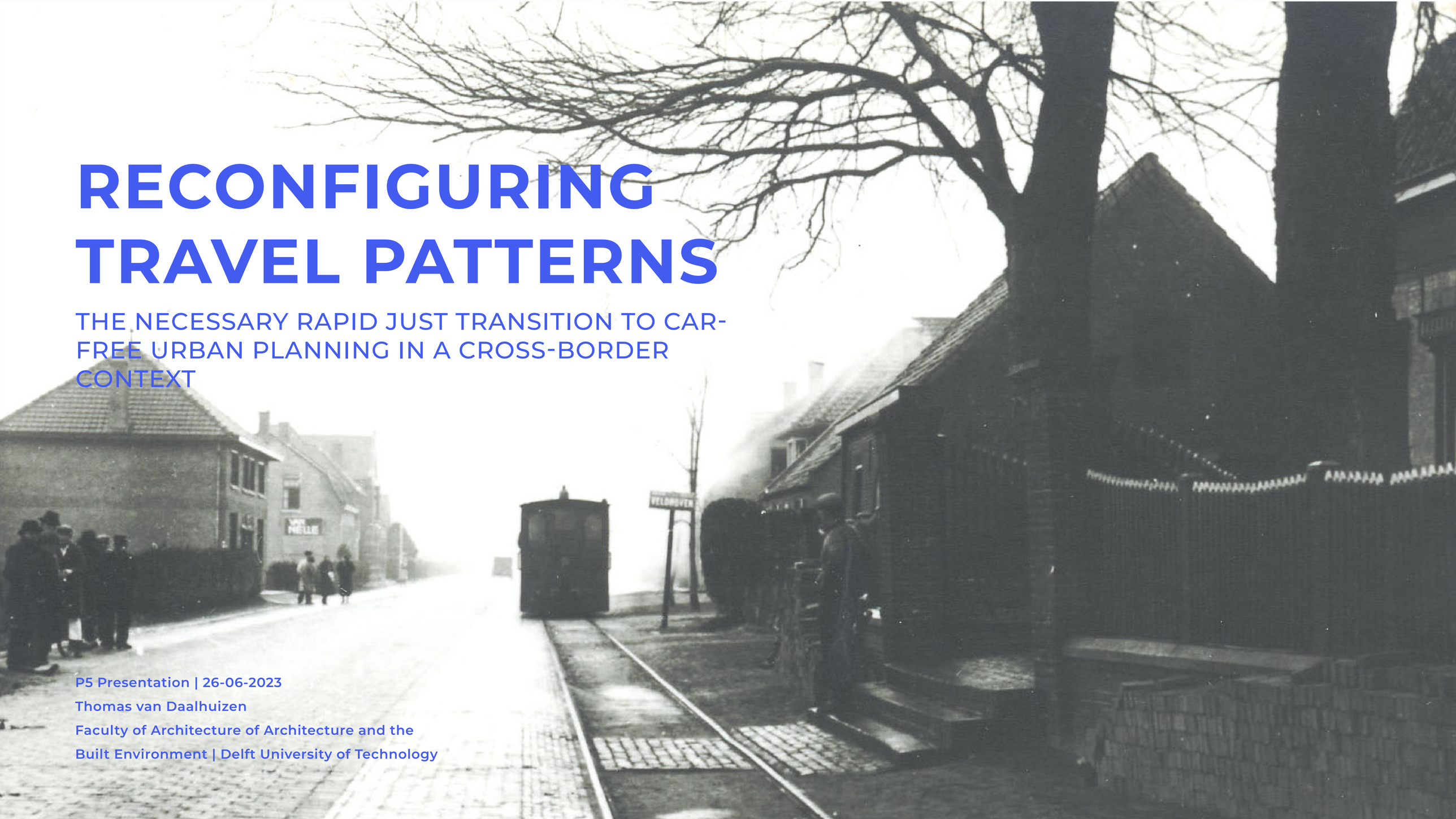
RECONFIGURING TRAVEL PATTERNS

THE NECESSARY RAPID JUST TRANSITION TO CAR-FREE URBAN PLANNING IN A CROSS-BORDER CONTEXT



P5 Presentation | 26-06-2023

Thomas van Daalhuizen

Faculty of Architecture of Architecture and the Built Environment | Delft University of Technology

“The Schengen Agreement lies 35 years in the past. We must now lay the foundations for the next 35 years. The Future of Schengen is the Future of Europe.”

Ylva Johansson, 2021
European Commissioner of Home Affairs

01 PROBLEM

02 THEORY

03 ANALYSIS

04 VISION

05 STRATEGY

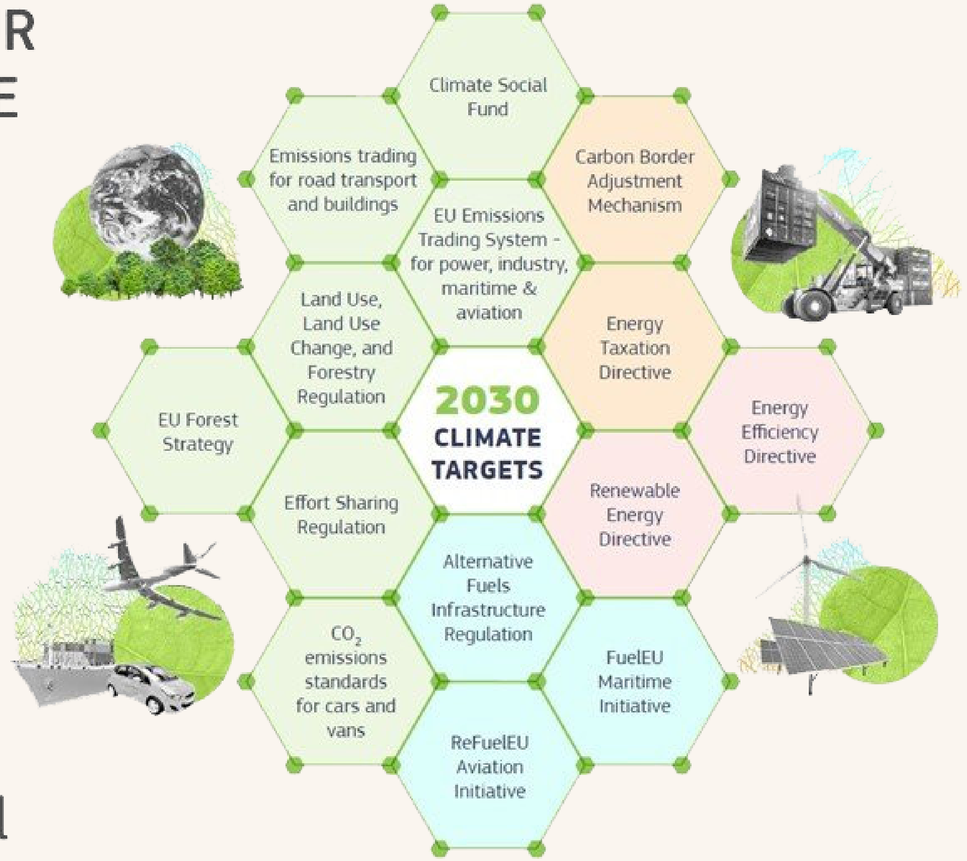
06 CONCLUSION

01 PROBLEM
02 THEORY
03 ANALYSIS
04 VISION
05 STRATEGY
06 CONCLUSION

THE PROBLEM AT HAND

EUROPEAN GREEN DEAL

REACHING OUR 2030 CLIMATE TARGETS



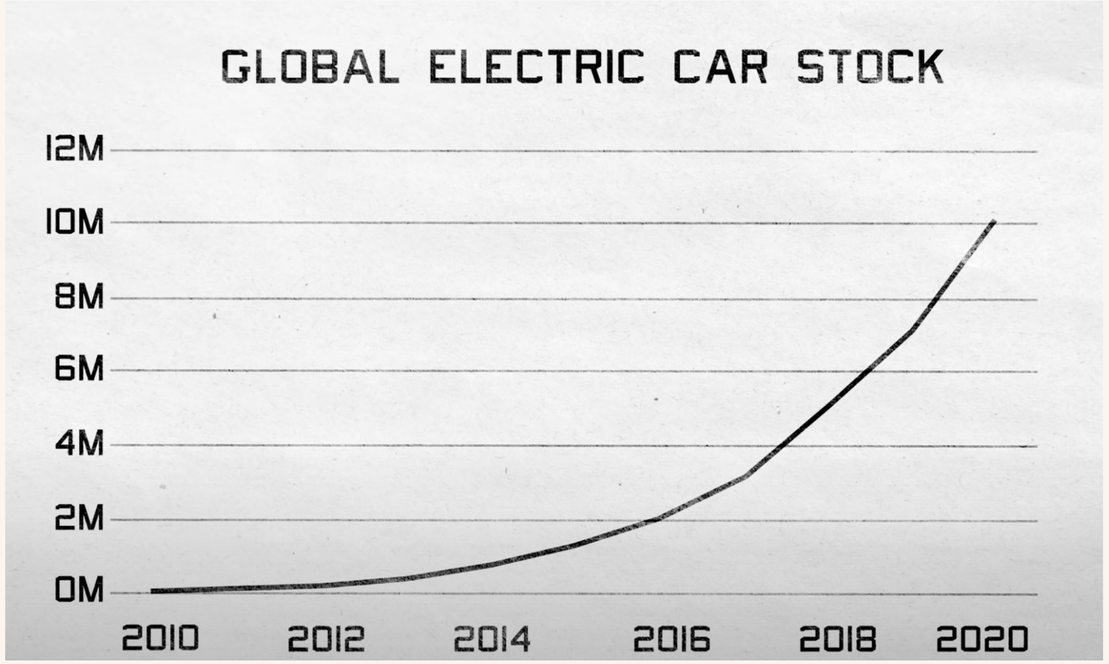
#EUGreenDeal

European Commission

75%

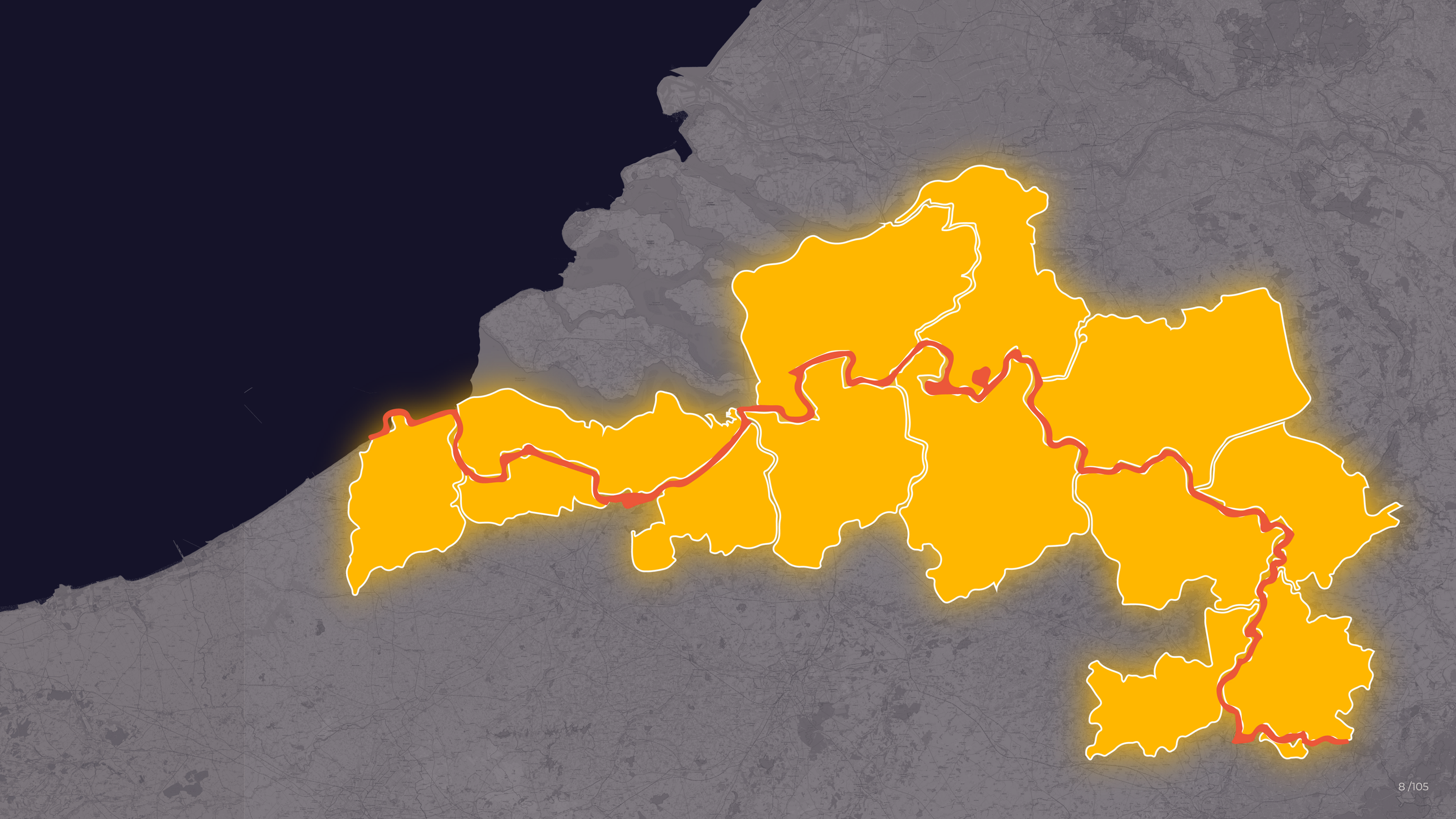
01
PROBLEM

Electric Cars



(Harris, 2022)

Photo: Afrewatch 2020 & Simon Dawson/Bloomberg

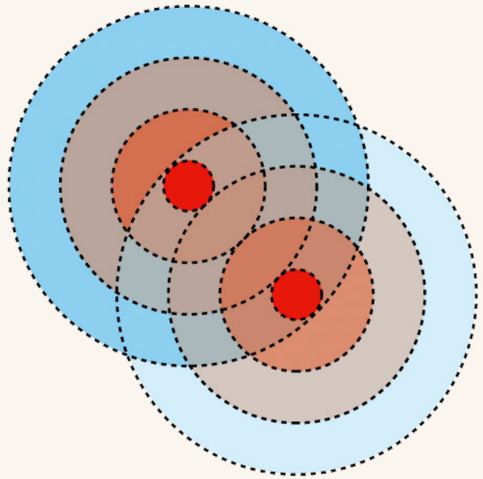


01
PROBLEM

Agglomeration Benefits

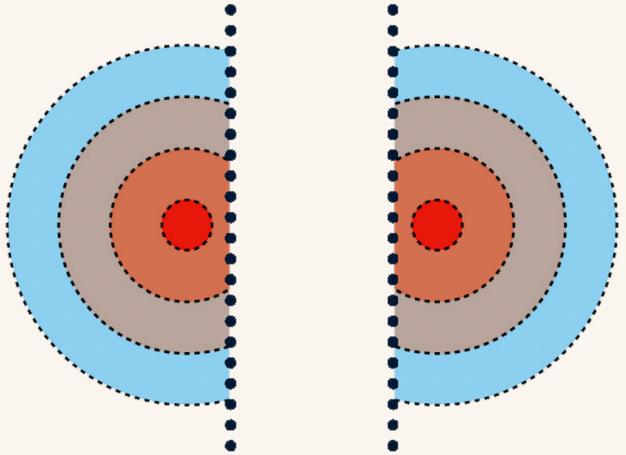
increased job opportunities and access to services

shared economic space



Cities and regions inland

not present in cities and regions that are divided by a national border



Cities and regions on borders

(Marlet et al., 2014)

01
PROBLEM

Cohesion policy

Narrow territorial and social disparities between regions in the EU

Difference in language and culture

Institutional and administrative differences

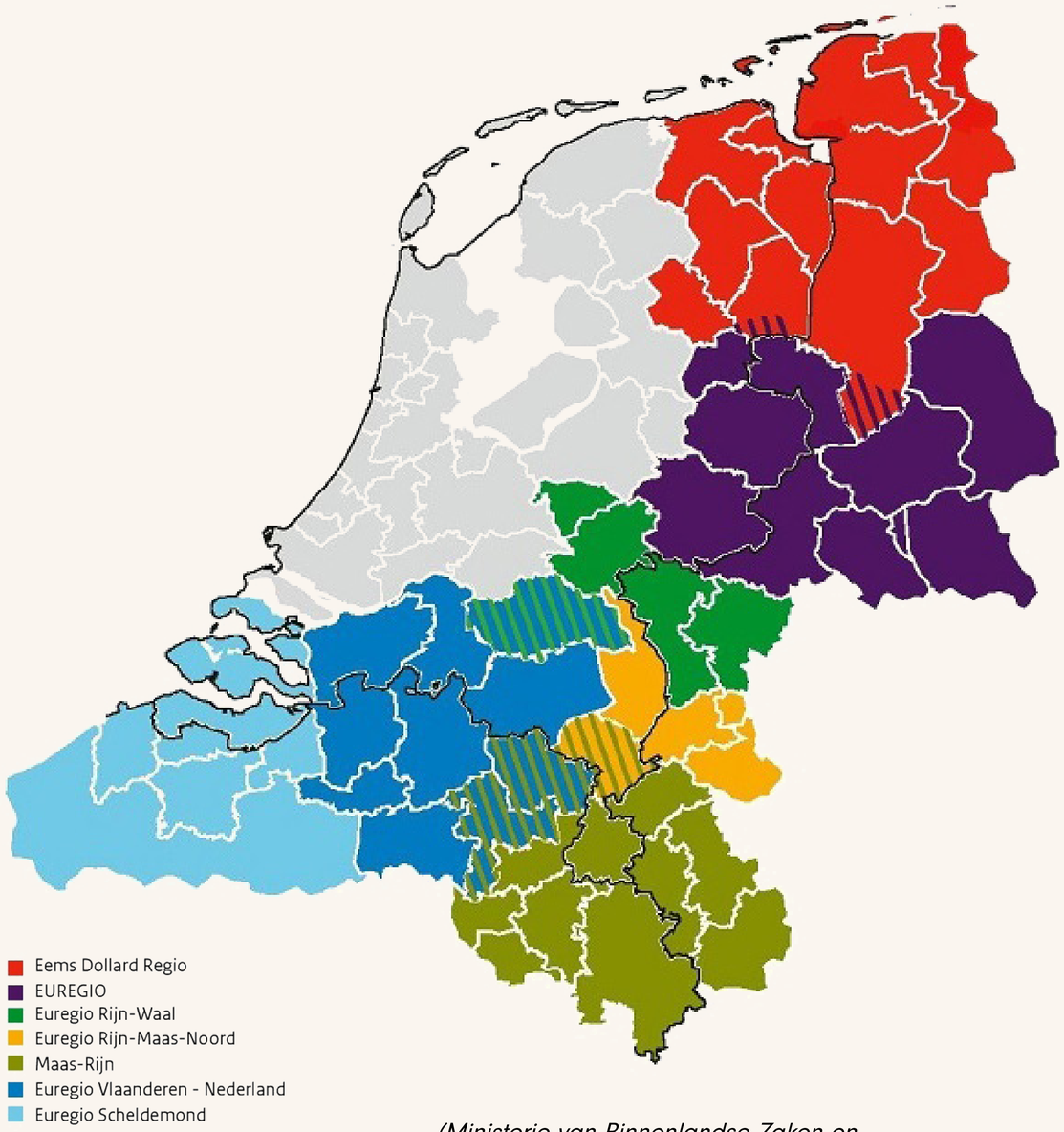
Lack of transport networks

Information backlog

Psychological factors

Economic differences

(Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019)



(Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2018)

01 PROBLEM

Institutional and administrative differences

Lack of transport networks

(Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019)

01
PROBLEM

Main Research Question

What transitional strategy can contribute to achieve a just and sustainable multi-modal network in a cross-border context?

01 PROBLEM
02 THEORY
03 ANALYSIS
04 VISION
05 STRATEGY
06 CONCLUSION

CREATING A FRAMEWORK

Mobility Justice

DISTRIBUTIVE JUSTICE	providing a critical minimum of accessibility for all people
DELIBERATIVE JUSTICE	providing access to previously excluded groups
PROCEDURAL JUSTICE	fairness of processes by which mobility systems are governed
RESTORATIVE JUSTICE	the recognition of those immobilised or bound into mobilities and a pro-active undertaking to address injustice
EPISTEMIC JUSTICE +	sharing of knowledge or knowing ensures that there is proactive production of knowledge and adaptability to external influences

MOBILITY JUSTICE

(Sheller, 2018)

11138
radio 10
10
Celebrate good times, come on
Summer mix

02
THEORY

Mobility Justice

providing a critical minimum of accessibility for all people

providing access to previously excluded groups

fairness of processes by which mobility systems are governed

the recognition of those immobilised or bound into mobilities and a pro-active undertaking to address injustice

sharing of knowledge or knowing ensures that there is proactive production of knowledge and adaptability to external influences

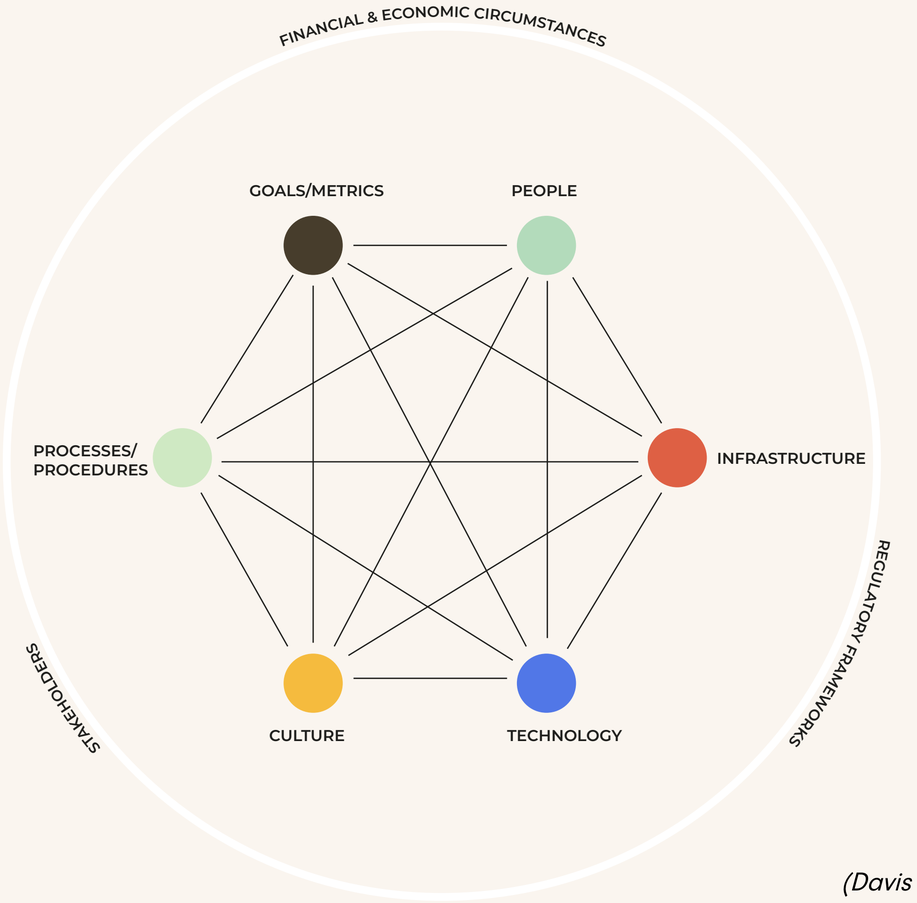
(Sheller, 2018)

02 THEORY

Socio-Technical Systems

MOBILITY JUSTICE

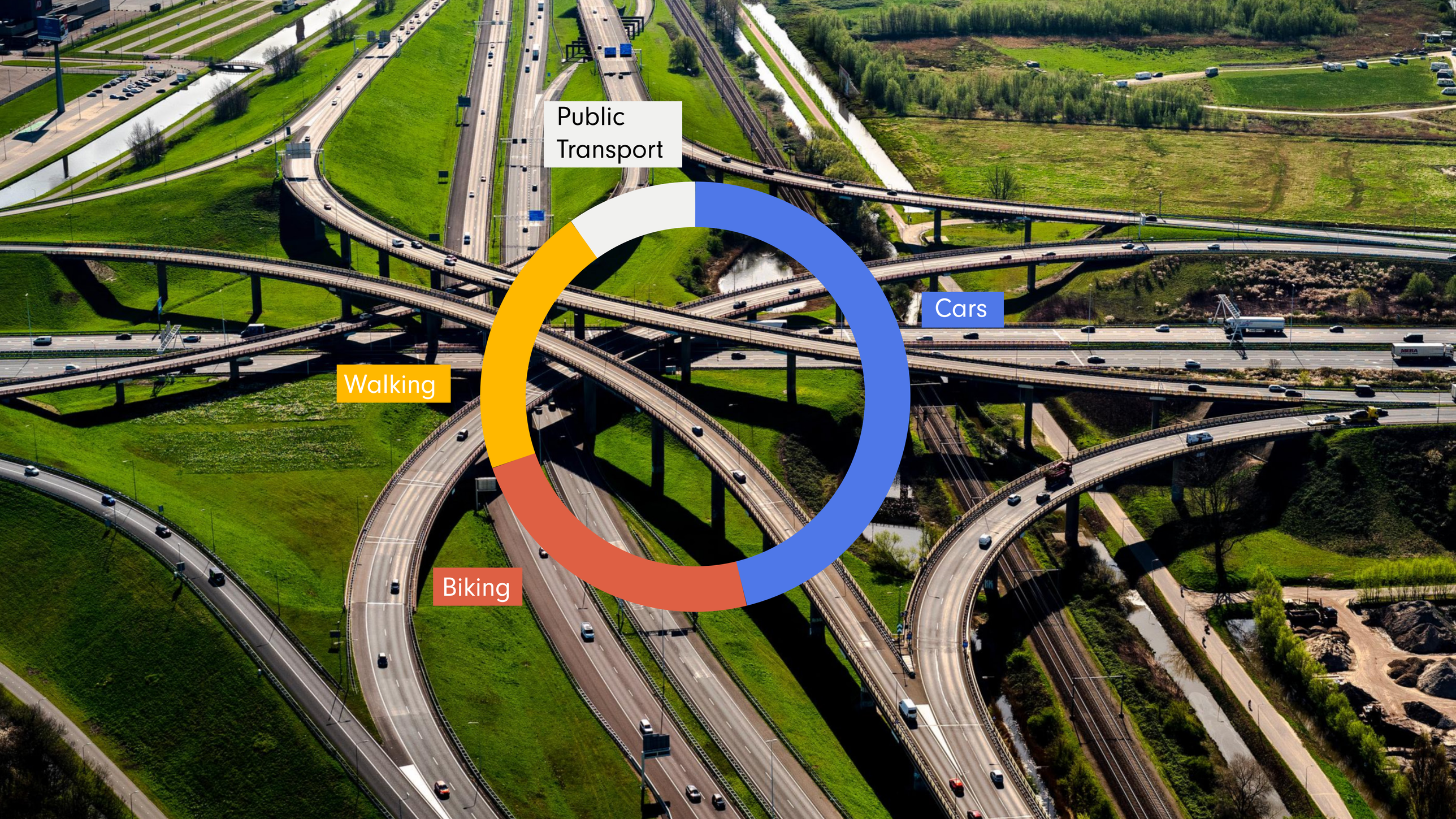
GOAL



(Davis et al. 2014)

"the new urban paradigm should concern itself with a system approach"

UN-Habitat, 2016


Public Transport
Cars
Walking
Biking

02 THEORY

Multi-Level Perspective

MOBILITY JUSTICE

PLANETARY BOUNDARIES
RIGHTS OF NATURE

DISTRIBUTIVE JUSTICE

DELIBERATIVE JUSTICE

PROCEDURAL JUSTICE

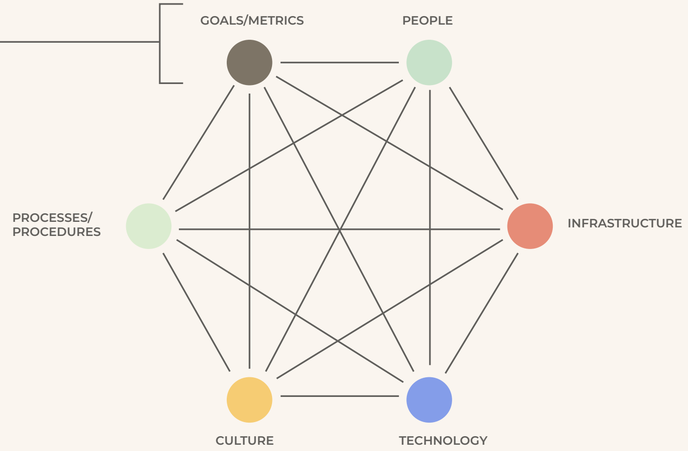
RESTORATIVE JUSTICE

EPISTEMIC JUSTICE

+

MOBILITY JUSTICE

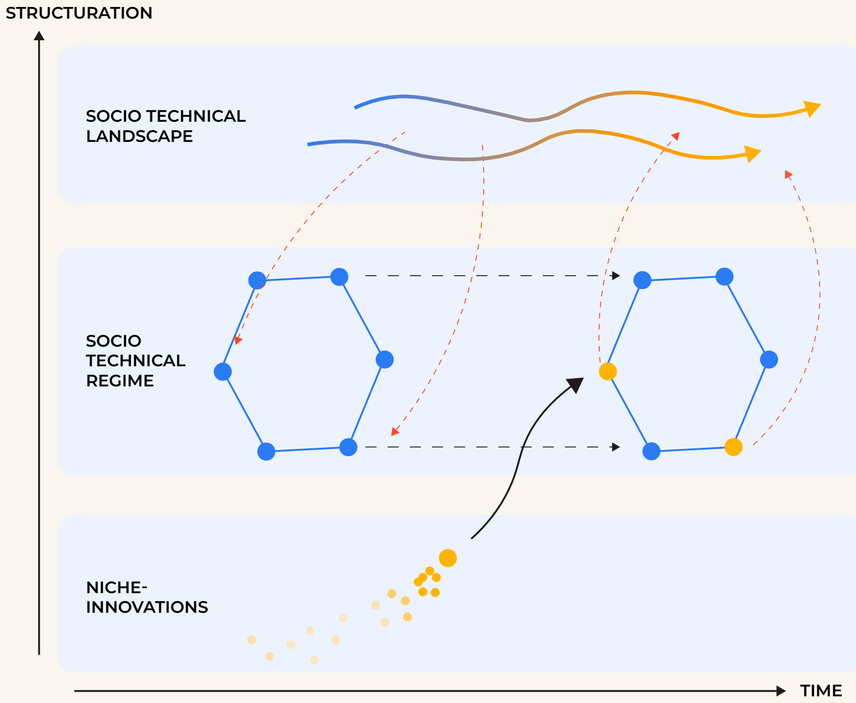
SOCIO-TECHNICAL SYSTEMS



GOAL

NEW URBAN PARADIGM

Putting presure on the regime to create room for innovations



Niche-innovations hope to enter the regime with their new visions. They provide a spark that can lead to a systemic change.

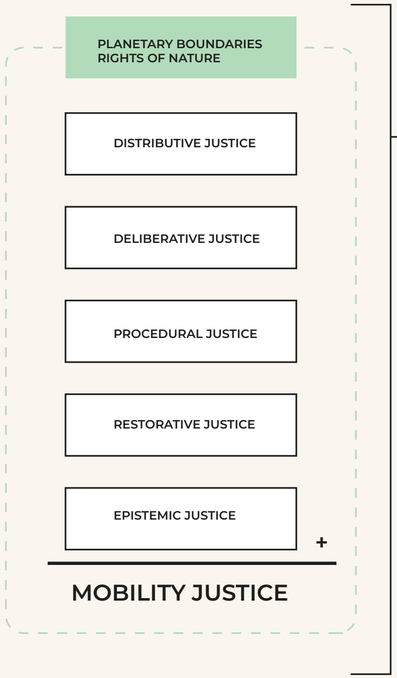
(Geels, 2011)

FASTNED
snelladen

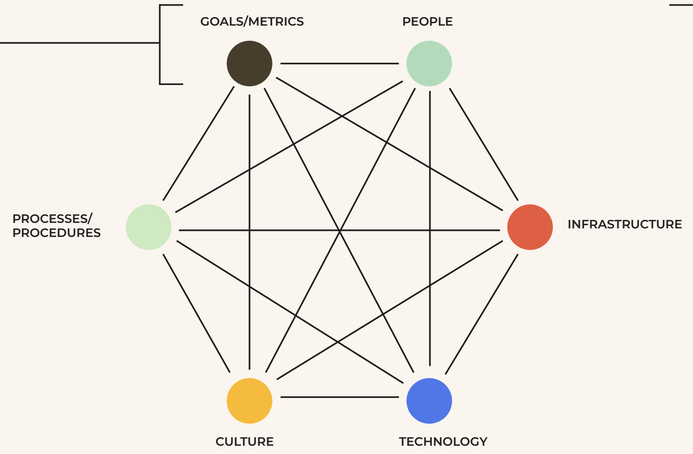
02 THEORY

Multi-Level Perspective

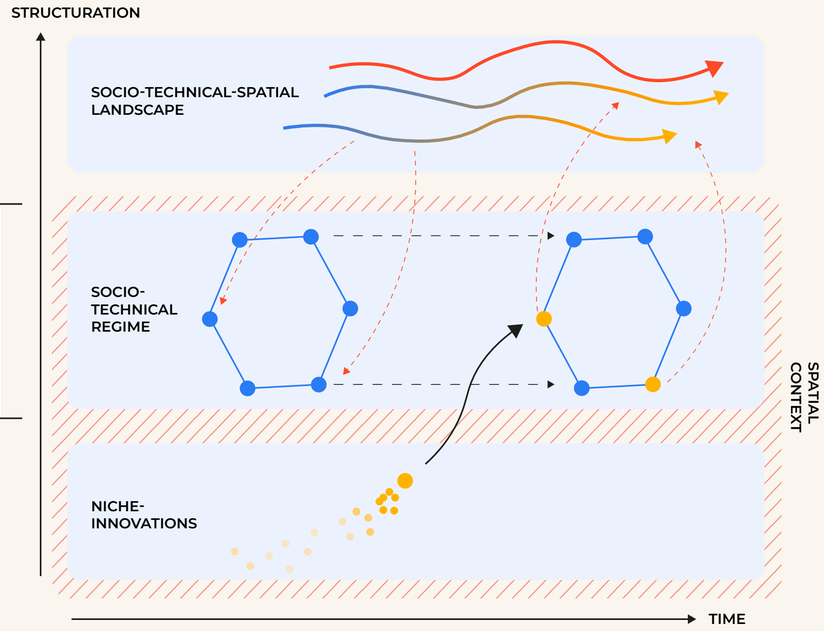
MOBILITY JUSTICE



SOCIO-TECHNICAL SYSTEMS



MULTI-LEVEL PERSPECTIVE



GOAL

NEW URBAN PARADIGM

TRANSITIONS

META GOVERNANCE

MOBILITY JUSTICE

PLANETARY BOUNDARIES
RIGHTS OF NATURE

DISTRIBUTIVE JUSTICE

DELIBERATIVE JUSTICE

PROCEDURAL JUSTICE

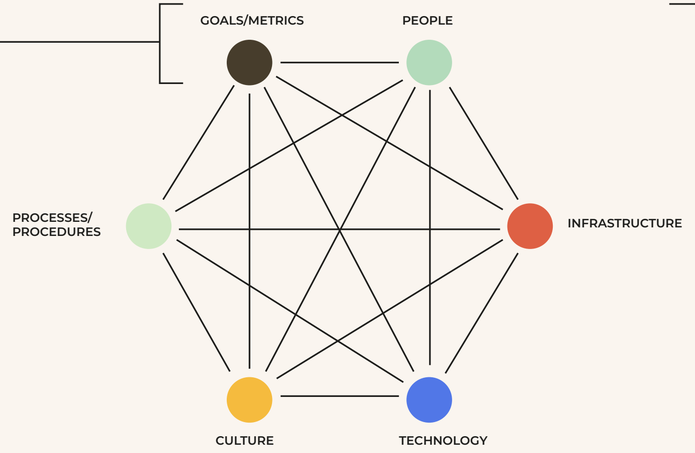
RESTORATIVE JUSTICE

EPISTEMIC JUSTICE

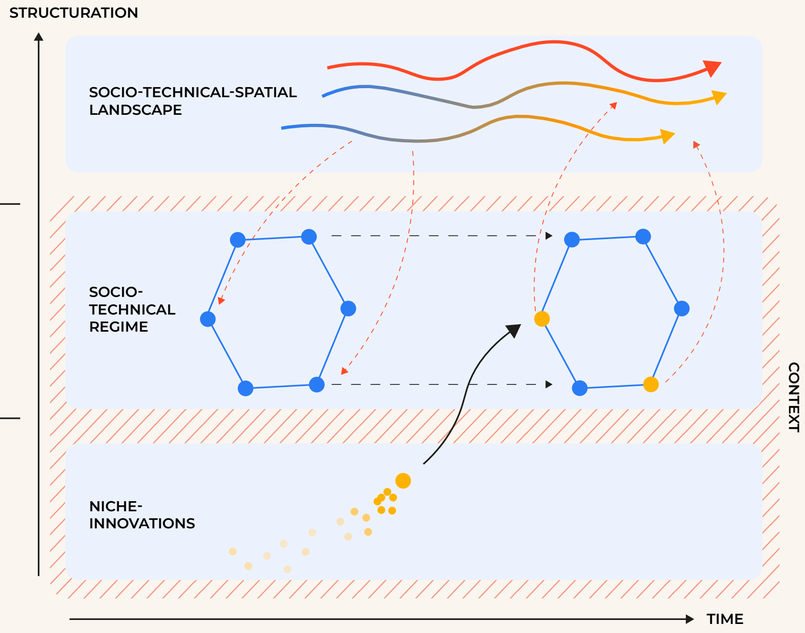
+

MOBILITY JUSTICE

SOCIO-TECHNICAL SYSTEMS



MULTI-LEVEL PERSPECTIVE



GOAL

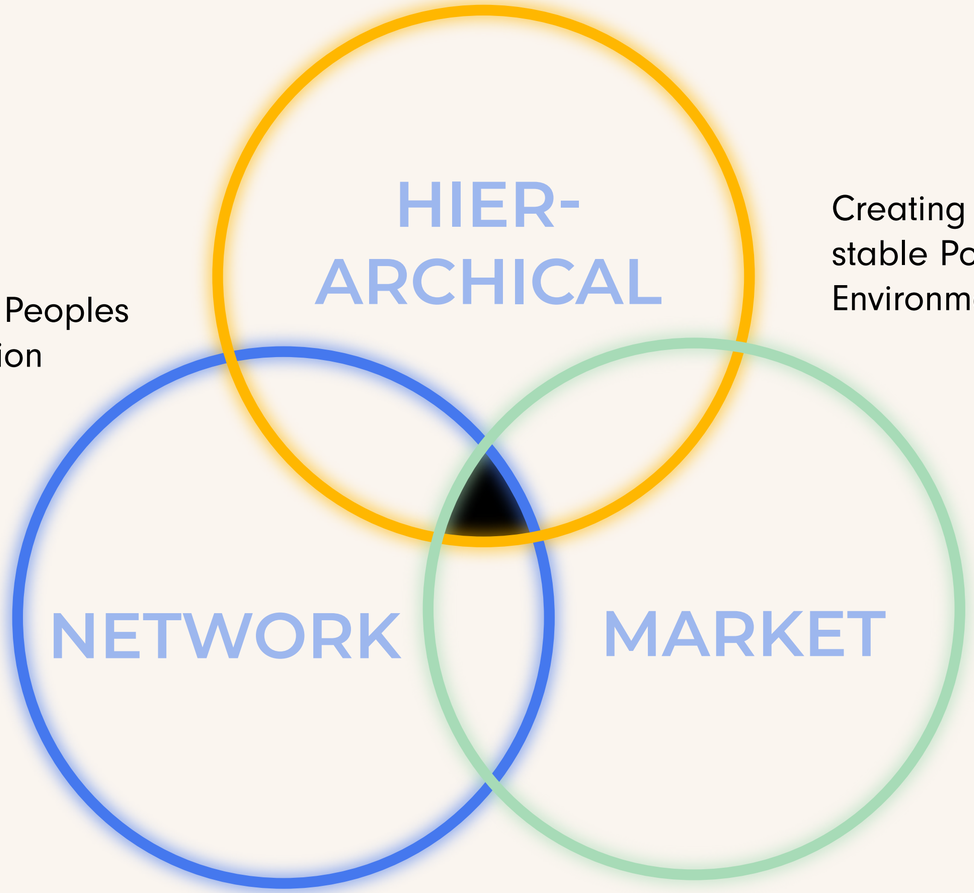
NEW URBAN PARADIGM

TRANSITIONS

(Meuleman, 2019)

02 THEORY

Metagovernance



Mobilises Peoples participation

Creating favourable and stable Political and Social Environment

Stimulates open Growth and opportunities for People

(Meuleman, 2019)

01
PROBLEM

02
THEORY

03
ANALYSIS

04
VISION

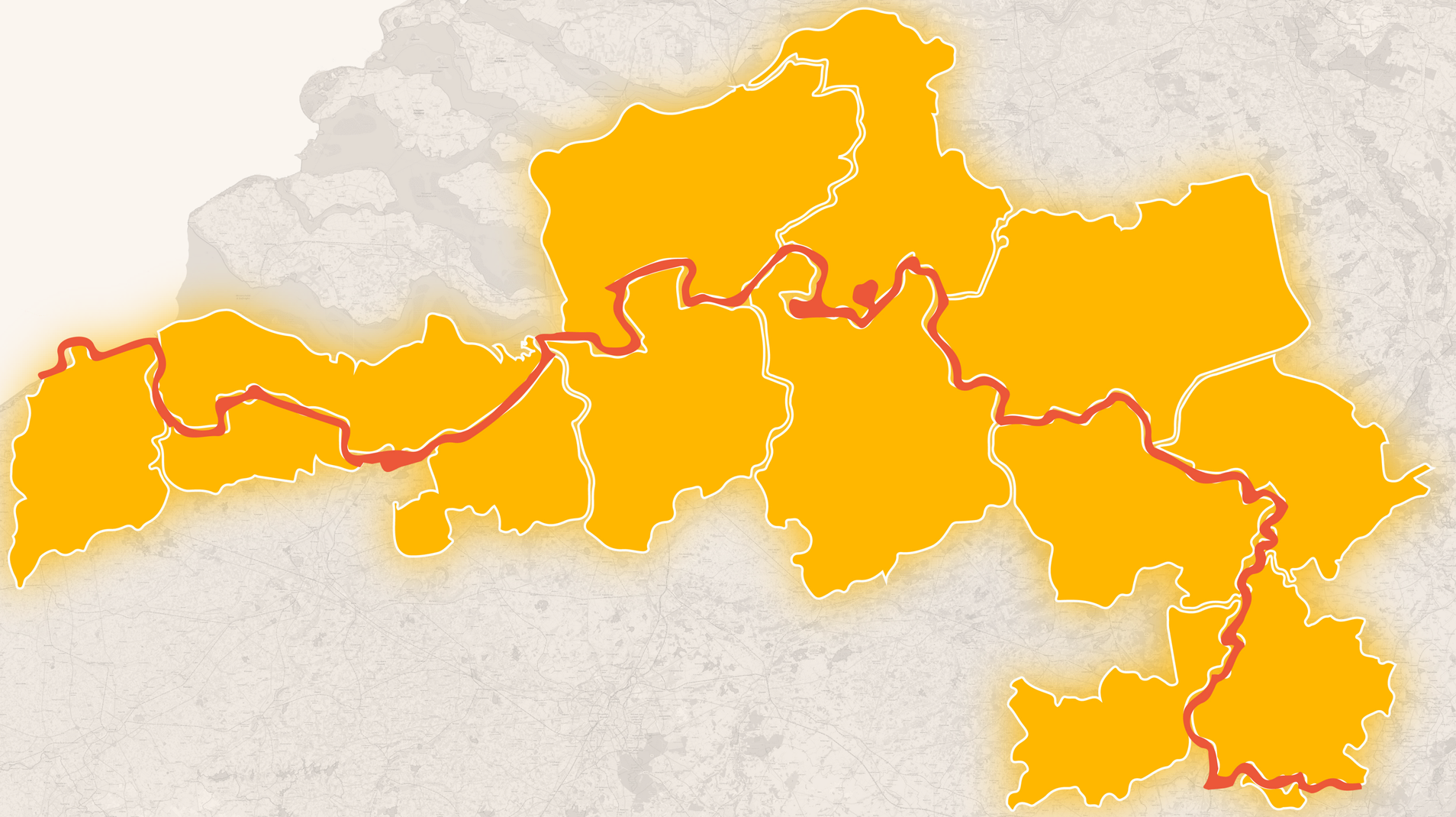
05
STRATEGY

06
CONCLUSION

UNDERSTANDING THE CONTEXT

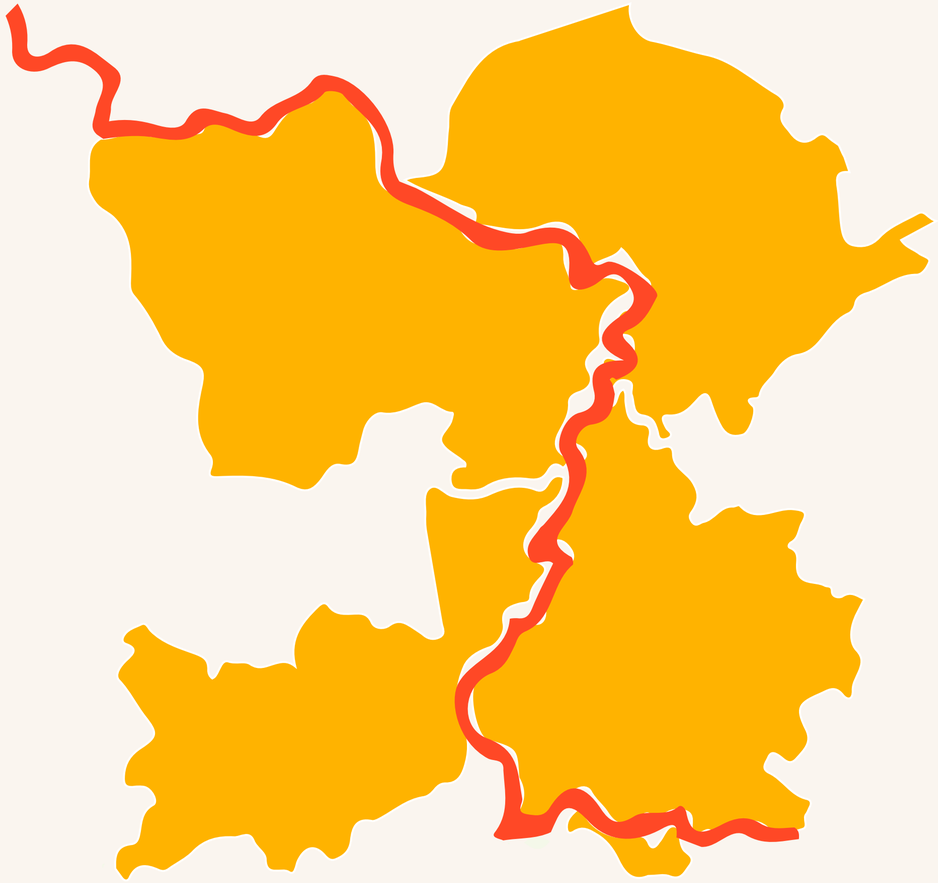
03

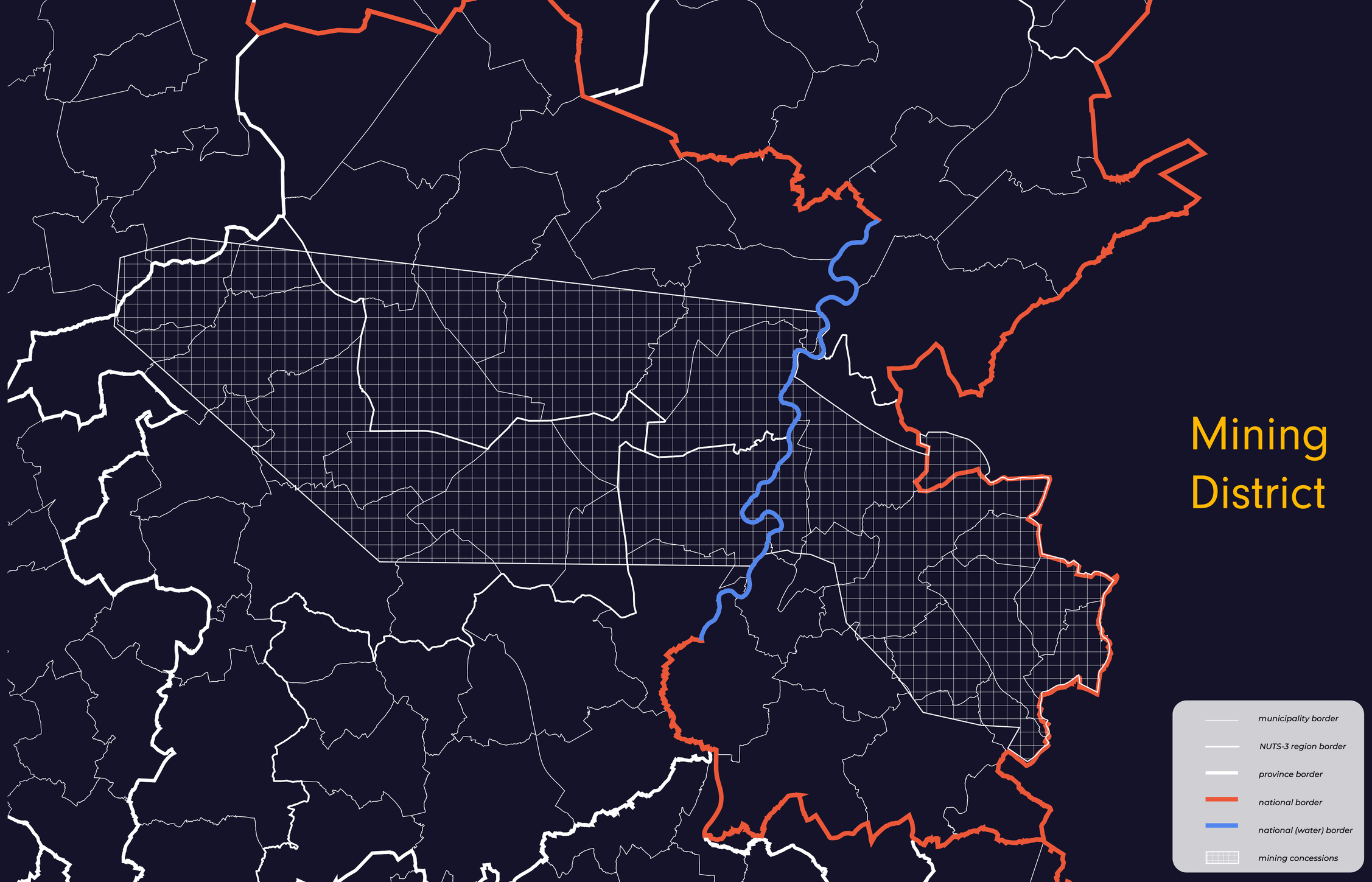
ANALYSIS



03
ANALYSIS

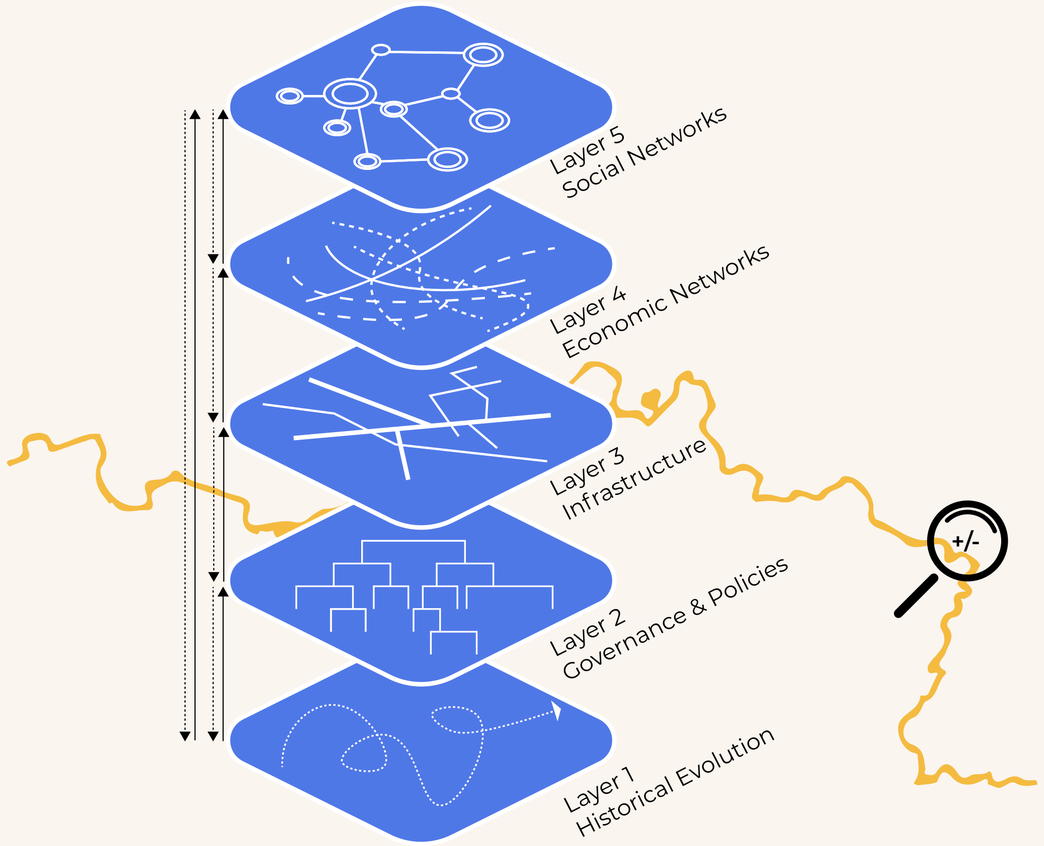
Limburg





Mining District

Networks of Urbanism



(Dupuy, 1991 & Rocco, 2008)

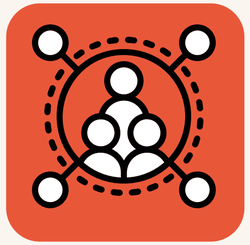
History | Mining

03 ANALYSIS

History | Garden City

Walkable, vibrant sociable neighbourhoods

Integrated and accesible public transport & biking system



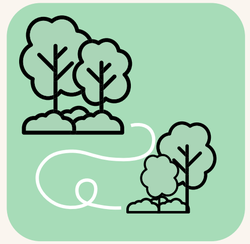
Community engagement & strong vision

Mixed tenure homes & affordable housing

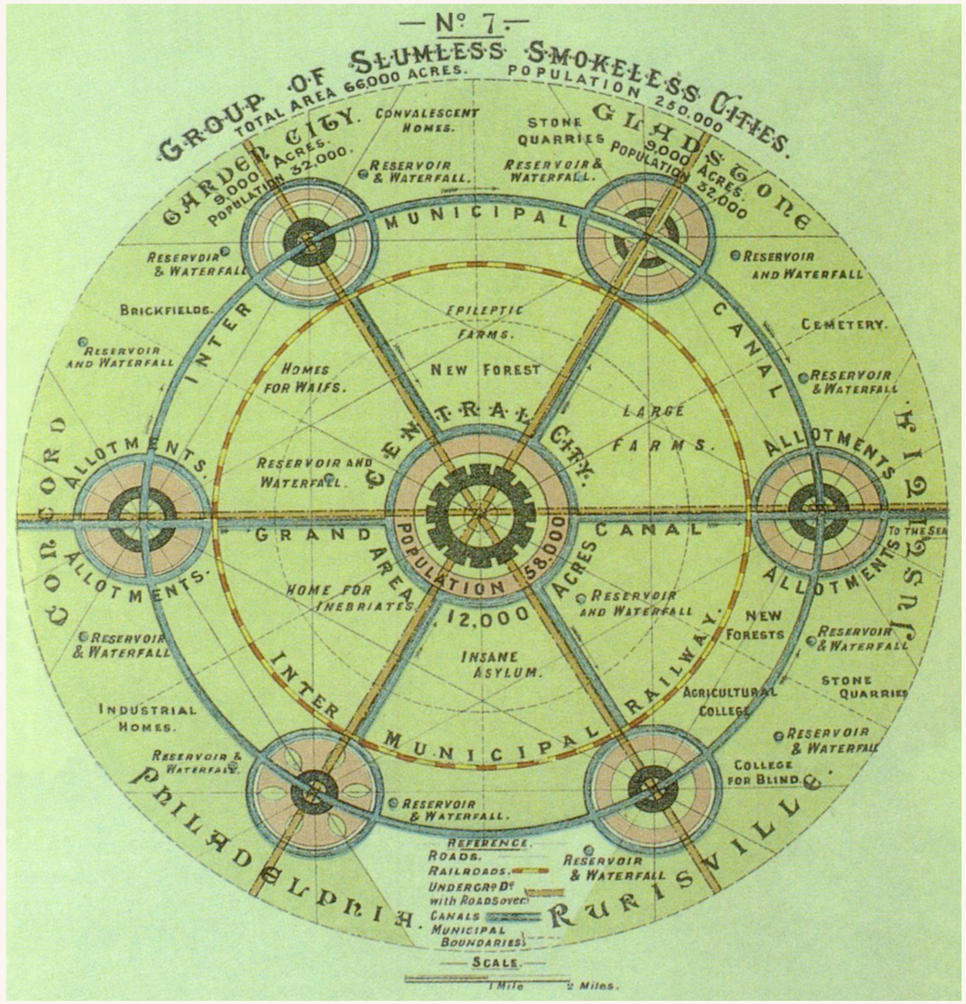
Local jobs

Strong cultural, recreational and shopping facilities

Homes in green environment



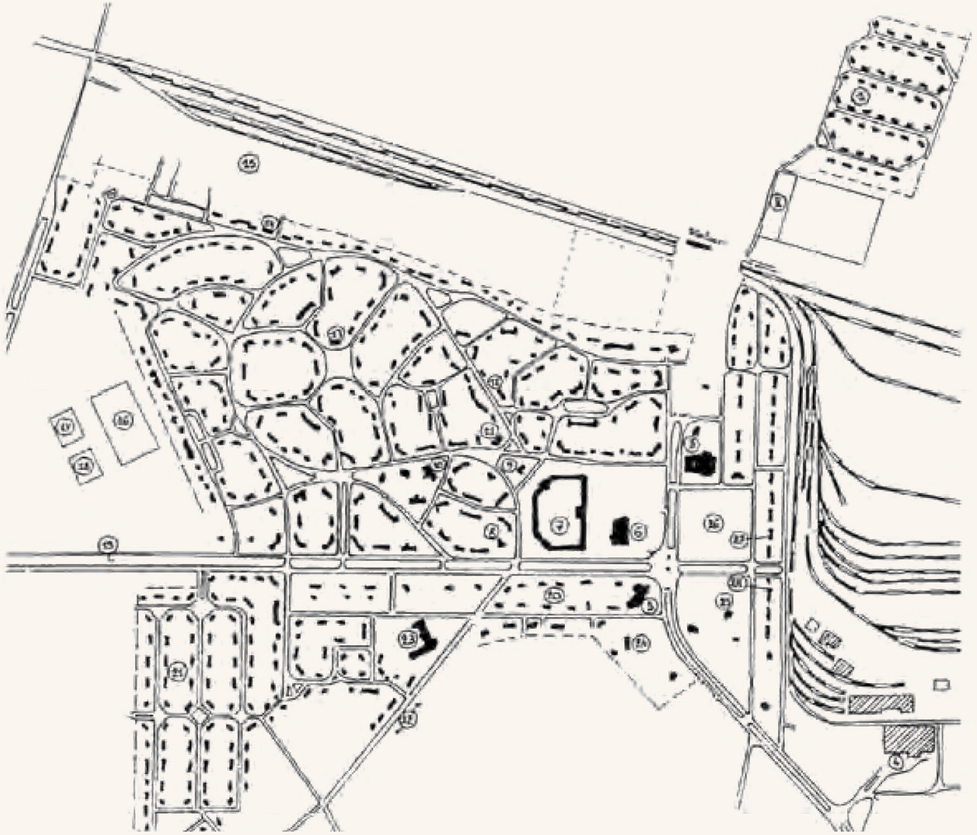
Green infrastructure



(Ebenezer Howard, 1898)

03 ANALYSIS

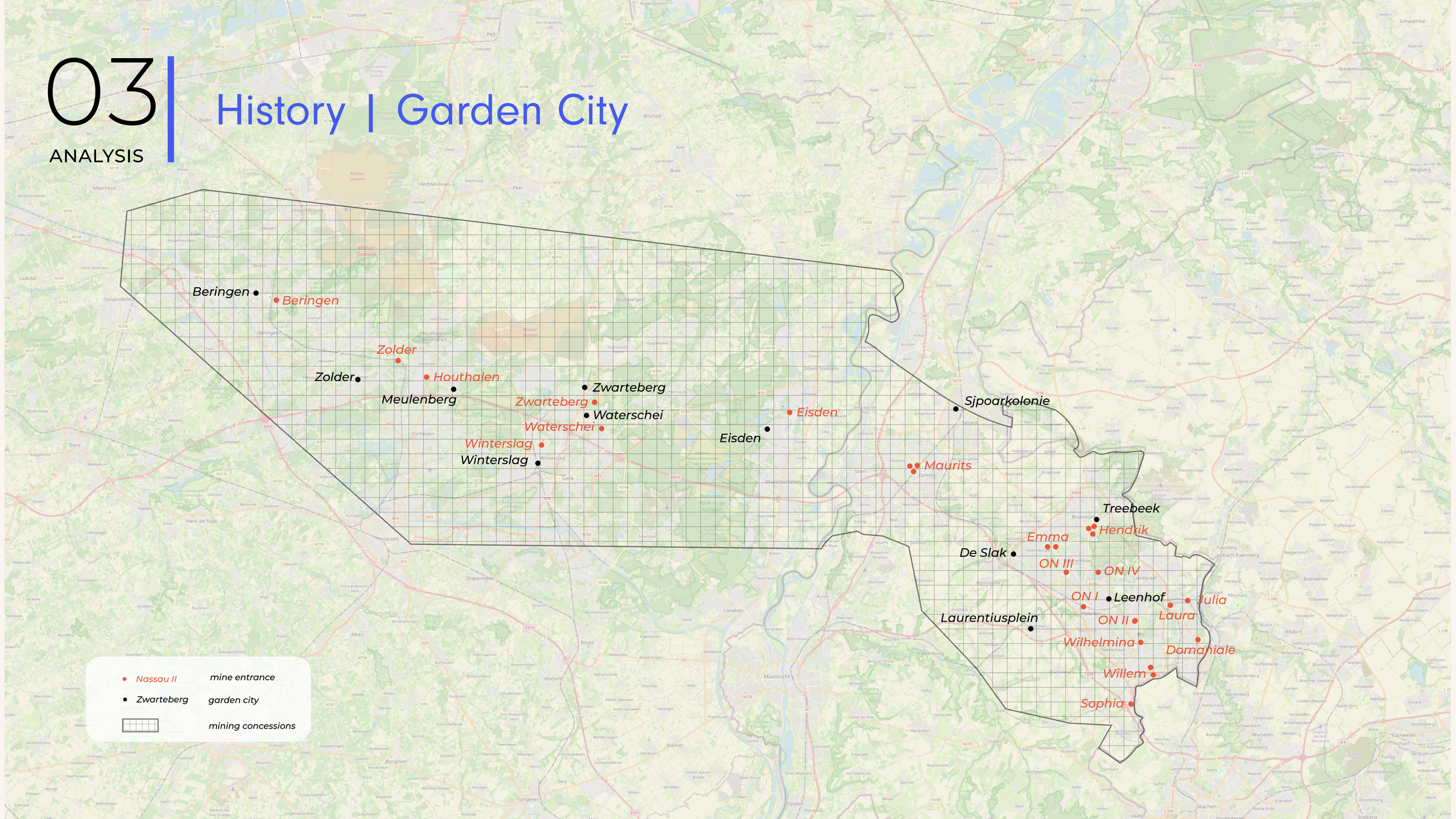
History | Garden City



1. Texaswijk: noodwoningen Kolenslag (1947–1948)
2. Stadion voetbalplein
3. Kerk
4. Hoofdgebouw (1920–1942
5. Casino
6. Nieuwe kring
7. Schoolcomplex
8. Klooster broeders
9. Klooster zusters
10. Huishoudschool
11. Economaat
12. Hotel Concordia
13. Hotel Central
14. Hotel Excelsior
15. Russisch kamp
16. T.I.K.B.
17. Jongensschool
18. Meisjesschool
19. Onderwijslaan (hoofdlaan)
20. Ingenieurs en bedienden
21. Nieuwe wijk (1948–1950)
22. Winkels Stalenstraat
23. Kliniek
24. Boerderij/Melkerij
25. Directeurswoning
26. Kioskpark
27. Kinderheil
28. Post

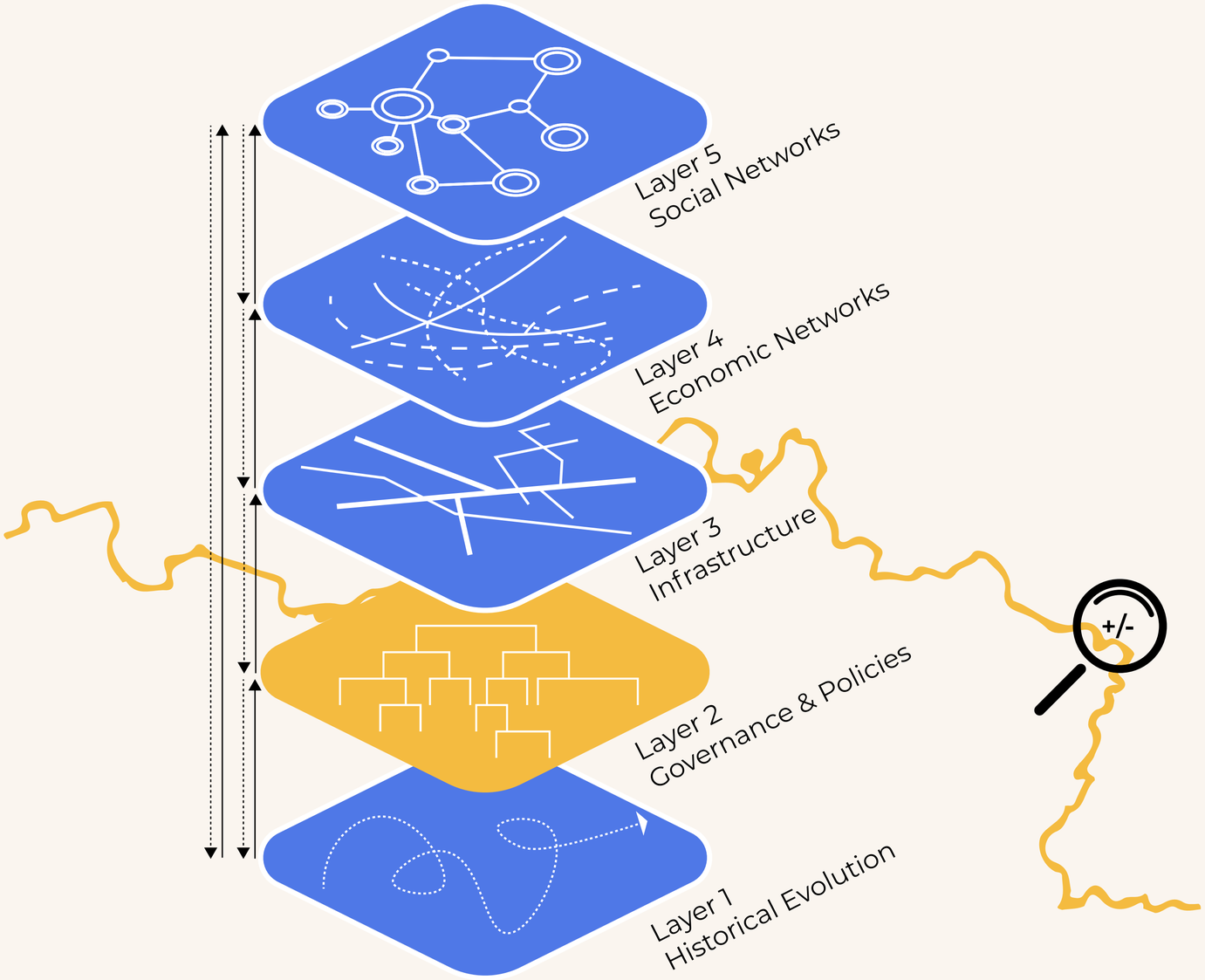
03
ANALYSIS

History | Garden City



03

ANALYSIS


Layer 5
Social Networks
Layer 4
Economic Networks
Layer 3
Infrastructure
Layer 2
Governance & Policies
Layer 1
Historical Evolution
+/-

Governance | Styles

BE

NL

03
ANALYSIS

Governance | Public Transport Policies

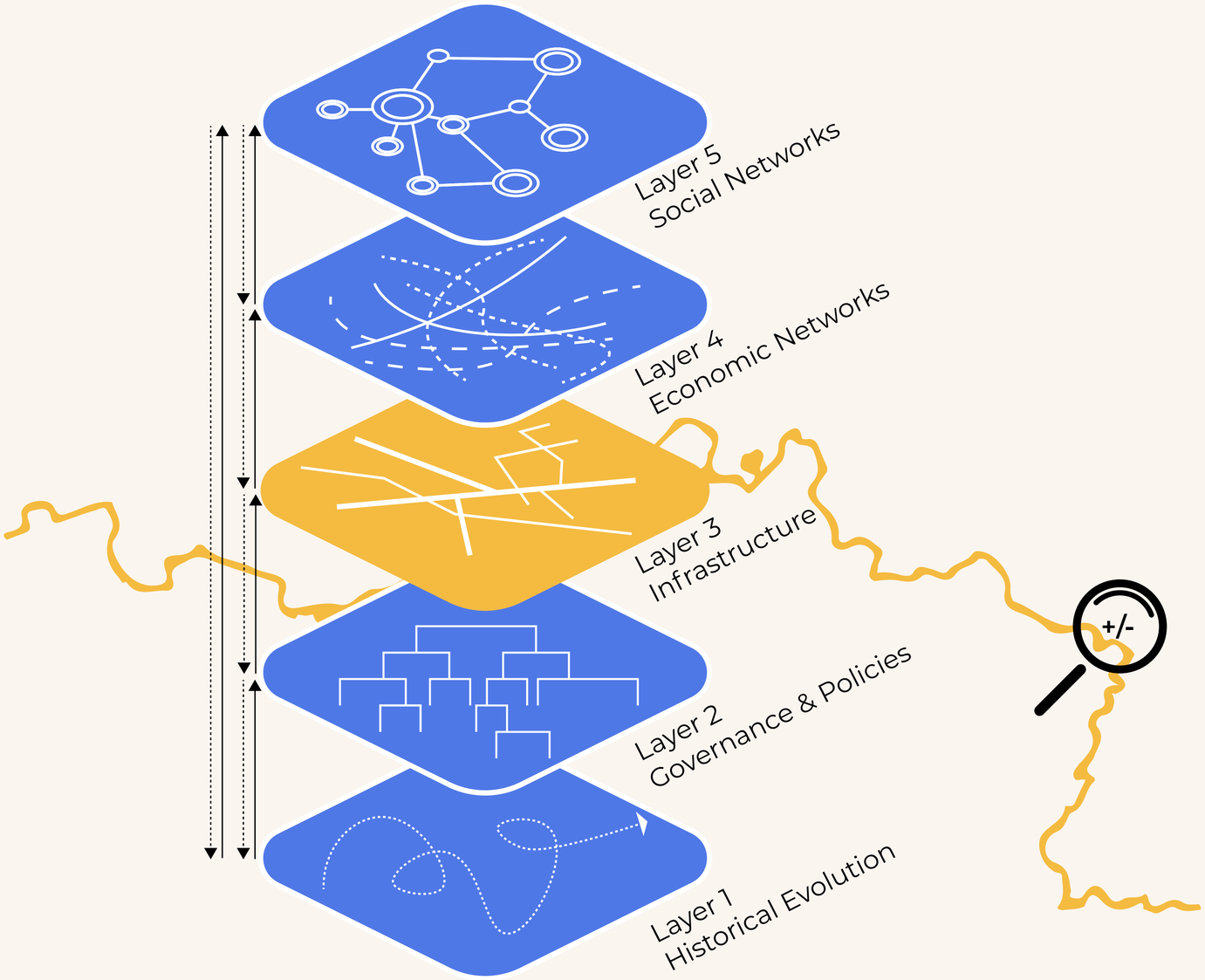
	The Netherlands	Belgium
Market type	Semi-open market Concessions (expections for main train network and cities of The Hague, Rotterdam and Amsterdam)	Closed market Monopoly (exceptions for international services)
Train operators	NS, Arriva, QBuzz, Connexion, etc.	NSMB
Tram, Metro, Bus operators	Arriva, QBuzz, Connexion, EBS, RET, GVB, HTM	De Lijn - Flanders TEC - Wallonia MIVB - Brussels
Infrastructure (rail)	Prorail	Infrabel

NL is profit driven
BE has a lack of innovation

differences lead to difficulty to bridge immobilities caused by border

03

ANALYSIS


Layer 5
Social Networks
Layer 4
Economic Networks
Layer 3
Infrastructure
Layer 2
Governance & Policies
Layer 1
Historical Evolution
+/-

03 ANALYSIS

Infrastructure | Connections

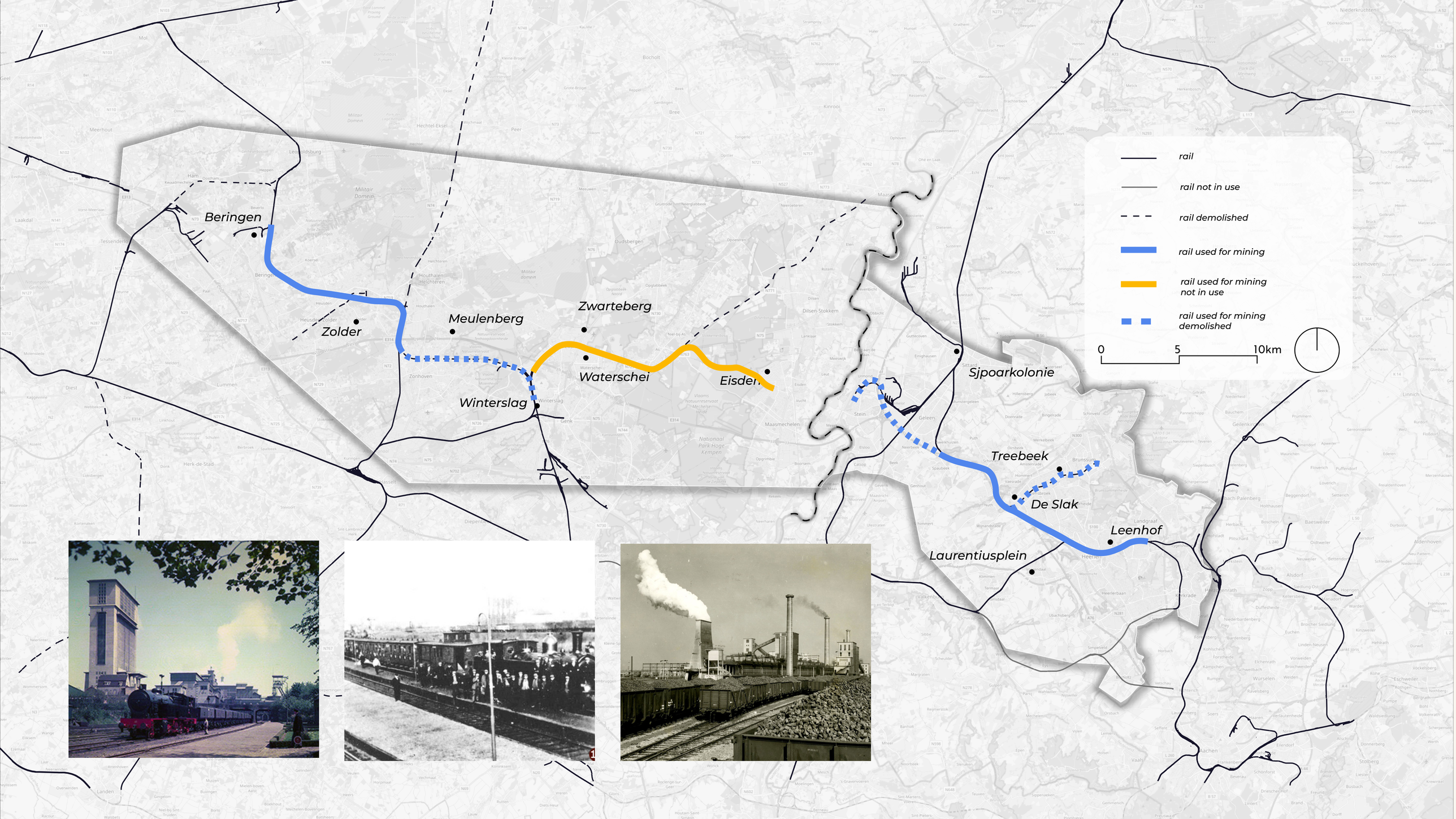
03
ANALYSIS

Infrastructure | Connections

No rail link

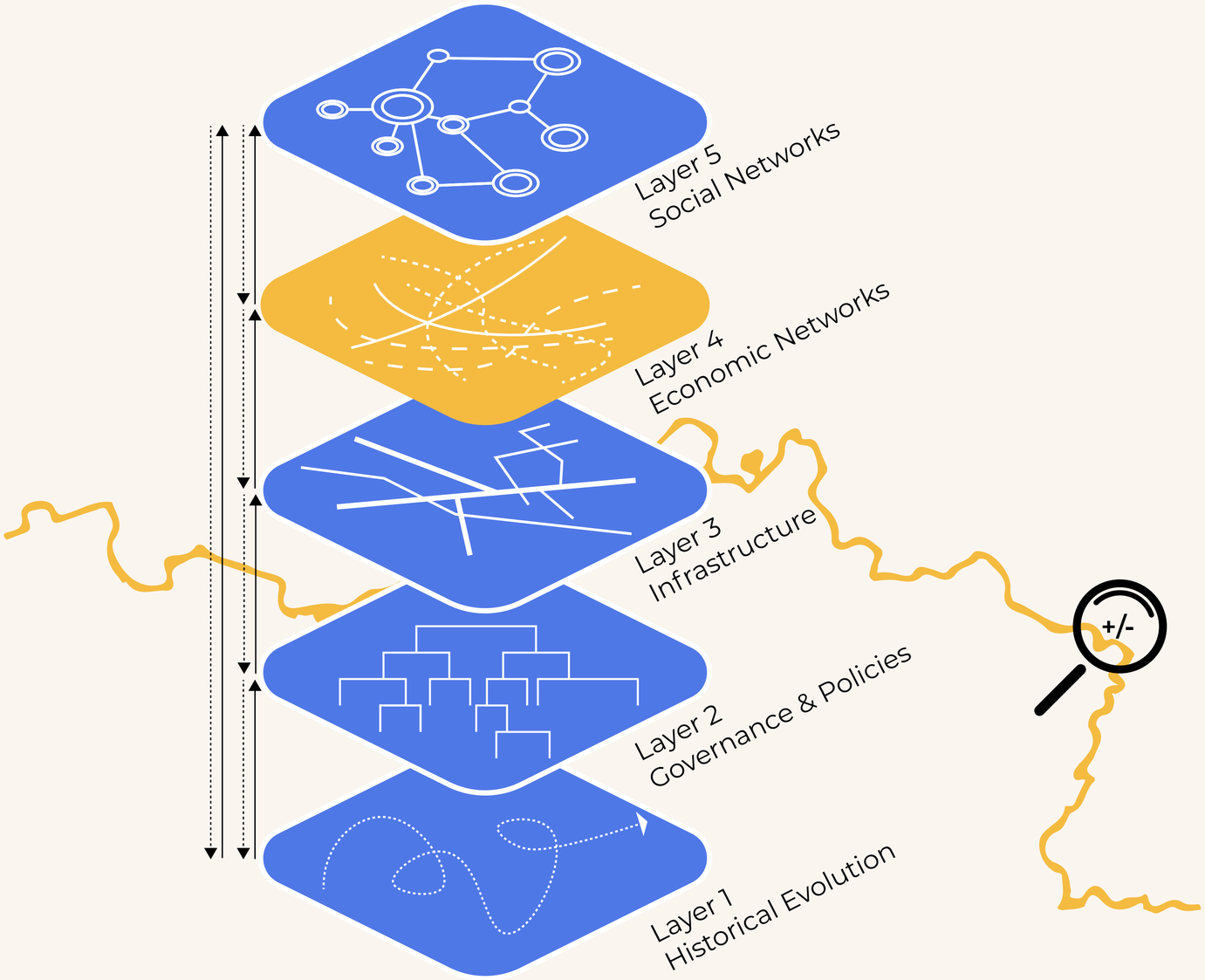
No cross-border public transport services

Walking & cycling trails, but no reliable cross-border connections


Beringen
Zolder
Meulenberg
Zwarteberg
Waterschei
Eisden
Winterslag
Sjpoarkolonie
Stein
Treebeek
De Slak
Leenhof
Laurentiusplein
rail
rail not in use
rail demolished
rail used for mining
rail used for mining not in use
rail used for mining demolished
0
5
10km

03

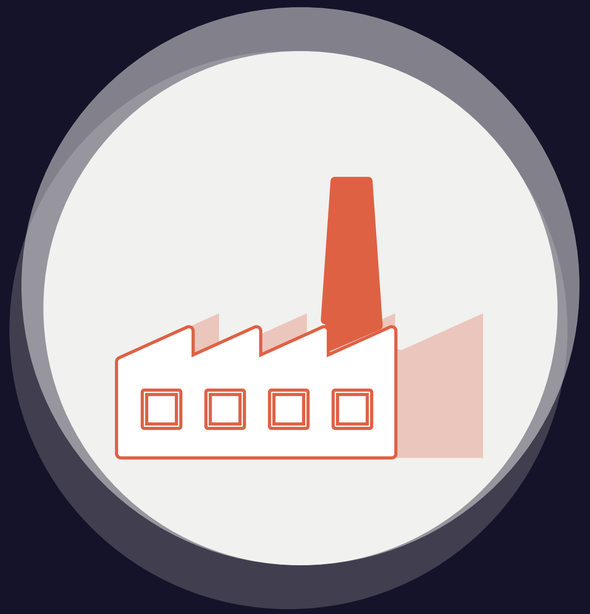
ANALYSIS


Layer 5
Social Networks
Layer 4
Economic Networks
Layer 3
Infrastructure
Layer 2
Governance & Policies
Layer 1
Historical Evolution
+/-

03
ANALYSIS

Economy | Surroundings

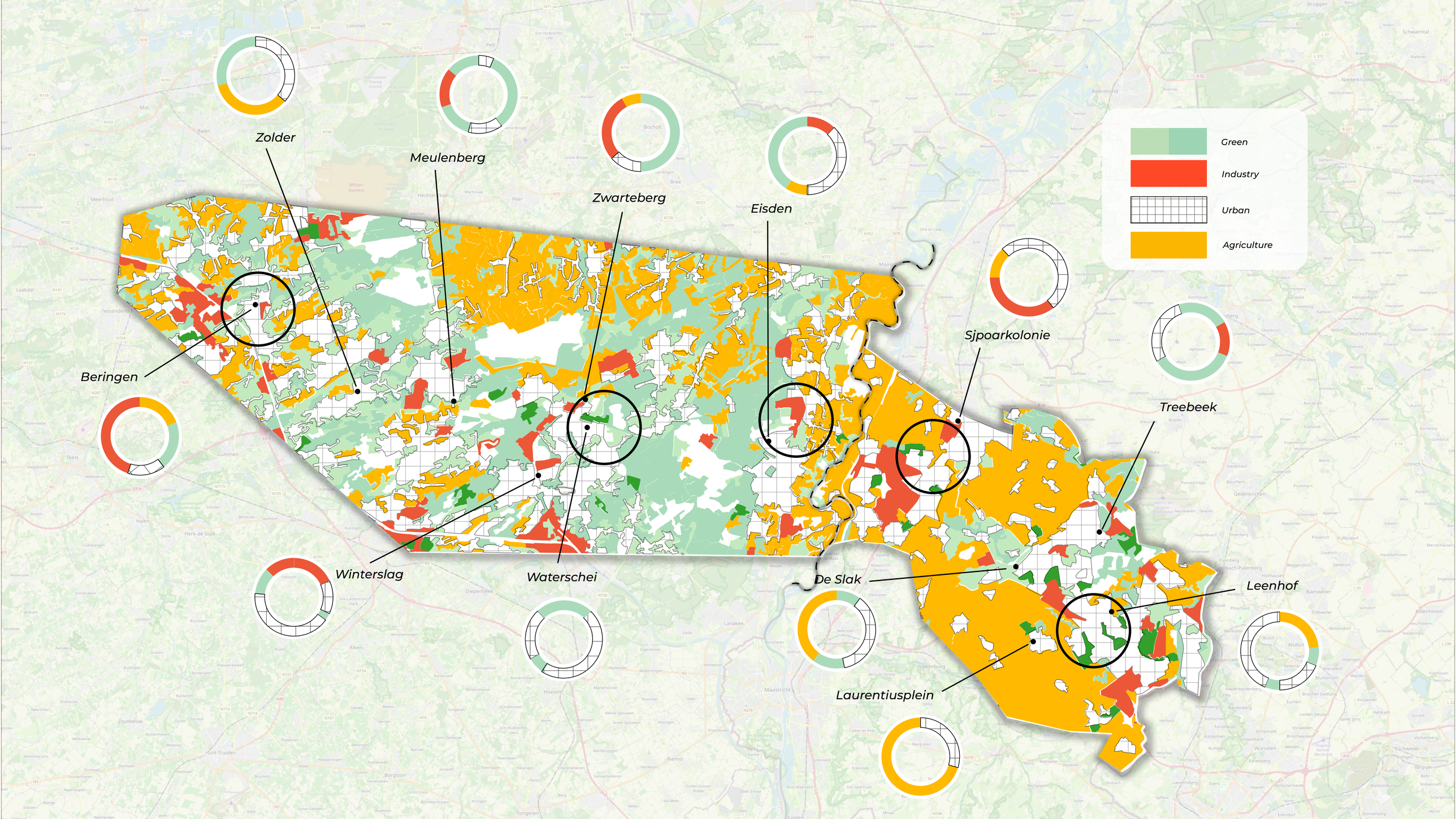
Green



Industry

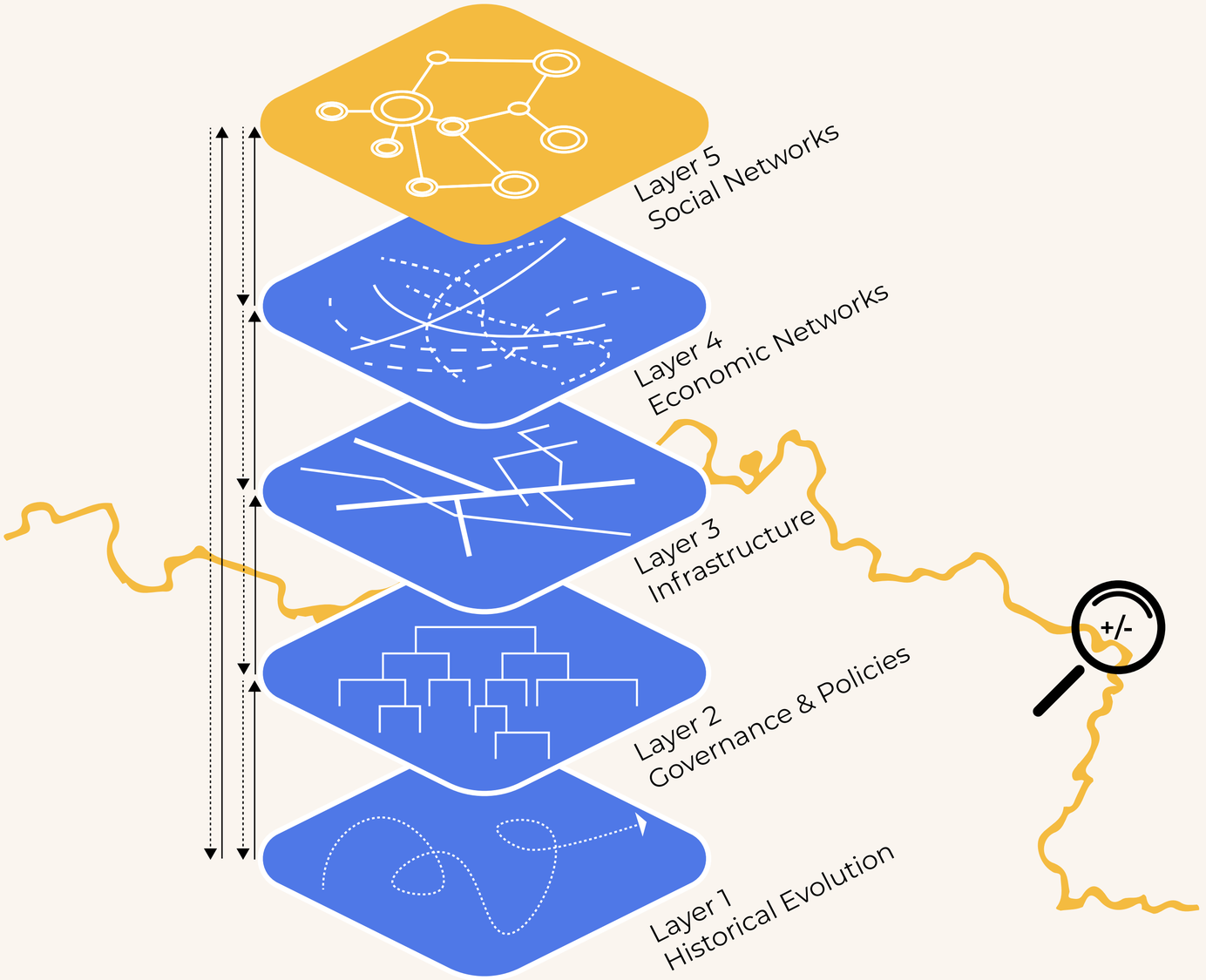
Urban

Agriculture


Green
Industry
Urban
Agriculture
Zolder
Meulenberg
Zwarteberg
Eisden
Beringen
Sjpoarkolonie
Treebeek
Winterslag
Waterschei
De Slak
Leenhof
Laurentiusplein

03

ANALYSIS


Layer 5
Social Networks
Layer 4
Economic Networks
Layer 3
Infrastructure
Layer 2
Governance & Policies
Layer 1
Historical Evolution
+/-

03
ANALYSIS

Social | Reasons to Travel

Work

Education

Family

Culture

Recreation

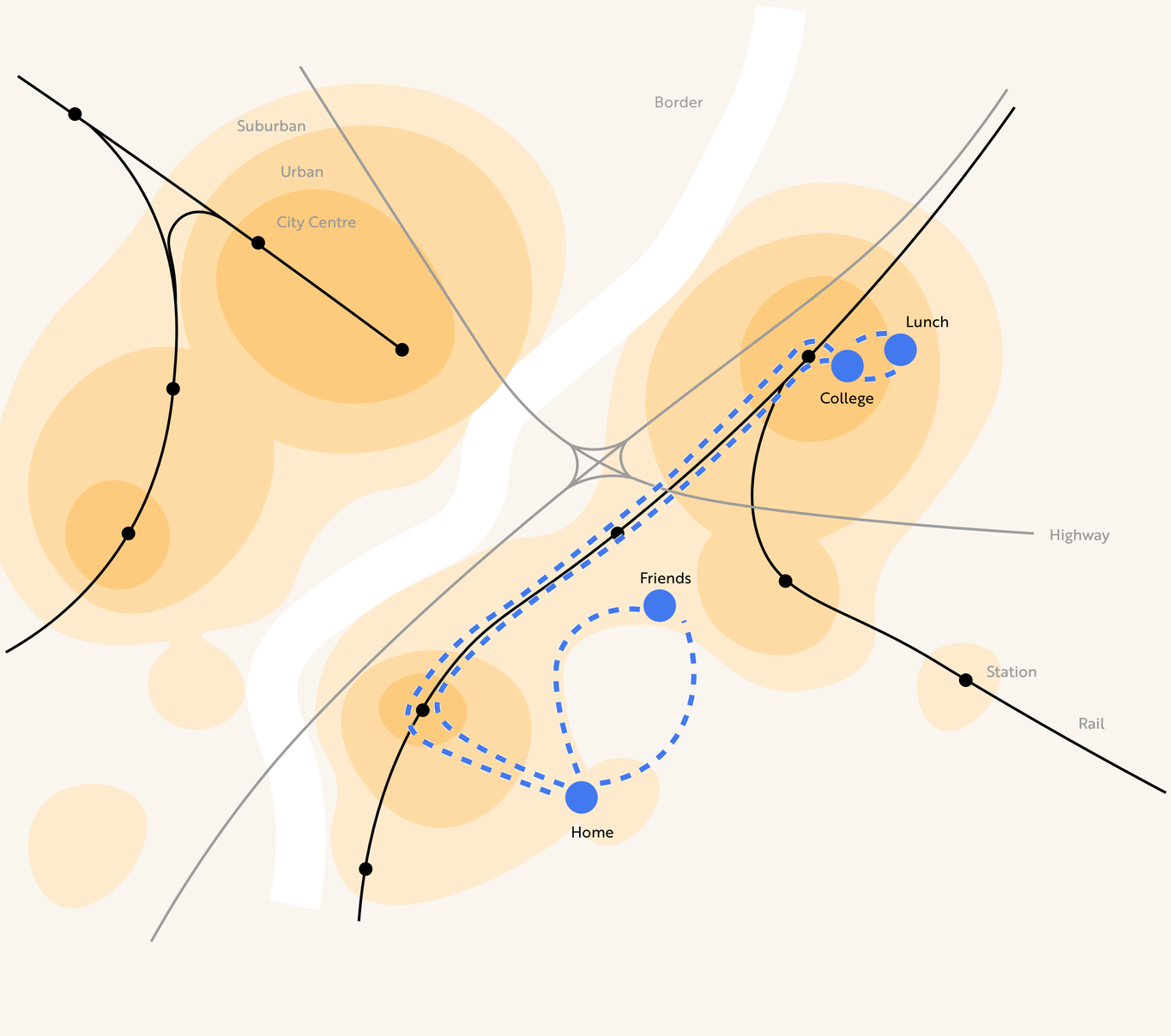
03 ANALYSIS

Social | Life Story

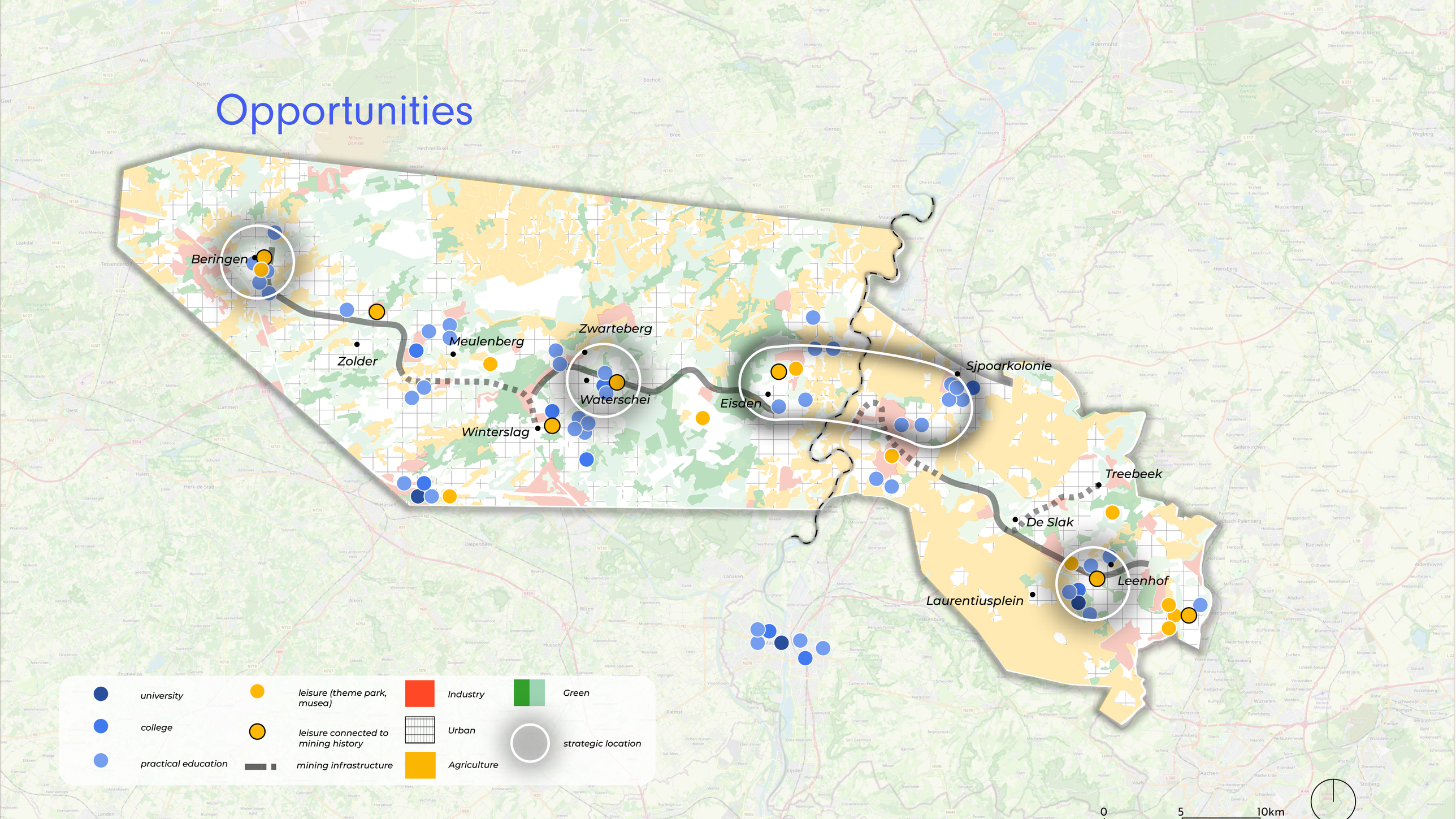
FLEUR

age: 21
family unit: mother (51) and father (54)
background: Dutch
studies at: College
home: rowhouse
mobility: bike & public transport

- 07:10 wake up
- 08:00 - 09:30 bike to station & catch train to college
- 09:30 - 12:30 attend classes
- 12:30 - 13:30 grab lunch in town
- 13:30 - 15:00 attend classes
- 15:00 - 17:30 Catch train & bike home
- 17:30 - 18:30 eat dinner
- 18:30 - 20:00 study
- 20:00 - 23:00 hang out with friends



Opportunities



01
PROBLEM

02
THEORY

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ANALYSIS

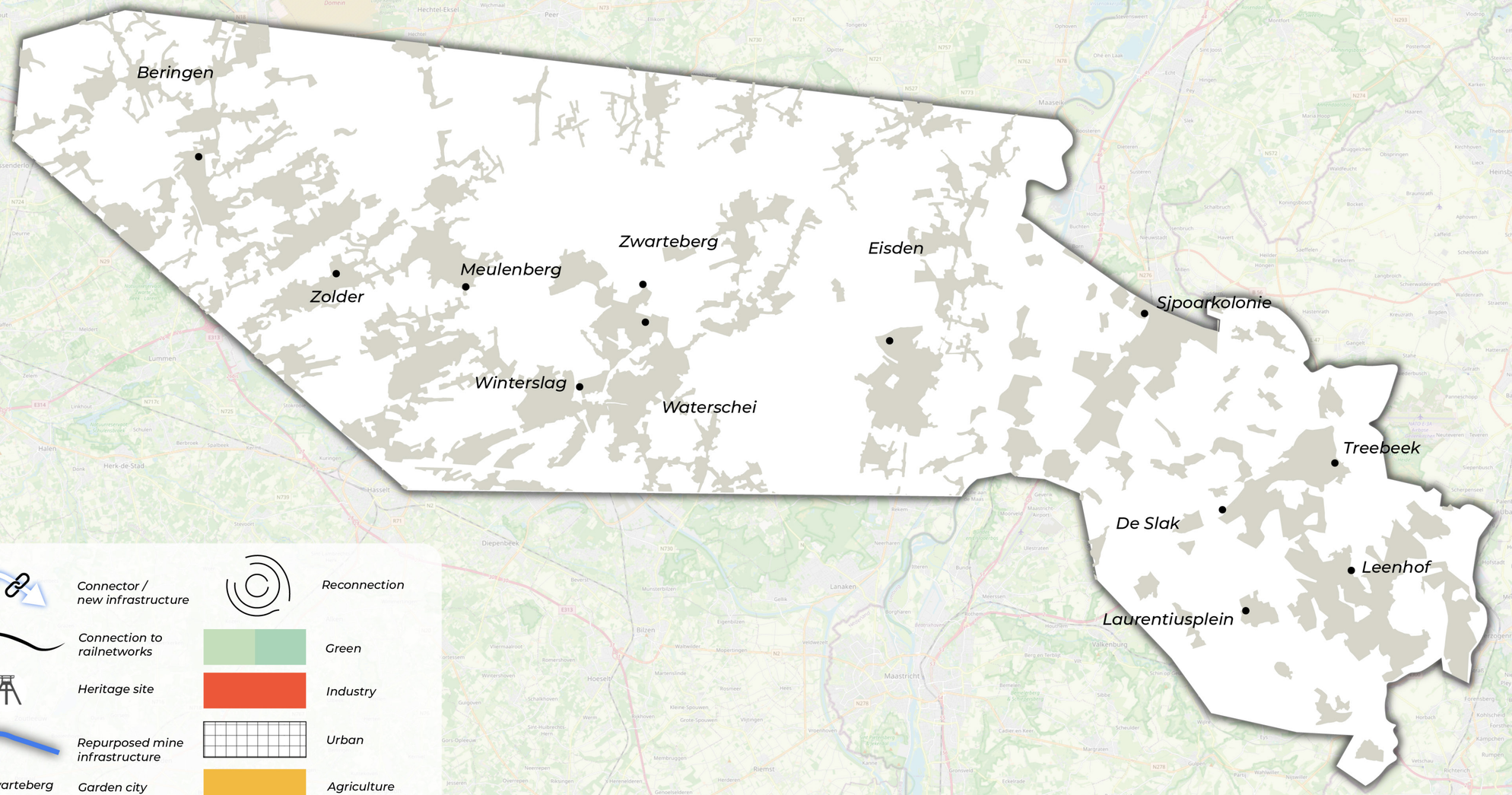
04
VISION

05
STRATEGY

06
CONCLUSION

04 VISION

In 2050 the region of Limburg will provide **mobility justice** by connecting the Dutch and Belgian provinces...



Connector / new infrastructure

Reconnection

Connection to railnetworks

Green

Heritage site

Industry

Repurposed mine infrastructure

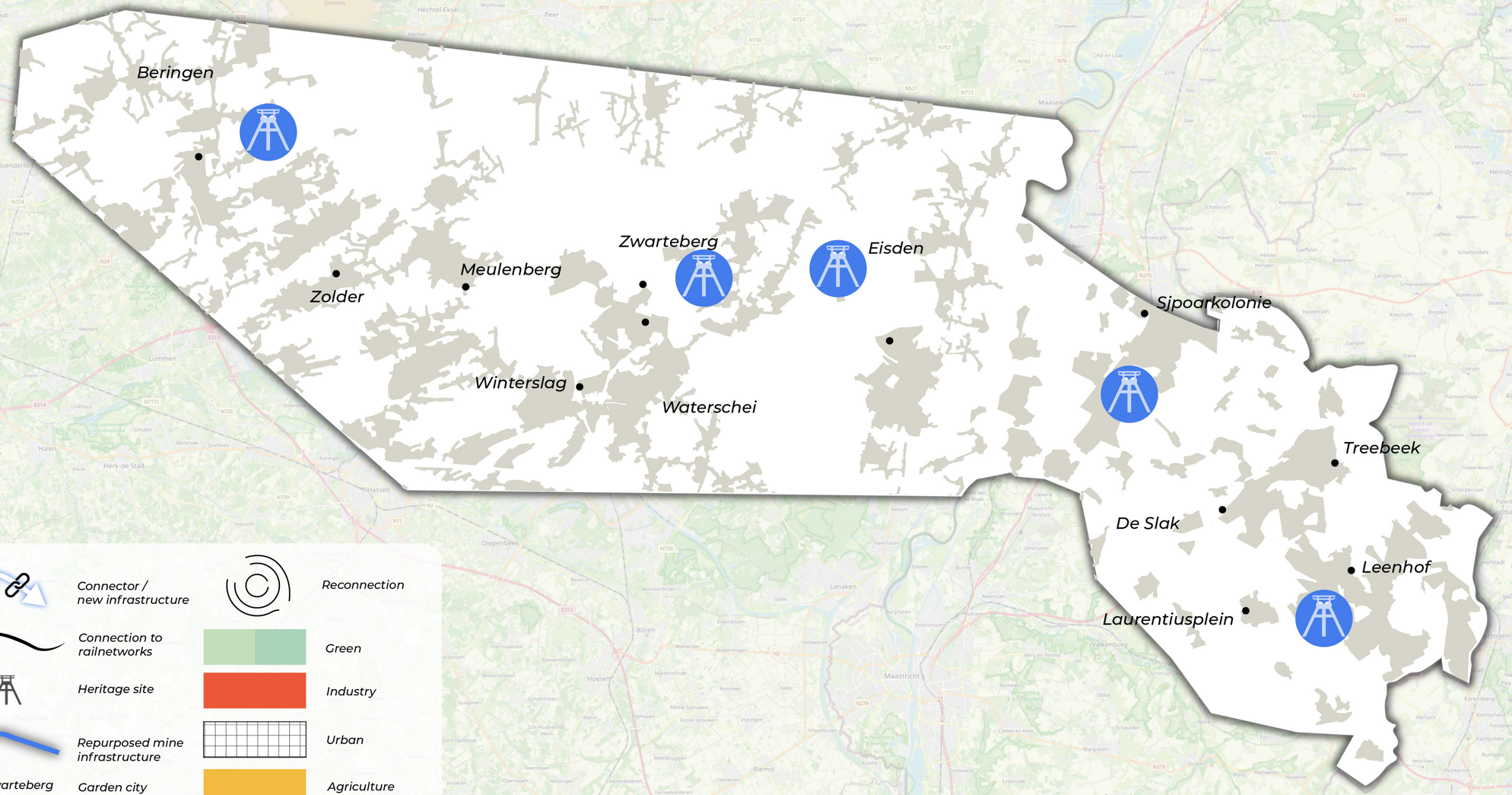
Urban

Zwarteberg

Garden city

Agriculture

...The provinces of Limburg will **reconnect** with their shared history of mining...



Connector / new infrastructure

Reconnection

Connection to railnetworks

Green

Heritage site

Industry

Repurposed mine infrastructure

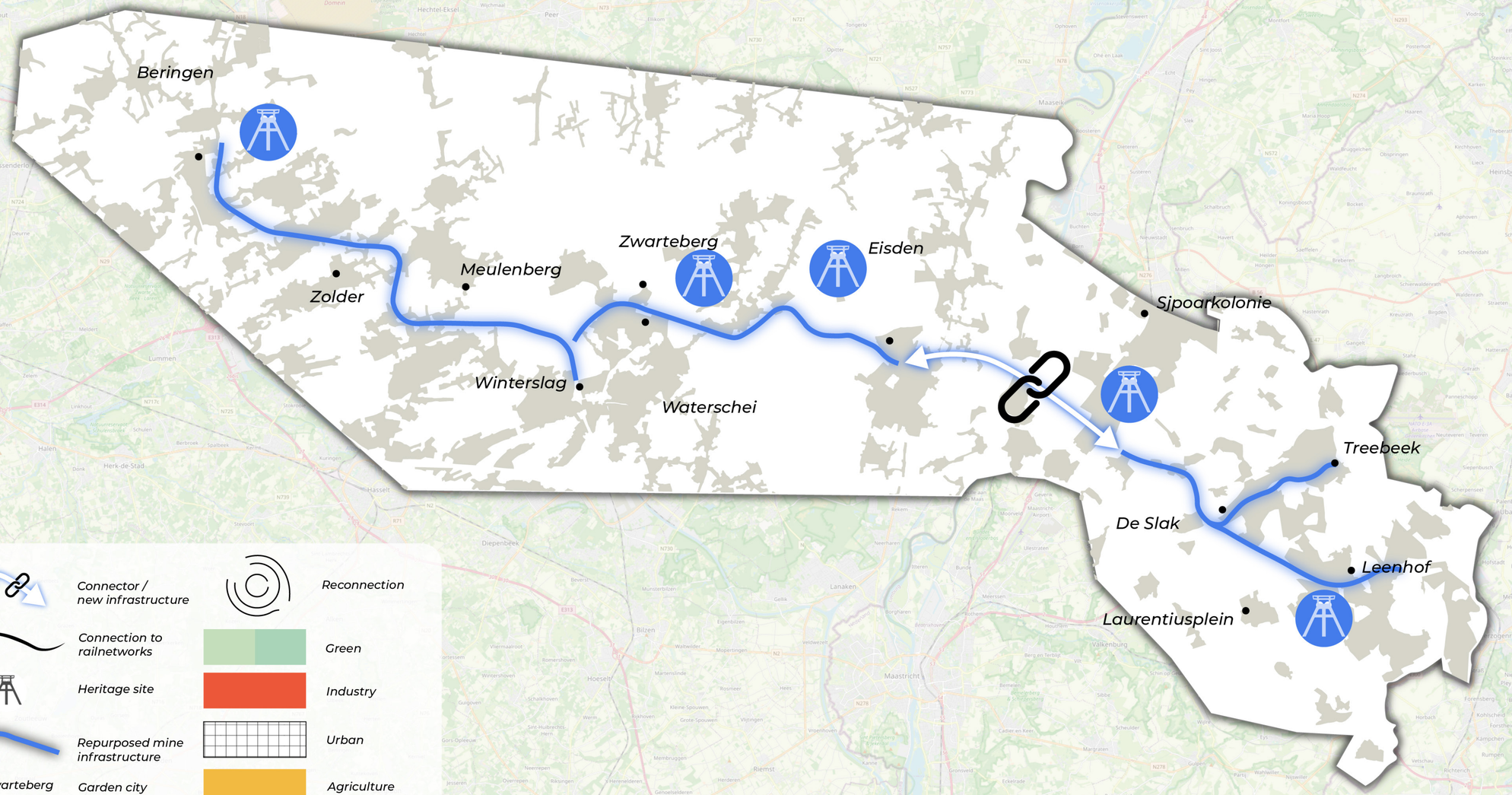
Urban

Zwarteberg

Garden city

Agriculture

...The old **mining infrastructure** will play a crucial role for the new transport network and will act as **backbone** to revitalise the garden cities....



Connector / new infrastructure

Reconnection

Connection to railnetworks

Green

Heritage site

Industry

Repurposed mine infrastructure

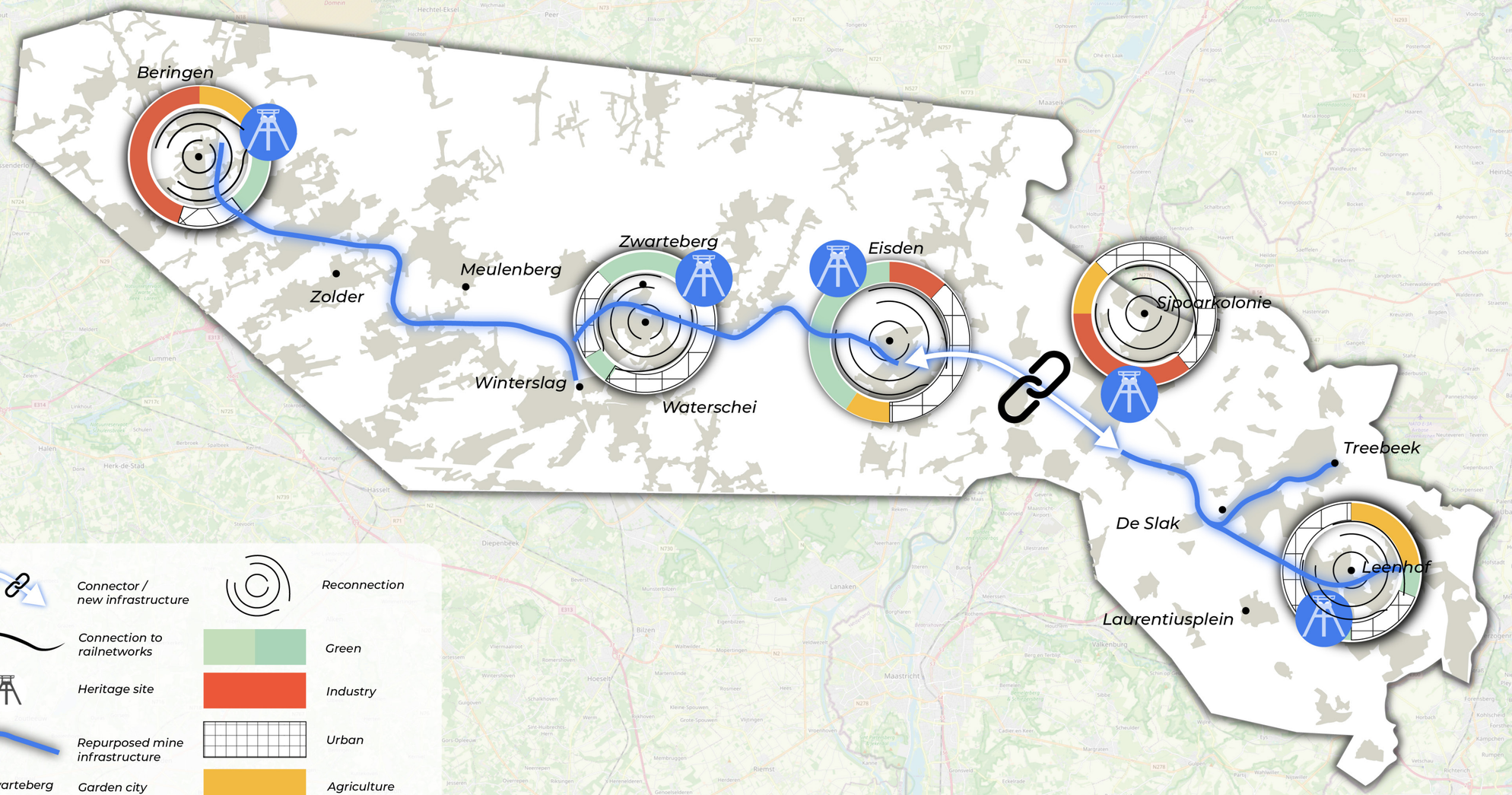
Urban

Zwarteberg

Garden city

Agriculture

... By **repurposing the old mining sites and garden cities**...



Connector / new infrastructure

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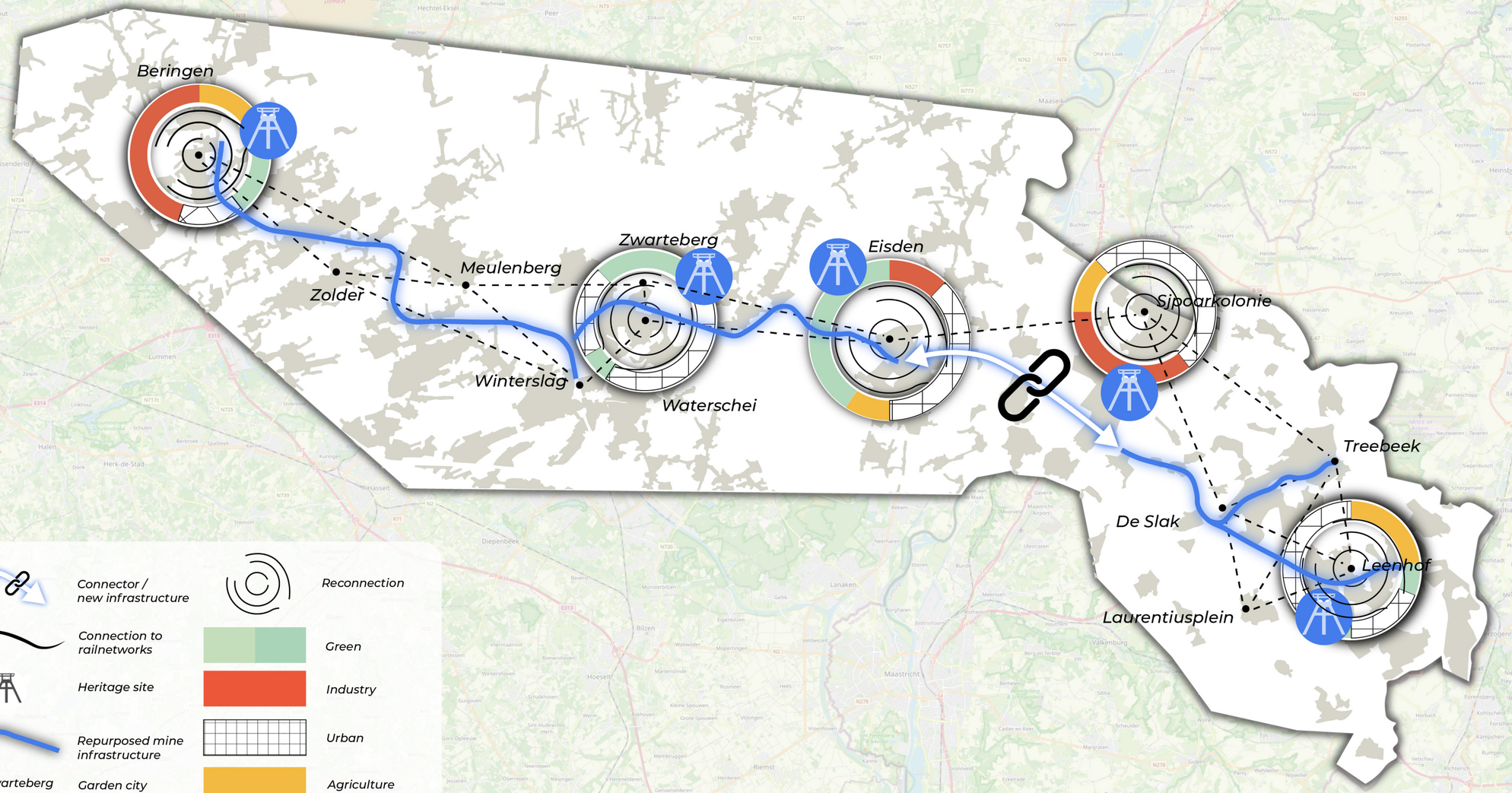
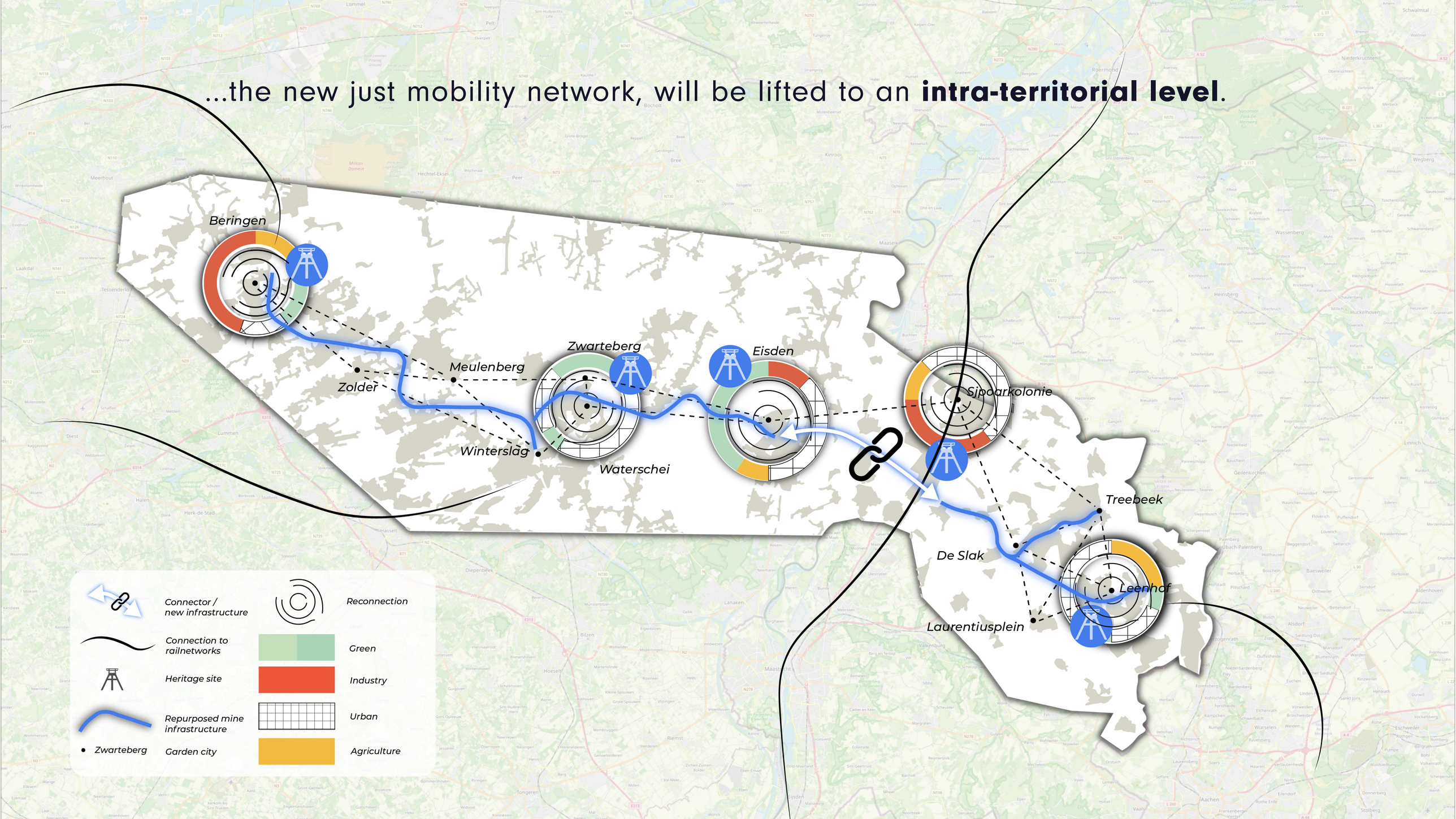
...to form nodes in the network and **rethinking the regional systems**...



...the new just mobility network, will be lifted to an **intra-territorial level**.

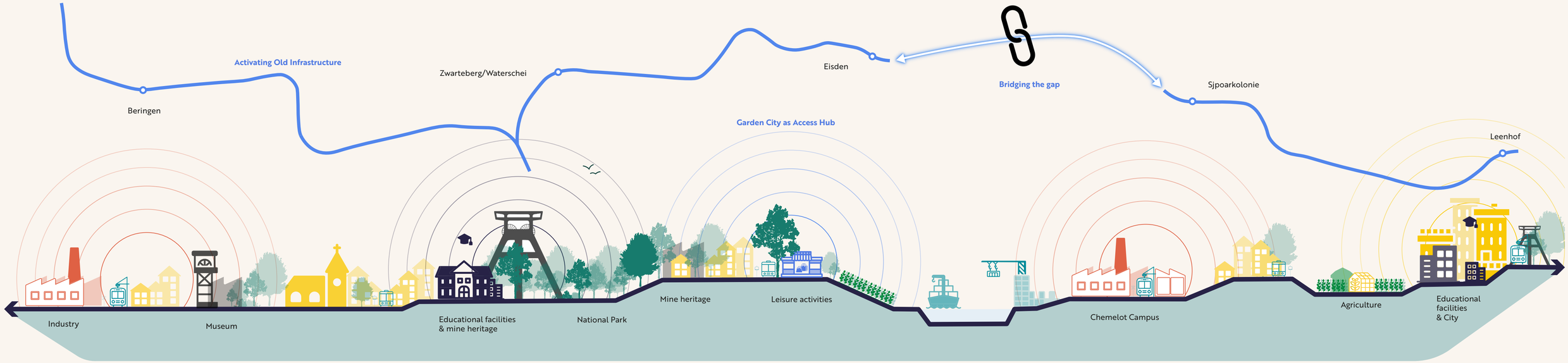


04
VISION

Current Situation

04
VISION

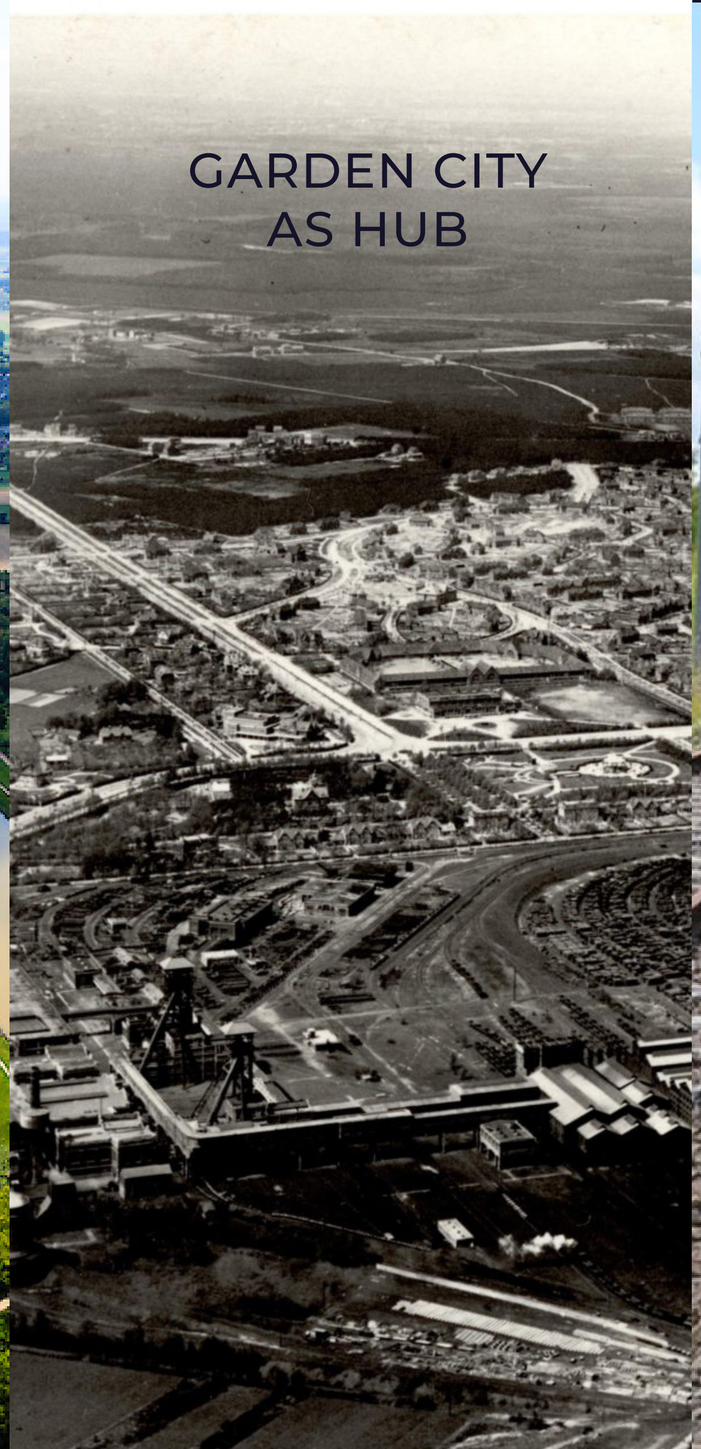
Vision 2050



04

VISION

Strategic Projects



01 PROBLEM

02 THEORY

03 ANALYSIS

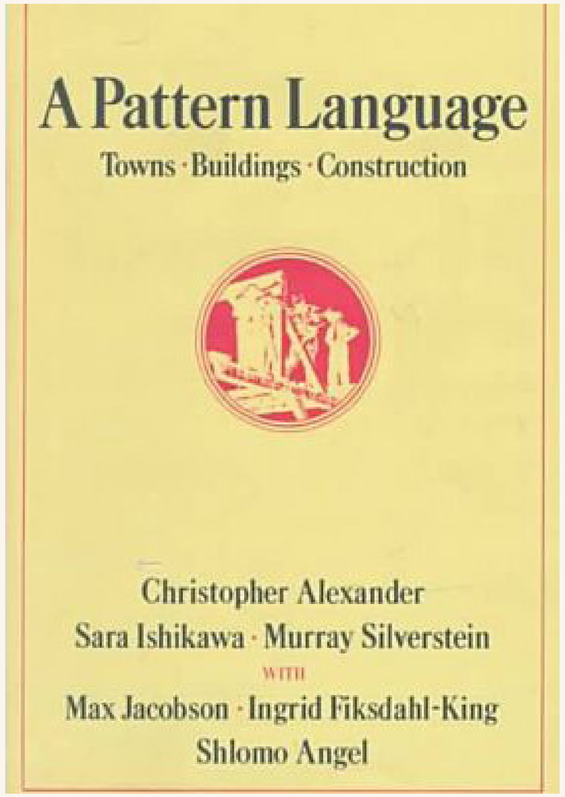
04 VISION

05 STRATEGY

06 CONCLUSION

CREATING A STRATEGY

Pattern Language | Introduction



(Alexander et al., 1977).

1. **Patterns**
2. **Pattern fields**, showing the relations between each pattern,
3. **Pattern sequence** of how to ‘play’ the patterns,
4. **A workshop** testing the functionality of the patterns
5. **A visualisation** of the transition, based on the practical implications that are part of the pattern language and the outcome of the workshop
6. **Policy recommendations**

05
STRATEGY

Pattern Language | Pathways

GOVERNANCE & POLICIES

NETWORKS & INFRASTRUCTURE

EMBRACING HERITAGE (OF THE MINES)

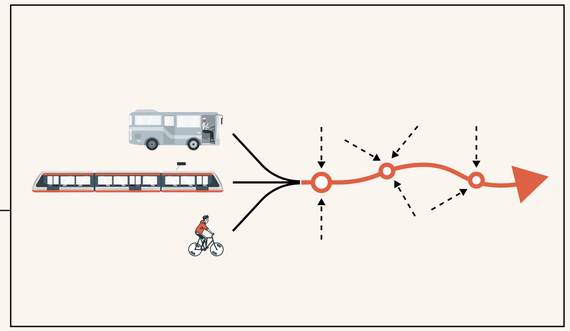
REGENERATING THE GARDEN CITY

Scales

1. Trans-national
2. Region
3. City
4. Neigbourhood
5. Public space

05
STRATEGY

pattern icon



Freepik by Storyset (edited)

N5 MULTIMODAL BACKBONE

A TRANSPORT NETWORK WITH A MULTIMODAL BACKBONE CAN ENHANCE CONNECTIVITY AND IMPROVE MOBILITY OPTIONS, LEADING TO MORE EFFICIENT AND SUSTAINABLE TRANSPORTATION.

CONNECTED TO
G5, G6, G7, G8, N1, N4, N6, N8, N9, E1, E2, E3, R3, R4

INFRASTRUCTURE - NETWORKS & INFRASTRUCTURE - TRANSNATIONAL

landscape

innovations

Image: Multimodal Corridor in Hilvursum the Netherlands (Prorail, 2021)

Theoretical Background

At volor acitati tem ulluptate porita sit ut harit, quam aut utem simagna temporatur ra quia sam eos del ipistis doluptatem as doluptaqui beatis maio illoresti ditate dolupta tiustru ptature nim aborerumenis molorest, simagnatent ut moloribus aut porrum nimus nulpa cum que nimodi corum vendi volum quos modiciis cum ne solupta voluptas earchiciet repudam sint et odite dentis amusaer umquis suntio et ant ut rent es minisquam aciaeceped que eiusandentem et lautatu reperib usdande liquia sam facerferum nonest eos consectes min plati volectore di occum velende llibus, sinullaccae ratibusapel maiorem ut ut velenditatem restrum, volupta tumqui am, ipient ium re nonserum quias eum aut audipsamusa sitatur autemquam as et velitia quam

Sources

(reference)

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Spatial interventions needed to support a Multi Modal Backbone include the creating of multiple transfer hubs where passengers can switch services or mode of transport. The whole length of the backbone should support different transportation methods to attract as many users as possible. This means that space has to be reserved to account for the different infrastructures such as biking lanes, bus lanes and rail corridors. Having safety measures implemented is also of importance as the speeds between the different transport methods differ greatly. Safety measures could include guarding rails, safety walls or appropriate distances between the infrastructure that can be filled with green space. In dense urban areas this clustering of infrastructures will most likely not be possible. When clustering is not possible different routes should be integrated in the urban fabric with a minimum number of obstacles. Furthermore, there should always be a way to that the routes are still part of the backbone.

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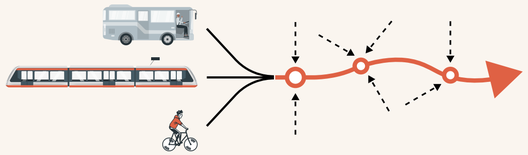
STRATEGY

pattern icon

pattern number
pattern title



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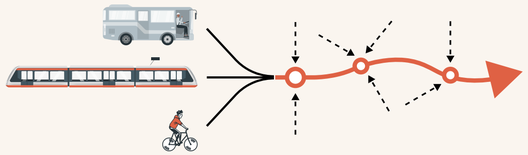
pattern title

hypothesis



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INFRASTRUCTURE - NETWORKS & INFRASTRUCTURE - TRANSNATIONAL

32

landscape

innovations

Image: Multimodal Corridor in Hilvursum the Netherlands (Prorail, 2021)

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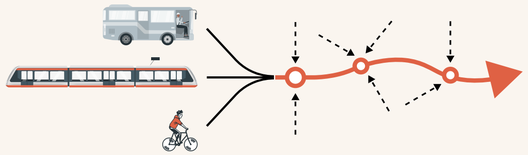
STRATEGY

pattern icon

pattern number
pattern title

hypothesis

regime - pathway
- scale



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INFRASTRUCTURE - NETWORKS & INFRASTRUCTURE - TRANSNATIONAL

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landscape

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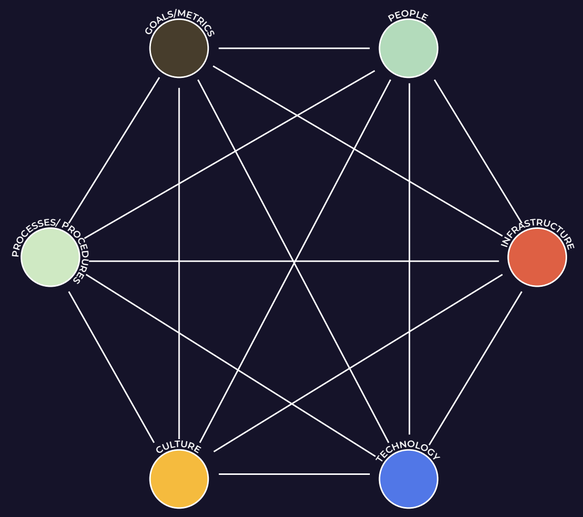
33

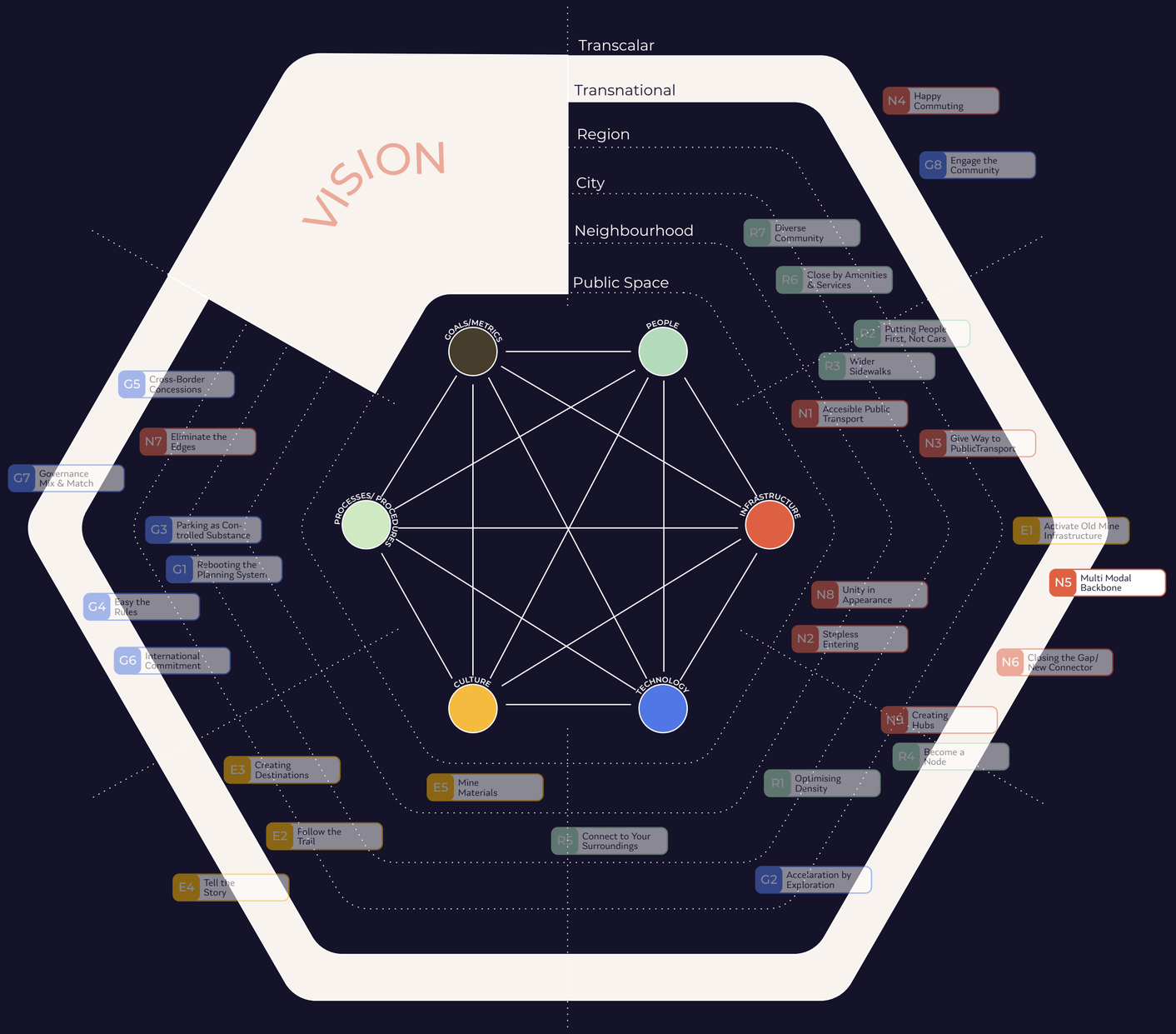
Pattern Language | Socio-Technical Systems



05 STRATEGY

VISION
Transcalar
Transnational
Region
City
Neighbourhood
Public Space
GOALS/METRICS
PEOPLE
PROCESSES/ PROCEDURES
INFRASTRUCTURE
CULTURE
TECHNOLOGY
G5 Cross-Border Concessions
N7 Eliminate the Edges
G7 Governance Mix & Match
G3 Parking as Controlled Substance
G1 Rebooting the Planning System
G4 Easy the Rules
G6 International Commitment
E3 Creating Destinations
E5 Mine Materials
E2 Follow the Trail
E4 Tell the Story
R5 Connect to Your Surroundings
G2 Accelaration by Exploration
R1 Optimising Density
R4 Become a Node
N9 Creating Hubs
N2 Stepless Entering
N8 Unity in Appearance
N6 Closing the Gap/ New Connector
N5 Multi Modal Backbone
E1 Activate Old Mine Infrastructure
N3 Give Way to PublicTransport
N1 Accesible Public Transport
R3 Wider Sidewalks
R2 Putting People First, Not Cars
R6 Close by Amenities & Services
R7 Diverse Community
G8 Engage the Community
N4 Happy Commuting

05
STRATEGY


VISION
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05
STRATEGY

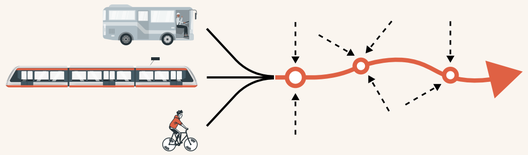
pattern icon

pattern number
pattern title

hypothesis

connections

regime - pathway
- scale



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INFRASTRUCTURE - NETWORKS & INFRASTRUCTURE - TRANSNATIONAL

landscape

innovations

Image: Multimodal Corridor in Hilvursum the Netherlands (Prorail, 2021)

Theoretical Background

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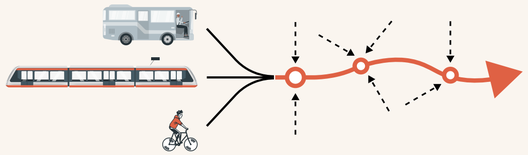

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INFRASTRUCTURE - NETWORKS & INFRASTRUCTURE - TRANSNATIONAL

landscape
innovations

Image: Multimodal Corridor in Hilvursum the Netherlands (Prorail, 2021)

Operating Level
Multi-Level
Perspective

Theoretical Background

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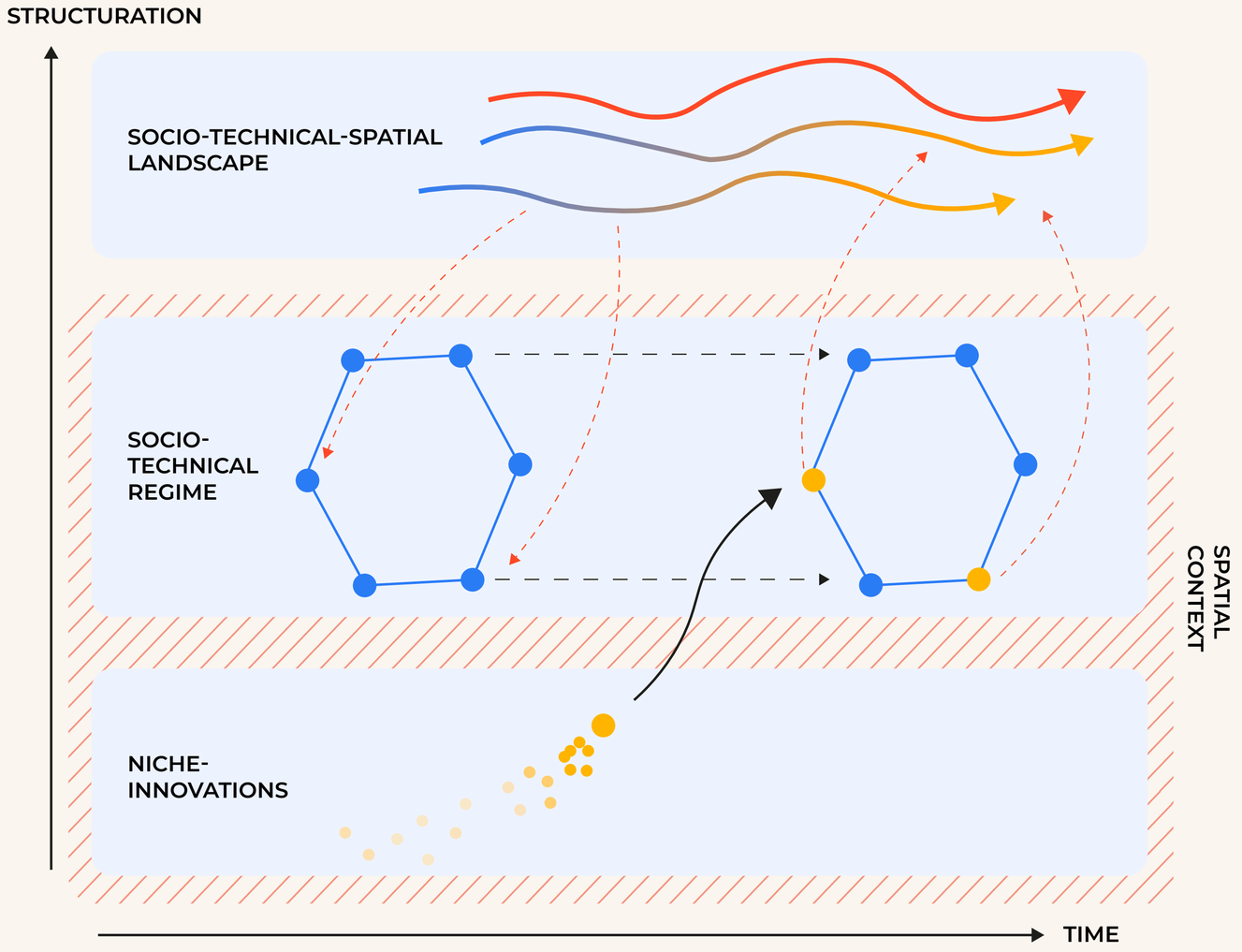
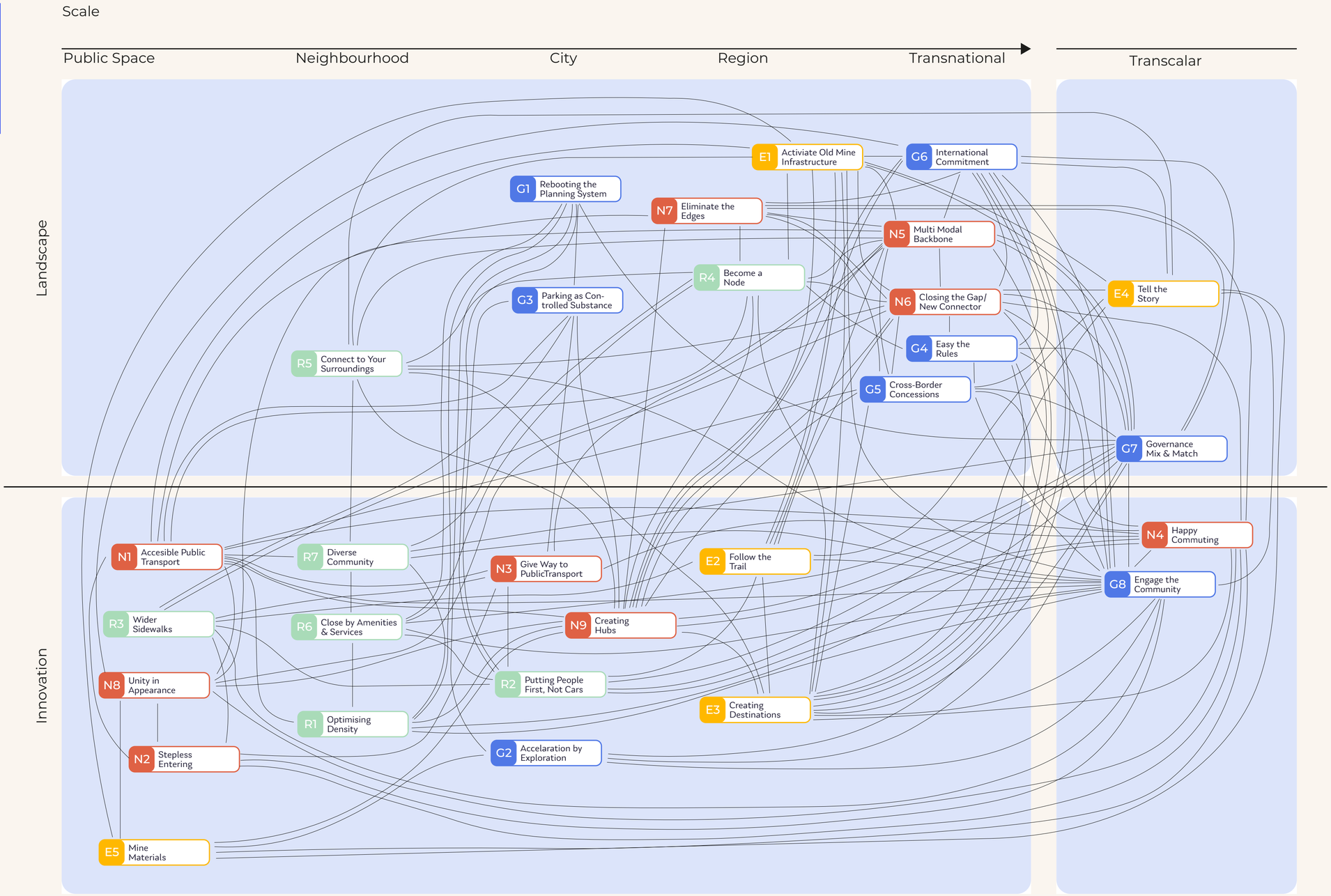
05
STRATEGY

Pattern Language | Multi-Level Perspective



05 STRATEGY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Neighbourhood
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Region
Transnational
Transcalar
Landscape
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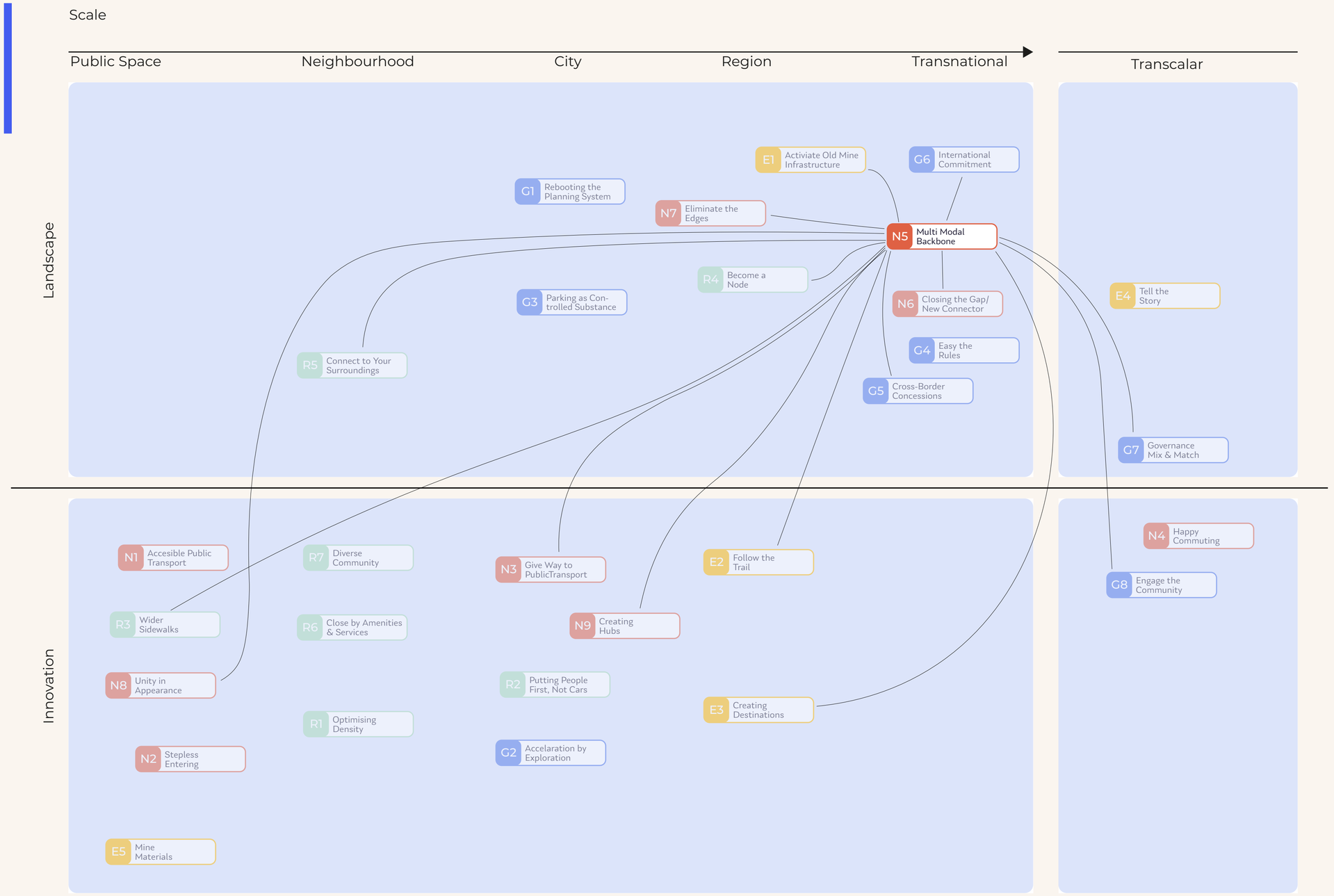
E5 Mine Materials

05 STRATEGY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G4 Easy the Rules
G5 Cross-Border Concessions
G7 Governance Mix & Match
N1 Accesible Public Transport
R7 Diverse Community
N3 Give Way to PublicTransport
E2 Follow the Trail
N4 Happy Commuting
G8 Engage the Community
R3 Wider Sidewalks
R6 Close by Amenities & Services
N9 Creating Hubs
N8 Unity in Appearance
R2 Putting People First, Not Cars
E3 Creating Destinations
R1 Optimising Density
N2 Stepless Entering
G2 Accelaration by Exploration
E5 Mine Materials

05
STRATEGY

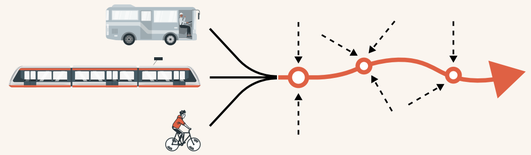
pattern icon

pattern number
pattern title

hypothesis

connections

regime - pathway
- scale



Freepik by Storyset (edited)

N5 MULTIMODAL BACKBONE

A TRANSPORT NETWORK WITH A MULTIMODAL BACKBONE CAN ENHANCE CONNECTIVITY AND IMPROVE MOBILITY OPTIONS, LEADING TO MORE EFFICIENT AND SUSTAINABLE TRANSPORTATION.

CONNECTED TO
G5, G6, G7, G8, N1, N4, N6, N8, N9, E1, E2, E3, R3, R4

INFRASTRUCTURE - NETWORKS & INFRASTRUCTURE - TRANSNATIONAL

32

Image: Multimodal Corridor in Hilvursum the Netherlands (Prorail, 2021)

landscape
innovations

operating level
multi-level
perspective

Theoretical Background

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Sources

(reference)

theoretical
background

Practical Implications

Spatial interventions needed to support a Multi Modal Backbone include the creating of multiple transfer hubs where passengers can switch services or mode of transport. The whole length of the backbone should support different transportation methods to attract as many users as possible. This means that space has to be reserved to account for the different infrastructures such as biking lanes, bus lanes and rail corridors. Having safety measures implemented is also of importance as the speeds between the different transport methods differ greatly. Safety measures could include guarding rails, safety walls or appropriate distances between the infrastructure that can be filled with green space. In dense urban areas this clustering of infrastructures will most likely not be possible. When clustering is not possible different routes should be integrated in the urban fabric with a minimum number of obsta-cles. Furthermore, there should always be a way to that the routes are still part of the backbone.

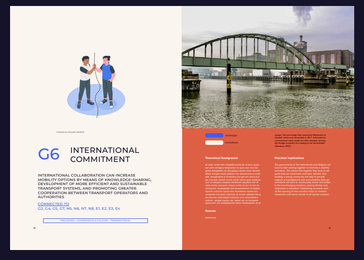
practical
implications

33

G1 REBOOTING THE PLANNING SYSTEM

ALLOWING DIFFERENT TYPES OF LAND USE IN RESIDENTIAL AREAS CREATES THE POSSIBILITY TO MEET DAILY NEEDS IN THE NEIGHBOURHOOD, REDUCING THE NEED TO TRAVEL WITH A PRIVATE VEHICLE.

CONNECTING TO
G3, G7, N1, R1, R6



G6 INTERNATIONAL COMMITMENT

INTERNATIONAL COLLABORATION CAN INCREASE MOBILITY OPTIONS BY MEANS OF ENTAILEDGE SHARING, DEVELOPMENT OF MORE EFFICIENT AND SUSTAINABLE TRANSPORTATION SYSTEMS, AND SUPPORT THAT ALSO HAVE LESS IMPACT ON THE ENVIRONMENT.

CONNECTING TO
G4, G5, G6, G7, N3, N6, N7, N8, E1, E3, E5, E4

N3 GIVE WAY TO PUBLIC TRANSPORT

PRIORITISING PUBLIC TRANSPORT NETWORKS INCREASE MOBILITY OPTIONS BY MEANS OF ENTAILEDGE SHARING, DEVELOPMENT OF MORE EFFICIENT AND SUSTAINABLE TRANSPORTATION SYSTEMS, AND SUPPORT THAT ALSO HAVE LESS IMPACT ON THE ENVIRONMENT.

CONNECTING TO
N3, N5, N6, N7, N8, N9, R2

N8 UNITY IN APPEARANCE

GIVING ALL STOPS AND IMPORTANT HUBS IN THE NETWORK A SIMILAR LOOK AND FEEL WILL INCREASE THE FEELING OF SAFETY AND RECOGNISABILITY FOR USERS ACROSS THE BORDER THAT HAS A SIMILAR LEVEL OF SERVICE.

CONNECTING TO
N8, N9, R3, R4, R5

E4 TELL THE STORY

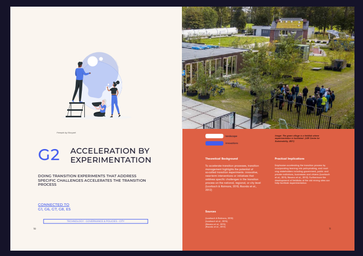
EDUCATING CITIZENS AND VISITORS ABOUT THE MINES HISTORY AND ITS CONSEQUENCES FOR THE LANDSCAPE AND CONDITIONS OF THE REGION AND CAN BOOST TOURISM

CONNECTING TO
E1, E2, E3, E4, E5, R5

R4 BECOME A NODE

BECOMING A NODE IN A MOBILITY NETWORK WILL INCREASE THE NUMBER OF USERS AND THUS THE OVERALL USABILITY AND RESILIENCE OF A COMMUNITY.

CONNECTING TO
R1, R2, R3, R4, R5, R6



G2 ACCELERATION BY EXPERIMENTATION

DOING TRANSITION EXPERIMENTS THAT ADDRESS SPECIFIC CHALLENGES ACCELERATES THE TRANSITION PROCESS.

CONNECTING TO
G1, G6, G7, G8, E5

G7 GOVERNANCE MIX & MATCH

MIXING GOVERNANCE STYLES CAN LEAD TO MORE EFFECTIVE CROSS-BORDER MOBILITY SOLUTIONS BY LEVERAGING THE STRENGTHS OF DIFFERENT APPROACHES, SUCH AS COMBINING TOP-DOWN COLLABORATION AND COORDINATION BETWEEN THEM.

CONNECTING TO
G1, G2, G4, G6, G8, N3, N6, N7, N9, E1, E3, E5, R1, R2, R6, R7

N4 HAPPY COMMUTING

MAKING PUBLIC TRANSPORT AND TRANSFERRING A SMOOTH AND MEMORABLE EXPERIENCE INCREASES RIDERSHIP

CONNECTING TO
G4, G5, N1, N2, N3, N6, N7, N8, N9, E3, E5, R2

N9 CREATING HUBS

CREATING DIFFERENT MAIN TRANSPORTATION HUBS THROUGHOUT THE REGION WILL ENSURE THAT CITIES NOT ONLY ON THE MAIN BACKBONE WILL BE WELL CONNECTED TO THE NETWORK.

CONNECTING TO
G5, G6, G7, N3, N4, N6, N8, N6, N7, N8, E1, E3, E5, R1, R5, R6

E5 MINE MATERIALS

USING MATERIALS THAT CAN BE TRACED BACK TO THE MINING HISTORY FOR CONSTRUCTING, STATIONS, REST AREAS, ETC. CAN INCREASE THE RECOGNISABILITY OF THE REGION INTO THE TRANSPORT NETWORKS.

CONNECTING TO
E2, N4, N8, E1, E4

R5 CONNECT TO YOUR SURROUNDING

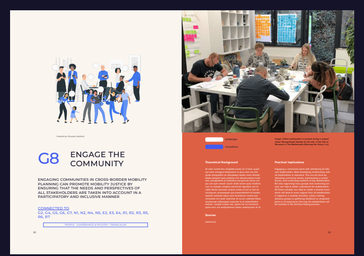
CONNECTING GARDEN CITIES WITH THEIR SURROUNDING LAND USES WILL GIVE THEM A UNIQUE CHARACTER AND THUS MAKE THEM MORE RECOGNISABLE. ADDITIONALLY TYPES OF LAND USE WILL BE CONNECTED TO THE NETWORK

CONNECTING TO
G8, N4, N5, N6, N7, E1, E4, R1

G3 PARKING AS CONTROLLED SUBSTANCE

INCREASE THE USE SUSTAINABLE MOBILITY BY REGULATING PARKING AND ROAD USE.

CONNECTING TO
G1, G7, G8, N1, N5, R1



G8 ENGAGE THE COMMUNITY

ENGAGING COMMUNITIES IN CROSS-BORDER MOBILITY PLANNING CAN PROMOTE MOBILITY JUSTICE BY ENSURING THAT THE NEEDS AND PERSPECTIVES OF MARGINALIZED GROUPS ARE TAKEN INTO ACCOUNT IN A PARTICIPATORY AND INCLUSIVE MANNER.

CONNECTING TO
G2, G3, G5, G6, G7, N1, N2, N4, N5, E2, E3, E4, R1, R2, R5, R6, R7

N5 MULTIMODAL BACKBONE

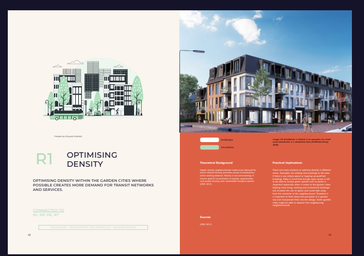
A TRANSPORT NETWORK WITH A MULTIMODAL BACKBONE CAN ENHANCE CONNECTIVITY AND IMPROVE MOBILITY OPTIONS, LEADING TO MORE EFFICIENT AND SUSTAINABLE TRANSPORTATION.

CONNECTING TO
G6, G8, G7, G7, G8, N1, N4, N6, N8, N9, E1, E2, E3, E5, R4

E1 ACTIVATE OLD MINE INFRASTRUCTURE

REUSING THE OLD RAIL INFRASTRUCTURE CAN ACT AS A BACKBONE FOR THE NETWORK CREATING AN EASY WAY TO CONNECT ALL OF THE REGION WHILE TAKING INTO ACCOUNT THE HISTORY.

CONNECTING TO
G5, G8, N1, N4, N6, N8, E2, E3, E4, E5



R1 OPTIMISING DENSITY

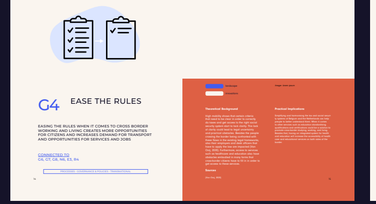
OPTIMISING DENSITY WITHIN THE GARDEN CITIES WHERE POSSIBLE CREATES MORE DEMAND FOR TRANSIT NETWORKS AND SERVICES.

CONNECTING TO
N1, N5, N6, R7

R6 CLOSE BY AMENITIES & SERVICES

HAVING AMENITIES CLOSE BY AND SPREAD THROUGH THE URBAN FABRIC INCREASES THE ACCESSIBILITY FOR CITIZENS AND CREATES SOCIAL INTERACTIONS.

CONNECTING TO
G8, N1, N4, N5, R1, R2, R4, R7



N1 ACCESIBLE PUBLIC TRANSPORT

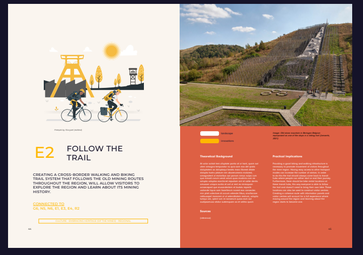
MORE ACCESSIBLE PUBLIC TRANSPORT REDUCES THE NEED FOR TRANSPORT BY CAR

CONNECTING TO
G2, N2, N3, N4, N7, N8, N9, E1, E3

N6 CLOSING THE GAP/ NEW CONNECTOR

CLOSING THE GAP BETWEEN THE TWO BORDER REGIONS WITH A NEW CONNECTOR IN TERMS OF SERVICES AND INFRASTRUCTURE WILL INCREASE THE ACCESSIBILITY TO THE SAME AMENITIES FOR CITIZENS ON BOTH SIDES OF THE BORDER.

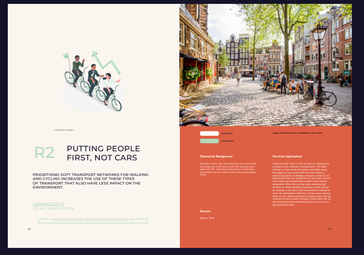
CONNECTING TO
G4, G5, G6, G7, G8, N1, N3, N7, N8, N9, E1, E2, E3, E4, R4, R5



E2 FOLLOW THE TRAIL

CREATING A CROSS-BORDER WALKING AND BIKING NETWORK THAT CONNECTS ALL OF THE MAIN CITIES THROUGHOUT THE REGION, WILL ALLOW VISITORS TO EXPERIENCE THE REGION AND LEARN ABOUT ITS MINING HISTORY.

CONNECTING TO
G5, G6, N4, N6, E1, E3, E4, R2



R2 PUTTING PEOPLE FIRST, NOT CARS

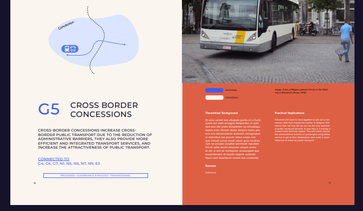
PRIORITISING SOFT TRANSPORT NETWORKS FOR WALKING AND BIKING NOT ONLY LEADS TO A MORE EFFICIENT USE OF TRANSPORT THAT ALSO HAVE LESS IMPACT ON THE ENVIRONMENT.

CONNECTING TO
N1, N3, N4, N6, R1, R3, R4, R6

R7 DIVERSE COMMUNITY

HAVING DIVERSITY AND THE CREATION OF A DIVERSE COMMUNITY WITHIN THE GARDEN CITIES AND THE NETWORK THE PHYSICAL AND SOCIAL STRUCTURES OF A GARDEN CITY INCREASES MOBILITY JUSTICE

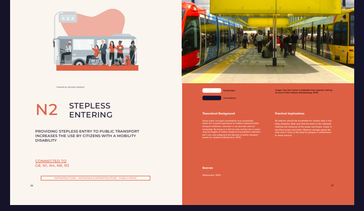
CONNECTING TO
G8, N1, N4, R1, R2, R6



G5 CROSS BORDER CONCESSIONS

CROSS-BORDER CONCESSIONS INCREASE CROSS-BORDER PUBLIC TRANSPORT DUE TO THE REDUCTION OF ADMINISTRATIVE BARRIERS. THEY ALSO PROVIDE MORE FINANCIAL STABILITY AND INCENTIVES FOR OPERATORS TO INCREASE THE ATTRACTIVENESS OF PUBLIC TRANSPORT.

CONNECTING TO
G4, G5, G7, N1, N5, N6, N7, N8, E5



N2 STEPLESS ENTERING

PROVIDING STEPLESS ENTRY TO PUBLIC TRANSPORT INCREASES THE USE BY CITIZENS WITH A MOBILITY DISABILITY

CONNECTING TO
G8, N1, N4, N8, E5

N7 ELIMINATE THE EDGES

AN OVERLAP IN CONCESSIONS WILL ENSURE THAT THERE WILL NO LONGER BE 'EDGES' IN THE REGION THAT SEE LESS TO NO SERVICE OF PUBLIC TRANSPORT

CONNECTING TO
G5, G6, N1, N5, N6, N9, R4

E3 CREATING DESTINATIONS

CREATING DESTINATIONS CAN BOOST HERITAGE TOURISM, CONNECTING AND CONNECTIONS BETWEEN DIFFERENT PARTS OF THE REGION, HAVING DIFFERENT TYPES OF DESTINATIONS ALONG THE NETWORK ALSO FACILITATES THE EXCHANGE OF PEOPLE, KNOWLEDGE AND CULTURE.

CONNECTING TO
N5, N6, N9, E1, E2, E4, R4, R5

R3 WIDER SIDEWALKS

WIDER SIDEWALKS ALLOW FOR BETTER WALKABILITY

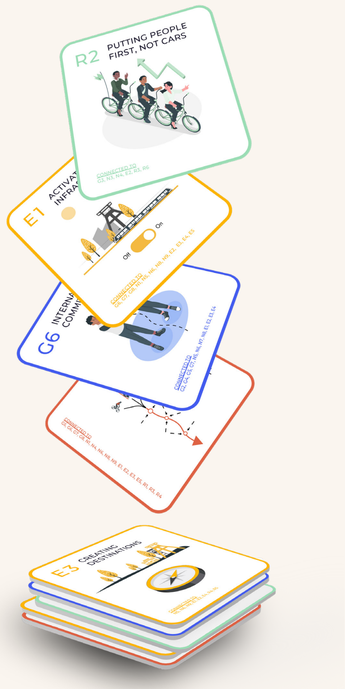
CONNECTING TO
G1, G2, N3, R2, E2, R3

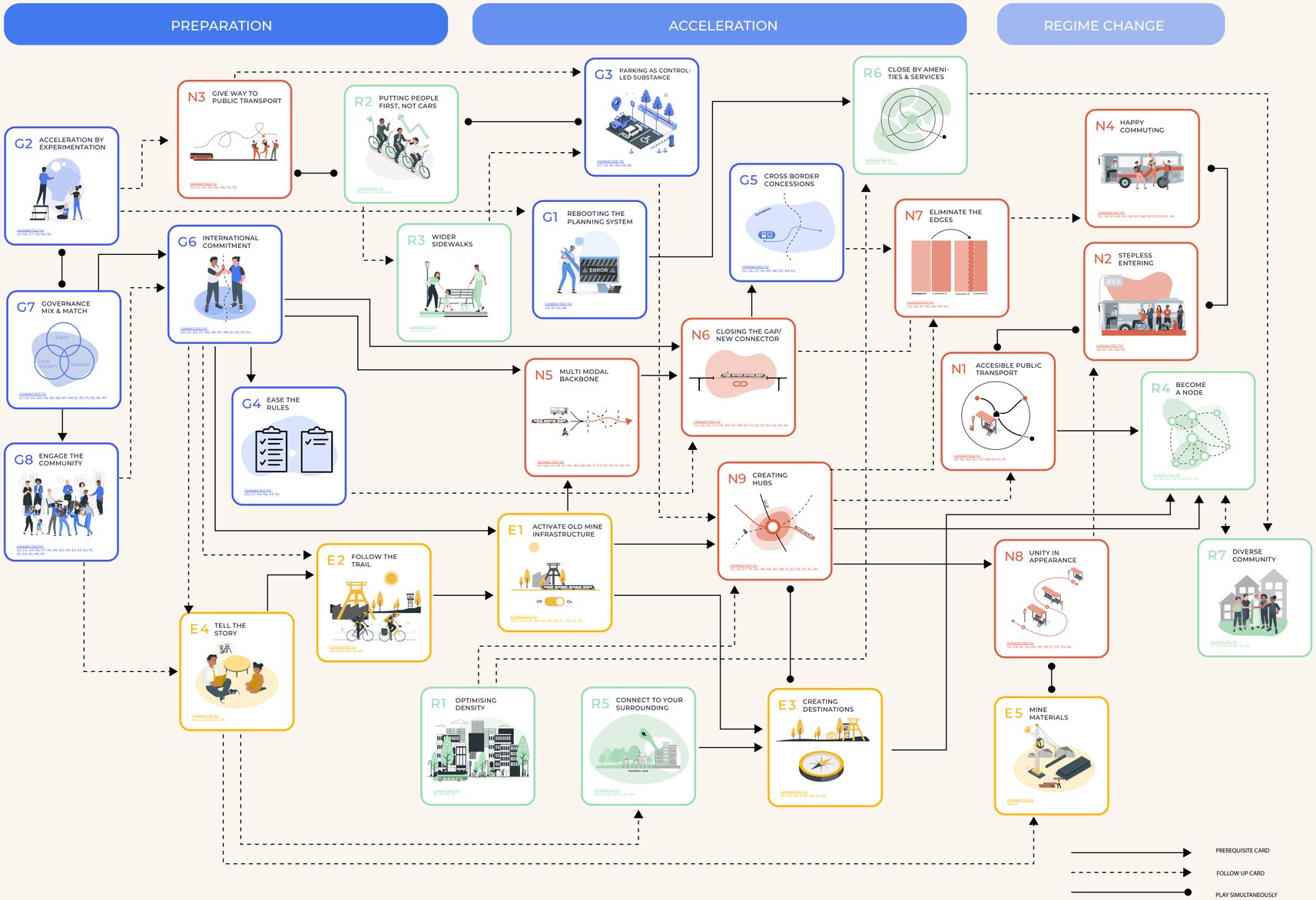
Pattern Language

05

STRATEGY

Pattern Language | Sequence





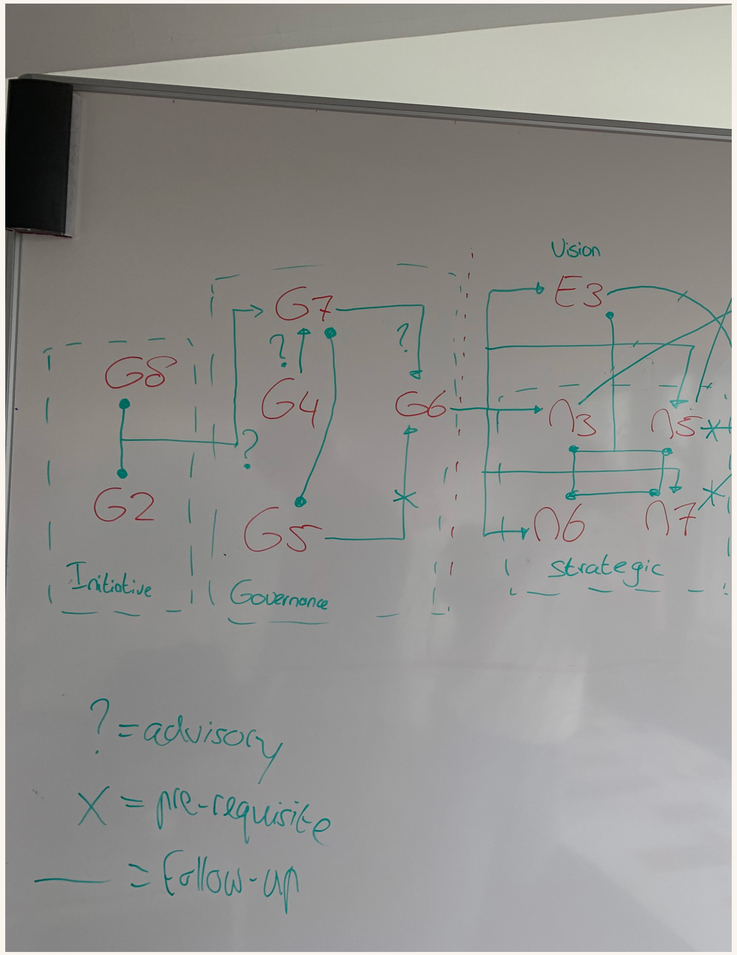
05
STRATEGY

Pattern Language | Workshop

Roles

1. Municipality of Maasmechelen
2. Municipality of Sittard/Geleen
3. Ministry of Infrastructure/department of the province
4. Citizen
5. Operator (NS, Arriva, de Lijn)
6. Infrastructure companies (Prorail, Infrabel)

Pattern Language | Workshop



05 STRATEGY

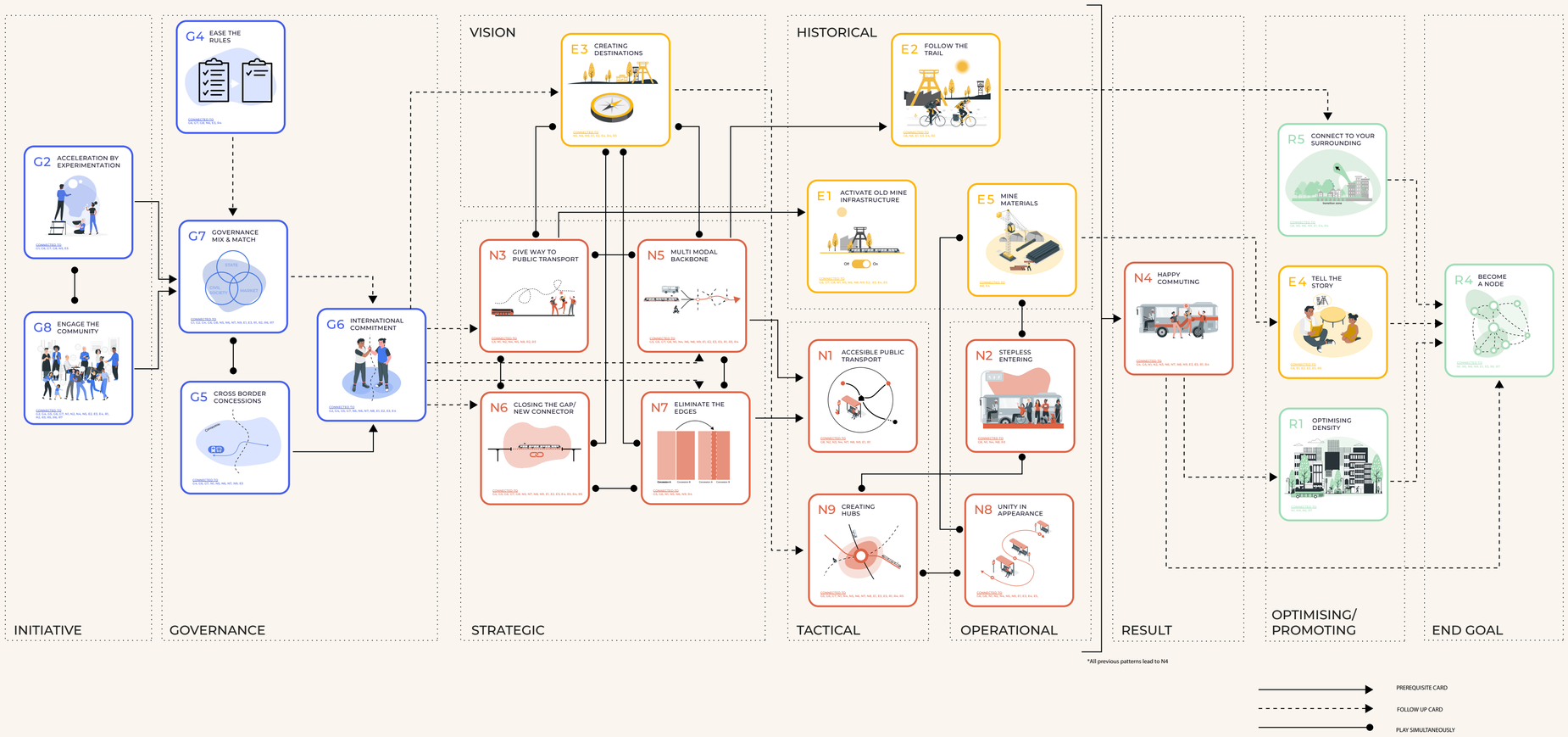
Pattern Language | Workshop

Similar sequence

Different grouping

Grouping based on type of actions instead of phases

More patterns are played simultaneously



05

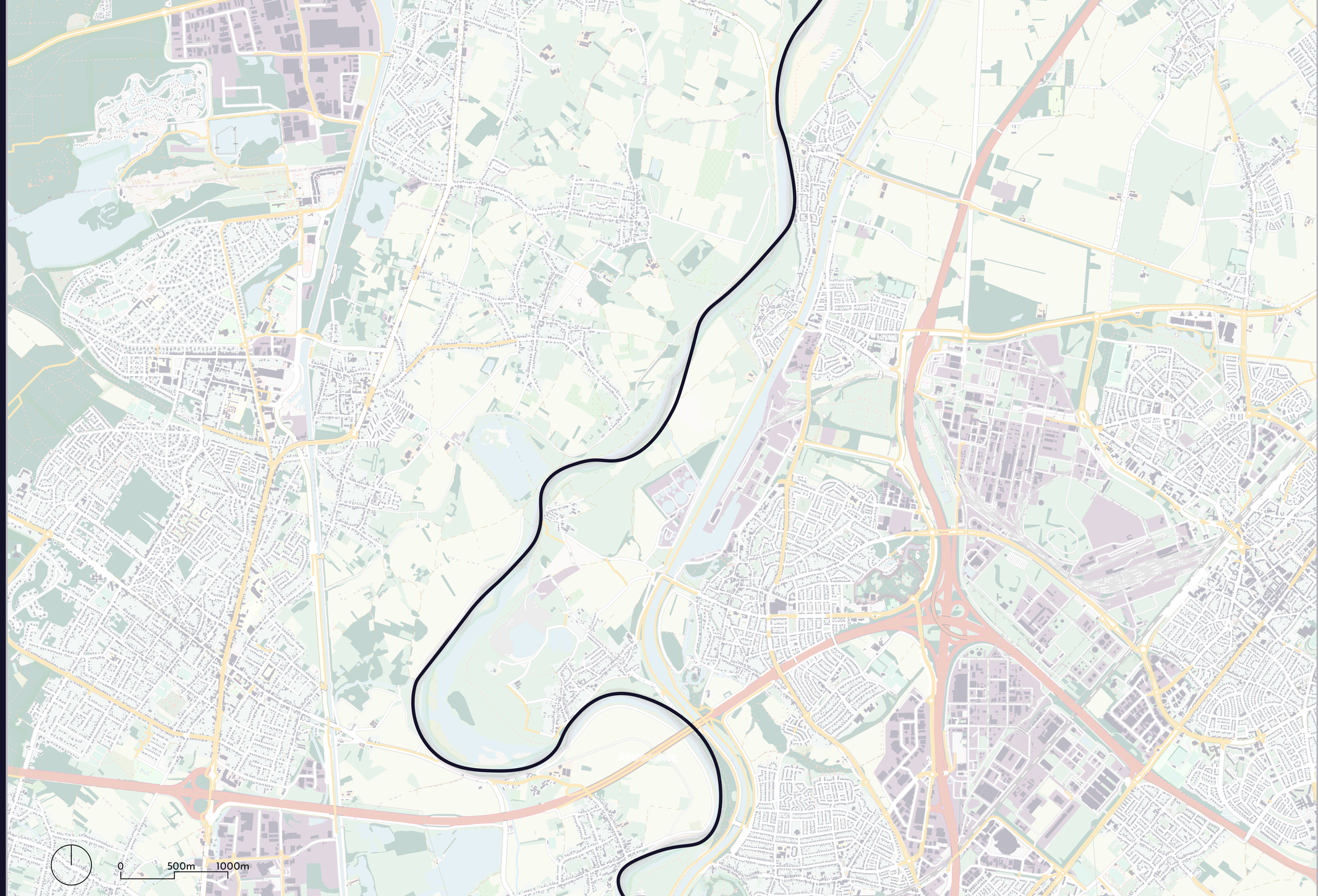
STRATEGY

Pattern Language | Synthesis

THEORY	ANALYSIS	PATTERNS
FIELDS	SEQUENCE	WORKSHOP

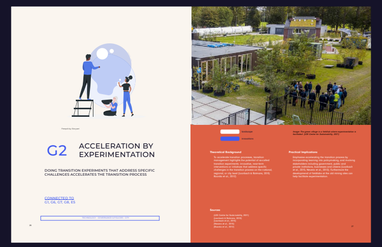
05

STRATEGY



05

STRATEGY



PREPARATION

ACCELERATION

REGIME CHANGE

G2 ACCELERATION BY EXPERIMENTATION
CONNECTED TO G1, G6, G7, G8, N5, E5

G7 GOVERNANCE MIX & MATCH
CONNECTED TO G1, G2, G4, G5, G6, G8, N1, N5, N7, N9, E1, E3, E5, R2, R6, R7

G8 ENGAGE THE COMMUNITY

N3 GIVE WAY TO PUBLIC TRANSPORT

R2 PUTTING PEOPLE FIRST, NOT CARS

G3 PARKING AS CONTROL-LED SUBSTANCE

R6 CLOSE BY AMENITIES & SERVICES

G5 CROSS BORDER CONCESSIONS

N4 HAPPY COMMUTING

N7 ELIMINATE THE EDGES

N2 STEPLESS ENTERING

G6 INTERNATIONAL COMMITMENT

R3 WIDER SIDEWALKS

G1 REBOOTING THE PLANNING SYSTEM

N6 CLOSING THE GAP/ NEW CONNECTOR

N1 ACCESIBLE PUBLIC TRANSPORT

R4 BECOME A NODE

N5 MULTI MODAL BACKBONE

G4 EASE THE RULES

N9 CREATING HUBS

E1 ACTIVATE OLD MINE INFRASTRUCTURE

N8 UNITY IN APPEARANCE

R7 DIVERSE COMMUNITY

E2 FOLLOW THE TRAIL

E4 TELL THE STORY

R1 OPTIMISING DENSITY

R5 CONNECT TO YOUR SURROUNDING

E3 CREATING DESTINATIONS

E5 MINE MATERIALS

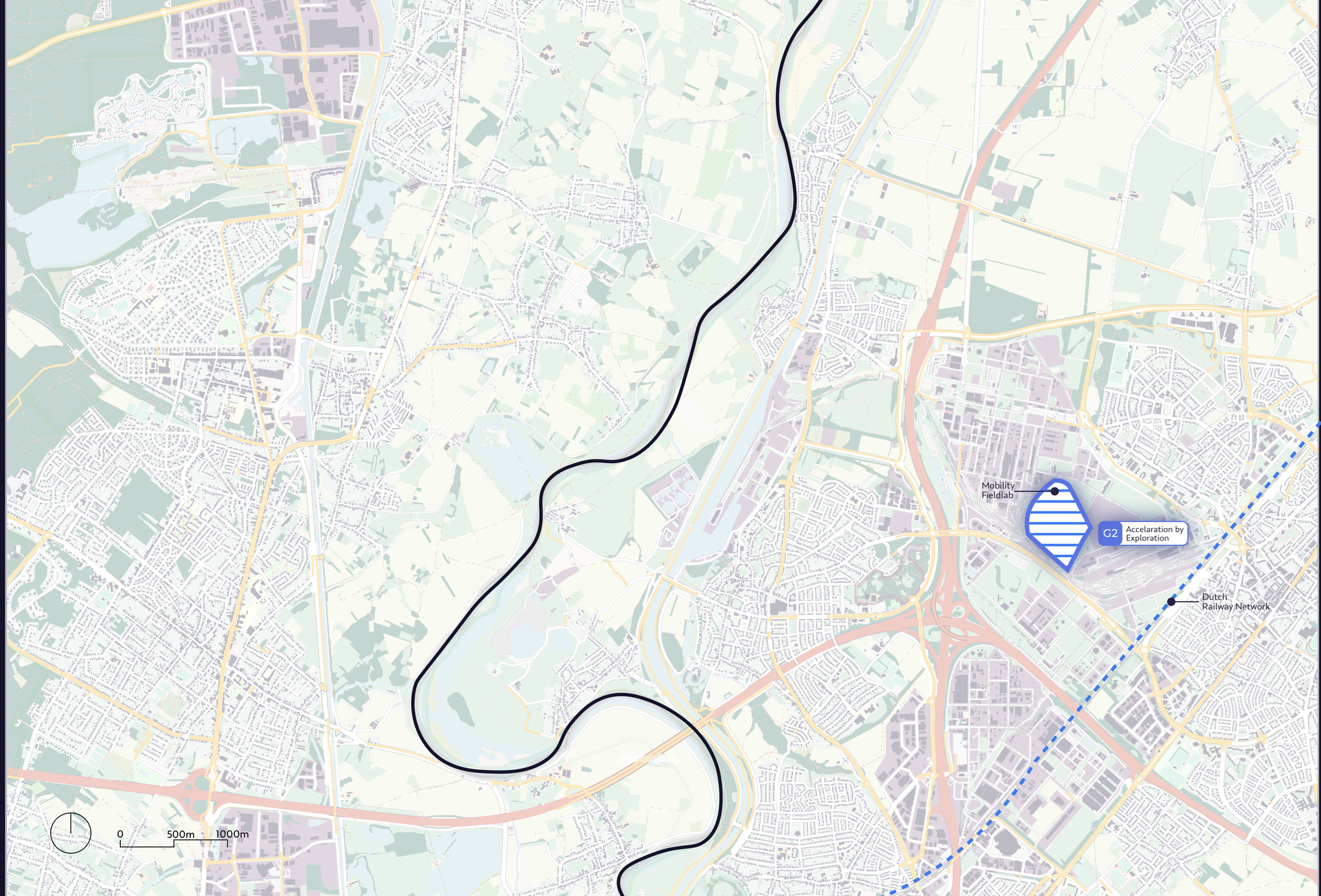
PREREQUISITE CARD

FOLLOW UP CARD

PLAY SIMULTANEOUSLY

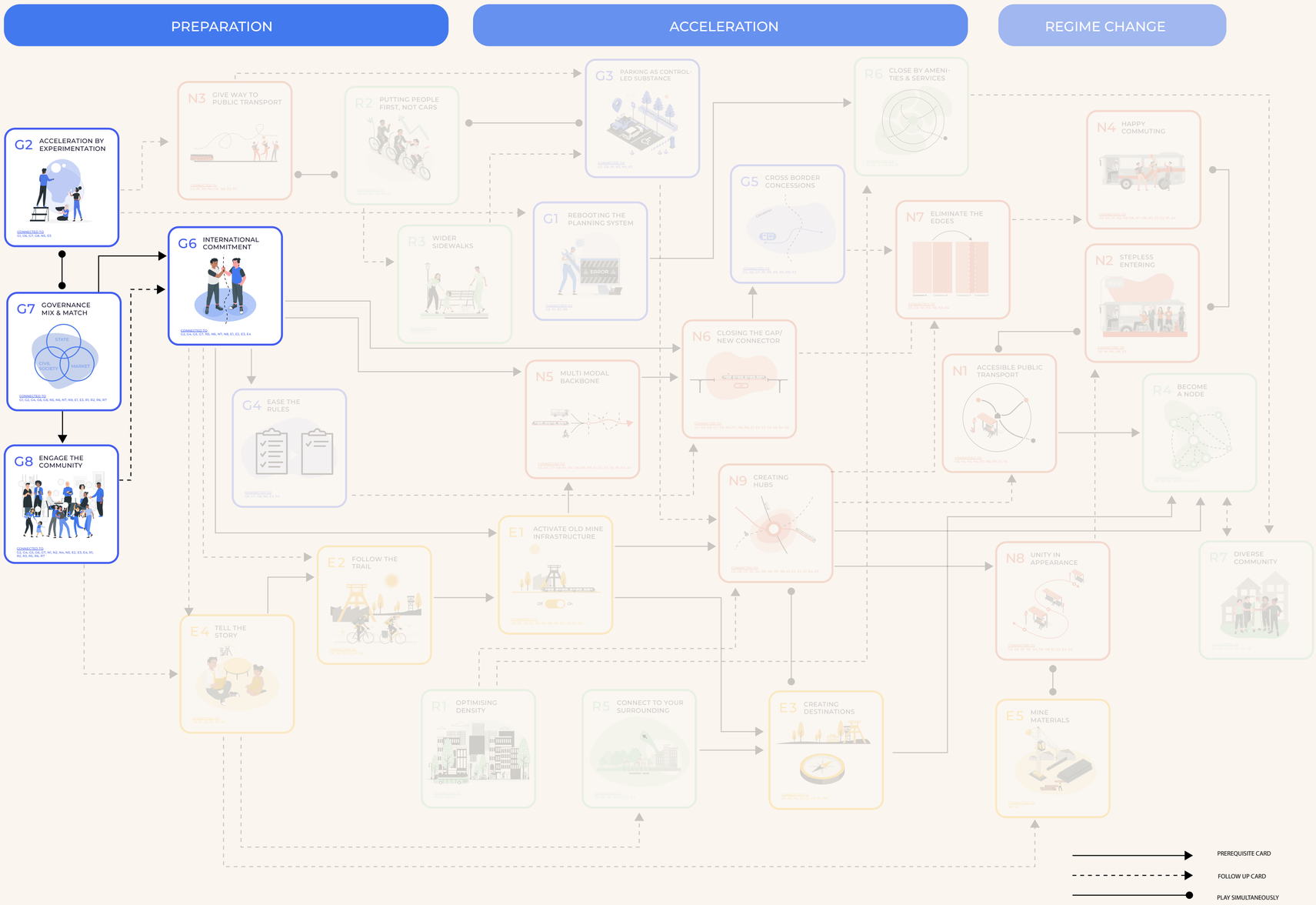
05

STRATEGY


Mobility
Fieldlab
G2
Accelaration by
Exploration
Dutch
Railway Network
0
500m
1000m

05 STRATEGY

G6 INTERNATIONAL COMMITMENT
G8 ENGAGE THE COMMUNITY
G7 GOVERNANCE MIX & MATCH


PREPARATION
ACCELERATION
REGIME CHANGE
G2 ACCELERATION BY EXPERIMENTATION
G7 GOVERNANCE MIX & MATCH
G8 ENGAGE THE COMMUNITY
G6 INTERNATIONAL COMMITMENT
N3 GIVE WAY TO PUBLIC TRANSPORT
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G3 PARKING AS CONTROL-LED SUBSTANCE
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E1 ACTIVATE OLD MINE INFRASTRUCTURE
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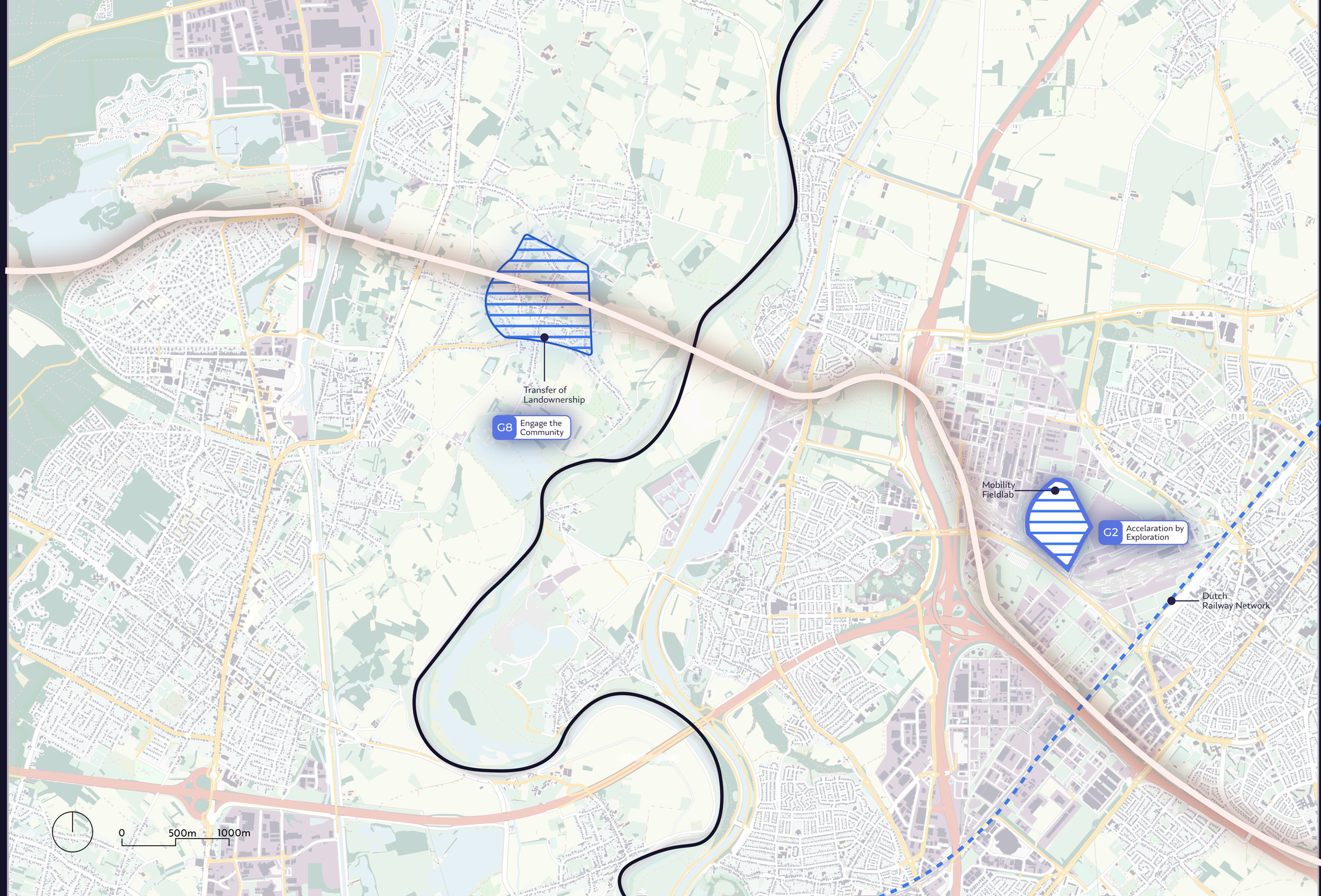
E3 CREATING DESTINATIONS
E5 MINE MATERIALS
PREREQUISITE CARD
FOLLOW UP CARD
PLAY SIMULTANEOUSLY

05
STRATEGY


Transfer of
Landownership
G8 Engage the
Community
Mobility
Fieldlab
G2 Accelaration by
Exploration
Dutch
Railway Network
0
500m
1000m

05

STRATEGY

PREPARATION

ACCELERATION

REGIME CHANGE

G2 ACCELERATION BY EXPERIMENTATION

N3 GIVE WAY TO PUBLIC TRANSPORT

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G3 PARKING AS CONTROL-LED SUBSTANCE

R6 CLOSE BY AMENI-TIES & SERVICES

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G5 CROSS BORDER CONCESSIONS

N7 ELIMINATE THE EDGES

N2 STEPLESS ENTERING

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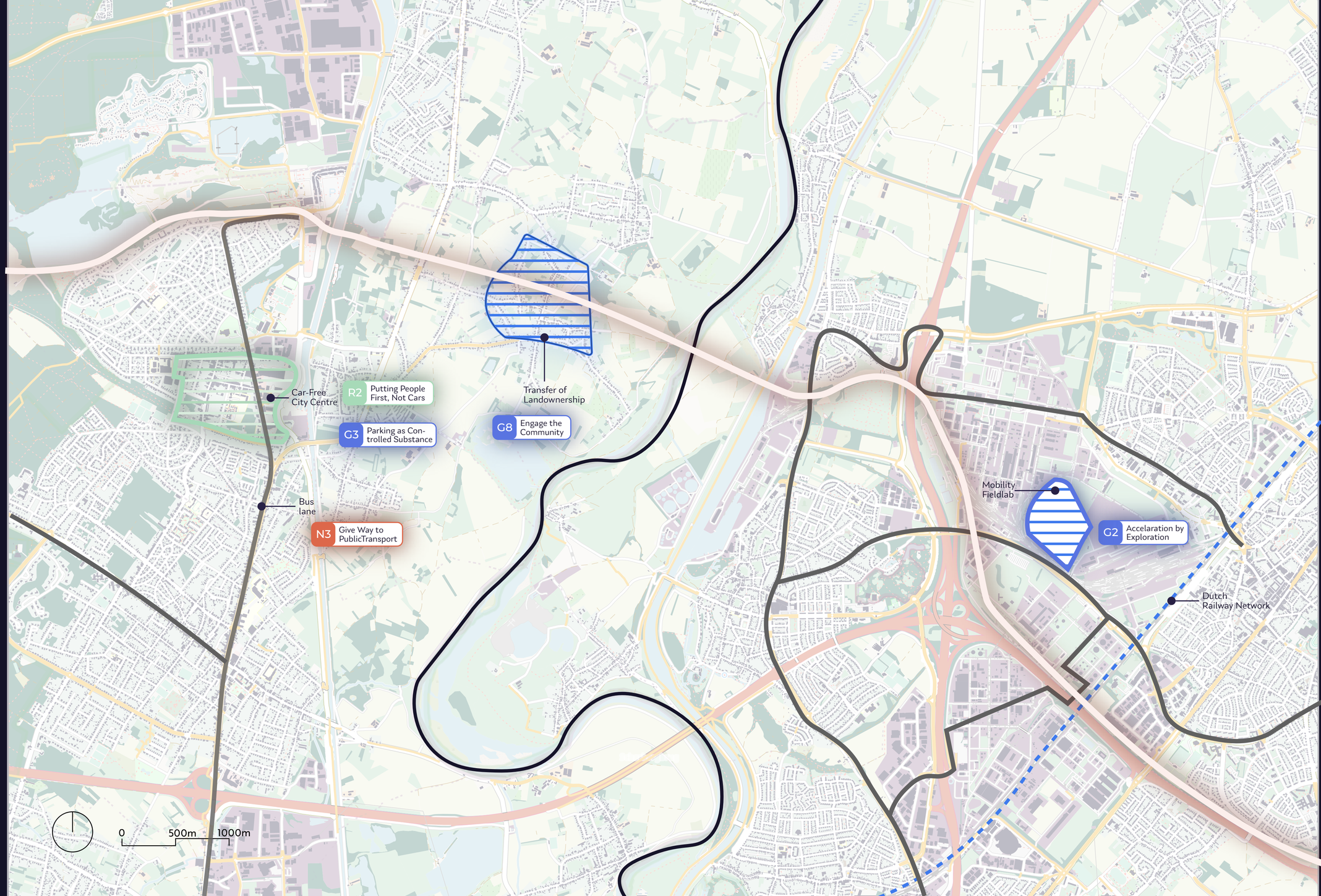
E5 MINE MATERIALS

PREREQUISITE CARD

FOLLOW UP CARD

PLAY SIMULTANEOUSLY

05
STRATEGY


Car-Free City Centre
R2 Putting People First, Not Cars
G3 Parking as Controlled Substance
Bus lane
N3 Give Way to PublicTransport
Transfer of Landownership
G8 Engage the Community
Mobility Fieldlab
G2 Accelaration by Exploration
Dutch Railway Network
0
500m
1000m

05
STRATEGY

PREPARATION

ACCELERATION

REGIME CHANGE

G2 ACCELERATION BY EXPERIMENTATION

N3 GIVE WAY TO PUBLIC TRANSPORT

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N4 HAPPY COMMUTING

G5 CROSS BORDER CONCESSIONS

G1 REBOOTING THE PLANNING SYSTEM

R3 WIDER SIDEWALKS

N7 ELIMINATE THE EDGES

N2 STEPLESS ENTERING

G6 INTERNATIONAL COMMITMENT

G7 GOVERNANCE MIX & MATCH

N6 CLOSING THE GAP/ NEW CONNECTOR

N1 ACCESIBLE PUBLIC TRANSPORT

R4 BECOME A NODE

N5 MULTI MODAL BACKBONE

G4 EASE THE RULES

N9 CREATING HUBS

G8 ENGAGE THE COMMUNITY

E1 ACTIVATE OLD MINE INFRASTRUCTURE

N8 UNITY IN APPEARANCE

R7 DIVERSE COMMUNITY

E2 FOLLOW THE TRAIL

E4 TELL THE STORY

R1 OPTIMISING DENSITY

R5 CONNECT TO YOUR SURROUNDING

E3 CREATING DESTINATIONS

E5 MINE MATERIALS

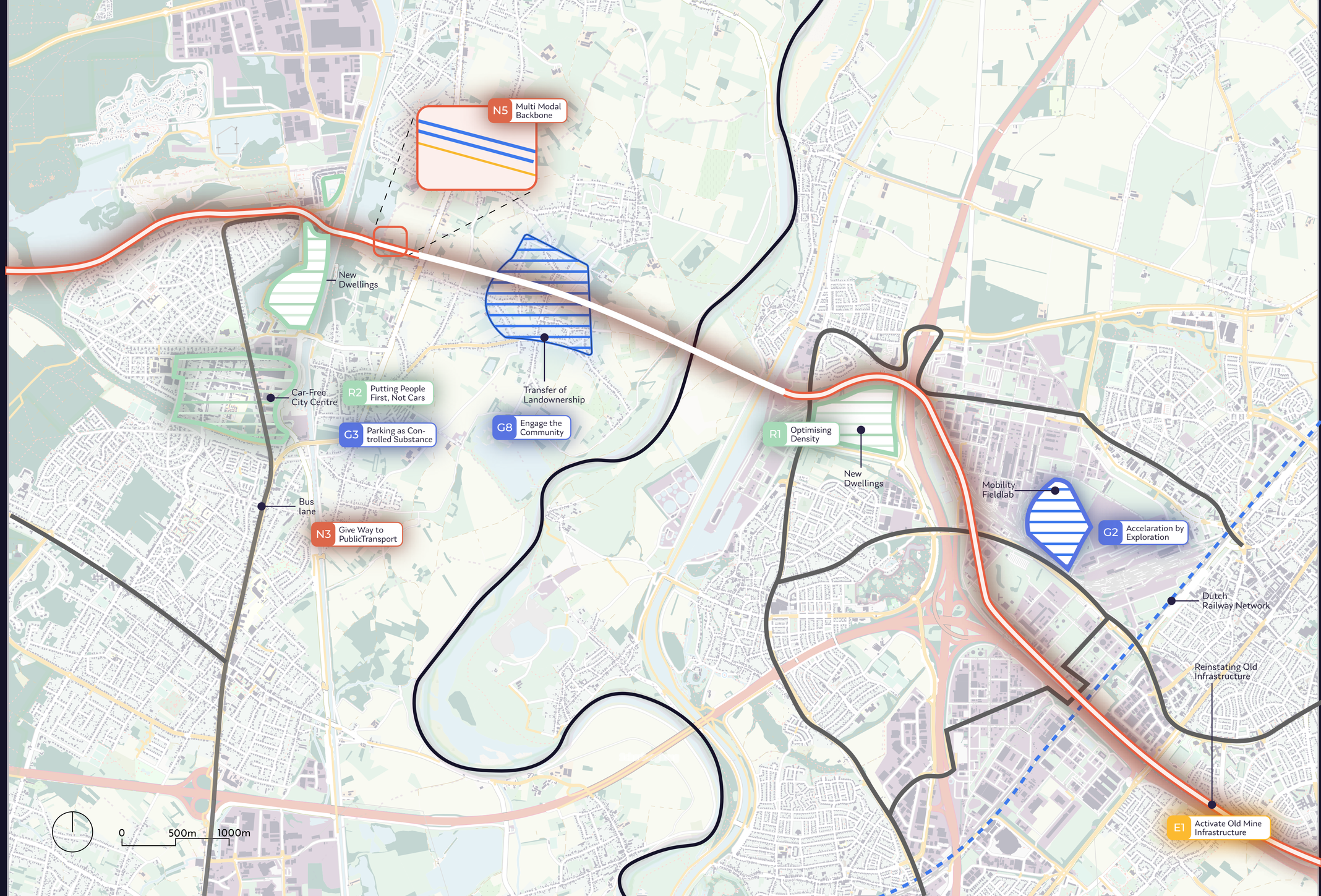
PREREQUISITE CARD

FOLLOW UP CARD

PLAY SIMULTANEOUSLY

05

STRATEGY


N5 Multi Modal Backbone
New Dwellings
Transfer of Landownership
Car-Free City Centre
R2 Putting People First, Not Cars
G3 Parking as Controlled Substance
G8 Engage the Community
Bus lane
N3 Give Way to PublicTransport
R1 Optimising Density
New Dwellings
Mobility Fieldlab
G2 Accelaration by Exploration
Dutch Railway Network
Reinstating Old Infrastructure
E1 Activate Old Mine Infrastructure
0
500m
1000m

Elevated Walkway
Mine Materials
N4
N8
E5
Multi Modal
Network
N5
E1
E2
R3
New Dwellings
Services &
Amenities
R1
R6

05
STRATEGY

PREPARATION | ACCELERATION | REGIME CHANGE

G2 ACCELERATION BY EXPERIMENTATION
CONNECTED TO
G1, G8, G7, G6, N5, E3

N3 GIVE WAY TO PUBLIC TRANSPORT
CONNECTED TO
G3, N7, N2, N1, N5, N6, R2, R3

R2 PUTTING PEOPLE FIRST, NOT CARS
CONNECTED TO
G3, N2, N4, E2, R2, R5

G3 PARKING AS CONTROL-LED SUBSTANCE
CONNECTED TO
G7, G8, N7, N3, N9, R2

R6 CLOSE BY AMENITIES & SERVICES
CONNECTED TO
N4, N7, N2, N1, N9, R4, R7, N8, E5

N4 HAPPY COMMUTING
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

G5 CROSS BORDER CONCESSIONS
CONNECTED TO
G3, N7, N2, N1, N9, R4, R7

N7 ELIMINATE THE EDGES
CONNECTED TO
G5, N4, N2, N1, N9, R4, R7, N8, E5

N2 STEPLESS ENTERING
CONNECTED TO
G5, N7, N4, N1, N9, R4, R7, N8, E5

G6 INTERNATIONAL COMMITMENT
CONNECTED TO
G2, G4, G5, G7, N5, N6, N7, N8, E1, E2, E3, E4

R3 WIDER SIDEWALKS
CONNECTED TO
N3, N7, N2, N1, N9, R4, R7, N8, E5

G1 REBOOTING THE PLANNING SYSTEM
CONNECTED TO
G3, N7, N2, N1, N9, R4, R7, N8, E5

G7 GOVERNANCE MIX & MATCH
CONNECTED TO
G1, G2, G4, G6, G8, N5, N6, N7, N9, E1, E3, E5, R2, R6, R7

N5 MULTI MODAL BACKBONE
CONNECTED TO
G6, G8, G7, G8, N1, N4, N6, N8, N9, E1, E2, E3, E5, R1, R5, R6

N6 CLOSING THE GAP/ NEW CONNECTOR
CONNECTED TO
G4, G5, G6, G7, G8, N5, N7, N8, N9, E1, E2, E3, E4, E5, R4, R6

N1 ACCESIBLE PUBLIC TRANSPORT
CONNECTED TO
G5, N7, N2, N4, N9, R4, R7, N8, E5

R4 BECOME A NODE
CONNECTED TO
G5, N7, N2, N1, N9, R7, N8, E5

G4 EASE THE RULES
CONNECTED TO
G6, N7, N2, N1, N9, R4, R7, N8, E5

G8 ENGAGE THE COMMUNITY
CONNECTED TO
G2, G4, G5, G6, G7, N1, N2, N4, N5, E2, E3, E4, R1, R2, R3, R5, R6, R7

N9 CREATING HUBS
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

E1 ACTIVATE OLD MINE INFRASTRUCTURE
CONNECTED TO
G5, G7, G8, N7, N1, N6, N8, N9, E2, E3, E4, E5

N8 UNITY IN APPEARANCE
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

R7 DIVERSE COMMUNITY
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

E2 FOLLOW THE TRAIL
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

E4 TELL THE STORY
CONNECTED TO
G2, G4, G5, G6, E1, E2, E3, R5

R1 OPTIMISING DENSITY
CONNECTED TO
N3, N7, N2, N1, E1

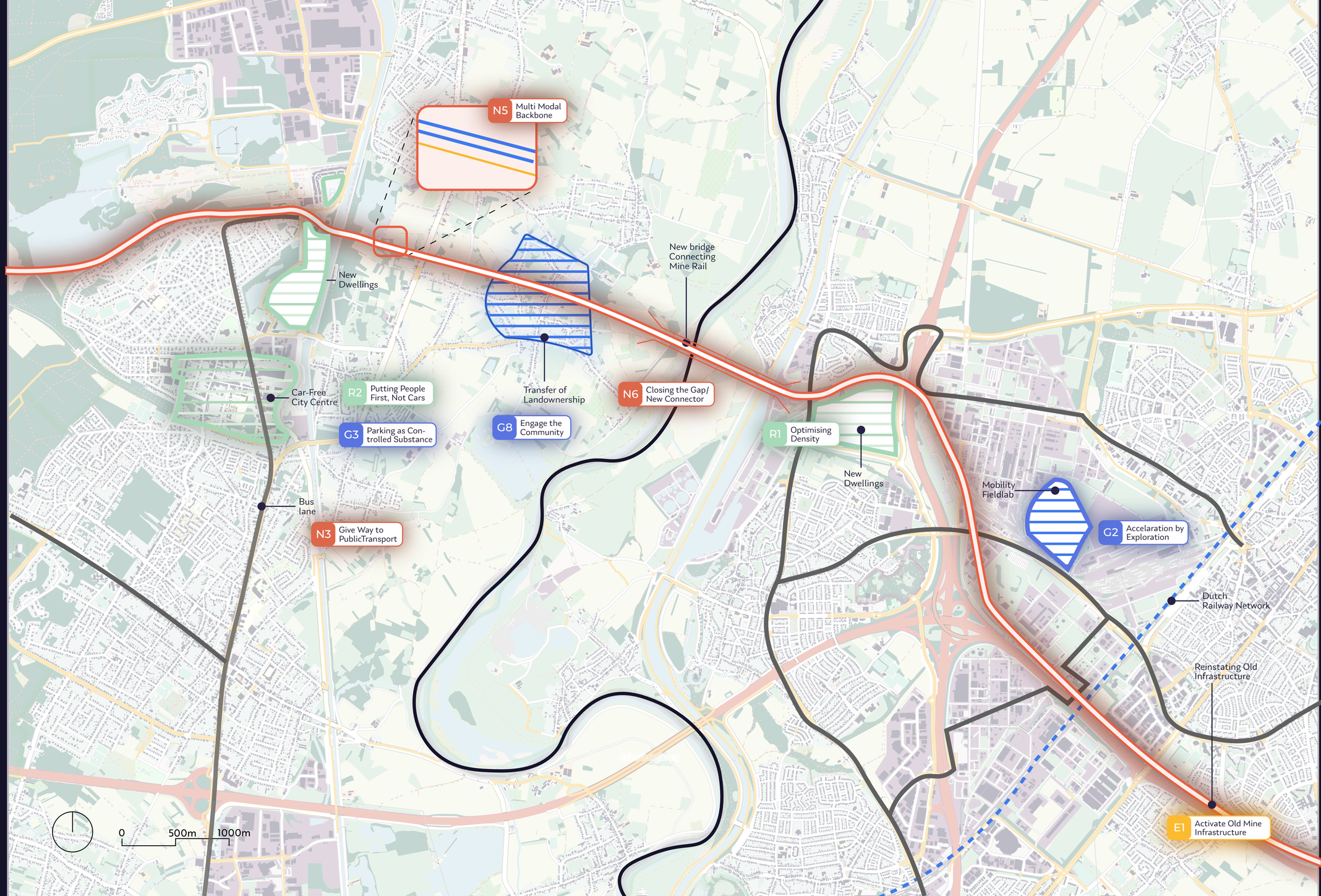
R5 CONNECT TO YOUR SURROUNDING
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

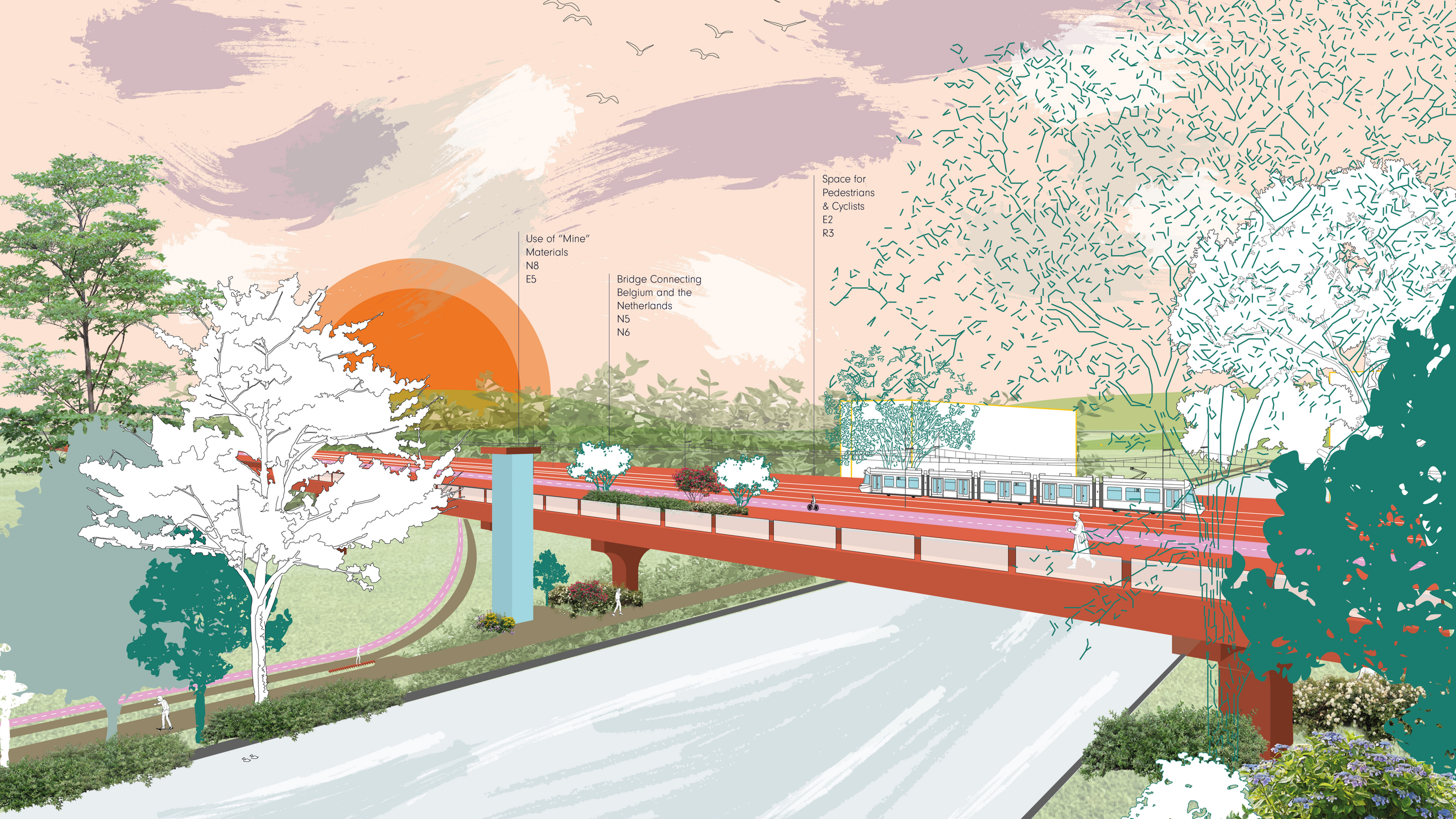
E3 CREATING DESTINATIONS
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

E5 MINE MATERIALS
CONNECTED TO
G5, N7, N2, N1, N9, R4, R7, N8, E5

PREREQUISITE CARD
FOLLOW UP CARD
PLAY SIMULTANEOUSLY

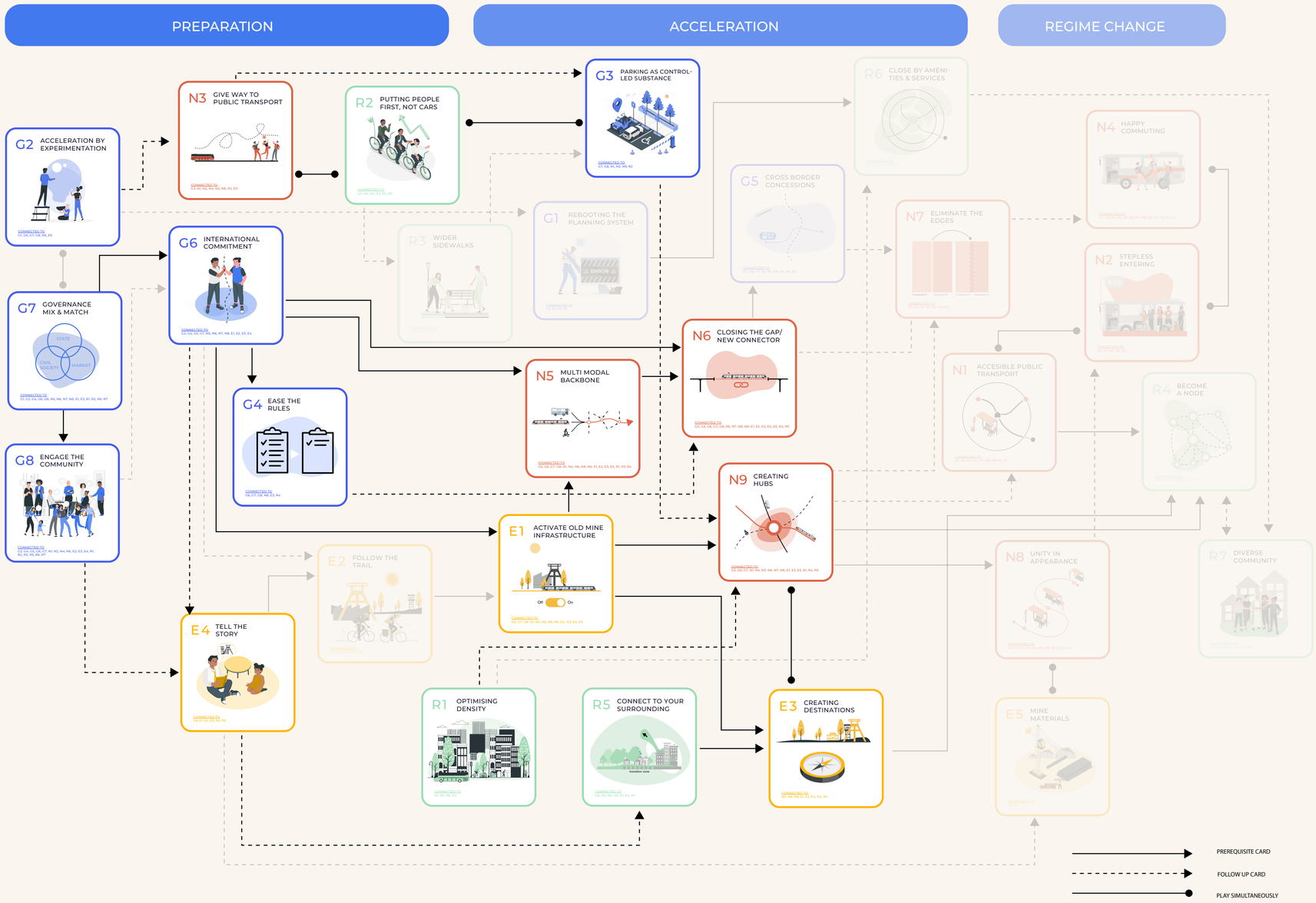
05
STRATEGY


N5 Multi Modal Backbone
New Dwellings
New bridge Connecting Mine Rail
Transfer of Landownership
Car-Free City Centre
R2 Putting People First, Not Cars
G3 Parking as Con-trolled Substance
G8 Engage the Community
N6 Closing the Gap/ New Connector
R1 Optimising Density
New Dwellings
Mobility Fieldlab
G2 Accelaration by Exploration
Bus lane
N3 Give Way to PublicTransport
Dutch Railway Network
Reinstating Old Infrastructure
E1 Activate Old Mine Infrastructure
0
500m
1000m


Use of "Mine"
Materials
N8
E5
Bridge Connecting
Belgium and the
Netherlands
N5
N6
Space for
Pedestrians
& Cyclists
E2
R3

05 STRATEGY

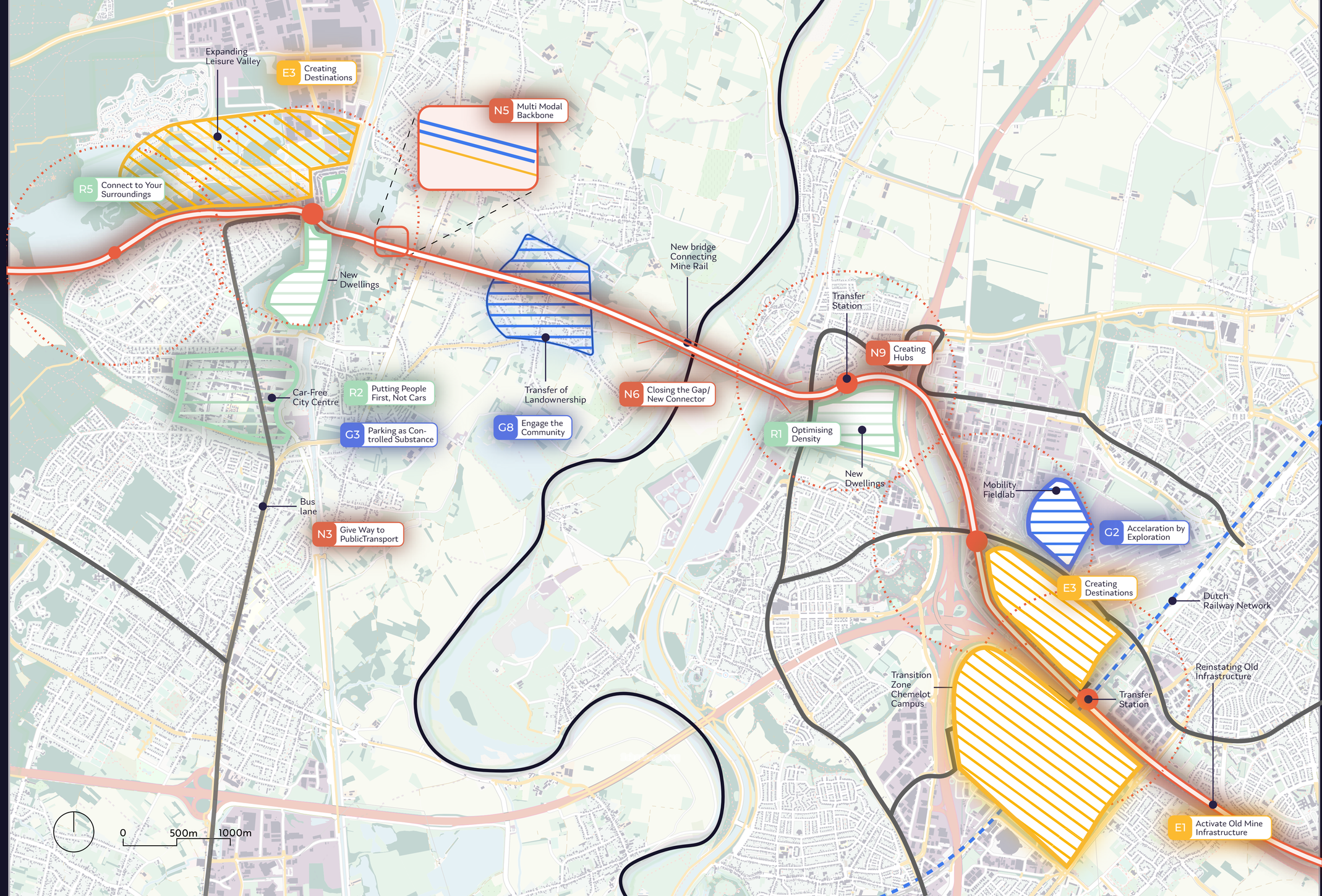
R5 CONNECT TO YOUR SURROUNDING
N9 CREATING HUBS
E3 CREATING DESTINATIONS
N6 CLOSING THE GAP/ NEW CONNECTOR



PREPARATION
ACCELERATION
REGIME CHANGE
G2 ACCELERATION BY EXPERIMENTATION
N3 GIVE WAY TO PUBLIC TRANSPORT
R2 PUTTING PEOPLE FIRST, NOT CARS
G3 PARKING AS CONTROL-LED SUBSTANCE
R6 CLOSE BY AMENI-TIES & SERVICES
N4 HAPPY COMMUTING
G5 CROSS BORDER CONCESSIONS
G1 REBOOTING THE PLANNING SYSTEM
R3 WIDER SIDEWALKS
N7 ELIMINATE THE EDGES
N2 STEPLESS ENTERING
G6 INTERNATIONAL COMMITMENT
G7 GOVERNANCE MIX & MATCH
N6 CLOSING THE GAP/ NEW CONNECTOR
N5 MULTI MODAL BACKBONE
N1 ACCESIBLE PUBLIC TRANSPORT
R4 BECOME A NODE
G4 EASE THE RULES
G8 ENGAGE THE COMMUNITY
N9 CREATING HUBS
E1 ACTIVATE OLD MINE INFRASTRUCTURE
E2 FOLLOW THE TRAIL
N8 UNITY IN APPEARANCE
R7 DIVERSE COMMUNITY
E4 TELL THE STORY
R1 OPTIMISING DENSITY
R5 CONNECT TO YOUR SURROUNDING
E3 CREATING DESTINATIONS
E5 MINE MATERIALS
PREREQUISITE CARD
FOLLOW UP CARD
PLAY SIMULTANEOUSLY

05

STRATEGY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E3 Creating Destinations
N5 Multi Modal Backbone
R5 Connect to Your Surroundings
New Dwellings
New bridge Connecting Mine Rail
Transfer Station
N9 Creating Hubs
Transfer of Landownership
N6 Closing the Gap/ New Connector
Car-Free City Centre
R2 Putting People First, Not Cars
G3 Parking as Controlled Substance
G8 Engage the Community
R1 Optimising Density
New Dwellings
Mobility Fieldlab
Bus lane
N3 Give Way to PublicTransport
G2 Accelaration by Exploration
E3 Creating Destinations
Dutch Railway Network
Transition Zone Chemelot Campus
Transfer Station
Reinstating Old Infrastructure
E1 Activate Old Mine Infrastructure
0
500m
1000m

05
STRATEGY

PREPARATION

ACCELERATION

REGIME CHANGE

G2 ACCELERATION BY EXPERIMENTATION
CONNECTED TO
G1, G4, G7, G8, N5, E3

N3 GIVE WAY TO PUBLIC TRANSPORT
CONNECTED TO
G3, N1, R2, R4, N5, N6, R3, R5

R2 PUTTING PEOPLE FIRST, NOT CARS
CONNECTED TO
G3, R3, N4, E1, R7, R6

G3 PARKING AS CONTROL-LED SUBSTANCE
CONNECTED TO
G7, G8, N7, N3, N9, R2

R6 CLOSE BY AMENITIES & SERVICES
CONNECTED TO
G3, G5, N7, N9, N8, R7

N4 HAPPY COMMUTING
CONNECTED TO
G1, G5, N7, N9, N8, R6, R7, N2, N1

G5 CROSS BORDER CONCESSIONS
CONNECTED TO
G3, N7, N9, N8, R6, R7

N7 ELIMINATE THE EDGES
CONNECTED TO
G3, G5, N9, N8, R6, R7

N2 STEPLESS ENTERING
CONNECTED TO
G1, N4, N9, N8, R6, R7

G6 INTERNATIONAL COMMITMENT
CONNECTED TO
G2, G4, G5, G7, N5, N6, N7, N8, E1, E2, E3, E4

R3 WIDER SIDEWALKS
CONNECTED TO
G6, N5, N6, N8, R5

G1 REBOOTING THE PLANNING SYSTEM
CONNECTED TO
G2, G4, G5, G6, N4, N5, N6, N7, N8, R3, R5

G7 GOVERNANCE MIX & MATCH
STATE
CIVIL SOCIETY
MARKET
CONNECTED TO
G1, G2, G4, G5, G8, N5, N6, N7, N9, E1, E3, E5, R2, R6, R7

N6 CLOSING THE GAP/ NEW CONNECTOR
CONNECTED TO
G4, G5, G6, G7, G8, N5, N7, N8, N9, E1, E2, E3, E4, E5, R4, R6

N1 ACCESIBLE PUBLIC TRANSPORT
CONNECTED TO
G3, N2, N3, N4, N7, N8, N9, E1, E5

R4 BECOME A NODE
CONNECTED TO
G1, G5, N7, N9, N8, R6, R7

N5 MULTI MODAL BACKBONE
CONNECTED TO
G5, G6, G7, G8, N1, N4, N6, N8, N9, E1, E2, E3, E5, R1, R5, R4

G4 EASE THE RULES
CONNECTED TO
G4, G7, G8, N6, E3, R4

G8 ENGAGE THE COMMUNITY
CONNECTED TO
G2, G4, G5, G6, G7, N1, N2, N4, N5, E2, E3, E4, R1, R3, R5, R6, R7

N9 CREATING HUBS
CONNECTED TO
G5, G7, G8, N1, N4, N5, N6, N7, N8, E1, E3, E5, R1, R4, R5

E1 ACTIVATE OLD MINE INFRASTRUCTURE
Off On
CONNECTED TO
G4, G7, G8, N1, N5, N6, N8, N9, E2, E3, E4, E5

N8 UNITY IN APPEARANCE
CONNECTED TO
G5, G8, G7, N1, N4, N5, N6, N7, N8, E1, E3, E5, R1, R4, R5

R7 DIVERSE COMMUNITY
CONNECTED TO
G1, G5, N7, N9, N8, R6, R7

E2 FOLLOW THE TRAIL
CONNECTED TO
G4, N5, N6, E1, E4, E5

E4 TELL THE STORY
CONNECTED TO
G4, G7, E2, E3, E5, R5

R1 OPTIMISING DENSITY
CONNECTED TO
N1, N5, N6, E5

R5 CONNECT TO YOUR SURROUNDING
transition zone
CONNECTED TO
G5, N5, N6, N9, E3, E4, R4

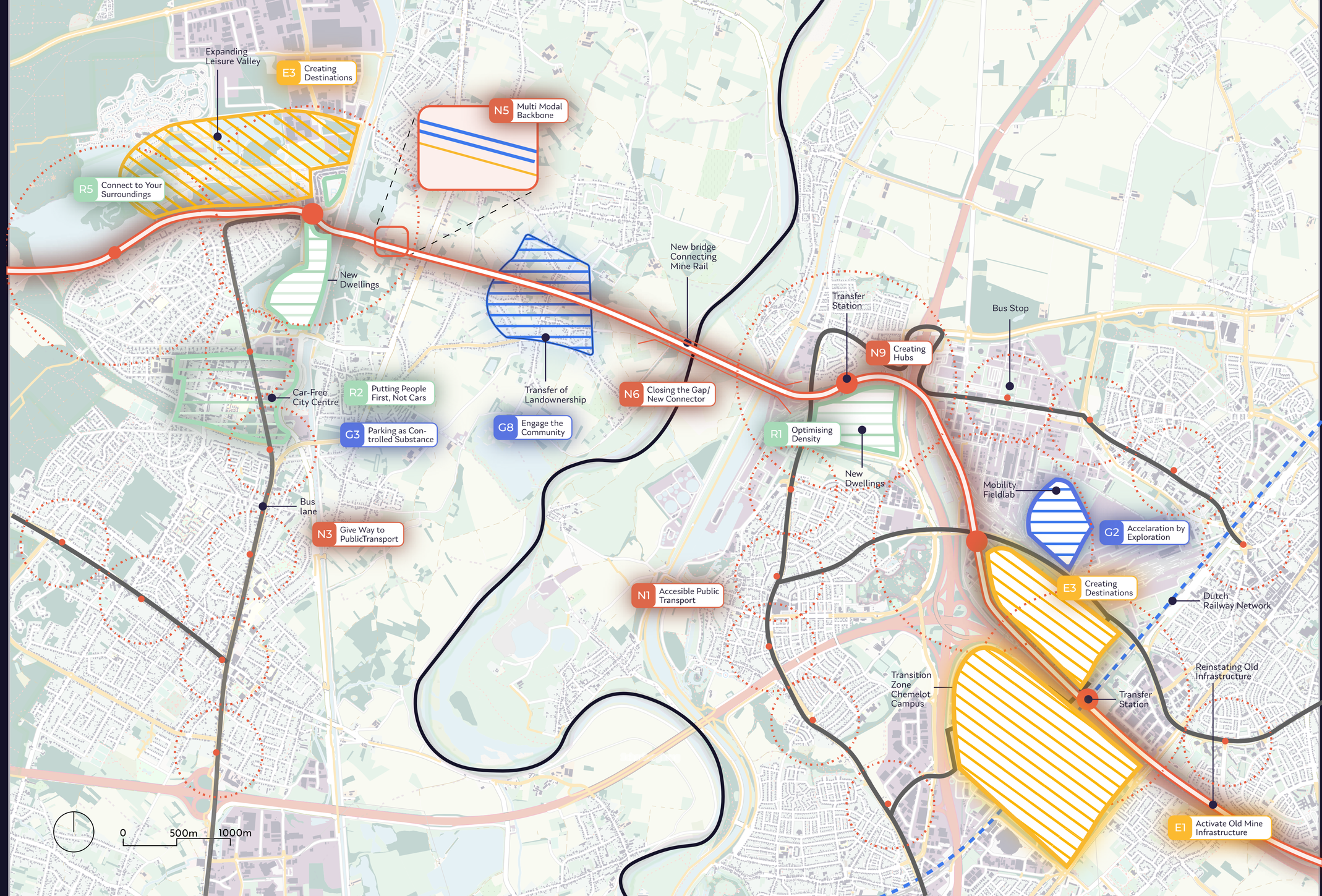
E3 CREATING DESTINATIONS
CONNECTED TO
N5, N9, N8, E1, E2, E4, R4

E5 MINE MATERIALS
CONNECTED TO
G4, G5, G7, N1, N4, N5, N6, N7, N8, N9, E1, E2, E3, E4, R1, R4, R5

PREREQUISITE CARD
FOLLOW UP CARD
PLAY SIMULTANEOUSLY

05

STRATEGY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Bus Stop
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N6 Closing the Gap/ New Connector
Car-Free City Centre
R2 Putting People First, Not Cars
G3 Parking as Controlled Substance
G8 Engage the Community
R1 Optimising Density
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E1 Activate Old Mine Infrastructure
0
500m
1000m

05

STRATEGY

PREPARATION

ACCELERATION

REGIME CHANGE

G2 ACCELERATION BY EXPERIMENTATION

N3 GIVE WAY TO PUBLIC TRANSPORT

R2 PUTTING PEOPLE FIRST, NOT CARS

G3 PARKING AS CONTROL-LED SUBSTANCE

R6 CLOSE BY AMENITIES & SERVICES

N4 HAPPY COMMUTING

G5 CROSS BORDER CONCESSIONS

G1 REBOOTING THE PLANNING SYSTEM

R3 WIDER SIDEWALKS

N7 ELIMINATE THE EDGES

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N5 MULTI MODAL BACKBONE

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R4 BECOME A NODE

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E1 ACTIVATE OLD MINE INFRASTRUCTURE

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R7 DIVERSE COMMUNITY

E4 TELL THE STORY

R1 OPTIMISING DENSITY

R5 CONNECT TO YOUR SURROUNDING

E3 CREATING DESTINATIONS

E5 MINE MATERIALS

PREREQUISITE CARD

FOLLOW UP CARD

PLAY SIMULTANEOUSLY

New Development
Housing, Services,
R&D Campus
R1
R5
R6
Bus Stop & Bus
Lane
N1
N2
N3
Innovation
Campus
E3
R5
More Space for
Pedestrians
R2
R3
supermarket
shopping
R&D
BUS
LANE

05 STRATEGY

Local Empowerment

Contribution to sustainable mobility on local scale

Get your city ready

Not sequential

Each category has a different goal

INITIATE

R2 PUTTING PEOPLE FIRST, NOT CARS

CONNECTED TO
G3, N3, N4, E2, R3, R6

Introduce car free zones in the city centre and give priority to soft transport modes. Cyclist and pedestrians should get priority at crossings. Additional safety measures at road crossing can also be put in place

G8 ENGAGE THE COMMUNITY

CONNECTED TO
G2, G4, G5, G6, G7, N1, N2, N4, N5, E2, E3, E4, R1, R2, R3, R5, R6, R7

Start to engage with citizens to build support for a mobility shift. Use focus groups but also more interactive means to get in touch. Think of exhibitions or events.

PREPARE

G3 PARKING AS CONTROLLED

CONNECTED TO
G7, G8, N1, N3, N9, R2

Start to limit free parking to promote other modes of transport. This can be amplified by decreasing the number of parking spaces.

G2 ACCELERATION BY EXPERIMENTATION

CONNECTED TO
G1, G6, G7, G8, N5, E5

Allow operators, companies & startups to test new mobility options. Provide a fieldlab to do this. Some larger companies might be able to provide more sustainable transport options for their employees.

N3 GIVE WAY TO PUBLIC TRANSPORT

CONNECTED TO
G3, N1, N2, N4, N5, N8, R2, R3

Introduce buslanes on busy corridors to ensure better travel times for public transport.

R3 WIDER SIDEWALKS

CONNECTED TO
G3, N5, E2, R2

Increase the size of sidewalks to show that pedestrians are prioritised in the city. Adding wider bike paths or seperating them form road traffic will also help to promote soft transportation.

EDUCATE & EXPLORE

E4 TELL THE STORY

CONNECTED TO
G6, E1, E2, E3, E5, R5

Acknowledge the significance of mining sites by marking them and creating experiences around these. Engage with citizens that can tell these stories from a first hand perspective.

E3 CREATING DESTINATIONS

CONNECTED TO
N5, N6, N9, E1, E2, E4, R4, R5

Use placemaking around locations that have potential to become new points of interest and that can contribute to the new network. Empower local businesses and residents to start the process and shape 'their' place so it can become a destination.

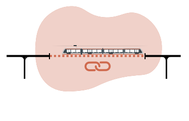
E2 FOLLOW THE TRAIL

CONNECTED TO
G6, N6, E1, E3, E4, R2

Activate local cycle clubs and enthousiast to help create new trails that follow the old mining sites.

CONNECT

N6 CLOSING THE GAP/ NEW CONNECTOR



CONNECTED TO
G4, G5, G6, G7, G8, N5, N7, N8, N9, E1, E2, E3, E4, E5, R4, R5

Instead of large scale connection projects, setting up a ferry or a bus that has a frequent timetable can close the gap. This small addition can connect existing networks and highlights the importance of a cross-border connection.

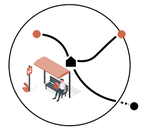
PROMOTE & OPTIMISE

N4 HAPPY COMMUTING

CONNECTED TO
G4, G5, N1, N2, N3, N6, N7, N8, N9, E3, E5, R1, R4

Improve public transport stops by providing amenities such as benches, shelter or area's with more traffic a cafe or little kiosk.

N1 ACCESIBLE PUBLIC TRANSPORT



CONNECTED TO
G8, N2, N3, N4, N7, N8, N9, E1, R1

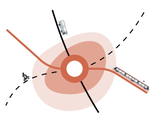
Look for current gaps in accesibility and address these specificially taking into account marginalised citizen groups. Citizens can also be asked to nominate new locations for bus stops.

R7 DIVERSE COMMUNITY

CONNECTED TO
G7, G8, N1, R1, R4, R5, R6

Allow for a mix of different citizen groups in neighbourhoods that are easily accessed by public transport. This helps to achieve equal access to sustainable mobility options.

N9 CREATING HUBS



CONNECTED TO
G5, G6, G7, N1, N4, N5, N6, N7, N8, E1, E3, E5, R1, R4, R5

Set up multimodal hubs where passengers can switch between bike, bus and shared mobility options. Placing these along the old mine infrastructure will ensure future usability.

N2 STEPLESS ENTERING

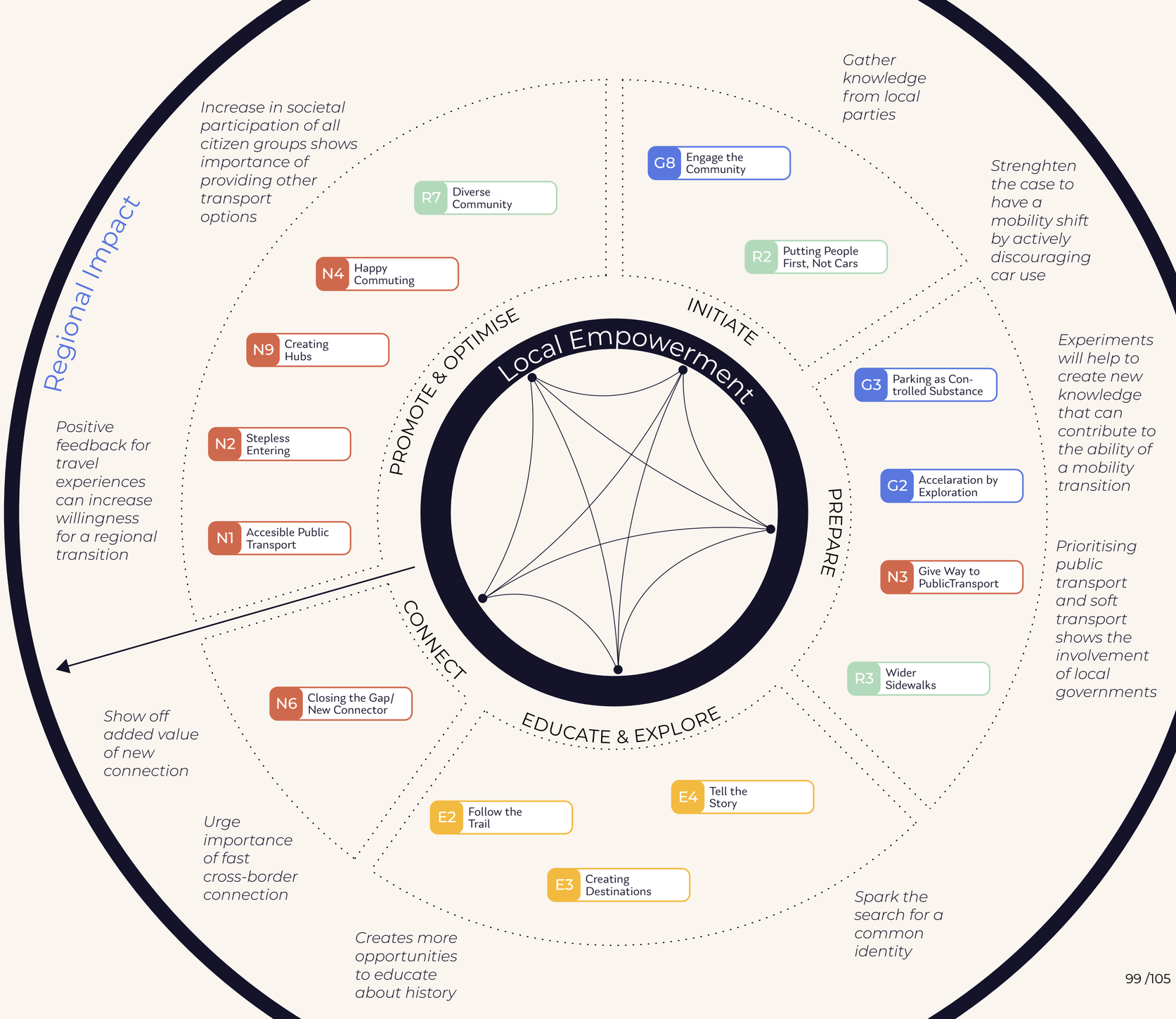
CONNECTED TO
G8, N1, N4, N8, R3

Show off an inclusive approach by investing in making all public transport stops accesible to those who are immobilised.

05
STRATEGY

Local empowerment can have regional impact

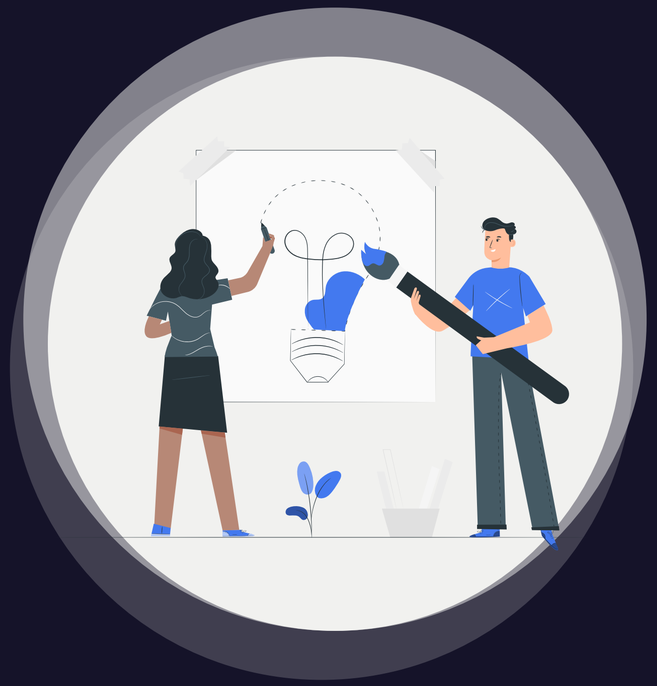
Pick and choose between categories



05
STRATEGY

Policy Recommendations

1. Establish a Cross-Border Sustainable Mobility Focus Group

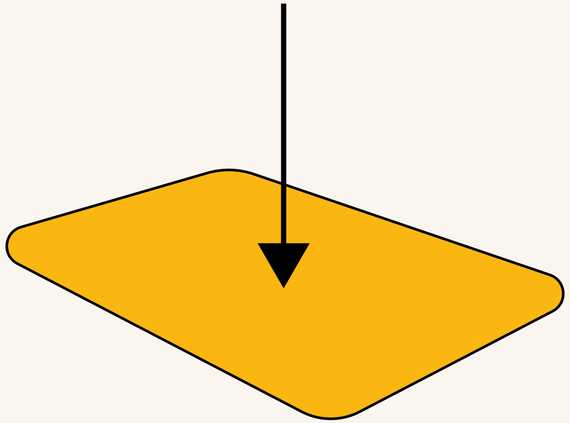


2. Develop a Common Vision and Goals

3. Harmonise Policy Frameworks

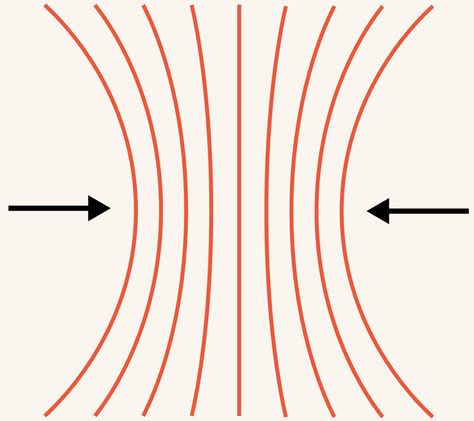
05
STRATEGY

Assessing the Strategy



Implementation

Stakeholder Engagement



Adaptability

01 PROBLEM

02 THEORY

03 ANALYSIS

04 VISION

05 STRATEGY

06 CONCLUSION

LOOKING FORWARD

06
CONCLUSION

Main Research Question

What transitional strategy can contribute to achieve a just and sustainable multi-modal network in a cross-border context?

06 CONCLUSION

1. Incorporate existing infrastructure
2. Local characteristics
3. Enhance public transport connection
4. Foster collaboration
5. Stakeholder engagement
6. Harmonisation of Policies
7. System approach by means of a pattern language

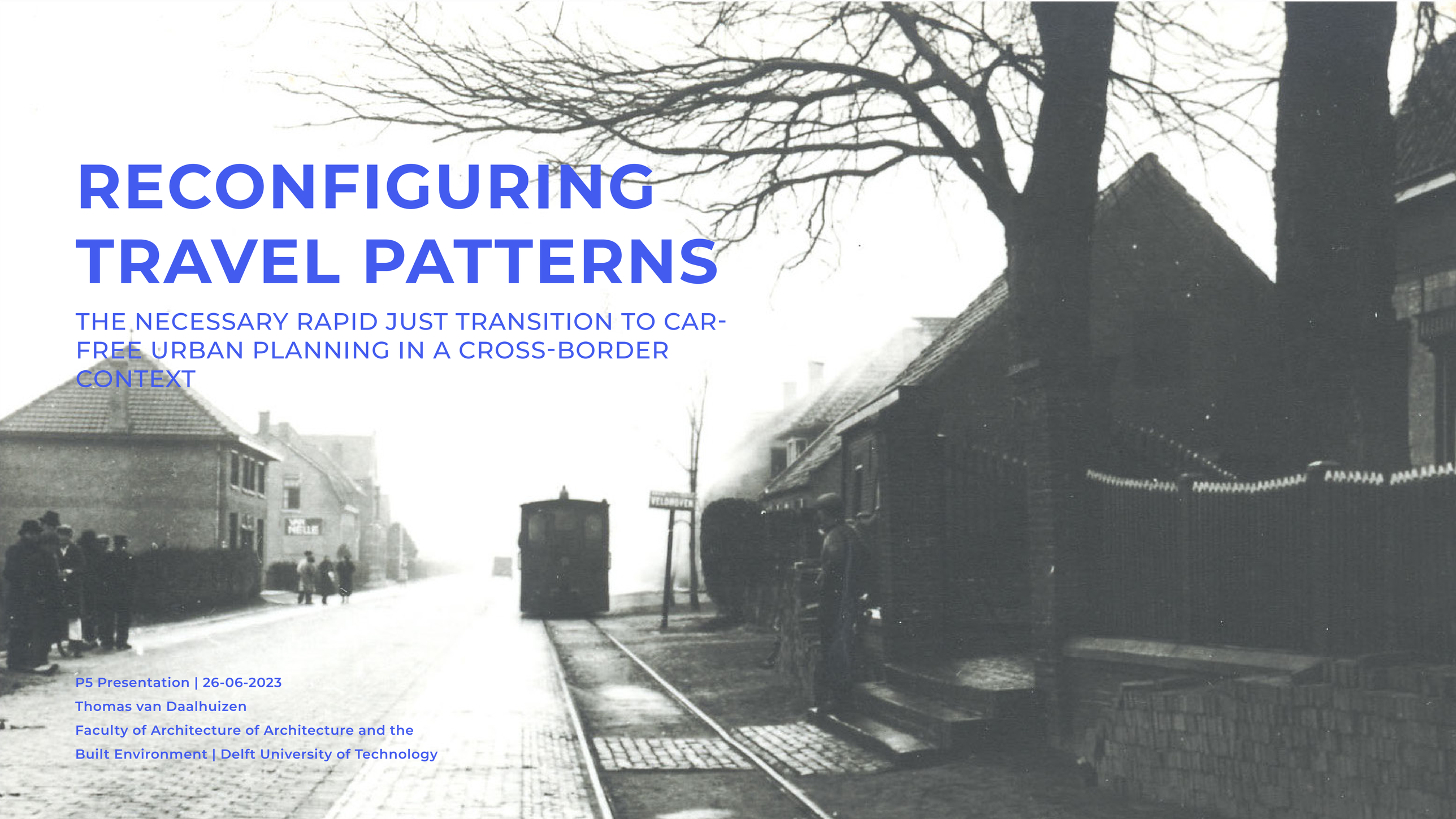
Mobility Transition Strategy

“The Schengen Agreement lies 35 years in the past. We must now lay the foundations for the next 35 years. The Future of Schengen is the Future of Europe.”

Ylva Johansson, 2021
European Commissioner of Home Affiars

RECONFIGURING TRAVEL PATTERNS

THE NECESSARY RAPID JUST TRANSITION TO CAR-FREE URBAN PLANNING IN A CROSS-BORDER CONTEXT



P5 Presentation | 26-06-2023

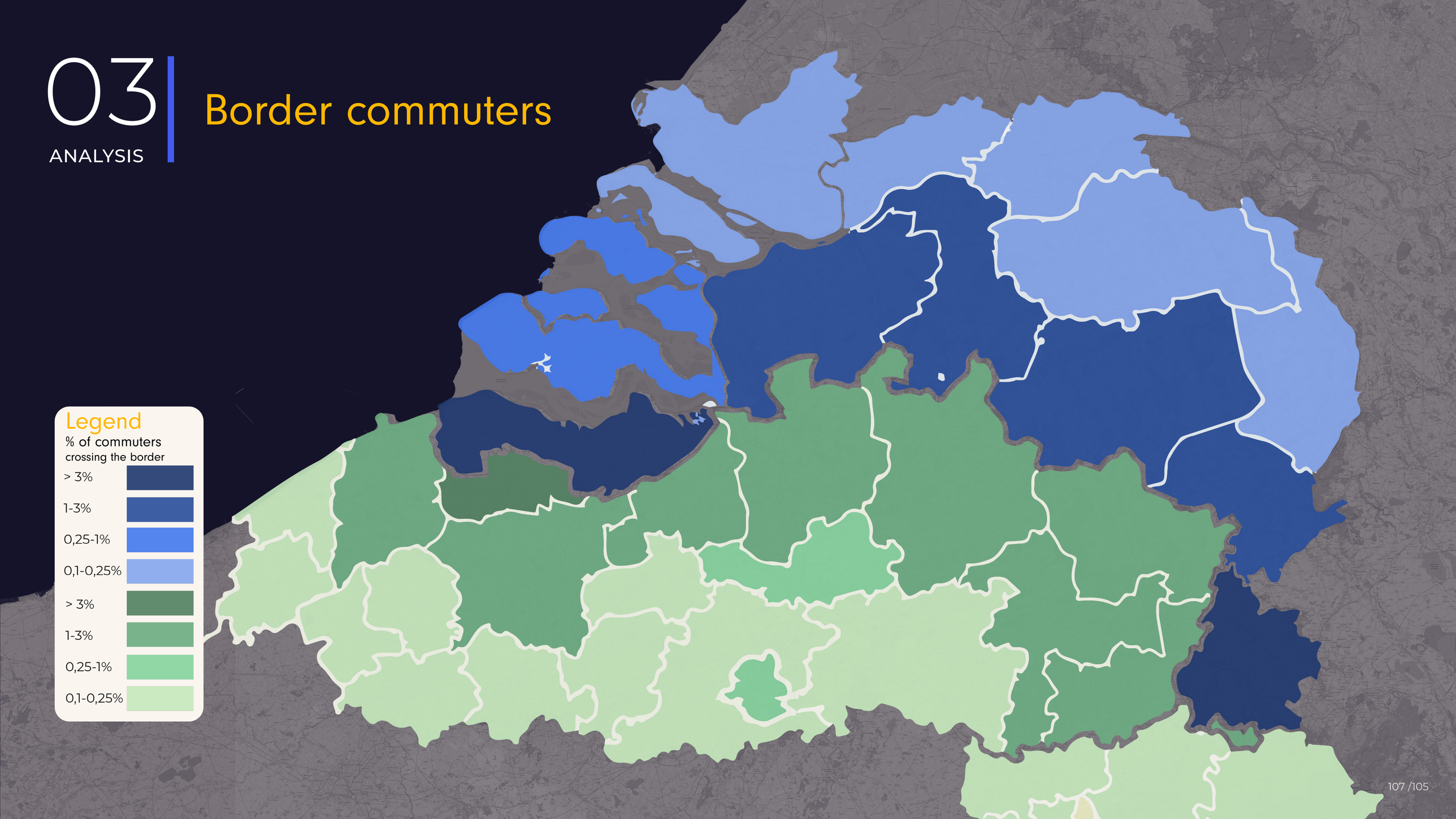
Thomas van Daalhuizen

Faculty of Architecture of Architecture and the Built Environment | Delft University of Technology

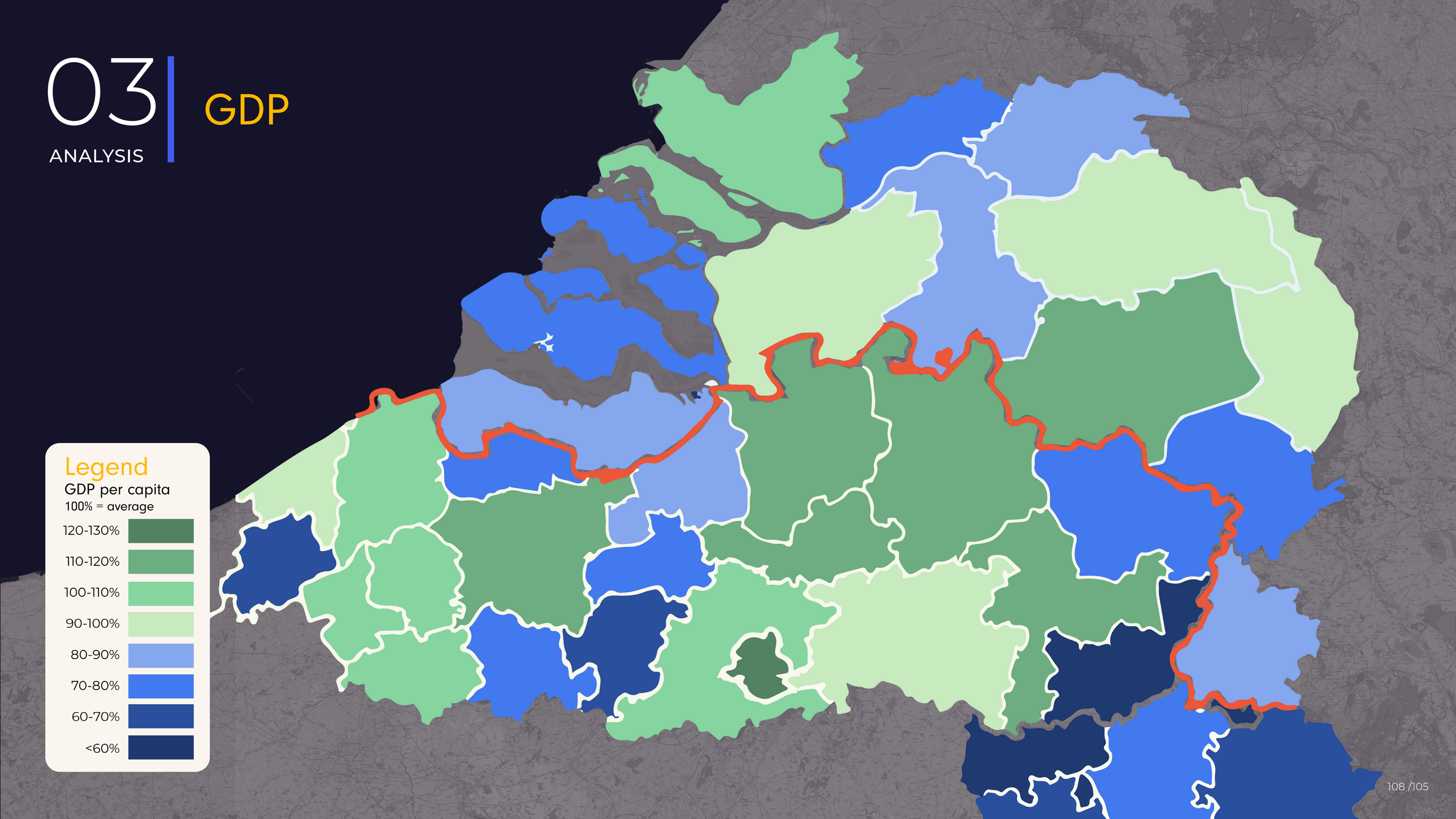
supermarket
shopping
BUS
LANE

03
ANALYSIS

Border commuters

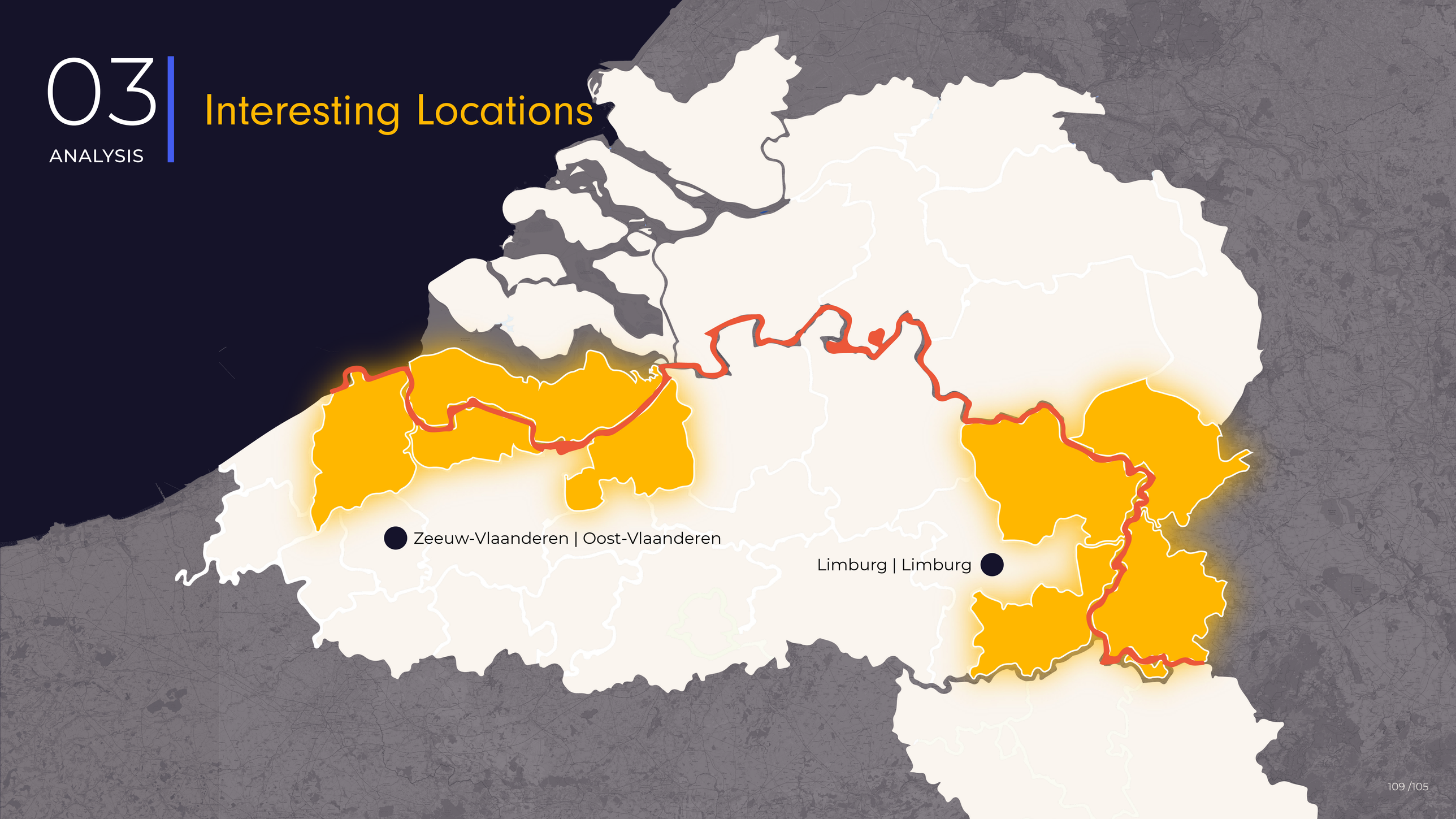


03 ANALYSIS | GDP



03
ANALYSIS

Interesting Locations



01
PROBLEM

Looking Back

Sub Research Question 1

How has regional mobility evolved in the last 100 years?

Sub Research Question 2

What are the current travel patterns in the cross-border region of The Netherlands and Belgium?

Sub Research Question 3

How do the planning systems in The Netherland and Belgium support different travel modes?

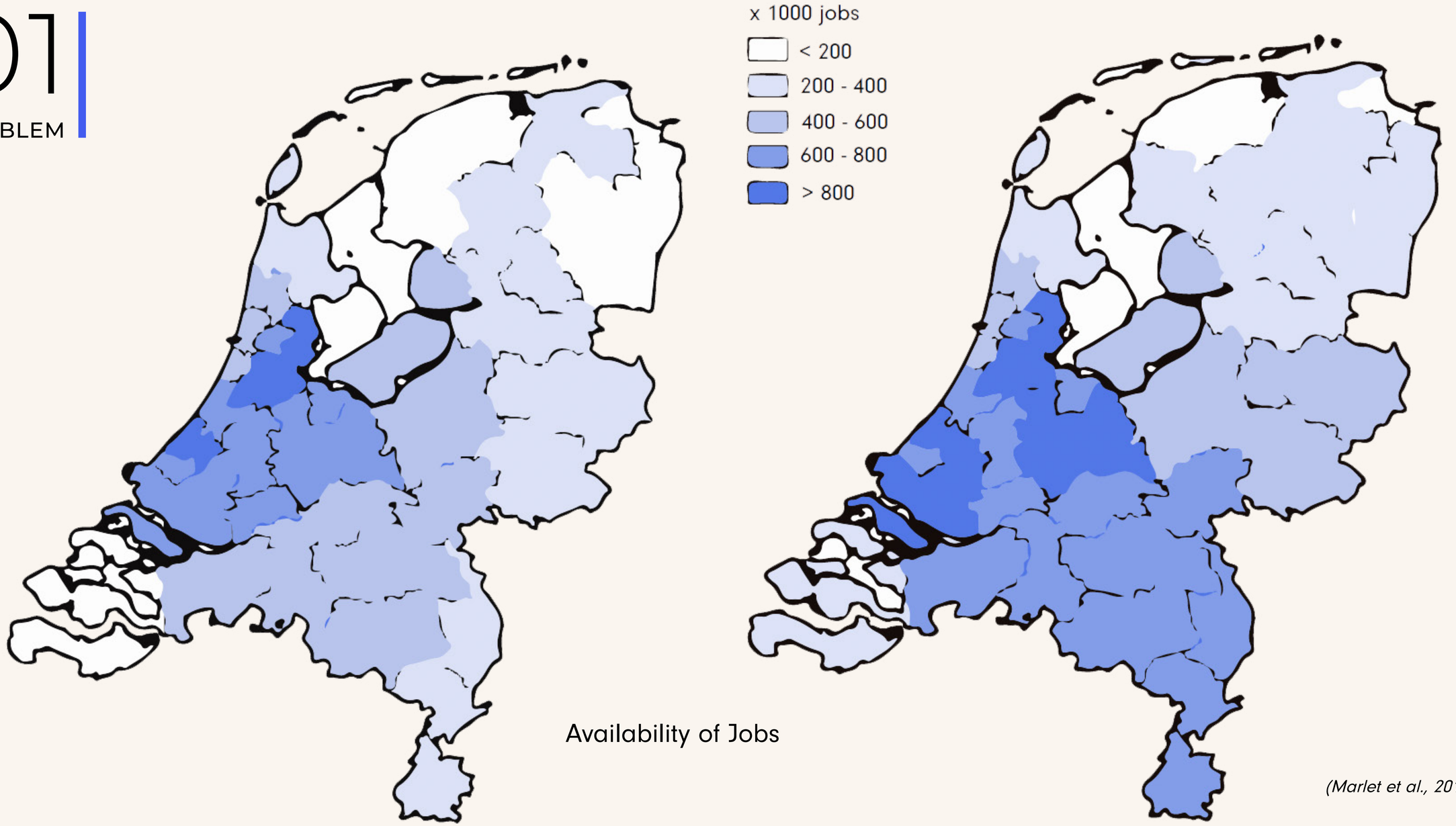
Looking Forward

Sub Research Question 4

What spatial and policy conditions have to be present to make a just transition towards a new mobility network in a cross-border context?

Sub Research Question 5

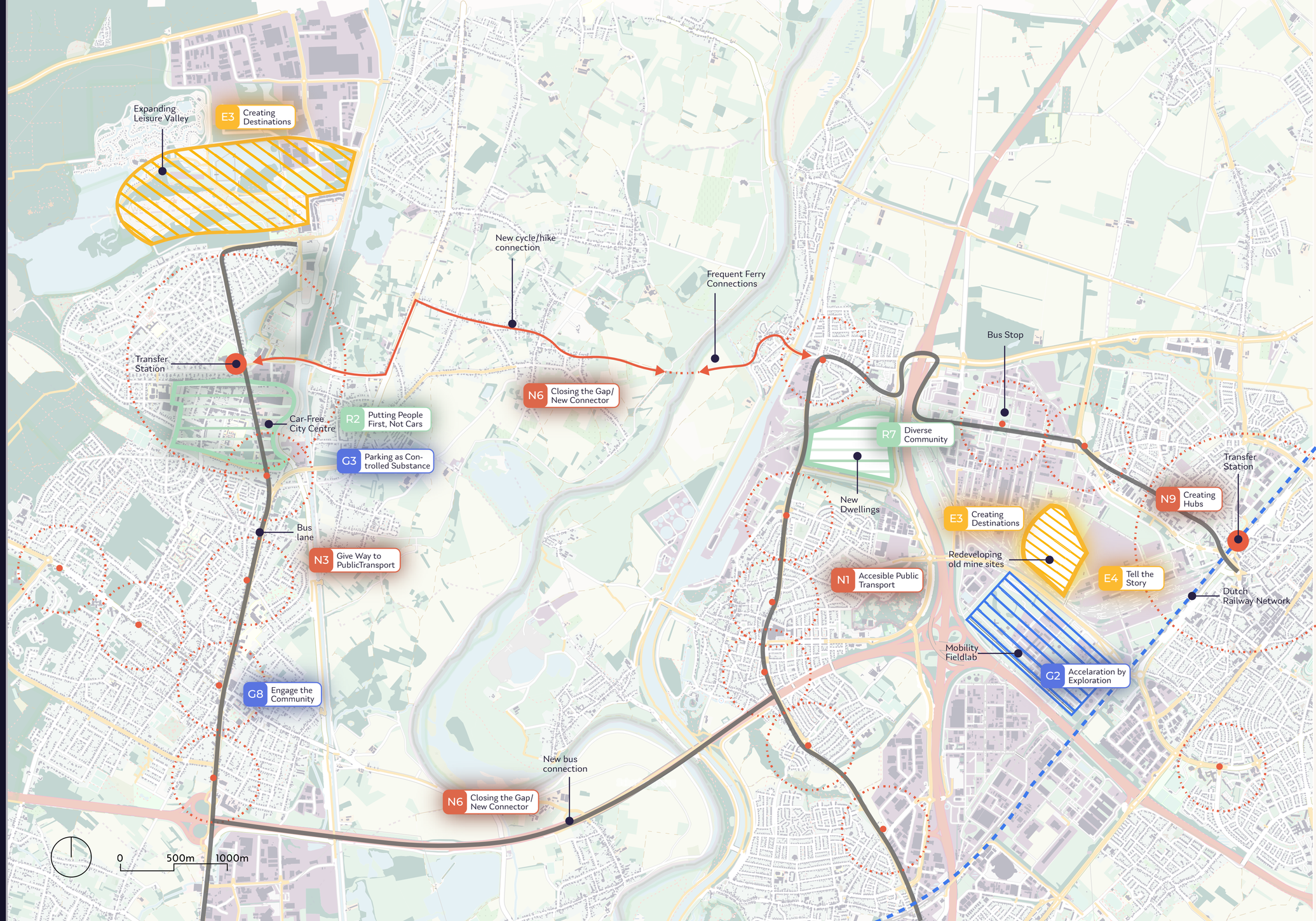
What wil be the implications of a mobility transition on the spatial and social sustainability in the region?

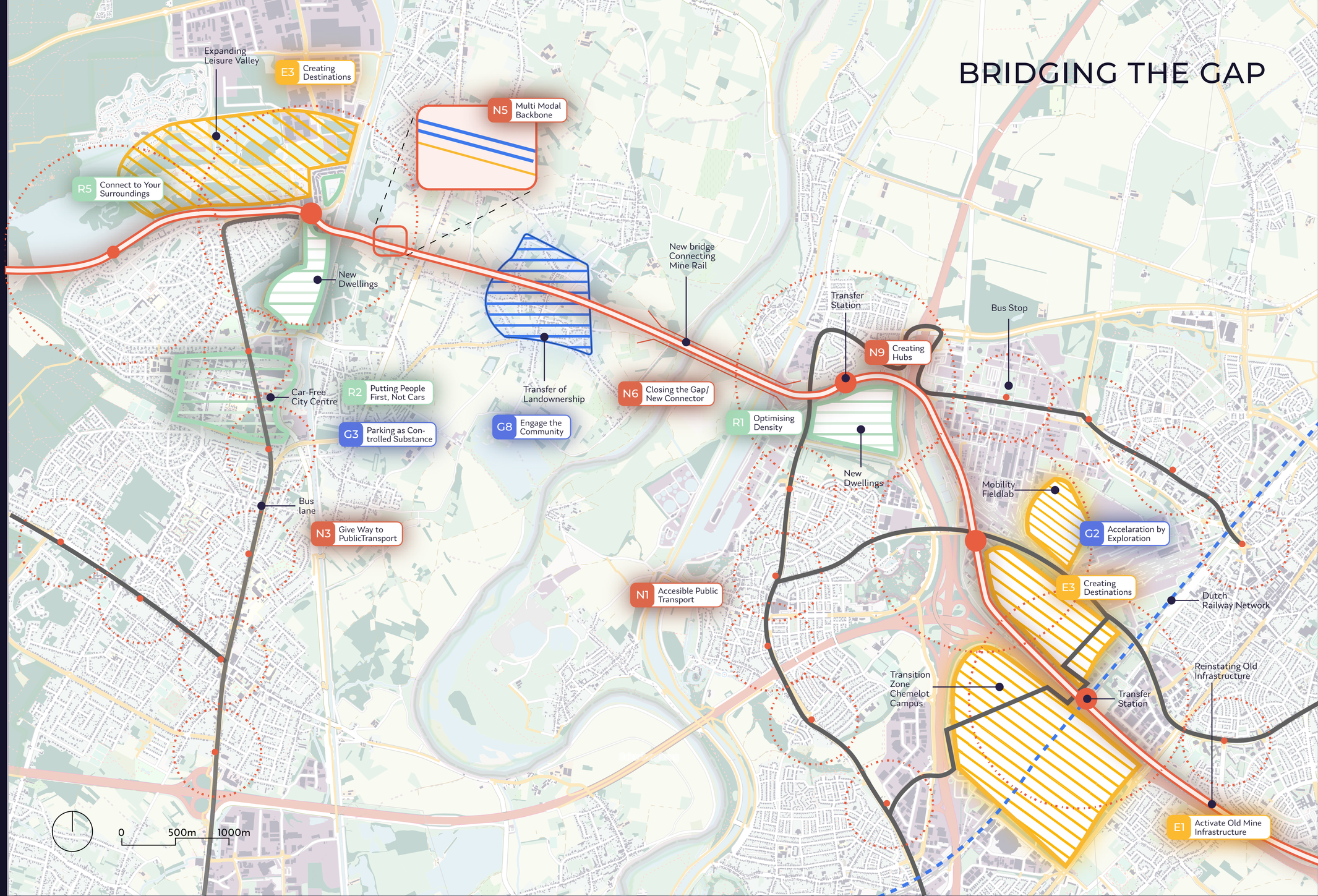


Availability of Jobs

(Marlet et al., 2014)

05
STRATEGY


Expanding Leisure Valley
E3 Creating Destinations
New cycle/hike connection
Frequent Ferry Connections
Transfer Station
N6 Closing the Gap/ New Connector
Car-Free City Centre
R2 Putting People First, Not Cars
G3 Parking as Controlled Substance
Bus lane
N3 Give Way to PublicTransport
G8 Engage the Community
New bus connection
N6 Closing the Gap/ New Connector
0
500m
1000m
Bus Stop
R7 Diverse Community
New Dwellings
Transfer Station
N9 Creating Hubs
E3 Creating Destinations
Redeveloping old mine sites
N1 Accesible Public Transport
E4 Tell the Story
Dutch Railway Network
Mobility Fieldlab
G2 Accelaration by Exploration

05
STRATEGY

BRIDGING THE GAP