Multi-stakeholder Governance in Urban Flood Risk Management: Institutional Mechanisms and Collaborative Frameworks in the Tomoegawa River Basin, Japan

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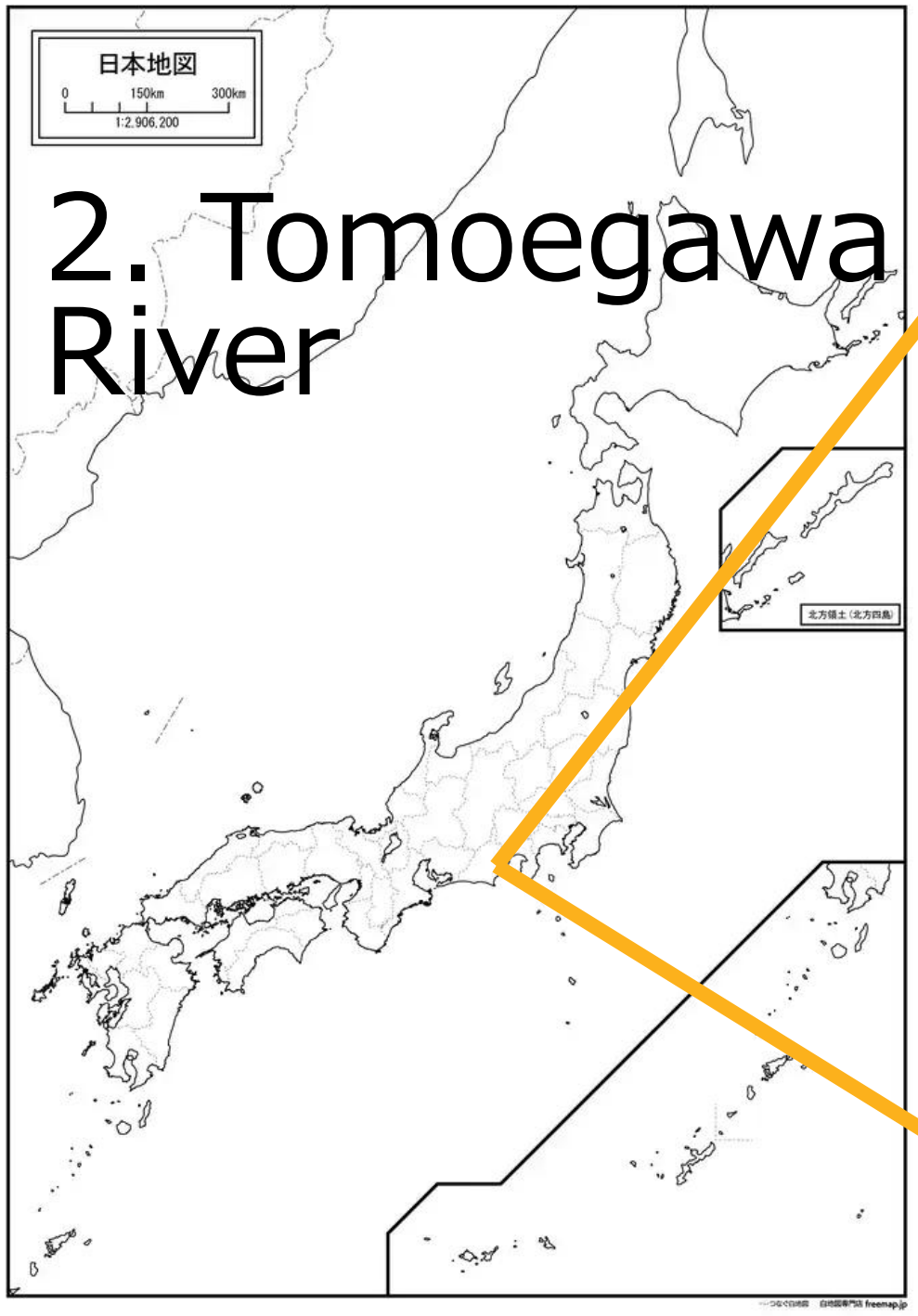
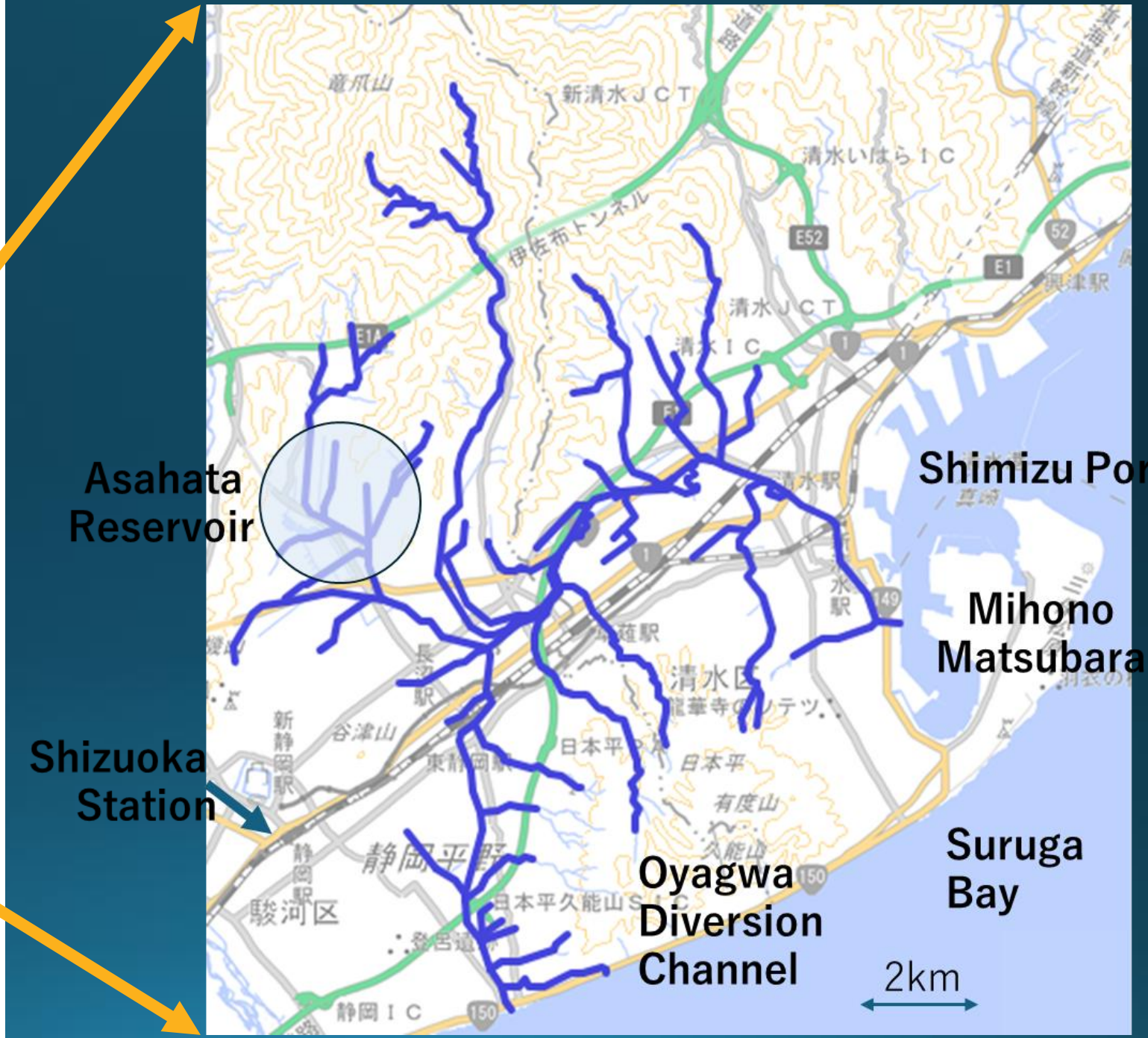
1. Background and purpose

- Transdisciplinary Approaches to Urban Flood Risk and Green Infrastructure
- Aims to propose policies and approaches of managing multi-purpose infrastructure
- Review on project documents, government reports and literature; field visits; and interviews to government and civil society organization

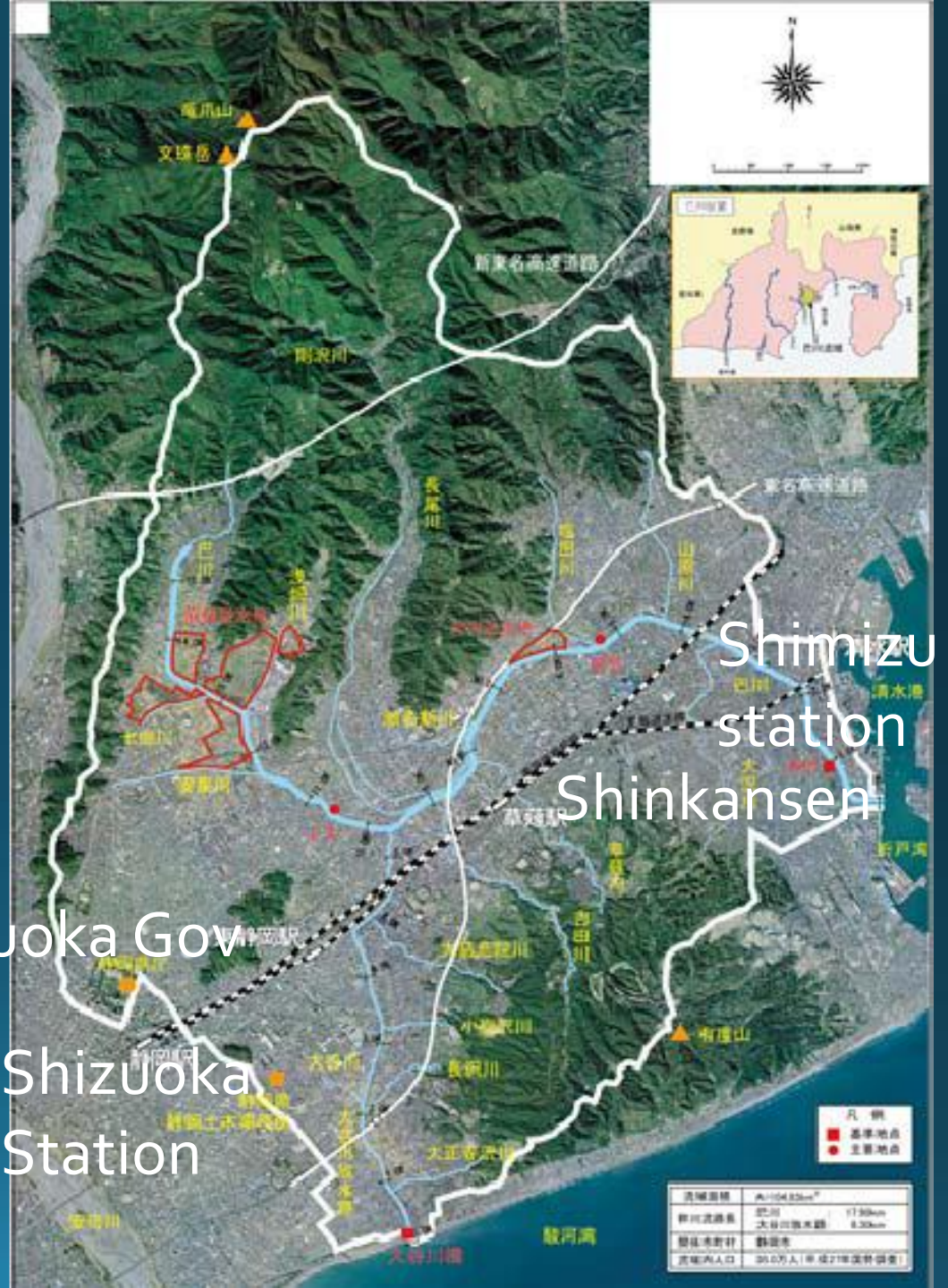
2. Tomoegawa River





Tomoegawa River

- River basin area 104.8km2
- Channel 17.98km
- In Shizuoka City
- Tomoe “巴”



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Shimizu Port

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わらを

くり、

まく使って、

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洪水に悩まされる

緩勾配の本川低地と崩壊しやすい山地の

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1974 flood
Tanabata flood 七夕洪水

Causality
27

Flooded
26,000
houses

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x.com/wizdy/status/1015428294596964352/photo/1

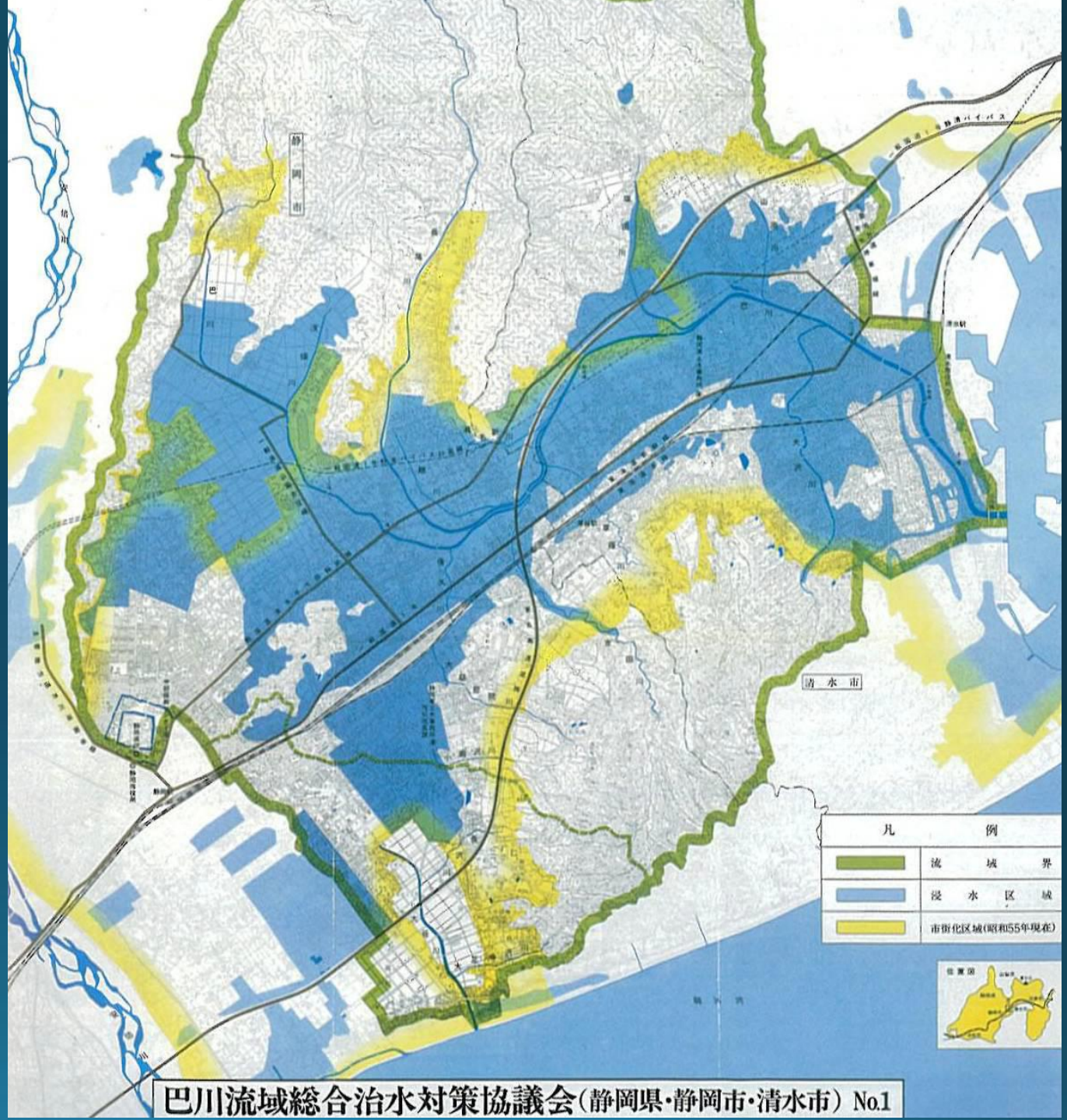
마루코는
아홉살
ちびまる子ちゃん

- Damage

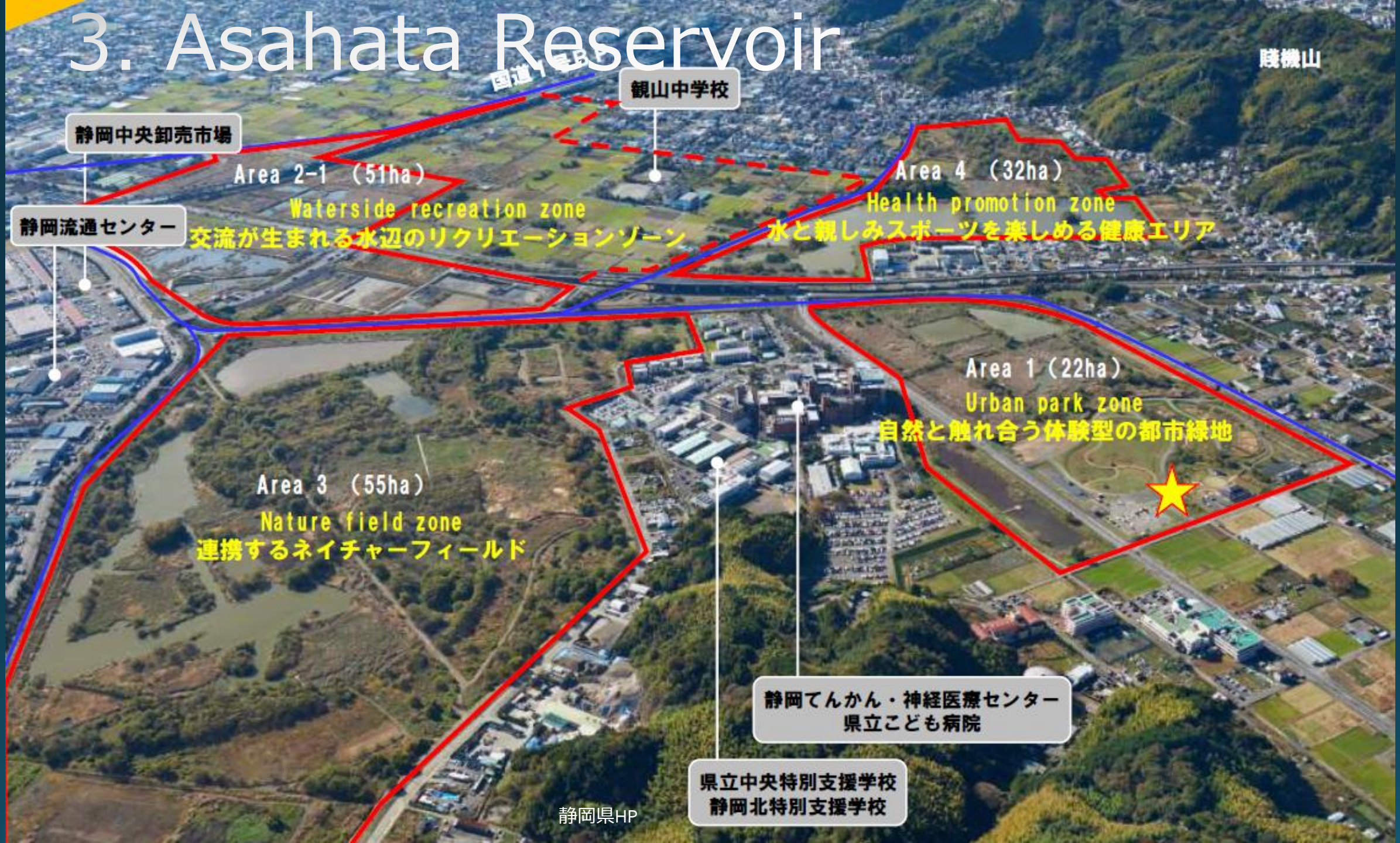
4.3 billion JPY (2015 price

- Flooded area

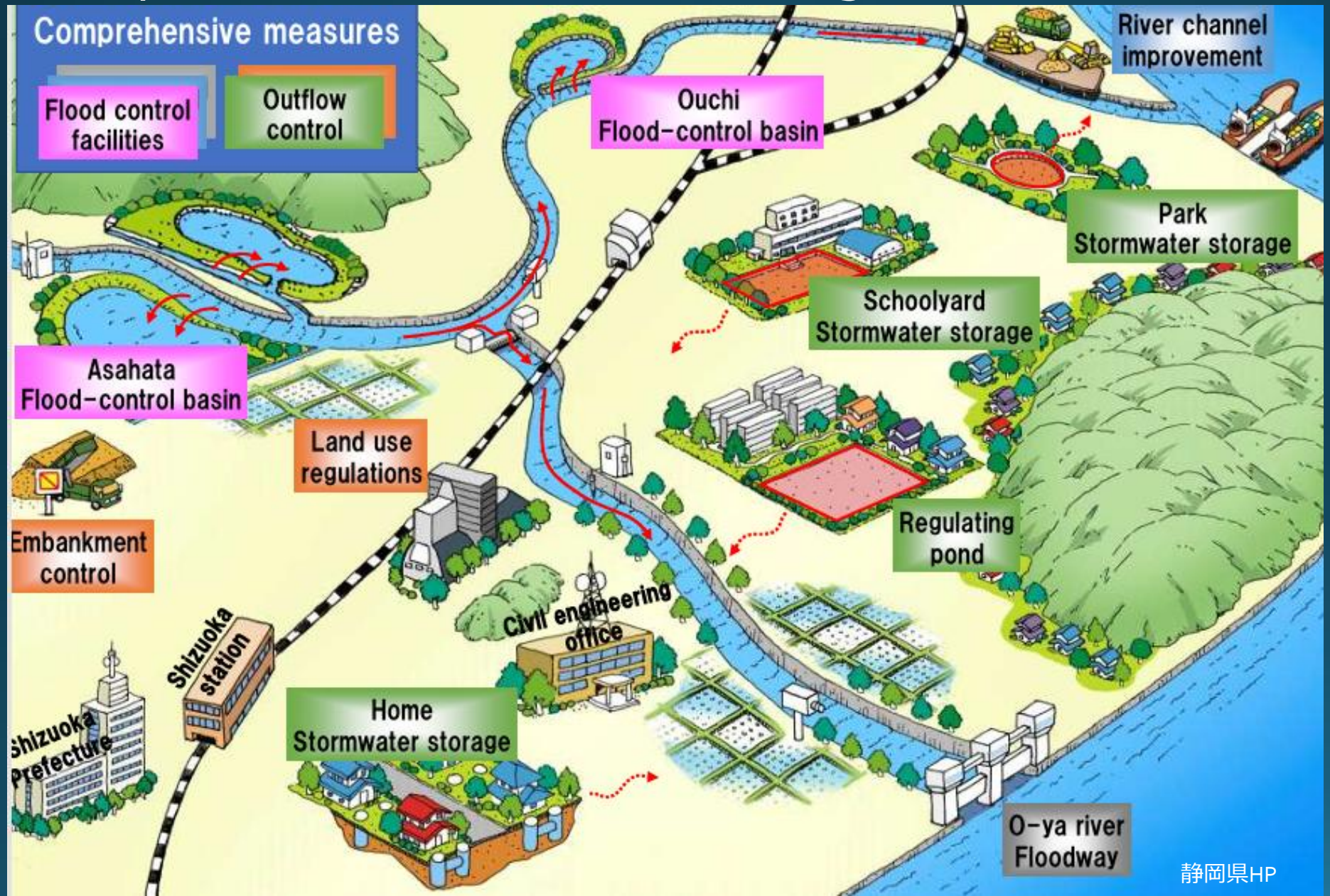
26km2



3. Asahata Reservoir



Comprehensive flood risk management



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1889

Mash land
Developed
as
paddy fields

図 1-8.明治 22 年に公表された最初の地図
出典：上土誌

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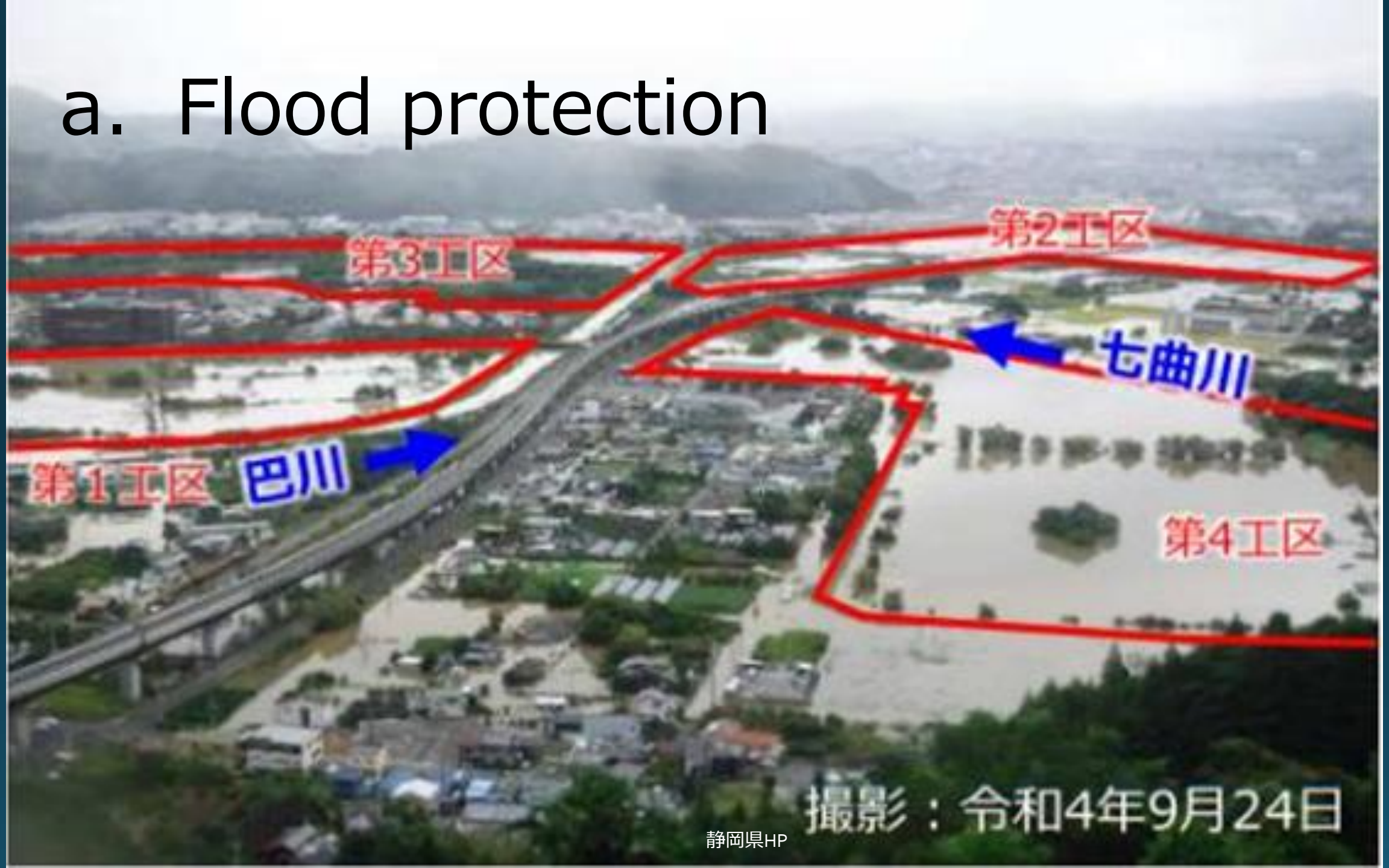
Asahata Reservoir

Table 1 History of project area	
Before 17 C	Originally mash
From 17 C	Developed paddy fields
1960s	Paddy field modernization
1974	Heavy rainfall
1975	Reservoir works started
2004	Natural Restoration Council established
2021	Green space constructed
Source: Authors	

- 3.5 million m^3
- 200 ha
- Construction cost spent: 70billion JPY

a. Flood protection



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b. Ecological restoration

- "Wetland 500" important wetlands by Env. Ministry in 2001
- 21 endangered plant species
- seeds preserved in existing soil
- 214 species of wild bird, including KONOTORI
- MIZU AOI

https://commons.wikimedia.org/wiki/File:Monochoria_korsakowii_5.JPG

c. Asahata Green Space, 2021

residents to access recreational experiences within reservoir complex

39,000 visitors in 2023

- play equipment for children
- open fields for sports and gatherings
- agricultural demonstration areas
- streams for educational and aesthetic purposes

https://asahata-gp.com/

Culture transfer to next generation “Shibage Fishing” technique

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d. Inclusive social services

- near medical, educational, and well-fare facilities
  - outdoor therapy
  - rehabilitation activities
  - mental health support
- Vocational training for skill development in agriculture, handicrafts, recycling, and data management

e. Governance

2004, Nature Restoration Council

- 7 academic researchers
- 8 government offices
- 88 organizations
- 32 individual members

Sub-commitees

- Nature Restoration Subcommittee: nature restoration and conservation, observation events
- Regional Revitalization Subcommittee: traditional fishing methods to preserve local culture
- Bethel Subcommittee: therapeutic landscape benefits for healthcare institutions and vulnerable populations

- JPY 200,000 for each activity
- In 2023, nine organizations received 1.5 million JPY, some 10,000 USD
- Prefecture and city governments cover 7 million JPY, some 47,000 USD, equally for council budgets.

- Supporter Programme launched in 2023
- requests from park users wanted to volunteer
- ecological surveys and park maintenance,
- number increased from 60 to 95.

4. Discussion and conclusion

Asahata Reservoir demonstrates feasibility of multipurpose green infrastructure for flood protection with environmental and social objectives in urban area

1. Flood–Nature Integration

✓not compromised flood protection. diverse wildlife populations and ecosystem services

✓Excavation works increasing flood capacity revived endangered species whose seeds remained buried in soil

✓grass cutting and soil tilling, prevent sediment deposition and forest encroachment, thereby ensuring flood storage capacity

2. Social inclusion

collaboration between healthcare providers, educators, social workers, and environmental managers

mental health and physical wellbeing benefits associated with access to urban green spaces, particularly for elderly and disabled people

3. Transdisciplinary governance

- organizational subsidies, volunteer contributions, and government financial support
- Governments, civil society organizations, educational institutions, healthcare facilities, local residents
- community support for long-term sustainability

Thank you very much
Arigato
감사합니다

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