# NEW YANGON CITY

# Development Guidelines

August 2019 DRAFT

NEW YANGON DEVELOPMENT COMPANY LTD

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# Development Guidelines

The Development Guidelines at the master plan level serve the purpose of linking further revisions and efforts to develop detailed schemes or zonal plans. The guidelines for New Yangon are designed to explain the general rules based on which proposals have been formulated. Guidelines for each land use have been proposed to achieve the objectives of the master plan. Parking and Social Infrastructure norms have been proposed to aid further development of zonal plans. The existing settlements have been identified as special areas requiring case-by-case attention. The city center has also been identified to create a compact Transit Oriented Development environment. The guidelines are envisaged to aid development of an urban design framework for each zone and area. One of the most critical aspects of the master plan is the green-blue network that needs to be free of encumbrance for city drainage and flood protection.

This will be delivered through:

# Land use Plan

The main goal of New Yangon is to generate jobs in the Greater Yangon area through selected industrial sectors (in early stages) that leverage on existing skills and available resources. Therefore around 25% of the site is dedicated to industrial uses. The industrial area is proposed to have a mix of heavy, light, and logistics related uses.

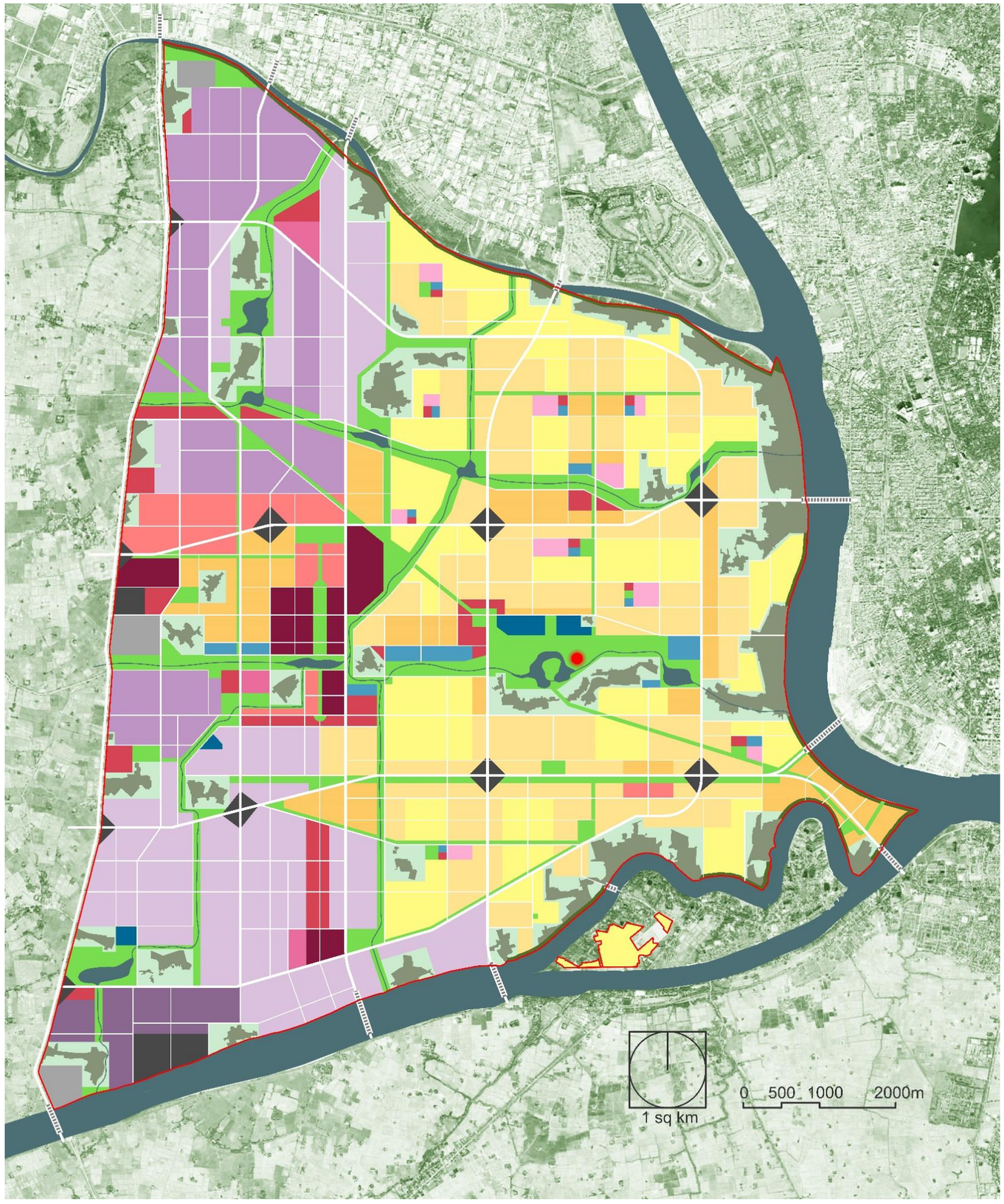
The city center is planned to be strategically located in the west of the city to become a catalyst for the future and serve the industrial areas. Around 35% of the site is planned to have residential uses with varying proportions of density and mix of uses. This residential area will also cater to the resettlement land requirement. Around 14% of area has been allocated for the green-blue network catering to flood resilience and drainage requirements of the city. Further allocations for green area at the local level will need to be made upon detailed planning for each zone/ area.

Civic uses at the city level have been identified, and those at the local level are envisaged to be allocated from within major land use zones.

Existing villages and village buffer occupies almost 14% of land. The village buffer has been identified to act as a mitigation zone between existing and new development. A proportion of the village buffer can be used to provide facilities and amenities for the community.

The land use areas include all roads, net available area will need to be calculated through detailed planning of individual zones. Due to rounding, the numbers presented may not add up precisely to the totals indicated.

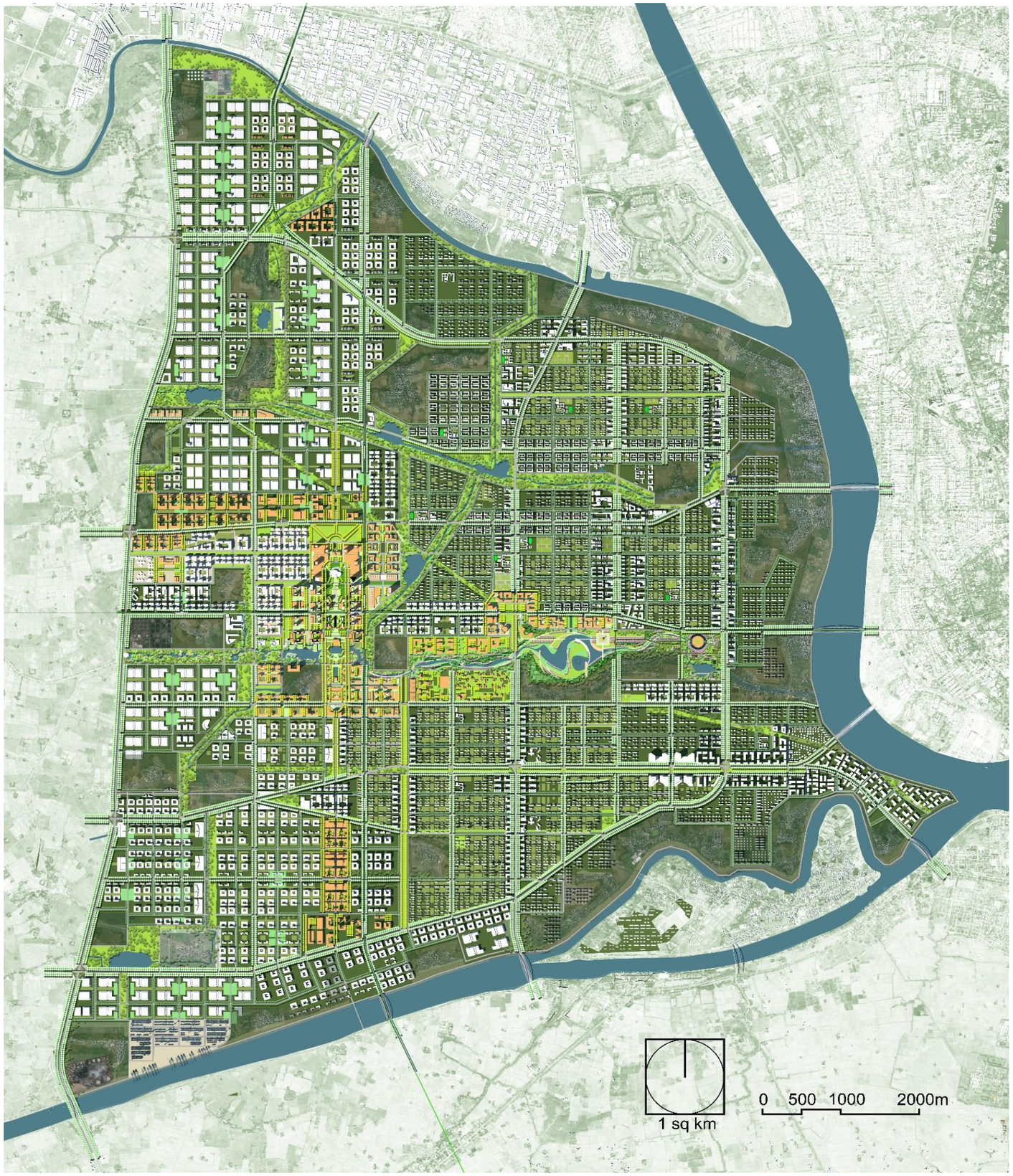
| LAND USE | LAND AREA (in sq km) | % |
|---|---|---|
| **Residential GFA** | **30.94** | **35%** |
| Residential I (Low Density) | 12.75 | 14.4% |
| Residential II (High Density) | 12.56 | 14.2% |
| Residential III (Mixed Use) | 5.63 | 6.4% |
| **Commercial GFA** | **6.41** | **7.3%** |
| Commercial I | 1.91 | 2.2% |
| Commercial II | 2.25 | 2.5% |
| Commercial III (Mixed Use) | 2.25 | 2.5% |
| **Industrial** | **22.37** | **25.3%** |
| Industrial I (Light Industry) | 12.82 | 14.5% |
| Industrial II ( Heavy Industry) | 7.96 | 9% |
| Industrial III (Logistics) | 1.59 | 1.8% |
| **Transport & Logistics** | 1.51 | **1.7%** |
| **Green Spaces** | **12.02** | **13.6%** |
| Open Space | 9.14 | 10.35% |
| River Buffer | 0.64 | 0.7% |
| Water Bodies | 2.24 | 2.54% |
| **Villages** | **11.97** | **13.6%** |
| Existing Villages | 5.68 | 6.4% |
| Village Buffer | 6.29 | 7.1% |
| **Civic Amenities** | **2.33** | **2.6%** |
| **Utilities (Physical Infrastructure)** | **0.77** | **0.9%** |
| **TOTAL** | **88.30** | **100.00%** |




Land Use Master Plan

## Legend:

- Civic Amenities
- Utilities (Basic Infrastructure)
- Existing Villages
- School
- College / University
- Open Space
- Basic Public Administrative
- Residential I
- Residential II
- Residential III
- Commercial I
- Commercial II
- Commercial III
- Industrial I
- Industrial II (Heavy Industry & Logistics)
- Industrial III (Heavy Industry & Logistics)
- Transport & Logistics Port




Illustrative Plan

# The Green-Blue Framework

Designing in harmony - a truly holistic approach to sustainable design recognizes the impacts of every design choice on natural and cultural resources. The most precious asset of any place is its local distinctiveness. This valuable quality is the main attraction for visitors and residents looking for a rich and authentic experience.

Aside from being attractive and enjoyable for people, sustainable projects promote biological diversity, contribute to the quality of the air and water, and reduce the impacts of construction.

The results of our holistic approach to design and planning are livable, enduring places that are compatible with and considerate of natural ecosystems. We draw on the strengths of both the natural and the built environment, and create guidelines to ensure that the attributes that attracted people to a location in the first place will still be there years later. Creating a landscape fabric that becomes a backbone for New Yangon City.

The aim is to highlight the ecological richness, using green fabric and water as a main element to enhance the environmental benefits of the area, and to expand the public nature of the green spaces with the concept of “having a home in a park”.

**HARMONY WITH NATURE**

- Rich bio-diversity
- Connected to wider green network
- Capitalizing on natural assets

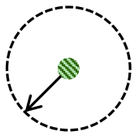
**REJUVENATING AND INVIGORATING**

- Fresh environment
- Places for body, mind and spirit
- Healthier community

**DISCOVER EXPLORE AND CONNECT**

- Easy to navigate network of open spaces
- Active and vibrant
- Community integration

## District Park



R = 5 km

4 sqm

Characteristics:

- Spaces for Exercises
- Playground
- Park facilities (Toilets/Shower)

## Neighbourhood Park

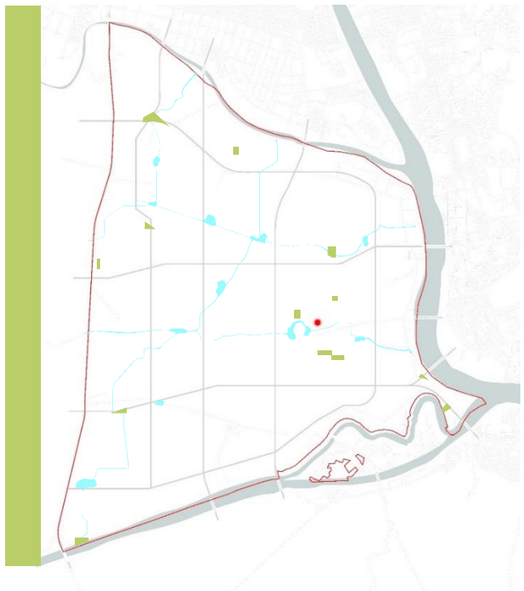
R = 5 km

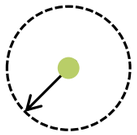
3.3 sqm

Characteristics:

- Community Garden
- Playground

## Pocket Park





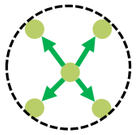
R = 1.6 km

1.7 sqm

Characteristic:

- Seating Spaces

## Green Connector



3.3 sqm

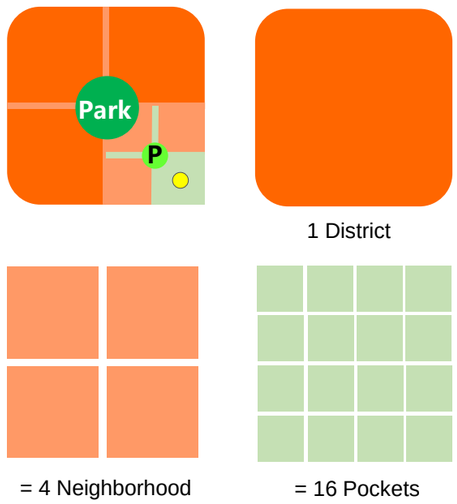
Characteristics:

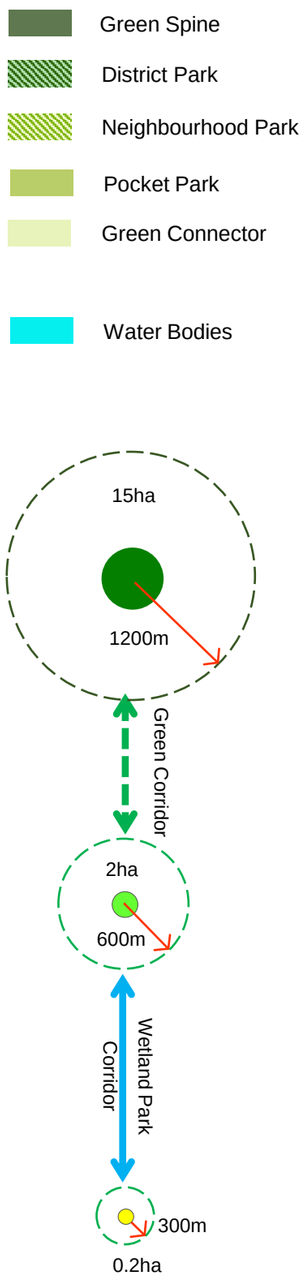
- Jogging/Cycling Path
- Seating Area
- Shaded Structures

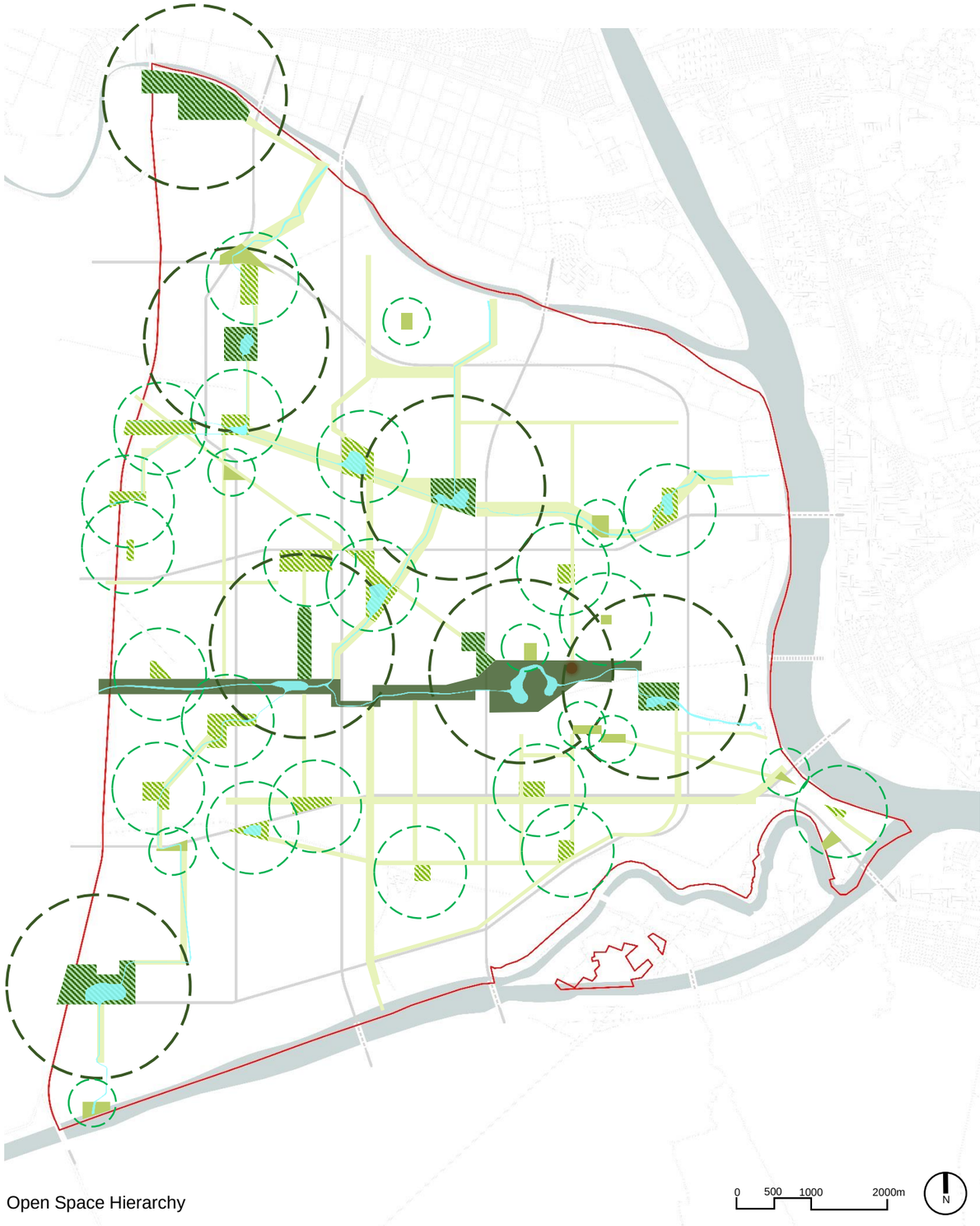
# The Green-Blue Framework

The proposed open space network in New Yangon closely follows the blue ecosystem. These Green-Blue spines are proposed to leveraged for the public realm as well as for city wide pedestrian and bicycling networks. A hierarchy of city level to local green areas is proposed that can together provide around 12-14 sqm of green area per resident. While the master plan level green area provides around 10 sqm of green space per person, local green spaces are proposed to add additional 2-4 sqm per person through detailed zonal plans or detail area planning based on the norms outlined in the master plan.

The main aim of the Green-Blue strategy is to create usable and active spaces that serve a purpose and are closely linked to day-to-day lives of the residents.




Open Space Hierarchy

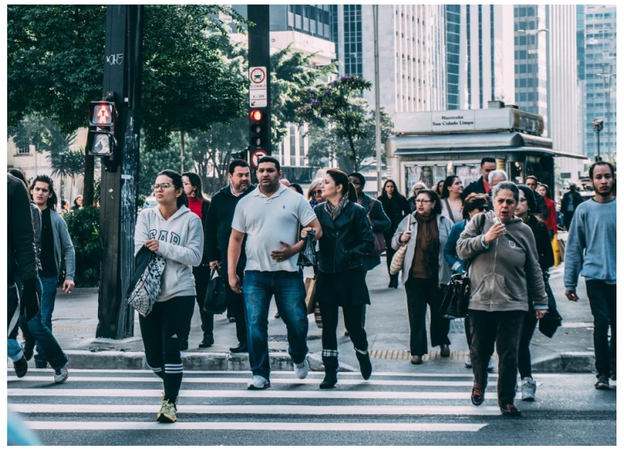
# One-Connected City

In order to be a successful city, New Yangon City needs to be connected with the existing fabric allowing businesses and people to migrate across the river. Connectivity across the Yangon River will also help in catalysing development westwards which was hampered due to lack of bridges. One of the most important principles of connectivity is ‘network’. Any form of transportation needs to be examined from the perspective of a network at both the city and local level.

At the city level, the plan proposes New Yangon to be connected to both road and future rail network. The plan also proposes that network to be extended westwards and in the south for future development.

Within NYC, the plan proposes to have multiple modes of transit promoting use of sustainable means of transportation. The public transportation network has been carefully crafted to allow maximum possible coverage. In addition to cycling and pedestrian networks along roads, green corridors have been identified that can provide pleasant trips to the residents.

The aim of the plan is for New Yangon to be one of the most public transit friendly cities. Future advances in transit and urban technology can be integrated along these networks further enhancing convenience.

# Express Bus Network

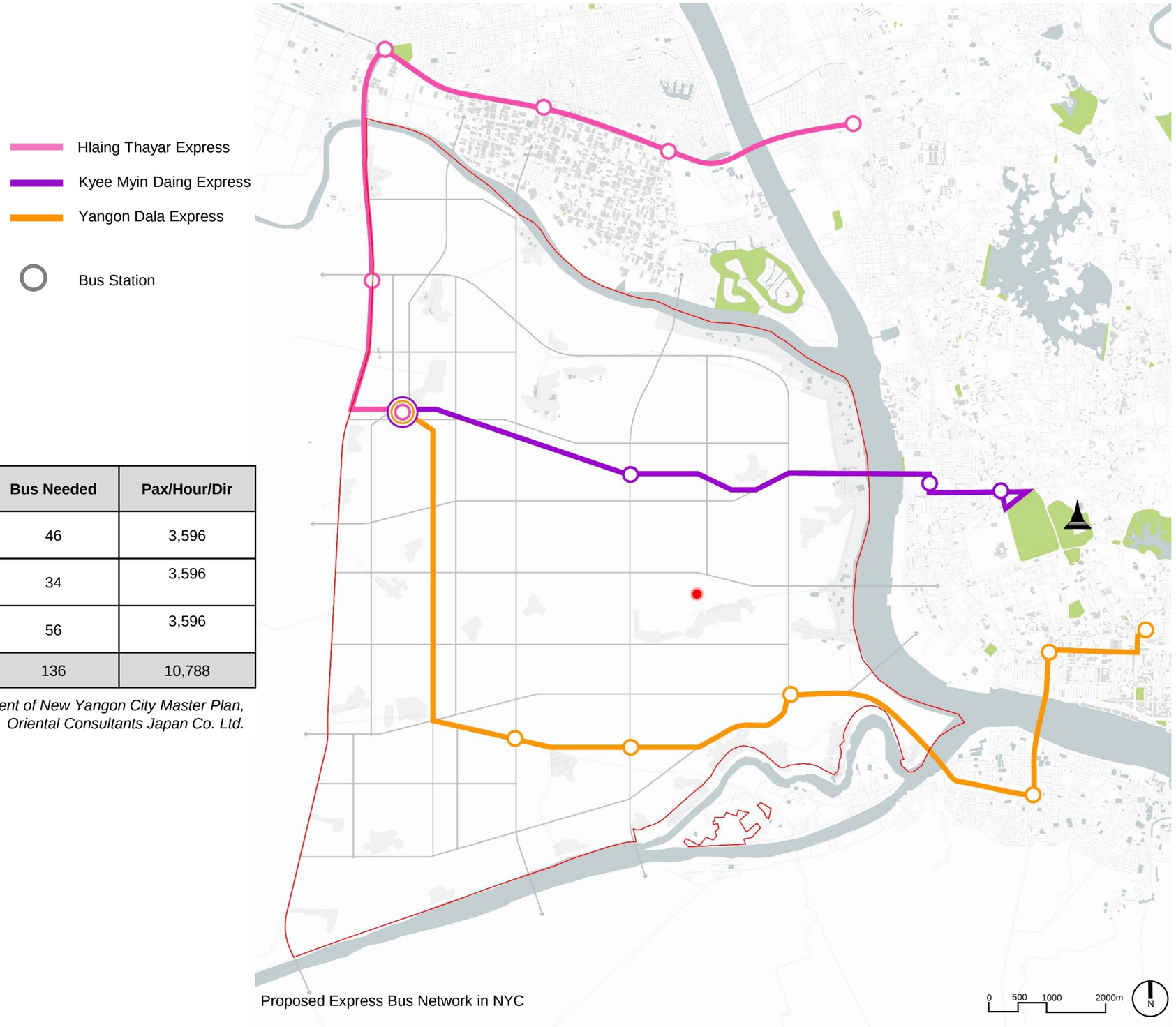
The initial stages of development in New Yangon will depend on a city bus network for connectivity. Based on the estimated employment to be created by 2025, a large number of workers will be traveling from outside NYC.

In addition to the city bus network, express bus routes have been proposed to connect various areas of existing city with New Yangon. Further details are available in the Traffic and Transportation Study.

Potential Ridership Capacity of Limited Express Bus Routes

| | Distance | Stops | Headways | Bus Needed | Pax/Hour/Dir |
|---|---|---|---|---|---|
| **Hlaing Thayar Express** | 17.5 | 6 | 2 min | 46 | 3,596 |
| **Kyee Myin Daing Express** | 12.3 | 4 | 2 min | 34 | 3,596 |
| **Yangon Dala Express** | 22.0 | 7 | 2 min | 56 | 3,596 |
| | 51.8 | 17 | | 136 | 10,788 |

*Source: Conceptual Traffic and Transport Study Report for development of New Yangon City Master Plan, Oriental Consultants Japan Co. Ltd.*




Proposed Express Bus Network in NYC

*Source: Conceptual Traffic and Transport Study Report for development of New Yangon City Master Plan, Oriental Consultants Japan Co. Ltd.*

# Secondary Transit Network

To supplement the proposed MRT network and to increase the coverage of public transport system in NYC, a Secondary Transit Network in the form of either Bus Rapid Transit (BRT) or Light Rail Transit (LRT) is proposed.

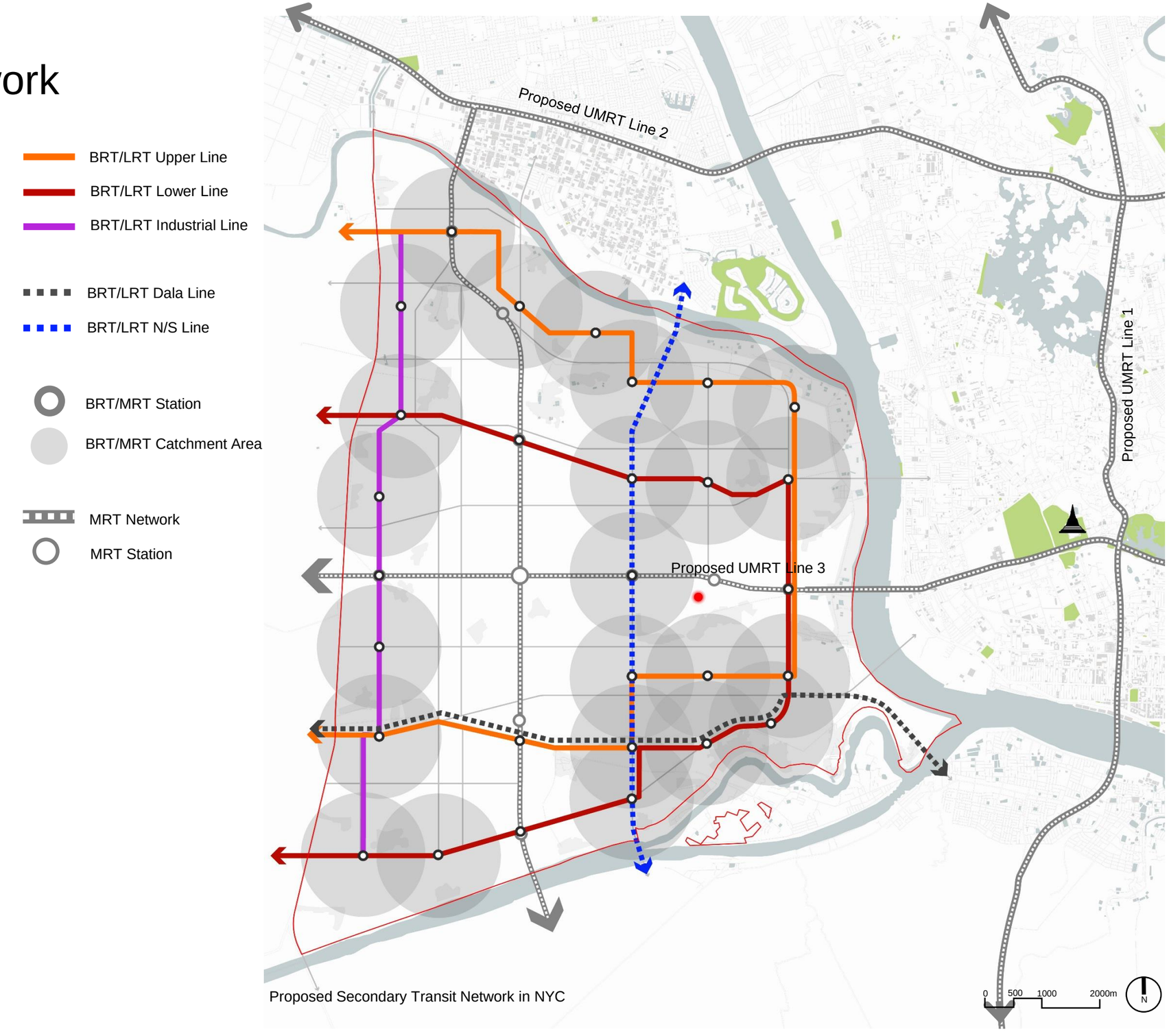
The Secondary Transit Network would consist of BRT or LRT lines covering most of the residential area and the western part of industrial area. There will be interchange stations at the MRT stations to allow convenient transfer between the two networks.

The distance between BRT/ LRT station is approximately 1.5km apart. Most of the population in NYC are within 10 minutes (800m) walking distance from the station.

Provision of dedicated traffic lanes on Arterial and Sub-Arterial Roads for BRT/ LRT to ensure priority for public transport and to minimize conflict with other road-based transport.

Traditional bus services would also be available to serve the commuters between NYC and other areas and to supplement the proposed MRT and BRT/LRT network within NYC.

Implementation of the networks and routing needs to be studied in future stages as the city grows.




Proposed Secondary Transit Network in NYC

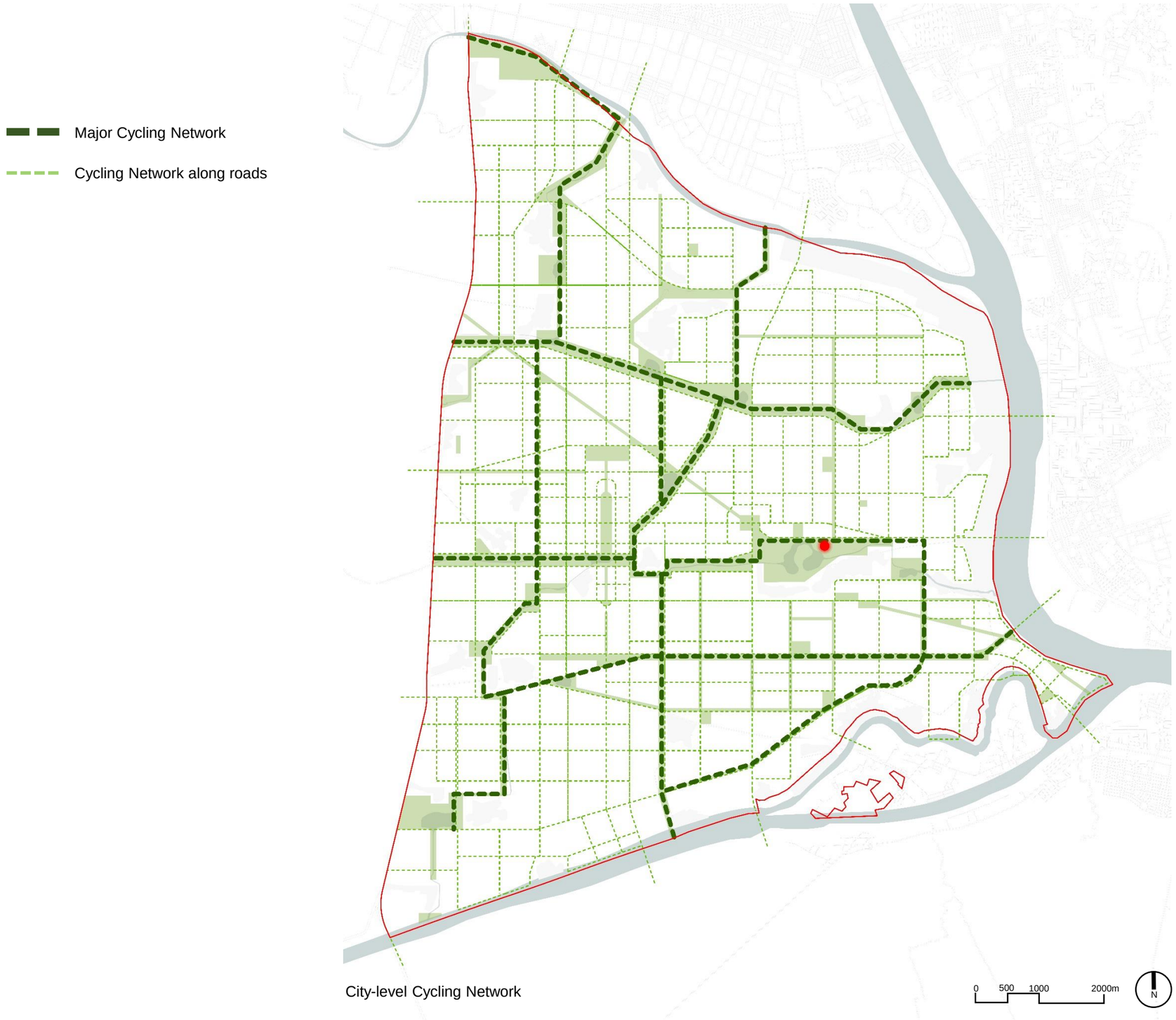
*Source: Conceptual Traffic and Transport Study Report for development of New Yangon City Master Plan, Oriental Consultants Japan Co. Ltd.*

# Cycling Network

Preparing itself for future challenges that include adoption of new transit technologies, a dedicated city level cycling network is proposed for New Yangon City along its green network. In the long run, the network is envisaged to absorb changes to technology in the type of low-speed personal mode. In the short term, the network can cater to cycles as well as personal mobility devices that are increasingly being adopted. A shared cycling system can also be adopted with dedicated spaces for parking and facilities for commuters. Park and ride facilities can also be incorporated in the system if found feasible.

One of the main issues with mass adoption of cycling as a mode of transit is the weather, especially in tropical climates. Hence it is imperative that the dedicated cycling network is planned with enough natural and artificial shade for cyclists. Pedestrian networks can be integrated alongside this cycling network, however, as expected, long walking trips are not anticipated.

Dedicated cycling lanes have also been proposed along roads (except arterial roads). As the development progresses, the network of lanes along roads and along green corridors can be integrated to provide last mile connectivity for the commuters.




City-level Cycling Network

# Mass Public Transit

Since road-based private transportation is not an efficient and sustainable way to manage the anticipated travel demand of NYC, a high-capacity and high-quality mass transit system is required to form the backbone of the public transport service for NYC.

Based on the latest master plan and target mode share of public transport for NYC, two mass transit lines are proposed:

- A North-South (N-S) Line connecting NYC with the future Urban Mass Rapid Transit (UMRT) Line 2 in the north and future NYC Phase 2 in the south.

- An East-West (E-W) Line crossing Yangon River to connect with the existing Yangon Circular Rail and future UMRT Line 3 in the east.

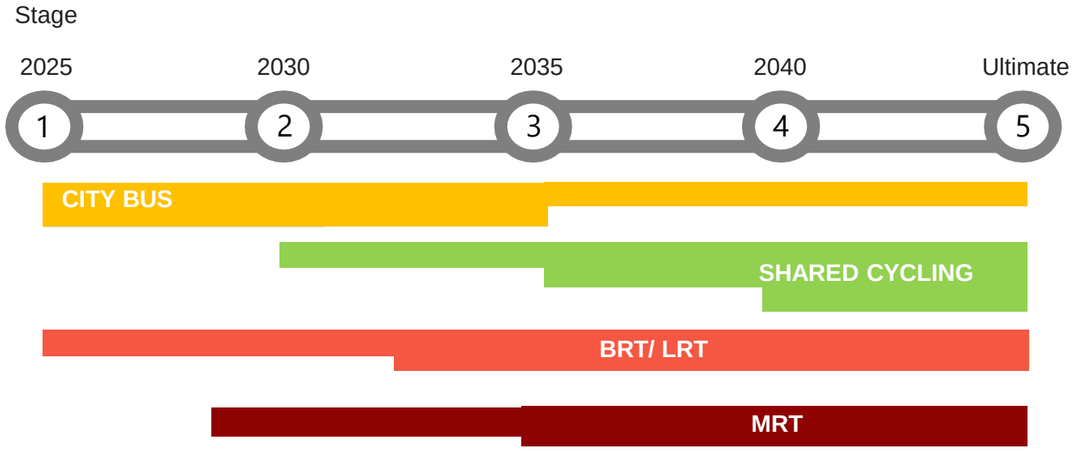
The proposed north-south line would pass through the eastern part of industrial area and commercial area in the city center. The proposed east-west line would mainly pass through the commercial area and residential area. The two MRT lines would intersect at the city center to allow easy interchange. In addition, transport hubs would be developed at major locations to allow seamless transfer between various public transport network.

In general, the distance between MRT station is approximately 2-3km apart to allow sufficient catchment along the major development axles.

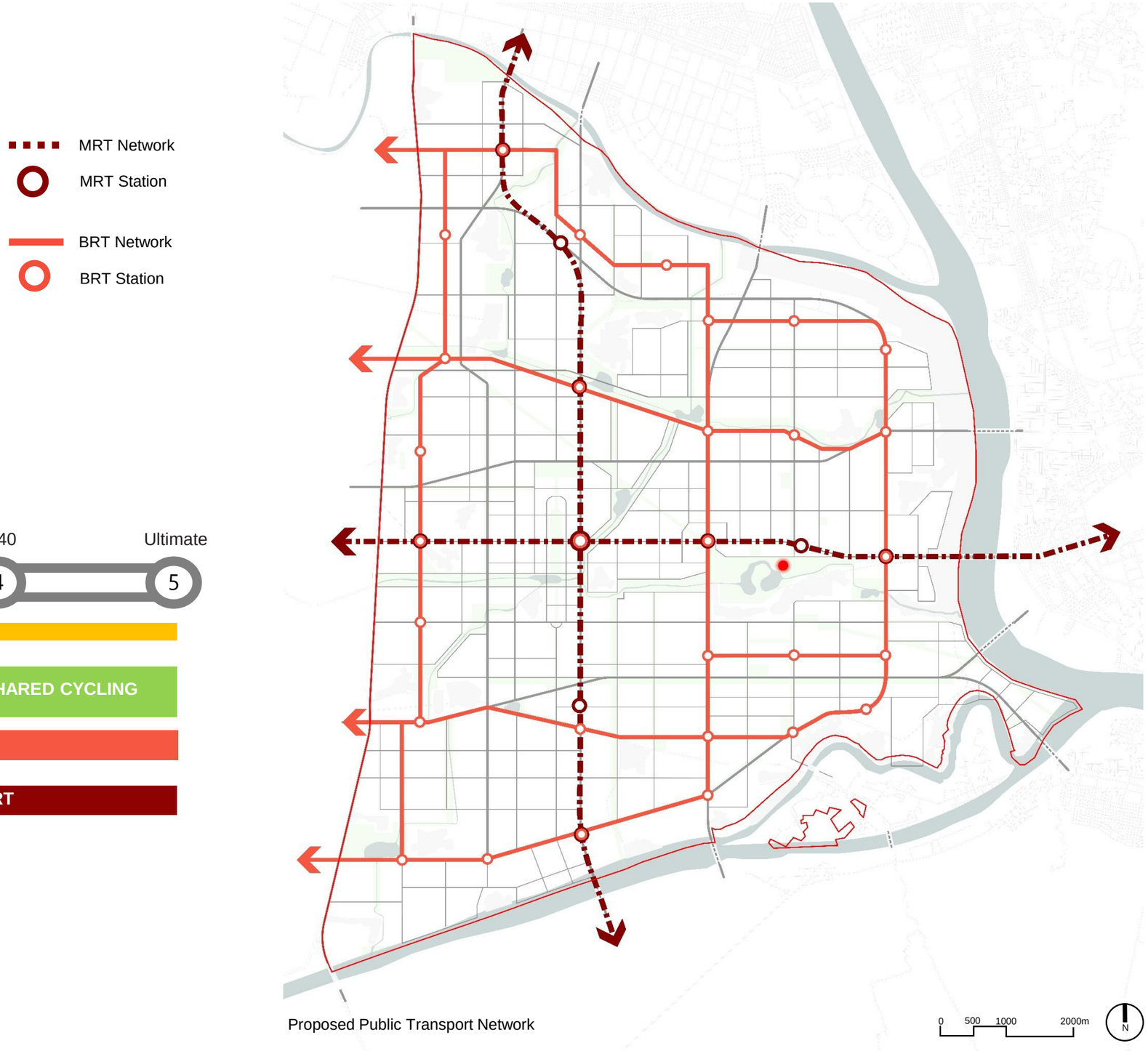
Currently, the N-S Line and E-W Line are scheduled to be implemented in year 2027 and post 2030 respectively.

# One-Connected City

The vision for NYC is to be a One-Connected-City with multiple options for sustainable public transit. However, the level of investment involved with public transit is prohibitive and needs to be suitably phased. It is envisaged that early stages of the city will require a city bus network connecting key areas within, and with interchanges with the network operating in Greater Yangon. As the population grows, feasibility of activating the secondary transit network (few routes) can be examined. In parallel, a shared cycling scheme could be implemented with the help of private sector investment.




Conceptual phasing/ activation of various types of public transit




Proposed Public Transport Network

# Road Hierarchy

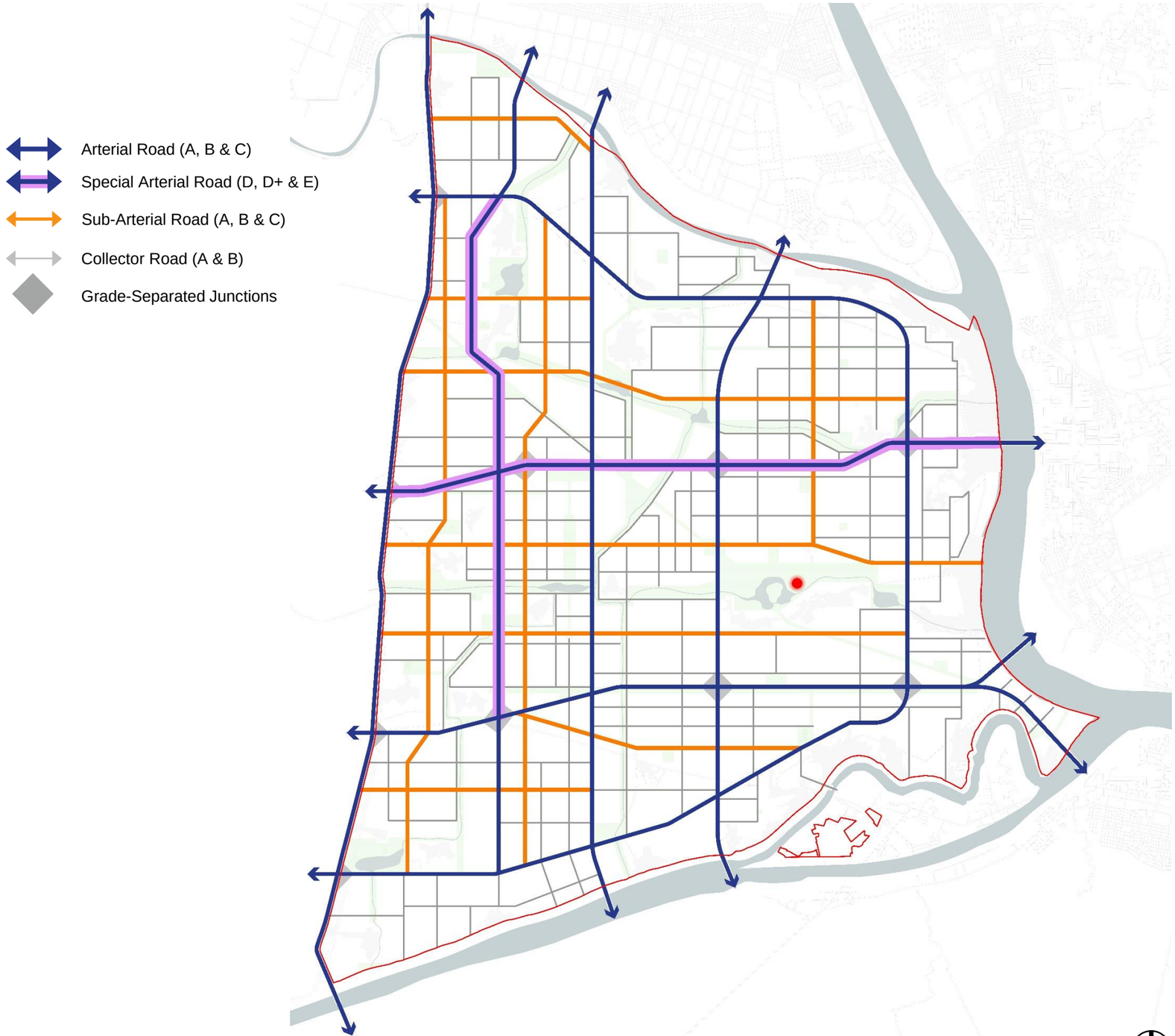
The road network for New Yangon City is the result of an iterative process between possible location of bridges, the internal land uses, and mass transit alignments. Planned as a branched system, a road hierarchy has been established with different capacities to guide vehicular traffic at different volumes and speeds.

Arterial Roads will connect NYC with the rest of Yangon also allowing through traffic to leave Yangon without entering next order of roads. Grade separated junctions have been proposed for the future to have non-signalized junctions, allowing higher volumes. Some of the existing road alignments in the site have been identified that can be upgraded.

Sub-arterial Roads branch off from Arterial Roads to connect the Arterial Roads with important centers within NYC.

Collector Roads and Local Roads are mainly for internal circulation and provide access to individual developments.

The key principle of such a branched network is that (as far as possible) traffic should always follow the hierarchy to transition from one type of road to another with gradually increasing capacities and speeds.




Road Hierarchy Map

# Types of Roads

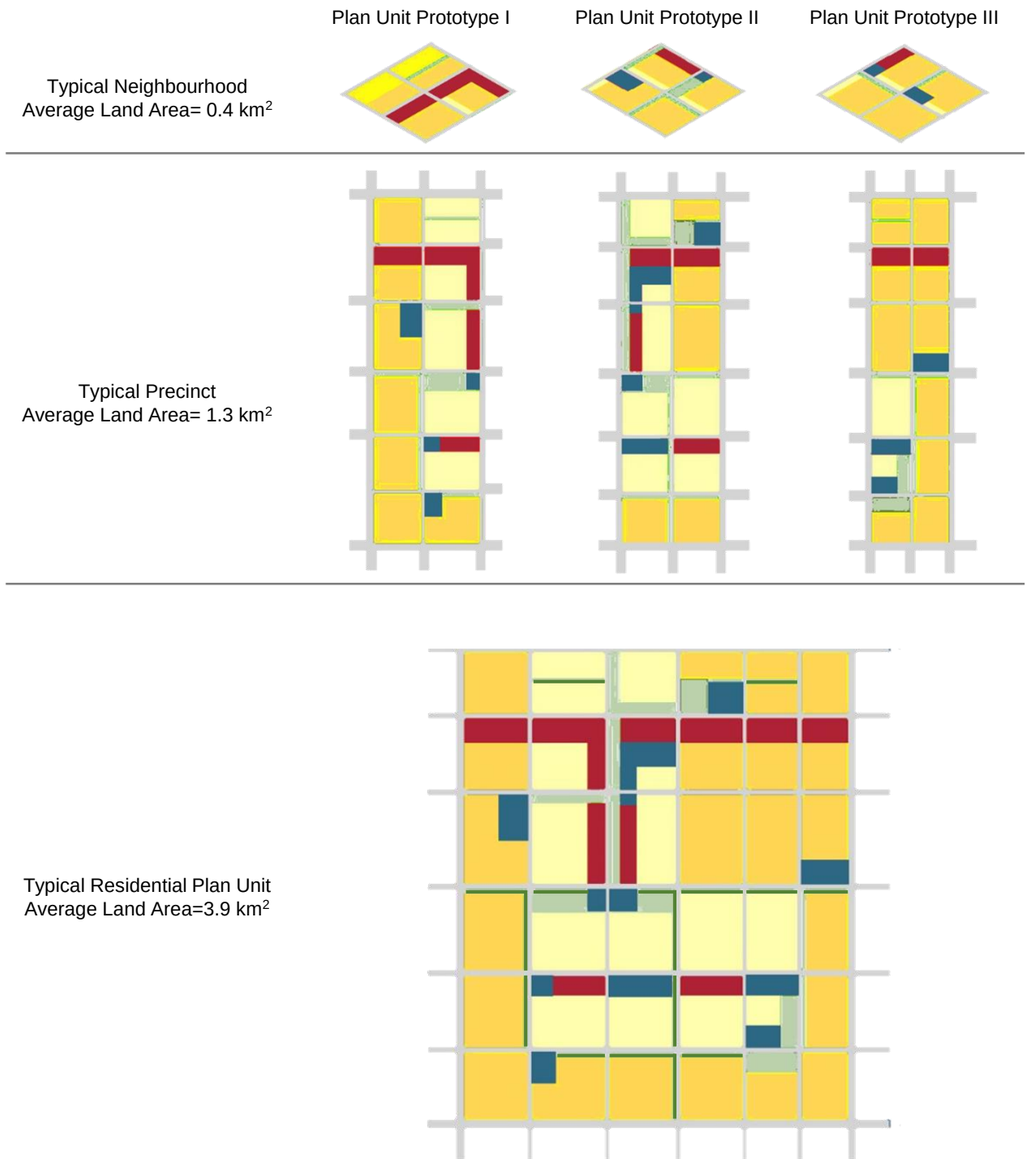
| Road Type | Carriageway | Median | MRT | Secondary Transit | Bus Bay | Bicycle Lane | Green Strip | Sidewalk | Parcel Entry |
|---|---|---|---|---|---|---|---|---|---|
| Arterial Road Type A<br>Arterial Road (typical)<br>**48.0m** | 6-lane divided carriageway | Minimum 2.5m wide median to allow for extra turning lane at junctions; No median gap permitted except for junctions with other Arterial and Sub-arterial Roads | No MRT alignment | No Secondary Transit alignment | Service corridor alternating into Bus-Bay for city bus network | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise | Minimum 3m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | No parcel entry for vehicles |
| Arterial Road Type B<br>Arterial Road with Secondary Transit<br>**50m** | 6-lane divided carriageway + lane on either side for Secondary Transit | Minimum 2.5m wide median to allow for extra turning lane at junctions; No median gap permitted except for junctions with other Arterial and Sub-arterial Roads | No MRT alignment | Dedicated lane on either side for Secondary Transit | City-bus network to mix with traffic, but use same transit stops | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise | Minimum 3m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | No parcel entry for vehicles |
| Arterial Road Type C,<br>Arterial Road with MRT<br>**48m** | 6-lane divided carriageway | Minimum 4.0m wide median to allow for extra turning lane at junctions and MRT; No median gap permitted except for junctions with other Arterial, Sub-arterial Roads | Elevated MRT on Median with station below the viaduct | No Secondary Transit alignment | Service corridor alternating into Bus-Bay for city bus network | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise; To be used for circulation near MRT stations | Minimum 3m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | No parcel entry for vehicles |
| Special Arterial Road Type D, D+ & E (Civic Space)<br>**53-100m** | 6/8-lane divided carriageway | 2.5-20m wide central green space/ median | No MRT alignment | No Secondary Transit alignment | Service corridor alternating into Bus-Bay for city bus network | Central and site green space to have dedicated cycling lanes | Minimum 1m Green Strip for buffering against noise for type C & D. Type D+ does not have green strip. | Minimum 2m wide sidewalk except in areas where foot traffic is expected | No parcel entry for vehicles |
| Sub-Arterial Type A<br>Sub-arterial Road (typical)<br>**41.50m** | 4-lane divided carriageway | Minimum 2.5 m wide median to allow for extra turning lane at junctions; No median gap permitted except for junctions with other Arterial, Sub-arterial, and Collector Roads | No MRT alignment | No Secondary Transit alignment | Service corridor alternating into Bus-Bay for city bus network | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise | Minimum 3m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | No parcel entry for vehicles |
| Sub-Arterial Type B<br>Sub-arterial Road with Secondary Transit<br>**43.50m** | 4-lane divided carriageway+ lane on either side for Secondary Transit | Minimum 2.5m wide median to allow for extra turning lane at junctions; No median gap permitted except for junctions with other Arterial and Sub-arterial Roads | No MRT alignment | Dedicated lanes on either side for Secondary Transit | City-bus network to mix with traffic, but use same transit stops | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise | Minimum 3m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | No parcel entry permitted |
| Sub-Arterial Type C<br>Sub-arterial Road with MRT<br>**41.50m** | 4-lane divided carriageway | Minimum 4.0m wide median to allow for extra turning lane at junctions and MRT; No median gap permitted except for junctions with other Arterial and Sub-arterial Roads | Elevated MRT on Median with station below the viaduct | No Secondary Transit alignment | Service corridor alternating into Bus-Bay for city bus network | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise; To be used for circulation near MRT stations | Minimum 3m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | No parcel entry permitted |
| Collector Type A<br>Collector Road (typical)<br>**35m** | 4-lane undivided carriageway | No median | No MRT alignment | No Secondary Transit alignment | Service corridor alternating into Bus-Bay for city bus network | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise | Minimum 2.5m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | Parcel entry permitted |
| Collector Type B<br>Collector Road with Secondary Transit<br>**35m** | 4-lane undivided carriageway | No median | No MRT alignment | Dedicated lanes on either side for Secondary Transit | City-bus network to mix with traffic, but use same transit stops | Dedicated cycling lane on either side | No Green strip designated | Minimum 2.5m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | Parcel entry permitted |
| Collector Type C<br>**20m** | 4-lane undivided carriageway | No median | No MRT alignment | No Secondary Transit alignment | No bus bay | Dedicated cycling lane on either side | No Green strip designated | Minimum 1.5m wide sidewalk | Parcel entry permitted |
| Local Street<br>Local Roads<br>**12m** | 2-lane undivided carriageway | No median | No MRT alignment | No Secondary Transit alignment | Not expected to be part of city bus network | Dedicated cycling lane on either side | Minimum 1m Green Strip for buffering against noise | Minimum 1.5m wide sidewalk (remaining for green strip) except in areas where foot traffic is expected | Parcel entry permitted |
| Local Street<br>**10m** | 2-lane undivided carriageway | No median | No MRT alignment | No Secondary Transit alignment | No bus bay | No dedicated cycling lane | No Green strip designated | Minimum 1.5m wide sidewalk | Parcel entry permitted |

# Create Self-Sustained Communities

A large scale greenfield development such as New Yangon City requires multiple levels of planning and design. This plan proposes to establish the fundamentals that would guide next level of plans. In order to consistently program the future housing and mixed-use developments, planning models must drive equal access to civic amenities, commercial facilities and public resources (libraries, education, healthcare, commercial Centers) creating self sustained communities.

A Planned Unit (precinct/ neighbourhood/ new town) structure has been developed and proposed to be adopted for New Yangon. Based on employment growth, population projection and defined land areas corresponding to density thresholds, the city is proposed to comprise of fifteen Planned Units. Each Planned Unit can then be assigned to have facilities and amenities based on the adopted norms.

A typical Planned Unit is envisaged to have 80,000 to 120,000 residents. Depending on the applicable norm, some Planned Units may have to share city level facilities which can be appropriately located for each access. Local Streets should be provided inside each neighbourhood unit for direct access to each parcel. The system provides a guidance for incremental growth of population and development in each Planned Unit reducing redundancies in provision of amenities. Community Centers have been identified in each Planned Unit to house local & cluster facilities like primary schools, health clinics, hospitals, community multipurpose spaces, etc.


*Typical hierarchy of a Planned Unit comprising of neighbourhoods that together form precincts, eventually coming together as a planned unit providing amenities for each hierarchy that are accessible to the residents.*

# Create Self-Sustained Communities

**Phase I**

Less residential demand
Priority development: Green + Community Center + Residential

**Phase II**

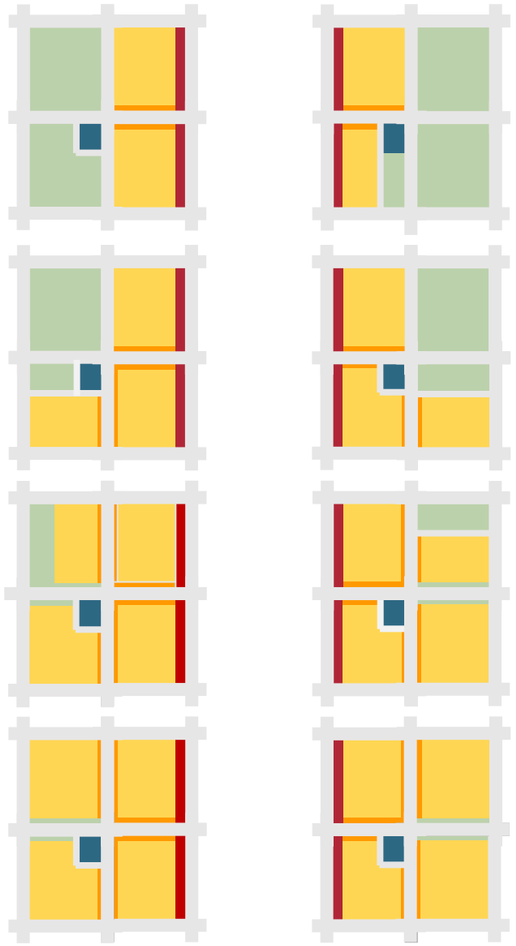
Increasing residential demand
Build street front retail and pubic realm

**Phase III**

Increasing residential demand
Develop the community park
Develop the public realm

**Phase III**

Fully developed residential community
Develop the eco-corridor

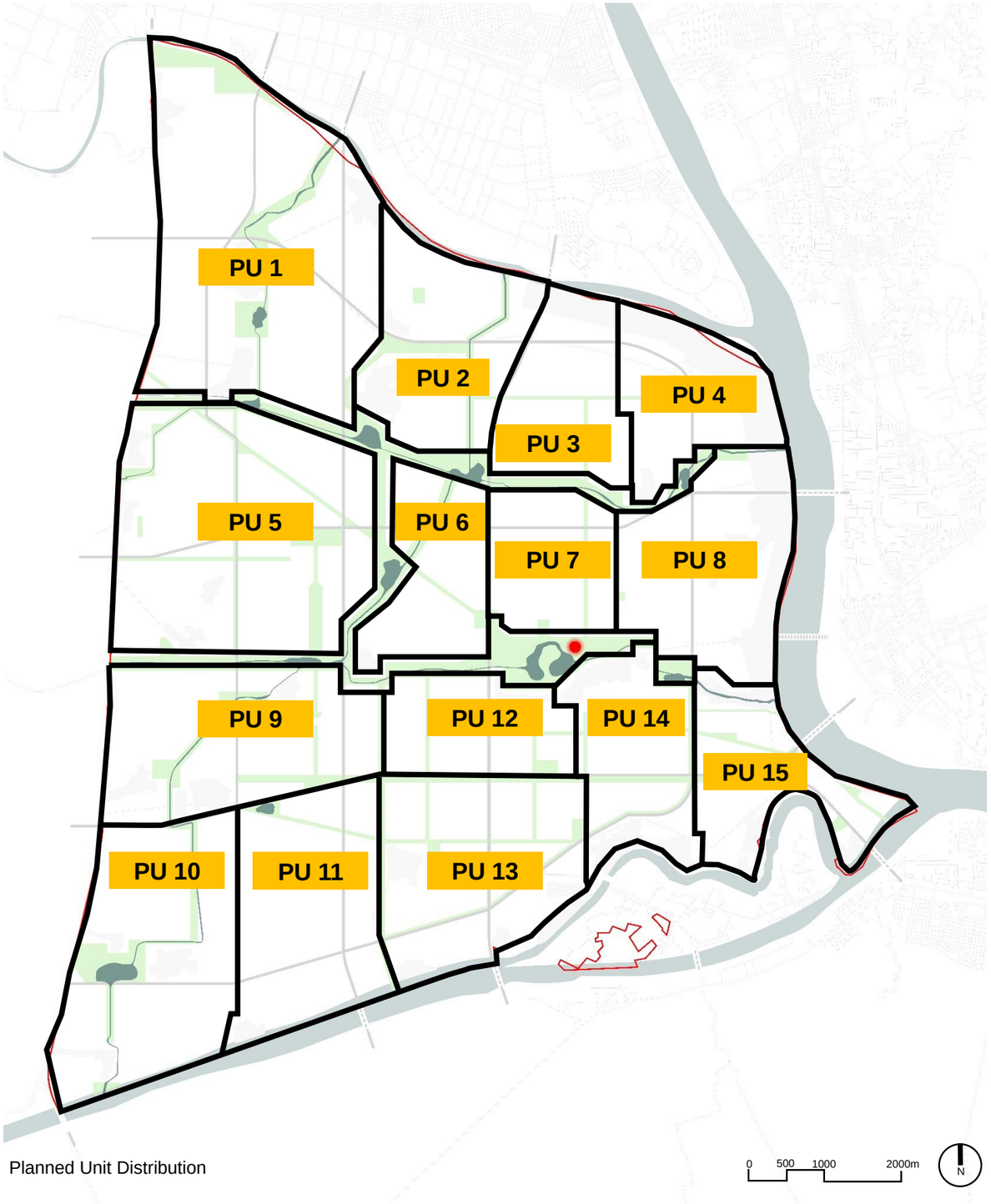


Plan Unit Prototype II



Plan Unit Prototype I

Planned Unit boundary




Planned Unit Distribution

# Social Infrastructure Distribution

Based on the concept of Planned Unit Development and norms adopted for provision of social infrastructure, a numeric and spatial distribution of amenities is proposed for New Yangon.

Community Centers have been tentatively identified in each unit that can house local, cluster level, or district level facilities. This system allows implementation of such facilities as the city grows in size and prevents over investment in early stages.

City level facilities and amenities such as the stadium and administrative areas have already been identified to be part of the main spine or cultural corridor. District level nodes have been tentatively identified in New Yangon to cater to shared facilities. These shared facilities, such as a university, cater to a larger population and hence can be shared between multiple units.

Local nodes have been tentatively identified that can cater to facilities directly associated with smaller populations. While each residential area or unit is proposed to have a local node, the Service Spine in the Industrial area is proposed to house such facilities as per requirements.

Table Showing Standards for Facility Distribution

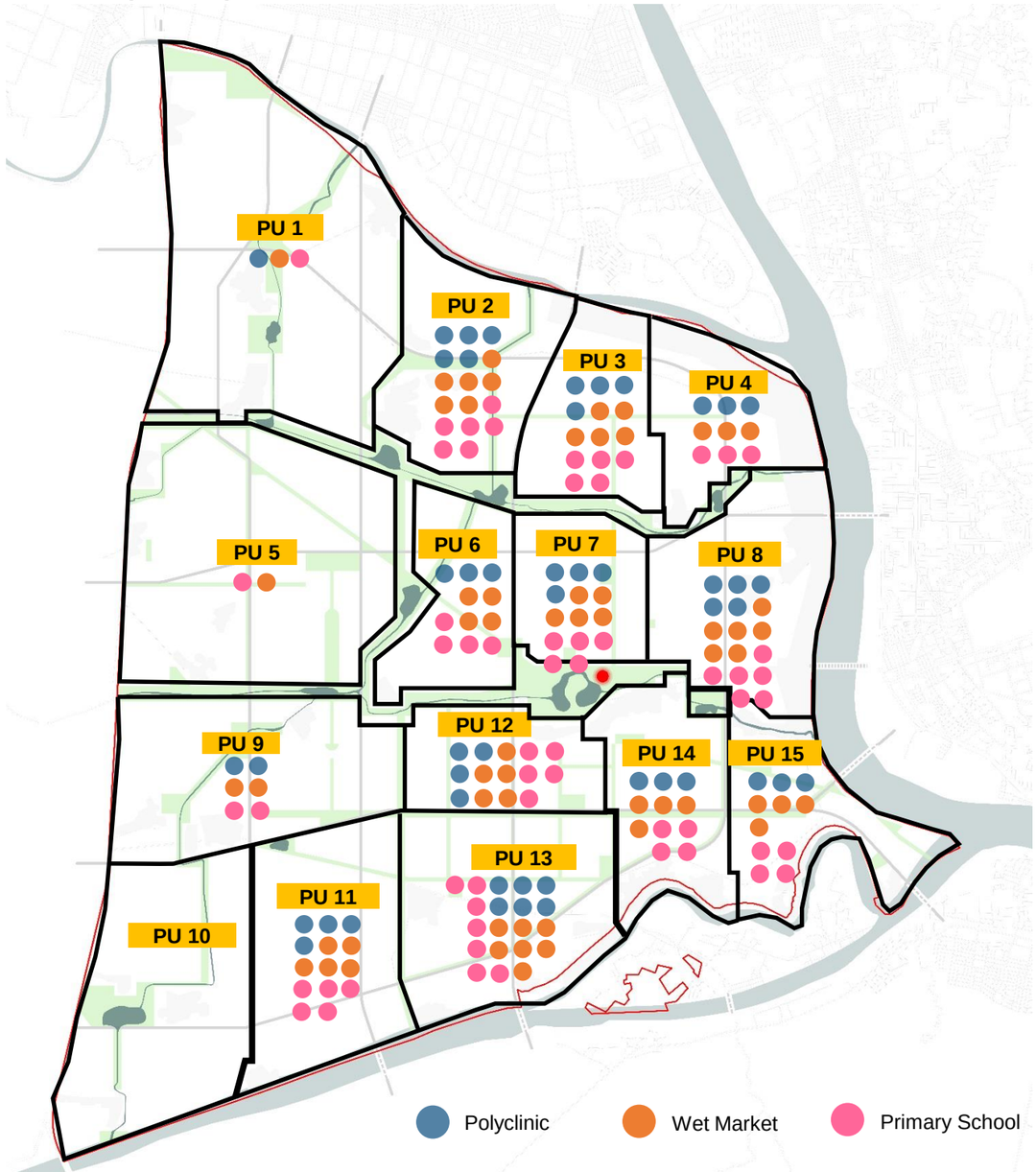
| | |
|---|---|
| Primary School | 1 per 15,000 persons |
| High/Middle School | 1 per 25,000 persons |
| College/ University | 1 per 90,000 persons |
| Polyclinic | 1 per 25,000 persons |
| Hospital | 40 bed per 10,000 population |
| Wet Market | 1 per 20,000 persons |
| Religious Sites | 1 per 40,000 persons |

Table showing Amenity Distribution across Planned Units

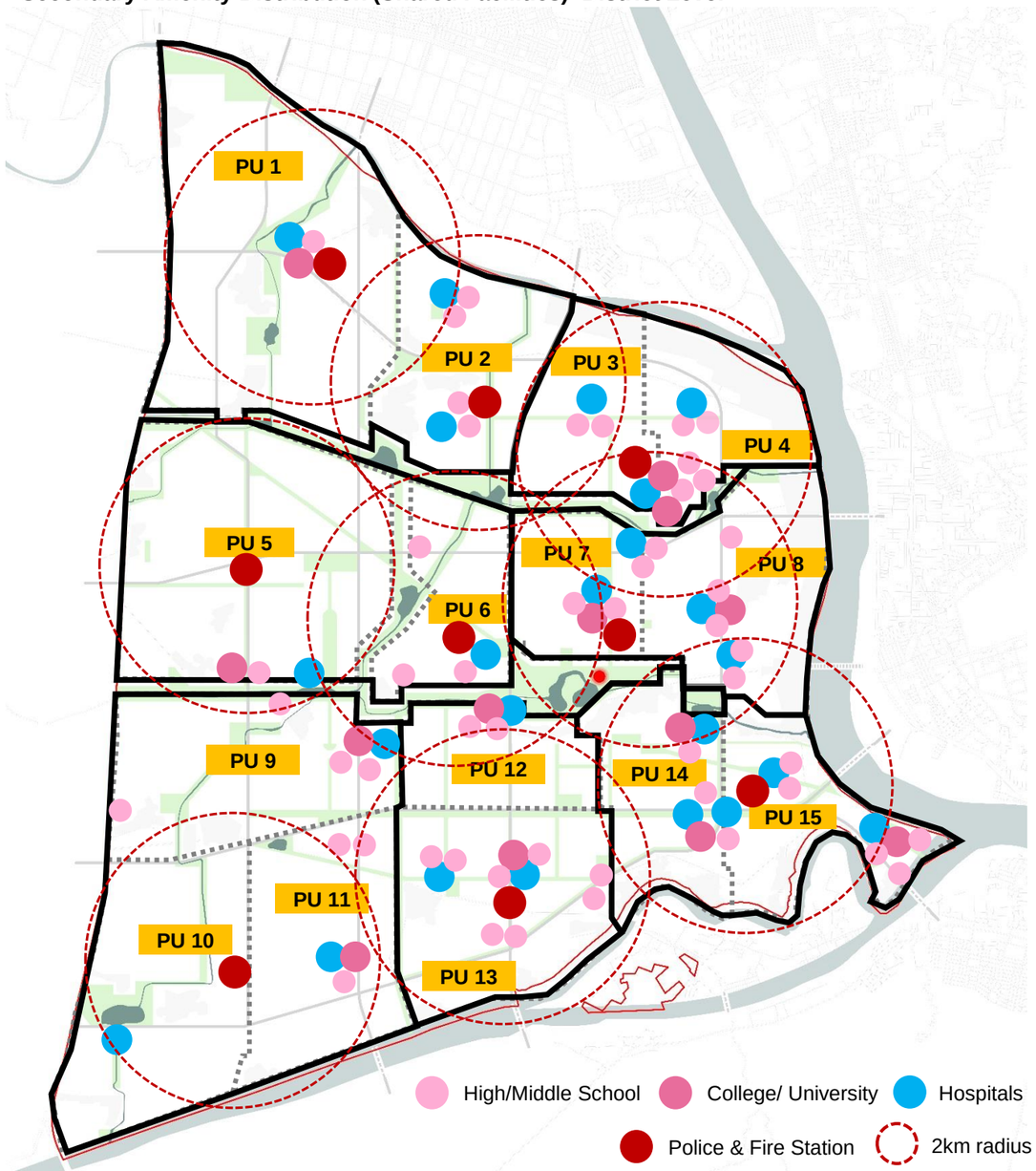
| Facility | | | | | | |
|---|---|---|---|---|---|---|
| AREA | Education | | | Healthcare | | Others |
| | Primary School | High/Middle School | College/ University | Polyclinic | Hospital | Wet Market |
| PU_1 | 1 | 5 | 1 | 1 | 3 | 1 |
| PU_2 | 6 | | | 5 | | 6 |
| PU_3 | 5 | 7 | 2 | 4 | 3 | 5 |
| PU_4 | 3 | | | 3 | | 3 |
| PU_5 | 1 | 4 | 1 | 1 | 2 | 1 |
| PU_6 | 4 | | | 3 | | 4 |
| PU_7 | 5 | 9 | 2 | 4 | 4 | 5 |
| PU_8 | 6 | | | 5 | | 6 |
| PU_9 | 2 | 6 | 2 | 2 | 3 | 2 |
| PU_10 | 0 | | | 0 | | 0 |
| PU_11 | 5 | | | 2 | | 5 |
| PU_12 | 5 | 9 | 3 | 4 | 5 | 2 |
| PU_13 | 7 | | | 6 | | 7 |
| PU_14 | 4 | 7 | 2 | 3 | 3 | 4 |
| PU_15 | 4 | | | 3 | | 4 |
| **TOTAL** | **58** | **47** | **13** | **46** | **23** | **55** |

# Social Infrastructure Distribution

**Primary Amenity Distribution - Local Level**




**Secondary Amenity Distribution (Shared Facilities)- District Level**



# Applicability & General Rules

The development guidelines are an intermediate step between detailed master planning and urban design for individual stages of development or zones. Documentation prepared helps translate the intent of the plans and the master developer / authority into a detailed set of regulations and controls that ensures compliance with the basic principles of a master plan. It ensures quality, cohesiveness, and integration while allowing flexibility for individual designs.

The master plan proposals have gone through an iterative process tested by each relevant discipline. Spatial and strategic considerations were made for flood mitigation, road and transportation networks, and infrastructure. Some of general considerations and applicable rules are as follows:

- The master plan green network is designed to be the backbone for stormwater drainage and flood mitigation. The channels and ponds within the green network are proposed to retain water during flood events while sluice gates along the river will prevent backflow. It is highly recommended that the master plan green network be kept free of encumbrance.

- Various bridges have been identified to connect New Yangon with rest of the city. The location of each bridge has been conceptually determined. Based on the anticipated traffic, each bridge is identified to have a certain number of lanes. The location of bridges is fundamental to the Arterial Road network within the city.

- While an MRT network has been identified in the master plan, the Arterial and Sub-arterial Roads have flexibility of accommodating future changes to the network.

- It is recommended that the Arterial and Sub-arterial Road networks be retained in future changes to the master plan since these roads are the backbone of the transportation network. The master plan does not propose networks of Collector or Local roads which are flexible for future sub-division.

- Sub-division plans need to consider the road hierarchy. As a general rule, a Local Road should not be allowed to connect directly to a Sub-arterial or Arterial Road. Traffic should be allowed to flow from Local to Collector to Sub-arterial to Arterial Roads that are designed for incremental increase in capacity and speed.

- Road networks connecting existing settlements with the new urban grid should be designed to follow the road hierarchy as well. Vehicular access should not be allowed from existing settlements that usually have narrow local roads directly on to Arterial or Sub-arterial Roads.

- Various zones have been identified in the master plan with a predominant use. The city is envisaged to have mix of uses in each zone that have been allowed in these guidelines.

- Tentative locations of local and shared social infrastructure has been identified in each Planned Unit in New Yangon. The framework and norms for provision of social infrastructure has been proposed as part of the master plan. Final locations and clustering needs to be determined through detailed master plans of each stage or zone.

- Based on the concept of planned unit, a typical neighbourhood has an average size of 0.4 km². This includes local streets and open spaces, with each unit being approximately 320m*320m

- The density distribution proposed in the master plan is fundamental to flow of traffic and provision of public transit. Future revisions to the master plan that lead to changes in density distribution need to examine the road network and provision of public transit in parallel.

- Overarching FAR values have been allocated to each land use category. However, densities have been differentially distributed across the city based on proximity to public transit and other considerations under Transit Oriented Development concept. It is recommended that the FAR plan be updated from time to time based on future changes by the relevant authority.

- Upon preparation of detailed plans for each zone, it is recommended that those FAR plans have precedence on the overarching plan. However, it should be the responsibility of the authority to keep the data up-to-date and coordinate densities between each zones and for the entire city.

- Built up area has a direct relationship with population and generation of employment. Increase in density will also result in increase of resident population and employment. Infrastructure provisions need to be incrementally revised based in any future changes to density.

- The density of development in existing settlements has been assumed to marginally increase. It is recommended that no large scale commercial or industrial activities be permitted within the existing settlements. Reorganization of existing settlements is recommended to be undertaken under Residential use categories and should be up to discretion of the authority.

- Green space hierarchy has been proposed as part of the master plan. It is recommended that detailed master plans of each zone allocate further green spaces based on the hierarchy allowing for creation of district and neighbourhood parks, as well as local pocket parks that are ideal for small children.

- A 50 meter buffer has been identified along the waterfront along main rivers. The buffer will serve to provide space for the proposed dykes, and can be transformed into a waterfront promenade. The buffer is recommended to be kept free of encumbrance.

- Rainwater Harvesting is encouraged for all parcels to retain water for non-potable purposes. Excess water can be discharged into the ground for recharge, and into the stormwater network.

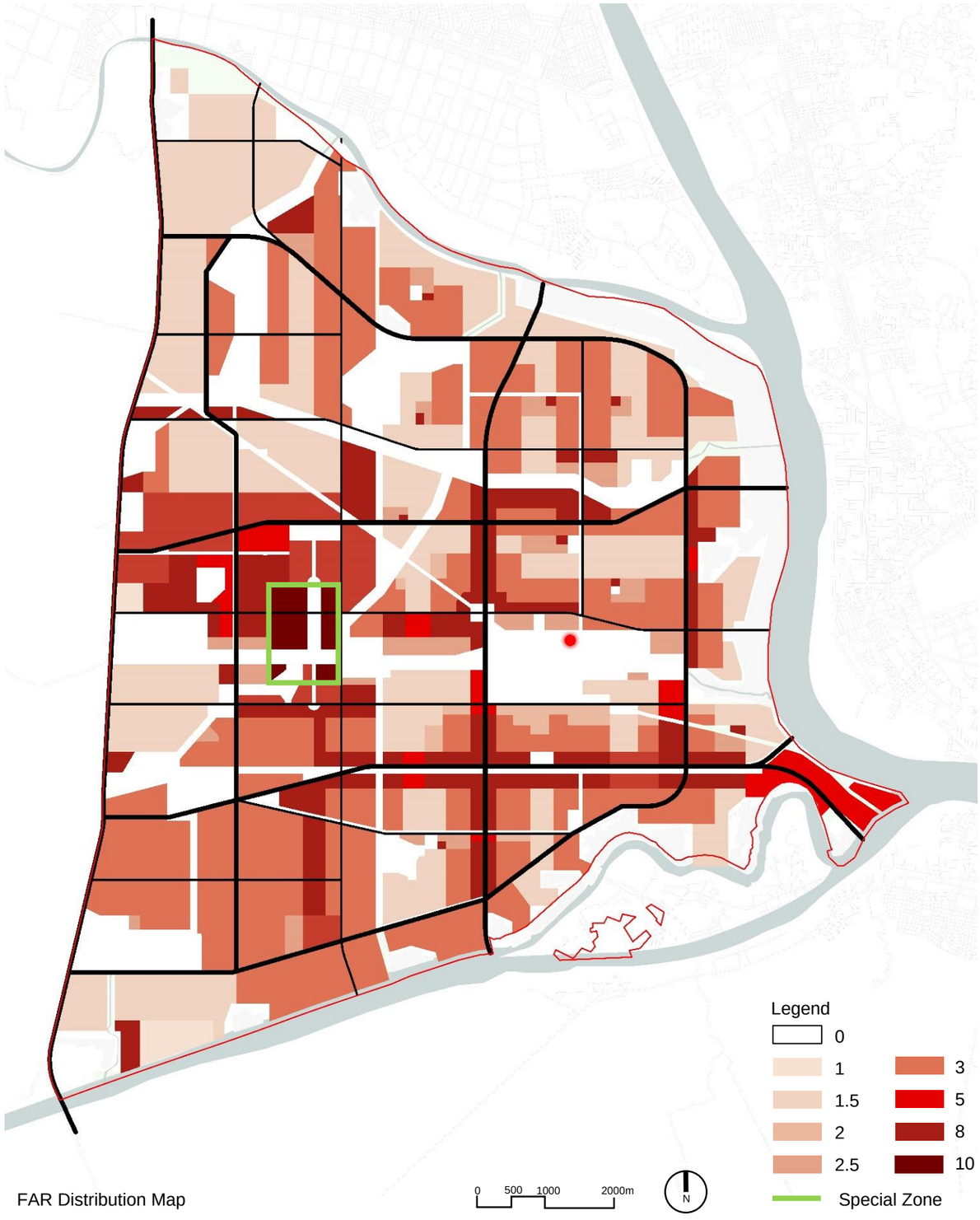
# FAR & Density Distribution

The Floor Area Ratio (FAR) within the site has been mandated to strengthen the relationship between land use and transportation. Higher densities have been allocated near transit stations of both the MRT and Secondary Transit networks. Land use typologies have been synchronized to allow for appropriate density to take shape and draw maximum advantages from being allocated close to a station. The Land use and FAR distribution also takes into account allocation of density for jobs and housing throughout the city. While maintaining primacy of a use, higher density allows for creation of mixed use districts that will help in reducing the need for long trips. Mixed uses will also help in distribution of amenities throughout the city and close to where they are required.

Together with minimum setbacks, maximum plot coverage or ground coverage, and other controls, the FAR controls are expected to allow for diversity and individual expression in urban design and architecture. This master plan does not mandate height restrictions; it is expected that FAR controls and cost efficiency constraints will have an overarching impact on heights of buildings, and allow for a vibrant skyline in New Yangon. A high FAR has been allowed in the commercial node or city center such that it can have a pronounced presence in the skyline of New Yangon and even be visible from the existing city. This will help to create a landmark district in the city and assist in wayfinding. The FAR map is expected to be a key development control enforced by the relevant authority along with rest of the development controls. Based on inputs received from developers and the market, FAR can be revised for various land uses and density can be reallocated across the city in future revisions of the master plan or from time-to-time. The BCR & FAR provided in the planning guidelines are maximums, to be used for development control purposes.

| Category of Land Use Zones | Max: Floor Area Ratios (FAR)* | Max: Building Coverage Ratios (BCR) (%) |
|---|---|---|
| Low Density Residential Area | 1.5 | 60 |
| Medium-High Rise Residential Area | 3.0 (Inside TOD), 2.5 (Outside TOD) | 50 |
| Mixed Use Area (Residential) | 5.0 (Inside TOD), 3.0 (Outside TOD) | 80 |
| Commercial Zone (Office & Retail) | 8.0 | 80 |
| Mixed Use Area (Commercial) | 8.0 | 80 |
| Light Industrial Zone | 2.5 | 60 |
| Heavy & Logistics Industrial Zone | 2.0 | 60 |
| Transport & Logistics | 2.0 | - |
| Civic Amenities | 2.5 | 50 |
| Utilities (Physical Infrastructure) | 1.0 | 60 |
| Special Zones: All land use zones within Main Commercial Node Buffer | 10 | 80 |

**Any proposed variations to the maximum BCR & FAR permitted should be submitted to the relevant authority for approval*




FAR Distribution Map

# Residential Zone

The Residential use zone is the largest land use in New Yangon city. A further sub-division of the zone has been recommended based on density and allowable mix of activities.

**Residential I (R1)**

Low-density landed housing has been categorized as Residential Zone I (R1). The zone is envisaged to have individual plots with single or multi-family units. The zone can have plotted housing that is detached, semi-detached, or row housing. Following are general guidelines for R1:

- The zone should typically not be located along Arterial or Sub-arterial Roads. Higher density housing should be located along high capacity transportation alignment.
- Sub-division of parcels within the zone should be carried out as per general guidelines for road hierarchy and green spaces.
- In case of row-housing, side setbacks are not required, and the longest uninterrupted stretch of plots should not exceed 60.0m in length. In case of semi-detached housing, common side setback is exempt.
- No commercial activity is permitted in R1 plots that have direct access to a local road only.
- In case more than 50% of floor space is planned to be used for non-residential permitted activities, the plot should be zoned in non-R1 category and relevant guidelines should prevail.
- Minimum length of any one side of a parcel should be 6.0m.

**Residential II (R2)**

Medium-high density housing has been categorized as Residential Zone II (R2). The zone is envisaged to primarily have mid to high rise buildings over a basement or podium. Medium-high density housing can be developed for various income categories depending on unit sizes and amenities amongst other real estate factors. Following are general guidelines for R2:

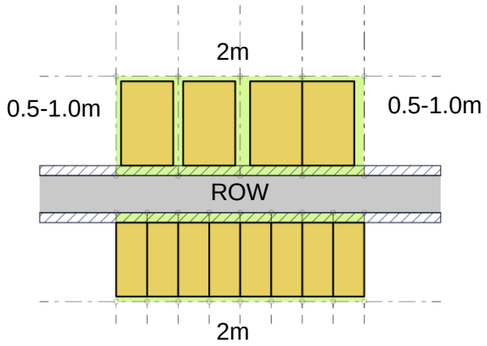
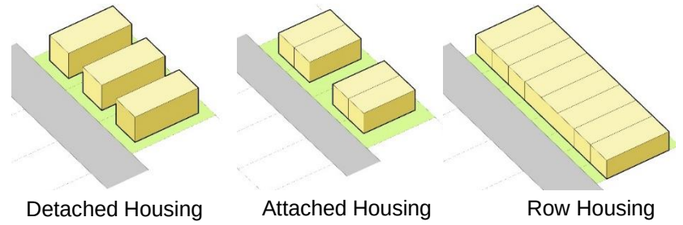
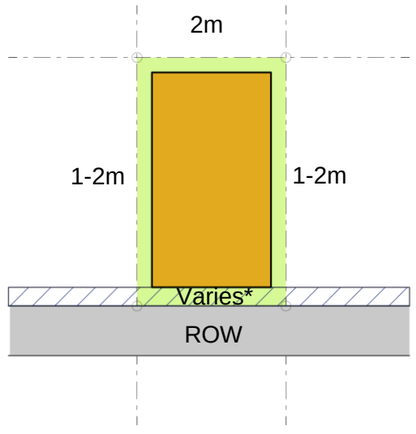
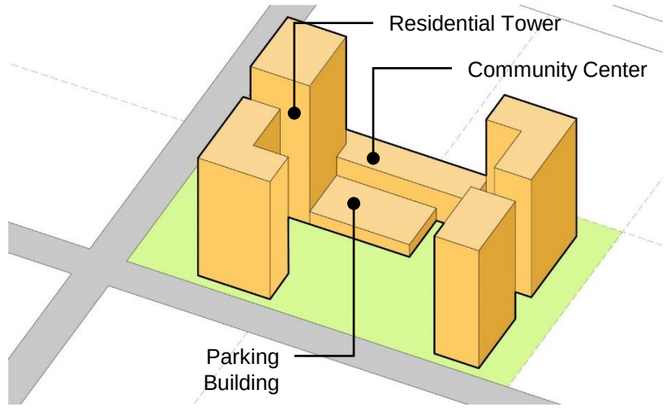
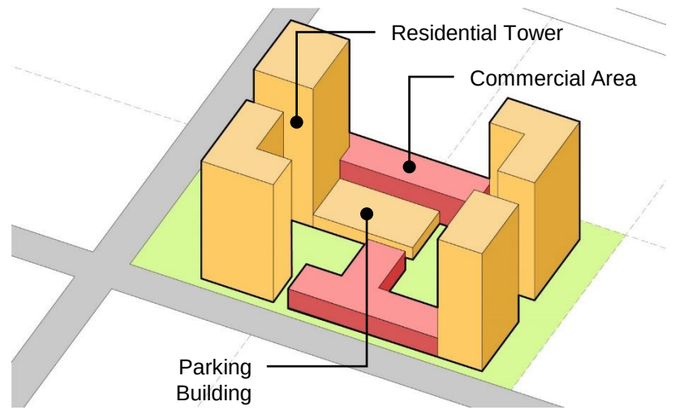
- The zone should typically be located along Arterial, Sub-arterial, and Collector Roads.
- Sub-division of zone should ensure that typically large parcels are created with access to transit and amenities.
- In case of smaller parcels with higher than 4.0 storey building, semi-detached typology is permitted. Common side setback is exempt.
- No commercial activity is permitted in R2 parcels that have direct access to a local road only.
- Limited low-intensity commercial activity is permitted at podium or ground level only. Non-residential activity is not permitted on higher floors.
- Minimum length of any one side of a parcel should be 12.0m.

**Residential III (R3)**

High density housing mixed with limited commercial activity has been categorized as Residential Zone III (R3). The zone is envisaged to have mid to high rise buildings over a basement or podium. High density housing can be developed for various income categories depending on unit sizes and amenities amongst other real estate factors. Following are general guidelines for R3:

- The zone should typically be located along Arterial, Sub-arterial, and Collector Roads. As far as possible, this zone should be located within 800m of a transit station.
- Sub-division of zone should ensure that typically large parcels are created with access to transit and amenities.
- In case of smaller parcels with higher than 4.0 storey building, semi-detached typology is permitted. Common side setback is exempt.
- No commercial activity is permitted in R3 parcels that have direct access to a local road only.
- Low-intensity commercial activity is permitted at podium or ground level only. Non-residential activity is not permitted on higher floors.
- Minimum length of any one side of a parcel should be 30.0m.

# Residential Zone

| ZONE | Examples of Broad Residential Types | FAR | BCR (%) | Setbacks | Examples of Building Typology |
|---|---|---|---|---|---|
| **R1**<br>Low Density<br>(Refer to uses under Primarily Residential Use from MNBC) | • Detached housing<br>• Semi-detached housing<br>• Row housing<br>• Walk-ups | 1.5 | 56<br>For plots less than 12x18 and 6x18<br><br>60<br>For plots more than 12x18 |  |  |
| **R2**<br>Medium-High Density<br>(Refer to uses under Primarily Residential Use from MNBC) | • Residential stand alone Tower<br>• Condominiums<br>• Residential Clusters/ Group Housing | 2.5 (outside TOD<br><br>3.0 (inside TOD) | 50 |  |  |
| **R3**<br>Mixed use High Density<br>(Refer to uses under Mixed Residential Use from MNBC)<br><br>Residential Use: 80%<br>Commercial Use: 20% | • Residential stand alone Tower<br>• Condominiums<br>• Residential Clusters/ Group Housing | 3.0 (outside TOD<br><br>5.0 (inside TOD) | 50 | *Refer to Setback Requirements page |  |

# Commercial Zone

The Commercial use zone has been strategically located to mainly form the main City Center or Commercial Node of the city. Commercial activity has also been zoned along the western and southern growth corridors. Smaller commercial areas have been identified strategically to serve city level functions and residential areas. A further sub-division of the zone is recommended based on proportion of office, retail, and residential activities.

**Commercial I (C1)**

With predominantly offices, Commercial Zone I (C1) is primarily located near the city Center. The zone is envisaged to have high-rise towers on a basement or podium. Following are general guidelines for C1:

- The zone should typically be located adjacent to Arterial and Sub-arterial roads.
- Sub-division of Commercial zone should typically avoid providing Local Roads.
- Podium or ground level should typically cater to retail and F&B. In a contiguous C1 zone, a street side colonnade should be provided.
- Minimum length of any one side of a parcel should be 20.0m

**Commercial II (C2)**

The retail focused Commercial Zone II (C2) is primarily aimed towards creating large indoor spaces for shopping, leisure, and entertainment. Outdoor amusement parks can also be planned in this zone. Following are general guidelines for C2:

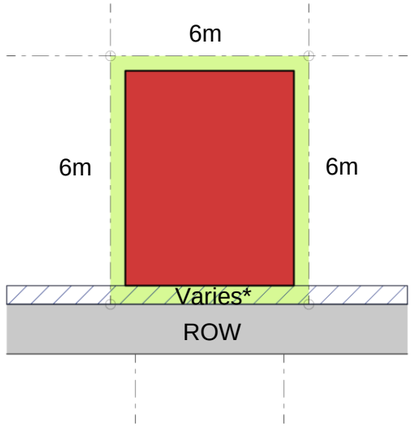
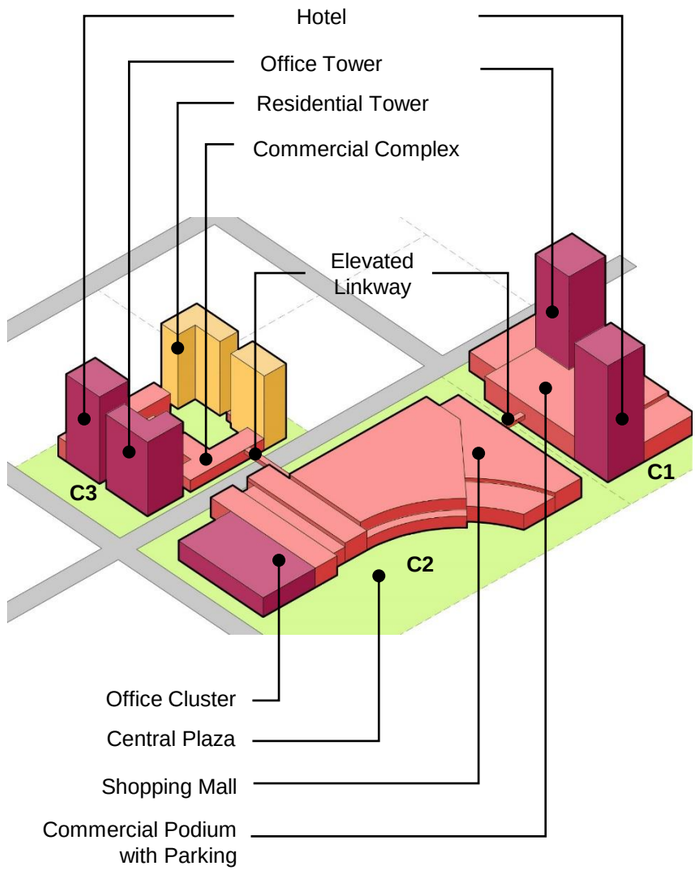
- The zone should typically be located adjacent to Arterial, Sub-arterial, or Collector Roads.
- Sub-division of Commercial zone should typically avoid providing Local Roads.
- Podium or ground level should typically cater to retail and F&B.
- Minimum length of any one side of a parcel should be 20.0m.

**Commercial III (C3)**

Commercial Zone III (C3) is envisaged to be a mixed zone allowing Residential activity to mix with Commercial. This zone would typically be helpful around the City Center allowing for mixed use towers that have hotels and serviced offices and apartments. Following are general guidelines for C3:

- The zone should typically be located adjacent to Arterial, Sub-arterial, or Collector Roads.
- Sub-division of Commercial zone should typically avoid providing Local Roads.
- Podium or ground level should typically cater to retail and F&B. Residential activities should typically be planned at higher floors.
- Minimum length of any one side of a parcel should be 20.0m.

# Commercial Zone

| ZONE | Examples of Broad Commercial Types | FAR | BCR (%) | Setbacks | Examples of Building Typology |
|---|---|---|---|---|---|
| **C1**<br>(Refer to uses under Commercial Use from MNBC)<br><br>Office: 80%<br>Retail: 10%<br>Others: 10% | White-collar focused employment area aimed towards offices and allied activities:<br>• Hospitality<br>• Business Office<br>• Financial Institution<br>• Software development<br>• Non-substance based research & development | 8 | 80 |  |  |
| **C2**<br>(Refer to uses under Commercial Use from MNBC)<br><br>Office: 10%<br>Retail: 80%<br>Others: 10% | Retail focused commercial area suitable for:<br>• Hospitality<br>• Shopping Malls<br>• Regional shopping Center<br>• Transit malls<br>• Amusement Park | 8 | 80 | | |
| **C3**<br>(Refer to uses under Mixed Residential Use from MNBC)<br><br>Residential Use: 40%<br>Commercial Use: 60% | Mixed commercial environment with residential uses. | 8 | 80 | *Refer to Setback Requirements page | |

# Industrial Zone

The Industrial zone in New Yangon has been located adjacent to the existing highway and future Outer Ring Road to take advantage of potential connection to Thilawa Port. The zone is sub-classified into Heavy and Light Industrial areas based on various industry types.

**Light Industry (I1)**

The Light Industry (I1) zone primarily consists of non-polluting industries. Primarily located in the south-western portion of the city due to climatic considerations, the zone is envisaged to cater to research and development, assembly, and industries related to Information Technology sector. Following are general guidelines for I1:

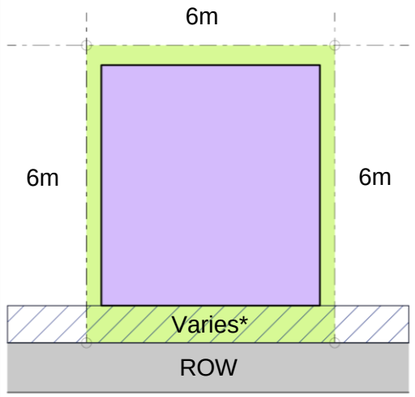
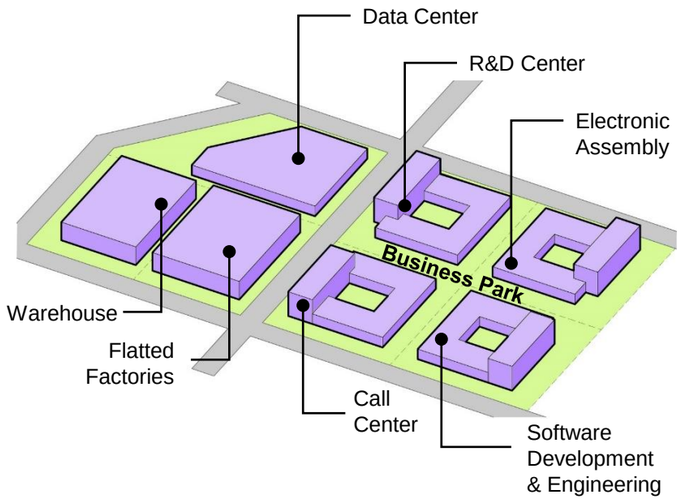
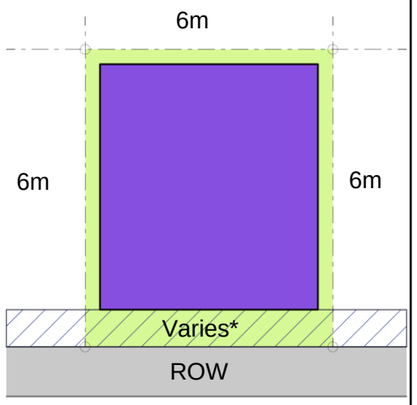
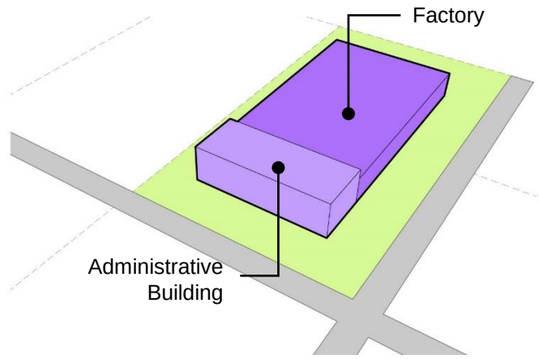
- Business park or campus style developments should be promoted in I1.
- Sub-division of I1 should be based on a mix of plot sizes that can accommodate different industry sizes, fostering anchor-ancillary relationships.
- Larger parcels should be located adjacent to Arterial and Sub-arterial roads, while smaller parcels can be planned in clusters. Large parcels should typically have two ingress/ egress points.
- Typically, Local Roads should be avoided in sub-division of I1 since the zone will potentially have heavy traffic movement during peak hours and truck movements for goods.
- In case more than 30% of floor space is planned to be used for non-industrial permitted activities, the plot should be zoned in non-I1 category and relevant guidelines should prevail. Alternatively, those activities should be transferred to a non-Industrial parcel.
- The front façade or that facing roads should typically have office/ administrative functions such that large volumes and blank walls can be hidden at the back.
- A 100% green cover replacement strategy is encouraged. Surface area of green space at the ground, roof, and (green) walls together can be included.

**Heavy & Port Industry (I2 & I3)**

The Heavy & Port Industry (I2 & I3) zone primarily consists of polluting industries permitted under Myanmar National Building Code (MNBC). Primarily located in the north-western portion of the city due to climatic considerations, the zone is envisaged to cater to large employment generating establishments. Following are general guidelines for I2 & I3:

- Sub-division of I2 & I3 should be based on a mix of plot sizes that can accommodate different industry sizes, fostering anchor-ancillary relationships.
- Larger parcels should be located adjacent to Arterial and Sub-arterial roads, while smaller parcels can be planned in clusters. Large parcels should typically have two ingress/ egress points.
- Typically, Local Roads should be avoided in sub-division since the zone will potentially have heavy traffic movement during peak hours and truck movements for goods.
- In case more than 30% of floor space is planned to be used for non-industrial permitted activities, the plot should be zoned in non-I2 & I3 category and relevant guidelines should prevail. Alternatively, those activities should be transferred to a non-Industrial parcel.
- The front façade or that facing roads should typically have office/ administrative functions such that large volumes and blank walls can be hidden at the back.
- A 100% green cover replacement strategy is encouraged. Surface area of green space at the ground, roof, and (green) walls together can be included.

# Industrial Zone

| ZONE | Examples of Broad Industrial Types | FAR | BCR (%) | Setback | Examples of Building Typology |
|---|---|---|---|---|---|
| **I1**<br>Light Industry<br>(Refer to uses under Controlled Industrial Use and General Industrial Use from MNBC) | • Software development and Call-Centers<br>• Assembly and repair of electronics<br>• Warehousing and storage of finished non-hazardous substances and goods<br>• Packaging and bottling of food and beverages<br>• Biotechnology<br>• Research & Development<br>• Data Centers<br>• Manufacture of paper products<br>• Small & medium enterprises dealing in non-hazardous materials | 2.5 | 60 |  <br>*Refer to Setback Requirements page |  |
| **I2 & I3**<br>Heavy & Port Industry<br>(Refer to uses under Special Industrial and Hazardous use from MNBC) | • Food processing<br>• Sugar mills<br>• Industries using chemical for dyeing and processing<br>• Manufacture of metallic parts/ products<br>• Vehicle/ Automobile industries<br>• Storage of chemicals/ oils<br>• Petroleum processing and product storage<br>• Manufacture of building materials | 2 | 60 |  |  |

# Institutional/ Civic Use

Institutional and Civic functions are the backbone of city governance. These public functions, usually funded by tax-payers, are aimed towards conserving and promoting educational, cultural, and sports activities. New Yangon has been planned with numerous city level activities, as well as district and local level activities. Following are general guidelines for this zone:

- The overall FAR for institutional uses is proposed to be 2.5. The BCR is proposed to be 50%.
- Residential and commercial activities to support the predominantly civic function is permitted in this zone. In case more than 20% of floor space is planned to be used for non-institutional permitted activities, the plot should be zoned in non-institutional category and relevant guidelines should prevail.
- Activities within the zone need to be located based on hierarchy and anticipated visitors. City level activities should be located adjacent to Arterial and Sub-arterial Roads, while neighbourhood level activities can be located on Local Roads.
- Emphasis should be to promote pedestrian activity in and around the zone integrated with open spaces.
- The architectural vocabulary of institutional buildings should reflect the local culture and promote a unique yet cohesive identity of the city.

| Community Facilities | | Provision |
|---|---|---|
| Educational Facilities | Nursery School/ Kindergarten | Planning Guideline: 1 per 2,500 population<br>Size: Approx. 0.08 ha<br>Design Guideline: within 800m walking distance |
| | Primary School | Planning Guideline: 1 per 15,000 population<br>Size: Approx. 1.6ha<br>Design Guideline: within 800m walking distance |
| | Middle and High School | Planning Guideline: 1 per 25,000 population<br>Size: Approx. 2.2ha<br>Design Guideline: within 2km radium |
| | University | Planning Guideline: 1 per 90,000 population<br>Size: Area as per actual requirements depending on envisaged departments and facilities<br>Design Guideline: As per physical plan provision |
| Health Facilities | Polyclinics | Planning Guideline: 1 per 25,000 population<br>Design Guideline: As per physical plan provision |
| | Hospitals | Planning Guideline: 40 beds per 10,000 population<br>Design Guideline: As per physical plan provision |
| Places of Worships / Religious Centers | Place of Worship | Planning Guideline: 1 per 40,000 population<br>Design Guideline: As per physical plan provision |
| Parks & Open Space | Open Space | Master Plan level: 10-13sqm per person<br>Local area planning: minimum 3sqm per person in addition to above<br>Design Guideline: Within 800m walking distance of resident population |
| Sports & Recreation | Sports Complex | Planning Guideline: 1 per 250,000 population<br>Size: 3-4ha<br>Design Guideline: As per physical plan provision |
| Wet Market | Wet Market* | Planning Guideline: 1 market per 20,000 population<br>Size: minimum 5,000 sqm GFA<br>Design Guideline: within 10-15mins walking distance<br>*Includes Community Convenience Center |
| Police Station | | Shall be based on Jurisdiction |
| Fire Station | | Shall be based on Jurisdiction |

# Setback Requirements

### Minimum Setback Requirement per Land Use

| Land Use | Side (m) | Rear (m) |
|---|---|---|
| Industrial I | 6 | 6 |
| Industrial II & III | 6 | 6 |
| Residential I | 0.5m or 1m* | 2m |
| Residential II & III | 1m or 2m** | 2m |
| Commercial I, II & III | 6 | 6 |
| Civic | 6 | 6 |

Note: For industrial development, minimum setback shall be 6m in all sides.

### Minimum Setback abutting a Road

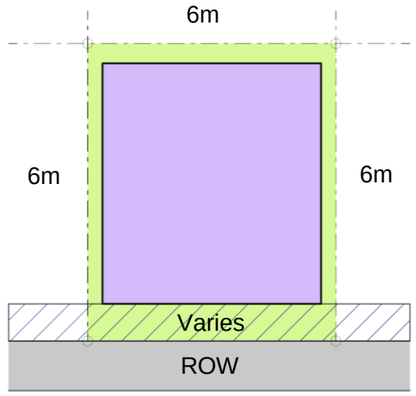
| Road Category | Min. width of setback (m) | Specification of Buffer |
|---|---|---|
| Ring Road | 15.00 | 5m green, 10m physical |
| Arterial Road | 7.50 | 3m green, 4.5m physical |
| Sub-Arterial Road | 6.00 | 2m green, 4m physical |
| Collector Road | 4.00 | 2m green, 2m physical |
| Local Road | 3.00 | 1m green, 2m physical |

The prescribed setback shall be used for landscape elements or movement of people and/ or vehicles and are free from permanent obstruction. All developments except within special zones shall follow the minimum prescribed setback above per land use. The road setback requirements shall also conform to YCDC bylaws of local, collector, minor arterial, and major arterial roads and High-rise Inspection Committee for main and secondary roads. YCDC and MOC review shall take precedence over above recommendations.

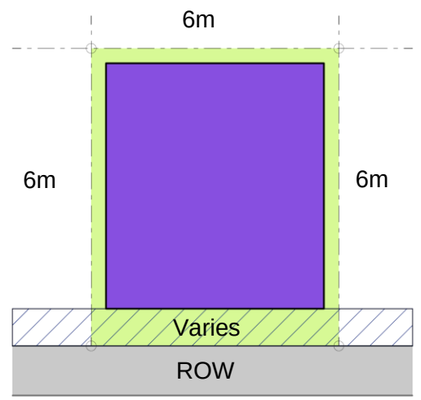
Developments must meet all requirements for setback, BCR, & FAR guidelines (whichever is the most stringent). For plots adjacent to arterial and sub-arterial roads, special architectural review and approval is required by Authority.

* 0.5m side setback is required for 6x18m plot size, 1m side setback is required for all plots above 6x18m.
** 1m side setback is required for 12x18m plot size, 2m side setback is required for all plots above 12x18m

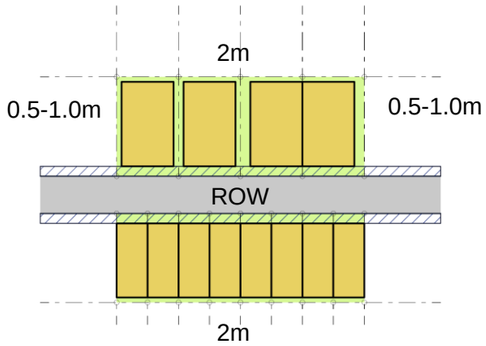
**Industrial I**



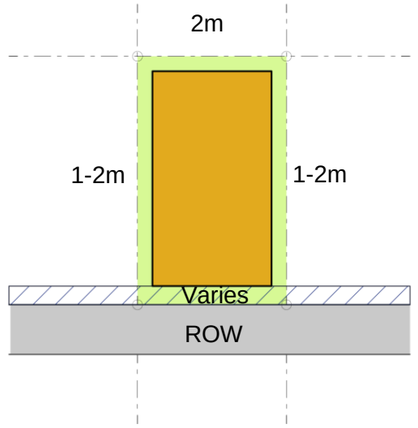

**Industrial II & III**



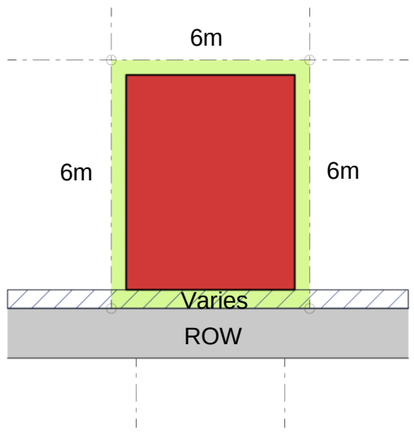

**Residential I**



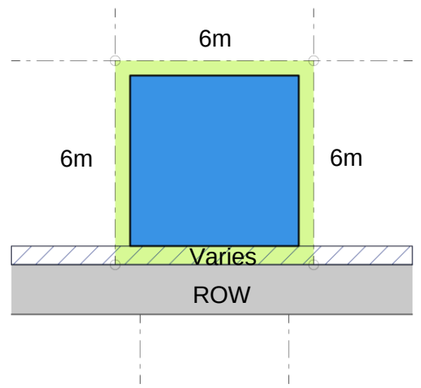

**Residential II & III**




**Commercial I, II & III**




**Civic Amenities**



# Off-Street Parking Requirements

Parking guidelines are critical for the city to regulate and control issues surrounding on-street parking prevalent in the existing city. While provision of parking is not designed to promote car ownership, an optimum provision coupled with road usage charges will help in promoting public transportation. It is assumed that exemptions can be sought by developers for case-by-case analysis by the authorities.

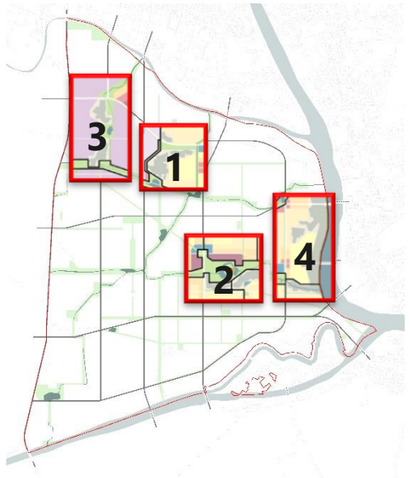
| FLOOR USAGE* | | STANDARD MINIMUM CARPRK REQUIREMENTS | MINIMUM TWO WHEELER PARKING REQUIREMENTS | MINIMUM SERVICE VEHICLE PARKING REQUIREMENTS |
|---|---|---|---|---|
| Residential | Non-Affordable Housing | 1 lot per 200 sqm GFA | 1 lot per unit | N/A |
| | Affordable Housing | 1 lot per 40 units | 1 lot per unit | N/A |
| Commercial | Office | 1 lot per 200 sqm GFA | 1 lot per 100 sqm GFA | One space for garbage truck at each collection point |
| | Market, Shopping Center, Retail | 1 lot per 100 sqm GFA | 1 lot per 100 sqm GFA | One space per 8,000 sqm GFA for loading/unloading |
| | F&B | 1 lot per 50 sqm GFA plus 20% | 1 lot per 100 sqm GFA | Space to be allocated for one service |
| | Hotel | 1 lot per 200 sqm GFA plus 20% | 1 lot per 100 sqm GFA | One space per 8,000 sqm GFA for loading/unloading |
| Industrial | Light Industry | 1 lot per 300 sqm GFA industry floor area<br>1 lot per 200 sqm GFA of administrative and corporate floor area | 1 space per 100 sqm of usable area | One space per 3,000 sqm GFA for loading/unloading |
| | Heavy Industry | 1 lot per 1,000 sqm GFA of industry floor area<br>1 lot per 200 sqm GFA of administrative and corporate floor area | 1 space per 500 sqm of usable area | One space per 3,000 sqm GFA for loading/unloading |
| Port and Logistics | | 1 lot per 5,000 sqm of site area<br>1 lot per 200 sqm GFA of administrative and corporate floor area | 1 space per 500 sqm of site area | |

** Requirements for other usage subject to review and approval by the authority on case-to-case basis.*

**Reduction Rate**

| SPECIAL ZONE | DESCRIPTION | REDUCTION RATE |
|---|---|---|
| Zone 1 | NYC Commercial Center (to be designated) | 50% |
| Zone 2 | Areas within 400m radius from mass transit or secondary transit station | 30% |

# Village & Village Buffer




The existing settlements and surrounding buffer has been identified as a special zone. A case-by-case analysis is required for integrating the existing settlements with the new urban fabric. The settlements have been categorized into four types based on their positioning in the new city. Following are general guidelines for this special zone and 4 villages have been selected as typical examples:

- Low-intensity development to be promoted in existing settlements and the buffer area.
- A maximum of 30% of the buffer can be used for permanent buildings while remaining area becomes space for integration of village to new development.
- Existing settlements and individual parcels will be subject to relevant use zone regulations.

**1. Balanced Village**

Some of the existing settlements will be surrounded by multiple types of activities. Each settlement may have a different positioning depending on mix of surrounding uses. Special consideration will need to be made on each settlement and its future direction of development.

**2. Culture Village**

Existing settlements adjacent to the proposed cultural spine in New Yangon will interact with a number of civic functions. These settlements can become a platform for showcasing the city's culture.

**3. Industry Village**

NYC's vision is to provide jobs and promote economic growth . To enable this, the land area required means that some villages will be closer to land allocated for industrial than others. The village buffers will play a different role in these circumstances.

**4. Waterfront Village**

A large proportion of existing settlements are located along the Yangon River. The riverfront provides a unique opportunity for developing vibrant mixed environments that can showcase local culture.

# Commercial Center

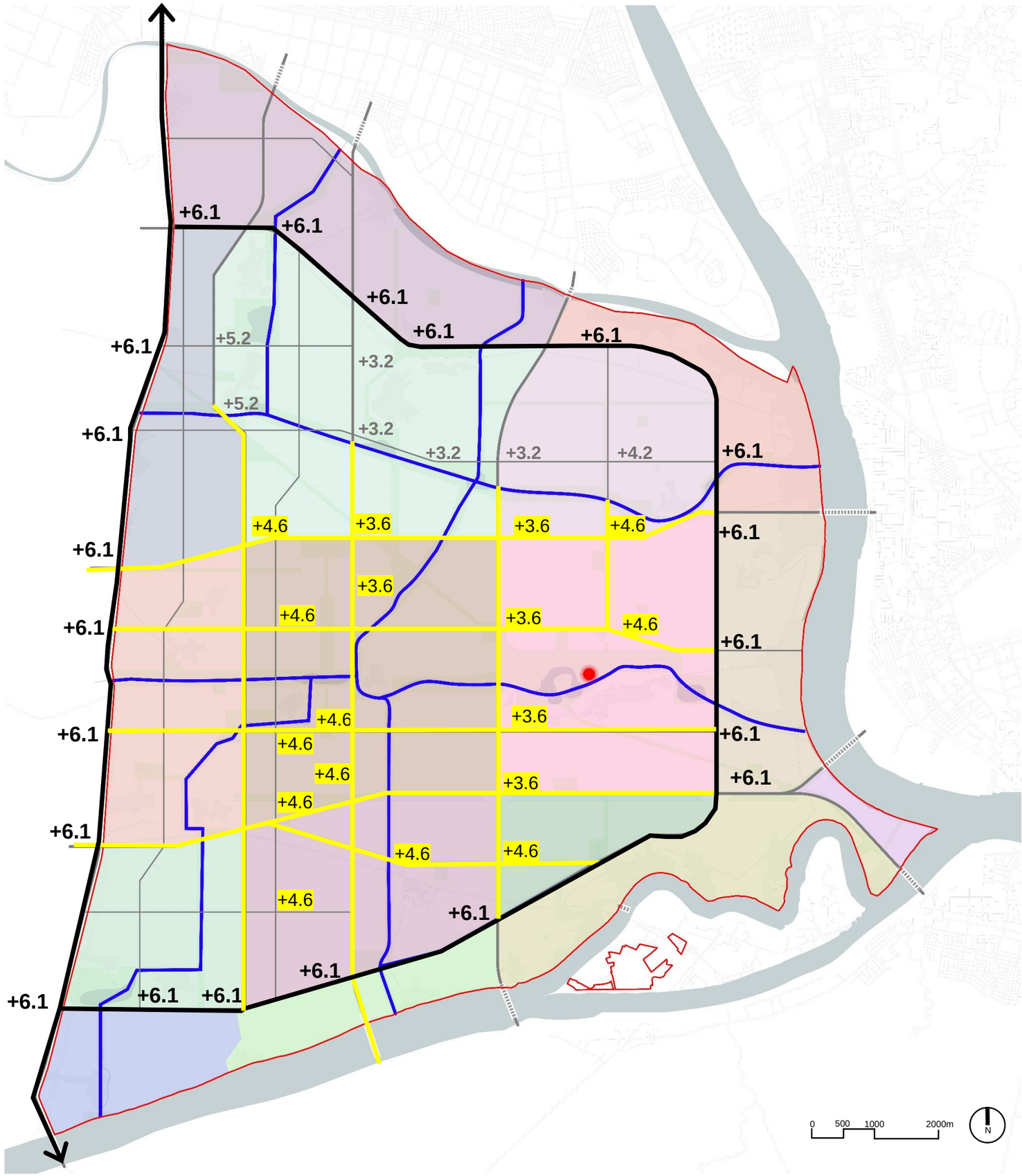
The City Center or Commercial Center largely falls within the Commercial Zone regulations. In order to create a unique identity for the district, additional guidelines are proposed:

- The district should be developed as a compact city environment.
- No setback is permitted for all parcels within this special zone.
- Commercial parcels within this zone are permitted an FAR of 8.0.
- Elevated pedestrian linkages are encouraged between buildings starting from transit stations.
- Parcels are encouraged to provide shaded walkways or colonnades along streets for promoting pedestrian movement.

# Proposed Road Level

The road levels of main road system within NYC have been proposed based on the proposed platform level, maximum water level and the proposed building level. In general, the road levels should be above the maximum water level, which is the 100-year design flood level. The road levels need to be below the building levels to avoid water run-off flowing into developments coming from the roads. It should be noted that there will be a perimeter road that will serve as a dike running around the Phase 1 area of NYC. This perimeter dike road helps to prevent overflow of flood waters from surrounding rivers, i.e. Yangon River, Pan Hlaing River, and Twante Canal. The top level of the perimeter dike road is proposed as +6.1 MSL considered as the 100-year flood level of those main rivers. Long-term Sea Level Rise is not included in the proposed top level of the perimeter dike road because this road is considered as a short-term solution whereas the river dike system proposed along the main rivers will act as long-term and primary flood control system, in which long-term Sea Level Rise will be incorporated to the design.

Further analysis and coordination with infrastructure planning is also recommended in the later stage of the master plan and design of New Yangon City to determine the proper elevations of the primary road intersections throughout the project site.



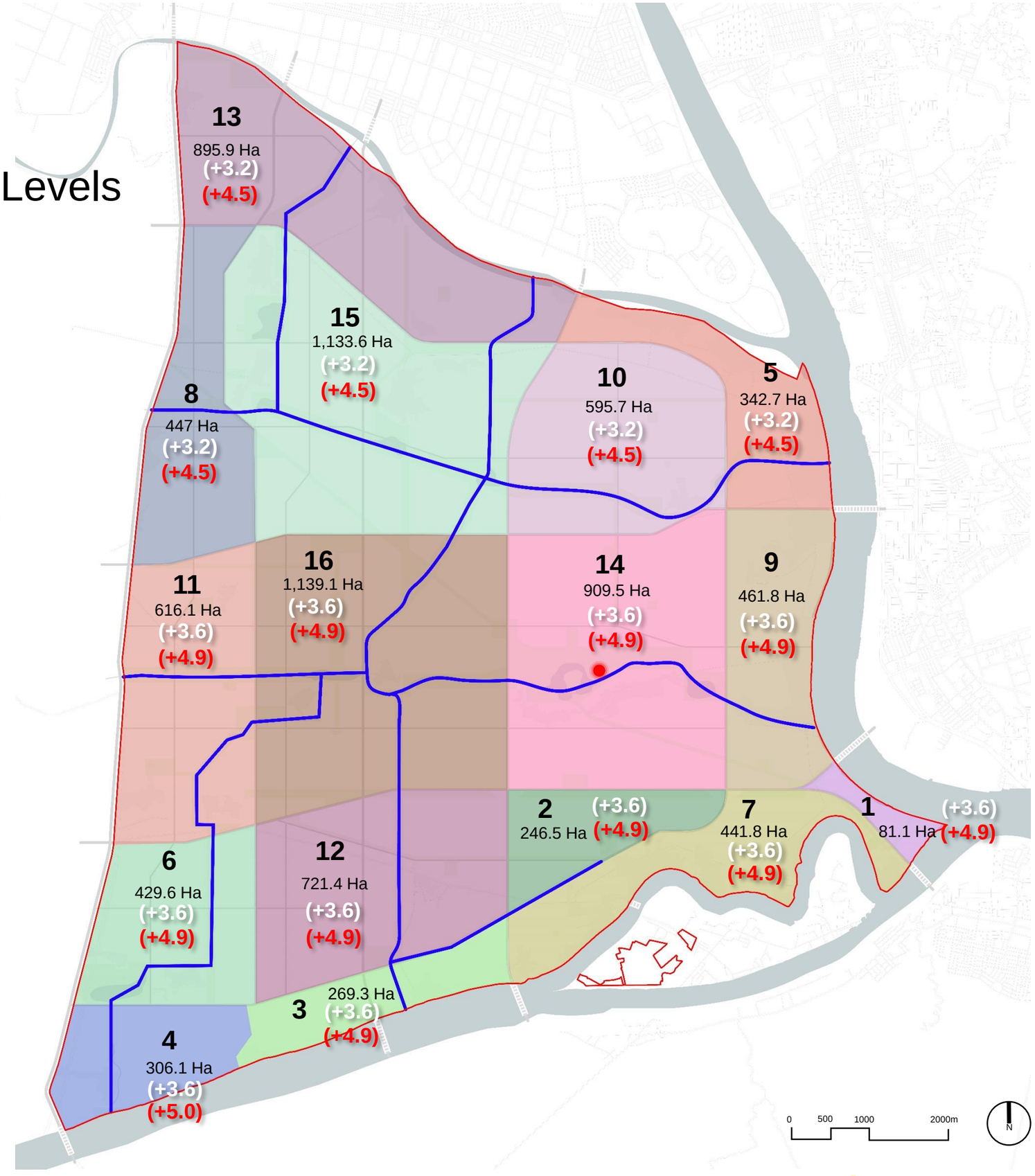
# Proposed Platform and Building Levels

Sub-catchments are defined based on the proposed Arterial and Sub-Arterial Road Network, as well as the existing natural main streams. In this figure of the sub-catchment plan:

- The bold black text is the sub-catchment ID number
- The small black text is the catchment area size
- The white text shows the proposed platform level of the sub-catchment area
- The red text is the proposed building or floor level

The platform level is proposed to be 300mm above the maximum water level of main streams within and/or adjacent to the sub-catchment. The building level or floor level within the New Yangon should be at least 600mm above the maximum water level of area to avoid local flooding that could happen during heavy storm events.

More analysis including flood analysis is recommended in the later stage of the planning and design of the New Yangon to further develop the platform level for each parcel in the project site.



## 8 Land Use Matrix

The following land use matrix shows the uses which are permitted, conditionally permitted, and prohibited in specific zoning districts in the New Yangon City. Conditionally Permitted use shall obtain approval from NYDC Planning Department prior starting building permit process. Uses, which are not listed in below matrix shall obtain approval from NYDC Planning Department prior starting building permit process.

| Land Use | 2.2 Residential I (Low Density) | 2.3 Residential II (Medium-High Density) | 2.3 Residential III (Mixed Use) | 4.1 Transit Oriented Development | 5.1 Commercial I | 5.2 Commercial II | 5.3 Commercial III | 6.1 Industrial I (Light) | 6.2 Industrial II (Heavy) | 6.3 Industrial III (Logistics) | 6.1 Institutional / Civic Amenities |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Advertising and publishing businesses | • | • | • | • | P | P | P | • | • | • | • |
| Agriculture | • | • | • | • | • | • | • | • | • | • | • |
| Ambulance service | • | • | • | C | C | C | C | • | • | • | • |
| Answering and communication services | • | • | • | • | P | P | P | • | • | P | • |
| Antennas (above height limit) | • | • | • | • | • | • | • | • | • | • | • |
| Arcade, game | • | • | C | C | P | P | P | • | • | • | • |
| Assembly of components or finished products | • | • | • | • | • | • | • | P | P | P | • |
| Automobile parking lots and structures | • | • | • | P | • | P | P | • | • | • | • |
| Automobile repair specialty shop | • | • | • | • | P | P | • | C | • | • | • |
| Automobile Sales and Leasing Facility | • | • | • | • | P | P | C | • | • | • | • |
| Bar, tavern, cocktail lounge | • | • | C | C | C | P | P | • | • | • | • |
| Barber and beauty saloon | • | • | P | C | P | P | P | • | • | • | • |
| Blueprinting, reproduction, copying, general printing | • | • | P | C | P | P | P | • | • | • | • |
| Boarding house | C | C | • | • | • | • | • | • | • | • | • |
| Caretaker's quarters | • | C | C | • | • | C | • | • | • | • | • |
| Car wash | • | • | C | • | P | P | • | • | • | • | • |
| Child care center | • | P | P | • | P | P | • | • | • | • | • |
| Civic, governmental and cultural | • | • | • | • | • | • | • | • | • | • | P |
| Clinics | • | • | P | • | P | P | • | • | • | • | • |
| Community Facility | C | C | C | • | C | C | C | • | • | • | • |
| Conference/Convention Facility | • | • | P | • | P | P | P | • | • | • | • |
| Convenience Store | • | • | P | C | P | P | P | • | • | • | • |
| Department Store | • | • | P | C | • | P | P | • | • | • | • |
| Animal Care Facility | • | • | P | • | P | P | P | • | • | • | • |
| Dry Cleaning Facility | • | • | • | • | P | P | P | • | • | • | • |
| Educational Facility | • | • | • | • | P | P | P | • | • | • | P |
| Financial Institution | • | • | P | P | P | P | P | • | • | • | • |
| Fire Station | • | • | • | • | • | • | • | • | • | • | P |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Station | • | • | • | • | P | P | C | • | • | • | • |
| Golf Course | • | • | C | • | C | C | C | • | • | • | • |
| Hazardous Waste Facility | • | • | • | • | C | C | C | C | C | • | • |
| Hospital | • | • | • | • | C | C | C | • | • | • | P |
| Hotel, Motel | • | • | P | P | C | C | P | • | • | • | • |
| Landscaping Business | • | • | • | • | P | P | C | • | • | • | • |
| Large Collection Facility | • | • | • | • | C | C | • | P | P | • | • |
| Library | • | • | C | • | C | C | C | • | • | • | P |
| Mail and Delivery Services | • | • | P | • | P | P | C | • | • | • | • |
| Monastery (and other places of religious worship) | C | C | • | • | • | • | • | • | • | • | P |
| Movie Theaters | • | • | P | C | P | P | P | • | • | • | • |
| Museum | • | • | • | C | • | C | P | • | • | • | • |
| Office. Administrative, business, professional | • | • | • | C | P | P | P | • | • | • | • |
| Outdoor Market | • | • | • | C | C | C | C | • | • | • | • |
| Parks | • | • | • | C | • | • | • | • | • | • | P |
| Police Station | • | • | • | • | • | • | • | • | • | • | P |
| Research and Development | • | • | • | C | P | P | P | P | P | • | • |
| Residential | P | P | P | • | • | • | • | • | • | • | • |
| Restaurant | • | • | • | P | P | P | P | • | • | • | • |
| Retail | • | • | • | P | P | P | P | • | • | • | • |
| Senior Housing | • | • | • | • | P | P | P | • | • | • | • |
| Sport Complex | • | • | • | • | • | • | • | • | • | • | P |
| Transportation support facility | • | • | • | P | • | C | C | • | • | • | • |
| Vocational Schools | • | • | • | • | • | P | • | • | • | • | • |
| Warehousing, storage and distribution | • | • | • | • | • | • | • | • | C | P | • |
| Wet Market | • | • | • | • | • | • | • | • | • | • | P |