



TONGJI UNIVERSITY

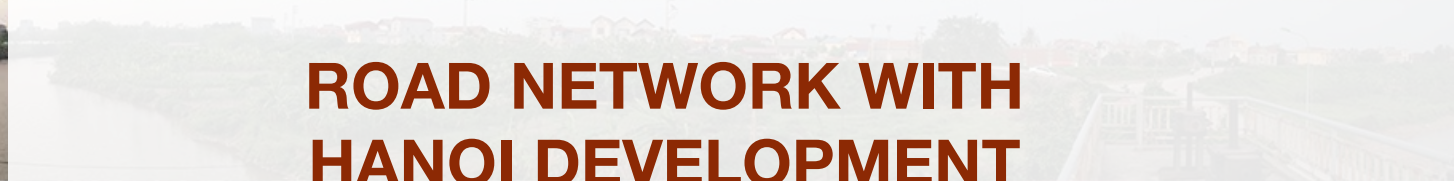


ROAD IN THE DEVELOPMENT OF HANOI WESTERN-PERIURBAIN AREAS CHALLENGES AND ISSUES CASE STUDY OF NATIONAL ROAD 32

NGUYEN Tien Tam

PhD student, international cotutelle
Hanoi Architecture University
Bordeaux Montaigne University

Shanghai, 10 november 2018



ROAD NETWORK WITH HANOI DEVELOPMENT

HANOI MASTER PLAN EVOLUTION

Master plan of 1954-1960
The city will mostly develop over the right bank (hữu nghị) of Red river

1954
152 km²
0.44 million
habs



1954

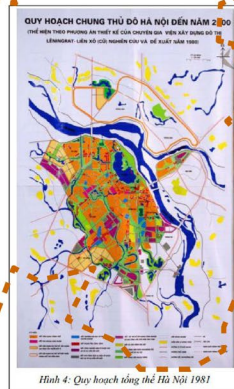
Master plan of 1960-1964
Hanoi tent to reach the other side of Red river, but very modestly



1960

1961
586 km²
0,9 million
habs

Master plan to 2000
Hanoi's back to the strategy of developing over the right bank

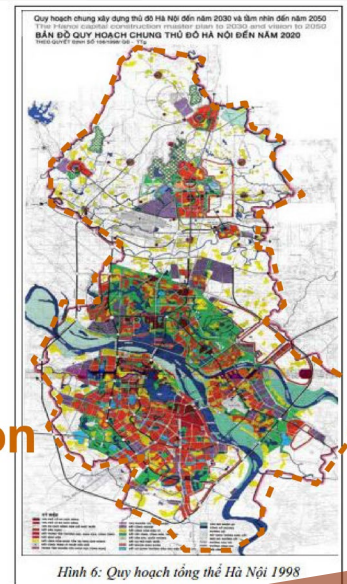


1981

1978
2.123 km²
2.5 million habs

1991
922 km²
2.05 million
habs

Hanoi seek to enlarge its urban center over the northern side of Red river

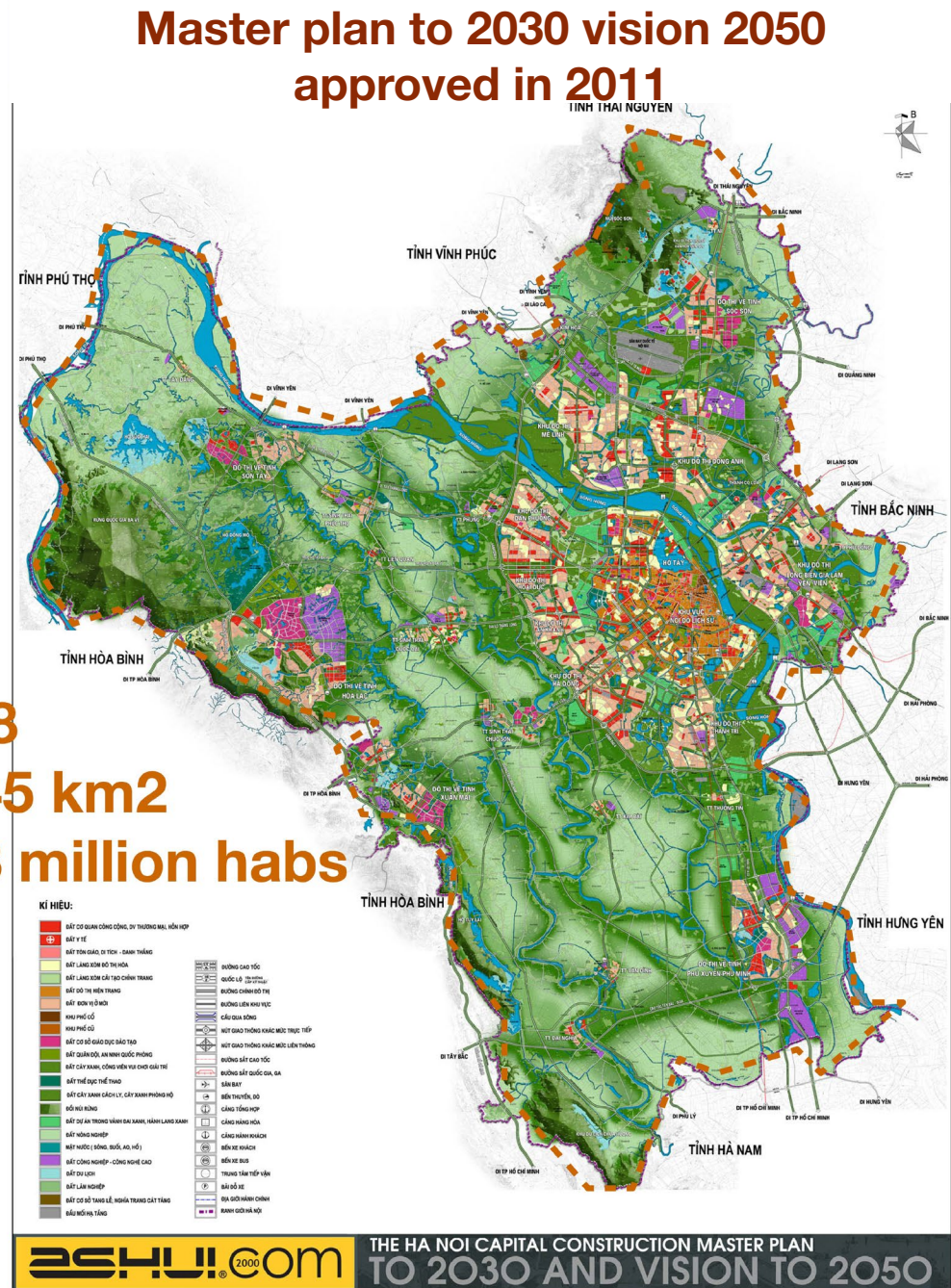


1998

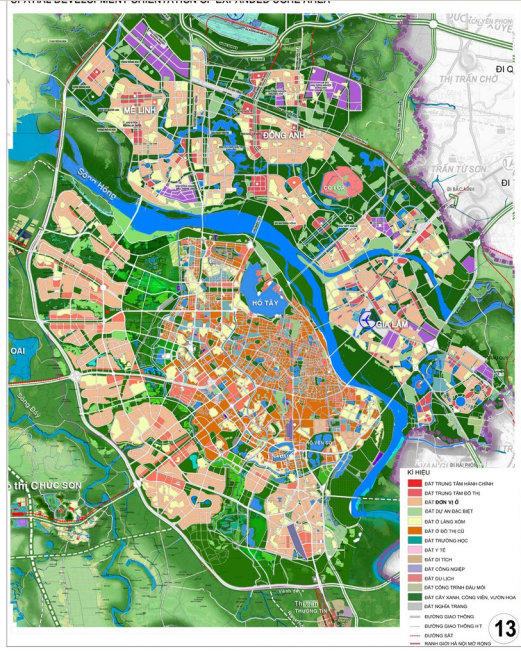
Master plan of 1998 is revised for a vision of 2010

1991
922 km²
2.05 million
habs





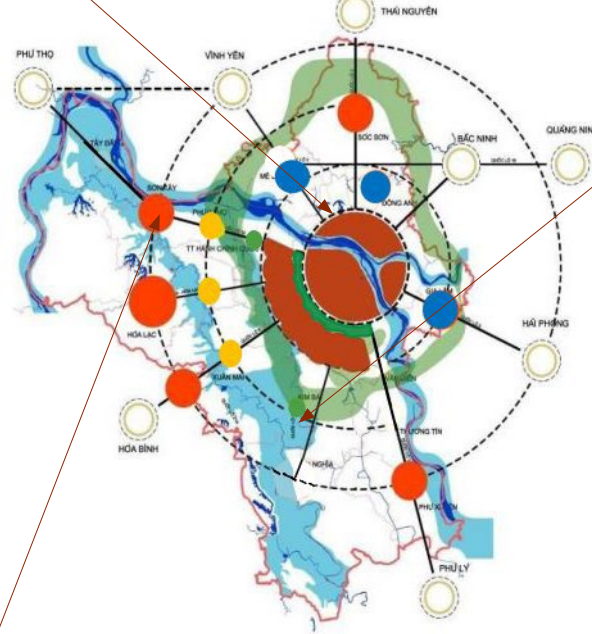
HOW DO WE BUILD THE FUTURE METROPOLIS?



Urban (30%)



ARCHIPELAGO CITY



Green corridor (70%)



**Taux d'accroissement de la population entre 1999 et 2009
dans la province de Hà Nội au maillage communal**

Phước Thọ
Vĩnh Phúc
Hà Nội
Hàng Yên
Hà Bắc
Hà Nam

Limite de province
Limite de commune

Hà Nam

Accroissement de la population

- De 24,62 à 34,62
- De 1,81 à 2,67
- De 0,71 à 1,80
- De moins 0,67 à 0,72
- De moins 0,36 à moins 0,67
- Non recensé

Source : recensements de la population de 1999 et 2009
Copyright : J. Fournier

Parcs, zones et sites industriels dans les districts de Hà Nội en 2008-2009

The map shows the districts of Phúc Thọ, Vĩnh Phúc, Bắc Giang, and Hà Nội. Industrial parks and sites are marked with red squares and circles. The map also shows the Red River and the Hanoi Ring Road.

[illegible][illegible]An aerial photograph showing a road network and surrounding land use. The image is divided into two main sections by a vertical line. The left section shows a road with a median and some greenery. The right section shows a road with a median and some greenery. The text 'Road system and land use evolutions in 2011' is overlaid on the bottom right of the image.

Road system and land use evolutions in 2011

CHỈ CHỮ

	Quốc lộ
	Cao tốc
	Quốc lộ biểu diễn
	Thị trấn
	Đường quốc gia biểu diễn
	Thị trấn biểu diễn
	Đường quốc gia
	Đường quốc gia cũ
	Cao tốc mở thông
	Đường trục chính mở thông
	Đường trục mở thông
	Đường liên khu vực
	Đường quốc gia mở thông
	Đường sắt mở thông

CHỈ CHỮ

	Quốc lộ
	Cao tốc
	Quốc lộ biểu diễn
	Thị trấn
	Đường quốc gia biểu diễn
	Thị trấn biểu diễn
	Đường quốc gia
	Đường quốc gia cũ
	Cao tốc mở thông
	Đường trục chính mở thông
	Đường trục mở thông
	Đường liên khu vực
	Đường quốc gia mở thông
	Đường sắt mở thông

IMPORTANT INVESTMENT

ROAD NETWORK PERSPECTIVE

Construction

- Beltway No 4 (148 km) et No 5 (375 km)
- Urban road which connect satellite towns with the city center (90 km)

Upgrade

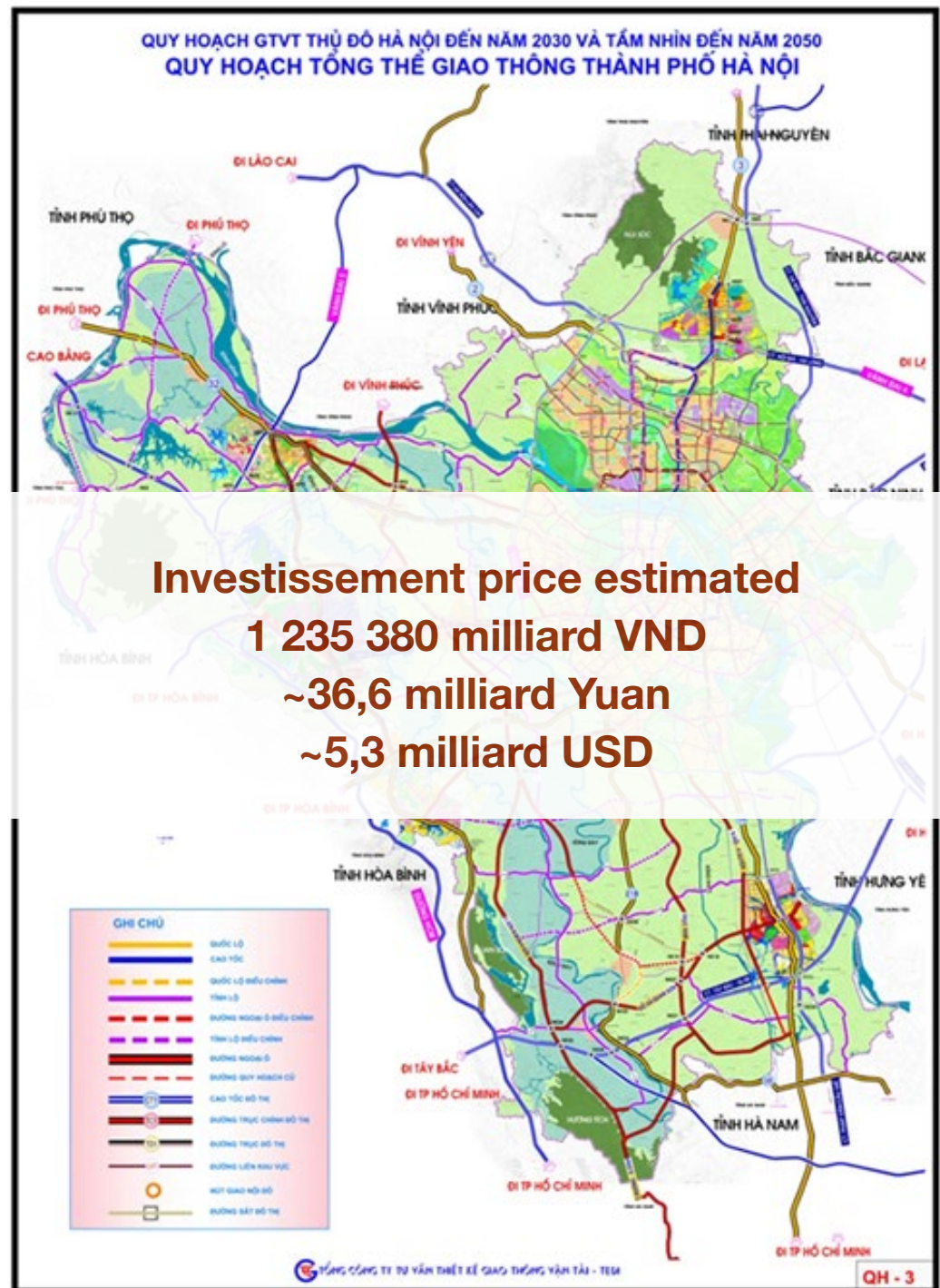
- Current urban road network (336 km)

Bridges

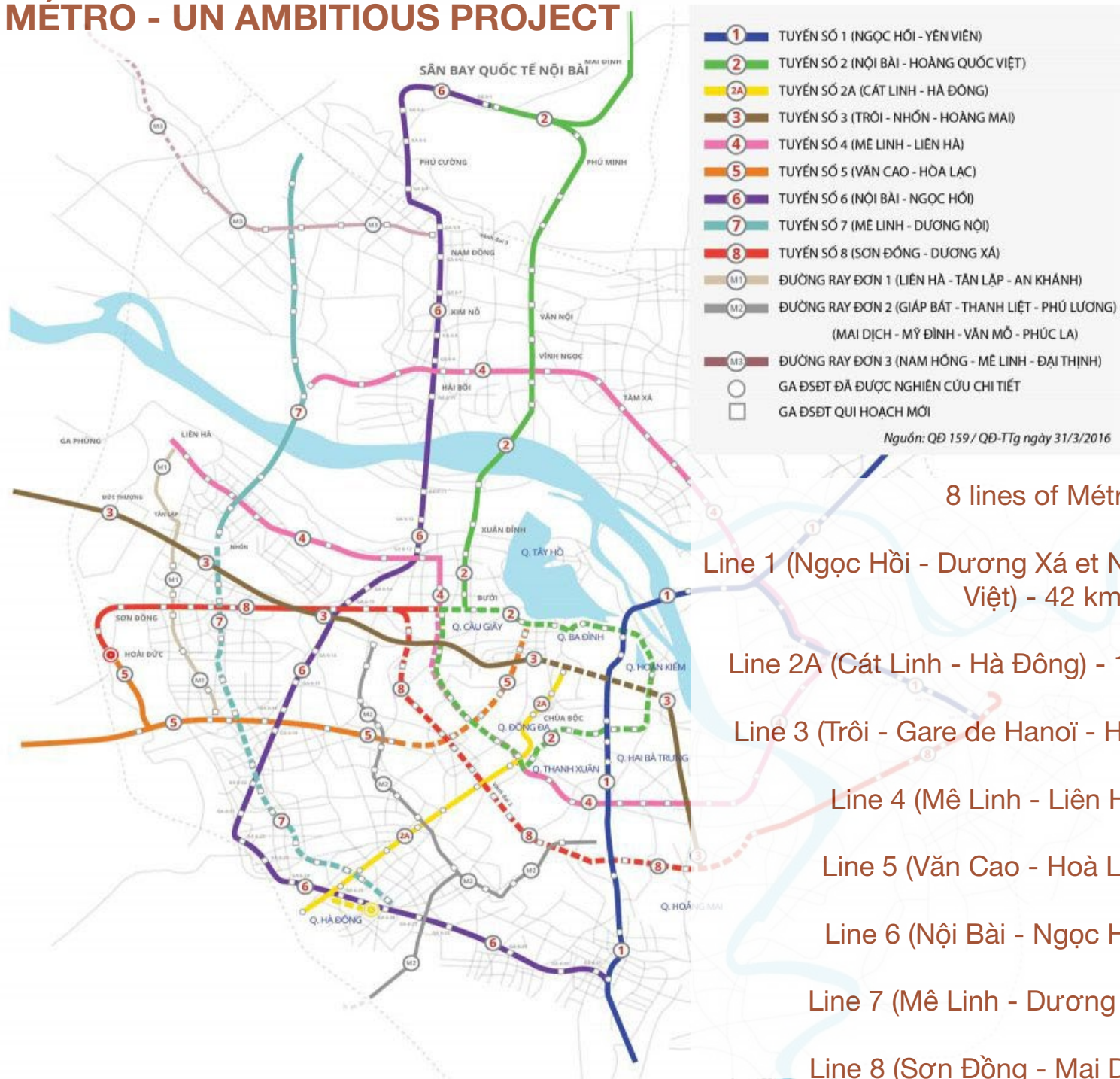
- 8 bridges on Đuống river, 4 news, 4 upgrade from existing ones
- 5 new road-rail bridges on Red river

PUBLIC TRANSPORT PERSPECTIVE DU

- In 2030, 50-55% of urban mobility will be charged by public transport, bus 30%, Métro 20-25%.
- Put in service un complete network of Bus, High Quality Bus (BRT), Métro



LE MÉTRO - UN AMBITIOUS PROJECT



8 lines of Métro

Line 1 (Ngọc Hồi - Dương Xá et Nội Bài - Hoàng Quốc Việt) - 42 km

Line 2A (Cát Linh - Hà Đông) - 14 km - en chantier

Line 3 (Trôi - Gare de Hanoi - Hoàng Mai) - 26 km

Line 4 (Mê Linh - Liên Hà) - 54 km

Line 5 (Văn Cao - Hoà Lạc) - 39 km

Line 6 (Nội Bài - Ngọc Hồi) - 37 km

Line 7 (Mê Linh - Dương Nội) - 28 km

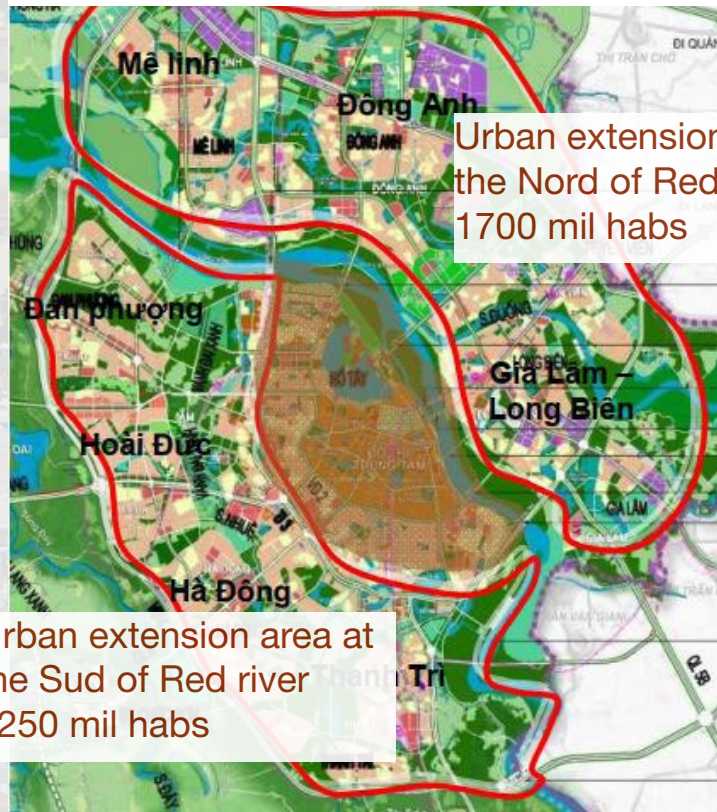
Line 8 (Sơn Đồng - Mai Dịch) - 37 km



ROAD DEVELOPMENT IN HANOI WESTERN-PERIURBAN AREAS CHALLENGES AND ISSUES

MÉTROPOLISATION IN WESTERN AREAS

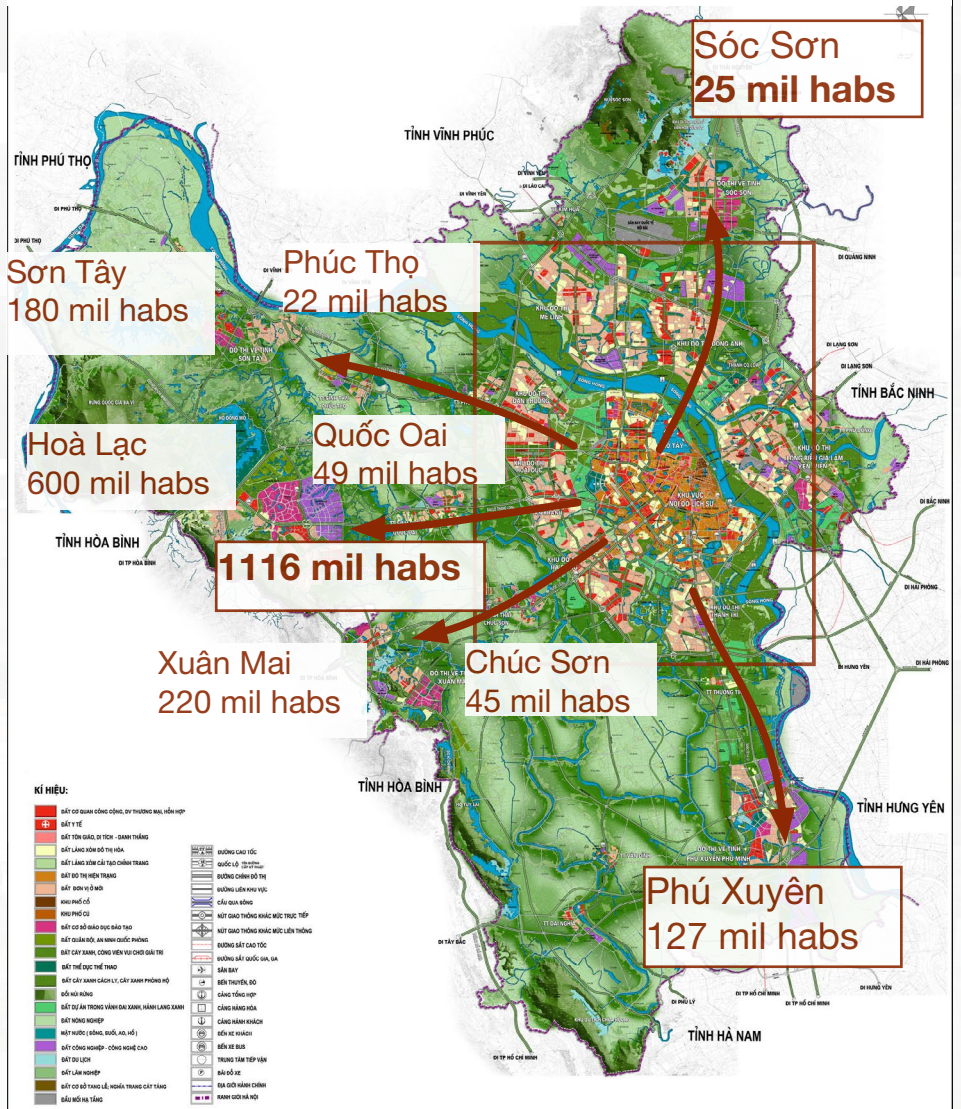
POPULATION DISTRIBUTION IN EXTENDED AREAS OF URBAN CENTER



Urban extension area at the Sud of Red river
1250 mil habs

Urban extension area at the Nord of Red river
1700 mil habs

POPULATION DISTRIBUTION IN SATELLITE TOWNS MASTER PLAN FOR 2030



INFRASTRUCTURE - LEVER OF DEVELOPMENT

NATIONAL ROAD NO 32. EXEMPLARY CASE STUDY OF CHALLENGES AND ISSUES

PROJECT MANAGEMENT?

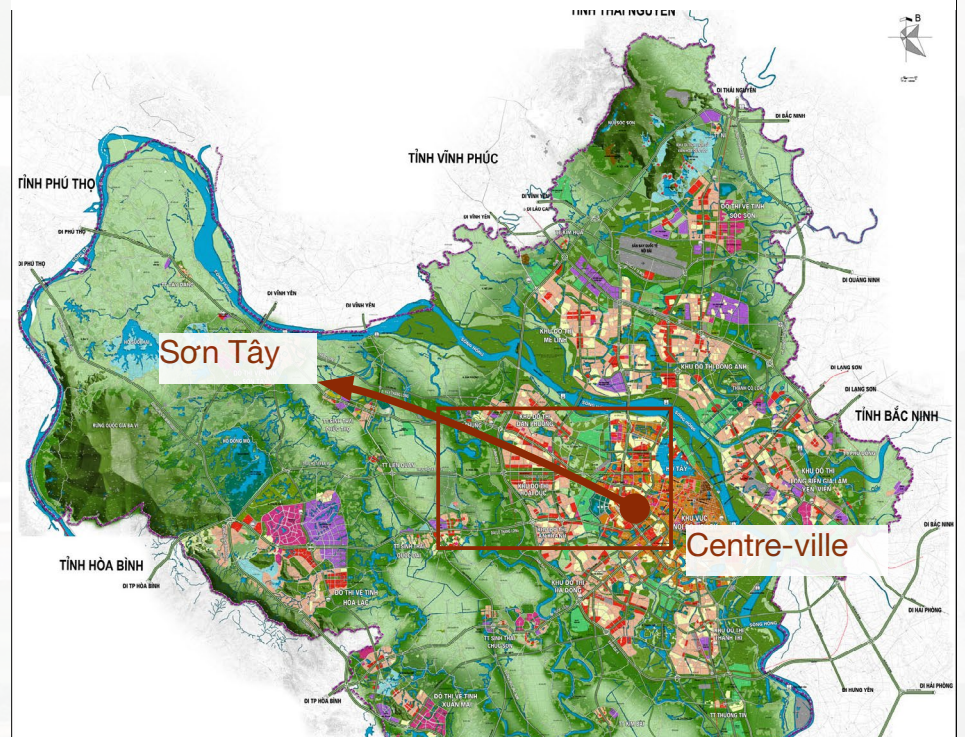
MÉTRO LINE NO 3 NHỎN - HANOI GARE



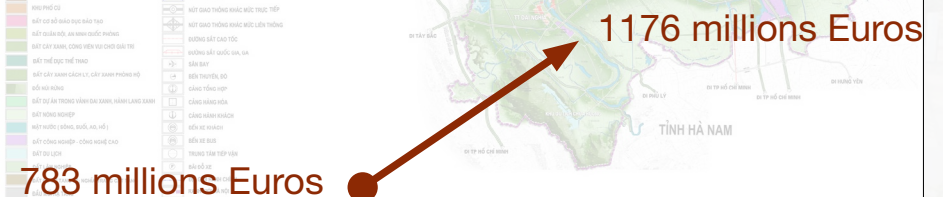
Changes of «Starting - Ending» date



IMPORTANT DEVELOPMENT AXIS



Change of investissement price

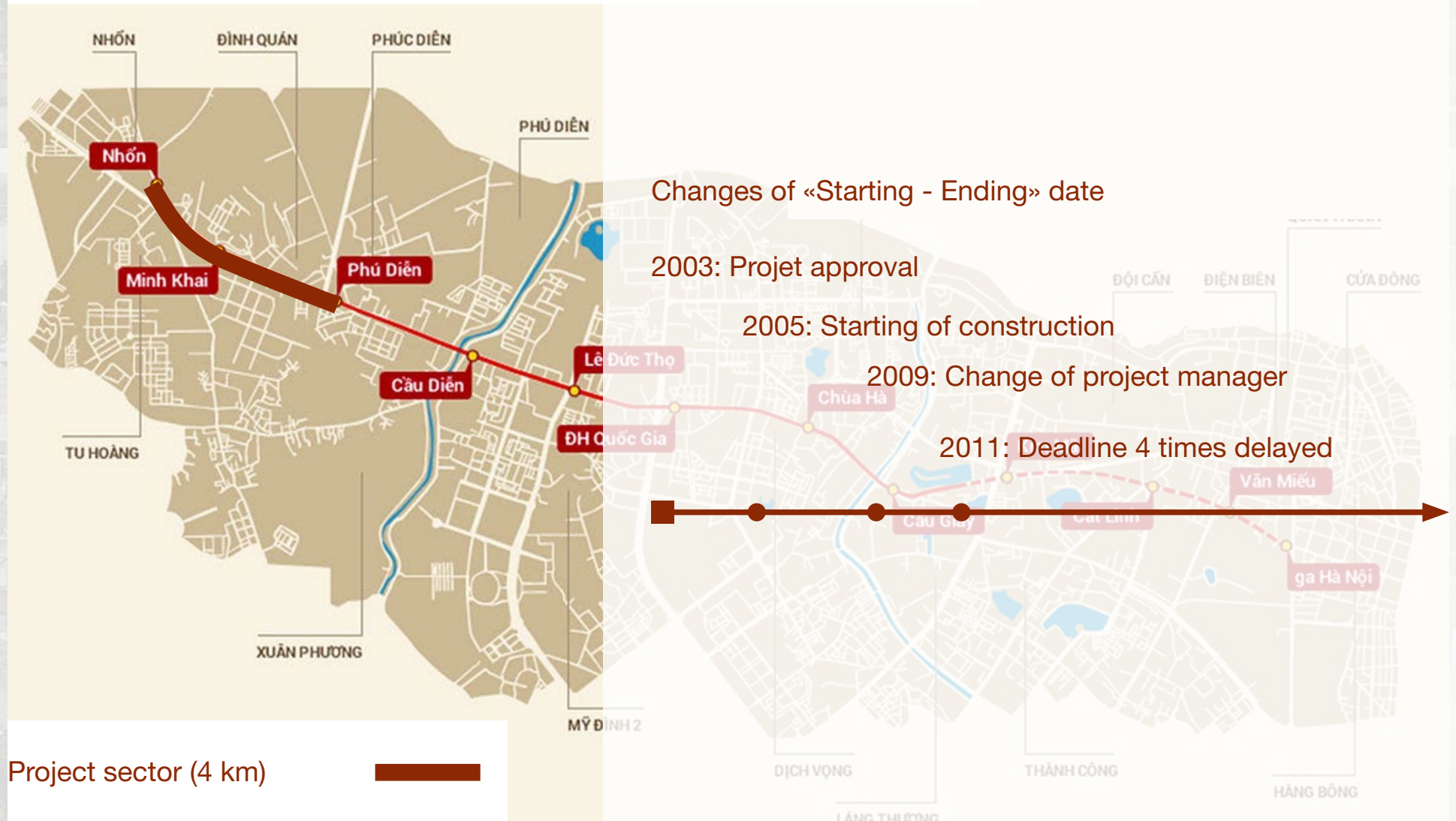


INFRASTRUCTURE - LEVER OF DEVELOPMENT

NATIONAL ROAD NO 32. EXEMPLARY CASE STUDY OF CHALLENGES AND ISSUES

PROJECT MANAGEMENT?

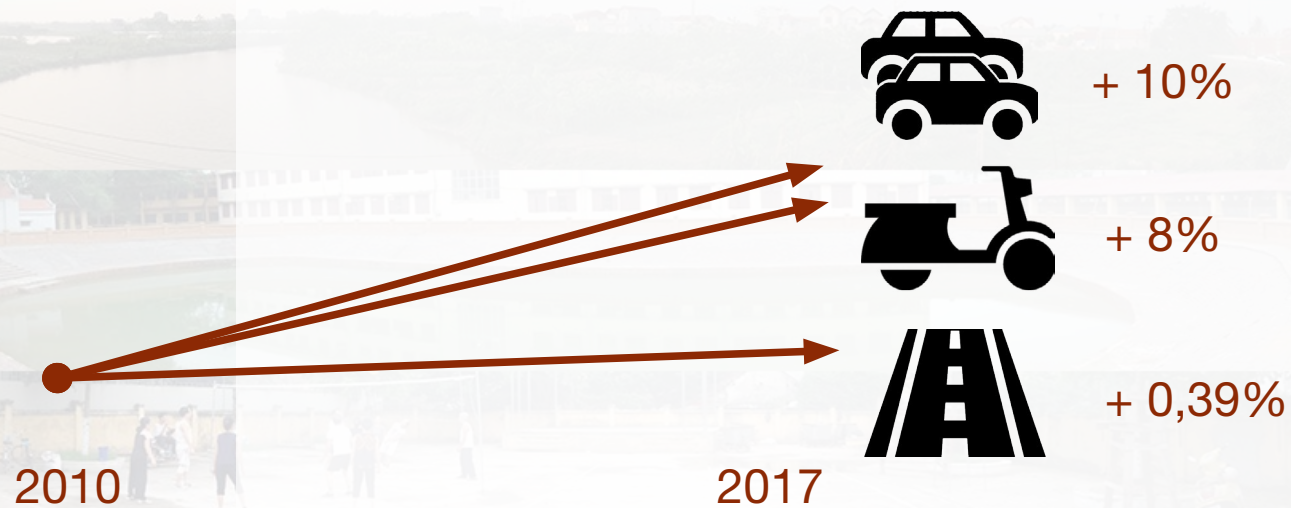
UPGRADE PROJECT OF NATIONAL ROAD 32 (CẦU ĐIỂN - NHỐN)



INFRASTRUCTURE - LEVER OF DEVELOPMENT

NATIONAL ROAD NO 32. EXEMPLARY CASE STUDY OF CHALLENGES AND ISSUES

GROWTH RATE OF VÉHICULES VS ROA



Hanoi

Economic damage because of traffic: 1-1,2 milliard USD/year

Lost of work time: > 1 million hours/year

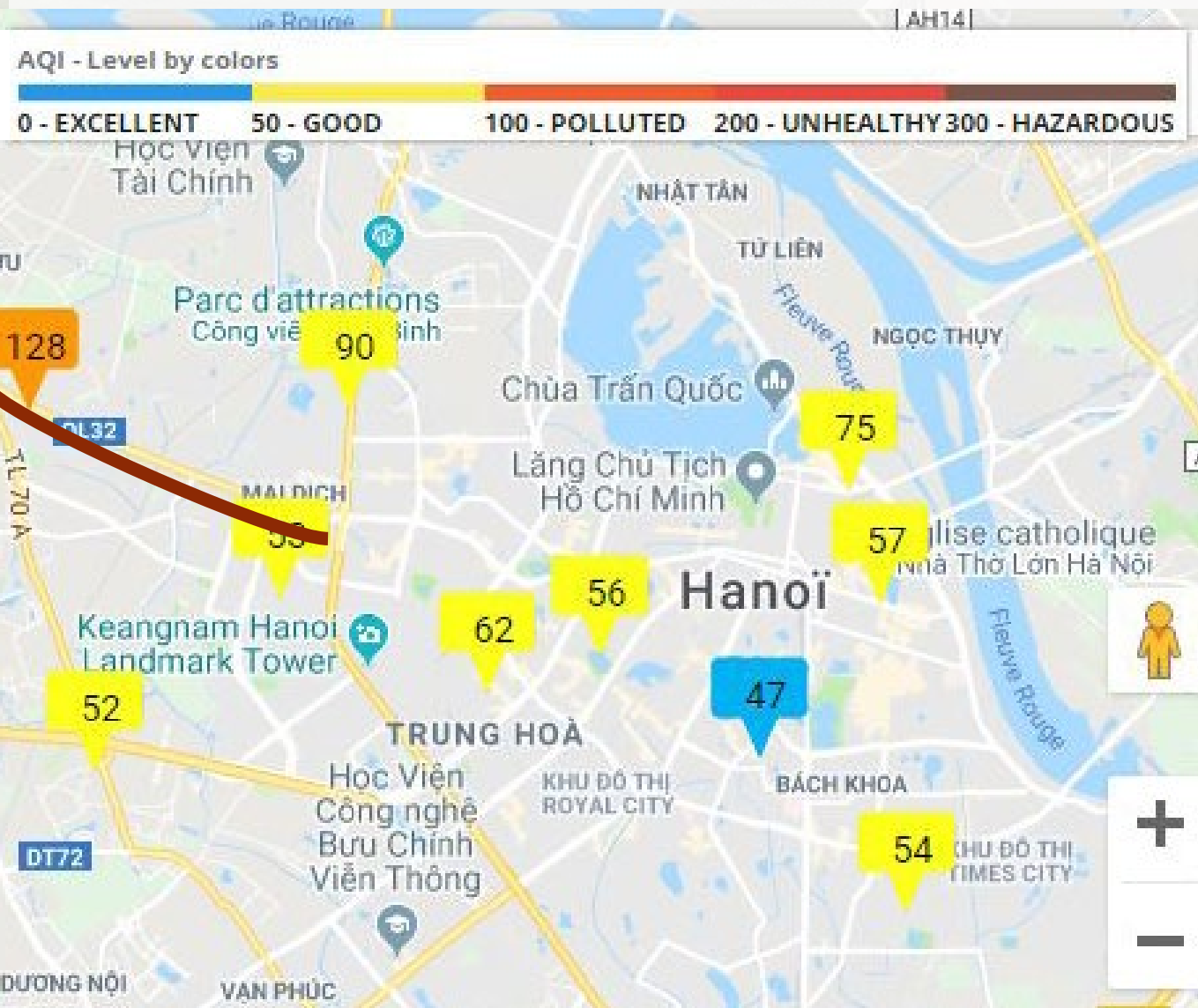


INFRASTRUCTURE - LEVER OF DEVELOPMENT

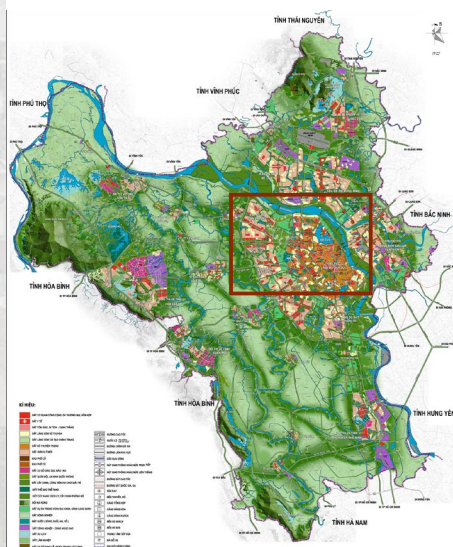
NATIONAL ROAD NO 32. EXEMPLARY CASE STUDY OF CHALLENGES AND ISSUES

LIFE QUALITY

AIR QUALITY INDEX (AQI) IN HANOI AT 10/10/2018



National road 32



Source: <http://moitruongthudo.vn/>

URBANISTIC QUALITY?

[illegible]

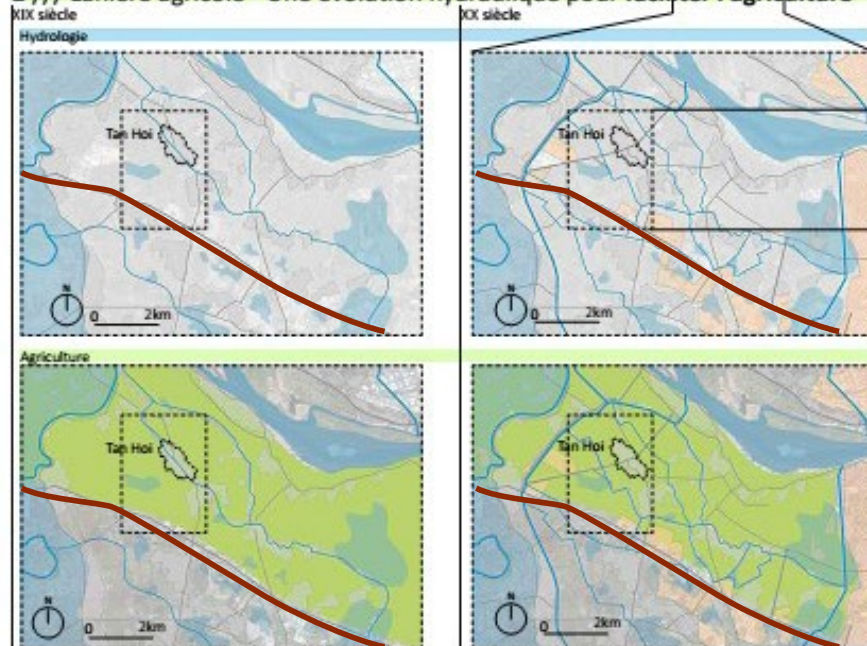
INFRASTRUCTURE - LEVER OF DEVELOPMENT

NATIONAL ROAD NO 32. EXEMPLARY CASE STUDY OF CHALLENGES AND ISSUES

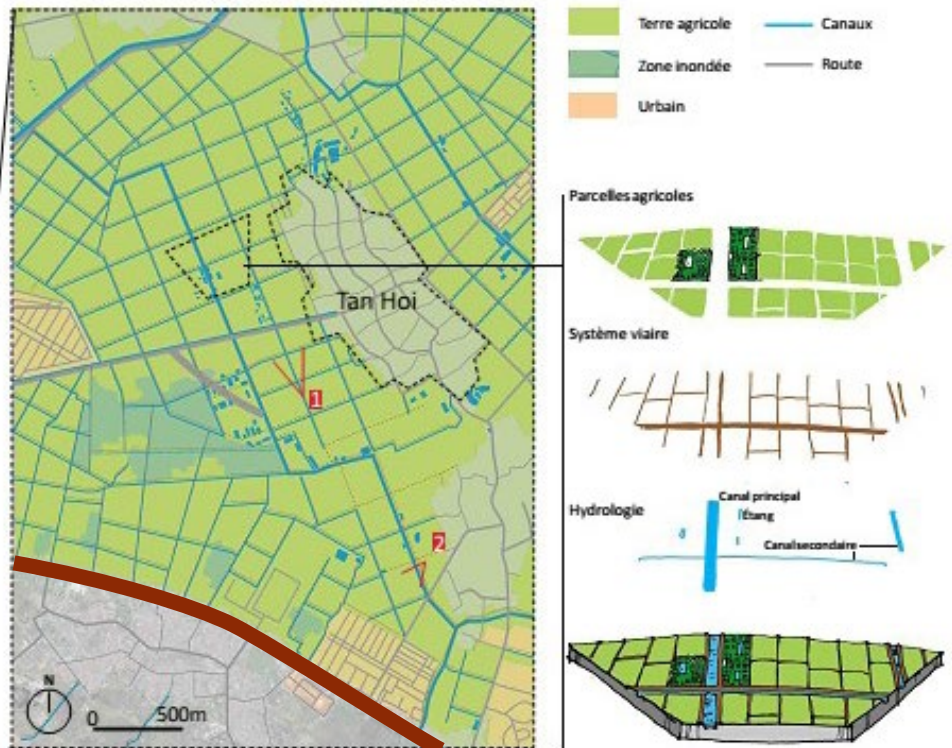
HYDRAULIC VALUES OF HANOI TERRITOIRY

1 /// Eau - l'Acteur structurant du territoire

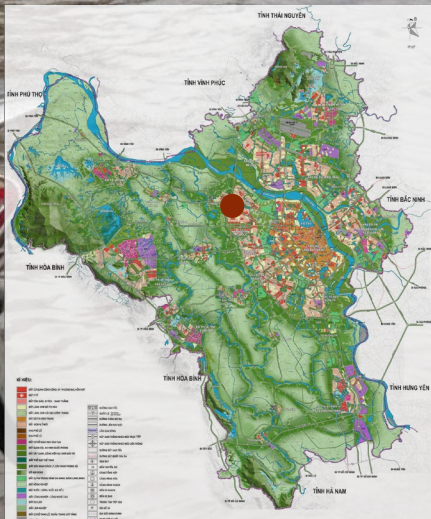
2 /// Lanière agricole - Une évolution hydraulique pour faciliter l'agriculture



3 /// Une agriculture structurée par l'eau de toutes les échelles, jusqu'au site



National road 32





/// Coherence between road network development and urbanization.

/// Environmental degradation tied to urbanization.

/// La prise en compte des mécanismes naturels pour un développement urbain raisonnable et efficace



THANK YOU FOR YOUR ATTENTION!

XIN CẢM ƠN!