

Introduction to Suqian Sponge City Development

(Jiangsu Province, China)



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Ewaters Environmental Science & Technology

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- 01** Brief Introduction
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- 03** Typical projects

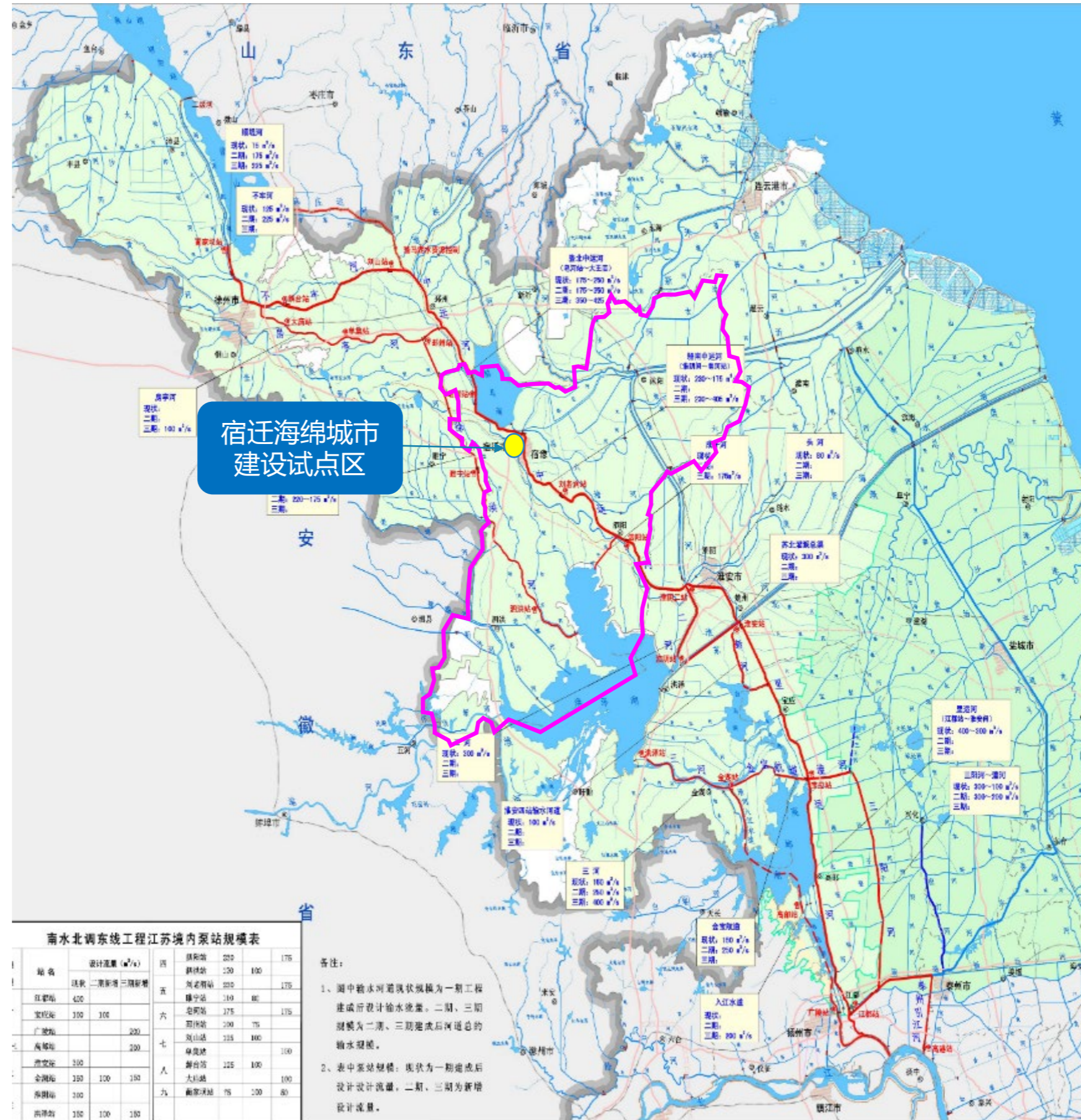


Basic situation

- North Jiangsu Province, North Wing of the Yangtze River Delta
- Area 8555 km²
- In 2018 population 4.925 million

Ecological background conditions are good

- Two lake converge and river networks interweave
- Green vegetation, water city, oxygen bar
- Important node of Jianghuai Ecological Corridor
- Important channel for east route of South – North Water Transfer
- Jiangsu Ecological Park



Project area: 13.12km²

Big risk of Water environment pollution

- 地表径流污染负荷较高
- 存在较多散乱污点源污染
- 存在混接、漏接、错接现象

Insufficient protection of water ecological functions

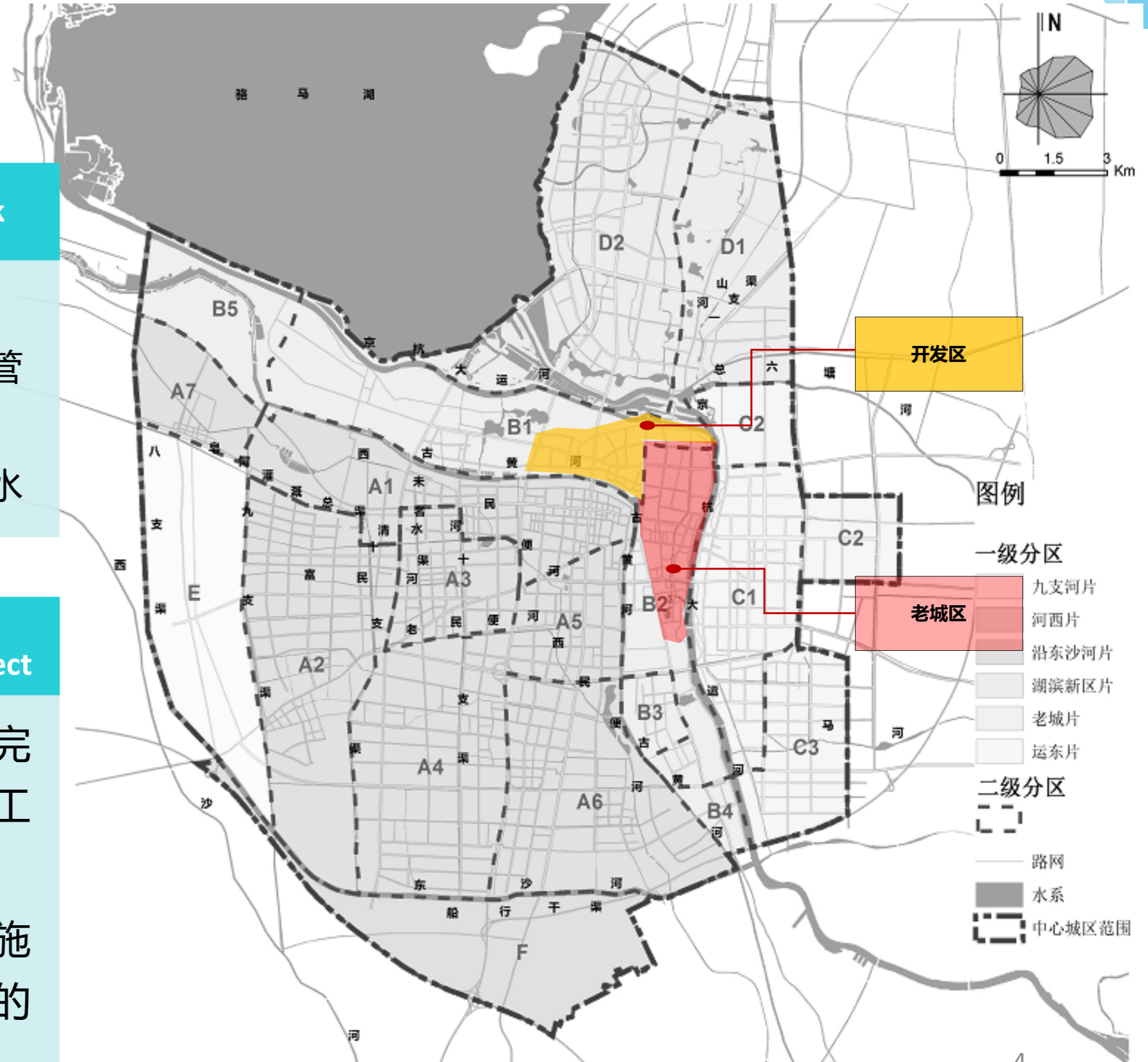
- 河岸硬质化现象严重
- 大堤沿岸水系亦被切断做鱼塘，带来水质恶化的风险
- 试点区内存在大量拆迁未建地块，生态断

Local waterlogging risk

- 存在部分地势低洼点
- 管网建设年限较久，管网排水能力不足
- 部分区域污水通过雨水管进入雨水系统

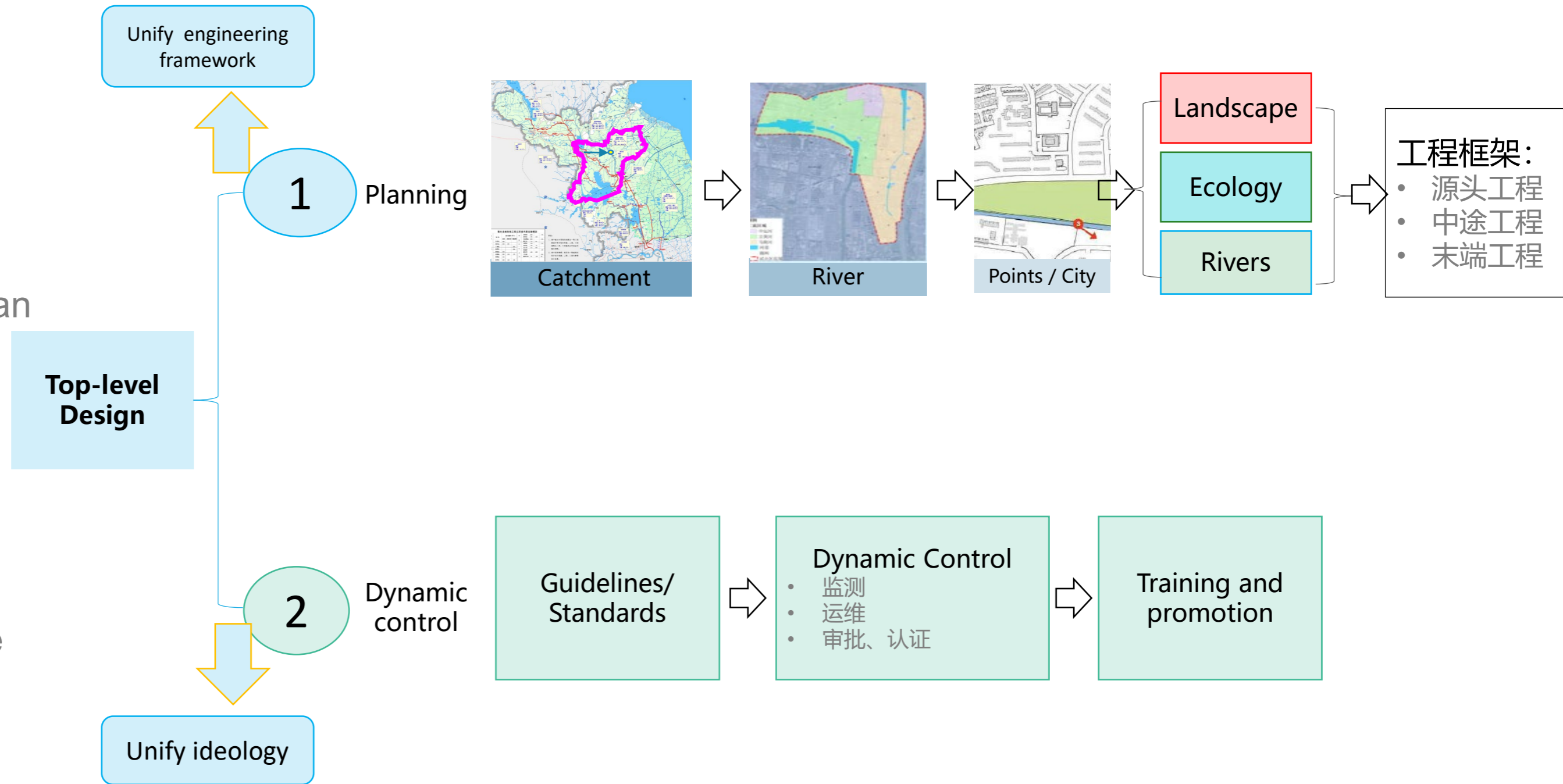
Difficulty of the construction of the project

- 部分小区已经改造完成，再行改造时施工影响
- 老城区居多，改造施工可能还面临民众的抵触情绪



1. From the planning level, coordinating with a hierarchical engineering planning framework from watershed level to an urban node.

2. Unify ideology, develop standards and guidelines ensure long-term effective capacity building.





Partition construction ideas

- **STEP1:** Problem goal dual orientation, determine the amount of water and water quality coupling goal in two zones
- **STEP2:** Determine the pollutant reduction amount and the total annual runoff control target
- **STEP3:** Make the source, process and end strategy in each zone
- **STEP4:** Determine specific projects of each land according to the construction conditions, objectives and strategies.
- **STEP5:** Target accessibility analysis by modelling tool etc.

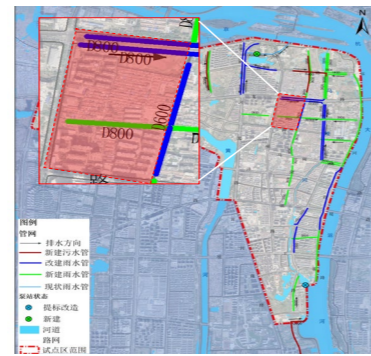
源头改造

- 根据地块建设方案类型, 确定源头改造重点
- 筛选建成5年以上, 同时内部具备改造空间的小区进行改造



过程控制

- 判断是否有雨污混接点、污水直排点等需要实施改造
- 结合污水处理提质增效、黑臭水体整治等同步新建雨污水管网

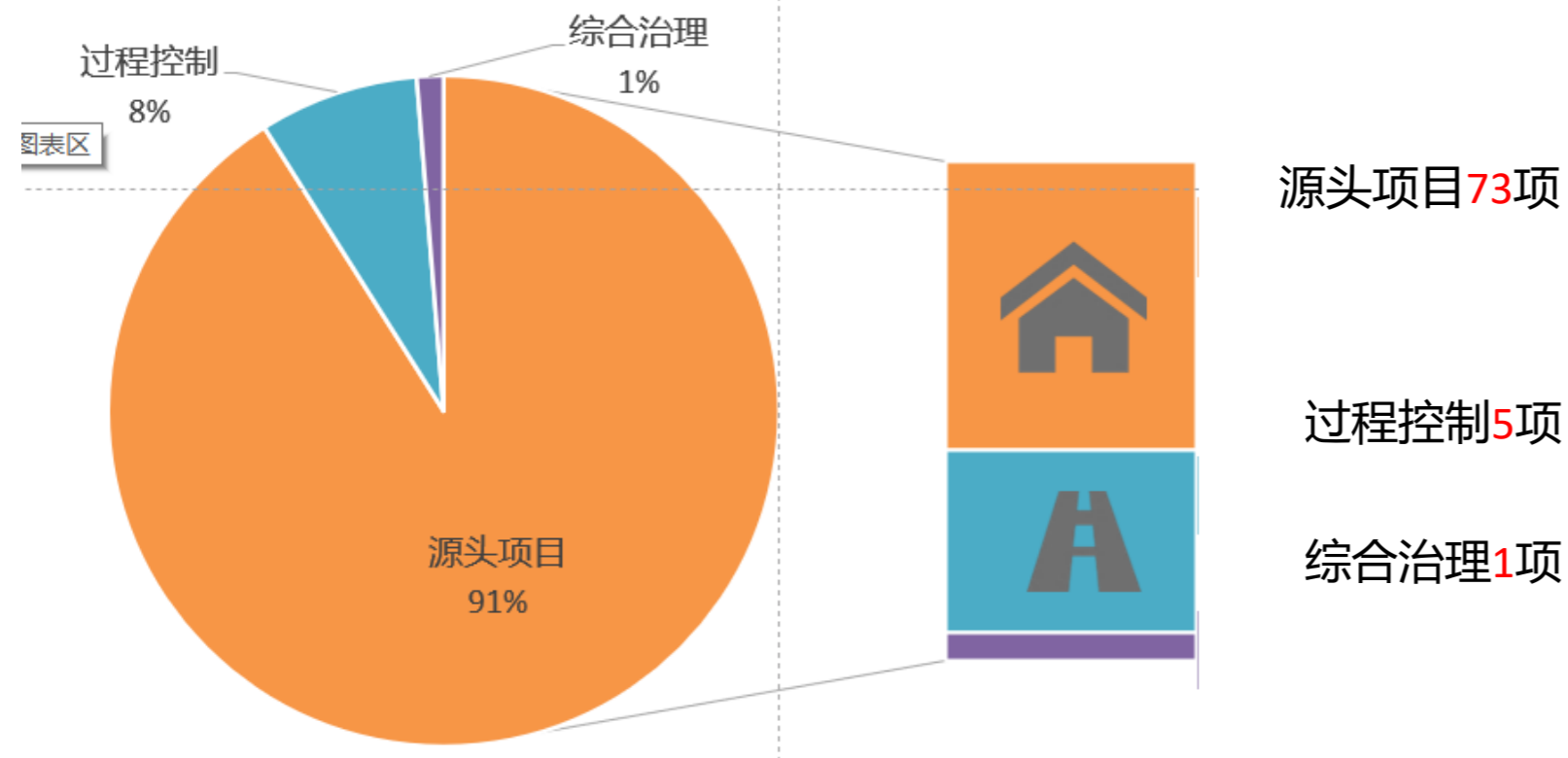


生态修复

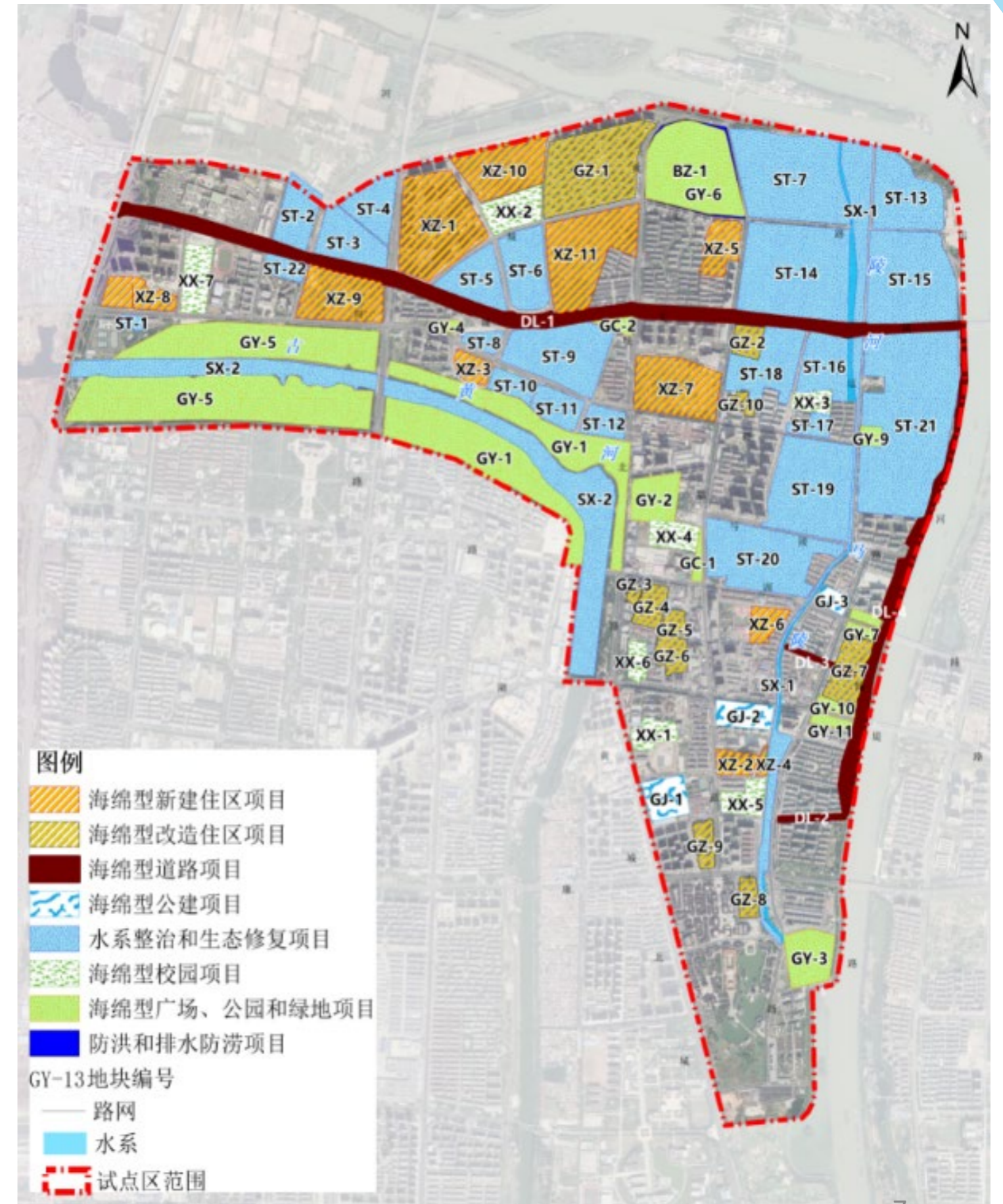
- 结合地块开发计划, 对已拆未建, 处于闲置状态的地块开展生态修复工程



79 projects in the pilot area , with a total investment of **650 million RMB**



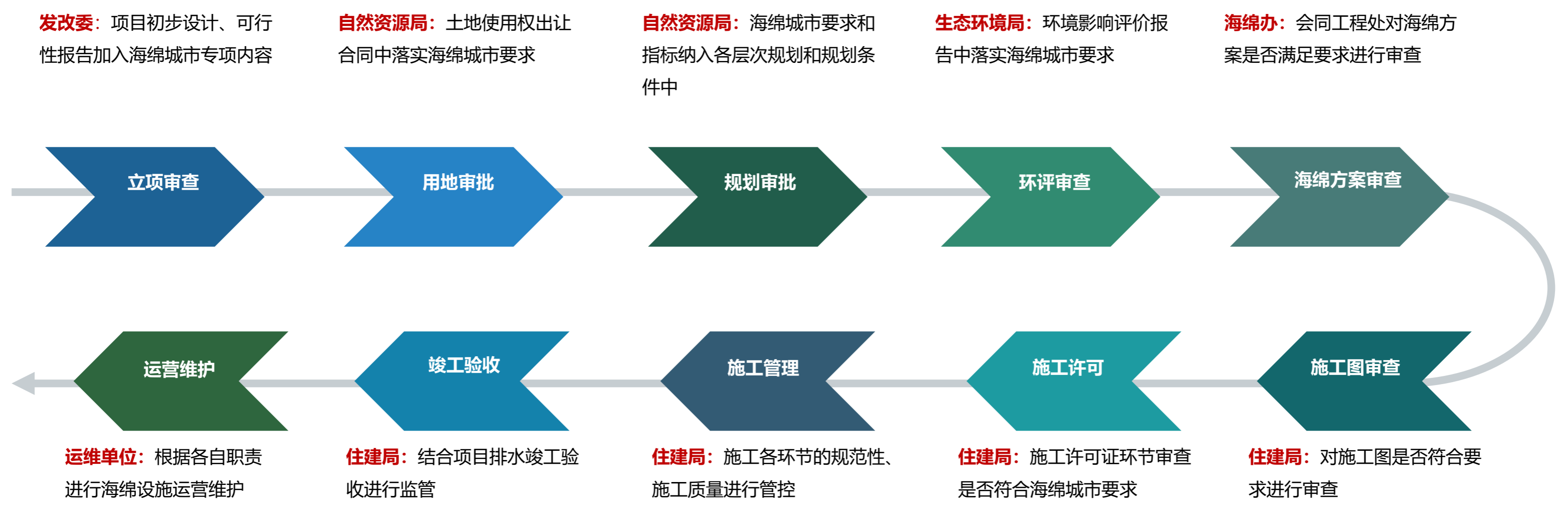
类别	新方案		
	原有项目	新增项目	合计
新建住区	1	13	14
改造住区	10	0	10
校园	6	1	7
道路	3	1	4
广场公园	12	1	13
其他	1	2	3
水系与生态修复	1	21	22
过程控制	0	5	5
综合治理	1	0	1
总计	35	44	79





Improve the implementation of relevant systems, implement the whole process of management and control

完善组织架构、项目方案和施工图审查、建设质量控制、竣工验收、督查考核、运行维护、资金保障等方面的制度文件



宿迁市海绵城市技术体系



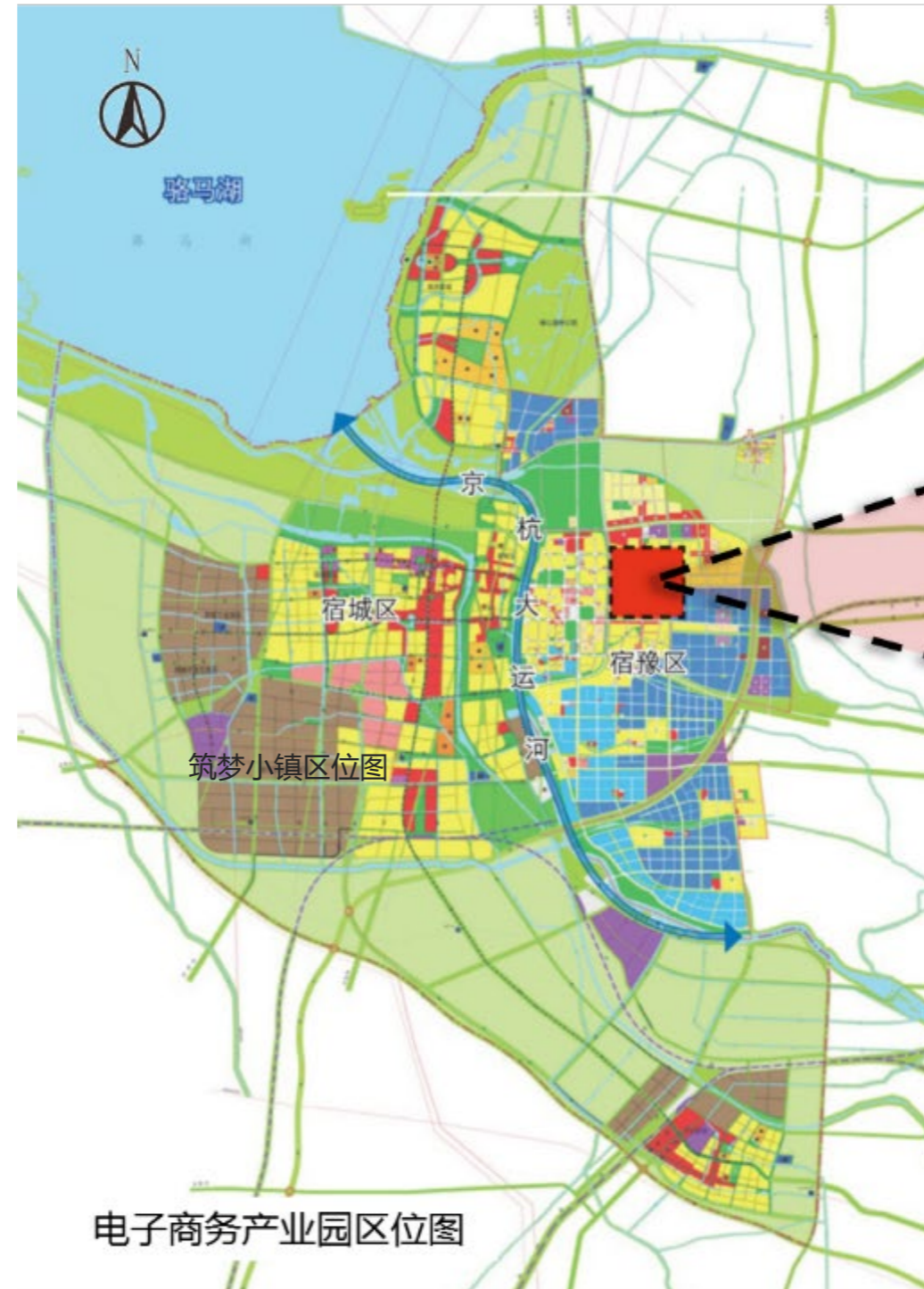
- 《市政府关于推进宿迁市海绵城市建设实施意见》
- 《宿迁市海绵城市建设各单位工作职责及流程》
- 《宿迁市海绵城市建设规划管理办法》
- 《关于规范宿迁市海绵城市施工验收管理办法的通知》
- 《宿迁市海绵城市建设专项补助资金管理办法》
- 《年度海绵城市项目建设计划表》
- 海绵城市建设自查及效果评估分析

Project Overview

The area is 24.2 hectares with a greening rate of approximately 38.9%, water surface rate is nearly 22.2%, Ecological conditions and sponge construction conditions are superior.



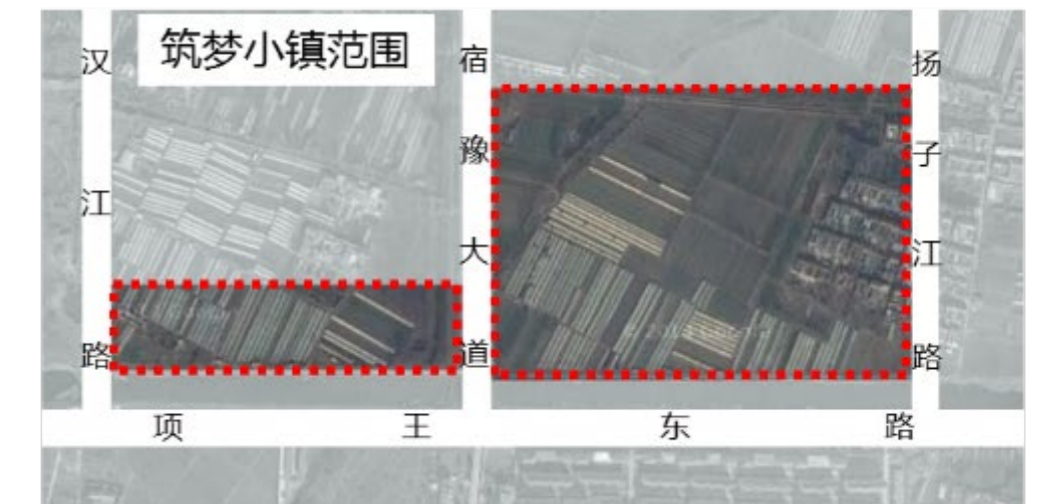
筑梦小镇景观总平面图



电子商务产业园区位图



电子商务产业园区范围



筑梦小镇范围

Construction strategy

➤ Mainly goal-oriented, supplemented by problem-oriented

- Use landscape highlights
- Adopt suitable technology
- Fit the urban landscape
- Sponge demonstration education
- Use multi-method rainwater treatment combination unit
- Runoff pollution control of rainwater discharge



筑梦小镇鸟瞰图

宿迁筑梦小镇海绵策略

以目标为导向

以问题为导向

利用景观突出显示度

采用适宜海绵技术

贴合城市景观品味

海绵示范教育宣传

采用多手段的雨水处理组合单元

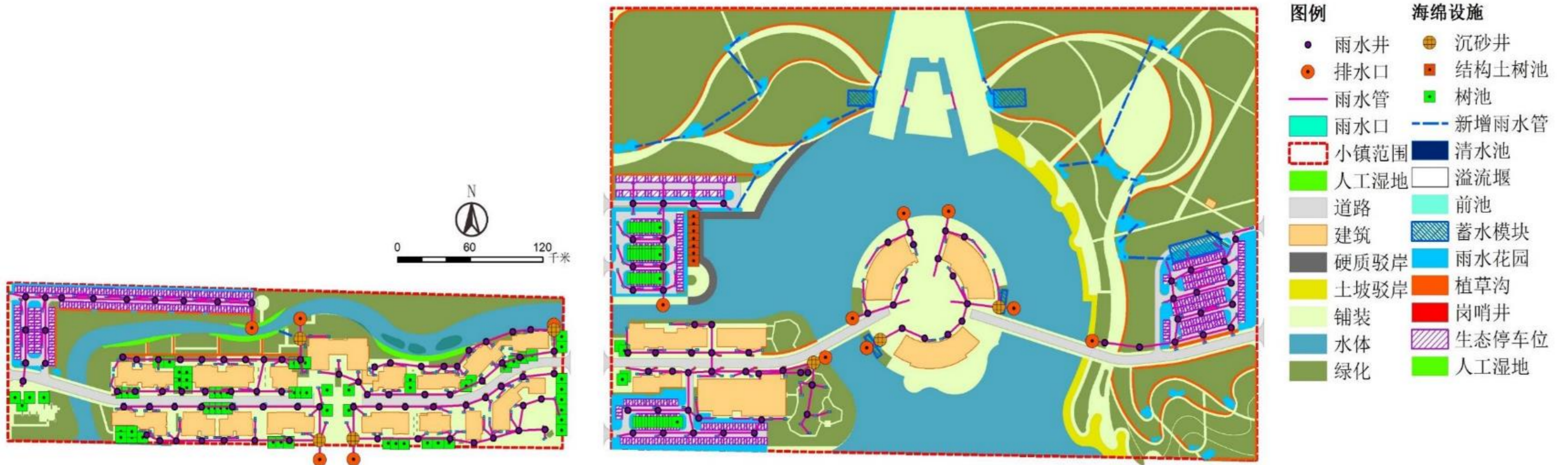
雨水排口径流污染控制

筑梦小镇建设策略框架

筑梦小镇作为宿迁海绵城市建设的典范，尤其体现在理念国际化，设施先进化，技术多样化这三方面。通过引进澳洲，新西兰等发达国家的低影响开发案例的实际经验和产品，打造全国标志性海绵建设示范基地。根据场地分析结果，并综合考虑场地下垫面分布特性、建筑及管网分布情况、绿地和景观水体分布情况等，除了选用雨水花园、植草沟、生态树池、生态停车位等传统海绵设施外，还选用了岗哨井、拱形调蓄设施等新型工艺产品作为雨水处理主要设施。

Floor plan

Besides rain garden, bioswale, ecological tree pool, ecological parking lots and other traditional sponge facilities, **sentinel pit, rotational flow sand well, vaulted storage facilities** and other main of new technology products are also choosing as water treatment facilities.



筑梦小镇海绵设施平面布置图



Rainwater harvesting pool construction



Bioswale construction



Rain garden construction

Construction effectiveness

The water displacement outside the town was effectively controlled and the pollution of the non-point sources pollution of rainwater was effectively reduced.



雨水花园实景图



下凹式绿地实景图



岗哨井实景图



人工湿地实景图



筑梦小镇远景图



生态树池实景图



植草沟实景图

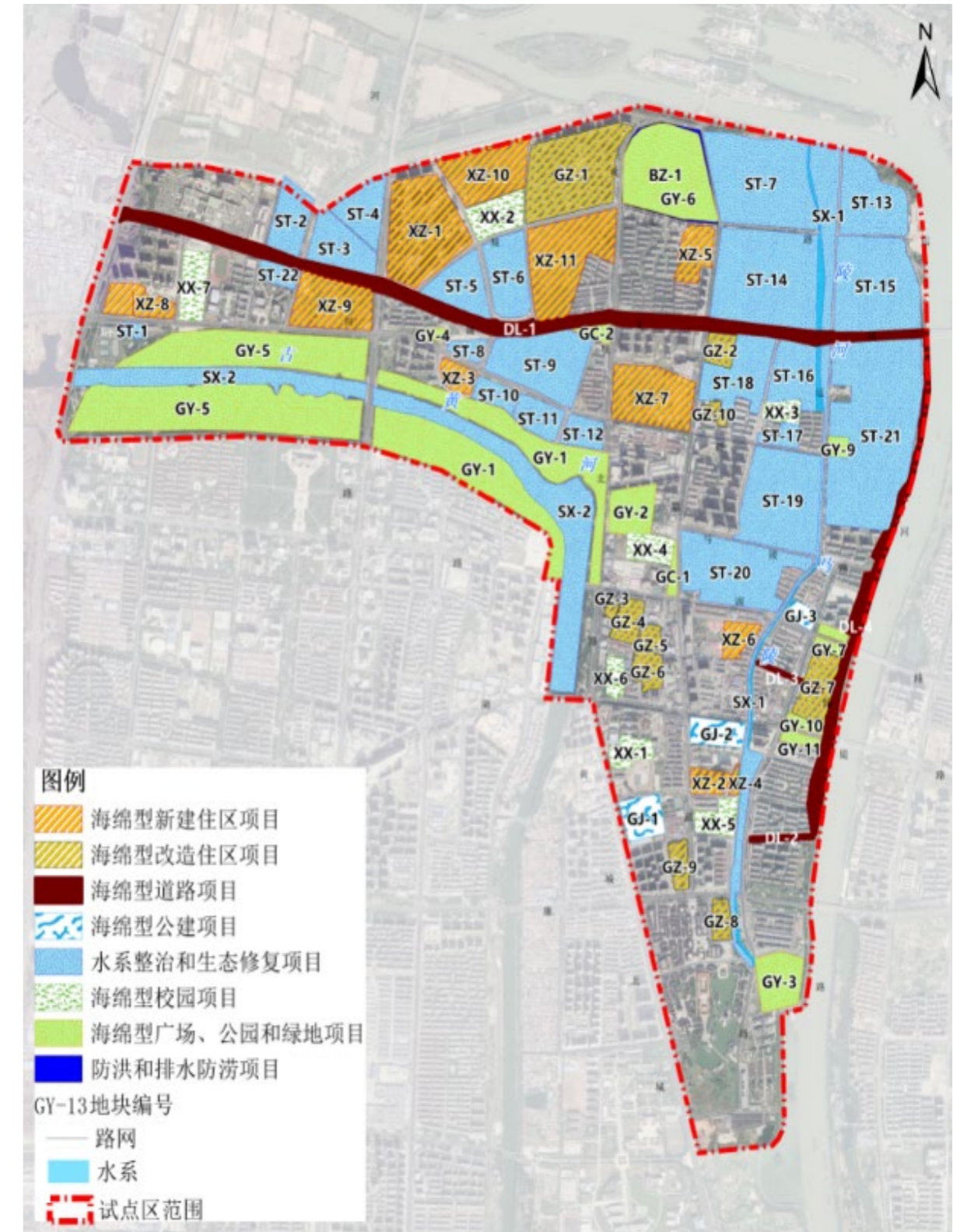
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Project Background

- Important drainage channel
- 5.2 km long, 11.6 km² of water catchment area
- Population 138,500
- Black-odor river water body state for a long time, At the beginning, after 7 rounds of treatment, it was still in black-odor state. The eighth round of treatment was launched in 2014, which lasted 3 years. The environment has been completely improved, and public satisfaction has reached 97.7%.



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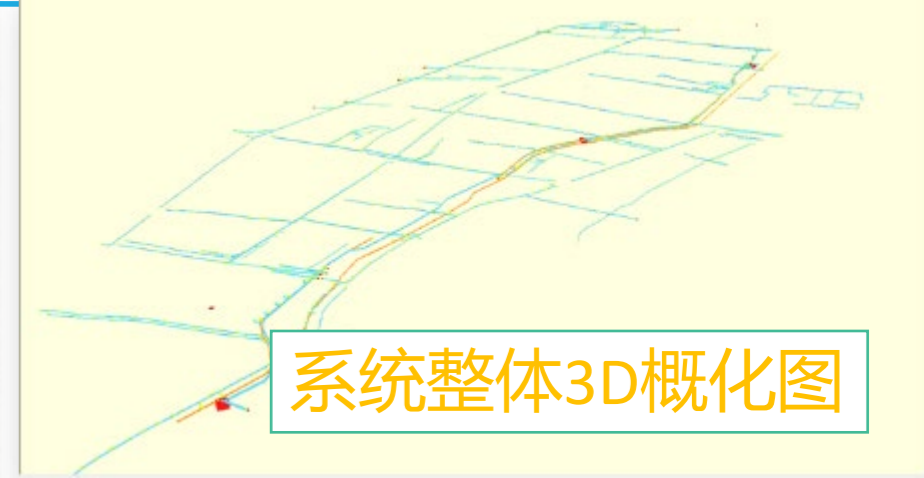


- Urban stream with CSO and SW overflows
- Measures include SW sponge facilities at source, CSO control, 3 SW Storage Tanks, new interceptor
- 概化雨污水节点1362个, 雨污水管道1320条 (段), 污水截流井23处, 截流堰23处、调蓄池3个。

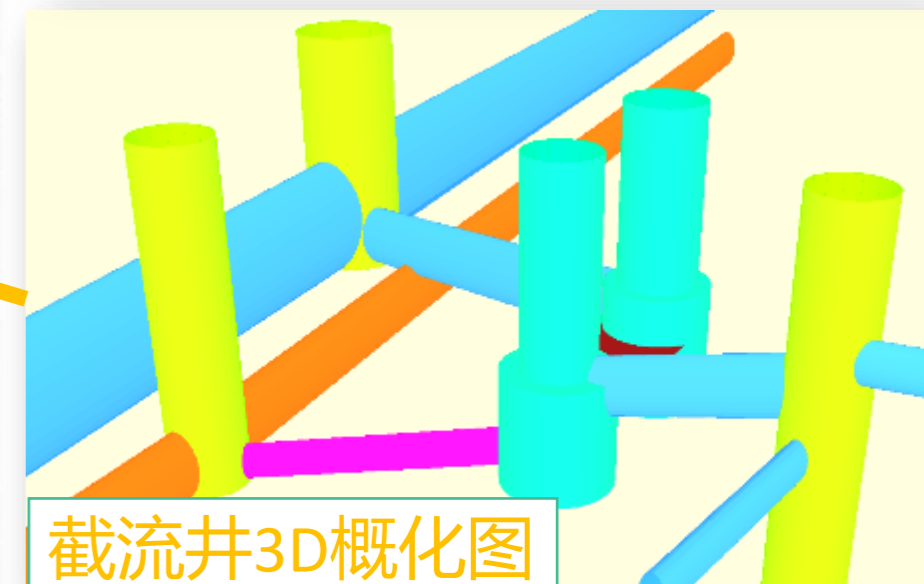
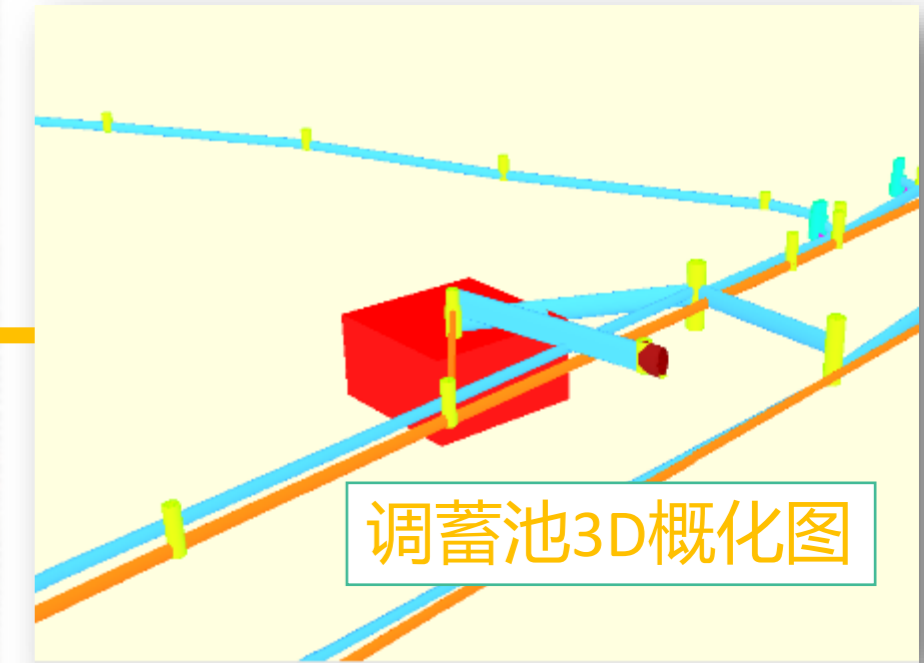
系统平面概化图



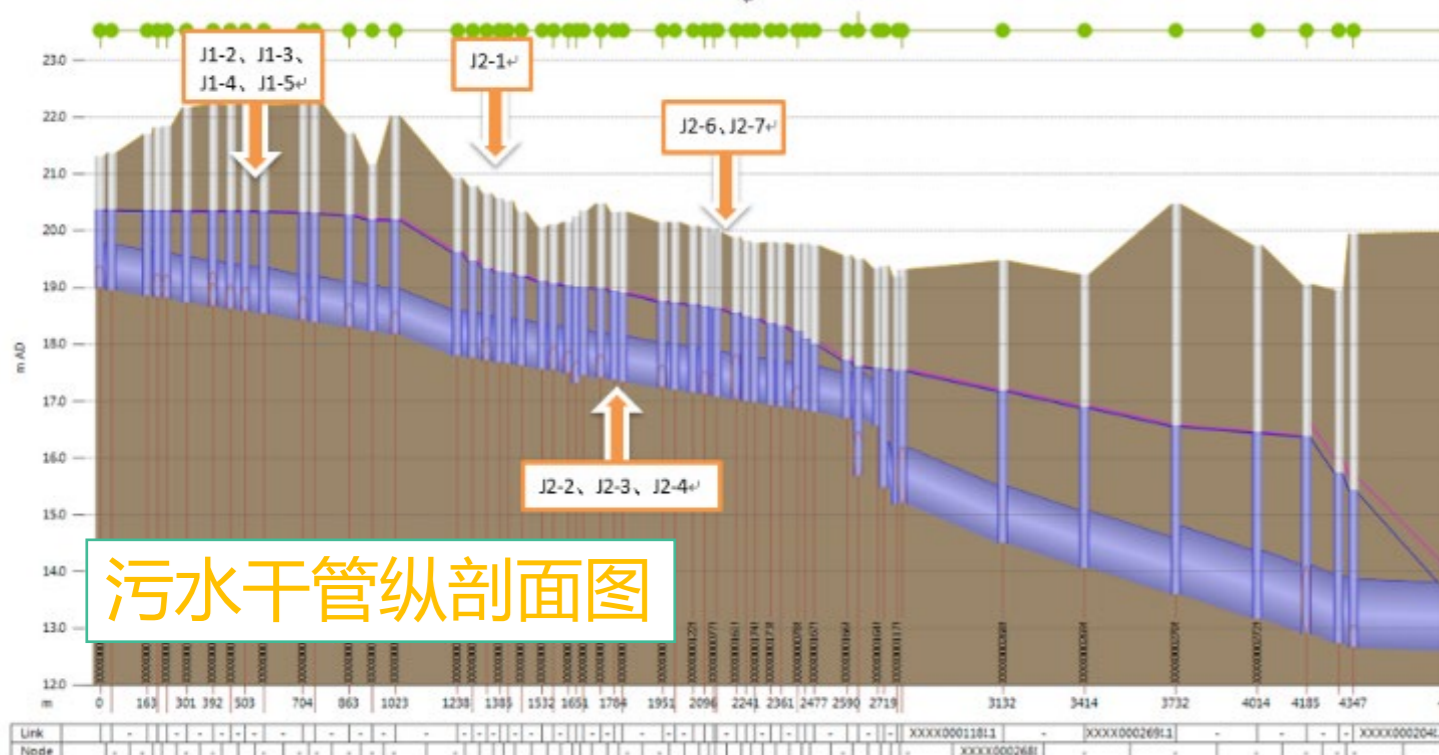
系统整体3D概化图



调蓄池3D概化图



截流井3D概化图



污水干管纵剖面图

River length: 5.2km; catchment area: 11.6km²



船型广场

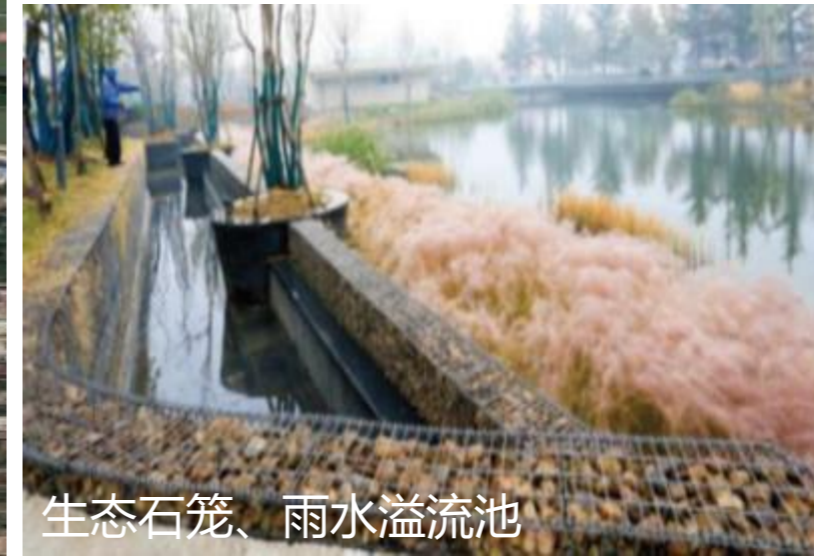


雨打芭蕉中式庭院



心连心广场

最终将水环境治理与海绵手法的应用



生态石笼、雨水溢流池



透水铺装



生态回游通道



道路下凹绿地

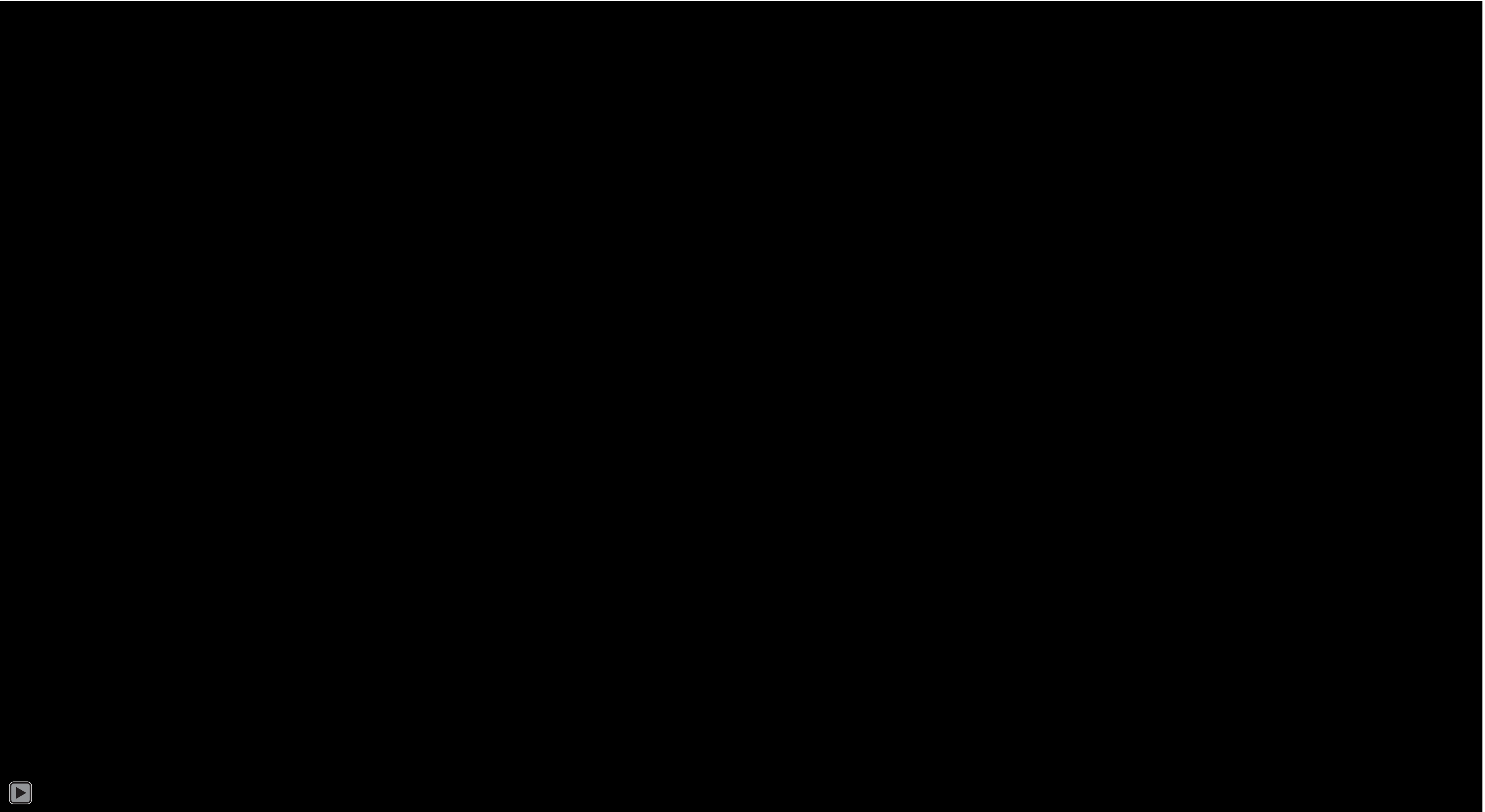


植草沟



生态浮岛

Maling River smart real time monitoring system





Thank You

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