Chapter 06

Transport Development Strategy

Enabling Convenient & Fast Mobility

04 Major TODs, New Modes of Public Transport & 03 Hierarchical Levels of Roads

Transport Development Strategy

Introduction

A city's live functionality is enabled with its transport network which is overlaid on its spatial structure. A key component of the built environment is the transport system that serves the land uses contained within the urban fabric, whether they be residential, commercial, services or other.

Objective

The objective of Transport Development Strategy is to create a functionally effective transportation network that facilitates efficient mobility within the city. The effectiveness of any transportation network is attributed to its spatial configuration which is a function of several criteria such as spatial distribution of different modes of transport networks and their points of concurrence resulting in transport hubs. Hence in more specific terms, determination of appropriate network arrangements and strategic locations for transport hubs in accordance with the proposed spatial structure, as to match with the proposed densities, characters and proposed development activities is the main objective of the Transport Development Strategy of CCCDP – 2019-2030.

Approach

Following the planning norm 'higher the accessibility, greater the potential for development', the road network of Colombo Commercial City is proposed as to induce the anticipated developments in the identified density zones. The routes of other transport modes such as bus, railway, proposed light rail transit and water transport are determined as to facilitate each zone as per the proposed densities and to connect hierarchical nodes as per their priority levels. Transport Development

Strategy is implemented in real grounds through two main approaches including;

- **Regulatory approach (Including recommendation and guidelines)**
- **Direct interventions of state agencies**

Contribution towards the Vision & Goals of CCCDP – 2019-2030

The proposed Transport Development Strategy contributes to achieve the third goal of CCCDP – 2019-2030 which is 'The Smart, Smooth and Sensed Urban Space for all inhabitants' and its subsequent objectives mentioned below.

- **To have an integrated multimodal, reliable, affordable and comfortable Public Transport System by 2030**

- **To have 04 Major TODs at strategic locations enabling easy mobility within *Colombo Commercial City* by 2030**

Also, Transport Development Strategy contributes to have a well-connected water transportation system in *Colombo Commercial City* by 2030 which is the third objective under *Goal 01 – 'The most sought Waterfront Business Environment Experience in the World'*.

Scope

The planning framework of the Transport Development Strategy includes:

- **Interventions to manage intra-city traffic movements**

- **Interventions to create an effective and convenient transportation system**

- **Strategic interventions and projects proposed by UDA and other stakeholder agencies to improve different transport modes and transport hubs of *Colombo Commercial City***

- **Recommendations for hierarchically arranged road network including definitions of characters and functions of different road categories**

However, the specific traces of proposed transport routes and the detailed feasibility studies have not yet been conducted at this stage.

6.1. Proposed Improvements to Road Transportation System in Colombo Commercial City (Project Code - T-1)

Introducing of a hierarchically arranged road network is one of the key components of proposed Transport Development Strategy of *Colombo Commercial City*. A hierarchically arranged road network can be used as a tool in planning to maintain the appropriate link in between land use and the road system and maintaining appropriate linkage of roadways in the road system. Also it plays a major role in achieving the anticipated development of a city.

The key objective of a development of road hierarchy is to ensure the orderly grouping of roadways in a framework around which state and local governments can plan and implement various construction, maintenance, and management schemes and projects. It also assists local and state agencies with the adoption of appropriate standards for roadway construction.

Accordingly, a road hierarchy consisting of three major levels has been proposed for *Colombo Commercial City*. The determination of road hierarchy was based on following criteria.

- Existing capacities of roads (Level of Service)
- The overall concept plan and vision
- Expected Densities and characters of each broader Density zones and character zones

6.1.1. Proposed Road Hierarchy

According to the proposed road hierarchy, there will be three major categories of roads namely Level 01, Level 02 and Level 03 roads. The sub categories of three levels are determined based on different characters and functions of roads. The Proposed Road Network of *Colombo Commercial City* is given in the Figure 6.1 and Map 6.1. The characteristics definitions of each road type are elaborated in the Table 6.1.

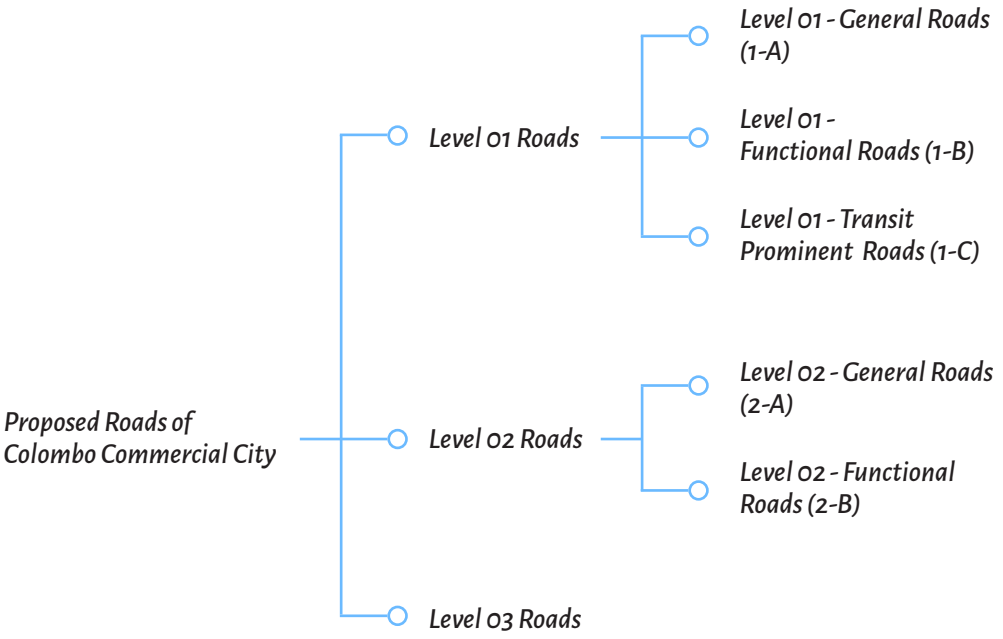


Figure 6.1: *The Proposed Road Hierarchy in Colombo Commercial City*

Road Category Code	Road Category Name	Defined Function/ Character
Level 01 Roads		
01 - a	Level 01 – General Roads	Should have minimum carriage width 15m (four lanes) Water Drives falling under this road category may have minimum carriage width of 7m (two lanes) Roads that cater both vehicular and pedestrian traffic equally Composed of mixed characters of both Functional Roads and Transit Prominent Roads

Road Category Code	Road Category Name	Defined Function/ Character
01 - b	Level 01 – Functional Roads	A street which acts as a place in its own right: a location where activities occur on or adjacent to the street. Should have minimum carriage width of 15m (four lanes) Water Drives falling under this category may have minimum carriage width of 7m (two lanes) Pedestrian prominent streets Roads which act as functional streets daily, during certain hours of day, special days of week, seasonally or on special days More pedestrian friendly and convenient road designs Well-maintained streetscapes with attractive street furniture, façade designs and tree lines Promoting small scale retail and shopping activities along the roads
01 - c	Level 01 – Transit Prominent Roads	A street that mainly acts as a conduit for through movement and which forms an integral part of the whole urban street network Should have minimum carriage width of 15m (four lanes) The major arterial roads that are mainly reserved for the purpose of easing city traffic Adoption of Road designs that discourage on-street parking & frequent pedestrian crossings Use of overhead/ underground bridges for pedestrian crossings and laying of 0n-street zebra crossings at considerable distances Discouraging small scale retail activities and on-street shopping

Road Category Code	Road Category Name	Defined Function/ Character
Level 02 Roads		
02 - a	Level 02 – General Roads	Should have minimum carriage width of 7m (two lanes) Roads that cater both vehicular and pedestrian traffic equally Composed of mixed characters of both Functional Roads and Transit Prominent Roads
02 - b	Level 02 – Functional Roads	Should have minimum carriage width of 7m (two lanes) Pedestrian prominent streets Roads which act as functional streets daily, during certain hours of day, special days of week, seasonally or on special days More pedestrian friendly and convenient road designs Well-maintained streetscapes with attractive street furniture, façade designs and tree lines Promoting small scale retail and shopping activities along the roads
Level 02 Roads		
03	Level 03 Roads	All Local Authority roads and Private Roads are considered under this category All Local Authority roads under this category should have minimum road width of 7m All Private Roads under this category should have minimum road width of 03 meters

Table 6.1: *Characters and functions of proposed hierarchical road categories of Colombo Commercial City*

6.1.2. Cross sections of proposed roads

(a) Level 01 Roads

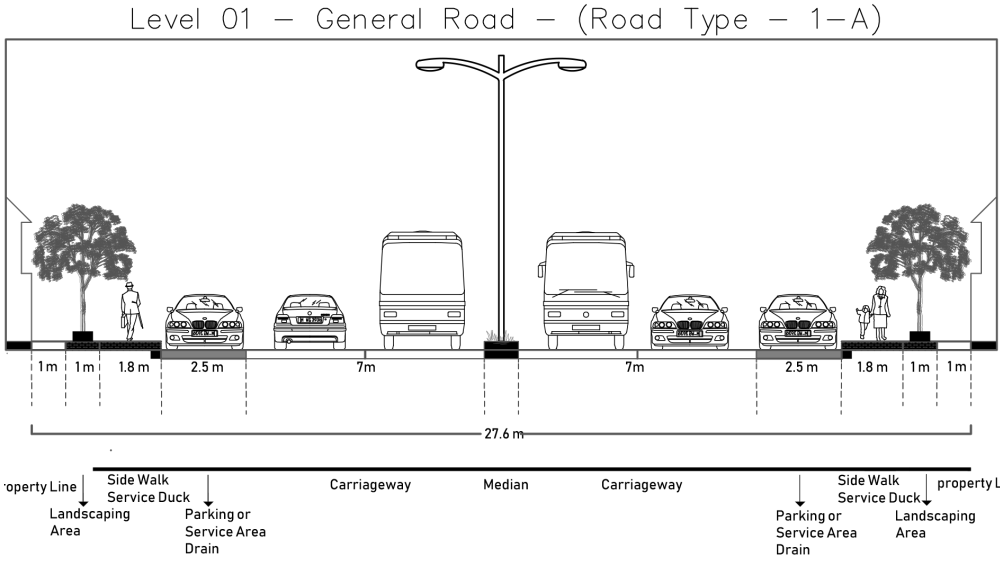


Figure 6.2: *Cross section of a Level 01 – General Road - (Road Type - 1-A)*

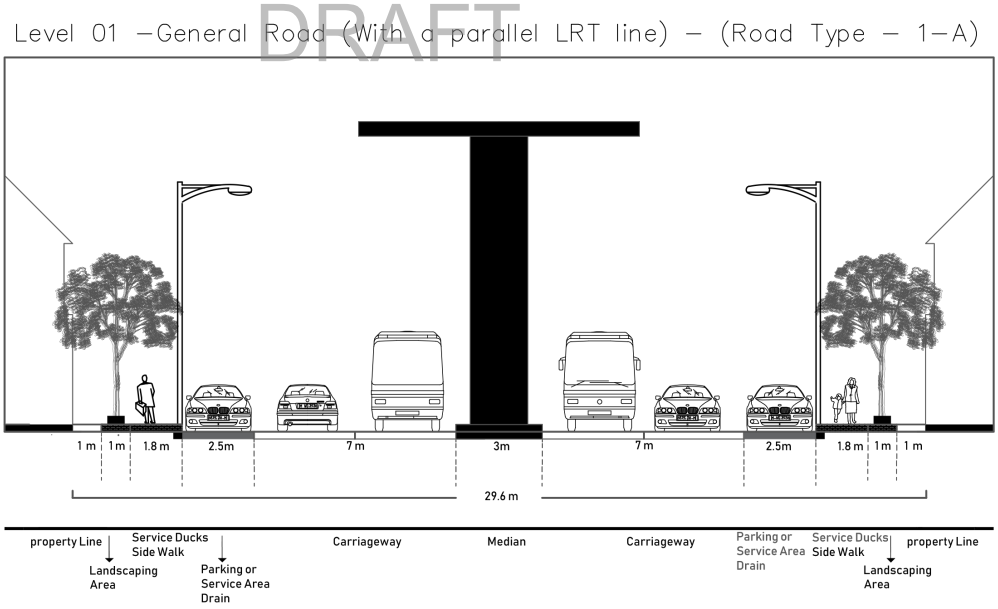


Figure 6.3: *Cross section of a Level 01 –General Road (With a parallel LRT line) – (Road Type - 1–A)*

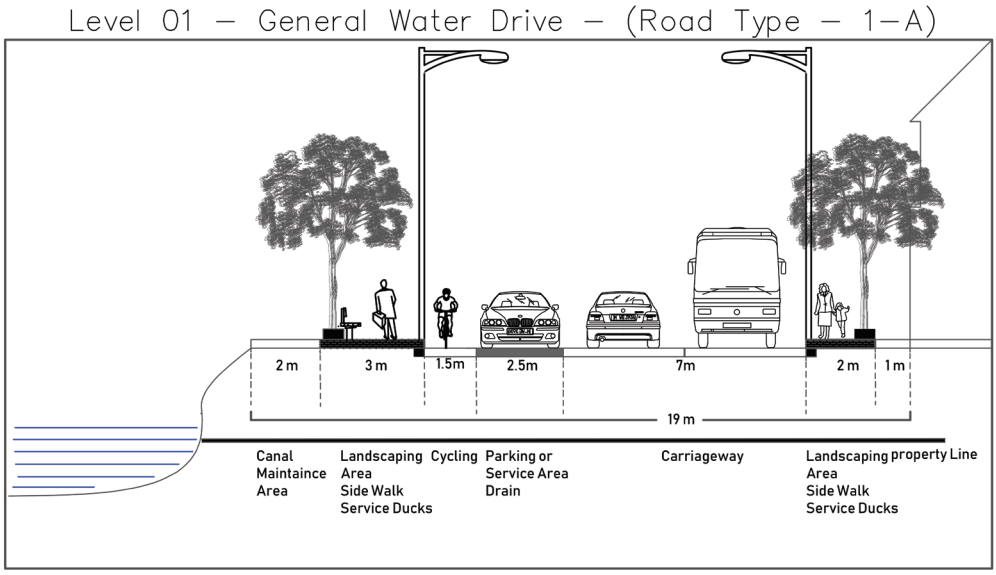


Figure 6.4: *Cross section of a Level 01 - General Water Drive - (Road Type - 1–A)*

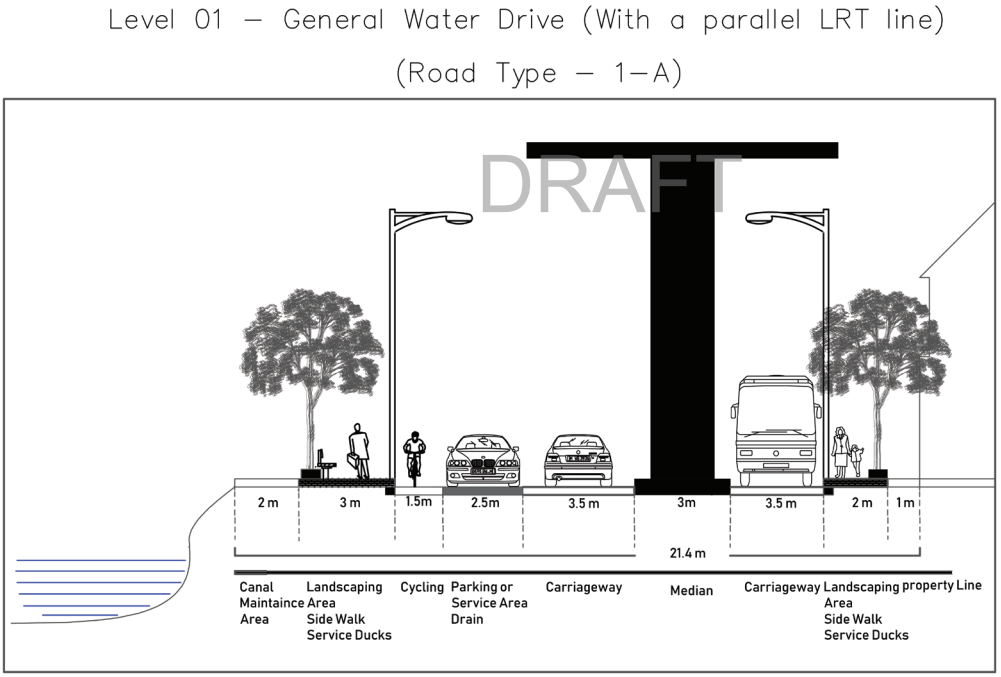


Figure 6.5: *Cross section of a Level 01 - General Water Drive (With a parallel LRT line) - (Road Type - 1–A)*

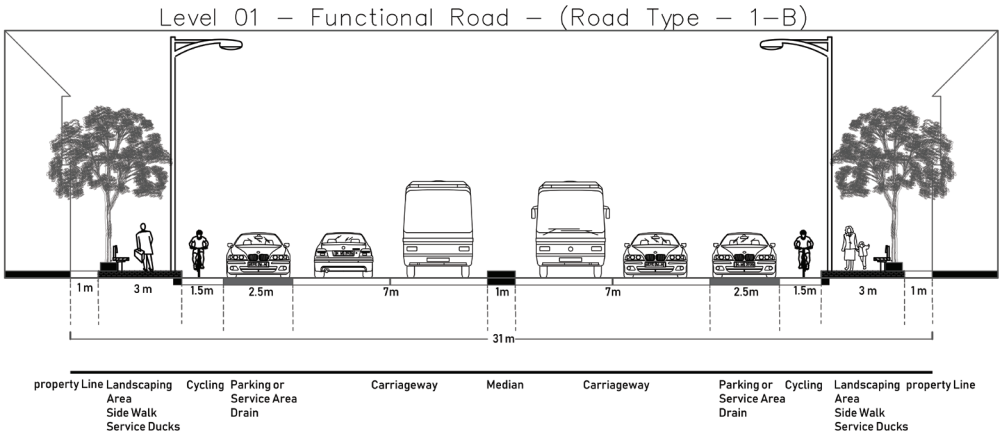


Figure 6.6: *Cross section of a Level 01 – Functional Road - (Road Type - 1–B)*

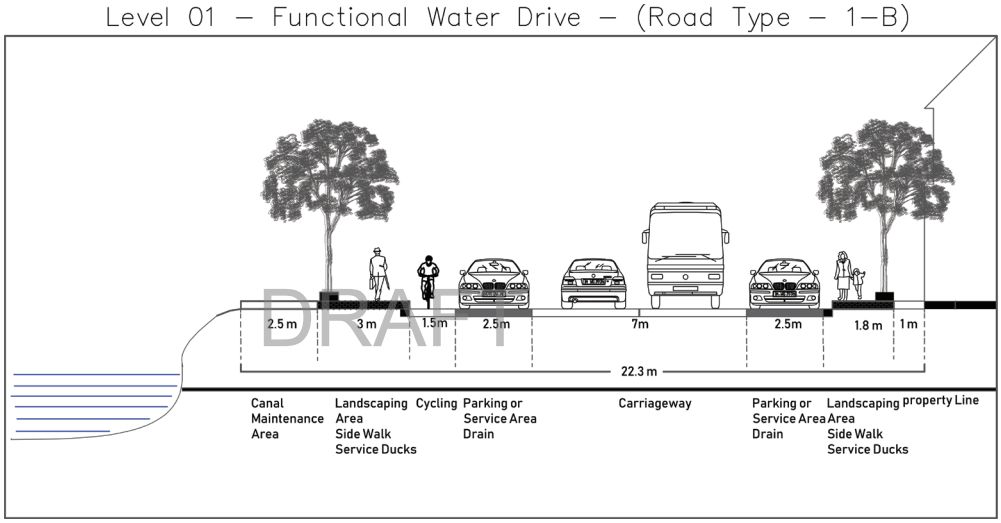


Figure 6.7: *Cross section of a Level 01 – Functional Water Drive - (Road Type - 1–B)*

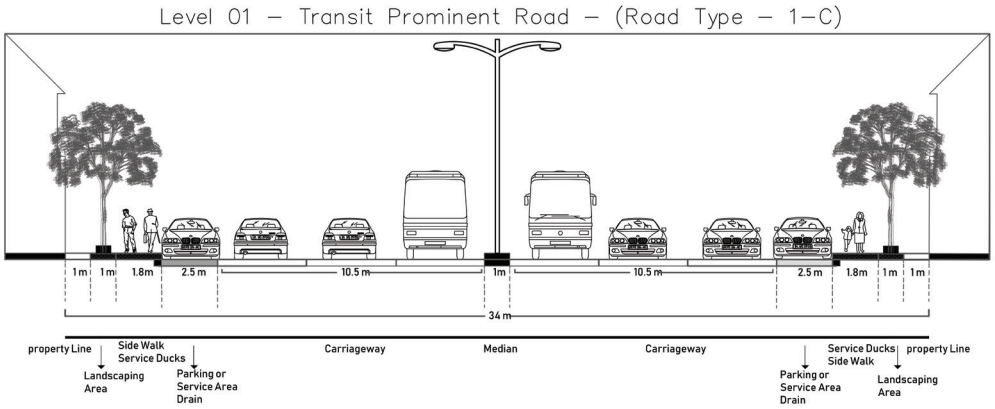


Figure 6.8: *Cross section of a Level 01 – Transit Prominent Road - (Road Type - 1–C)*

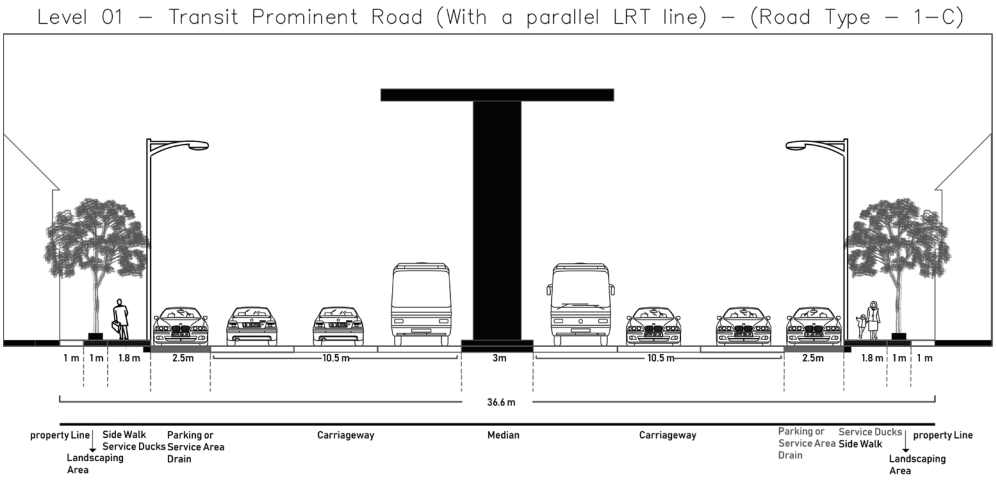


Figure 6.9: *Cross section of a Level 01 – Transit Prominent Road (With a parallel LRT line) - (Road Type - 1–C)*

(b)Level 02 Roads

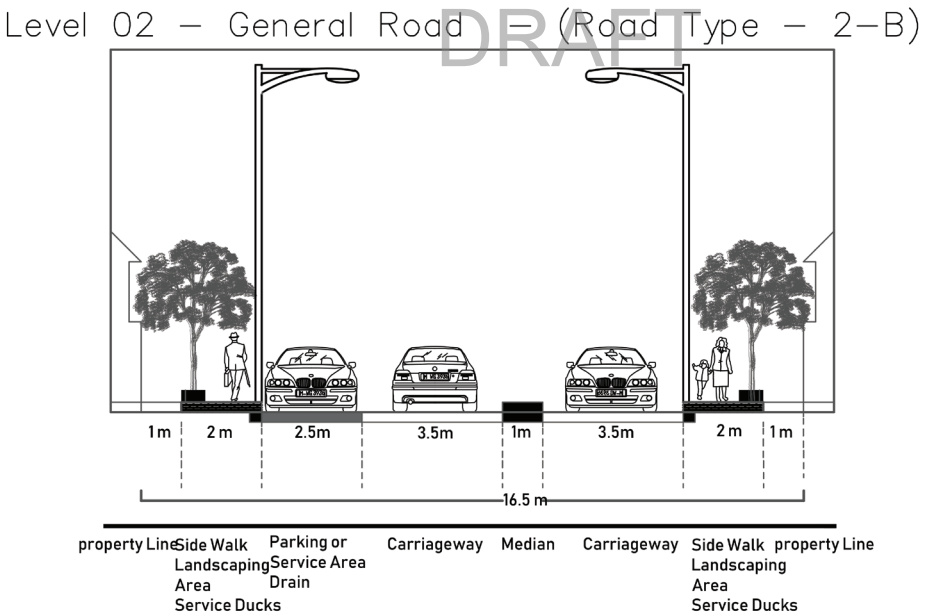


Figure 6.10: *Cross section of a Level 02 – General Road - (Road Type – 2-B)*

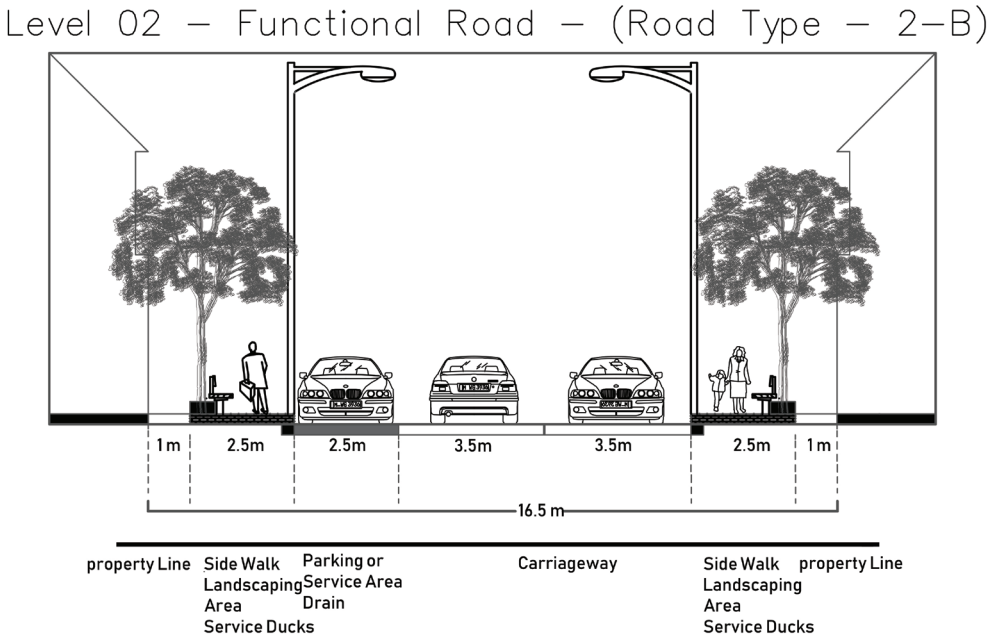


Figure 6.11: *Cross section of a Level 02 – Functional Road - (Road Type – 2-B)*

(c)Level 03 Roads

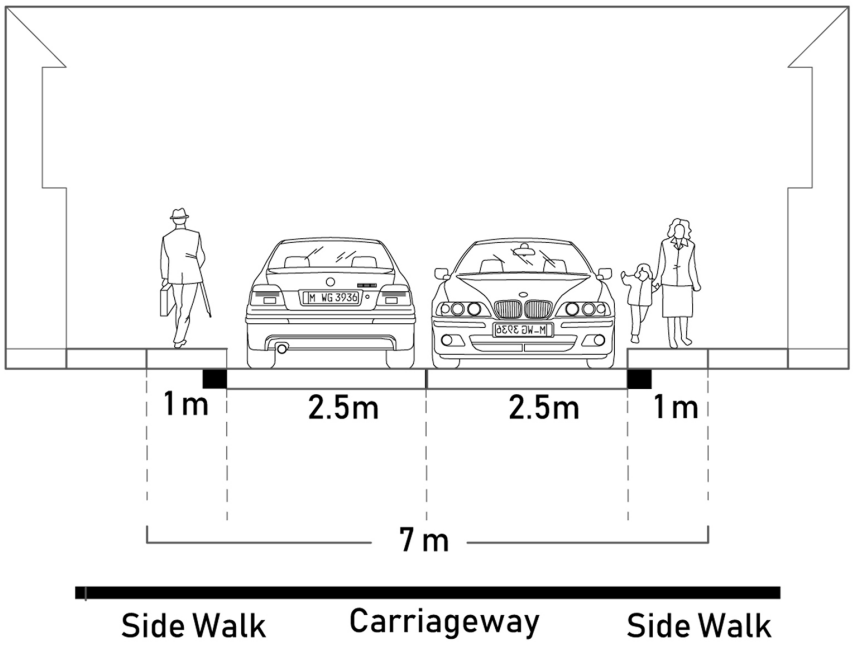
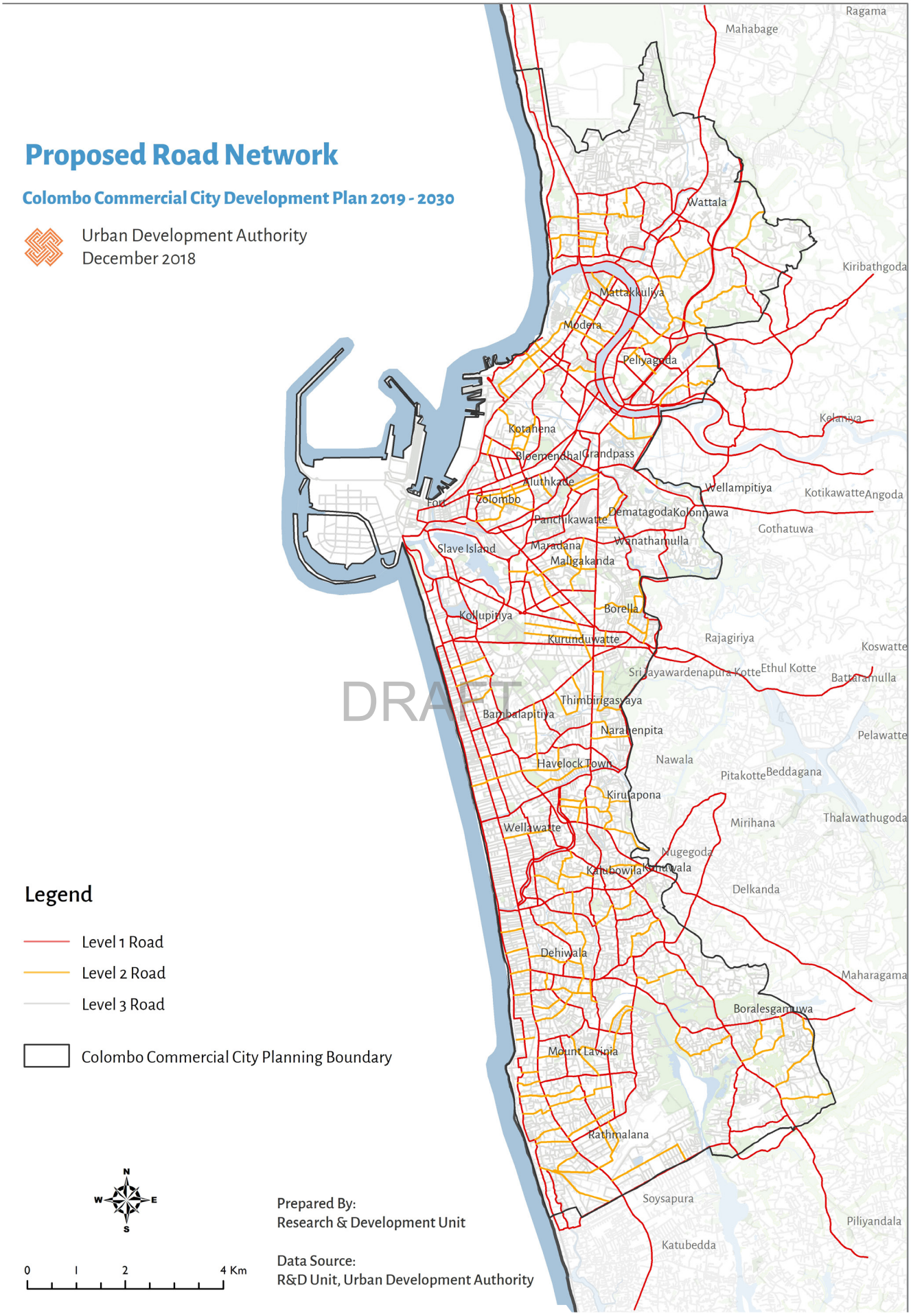


Figure 6.12: *Cross section of a Level 03 Road*



Map 6.1: *Proposed Road Network of Colombo Commercial City - 2030*

6.1.3. Level 01 Roads – New Road Links and Proposed Widening of Existing Roads (Project Code – T-1-1)

All road construction and improvement projects identified in *Colombo Commercial City Development Plan – 2019-2030* will be aligned under Transport Development Strategy – Action Projects Type - 01 with the project code T-1.

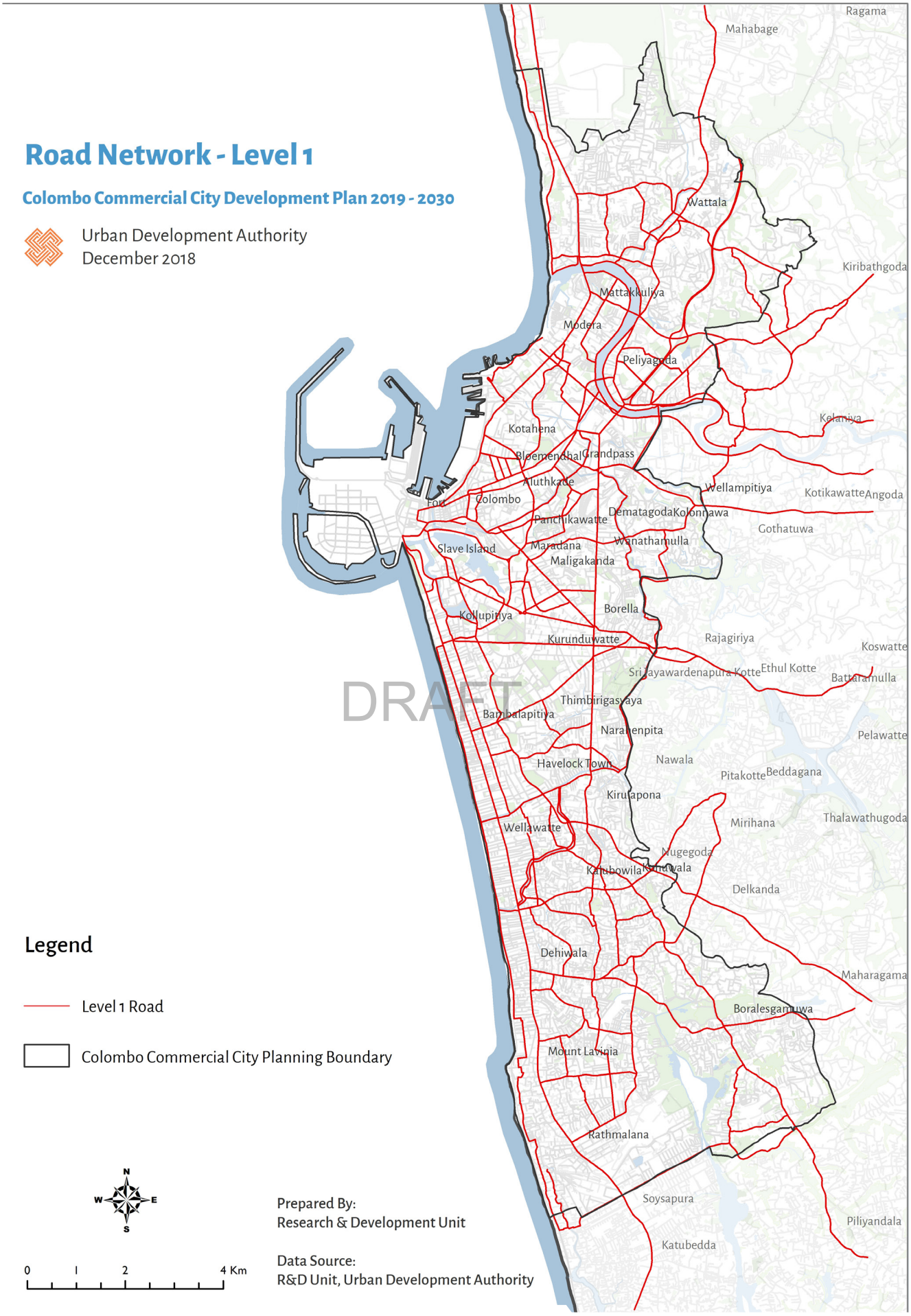
The proposed new road constructions and road widening projects falling under the category of Level 01 Roads are aligned under the project code T-1-1. New Road Construction Projects falling under Level 01 roads are aligned under Project Code T-1-1-1 while the road widening projects of same road category are aligned under Project Code – T-1-1-2. The proposed Level 01 Roads are indicated in the Map 6.2 and the list of Level 01 Roads is given in the Annexure: 6.1.

(a) New road constructions under Level 01 Roads (Project Code – T-1-1-1)

Though the plan has identified the level 01 roads as depicted in Map Map 6.2, there are some missing links within the identified Level 01 Road Network, which need to be connected with new links in order to have a complete network of Level 01 roads. The list of new road links coming under Level 01 road category are given in the Annexure 6.2 The new road links coming under the Level 01 Road Category are indicated in the Figure 6.13.

(b) Road widening projects under proposed Level 01 Roads (Project Code – T-1-1-2)

In the existing situation, some of the roads coming under the identified Level 01 Road Network, do not have the minimum road width specified for Level 01 Roads where the carriageway width is required to be minimum of 15m (four lanes). Hence, those roads which are falling under the Level 01 Road category are proposed to be widened up under the project code T-1-1-2. The list of roads which are proposed to be widened up under the project code T-1-1-2 are given in the Annexure 6.3



Map 6.2: *Proposed Level 01 Roads of Colombo Commercial City - 2030*

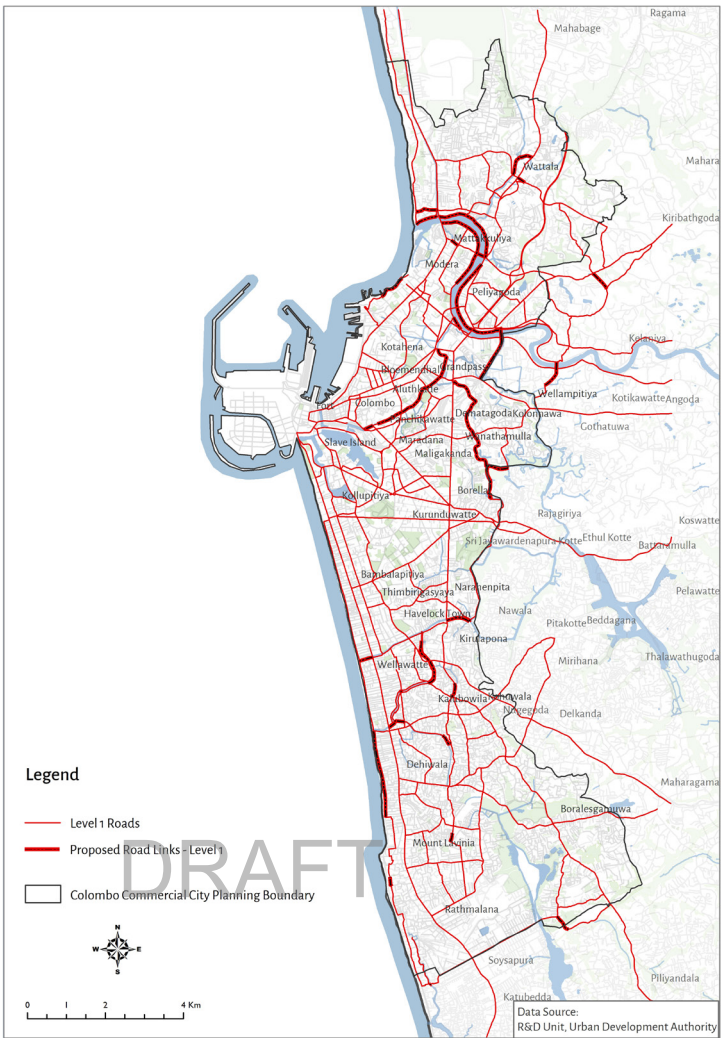
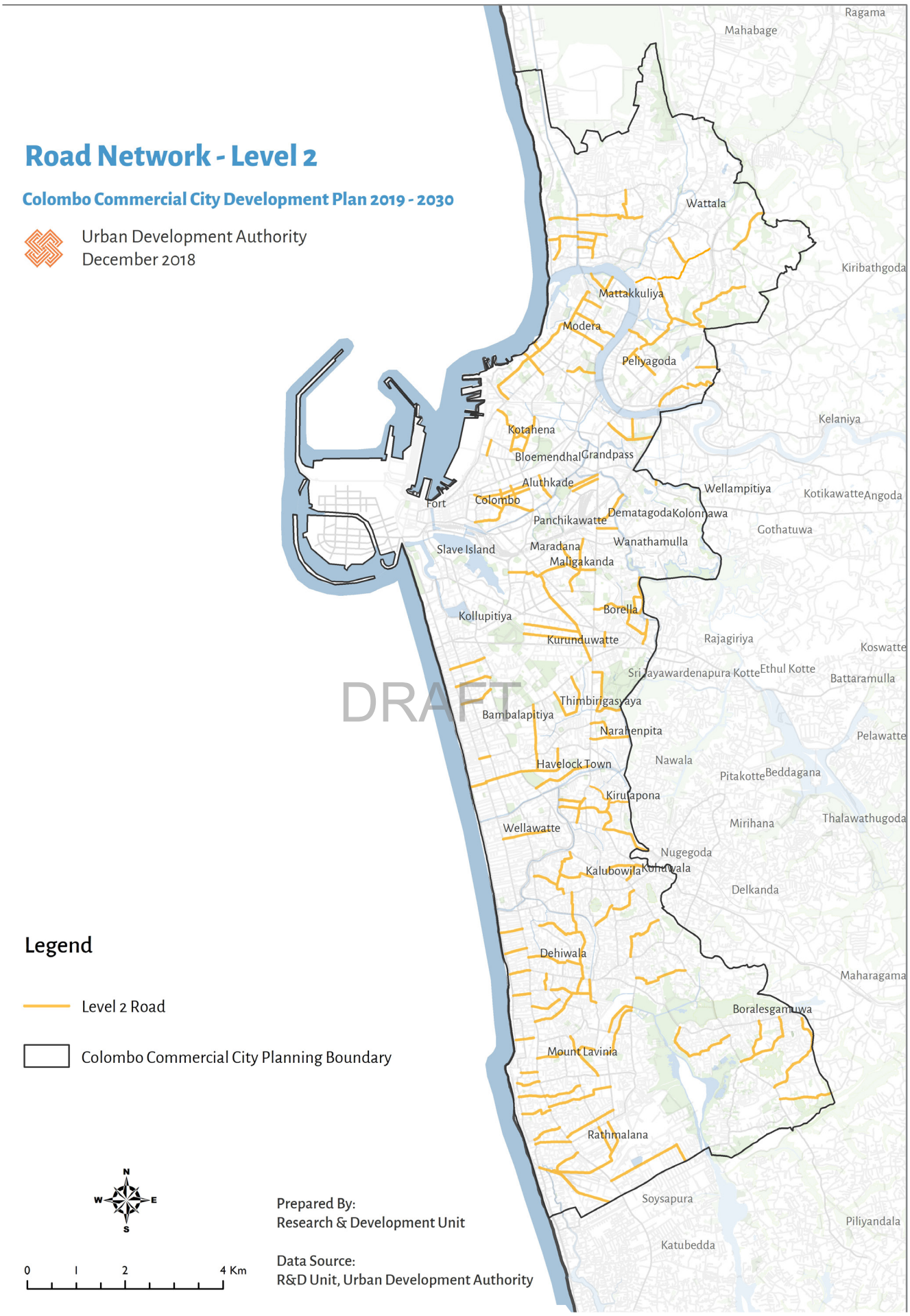


Figure 6.13: *Proposed new road links under Level 01 Roads (Project Code – T-1-1-1)*

6.1.4. Level 02 Roads – New Road Links and Proposed Widening of Existing Roads (Project Code – T-1-2)

Identified road improvements including both new road constructions and road widening projects falling under Level 02 Road category are aligned under the project code T-1-2. The list of proposed Level 02 roads within *Colombo Commercial City* is given in the Annexure 6.4 and these roads are shown in the Map 6.3. The list of new road links and the road sections which are proposed to be widened under Level 02 Road Category are given in the Annexure 6.5 and 6.6 respectively. The new road links and road widenings coming under Level 02 Road Category are aligned under Project Code – T-1-2-1 and T-1-2-2 respectively.



Map 6.3: *Proposed Level 02 Roads in Colombo Commercial City*

Proposed Improvements to Road Transportation System in Colombo Commercial City

Proposed Elevated Highways in Colombo Commercial City

6.1.5. Proposed Elevated Highways in Colombo Commercial City (Project Code – T-1-3)

Two Elevated Highways have been proposed by the Ministry of Highways, Road Development and Petroleum Resources Development as follows.

a. **Port Access Elevated Highway – Project Code – T-1-3-1**
b. **New Kelani Bridge – Athurugiriya Elevated Highway – Project Code – T-1-3-2**

These two Elevated Highway Development Projects will be incorporated into the **CCCDP – 2019-2030** under the project code T-1-3. Proposed Elevated Highways are shown in the Figure 6.14.

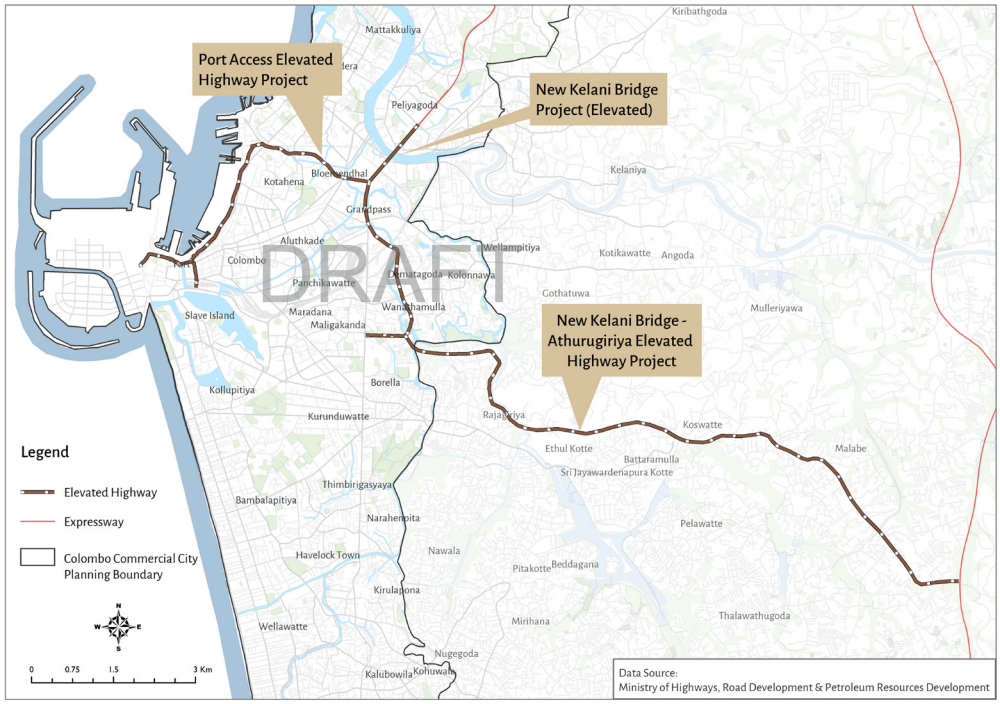


Figure 6.14: *Proposed Elevated Highway Projects in Colombo Commercial City - 2030*

6.2. Proposed Improvements to Rail Transportation System in Colombo Commercial City (Project Code - T-2)

Railway transportation is the mass transportation system currently operating in Sri Lanka. Parallel to the increasing population and urbanization, the travel demand in *Colombo Commercial City* has increased during past years and will continue to upsurge in the future years to come. Population growth, formalized housing, high density housing along the major roads and employment creation will generate more trips and have a potential to create congestion in the horizons. However, in response to the rapidly increasing passenger demand, the state has taken further steps to improve the mass (rail) transportation system with new technological advancements. Many of the rail improvement projects, which are in line with the future vision and anticipated developments of *Colombo Commercial City* are incorporated into the **CCCDP – 2019-2030** as elaborated below. The all proposed mass transport (rail) projects are aligned under the Transport Development Strategy – Action Project Type – 02 with the project code T-2.

6.2.1. Improvements to Railway Network within Colombo Commercial City (Project Code – T-2-1)

Colombo Fort Railway Station is the main railway station of Sri Lanka where all railway lines spreading throughout the island coincide. According to the existing configuration of railway network, passengers travelling across *Colombo Commercial City*, need to transit via either Colombo Fort or Maradana Stations. This results in an unnecessary flow of passengers to Colombo Fort creating huge congestion and waste of time and resources of all passengers. Considering, these weaknesses in existing configuration of railway network of *Colombo Commercial City*, few of following changes have been proposed. The improvements to the existing railway network of *Colombo Commercial City* are aligned under the project code T-2-1. These projects are listed in the Table 6.2 and shown in the Figure 6.15.

No.	Project Name	Project Code
01	Construction of a Railway Station with mega service capacity at Peliyagoda interlinked with proposed regional bus terminal	T-2-1-1 *Following Reference: Table 6.7
02	Shifting of Dematagoda Railway Station towards west to serve both Main line and Kelani Valley line	T-2-1-2

No.	Project Name	Project Code
03	Rerouting of Kelani Valley line as to go parallel to Baseline via Borella Junction	T-2-1-3
04	Construction of a new Railway Station at Borella Junction	T-2-1-4
05	Capacity improvement of Ratmalana Railway Station as a part of proposed Ratmalana TOD development	T-2-1-5 *Following Reference: Table 6.9

Table 6.2: *Proposed improvements to existing Railway Network (Project Code – T-2-1)*

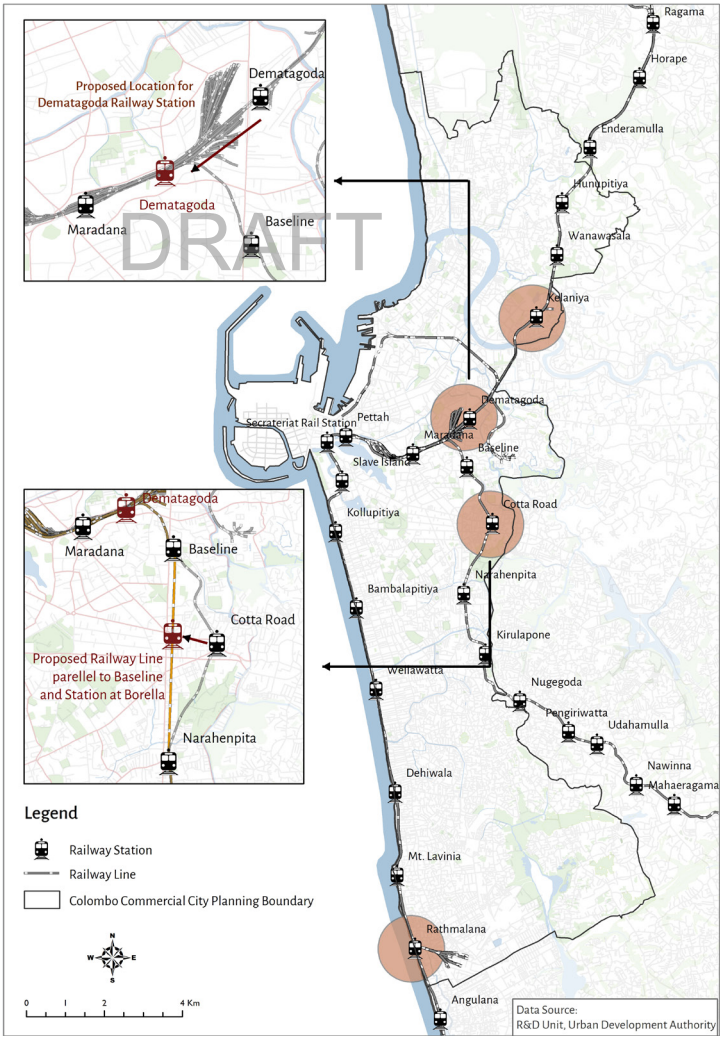


Figure 6.15: *Proposed alterations to existing railway routes and stations (Project Codes – T-2-1-2/ T-2-1-3/ T-2-1-4)*

6.2.2. Electrified Railway Proposals (Project Code - T-2-2)

The proposals of Railway Electrification and Modernization Project (REMP), undertaken by the Western Region Megapolis Planning Project under the Ministry of Megapolis & Western Development are incorporated into the *Colombo Commercial City* Development Plan under the project code – T-2-2. The proposed Railway Electrification routes are listed in the Table 6.3 and shown in Figure 6.16.

As per the proposals, initially Panadura-Colombo-Veyangoda railway section is proposed to be upgraded and modernized to run electric trains. The aims of this project are to save time of people, money and fuel while avoiding the financial loss to individual and an economic loss to country by saving each minute wasted on the road or rail. Furthermore, with modern, fast suburban rail services, passengers carried and the service frequency can be increased and more fuel and man-hours can be saved. Accordingly, the following lines have been proposed to be electrified by 2025.

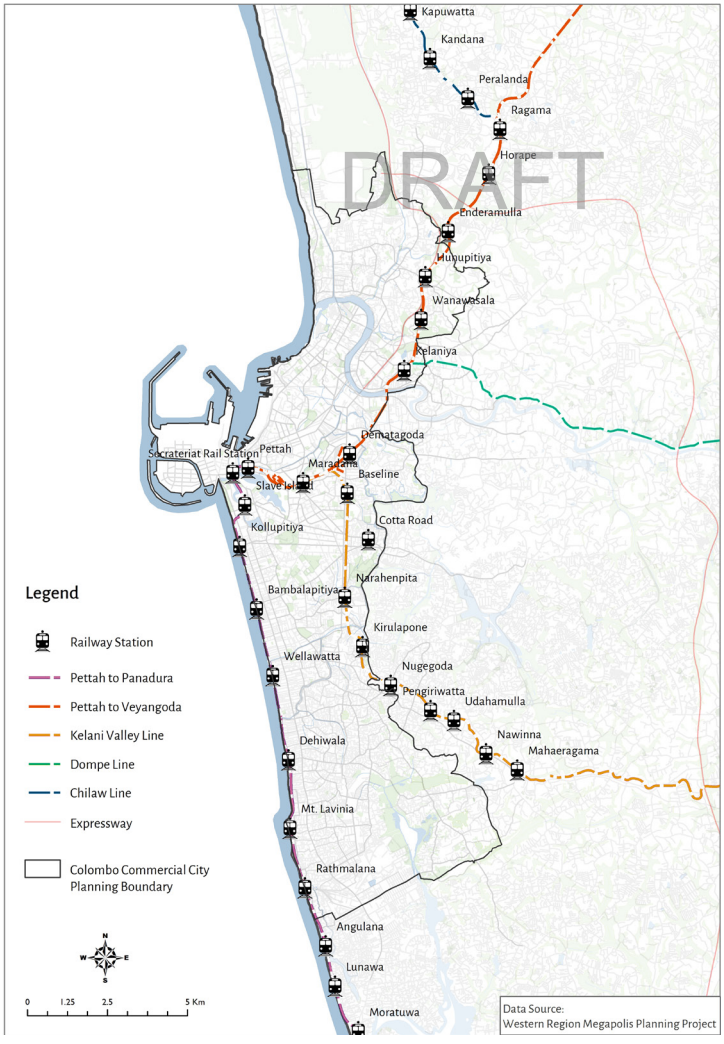


Figure 6.16: *Proposed railway electrification and modernization projects (Project Code – T-2-2)*

No.	Project Name	Project Code
01	Electrification and modernization of Coastal line (Pettah to Panadura)	T-2-2-1
02	Electrification and modernization of Main Line (Pettah to Veyangoda)	T-2-2-2
03	Construction of Dompe Line (Newly introducing an electrified rail facility)	T-2-2-3
04	Kelani valley line development	T-2-2-4

Table 6.3: *Proposed railway electrification and modernization projects (Project Code – T-2-2)*

6.2.3. Proposed Light Rail Transit (LRT) Projects (Project Code – T-2-3)

One of the key public transport improvements identified in the CoMTrans Urban Transport Master Plan is the introduction of a LRT system as a new mode of public transport in the Colombo CBD and the outer region. The proposed LRT system consists of 07 major lines (07 packages) as indicated in the Figure 6.17.

The works of first line (Yellow Line) which connects Malambe and Kollupitiya via Rajagiriya, Kota Road, Borella, Town Hall, Fort and Galle Face has already been started with the endowments of Japan International Cooperating Agency (JICA). The rest of the lines are proposed to be constructed with the endowments of KORIAN Consultancy and the feasibility studies are currently being conducted. The recommendation of **CCCDP – 2019-2030** is that the Package 02 (Green Line) which is Proposed from Kelaniya to Moratuwa Via Dematagoda, Kirulapone, Piliyandala, Moratuwa need to be altered from the point of Kirulapone to Moratuwa along the proposed baseline extension and via Ratmalana, considering the anticipated future densification pattern.

All projects proposed related to LRT Network of Colombo will be incorporated into the *Colombo Commercial City Development Plan – 2019-2030* under the project code T-2-3 given the condition that the recommendations of **CCCDP – 2019-2030** are well accommodated. The Table 6.4 indicates the project codes designated for already identified proposals of LRT Network. However, these project codes may vary depending on the future amendments of the proposals of LRT Network.

No.	Project Name	Proposed Route	Project Code in CCCDP – 2030
01	JICA Line		T-2-3-1
02	Package 01 (Red Line)	Kirulapone to Ragama Via Kollupitya, Pettah, Peliyagoda, Kiribathgoda , Kadawatha	T-2-3-2
03	Package 02 (Green Line) – Proposed by Western Region Megapolis Planning Project	Kelaniya to Moratuwa Via Dematagoda, Kirulapone, Piliyandala, Moratuwa	T-2-3-3
	Package 02 (Green Line) – Route recommended by CCCDP – 2019-203	Kelaniya to Moratuwa Via Dematagoda, Kirulapone, Kalubowila, Ratmalana & Moratuwa	T-2-3-3
04	Package 03 (Blue Line)	Hunupitiya to Kottawa Via Angoda, Koswatta, Thalawathugoda	T-2-3-4

Table 6.4: *Proposed projects under Colombo LRT Network (Project Code – T-2-3)*

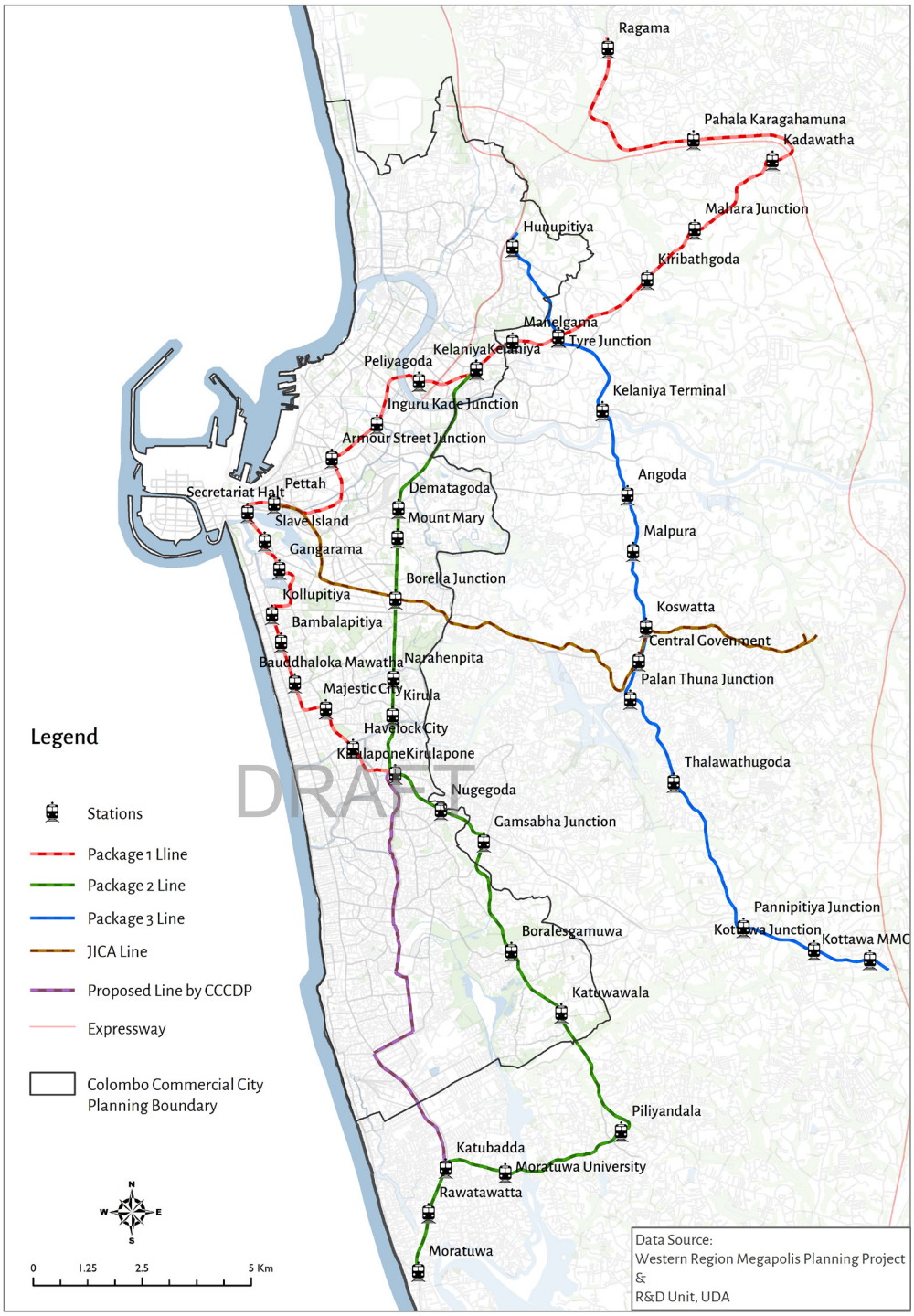


Figure 6.17: *Proposed Light Rail Transit Network*

6.3. Proposed Improvements to Bus Transportation System in Colombo Commercial City (Project Code - T-3)

As it was identified in the context analysis, around 7,400 intra-provincial buses and 3,300 inter-provincial buses depart and arrive at Pettah. It has been estimated that number of passengers departing from Pettah bus terminal is around 38,000 per day for inter-city bus services while 14,000 passengers per day for intra-city bus services. It is important to note that all these passengers and both inter and intra provincial buses circulate through *Colombo Commercial City*. Thus, the bus transportation within *Colombo Commercial City* is a major aspect of its overall transport system. All projects proposed under improvements to Bus Transportation System in *Colombo Commercial City* are aligned under Transport Development Strategy – Action Project Type – 03 with the project code T-3.

6.3.1. Proposed Bus Priority Lane System in Colombo Commercial City (Project Code – T-3-1)

The major arterials of *Colombo Commercial City* become severely congested during peak hours as high vehicle volumes exceed the existing road capacities. The major reason for the exceeding capacities is the drastic increase in number of private vehicles which are used by approximately 38% of passengers. However, approximately 62% of passengers who use public transport, especially bus transport also suffer severely due to traffic congestion, even though the share of buses in vehicle share is only 6% of total vehicles. Hence, it is important to provide due priority to bus transportation in the overall city transport system.

In order to fulfill the above identified need and to speed up vehicle traffic while maintaining ordered flows, **CCCDP – 2019-2030** proposes to have a dedicated Bus Priority Lane on major transport corridors which have a higher bus passenger demand. All projects streamlining under Bus Priority Lane System are proposed to be aligned under the project code T-3-1.

6.4. Proposed Nodal Developments (Project Code – T-4)

A selected set of priority nodes identified under the proposed hierarchy of nodes as a part of the Spatial Development Strategy of **CCCDP – 2019-2030** are proposed to be developed with strategic interventions especially in the scope of transport development. These nodal developments will be aligned under the Transport Development Strategy – Action Project Type – 04 with the project code T-4. The set of nodes (as shown in the Table 6.5) which need immediate interventions were selected mainly based on their priority level, special role in the overall transport network and existing situation including present land use and functioning pattern.

No.	Name of the Nodal Development	Priority level based on proposed nodal hierarchy	Type of Transport Development Intervention
01	Pettah	Level 01	Regional level Multi Modal Transport Hub (MMTH)
02	Peliyagoda	Level 02	National/ Regional level Multi Modal Transport Hub (MMTH)
03	Dematagoda	Level 03	Transit Oriented Development (TOD) Node
04	Ratmalana	Level 04	Transit Oriented Development (TOD) Node
05	Wellawatta	Level 05	Regular Nodal Development
06	Dehiwala	Level 06	Regular Nodal Development
07	Kollupitiya	Level 07	Regular Nodal Development
07	Hunupitiya	Level 08	Regular Nodal Development
08	Boralesgamuwa	Level 09	Regular Nodal Development

Table 6.5: *Selected priority nodes to be developed combined with transport-based developments*

6.4.1. Proposed Level 01 Nodal Developments (Project Code – T-4-1)

As per the **CCCDP** – 2030, Pettah and Peliyagoda are proposed to be developed as the two first priority nodes of *Colombo Commercial City*. It is envisioned that Pettah and Peliyagoda will function as Downtown and Uptown of Colombo with the proposed planning interventions. All types of nodal developments nodal developments proposed under **CCCDP – 2019-2030** will be aligned under Transport Development Strategy – Action Project Type – 04 with the project code T-4.

As per the **CCCDP – 2019-2030**, two major scale Multi Modal Transport Hub Developments will be carried out at Pettah and Peliyagoda, which are proposed to be developed as Level 01 nodes of *Colombo Commercial City*. It is envisioned that Pettah and Peliyagoda will function as Downtown and Uptown of Colombo with the proposed planning interventions. The Level 01 nodal developments proposed under **CCCDP – 2019-2030** are be aligned under the project code T-4-1.

(a) Pettah Nodal Development (Project Code – T-4-1-1)

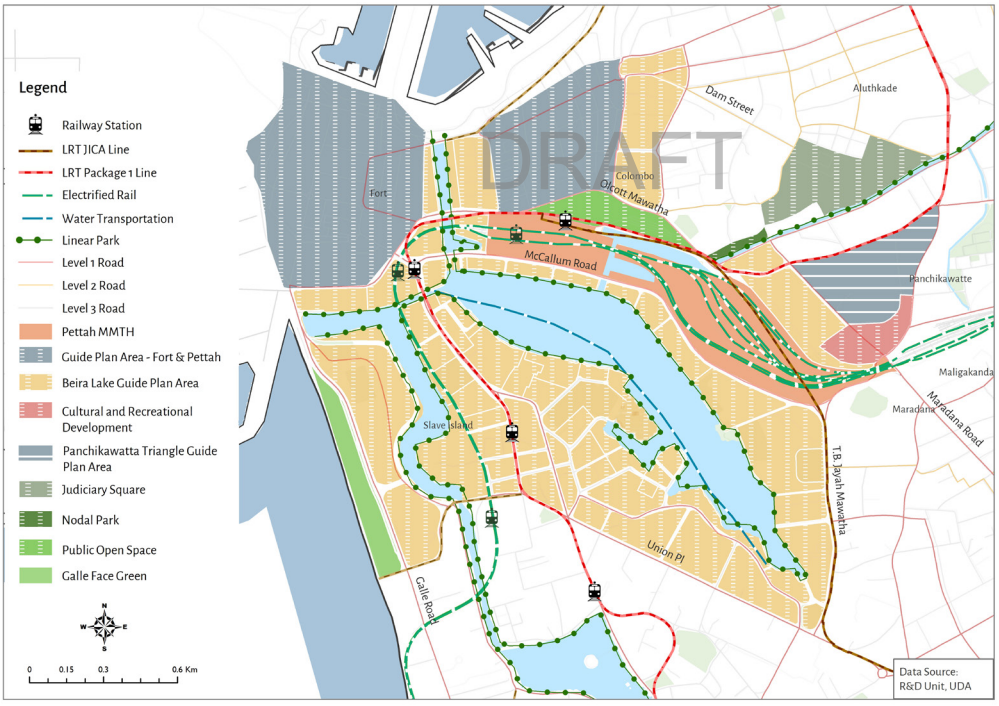
Pettah Nodal Development consists of several planning interventions in the Pettah area including Pettah Multimodal Transport Development Hub (MMTH) which is proposed by Ministry of Megapolis and Western Development. Pettah MMTH Project combines the Railway improvement, LRT development, and Road & Bus Transportation developments. The proposed MMTH development at Pettah consists of a parallel regeneration program where it intends to shift some of the incompatible activities to the outer region of Colombo CBD while releasing key sites for MMTH and other economically beneficial developments. However, it is proposed to change its present role of Pettah as a national transport hub to avoid the unnecessary traffic flows it attracts to the city. It is proposed to promote proposed Peliyagoda MMTH as the national and regional level transport hub and utilize Pettah MMTH as the center of intra-city transport network.

The sub-projects of Pettah Nodal Development project including Pettah MMTH Development will be aligned in **CCCDP – 2019-2030** under the project code T-4-1-1. The relevant sub-projects of Pettah Nodal Development are listed in the Table 6.6 and shown in the Figure 6.18.

No.	Project Name	Project Code
01	Pettah Multi Modal Transport Hub Development	T-4-1-1-1
02	Incorporating Charmer's Granary Mixed Development Project Proposed by Urban Development Authority	T-4-1-1-2
03	Waterfront Mixed Development Project at Galle Face Front	T-4-1-1-3
04	Mixed Development Project at Gunesinghapura, Pettah	T-4-1-1-4
05	Open Space Development at Bestian Mawatha (At the existing Manning Market Premise & Private Bus Stand)	T-4-1-1-5
06	Conducting a Cultural & Recreational Zone Development at Maradana linking Trace Expert City land, Maradana Railway Station, Elphinstone Theatre, Tower Hall, Kularatne Mawatha and T.B. Jaya Mawatha	T-4-1-1-6
07	Construction of Rooftop Public Deck on top of the Trace Expert City Building Complex (Sight Seen deck, Open restaurants)	T-4-1-1-7
08	Implementing a Special Guide Plan for Panchikawatta Triangle Area	T-4-1-1-8
09	Implementing a special Guide Plan for the Pettah Bazaar Area in order to conserve the archeologically important buildings and the special character associated with its daily functioning pattern.	W-4-1-2-2 *Previous Reference: Table 4.10
10	Incorporating Beira Lake Intervention Area Development Plan proposed & implemented by Urban Development Authority	W-4-3-1 *Previous Reference: Table No. 4.13
11	Conducting Colonial Heritage Conservation Project at Colombo Fort, Pettah & Maradana	E-3-1-6 *Following Reference: Table 7.18

No.	Project Name	Project Code
12	Implementing a special Guide Plan for Judiciary Square (Hultsdorf Area)	W-4-4-2 *Previous Reference: Table 4.14
13	Clearing of existing Underserved Settlements in the Reservation and surroundings of St. Sebestian Canal and open up them for Mixed Developments	W-4-4-3 *Previous Reference: Table 4.14
14	Development of Nodal Park in between Sanchiarachchi Garden Road and St. Sebestian Canal (approx. area of 0.7 ha)	W-4-4-1-a *Previous Reference: Table 4.14

Table 6.6: *Proposed Projects under Pettah Nodal Development (Project Code – T-4-1-1)*



Figures 6.18: *Proposed Pettah Nodal Development (Project Code – T-4-1-1)*

(b) Peliyagoda Nodal Development (Project Code – T-4-1-2)

Peliyagoda Nodal Development is one of the major interventions to regenerate Kelani River surroundings and to activate Kelani River Water Esplanade. As explained in the previous section, Peliyagoda is proposed to be one of the Level 01 nodes of *Colombo Commercial City* and the Uptown of Colombo. Therefore, Peliyagoda Nodal Development can be identified as one of the most important projects of **CCCDP – 2019-2030.**

As per the connectivity analysis, it was identified that Peliyagoda is the most connected node within *Colombo Commercial City* in terms of all means of transportation networks. Therefore, it has the potential to act as a national and regional level transport hub which can be harnessed to transform the area and also to divert the unnecessary traffic flows entering City of Colombo. All projects proposed under Peliyagoda Nodal Development will be aligned under the project code T-4-1-2. These projects are indicated in the Table 6.7 and are shown in Figure 6.19.

No.	Project Name	Project Code
01	Peliyagoda Multi Modal Transport Hub Development	T-4-1-2-1 *(Previous reference - Table 4.12)
01-a	Development of Peliyagoda Regional Bus Terminal	T-4-1-2-1-a
01-b	Construction of a Railway Station with mega service capacity at Peliyagoda interlinked with proposed Regional Bus Terminal	T-2-1-1 *Previous Reference: Railway Improvement Projects, Table 6.2
02	Development of an Urban Square along the Right Bank of Kelani River (Peliyagoda Stretch)	T-4-1-2-2
02-a	Construction of a Public Square/ Art Installation/ Picnic Area	T-4-1-2-2-a
02-b	Development of an Open Market Space	T-4-1-2-2-b
02-c	Development of an Open Air Theater & a Public Gathering Arena	T-4-1-2-2-c

No.	Project Name	Project Code
02-d	Construction of a Cruise/ Boat anchoring area and a deck facilitating Water Transportation	T-4-1-2-2-d
03	Construction of three pedestrian bridges across the Kelani river connecting urban square and Kelani River left bank developments	T-4-1-2-3
04	Construction of a water retention Pond	T-4-1-2-4
05	Mixed Development at (Sedawatta) Kelani River left bank area	T-4-1-2-5

Table 6.7: *Proposed Projects under Peliyagoda Nodal Development (Project Code: T-4-1-2)*

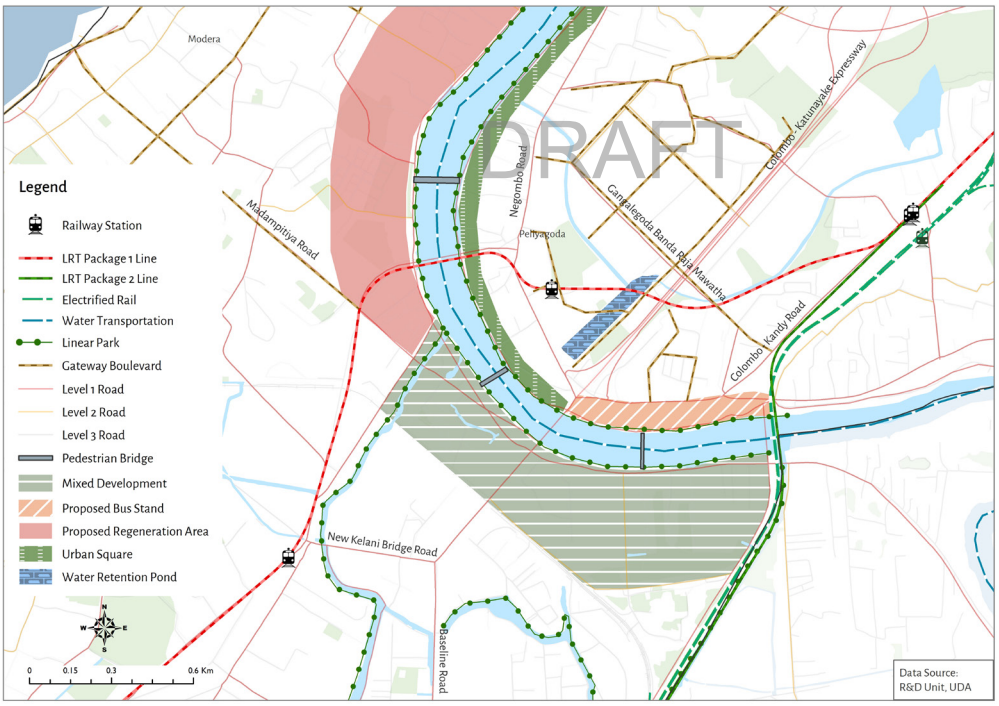


Figure 6.19: *Proposed Peliyagoda Nodal Development (Project Code: T-4-1-2)*

6.4.2. Proposed Level 02 Nodal Developments (Project Code – T-4-2)

The development of Level 02 Nodes will be conducted in two levels such as Transit Oriented Development Nodes and Regular Nodal Developments. Dematagoda and Ratmalana nodes will be developed as TODs with the intention of improving their capacities to serve as regional transport hubs diverting traffic flows to *Colombo Commercial City* from east and south directions respectively.

a) Proposed Transit Oriented Development at Dematagoda (Project Code – T-4-2-1)

Dematagoda acts as a highly functional transport hub even at present due to its strategic location where the main line intercepts with the Baseline Road; the proposed spine of the road network in Colombo. Currently, Dematagoda is the railway station where a large number of passengers from north direction use as an intermediate transit point when entering and departing Colombo City limits and also the adjoining Kotte Capital City.

Understanding its locational prominence, Dematagoda is proposed to be developed in the theme of Transit Oriented Development enabling to enhance its present role and to act as the East Gate of *Colombo Commercial City* which provides transit in between inter and intra city transport modes.

The projects coming under Proposed Transport Oriented Development at Dematagoda are aligned under the project code T-4-2-1. These projects are listed in the Table 6.8 and shown in the Figure 6.20.

No.	Project Name	Project Code
01	Shifting of Dematagoda Railway Station towards west to serve both Main line and Kelani Valley line	T-2-1-2 *Previous Reference: Railway Improvement Projects, Table 6.2
02	Construction of LRT station close to the Dematagoda Railway station at proposed location	T-4-2-1-1
03	Promote mixed development at existing Dematagoda Railway station area	T-4-2-1-2

Table 6.8: *Proposed Projects under Transit Oriented Development at Dematagoda (Project Code: T-4-2-1)*

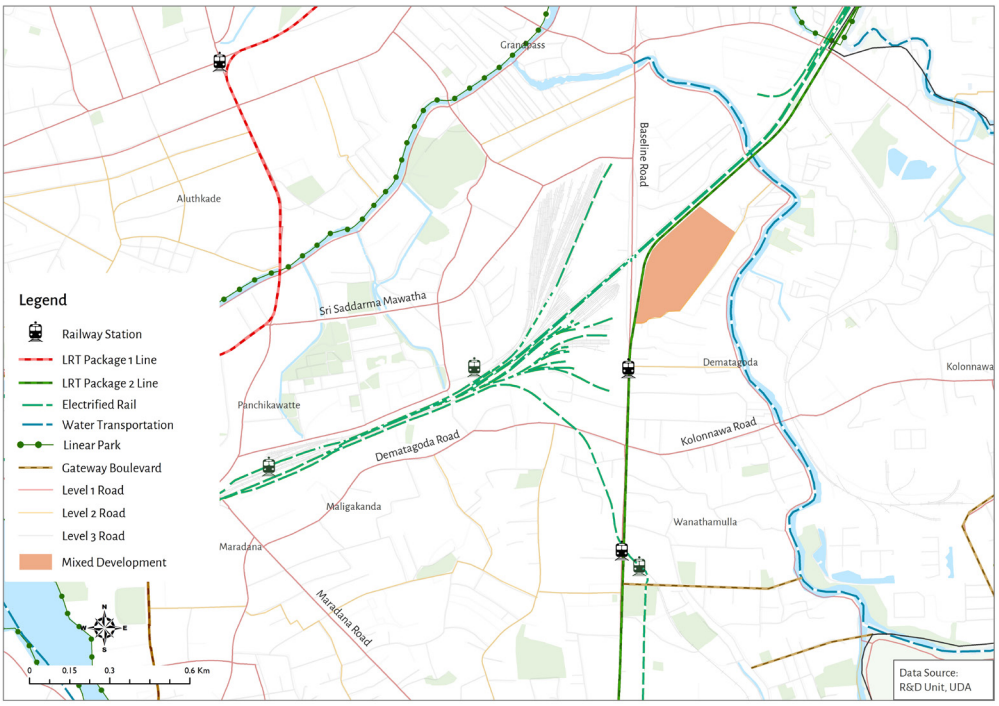


Figure 6.20: *Proposed TOD at Dematagoda (Project Code: T-4-2-1)*

(b) Proposed Transit Oriented Development at Ratmalana (Project Code – T-4-2-2)

Even though, the railway station of Ratmalana acts as a main transit point, there is no any convenient physical link in between the railway station and bus transportation system. Hence, it is proposed to promote Transit Oriented Development at Ratmalana interlinking different modes of transport enabling easy transfer between modes. It is anticipated that with the proposed interventions, Ratmalana will act as the South Gate of *Colombo Commercial City* providing an option of mode and route transfer for south traffic of the city.

All projects proposed under Transit Oriented Development at Ratmalana are aligned under project code T-4-2-2. The projects falling under TOD Node at Ratmalana are listed in the Table 6.9 and shown in Figure 6.21.

No.	Project Name	Project Code
01	Capacity improvement of Ratmalana Railway Station as a part of proposed Ratmalana TOD development	T-2-1-5 *Previous Reference: Railway Improvement Projects, Table 6.2
02	Promoting mixed developments with public open space at railway lands (existing CGR Quarters land), Ratmalana	T-4-2-2-1
02-a	Promoting a Park, Public Square, Playground and an Exhibition Space at the proposed Public Open Space at CGR Land	T-4-2-2-1-a
02-b	Construction of an artificial water fountain at the proposed Public Open Space at CGR Land	T-4-2-2-1-b
02-c	Promoting middle income housing in the proposed mixed development area at CGR Land	T-4-2-2-1-c
06	Promoting a beach park at Ratmalana Beach close to the Railway Station	T-4-2-2-5
07	Constructing a Linear Park/ Bicycle path connecting Railway, LRT station, Mixed Development & Beach Park	T-4-2-2-6
08	Conducting Ratmalana - Belekkade Pola Development Project	T-4-2-2-7

Table 6.9: *Proposed Projects under Transit Oriented Development at Ratmalana (Project Code: T-4-2-2)*

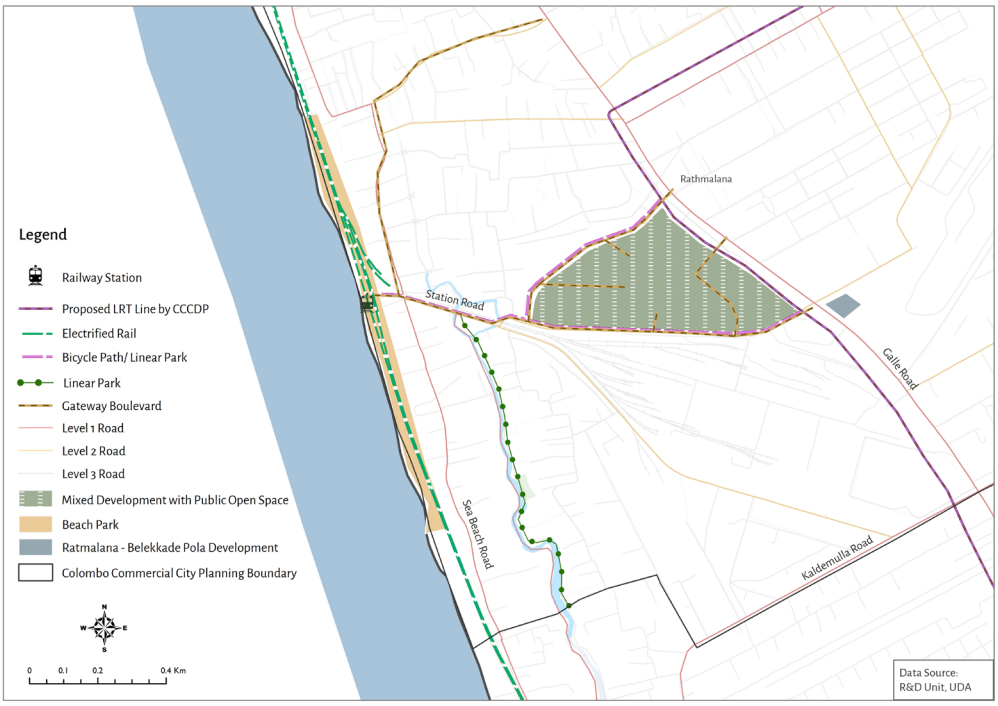


Figure 6.21: *Proposed TOD at Ratmalana (Project Code: T-4-2-2)*

(c) Proposed Nodal Development at Wellawatta (Project Code – T-4-2-3)

The proposed projects coming under Wellawatta Nodal Development are aligned under the project code T-4-2-3 and are indicated in the Table 6.10 and Figure 6.22.

No.	Project Name	Project Code
01	Promoting a Water Transportation Hub by constructing of a boat/cruise anchoring area to facilitate water transportation initiation link from Wellwatta to Battaramulla	T-4-2-3-1
02	Construction of a linear park along the Wellawatta Canal	T-4-2-3-2
03	Promoting a Gateway Boulevard along Wellawatta Station Road to connect Wellawatta Junction at Galle Road and Marine Drive	WO-2-7 *Previous Reference: Table 4.7 (Gateway Boulevards)

No.	Project Name	Project Code
04	Exposing Cooray Park for public access and linking it with Canal Front through 1st Lane, 3rd Lane and Rohini road	T-4-2-3-4
05	Redevelopment of Wellawatta Railway Station	T-4-2-3-5
06	Promoting mixed developments at Wellawatta Public Car Park Land	T-4-2-3-6

Table 6.10: *Projects coming under proposed Nodal Development at Wellawatta (Project Code: T-4-2-3)*

Figure 6.22: *Proposed Nodal Development at Wellawatta (Project Code: T-4-2-3)*

(d) Proposed Nodal Development at Dehiwala (Project Code – T-4-2-4)

The proposed projects coming under Dehiwala Nodal Development are aligned under the project code T-4-2-4. The list of projects are indicated in the Table 6.11 and Figure 6.23.

No.	Project Name	Project Code
01	Redevelopment of Dehiwala Railway Station	T-4-2-4-1
02	Mixed Development Project at UDA Market Land	T-4-2-4-2
03	Mixed Development project Dehiwala Mt-lavinia MC Market Land	T-4-2-4-3
04	Constructing a Cycling path connecting Dehiwala Zoological Garden and proposed Dehiwala Canal Linear path	T-4-2-4-4
05	Promoting Gateway Boulevard Roads at Station Road and Ediriweera Mawatha	WO-2-28 & WO-2-29 *Previous Reference: Table 4.7 (Gateway Boulevards)

Table 6.11: *Projects coming under proposed Nodal Development at Dehiwala (Project Code: T-4-2-4)*

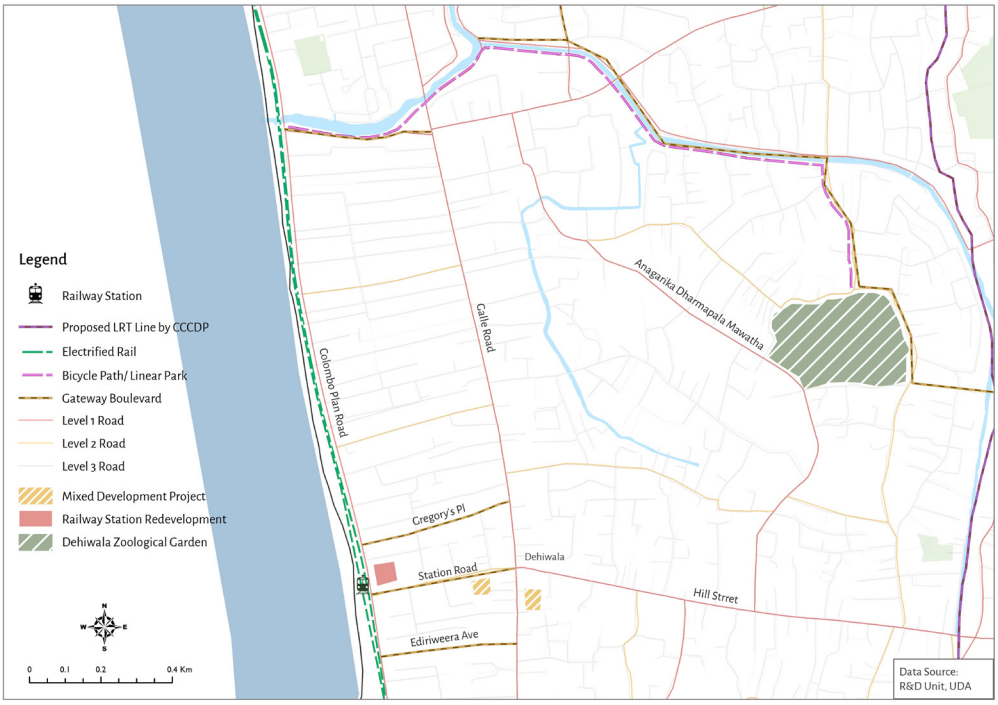


Figure 6.23: *Proposed Nodal Development at Dehiwala (Project Code: T-4-2-4)*

(e) Proposed Nodal Development at Kollupitiya (Project Code – T-4-2-5)

The proposed projects coming under Kollupitiya Nodal Development will be carried out under proposed Kollupitiya Junction Guide Plan under the project code T-4-2-5.

6.4.3. Proposed Level 03 & 04 Priority Nodal Developments (Project Code – T-4-3)

The development of Level 03 & 04 Priority Nodes will be conducted as Regular Nodal Developments. Hunupitiya will be developed as a Level 03 Node considering its transport linkages with bus, rail and proposed light rail transit connections and Boralesgamuwa will be developed as a Level 04 Node to cate its neighboring low-density residential development.

(a) Proposed Nodal Development at Hunupitiya (Project Code – T-4-3-1)

The proposed projects coming under Hunupitiya Nodal Development are aligned under the project code T-4-3-1. These projects are indicated in the Table 6.12 and Figure 6.24.

No.	Project Name	Project Code
01	Redevelopment of Hunupitiya Railway Station	T-4-3-1-1
02	Development of LRT Station	T-4-3-1-2
03	Recommending Promotion of Mixed Development at the land currently utilized by Ceylon Fertilizers Company Limited	T-4-3-1-3
04	Recommending Promotion of Commercial Developments combined with the proposed Railway Station Development	T-4-3-1-4
05	Recommending a new Expressway Entrance/ Exit Point at Hunupitiya	T-4-3-1-5

Table 6.12: *Projects coming under proposed Nodal Development at Hunupitiya (Project Code: T-4-3-1)*

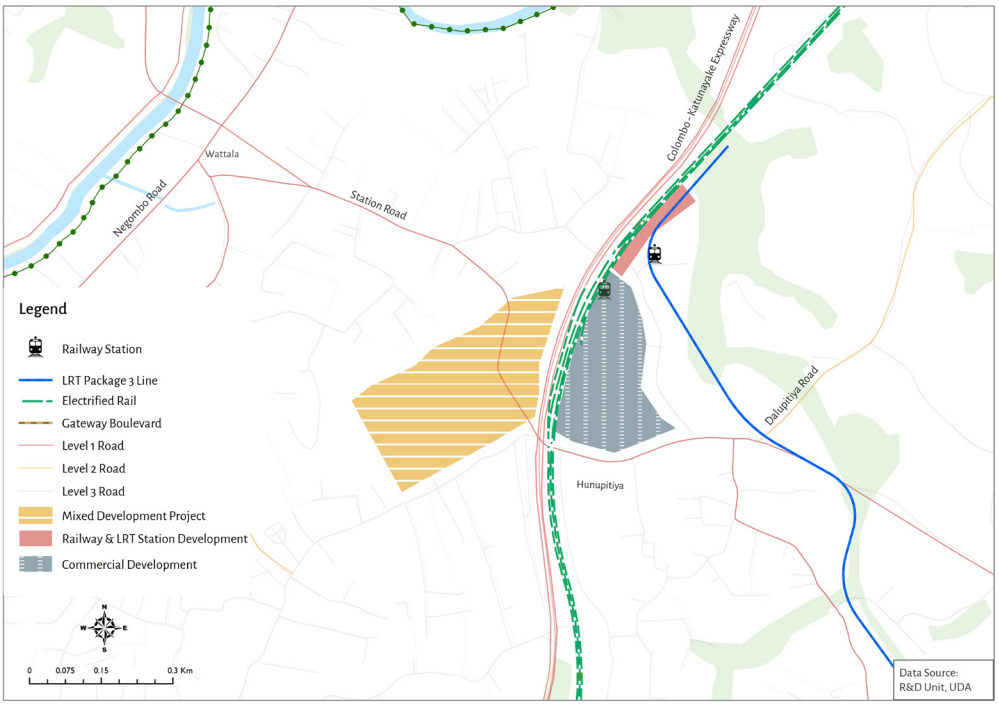


Figure 6.24: *Proposed Nodal Development at Hunupitiya (Project Code: T-4-3-1)*

(b) Proposed Nodal Development at Boralesgamuwa (Project Code – T-4-3-2)

The proposed projects coming under Boralesgamuwa Nodal Development are aligned under the project code T-4-3-2. These projects are indicated in the Table 6.13 and Figure 6.25.

No.	Project Name	Project Code
01	Promoting an Agricultural Tourism Model Village at Katuwawala	T-4-3-2-1
02	Development of a Wetland Park at Attidiya Bird Sanctuary	W-4-8-1 *Previous Reference: Table 4.18
03	Promoting Mixed Developments at UDA owned land located adjacent to Colombo – Horana Road opposite to Pirivena Road	T-4-3-2-3
04	Promoting Commercial and Mixed Developments at the existing Boralesgamuwa Police Station Land	T-4-3-2-4

No.	Project Name	Project Code
05	Constructing a Walking Path along the wetland stretching from Colombo – Horana Road towards Boraleshamuwa Lake	T-4-3-2-5
06	Conducting a special Landscaping Project at Boralesgamuwa Town Center	T-4-3-2-6

Table 6.13: Projects coming under proposed Nodal Development at Boralesgamuwa (Project Code: T-4-3-2)

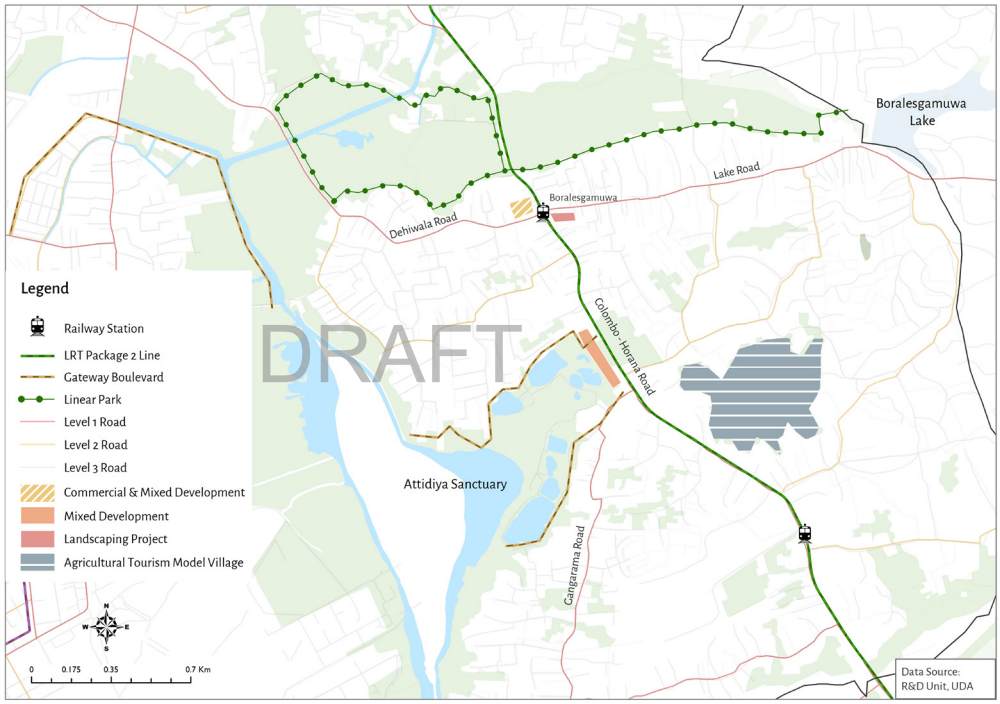
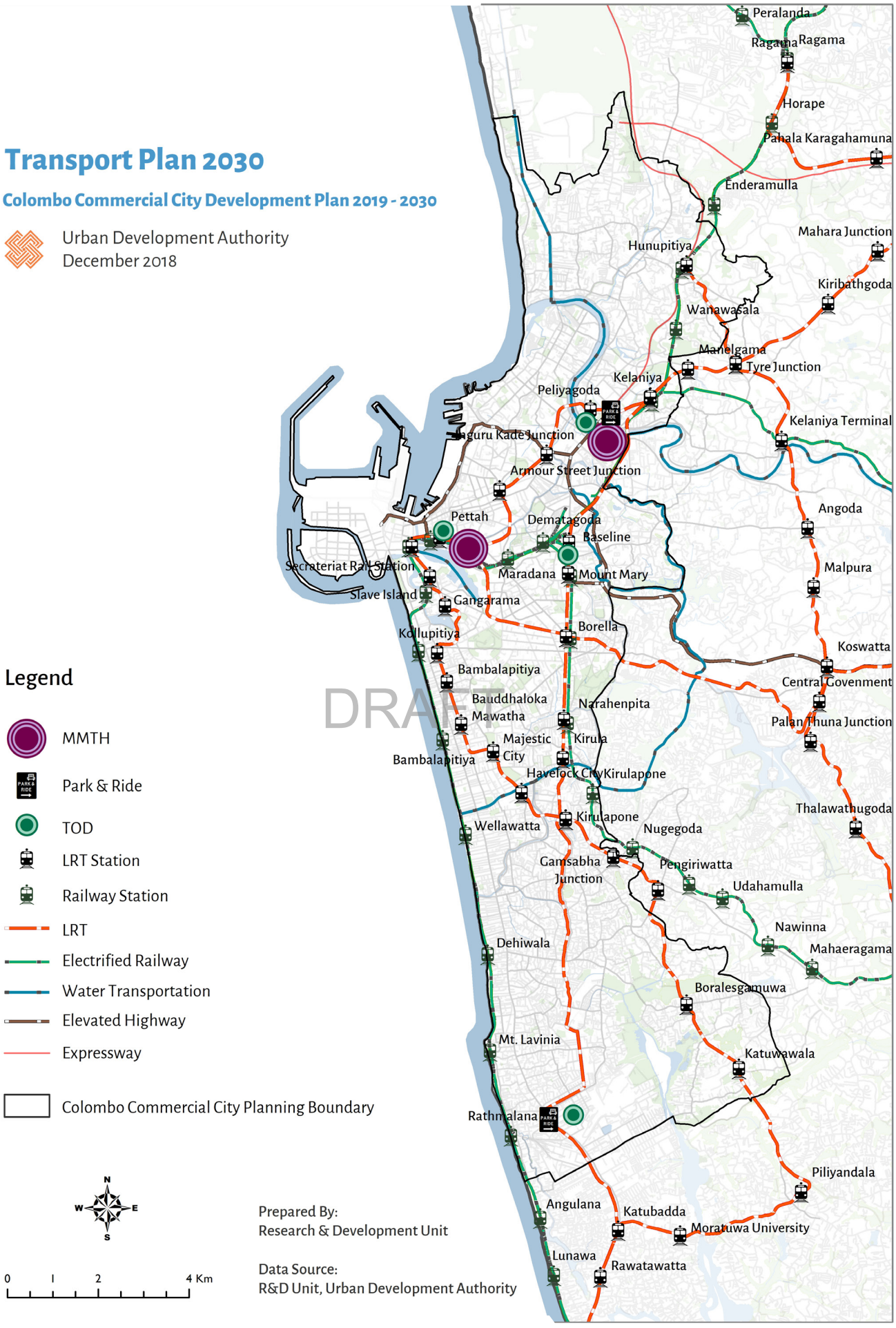


Figure 6.25: *Proposed Nodal Development at Boralesgamuwa (Project Code: T-4-3-2)*

Transport Plan 2030

Colombo Commercial City Development Plan 2019 - 2030

Urban Development Authority
December 2018



Legend

- MMTH
- Park & Ride
- TOD
- LRT Station
- Railway Station
- LRT
- Electrified Railway
- Water Transportation
- Elevated Highway
- Expressway
- Colombo Commercial City Planning Boundary

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Prepared By:
Research & Development Unit

Data Source:
R&D Unit, Urban Development Authority

Map 6.4: *Transport Development Strategy Composite Map - 2030*

6.5. Future Possible Impacts of Transport Development Strategies

6.5.1. Ease of Traffic Congestion and Attraction of Developments due to changes of Integration Pattern

As per the theoretical explanations, roads with higher integration values attract more developments to the road-based corridors. As explained in the section 4.3.3 under Water Esplanades Development Strategy of **CCCDP – 2019-2030**, it was identified that the integration levels would relatively increase in areas such as Peliyagoda, Mattakkuliya, Kolonnawa and Attidiya due to the impact of newly introduced water drives.

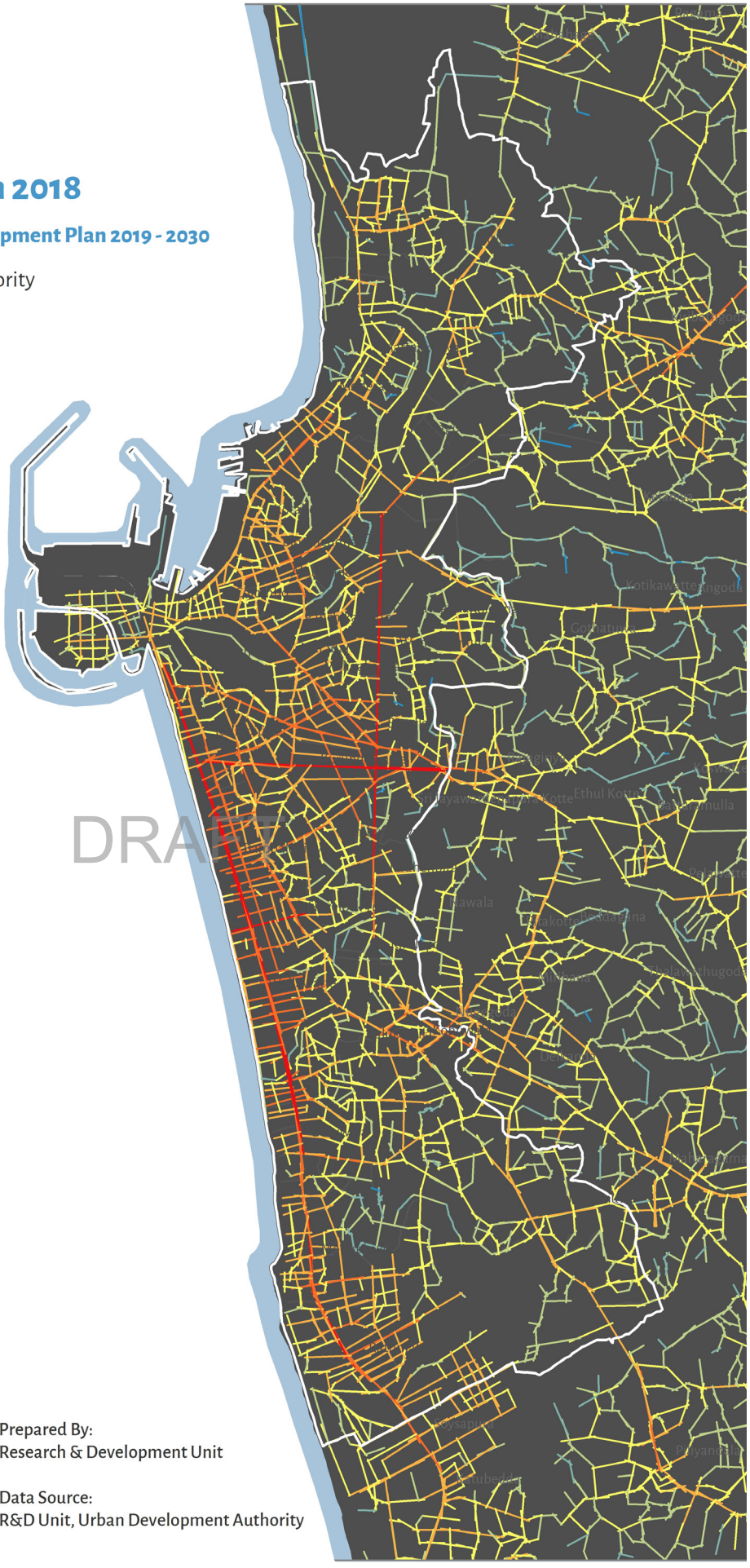
This section of the report evaluates further changes of integration values after introducing new road links and road widenings proposed under the Road Transportation Improvement Strategic Actions which have been elaborated under the Section 6.1 of this chapter. The change of integration values was evaluated using the Space Syntax Analysis. The integration values of road sections as per the existing road network and after introducing all new roads and road widenings as per the proposed road network are presented in the Map 6.5 & 6.6 respectively. One of the major criteria considered in promoting Level 01 and 02 roads was to induce more developments into areas which are currently at a relatively underutilized state as per the planning point of view. As explained in the section 4.2.3 - (a) under Water Esplanades Development Strategy of **CCCDP – 2019-2030**, the main objective of introducing water drives as Level 01 roads was to expose abandoned waterfronts for developments.

When analyzing the change of integration values after introducing all new roads and road widenings including water drives, it could observe that the high integration values of road sections located within Colombo Core area have been relatively decreased releasing their existing pressure both in terms of traffic and development attraction. Consequently, this pressure has been equally distributed to peripheral areas including Peliyagoda, Mattakkuliya, Kolonnawa, Kalubowila and Ratmalana areas as new roads introduced in these areas indicate a moderate level of integration level which can be considered as a significant level of increase in integration values of the road sections in these areas. For example, the integration levels of Baseline Road and Galle Road have been slightly decreased in locations such as Kollupitiya, Bambalapitiya and Borella where as new extension of Baseline Road stretching from Kirulapona to Ratmalana and new roads introduced in Peliyagoda, including level 01 water drives at either side of Kelani River indicate moderate level of integration values compared to the values of whole network. Another important observation is that the Extended Lake Drive indicates a relatively lower integration value, meaning less attraction for developments. This situation will make Extended Lake Drive an ideal traffic bypass road being an alternative to divert excessive traffic in Baseline Road and other major arterials.

Existing Integration 2018

Colombo Commercial City Development Plan 2019 - 2030

Urban Development Authority
December 2018



Legend

Integration

- < -0.72 Std. Dev.
- -0.72 - -0.39 Std. Dev.
- -0.39 - -0.056 Std. Dev.
- -0.056 - 0.28 Std. Dev.
- 0.28 - 0.61 Std. Dev.
- 0.61 - 0.93 Std. Dev.
- 0.93 - 1.3 Std. Dev.

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Prepared By:
Research & Development Unit

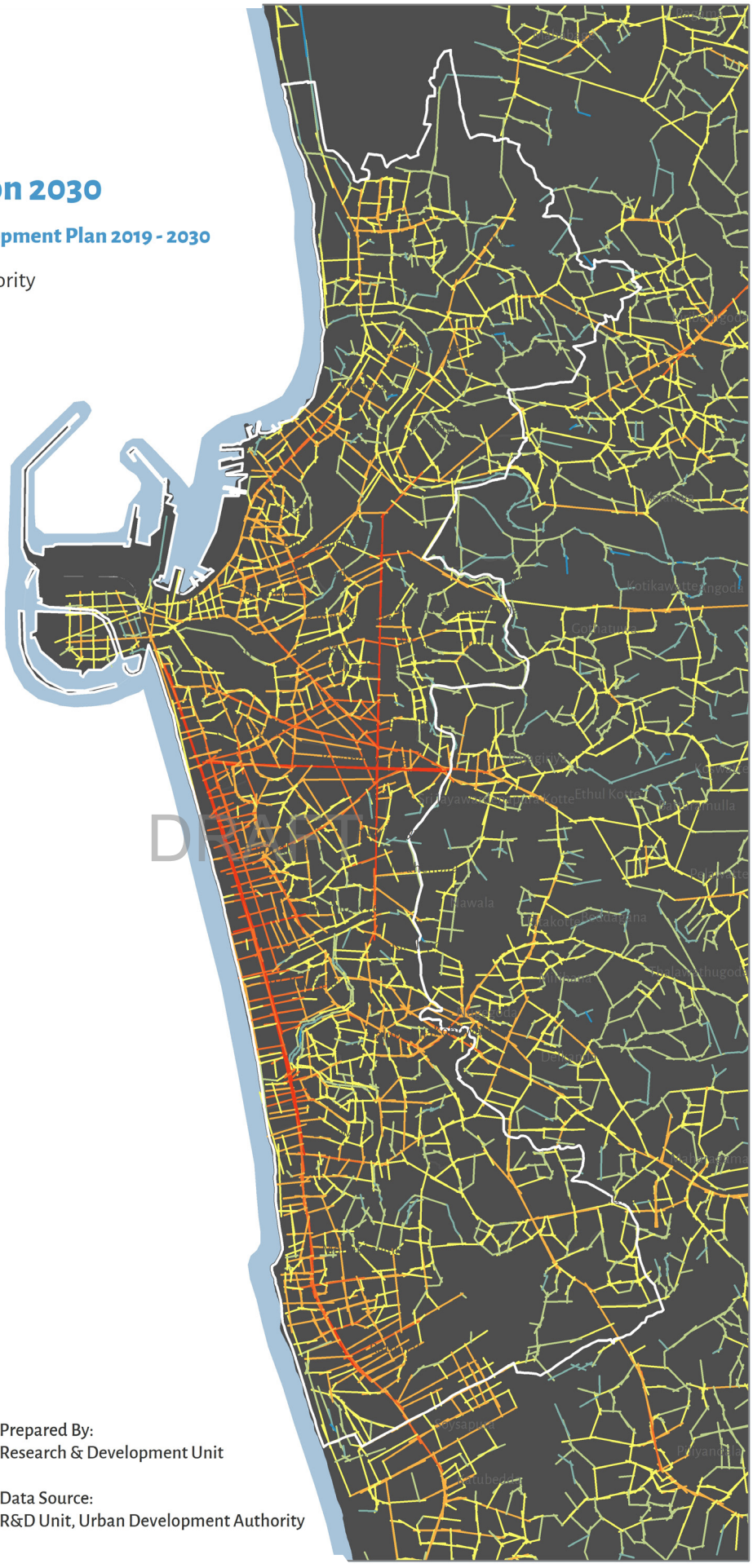
Data Source:
R&D Unit, Urban Development Authority

Map 6.5: *Integration Levels of Existing Road Network - 2018*

Expected Integration 2030

Colombo Commercial City Development Plan 2019 - 2030

Urban Development Authority
December 2018



Legend

Integration

- < -0.72 Std. Dev.
- -0.72 - -0.39 Std. Dev.
- -0.39 - -0.056 Std. Dev.
- -0.056 - 0.28 Std. Dev.
- 0.28 - 0.61 Std. Dev.
- 0.61 - 0.93 Std. Dev.
- 0.93 - 1.3 Std. Dev.

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Prepared By:
Research & Development Unit

Data Source:
R&D Unit, Urban Development Authority

Map 6.6: *Integration Levels of Proposed Road Network – 2030*

6.5.2. Ease of traffic congestion due to impacts of proposed hierarchically arranged road network

The traffic impact of proposed Road Network was analyzed using traffic simulation software, STRADA Modelling. One of the major expectations of the strategic interventions proposed to the existing transport system of *Colombo Commercial City* is to ease the traffic congestion within the city. It was identified in the context analysis that the severe traffic congestion on major arterials and nodes during peak hours result;

- Average speed less than 10km/hour (which is significantly lower compared to other international cities)
- Colombo having moderate level of air quality with average of 80 AQI of PM2.5 level
- Overall economic loss of LKR 40 Billion accounting for 1.5% annual GDP loss within CMC area

Therefore, the changes in traffic pattern of *Colombo Commercial City* due to newly introduced road links and road widening were analyzed using following traffic parameters.

a) The changes in Volume Capacity Ratios and Traffic Volumes (in PCUs)

Volume Capacity Ratio is the ratio in between total no. of vehicles passing a certain point on road in one hour to the maximum no. of vehicles that can pass the same point at a reasonable traffic condition. The Volume Capacity Ratios and Traffic Volumes of existing road network that can be expected in the Do-nothing scenario are shown in the Figure 6.26 whereas the scenario which represents the traffic impacts of road development interventions made by **CCCDP – 2019-2030** are shown in the Figure 6.27.

It was identified that the predicted Volume Capacity Ratios (VCR) and traffic volumes (in terms of Passenger Car Units (PCU)) of proposed road network will be relatively decreased compared to the Volume Capacity Ratios that can be resulted in the Do-nothing scenario. It can be observed that VCRs will be significantly decreased at Baseline Road, Kandy Road, certain parts of Galle Road, Peliyagoda, Colombo Fort, Pettah, Maradana, Dematagoda, Kirulapona & Nugegoda at High level Road and many parts of Colombo CBD area. Hence, these indicators suggest that it can be expected that the traffic congestion of *Colombo Commercial City* during peak hours will be reduced with the future hierarchically arranged road network proposed by **CCCDP – 2019-2030**.

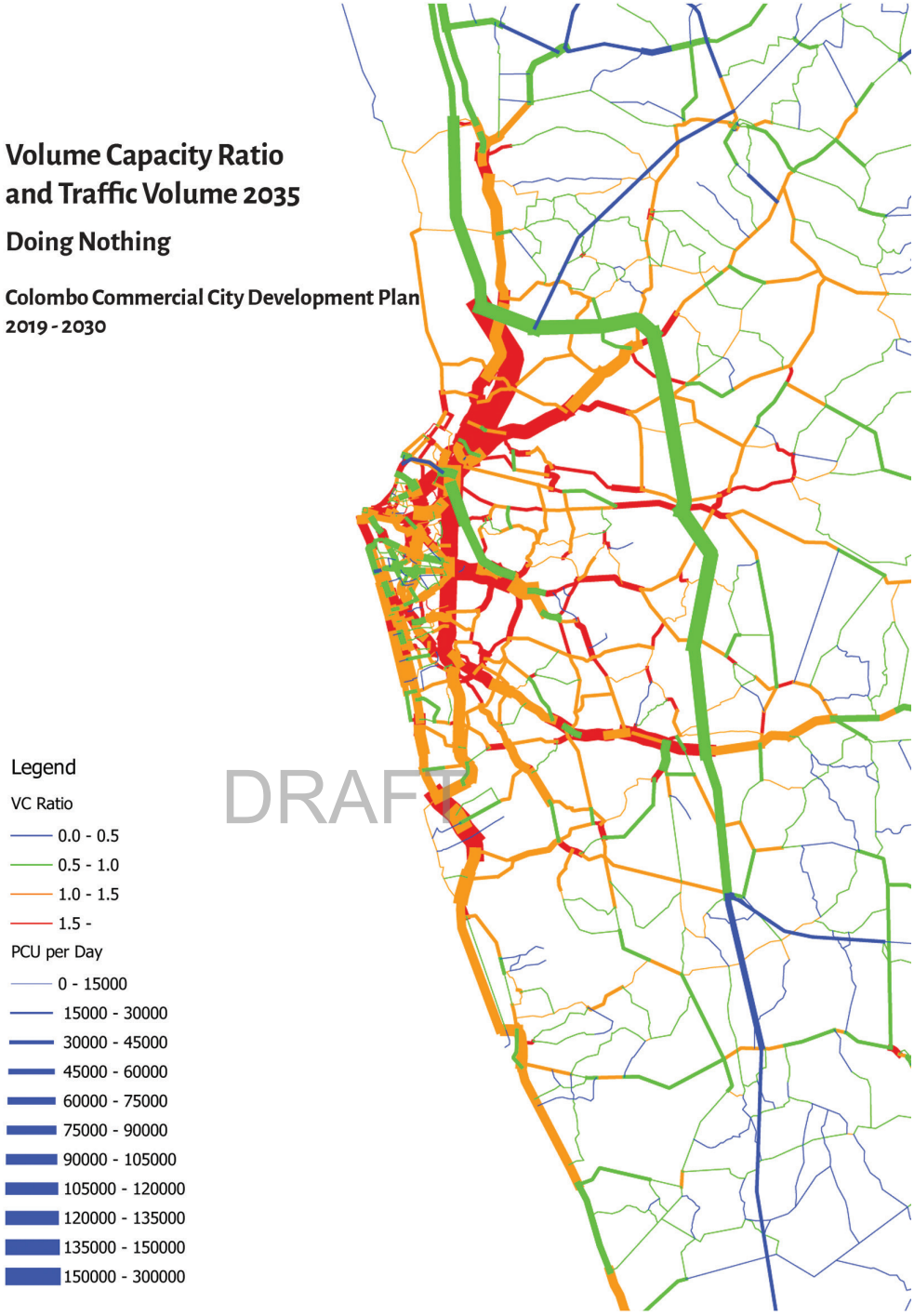


Figure 6.26: *Expected Volume Capacity Ratios and Traffic Volumes (in terms of PCU) in the Do-nothing Scenario - 2035*

b) Increased Public Transport Passenger Volumes

Introducing new modes of public transport and improvements to pubic transport such as Light Rail Transit, Electrified Railway and Bus Priority Lane Systems are some of the major transportation interventions of **CCCDP – 2019-2030**. Therefore, the impacts of these interventions were analyzed considering the changes of Public

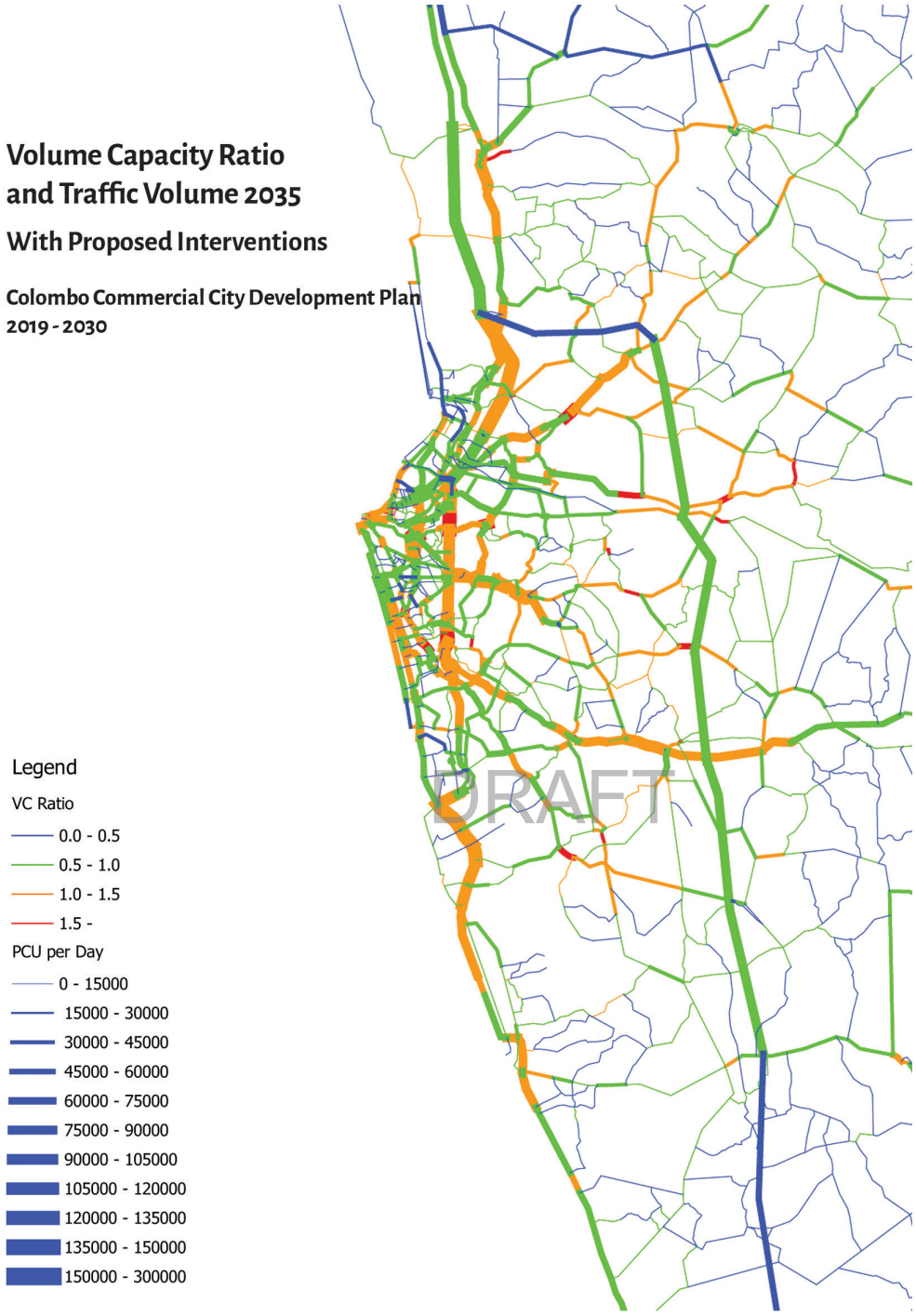


Figure 6.27: *Expected Volume Capacity Ratios and Traffic Volumes (in terms of PCU) after the Improvements to the Road Network - 2035*

Transport Passenger Volumes as indicated in the Figure 6.28 (representing the Do-nothing scenario) and Figure 6.29 (representing the scenario which includes the public transportation improvements carried out by **CCCDP – 2019-2030**).

It can be observed that the Public Transport Passenger Volumes which are completely handled by bus and rail transportation at the existing situation, will be distributed to

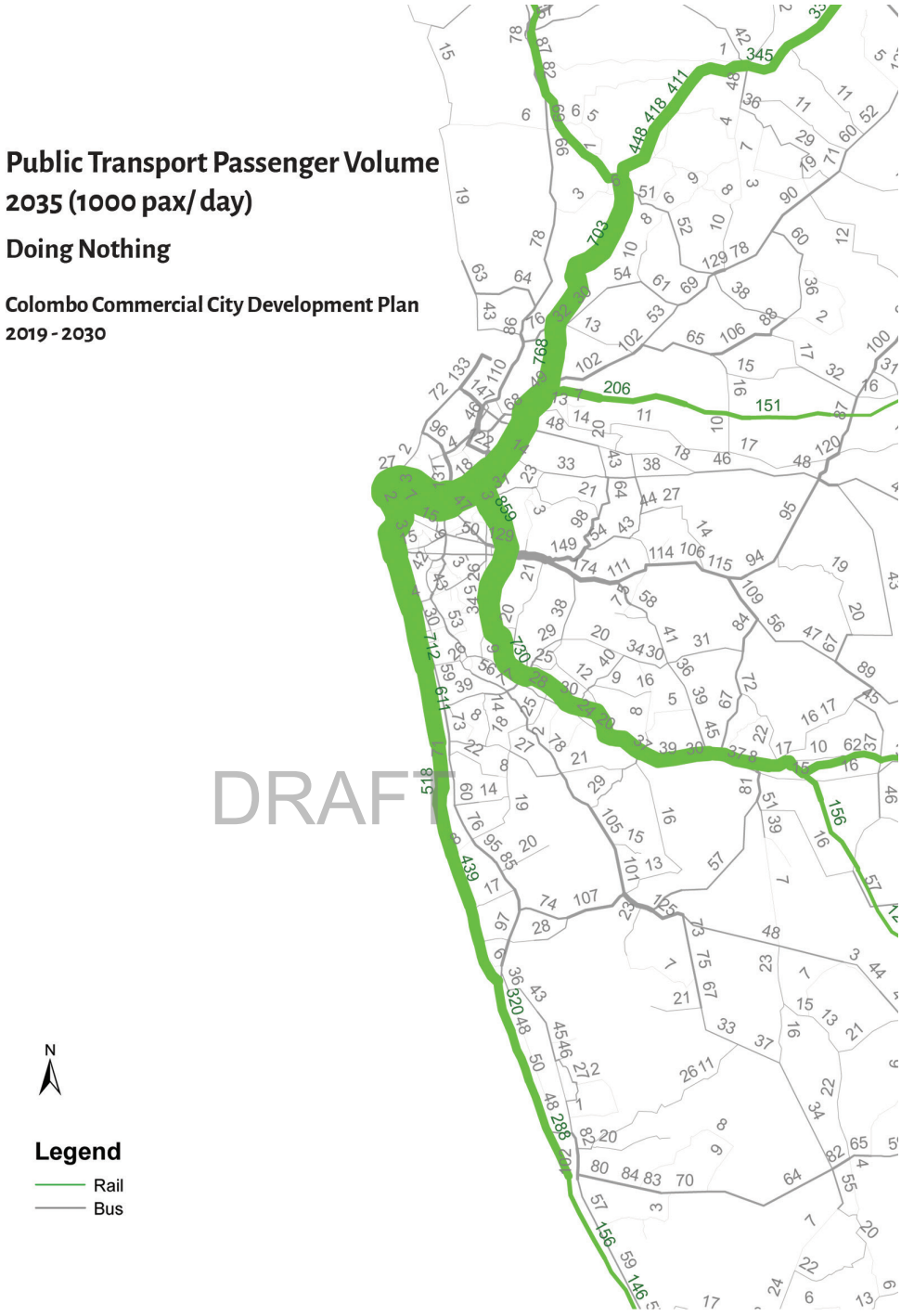


Figure 6.28: *Expected Public Transport Passenger Volumes in the Do-nothing Scenario - 2035*

other new modes of transport such as Light Rail Transit. This will lessen the current pressure on rail and bus transportation in a considerable level. At the same time, with the proposed railway electrification, the handling capacities of rail transportation will also be increased reducing its current over exceeded passenger volumes.

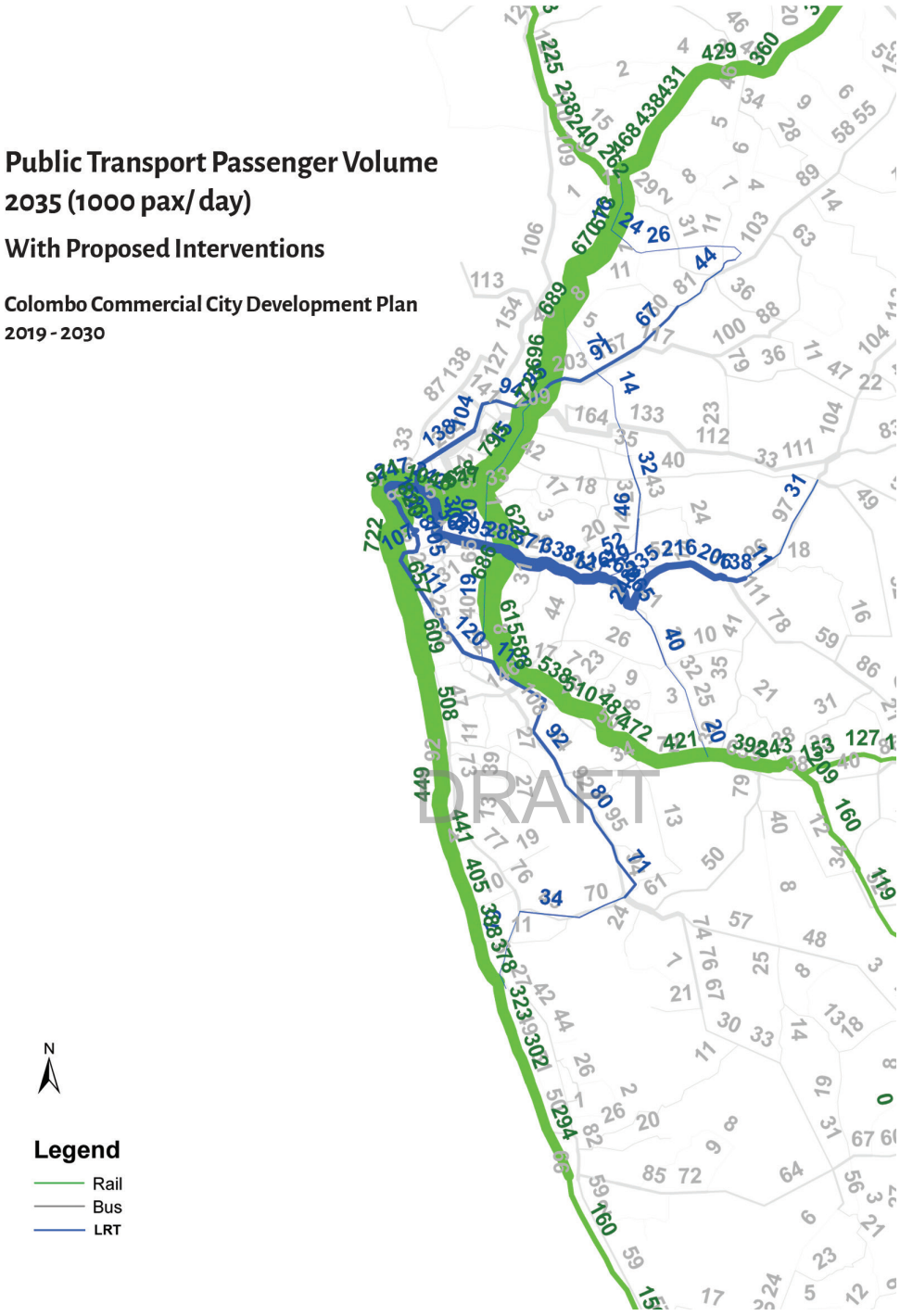


Figure 6.29: *Expected Public Transport Passenger Volumes after introducing new public transport modes such as LRT and Electrified Railway - 2035*

Ease of traffic congestion due to impacts of proposed hierarchically arranged road network

6.5.3. Increased on land values within Colombo Commercial City due to transport development strategies (Transit Oriented Developments)

There are significant impacts of transport development strategies such as proposed road developments and Transit Oriented Developments especially on city land values.

a) Impacts of Transit Oriented Developments (TODs)

The impacts of Transit Oriented Developments were analyzed based on the theoretical explanations given in the 'Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects, The National Academies Press, 2004' regarding the direct and neighboring impacts of TODs. As per these theoretical explanations, the major benefits of TODs are increase in land values, rents and real-estate performance, increase of affordable housing opportunities and revitalization of neighborhoods.

It was identified that the direct impact areas of Pettah MMTH, Peliyagoda MMTH, Dematagoda TOD and Ratmalana TOD are 1.186 km², 1.182 km², 1.492 km² and 1.462 km² respectively within the buffers of 750 m radius. The overall neighboring impact area of all four TODs within the buffers of 2 km radius is approximately 19.2 km². The areas that would have both direct and neighboring impacts of TODs account for approximately 24% of total land of *Colombo Commercial City*. The TOD impact areas are shown in the Figure 6.30.

a) Expected changes in land values

As explained in the Section 4.3.2 under the Water Esplanade Development Strategy, it was estimated that the high land values which are largely concentrated in Colombo Central Business District, will be dispersed into peripheral areas as a result of exposing many of the hidden city backyards into front yards with the proposed waterfront developments. The further changes in land values that can be expected as a result of Transport Oriented Developments was evaluated and it was identified that the land values of Colombo CBD area will be further increased while the land values of peripheral areas such as Wattala, Peliyagoda, Kolonnawa, Ratmalana and Boralesgamuwa will also be increased drastically. The existing land values and estimated land values that will be resulted after both waterfront development interventions and transport-oriented development interventions are shown in the Map 6.73 and 6.8 respectively.

Future Possible Impacts of Transport Development Strategies

Increased on land values within Colombo Commercial City due to transport development strategies (Transit Oriented Developments)

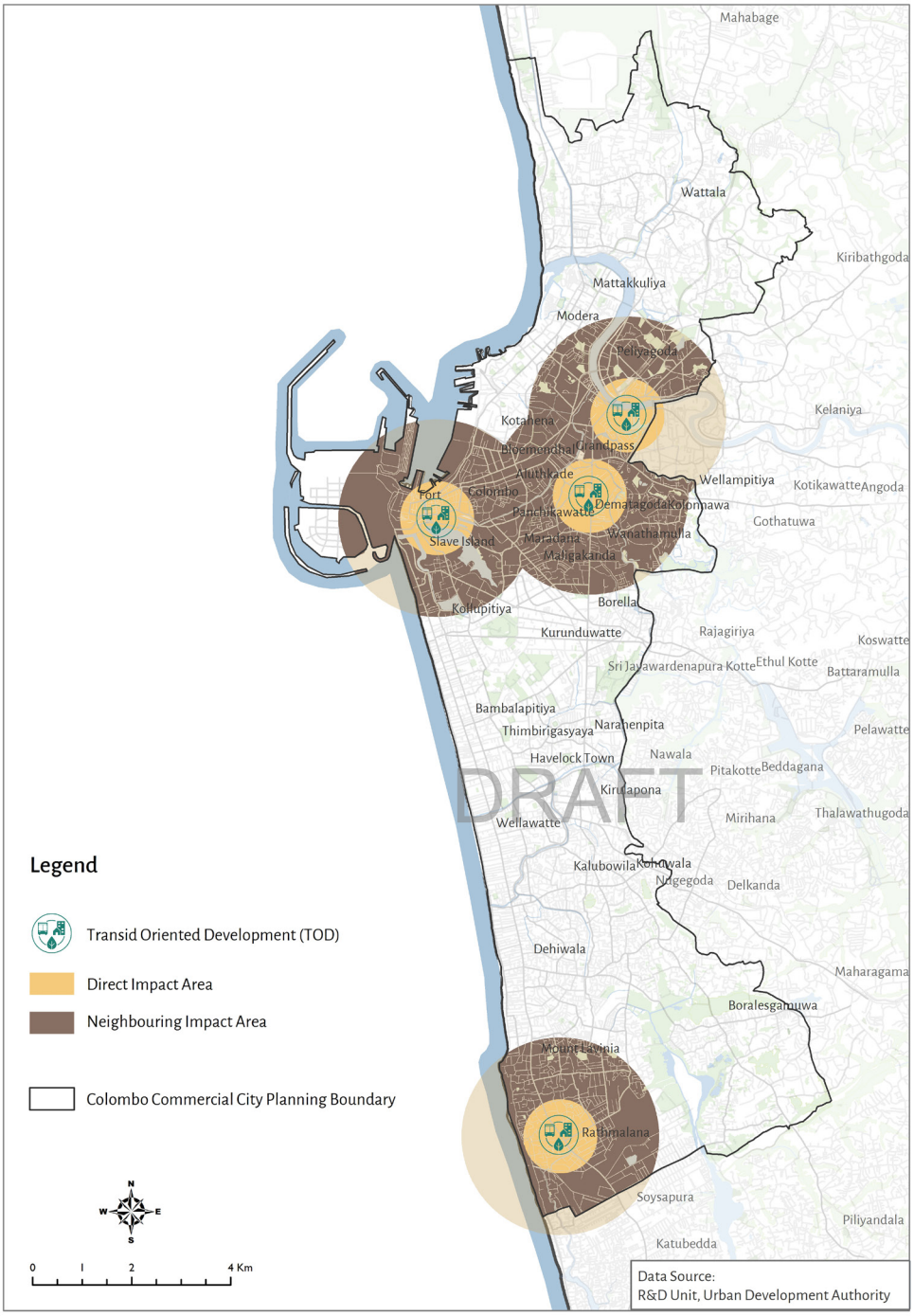
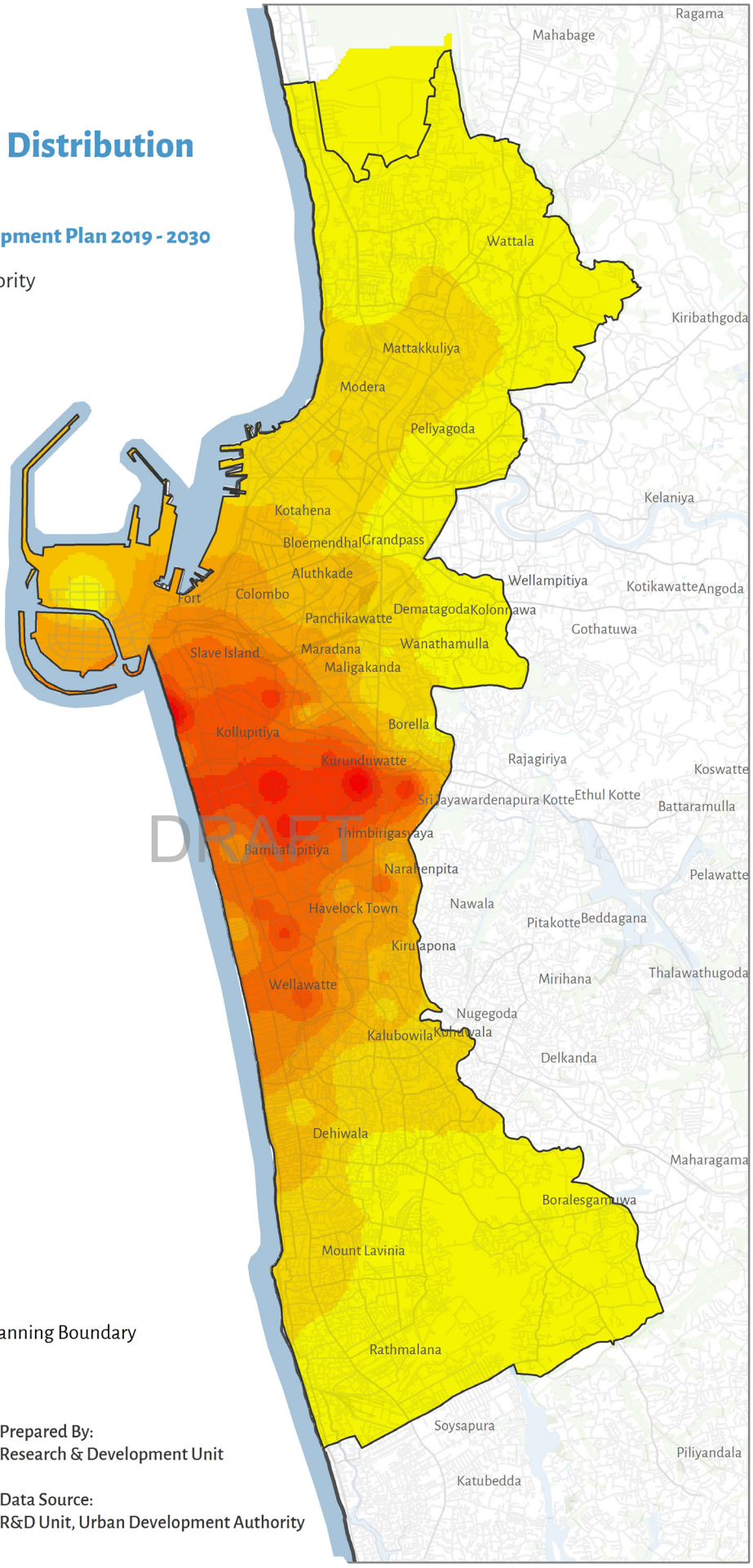


Figure 6.30: *Impact Areas of Proposed TODs in Colombo Commercial City*

Existing Land Value Distribution 2018

Colombo Commercial City Development Plan 2019 - 2030

Urban Development Authority
December 2018



Legend

Land Value (LKR)

- <2,000,000
- 2,000,000.001 - 4,000,000
- 4,000,000.001 - 6,000,000
- 6,000,000.001 - 8,500,000
- 8,500,000.001 - 10,500,000
- 10,500,000.01 - 12,500,000
- 12,500,000.01 - 14,500,000
- 14,500,000.01 - 16,500,000
- 16,500,000.01 - 18,500,000
- 18,500,000.01<

Colombo Commercial City Planning Boundary

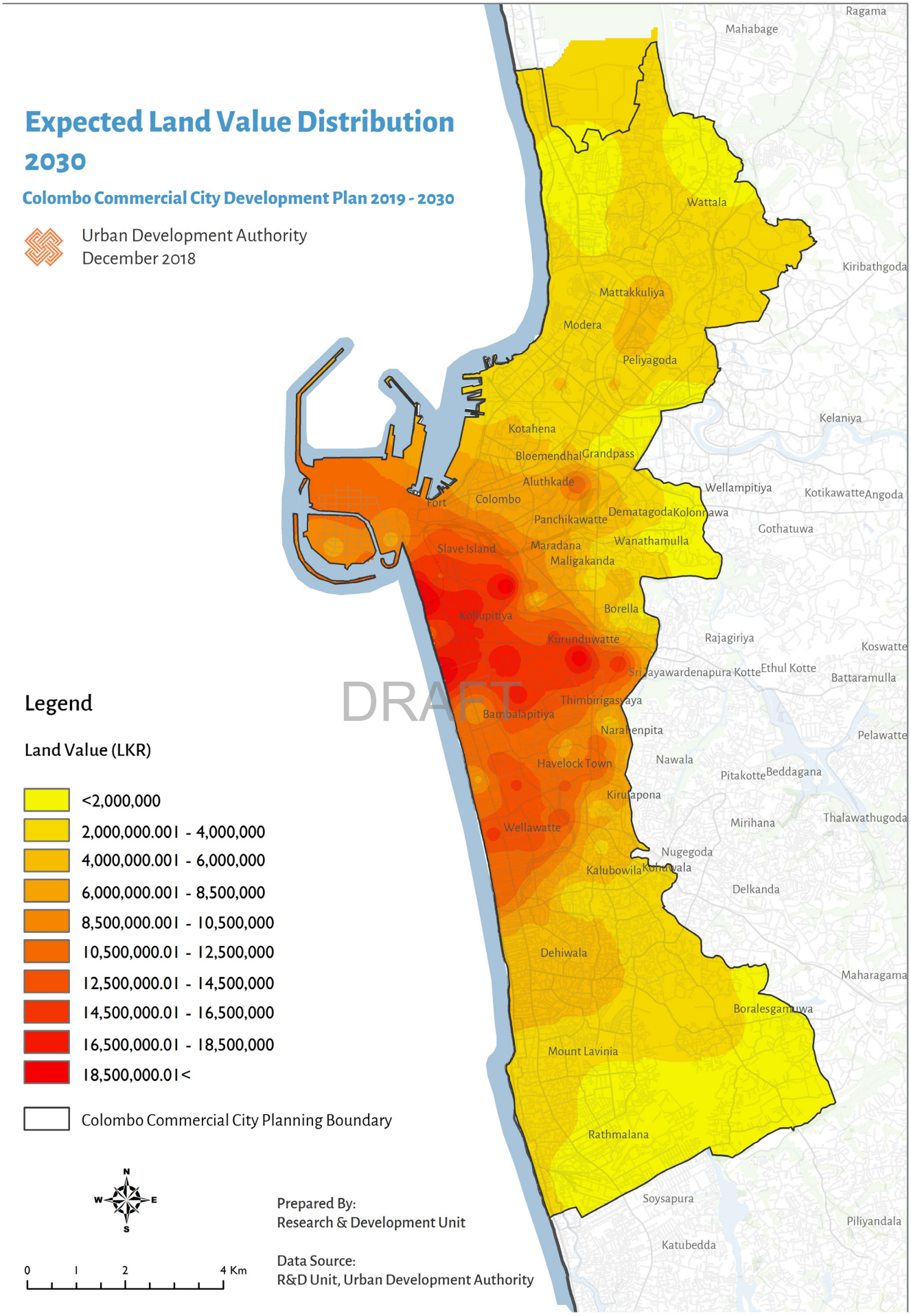
N W E S

0 1 2 4 Km

Prepared By:
Research & Development Unit

Data Source:
R&D Unit, Urban Development Authority

Map 6.7: *Land Value Distribution of Colombo Commercial City - 2018*



Map 6.8: *Land Value Distribution of Colombo Commercial City - 2030*