



Transit Oriented Development (TOD) for African Cities

**URBAN LIVABILITY, ACCESSIBILITY
& MOBILITY FOR ALL**

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Transit Oriented Development (TOD)

for African Cities:

URBAN LIVABILITY, ACCESSIBILITY & MOBILITY FOR ALL



INTRODUCTION

Transit-oriented development (TOD) aims to integrate mixed-use development near to mass-transit facilities.

Urban compactness, walkable streets and public spaces near public transport stations characterize the implementation of a successful TOD policy.

While cities like Copenhagen, Tokyo and Hong Kong have adopted TOD model in their early urban development stages, many cities have caught up with the concept by focusing their urban densification efforts along their mass-transit networks.

Transit Oriented Development (TOD)

for African Cities:

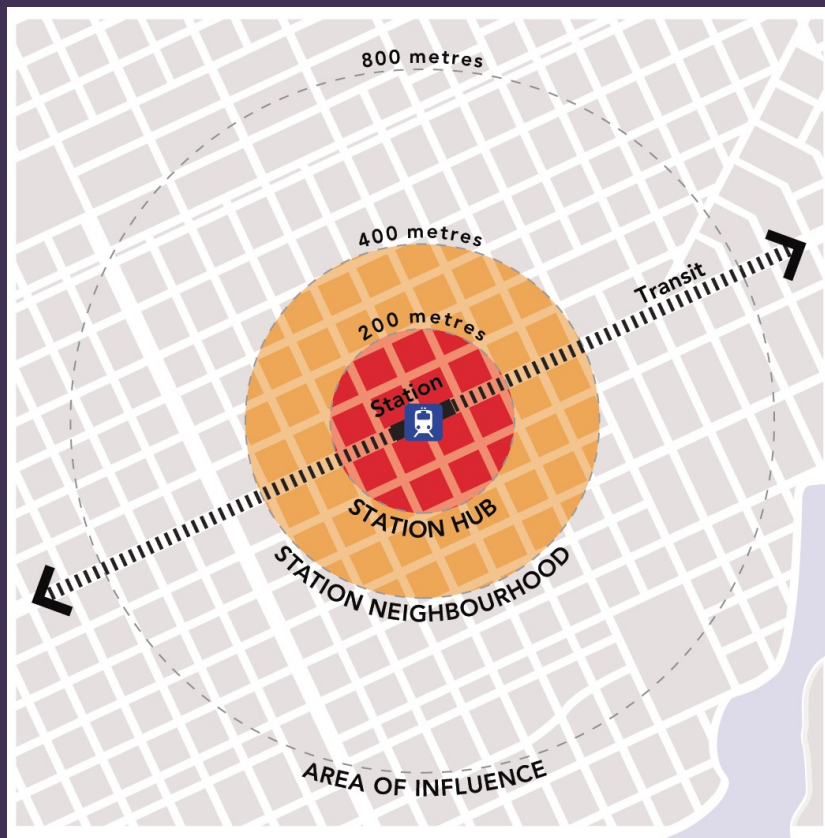
URBAN LIVABILITY, ACCESSIBILITY & MOBILITY FOR ALL



INTRODUCTION

TOD is a complex policy concept to implement, with multiple stakeholders and levels of government to involve over extensive time periods. The interpretation and policy transfer of TOD around the world has not always been successful and heavily depends on the local governance, urban planning culture and mobility trends.

Although African cities can learn from TOD policies applied in other continents, they have to build their own approach of Transit Oriented Development, by developing short-term solutions by integrating existing transport suppliers, mass-transit planning and city planning orientations with local characteristics.



The Multi-Scale & Multimodal Approach of Accessibility

Understanding the scale of TOD planning (metropolitan area > urban district > neighborhood > street) is essential to build a multimodal transport infrastructure that creates synergies between mass transit systems, local public transport, bicycles, pedestrians, cars, parking management and shared-used mobility.

The relevance of TOD in the context of African rapid urbanization:

- **Accessibility is a key factor of urban economic growth, social opportunities and human health in larger cities.**
- **The emergence of African megacities requires a development model that integrates mobility and accessibility for all, infrastructure planning and city planning.**

MAIN PRINCIPLES OF T.O.D.

walk

High quality, unobstructed pedestrian footpaths provide basic mobility for all. Furniture, landscaping elements, and active building edges transform walkways into vibrant public spaces.

▶ Leave at least 2 m of clear space to ensure that footpaths are accessible to all.

▶ Provide street trees and covered walkways to make walking pleasant even during hot months. Ensure that lighting is present to increase safety at night.

▶ Encourage active and visually permeable frontage—rather than blank compound walls—to improve safety.

▶ Use speed table crossings to reduce motor vehicle speeds.

▶ Create continuous, physically segregated cycle tracks when motor vehicle speeds are higher than 30 km/h.

cycle

Street design ensures safety for cyclists by reducing carriageway speeds or creating separate cycle tracks. A complete network, adequate shading elements, smooth surfaces, and secure cycle parking are essential.

connect

A dense network of walking and cycling routes results in short, varied, and direct connections that improve access to goods, services, and public transport.

▶ Break up large blocks by creating publicly accessible pedestrian- and cycle-only paths.

▶ Reduce the size of city blocks (consisting of one or more plots) to a hectare or less, with the longest dimension no more than 150 m.

public transport

Frequent, fast, and reliable high capacity rapid transit reduces dependence on personal motor vehicles.

▶ Create a dense network of rapid transit lines to ensure that the majority of the population has access to high quality public transport.

shift

Adequate parking fees and a reduction in the overall supply of parking create incentives for the use of public transport, walking, and cycling.

▶ Replace minimum off-street parking requirements with parking maximums.

▶ Reduce the space used for motor vehicle traffic and parking to no more than 12 per cent of the total land area.

▶ Price on-street parking to manage demand.

densify

Intensification of residential and commercial uses around high capacity rapid transit stations helps ensure that all residents and workers have access to high quality public transport.

▶ Create the highest densities within a 5 minute walk (400 m) of high capacity rapid transit stations.

▶ Plan developments with a plot-level density of at least 140 dwelling units per hectare.

mix

A diverse mix of residential and non-residential land uses reduces the need to travel and ensures activation of public spaces at all hours.

▶ Encourage diversity through a variety of built forms.

▶ Reserve at least 30 per cent of residential floor area for affordable units.

▶ Provide a horizontal and vertical mix of uses.

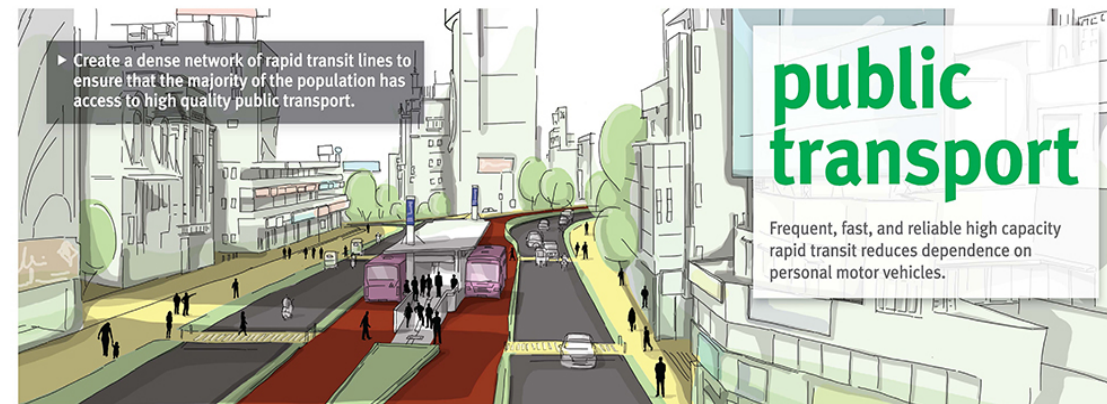
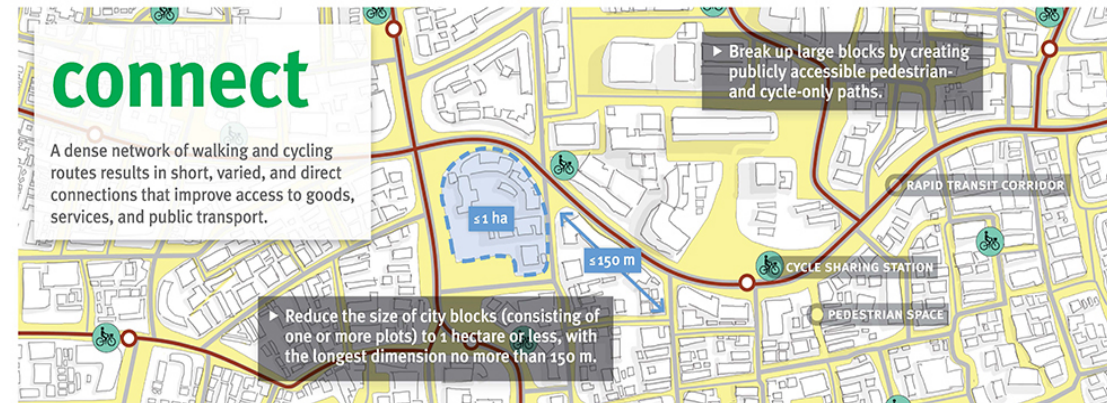
compact

Redevelopment of existing urban fabric helps ensure that residents can live close to jobs, schools, services and other destinations, resulting in reduced travel times and emissions.

▶ Centre new developments around high capacity rapid transit.

▶ Maintain commute times to employment centres at 20 min or less by public transport.

MAIN PRINCIPLES OF T.O.D.



Transit Oriented Development (TOD) represents the intricate relationship between “Transit” (the operational/ access imperative of an urban environment) and “Development” (the spatial manifestation of those that are within the urban economy).

TOD is about changing, developing and stimulating the built form of the city in such a way that the movement patterns of people and goods are optimised to create urban efficiencies and enable social equality and economic development.

1. the case of TOKYO

32 Million People

Japan

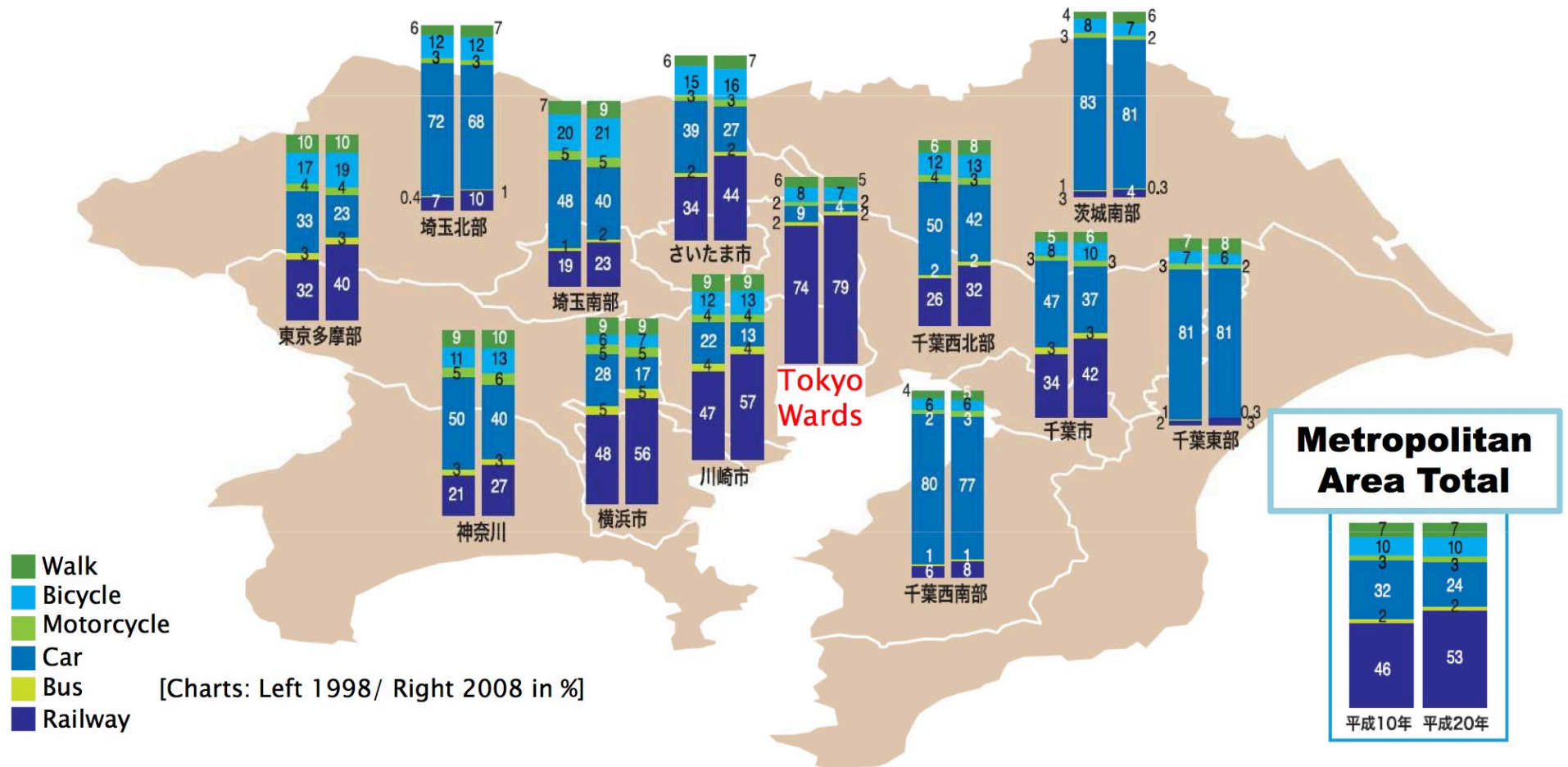
How can people move in Tokyo, the world largest metropolitan area of +30 Million population?



1. the case of TOKYO

Tokyo is highly reliant on public transport

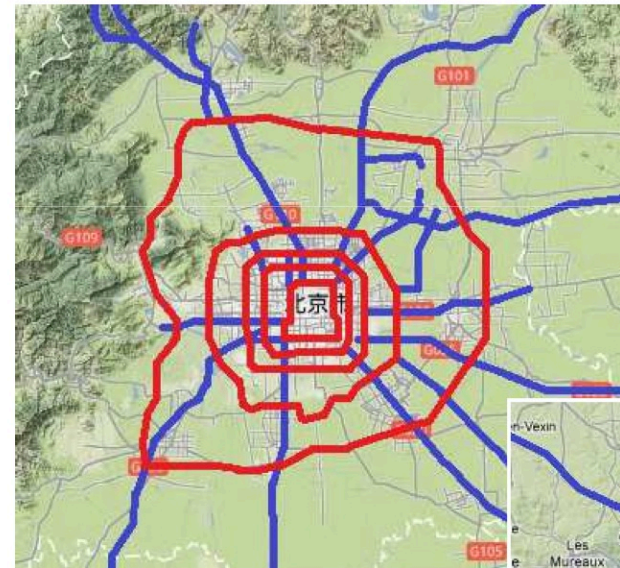
Modes of Commute Travel in Tokyo Metropolitan Area(2008 and 1998)



Even as the metropolitan area (35M population), more than 50% of commuters take railway. The figure is about 80% within the wards of Tokyo (8M population).

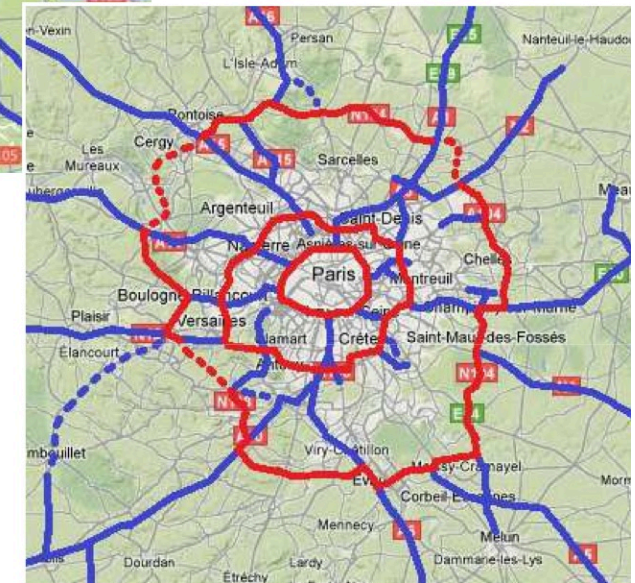
1. the case of TOKYO

Tokyo's road network is poor compared with other cities in the world

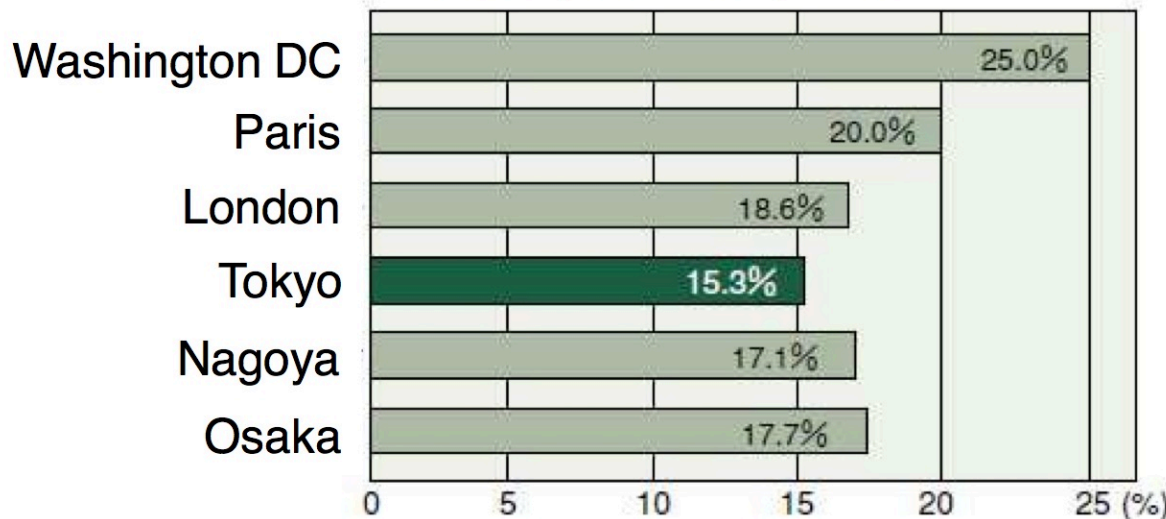


Beijing

Paris



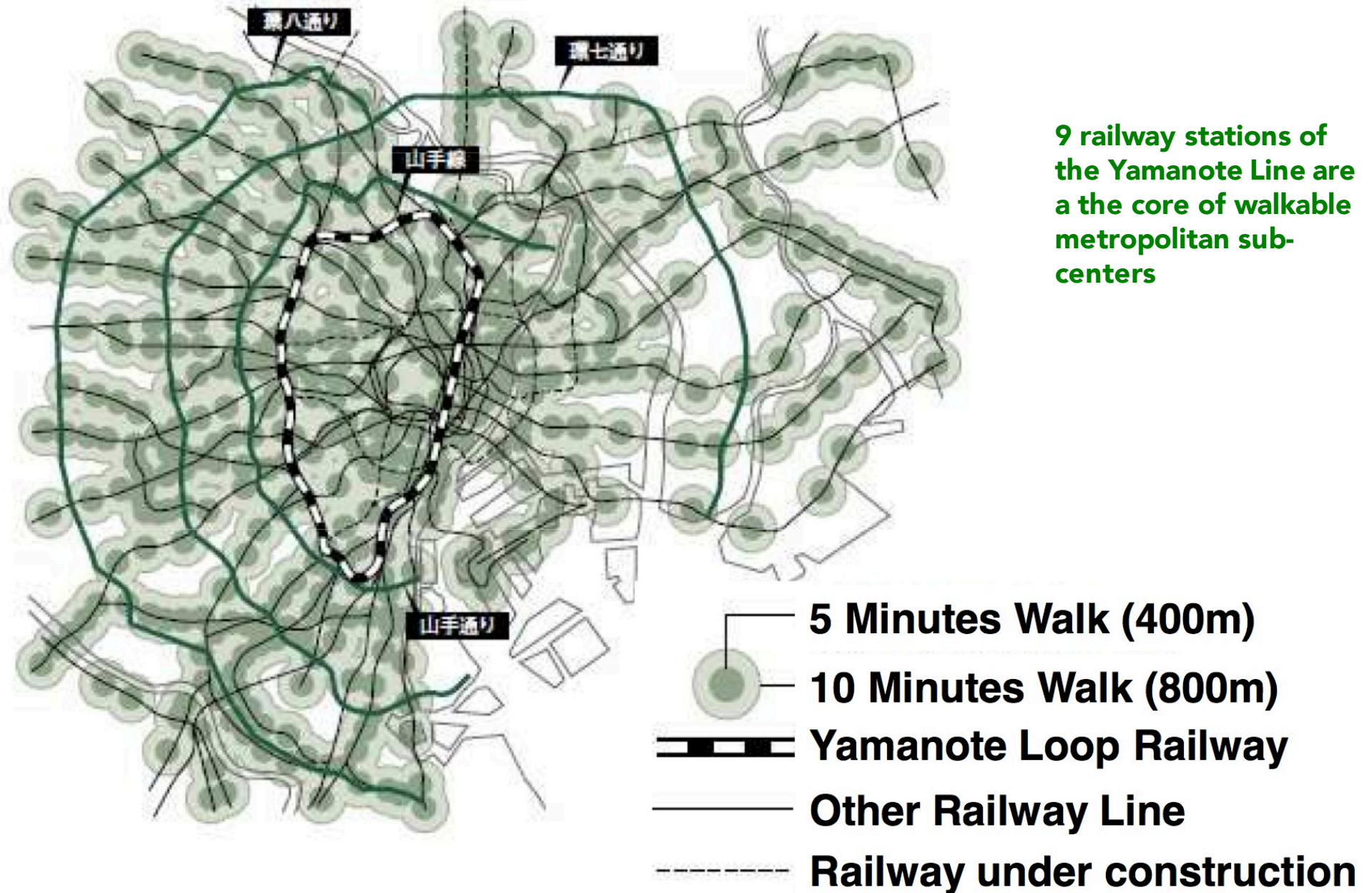
Road Space / City Area



In its early development stage, Tokyo decided to give priority to the construction of railways and a dense network of public transport services.

1. the case of TOKYO

RAILWAY CATCHMENT IN DOWNTOWN TOKYO
Inside the Yamanote Loop Line (35 km, 29 stations),
everywhere is within walking distance from station

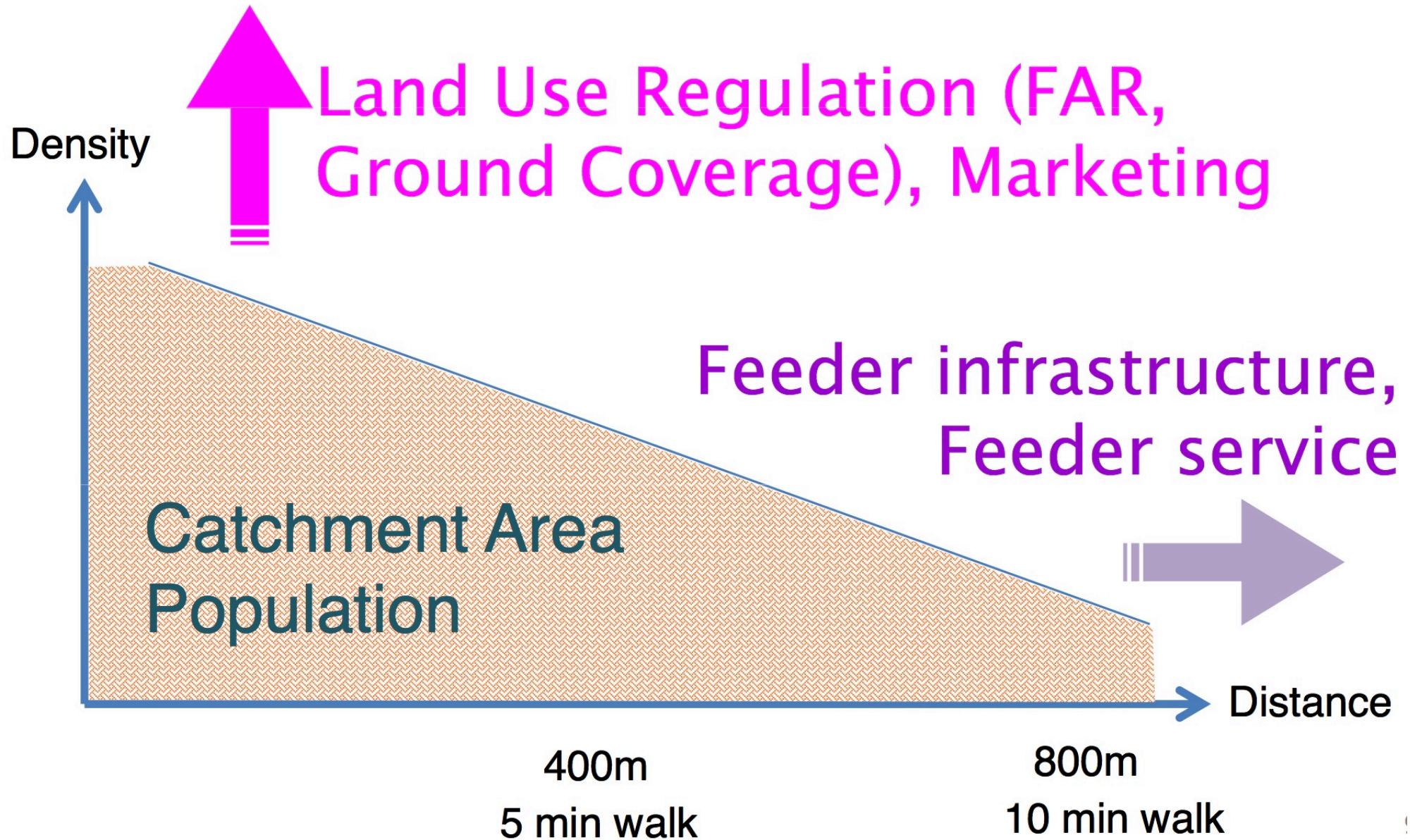


1. the case of TOKYO

TOD Density Model

What determines the CATCHMENT POPULATION?

URBAN POPULATION DENSITY IS PROPORTIONAL TO PUBLIC TRANSPORT ACCESSIBILITY



1. the case of TOKYO

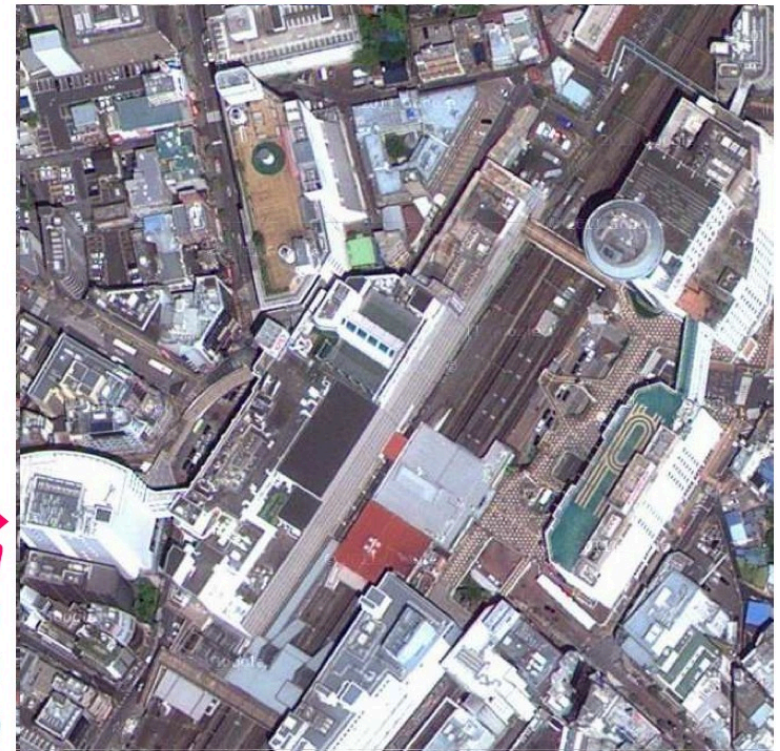
CONNECTIVITY: "Station Plaza" Development

Station plaza provides not only better interchange between different modes but also a city center



Rockville Station

Maryland, USA
Metro, Marc, Amtrak
40- min to Union Sta.



Kashiwa Station

Chiba, Japan
JR, Tobu
40+ min to Tokyo
Sta.

300m

300m

Kashiwa Station Plaza



Elevated walkway w/ open space connecting adjacent buildings



Cars, buses and taxis at grade



Venue for local festivals

2. the case of COPENHAGEN

1.3 Million people

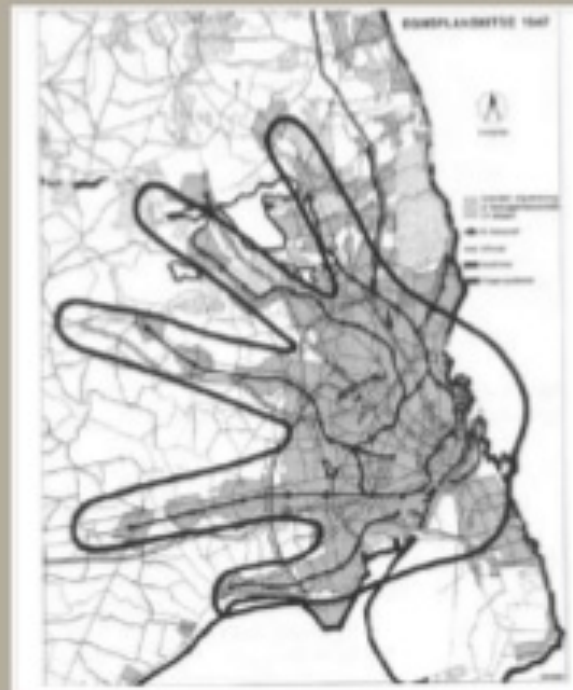
Denmark

50 YEARS OF TOD PLANNING WITH THE FINGER PLAN

Copenhagen implemented a policy of urbanization oriented to its urban railway and public transport system, and preserving other areas (in between) from urbanization.

The Fingers Plan

- 1947
- Development strategy where each finger is a metropolitan area focused on a branch of the Copenhagen S-train.
- Palm of the “hand” is the central, dense urban area of Copenhagen.
- Is still the basis of regional transportation almost 60 years later.



2. the case of COPENHAGEN

50 YEARS OF TOD PLANNING WITH THE FINGER PLAN

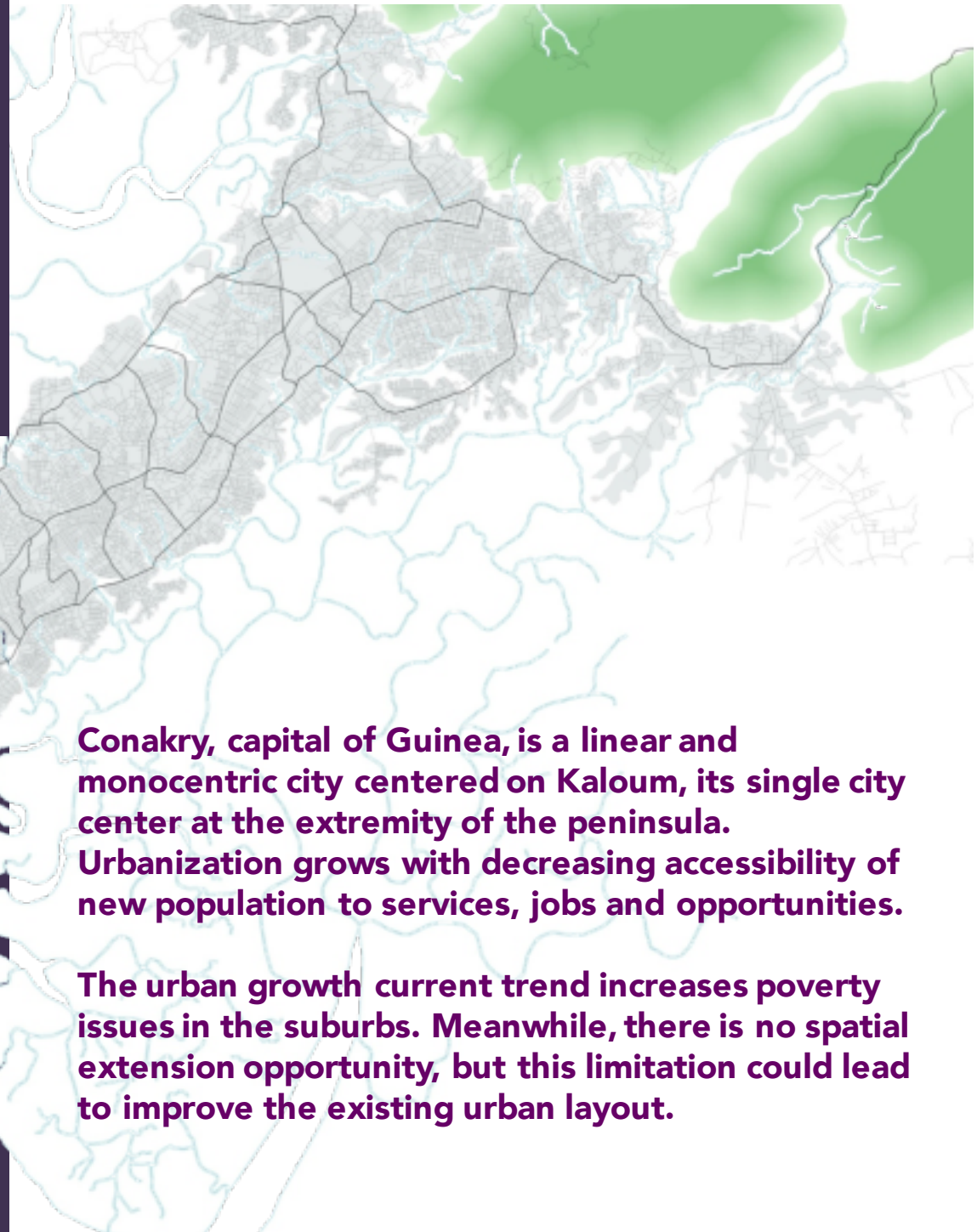
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A Practical Case of T.O.D.

Planning in Africa:

The case of Conakry, Guinea

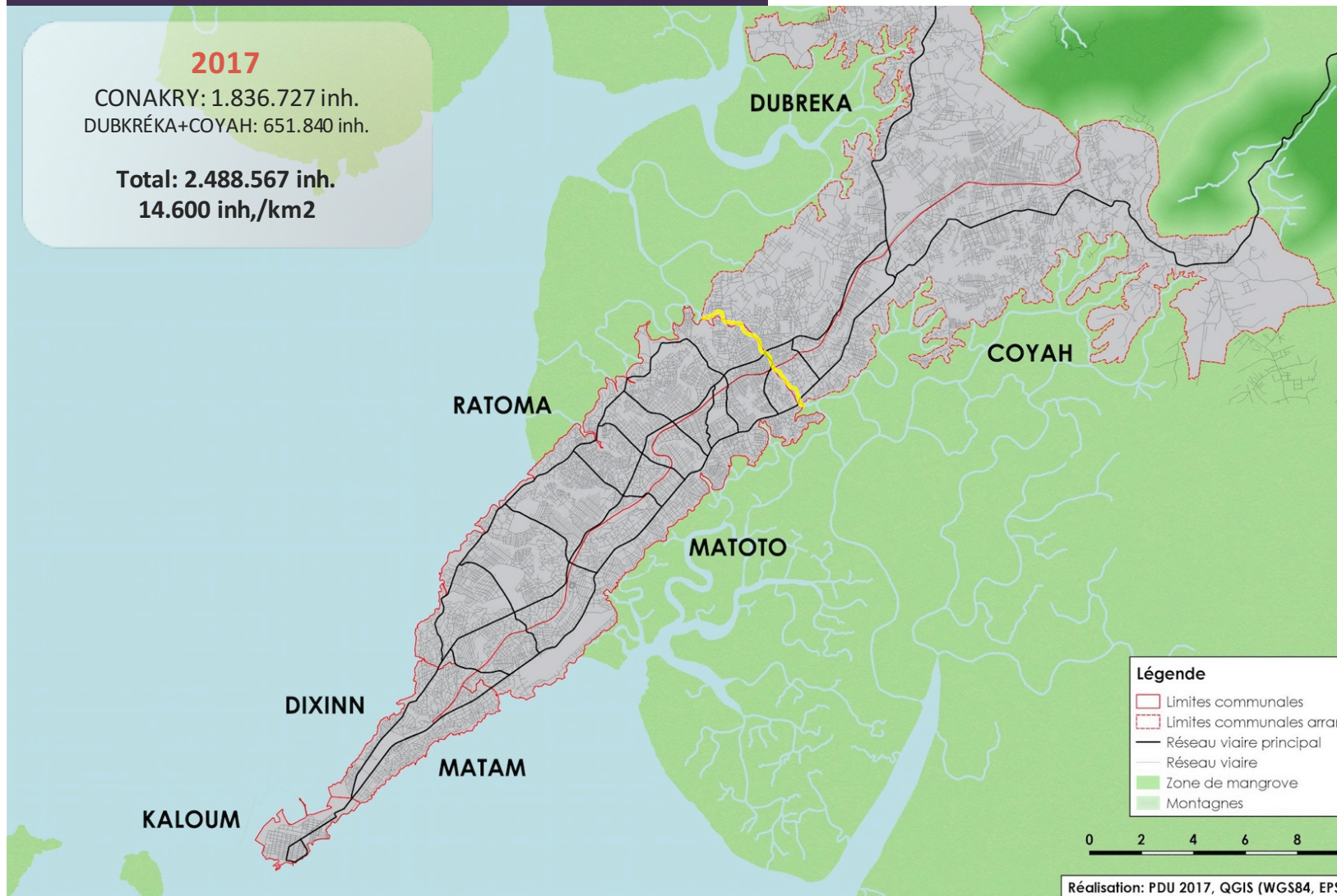


Conakry, capital of Guinea, is a linear and monocentric city centered on Kaloum, its single city center at the extremity of the peninsula. Urbanization grows with decreasing accessibility of new population to services, jobs and opportunities.

The urban growth current trend increases poverty issues in the suburbs. Meanwhile, there is no spatial extension opportunity, but this limitation could lead to improve the existing urban layout.

A Practical Case of T.O.D. Planning in Africa: The case of Conakry, Guinea

Population and density projection show the emergency of a strategic urban development policy focusing on the existing agglomeration.



- **URBAN AREA OF CONAKRY**
- **CONAKRY, DUBREKA & COYAH**
- **PROJECTED POPULATION :**

2020
 2.750.000 inh.
 16.175 inh./km²

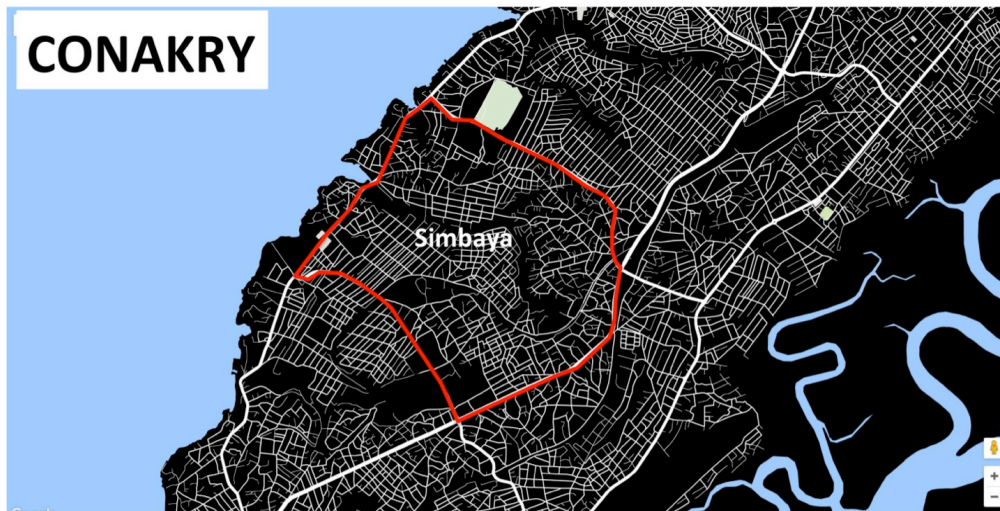
2025
 3.300.000 inh.
 19.400 inh./km²

2035
 4.400.000 inh.
 26.000 inh./km²

2040??
 5.400.000 inh.
 31.500 inh./km²

A Practical Case of T.O.D. Planning in Africa:
The case of Conakry, Guinea

The city of Conakry also lacks of secondary arteries and streets that could secure the accessibility of population in the informal neighbourhoods.



A Practical Case of T.O.D. Planning in Africa: The case of Conakry, Guinea

It is proposed to combine a Bus Rapid Transit network, a reinforced Railway line and the development of walkable and accessible neighbourhoods around public transport stations.

SCENARIO BRT

PHASE 02 (4 lignes)



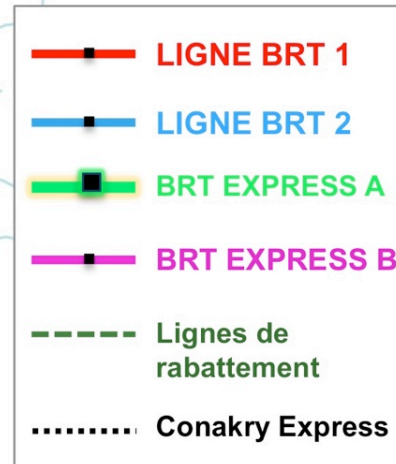
Lignes Bus de rabattement

LIGNE BRT 2

KALOUM

SONFONYA

LIGNE BRT 1



RÉSEAU BUS RAPID TRANSIT

PHASE 02:

+ LIGNE BRT 02

Kaloum – Sonfonya
(Route de Donka, Route Le Prince)

→ 20 kilomètres

→ 28 stations BRT

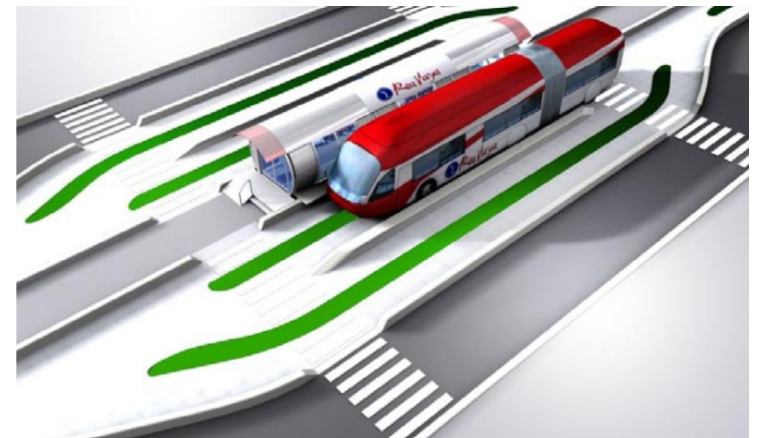
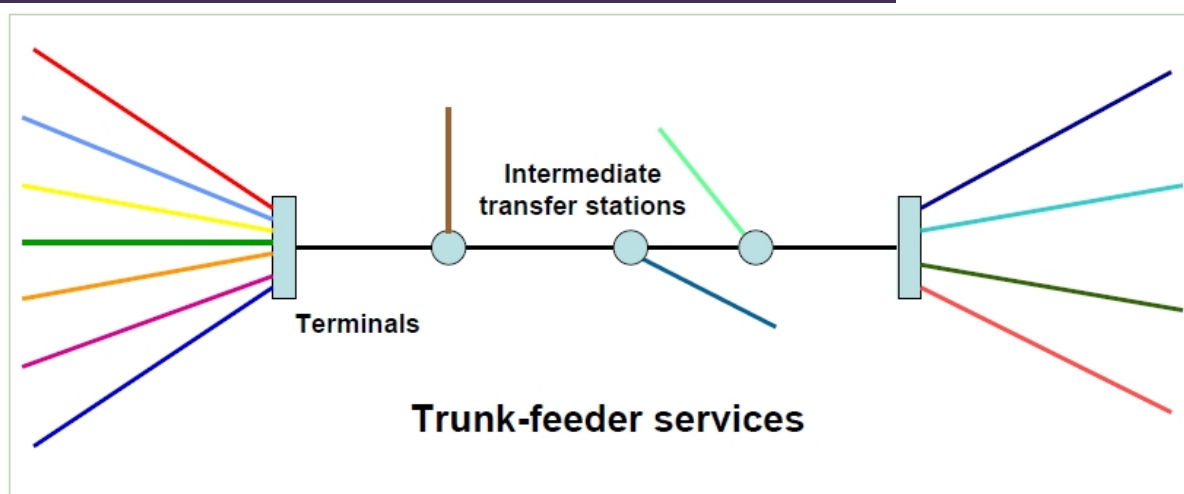
+ Ligne de Rabattement

A Practical Case of T.O.D. Planning in Africa:

The case of Conakry, Guinea

The flexibility of the BRT system allows to combine local, inter-district and express lines.

This model multiplies the level of accessibility to all urban population in a linear city, as long as stations are well connected to communities around.





DUBREKA

COYAH

RATOMA

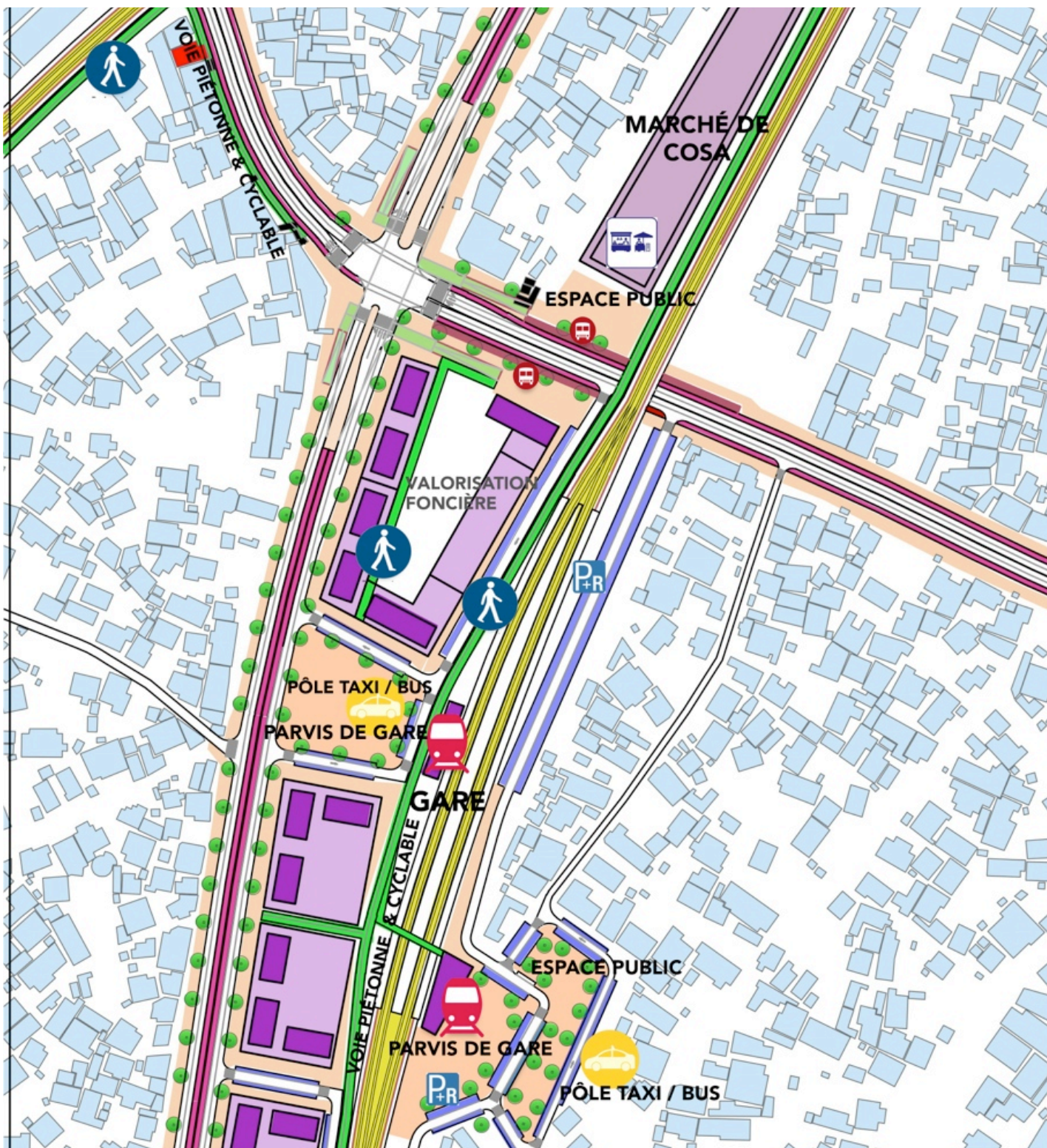
MATOTO

DIXINN

MATAM

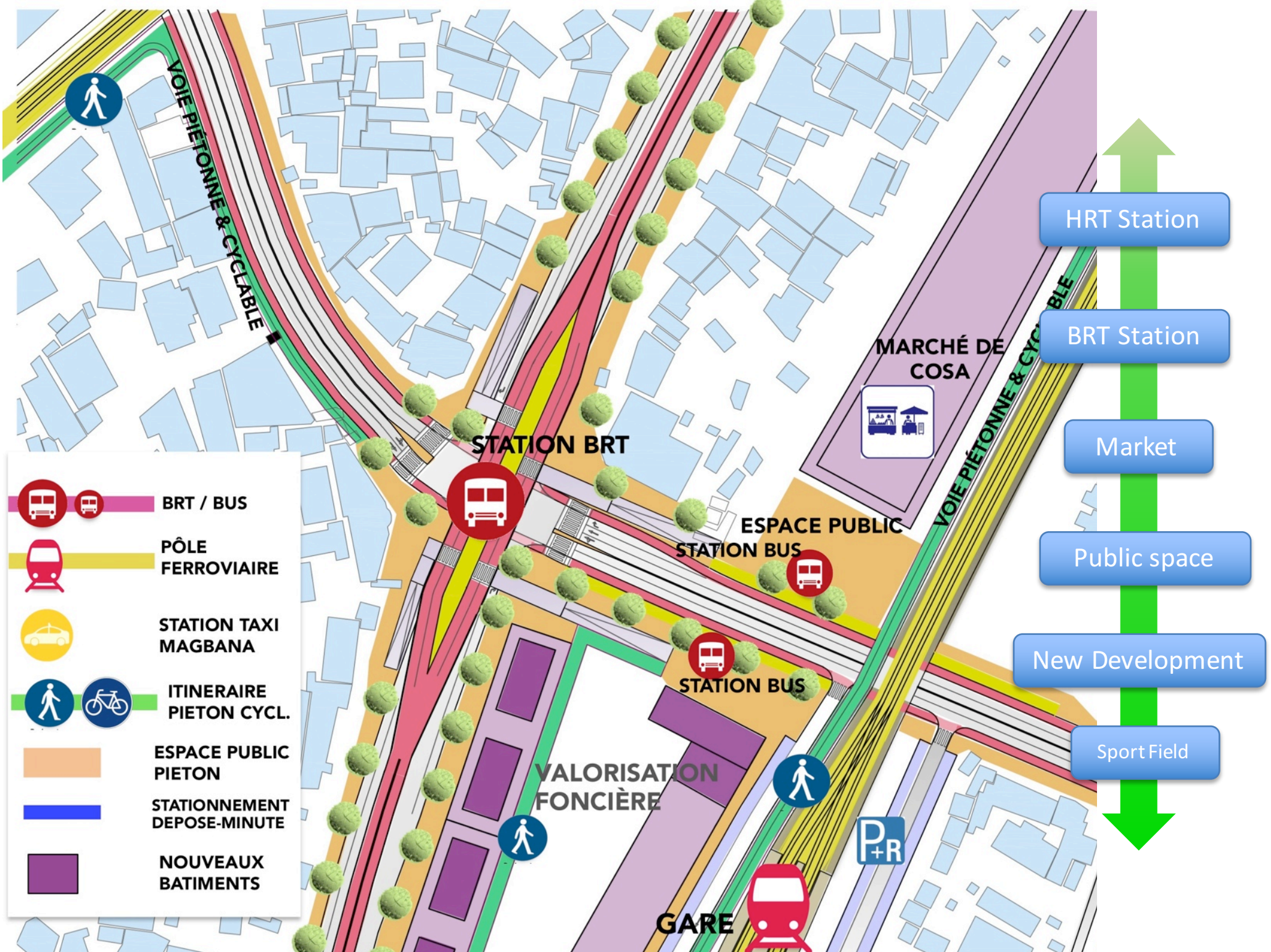
KALOUM

9 Pedestrian & Cycling Highways are planned on 65 km to accompany the development of the public transport infrastructure



At the micro-level, Urban development, pedestrian accessibility and public transport infrastructure are all integrated.

Multimodal connections and real estate development are planned together to create a virtuous circle of urban economy.



HRT Station

BRT Station

Market

Public space

New Development

Sport Field

MARCHÉ DE COSA

STATION BRT

ESPACE PUBLIC
STATION BUS







STATION BUS

VALORISATION
FONCIÈRE

GARE

VOIE PIÉTONNE & CYCLABLE

VOIE PIÉTONNE & CYCLABLE

-  BRT / BUS
-  PÔLE FERROVIAIRE
-  STATION TAXI MAGBANA
-  ITINÉRAIRE PIÉTON CYCL.
-  ESPACE PUBLIC PIÉTON
-  STATIONNEMENT DÉPOSE-MINUTE
-  NOUVEAUX BATIMENTS



THANK YOU FOR YOUR ATTENTION

