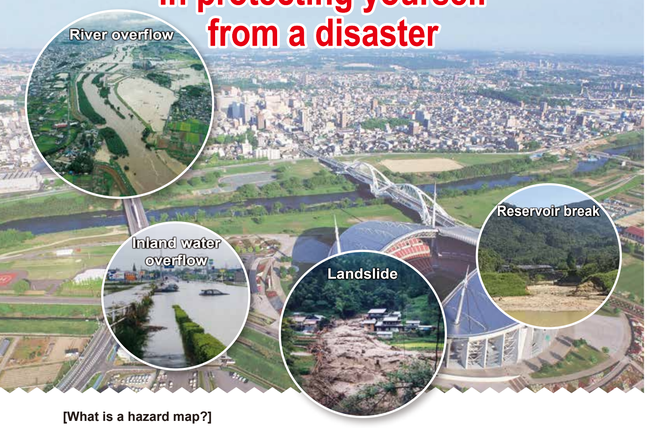
You are the first line of defense in protecting yourself from a disaster



[What is a hazard map?]

The Toyota City Flood Hazard Map summarizes information to use as a reference when evacuating from damage caused by heavy rain. This map displays areas of expected flooding if major rivers in the city, including the Yahagi River, overflow due to heavy rain, as well as the expected depth of flooding. It also displays areas in danger of landslides and evacuation sites.

1 Know the disaster risks

First, understand the disaster risks (expected damage) of the area where you live.

Information such as designated emergency evacuation sites is listed, in addition to the range and depth of flooding expected due to river overflow. This is the expected damage for the maximum expected rainfall (heavy rain of a scale with a probability of occurring once every 1,000 years*).

Rainfall of a scale that is estimated to occur once every 1,000 years*: This does not mean periodic heavy rain that occurs once every 1,000 years, but instead means heavy rain of such a scale that the probability of its occurrence in a year is around 1/1,000 (0.1%). The probability is low, but it could occur this year or next year. If it rains, it will most certainly be torrential heavy rain, so sufficient daily preparation is necessary in order to take action to protect yourself in an emergency.

For details, check this website...

You can find various information on the flood hazard map here.

- **Flood hazard map data (PDF)**
- **Toyota i-Map (disaster prevention map)***
- **Analysis conditions for river overflow, etc.**
- **Real-time disaster prevention information,** etc.

Toyota i-Map (disaster prevention map)*: A map information service that allows you to display various disaster risks on a map on the Internet. It can be freely zoomed in and out, so you can check disaster risks near your home in more detail.

2 Check your evacuation destinations and routes

In order to evacuate safely without panicking in an emergency, you must prepare and check in advance.

Know the different types of evacuations

Horizontal evacuation (evacuating to another location)

Evacuate to a safe place away from areas in danger of flooding, house collapsing or washing away, and landslides.

This involves moving to a distant location, **so a certain amount of time will be required for evacuation.** Confirm your safe evacuation routes and means of transportation ahead of time, **and make sure you have plenty of time to start evacuating.**

Vertical evacuation (moving upstairs, etc.)

If there is no time for horizontal evacuation to a safe place (e.g. a designated evacuation center), or it is too late to escape, your best means of saving your own life is to evacuate to a place out of danger, such as the second floor of your home or as high a floor as possible in a sturdy building nearby.

This is ultimately to protect yourself, **so you should consider what problems might occur if flooding continues for a long time or if you become isolated within a danger zone.** There are places in Toyota City where flooding could continue for a week.

Ensuring safety indoors (sheltering in place)

If you are currently in a location with little-to-no risk of flooding, house collapsing or washing away, or a landslide, and if it would be more dangerous to evacuate outdoors—stay where you are, such as at home, to ensure safety.

Prepare daily for electricity, water, and gas outages, and stock up on food, water, household medicines, and other necessities.

Consider your evacuation destinations

- The evacuation destinations indicated by icons on the map on the front are "designated emergency evacuation sites" and "temporary evacuation sites or temporary vehicle evacuation sites."
- The evacuation destination does not necessarily have to be one of these two. Refer to the facilities covered below and consider which evacuation destination is best based to your own situation and that of your home.

Designated emergency evacuation site

These are facilities designated by the city as emergency evacuation destinations for protecting yourself from the danger of disasters. Some emergency evacuation sites cannot be used during storms and floods.

Staying overnight in a car

This is evacuating by staying in a car parked in a safe place. It is an effective means of ensuring privacy. However, this requires care with regard to managing your own health, such as taking measures to prevent deep-vein thrombosis. In addition to parking lots at designated emergency evacuation sites, you can also use temporary evacuation sites and temporary vehicle evacuation sites when available.

Your home

Evacuating outdoors can sometimes be more dangerous. If so, consider sheltering in place (in your house) to ensure safety indoors. If you feel in danger, use vertical evacuation and go to the second floor of your home to protect yourself.

Voluntary evacuation site

This is an evacuation site designated by the local government. The availability and use of waiting areas and resident evacuation shelters until the emergency evacuation sites are opened differ by region.

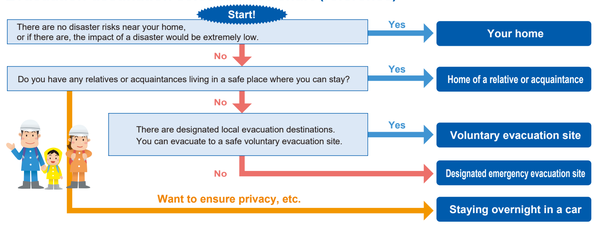
Home of a relative/acquaintance

If you have any relatives or acquaintances at a safe location you can visit, consider using their house as an evacuation destination. Be sure to regularly discuss evacuation with them.

Emergency evacuation site (your last resort to protect yourself)

This is a place used as a last resort for protecting yourself when it is too late to evacuate. You should have a predetermined safe place you can get to quickly as an emergency evacuation site.

Evacuation destination selection flowchart (reference)



The more intense and prolonged the rain, the larger the scale of flooding will be.

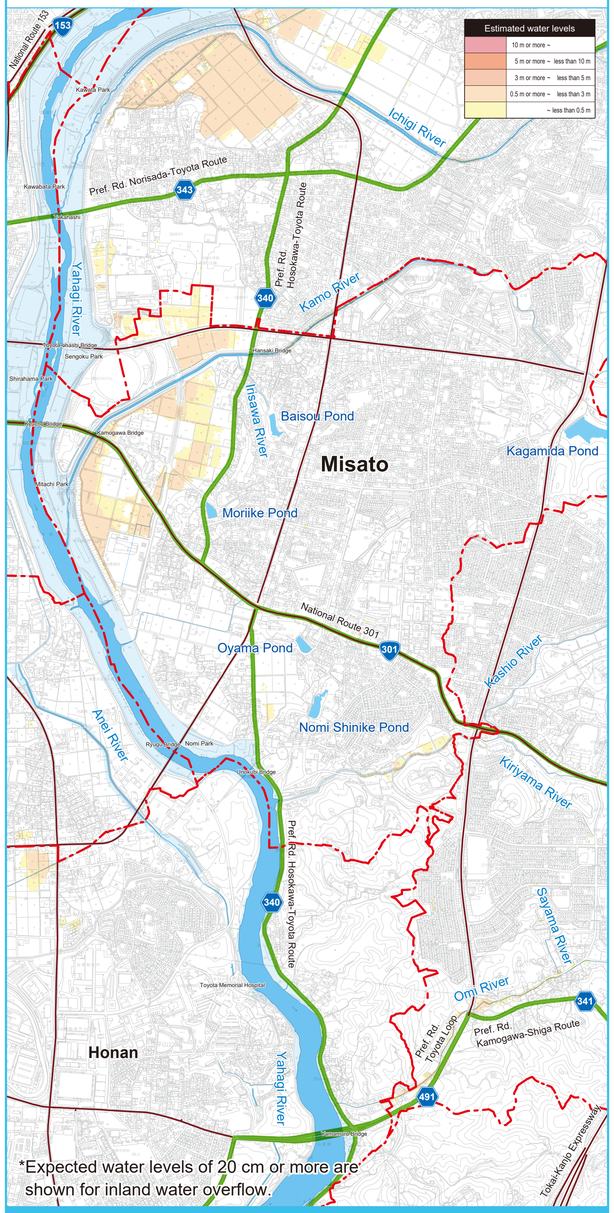
Floods caused by typhoons and torrential rains differ in whether they will damage your home and how much damage they will cause, depending on the intensity of the rain and the location of overflow (large river, small or medium-sized river, waterway, etc.).
For example, if heavy rain continues ❶, water may overflow from waterways and gutters. If extremely heavy rain continues ❷, water may also overflow from small and medium-sized rivers (such as the Kamo River). If torrential rain continues ❸, water may overflow from large rivers (the Yahagi River).

❶ Beginning of heavy rain with flooding (Heavy rain continues)

Heavy rain of a scale estimated to occur **once** every **10** years

[Flood conditions]

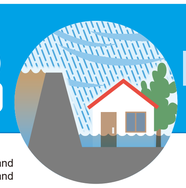
Water overflows from waterways and gutters on nearby roads, but flooding is light.



Flooded area from waterways and gutters

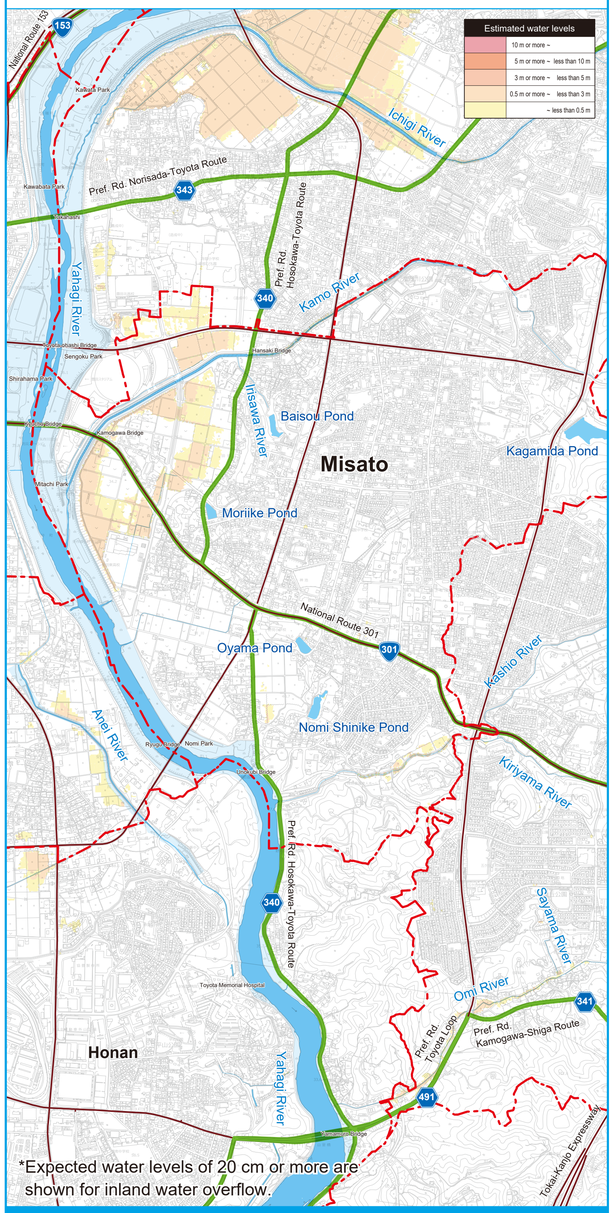
❷ Rain intensifies and flooding spreads (Extremely heavy rain continues to fall)

Heavy rain of a scale estimated to occur **once** every **30 to 50** years



[Flood conditions]

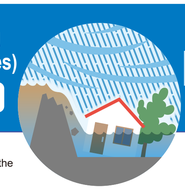
The water level of the tributary of the Yahagi River (the Kamo River) rises, and water overflows from the embankment, causing the flooded area to expand and the depth to increase.



Flooded area from small and medium-sized rivers

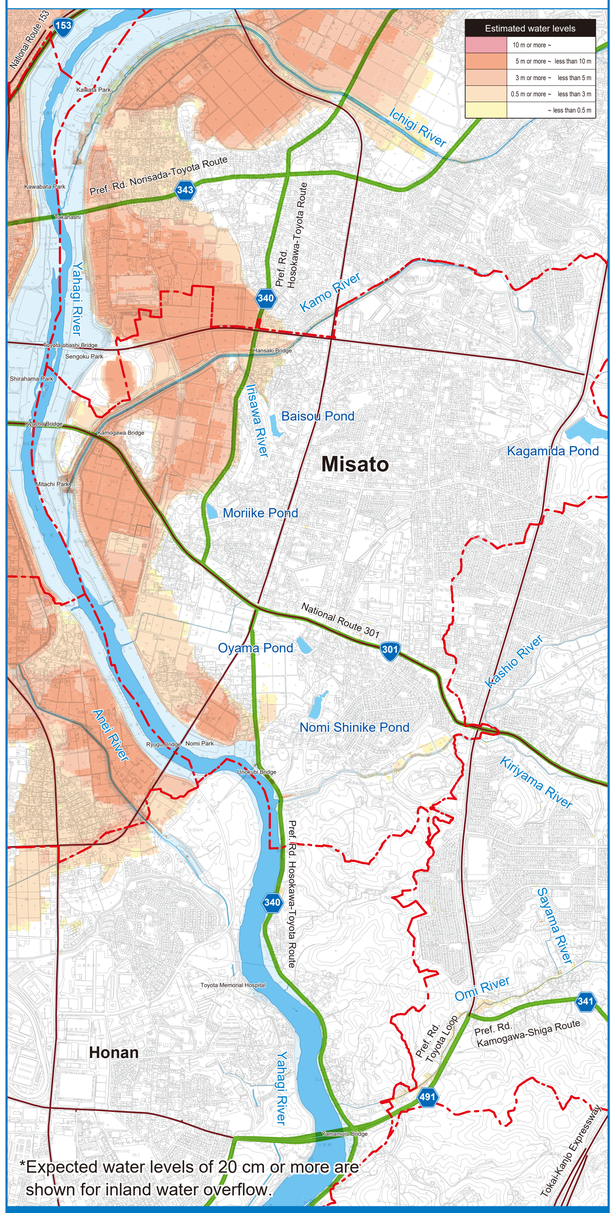
❸ Rain continues to intensify and flooding spreads further (Torrential rain continues)

Heavy rain of a scale estimated to occur **once** every **150** years



[Flood conditions]

The water level of the Yahagi River rises, and water overflows from the embankment, causing flooding damage over an even wider area.



Flooded area from a large river

*Source: Inland Water Flooding Area Map

*Sources: Inland Water Flooding Area Map, Flooding Area Map, and Flooding Forecast Map (Class A River Yahagi River System, Yahagi River Midstream Tributary / Yahagi River Upstream Tributary / Kagogawa River Basin) (Class B River Sakai River System, Sakai River and Azuma River Basin; Class B River Sawatari River System, Sawatari River Basin)

*Sources: Inland Water Flooding Area Map, Flooding Area Map, and Flooding Forecast Map (Class A River Yahagi River System, Yahagi River Midstream Tributary / Yahagi River Upstream Tributary / Kagogawa River Basin) (Class B River Sakai River System, Sakai River and Azuma River Basin; Class B River Sawatari River System, Sawatari River Basin) and Flooding Area Map (Class A River Yahagi River System, the Yahagi River)

Disaster risks that occur during heavy rain

Flooding due to river overflow

If the river water level rises and water overflows from the embankment or the embankment collapses, houses, roads, farmland, and other parts of the town will be flooded. Depending on the scale of heavy rain, flooding may reach the fifth floor or higher of buildings in some areas.

Estimated area of overflow including house collapse

This is an area where there is a risk of houses collapsing or washing away if a large-scale flood occurs. This is an area where horizontal evacuation is necessary and vertical evacuation must be avoided. Some causes of house collapse are **intense overflow** caused when embankments are breached, or **river bank erosion** caused when river dikes and embankments are eroded by the river flow.

Flooding due to inland water overflow

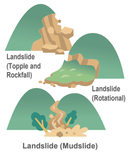
Water will overflow from waterways and manholes, or remain pooled in low-lying land. Normally, rain that falls in town drains into rivers through waterways and gutters. However, heavy rain causes river water levels to rise, making it difficult for water to drain from waterways into rivers. If the river water level does not drop, there will be places where flooding continues for a long time.

Reservoir break

Reservoirs are used to temporarily store water during heavy rain, in addition to being used for other purposes that make use of water (such as agriculture). If a reservoir breaks, flooding may occur downstream from the reservoir.

Landslide

These are disasters (usually landslides) that occur due to heavy rain, such as **topple or rockfall landslides**, where mountain slopes or cliffs collapse; **rotational landslides** where gentle slopes slowly collapse due to the impact of groundwater; and **mudslides**, where collapsed soil mixes with rainwater or river water and flows, burying houses, roads, and farmland.



Landslide Hazard Areas (commonly known as the "Yellow Zone").

An area where it is deemed that there is a risk of harm to the lives of residents in the event of a landslide.

Landslide Special Hazard Areas (commonly known as the "Red Zone").

Hazard areas where it is deemed that there is a serious risk of building damage and serious harm to the lives of residents in the event of a landslide.