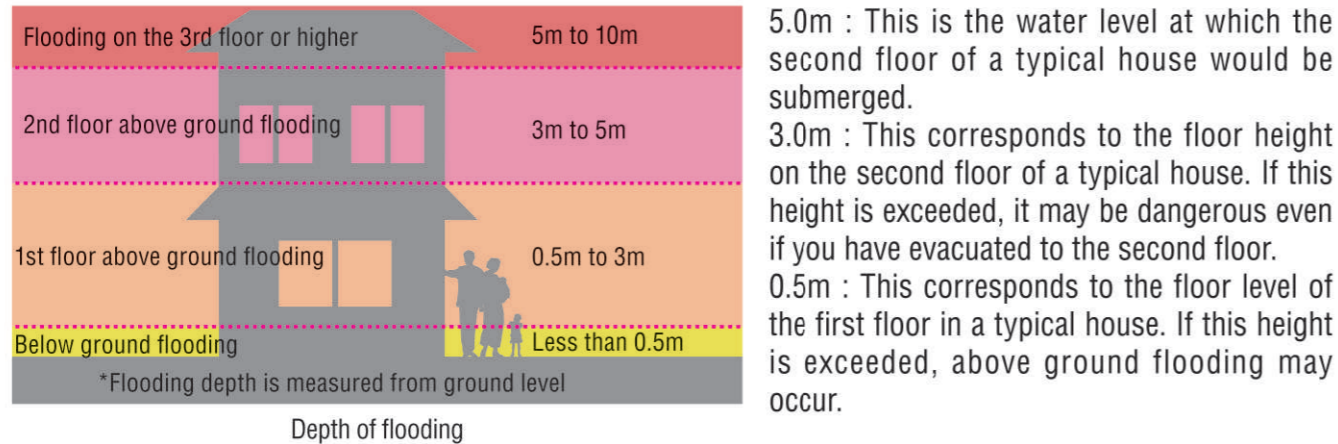


# How to Read a Hazard Map

- **Make sure you understand the information on the hazard map, and discuss evacuation routes and other details with your family on a regular basis.**

## Explanation 1 Classification of maximum flooding depth

The flooding depth classifications have the below meanings.



## Explanation 2 Areas at risk of building collapse, etc.

This map indicates areas where houses are at risk of collapse due to floodwaters caused by levee breaches or other reasons sweeping them away, or due to riverbank erosion caused by floodwaters within the river channel.

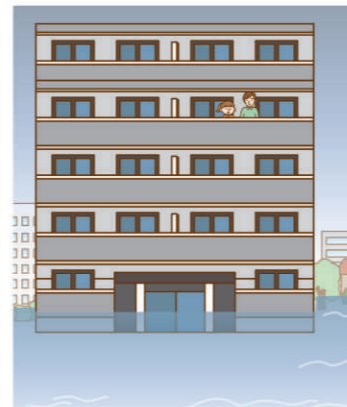
The extent of house damage caused by floodwaters was estimated based on the structural characteristics and weight of a standard two-story wooden house using the maximum water depth and flow velocity obtained from numerical simulations.

The extent of house collapses caused by riverbank erosion has been estimated based on historical data on the width of riverbank erosion that has occurred nationwide.

## Explanation 3 Duration of flooding

If you do not evacuate from areas where flooding is expected to persist for an extended period, note that the following issues may occur:

- If the water is deep, you won't be able to leave your house.
- Even if you have supplies, water and food will eventually run out.
- Sanitary conditions will deteriorate.
- If someone falls ill, it will be difficult to handle.
- People who are receiving regular medical care cannot receive treatment.
- If the power fails, you will be unable to access information.
- The suspension of electricity, gas, and water services will lead to a deterioration in living conditions.



## Explanation 4 Landslide hazard zones

Areas where particular caution is required regarding landslides are designated by the prefecture as landslide hazard zones or special hazard zones.

Landslide hazard zones and special hazard zones include debris flows, rockfalls, and landslides, but the map does not specify these categories and shows only the zones themselves. Please note that there are no designated landslide-prone areas within Fukuroi City.



### Special Landslide Hazard Zone (Red Zone)

This is an area where, in the event of a landslide or similar incident on a steep slope, there is a recognized risk that buildings could be damaged and that the lives or physical well-being of residents and others could be seriously endangered.

Displayed on the map asmap as

### Landslide Hazard Zone (Yellow Zone)

This is an area where it is recognized that landslides or similar events on steep slopes could pose a risk to the lives or physical safety of residents and others.

Displayed on the map asmap as

- The below three areas have been designated as areas requiring early evacuation. You need to be especially careful.

## Areas requiring early evacuation

### 1 Areas at risk of house collapses or other damage due to flood waters or riverbank erosion

Areas where wooden houses are expected to collapse due to the violent currents caused by a levee breach or where levees and the ground are expected to be eroded by the river's strong currents

Displayed on the map as (Violet)



Kurihara City, Miyagi Prefecture (from the 2015 Flood Report)



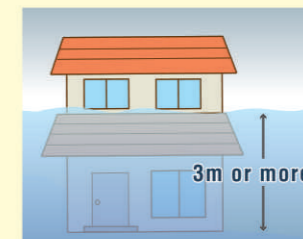
Asakura City, Fukuoka Prefecture (from the 2017 Flood Report)

### 2 Areas where flooding depth may rise to 3 meters or higher

Areas where flooding is expected to reach the second floor or higher of a typical house

Displayed on the map as (Red)

Displayed on the map as (Pink)



Tanabe City, Wakayama Prefecture (from the 2015 Flood Report)

### 3 Areas where flooding is likely to persist for three days or more

Areas where flooding depth of 50 cm or more is expected to persist for three days or more, and where residents may become isolated

Displayed on the map as (Green)



Daisen City, Akita Prefecture (from the 2011 Flood Report)

## ● How a Flood Hazard Map is Created

This section describes the criteria and methods for creating flood hazard maps.

### 1 Rainfall used in flood hazard maps

The rainfall used in flood hazard maps is based on the maximum predicted rainfall established by the national government according to watershed area. In the Ota River basin, 629.5 mm of rain fell in 24 hours—meaning the probability of rainfall exceeding that magnitude in a single year is roughly once every 1,000 years.

Predicted rainfall

**Projected rainfall over 24 hours: Otakawa River system: 629.5 mm; Benzaiten River system: 800.0 mm; Maekawa River system: 836.0 mm**

- In addition, you can check the inland inundation area maps for Shizuoka Prefecture online.

Using a computer



Inundation in Shizuoka Prefecture



Search

Using a smartphone



- The highest rainfall ever recorded in the Fukuroi City limits was 508.0 mm over a 24-hour period during the Tanabata torrential rains (July 1974) as observed by the Shizuoka Regional Meteorological Observatory. Rainfall exceeding 1,000 mm in 24 hours has been recorded elsewhere in the country. (Hisou Observation Station, Naka Town, Tokushima Prefecture: 1,114.0 mm over 24 hours)
- Torrential rains exceeding past records for the region, including the torrential rains of July 2020, have occurred almost every year in recent years, and there is a very real possibility that Fukuroi City could experience unprecedented rainfall.

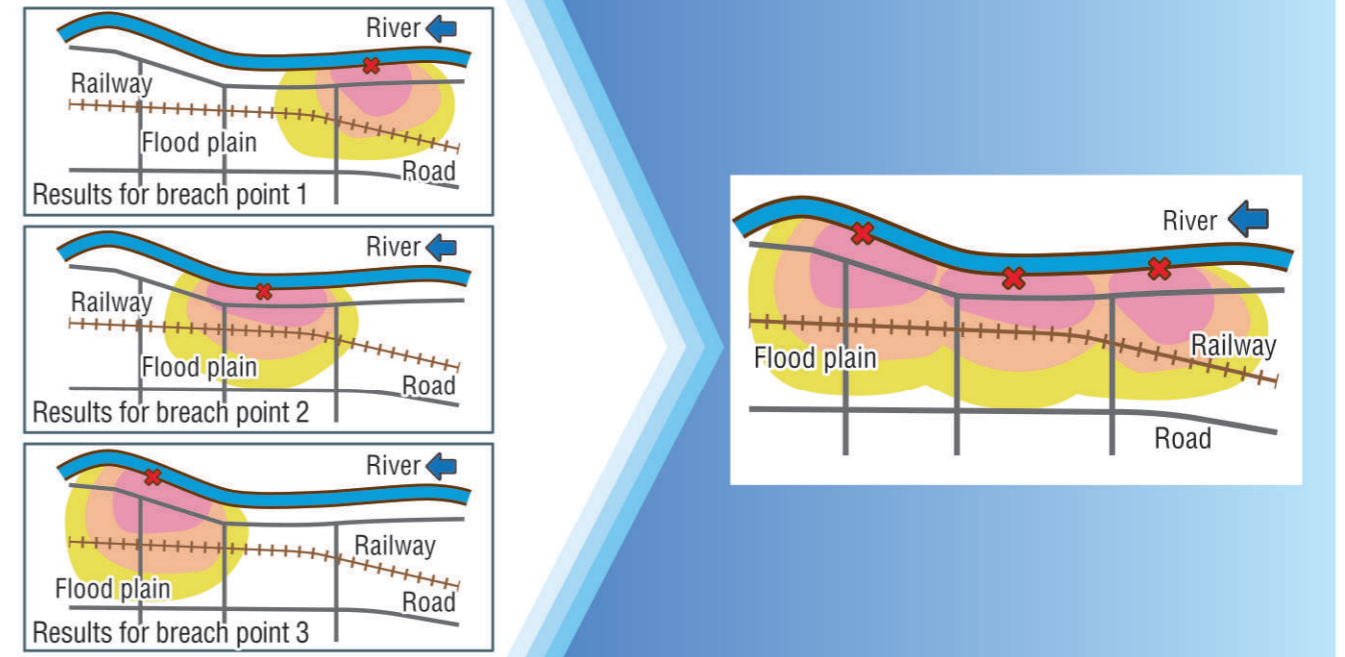
	24-hour precipitation (location with the highest rainfall)	Number of locations that set new records
September 2022 Heavy rain caused by Typhoon No. 15	416.5mm (Suruga Ward, Shizuoka City, Shizuoka Prefecture)	6 locations nationwide
July 2021 Heavy rain, mainly in the Tokai and southern Kanto regions	543.0mm (Hakone Town, Ashigarashimo District, Kanagawa Prefecture)	3 locations nationwide
July 2020 Torrential rain	497.0mm (Hita City, Oita Prefecture)	30 locations nationwide

Source: From the Japan Meteorological Agency website, "Weather Events That Caused Disasters"

## 2 How flood hazard maps are created

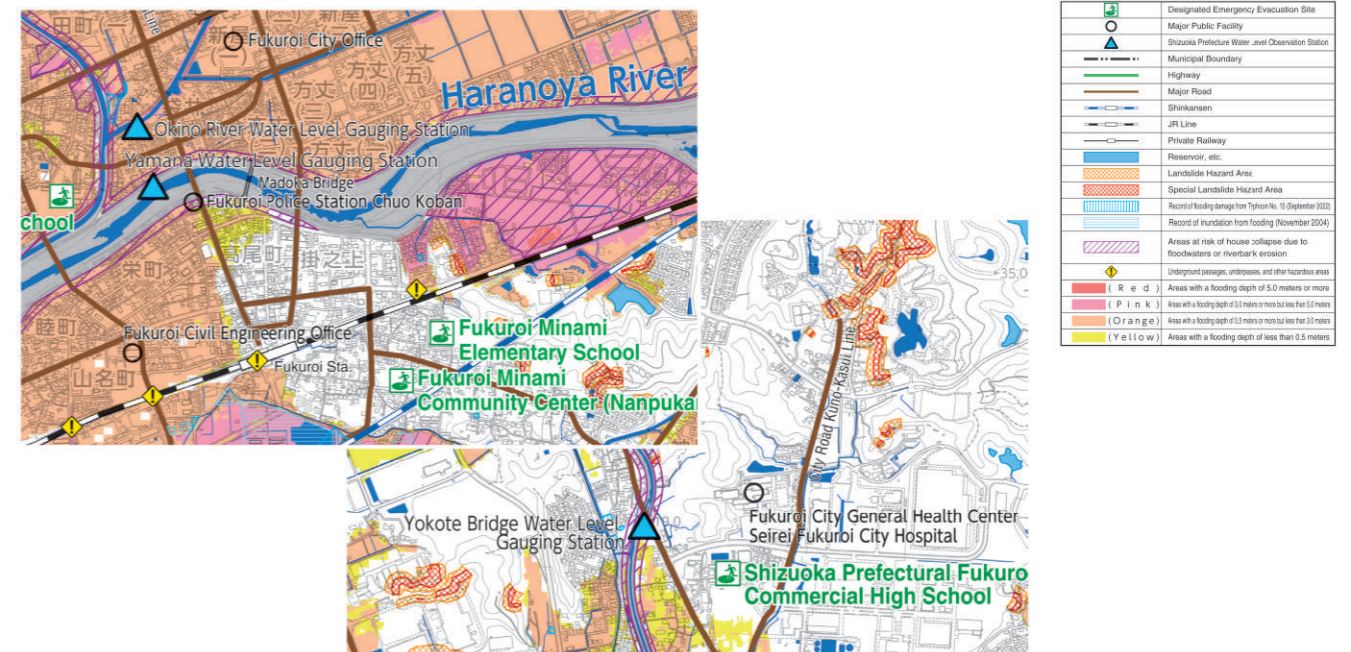
### ① Inland Inundation Area Map

This map shows the areas predicted to flood and the flooding depth based on flooding caused by the maximum predicted rainfall. The topographical data and other information is reproduced in a computer model, multiple potential breach locations for each river are predicted based on the target rainfall, and the maximum flooding depth is overlaid to create the map.



### ② Flood hazard map

This map includes information on evacuation, such as designated emergency evacuation sites, within the predicted flood inundation zone.



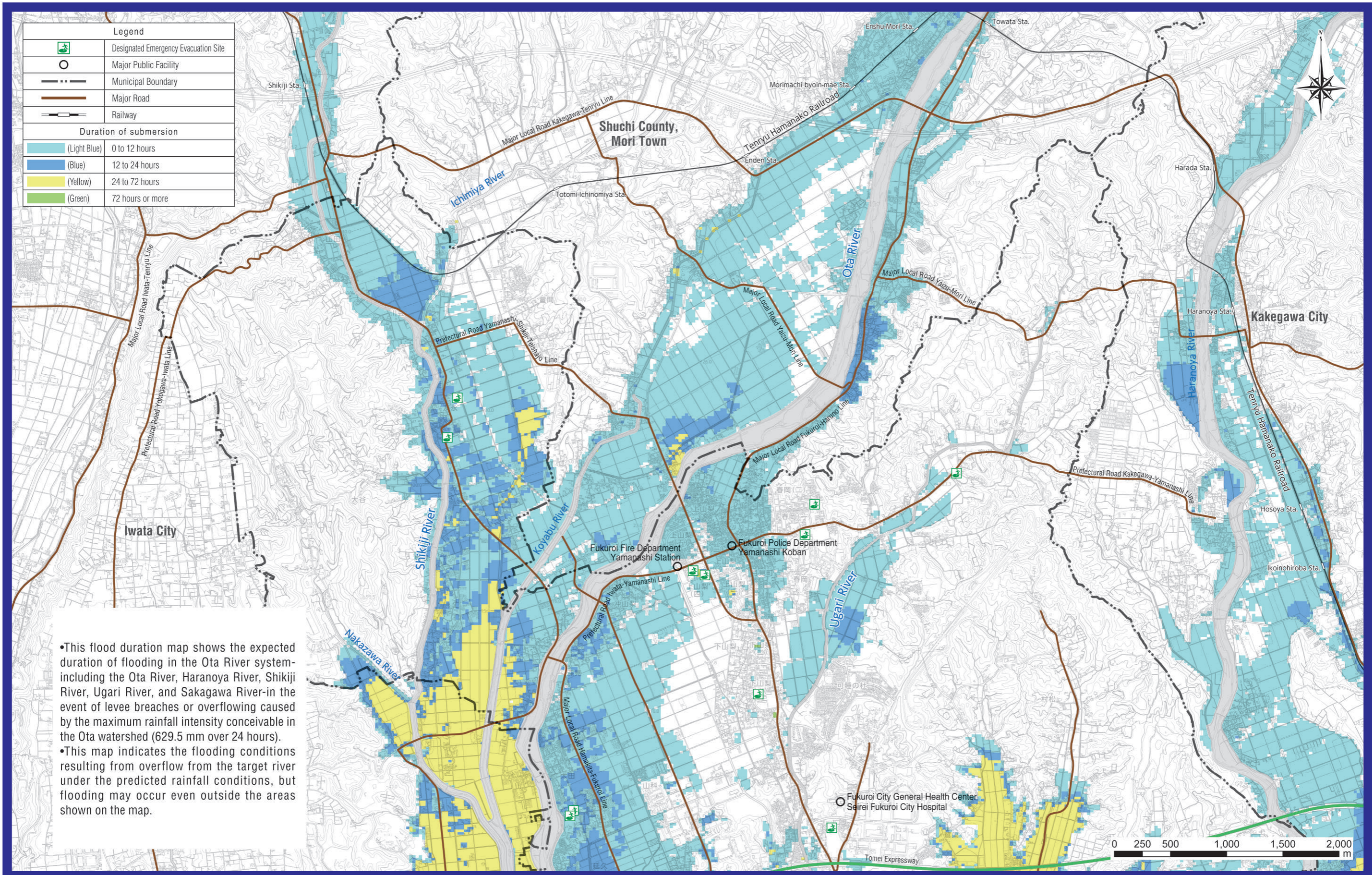
\*Note that flood inundation maps may differ from actual disaster conditions.

# Flood Duration Map [Northern Region]

During flooding, power outages and disruptions to water and sewer services may occur. It is difficult to live in such an environment for long periods of time. Consider whether it is possible to ensure safety indoors (vertical evacuation) and what actions to take in advance.

Areas marked in green (where flooding is expected to last 72 hours or more) are areas where early evacuation is necessary.

- This map shows the duration during which water depths reach 50 cm or more.
- In areas where flooding is predicted to last for an extended period, caution is advised as there is a risk of being isolated.



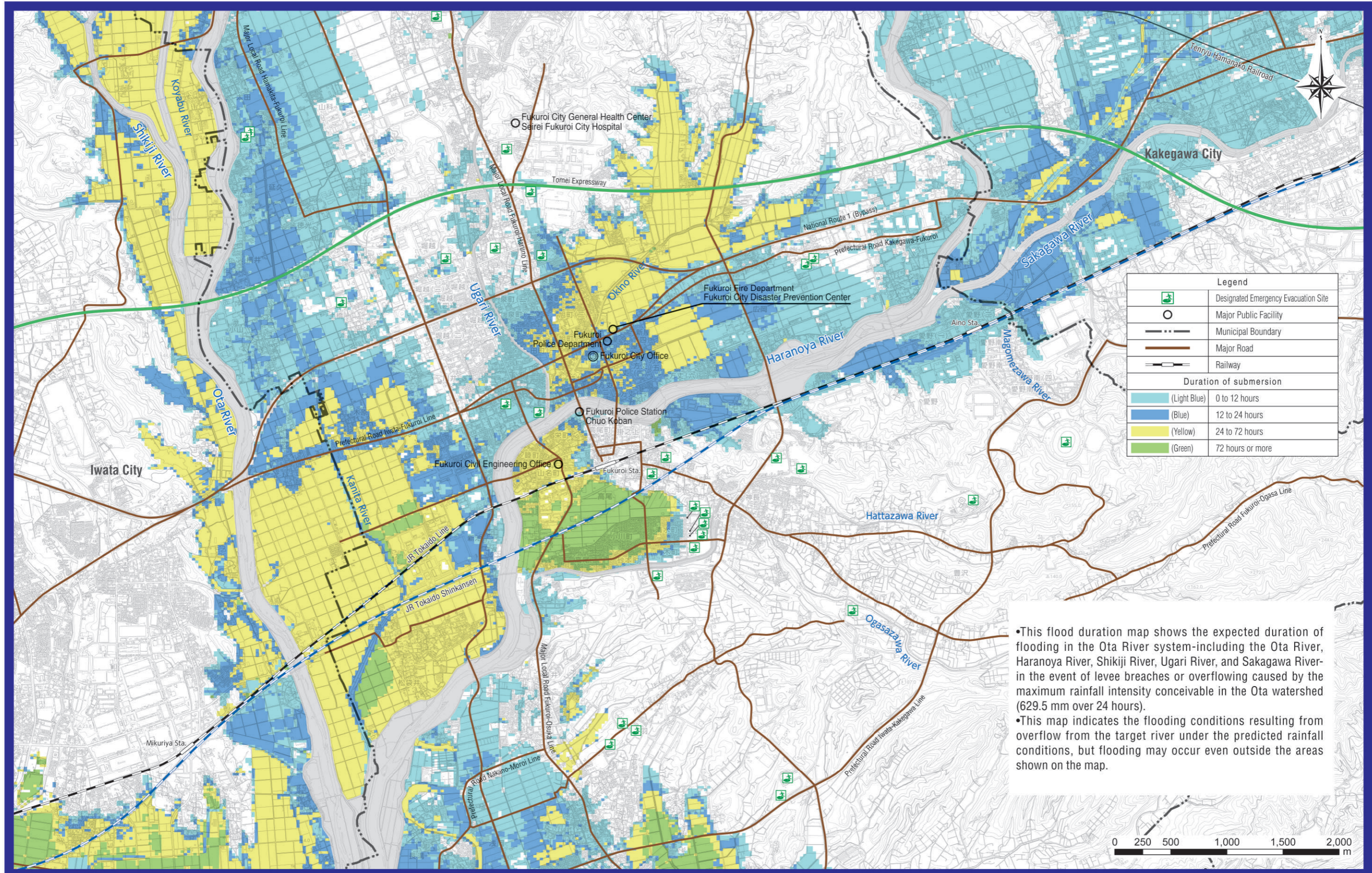
• This flood duration map shows the expected duration of flooding in the Ota River system—including the Ota River, Haranoya River, Shikiji River, Ugari River, and Sakagawa River—in the event of levee breaches or overflowing caused by the maximum rainfall intensity conceivable in the Ota watershed (629.5 mm over 24 hours).  
 • This map indicates the flooding conditions resulting from overflow from the target river under the predicted rainfall conditions, but flooding may occur even outside the areas shown on the map.

# Flood Duration Map [Central Region]

During flooding, power outages and disruptions to water and sewer services may occur. It is difficult to live in such an environment for long periods of time. Consider whether it is possible to ensure safety indoors (vertical evacuation) and what actions to take in advance.

Areas marked in green (where flooding is expected to last 72 hours or more) are areas where early evacuation is necessary.

- This map shows the duration during which water depths reach 50 cm or more.
- In areas where flooding is predicted to last for an extended period, caution is advised as there is a risk of being isolated.



• This flood duration map shows the expected duration of flooding in the Ota River system—including the Ota River, Haranoya River, Shikiji River, Ugari River, and Sakagawa River—in the event of levee breaches or overflowing caused by the maximum rainfall intensity conceivable in the Ota watershed (629.5 mm over 24 hours).

• This map indicates the flooding conditions resulting from overflow from the target river under the predicted rainfall conditions, but flooding may occur even outside the areas shown on the map.

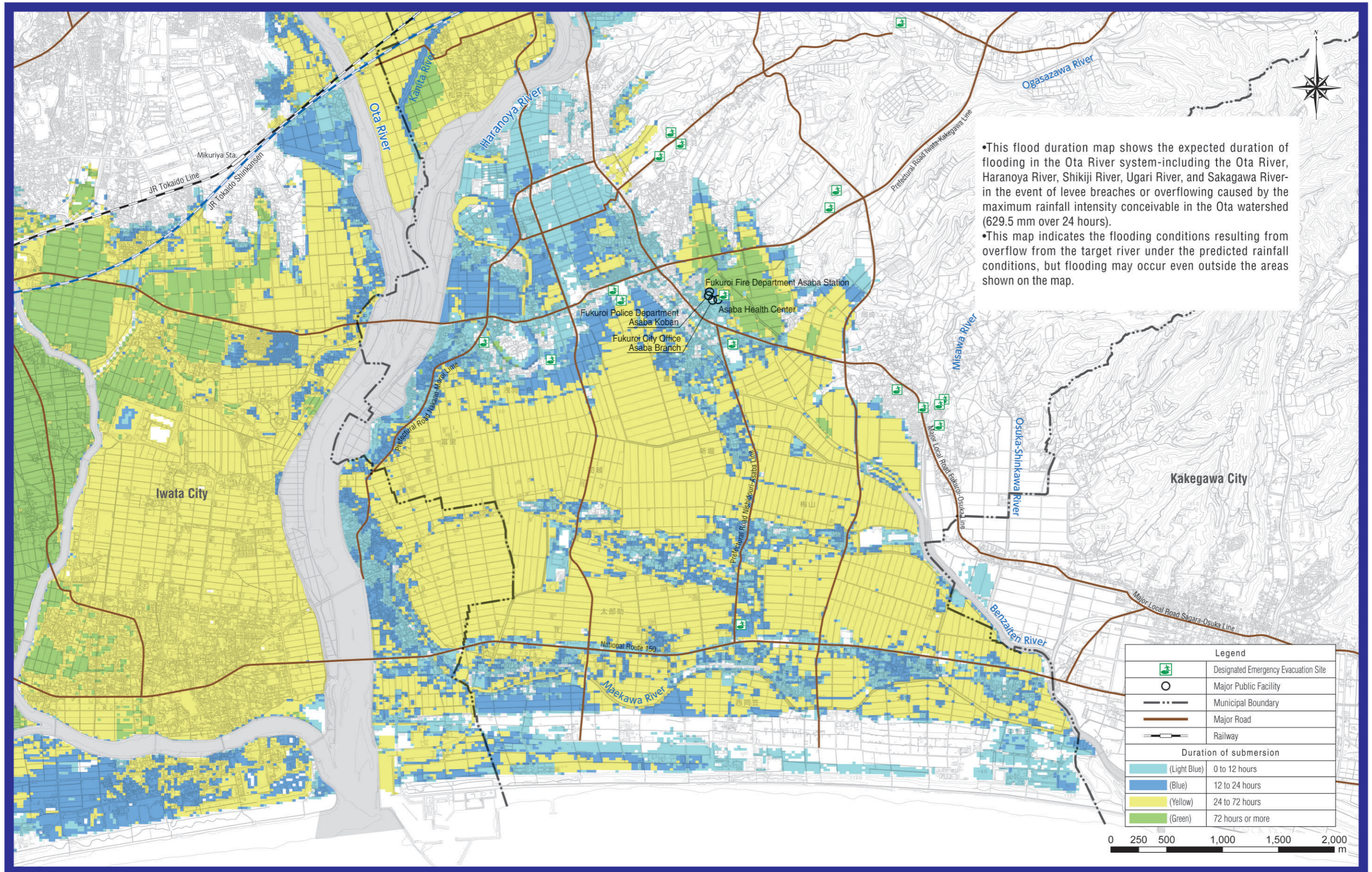
0 250 500 1,000 1,500 2,000 m

# Flood Duration Map [Southern Region]

During flooding, power outages and disruptions to water and sewer services may occur. It is difficult to live in such an environment for long periods of time. Consider whether it is possible to ensure safety indoors (vertical evacuation) and what actions to take in advance.

Areas marked in green (where flooding is expected to last 72 hours or more) are areas where early evacuation is necessary.

- This map shows the duration during which water depths reach 50 cm or more.
- In areas where flooding is predicted to last for an extended period, caution is advised as there is a risk of being isolated.



• This flood duration map shows the expected duration of flooding in the Ota River system—including the Ota River, Haranoya River, Shikiji River, Ugari River, and Sakagawa River—in the event of levee breaches or overflowing caused by the maximum rainfall intensity conceivable in the Ota watershed (629.5 mm over 24 hours).

• This map indicates the flooding conditions resulting from overflow from the target river under the predicted rainfall conditions, but flooding may occur even outside the areas shown on the map.

# Inland Inundation Hazard Map

## ● How an Inland Inundation Hazard Map is Created

This section describes the criteria and methods for creating inland inundation hazard maps.

### 1 Rainfall used in the inland inundation hazard map

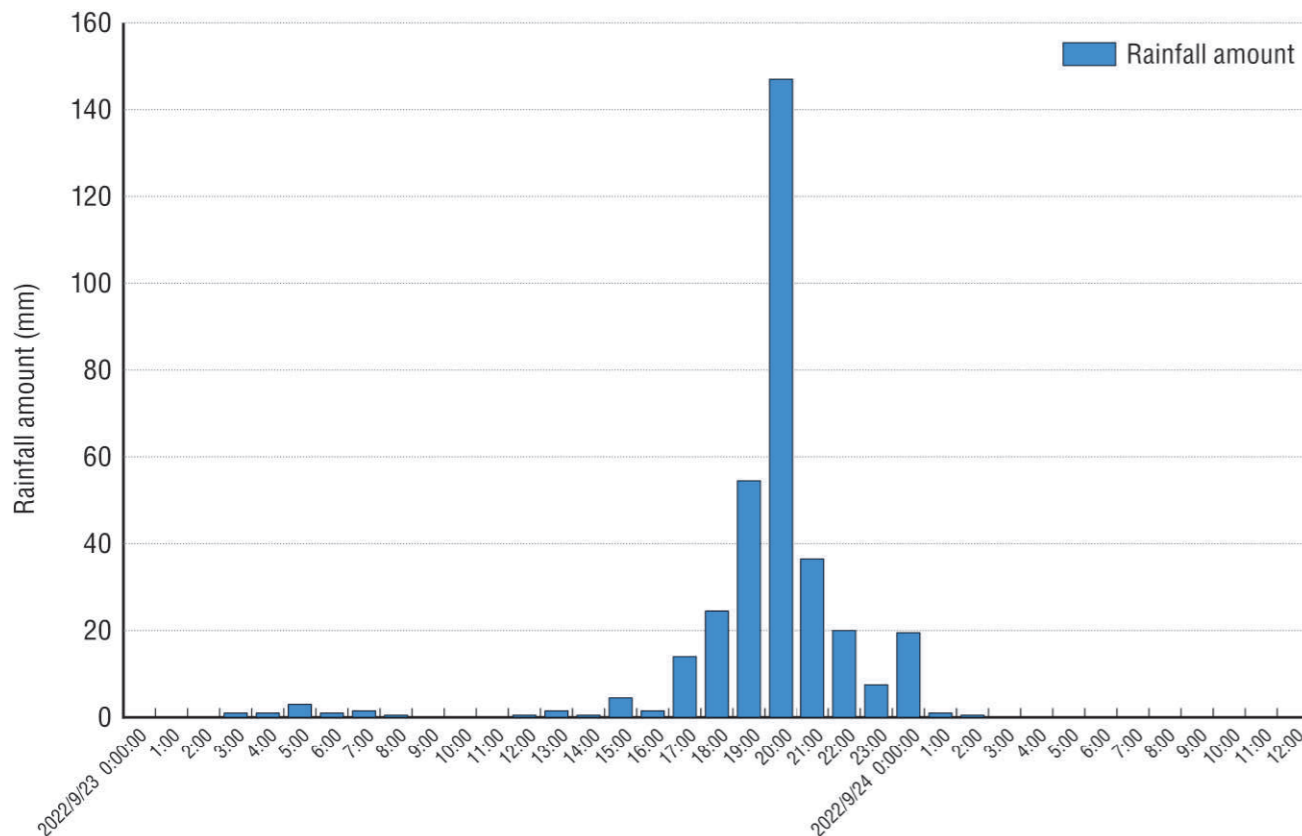
The rainfall data used in the inland inundation hazard map was generated by scaling up the rainfall profile (temporal distribution) from the maximum rainfall ever recorded in Fukuroi City (September 23, 2022), based on national standards, to match the maximum rainfall amounts specified for each area, and the map is based on a rainfall event with a maximum hourly rainfall of 147.0 mm and a total rainfall of 333.5 mm. This means the probability of rainfall exceeding this magnitude in a given year is roughly once every 1,000 years.

Predicted rainfall

147.0mm per hour

Inland flooding often occurs when large volumes of rainwater flow into waterways in a short period of time, exceeding their capacity, and when heavy rainfall continues for an extended period, the volume of water overflowing onto land increases, tending to expand the flooded area and increase flooding depth.

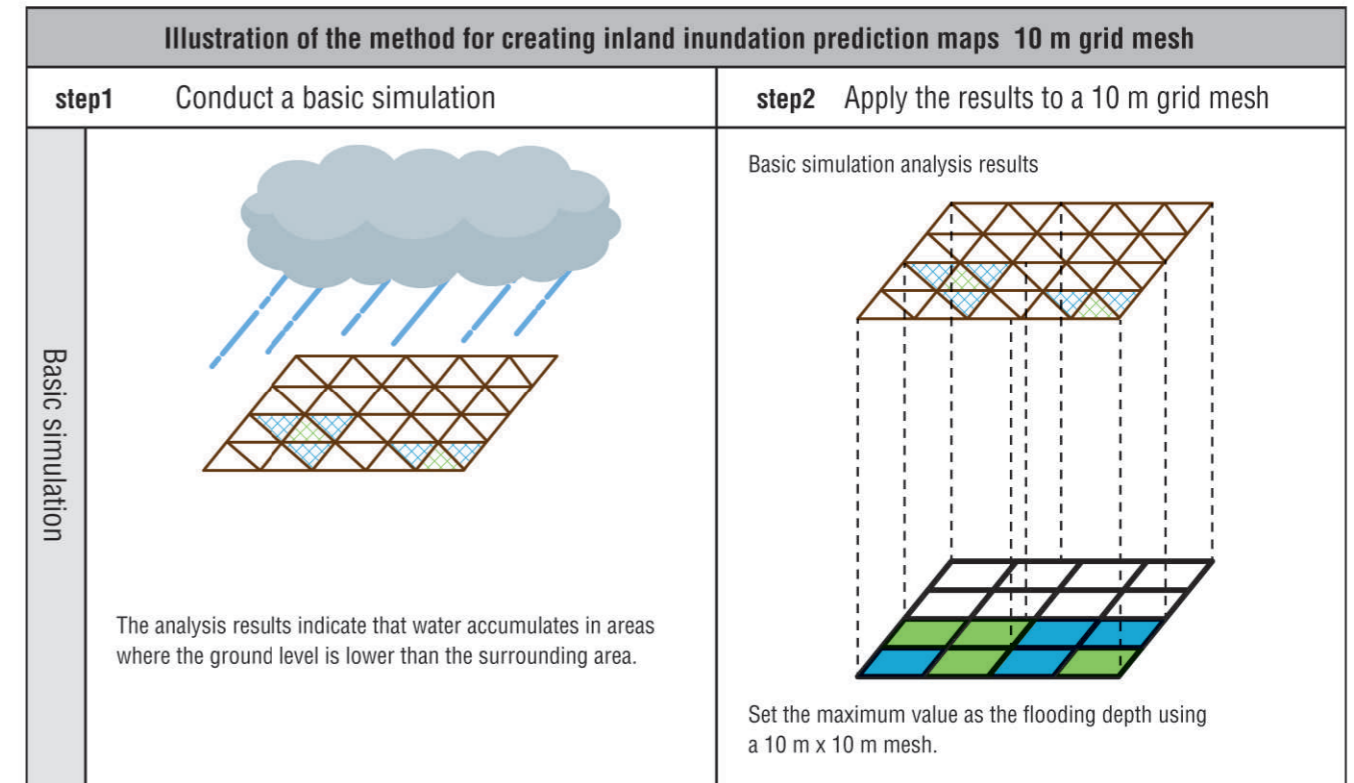
Maximum predicted rainfall (based on Fukuroi City Hall data / September 23–24, 2022)



## 2 How an Inland Inundation Hazard Map is Created

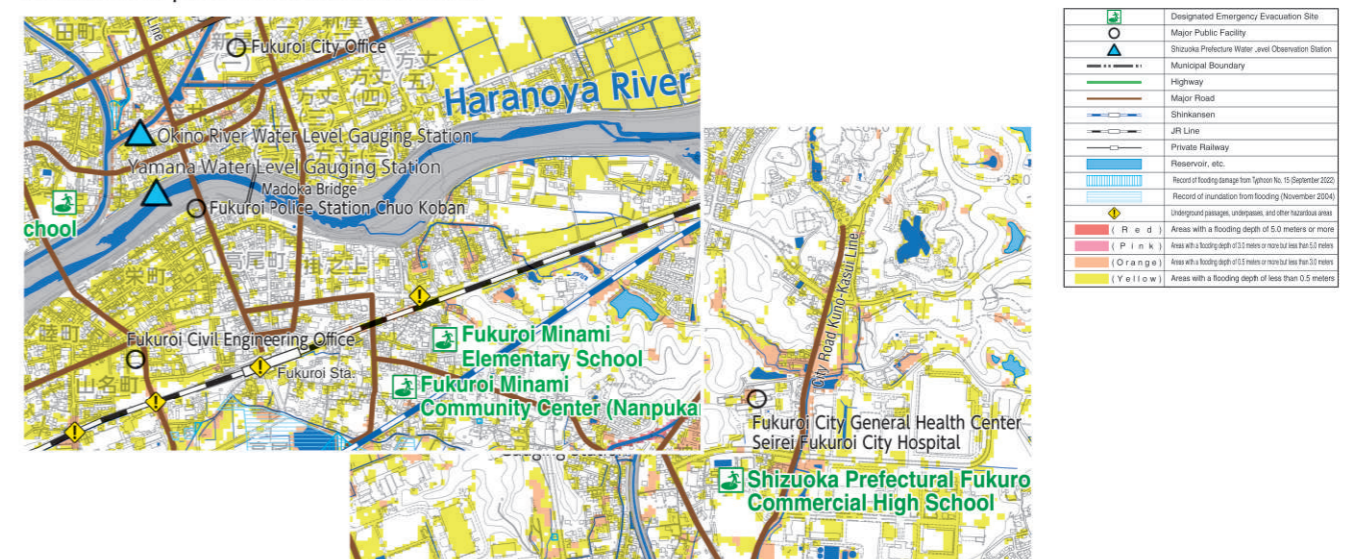
### ① Map of areas for which inland inundation is predicted

This map indicates the areas predicted to be affected and the flooding depth in the event of inland inundation caused by the maximum predicted rainfall. This map comprehensively analyzes how flooding would occur if a target rainfall event were to occur by reproducing topographical data, such as ground elevation, major drainage facilities, and the conditions of receiving rivers, in a computer model.



### ② Inland Inundation Hazard Map

This map includes information on evacuation, such as designated emergency evacuation sites, within areas identified as prone to inland inundation.



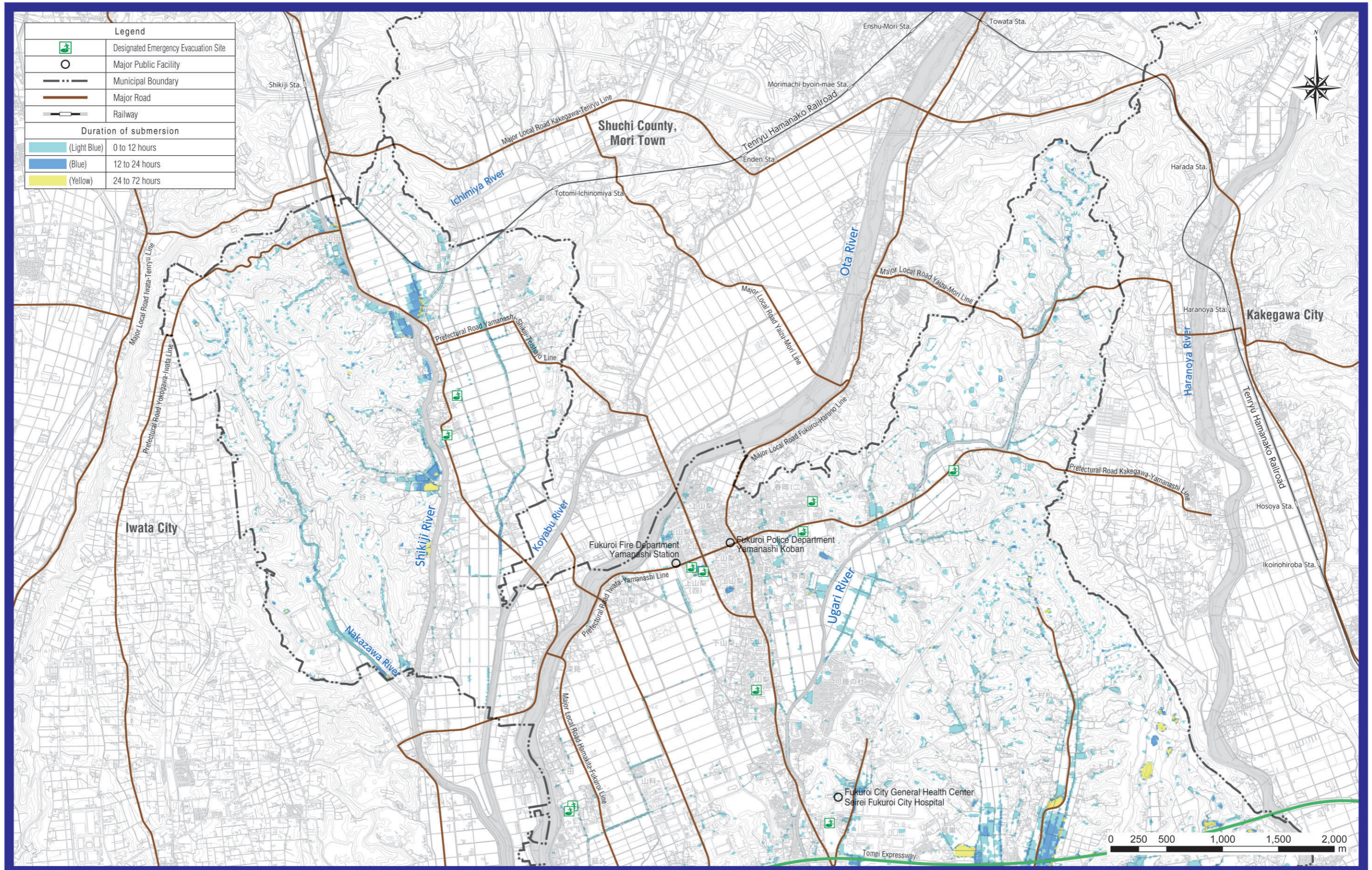
\*Note that the inland inundation area map may differ from actual disaster conditions.

# Inland Inundation Duration Map[Northern Region]

During flooding, power outages and disruptions to water and sewer services may occur. It is difficult to live in such an environment for long periods of time. Consider whether it is possible to ensure safety indoors (vertical evacuation) and what actions to take in advance.

Areas where inundation is expected to last 72 hours or longer are designated as areas requiring early evacuation, but there are no such areas in this prediction.

- This map shows the duration during which water depths reach 50 cm or more.
- In areas where flooding is predicted to last for an extended period, caution is advised as there is a risk of being isolated.

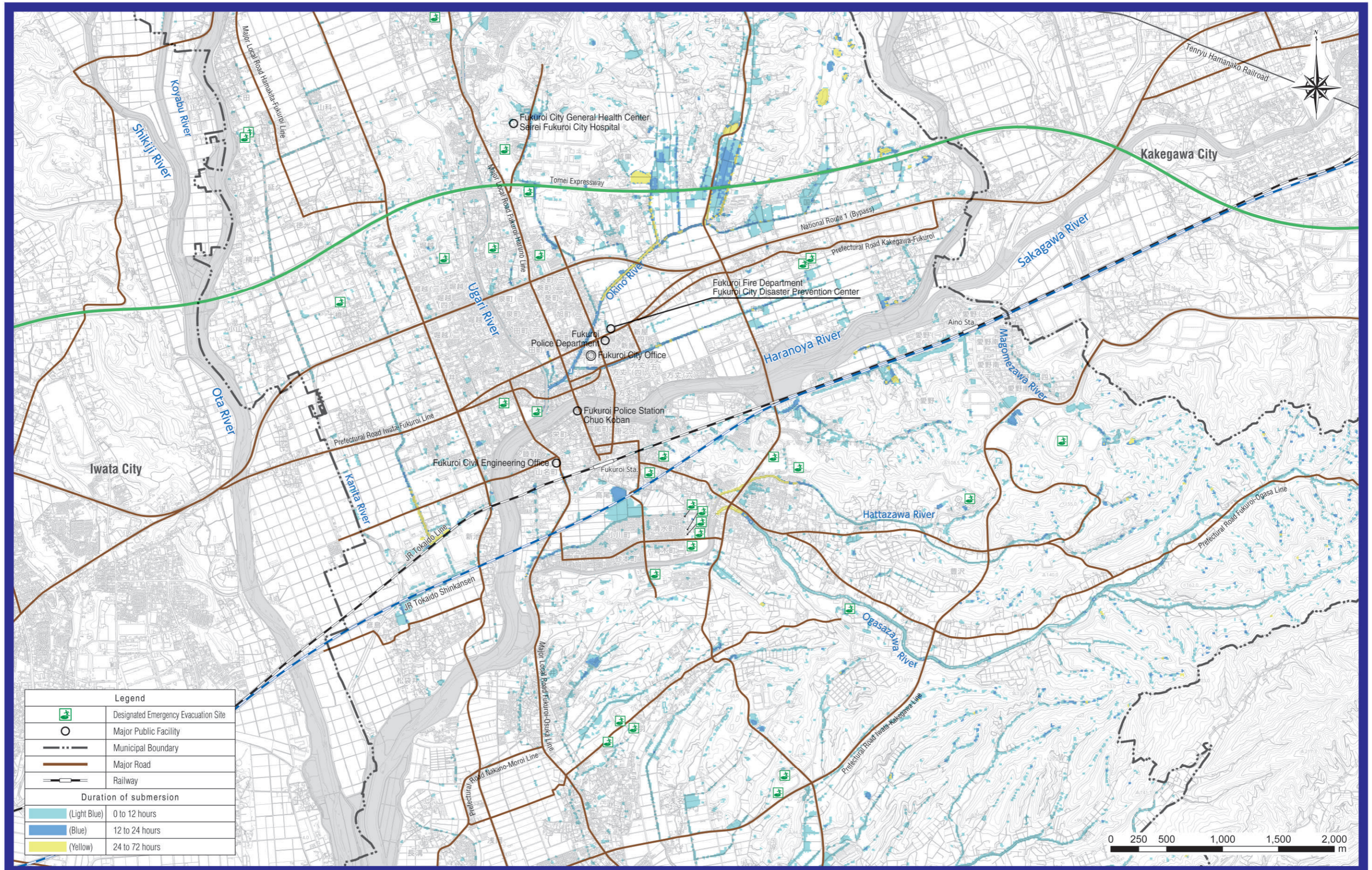


# Inland Inundation Duration Map[Central Region]

During flooding, power outages and disruptions to water and sewer services may occur. It is difficult to live in such an environment for long periods of time. Consider whether it is possible to ensure safety indoors (vertical evacuation) and what actions to take in advance.

Areas where inundation is expected to last 72 hours or longer are designated as areas requiring early evacuation, but there are no such areas in this prediction.

- This map shows the duration during which water depths reach 50 cm or more.
- In areas where flooding is predicted to last for an extended period, caution is advised as there is a risk of being isolated.

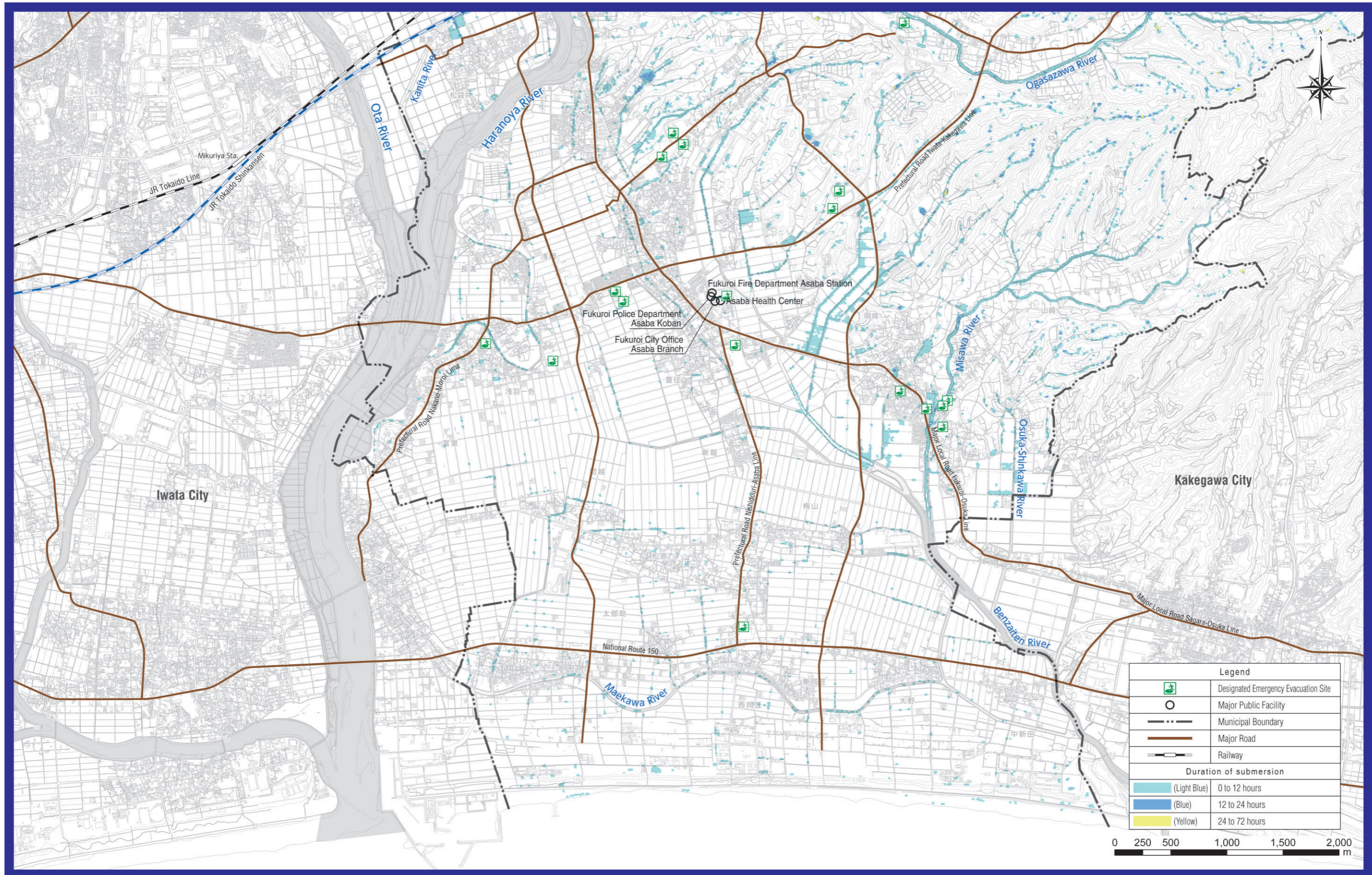


# Inland Inundation Duration Map[Southern Region]

During flooding, power outages and disruptions to water and sewer services may occur. It is difficult to live in such an environment for long periods of time. Consider whether it is possible to ensure safety indoors (vertical evacuation) and what actions to take in advance.

Areas where inundation is expected to last 72 hours or longer are designated as areas requiring early evacuation, but there are no such areas in this prediction.

- This map shows the duration during which water depths reach 50 cm or more.
- In areas where flooding is predicted to last for an extended period, caution is advised as there is a risk of being isolated.



Check during normal times

Keep in mind that you are responsible for your own safety, and take the time to assess the disaster risks at your home and review the appropriate actions to take.

## Evacuation Decision-Making Flowchart

What evacuation measures should you take? Make sure to do this

Check the hazard map\* to see where your home is located, and mark it on the map.

\*A hazard map is a map that highlights areas at high risk of flooding or landslides. Disasters can occur even in areas that are not marked.

Is your house located in a colored area?

No

Even if your house is not in a colored area, if you live in low-lying areas or near cliffs, please refer to evacuation advisories issued by your local municipality and evacuate as necessary.

Yes

Due to the risk of disaster, you should generally\* evacuate to a location outside your home.

Exception

\*Even if there is a risk of flooding,  
 ①Your house is located outside an area at high risk of houses collapsing or caving in due to flooding  
 ②Your house is above flooding depth  
 ③If you can wait until the water recedes and have sufficient supplies of water and food, it is possible to stay at home and ensure your safety.

Will it take you or the people evacuating with you a long time to evacuate?

No

Yes

Do you have any relatives or friends whose home you can stay at if you need a safe place to go?

Yes

If an Alert Level 3 alert is issued, **evacuate to the home of a relative or friend where you will be safe** (make sure to discuss this with them in advance).

No

If Alert Level 3 is issued, **evacuate to a designated emergency evacuation site specified by your local municipality.**

Do you have any relatives or friends whose home you can stay at if you need a safe place to go?

Yes

If an Alert Level 4 alert is issued, **evacuate to the home of a relative or friend where you will be safe** (make sure to discuss this with them in advance).

No

If Alert Level 4 is issued, **evacuate to a designated emergency evacuation site specified by your local municipality.**

In all situations, be sure to check safe evacuation routes in advance !

If you need to evacuate, check the following points and evacuate safely !



- Evacuating outdoors during heavy rain is dangerous.
- Those who require more time to evacuate and those assisting them should begin evacuating at "Alert Level 3", while everyone else should begin evacuating at "Alert Level 4".

When evacuating, talk to your neighbors and help each other !





No.	Designated emergency evacuation site	Address	Floors	Remarks
1	Mitsukawa Community Center (Sansan Kaikan)	147 Tomonaga	2	※
2	Mitsukawa Elementary School	38 Tomonaga	3	※
3	Ugari Iki-iki Community Hall	1121-1 Ugari	1	
4	Yamanashi Daycare & Early Childhood Education Center	1-8-7 Haruoka	1	
5	Yamana Elementary School	684 Haruoka	3	
6	Yamana Community Center	4-3-1 Kamiyamanashi	2	
7	Tsukimi-no-Sato Workshop Center	4-3-7 Kamiyamanashi	2	
8	Shunan Junior High School	1-1-1 Shimoyamanashi	4	
9	Imai Community Center	687 Ota	2	※
10	Imai Elementary School	692 Ota	3	※
11	Shizuoka Greenhouse Agricultural Cooperative Crown Melon Office	219 Oyama	2	
12	Shizuoka Prefectural Fukuroi Commercial High School	2350 Kuno	4	
13	Wakakusa Daycare & Early Childhood Education Center	766-1 Horikoshi	2	
14	Fukuroi Kita Elementary School	1580 Kuno	3	
15	Fukuroi Kita Community Center	1330-2 Kuno	2	※
16	Fukuroi City General Gymnasium (Sawayaka Arena)	1912-1 Kuno	2	
17	Fukuroi Nishi Elementary School	442 Kawai	4	※
18	Fukuroi Junior High School	701 Kawai	4	※
19	Fukuroi Higashi Elementary School	2317-1 Hirooka	3	
20	Fukuroi Higashi Community Center (Katsumokukan)	2506-1 Hirooka	2	
21	Fukuroi Minami Community Center (Nanpukan)	754-1 Takao	2	
22	Fukuroi Minami Elementary School	740 Takao	3	
23	Fukuroi Minami Junior High School	3110 Aino	4	
24	Shizuoka Prefectural Fukuroi High School	2446-1 Aino	3	
25	Ogasayama Sports Park (ECOPA)	2300-1 Aino	6	
26	Shizuoka Institute of Science and Technology	2200-2 Toyosawa	5	
27	Toyosawa Community Center (Toyosawa Fureai Kaikan)	210-1 Toyosawa	1	
28	Konan Elementary School	306-2 Uedacho	3	
29	Shizuoka Prefectural Fukuroi Special Needs Education School	2753-1 Takao	3	
30	Konan Community Center (Kibokan)	267-8 Uedacho	2	
31	Fukuroi Sports Center	267-19 Uedacho	2	
32	Sunlife Fukuroi Workers' Welfare Center	267-5 Uedacho	2	
33	Daycare & Early Childhood Education Center Nijiuro	267-31 Uedacho	1	
34	Asaba Higashi Elementary School	2800 Asaba	3	
35	Asaba Higashi Daycare & Early Childhood Education Center	2617-1 Asaba	1	
36	Asaba Kita Community Center	2857 Asaba	1	
37	Asaba Kita Elementary School	1322 Asaba	2	
38	Asaba Kita Kindergarten	41 Asana	1	
39	Mellow Plaza	1027 Asana	2	※
40	Asaba Junior High School	822 Asana	3	※
41	Asaba Nishi Kindergarten	873-1 Nagamizo	1	
42	Asaba Nishi Community Center	410-1 Naka	2	
43	Chuen Clean Center - Incineration Facility	6635-192 Okazaki	3	
44	Kazami-no-Oka Pool & Fitness Center	6635-8 Okazaki	1	
45	Okazaki Hall	2525 Okazaki	2	
46	Former Kasahara Nursery	567-1 Okazaki	1	
47	Kasahara Daycare & Early Childhood Education Center	5093-13 Yamazaki	1	
48	Kasahara Community Center	5093-5 Yamazaki	2	
49	Kasahara Community Center Plaza Hall	5093-5 Yamazaki	1	
50	Kasahara Elementary School	4822 Yamazaki	3	
51	Asaba Minami Elementary School	148 Nishidouri	3	※

\*Designated emergency evacuation sites for which evacuation to the second floor or higher is required

# Timeline for Your Family

To avoid panicking in the event of a flood, creating a timeline—a personal disaster preparedness plan (schedule)—in advance will help you evacuate safely when the time comes. Plan and organize who will do what and when.

Don't wait until a typhoon hits; plan your precautions in advance!

When		Who does what				Actions you should take (examples)	
Surrounding situation (examples)	City information	Name	Name	Name	Name		
<p><b>Prepare for Heavy Rain</b></p> <p>It appears that a severe typhoon may be approaching in a few days. It's still sunny outside.</p> 	<p>Evacuation advisory issued by the city →</p>	Alert Level 1					<p><b>Increase mental preparedness</b></p> <ul style="list-style-type: none"> <li>• Check emergency food supplies, shop for groceries</li> <li>• Check the typhoon's path and the times of greatest danger</li> <li>• Check your family's schedule</li> <li>• Take precautions against strong winds</li> <li>• Charge your cell phone, go fill up the car with petrol</li> <li>• Check how to obtain evacuation information</li> <li>• Check the disaster risk for your home using the Fukuroi City Flood Hazard Map</li> <li>• Prepare sandbags and water barriers</li> </ul>
<p><b>Things to Check Before Evacuating</b></p> <p>Forecasts indicate that a severe typhoon is set to make a direct hit on the Tokai region. The Japan Meteorological Agency has issued a <b>weather advisory</b>.</p>  <p>There is an increased likelihood that the Japan Meteorological Agency will issue a <b>warning</b> in the coming hours.</p>		Alert Level 2					<p><b>Check evacuation procedures</b></p> <ul style="list-style-type: none"> <li>• Consider voluntary evacuation</li> <li>• Check evacuation methods</li> <li>• Prepare emergency supplies</li> <li>• Move your valuables to a high place</li> </ul> 
<p><b>Things to Keep in Mind When Evacuating</b></p> <p>Rain and wind have picked up considerably. Rainwater that hasn't drained away is accumulating on the road. The Japan Meteorological Agency has issued a <b>warning</b>. The city has issued an <b>evacuation order for the elderly and others (Alert Level 3)</b>.</p> 	<p>Evacuation for the elderly and vulnerable</p>	Alert Level 3					<p><b>Elderly residents and others should evacuate, other residents should prepare</b></p> <ul style="list-style-type: none"> <li>• Check the list of open evacuation shelters (Shizuoka Prefecture Disaster Preparedness App, Fukuroi City Official Website, etc.)</li> <li>• Talk to vulnerable neighbors</li> </ul>
<p>The city has issued an <b>evacuation order (Alert Level 4)</b>. There is an increased likelihood that the Japan Meteorological Agency will issue a <b>special warning</b> in the coming hours.</p> <p><b>Evacuate immediately at Alert Level 4!</b></p>	<p>Evacuation directive</p>	Alert Level 4					<p><b>Everyone evacuates</b></p> <p>When going to an evacuation shelter</p> <ul style="list-style-type: none"> <li>• Talk to vulnerable neighbors</li> <li>• Evacuate to a shelter</li> </ul> <p>When taking shelter at home</p> <ul style="list-style-type: none"> <li>• Move to a safe room</li> </ul>
<p><b>Disaster Occurrence</b></p> <p>The wind is howling so fiercely outside that it feels dangerous. Evacuating from your home at this point is actually dangerous.</p>	<p>Emergency safety measures</p>	Alert Level 5					<p><b>Best course of action to save lives</b></p> <p>When taking shelter at home</p> <ul style="list-style-type: none"> <li>• Move to a safe room</li> </ul>