Relocation and Land Usage at Tsunami Disaster Area ～ Case of Ofunato City of Iwate ～

Policy Research Institute for
Land, Infrastructure, Transport and Tourism

1. Overview of Ofunato City

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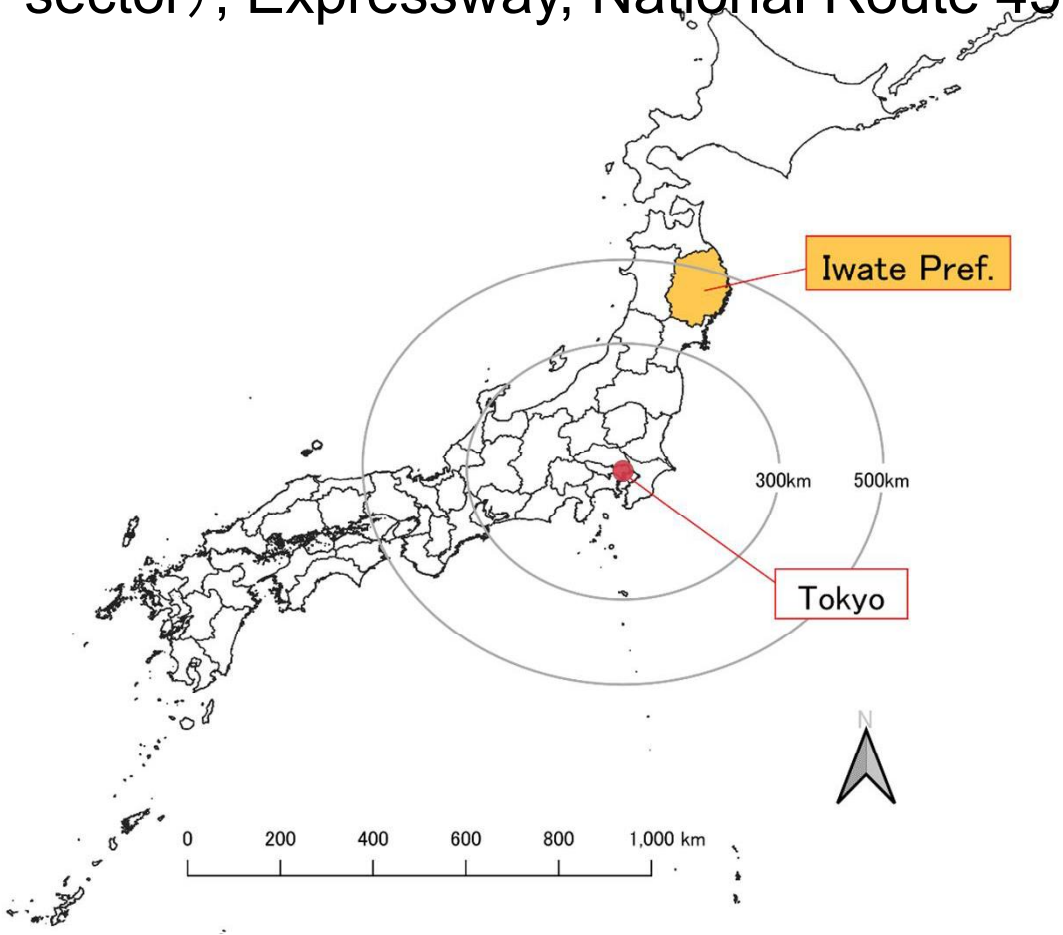
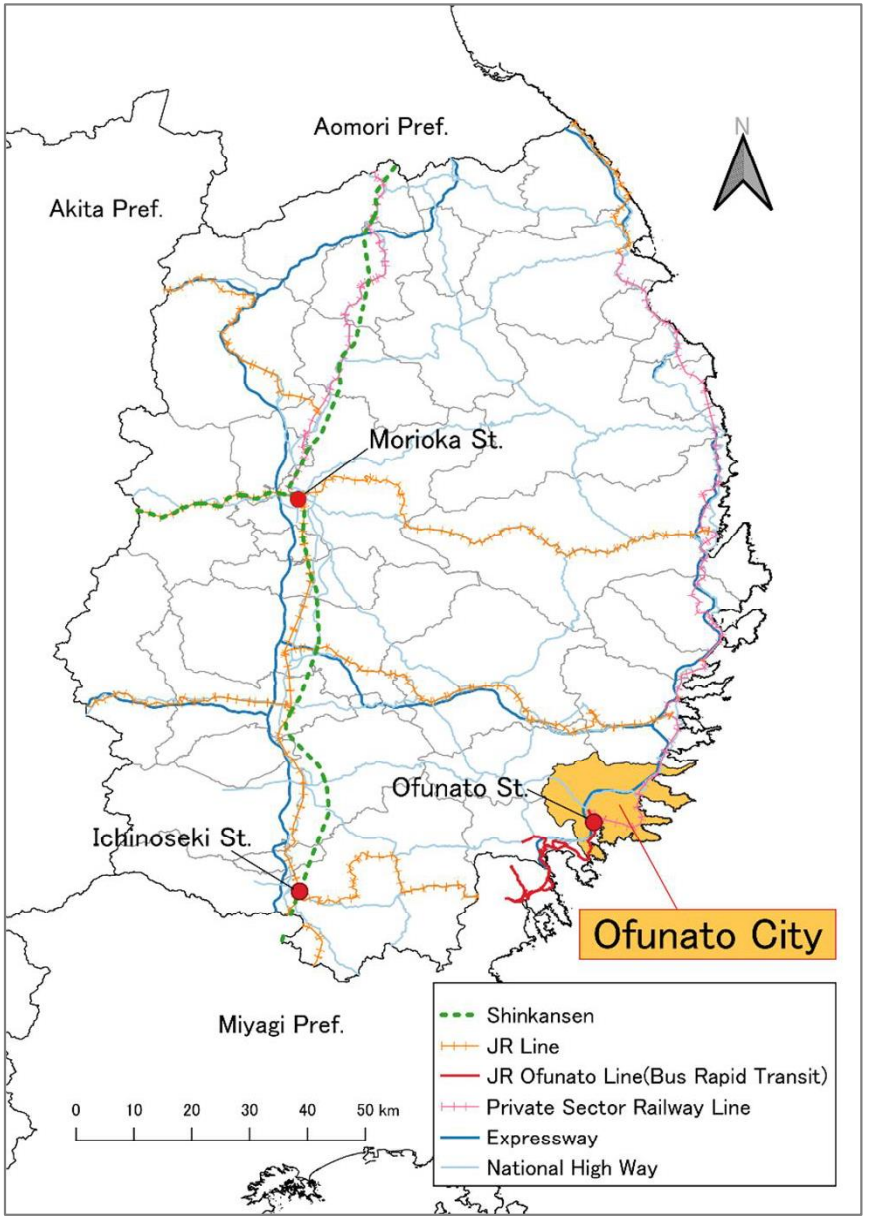
- Located at southeast of Iwate Prefecture, about 400km away from Tokyo
- Major transportation of the city:
  JR Ofunato Line（Bus Rapid Transit), Sanriku Railway South Rias Line（private sector）, Expressway, National Route 45





Source: MLIT digital national land information

1. Overview of Ofunato City

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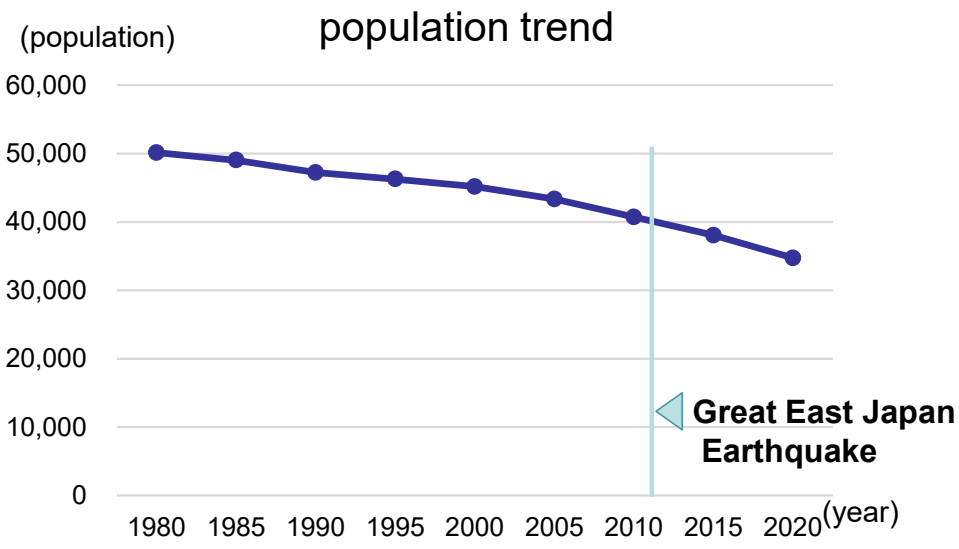
- Population：32,302
  (registered resident as of June 2024)
- Area：322.51k㎡
- Industry：Fishery and Marine Products Processing, Cement Manufacturing, etc.

- Due to complex topography with many mountainous areas, few inhabitable lands.
- Urban areas have been developed on the coastal lowlands and riverside

➢ Prior to the disaster, population has been decreasing and such trend continues after the disaster.



Source: Census

View of the city from above Ofunato Bay (by Ofunato City)

2. Disaster by Great East Japan Earthquake

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- Due to Tsunami caused by Great East Japan Earthquake in March 2011, quite a number of coastal districts are suffered from tremendous damage.

Source: Ofunato City – Record of Great East Japan Earthquake

3. Reconstruction from Great East Japan Earthquake

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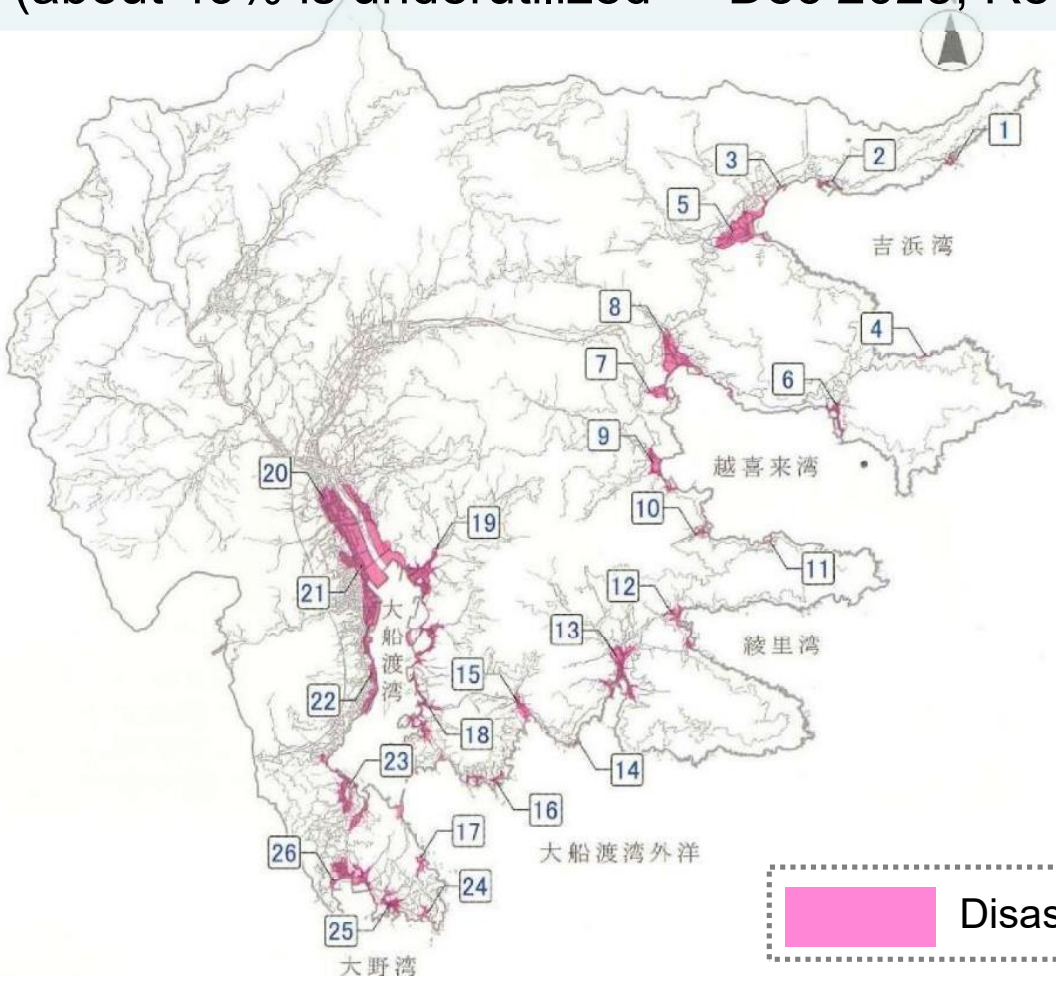
3-a. RELOCATION: Residential sites were relocated to higher ground, while securing safety by seawall.

3-b. LAND USAGE: Relocation Promotion Area (Disaster Area) are being used for industrial purposes to attract business, and currently, it is being utilized for agricultural facilities, fishery facilities, and green open space.
(about 49% is underutilized - Dec 2023, Reconstruction Agency HP)



※ After the earthquake, 26 areas were designated as Disaster Risk Areas, based on inundation simulations of a tsunami caused by one of the largest earthquakes ever recorded.

Disaster Risk Areas

Source: Dec 2014 Ofunato City Public Relation document

Disaster Risk Areas

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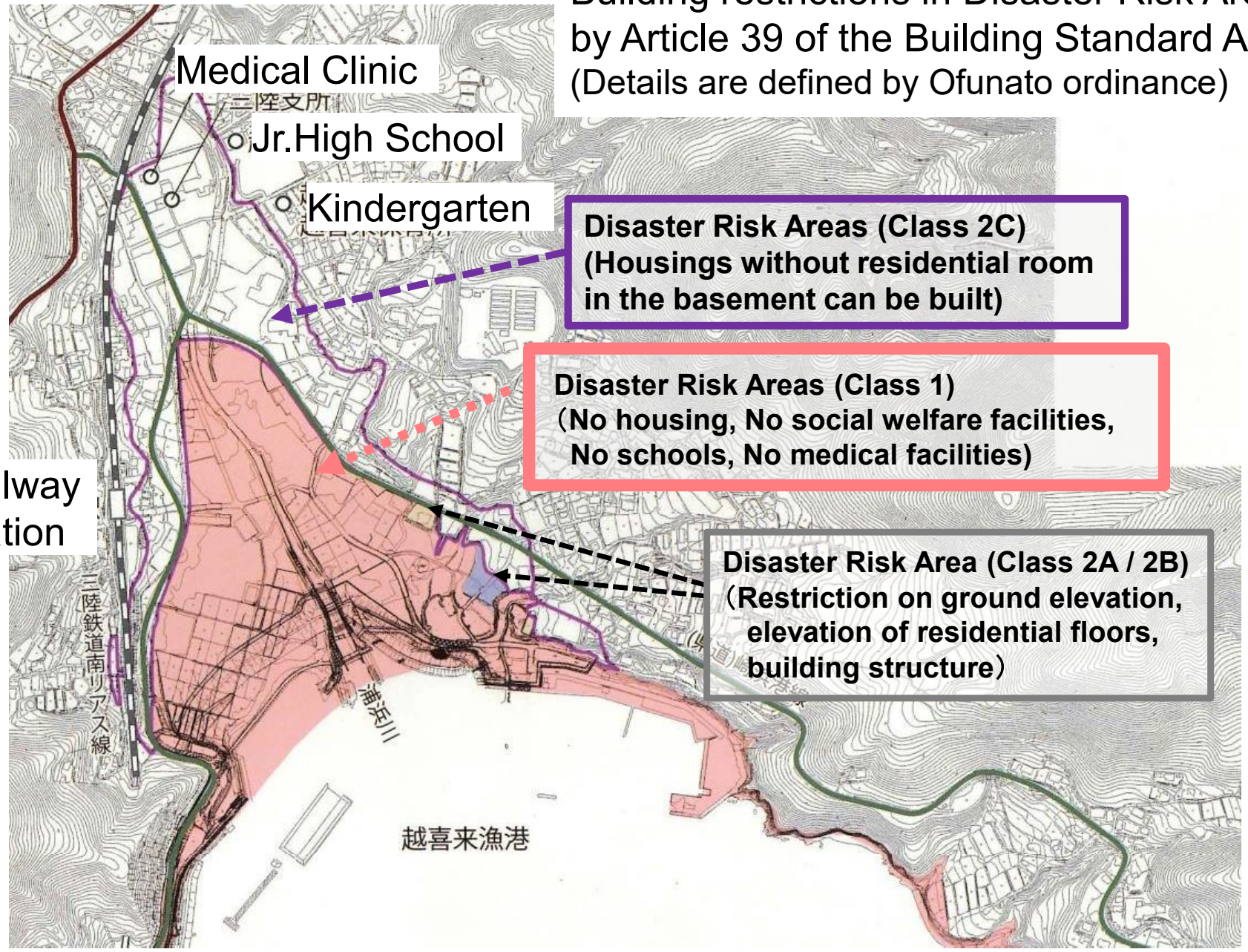
Building restrictions in Disaster Risk Areas by Article 39 of the Building Standard Act
(Details are defined by Ofunato ordinance)



Disaster Risk Areas (Class 2C)
(Housings without residential room in the basement can be built)

Disaster Risk Areas (Class 1)
（No housing, No social welfare facilities, No schools, No medical facilities)

Disaster Risk Area (Class 2A / 2B)
（Restriction on ground elevation, elevation of residential floors, building structure）

Source: modified “Monthly Ofunato” Dec. 2014

3-a. Residence Relocation to Higher Ground

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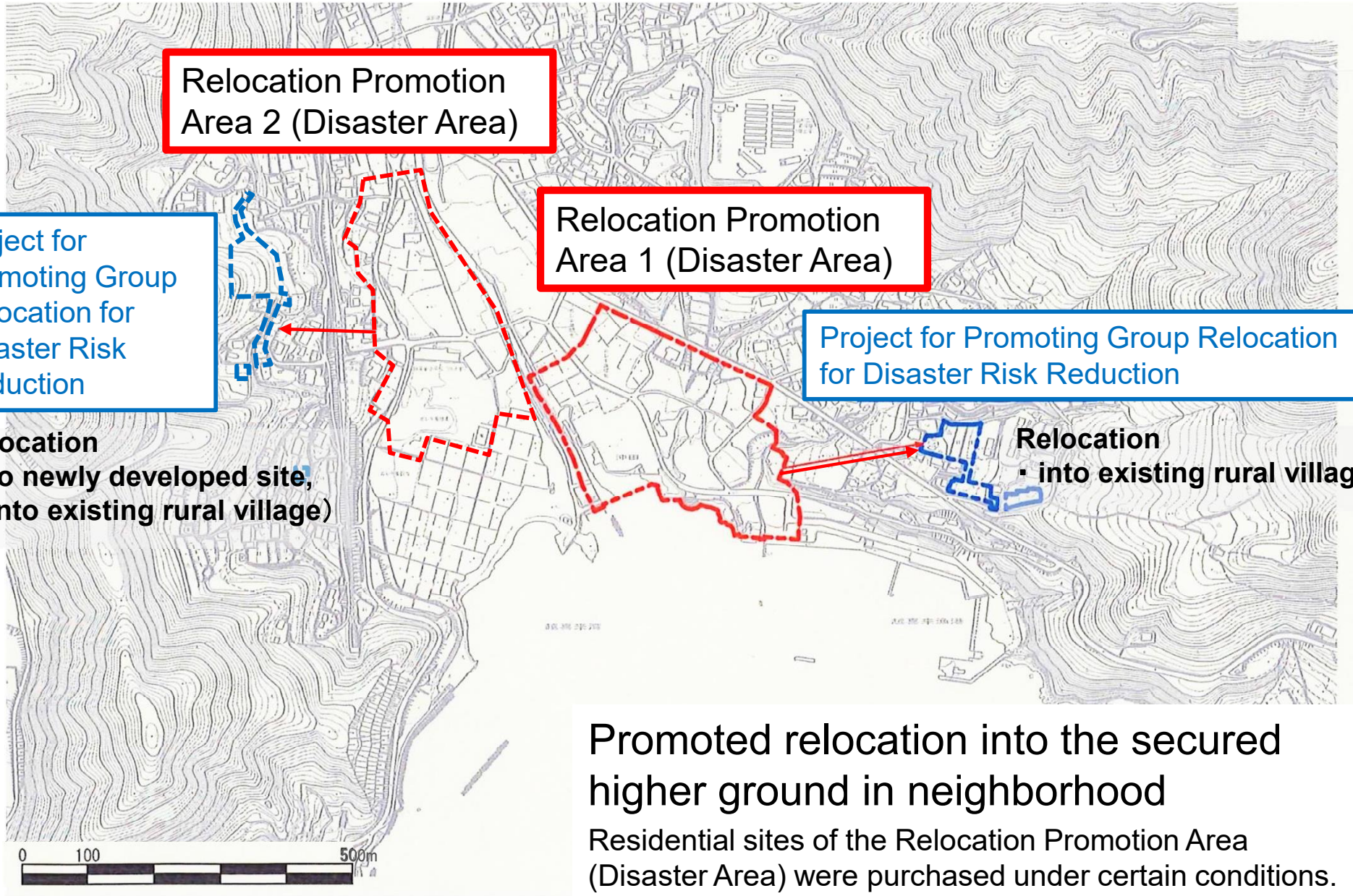

Promoted relocation into the secured higher ground in neighborhood

Residential sites of the Relocation Promotion Area (Disaster Area) were purchased under certain conditions.

Source: modified Ofunato City document

3-a. Relocation into Existing Rural Villages at Higher Land

※ Some districts newly developed relocation site.

- Agricultural land and miscellaneous land around existing residence are secured for relocation and housing sites are developed.
- Compared to securing a new higher ground relocation site, land development costs were reduced, and the construction period was shortened.
- By considering relocation sites within the same district, the existing community is maintained.

3-b. Land Usage of Disaster Area

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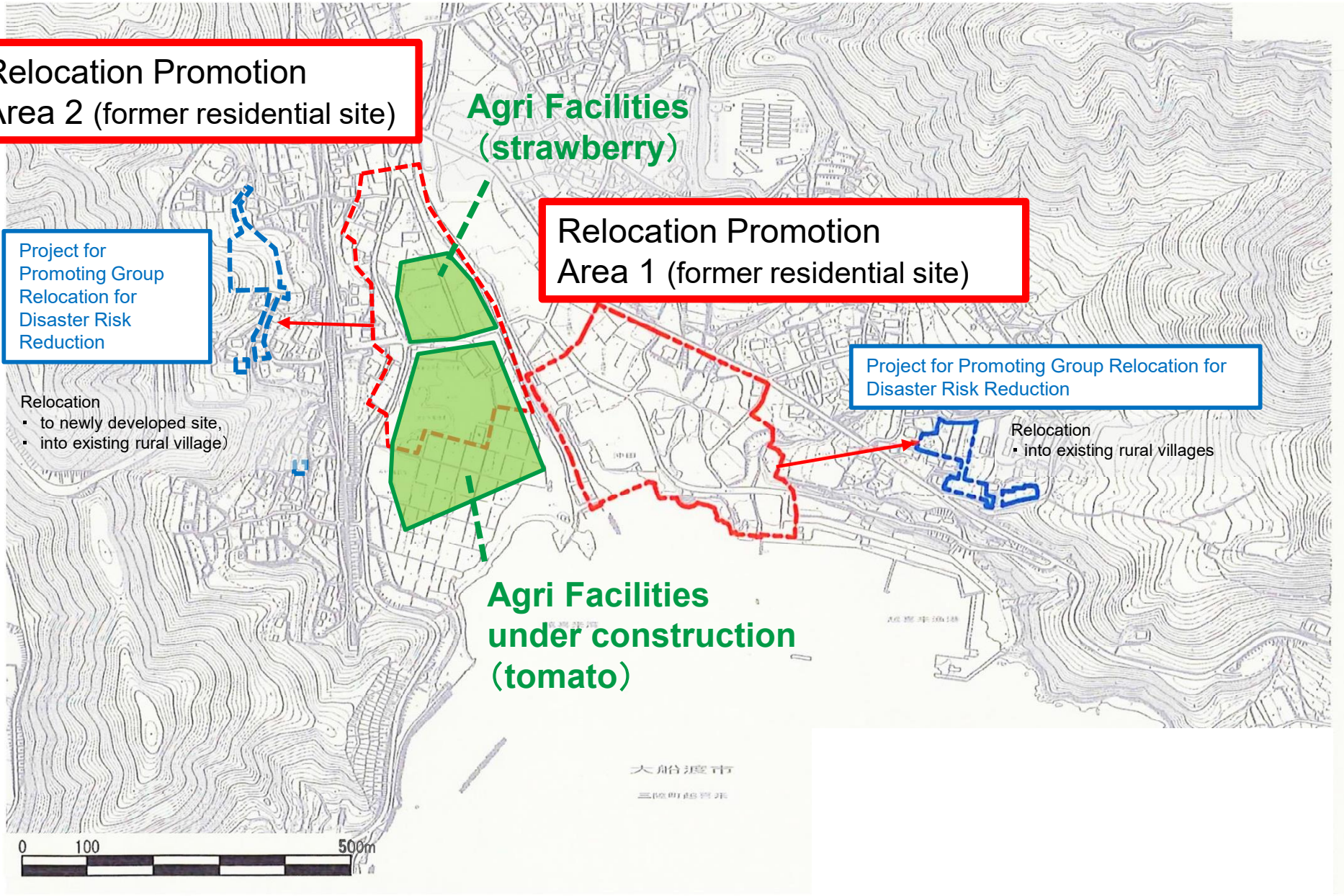

Source: modified Ofunato City document

3-b. Land Usage of Disaster Area

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The disaster area and the adjacent private land are being developed together as an industrial site and leased by the city to the company at a low cost through a 30-year fixed-term land lease.

Strawberry cultivation facilities were constructed in 2020, and profitable “summer strawberry” cultivar is grown year-round.

Strawberry cultivation facilities

Another company plans to construct a tomato cultivation facility.
(The company cultivates tomatoes in the disaster area.)

Land for tomato cultivation facilities

Appendix

1. Topography of Ofunato City

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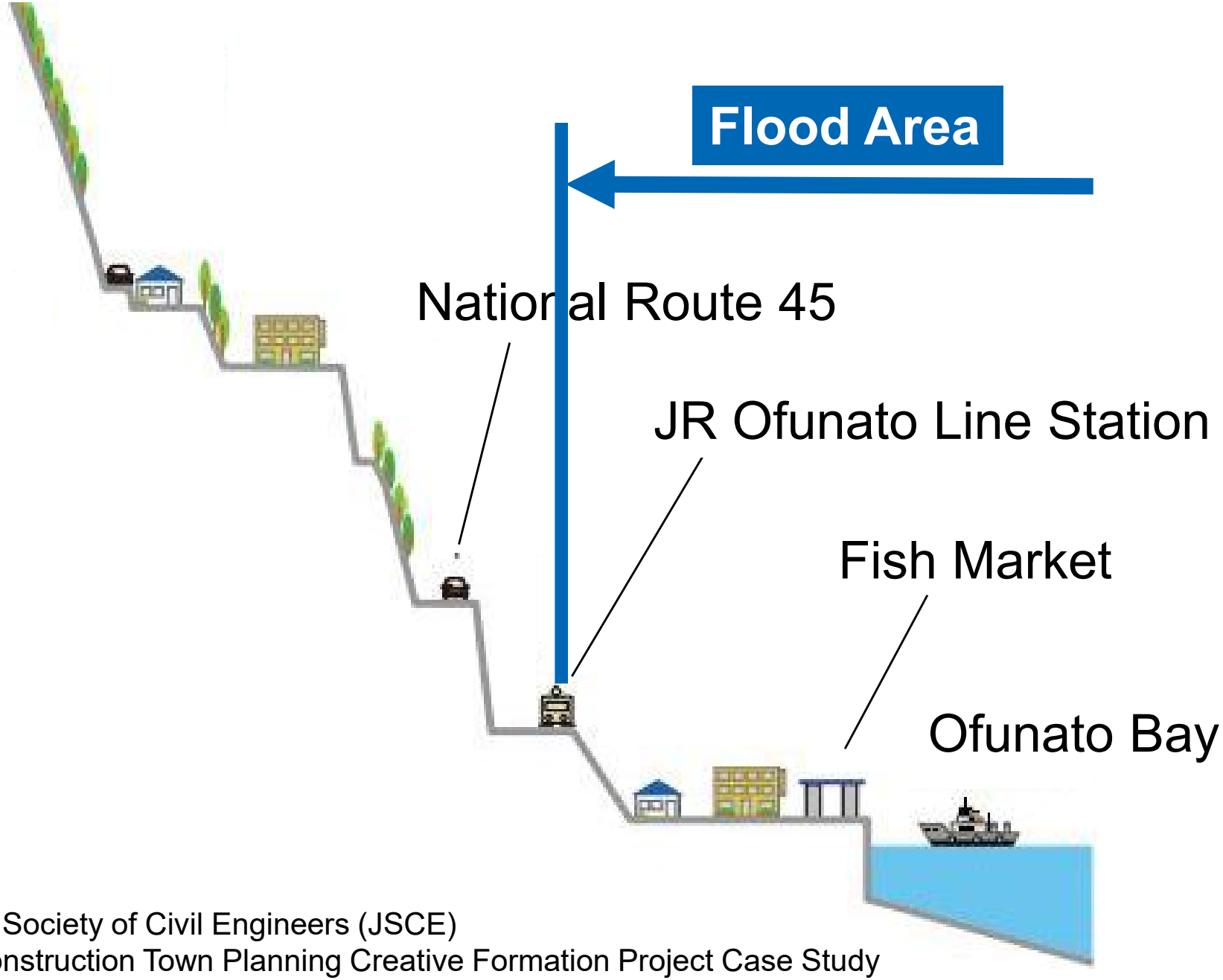

Source：Japan Society of Civil Engineers (JSCE)
Oct 2013 Reconstruction Town Planning Creative Formation Project Case Study
- translated for English presentation

Relocation to Higher Ground

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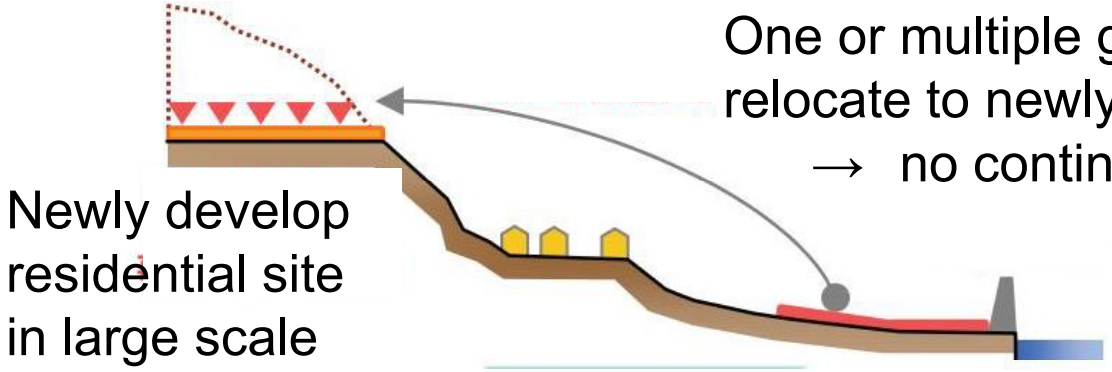
Ordinary Group Relocation



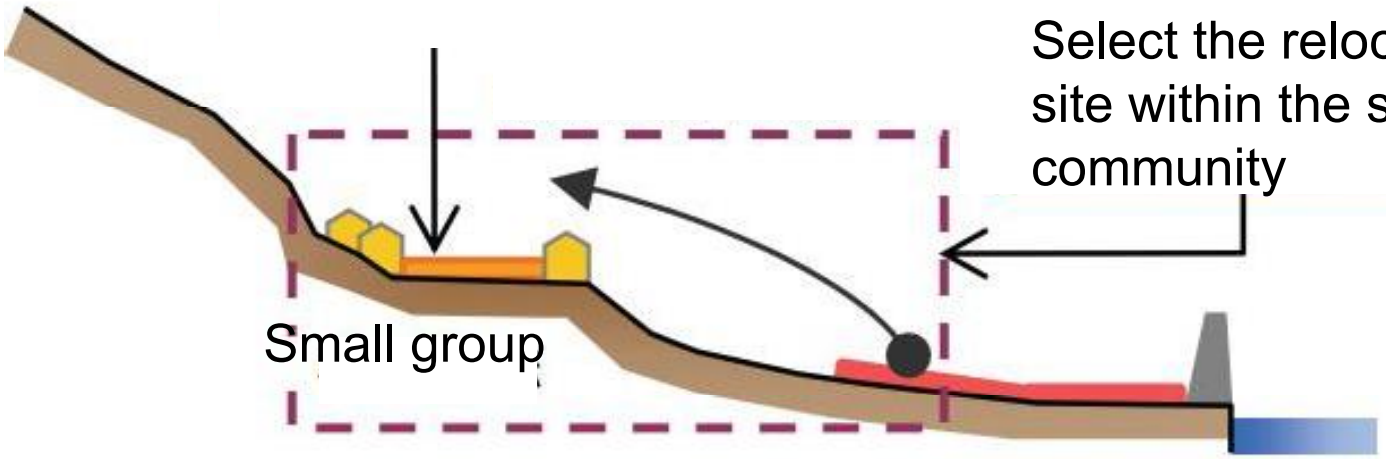
Newly develop residential site in large scale

One or multiple groups from different communities relocate to newly developed residential site

→ no continuity of the former community

Ofunato City Group Relocation

Small group relocation into existing rural village in the same community



Small group

Select the relocation site within the same community

Source：Japan Society of Civil Engineers (JSCE) Oct 2013 Reconstruction Town Planning Creative Formation Project Case Study - translated for English presentation and add some explanation

Disaster Risk Zones (Area) - Ofunato City

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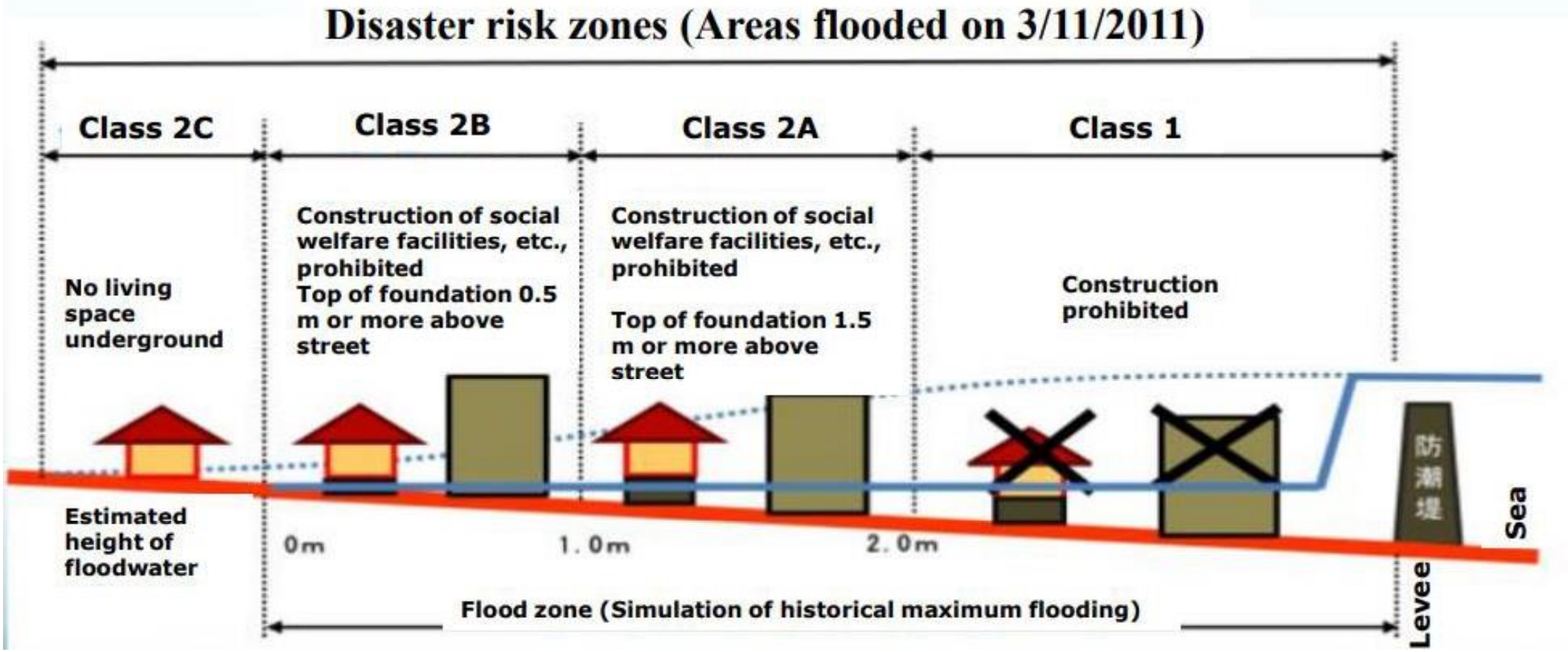
Conceptual view of disaster risk zones



Source: presentation by Ofunato City Mayor at International Recovery Forum 2013 (Kobe, January 2013)

Disaster Risk Zones (Area) – Ofunato City

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Setting of disaster risk zones

Area	Estimated height of floodwater	Applicable structures	
		Structures for living	Social welfare facilities, schools, hospitals
Class 1	About 2.0 m or more	Construction prohibited	Construction prohibited
Class 2A	About 1.0 m to less than 2.0 m	Top of foundation must be 1.5 m or more above street and there must be no living space underground. If top of foundation is less than 1.5 m above street, structures must be sturdy and living space located on 2nd and higher floors.	Construction prohibited
Class 2B	Less than 1.0 m	Top of foundation must be 0.5 m or more above street and there must be no living space underground. If top of foundation is less than 0.5 m above street, structures must be sturdy and living space located on 2nd and higher floors.	Construction prohibited
Class 2C		There must be no living space underground	There must be no living space underground

Source: presentation by Ofunato City Mayor at International Recovery Forum 2013 (Kobe, January 2013)