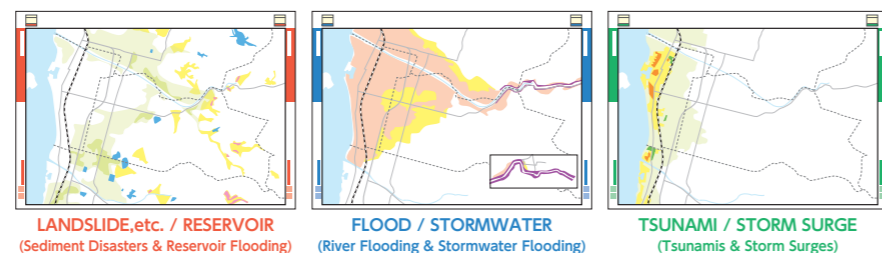


# How to Read the Hazard Map

## Color Coding by Category

Three types of hazard maps are included: **RED** for Sediment Disasters & Reservoir Flooding, **BLUE** for River Flooding & Stormwater Flooding, and **GREEN** for Tsunamis & Storm Surges. **BLUE/GREEN** maps are not included for zones where river/stormwater flood damage is not expected, or there is no tsunami/storm surge danger.



## Projected Scenarios for Each Category

### SEDIMENT DISASTER (Landslide, etc.) (Sediment Disaster Hazard Zones / Sediment Disaster Special Hazard Zones)

Boundaries of hazard zones designated by Ehime Prefecture in accordance with the Sediment Disaster Prevention Act are indicated for each category of sediment disaster. Sediment Disaster Hazard Zones (Yellow Zones) indicate areas where the lives and wellbeing of residents, etc. may be at risk in the event of a disaster such as the collapse of steeply sloped ground. Sediment Disaster Special Hazard Zones (Red Zones) indicate considerable risk to the lives and wellbeing of residents, etc. with buildings facing risks of damage or destruction.

### RESERVOIR FLOODING (Key Reservoirs for Disaster Management / Expected Reservoir Flooding Inundation Zones)

Expected inundation zones in the event of reservoir collapse during times of flooding are overlaid, indicating zone boundaries and maximum inundation depths for key reservoirs for disaster management in 299 locations.  
\* To see inundation depths for specific reservoirs, check the Reservoir Hazard Map.

### RIVER FLOOD (Expected Flood Inundation Zones / Maximum Inundation Depth)

Expected flood inundation zones in the event of rainfall at maximum expected levels (once-per-1,000-years levels) as announced by river administrators in accordance with the Flood Control Act are overlaid, indicating zone boundaries and maximum inundation depths.

River name	Shigenobu-gawa River	Ishite-gawa River	Ono-gawa River	Tateiwa-gawa River
River administrator	Japan Govt.	Japan Govt. Ehime Pref.	Ehime Pref.	Ehime Pref.
Expected 24-hr rainfall total	626mm	705mm	754mm	769mm

(Expl.) **Expected Flood Zone with Destruction of Houses, etc.**

Indicates zones where ordinary buildings are at high risk of being destroyed, swept away, etc. in the event embankments in the vicinity collapse due to an occurrence of the maximum expected level of rainfall. These zones fall into two categories: those due to direct risks of flowing flood waters, and those due to the erosion of riverbanks.

- Expected Flood Zone with Destruction of Houses, etc. (Due to Flood Flow) ... Zones where wooden houses are at risk of being swept away/destroyed due to flowing flood water
- Expected Flood Zone with Destruction of Houses, etc. (Due to Riverbank Erosion) ... Zones where houses are at risk of being swept away/destroyed due to flood-induced erosion of riverbanks

\* To see detailed inundation depths and durations of inundation for specific rivers, check the Matsuyama Flood Hazard Map.

### STORMWATER FLOODING (Expected Stormwater Inundation Zones / Maximum Inundation Depth)

Expected stormwater inundation zones in the event of an occurrence of heavy rain with total rainfall of 299 mm and maximum hourly rainfall of 83.5 mm are shown, indicating zone boundaries and maximum inundation depths.

\* To see detailed inundation depths, check the Matsuyama Stormwater Hazard Map.

### TSUNAMI DAMAGE (Tsunami Hazard Zones / Maximum Inundation Depth [Standard Water Level])

Tsunami hazard zones designated by Ehime Prefecture in accordance with the Act on Regional Development for Tsunami Disaster Prevention are shown, indicating zone boundaries and standard water levels.

### STORM SURGE DAMAGE (Expected Storm Surge Inundation Zones)

Boundaries of expected inundation zones in the event of storm surges of the largest expected potential level as announced by Ehime Prefecture in accordance with the Flood Control Act are indicated.

\* To see detailed inundation depths and durations of inundation, check the Matsuyama Storm Surge Hazard Map.

#### ● Projections Based on Largest Recorded Typhoons

- Central pressure 900 hPa(Equiv. to 1934 Muroto Typhoon)
- Radius & velocity Radius of maximum cyclostrophic wind: 75 km\* (Equiv. to 1959 Isewan Typhoon/Typhoon Vera)  
Velocity: 75 km/h(Equiv. to 1959 Isewan Typhoon/Typhoon Vera)

\* Radius of maximum cyclostrophic wind: Distance from the center of a typhoon to the point near the typhoon with the highest wind speed

### Check! View the Hazard Map Online

A Web edition of the Hazard Map is available on the Matsuyama City Disaster Management Portal. Use it to find more details on disaster risk.

① Access the Matsuyama City Disaster Management Portal

the Matsuyama City Disaster Management Portal  Search

② Click on Matsuyama Hazard Map Web Edition

③ Select the type of disaster risk you wish to check

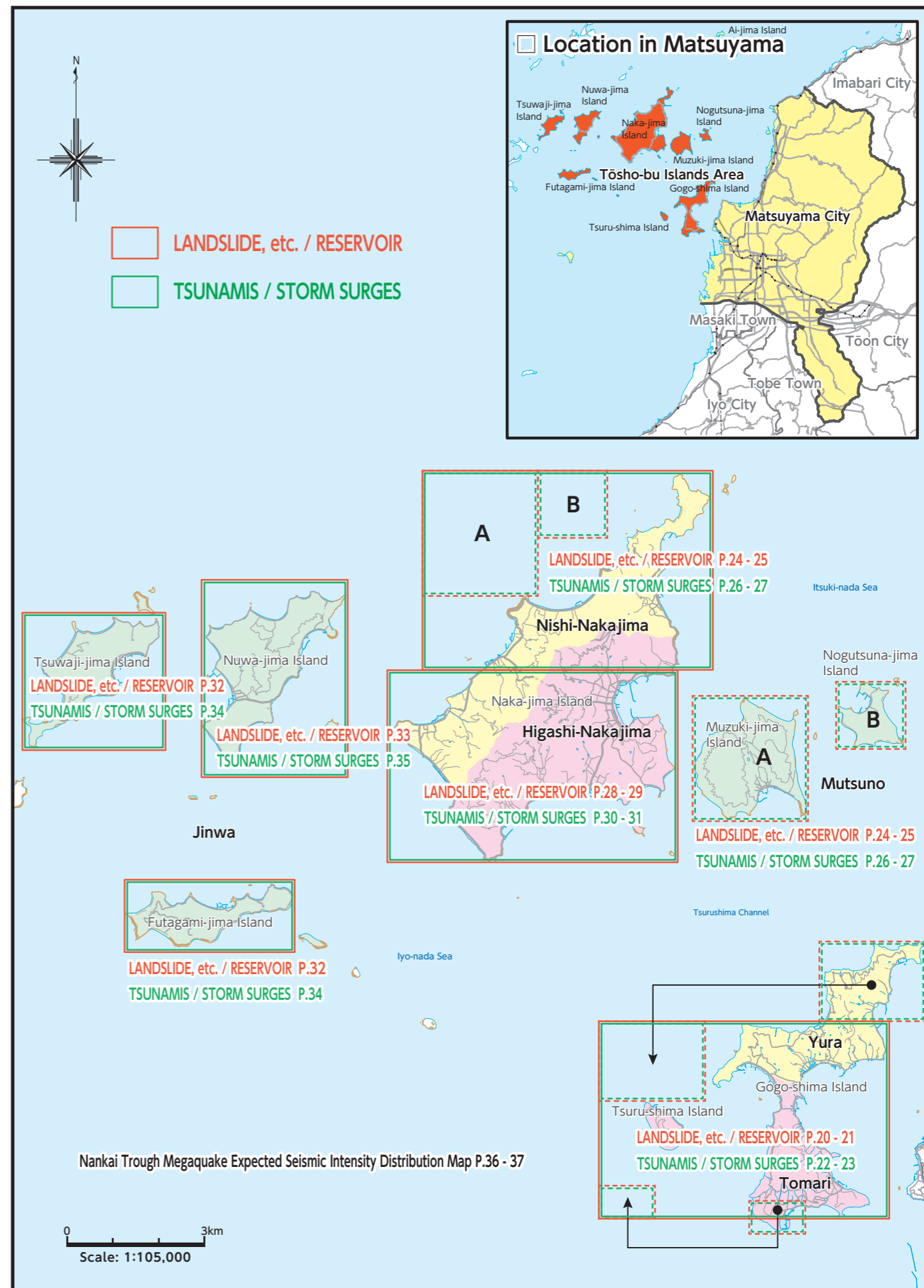


⚠ While all projections are made on the basis of current knowledge, disasters may potentially exceed projected levels.

While this Hazard Map has been created based on the latest digital map data (basic national geospatial data) published by the Geospatial Information Authority of Japan (GSI), please be aware that certain locations may not correspond with actual current conditions due to changes over time. With regard to hazard information for sediment disasters, etc., the map is meant to serve as an approximate general reference only, and is by no means representative of exact or specific limits of the boundary, scope, etc. of hazard zones, etc. Please also note that listed disaster management information, including evacuation shelters, etc. is current as of Jan. 2022, and may be subject to change in the future. Please refrain from reproducing or reprinting this publication's cover, contents, or maps without the consent of Matsuyama City.

## INDEX MAP

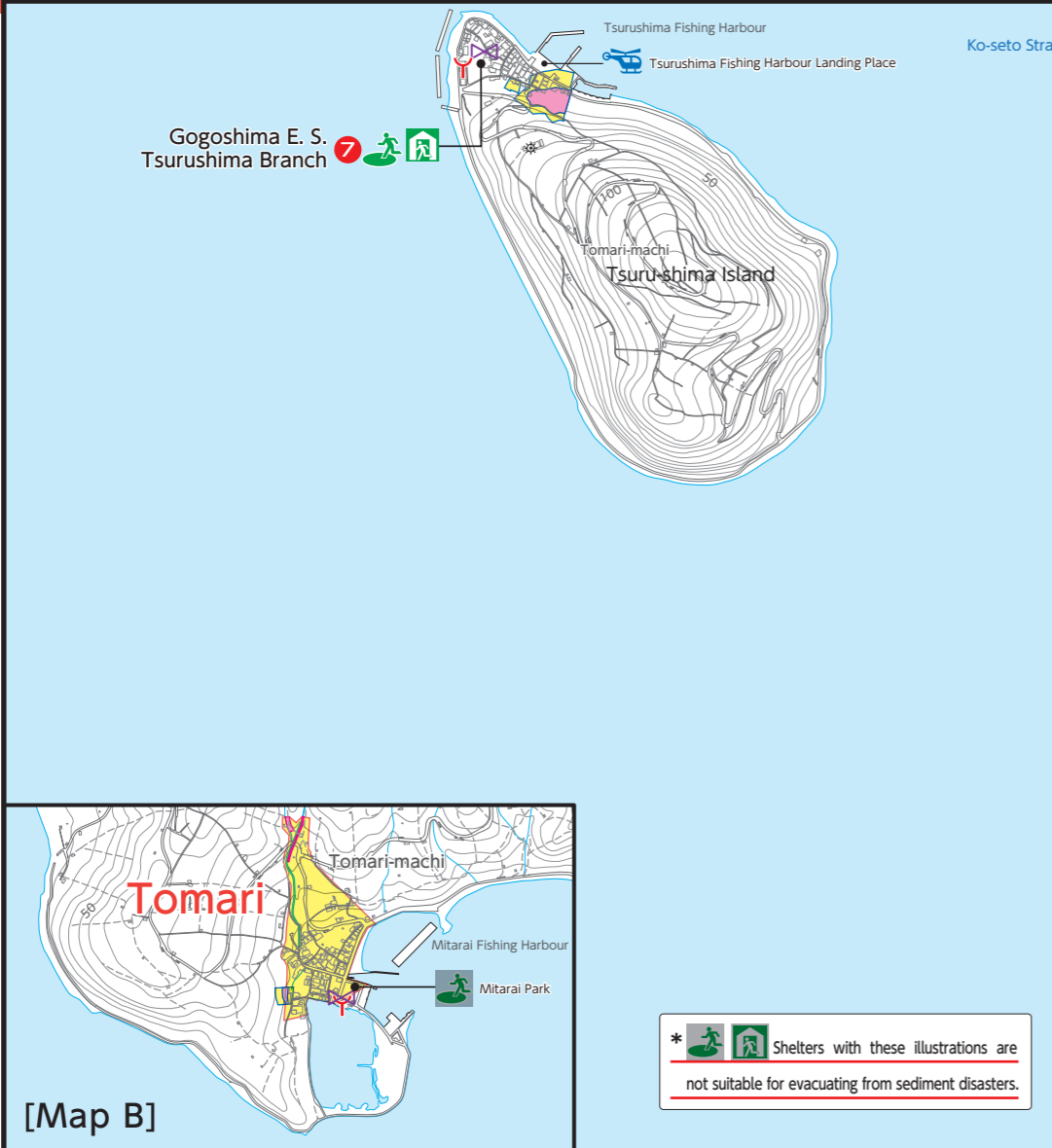
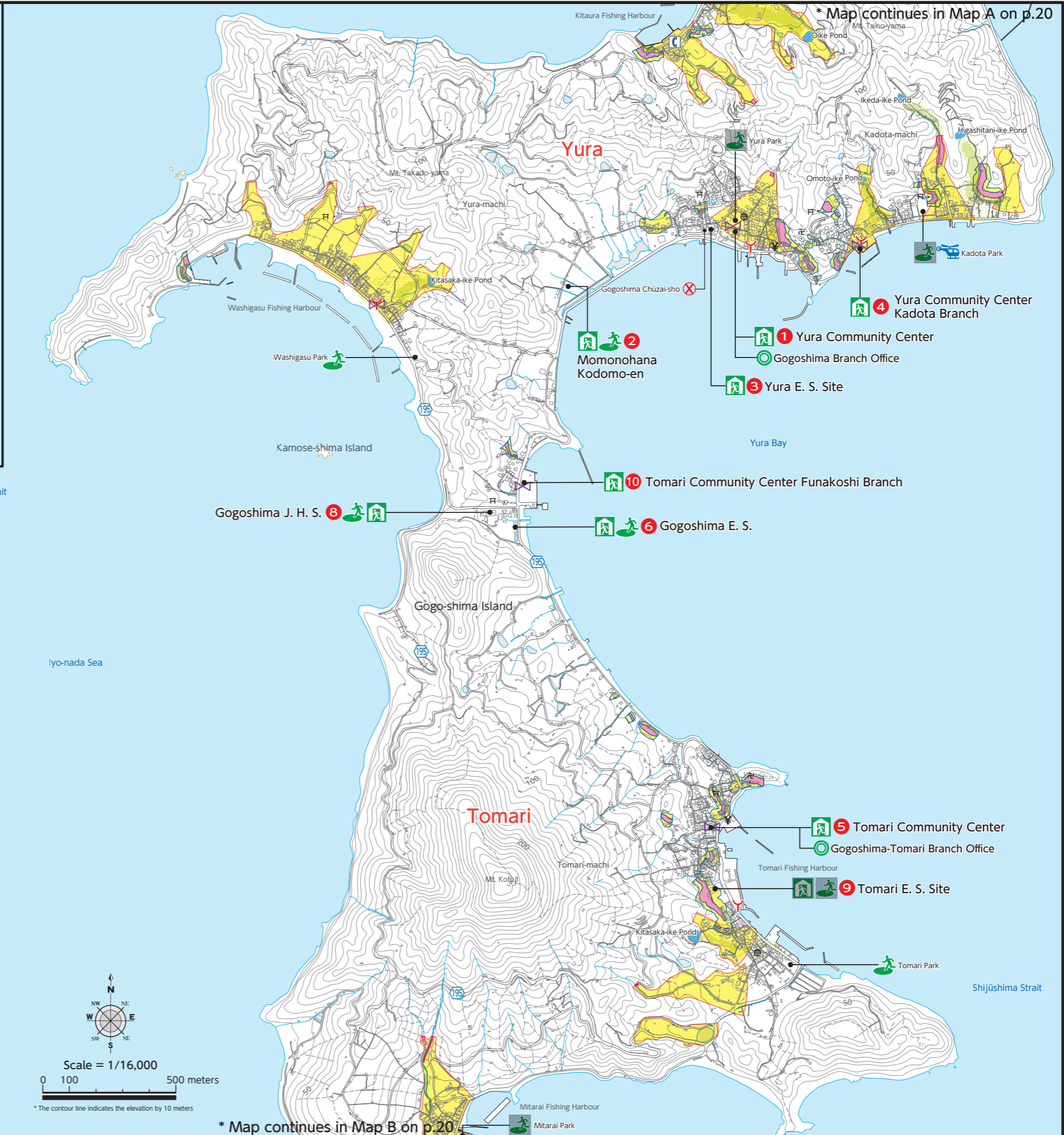
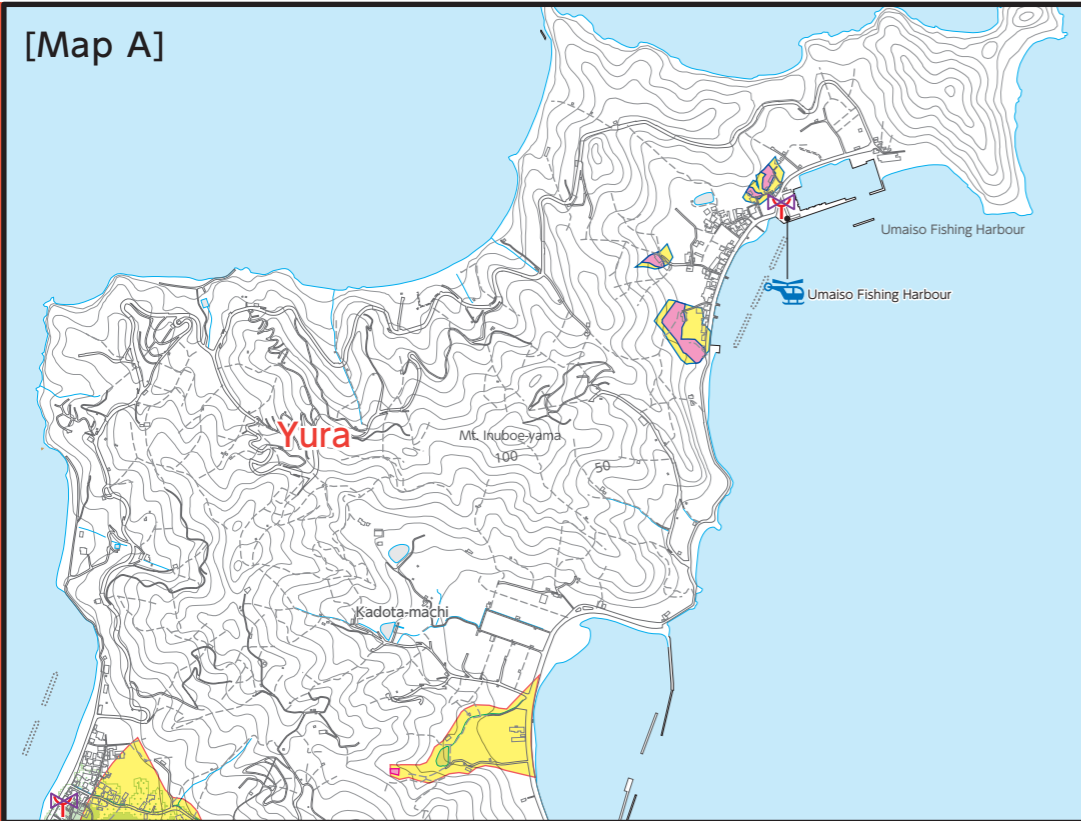
[ Yura / Tomari / Mutsuno / Higashi-Nakajima / Nishi-Nakajima / Shinwa ]





Yura / Tomari

Yura / Tomari



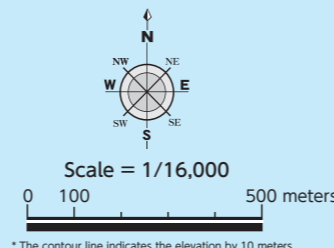
Sediment Disasters / Reservoir Flooding

Sediment Disasters / Reservoir Flooding

[Map B]

[Map A]

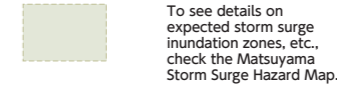
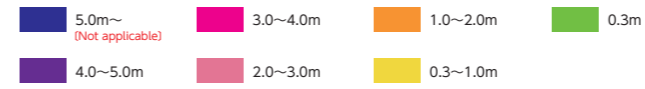
\* Shelters with these illustrations are not suitable for evacuating from sediment disasters.



\* Map continues in Map B on p.20

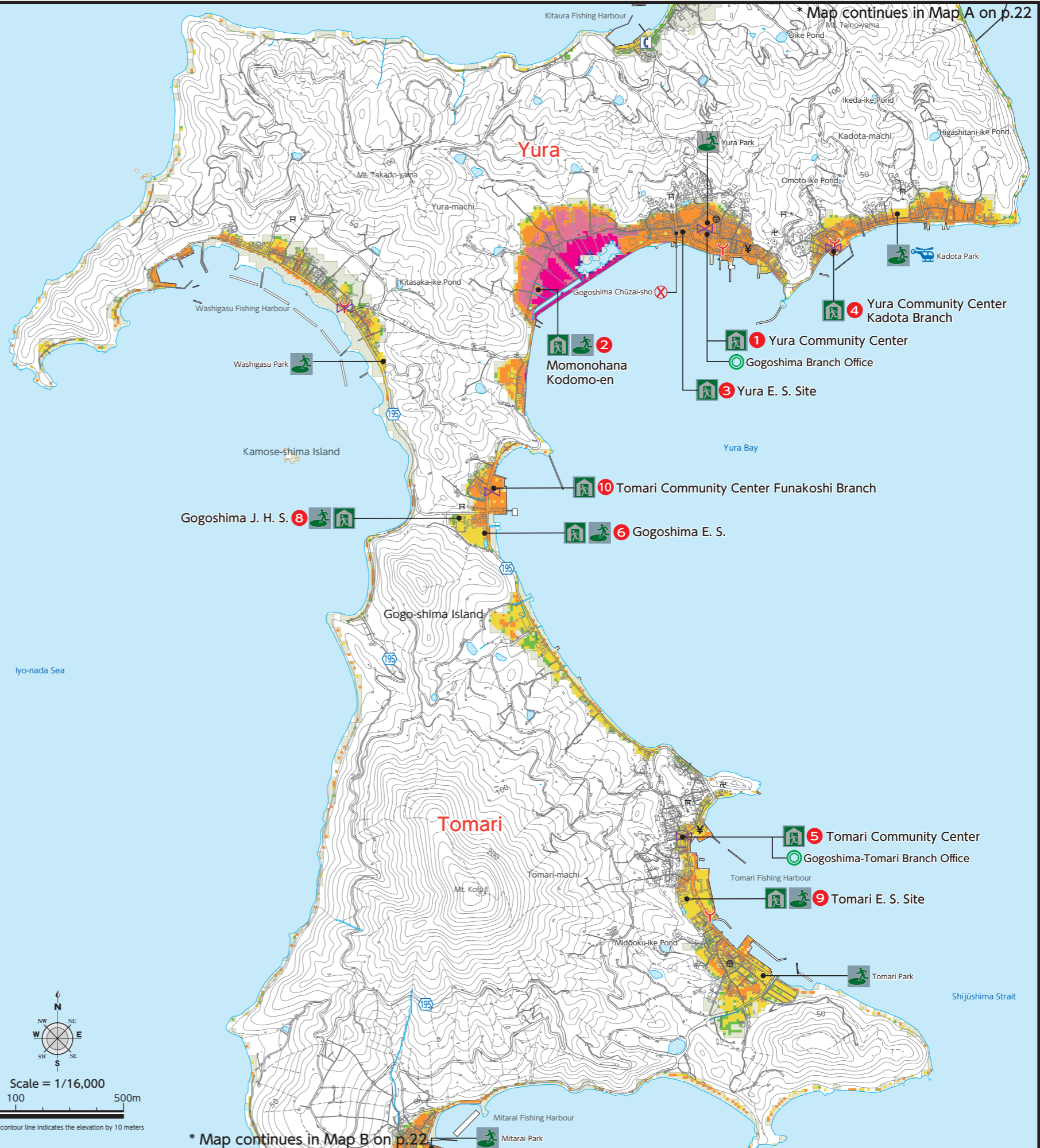
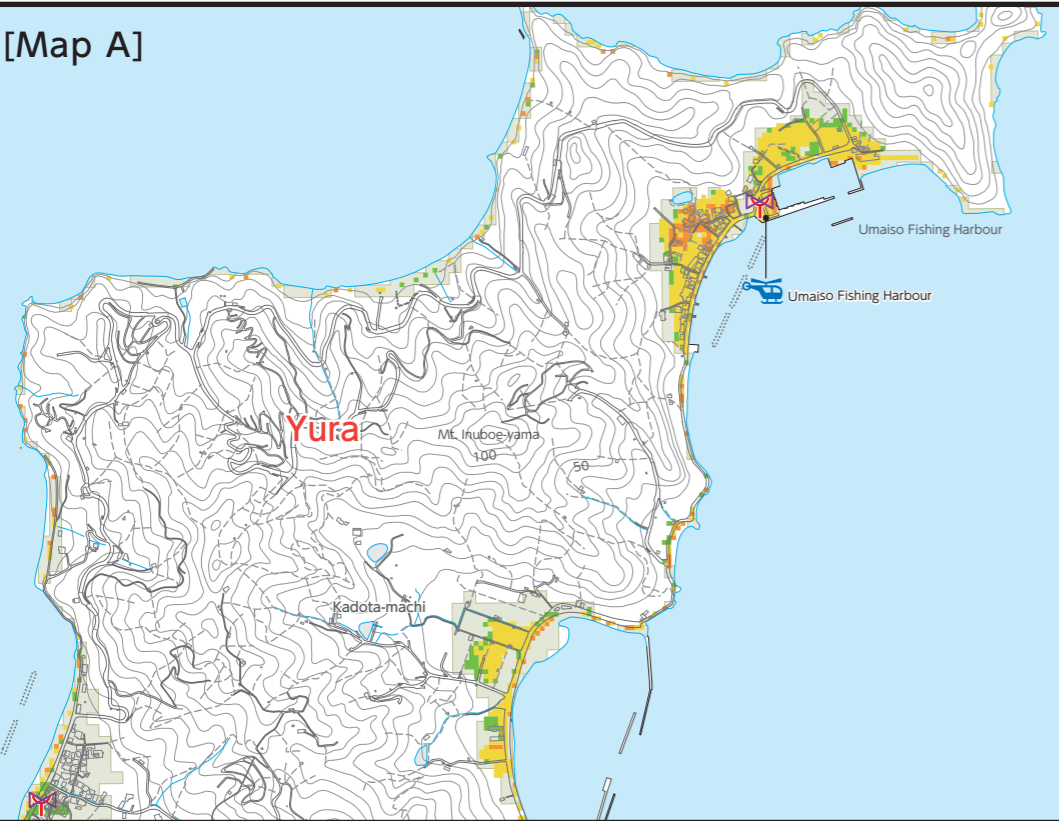
\* Map continues in Map A on p.20





Yura / Tomari

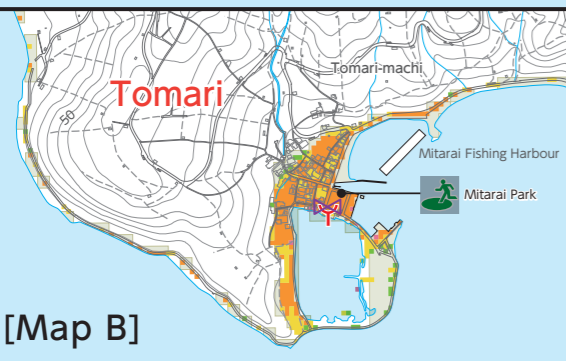
[Map A]



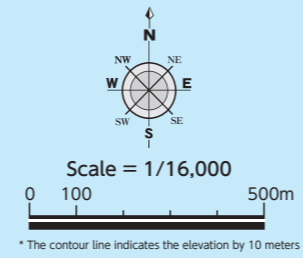
Yura / Tomari

Tsunamis / Storm Surges

[Map B]



\* Shelters with these illustrations are not suitable for evacuating from tsunamis.



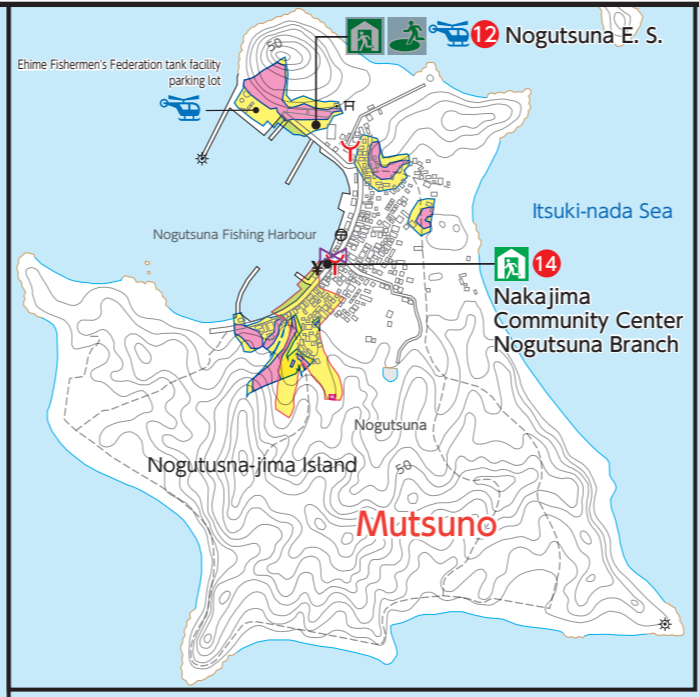
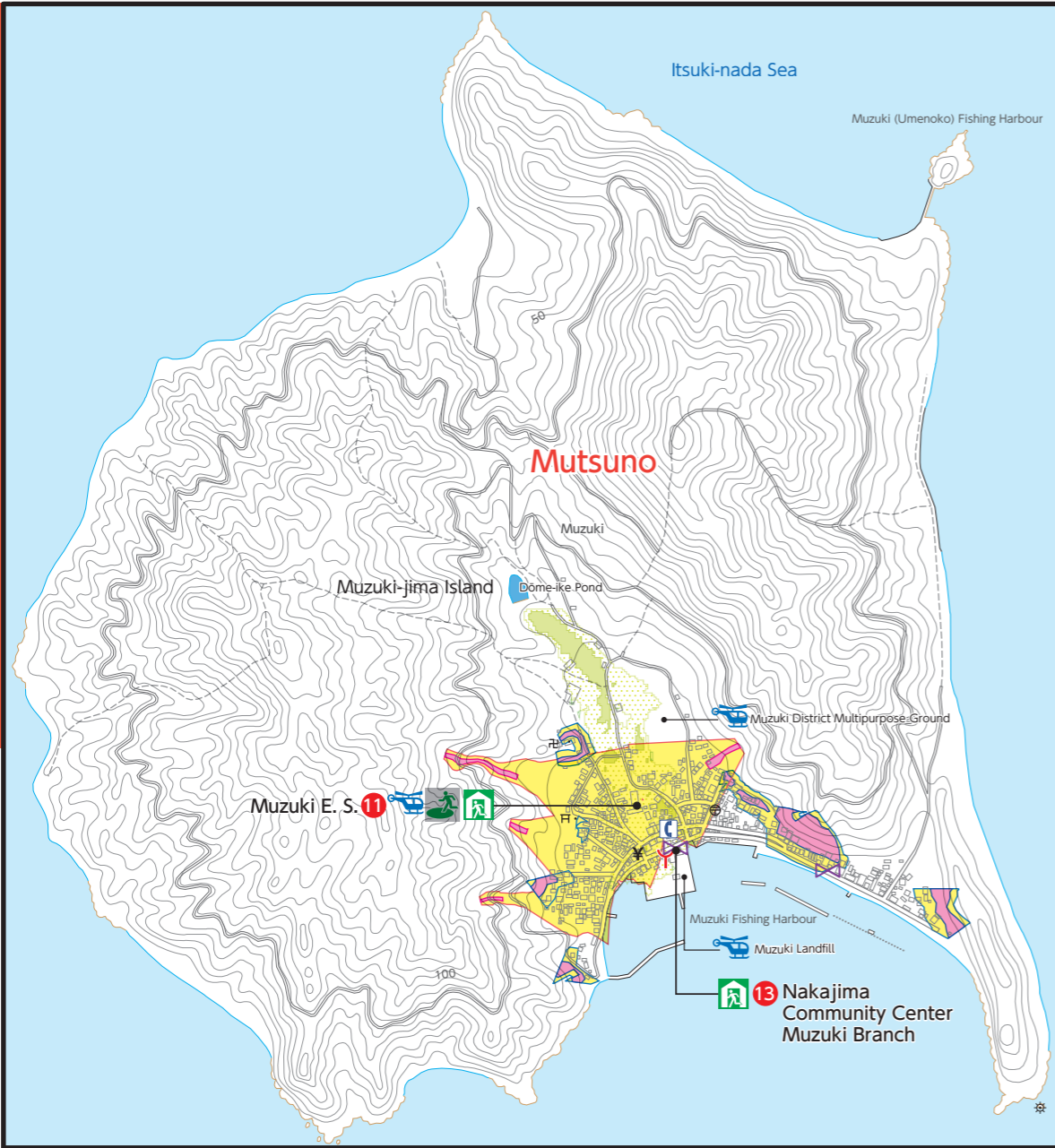
\* Map continues in Map B on p.22

Tsunamis / Storm Surges



Mutsuno / Nishi-nakajima

Mutsuno / Higashi-nakajima / Nishi-nakajima

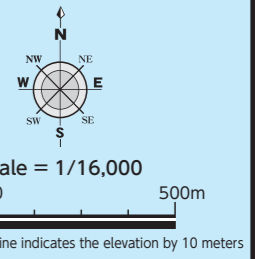


\* Shelters with these illustrations are not suitable for evacuating from sediment disasters.



Sediment Disasters / Reservoir Flooding

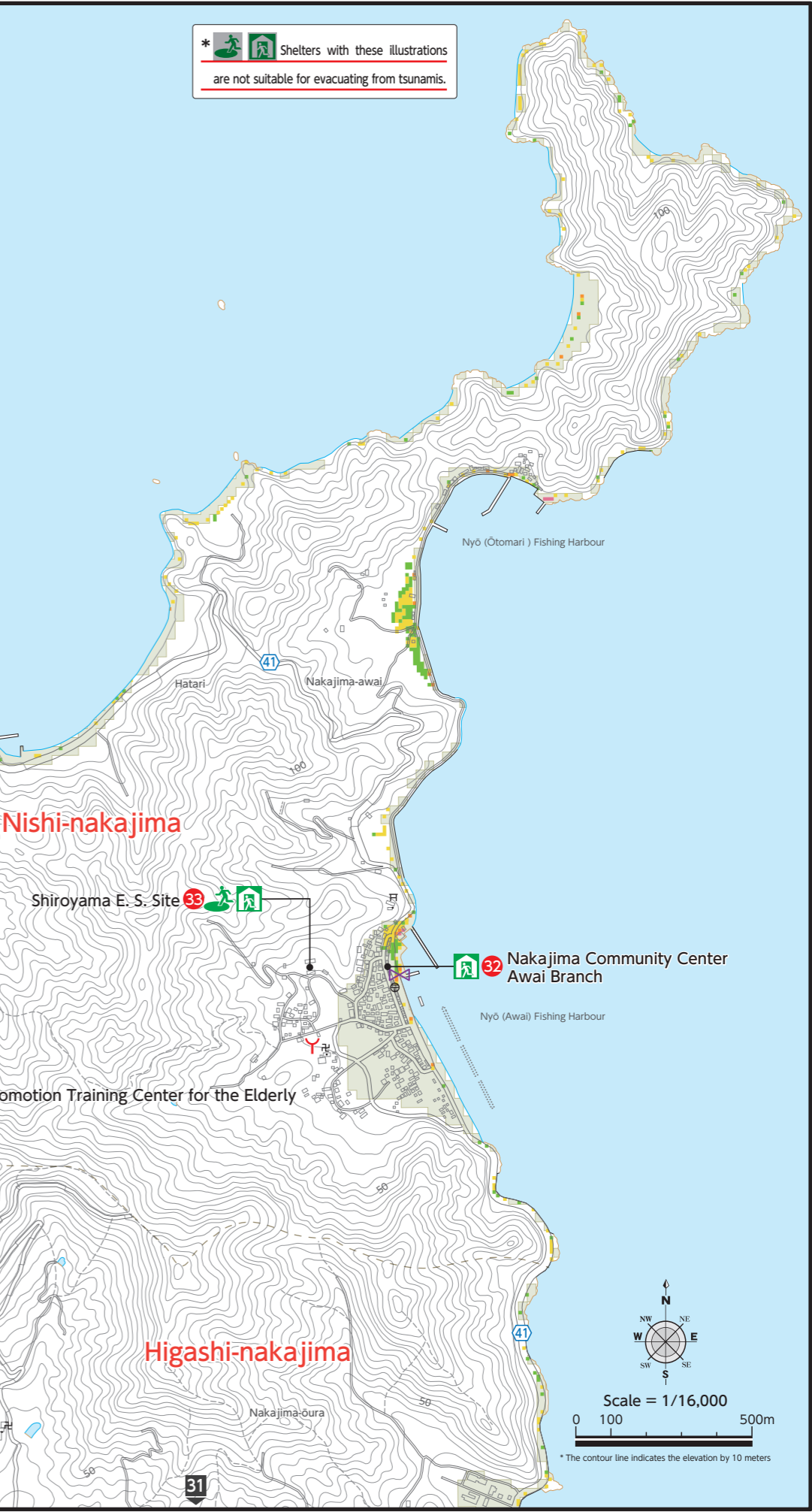
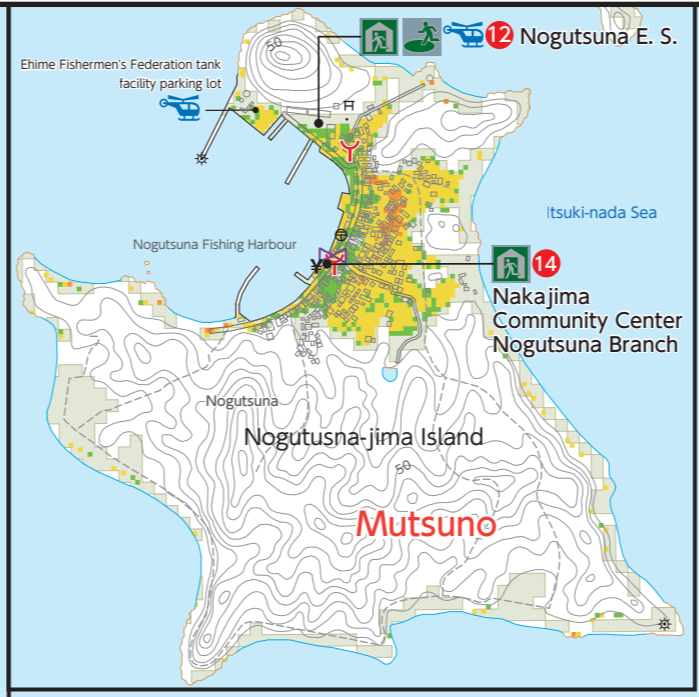
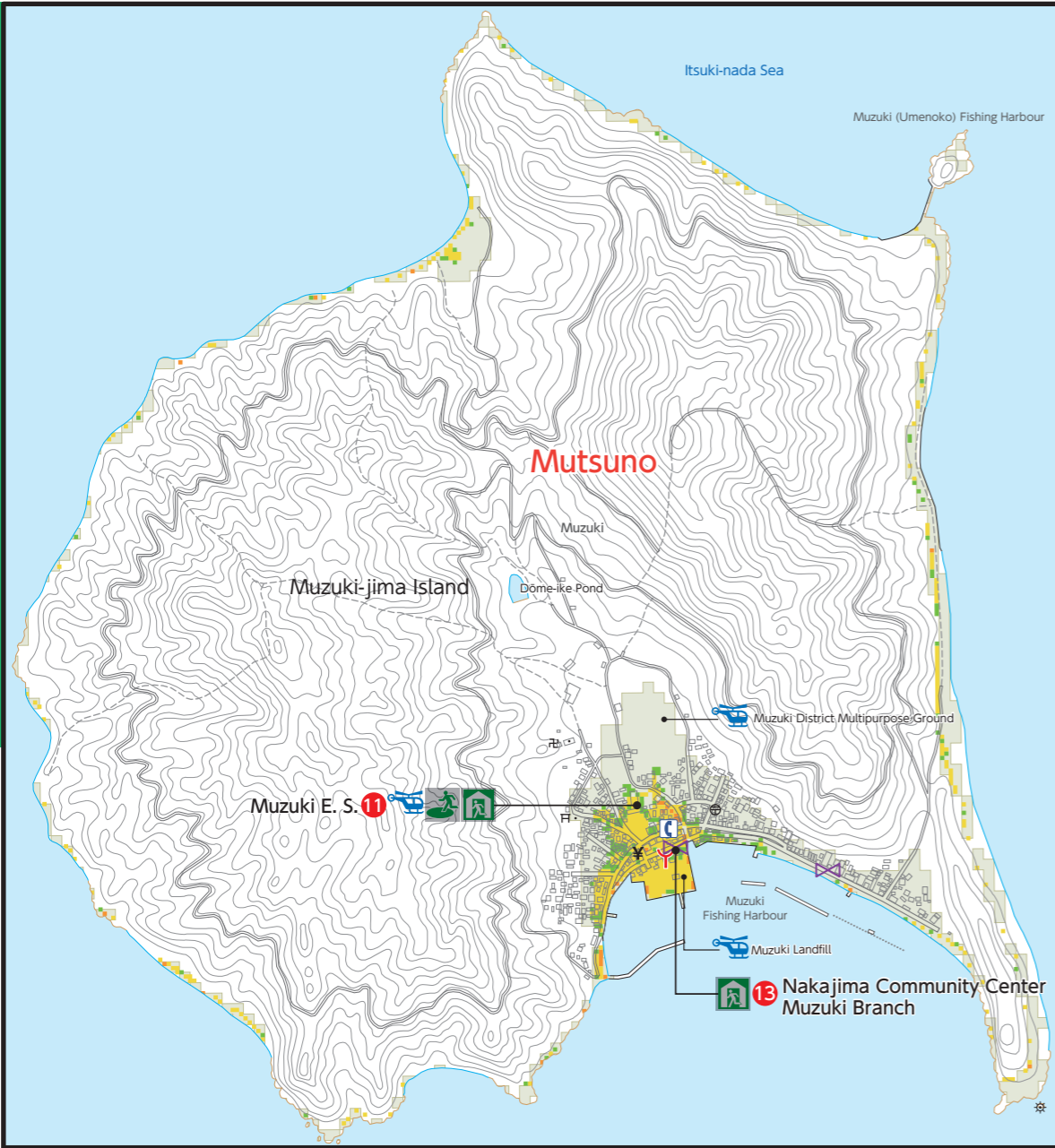
Sediment Disasters / Reservoir Flooding







Mutsuno / Nishi-nakajima

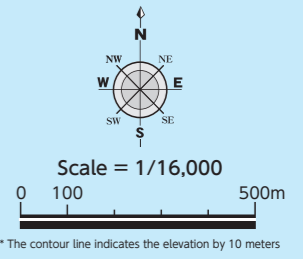


Mutsuno / Higashi-nakajima / Nishi-nakajima

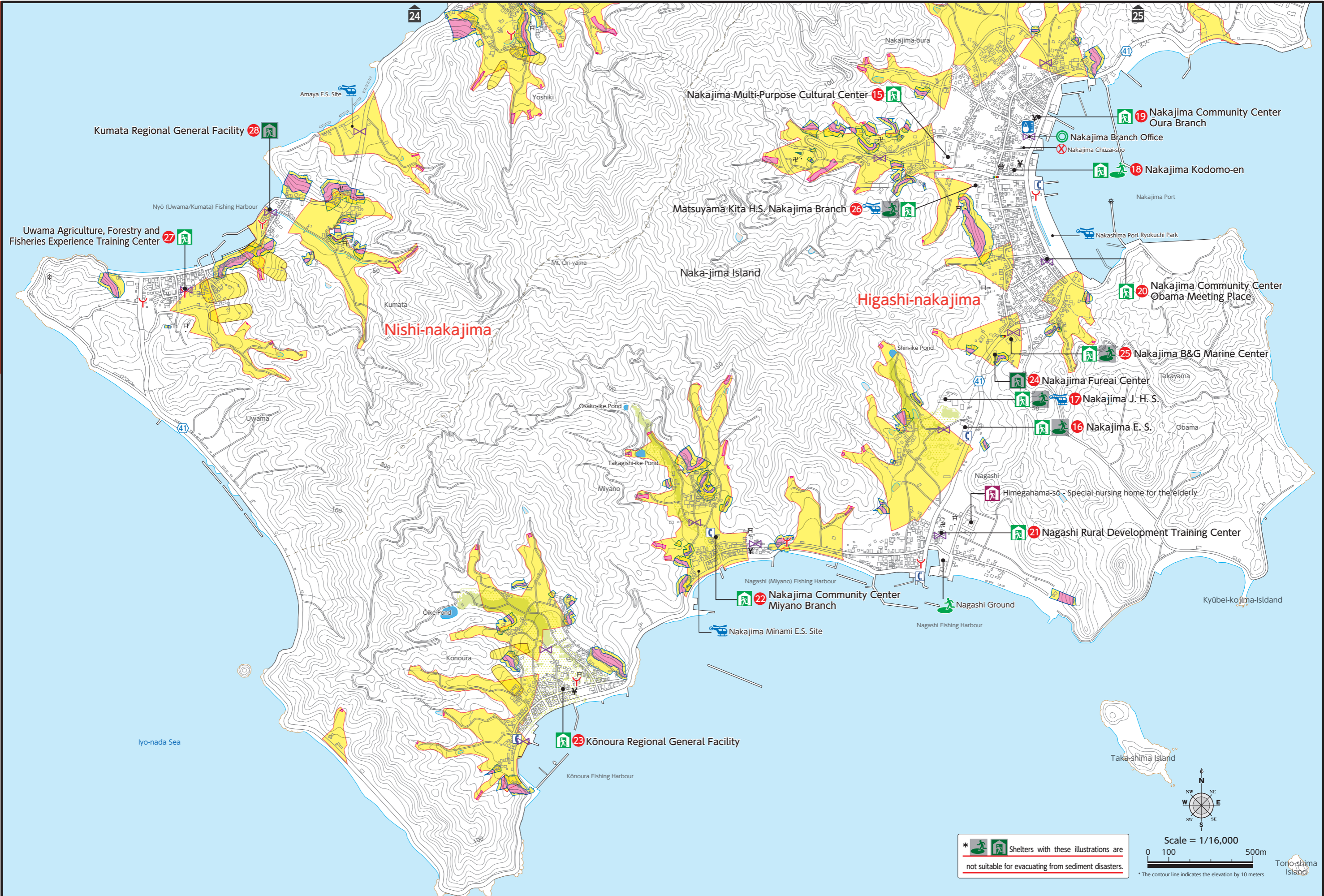
Tsunamis / Storm Surges



Tsunamis / Storm Surges







\* Shelters with these illustrations are not suitable for evacuating from sediment disasters.

Scale = 1/16,000  
0 100 500m

\* The contour line indicates the elevation by 10 meters

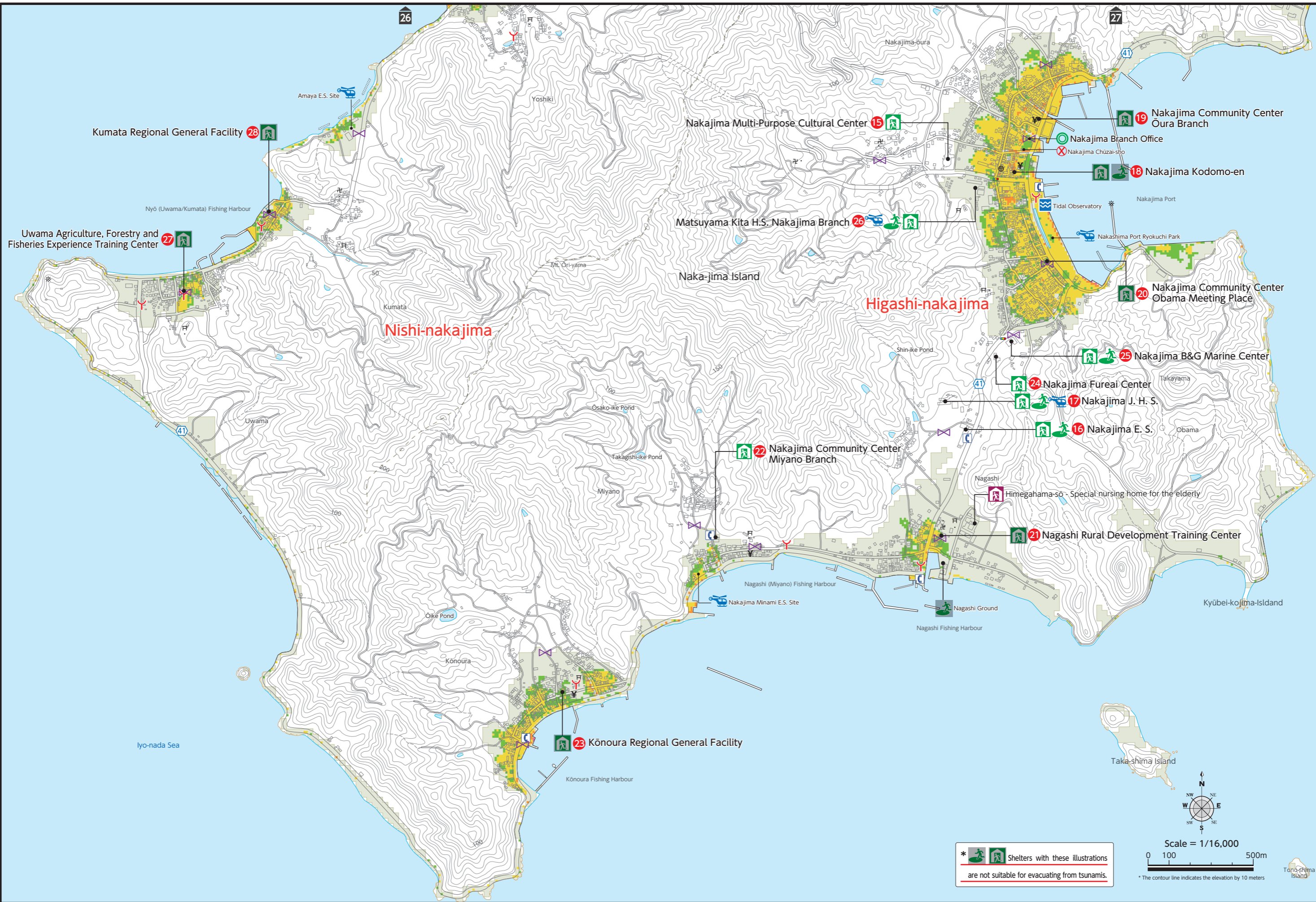
Tono-shima Island





Higashi-nakajima / Nishi-nakajima

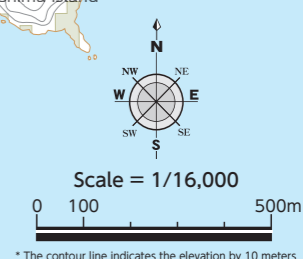
Higashi-nakajima



Tsunamis / Storm Surges

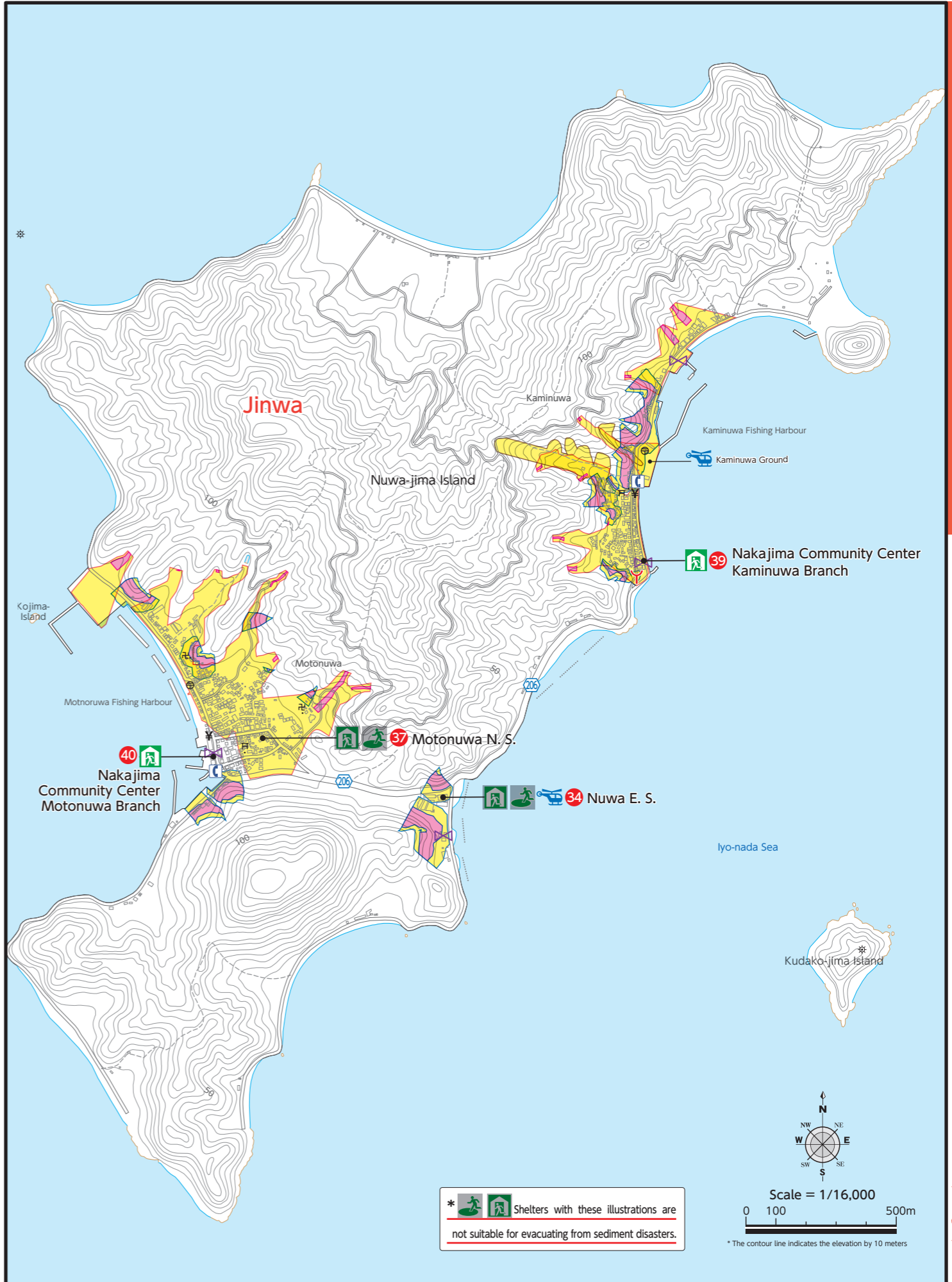
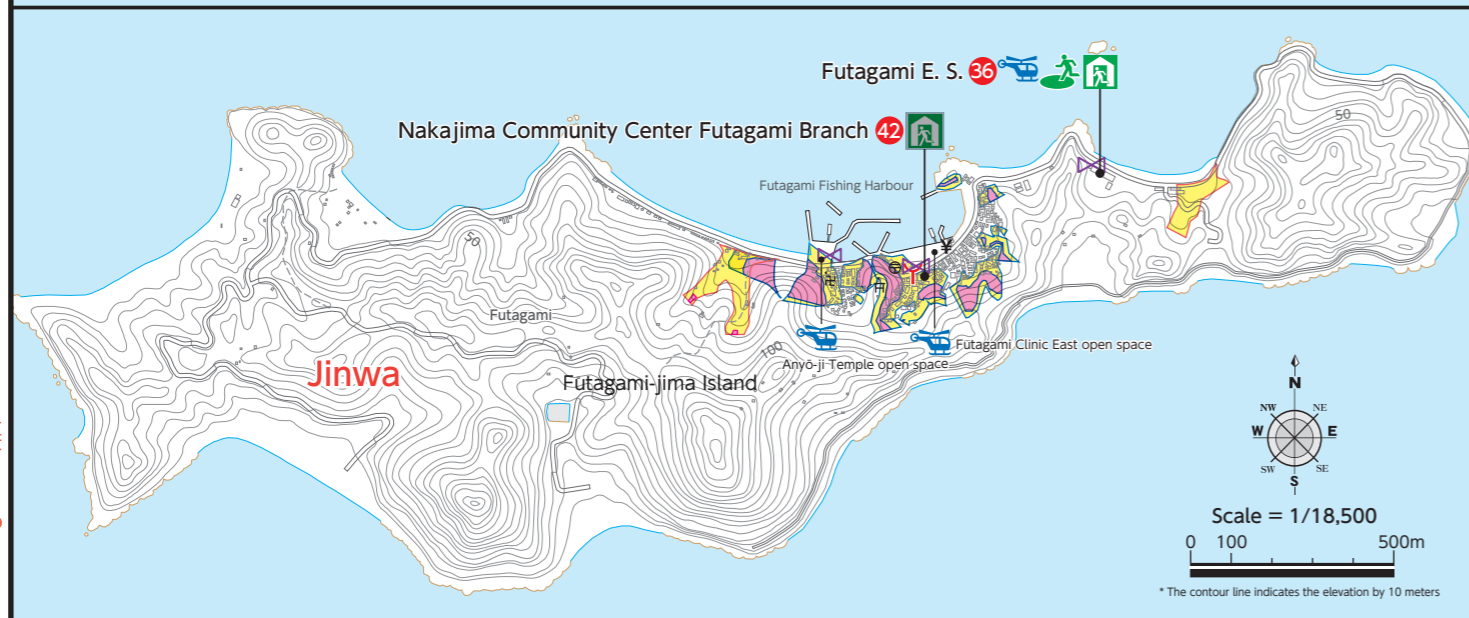
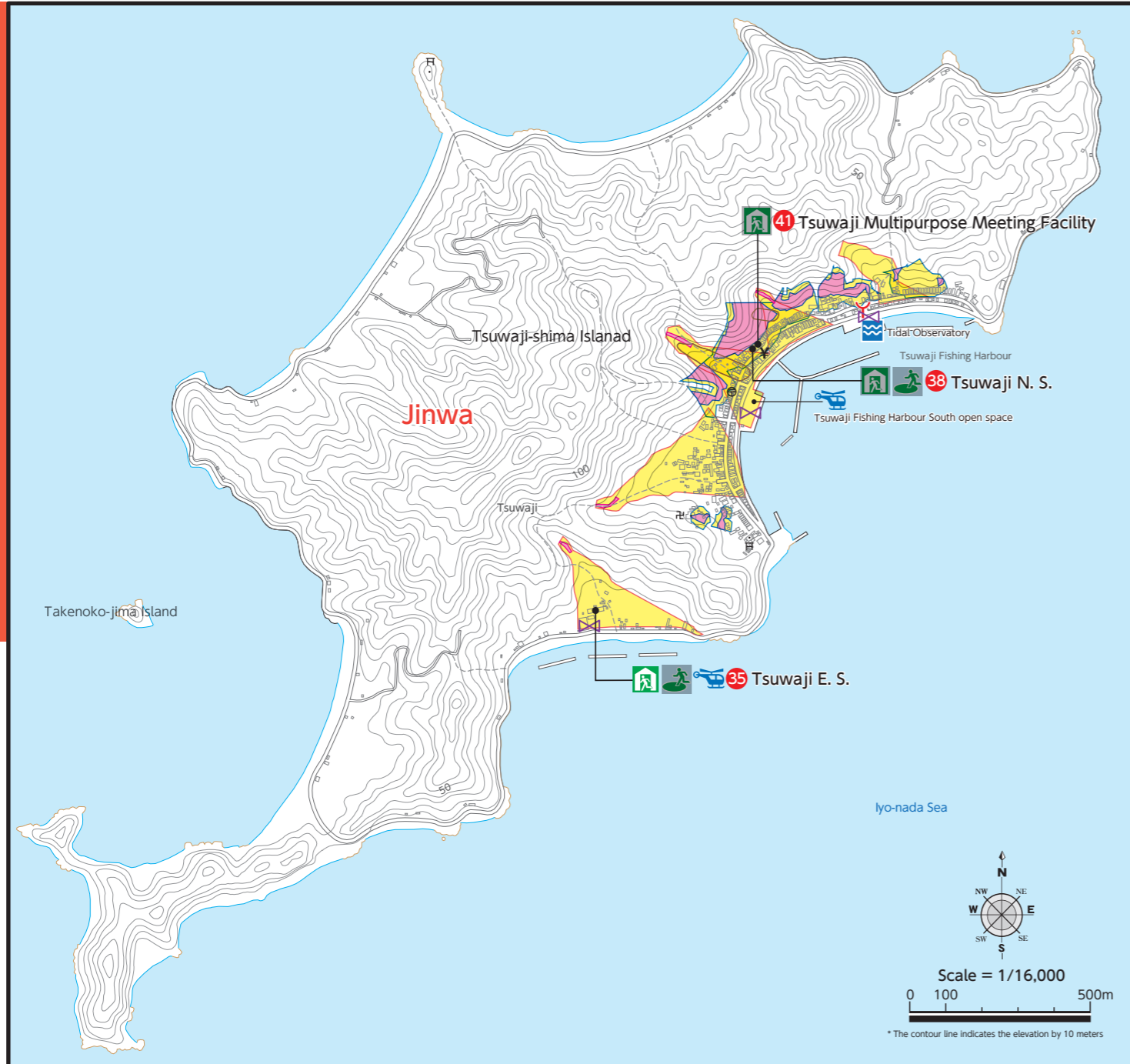
Tsunamis / Storm Surges

\* Shelters with these illustrations are not suitable for evacuating from tsunamis.



\* The contour line indicates the elevation by 10 meters





\* Shelters with these illustrations are not suitable for evacuating from sediment disasters.



- Designated Emergency Evacuation Site\*
- City Hall / Branch Office
- Police Station Koban / Chūzai-sho
- Emergency Helicopter Landing-pad
- Emergency Transportation Route
- National Road
- Prefectural Road
- Designated Evacuation Shelter\*
- Fire Station / Branch
- Emergency Medical Facility
- Underground Shopping Center / Underpass
- Major Evacuation Route
- JA / Bank
- Post Office
- Welfare Evacuation Shelter
- Civilian Firefighters' Pump Storage
- Emergency Broadcast System (Announcement / Siren)
- Payphone (outdoors)
- Intersection Name
- Shrine
- Temple

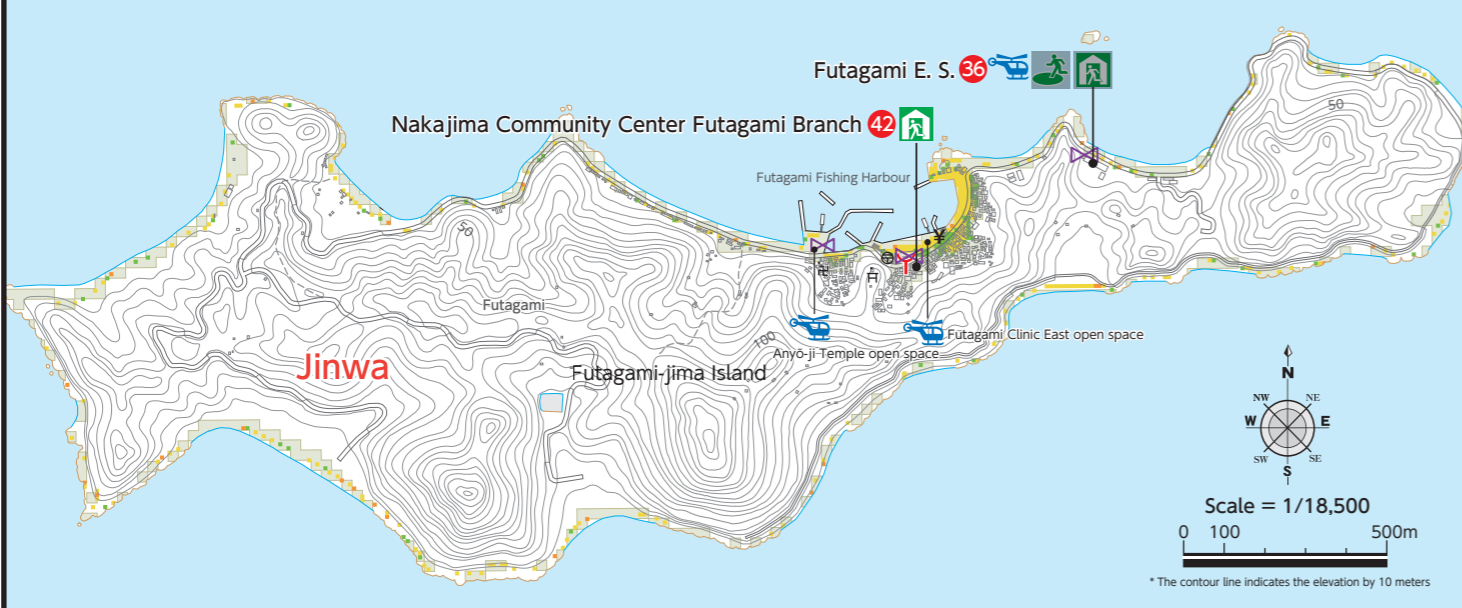
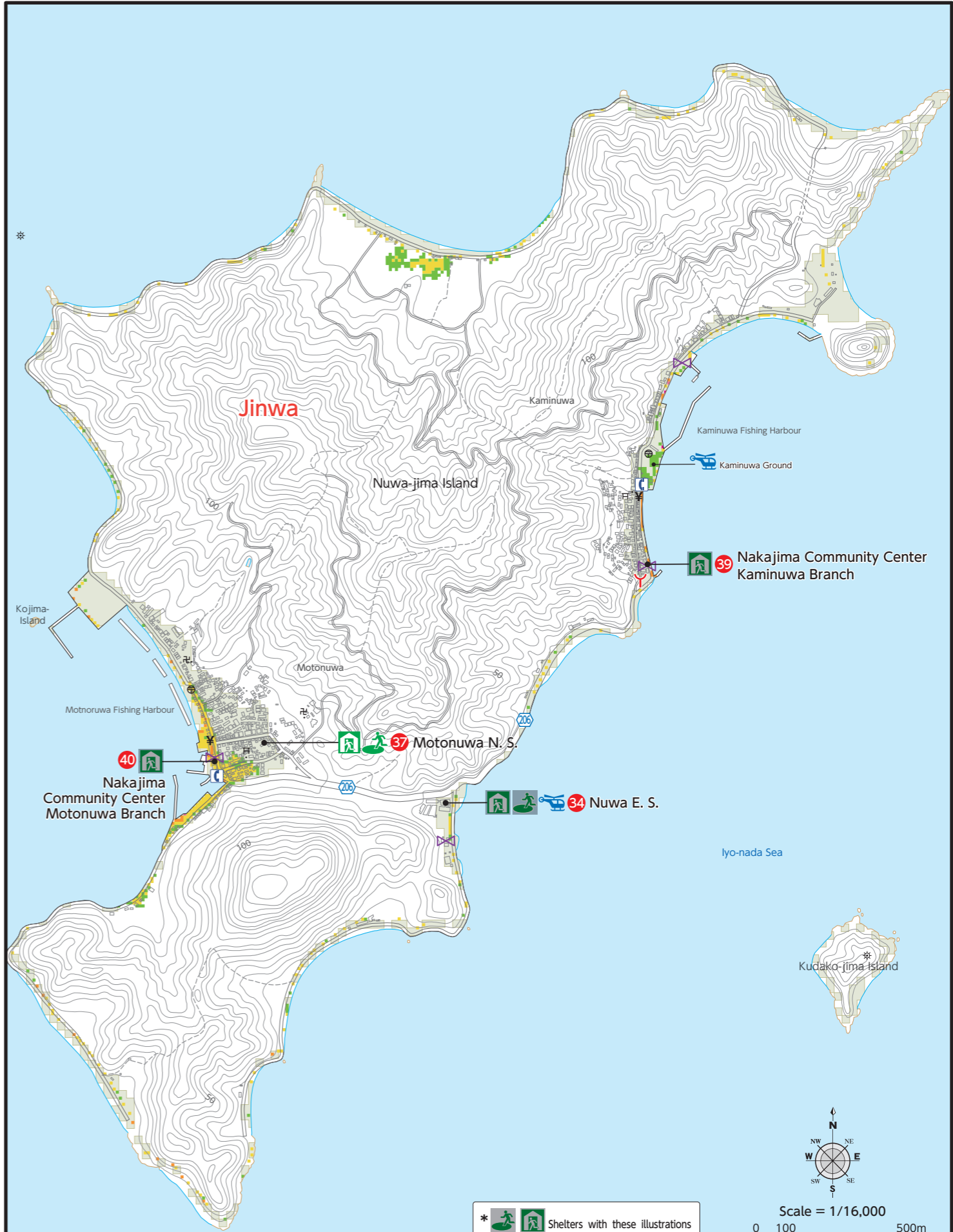
<Tsunami Hazard Zones / Maximum Inundation Depth [Standard Water Level]>

- 5.0m~ (Not applicable)
- 3.0~4.0m
- 1.0~2.0m
- 0.3m
- 4.0~5.0m (Not applicable)
- 2.0~3.0m
- 0.3~1.0m

<Expected Storm Surge Inundation Zones>



To see details on expected storm surge inundation zones, etc., check the Matsuyama Storm Surge Hazard Map.



\* Shelters with these illustrations are not suitable for evacuating from tsunamis.



# Nankai Trough Megaquake Expected Seismic Intensity Distribution Map (Cases overlaid)

Source: Results of 2013 Ehime Prefecture Earthquake Damage Projection Survey (Initial Report)

< JMA Seismic Intensity Scale >

6 Lower 5 Upper

Designated Emergency Evacuation Site  
Designated Evacuation Shelter

Jinwa

Yura / Tomari / Mutsuno / Higashi-Nakajima / Nishi-Nakajima

**Seismic Intensity: 7**

- Wooden houses with low earthquake resistance are even more likely to lean or collapse.
- Even wooden houses with high earthquake resistance may lean in some cases.
- Reinforced-concrete buildings with low earthquake resistance are more likely to collapse.



**Seismic Intensity: 6 Upper**

- It is impossible to move without crawling. People may be thrown through the air.
- Most unsecured furniture moves and is more likely to topple over.
- Wooden houses with low earthquake resistance are more likely to lean or collapse.
- Large cracks may form in ground. Large landslides and massif collapses may be seen.



**Seismic Intensity: 6 Lower**

- It is difficult to remain standing.
- Many unsecured pieces of furniture move and may topple over. Doors may become wedged shut.
- Wall tiles and windows may sustain damage and fall.
- Wooden houses with low earthquake resistance may lean or collapse, and tiles may fall.



**Seismic Intensity: 5 Upper**

- Walking is difficult without holding on to something stable.
- Dishes in cupboards and items on bookshelves are more likely to fall.
- Unsecured furniture may move.
- Unreinforced concrete-block walls may collapse.



**Seismic Intensity: 5 Lower**

- Many people are frightened and feel the need to hold on to something stable.
- Dishes in cupboards and items on bookshelves may fall.
- Unsecured furniture may move, and unstable furniture may topple over.

