# Determination of Zone Factor - Colombo Commercial City

## Content

## Zone Factor

As a novel approach, zones of the planning area have demarcated based on their expected densities and the character. Not as the earlier method which the zoning was based on the future proposed land use and the character of the area.

With that, a new formula has been introduced to determine the achievable floor area for a given property based on the expected density of the particular zone. (Refer …….. of Volume III Part II of Colombo Commercial City Development Plan)

Accordingly, 'Zone Factor' is the extent of development that an area can hold, based on:

- The environmental/ cultural sensitivity of the area.
- The infrastructure availability (Access Roads, Water Supply, Surface Drainage, Sewerage Disposal, etc) to cater to the development,
- The carrying capacity in terms geographic conditions, population density, etc

Zone Factor is calculated based on the space requirement for the future anticipated development which depends on expected Residential and Commuter population in the respective zone.

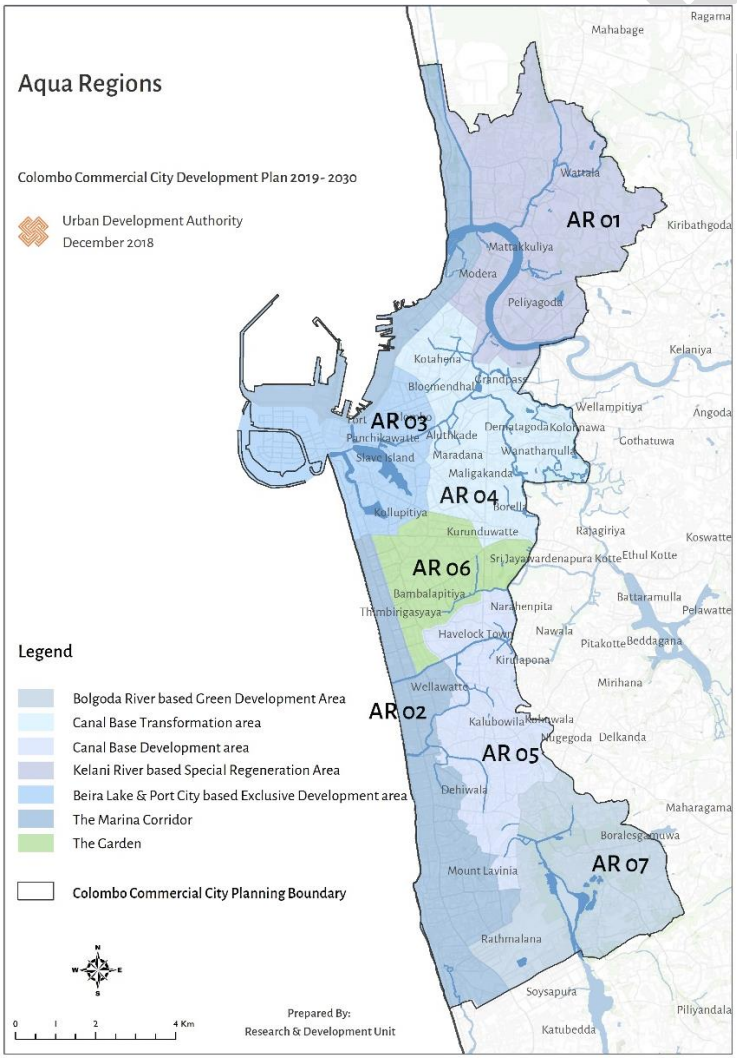
## Demarcation of Zones and Sub-Zones

Colombo Commercial City will be developed with the Vision of "Aquarina" – The City in Water;
Colombo to be experienced as the Smart, Vibrant and Tropical Water Garden City of South Asia in 2030.

The Concept

In achieving the vision, Colombo Commercial City will be developed by specific clusters based on its Potentials/ Future demanding activities/ Characters as 07 'Aqua Regions',

AR 01 - Kelani River based Special Regeneration Area
AR 02 - The Marina Corridor
AR 03 - Beira Lake & Port City based Exclusive Development area
AR 04 - Canal Base Transformation Area
AR 05 - Canal Base Development Area
AR 06 - The Garden
AR 07 - Bolgoda River based Green Development Area

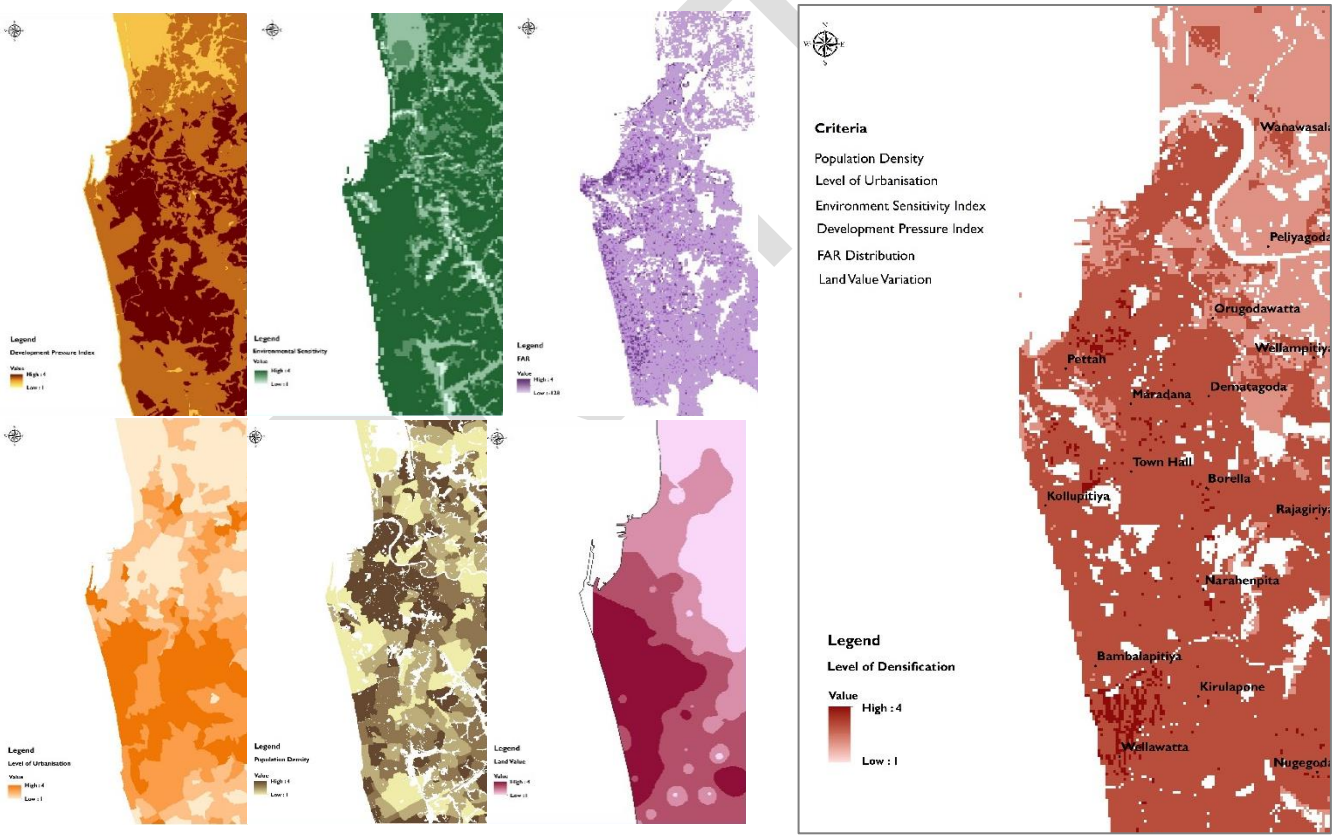


Densification Pattern

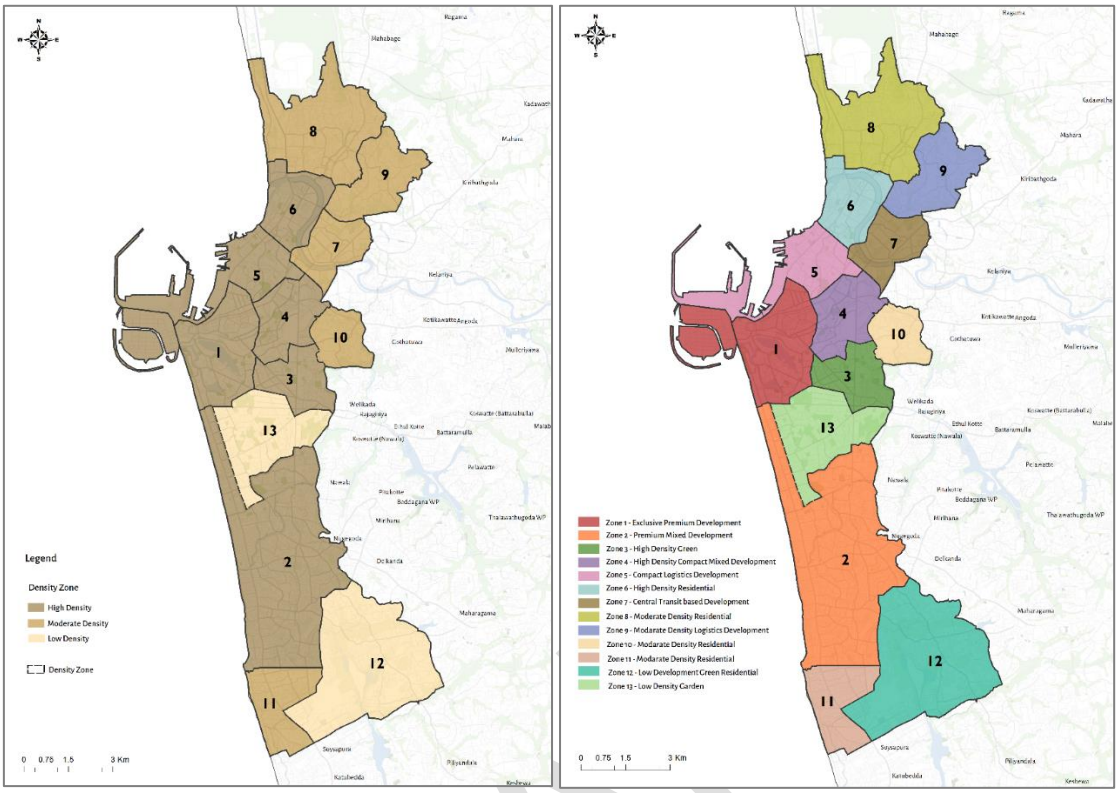
The future densification pattern of the city was determined based on;

- Carrying Capacities (Supply capacity of Infrastructure, Bearing Capacity of Environment, Human Space Demand)
- Population & Urbanisation Trends
- Existing FAR
- Land Value Variation
- Ongoing & Proposed Projects

Weighted overlay result of the considered criteria was as follows;



Considering the Density Distribution and the character, the area was divided into thirteen zones within three broader densification zones;

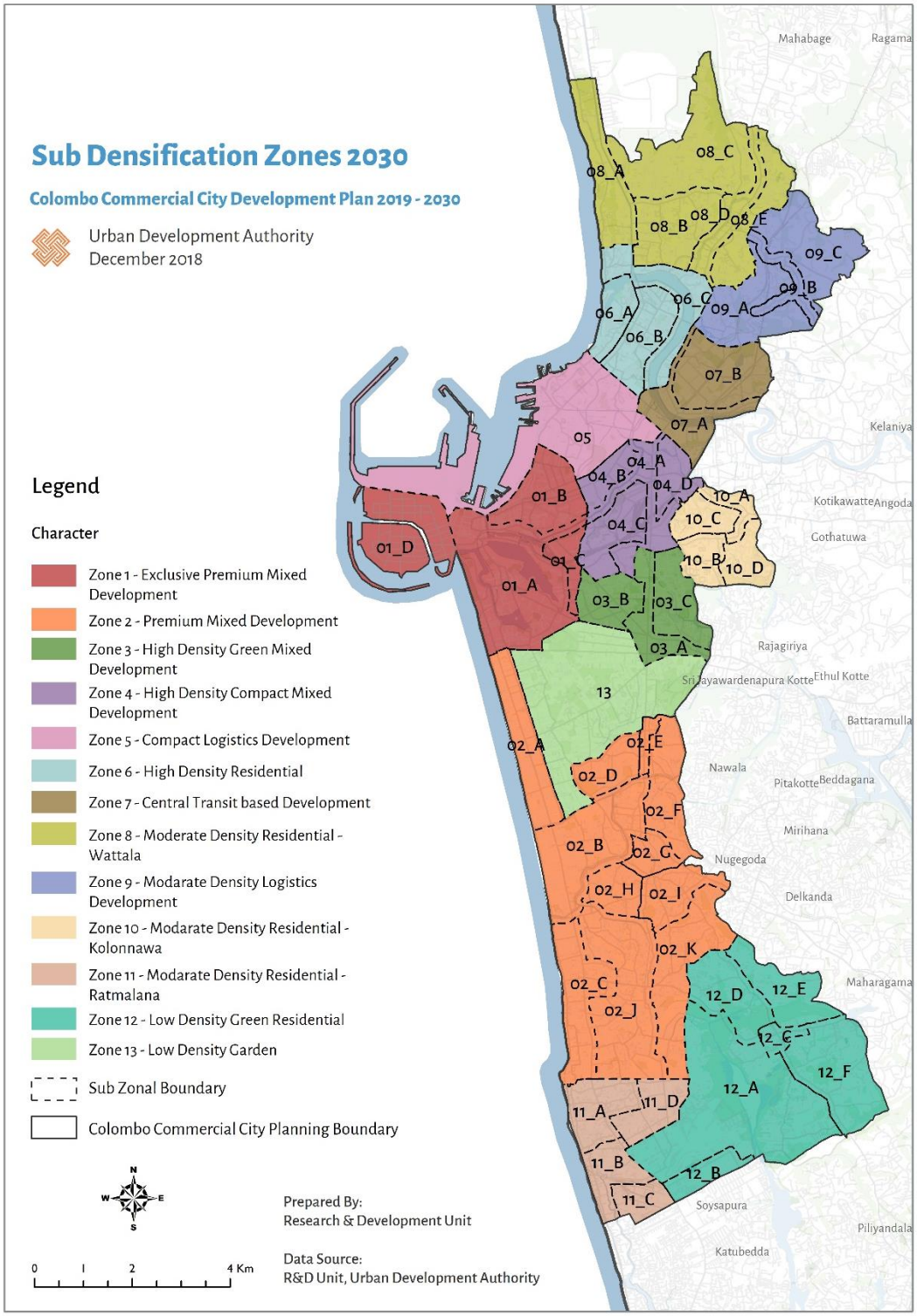



| Zone | Density | Character |
|---|---|---|
| Zone 1 | High Density | Exclusive Premium Mixed Development |
| Zone 2 | | Premium Mixed Development |
| Zone 3 | | High Density Green Mixed Development |
| Zone 4 | | High Density Compact Mixed Development |
| Zone 5 | | Compact Logistics Development |
| Zone 6 | | High Density Residential |
| Zone 7 | Moderate Density | Central Transit based Development |
| Zone 8 | | Moderate Density Residential - Wattala |
| Zone 9 | | Moderate Density Logistics Development |
| Zone 10 | | Moderate Density Residential - Kolonnawa |
| Zone 11 | | Moderate Density Residential - Ratmalana |
| Zone 12 | Low Density | Low Density Green Residential |
| Zone 13 | | Low Density Garden |

These thirteen zones were divided into further small zones based on;

- The Road Hierarchy
- The Level of Service of the Roads
- The Node Hierarchy and the area considered as the node

Accordingly fifty one (51) sub densification zones were demarcated in Colombo Commercial City.



## Estimating Floor Space Requirement for Zones

Process of Determining the Zone Factor

1. The Envisioned Development (as per the Goals and Objectives)
2. The limits for Development determined by analyzing Sensitivity/ Potential/ Carrying Capacity
3. The Expected Residential + Commuter Population (Based on Intelligent Guesses and Assumptions)
4. Workout the Required Residential + Commercial Floor Space to Accommodate 03

Accordingly;

$$Zone\ Factor = \frac{Total\ Expected\ FloorArea}{Available\ Developable\ Land\ Area}$$

Residential Population and non-residential Population were predicted for Colombo Commercial City based on the above mentioned 01 and 02 criteria. (Annexure …… - Population Prediction).

Commuter population was taken as the total of non-residential population and 40% of the residential population assuming 40% of the residential population commuting within the city.

According to the estimated population for zones, required floor area space was calculated as shown in the following table for the thirteen zones.



Estimating Space Requirement

Estimating space for residents;

- Per capita Residential Space – 50 sq.m

Estimating space for commuters;

- Per capita Commuter Space – 40 sq.m

Total Space = Total Residential Space + Total Commuter Space

Developable Land Area – Land area that could be used to build up excluding the environmental sensitivity areas, water bodies and roads.

| Zone | Character | Current Distribution 2017 | | Envisaged Distribution 2030 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Residential | | | Non-Residential | | Commuter | | | | | | | |
| | | Resident Population | Percentage to Total | Residential Population | Percentage to Total | Area Sq M | Non Residential Population | Percentage to Total | Commuter Population | Percentage to Total | Area Sq.m | Ratio Res: Non Res | Total Floor Area Sq.m | Percentage to Total | Developable Land Sq.m | Adjusted Overall Zone Factor |
| 01 | Exclusive Premium Mixed Development | 109,853 | 10 | 117,000 | 9 | 5,850,000 | 197,000 | 17.9 | 243,800 | 15 | 9,752,000 | 0.37 | 15,602,000 | 12 | 4,722,000 | **3.30** |
| 02 | Premium Mixed Development | 254,628 | 24 | 312,000 | 24 | 15,600,000 | 295,000 | 26.8 | 419,800 | 26 | 16,792,000 | 0.51 | 32,392,000 | 25 | 17,350,000 | **1.90** |
| 03 | High Density Green Mixed Development | 75,681 | 7 | 91,000 | 7 | 4,550,000 | 106,000 | 9.6 | 142,400 | 9 | 5,696,000 | 0.46 | 10,246,000 | 8 | 3,064,000 | **3.30** |
| 04 | High Density Compact Mixed Development | 114,776 | 11 | 117,000 | 9 | 5,850,000 | 84,000 | 7.6 | 130,800 | 8 | 5,232,000 | 0.58 | 11,082,000 | 9 | 3,420,000 | **3.20** |
| 05 | High Density Logistics Development | 63,666 | 6 | 65,000 | 5 | 3,250,000 | 67,000 | 6.1 | 93,000 | 6 | 3,720,000 | 0.49 | 6,970,000 | 5 | 2,682,000 | **2.60** |
| 06 | High Density Residential - Kotahena | 77,320 | 7 | 104,000 | 8 | 5,200,000 | 90,000 | 8.2 | 131,600 | 8 | 5,264,000 | 0.54 | 10,464,000 | 8 | 3,293,000 | **3.20** |
| 07 | Central Transit based Development | 37,075 | 3 | 39,000 | 3 | 1,950,000 | 60,000 | 5.5 | 75,600 | 5 | 3,024,000 | 0.39 | 4,974,000 | 4 | 3,126,000 | **1.60** |
| 08 | Moderate Density Residential - Wattala | 76,560 | 7 | 117,000 | 9 | 5,850,000 | 13,000 | 1.2 | 59,800 | 4 | 2,392,000 | 0.90 | 8,242,000 | 6 | 9,613,000 | **0.90** |
| 09 | Moderate Density Logistics Development | 52,617 | 5 | 65,000 | 5 | 3,250,000 | 19,000 | 1.7 | 45,000 | 3 | 1,800,000 | 0.77 | 5,050,000 | 4 | 4,572,000 | **1.10** |
| 10 | Moderate Density Residential - Kolonnawa | 34,724 | 3 | 52,000 | 4 | 2,600,000 | 4,000 | 0.4 | 24,800 | 2 | 992,000 | 0.93 | 3,592,000 | 3 | 2,321,000 | **1.50** |
| 11 | Moderate Density Residential - Ratmalana | 51,520 | 5 | 78,000 | 6 | 3,900,000 | 50,000 | 4.5 | 81,200 | 5 | 3,248,000 | 0.61 | 7,148,000 | 6 | 3,979,000 | **1.80** |
| 12 | Moderate Density Green Residential | 75,796 | 7 | 91,000 | 7 | 4,550,000 | 33,000 | 3.0 | 69,400 | 4 | 2,776,000 | 0.73 | 7,326,000 | 6 | 9,054,000 | **0.80** |
| 13 | Low Density Garden | 39,730 | 4 | 52,000 | 4 | 2,600,000 | 82,000 | 7.5 | 102,800 | 6 | 4,112,000 | 0.39 | 6,712,000 | 5 | 4,734,000 | **1.40** |
| | | **1,063,946** | | **1,300,000** | | **65,000,000** | **1,100,000** | | **1,620,000** | | **64,800,000** | **0.54** | **129,800,000** | | **71,930,000** | **1.80** |

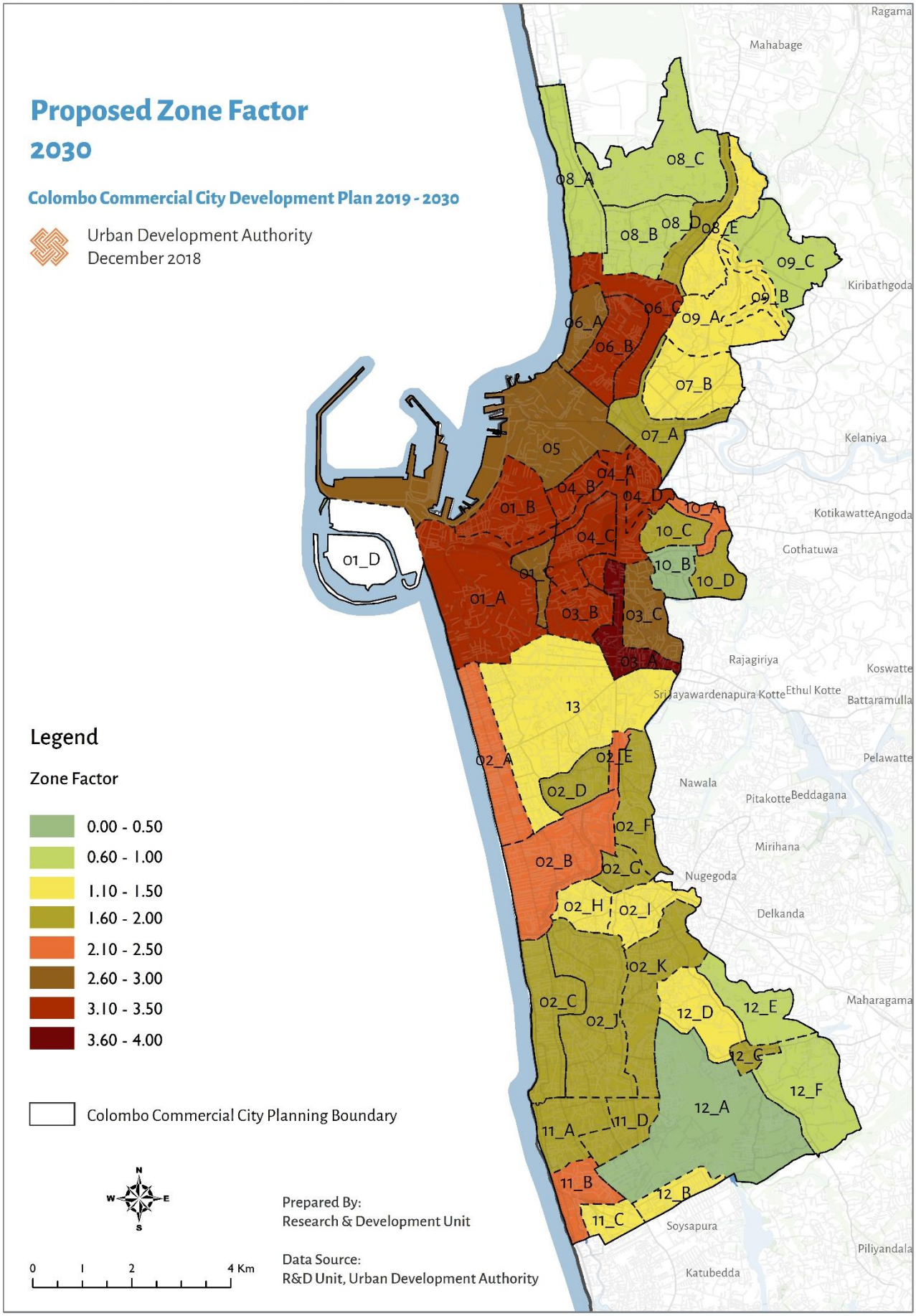
## Determining the Zone Factor for Sub-Zones

Total space requirement of a zone was divided into subzones based on the expected development intensity in the respective sub-zone.

| Zone | Character | Total Space (sq.m) | Sub-Zone | Percentage of the Expected Space | Expected Space (sq.m) | Developable Land Area (sq.m) | Zone Factor |
|---|---|---|---|---|---|---|---|
| 01 | Exclusive Premium Mixed Development Zone | 15,602,000 | 01_A | 62 | 9,673,240 | 2,862,000 | 3.4 |
| | | | 01_B | 30 | 4,680,600 | 1,450,000 | 3.2 |
| | | | 01_C | 8 | 1,248,160 | 412,000 | 3 |
| 02 | Premium Mixed Development Zone | 32,392,000 | 02_A | 10 | 3,239,200 | 1,476,000 | 2.2 |
| | | | 02_B | 18 | 5,830,560 | 2,828,000 | 2.1 |
| | | | 02_C | 12 | 3,887,040 | 1,936,000 | 2 |
| | | | 02_D | 4.6 | 1,490,032 | 846,000 | 1.75 |
| | | | 02_E | 1.4 | 453,488 | 216,000 | 2.1 |
| | | | 02_F | 8 | 2,591,360 | 1,501,000 | 1.75 |
| | | | 02_G | 3.5 | 1,133,720 | 586,000 | 1.9 |
| | | | 02_H | 4 | 1,295,680 | 864,000 | 1.5 |
| | | | 02_I | 5.5 | 1,781,560 | 1,171,000 | 1.5 |
| | | | 02_J | 20 | 6,478,400 | 3,576,000 | 1.8 |
| | | | 02_K | 13 | 4,210,960 | 2,352,000 | 1.8 |
| 03 | High Density Green Mixed Development Zone | 10,246,000 | 03_A | 33 | 3,381,180 | 909,000 | 3.7 |
| | | | 03_B | 31 | 3,176,260 | 938,000 | 3.4 |
| | | | 03_C | 36 | 3,688,560 | 1,217,000 | 3 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 04 | Traditional Compact Mixed Development Zone | 11,082,500 | 04_A | 36 | 3,989,520 | 1,181,000 | 3.4 |
| | | | 04_B | 19 | 2,105,580 | 639,000 | 3.3 |
| | | | 04_C | 23 | 2,548,860 | 808,000 | 3.2 |
| | | | 04_D | 22 | 2,438,040 | 792,000 | 3.1 |
| 05 | High Density Logistics Zone | 6,970,000 | 05 | 100 | 6,970,000 | 2,682,000 | 2.6 |
| 06 | High Density Residential Zone - Kotahena | 10,464,000 | 06_A | 15 | 1,569,600 | 564,000 | 2.8 |
| | | | 06_B | 40 | 4,185,600 | 1,368,000 | 3.1 |
| | | | 06_C | 45 | 4,708,800 | 1,360,000 | 3.5 |
| 07 | Transport Oriented Development Zone | 4,974,000 | 07_A | 45 | 2,238,300 | 1,149,000 | 2 |
| | | | 07_B | 55 | 2,735,700 | 1,976,000 | 1.4 |
| 08 | Moderate Density Residential Zone I - Wattala | 8,242,000 | 08_A | 15 | 1,236,300 | 1,468,000 | 0.8 |
| | | | 08_B | 20 | 1,648,400 | 2,168,000 | 0.75 |
| | | | 08_C | 25 | 2,060,500 | 3,409,000 | 0.6 |
| | | | 08_D | 20 | 1,648,400 | 1,027,000 | 1.6 |
| | | | 08_E | 20 | 1,648,400 | 1,541,000 | 1.1 |
| 09 | Moderate Density Logistics Zone | 5,050,000 | 09_A | 40 | 2,020,000 | 1,798,000 | 1.1 |
| | | | 09_B | 18 | 909,000 | 713,000 | 1.3 |
| | | | 09_C | 42 | 2,121,000 | 2,061,000 | 1 |
| 10 | Moderate Density Residential Zone II - Kolonnawa | 3,592,000 | 10_A | 25 | 898,000 | 381,000 | 2.4 |
| | | | 10_B | 10 | 359,200 | 683,000 | 0.5 |
| | | | 10_C | 35 | 1,257,200 | 684,000 | 1.8 |
| | | | 10_D | 30 | 1,077,600 | 573,000 | 1.9 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11 | Moderate Density Residential Zone III - Ratmalana | 7,148,000 | 11_A | 35 | 2,501,800 | 1,369,000 | 1.8 |
| | | | 11_B | 32 | 2,287,360 | 991,000 | 2.3 |
| | | | 11_C | 10 | 714,800 | 645,000 | 1.1 |
| | | | 11_D | 23 | 1,644,040 | 974,000 | 1.7 |
| 12 | Moderate Density Green Residential Zone | 7,326,000 | 12_A | 26 | 1,904,760 | 3,551,000 | 0.5 |
| | | | 12_B | 9 | 659,340 | 630,000 | 1.1 |
| | | | 12_C | 8 | 586,080 | 339,000 | 1.7 |
| | | | 12_D | 20 | 1,465,200 | 1,152,000 | 1.3 |
| | | | 12_E | 15 | 1,098,900 | 1,126,000 | 1 |
| | | | 12_F | 22 | 1,611,720 | 2,255,000 | 0.7 |
| 13 | Low Density Garden Zone | 6,712,000 | 13 | 100 | 6,712,000 | 4,734,000 | 1.4 |


Proposed Zone Factor
2030
Colombo Commercial City Development Plan 2019 - 2030
Urban Development Authority
December 2018
Legend
Zone Factor
0.00 - 0.50
0.60 - 1.00
1.10 - 1.50
1.60 - 2.00
2.10 - 2.50
2.60 - 3.00
3.10 - 3.50
3.60 - 4.00
Colombo Commercial City Planning Boundary
N
W
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S
0
1
2
4 Km
Prepared By:
Research & Development Unit
Data Source:
R&D Unit, Urban Development Authority
Ragama
Mahabage
Kiribathgoda
Kelaniya
Kotikawatte
Angoda
Gothatuwa
Rajagiriya
Koswatte
Sri Jayawardenapura Kotte
Ethul Kotte
Battaramulla
Pelawatte
Nawala
Pitakotte
Beddagana
Mirihana
Nugegoda
Delkanda
Maharagama
Soysapura
Piliyandala
Katubedda
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