



# Protect our lives!

# **Kisosaki Town**

# **Disaster Prevention**

# Guidebook

An early evacuation will save your life! **Evacuate voluntarily** if you feel unsafe where you are.

▶P3

Check the location of your evacuation shelter and the route to it! Share the information with your family and neighbors.

A tsunami travels as fast as

**an automobile!** Take immediate action if you sense danger.

P6

▶P11

occurred! Three steps to take: drop, cover your head, stay put.

An earthquake has





A person needs **3 liters** of water per day. Tidying up will help reduce the harm < from a disaster!

Ensure safety at home

Kisosaki Town, Mie Prefecture

# When faced with large-scale flood damage...

It is expected that Kisosaki Town, Expected flooding due to The town an area lying at sea level or lower, a storm surge will be flooded if a storm surge (or is flooded an abnormal rise in the sea level) occurs due to a typhoon or the like. Areas likely to be flooded Hashima **Ichinomiya** City City Yoro Town Wanouchi Iwakura City Town Kitanagoya City Inazawa City **Kiyosu City** Kaizu City **Ama City** Inabe City Oharu Hokusei Citizen Hall **Tsushima City** Town Aisai City The (Wide-area Nagoya City **Kanie Town** vacuation) surrounding **Inabe City Kuwana** City Yatomi Citv areas will be **Toin Town** (Wide-area Tobishima flooded too evacuation Village Toin Town General Culture Center Asahi Town **Tokai** City **Kawagoe Town** When Kisosaki Town is flooded, its surrounding Yokkaichi City **Kisosaki Town** areas will also be widely **Chita City** flooded.

Created based on the expected storm surge disaster due to a super-large typhoon equivalent to the Super Ise Bay Typhoon (Tokai Netherlands Regional Council for High Tide and Flood)



Utilities such as water, electricity, and gas stops



Flooding continues for days



Rescue may take days



Even the evacuation shelters in the town may be flooded

# If such hazardous situations are expected...

# Early preparation Early evacuation

If people evacuate to a distant shelter all at once,

panic as well as severe traffic congestion will

to evacuate, should start

occur. Everyone, including those who need time and assistance

evacuating early,

by car or public

transportation.



Be proactive, gather information

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As a storm approaches, transportation services may be suspended, and traveling on foot will be very difficult. Obtain information from a reliable source such as radio or television.

## Evacuate out of town to a place where there is no risk of flooding

Large-scale flood damage will make the whole town flooded over a long period of time, making all the shelters unusable. If that's the case, you need to go to your own evacuation site or a safety evacuation -area.

#### Evacuate to your own evacuation site

Evacuate to your own evacuation site, such as a relative's or a friend's home, or your office out of town where



Evacuate to a shelter in the municipality with which we have a safety evacuation area agreement

Evacuate to **Inabe City** or **Toin Town**, with which we have agreements.

#### The safety evacuation area agreement for flood has been concluded

among Kuwana City, Inabe City, Kisosaki Town, Toin Town



Inabe City and the Toin Town accept evacuees living in areas at sea level of Kuwana City and Kisosaki Town when flooding occurs due to a storm surge.

\* See "When to start evacuating (wide-area evacuation)" on page 6.



# How to evacuate in time

Failing to evacuate in time during a disaster may cost you your life. Determine if and when to evacuate based on the information you gather on your own.

#### Indecisiveness may cause you to fail to evacuate in time

People tend to hesitate to evacuate if their neighbors are not evacuating, even when a disaster like a typhoon is predicted. If you fail to evacuate in time, it is possible that you will be isolated with no assistance for days in a flooded area.

This area should be fine because there has been no flooding here for decades.

Nobody's evacuating, so everything must be fine.

The water will never run over the dike that high.

A motive for evacuation "Encouragement from family and friends"

As for a motive for evacuation, "encouragement from family and friends" has the highest percentage (41%). In addition, as for the most decisive reason for evacuation, "recommendation from family" has the second highest percentage (12.1%). Family members, neighbors, volunteer fire fighters, and neighborhood council members who call out for evacuation are the key to getting an early start on evacuation.

Refer to "Research and Study of Local Citizens' Voluntary Evacuation Behavior" Japan Fire and Crisis Management Association (March 2020)

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## Don't wait around! / Take the initiative, gather disaster information on your own!

You could be misled by false rumors at the time of a disaster. Decide to evacuate based on the disaster information you gather on your own.



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Websites



Television **Emergency alert email** Kisosaki town email distribution service

The d button on the TV remote (Data broadcasting) Press the d button to get information on weather and disasters. Familiarize yourself with how to use the d button by watching weather news on data broadcasting on a daily basis.

# How Kisosaki Town sends out information

Type of information	Emergency radio for disaster prevention (Receiver at each house)	Emergency alert email	CTY data broadcasting	Kisosaki Town Email Distribution Service
Emergency earthquake warning	(J-Alert system)	(Meteorological Agency)		
Earthquake information	(J-Alert system)		•	
Tokai earthquake information	(J-Alert system)	(J-Alert system)	•	Sending you information
Tsunami information	(J-Alert system)	(J-Alert system)	•	useful for everyday life, as well as disaster information.
Special warning	(J-Alert system)		•	Disaster emergency, crime prevention, healthcare, childcare support,
Civil protection information	(J-Alert system)		•	everyday life, bus service, garbage separation and events
Evacuation information	•	•	•	To sign up for the email distribution se read the QR code or send a blank ema the address below:
own in parentheses is	the sender of informatior	: otherwise, the send	der is Kisosaki Town	t-kisosaki@sg-m.jp

# **5-level Warning System**

Disaster information with a corresponding warning level (1 to 5) is provided by the Japan Meteorological Agency and/or the local government.

Examples of information provided with a warning level	Warning Level	Action to take	Evacuation information
Info corresponding to Warning Level 5 Emergency heavy rain warning Information on the occurrence of storm surges and flooding.	Warning Level	Severe disasters have already occurred. You must take the best possible measures to save yourself.	<b>Disaster information</b> (Issued by local governments)
Info corresponding to Warning Level 4 Storm warning Information on the risk of storm surges and flooding, Storm surge warnings etc.	Warning Level 4 All residents must evacuate	All residents must evacuate immediately. If going to a public shelter seems dangerous, you must go to a safe location nearby or a safer area inside your house.	<b>Evacuation advisory</b> <b>Evacuation order (urgent)</b> (Issued by local governments)
Info corresponding to Warning Level 3 Heavy rainfall warning An advisory that is most likely switched to a storm surge warning	Warning Level 3 The elderly and physically challenged must evacuate	You must prepare for evacuation. People who need assistance (the elderly, physically challenged, and infants) and their care givers must start evacuating.	Evacuation preparation The elderly and people who need assistance must start evacuating (Issued by local governments)
Residents can use this information as a guide for	Warning Level	You should check evacuation procedures while reviewing the hazard map.	Flood advisory Heavy rain advisory (Issued by the Japan Meteorological Agency)
voluntary evacuation.	Warning Level	You should be alert for disasters.	Early warning information (Issued by the Japan Meteorological Agency)





# (Wind and Flood Damage)

#### A typhoon is a foreseeable disaster. It is important to take precautions and prepare in advance.

A typhoon can cause damage from strong winds, not to mention swelling of the river and a dike breach due to heavy rain. Unlike earthquakes, typhoons can be forecasted and tracked. It is important to prepare in advance and evacuate early.



## Strength of wind and damage

Average wind velocity (meters per second)	Forecast terminology	Observed conditions	Guide for evacuation
10 or more but less than 15 strong wind		It's hard to walk against the wind. You can't hold up an umbrella.	Move to a shelter or a safe location if you can (before it
15 or more but less than 20	Strong wind	It's hard to walk against the wind. Some people might fall down.	starts raining). [Horizontal evacuation]
20 or more but less than 25	Very strong wind	You might fall unless you hold on to something. Driving is dangerous.	If you fail to evacuate early or flooding has already started, move to a higher area of the building. <b>[Vertical evacuation]</b>
25 or more but less than 30	strong time	You can't stand upright.	It is dangerous to move in the dark at night or when the visibility is poor due to heavy rain. In that case, stay where
<b>30</b> or more	30 or more Violent wind		you are, or move to a higher area of the building. [Vertical evacuation]

#### Torrential rain<sup>\*</sup>

Unexpected heavy rain falls on a localized area in a very short period of time, | due to the rainy season front. Torrential rain can | cause river flooding and poor drainage.



#### Things you should bear in mind

Be alert when you see or hear phrases like "the atmospheric conditions are unstable" and "the weather may change suddenly."

The raining in a far-off location could affect the condition of where you are.

The water level can rise to a dangerous level in a very short time, so stay away from irrigation channels and the like.

\* Definition of torrential rain: 100 to several hundred millimeters of rainfall on a localized area in a few hours

## Storm surge caused by a typhoon

A storm surge is an extreme rise in the sea level. It is differentiated from a tsunami because it often occurs as a typhoon approaches. An area lying at sea level or lower has a high risk of being hit by flooding due to storm surges.

> Tide level at the time of the Ise Bay

> > Typhoon

3.89 m

Expected height at

Nagoya Port)

#### How a storm surge occurs



#### Strong wind disturbs the sea surface, causing currents and raising the water level, which hits the land.

The atmospheric pressure drops due to a typhoon, and the surrounding air with high pressure causes the sea surface to rise.



\* A line to indicate that the level of a body of water has become dangerously high, posing the risk of flooding



# **Contraction Earthquakes**

#### Know what to do to keep yourself safe, no matter where you are when an earthquake strikes.

An earthquake strikes suddenly. When you feel an earthquake or receive an emergency earthquake warning, protect your head from falling objects. After the quake stops, ensure the safety of the surroundings, and secure an escape path.





Secure an escape path





Stay away from window glass and outside walls

Drop, cover your head, stay put!

> Move only after the shaking stops!



If there is broken glass on the floor, wear slippers or lay down things like magazines to walk on.

## If you are at home...



Move away from tall furniture such as bookcases.



If you are on the second floor, stay there; do not run downstairs.



Protect yourself from broken glass with a blanket.



Protect your head with a washbowl and get out of the shower room immediately.

## If you are out...



Hold on to something like a hanging strap if you are in a moving vehicle.



Protect your head with a shopping basket from falling objects.



Park your car on the side of the road and get away, leaving the key on.



Press all the floor buttons and get off the elevator when the door opens.

# 

#### A tsunami is caused by an earthquake. Move to a higher place.

An earthquake can cause a tsunami, a series of enormous waves. A tsunami travels very fast, so immediately go to a higher place or a designated emergency evacuation site even in a small quake.



### **Facts about tsunamis**









Much higher than you might expect

**Travels as fast as** a car

**Occurs in multiple waves** that can hit in succession

May occur with very little warning

## **Tsunami warning and advisory**

	Expected height of a tsunami			
Types	Specific data announced (Criteria for announcement)	Terminology used at the time of a major earthquake	Expected damage	
	10 meters or higher (10 m < height)		Wooden houses are completely	
Mega- tsunami warning	10 meters (5 m < height ≤ 10 m)	Major	destroyed or washed away. People are caught up in tsunami currents.	
	5 meters (3 m < height ≤ 5 m)			
Tsunami warning	3 meters (1 m < height ≤ 3 m)	High	Low-lying areas are hit by tsunami currents and flooded. People are caught up in tsunami currents.	
Tsunami advisory	1 meter (20 cm ≤ height ≤ 1 m)	Not applicable	If in the water, people are caught up in rapid currents. Small vessels overturn.	



Signboards in the town





Tsunami evacuation pictogram Showing an evacuation shelter that can be used at the occurrence of a tsunami. The signboard is placed at an easily viewable location.



Answers for the quiz on page 13: Q1.3 Q2.3 Q3.1 Q4.2 Q5.2



#### **Checklist for emergency carry-out items**

Add your own carry-out items as necessary.

Drinking water and food	
Portable radio	□ Blankets
☐ Flashlights	First aid kit and disinfection solution
☐ Batteries	Portable toilet
Helmet and masks	□ Cash
□ Work gloves	☐ Family pictures
☐ Writing tools and paper	Photocopy of driver's license
☐ Can opener and knives	Photocopy of health insurance card
☐ Lighters	Photocopy of bank book
🗌 Toothbrush kit	□ Spare key for the house and/or the car
Clinical thermometer	

## Safety tips for women

#### Always have security items with you.

A security buzzer or a whistle will help you get help if you are trapped in a collapsed building.



#### Do not act alone.

Women can be an easier target for crime during a disaster. Do not act alone; act with others.

#### Beware of unexpected visitors!

Following disasters, criminals often visit neighborhoods in disguise. Do not let anyone into your home unless you are sure who they are.



#### Operators of the evacuation shelter should be both men and women. Get women's opinions

on how to operate an evacuation shelter, so it will be as comfortable as possible for both men and women.

北南湖

# now!

**Q2** 

Quiz on disaster	Q3
prevention	
prevention	

91 What would you do first when an earthquake occurs?

- Get away from where you are
   Hold on to the wall
- 3) Drop and cover your head

#### When would you evacuate as a typhoon is approaching?

 When the wind and rain become ferocious
 When your house is flooded up to your knees
 When the wind and rain are still weak with no flooding

#### Where would you keep your emergency carry-out bag?

- 1) Near the exit (at the front door) 2) In a locked closet because the bag
- a) In a locked closer because the bag contains important items
  3) In the kitchen because it contains food

#### A tsunami has occurred! What would you do?

- 1) Evacuate as far as possible
- 2) Move to a safe, higher place
- 3) Wait until the next information comes in and then act

#### What do you call the act of helping each other at the time of a disaster?

1) Self-help 2) Mutual help

04

Q5

3) Public help

Go to the bottom of

# **Flooding Hazard Map**

#### Flooding has occurred at the upstream region from Kisosaki Town!



#### <Creation conditions for the flooding hazard map>

Waterflow over the dike	<ul> <li>It is expected that the left bank dike of the Kiso River at the upstream region from Kisosaki Town is broken and the town will flood from the Aichi Prefecture side.</li> <li>An overtopping flood is taken into consideration for the left bank dike of the Kiso River in Kisosaki Town (high-tide dike section), but it hasn't occurred.</li> </ul>	
Expected dike break	- Based on a 200-meter pitch at the dike section.	
Expected dike breach	<ul> <li>For a section with a completed dike, the estimated high-water level is used. (Planned margin height = planned dike height – estimated high-water level).</li> <li>For other sections except for a section with a completed dike, the height is set by subtracting the planned margin height from the dike height at each break point.</li> <li>No break at the section with a high-tide dike.</li> </ul>	
Calculation for flooding	<ol> <li>A terrain model that evaluates the Kiso floodplain by dividing it into grids (mesh) with 25-meter intervals as one unit.</li> <li>A river course model to evaluate changes in the water level of the Kiso River over time A simulation model that combines the above two is called a flood analysis model, based on which changes in the river water level and the spatiotemporal spread of flooding due to a dike break are calculated.</li> </ol>	
Expected maximum rainfall	The expected maximum rainfall is set based on the relationship between the rainfall duration, the basin area, and the maximum rainfall, based on the maximum rainfall observed in an area with similar rainfall characteristics in the country. The total rainfall in two days at the Kiso basin is assumed to be 527 mm.	
Reference	Expected Flood Risk, published by the Chubu Regional Development Bureau (December 2016) The rainfall goes beyond the annual excess probability of approximately 1/1,000 (the rainfall that would occur once in 1,000 years).	



# Tsunami Hazard Map

#### The evacuation site where you go to save your life:





### A Designated emergency evacuation site 🗴

No.	Facility name	Location for use	Capacity (persons)
1	Nabeta River Upstream Drainage Pump Station	Roof	287
2	Fukutoku Shoji Co., Ltd.	Factory 3rd floor	390
3	Northern Area of Kisosaki Town Tsunami Evacuation Tower	1st and 2nd tiers	450
4	Townspeople Hall	Hall and roof	650
5	Chubujozai Co., Ltd.	Warehouse 2nd and 3rd floors	150
б	Kisosaki Elementary School	School building 3rd floor and roof	1,476
7	Kisosaki Junior High School	School building 3rd floor and roof	1,759
8	Ishida Tekko Co., Ltd.	Office building 3rd floor and roof	320
9	Hagoromo Foods Co., Ltd. Kisosaki Plant	Warehouse 3rd floor	400
10	Disaster Control Center	2nd floor and roof	256
11	Asai Kogyo Co., Ltd.	Office building 2nd floor	300
12	Nabeta River Downstream Drainage Pump Station	Roof	335
13	Southern Area of Kisosaki Town Tsunami Evacuation Tower	1st and 2nd tiers	100



#### <Creation conditions for the tsunami hazard map>

Reference	Research on Earthquake Damage Estimation, published by Mie Prefecture (March 2014) Some are selected from a number of possibilities. The actual scenario of the next earthquake may be different from the estimation.	
Expected earthquake	The "most powerful class" earthquake that is scientifically expected to occur on the Nankai Trough. Kisosaki Town is expected to experience a seismic intensity of 7.	
Occurrence conditions for a tsunami	A tsunami caused by an earthquake occurs at the high water level (T.P + 1.2m).	
Expected dike break	The dike is broken when the banking structure sinks by 75% (25% left) and a tsunami runs over the sunken structure.	

# **Storm Surge Hazard Map**





#### <Creation conditions for the storm surge hazard map>

Reference	Area map of expected flooding due to storm surge, published by Mie Prefecture (August 2020)
	910 hPa at landfall (similar to the Muroto Typhoon) The atmospheric pressure after landfall is constant.
The moving speed of the typhoon *1	73 km/h (similar to the Ise Bay Typhoon)
The radius of maximum cyclostrophic wind speed of the typhoon *2	75 km (similar to the Ise Bay Typhoon)
Tide level	The abnormal sea level (0.152m in the Tokai region) is added to the high water level (T.P + 1.2m).
Conditions for a dike breach (River levees, etc.)	The river flow rate is set based on a government-administered river. The river flow rate is the basic high water flow rate stipulated by the river management basic policy. The dike is breached when the design conditions (estimated high tide level, estimated high-water level) are reached.
The path of the typhoon	Set the path where the tide level becomes the highest on the coast of Mie Prefecture. Set the path of Typhoon No.6 of 1972 (NNW). The probability of a typhoon passing through the path is assumed to be once every 500 to 5,000 years.

\*1 The maximum wind speed increases as the moving speed increases, so in principle, the maximum tide level deviation also increases.

\*2 The distance between the center of the typhoon and the point around the typhoon where the wind speed is the fastest.



# Designated emergency evacuation site

Facility name	Location for use
Nabeta River Upstream Drainage Pump Station	Roof
Fukutoku Shoji Co., Ltd.	Factory 3rd floor
Northern Area of Kisosaki Town Tsunami Evacuation Tower	1st and 2nd tiers
Townspeople Hall	Hall and roof
Chubujozai Co., Ltd.	Warehouse 2nd and 3rd floors
Kisosaki Elementary School	School building 3rd floor and roof
Kisosaki Junior High School	School building 3rd floor and roof
Ishida Tekko Co., Ltd.	Office building 3rd floor and roof
Hagoromo Foods Co., Ltd. Kisosaki Plant	Warehouse 3rd floor
Disaster Control Center	2nd floor and roof
Asai Kogyo Co., Ltd.	Office building 2nd floor
Nabeta River Downstream Drainage Pump Station	Roof
Southern Area of Kisosaki Town Tsunami Evacuation Tower	1st and 2nd tiers

#### **Designated evacuation shelter**

Facility name	Object area
Karoto Meeting House	Shinkaroto, Kamikaroto
Rural Community Multi-Purpose Joint-use Facility	Kamikennyu, Higashikennyu, Tatsutaka
Northern Area Public Hall	Nakakaroto, Oshinden, Sotobiraki
Kisosaki Childcare Center	Shimokennyu, Kamiizumi
Townspeople Hall	Nishitaiganji, Kobayashi
Welfare and Education Center	Nishitaiganji, Kobayashi
Hometown Creation Hall	Koizumi
Kisosaki Elementary School	Fukuzaki, Nishihakurogawa, Sakae, Dainisakae
Kisosaki Town Gymnasium	Omijima, Tashiro, Wakizuki, Gangaji
Kisosaki Junior High School	Shimoizumi, Tomitane, Nakaizumi, Kaorugaoka, Nakasakae, Dainitomitane, Daisantomitane
Eastern Area Public Hall	Minamisakae, Shintomitane, Higashitomitane
Former Nanbu Kindergarten/ Nursery School	Toyosaki, Kawasaki, Hakuro, Genroku, Shimofujisato, Kamifujisato, Matsunaga, Fujisatodai, Nagisadai

#### Welfare shelter

Facility name	Capacity (number of persons)	Facility name	Capacity (number of persons)
Health Center	70	Social Welfare Corporation Jikokai Suisen-no-Sato	50

#### Disaster Emergency Message Dial [171]

Voice message service for safety confirmation that is provided at the time of a disaster.



#### This service is accessible via the following phones:

#### Ordinary fixed phones (touch-tone line, dial line), pay phones, ISDN phones, cell phones, PHSs, IP phones

- This messaging service is only for phones in the disaster-stricken area, and usable telephone numbers are those with area codes, cell phones and PHSs, and IP phones.
- Please contact your telephone carrier for details.

#### Note:

- The recording time is up to 30 seconds per message.
- You can record up to 20 messages per telephone number. (When the number of stored messages exceeds 20, the oldest one will be deleted.)
- Messages will be stored until the Disaster Emergency Message Dial 171 service is deactivated and they will be deleted automatically after that.
- There are no charges for calls to record and play messages made through fixed phones, pay phones, ISDN phones, and fiber optic phones provided by NTT East/ NTT West. (For charges for calls made through other carriers' phones, cell phones or PHSs, contact the carrier you use.)

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