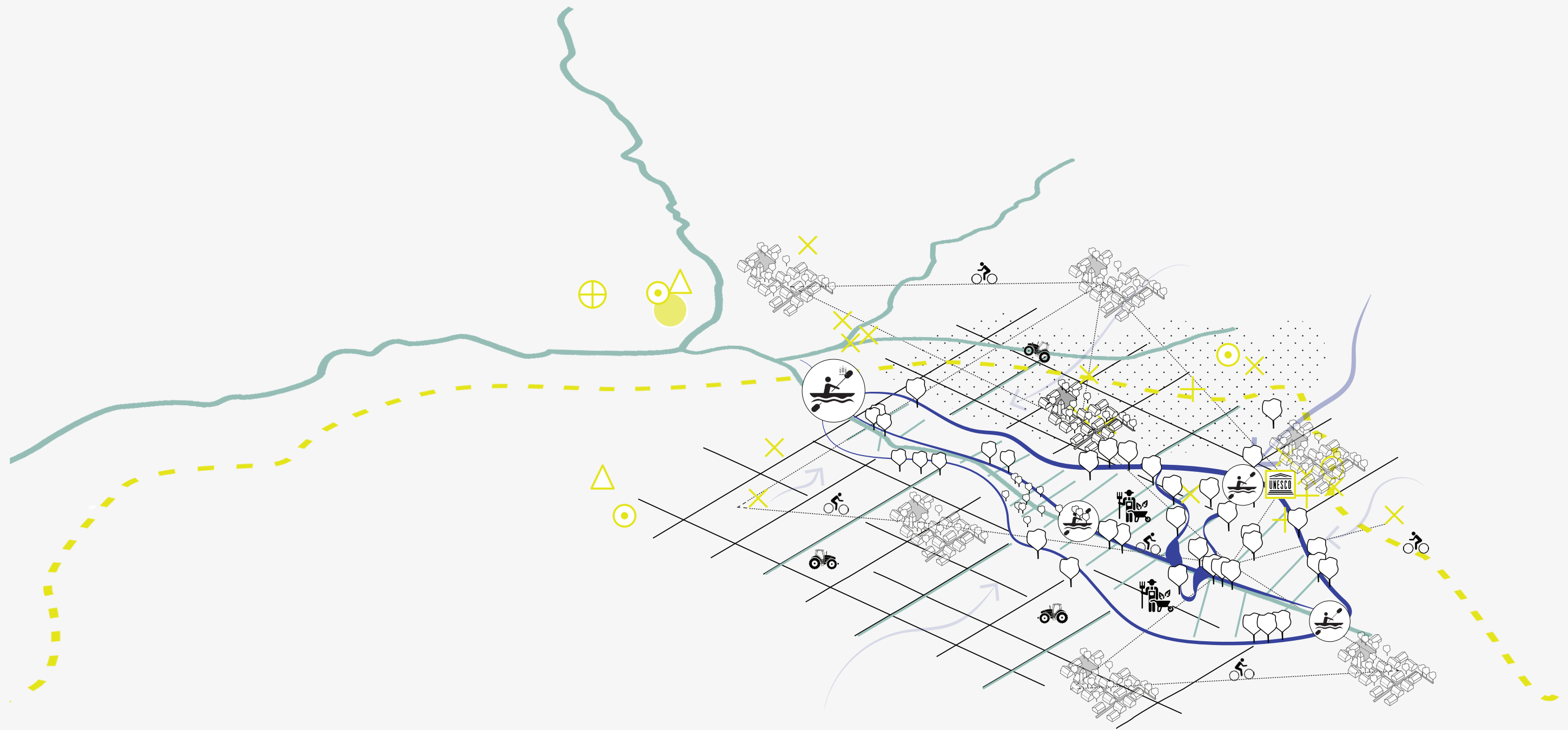


ECO-HUMAN SYMBIOSIS:

Revitalising the cultural & natural heritage
of Philippi Park.

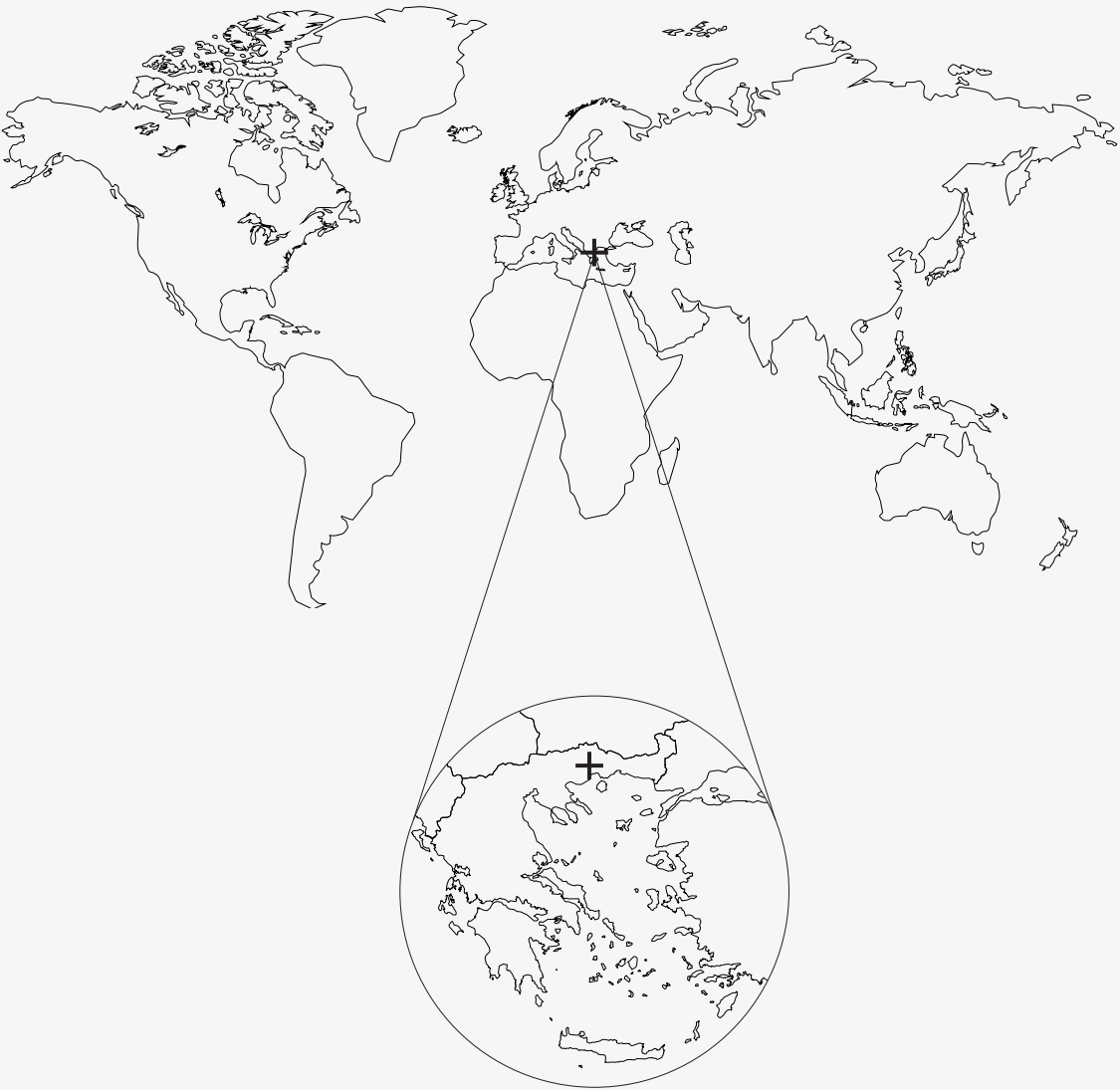


LANDSCAPE ARCHITECTURE TRACK
TU DELFT

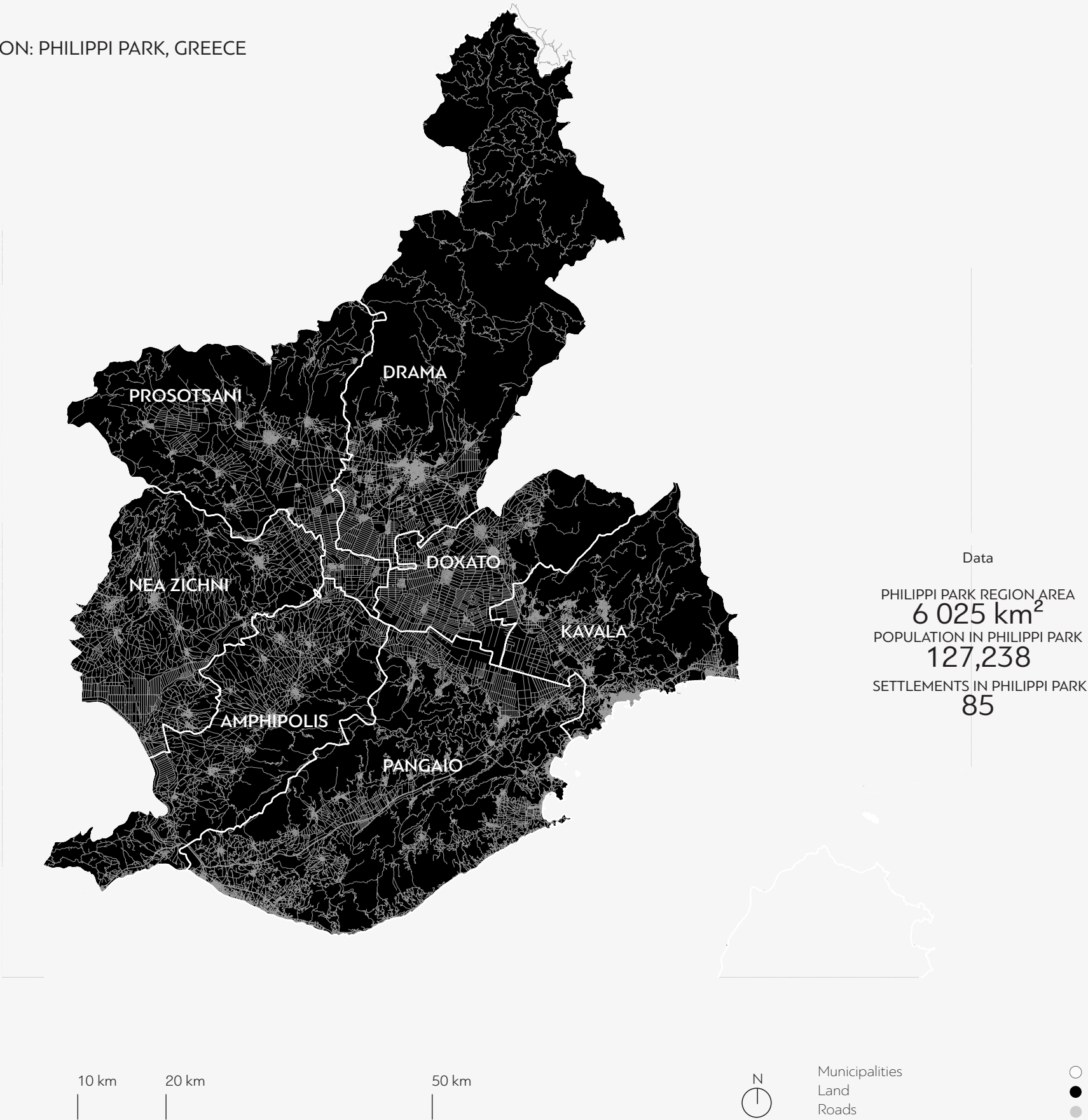
Professor: Inge Bobbink
Second mentor: Taneha Bacchin
Student: Foteini Katavelaki

SITE-LOCATION
REGIONAL SCALE

MAP: WORD - GREECE



LOCATION: PHILIPPI PARK, GREECE



SITE-LOCATIONAL
MUNICIPALITIES

AGE COMPOSITION
PEOPLE AGED 0-55

57,874 (55%)
PEOPLE AGED 56+

45,827 (45%)

UNEMPLOYMENT LEVEL
TOTAL POPULATION

18%

HIGHEST AVERAGE
MUNICIPALITY OF KAVALA

28%

LOWEST AVERAGE
MUNICIPALITY OF PROSOTSANI

7.2%

EMPLOYMENT BY SECTOR IN THE REGION

- 1. AGRICULTURE, FORESTRY, AND FISHING
- 2. WHOLESALE AND RETAIL TRADE
- 3. PUBLIC ADMINISTRATION

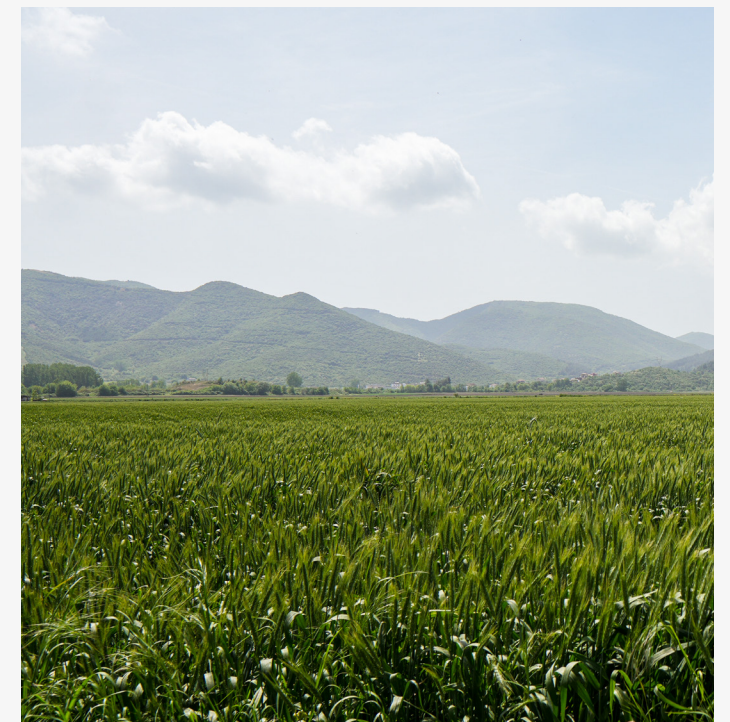




“

To write the story of a man of our
time who was cured of his suffer-
ing simply by gazing for hours at a
landscape

Albert Camus Notebooks, book two



Philippi Park
© Petros Sainatoudis

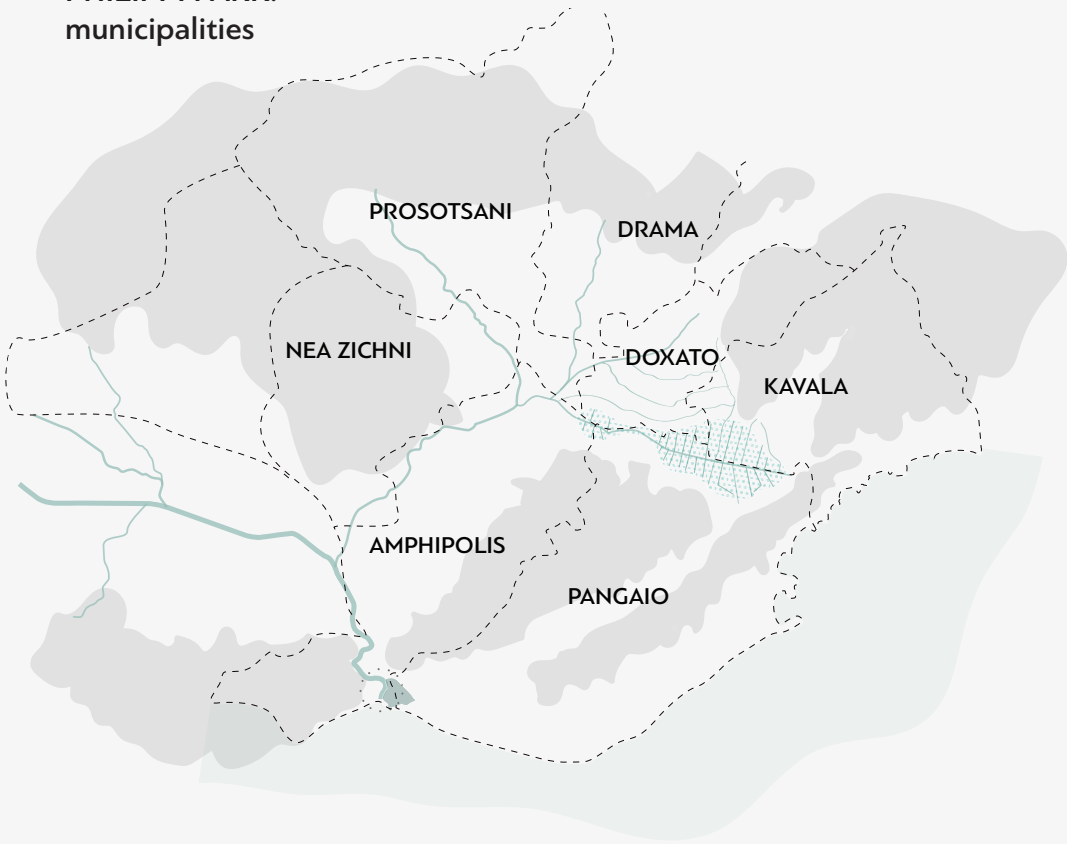
Website & Eshop: opsometha.org
Email: info@opsometha.org
Facebook: [@opsometha](https://www.facebook.com/opsometha)

CULTURAL LANDSCAPE



ANALYSIS
LOCATION

PHILIPPI PARK:
municipalities



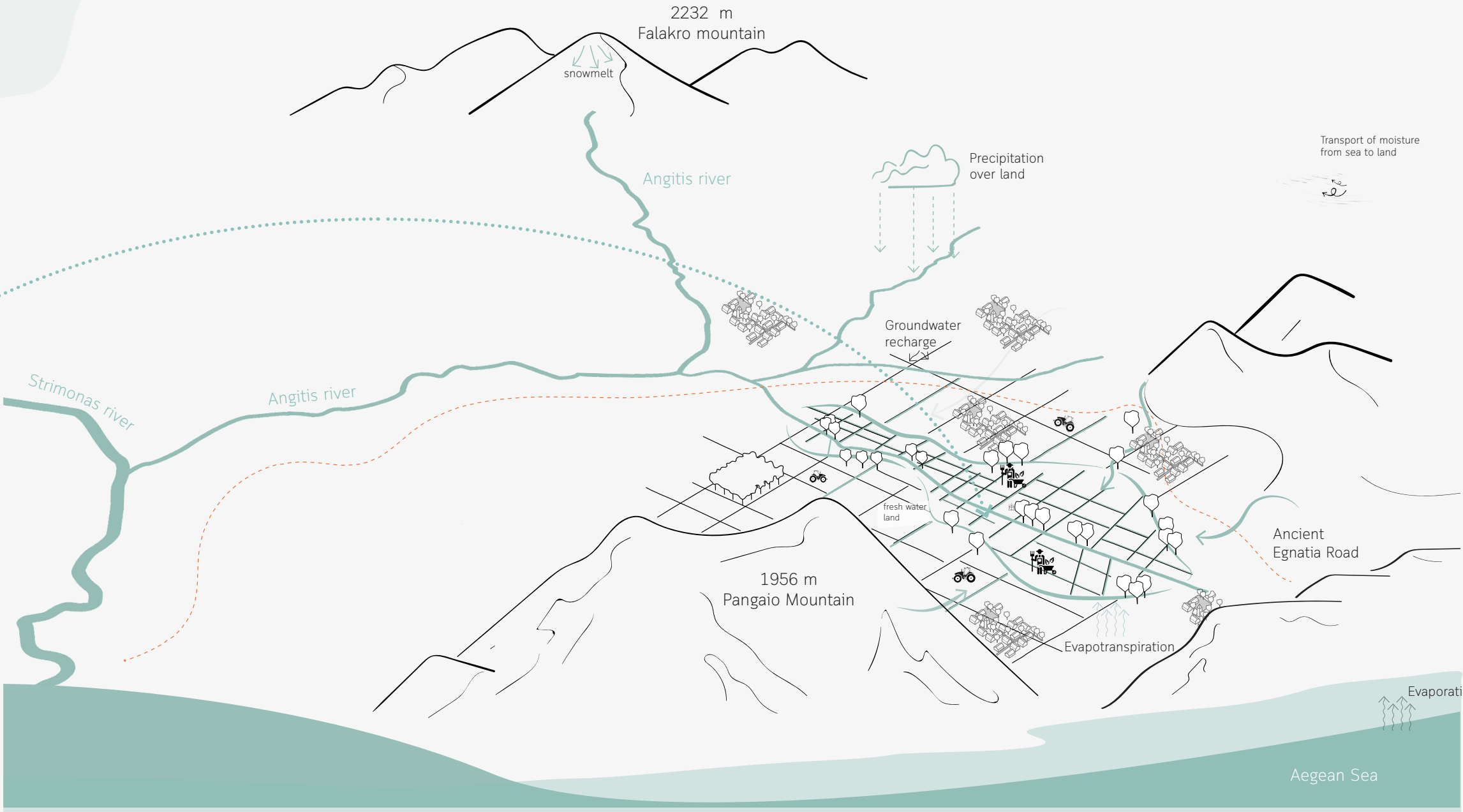
- Mountains
- Water
- Peat
- Canals & streams
- - Municipalities



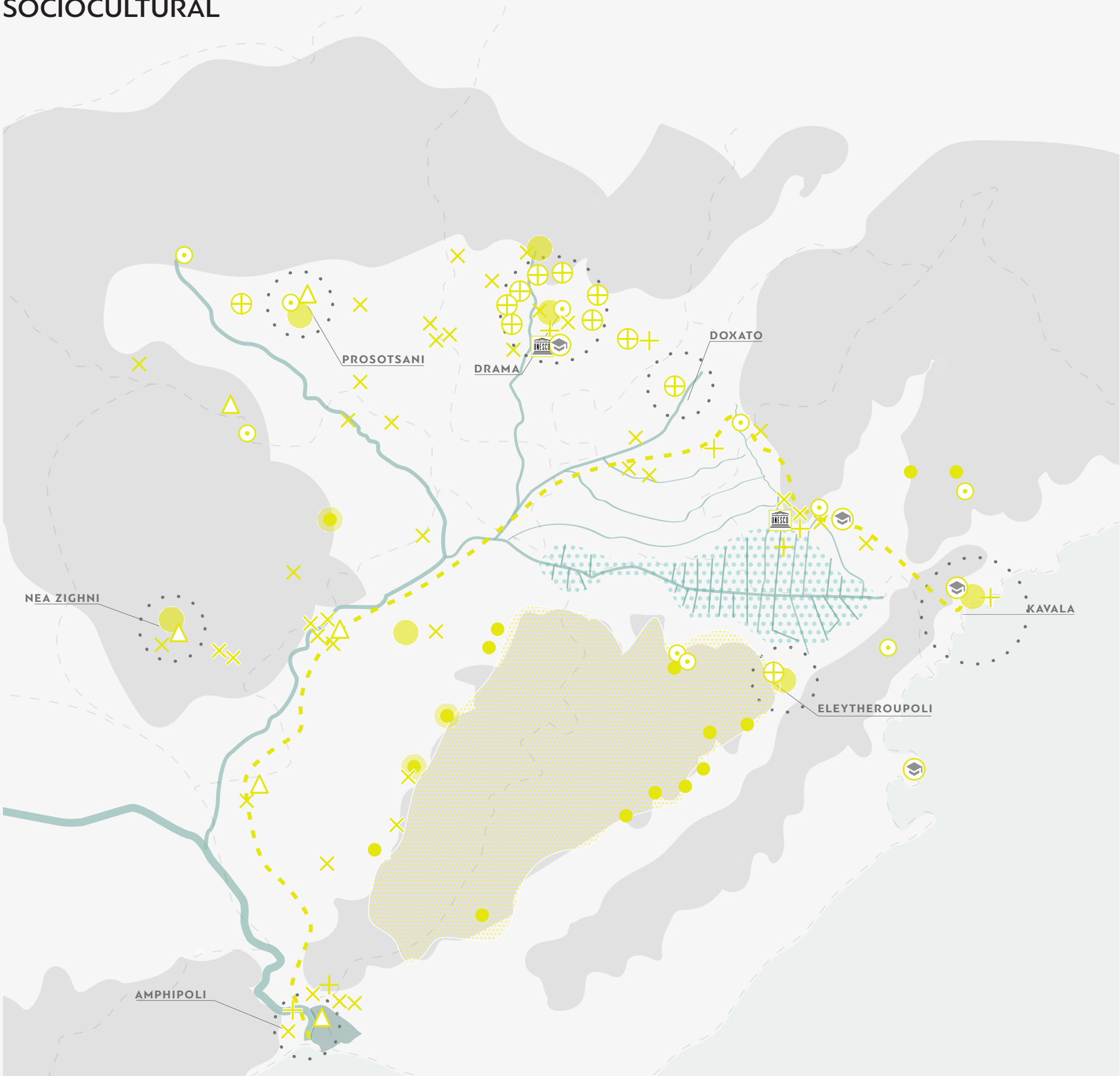
TODAY: ARGICULTURAL LAND
WITH A SYSTEM OF CANALS

WATER CYCLE:

BEFORE 1930: LAKE



HISTORICAL BACKGROUND
SOCIOCULTURAL



- Acropolis- Complexes-Castle- Fortress
- Archaeological Sites
- Prehistoric-Hellenic-Roman settlements
- Forum
- Cultural Festivals
- Special Locations
- Ancient Egnatia
- Areas with special architecture
- Traditional settlements
- Religious Places
- Unesco monument
- Archaeological site Pangaio
- Educational & Research Institutions
- Water
- Mountains

HISTORICAL BACKGROUND
COLLAGE

8500
YEARS OF HISTORY

PREHISTORIC AREA

ANCIENT GREECE

ROMAN EMPIRE

EARLY CHRISTIAN ERA

BYZANTINE EMPIRE

MODERN HISTORY

ARCHAEOLOGICAL SITE
OF PHILIPPI / UNESCO site
356 BC



REFERENCE POINT
ABOVE THE
GNATIAN ROAD



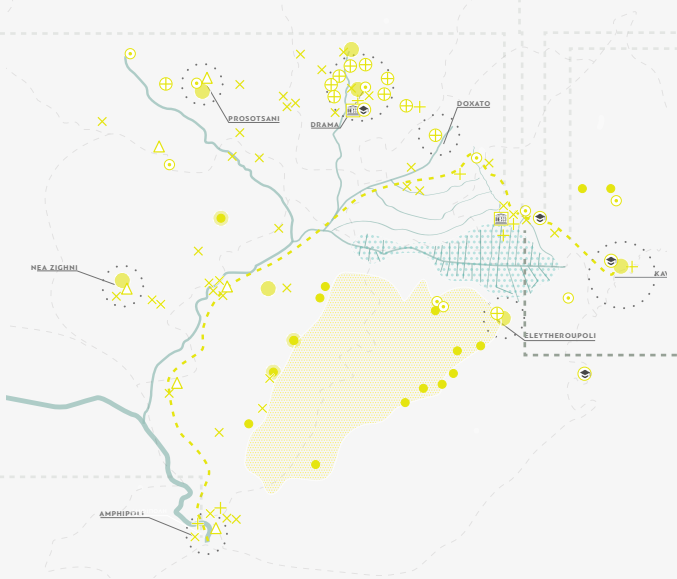
ANCIENT EGNATIA ROAD
146 BC



APOSTLE PAUL
Baptism of 1st European
Christian named Lydia
49 AD



ARCHAEOLOGICAL SITE
OF AMPHIPOLIS
437 BC



PREHISTORIC SETTLEMENT
OF DIKILI TAS
4300 BC

HISTORICAL BACKGROUND
COLLAGE

8500
YEARS OF HISTORY

PREHISTORIC AREA

ANCIENT GREECE

ROMAN EMPIRE

EARLY CHRISTIAN ERA

BYZANTINE EMPIRE

MODERN HISTORY

ARCHAEOLOGICAL SITE
OF PHILIPPI / UNESCO site
356 BC



REFERENCE POINT
ABOVE THE
EGNATIAN ROAD



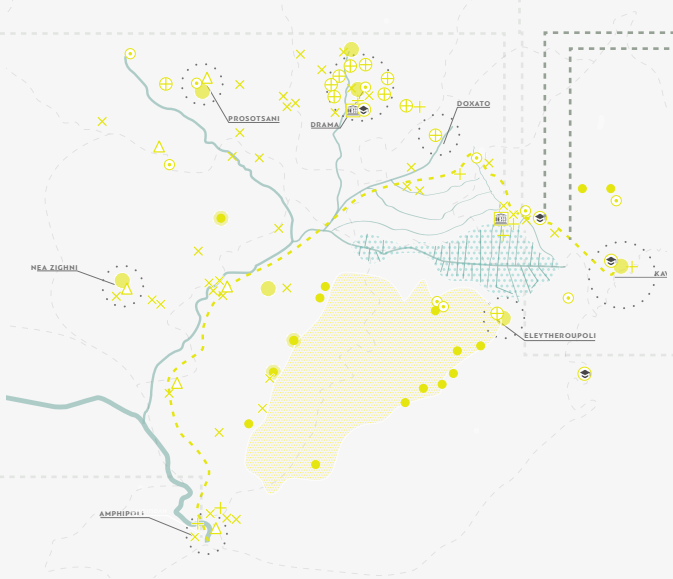
ANCIENT EGNATIA ROAD
146 BC



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Baptism of 1st European
Christian named Lydia
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ARCHAEOLOGICAL SITE
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ARCHAEOLOGICAL SITE
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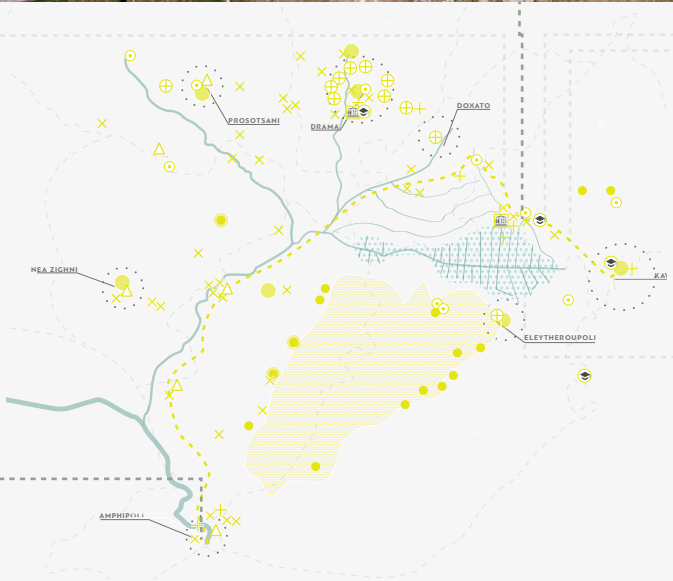
REFERENCE POINT
ABOVE THE
GNATIAN ROAD



ANCIENT EGNATIA ROAD
146 BC



ARCHAEOLOGICAL SITE
OF AMPHIPOLIS
437 BC



PREHISTORIC SETTLEMENT
OF DIKILI TAS
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HISTORICAL BACKGROUND
COLLAGE

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ANCIENT GREECE

ROMAN EMPIRE

EARLY CHRISTIAN ERA

BYZANTINE EMPIRE

MODERN HISTORY

ARCHAEOLOGICAL SITE
OF PHILIPPI / UNESCO site
356 BC



REFERENCE POINT
ABOVE THE
GNATIAN ROAD



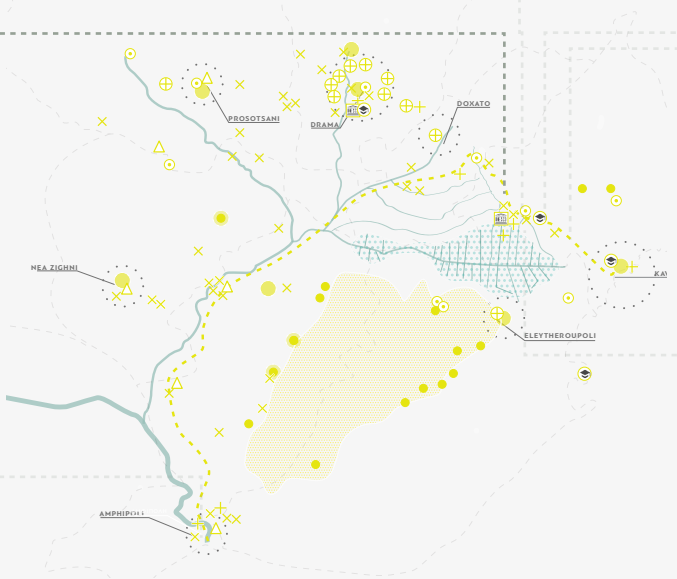
ANCIENT EGNATIA ROAD
146 BC



APOSTLE PAUL
Baptism of 1st European
Christian named Lydia
49 AD

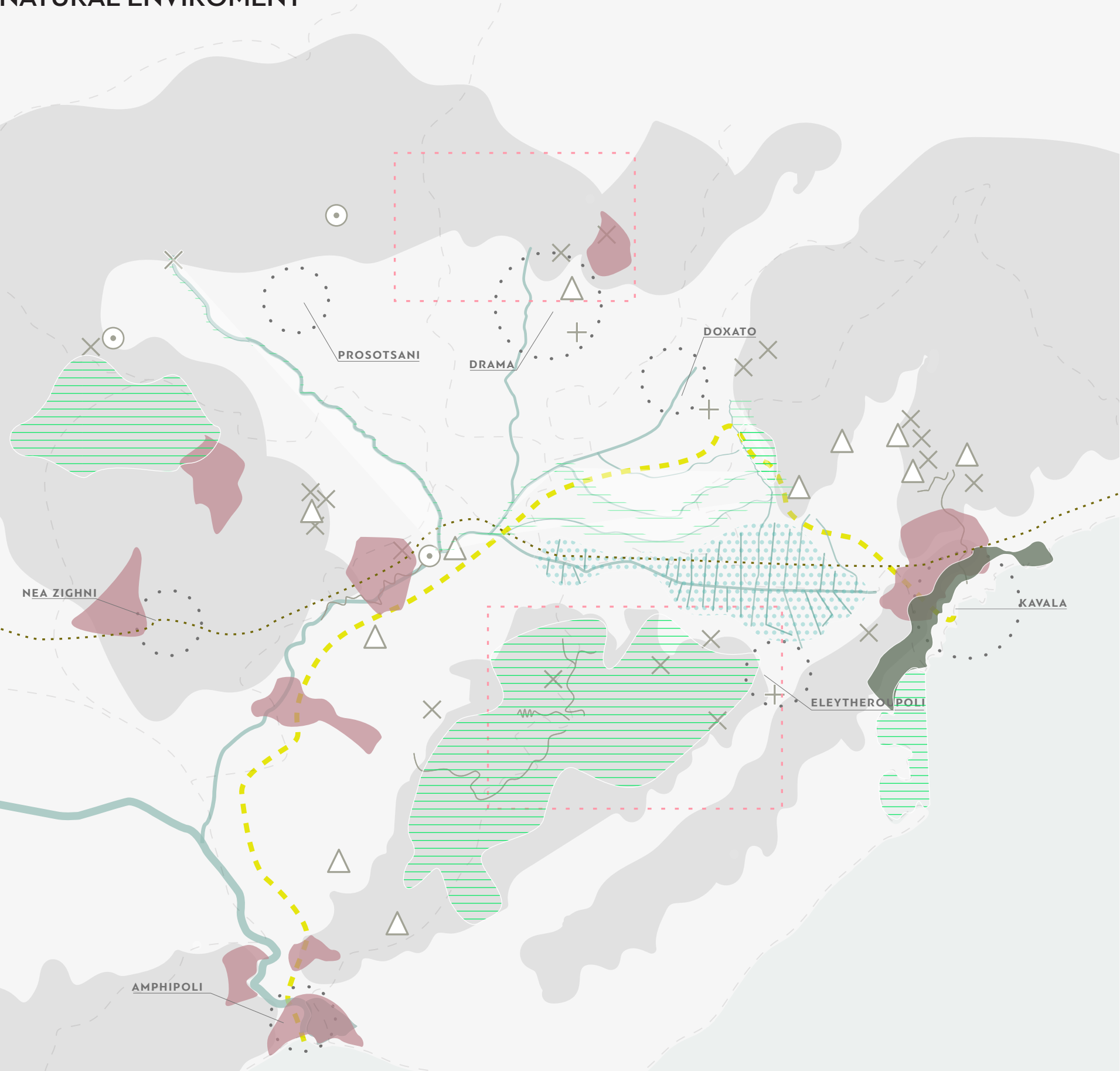


ARCHAEOLOGICAL SITE
OF AMPHIPOLIS
437 BC



PREHISTORIC SETTLEMENT
OF DIKILI TAS
4300 BC

PHILIPPI PARK
NATURAL ENVIROMENT



- Canyon
- Cave paintings
- Caves (visited)
- Caves (not visited)
- Walking paths
- Natura 2000
- Aesthetic Forest
- Wildlife sanctuaries
- Mineral wealth
- Via Egnatia
- TAP Trans Adriatic Pipeline
- Water
- Mountains

PHILIPPI PARK
PHILIPPI PEATLAND

PANGKAIIO MOUNTAIN
1956m



PHILIPPI PARK
PHILIPPI PEATLAND

MENOIKIO
MOUNTAIN 1956m

FALAKRO MOUNTAIN
2.232 m

MOUNTAIN OF LEKANI
1928m

WATER SYSTEM
OF CANALS



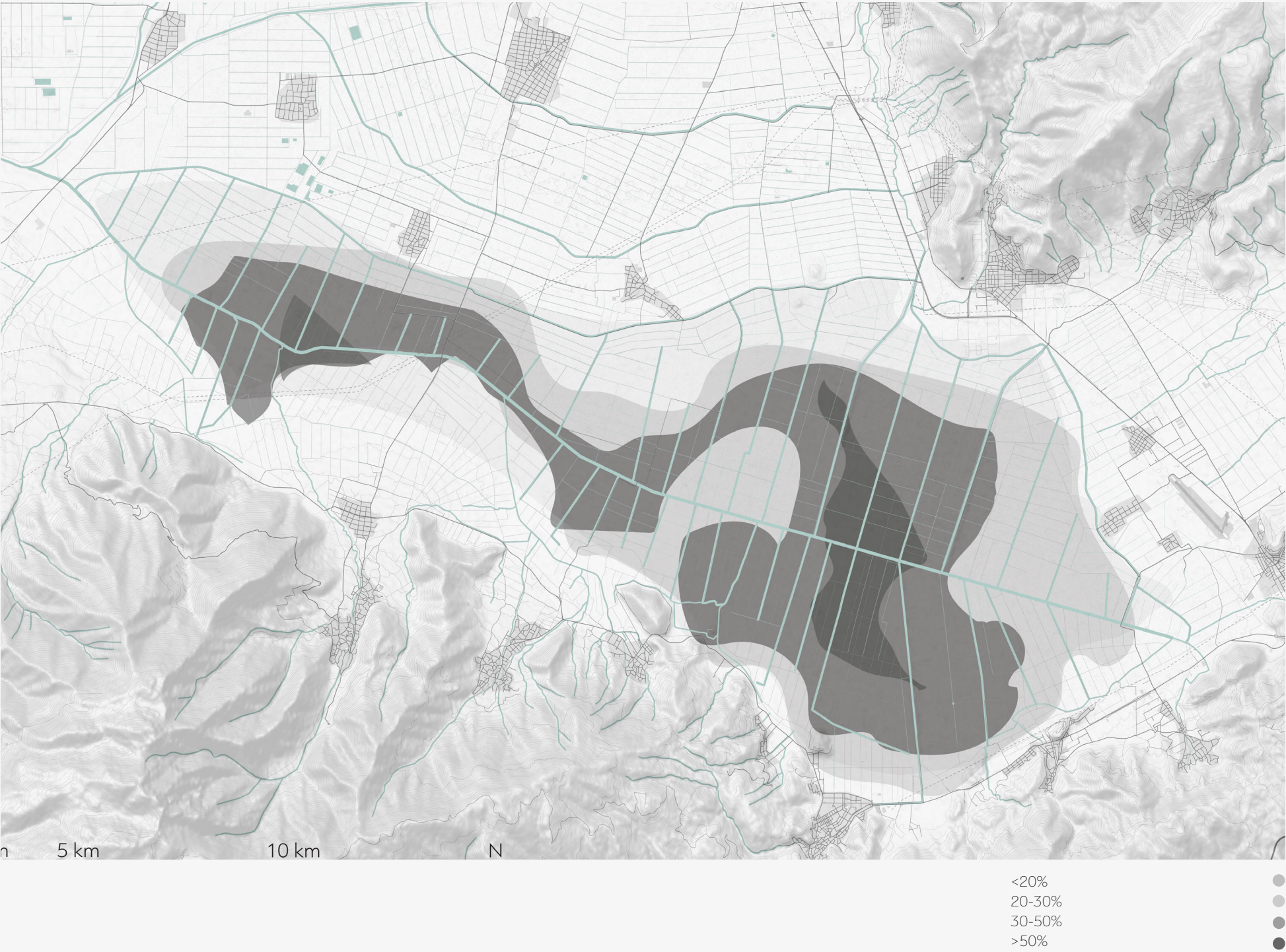
PHILIPPI PARK
PHILIPPI PEATLAND



CENTRAL CANAL
29 km

ANALYSIS
PEATLAND

SPATIAL DISTRIBUTION OF THE ORGANIC SUBSTANCE IN THE SOILS
AT DEPTH OF 0-90 CM

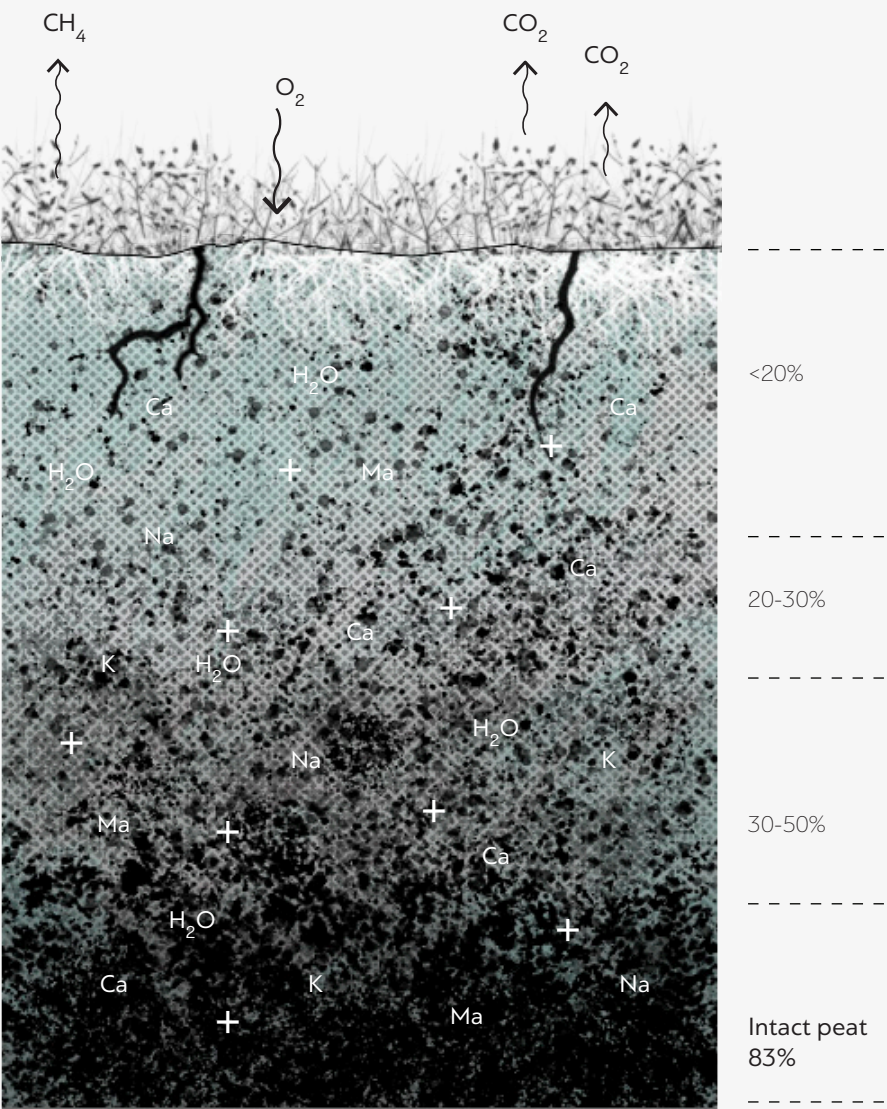


GLOBAL PEAT RESERVES
LIMITED, EVALUATED BY SURFACE AREA.
DEPTHS

7-18m

PHILIPPI PEATLAND DEPTH

AVERAGE 75m
MAX 300m



ISSUES

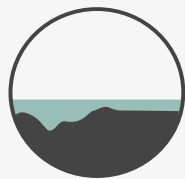
SOIL
SUBSIDENCE



CONFLAGRA-
TION



FLOODS



CRACKS IN THE
GROUND



LOSS IN BIODI-
VERSITY



&

PEAT OXIDATION

GREEN HOUSE GAS EMISSIONS

MINERALISATION

CROPS & FARMERS

CROPS



65% maze

25% sugar beet

10% crops like industrial tomato, cotton,
sunflowers, tobacco, wheat

NUMBER OF FARMERS



1557 Drama



1101 Pangaio



913 Kavala



375 Amphipolis



113 Prosotsani

CONFLICTS



Farmers &
Residents



Politicians



Cultural Landscape



Residents &
Visitors

ANALYSIS
GOALS

PROBLEMS:

Soil
subsidence

Floods

Cracks in the
ground

Conflagration

Loss in biodiversity

OPPORTUNITIES:



Water
management



Reservoirs &
Boezem system



Ecosystem Improvement
Nature Reserve
Tree planting



Access to
canals



Recreation: Canoeing, Fishing, Hiking, Biking



Alternative
Transportation

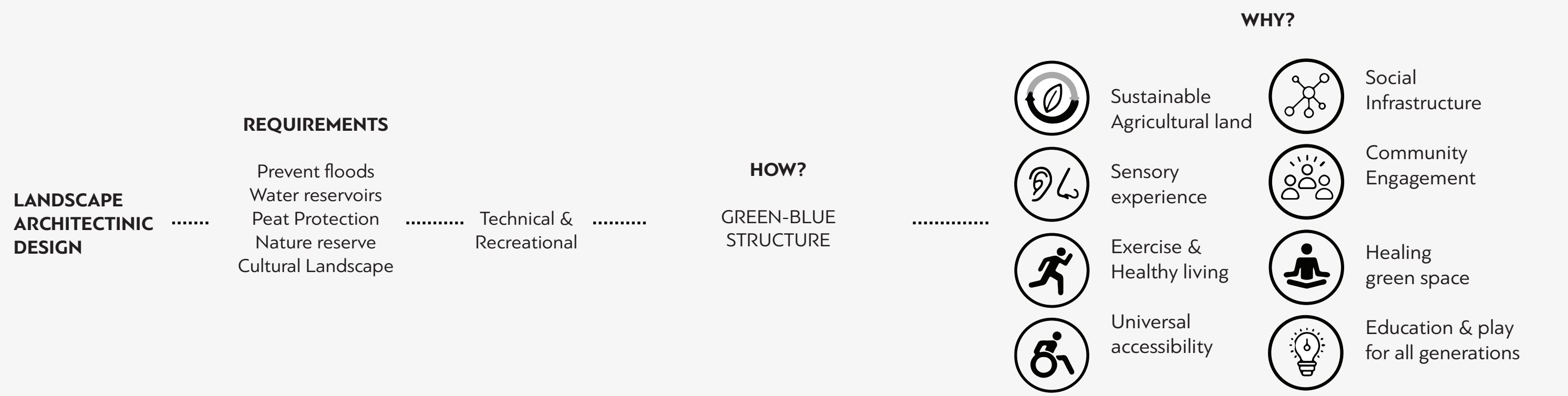
&

- HIGH-QUALITY AGRICULTURAL PRODUCTS,
- LIMITING NITROGEN LOSS,
- PRESERVING SOILS SUITABLE FOR NITROGEN MANAGEMENT,
- IMPLEMENTING LAND USE POLICY FOCUSED ON THE SUSTAINABLE USE OF SOIL RESOURCES

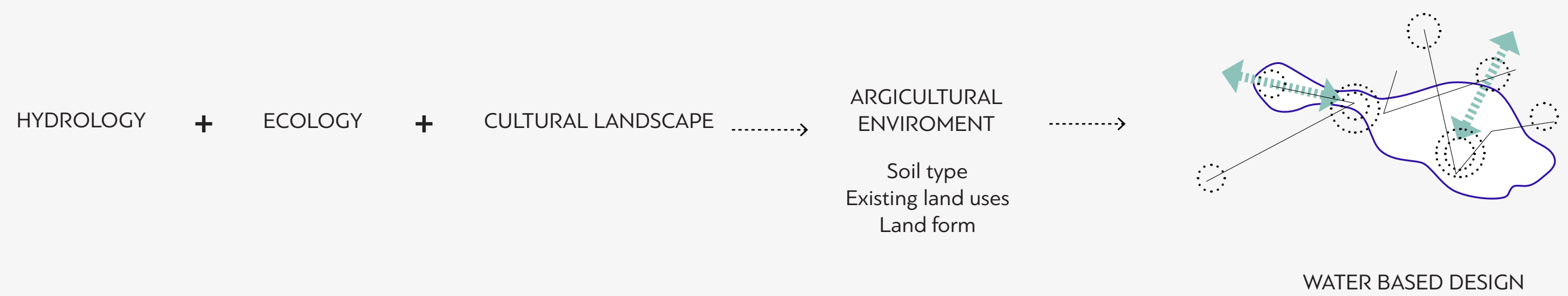


“

How can an architectural landscape design of a green-blue structure help revitalize, revive and enhance the cultural landscape of Philippi Park?



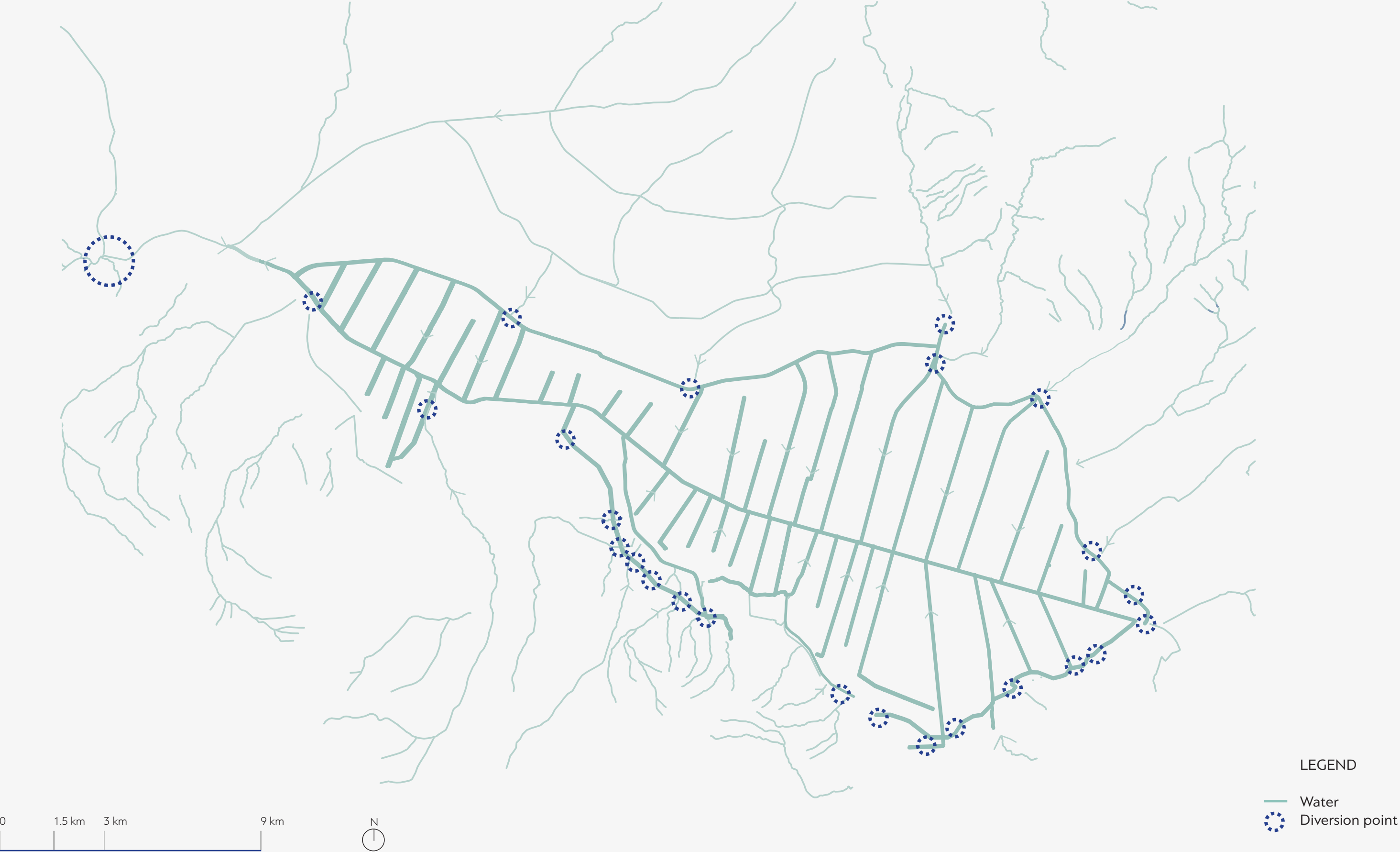
DESIGN PRINCIPLES



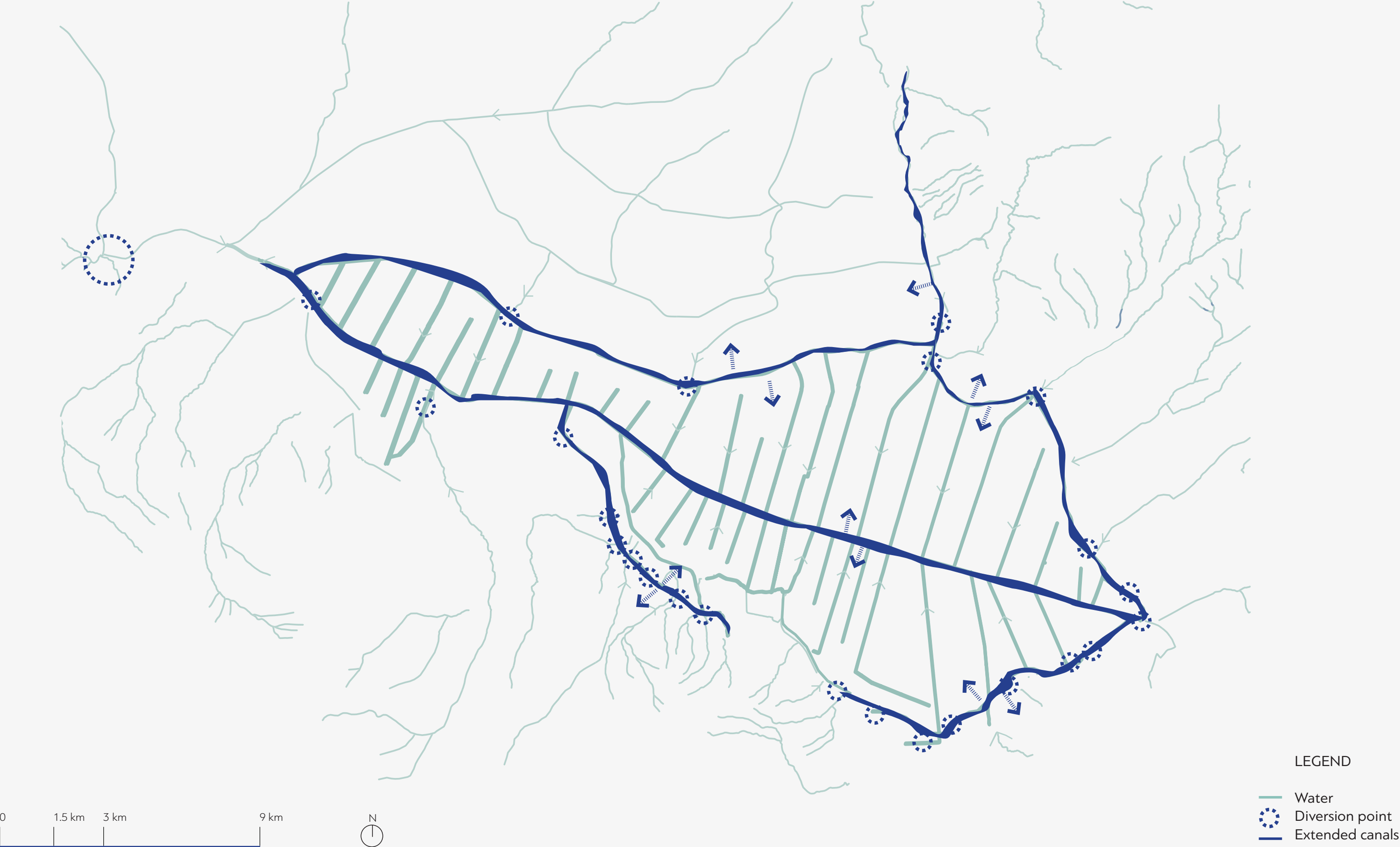


CONCEPT

WATER SYSTEM



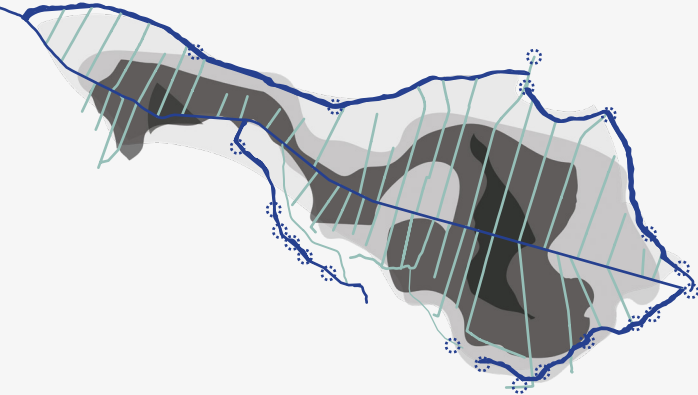
FLOOD PROTECTION- CANAL EXPANSION



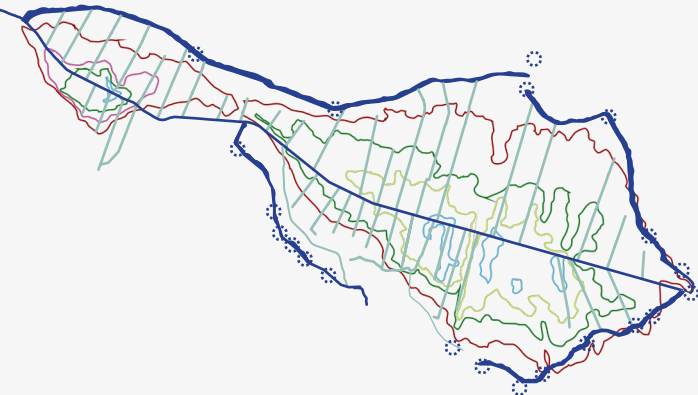
DESIGN

HYDROLOGY

2. PEAT DISTRIBUTION



3. SUBSIDENCE

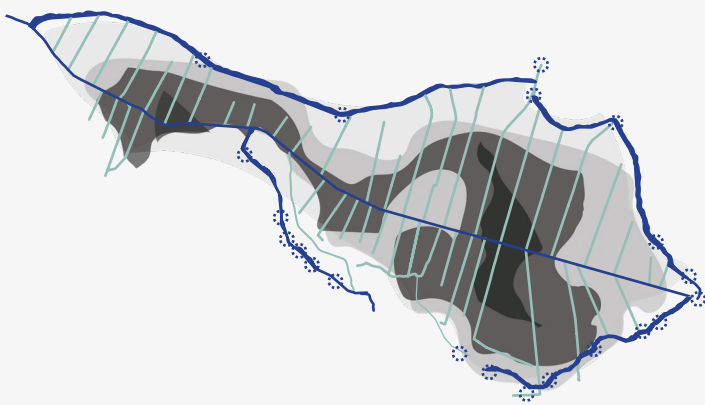


4. HERITAGE

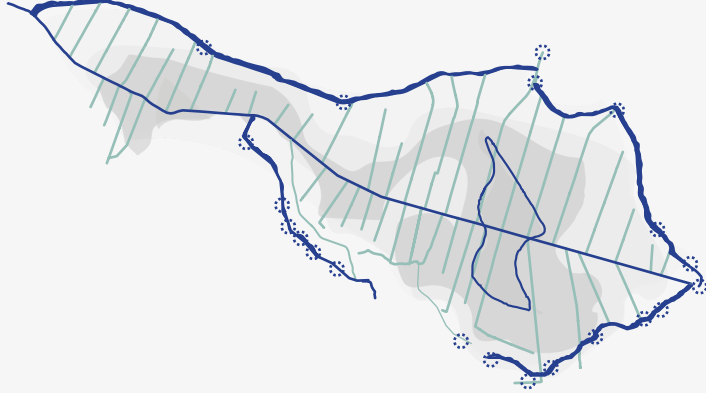


DESIGN
HYDROLOGY

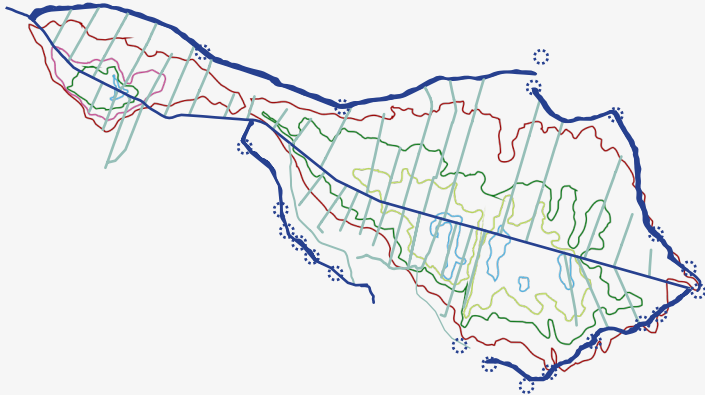
2. PEAT DISTRIBUTION



RING CANAL
AROUND THE DEEPEST
PEAT AREAS



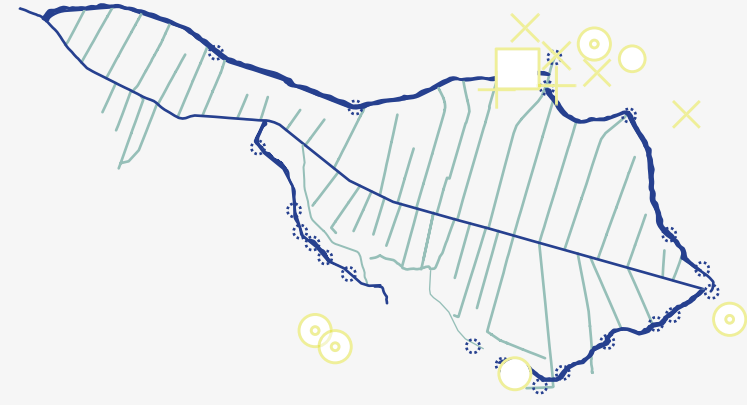
3. SUBSIDENCE



LAKES
IN THE DEEPEST
SUBMERGED AREAS



4. HERITAGE

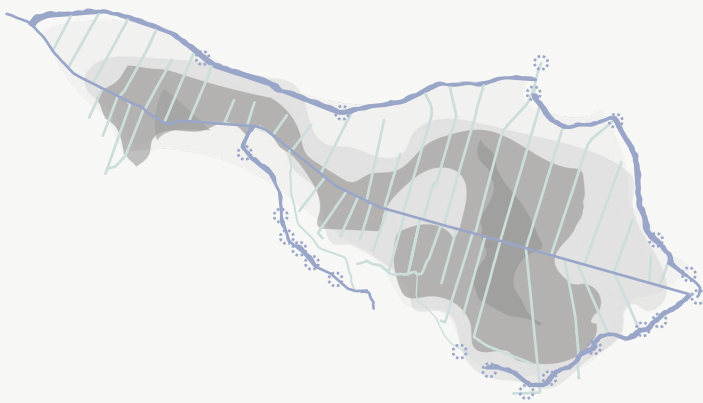


STREAMS
FOLLOWING SUBMERGED AREAS
AND CONNECT LAKES WITH LANDMARKS



DESIGN
HYDROLOGY

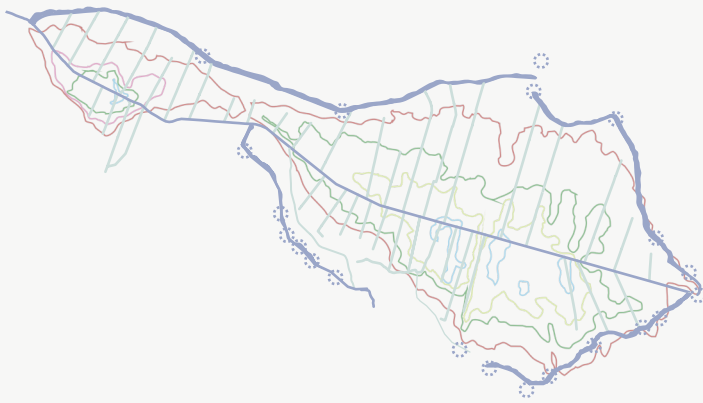
2. PEAT DISTRIBUTION



RING CANAL
AROUND THE DEEPEST
PEAT AREAS



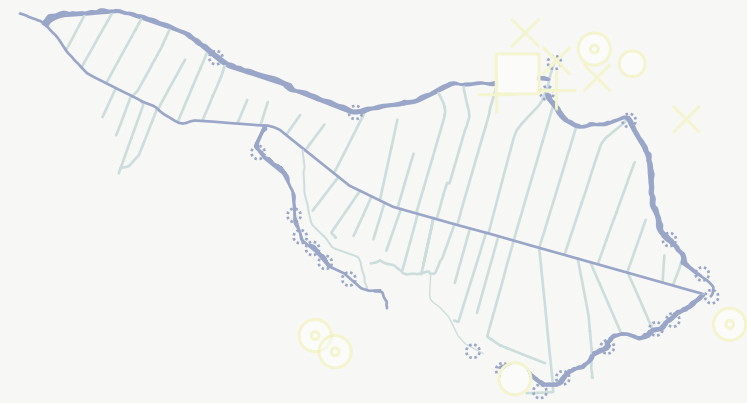
3. SUBSIDENCE



LAKES
IN THE DEEPEST
SUBMERGED AREAS



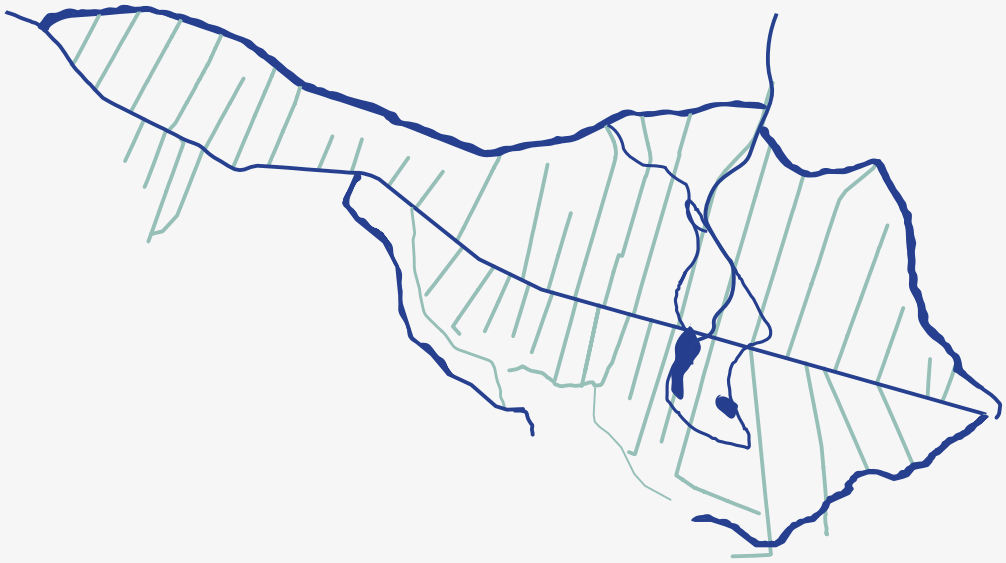
4. HERITAGE



STREAMS
FOLLOWING SUBMERGED AREAS
AND CONNECT LAKES WITH LANDMARKS

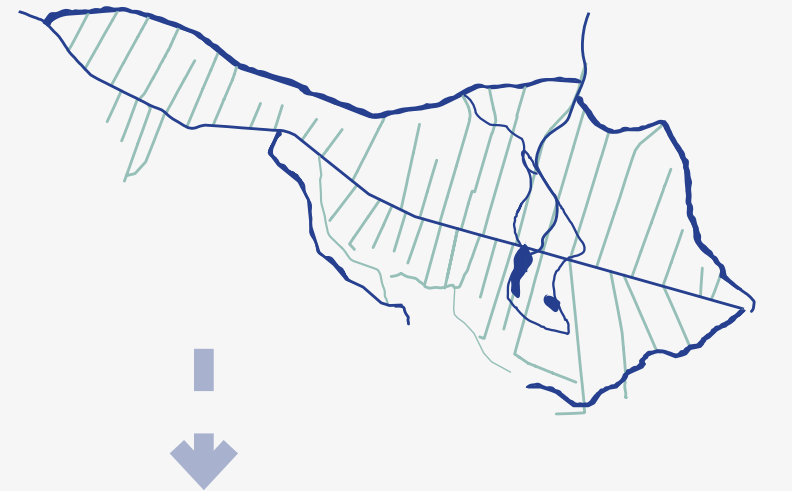


NEW WATER NETWORK

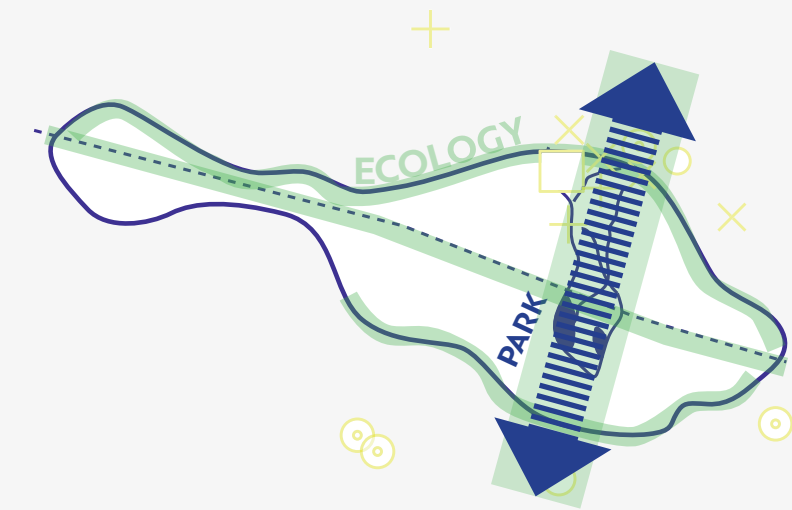


DESIGN
CONCEPT

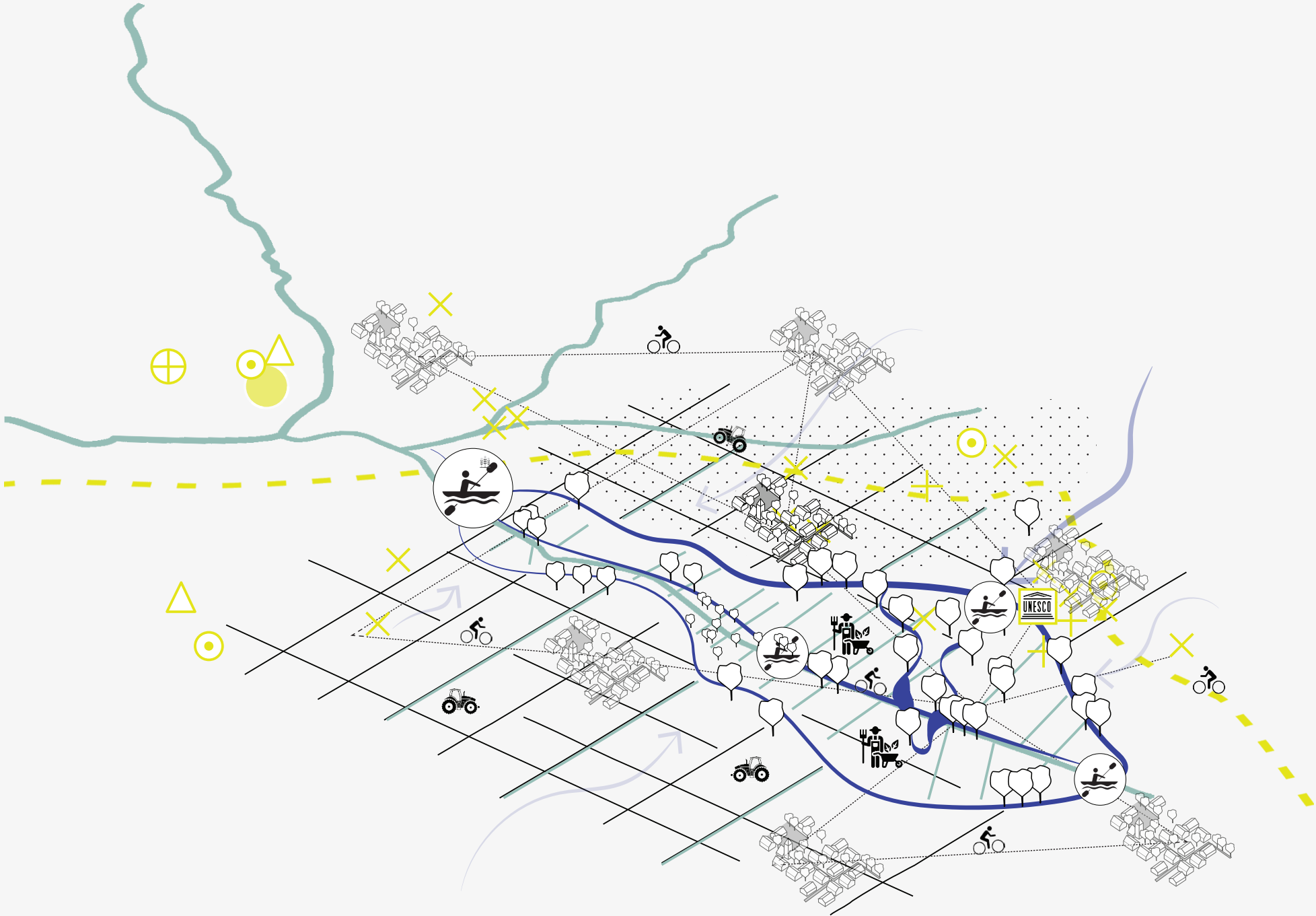
NEW WATER NETWORK



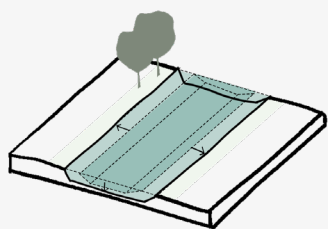
GREEN- BLUE STRUCTURE



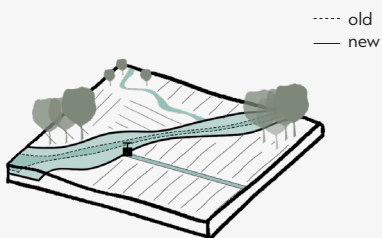
LANDSCAPE
ARCHITECTINIC
DESIGN



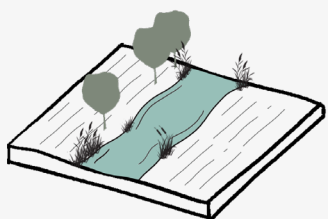
HYDROLOGY



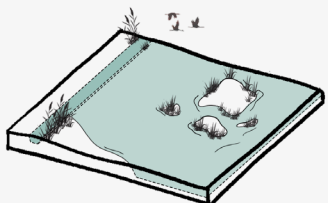
expand central canal



expand perimetrical canals to collect fresh water

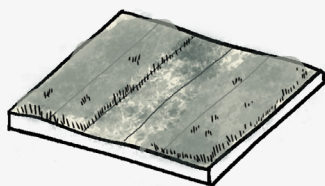


new waterways

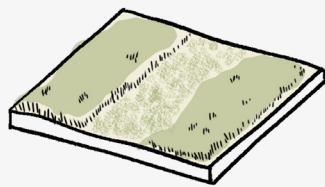


Lakes - water reservoirs

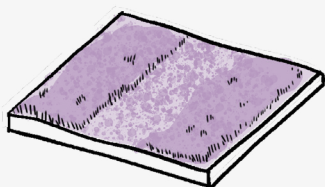
ARGICULTURE



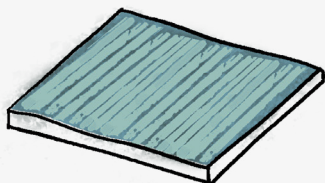
new crops - transition argiculture



new crops - transition argiculture

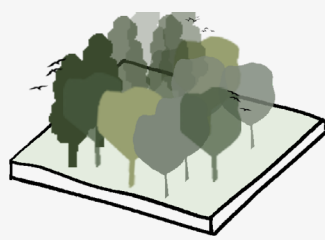


new crops - transition argiculture

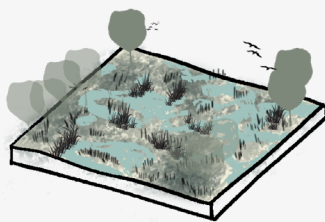


palludiculture

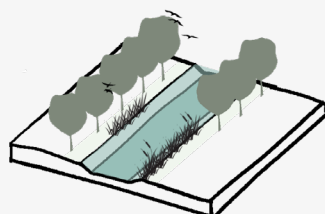
ECOLOGY



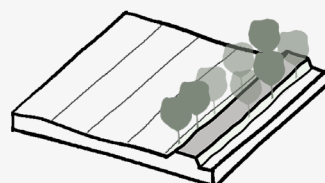
forest areas



marshland

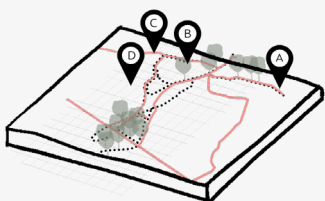


reforestation of central canal

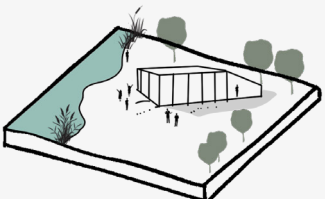


tree planting along routes

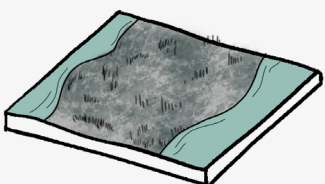
HERITAGE



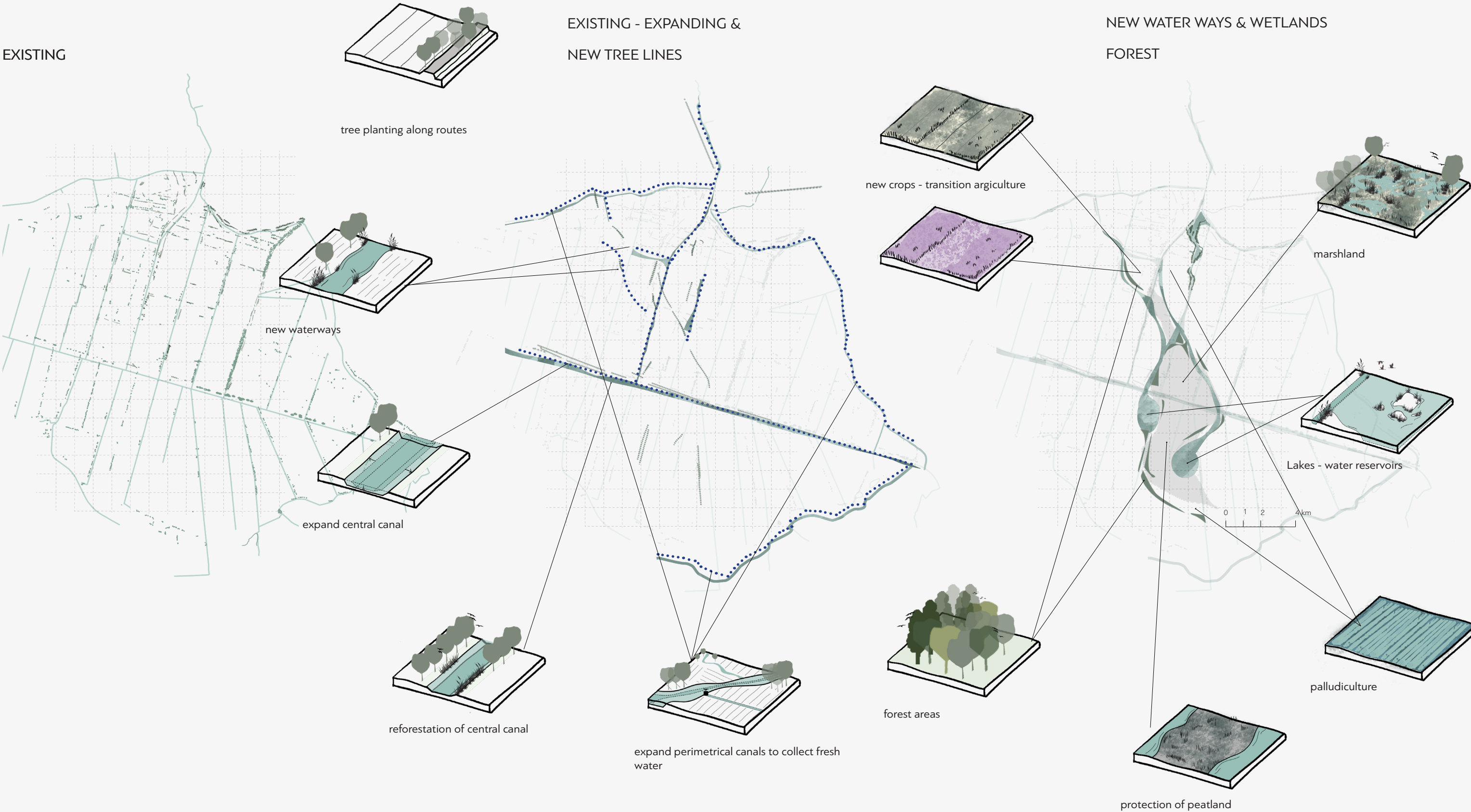
Connecting



museums & info points

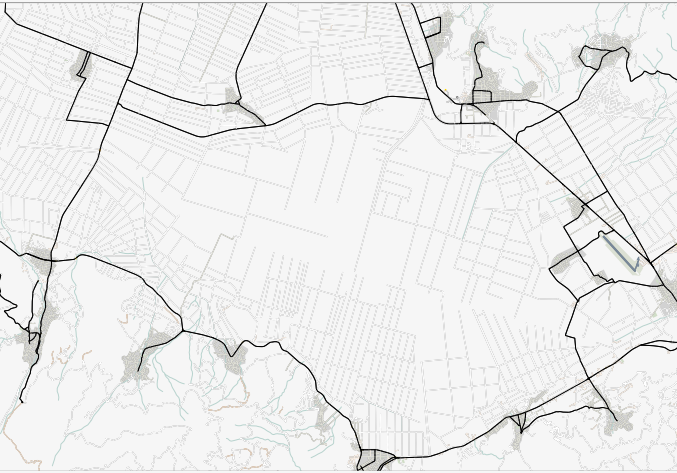


protection of peatland

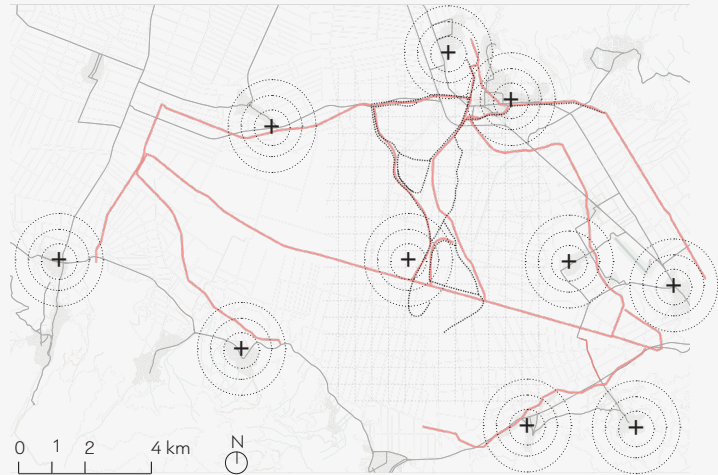


COMMUTING
Masterplan

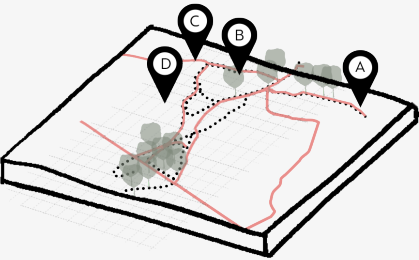
EXISTING
Road network & villages



NEW BIKE LANE &
WALKING PATH CONNECTING
COMMUNITIES



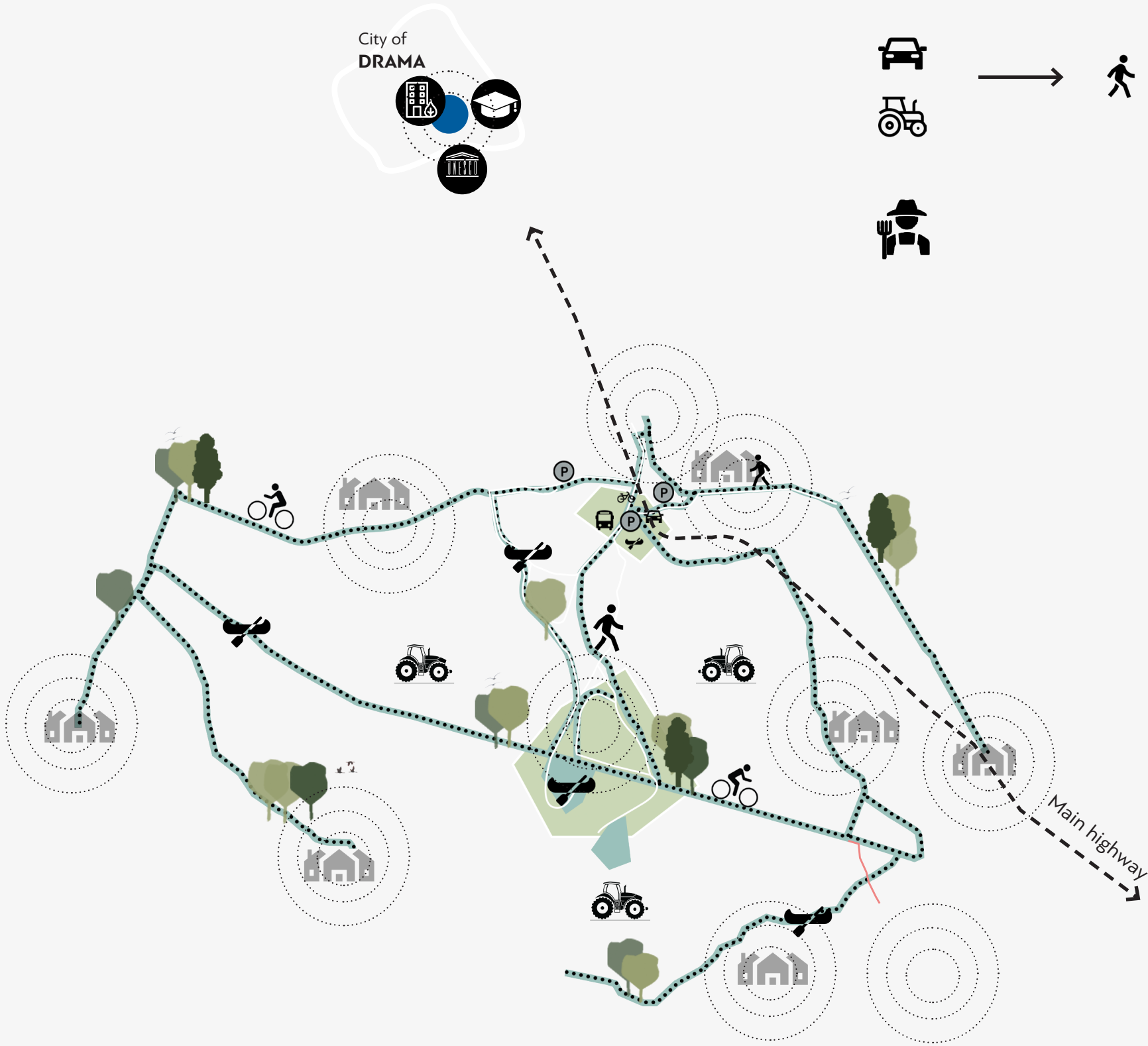
TOOLBOX



Connecting

EXISTING

PROPOSED



Main highway

City of
KAVALA



City of
DRAMA



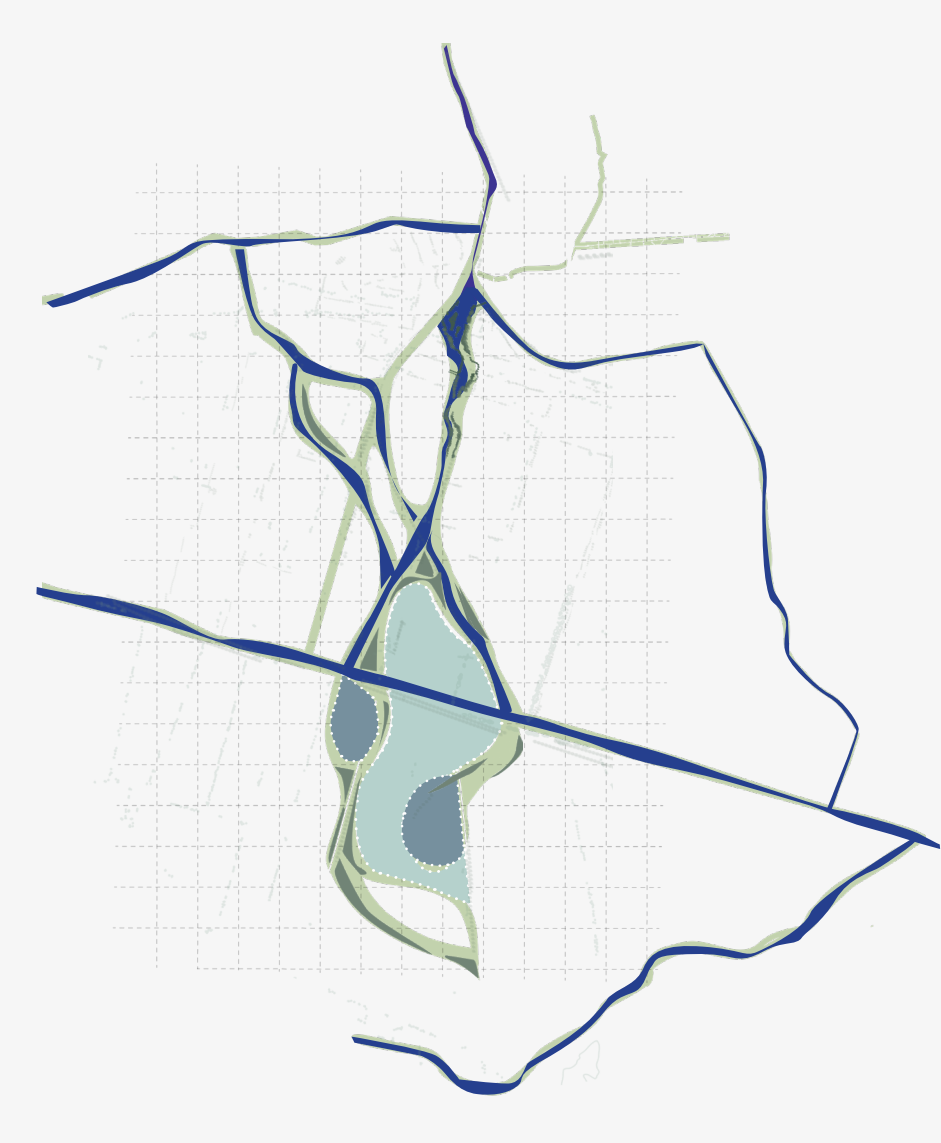
PROGRAM & HABITATS

Masterplan

PROGRAM



HABITATS



- NATURE
- HERITAGE
- EXPERIMENTAL ARGICULTURE
- RESIDENTIAL

- SREAMS-EXTENDED CANALS
- LAKE - RESERVOIR
- GRASSLAND WITH SCATTERED TREES
- FOREST
- MARSHLAND

SREAMS-EXTENDED CANALS



Existing



Proposed

GRASSLAND WITH SCATTERED TREES

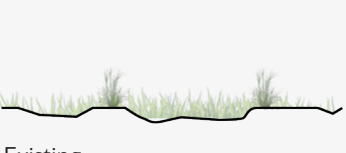


Existing



Proposed

LAKE - RESERVOIR



Existing

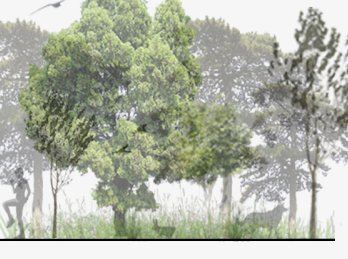


Proposed

FOREST



Existing



Proposed

MARSHLAND



Existing

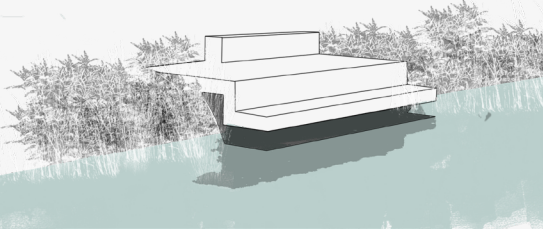


Proposed

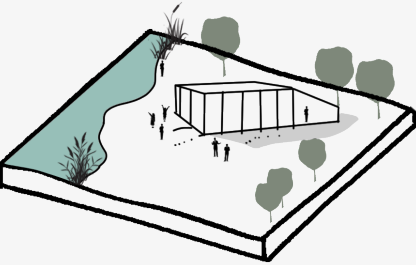
info points



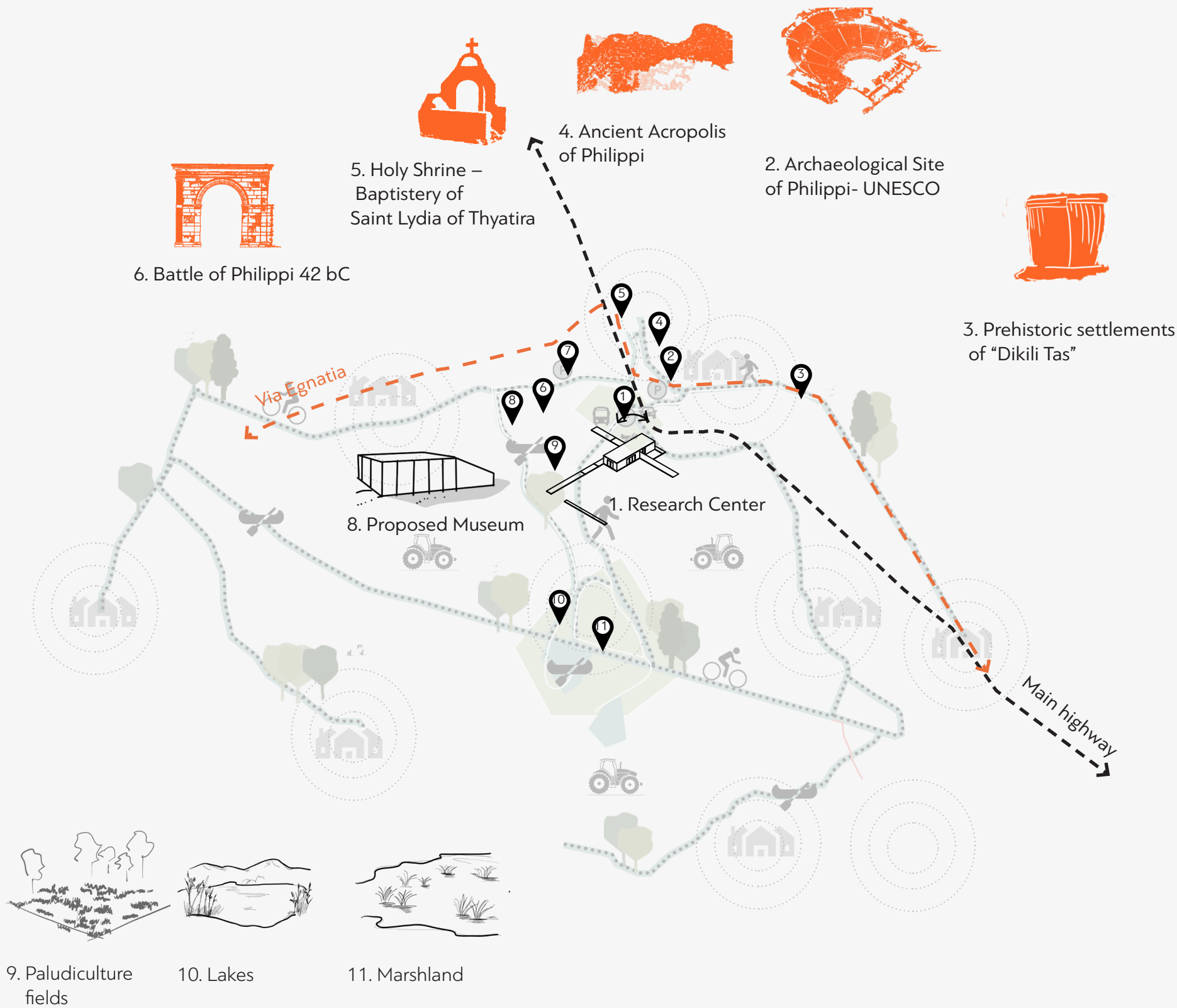
decks



TOOLBOX



Architectural constructions

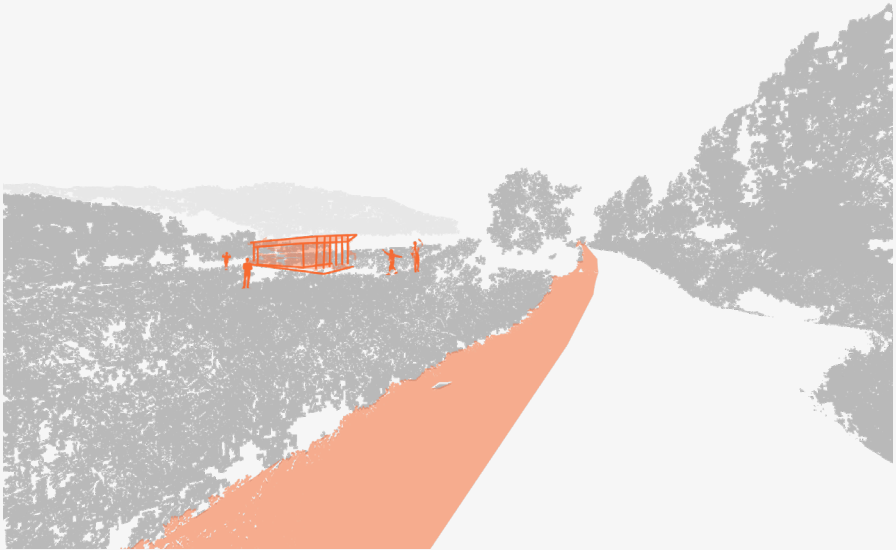




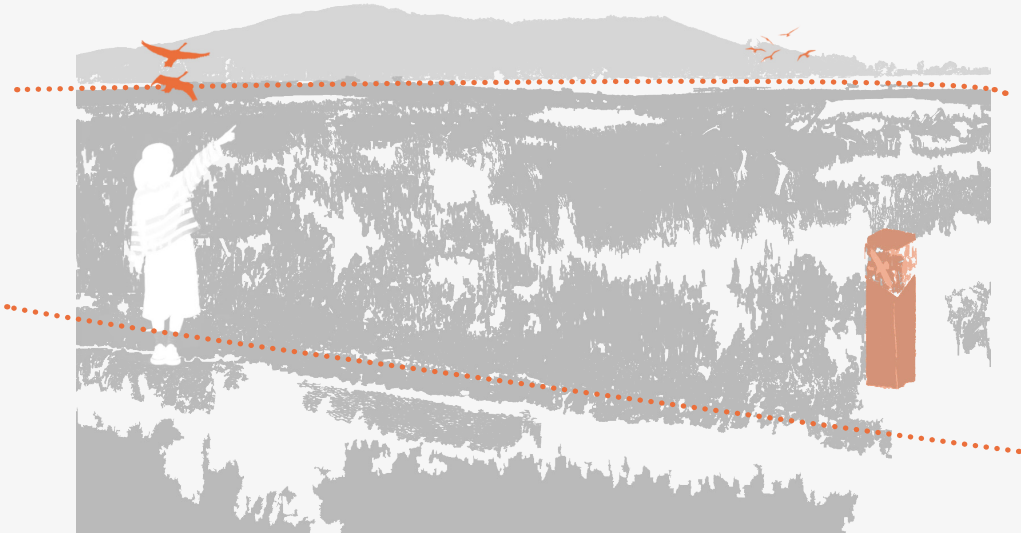
1. Dikili tas-Prehistoric settlement linked by bike lane to Philippi UNESCO site.



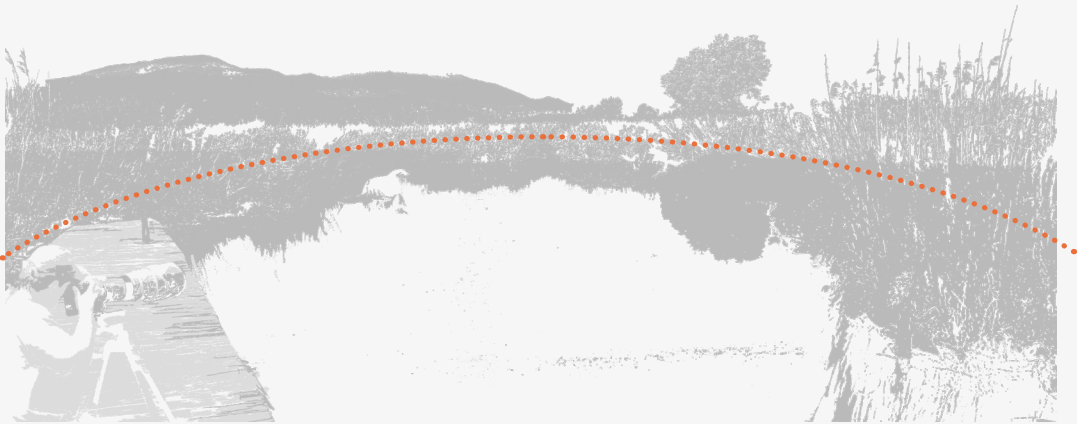
2. Tree planting on road leading to UNESCO site, converting to pedestrian/bike path.



3. New museum & bike path



4. paludiculture fields

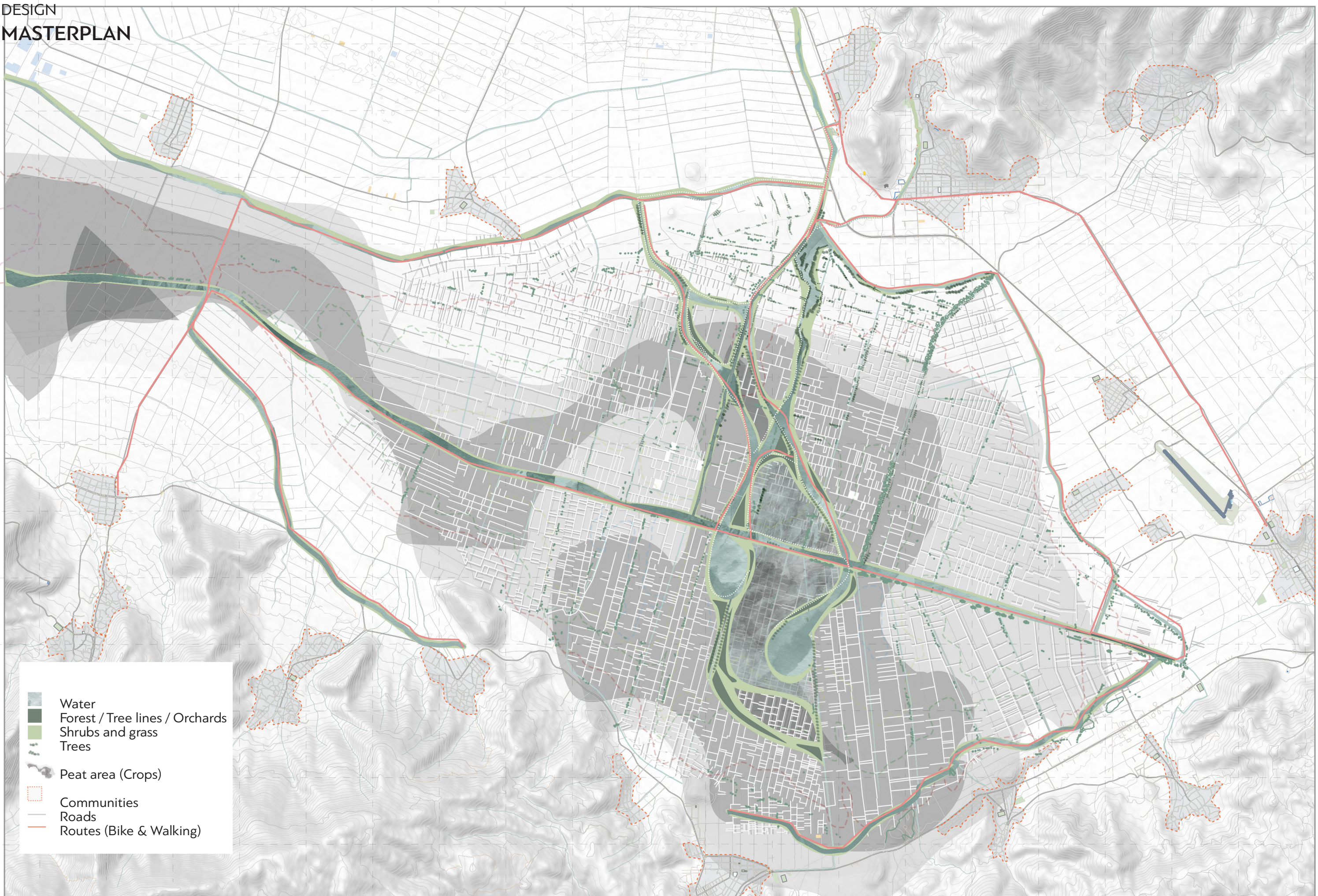


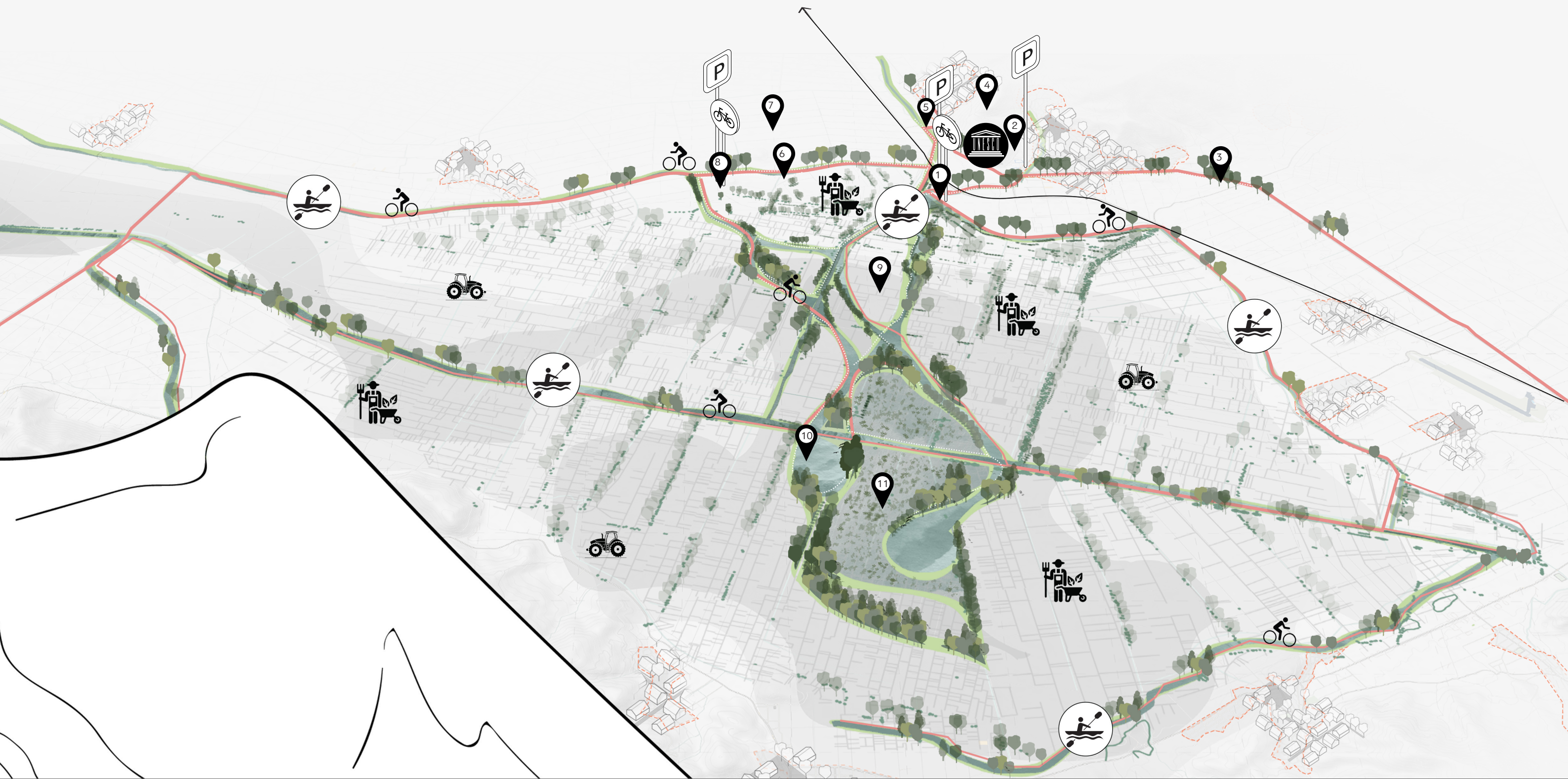
5. lake- reservoir & decks



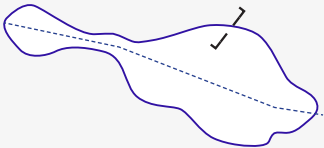
6. tree lines

DESIGN
MASTERPLAN





RING CANAL
Recreation-Ecology



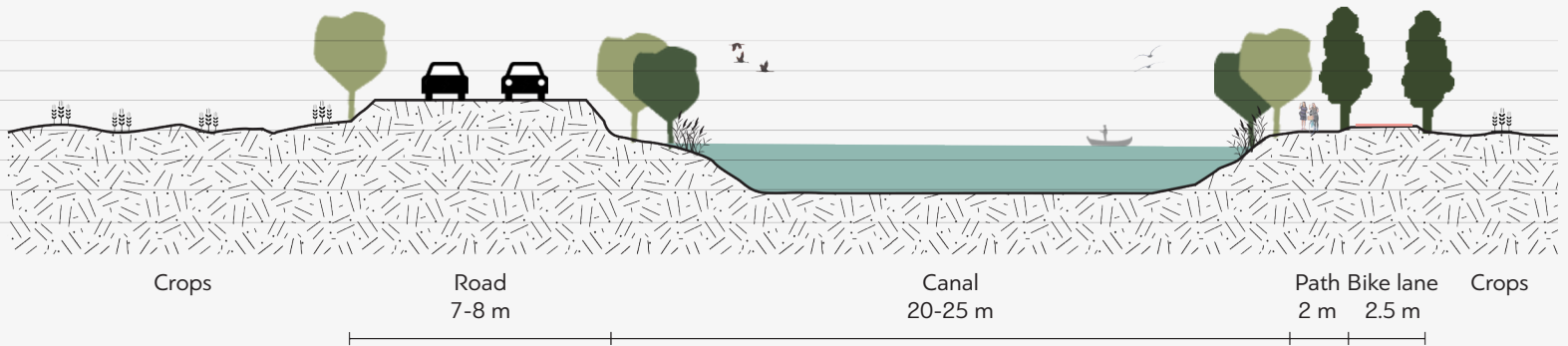
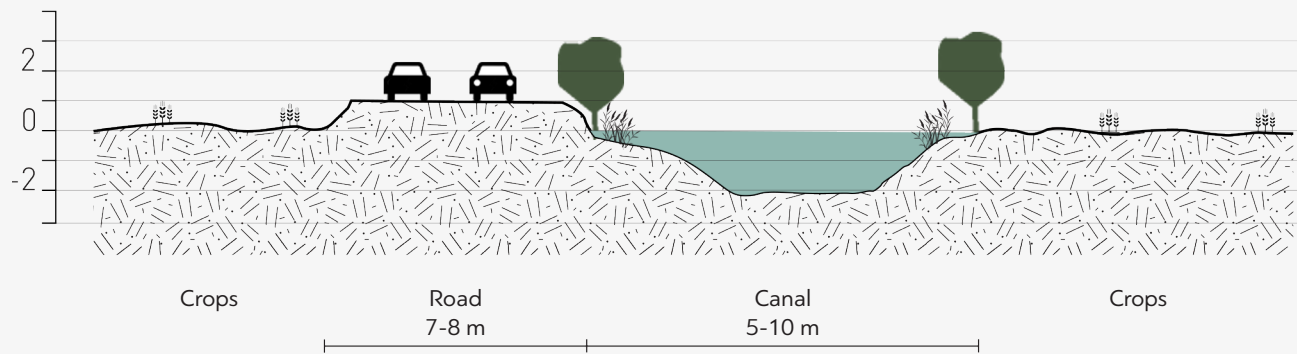
EXISTING



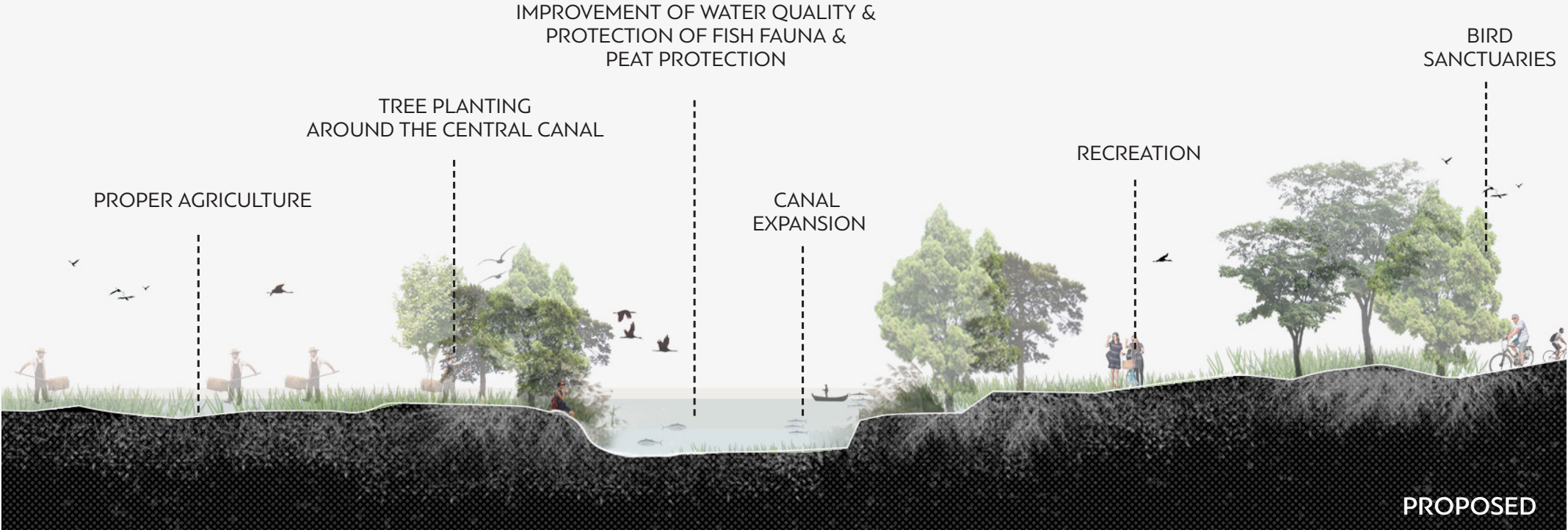
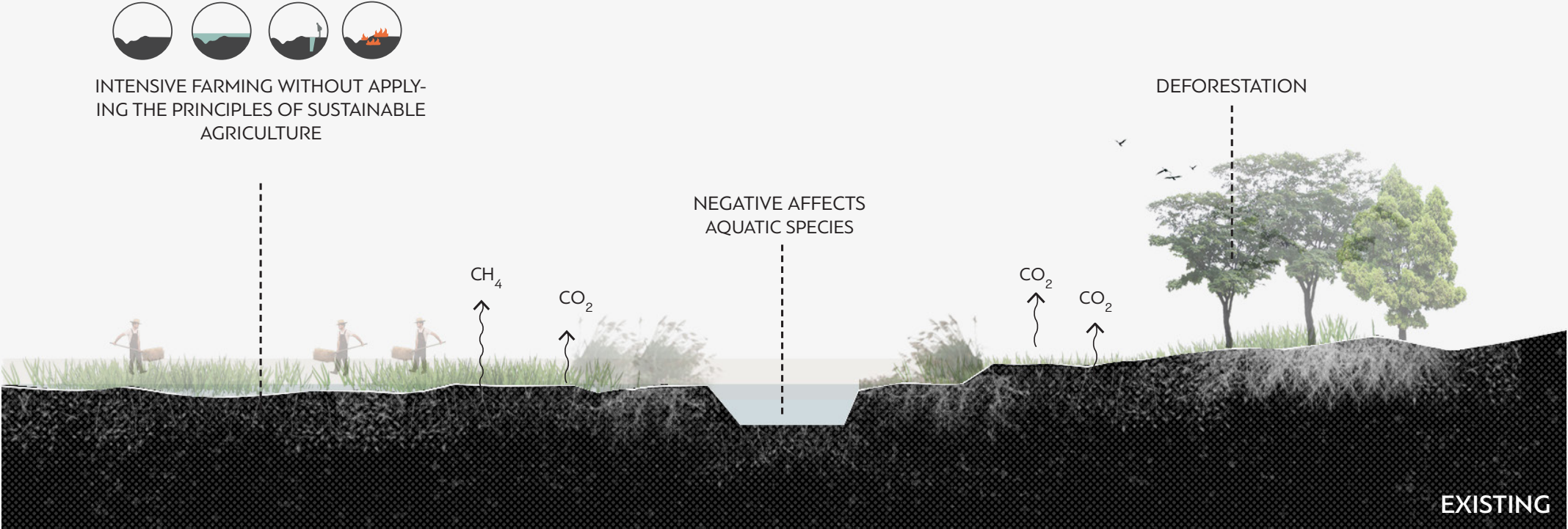
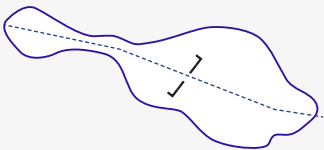
PROPOSED



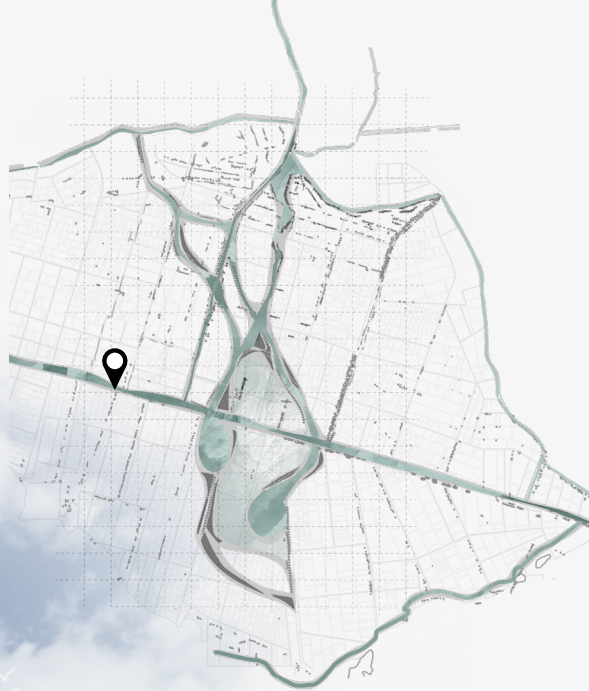
SECTIONS
Scale 1:250







CENTRAL CANAL
Visualitaztion



TRANSITIONAL ARGICULTURE
Masterplan

WHY?

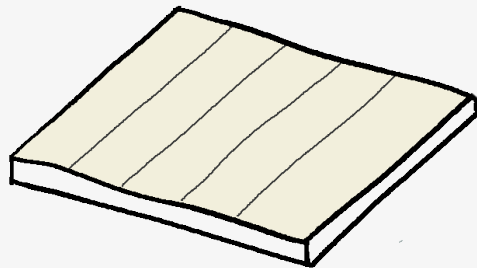
PEAT FORMATION RATE
6.5-10cm / century

HOLDS WATER 8 TO 9 TIMES ITS WEIGHT

ALKALINE PEAT-
BENEFICIAL FOR PLANTS

SUBSIDENCE

Conventional Argiculture
92.000 Acres



EXISTING

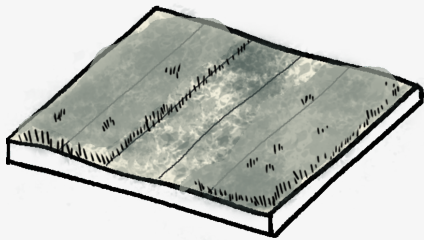
CROPS 

65% maze

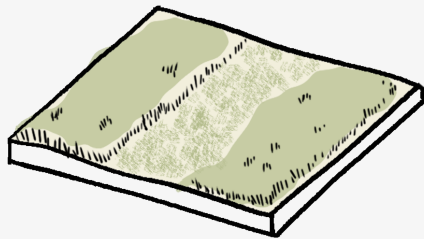
25% sugar beet

10% crops like industrial tomato, cotton,
sunflowers, tobacco, wheat

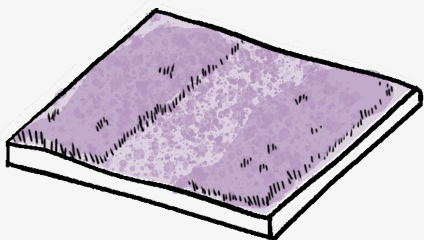
CONVENTIONAL ARGICULTURE
TRANSFORMED TO:



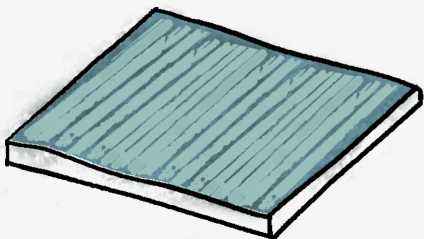
new crops - transition argiculture



new crops - transition argiculture



new crops - transition argiculture



new crops - paludiculture

HOW?

CROP INNOVATION TIMELINE:



Research & Development:
3-10 years
Develop new crop varieties with
desired traits.



Scaling up Production:
1-3 years
Increase seed production to meet
demand.



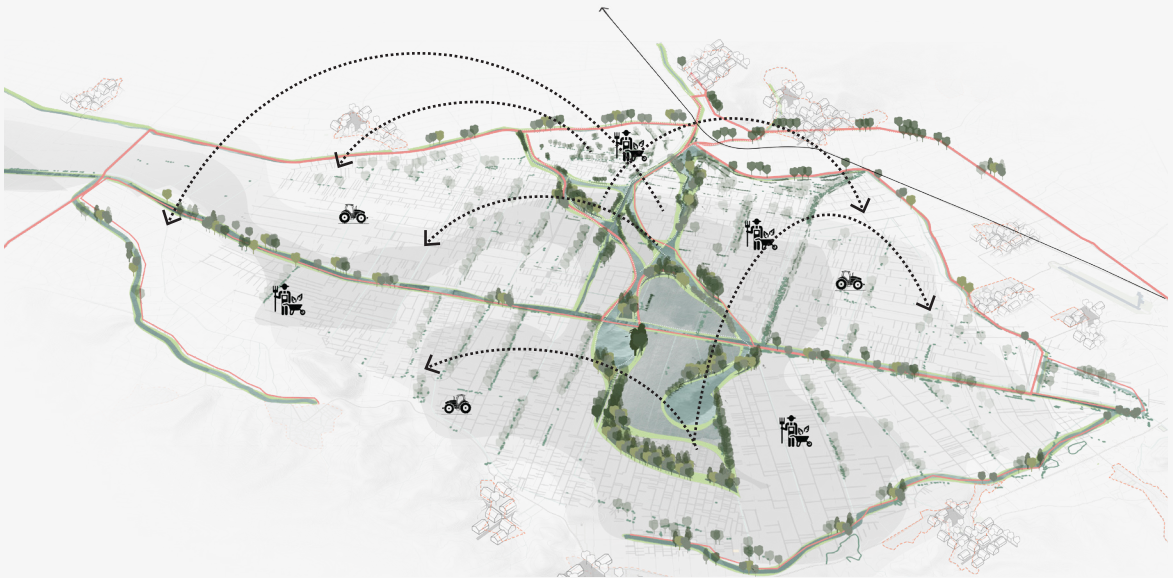
Testing:
2-5 years
Evaluate performance and ensure
safety and quality.



Adoption in the Fields:
2-5 years
for farmers to adopt and integrate
new crops into their practices.



Regulatory Approval:
2-5 years
for regulatory agencies to approve
the new varieties.



PROPOSED

CROPS 

65% PALUDICULTURE

35% NEW CROPS



argiculture without the
reliance on heavy vehicles

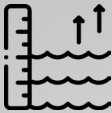
research on new crops

wet argiculture

BENEFITS



BIODIVERSITY
CONSERVATION

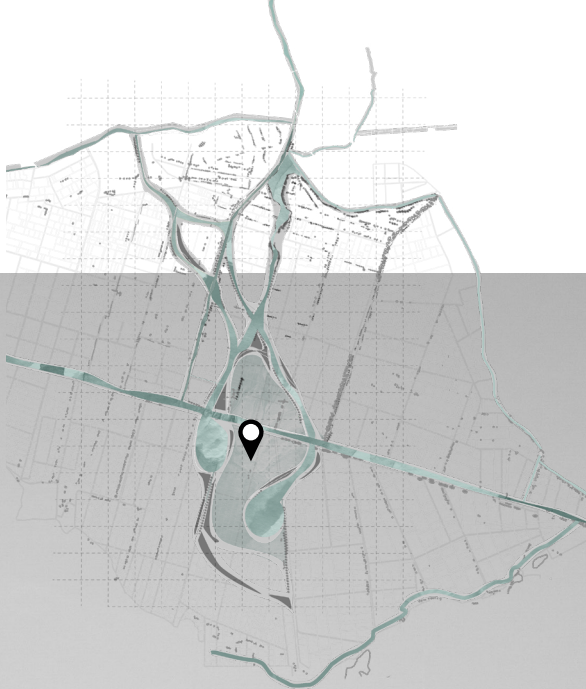


FLOOD CONTROL



W

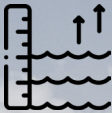
HUMAN <----- CONFLICT
BETWEEN NATURE
AND ARGICULTURE -----> **NON-HUMAN**



BENEFITS



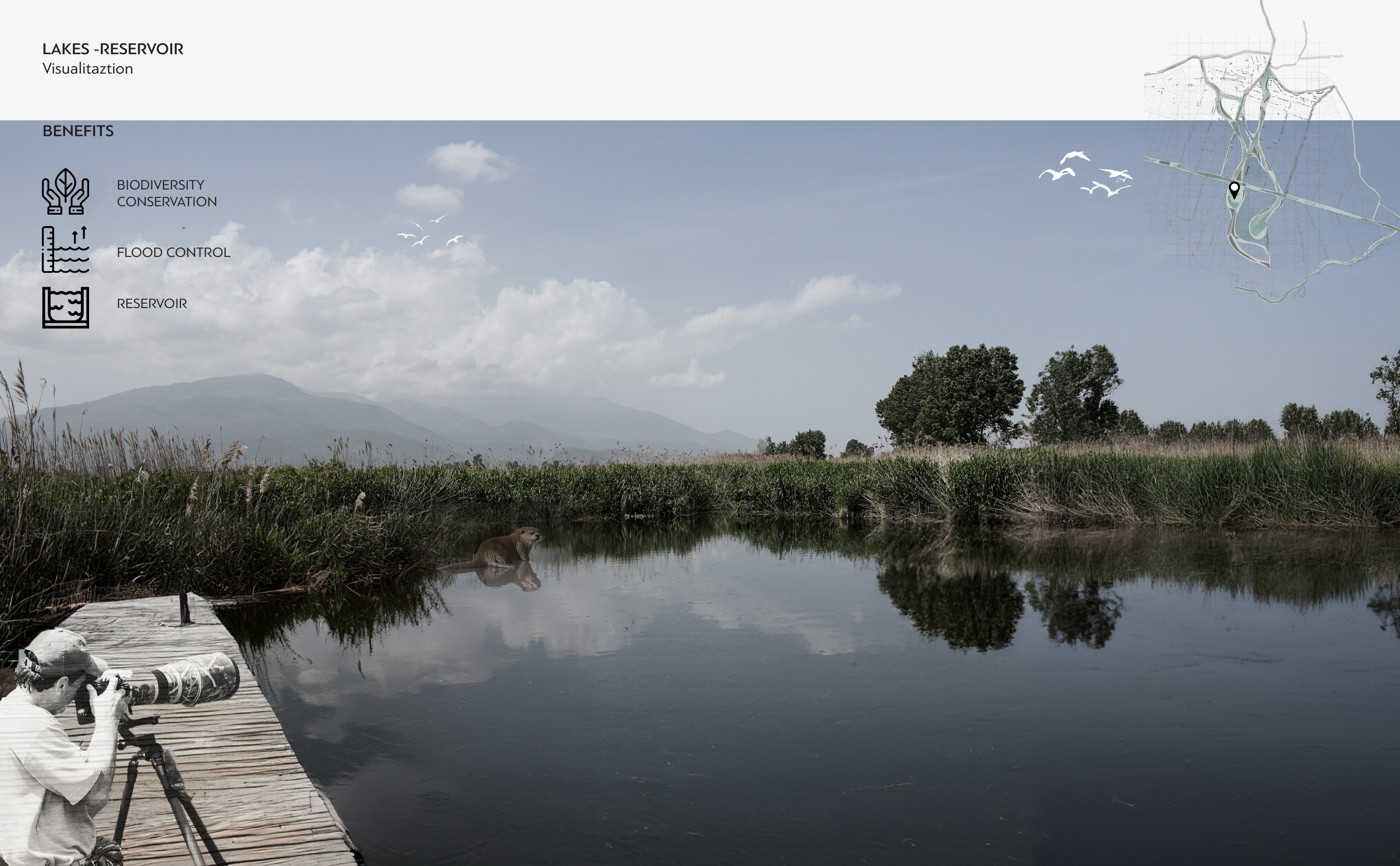
BIODIVERSITY
CONSERVATION



FLOOD CONTROL



RESERVOIR



PHASES OF THE DESIGN
10 years phases of Design

PHASES

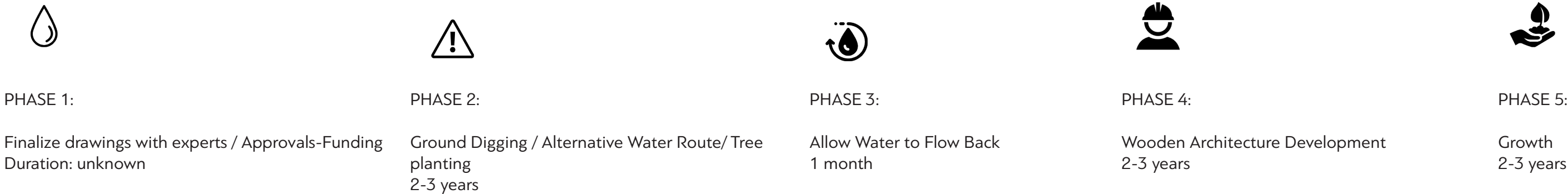
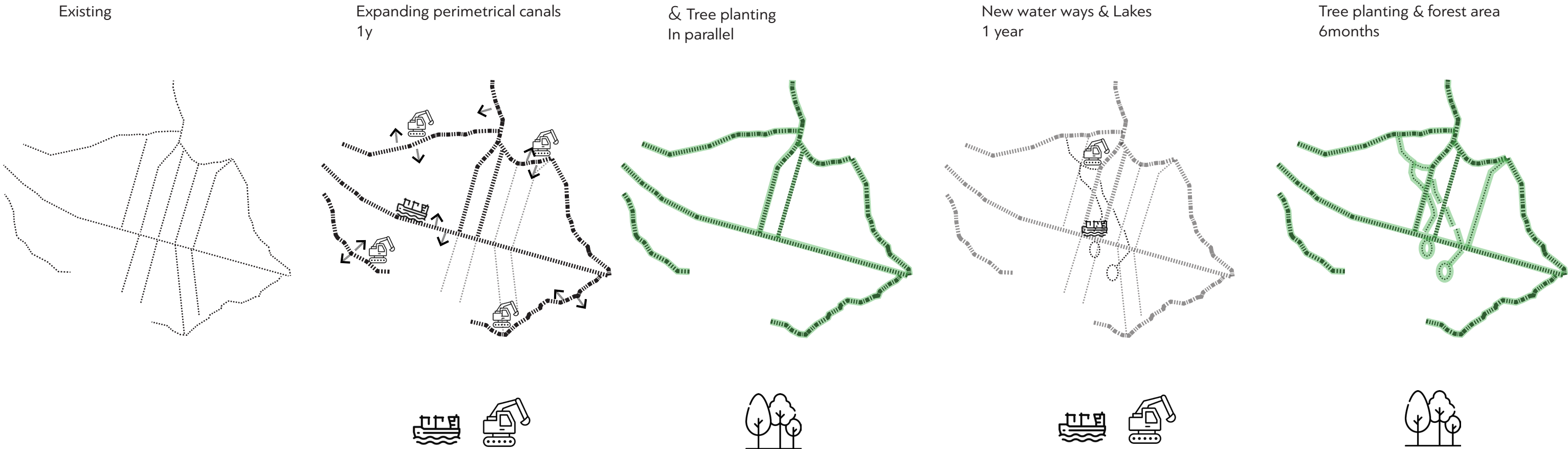


DIAGRAM PHASE 2-4



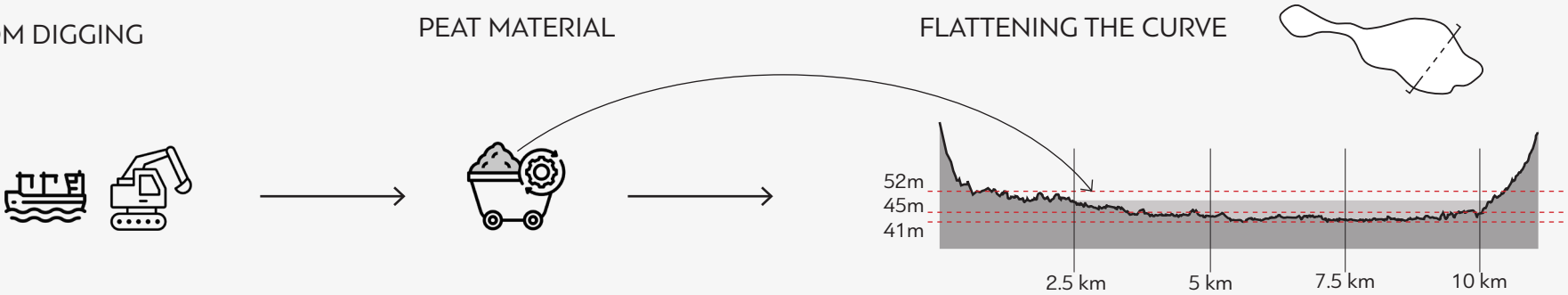
TECHINICAL EXPLAINATION
how the system works

EXCESS MATERIAL

FROM DIGGING

PEAT MATERIAL

FLATTENING THE CURVE



Total excavations: 30.976.650 m³ (peat)

Calculating Land Coverage

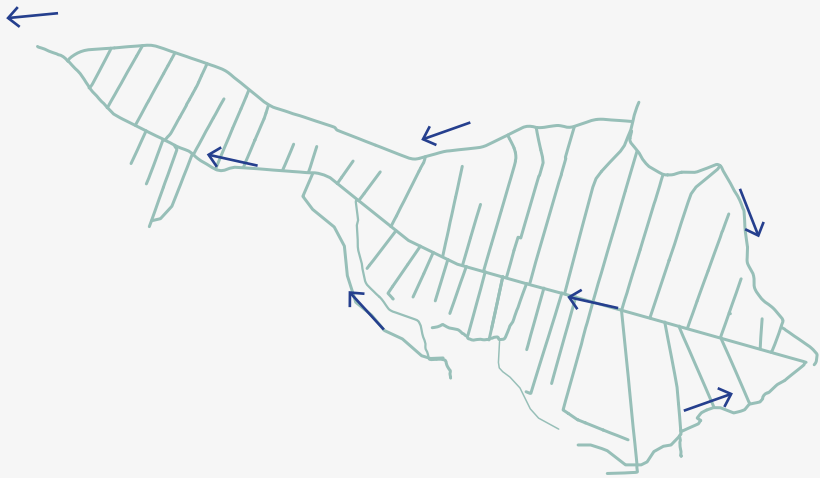
How much land we can cover if we have this amount of peat soil 30,976,650 cubic meters. if we apply around 6m ?

if you apply around 6 meters of peat soil, it can cover approximately 1,599.92 acres of land.

WATER NETWORK

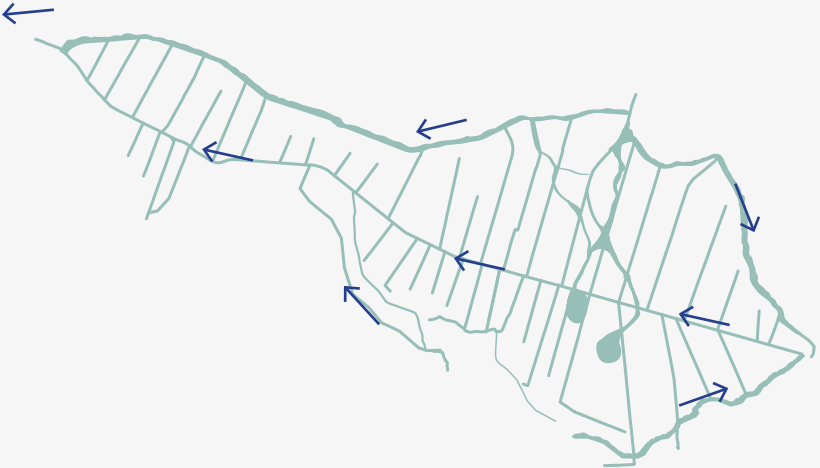
Existing

leaving to strimonas river

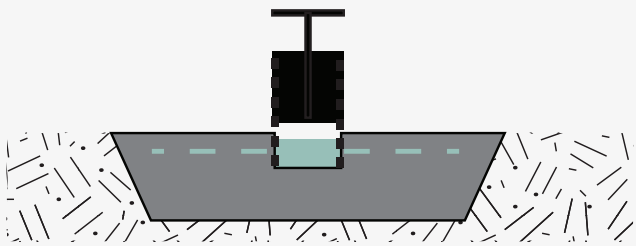


Proposed

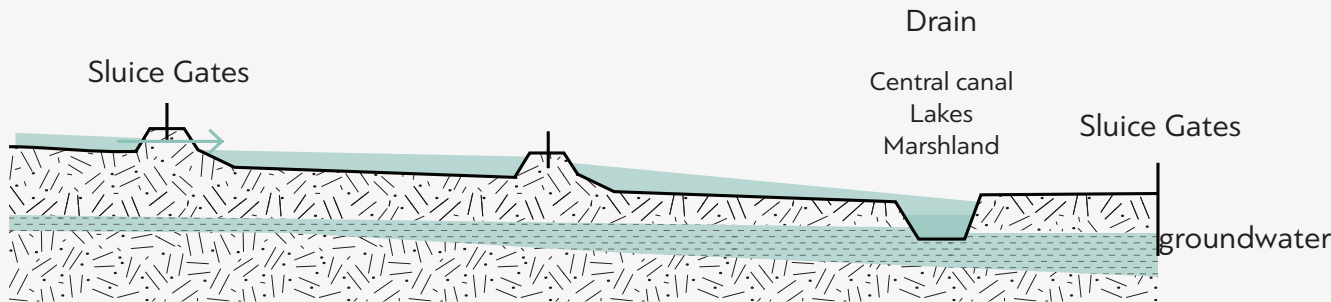
leaving to strimonas river



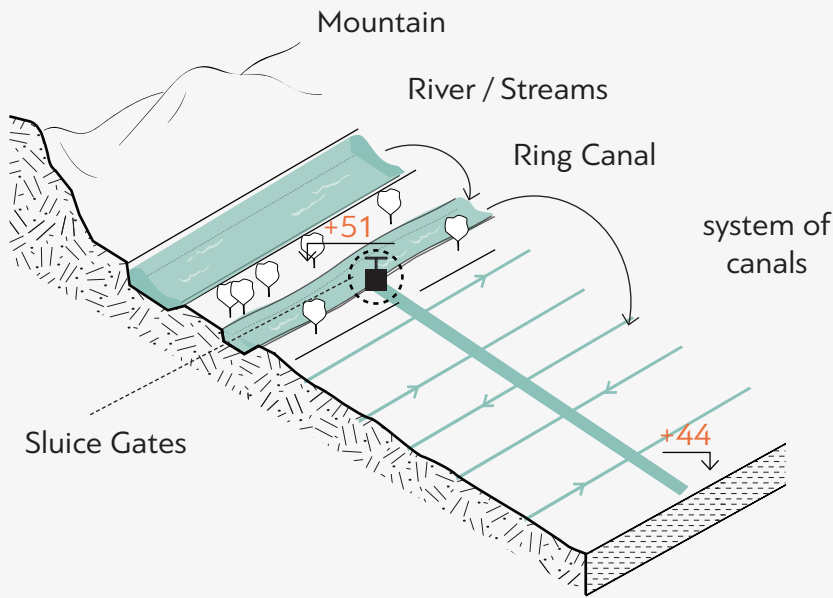
Keep the peat wet as much as possible
Control water with sluices



sluices in the vertical canals

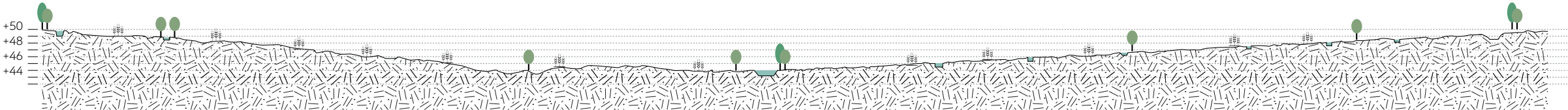


Water Flow & Sluices



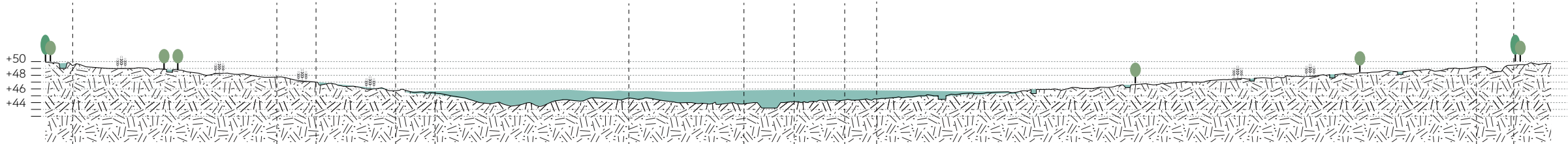
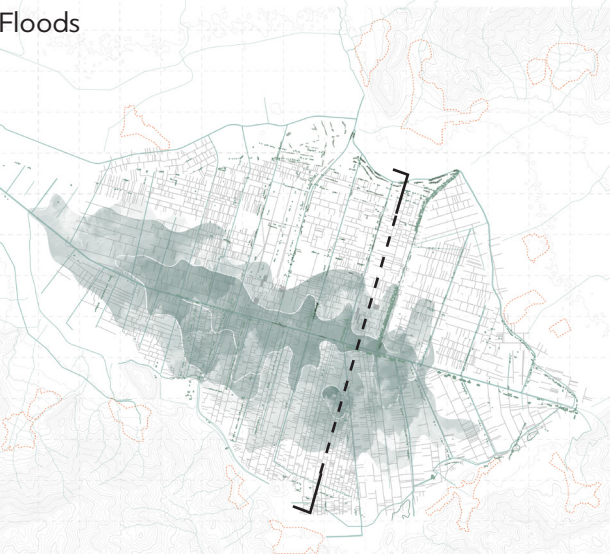
CHANGE IN TIME
external forces / weather

EXISTING



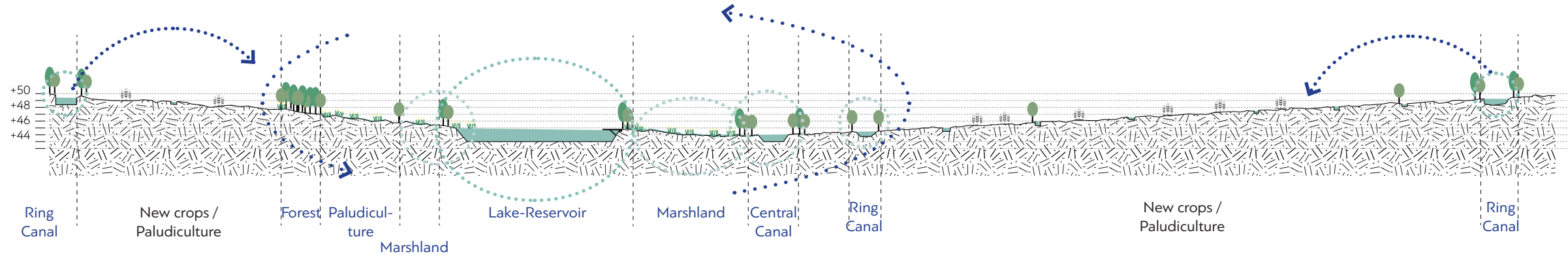
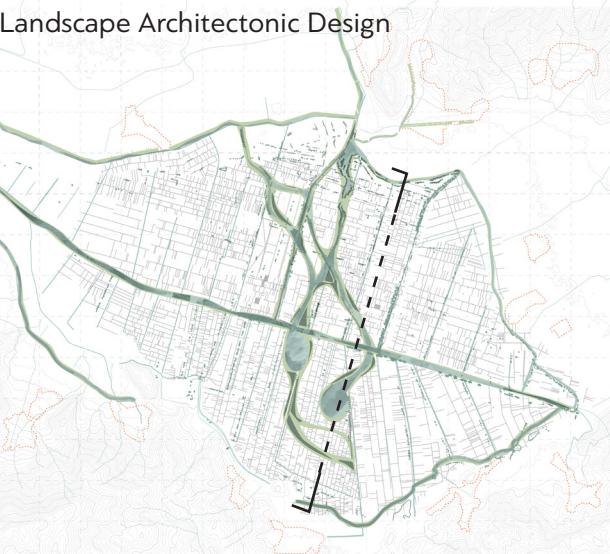
Conventional Argiculture

10 YEARS- NO INTERVENTION
Floods



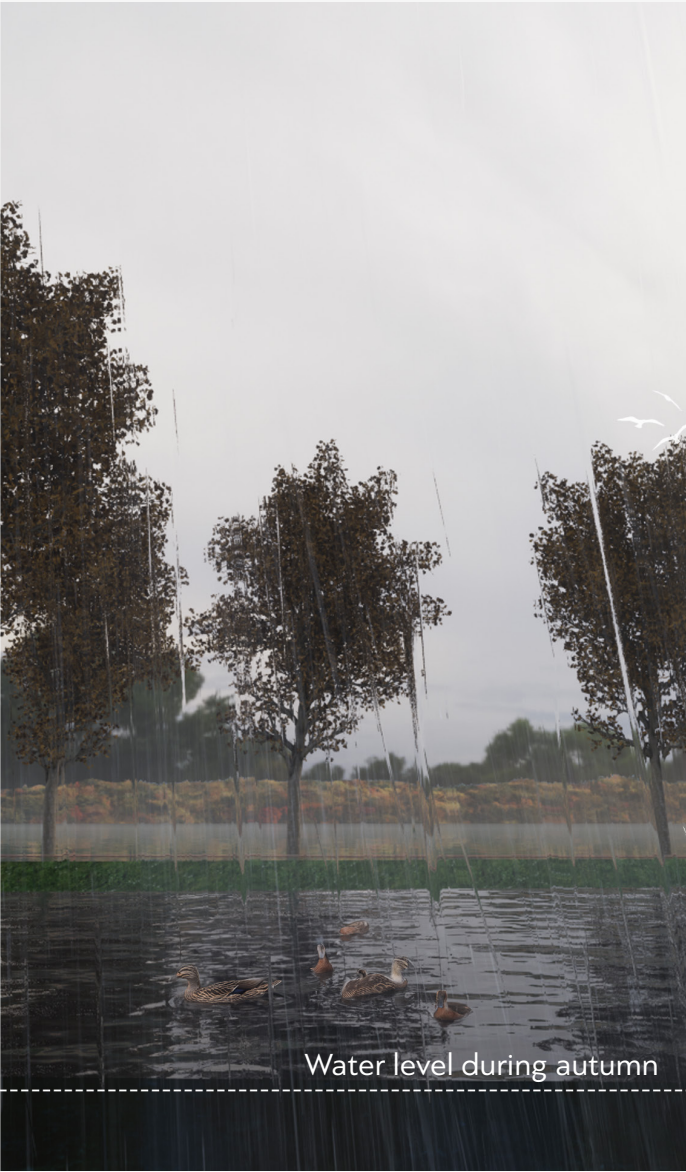
Floods

10 YEARS- WITH INTERVENTION
Landscape Architectonic Design



CHANGE IN TIME
SEASONAL VARIATIONS

SEASONS



CLIMATE

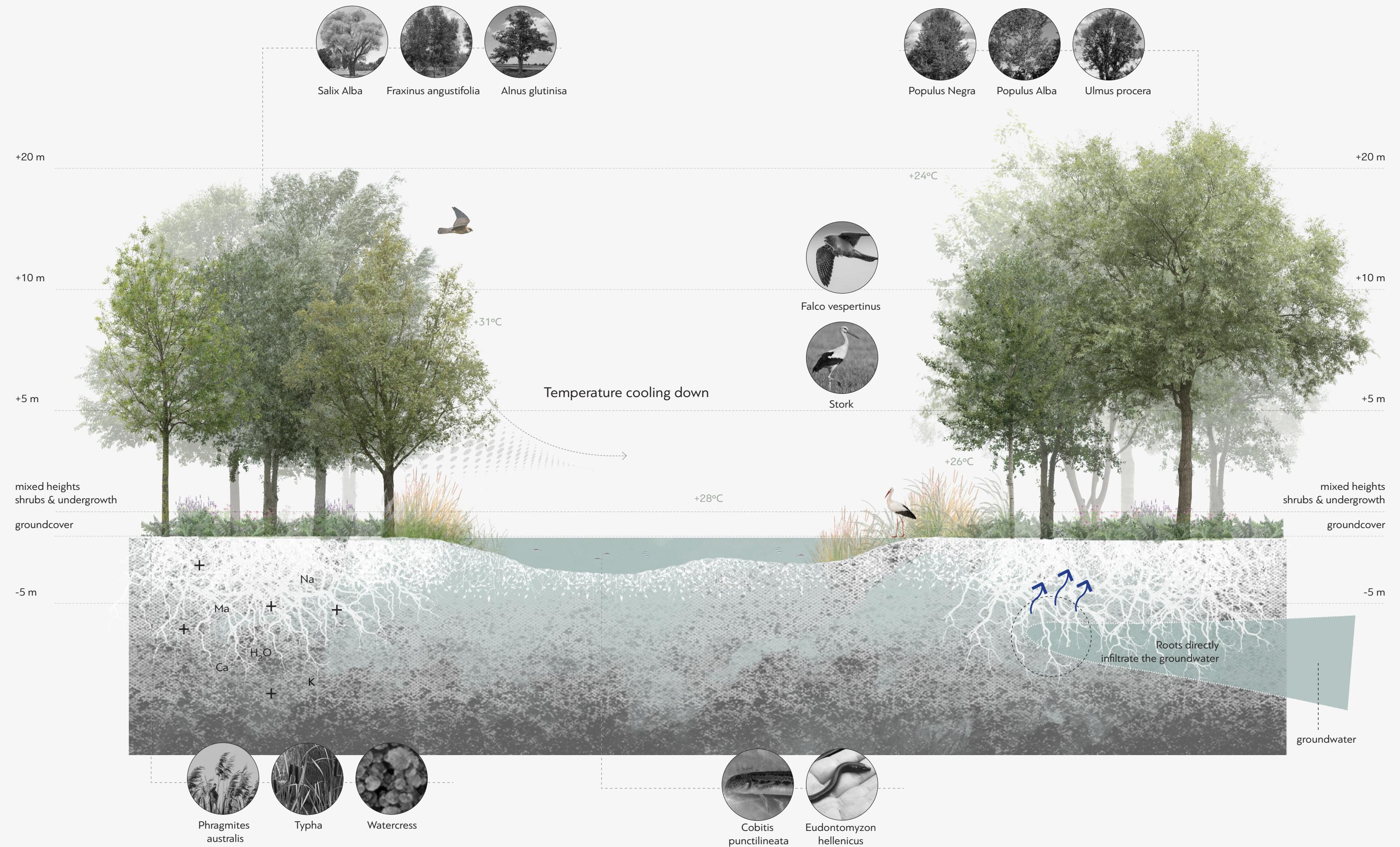
Warm mediterranean (Csa)

High t°:
31.9 °C (July)

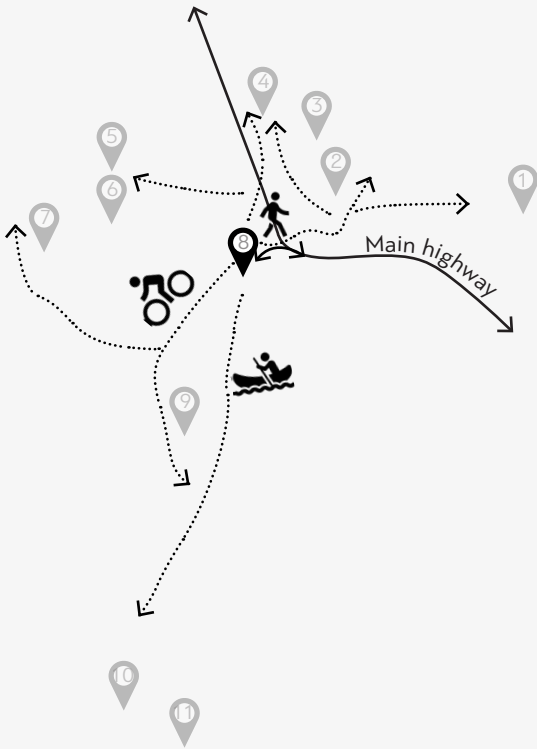
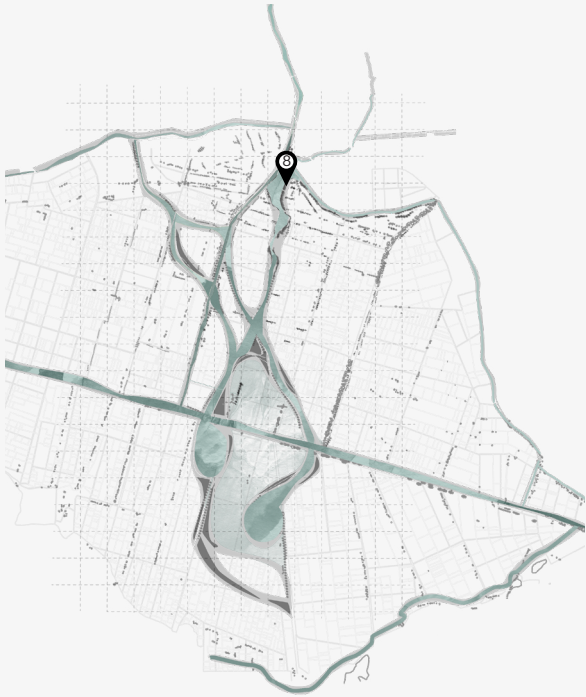
Low t°:
5.7 °C (Winter)

Precipitation:
508.6 mm annually

FLORA & FAUNA

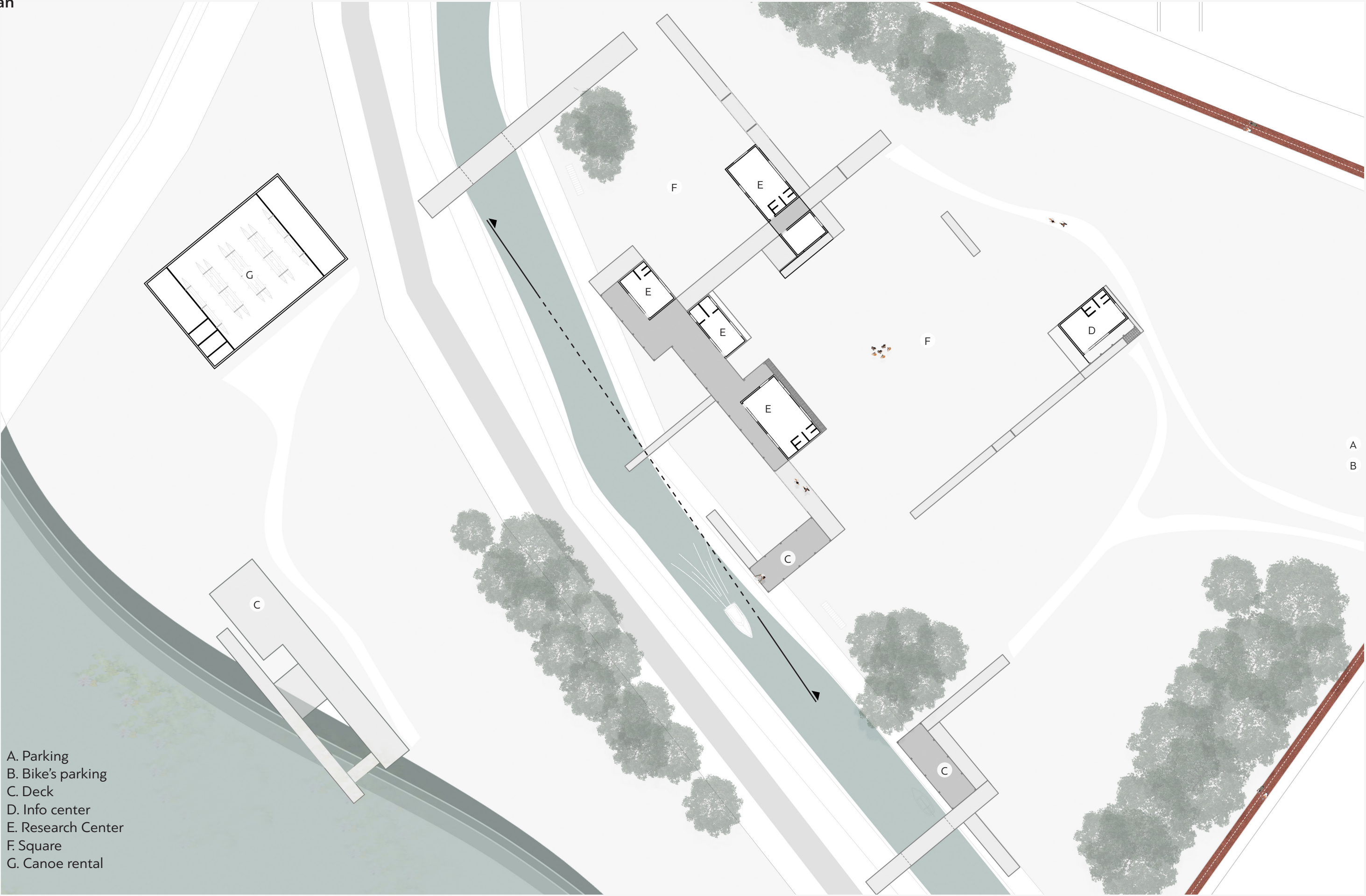


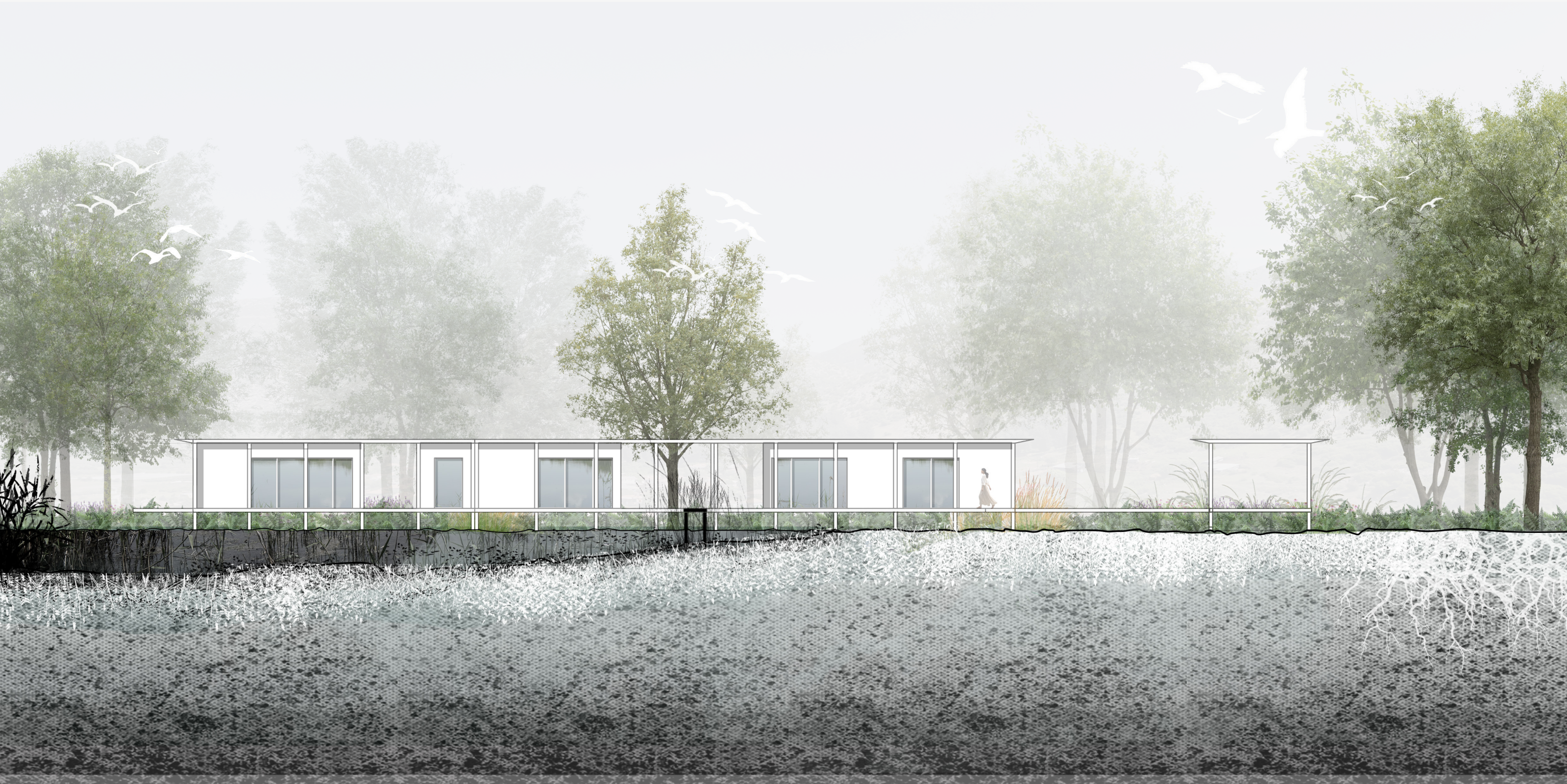
ZOOM IN
Entry pavilions



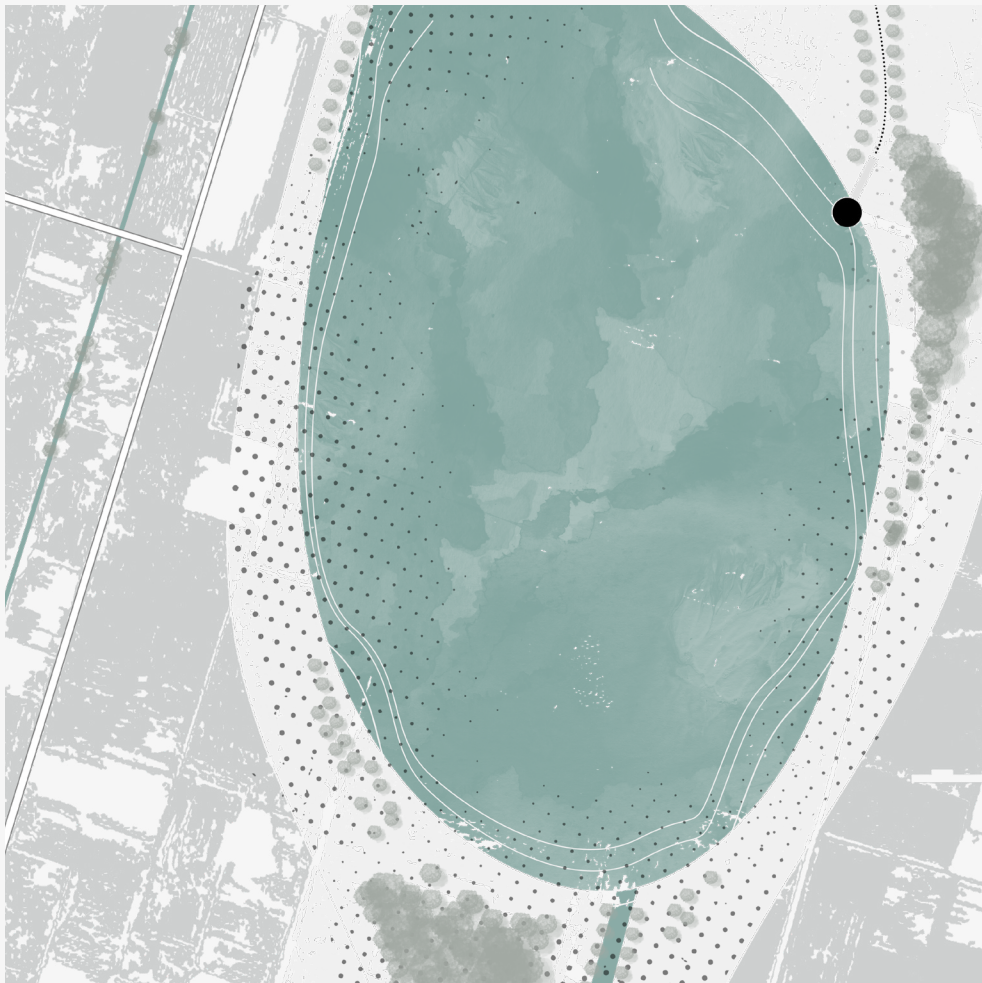
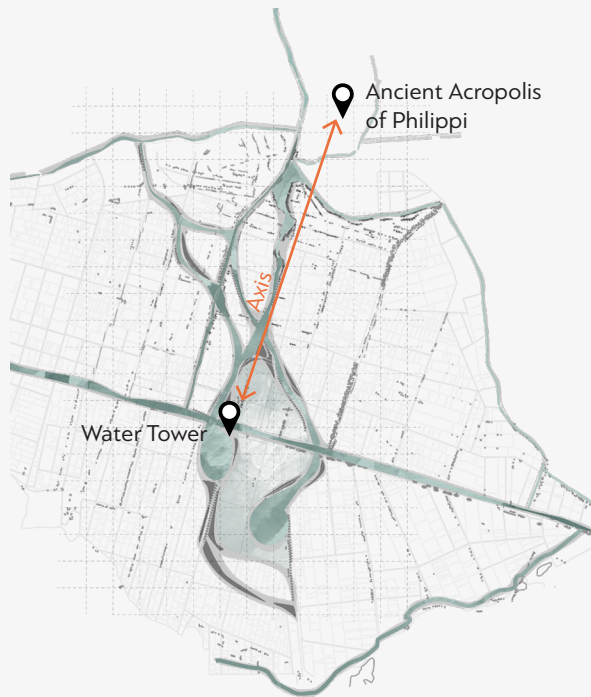
- A. Parking
- B. Bike's parking
- C. Deck
- D. Info center
- E. Research Center
- F. Square
- G. Canoe rental

ZOOM IN
Plan

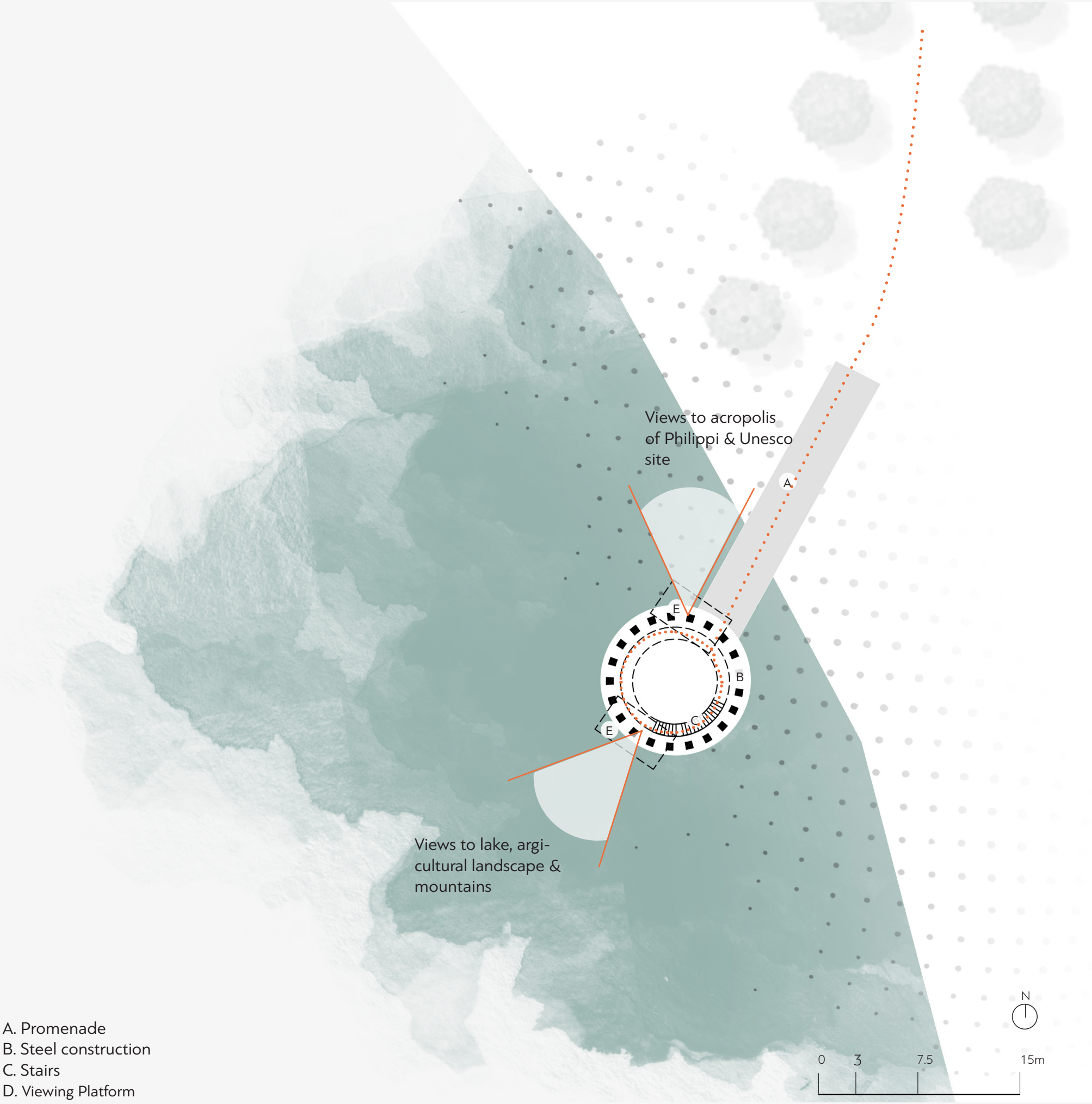


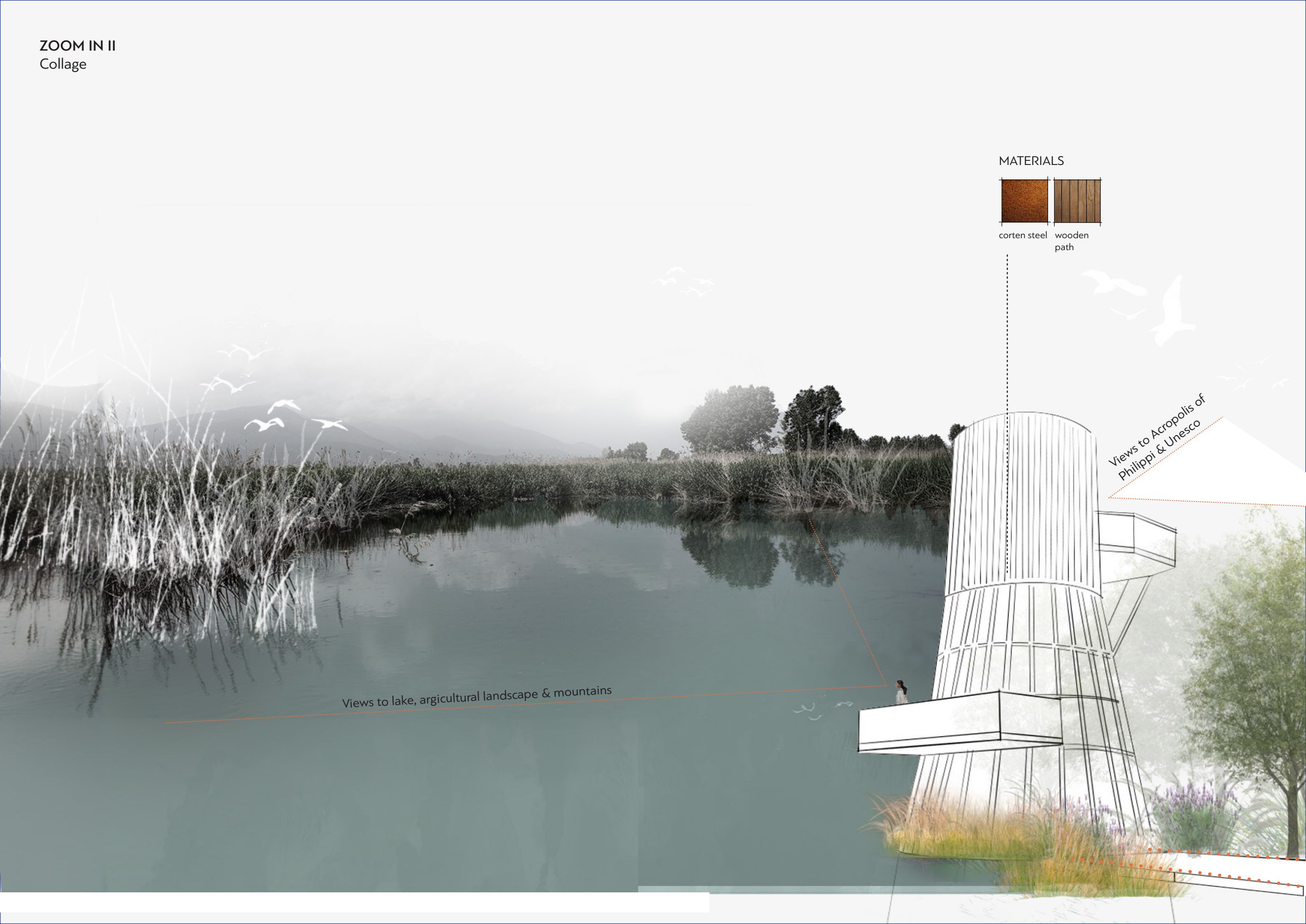


ZOOM IN II
Peatland Tower



- A. Promenade
- B. Steel construction
- C. Stairs
- D. Viewing Platform





MATERIALS



corten steel



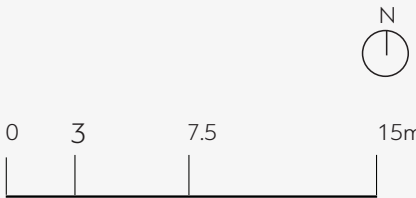
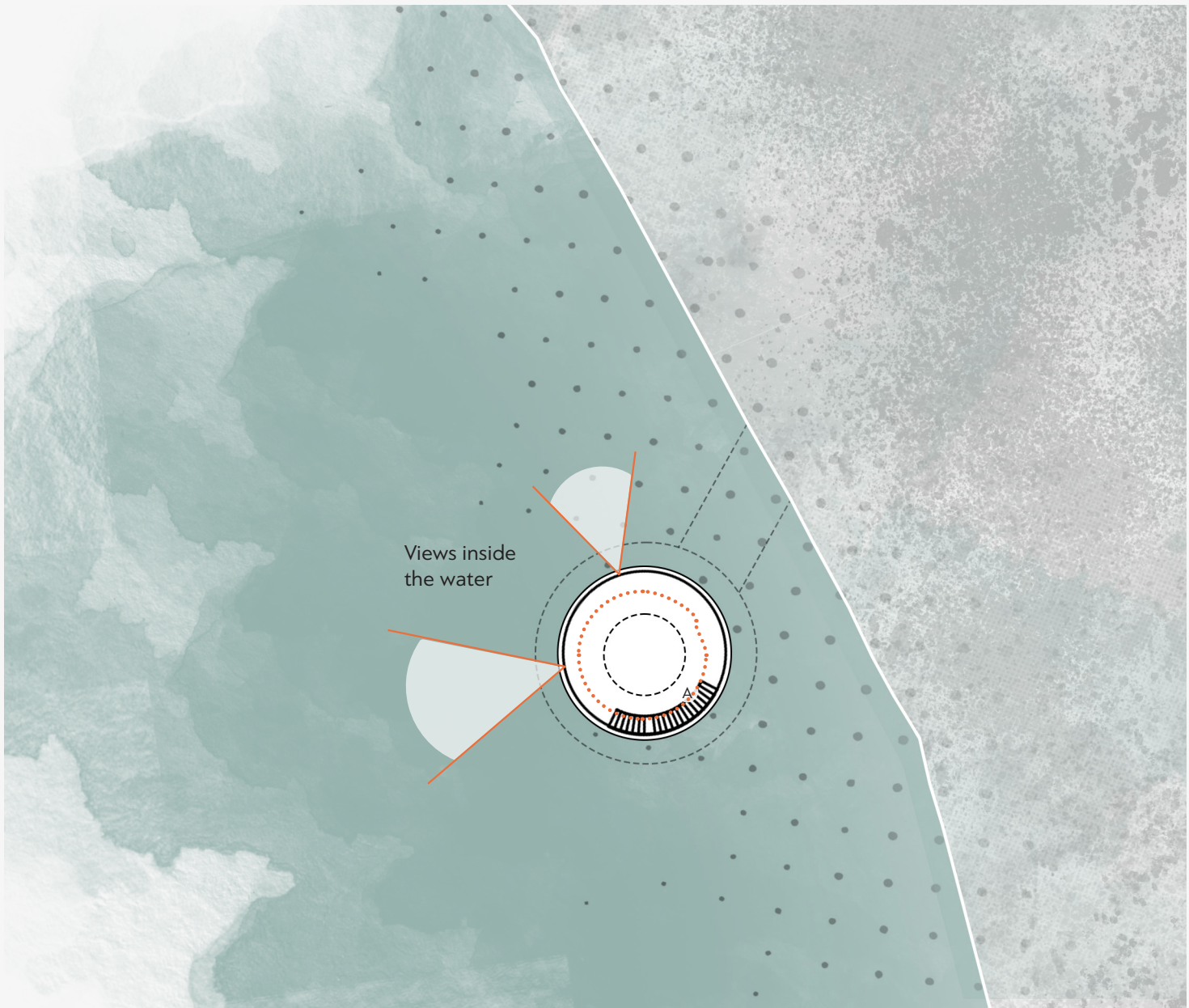
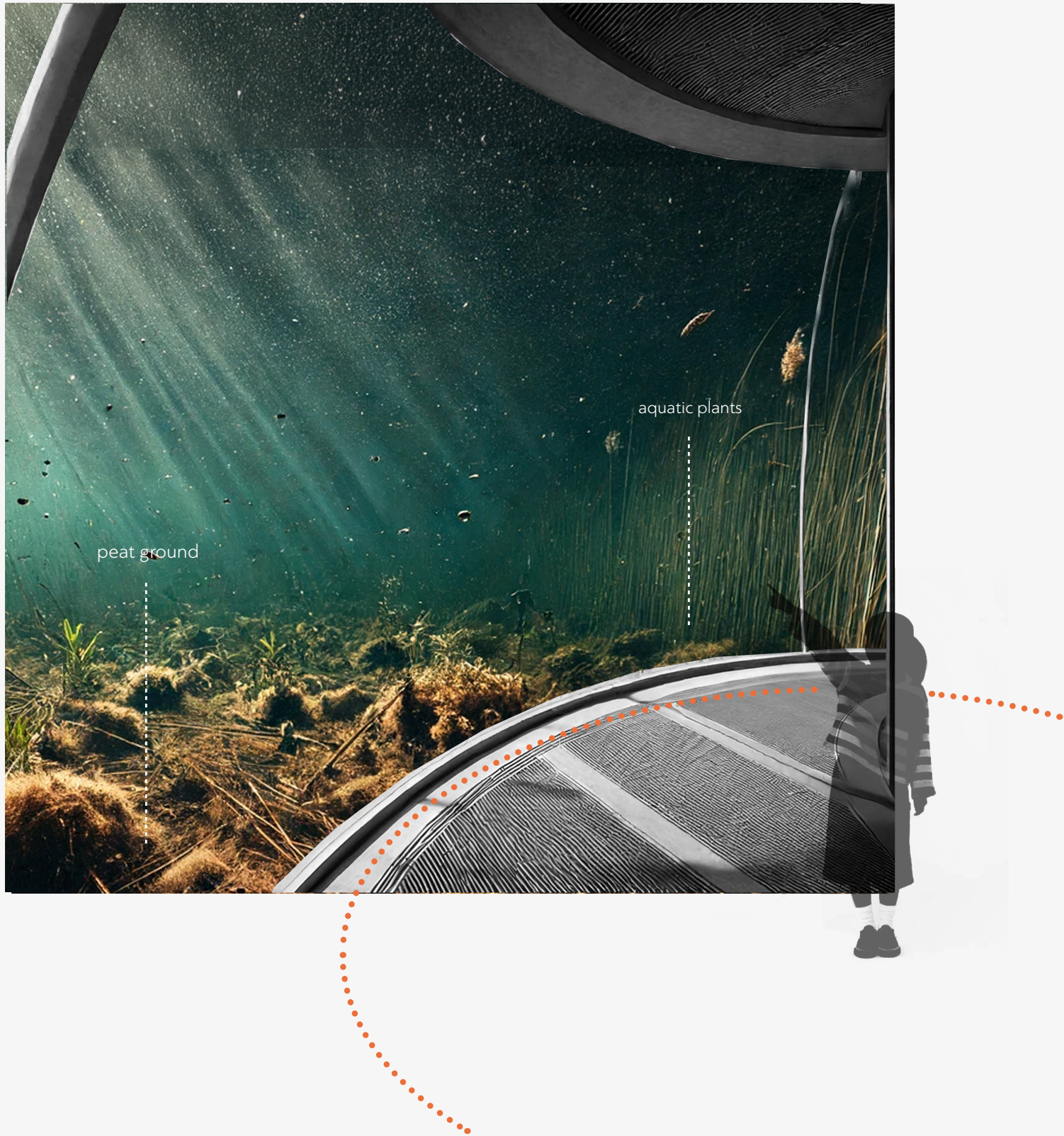
wooden
path

Views to Acropolis of
Philippi & Unesco

Views to lake, argicultural landscape & mountains

ZOOM IN II
Under water

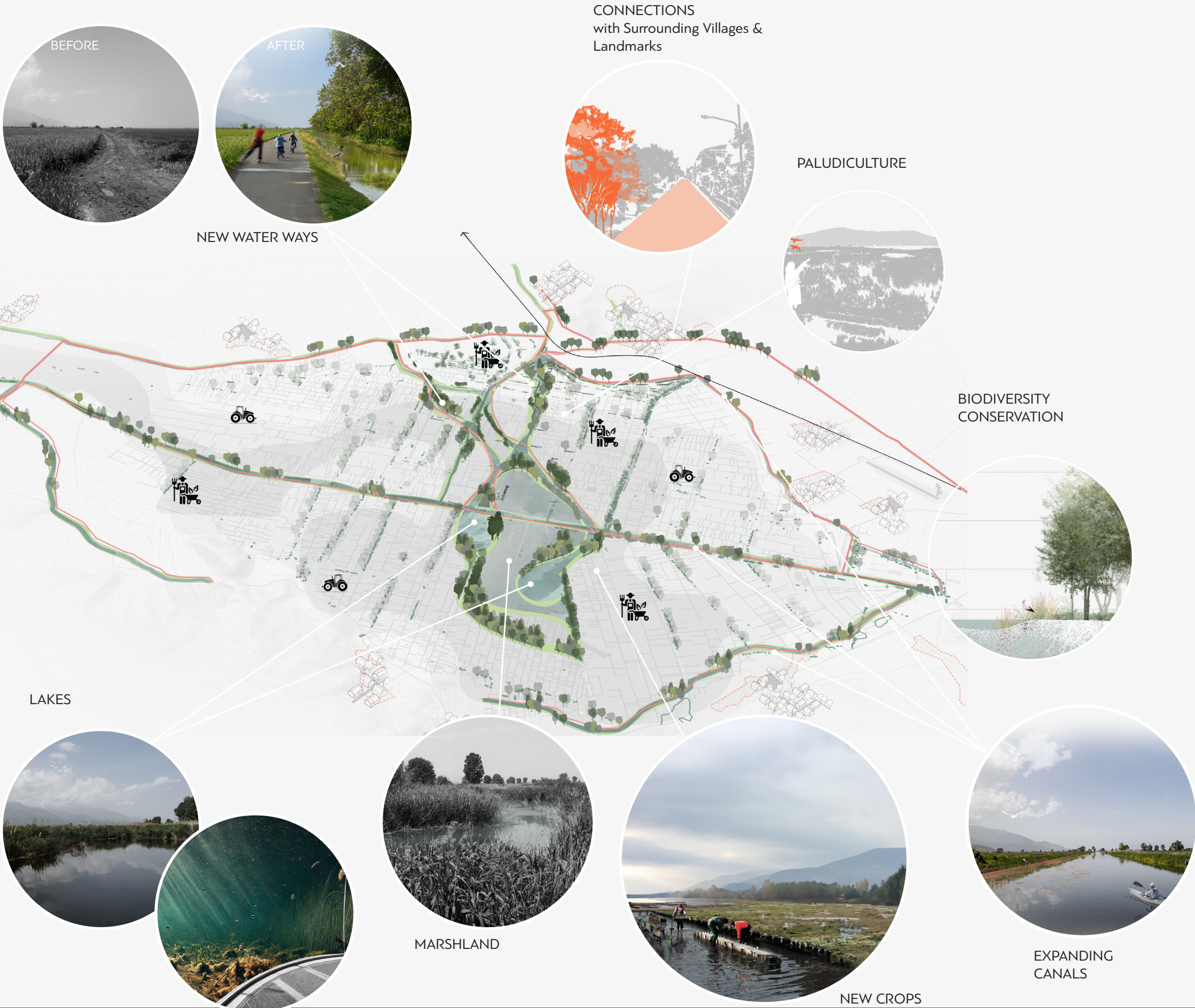
collage



An aerial photograph of a village nestled in a valley, with mountains in the background. The village consists of numerous small, light-colored buildings with red-tiled roofs, interspersed with green trees and fields. The mountains in the background are rugged and covered in sparse vegetation. The entire image is overlaid with a semi-transparent blue filter.

CONCLUSION

CONCLUSION
Limitations of my Design



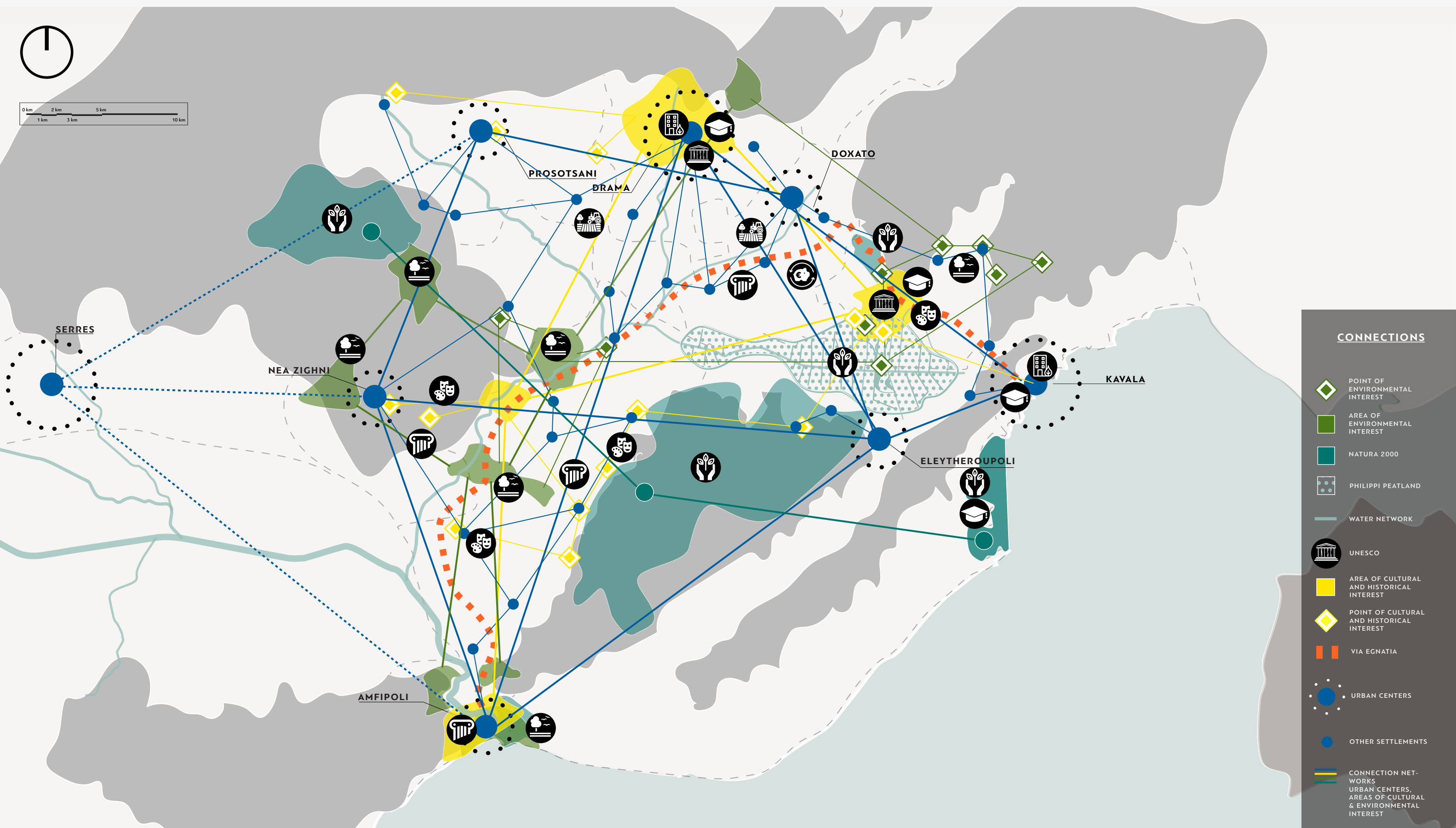
LANDSCAPE ARCHITECTONIC DESIGN

- Sustainable Water Management
- Biodiversity Conservation
- Community Engagement
- Cultural Heritage Preservation

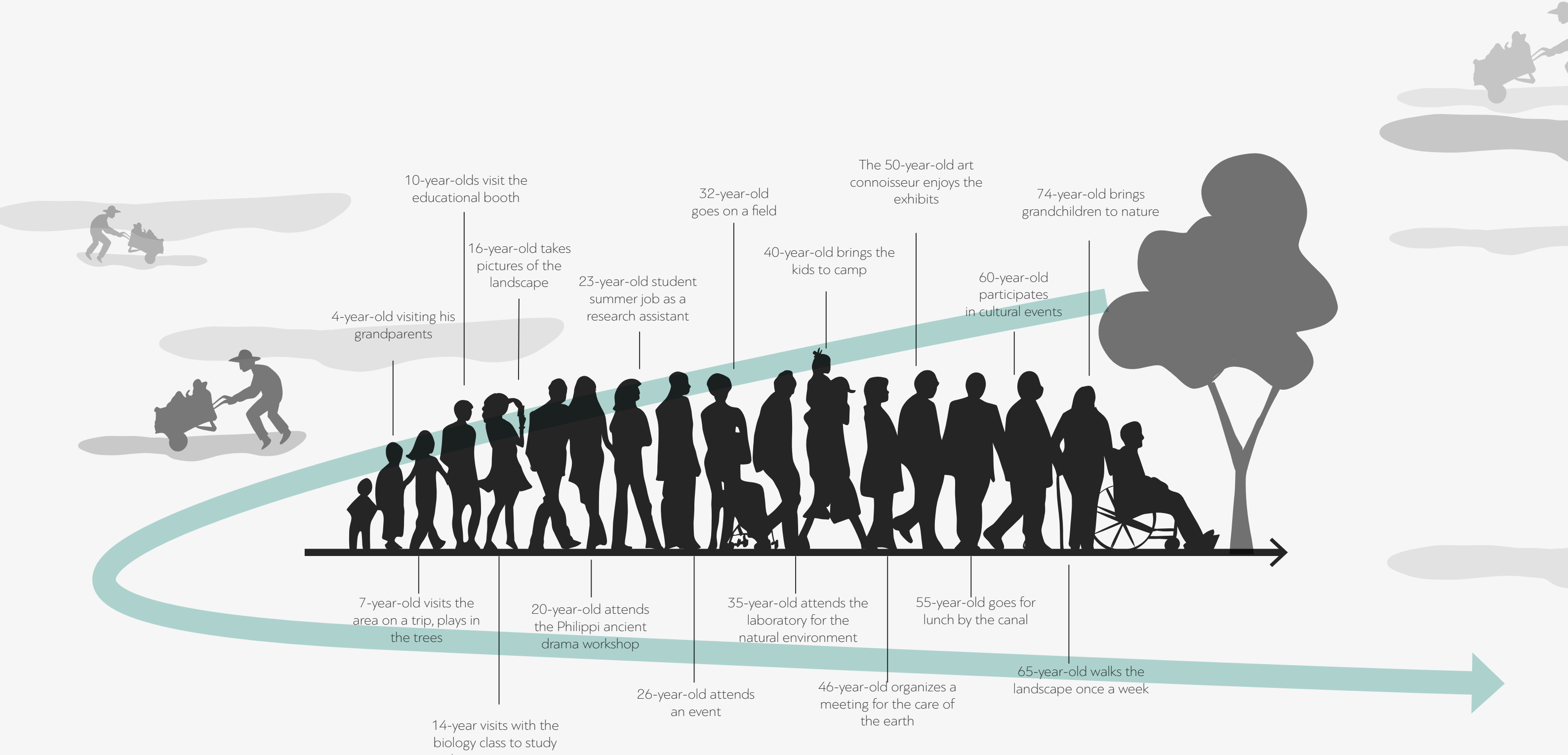
IN ORDER TO BE COMPLETED IT REQUIRES:

-  Economic calculations
-  Stakeholder engagement
-  Advanced technical support

CONCLUSION PHILIPPI PARK



CONCLUSION
ECO HUMAN SYMVIOSIS



Thank You!

CIRCULAR WATER STORIES LAB

Professor: Inge Bobbink.
Second mentor: Taneha Bacchin

Academic Year : 2023-2024
Landscape Architecture track // Department of Urbanism
Faculty of Architecture and the Built Environment – Delft University of Technology.



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