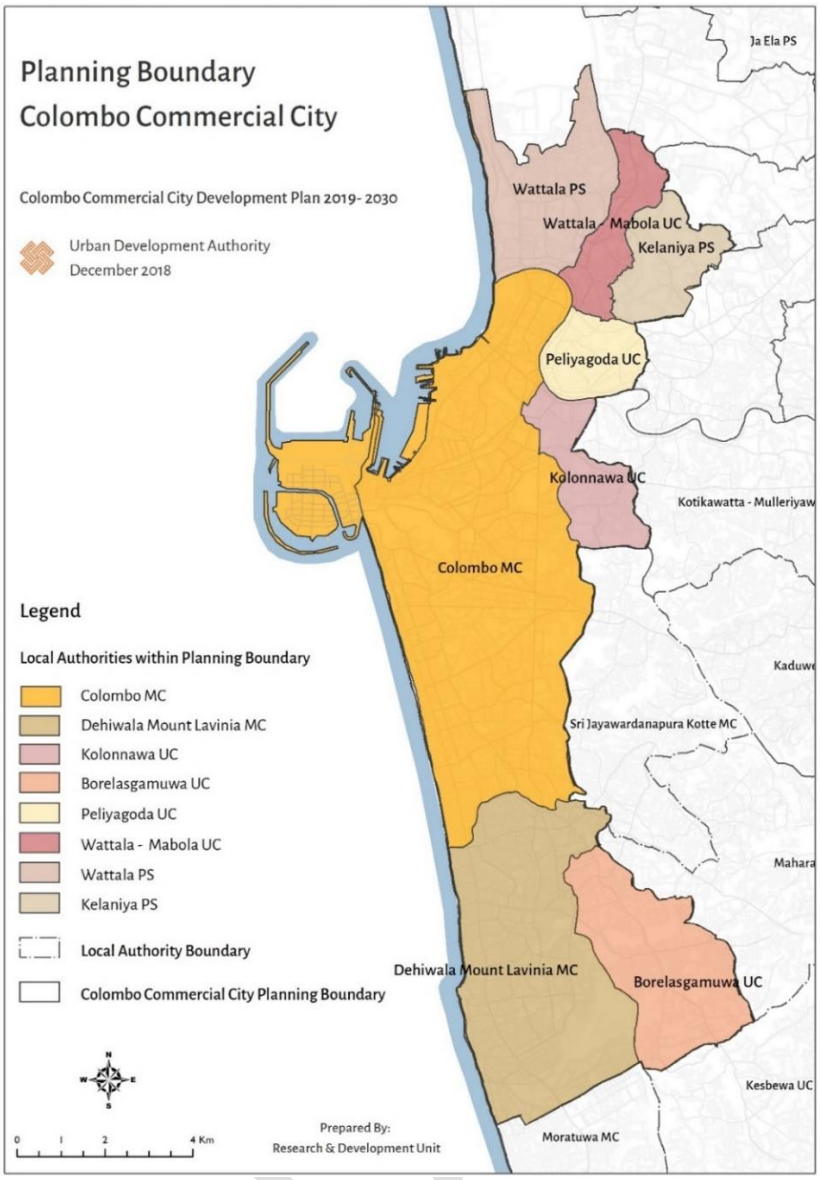
Population Forecast for Colombo Commercial City

Content

Colombo Commercial City

Colombo Commercial City consists with 08 Local Authorities (LAs) in Colombo and Gampaha Districts.

- Colombo Municipal Council (CMC)
- Dehiwala – Mt.Lavinia Municipal Council (DMMC)
- Boralesgamuwa Urban Council (UC)
- Kolonnawa Urban Council
- Peliyagoda Urban Council
- Wattala-Mabola Urban Council
- Wattala Pradeshiya Sabha (PS) - Part
- Kelaniya Pradeshiya Sabha - Part


Planning Boundary
Colombo Commercial City
Colombo Commercial City Development Plan 2019- 2030
Urban Development Authority
December 2018
Legend
Local Authorities within Planning Boundary
Colombo MC
Dehiwala Mount Lavinia MC
Kolonnawa UC
Borelasgamuwa UC
Peliyagoda UC
Wattala - Mabola UC
Wattala PS
Kelaniya PS
Local Authority Boundary
Colombo Commercial City Planning Boundary
0 1 2 4 Km
Prepared By:
Research & Development Unit
Ja Ela PS
Wattala PS
Wattala - Mabola UC
Kelaniya PS
Peliyagoda UC
Kolonnawa UC
Kotikawatta - Mulleriyaw
Colombo MC
Sri Jayawardanapura Kotte MC
Mahara
Dehiwala Mount Lavinia MC
Borelasgamuwa UC
Kesbewa UC
Moratuwa MC

Scenario 1 – Business as Usual Scenario (BAU)

Residential Population

Residential population was estimated as per the natural growth rate of each LA.

LA	Population 2011	Population 2017	Growth Rate	Population 2030
Boralesgamuwa UC	59,483	81,378	0.05224	160,500
CMC	555,152	555,031	-0.00004	554,800
Dehiwala-Mt. Lavinia MC	182,747	209,943	0.02312	283,600
Kelaniya PS	35,292	45,472[1]	0.04224	78,700
Kolonnawa UC	59,802	57,285	-0.00717	52,200
Peliyagoda UC	27,434	27,392	-0.00026	27,300
Wattala - Mabola UC	27,944	30,917	0.01685	38,500
Wattala PS	53,055	56,529[1]	0.01057	64,900
	1,000,909	1,063,947	0.01018	**1,260,500**

Sources:
Population 2001 – Department of Census and Statistics
Resident Population 2017 – Respective Local Authorities

Accordingly Residential Population in 2030 - 1,260,500

Population Increment (2017 – 2030) - 196,553

Annual Growth Rate (2017 – 2030) - 1.30%

[1] 2017 GND (Grama Niladhari Division) wise data was not available. Therefore, as only parts of Kelaniya and Wattala PSs are included in the planning boundary, population was taken considering the growth rates of respective local authorities.

Non-Residential Population

Non-residential population figures were only available for 2017. Therefore, the non-residential population was calculated considering the residential to non-residential ratio in 2017.

LA	Residential Population 2017	Non-residential Population 2017	Residential Population 2030	Non-residential Population 2030 (According to Residential to Non-residential ratio)
Boralesgamuwa UC	81,378	12,000	160,500	24,000
CMC	555,031	600,000	554,800	600,000
Dehiwala-Mt. Lavinia MC	209,943	147,000	283,600	199,000
Kelaniya PS	45,472	12,000	78,700	20,000
Kolonnawa UC	57,285	10,000	52,200	9,000
Peliyagoda UC	27,392	15,000	27,300	15,000
Wattala - Mabola UC	30,917	15,500	38,500	19,000
Wattala PS	56,529	4,000	64,900	5,000
	1,063,947	815,500	1,260,500	**891,000**

Source:
Residential Population & Non-residential Population 2017 – Respective Local Authorities

Accordingly Non-residential Population in 2030 - 891,000

Non-residential Population Increment (2017 – 2030) - 75,500

Annual Growth Rate (2017 – 2030) - 0.71%

Conclusion;

Residential Population

- CMC, Kolonnawa UC and Peliyagoda UC have negative growth rates which are not acceptable with the ongoing and proposed projects that will attract more residents to the respective areas.

- Boralesgamuwa UC shows a high growth rate of 5.2%, during the period of 2011 to 2017 which shows that there was a high demand for the area as a residential destination. But considering the existing land availability of the area, it cannot be expected to have the same growth rate in the coming years.

- Therefore considering the above, population according to the BAU scenario cannot be accepted.

Non-residential Population

- As residential population of CMC, Kolonnawa UC and Peliyagoda UC were decreased, the non-residential population has also been decreased accordingly. But with the anticipated development and ongoing and proposed projects it is expected to increase the non-residential population in respective areas.

- Therefore Non-residential population according to the BAU scenario also cannot be accepted.

Scenario 2 – Based on Carrying Capacities of Urban Systems

1. Pipe Borne Water Supply

Water Demand 2015

LA	Population 2015	Water Demand (m^3/d)
Colombo MC	576,740	350,990
Dehiwala-Mt.Lavinia MC	189,853	83,652
Boralesgamuwa UC	58,841	13,867
Kolonnawa UC	63,146	17,480
Peliyagoda UC	28,825	11,158
Wattala - Mabola UC	29,402	11,848
Wattala PS	153,875	39,537
Kelaniya PS	114,326	33,187
Total	1,215,008	561,719

Source:
National Water Supply and Drainage Board (NWSDB)

Water Demand in 2030

LA	Population 2030	Water Demand (m^3/d)
Colombo MC	687,015	361,570
Dehiwala-Mt.Lavinia MC	226,155	85,379
Boralesgamuwa UC	72,595	18,151
Kolonnawa UC	80,951	20,906
Peliyagoda UC	35,825	13,323
Wattala - Mabola UC	36,811	14,180
Wattala PS	191,242	59,244
Kelaniya PS	143,143	41,420
Total	1,473,737	614,173

Source:
National Water Supply and Drainage Board

NWSDB has estimated population in 2030 as 1,473,737 and accordingly water demand as 614,173 m^3 per day. Further, NSWDB ensures pipe borne water supply for the region with ongoing and proposed water supply projects.

Therefore, when considering the carrying capacity of the city in terms of pipe borne water supply, a resident population of 1,473,737 could be served within the city in 2030.

2. Waste Water Disposal Systems

Existing Situation (2011)

Existing Waste Water Disposal Systems are available only for CMC and for part of DMMC.

CMC

No of houses connected to CMC wastewater disposal system - 71,032
(Source: Census & Statistics Department, 2011)

Total Population served with the waste water disposal system - 284, 128
(Household Size – 4)

Total Population in CMC 2011 - 555,152
(Source: Census & Statistics Department, 2011)

Population not being served from the system - 271,024 (49%)

DMMC

Population served with the waste water disposal system - 10,790
(Source: Water Environment Partnership in Asia & NWSDB)

Accordingly, Total Population served with waste water disposal systems in the planning area (Colombo Commercial City) - 294,918

Total Population within Colombo Commercial City 2017 - 1,063,947
(Source: Respective Local Authorities)

Total Population not being served from the systems - 769,029

Accordingly, current waste water disposal systems only serves for 28% of the population.

Future Scenario (2030)

CMC

Capacity of the disposal system - 200 MLD (million liters per day)
- 200, 000 m^3/d

Catchment Population - 838,000
(Source: NWSDB, 2017)

Population in CMC according to the BAU Scenario - 554,800

DMMC – Boralesgamuwa Catchment

Waste water flow in 2030 (For Boralesgamuwa) - 1,422 m^3/d

Catchment Population in 2030 - 9,140
(Source: NWSDB, 2017)

As mentioned above, currently waste water disposal system at Ratmalana serve 10,790 population in DMMC. Hence the total population that will be served from the waste water disposal systems will be 574,730 which is 46% of total population estimated according to the BAU scenario. But this is 95% of increase (population increment – 279,812) related to the existing situation in the area.

Conclusion;

Population that will be served in 2030 by;

Pipe Borne Water Supply - 1,473,737

Waste Water Disposal System - 574,730

Total Population in 2030 - 1,260,500
(According to BAU Scenario)

Accordingly, water supply for the anticipated population will be sufficient while the waste water disposal will be lacking for 54% of the population.

But currently the city survives with only 28% of coverage of waste water treatment within the city. Therefore, with an increased service upto 46% in the city in 2030, the city will be able to accommodate population of 1.5 million without a serious issue in waste water management.

Scenario 3 – Based on the Anticipated Development

Although according to the BAU scenario and carrying capacity scenario population of 1,260,500 and 1,500,000 were derived respectively, the actual population that might attract with the anticipated development by the development plan must be predicted to serve the city population with adequate infrastructure and other facilities. Therefore a 3rd scenario was carried out to forecast the actual population that might be within the city in 2030.

Residential Population

LA	Population 2011	Population 2017	Growth Rate	Population 2030 (BAU)	Population 2030 (Adjusted)
Boralesgamuwa UC	59,483	81,378	0.05224	160,500	93,000
CMC	555,152	555,031	-0.00004	554,800	634,000
Dehiwala-Mt. Lavinia MC	182,747	209,943	0.02312	283,600	284,000
Kelaniya PS	35,292	45,472	0.04224	78,700	79,000
Kolonnawa UC	59,802	57,285	-0.00717	52,200	65,000
Peliyagoda UC	27,434	27,392	-0.00026	27,300	31,000
Wattala - Mabola UC	27,944	30,917	0.01685	38,500	38,000
Wattala PS	53,055	56,529	0.01057	64,900	65,000
	1,000,909	1,063,947	0.01018	1,260,500	**1,289,000**

Total population of 1,289,000 is rounded to **1,300,000**.

Growth rates of CMC, Kolonnawa UC and Peliyagoda UC were negative. But with the anticipated development, these areas will be more populated. Therefore, the overall growth rate which was 1.02% was considered as the growth rate for these three areas.

When considering the population growth rate of Boralesgamuwa during 2011 to 2017, it shows a growth rate of 5.2% which is the highest in the area. It was because of the high demand for residential uses in the area. But with the existing land availability and the buildable space in the area, this growth rate will not sustain in the coming years. But a positive growth in the residential population can be anticipated. Therefore, the overall growth rate of 1.02 was taken as the growth rate of Boralesgamuwa UC also.

Accordingly Residential Population in 2030 - 1,300,000

Population Increment (2017 – 2030) - 236,000

Annual Growth Rate (2017 – 2030) - 1.5%

Non-residential Population

For the BAU scenario, non-residential population was forecast considering the residential to non-residential ratio in 2017. But this ratio will not be the same with the anticipated development within the city. Therefore, the percentage increment of non-residential population which will be attracted to the respective local authorities were decided by brainstorming based on the future anticipated development within the LA.

LA	Non-residential Population 2017	Expected Increment in Non-residential Population (%)	Non-residential Population Accordingly
Boralesgamuwa UC	12,000	20	14,400
CMC	600,000	35	810,000
Dehiwala-Mt. Lavinia MC	147,000	35	198,000
Kelaniya PS	11,600	20	14,000
Kolonnawa UC	10,000	15	12,000
Peliyagoda UC	15,000	20	18,000
Wattala Mabola UC	15,500	12	17,000
Wattala PS	4,300	15	5,000
	815,400		1,088,000

Total non-residential population of 1,088,000 is rounded to **1,100,000**.

Accordingly Non-residential Population in 2030 - 1,100,000

Non-residential Population Increment (2017 – 2030) - 284,600

Annual Growth Rate (2017 – 2030) - 2.68%

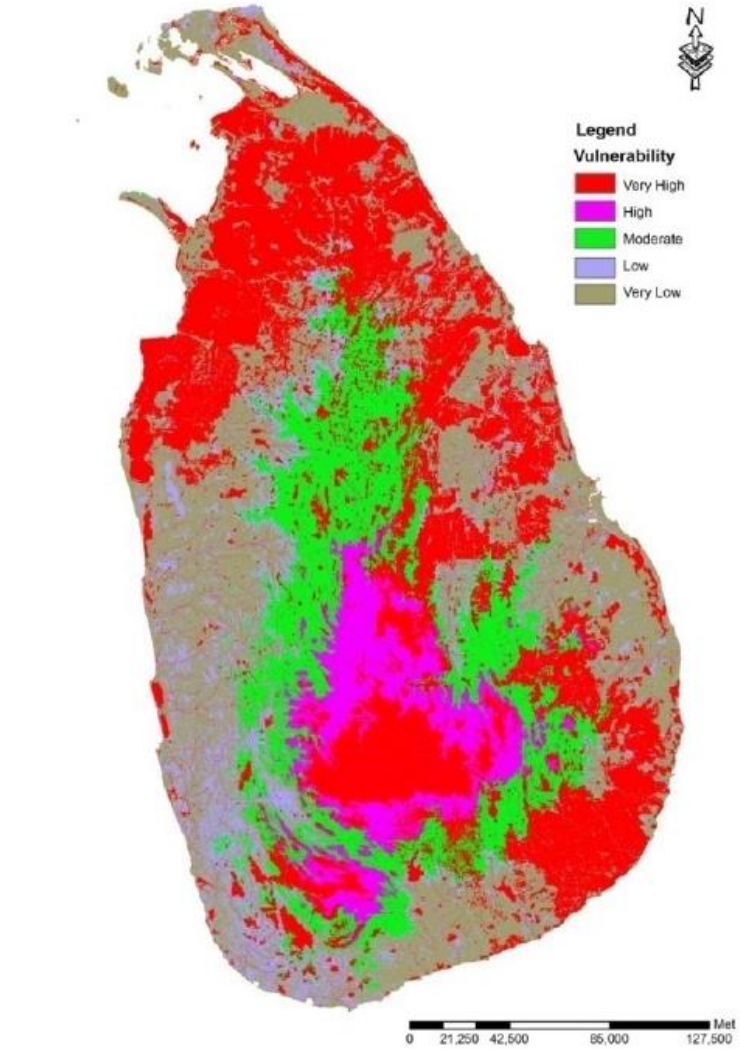
Evaluation of the Forecasted Population with the NPP share of the Future Population

As all the development plans should be in line with the NPP, it is important to accommodate the projected population for the planning area by the NPP. According to NPP 2050, Colombo Metro Region is expected to have 4,000,000 residents by 2050. So, approximately 1,300,000 of population can be considered as reasonable for the Colombo Commercial City in 2030.

Further, the NPP has considered four aspects to select the developable lands in the country.

1. The Constrained Space that needs to be conserved due to sensitivities and to protect the long standing uniqueness of the landscape

Figure 1: Lands Crucial for Conservation due to Environmental Sensitivity

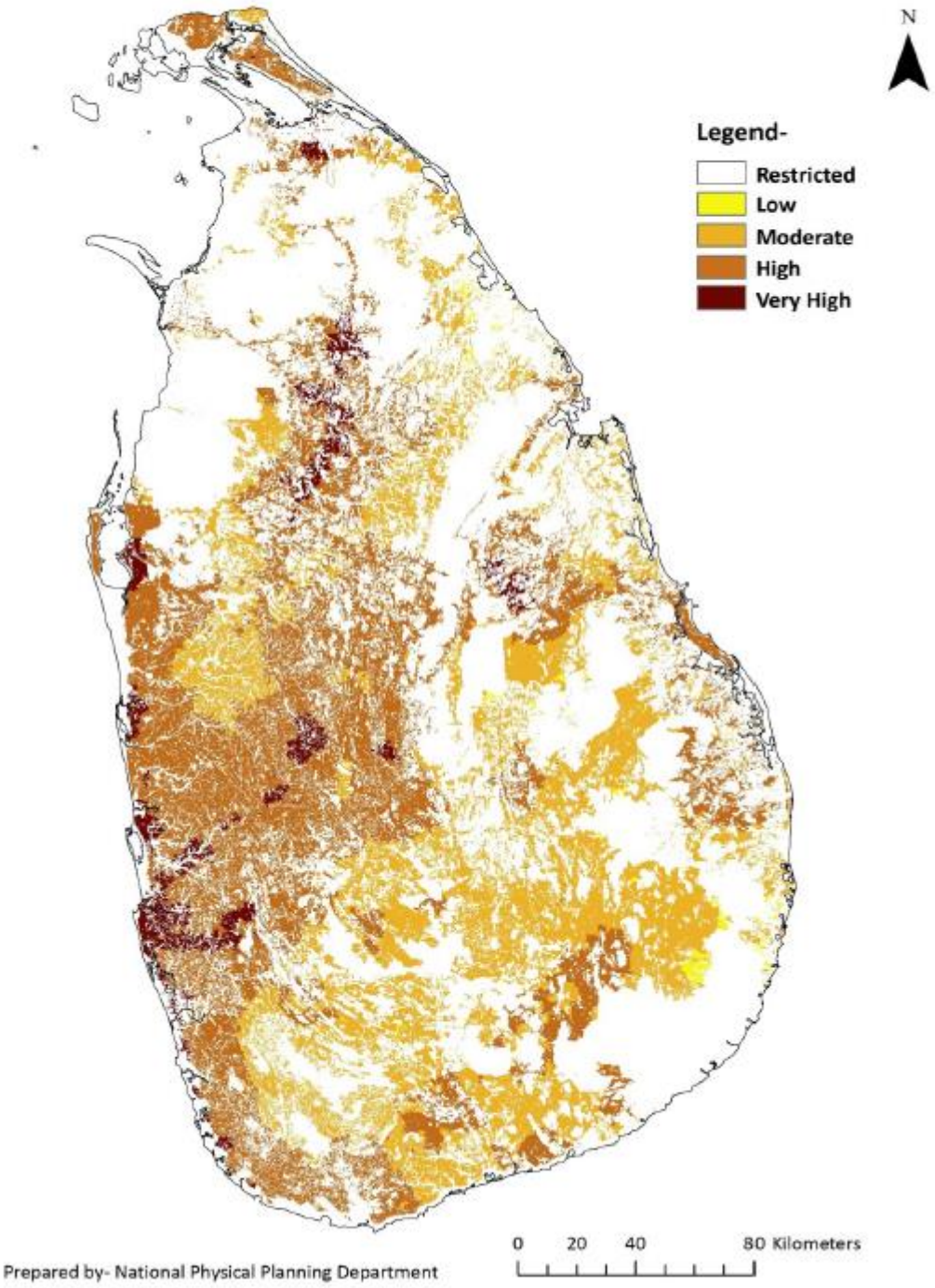


Prepared by the National Physical Planning Department on the information from Survey Department, Forest Department, National Building Research Organization, Wildlife Conservation Department

Source: NPP 2050, Updates- 2017 (Summary), National Physical Planning Department

2. The Potential Space in order to optimize and best utility of the available potentials throughout the island

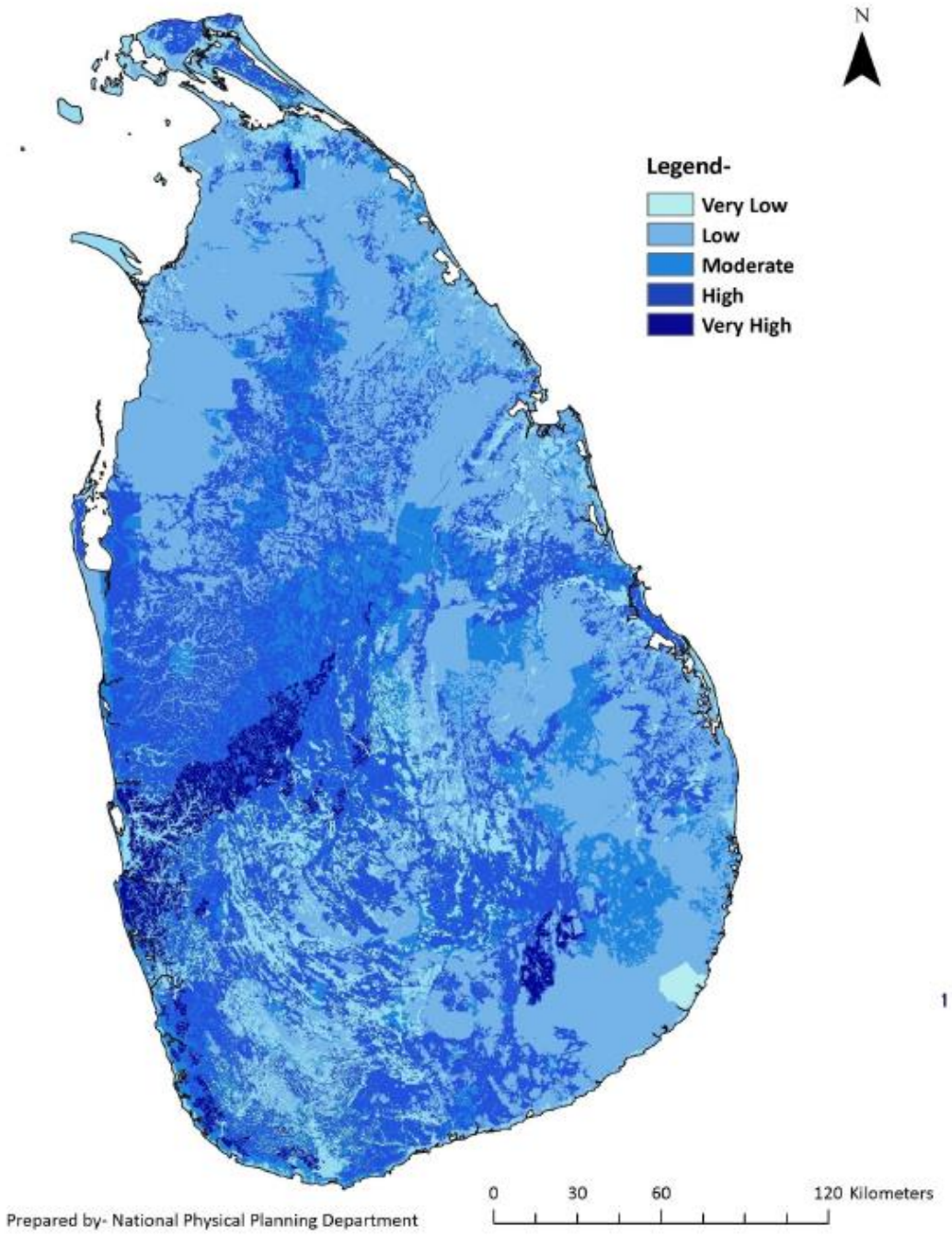
Figure 2: Lands Developable for the Best Utility of Land, Infrastructure and Other Resources



Source: NPP 2050, Updates- 2017 (Summary), National Physical Planning Department

3. The Livable Space that provides the most conducive environments for human habitation in the island

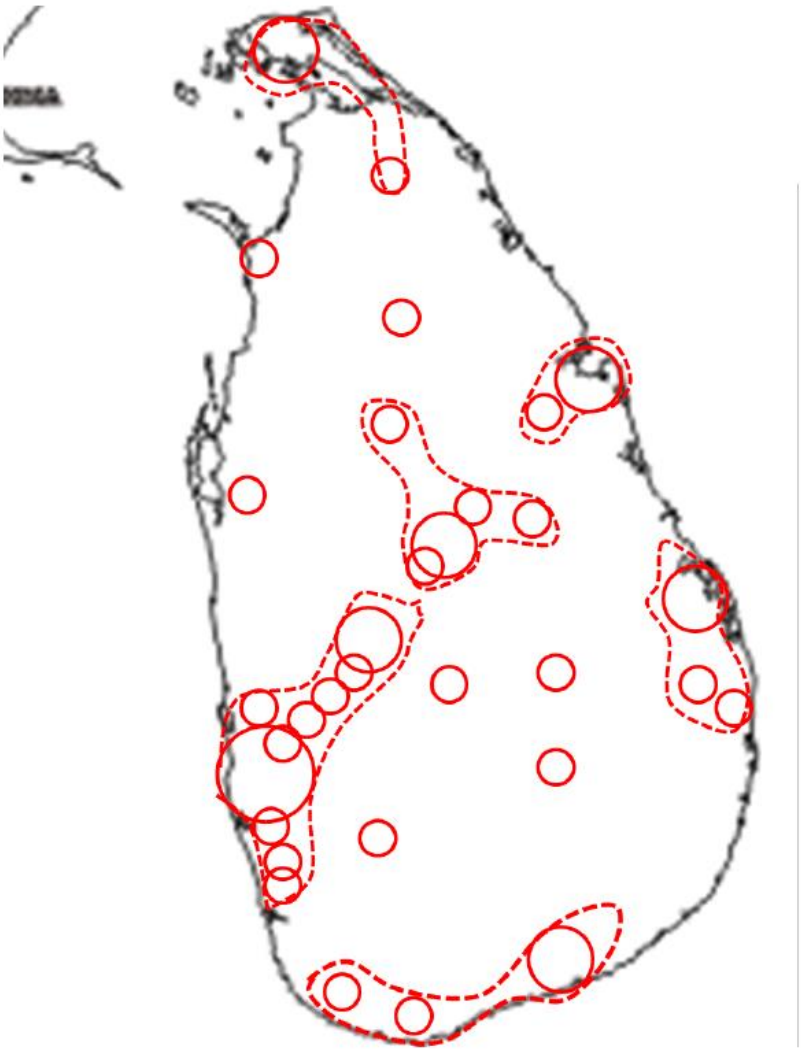
Figure 3: Lands with Livability and Suitable for Human Habitats



Source: NPP 2050, Updates- 2017 (Summary), National Physical Planning Department

4. The Explored Space that enables to identify the desired directions for future physical developments

Figure 4: Locations with High Potentials for Exploration of Possibilities



Source: NPP 2050, Updates- 2017 (Summary), National Physical Planning Department

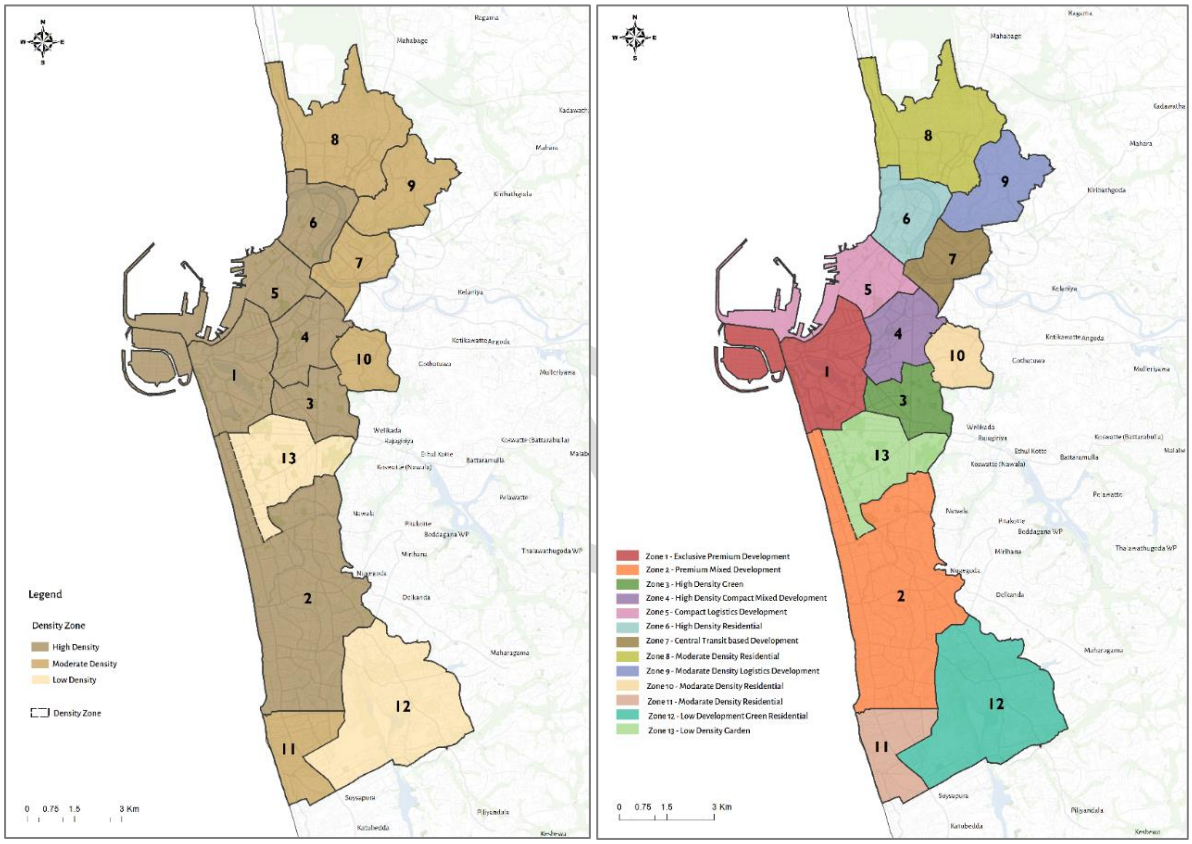
Accordingly, lands within the Colombo Commercial City has a very high potential to be developed in future with the lands with less environmental sensitivity, with lands developable for best utility of lands, infrastructure and other resources, lands with livability and suitable for human habitats and locations with high potentials for exploration of possibilities.

Therefore the predicted population can be accommodated within the region in the lands available and this population is in line with the population share predicted by the NPP for the region.

Population Distribution in to Zones

Colombo Commercial City was divided in to thirteen zones based on their expected densities and character. (Annexure ….. – Density Zones)

It is important to estimate the future residential and non-residential population that will be attracted to the respective zones, to provide adequate facilities to the population. Therefore, the residential population and non-residential population predicted for the LAs were distributed to the zones.



Expected Density and Character of Zones

Residential Population Distribution

According to the development plan, residential population is encouraged in each zone without depopulating. The forecasted population was divided among the 13 zones considering the expected population distribution and density in the respective zones.

Zone	Character	Population 2017 (TP* - 1,063,946)	Percentage to Total 2017	Expected Percentage 2030	Population 2030 Accordingly
Zone 1	Exclusive Premium Mixed Development	109,853	10	9	117,000
Zone 2	Premium Mixed Development	254,628	24	24	312,000
Zone 3	High Density Green Mixed Development	75,681	7	7	91,000
Zone 4	High Density Compact Mixed Development	114,776	11	9	117,000
Zone 5	Compact Logistics Development	63,666	6	5	65,000
Zone 6	High Density Residential	77,320	7	8	104,000
Zone 7	Central Transit based Development	37,075	3	3	39,000
Zone 8	Moderate Density Residential - Wattala	76,560	7	9	117,000
Zone 9	Moderate Density Logistics Development	52,617	5	5	65,000
Zone 10	Moderate Density Residential - Kolonnawa	34,724	3	4	52,000
Zone 11	Moderate Density Residential - Ratmalana	51,520	5	6	78,000
Zone 12	Low Density Green Residential	75,796	7	7	91,000
Zone 13	Low Density Garden	39,730	4	4	52,000
		1,000,909			**1,300,000**

*- TP – Total Population

Non-residential Population Distribution

Non-residential Population data was only available by Local Authority wise in 2017. Therefore, the non-residential population was divided considering the anticipated development within each zone based on brainstorming.

Zone	Character	Percentages to be considered in non-residential population distribution								Non-residential Population
		CMC	DMMC	Kolonnawa UC	Peliyagoda UC	Wattala-Mabola UC	Wattala PS	Boralesgamuwa UC	Kelaniya PS	
		*819,000	*200,000	*12,000	*18,000	*17,000	*5,000	*14,000	*14,000	
Zone 1	Exclusive Premium Mixed Development	0.24								197,000
Zone 2	Premium Mixed Development	0.2	0.65					0.1		295,000
Zone 3	High Density Green Mixed Development	0.13								106,000
Zone 4	High Density Compact Mixed Development	0.1		0.2						84,000
Zone 5	Compact Logistics Development	0.08		0.1						67,000
Zone 6	High Density Residential	0.1			0.12	0.2	0.5			90,000
Zone 7	Central Transit based Development	0.05		0.4	0.8					60,000
Zone 8	Moderate Density Residential - Wattala					0.6	0.5			13,000
Zone 9	Moderate Density Logistics Development				0.08	0.2			1	19,000
Zone 10	Moderate Density Residential - Kolonnawa			0.3						4,000
Zone 11	Moderate Density Residential - Ratmalana		0.25							50,000
Zone 12	Low Density Green Residential		0.1					0.9		33,000
Zone 13	Low Density Garden	0.1								82,000
		1	1	1	1	1	1	1	1	**1,100,000**

*- Non-residential Population in each LA distributed according to the rounded non-residential population