

KUNSHAN NECKLACE

Co-construction of greenway system around the Kunshan Old Town
Jiangsu Province, China

Project Statement

Kunshan City, an ancient Chinese water town steeped in history, is faced with an incongruity between urban expansion and the established waterway network of its historic old town. Meanwhile, citizens have higher quality requirements for their corresponding quality of life, which proves to be more challenging than before, such as neglected urban spaces, fragmented waterfronts, and cultural homogenization. "KUNSHAN NECKLACE" project is a urban green renewal planning for Kunshan Old Town, focused on the ecological revitalization and public space rejuvenation of Kunshan's circular waterways. The project aims to improve the fragile and weak relationship between residents and river system of Kunshan City.

Project Narrative

1. Background

Kunshan City, located in the southeastern part of Jiangsu Province between Shanghai and Suzhou City, is a typical Chinese water town. The old town of Kunshan is surrounded by four major rivers: Northern Ring River, Qingyang Port, Lou River, and Yehe River - encircling the city and establishing urban layout there since the Ming Dynasty. The dense network of waterways has not only influenced the development of streets along the rivers but also created a unique "street-alley-river" system that characterizes the daily life of its residents.

The project involves a 52-kilometer waterfront green space around four major water systems, varying from 6 to 290 meters in width and covering about 88.1 hectares. In the context of urban renewal, the project aims to integrate waterfront green spaces, connect walking systems, reshape waterfront areas, and enhance infrastructures. The plan aspires to create beautiful and comfortable riverside walking spaces, improve the city's ecological services and resilience, and provide leisure and entertainment venues for citizens. It highlights Kunshan's unique water town landscape and cultural heritage, injecting new vitality into Kunshan's development and becoming a crucial element in the city's transformation.

2. Opportunities and Challenges

Benefiting from its advantageous geographical location, Kunshan city conveniently enjoys the developmental dividends from Shanghai. However, the four water systems with widths exceeding 40 meters also serve as the boundary between the old town and the new town, creating numerous challenges. The surrounding land use was complex, with residential and commercial areas encroaching upon the riverside green spaces in recent years, leading to fragmentation and pollution issues. Additionally, historical relics gradually disappeared amidst urban development. The distinct separation between the old and new townscapes and the ineffective utilization of vast potential spaces were also pressing concerns.

Enhancing riverside connectivity, revitalizing the space with diverse functions, and restoring the ecosystem pose a major challenge for future planning. Solving these issues requires innovative planning concepts that integrate ecological restoration and historical preservation to achieve the harmonious development of Kunshan's overall landscape. This process involves not only the reuse of existing urban resources but also an exploration of sustainable urban development for the future.

3. Investigation and analysis

The planning employed scientific methods, using GIS combined with surveys to analyze the site and its surroundings. Through visits and discussions, we gathered the concerns of nearby residents. We found 11 greenway discontinuities, 19 inactive under-bridge spaces, 12 slow traffic system breaks, and 12 encroached riverside areas. The main issues identified are underutilized resources, fragmented green spaces, broken transportation links, and non-ecological riverbanks.

4. Planning Framework

To address these issues, the plan proposes the following goals: creating a comprehensive slow traffic network, revitalizing the site's culture and functions, and restoring the blue-green ecological foundation. To achieve these objectives, we have developed the "THREE RINGS" strategy.

Strategy One: Structure of Urban Greenway System

——Slow-Enjoyment Walking Ring

Improving connectivity is a crucial measure of this project. We planed to construct a multi-layered greenway system that links the blue-green spaces through riverside walkways, under-bridge spaces, and health corridors. The project will add 20 under-bridge spaces and 22 cross-river bridges, connecting a total of 52 kilometers of riverside greenway. This system will enhance the city's transportation convenience and further promote the ecological environment and quality of life in Kunshan.

Strategy Two: Scheming of Cultural and Civic Events

——Vibrant Functional Ring

The project planed to establish various functional spaces along the riverside to cater to the needs of residents of all age groups. Additionally, service facilities such as buildings, public restrooms, and parking lots were integrated based on service radius considerations to enhance the functionality of these areas. We have also added more urban image markers to preserve the cultural memories of the site and create new urban living scenes for citizens. These measures will not only improve the practicality and convenience of the riverside green spaces but also strengthen residents' sense of belonging and identity with the city, creating a comprehensive public space that combines cultural and functional elements.

Strategy Three: Construction of Ecological Scenery

——Blue-Green Ecological Ring

Firstly, we identified potential green spaces and negotiated with residential and commercial entities to reassign riverside land as green space, laying the foundation for ecological restoration and subsequent connectivity. The riverbanks transitioning into blue-green spaces will undergo ecological renovation. To create an ecological green space system, we aim to implement a progressive plant community model encompassing wetlands, understory, and open spaces. Additionally, sponge city facilities will be installed within the area to guide the collection and convergence of rainwater, enhancing the blue space's water absorption capacity. Ultimately, our long-term goal is to establish more suitable urban habitats, serving as stepping stones for wildlife within the city.

5.Performance

From the perspective of blue-green network planning, this project reutilizes potential riverside spaces. By engaging with over 20 surrounding communities and adding 22 new cross-river bridges, the plan will connect boardwalks and footpaths, aiming to create a continuous 52-kilometer greenway around the city. The project will update 30 landscape nodes and 8 cultural clusters, incorporate diverse service facilities, and revitalize 17.8 kilometers of riverside shoreline. The blue-green foundation of the site will be restored, with 61.7 hectares of green space updated, including 16 rainwater storage wetlands.

The planned "KUNSHAN NECKLACE" will consist of 16 riverside parks, providing convenient transportation corridors for citizens and serving as sources of urban vitality and ecological barriers. This will achieve a harmonious integration of transportation, vitality, and ecology.

6.Planning Process

The project commenced in 2021, adopting a participatory model involving community discussions, user engagement, guidance and coordination from management departments, and participation from designers. It collaborated with relevant agencies to conduct research on the Kunshan greenway. As of 2024, 25.3 kilometers of greenway has been completed, with full connectivity expected by 2026. In the future, the "KUNSHAN NECKLACE" project will expand progressively, forming an emerald necklace encircling the old city of Kunshan.

KUNSHAN NECKLACE

Co-construction of greenway system around the Kunshan Old Town

MASTER PLAN

This project aims to revitalize the potential riverside space by connecting greenways and introducing diverse service facilities. It also intends to restore the ecological foundation of the land and reshape a new "Kunshan Necklace" that integrates slow-traffic, vitality, and ecology. The project expects to renew 61.7ha of green space, and it is planned to open up 52 kilometers of greenway around the city in the long run, activating the 17.8 kilometers shoreline along the river.

SLOW-TRAFFIC RING

LONG-TERM PLAN TO FULLY CONNECT CITY CIRCULAR GREENWAY
52KM

VIBRANT RING

PLAN TO ACTIVATE WATERFRONT SPACES
17.8km

ECOLOGICAL RING

WILL RENOVATE RIVERSIDE GREEN SPACES
61.7HA



- | | | |
|-----------------------------|-------------------------------------|---------------------|
| 1 Riverside Park | 11 River Center Island | 21 Loujiang Plaza |
| 2 Vibrant Waterfront | 12 Lou River South Bank Scenic Zone | 22 Slow Lane |
| 3 Free-flowing Pathway | 13 Windswept Riverbank | 23 Duijiang Park |
| 4 Sponge Garden | 14 Riverside Plaza | 24 Arc Light Plaza |
| 5 Trigonometry Park | 15 Cultural Pavilion | 25 Tidewater Plaza |
| 6 Tinglin Memory Plaza | 16 Landscape Park | 26 Drumheller Park |
| 7 Yeho River Landscape Park | 17 Lize Pocket Park | 27 Wangjiang Park |
| 8 Park Under The Bridge | 18 Plank Road | 28 Waterfront Park |
| 9 Qushui Park | 19 Memorial Park | 29 Waterfront Plaza |
| 10 Liangzhu Park | 20 Recreational Pocket Park | 30 Jinpu Park |

22 ADDITIONAL BRIDGES

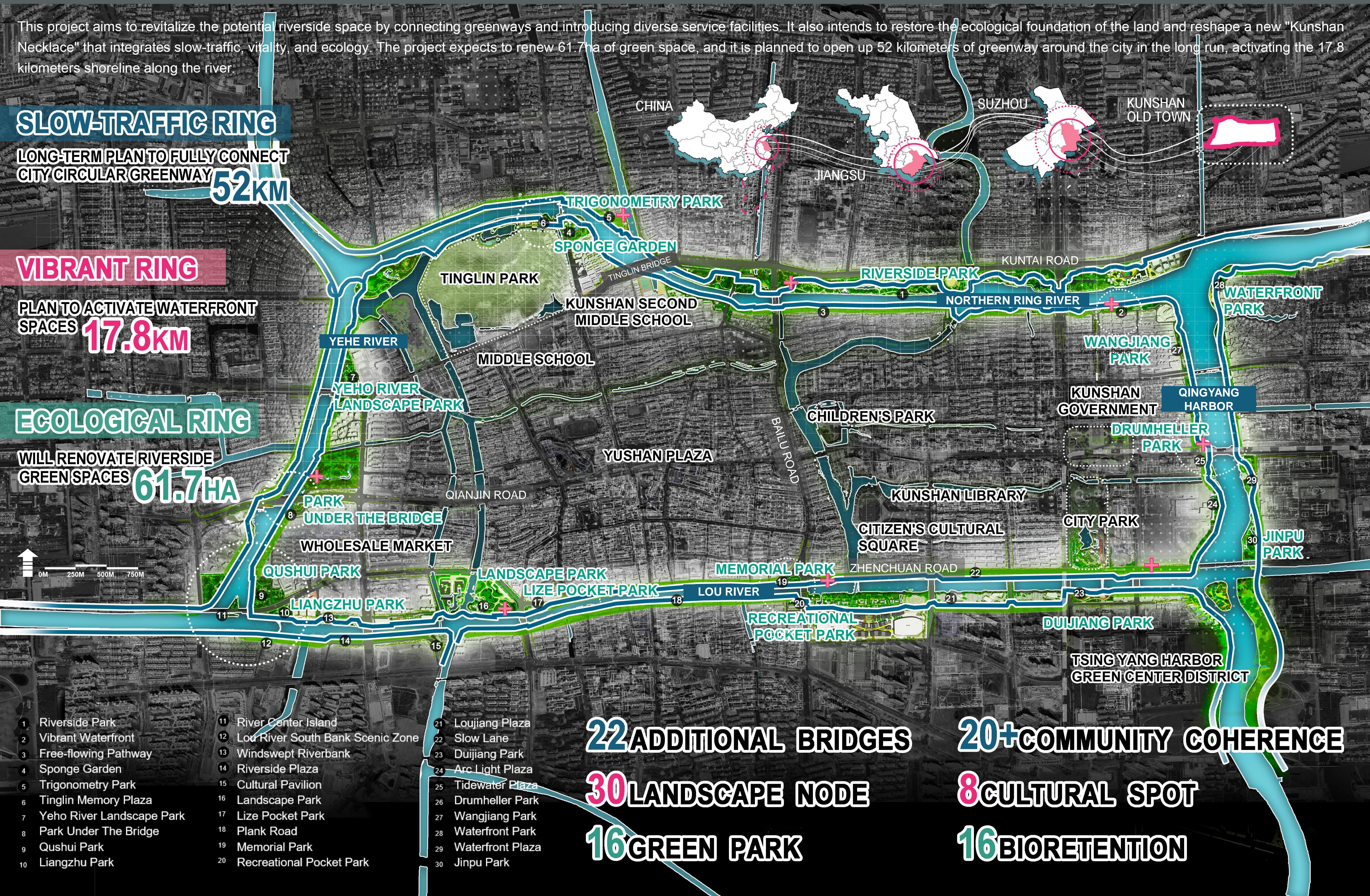
30 LANDSCAPE NODE

16 GREEN PARK

20+ COMMUNITY COHERENCE

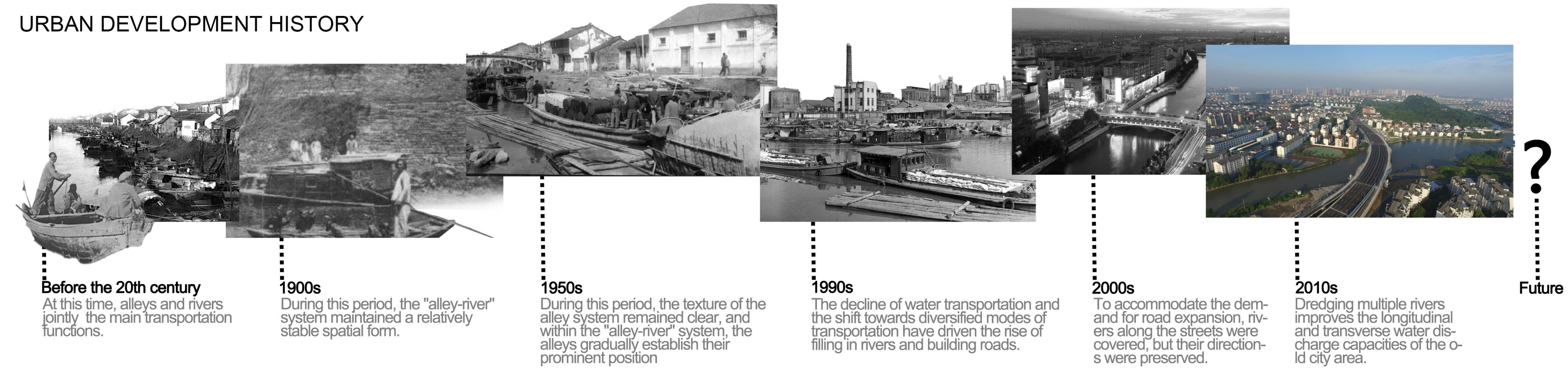
8 CULTURAL SPOT

16 BIORETENTION

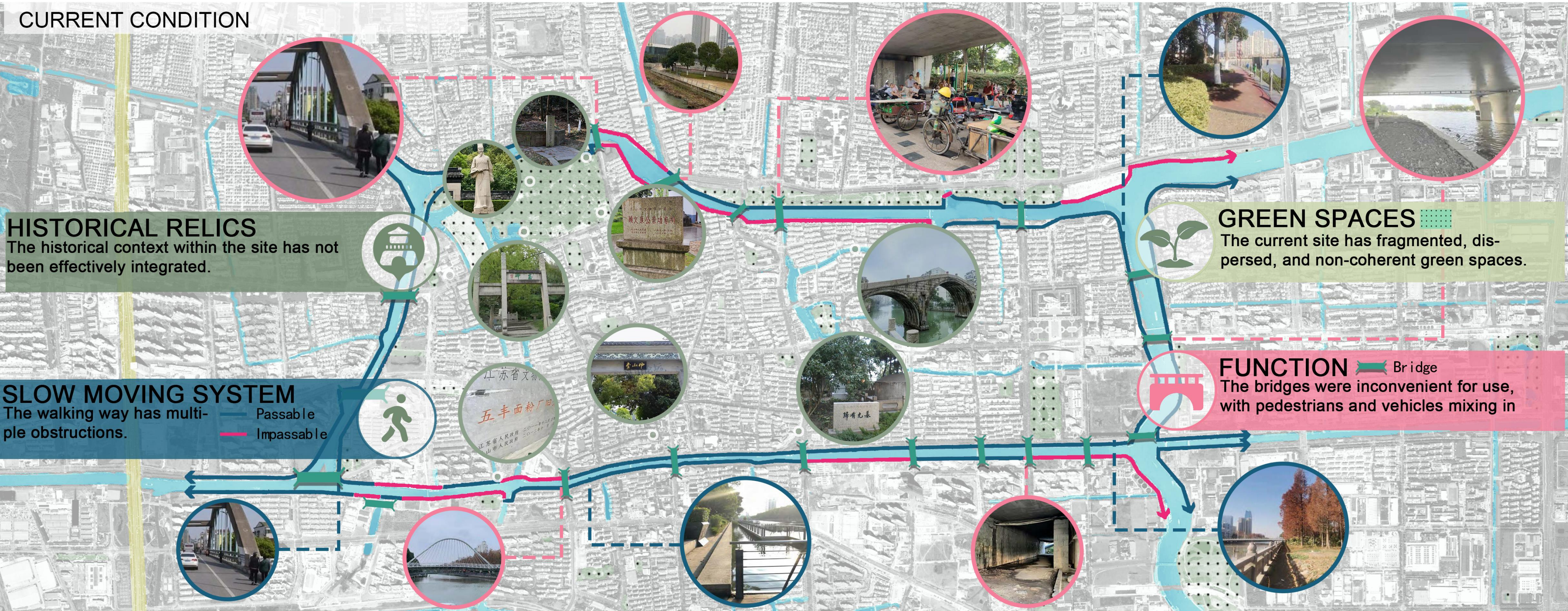


PROJECT BACKGROUND

URBAN DEVELOPMENT HISTORY



CURRENT CONDITION

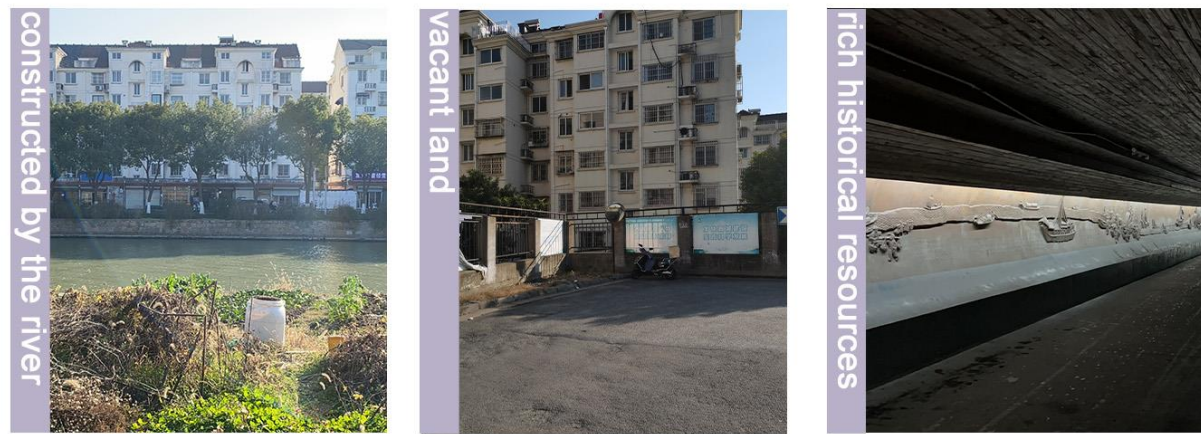


As a typical water town, Kunshan's old city has a deep connection with water. The city was built along the water, and people's lives revolve around it. However, urban development and changes in transportation have led to issues such as spatial fragmentation, poor road accessibility, disordered riverbank vegetation, insufficient water vitality, and the loss of historical and cultural heritage.

SITE ANALYSIS

UNDERUTILIZED SITE RESOURCES

unutilized natural resources+vacant land+rich historical resources



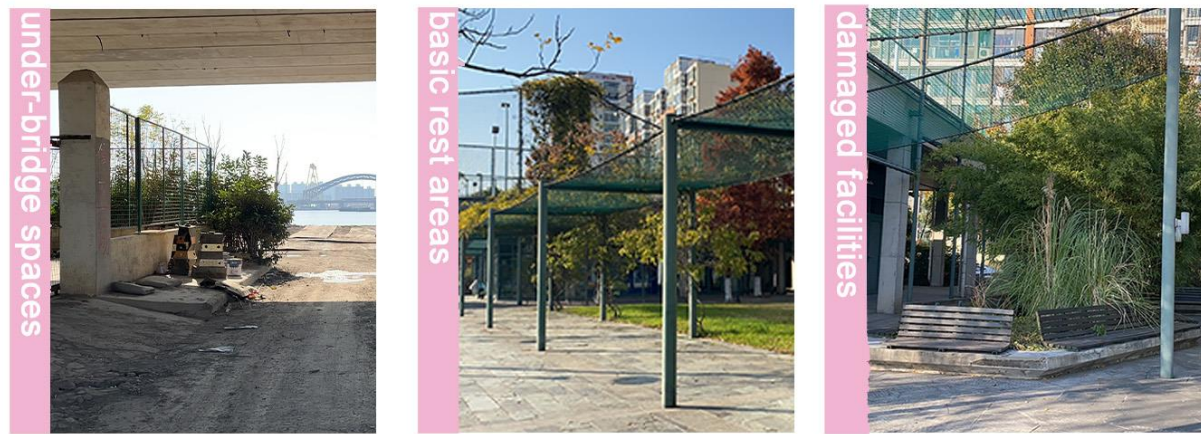
FRAGMENTED GREEN SPACES

retention of green spaces+renewal of green spaces
+greenway interruptions



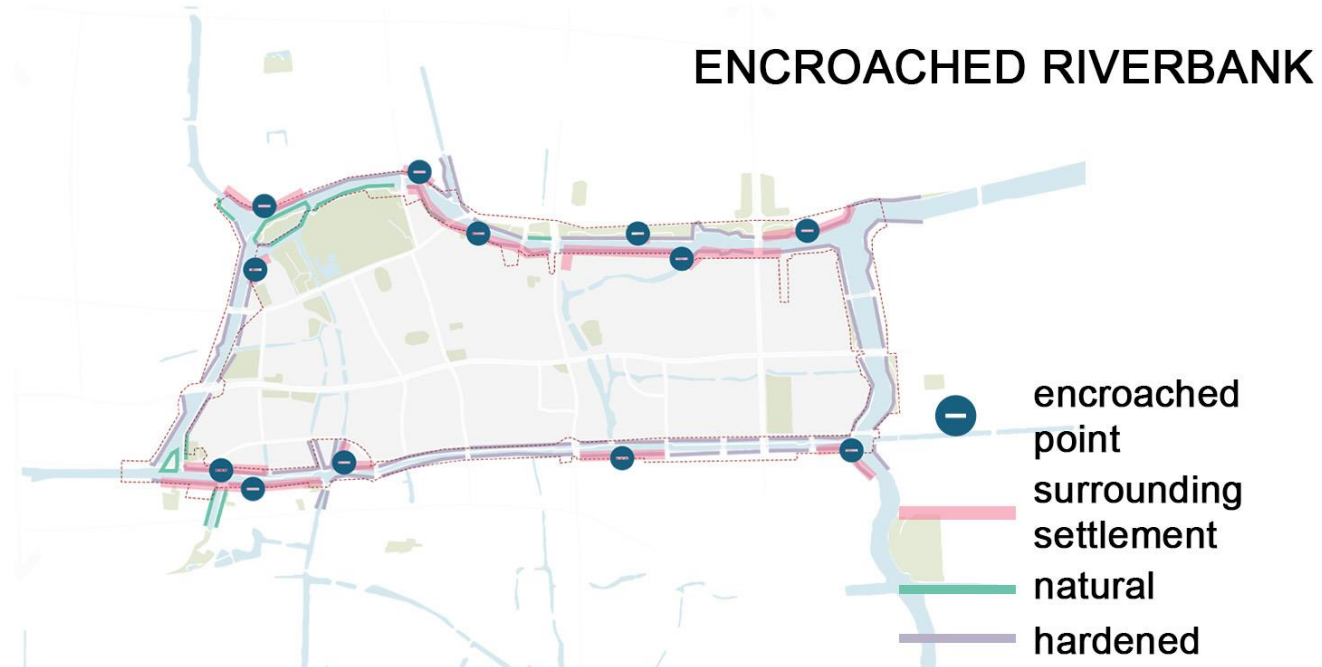
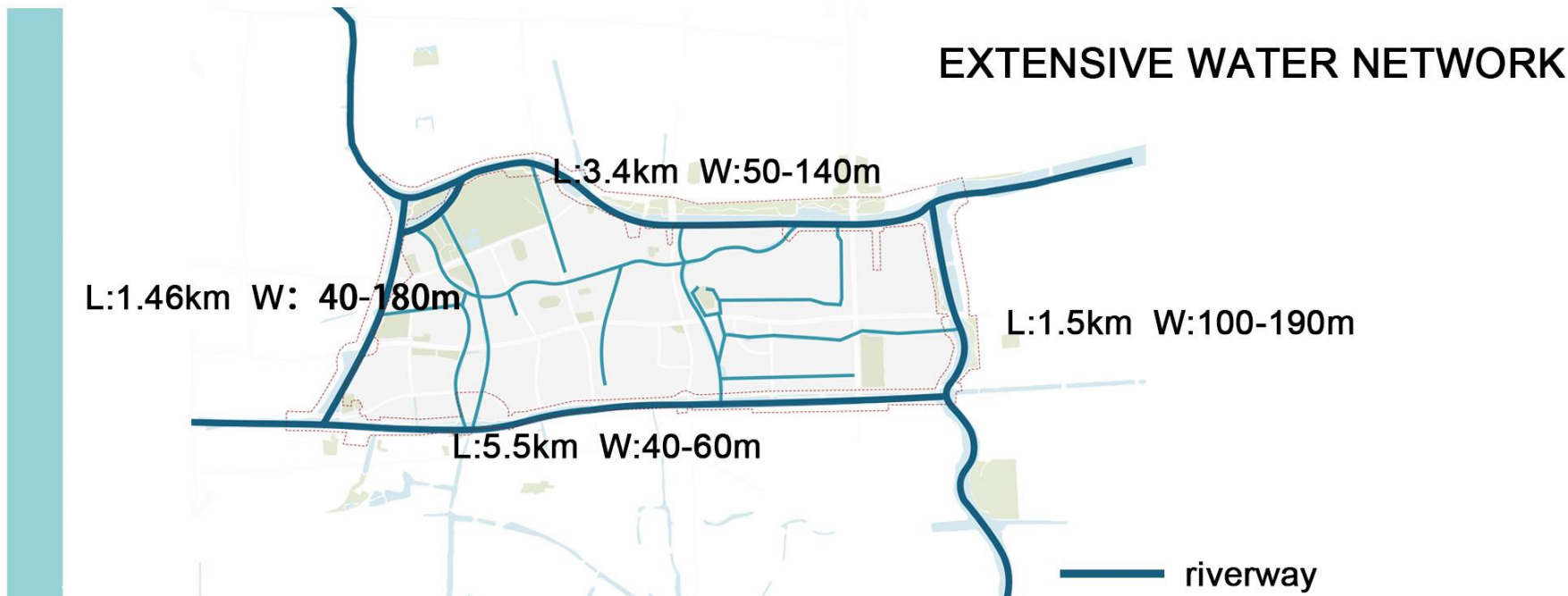
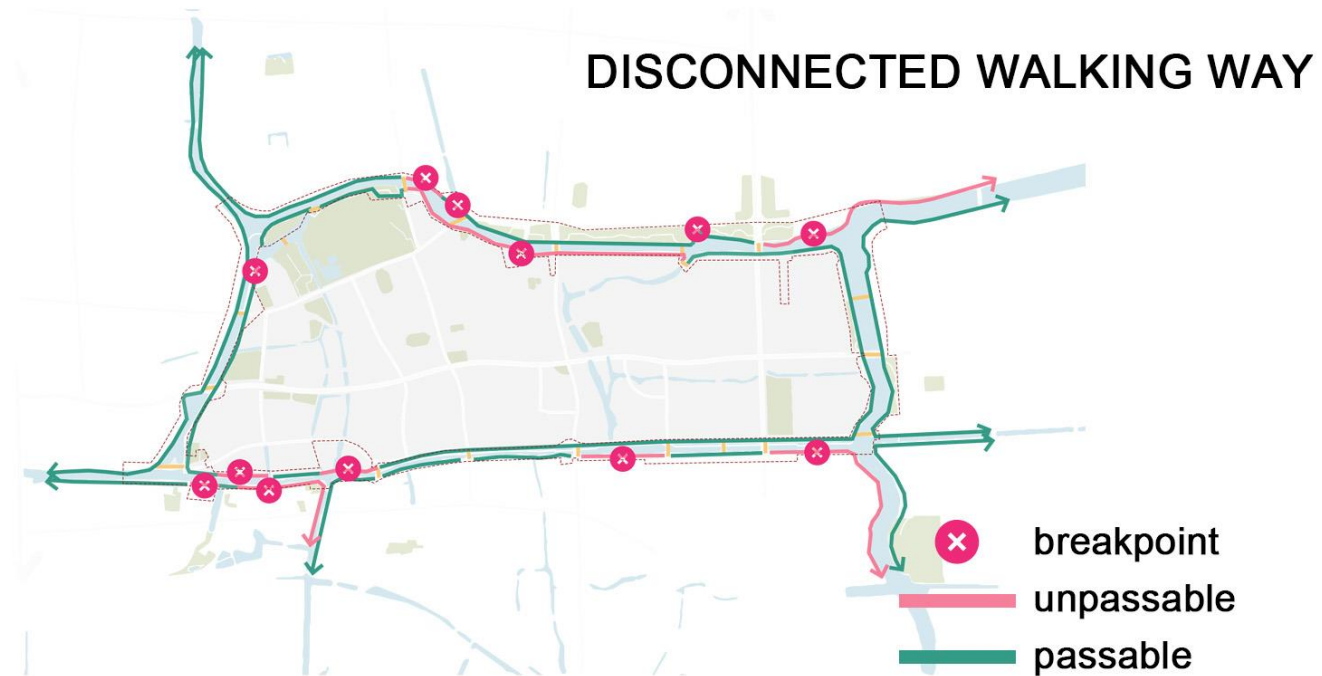
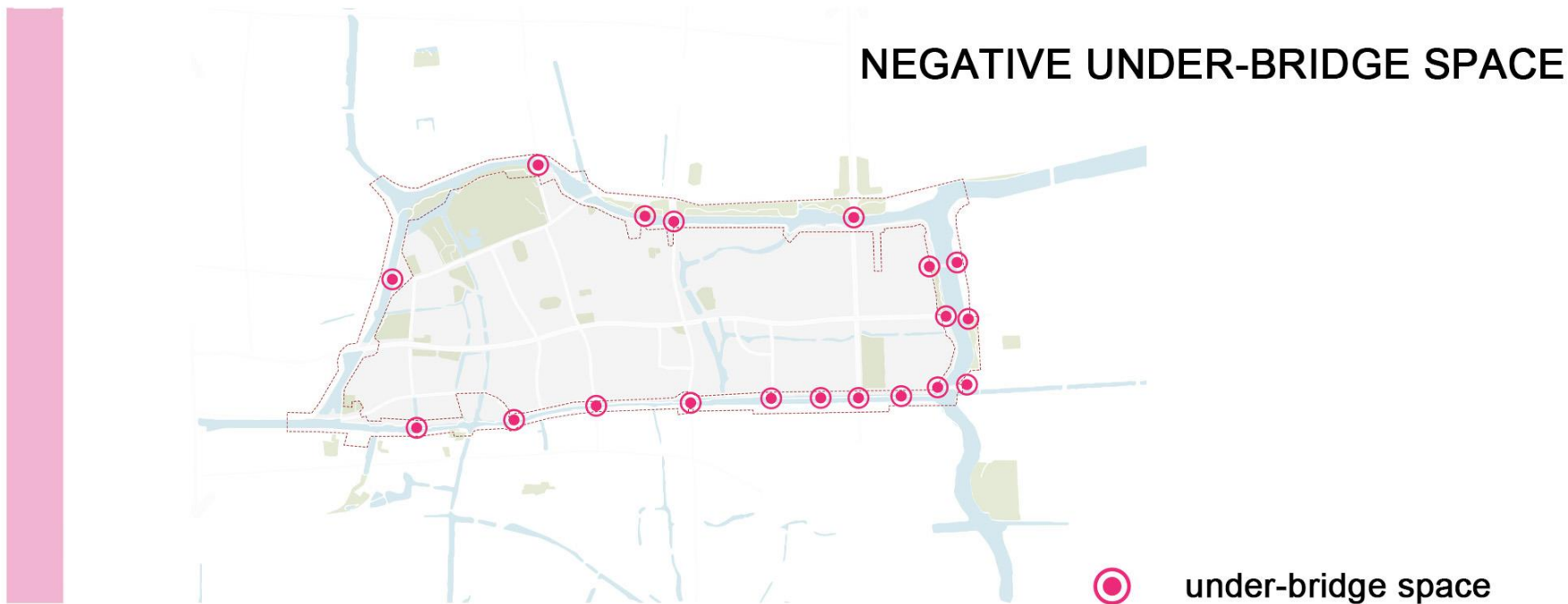
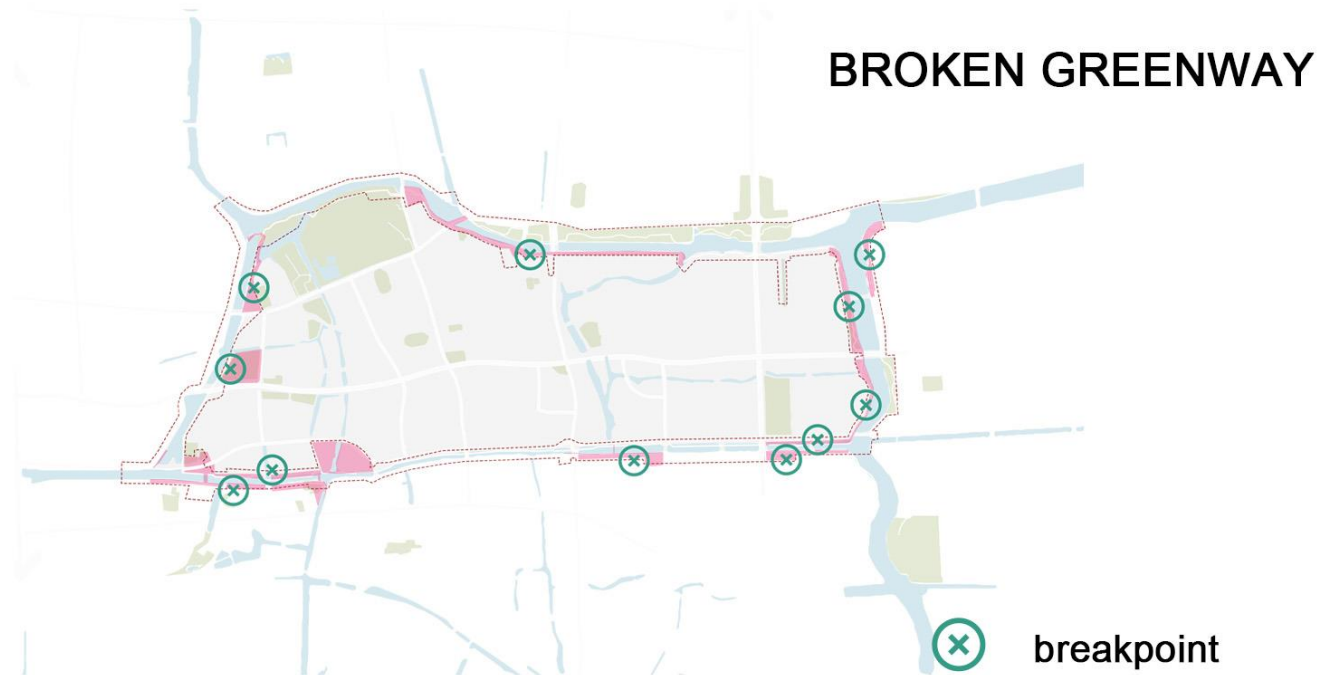
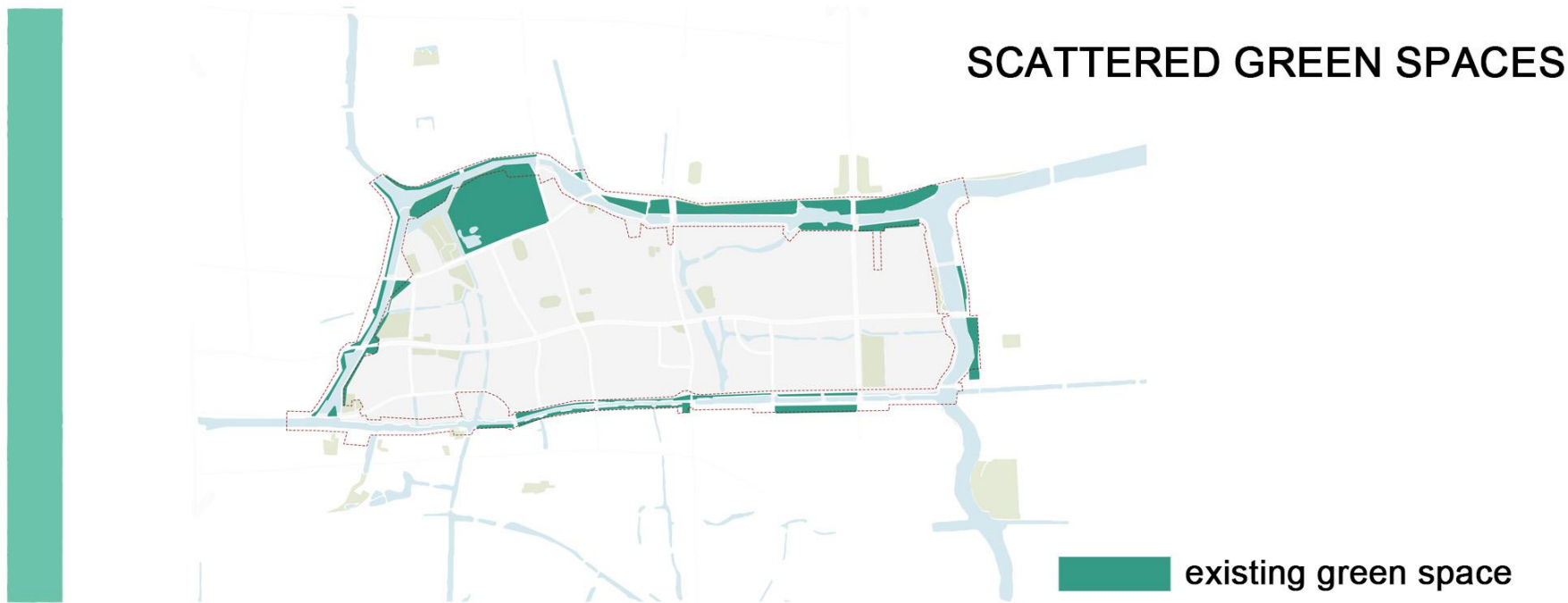
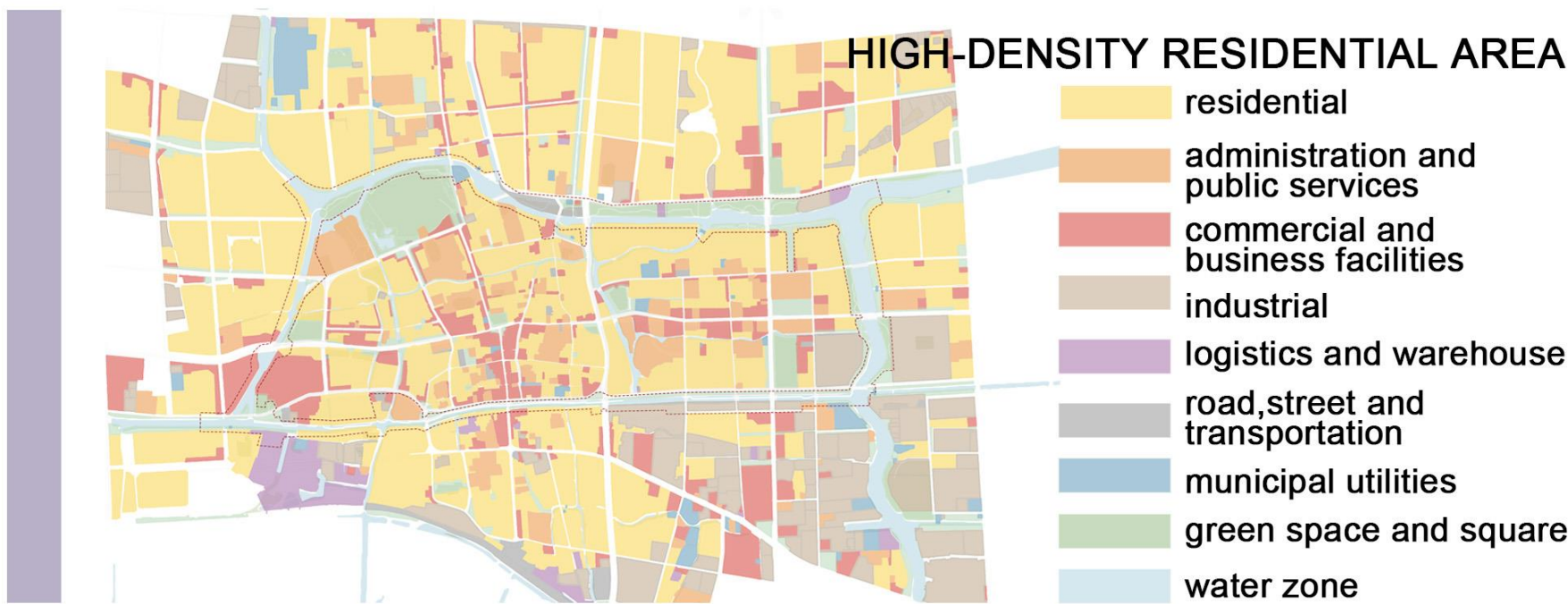
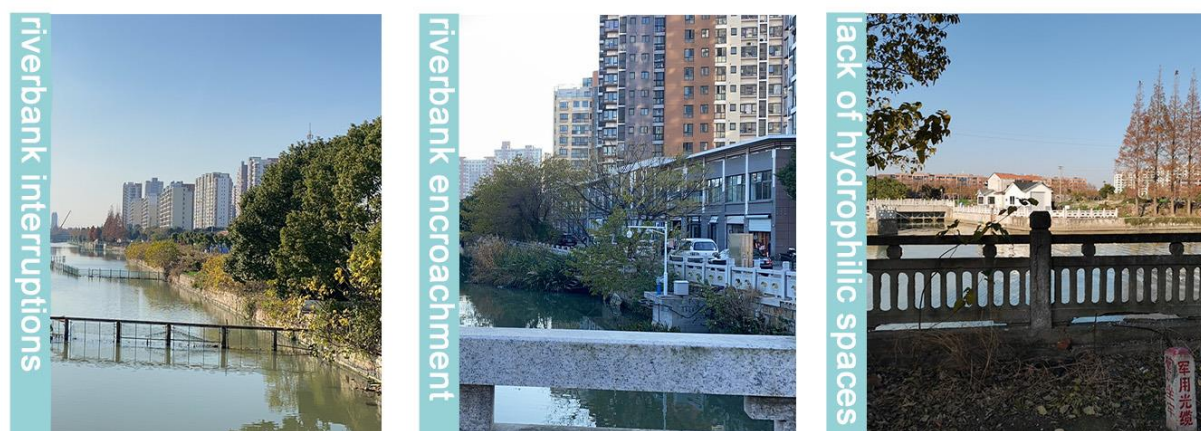
DISCONNECTED WALKING WAY

cluttered under-bridge spaces+basic rest areas+damaged facilities



NON-ECOLOGICAL RIVERBANKS

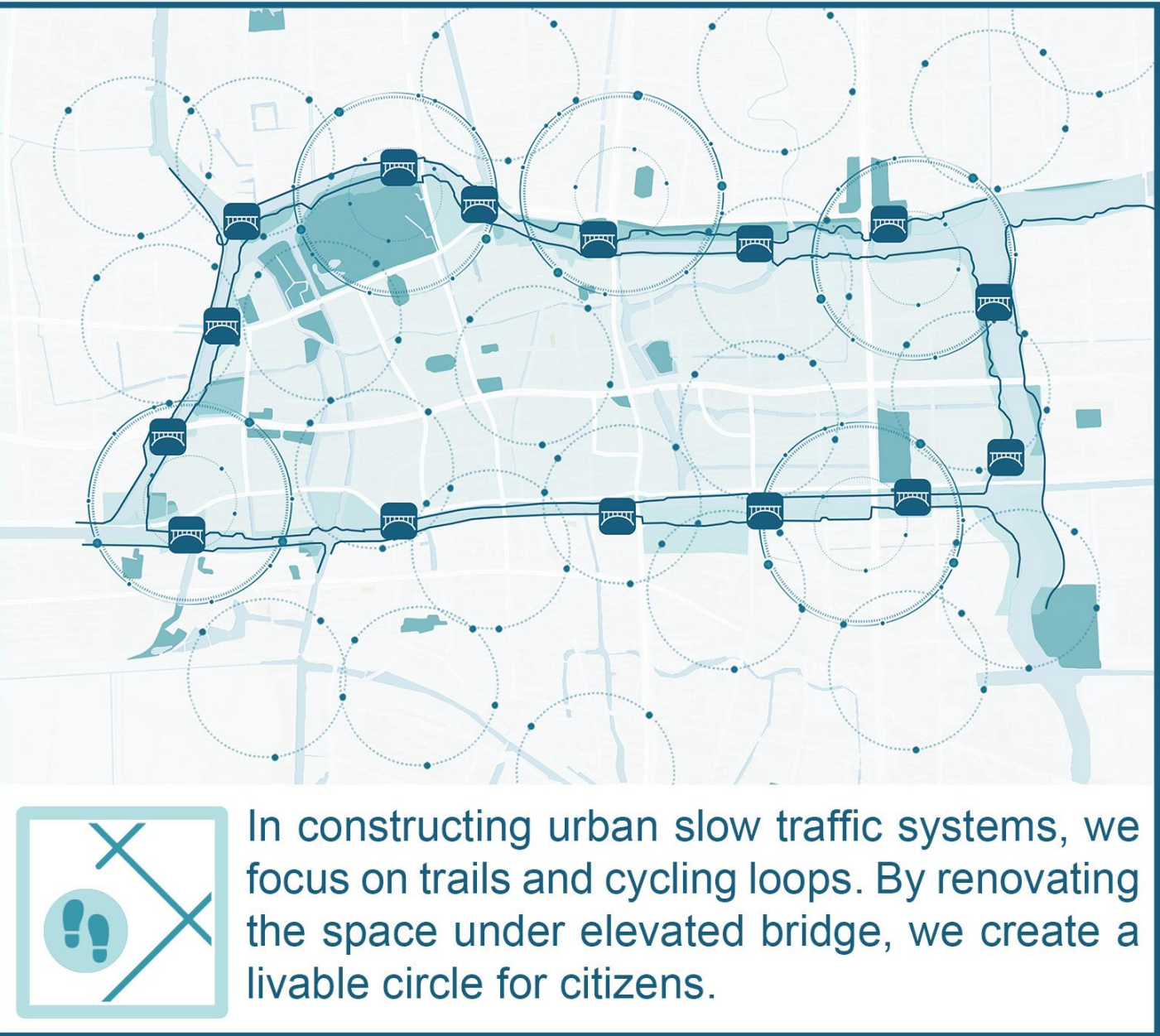
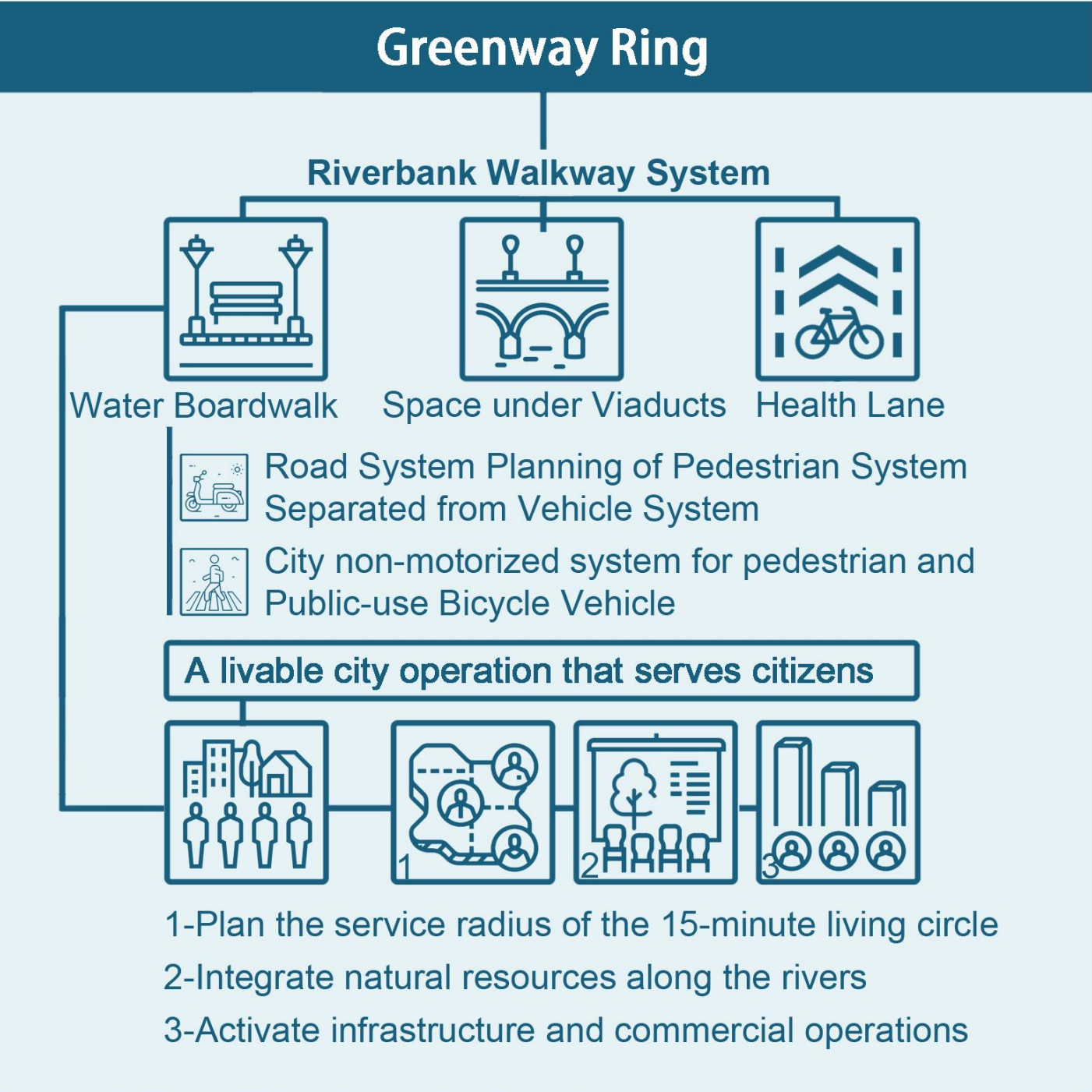
riverbank interruptions+riverbank encroachment+lack of hydrophilic spaces



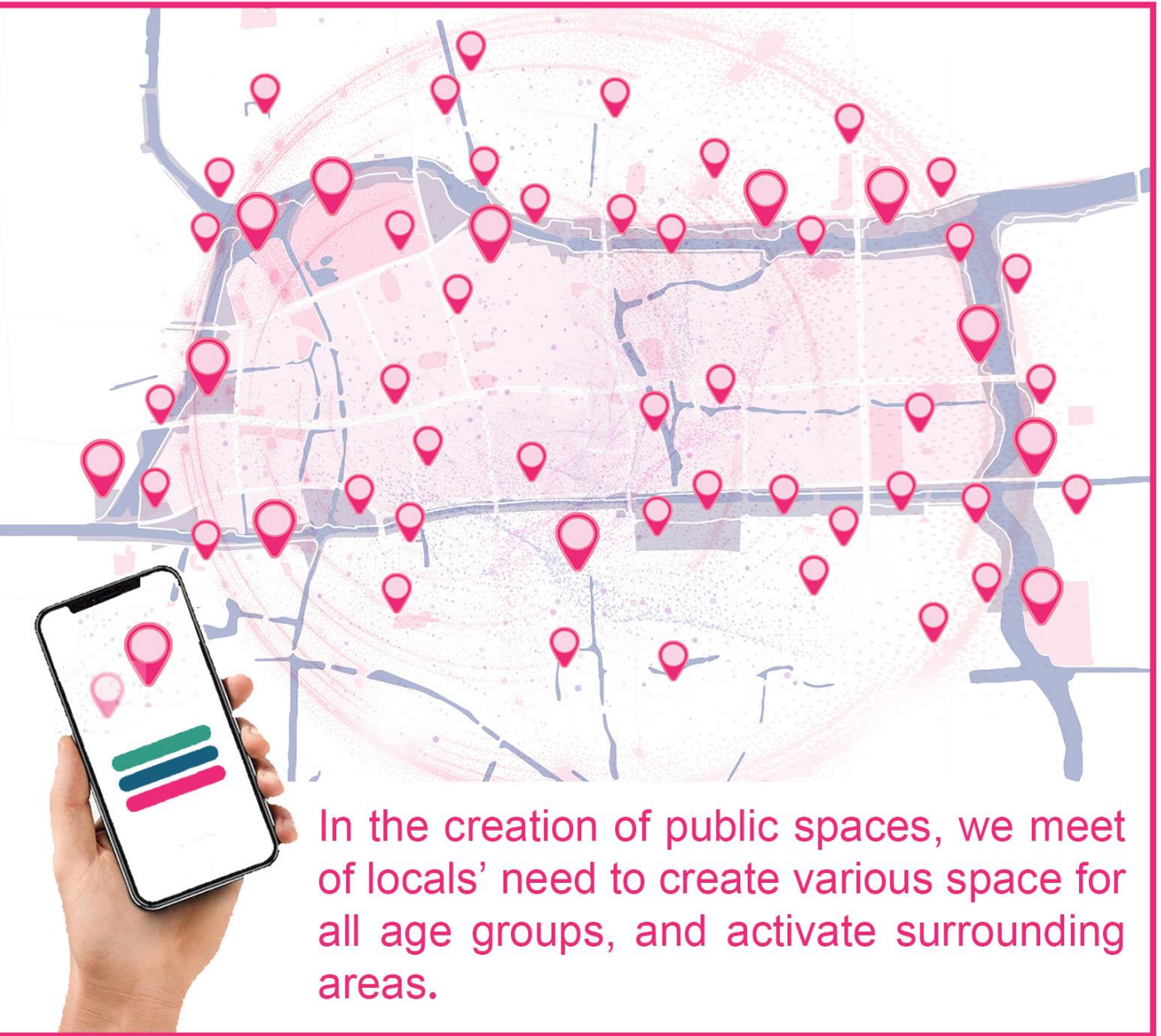
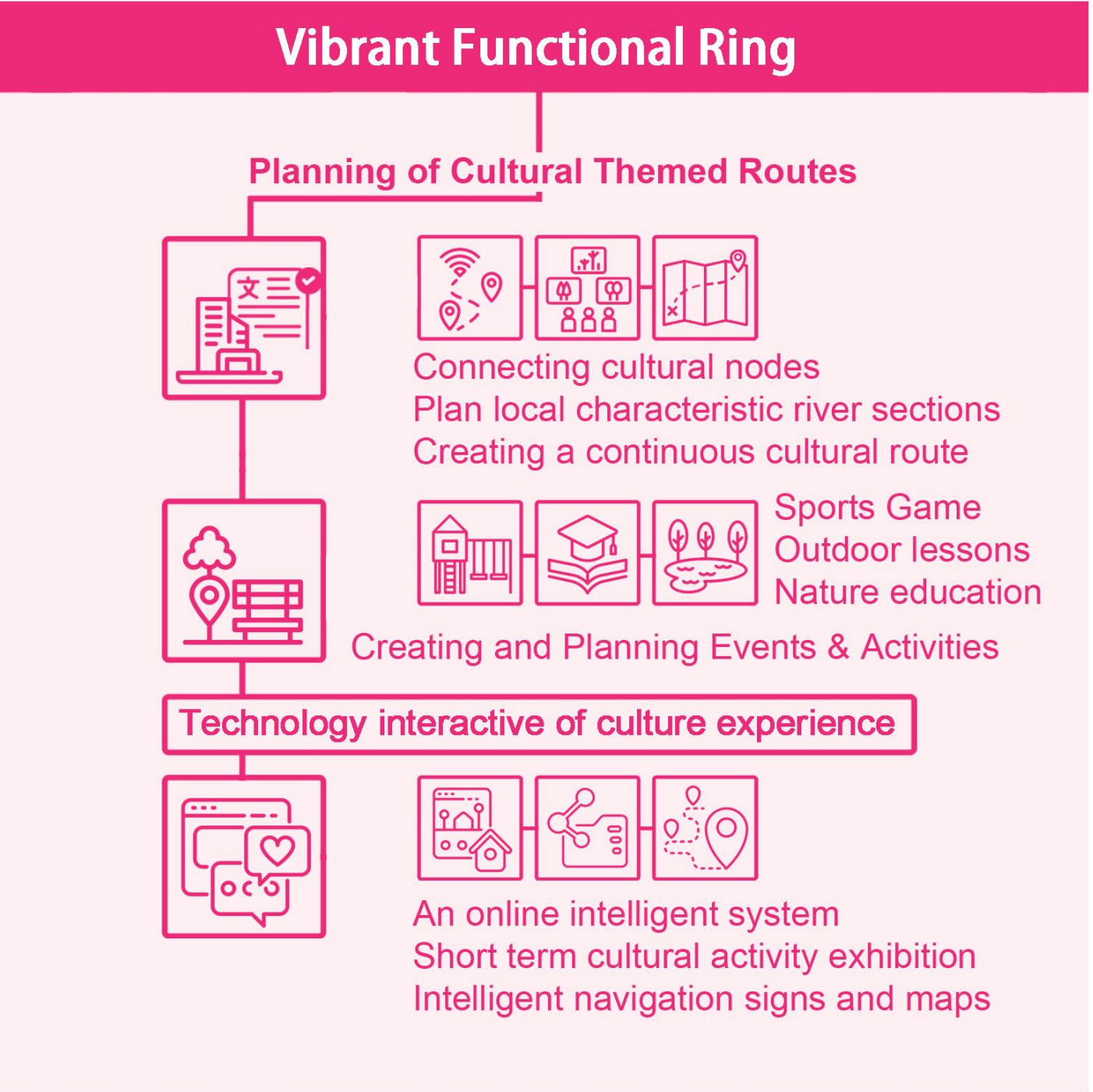
Through data analysis and field research, we found that the site has 11 greenway breakpoints, 19 negative under-bridge spaces, 12 interruptions in the walking way, and 12 encroached areas along the riverbank. The site mainly faces four major issues: underutilized resources, fragmented green spaces, disconnected walking way, and non-ecological riverbanks.

STRATEGY GENERATION

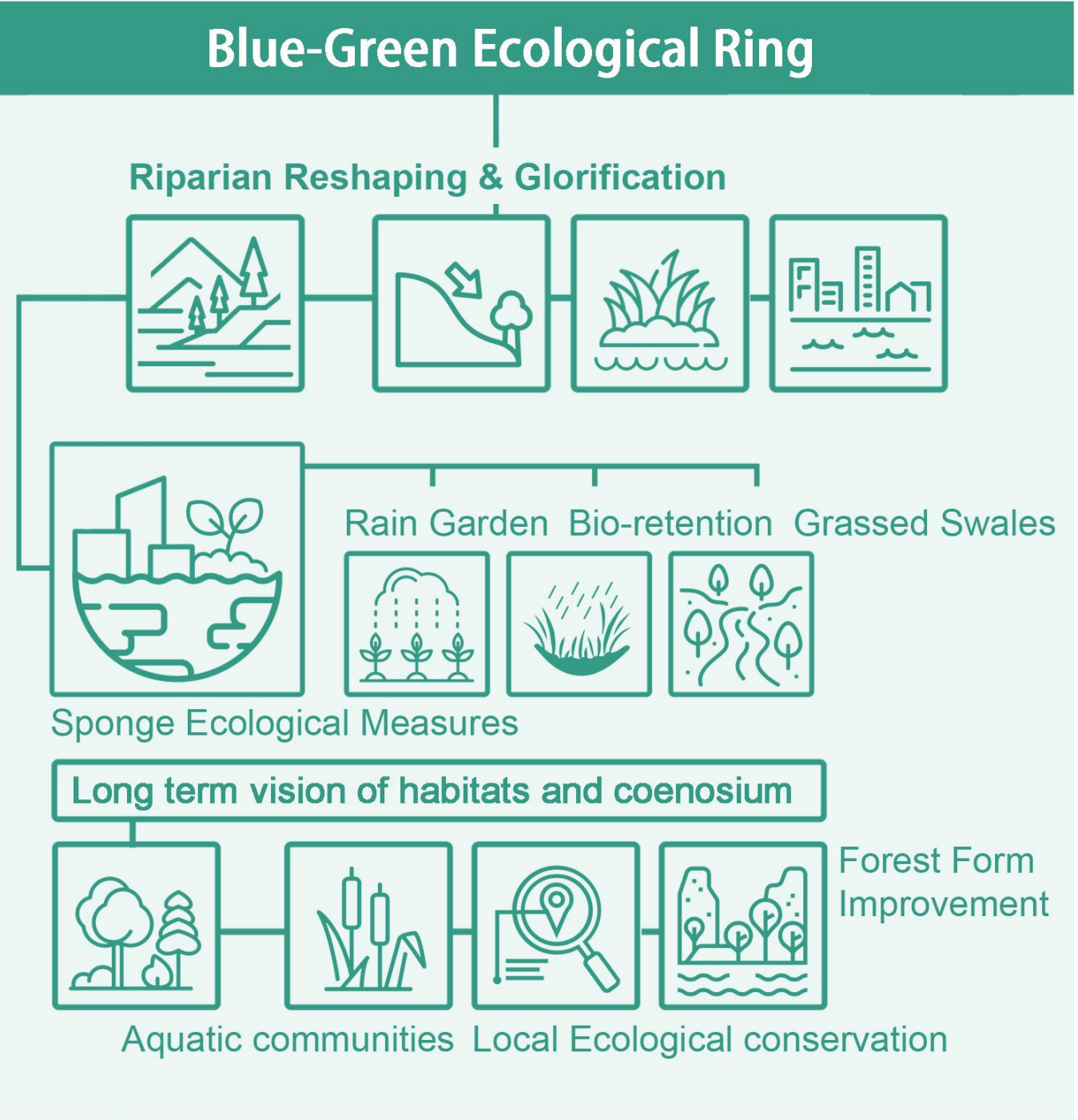
Strategy1: Structure of Urban Slow Traffic System



Strategy2: Scheming of Cultural and Civic Events



Strategy3: Construction of Ecological Scenery



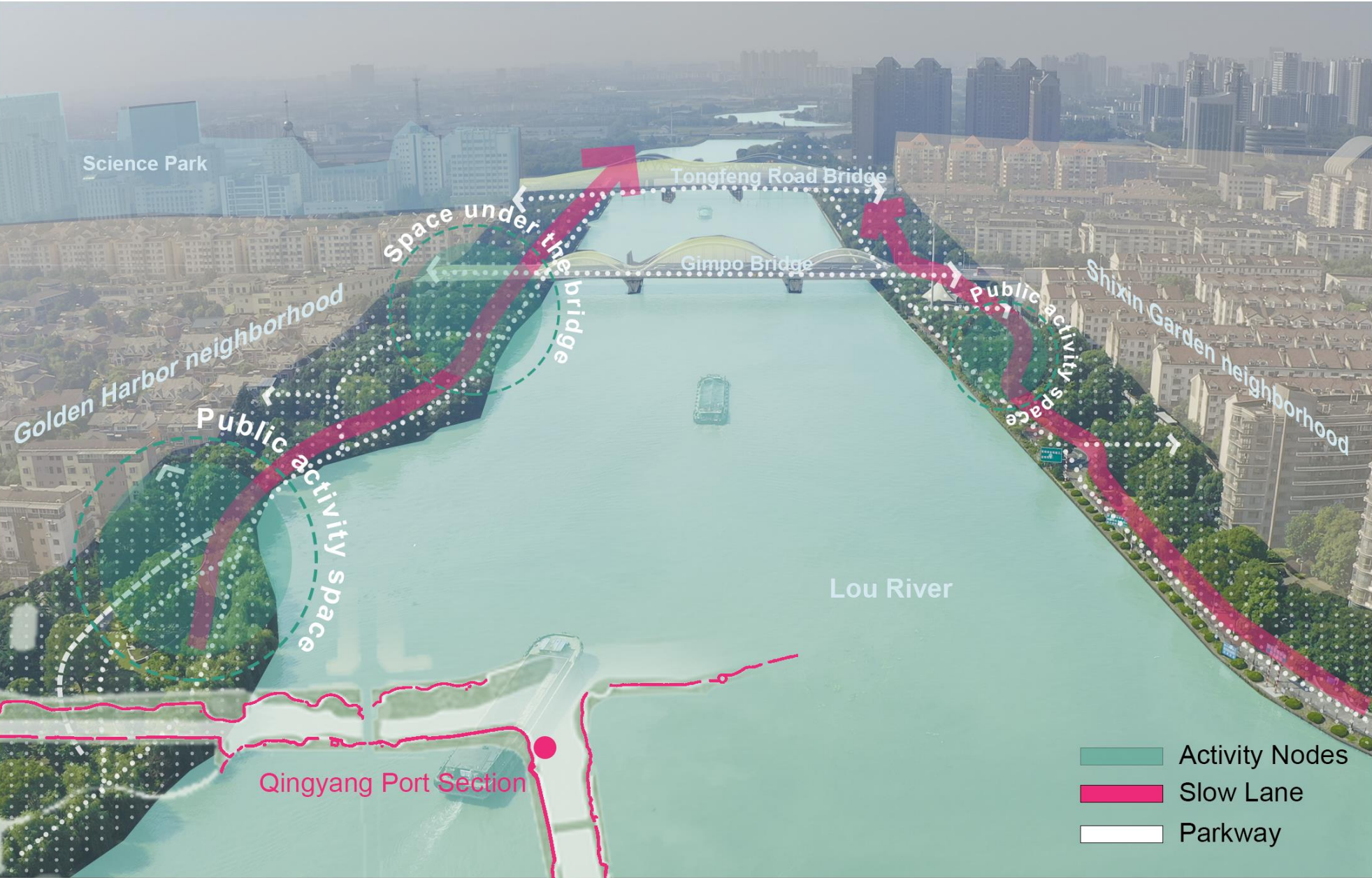
This planning is to construct three rings as Greenway Ring, Vibrant Functional Ring and Blue-Green Ecological Ring through three major strategies to optimize transportation systems, activate activity scenarios, and integrate local biological resources for obtaining a relatively good ecological foundation to improve the fragmented urban-water relationship in Kunshan.

STRATEGY 1: STRUCTURE OF URBAN GREENWAY SYSTEM

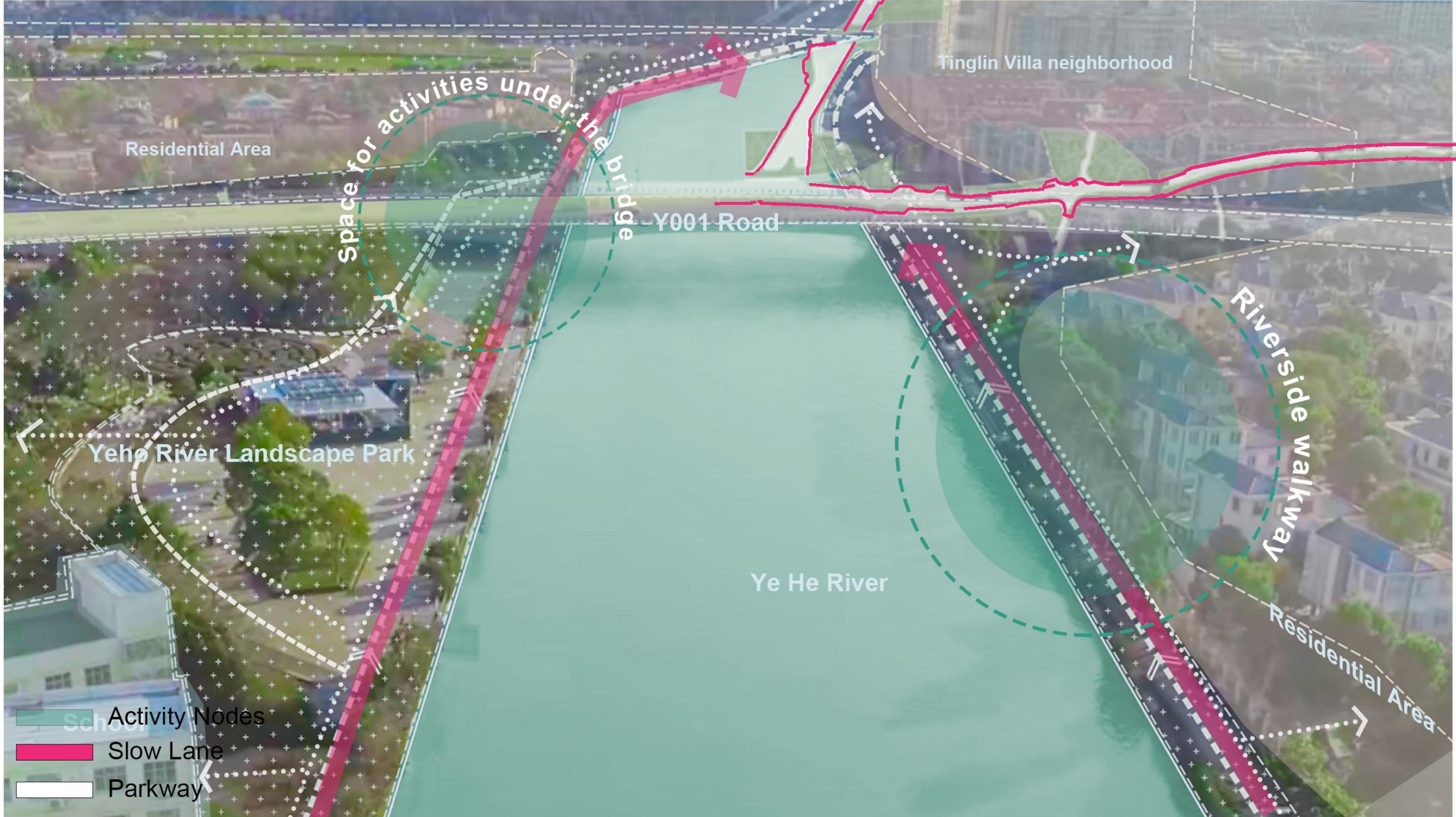
Zhangjia Port Section



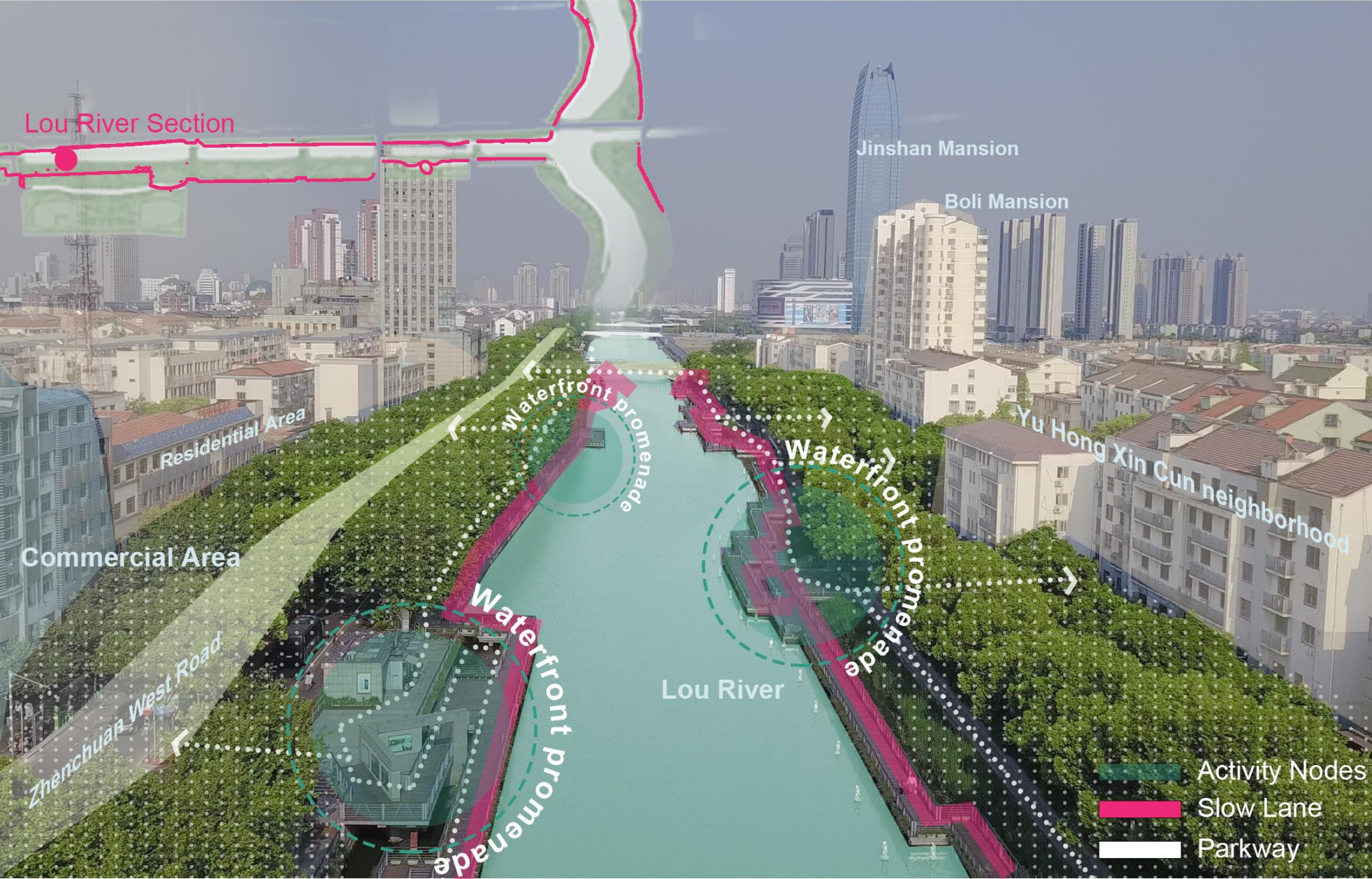
Qingyang Port Section



Yehe River Section



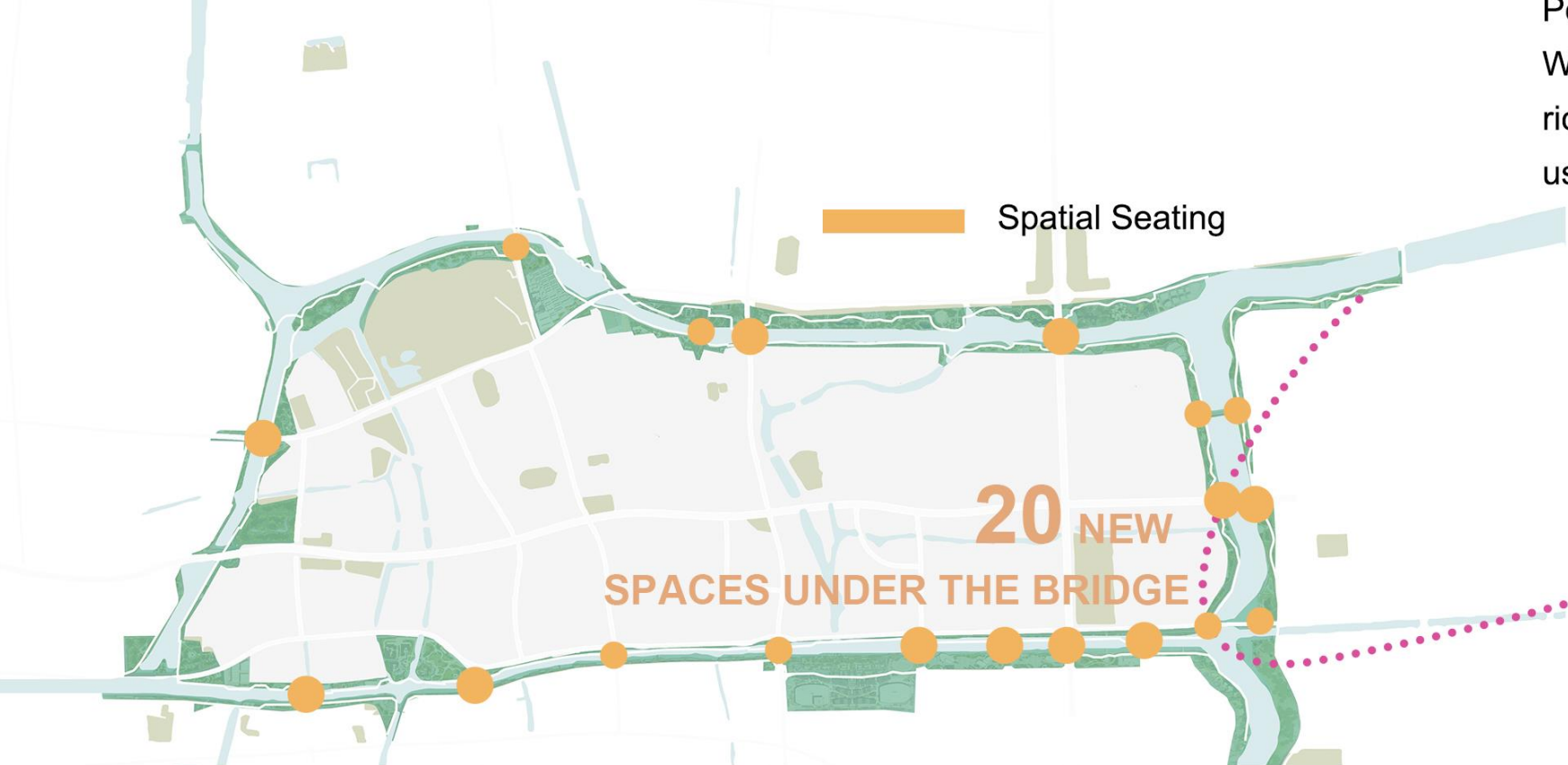
Lou River Section



According to the planning of the four rivers on both sides, this planning is to take different optimization strategies to build inside and outside connected waterfront walking system, such as adding a water-friendly trestle on the south bank for more public space at Zhangjiagang section, enriching the spatial experience of walking path at Qingyanggang section, and opening up the channel under the bridge at Yehe section.

STRATEGY 1: STRUCTURE OF URBAN GREENWAY SYSTEM

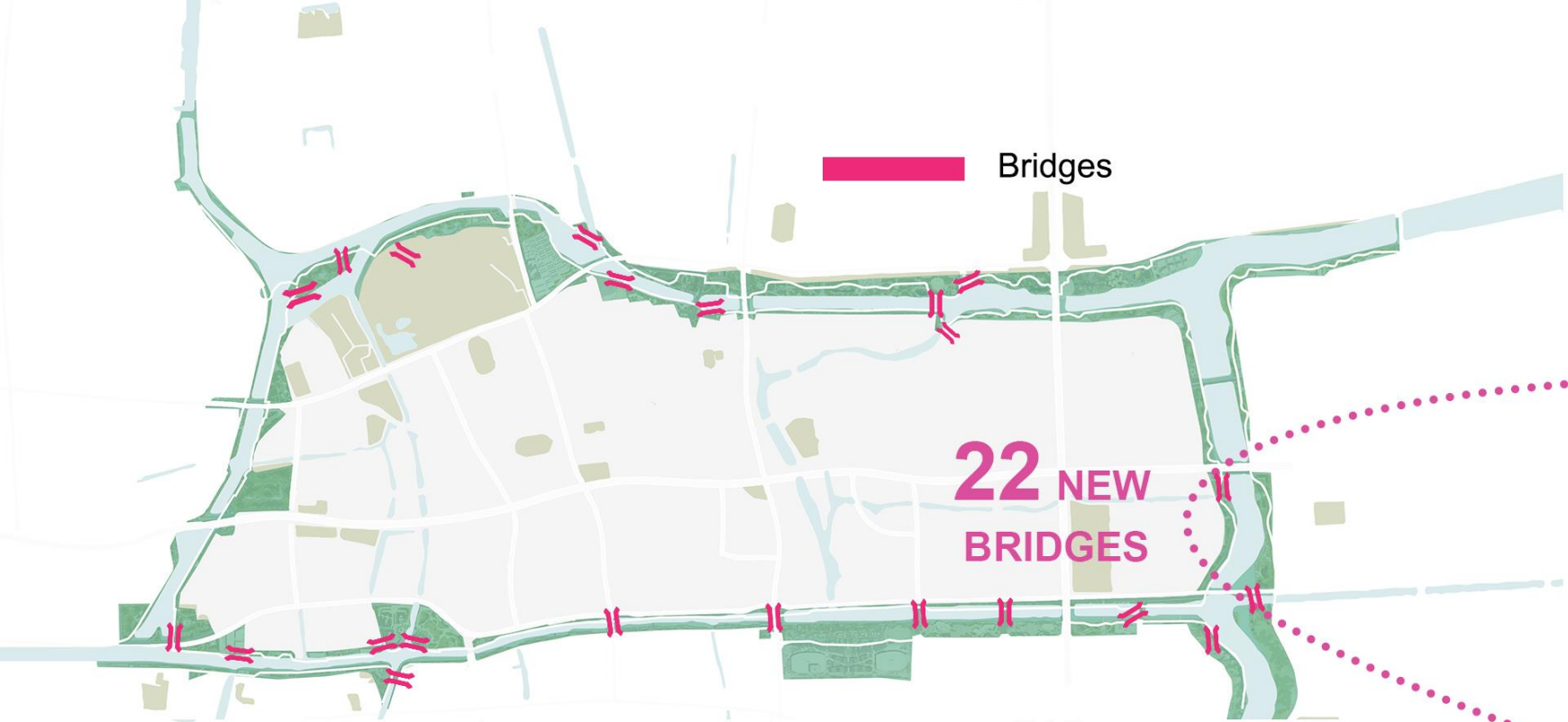
Space Under the Bridge



Waterside promenade
People can experience the water landscape of Kunshan Water Town through the waterfront trail, and the trail connects rich water-friendly spaces to undertake various activities for users.



New Bridges



Waterfront Trail

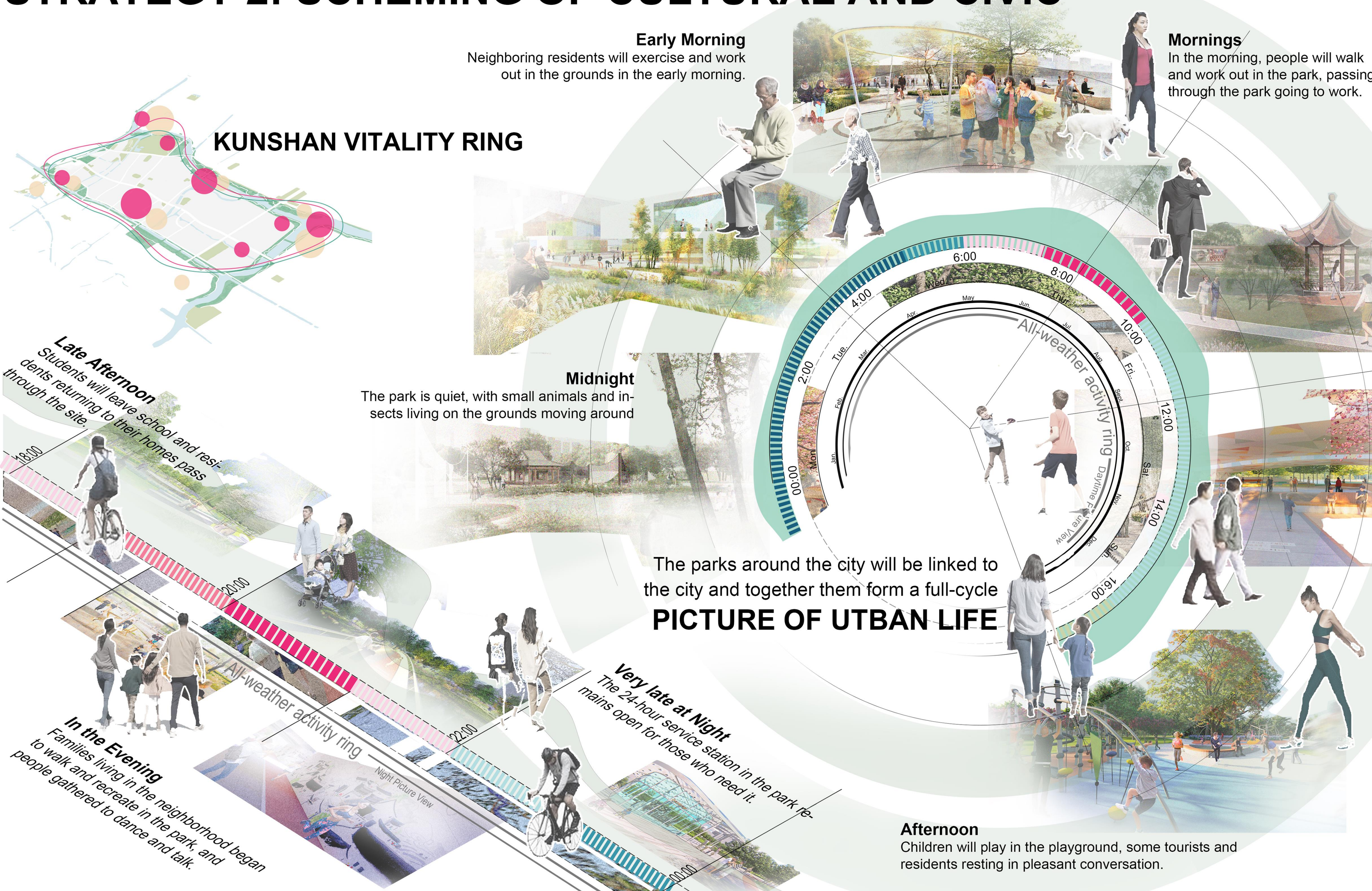


Parks and Leisure
The parks around the city will provide a variety of venues for play, recreation, interaction, and open space for the residents in the surrounding area and visitors from outside the city, and these venues have become key nodes for activating the vitality of the urban space.



Through methods such as bridging and adding waterfront walkways, the plan is to optimize the space under 20 bridges and 22 new bridges to form a 52-kilometer continuous green corridor, which will connect to other greenways in the city. On this basis, diversified transportation roads and activity spaces are formed to make people's activities more water-friendly and continue the spatial culture of Kunshan.

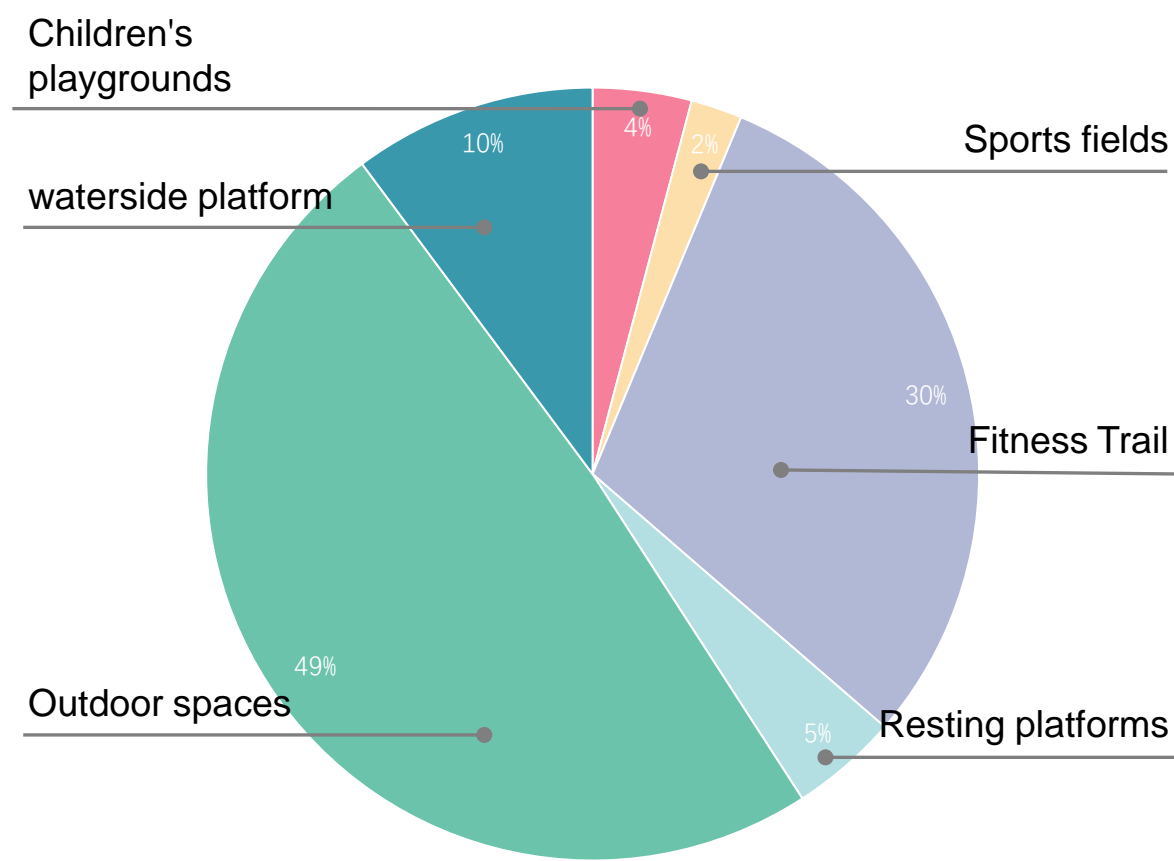
STRATEGY 2: SCHEMING OF CULTURAL AND CIVIC



The plan strings together several green spaces and pocket parks, implanting a variety of functions and building a picture of life for all time. People will be commute to work and school, exercise, play and socialize within the greenway.

STRATEGY 2: SCHEMING OF CULTURAL AND CIVIC

AGE FRIENDLY VENUE



Pre-school Children

Preschoolers need some space for **children's activities**, as well as **Resting platforms** for accompanying families



Teenagers

Teenagers need **outdoor spaces** and **sports fields** for extracurricular sports



Adults

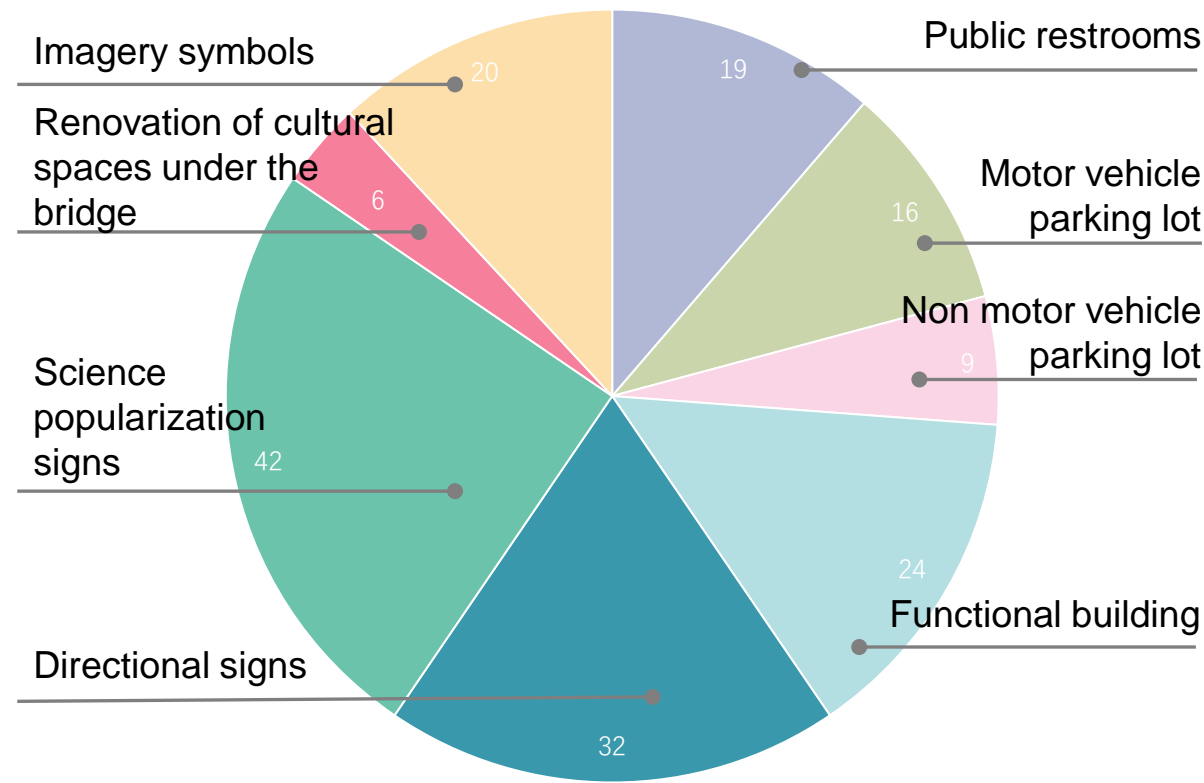
Adults need **fitness trails** as well as **sports fields** and enjoyment of the city's beauty



The Elderly

Older adults need **slow walking trails** for physical activity and **resting platforms** for socialization

PUBLIC SERVICES+ CULTURAL PROMOTION



Service Buildings

It includes restrooms and other functional buildings to enhance the site's service capabilities.



Parking Space

It includes both **motor** and **non-motorized parking areas**, allowing the site to accommodate more residents from afar.



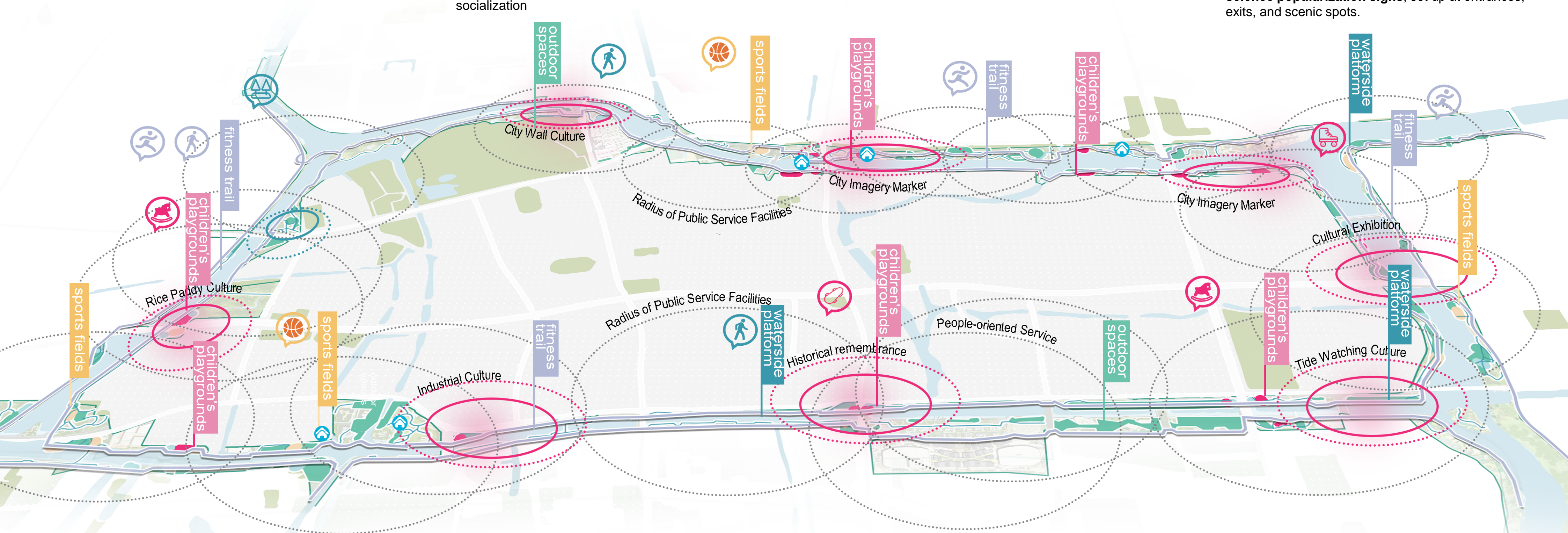
Cultural Point

It includes the **Renovation of cultural space under the bridge** and Imagery symbols, used to showcase and promote urban culture.



Signage System

Signage system mainly includes **directional signs** and **science popularization signs**, set up at entrances, exits, and scenic spots.



The Vibrant Functional Ring in this plan includes all-ages friendly activity venues as well as dot-distributed public service facilities and science promotion sites, building on the existing venues to create a new cultural identity. Most sites are open spaces, with 14 extra children's activity spaces and 12 fitness venues. The public service facilities will achieve full coverage of the 500-metre radius.

STRATEGY 3: CONSTRUCTION OF ECOLOGICAL SCENERY

Green Connectivity and Habitat Construction



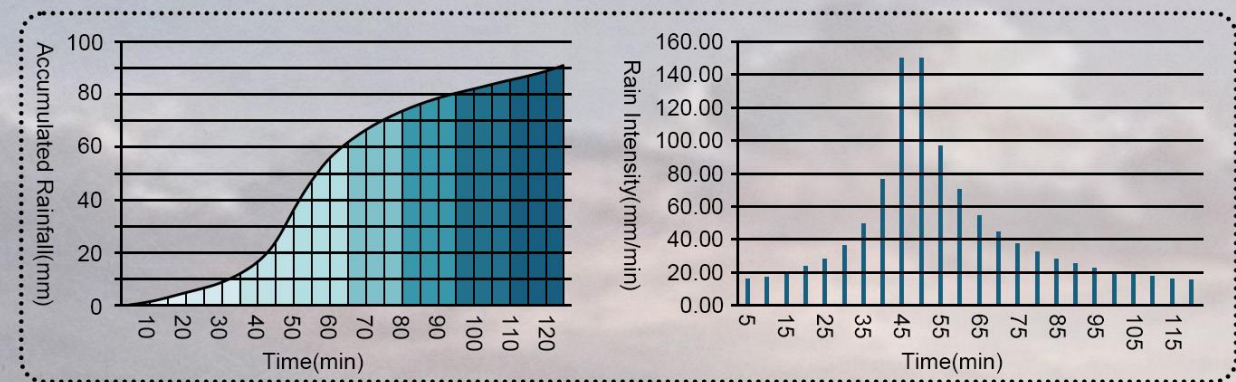
The plan aims to create a complete riverside greenway by preserving and updating existing green spaces, as well as adding new green spaces. Different types of plant spaces can be created through plant design. The supplementation of food source plants, nectar plants, and aquatic plants will provide a favorable habitat for diverse species.

STRATEGY 3: CONSTRUCTION OF ECOLOGICAL SCENERY

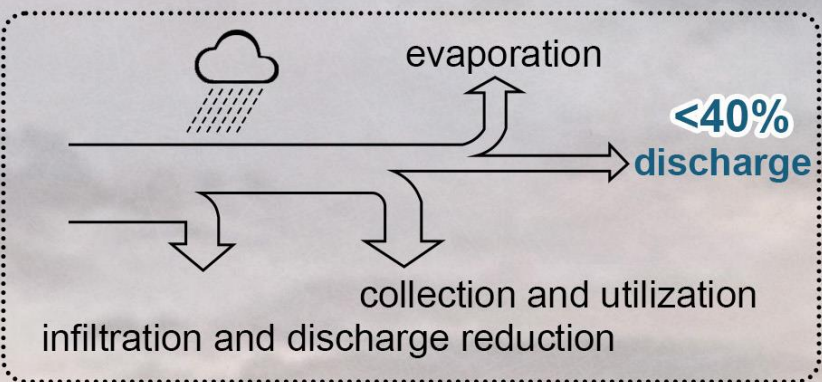
Ecologicalize Hard Riverbanks

SPONGE MEASURES IN BLUE SPACE

When ecologizing hard barges, the placement of a series of sponge facilities is crucial. These facilities are designed to collect and purify rainwater, providing the green space ecosystem with the necessary water resources while reducing the burden on the urban drainage system.



120-MINUTE RAINFALL IN KUNSHAN ONCE IN FIVE YEARS



SPONGE MODEL



The plan is to organize the revetment space of the site, ecologicalize the hard revetments, and incorporate a series of sponge facilities such as permeable pavements, grassed swales, and bioretentions for rainwater collection and purification. These facilities are designed to collect and purify rainwater, provide ecosystem with the necessary water resources while reducing the burden on the urban drainage system.

PROCESS AND SUMMARY

PROJECT PROCESS



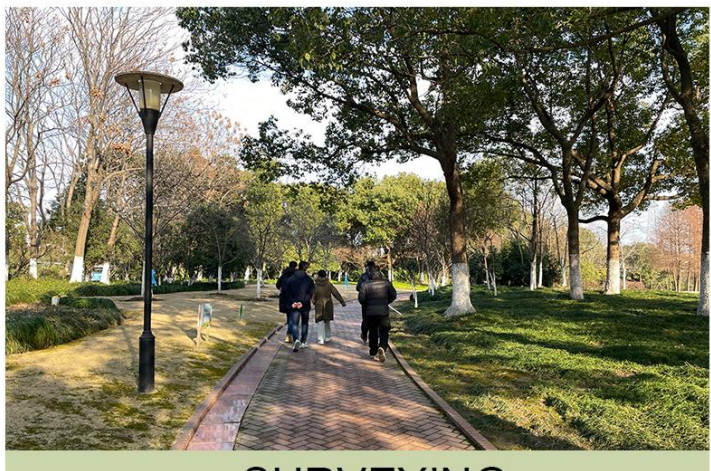
ASSESSMENT

The project adopts a model that involves multiple parties such as community discussions, user participation, management guidance and coordination, and designer involvement.



CONFERENCE DISCUSSION

Greenway system around the Kunshan Old Town construction site.



SURVEYING

Multiple parties participate in discussing and assessing issues related to the construction of the design project.



PUBLIC PARTICIPATION RESEARCH

On July 9, 2021, the "Launching Ceremony of 'Kun Xiaowei - Renewal' Urban Micro-Renewal College Design Season" was successfully held in Yushan Xiaotaoyuan, Kunshan.



DESIGN TEAM



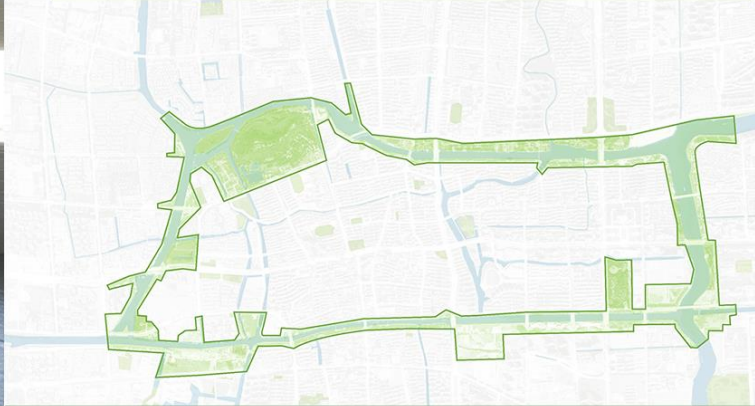
2021 DESIGN AND CONSTRUCTION

Engaged in greenway system around the Kunshan Old Town planning research with relevant parties.



2022 IMPLEMENTATION AND PLANNING

The design team is inspecting the construction progress of the greenway system around the Kunshan Old Town.

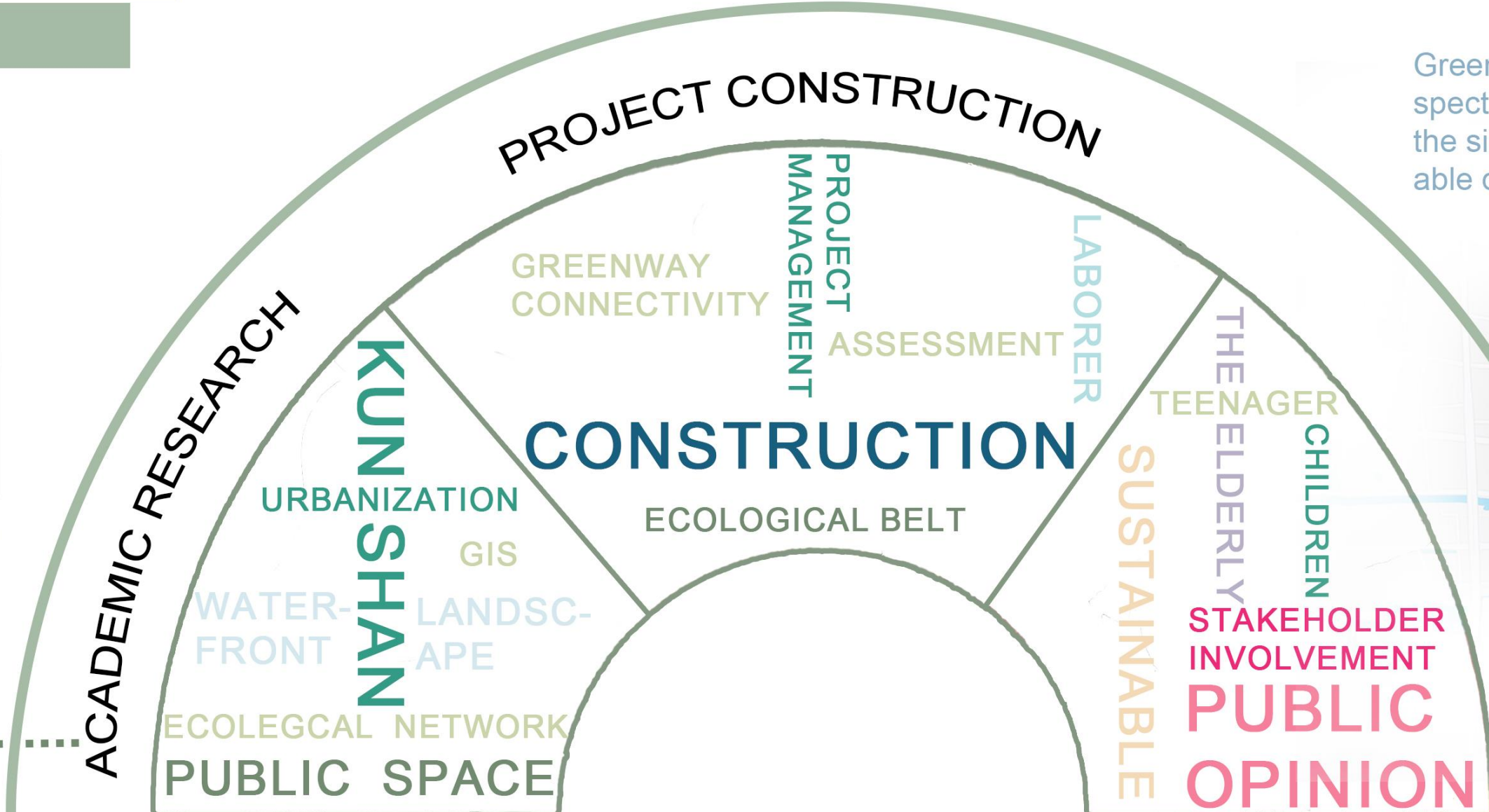
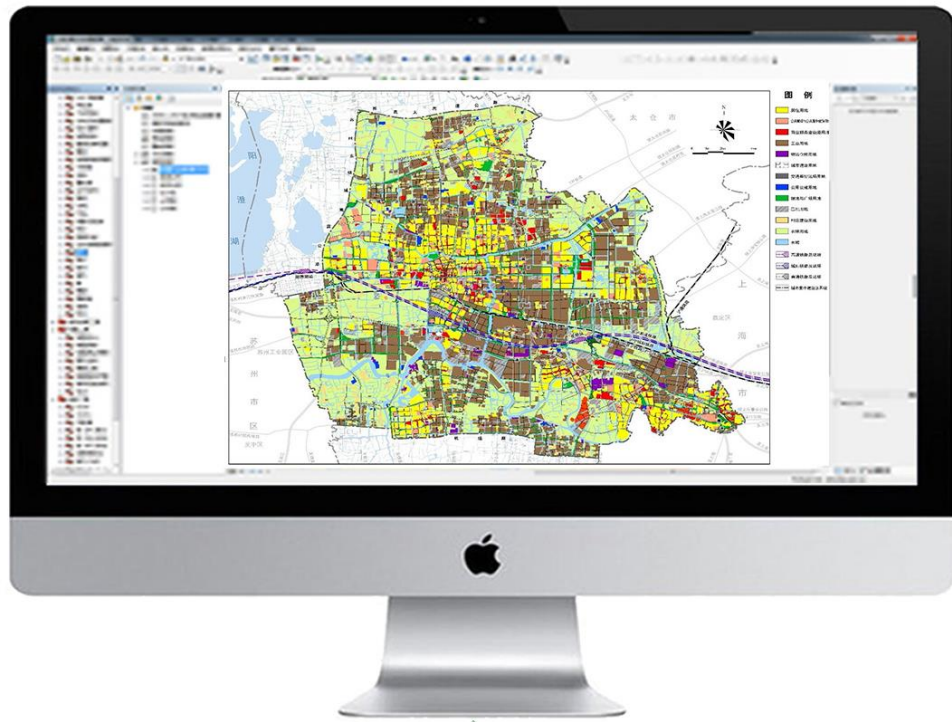


2023



KUN SHAN

PROJECT FUNCTION



Greenway system around the Kunshan Old Town is fully respect the needs of various user groups, organically integrate the site with the people-oriented concept, and form a sustainable development landscape.



The project commenced in 2021 with adopt a participatory model involving community discussions, resident engagement, management departments, and participation of designers. As of 2024, 25.3 kilometers of slow greenways have been completed, with full connectivity expected by 2026. The "Kunshan Necklace" project will expand progressively, forming an emerald necklace encircling the old town of Kunshan city.