

Assumed Inundation Area (Maximum Assumed Scale*)

This storm surge hazard map has been prepared to help residents in assumed inundation areas evacuate quickly in the event of flooding caused by a storm surge.
* The "maximum assumed scale" refers to a prediction based on the largest possible storm surge that can be assumed. Actual disasters may result in flooding outside the assumed areas or outcomes different from the prediction, so caution is required.

This map shows the following assumed inundation area maps:
Osaka Bay coast of Hyogo Prefecture (Amagasaki, Nishinomiya, and Ashiya coastal areas)
Storm Surge Inundation Assumption Map (Maximum Assumed Scale)
[Prepared by] Hyogo Prefecture

Assumed conditions
Inundation conditions used for this map:
Central pressure of the typhoon 910 hPa
Maximum assumed-scale typhoon
Once every 500 to 4,000 years

Amagasaki City has designated the following evacuation sites in case a disaster occurs.

- A tsunami temporary evacuation area** is a place where people can evacuate temporarily when a tsunami, storm surge, or flood occurs, and a tsunami warning or evacuation information is issued. These sites include public facilities as well as privately owned buildings provided through cooperation with their owners.
- A designated evacuation shelter** is a place where people can stay for a medium to long period if they lose their homes due to a disaster, or until the danger has passed after a disaster occurs.
- A welfare evacuation shelter** is a shelter intended for people who need special assistance during disasters. (This is a secondary shelter opened only when necessary during a disaster and is generally not available for use from the beginning.)

Check in advance which evacuation sites are easy for you to reach.



Walking guide

Use a coin to estimate the approximate distance and time on the map.

Measure the approximate distance and time on the map.

One 10-yen coin ≈ **400 m**
23.5mm

One 10-yen coin ≈ **14 minutes**

People who have difficulty walking/infants, etc.
Approx. 0.5 m per second

Approx. 7 minutes
Approx. 1.0 m per second

* Walking speeds are based on the "Report of the Committee for Examining Tsunami Evacuation Measures" by the Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications.

Legend

- Tsunami temporary evacuation area
- Designated evacuation shelter
- Welfare evacuation shelter
- City Hall
- Community Promotion Center
- Police station
- Fire station
- Designated emergency medical facility
- Helicopter landing site
- Water gate
- Flood control warehouse
- Pump Station, etc.
- Sewage treatment plant
- Water level observation station
- Disaster management radio system
- Underground areas (parking lots, commercial facilities)
- Underground passages/Underpasses

Estimated inundation depth

- 5.0 m or less than 10.0 m
- 3.0 m or less than 5.0 m
- 1.0 m or less than 3.0 m
- 0.5 m or less than 1.0 m
- Less than 0.5 m

Estimated inundation depth

Depth of inundation

- 5 m to 10 m
- 3 m to 5 m
- 1 m to 3 m
- 0.5 m to 1 m
- Less than 0.5 m

Even areas without color may still be flooded. Be cautious and evacuate early.

Protecting your life from storm surges

Amagasaki City has created an educational video about storm surges.

To protect your life from storm surges

This video clearly explains how storm surges occur and how to evacuate if one actually happens.

How storm surges occur

1 Rise in sea level caused by pressure drop ("suction effect")
For every 1-hPa drop in atmospheric pressure, the sea level rises by approximately 1 cm.

2 Waves pushed ashore by strong winds ("wind setup")
Strong typhoon winds push seawater toward the coast, causing the sea level to rise. Waves pushed ashore cannot return offshore and accumulate near the coast, further raising the sea level.

3 Overlap with high tide
From summer to autumn is the period when tide levels are highest during the year. When a typhoon approaches, pay close attention to the timing of high tide.

Storm surges occur due to the following three factors:

- Rising sea level caused by falling atmospheric pressure (pressure setup)
- Wind-driven waves that push seawater toward the coast (wind setup)
- Overlap with high tide

Tide level and inundation depth are different

Tide level is different from inundation depth. Tide level refers to the height measured offshore from sea level (elevation 0 m), while inundation depth is the height of floodwater measured from the ground at that location.

This hazard map shows the maximum assumed inundation depth.

Areas at risk from storm surges

In addition to weather conditions, the magnitude of storm-surge-induced sea level rise is affected by seabed topography and coastal shape. In Amagasaki City, one-third of the municipal area lies below sea level (the mean spring high tide level of Osaka Bay), forming a "zero-meter elevation zone." Water bodies also surround the city from three directions, making it prone to flooding, storm surges, and tsunamis.

Cross-sectional image

Design tide level TP: +3.9 m (elevation 3.9 m)
Mean high tide level TP: +0.8 m (elevation 0.8 m)
Reference tide level TP: ±0.0 m (elevation 0 m)
Low tide level TP: -0.7 m (elevation -0.7 m)

*T.P. refers to the average sea level of Tokyo Bay, which serves as the reference datum for measuring the height of the ground surface and sea level. In Japan, T.P. is used as the standard for elevation.

Never forget that day.
Typhoon Jane

When Typhoon Jane struck on September 3, 1950, the maximum instantaneous wind speed of 44 m/s was recorded in the city. Due to the storm surge, areas generally south of National Route 2 were inundated, and in the Oda district, flooding reached as far as the Tokaido Line, causing extensive damage. The typhoon struck just as construction of the seawall had begun, and the present seawall was completed in 1956.

The scars left in Amagasaki City

Fatalities and missing persons: 28
Housing damage: 7,967 homes destroyed or partially destroyed
Above-floor flooding: 18,679 homes
Below-floor flooding: 6,951 homes

From the "Amagasaki City Administrative Report," 1950 edition

Amagasaki City Museum of History
Amagasaki Archives Collection
Photo by the Public Relations Office

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1 : 17,000
0 500 1,000m
The grid spacing is 1 km (1,000 m).