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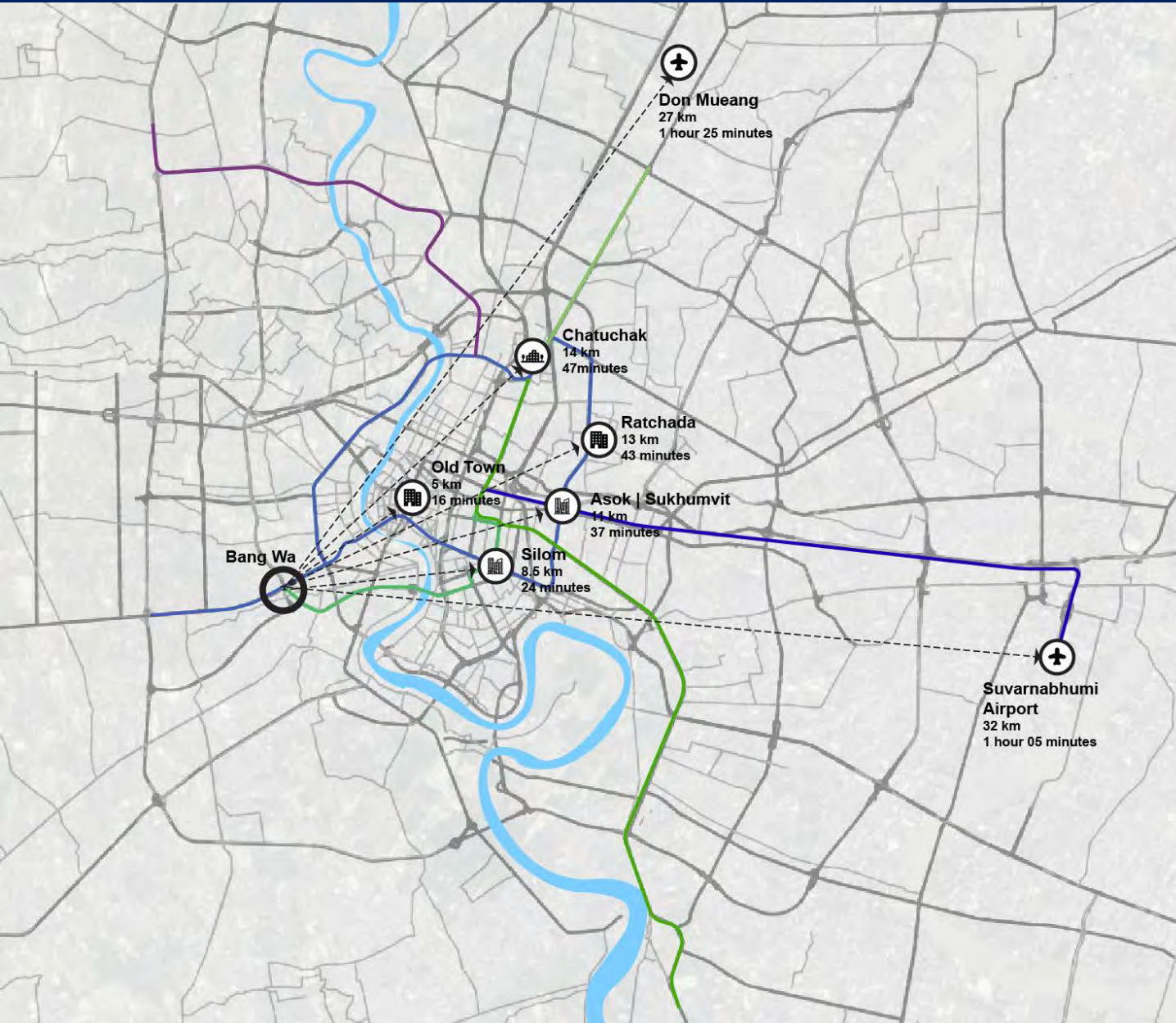
Transit Oriented Development Plan (TODP) for Khlong Bang Luang Area Bangkok, Thailand

Ms. Thipawan Saenchan

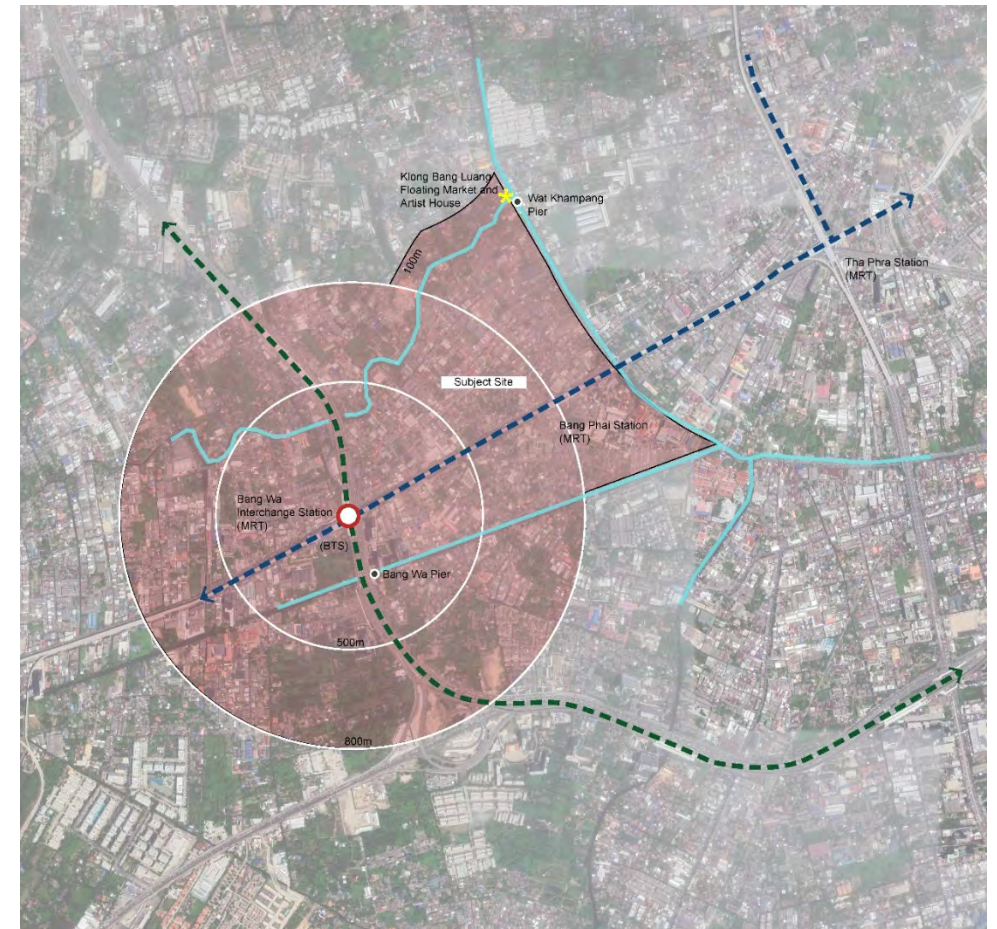
City Planner, Professional Level

Department of City Planning and Urban Development, BMA.

Project Site and SCOPE OF THE PROJECT



From the East...
to the West of
CHAO PHRAYA RIVER



Project Background

Development VS Conservation ?

Context:
From the
Past to the
Future



AN INFLUENTIAL ROUTE FOR LOCAL AND REGIONAL COMMERCE IN THE PAST, KHLONG BANGKOK YAI AND ITS SURROUNDING CONNECTIONS CAME INTO BEING TO CUT TRAVEL TIMES AROUND THE CHAO PHRAYA RIVER LOOP AND CREATE A GATEWAY FOR COMMERCE.

THE MIX OF USES IN THE HISTORY OF THE PLACE, FROM ECONOMIC TO CULTURAL TO RESIDENTIAL TO COMMUNAL, CAN EFFECTIVELY BE REFERENCED AND REVIVED IN THE PRESENT THROUGH THE TOD REGENERATION OPPORTUNITY.



Project Background

Development VS Conservation ?

Identity of Project Area



KHLONG BANG LUANG IS A UNIQUE 200-YEAR-OLD COMMUNITY THAT IS SEEN AS A QUIET, RIVERSIDE EXAMPLE OF AN AUTHENTIC BANGKOK EXPERIENCE, WHERE THE PAST AND PRESENT MEET.



Desired Outcomes

BALANCE between Conservation and Development is the ANSWER?

Opportunity: TOD as an agent of change

Disconnected

Connected

Congested

Seamless

Organic

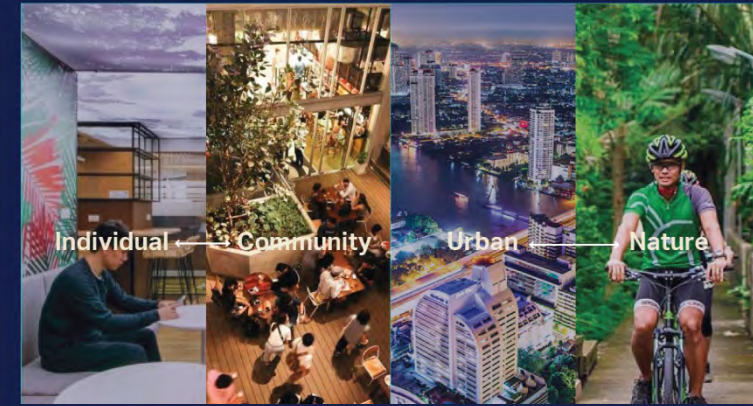
Purposeful

Utilitarian

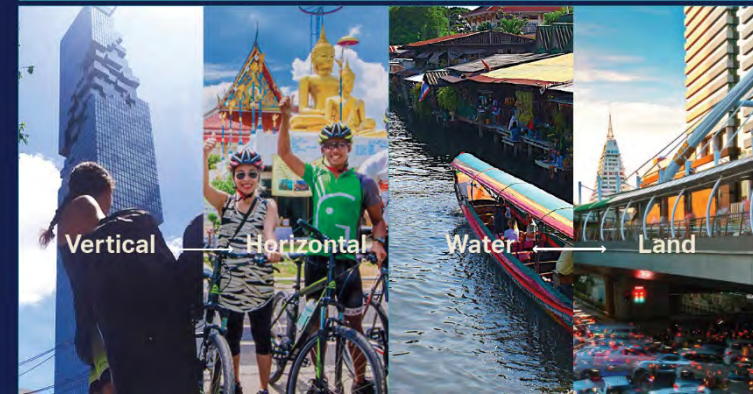
Vibrant



Transformation Story - Synergies



Transformation Story - Synergies



Project Objectives



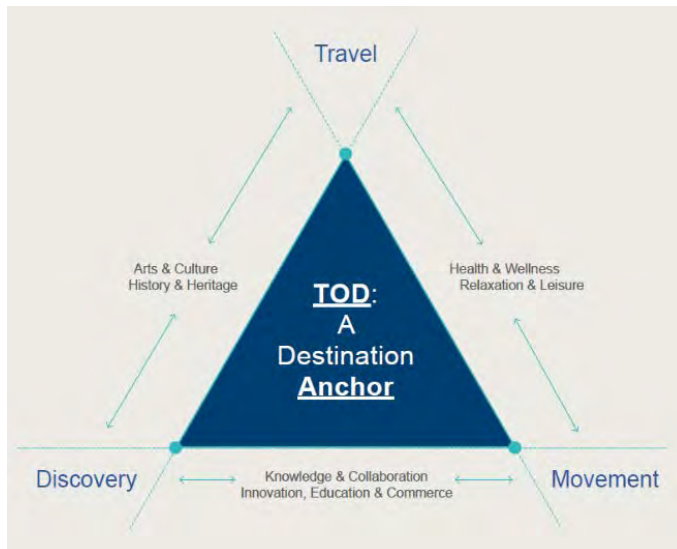
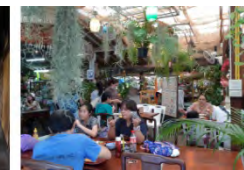
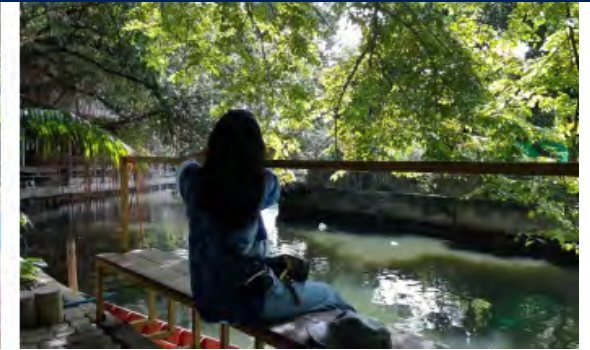
Encouraging compact **mixed-use development** near new or existing public transportation infrastructure that provides housing, employment, entertainment and civic functions within walking distance of a transit station.

Increasing **public transport** patronage via enhanced transport accessibility and intermodal connectivity, while encouraging the use of bicycles and walking.

Supporting **universal design** to ensure accessibility for the under-served and disadvantaged, including the elderly and persons living with disabilities.

WHAT DO WE LEARN FROM THE PROJECT?

Process of
Planning and
Design with
Community



Workshop and Site Visit

Survey and Analysis



Sustainable Development Strategy Study



Climate Resilience

To be resilient against the impacts of climate change, adapting to our changing world. Providing solutions that address the capacity of the built environment to bounce back from short-term shocks and long-term stresses. E.g. increased rainfall intensity, flooding, increased temperatures, hot days and heatwaves.



Net Zero Carbon

To be net zero carbon in construction and in operation. Focussing on energy efficiency, integrating renewables into the built environment, low impact / low carbon materials, eliminating waste and improving resource efficiency through circularity.



Sustainable Transport

To transition to active and sustainable transport with greater local and regional connections. Reducing reliance on fossil fuel powered modes of transport and encouraging electric and sustainable fuelled transport instead. Providing infrastructure to enable higher rates of active transport (walking and cycling) in the local area.



Biodiversity Net Gain

Delivering a net gain in biodiversity, whilst providing high quality green spaces. Encouraging active connections between people and nature and creating biodiverse green space in cities. Green spaces to double as recreational spaces for the local community. Grey infrastructure to be replaced by green infrastructure where possible.



Healthy Places

Enhancing health and wellbeing through sustainable placemaking. Promoting solutions in the built environment that improve the physical and mental health of the local community. Focussing on delivering parks, exercise spaces, good air quality, good water quality, access to healthy food and urban farming.



Water Management

To conserve and reuse water on-site and strive towards net zero water. Grey infrastructure to be replaced with green and blue infrastructure where possible via water sensitive urban design (WSUD) solutions. Including rain-gardens, swales, rainwater collection and use, stormwater collections and use, green roofs, green walls, vegetation planting, parks, sports grounds and naturalisation of waterways.



Social Inclusion

To have a positive impact on the local community and significantly increase social inclusion through planning and urban design. Ensure supply and distribution of urban services and mobility ensures equitable distribution of benefits and easy access for all including vulnerable groups. Diversity of housing types to be based on income, tenure, and size that meets local demand.



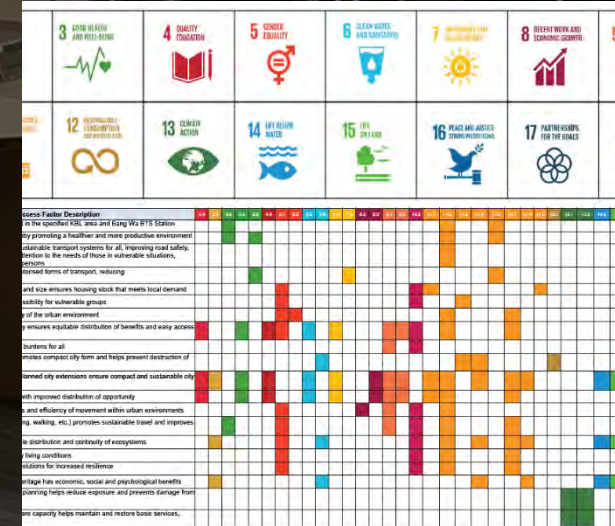
Better Places

Creating communities that have a strong sense of place and identity, maximise shared value, and that delight. Holistic design strategies improve safety and security of the urban environment resulting in safe, enjoyable, integrated and comfortable places.



Sustainable Development Goals

SDGs



Scenario 1: Cultural Heritage



Scenario: Health and Wellness



An architectural rendering of a sustainable urban development. The scene is viewed from an elevated perspective. On the left, a tall, slender building features a vertical garden facade with various green plants. In the center, several multi-story buildings are integrated with green roofs and terraces. A river flows through the middle of the development, with a small boat and a traditional-style structure on the bank. To the right, a large, modern building with a prominent wooden frame and glass panels stands out. The overall atmosphere is bright and clear, suggesting a clean, green environment.

Scenario

Community, Collaboration, Knowledge and Innovation

Conclusion of Challenges and Possibility



TOD Uses



PEOPLE – PLACE – OPPORTUNITY

The Transit-Oriented Development Plan (TODP) for Bang Wa and KBL is a timely opportunity to think differently about neighbourhood planning in Bangkok. Around the world, the Covid-19 pandemic has made cities think about how they can foster healthier environments and lifestyles as well as build resilient cities and societies.

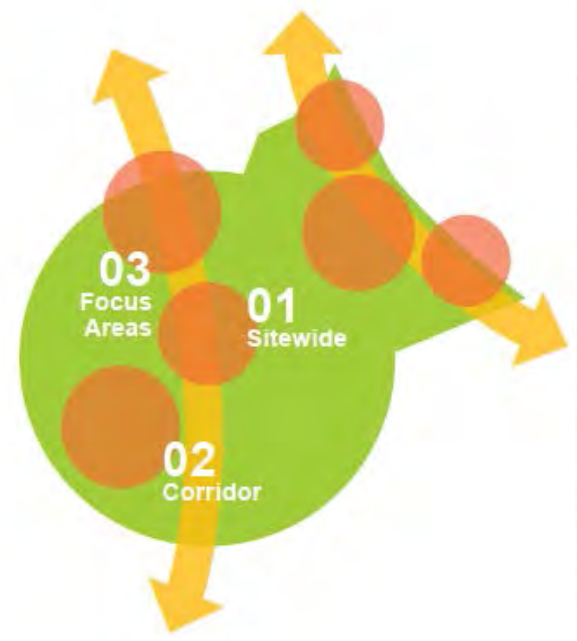


Vision Statement

To create a purposeful, connected, vibrant, inclusive and sustainable urban destination through an equitable TOD.

TOD Pillars

- People**
- Place**
- Opportunity**



Planning and Regulation

Density and Massing Strategy for TODP

As well as providing guidance on permitted land uses, the land use zoning in the Bangkok Comprehensive Plan (Draft, 2019) also sets a maximum FAR for each of the broad zones. In the study are these ranges from FAR 4.5 to FAR 7. The proposed density guidelines in Figure 3.25 provide further detail on where higher and lower densities are most suitable and, more importantly, a lower minimum limit for FAR to ensure that new development in the area is able to maintain and adhere to TOD principles of higher density development.

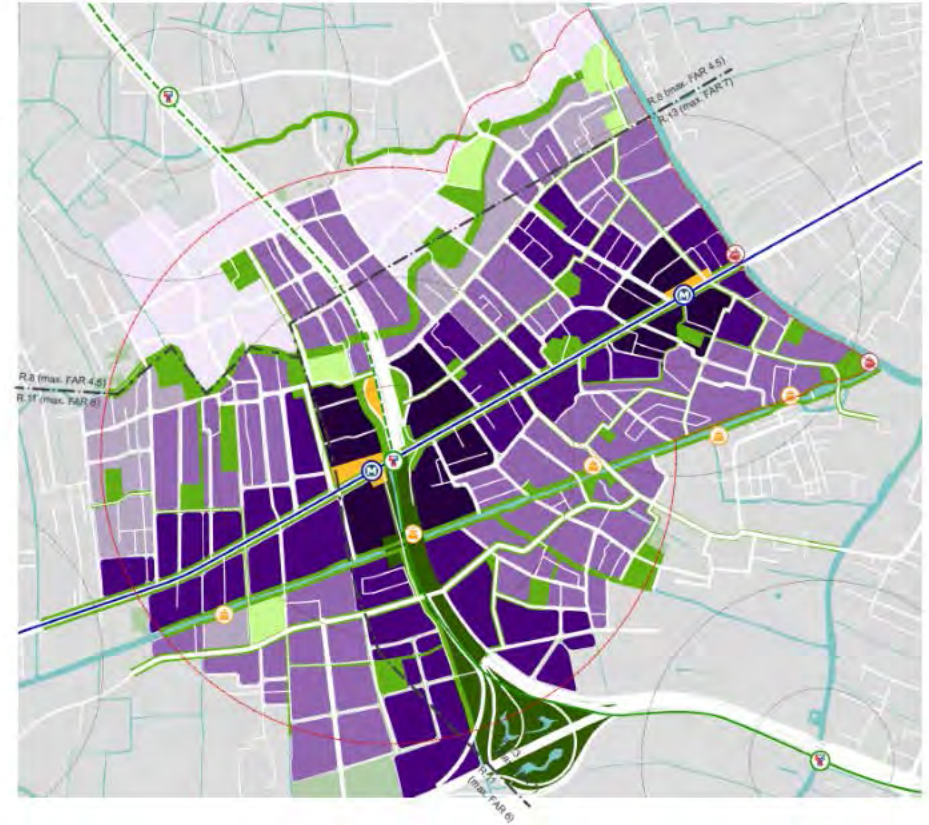
The strategy for Bang Wa and KBL will be to introduce the highest density development in the station core areas (typically 200m radius from the MRT/BTS). This is particularly important for the station core around Bang Wa station interchange which, other than the condominiums to the south-east, currently has development with unsuitable density for TOD. Other areas identified as suitable for higher density development is the blocks which flank the major roads and transport infrastructure, namely Phetkasem Road and Ratchaphruek Road. The wider right-of-way of these roads allows for taller development either side of the road without negative impacts on the pedestrian experience at street level. Outside of the station core, the residential areas a range of densities are appropriate to reflect:

- the proximity to transit
- proposed upgrades to road right-of-way
- the need to provide a range of suitable housing typologies
- sensitivity to important heritage assets and areas of cultural and historic character

Higher densities should be encouraged for new developments to diversify the housing stock from low rise, single family housing to higher density typologies such as mid-rise apartment blocks.

- Highest (FAR 5 to 7)
Blocks within the station core areas (approximately 200m radius from MRT/BTS stations)
- High (FAR 4 to 5)
Primarily blocks adjacent to highways (e.g. Ratchaphruek Road) and major arterial routes (e.g. Phetkasem Road).
- Medium (FAR 3 to 4)
Primarily residential blocks within 500m of MRT/BTS stations
- Lower (FAR 2 to 3)
Primarily residential blocks outside of 500m area but within TOD influence zone
- Lowest (FAR 1 to 2)
Lower density residential areas in TOD influence zone / within zone R.5 or areas with historic value

Figure 3.25 Proposed Density Strategy



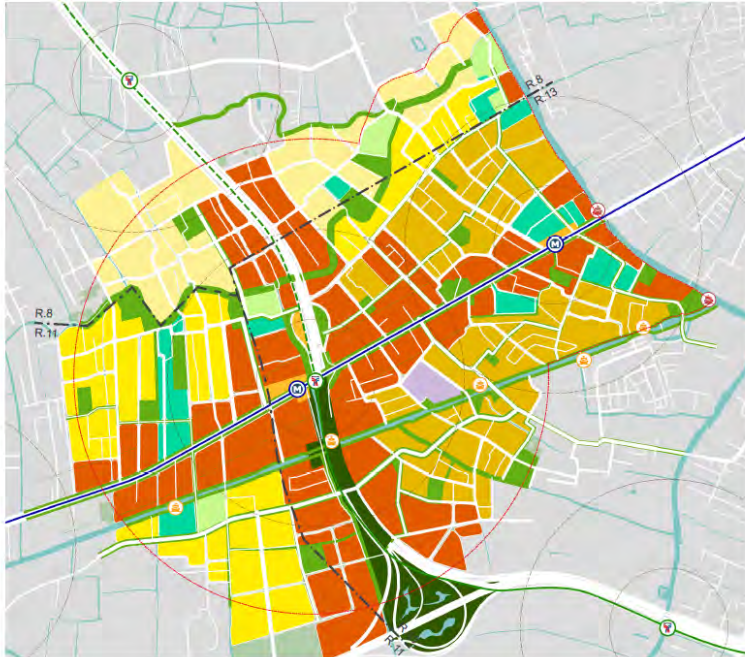
Land Use Zoning Plan

Land Use Strategy for TODP

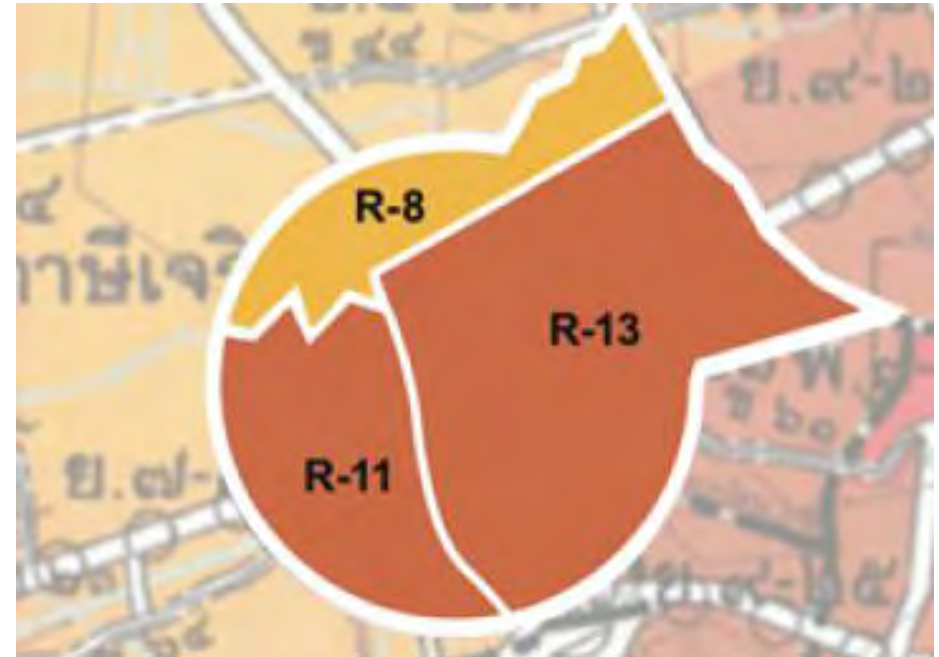
The Land Use strategy for Bang Wa and KBL is designed to compliment and support the Bangkok Comprehensive Plan Land Use Zoning, adding additional detail on appropriate locations for different permitted uses. Whilst the Bangkok Comprehensive Plan designates medium to high density residential categories (R8, R11 and R13) there is some flexibility within the zoning to provide non-residential uses. Therefore the land use strategy (right) seeks to add further guidance on suitability of different areas for the mixed use development which is an essential ingredient to successful TOD. The land use plan should be read in conjunction with the density plan (Figure 3.25). Provision has been made for some light industrial uses to the south-east of Bang Wa station, close to the Phasi Charoen Canal. The intention is to develop a cluster for local craft, production and making in this area, complimenting existing businesses already operating in this area.

In line with TOD best-practice, mixed use development is concentrated around the MRT and BTS station cores as well as along major arterial roads such as Ratchaphruek and Phetkasem Roads, forming mixed use nodes and corridors. In recognition of the importance of the cultural heritage sites (e.g. temples and shrines) and community amenities (e.g. schools, hospitals and universities) these sites have been identified on the plan to ensure their protection. Residential areas are further subdivided by their relative density which is in alignment with the Bangkok Comprehensive Plan. As per the guidance in the Comprehensive Plan, although these areas should be predominantly residential areas, complimentary uses are also permitted as per the relevant guidance in Table 3.2.

- Mixed Use**
Provides flexibility for a range of uses including residential, commercial, office, retail, hospitality and community / civic amenities.
- Residential (Higher Density)**
Higher density residential development aligned with parameters in Bangkok Comprehensive Plan.
- Residential (Medium Density)**
Medium density residential development aligned with parameters in Bangkok Comprehensive Plan.
- Residential (Lower Density)**
Lower density residential development aligned with parameters in Bangkok Comprehensive Plan.
- Light Industry**
Light industrial uses which support local SMEs, production, making and local crafts.
- Community & Civic Uses**
Including temples/religious amenities, clinics, hospitals, schools, colleges, universities and other civic uses.



LAND USE STRATEGY FOR TODP



BANGKOK COMPREHENSIVE PLAN

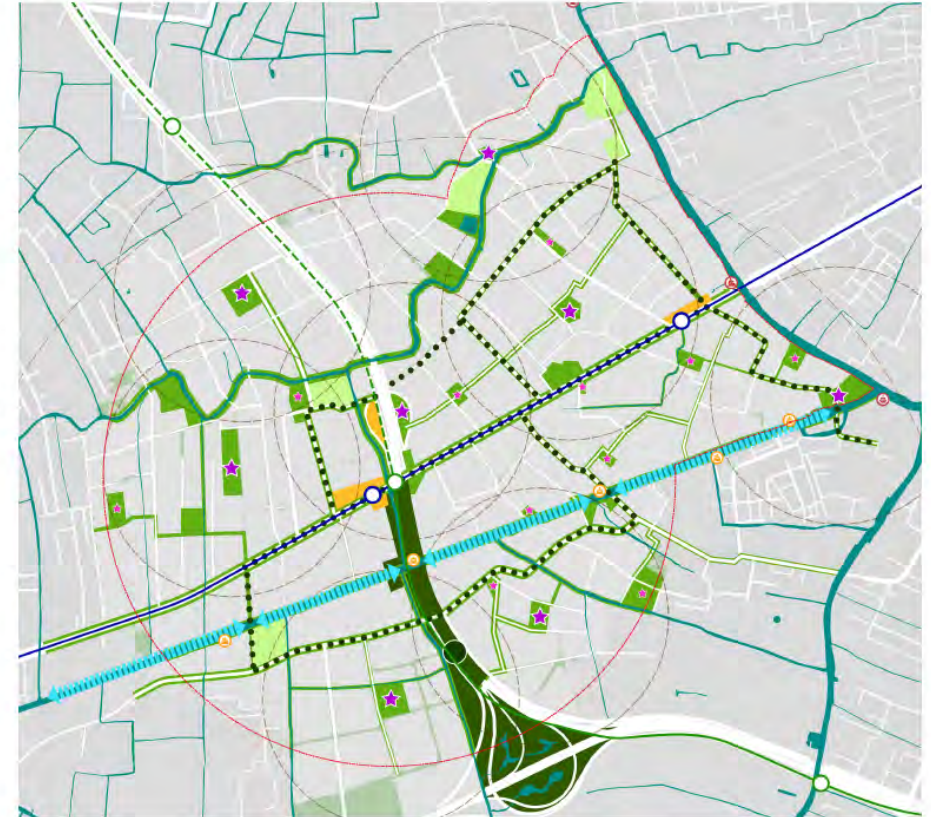
Open Space Plan

With most of the study area already containing consolidated development, finding land to create open space is challenging, particularly to the east of Bang Wa station. The Bangkok Comprehensive Plan indicates that the opportunity exists to develop a larger open space to the south of the site, within the highway interchange junction. Combined with utilizing the space underneath the highway infrastructure, there is the opportunity to initiate a larger district scale park to the area which can connect new development in this zone to Bang Wa station via a linear park. However, smaller, more local open space is also important and a variety of approaches to open space will be required to incrementally expand the network of open spaces within the TODP. This could be achieved via:

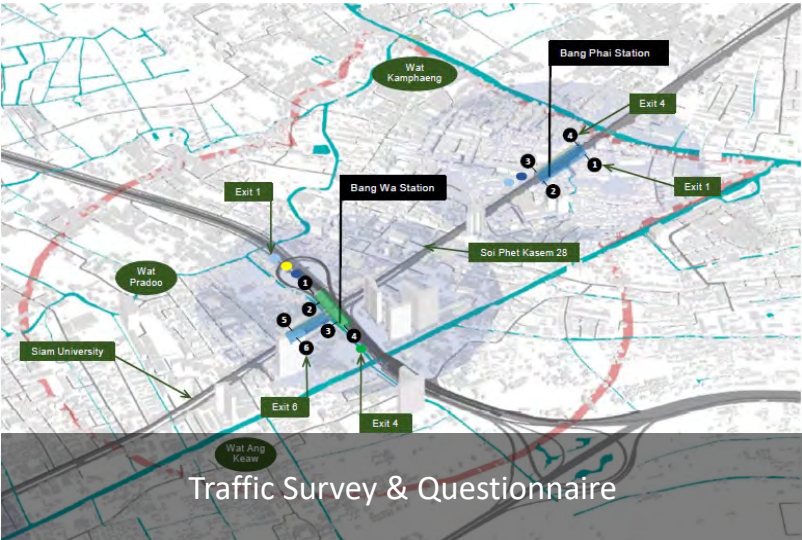
- Maximise, and where required, improve existing open spaces and parks in the study area. Include the local communities in the design and planning of these spaces.
- Any new development of significant size in the area should be required to provide public open space as part of its design, especially if the development is proposing higher density and additional residents.
- Small, tactical interventions at the neighbourhood scale have the potential to make a big impact. For example, reallocating street space to create open space can create opportunities for play and leisure areas, mitigating the lack of outdoor space at home.
- Create communal gardens in place of parked cars to create places neighbours can gather and children can play

- Ratchaphruek Corridor District Park (3.2km radius)
- ★ Neighborhood Park (400m radius)
- ☆ Small Open Space / Pocket Park
- Station Plaza
- Institutional Public Spaces
- Key Routes & Connectors
- Canal Corridors / Waterfront
- ▬ Waterside Promenade
- Greenspace (general)
- ▬ Green street / connector (general)

Figure 3.12 Proposed Open Space Framework



Transportation Plan



Cyclist Network and Water Transportation Plan

Figure 4.17 Proposed pedestrian and cyclist network for Khlong Bang Luang area

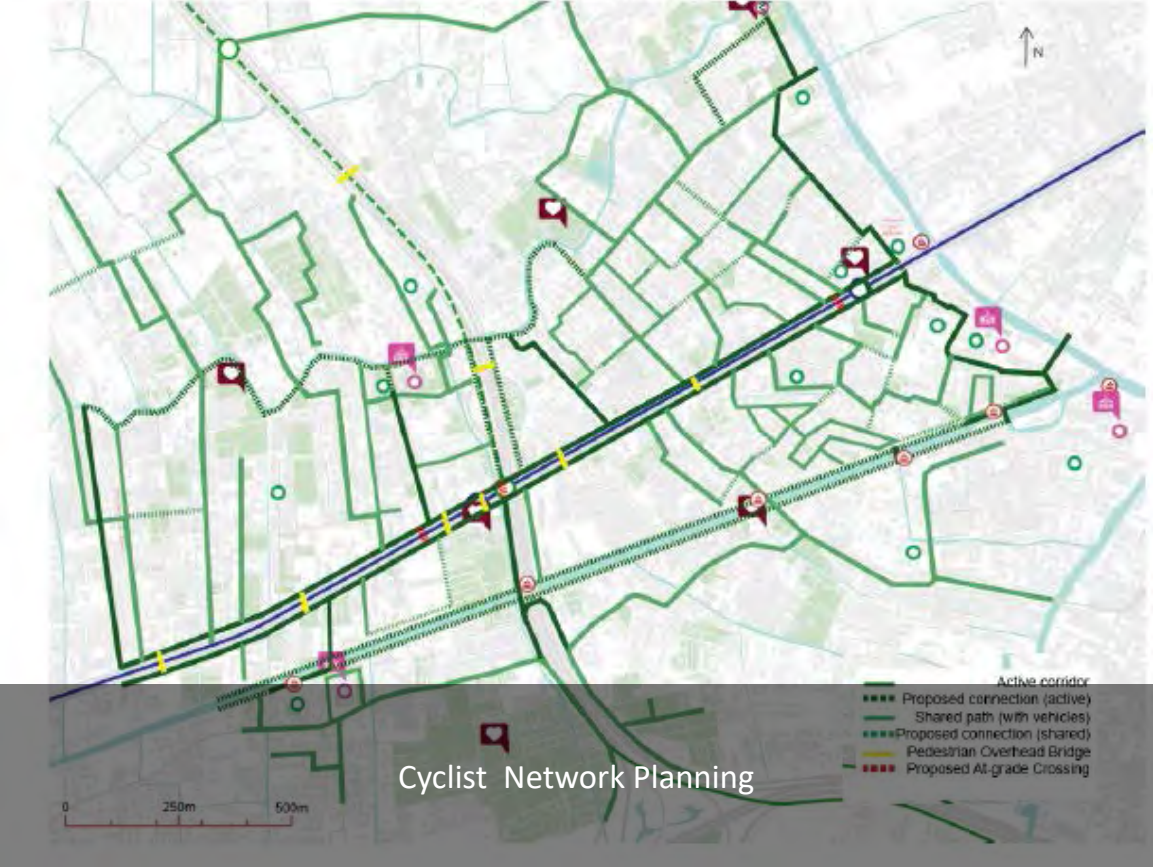
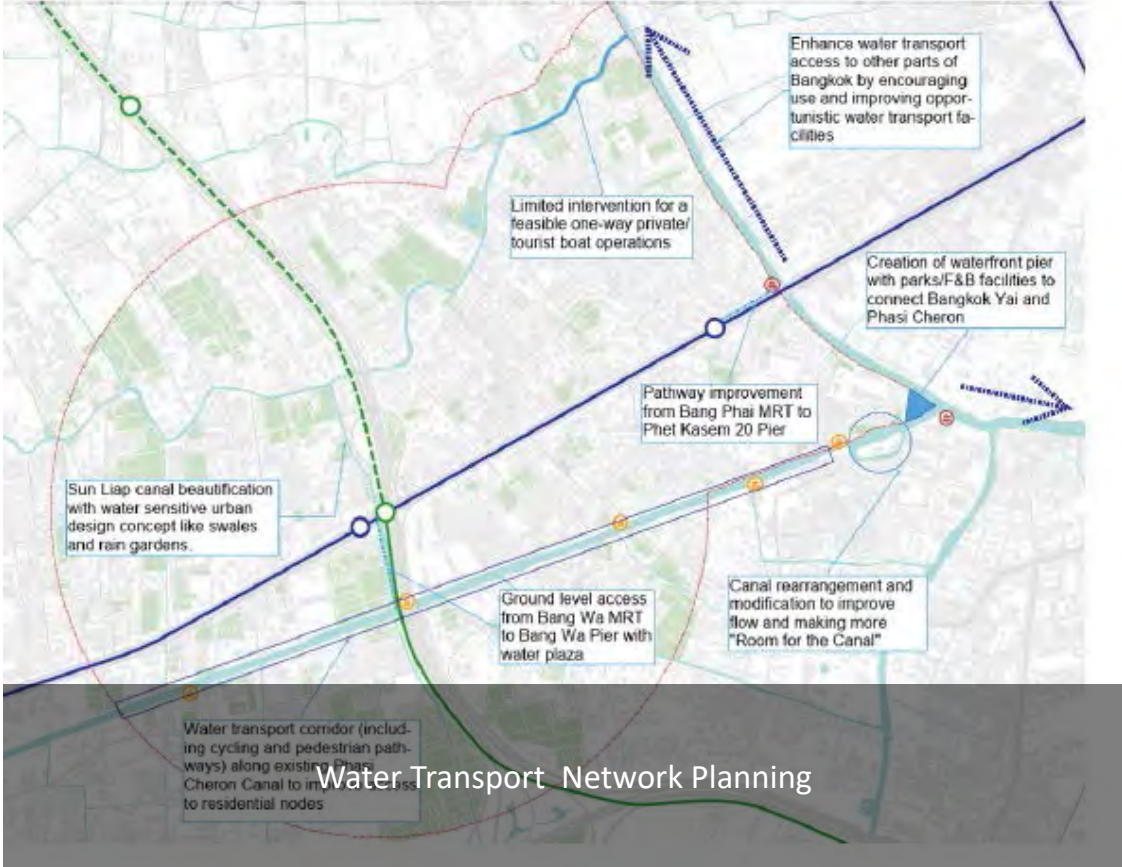


Figure 4.18 Proposed water transport enhancement for Khlong Bang Luang area



Existing Condition

Existing Condition

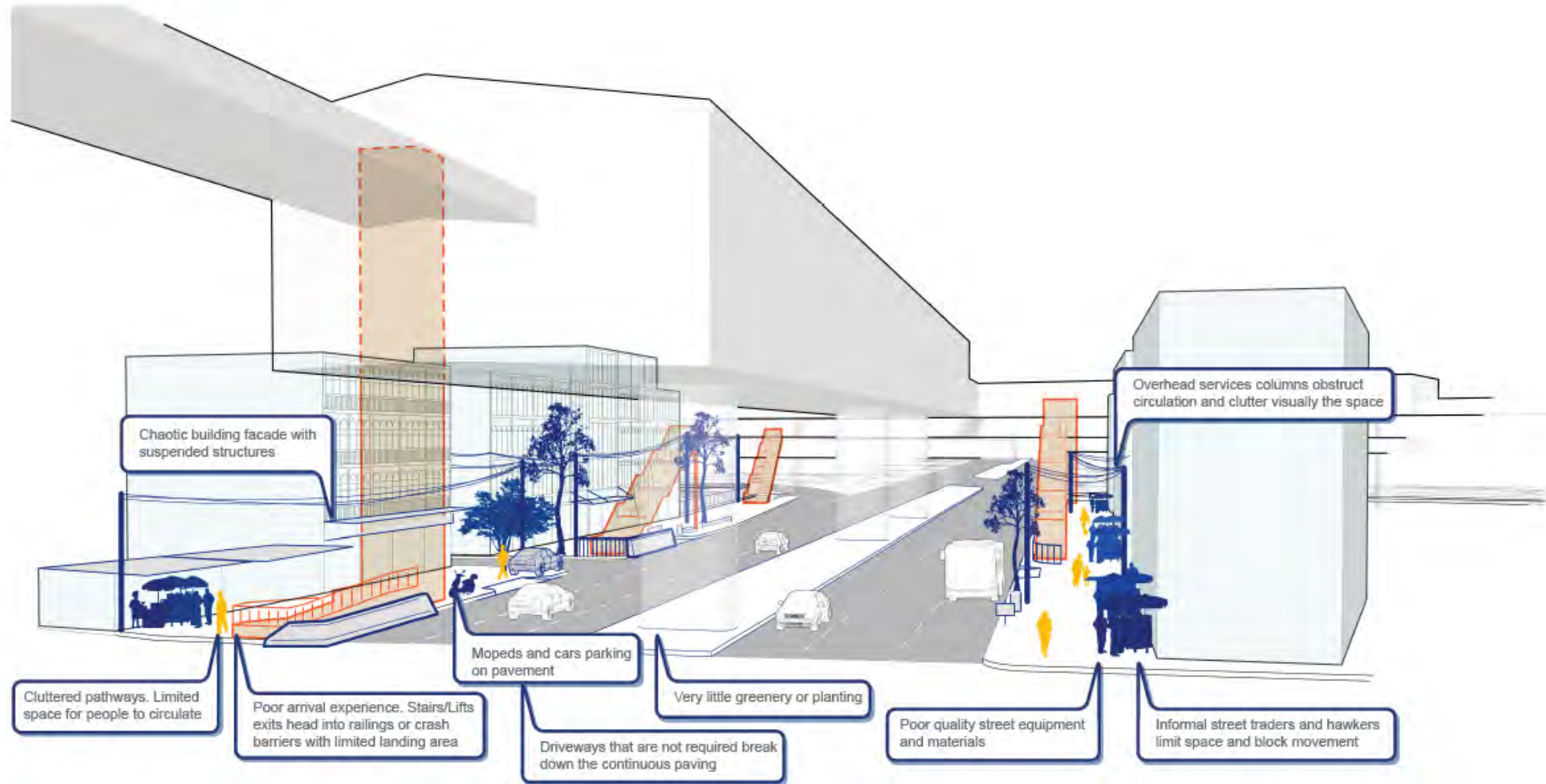


Figure 3.13 Phetkasem Road - Existing Condition

Street Design Improvement

Street Design Improvements

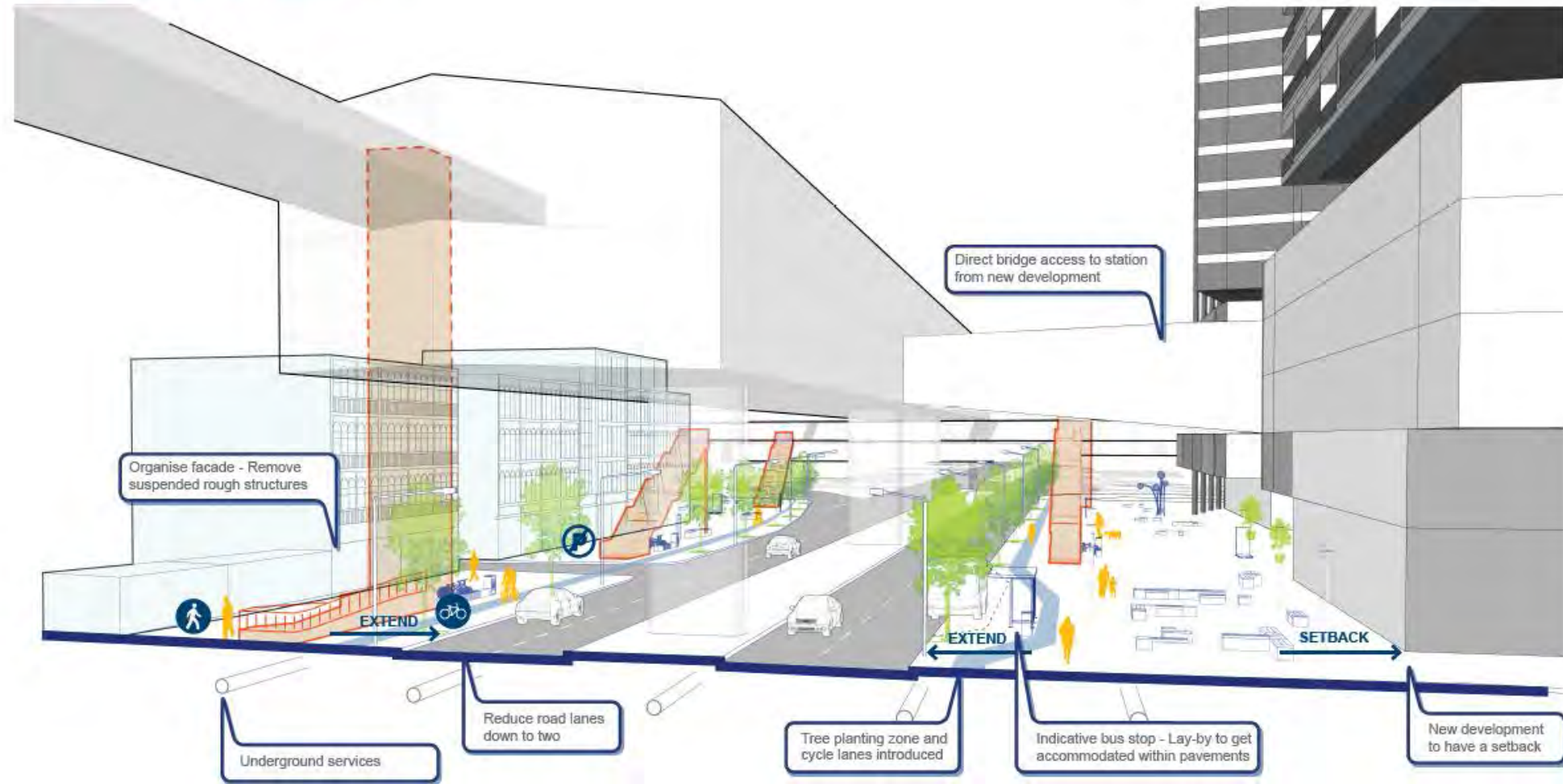


Figure 3.14 Phetkasem Road - Street Design Improvements

Program and Space

Programme and Space

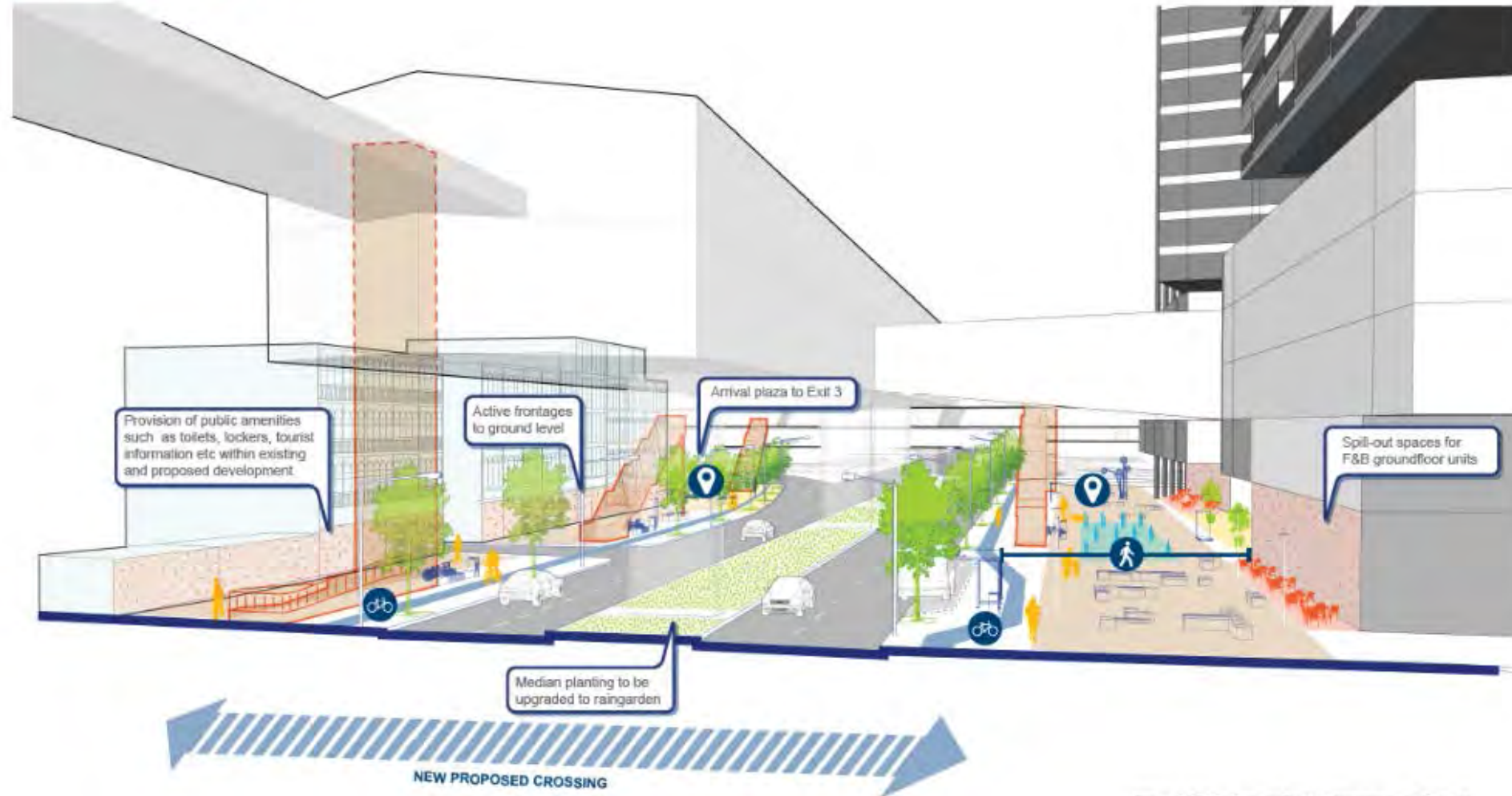


Figure 3.15 Phetkasem Road - Programme and Space

Street Furniture

Street Furniture

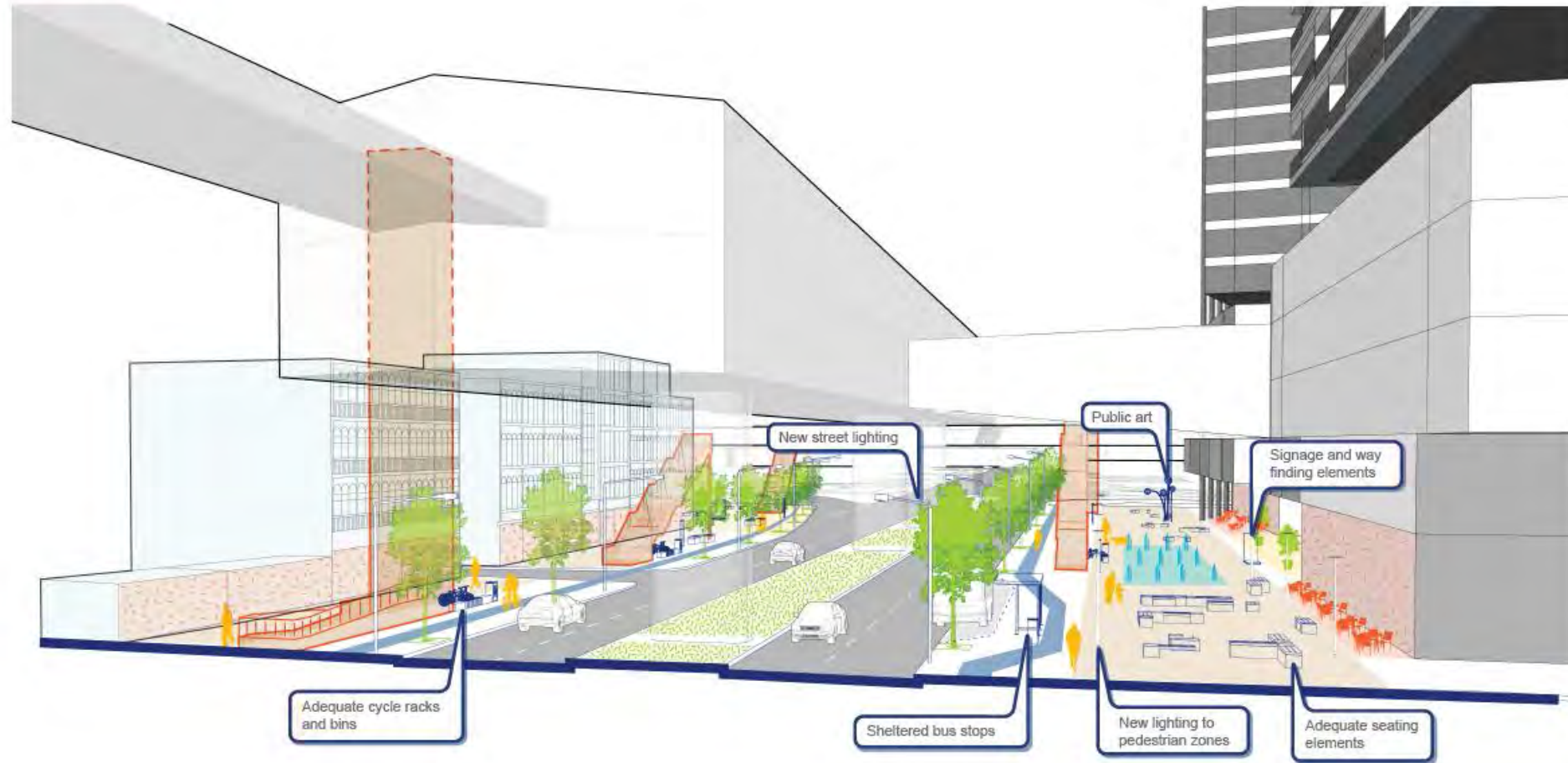


Figure 3.16 Phetkasem Road - Street Furniture

Sustainability

Sustainability

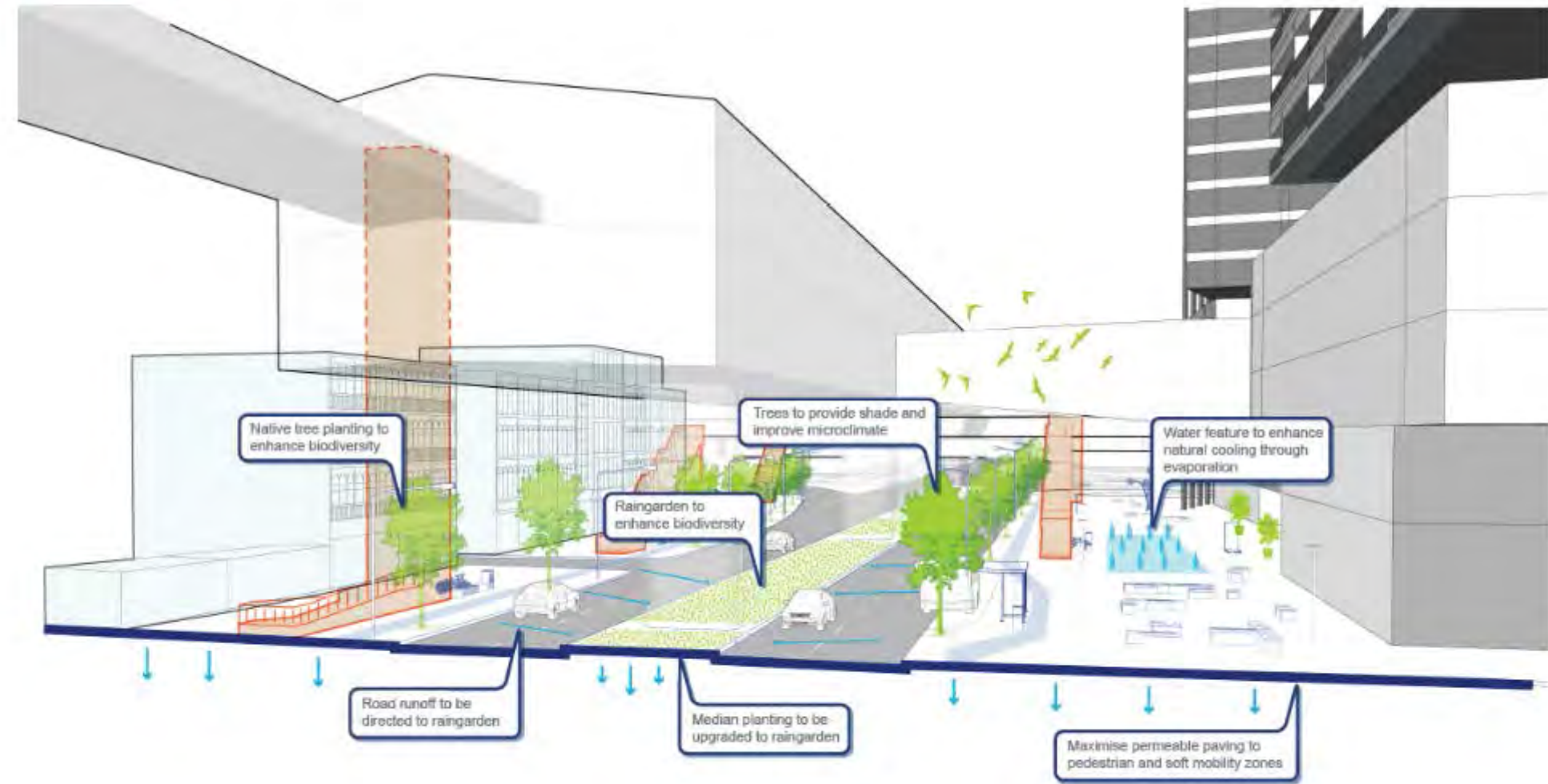


Figure 3.17 Phelkasem Road - Sustainability

Structure Plan of TOD

The planning strategy is based on key corridors. Placing key projects along these corridors will enhance the benefits of a TOD development and provide important connections between focus areas that are centred around different urban settings and opportunities. By creating connected corridors these focus areas are considered as part of the wider development and the network effects that they induce.

Ratchaphruek Corridor

The Ratchaphruek Corridor is a planning strategy which aims to increase the density of development in line with the wider project TOD principles. The proposal establishes Ratchaphruek Road as the main development corridor, with the Bang Wa Station Interchange becoming a multi-modal transit centre with more mixed-uses and higher densities at the heart of the corridor. This development expands to both north and south as a part of 'a ripple effect' and corridor strategy.

Khlong Bang Luang Corridor

The Khlong Bang Luang Corridor recognises the potential to connect Bang Phai MRT with a number of locally significant tourist destinations. This corridor is bounded by the Bang Chak Canal, Bangkok Yai, and Phasi Charoen Canal. The corridor will improve the connectivity between these attraction points whilst improving the local economy and communities.



Conceptual Plan of URBAN DESIGN



Phasi Charoen Park

- Creating a unique retail experience with emphasize on arts and culture
- Introducing park/open space into the area and elevate the commercial opportunity of the canal confluence
- Provide a community hub as an open platform for exchange, showcase, workshop, and collaboration of local artists, as well as visitor centre for the Tourists
- Creating pleasant pier stop that integrates the various temples around the zone.

Ratchaphruek Gateway

- Increase density and create a vibrant work/live environment
- Bringing open space at the heart of the community and connect to the open space network along Ratchaphruek Road
- Create and improve sustainable transport links to Bang Wa MRT and wider Bangkok network
- Testbed for BCG (Bio-Circular Green Economy) Development Scheme by introducing sustainable industrial mixed use in the development

Knowledge Hub

- Leveraging on synergy between Siam University and the community
- Creating R&D sandbox environment within the wider network
- Development of substantial mixed-use urban centre on released land. This should include commercial offices, multi-format retail, apartments, townhouses and civic amenities
- Local Food Production meets Agrotech along Bang Chak Canal

Bang Wa TOD Core

- Mixed Use development, supported by business, residential, hotel, and multimodal transit interchange
- Create local landmark and enhance neighbourhood identity on the spaces around MRT and underneath the Highway
- Engage local artists to create artworks meaningful for the residents and are inspired by Bang Wa's character and history around the open spaces network
- Providing proper space for public transport drop off/ pick up and improve last mile connectivity experience.
- Providing jobs to the community and wider Bangkok population

KBL Tourist Village

- Dedicating a Heritage Tourism Zone to protect the Old Thai Character of the area
- Improving local economy by extending the catchment of the tourist zone
- Enhancing the walking experience by designing a Woonerf experience
- Provide more open and porous surfaces on the open plaza spaces to address the flooding issue
- Turn dilapidated houses into 'art/cultural houses'

Bang Phai TOD Core

- Integrated Health Hub as a one stop service integrating healthcare, social, commercial, communal, and retail facilities around Bang Phai Hospital
- Creating Gateway and extension of retail from the KBL Tourist Village
- Enhancing the arrival experience at Bang Phai MRT by creating arrival plaza that provide open and flexible gathering spaces
- As Phetkasem 22 will be upgraded, introduce a higher density around Bang Phai MRT and create a commercial district along the Phetkasem 22 Road

Legend

- | | | | |
|--|--------------------------------|--|-----------------------------------|
| | Primary Priority Development | | MRT Network |
| | Secondary Priority Development | | Future BTS Extension |
| | Development Corridor | | MRT/BTS Network |
| | Water | | Pier |
| | Open Space Network | | Health and Wellness Theme |
| | Primary Development Network | | Knowledge and Collaboration Theme |
| | Secondary Development Network | | Heritage and Culture Theme |
| | Key Route Network | | |

DESIGN ELEMENTS

Legend

- Private Open Spaces
- Public Open Spaces
- Temple/ School/ Thai Space
- Waterbody/ Canal
- Commercial High Street
- Education Cluster
- Private Condo
- Waterfront Link
- Highway
- Major Road
- Local High Street
- Alleyway
- Future Link Alleyway/ Pedestrianised Network

- Temple
- Education
- Pier
- Bus Stop
- BTS Stop
- MRT Stop

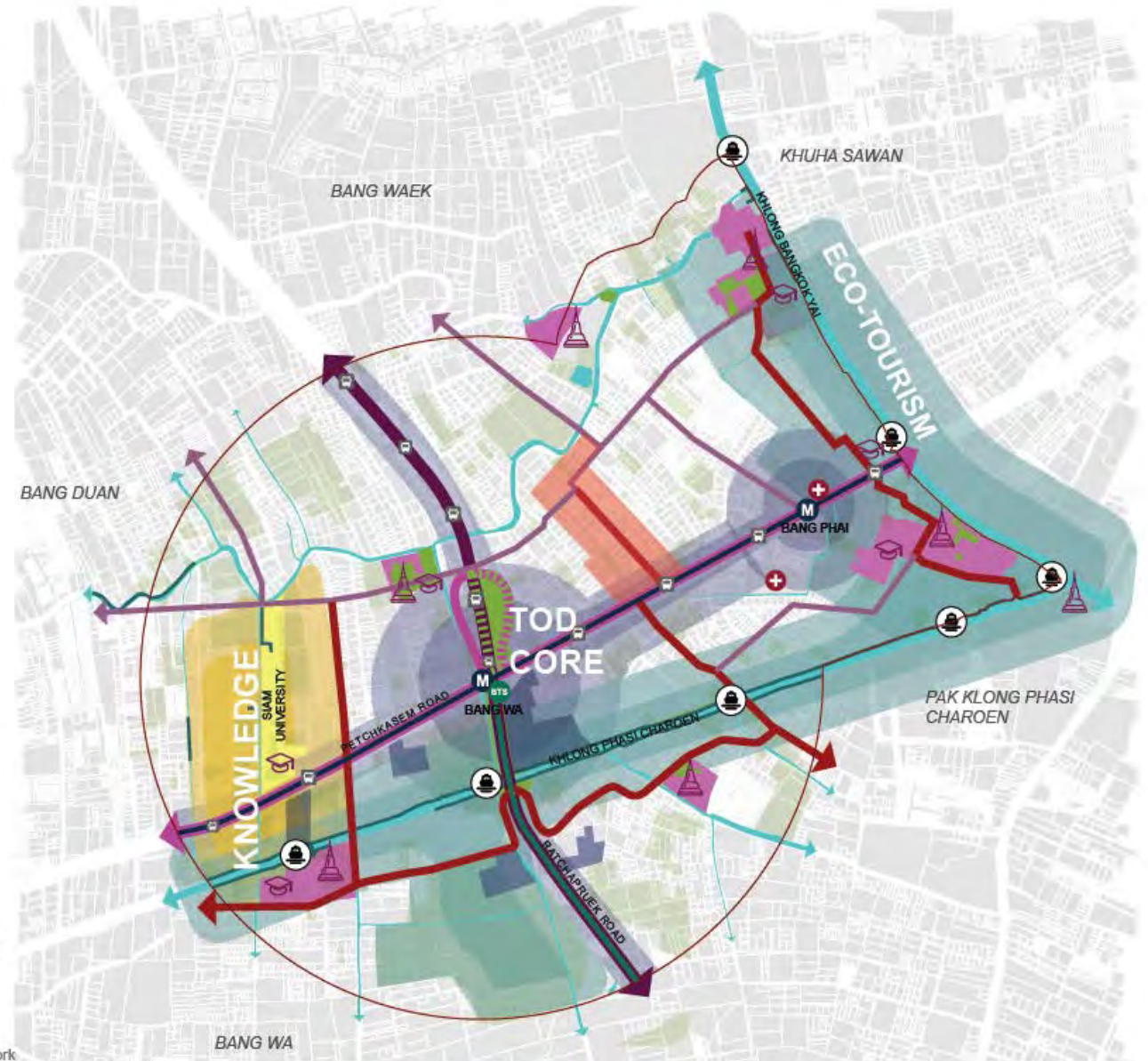


Figure 9.3 Character Area Framework

Ratchaphruek Corridor... TOD CORE...



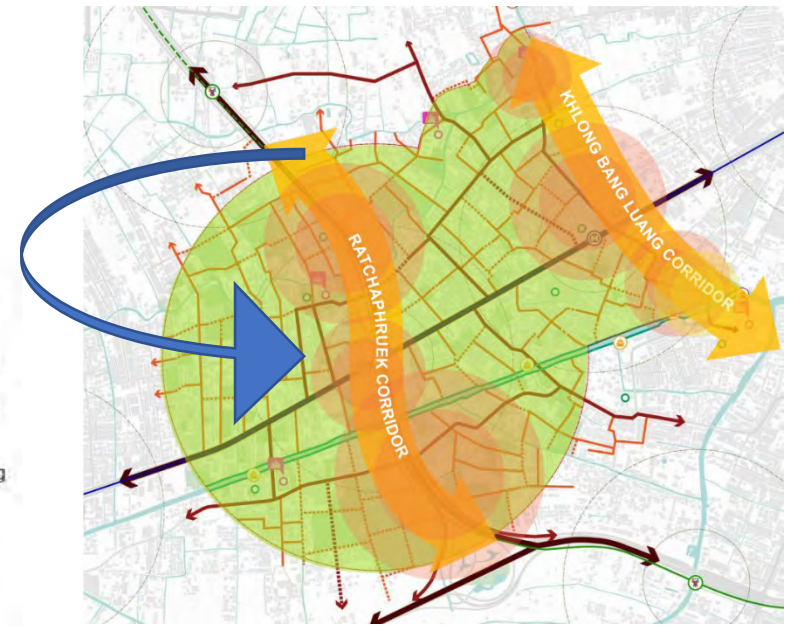
Knowledge Hub

Leveraging off the synergy between Siam University and the surrounding communities, there are opportunities for accommodating mixed use retail, R&D sand boxes, medium density residential within an overall TOD planning concept. This will help develop this area to the north-west of Bang Wa station as a new node and knowledge hub for investment and economic opportunity. Increasingly, universities are accommodating related commercial development and public uses to leverage their value and benefit to surrounding communities. The presence of a higher education institution and related activities that surround will help encourage inward investment in to the area including improved infrastructure including mobility and open spaces.

Bang Chak Canal

Bang Chak Canal is an important space for the communities of KBL and Bang Wa. Along the canal, there are series of temple space reflecting the strategic importance of the canal both in the past and present. However, recent access to the canal has been limited due to private plot ownership. The proposal is to turn part of the Bang Chak Canal as a crucial part of Bangkok's Urban Food Bowl, where residents and visitors could explore the traditional relationship of water, agrarian, and food, creating unique farm to table experience.

- | | |
|--------------------|----------------------|
| Road Network | Secondary Attraction |
| Openspace | Bike Parking |
| Temple space | Bus Stop |
| Station Plaza | MRT/ BTS Interchange |
| Gateway Entrance | Boat Pier |
| Waterside Walkway | Temple |
| Primary Attraction | Community Facilities |



Challenges and Opportunities of Development

01 | TOD Core



01 | Ratchaphruek Connector



01 | Ratchaphruek West



04 | Ratchaphruek East



05 | Ratchaphruek South



06 | Ratchaphruek Gateway



Bang Wa Station TOD CORE...Implementation



Multimodal Transit Hub



Marketplace



Living Quarter



Ratchaphruek Streetscape Canalside Walk



MASTER PLAN



Ratchaphruek Streetscape Public Art under Flyover



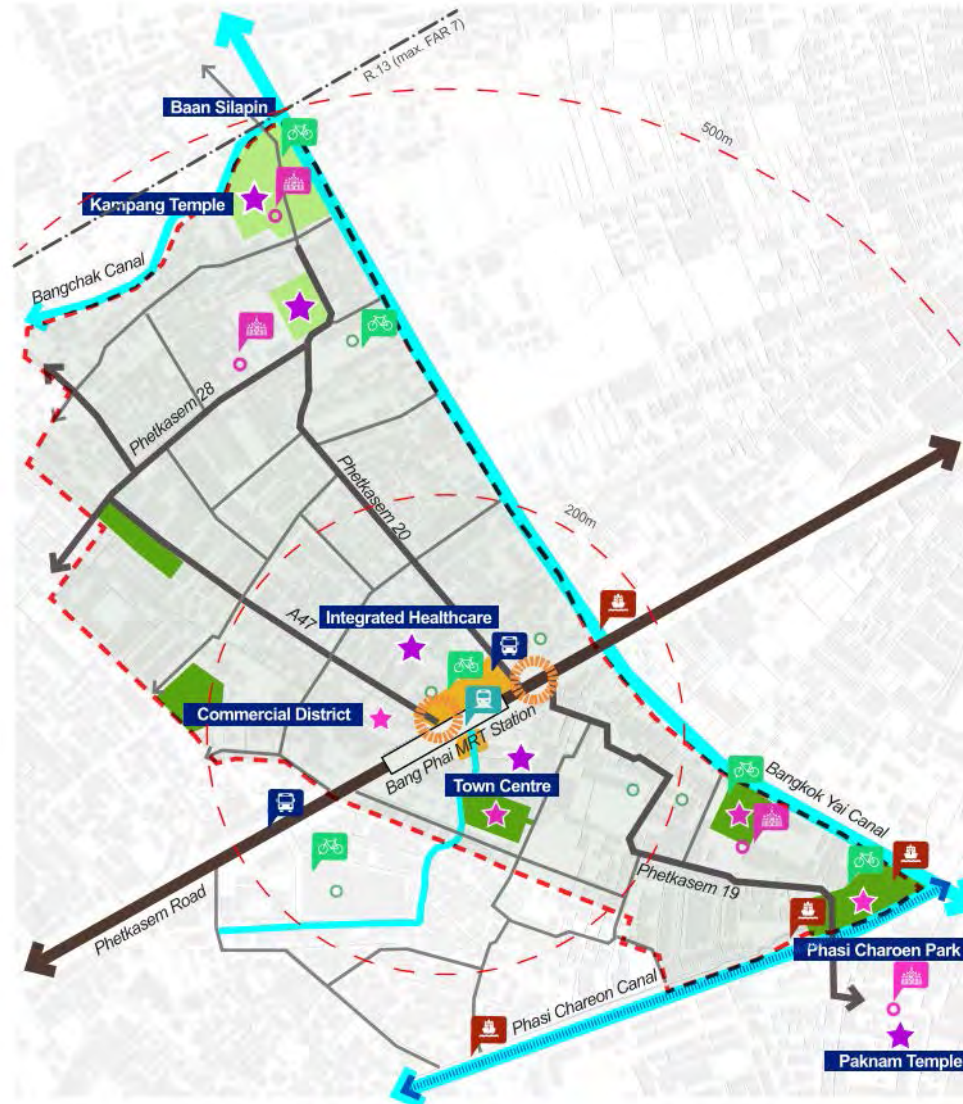
ECO-TOURISM... Khlong Bang Luang Corridor

A Healthy Neighbourhood

KBL Corridor is designed with holistic health in mind. A healthy neighbourhood is also an attractive neighbourhood to new residents and businesses who increasingly put a value on lifestyle. Creating a holistic healthy neighbourhood includes providing public spaces that encourage a healthy and active lifestyle. Well designed open spaces provide a welcome escape from the city and can help reduce mental health issues in urban areas. The neighbourhood should be designed with people, their interaction, enjoyment, and relaxation as a priority. This will result in a pleasant social environment and improve the quality of life of people and the wider community in general.

Leveraging from the A47 Road Upgrade

With the proposed BMA plan to upgrade the A47 road, there is the opportunity to leverage off the improvements and implement urban design and streetscape interventions along the A47 corridor. This includes improving the urban connectivity and planning the KBL Corridor as mixed-use commercial district that is a transit-orientated, people friendly, connected, comfortable, safe and attractive neighbourhood. The creation of a commercial district along the A47 road provides the opportunity to introduce a series of public spaces with tree planting, signage, wayfinding, traffic management and to improve the character and quality of the existing narrow and disconnected streetscape. These combined interventions will create a seamless connector street that links Phetkasem Road with the wider network on the northern end of Bang Chak Canal.



ECO-TOURISM... Khlong Bang Luang Corridor

01 | Phetkasem 22/A47 Deadend



02 | Phetkasem 20 School Road



03 | Bang Phai Hospital



04 | Paderng Suksa School



05 | Wat Thong School



06 | Phetkasem 28 Road



07 | Phetkasem 20 School-Temple Road



08 | Kampang Bangchak Temple



09 | KBL Floating Market



10 | Phetkasem 19 Road



11 | Wat Nuanradit School



14 | Wat Paknam Phasi Charoen



15 | Wat Pradu Chimpli



16 | Pratunam Phasi Charoen Pier



17 | Phetkasem 20 Pier



ECO-TOURISM... Khlong Bang Luang Corridor

01 | KBL Tourism Village



02 | Integrated Healthcare Hub



03 | KBL Residential District



04 | KBL West Gate



05 | Town Centre



06 | Phasi Charoen Community Park



ECO-TOURISM... Khlong Bang Luang Corridor...Implementation



Khlong Bang Luang Tourist Village

- Key Principles**
- Dedicating a Heritage Tourism Zone to protect the character of the area
 - Improve local economy by extending the catchment of the tourist zone
 - Enhance the walking experience by greening the street frontages
 - Provide more open and porous plaza spaces to address the flooding issue
 - Turn dilapidated houses into 'art/cultural houses'



Khlong Bang Luang West Gate

- Key Principles**
- Higher Density around Bang Phai MRT with Arrival Plaza linking to the Community Centre Hub
 - Mid Rise Residential along Phetkasem 22 with Ground Floor Retail



ECO-TOURISM... Khlong Bang Luang Corridor...Implementation



Mixed-use Community Center

Mixed-use Community Centre

Key Principles

-  One-Stop Community Hub with mix of uses integrating healthcare, social, commercial, communal, and retail facilities with ease of access from the Bang Phai station
-  Gateway and extension of retail from the KBL Tourism Area
-  Arrival Plaza at Bang Phai station creates an appropriate first impression and provides a new, flexible community space for events and a range of functions



ECO-TOURISM... Khlong Bang Luang Corridor...Implementation



Phasi Charoen Park

Phasi Charoen Park

Key Principles



Create a unique retail experience with an emphasis on arts and culture



Introduce a new community park/open space regenerating the surrounding area and creating opportunities for commercial and community activities including markets



Create a community hub that becomes an open platform for exchange, showcase, workshop, and collaboration



Create a pleasant and accessible pier stop that integrates the Wat Paknam Phasi Charoen and Wat Pradu Chimpli



ECONOMIC... Land Value Capture

Bang Wa and Land Value Capture

Rory Brooke
Head of Savills
Economics



John Timms
Regional Director,
SE Asia



John Liu
Associate Director

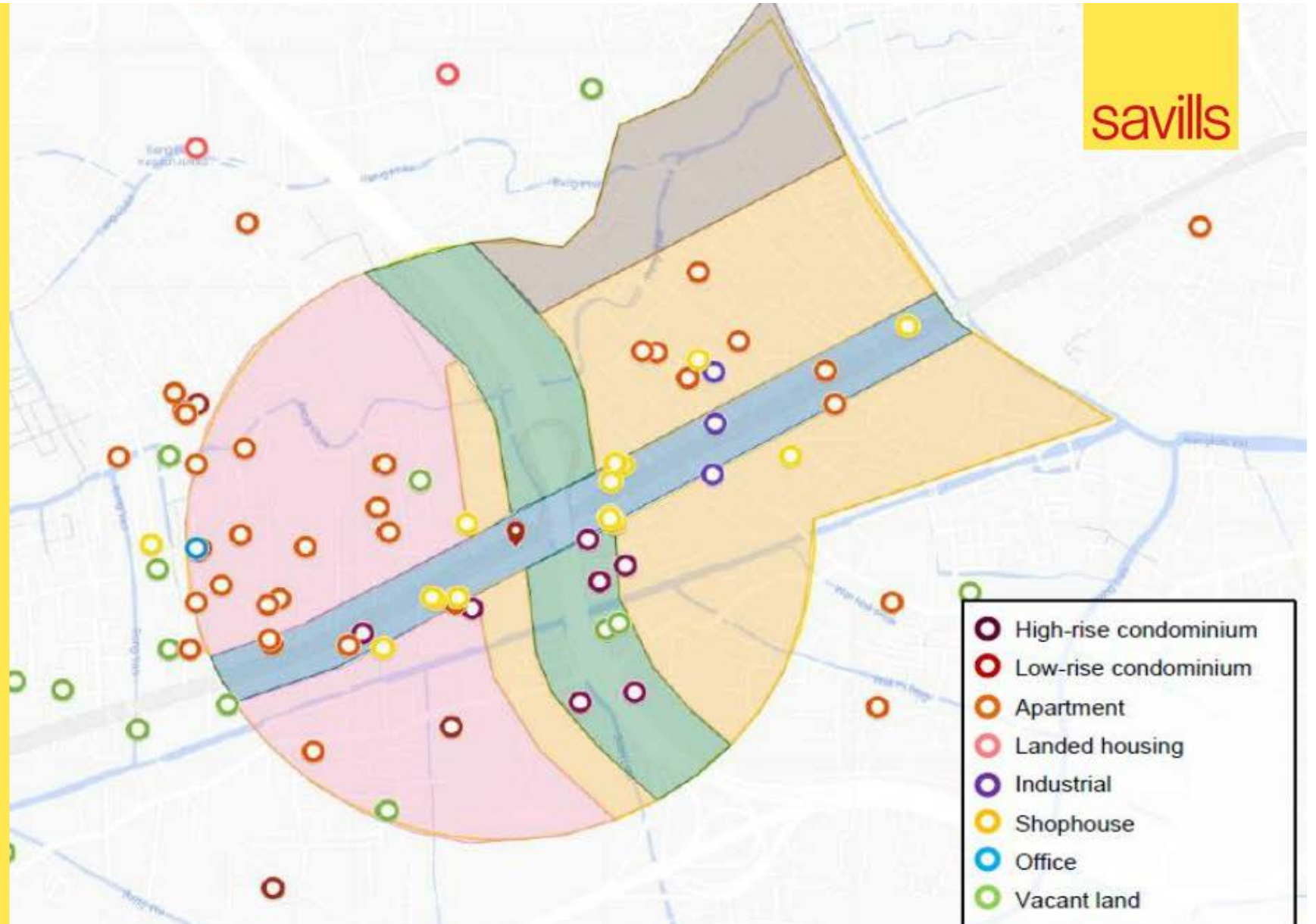


Gabriel Baudard
Economist



Case Studies

- London Bridge
- King's Cross
- Transport for London (TfL) projects, including Jubilee Line Extension (JLE)
- Singapore North East Line
- Manila MRT-3

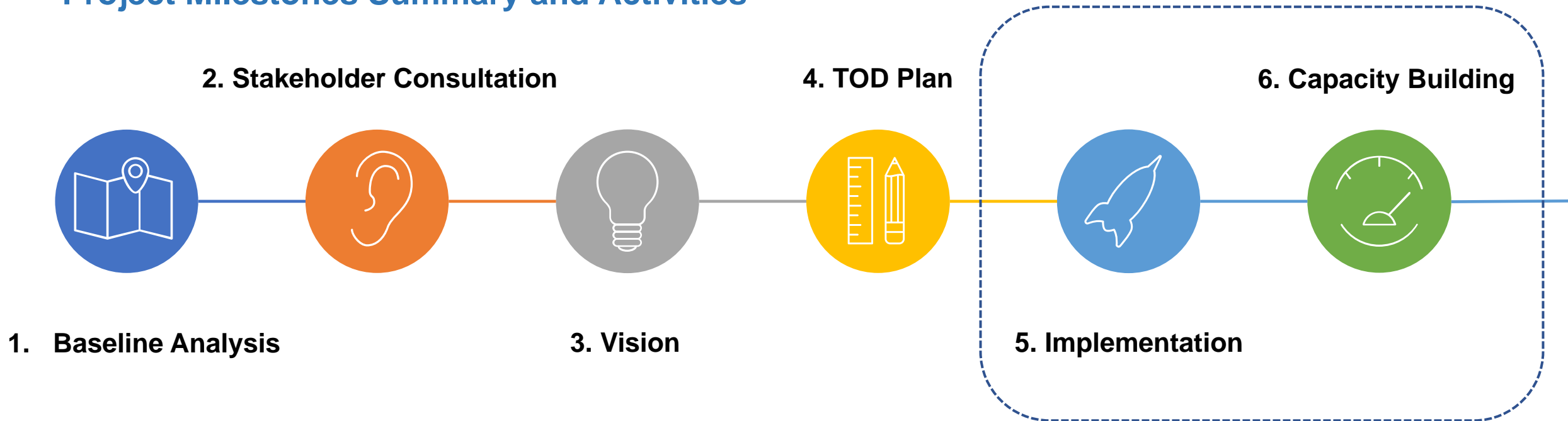


Desired Outcomes and Impacts

Expected benefits / outcomes

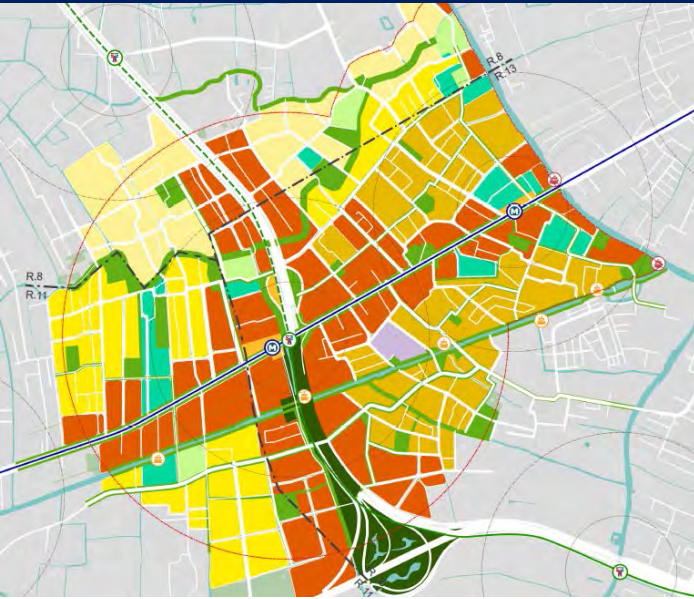
- **Transportation:** Increase the utilisation of all forms of public transport in the specified KBL area and Bang Wa BTS Station by providing more commuting options, while simultaneously building connectivity through a multi-tiered transport model.
- **Urban Development:** Promoting a comprehensive, multi-tiered approach to area-based planning that links transport to wider issues of land-use, housing and local economic development.

Project Milestones Summary and Activities



WHAT ARE CHALLENGES THE PROJECT?

Urban Planning and Development...Follow Up

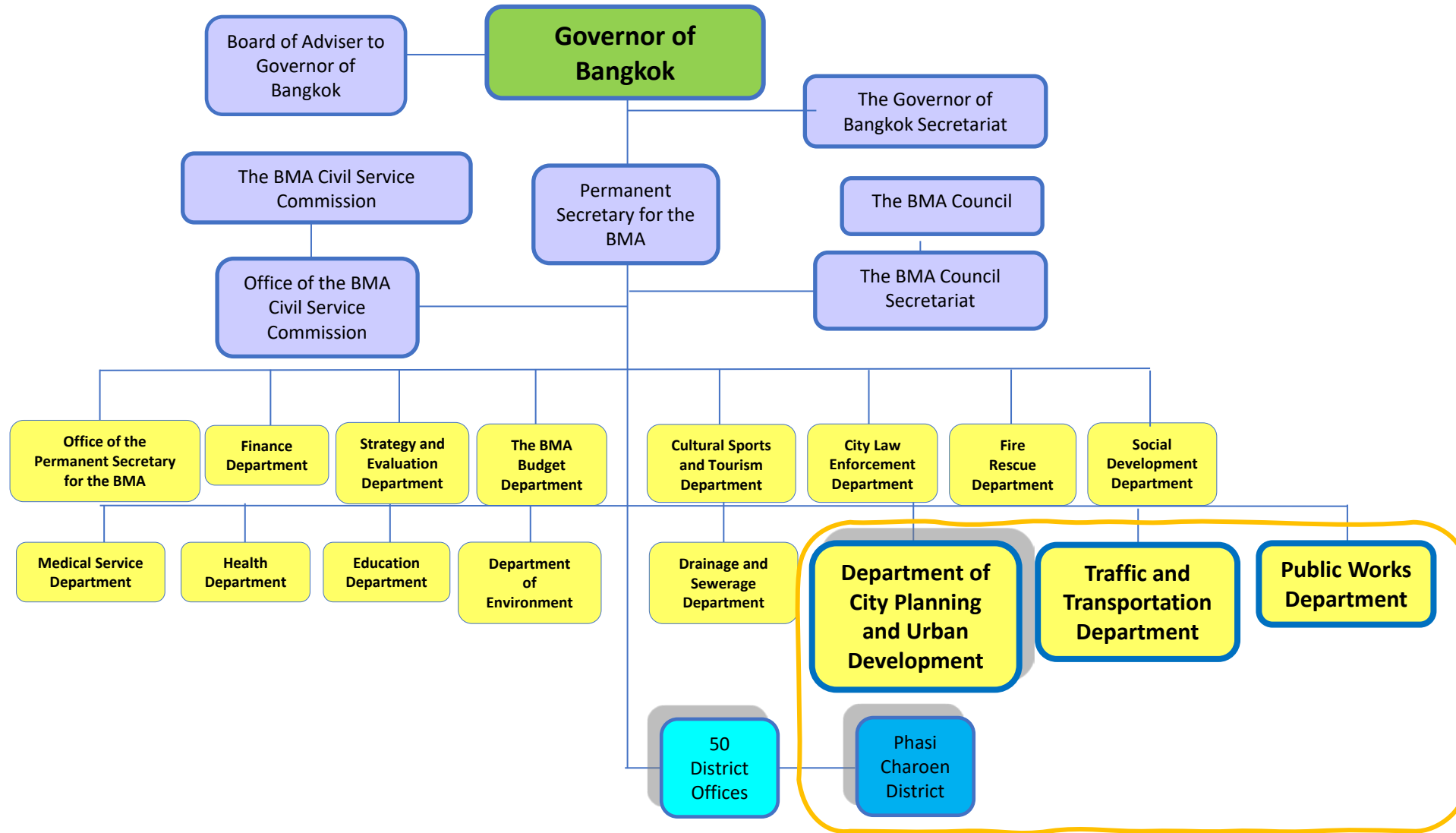


Design and Implementation...Action Team



Challenges of Action by BMA

Bangkok Metropolitan Administration



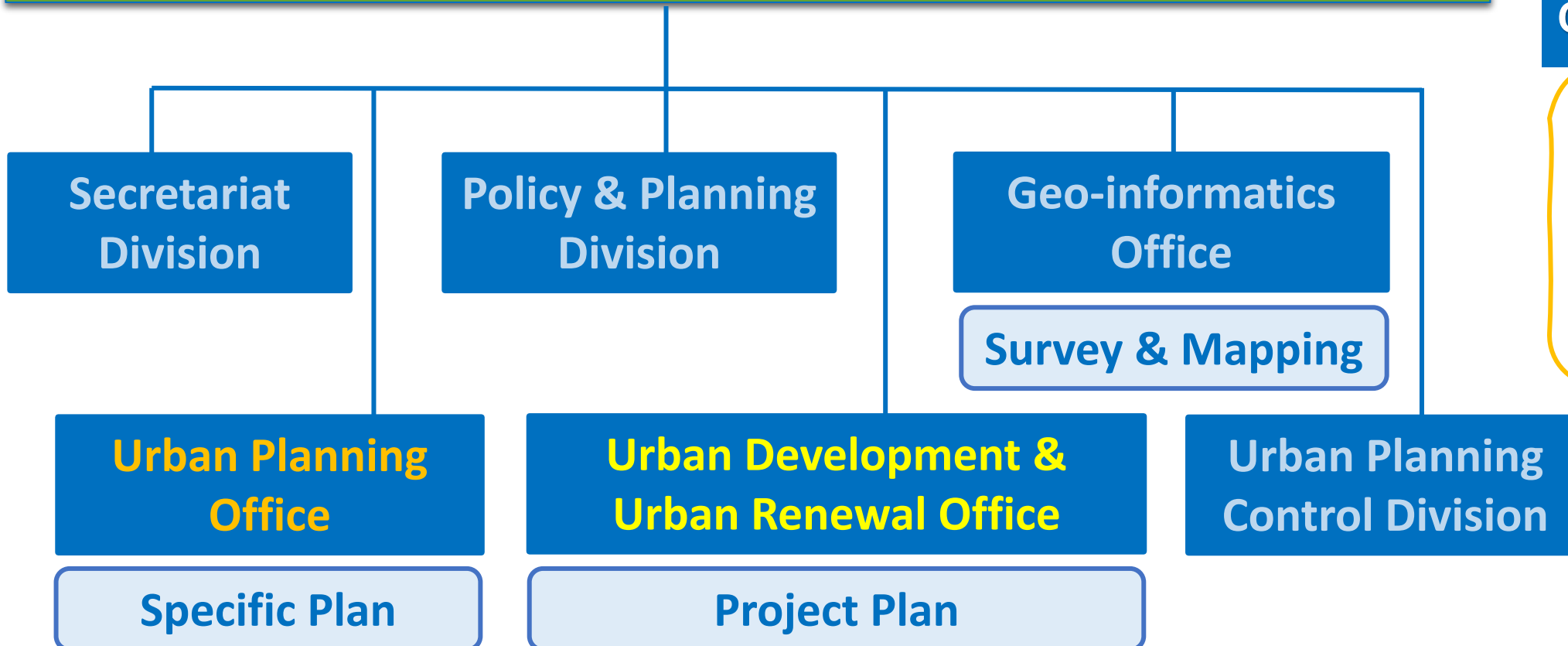
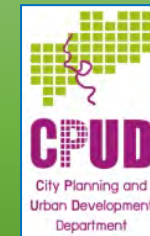
50 Administrative Districts
 6 Administrative Zones
 61 City Councilors

16 Departments
 68 Health centers
 38 Youth centers
 436 BMA schools
 600 BMA buildings

Personnel : 91,546 persons (2011)
 ➤ Officers : 22,024 persons
 ➤ Teachers : 16,042 persons
 ➤ Permanent Employees : 41,449 persons
 ➤ Temporary Employees : 12,031 persons

Challenges of Action by CPUD

Department of City Planning and Urban Development



Design for Construction Team

Survey & Mapping

Specific Plan

Project Plan



Thank YOU