport Improvements								
		Feasibility Study of Rapid Transit for all identified lines in CBD and Suburbs:							
		Green Line (RTS1)		1 Year					
		Yellow Line (RTS2)							
	1.1.3	Red Line (RTS3)	1						
		Borella – Battaramulla Line (RTS4)	-						
\//ithin		Battaramulla – Kottawa Line (RTS5)							
		Malabe – Kaduwela (RTS6)							
		Pelivagoda – Kadawatha (RTS 7)							
· · · · · ·	1.1.1	Feasibility on Railway Electrification & Modernization -	11	1 Vear					
6 Months		Panadura – Polgahawela Line (RL-M1)	1.1	Tical					
	114	Implementation of Inland Water Transport on:	60	1 Vear					
	1.1.4	Wellawatta – Battaramulla Trace (IW1)	00	I Year					
		Feasibility Study on Inland Water Transport on:	0.1	1 Year					
	1.1.4	Fort – Union Place Trace (IW2)							
		Mattakkuliya – Hanwella Trace (IW3)							
	1.1.28	Restructure of Public Bus Service	0.2	1 Year					
	1.1.23	Introduce New School Transport Service	1.42	1 Year					
	Road Infrastructure Development								
	4.4.6	Expressway Construction:	002.2	E Veren					
	1.1.0	Central Expressway	992.2	5 rears					
	1.1.6	Expressway construction:	F20 F	5 Years					
		Ruwanpura Expressway	529.5						
	1.1.6	Detailed Design and Implementation on Expressway construction-: • Elevated road From New Kelani Bridge to Colombo Port	145	3 years					
	1 1 10	Feasibility Study of Road Capacity Improvements on:							
		Horana-Meerigama	0.5	1 Year					
	1.1.10	 Ia-ela-Meerigama 	0.5	1 fear					
	1.1.11	Feasibility Study of Missing Links on:	1.5						
		Marine Drive Extension		1 Year					
		Baceline Extension							
		Dustine Extension Dustine Extension							
	115	Study on Expressively Canacity Improvements-	0.1	1 year					
	Environmental Suctainable Transport								
	1 1 24	Provision of separate lanes of highers/motor cycles – Feasibility Study	1 42	2 Years					

Conclusion

- Public Transport Intervention a Priority
 - Railway to carry much of the load
 - RTS to provide fast access to CBD and Suburbs
 - Modernized Buses to supplement with improved connections to rail and RTS stations
 - Supplemented with use of Inland water transport
- Highway improvements need to supplement the Public transport interventions
- Need Transport Demand Management until the Infrastructure is built.
 - Short term measures are vital.

Once we accept our limits, we go beyond them.

Albert Einstein

Thank you