◆内水八ザードマップとは What is Inland Water Hazard Map? 何谓内涝灾害预警地图 내수해저도 지도란 この内水ハザードマップは、下水道の排水能力を超える大雨によって内水はん濫が発生した場合に想定される浸水区域や浸水深等を、浸 水シミュレーションにより示したものです。 日頃の備えや避難の際に役立てていただくなど、市民の皆様の自助・共助の促進を目的として作成しました。

このマップの地図面では、想定される浸水深20cmから5m以上までを6段階で色分けし、25m×25mの正方形で表示しています。 お住まいの地域の浸水深を確認し、安全に移動できる避難ルートを確認してください。 雨の降り方や土地の形状の変化などにより、浸水区域や浸水深が地図と異なる場合もあるため、複数の避難ルートを考えておきましょう。

This Inland Water Hazard Map shows the inundation area and depth of inundation that can be anticipated in the occurrence of inland water flooding caused by neavy rainfall that exceeds the drainage capacity of the sewerage system, based on inundation simulation

It was prepared with the aim of promoting self-help and mutual-help among citizens by helping them prepare for everyday needs and evacuation On this map's surface, the assumed inundation depths from 20 cm to more than 5 m are color-coded in six levels and indicated by a 25 m × 25 m square.

Please check the depth of inundation in your area and make sure you have a safe evacuation route to move to. Consider multiple evacuation routes, as the flooded area and depth of flooding may differ from the map due to rainfall and changes in the shape of the land.

本内涝灾害预警地图基于超出下水道排水能力的大雨导致内涝泛滥时、对预测的淹水区域及淹水深度等进行淹水模拟试验而制作。

制作本地图是以备在日常防灾准备及避难时发挥作用等,为的是加强广大市民的自助、互助意识 比地图上以25m×25m正方形区块,将预计淹水深度20cm至5m以上的区域分为6个等级,以不同颜色标示。

请确认居住地区的淹水深度、以及可移动至安全场所的避难路线。 淹水区域及淹水深度可能会因降雨方式或土地形状的变化而与地图标示产生差异,故请确保多条避难路线。

이 내수 해저드 지도는 하수도의 배수 능력을 초과하는 집중 호우에 의해 내수 범람이 발생했을 경우에 상정되는 침수 구역과 침수 깊이 등을 침수 시뮬레이션을 평소의 준비와 피난시에 참고로 하시는 등 시민 여러분의 자조와 공조의 촉진을 목적으로 작성되었습니다.

이 지도의 지도면에서는 예상되는 20cm~5m 이상까지의 침수 깊이를 6 단계로 색으로 분류하여, 25m×25m의 정사각형으로 표시하고 있습니다 거주하시는 지역의 침수 깊이와, 안전하게 이동할 수있는 대피 경로를 확인하여 주십시오.

비가 내리는 경향이나 토지의 형태 변화 등으로 인해, 침수 구역과 침수 깊이가 지도와 다를 수 있기 때문에 여러 피난 루트를 검토해 두시기 바랍니다. Conditions under which the Inland Water Hazard Map was created

Japan (Use) R 2JHs 1206 based on the Survey Act") and reflecting major rivers and sewers in the city.

This map was prepared based on a simulation of inundation assuming that the maximum possible rainfall (maximum 153 mm, total rainfall 249 mm) would fall on the entire city of Saitama and the water level in the river to be discharged would be high. The information reflected in the inundation simulation is made based on topographical information such as ground elevation (based on the Geographical Survey Institute's laser surveying 5m mesh (elevation) approved by the Director of the Geographical Survey Institute of

Furthermore, the information on sewerage storage facilities, pump stations, drainage pump stations, gates, etc. is as of the end of 2020. Cautions for using the Inland Water Hazard Map

Assumed inundation areas and inundation depths may vary depending on the type of rainfall, the shape of the land, and the maintenance situation of rivers and sewers. Therefore, it does not mean that the areas indicated on this map always get flooded during heavy rains, but rather that even areas not

expected to be inundated may be inundated depending on the situation, so please be very careful. This map does not take class A rivers overflow (flooding) into account, so please check the latest flood hazard map as well. As we do not take reports of inundation information from citizens into account, please check the "Information on Flooding in Saitama City" available at the Information Disclosure Corner in each ward for past inundation information.

# 不获信息 이 지도에서 얻을 수 있는 정보

1. 浸水発生のメカニズム

方法 4 관계 기관의 연락처

6. 日頃からのこころがけ

7. 教えてヌゥ先生!

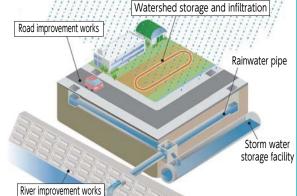


**☎** 048−622−1111

# three axes of "urban flooding prevention measures," "comprehensive inundation prevention measures," and "the rainwater runoff control measures".

the implementation conditions of the rivers to where the rain water is discharged. As a measure of inundation prevention, Saitama City has implemented rainwater pipes and storm water storage facilities to cope with rainfall of about 56 mm per hour in accordance with the implementation conditions of the rivers where the rain water is discharged. In addition, Saitama City has elevated its flood control measures for the rivers managed by the City to make floodwater safely flow down in rivers caused by rainfall of about 30 to 50 mm per hour. However, in recent years, heavy rainfall exceeding the implementation level has occurred frequently due to the effects of climate change, and increased rainwater runoff due to the advancement of urbanization have caused inundation damages in low-lying areas where rain water is easily collected.

1. Mechanism of How Inundation Occurs



# Mechanism of Inland Flooding (Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT) website)



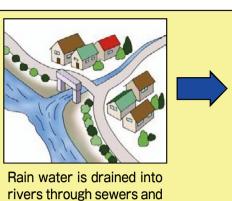
When rainfall exceeds the drainage capacity of sewers, water overflows from sewers or the water which cannot enter sewers remains on the ground.

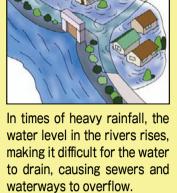
(1) Implementation level of Saitama City

Since Saitama City is located inland, rain water flows into class A rivers managed by the national

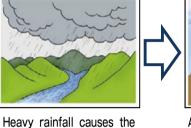
and prefectural governments. However, the amount of rain water discharged is limited depending on

Therefore, Saitama City will continue to further inundation prevention measures focusing on the



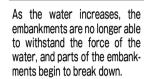


# Mechanism of River Flooding (Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT) website)



water in rivers to increase and the water level begins

As the water increases to the full level of embankments, the pressure of the water starts to build up on



quickly, and the water will flow out vigorously, hitting houses and buildings.

# (2) Places Prone to Inland Flooding

Sewer trunk lines and waterways are prone to inland flooding because when the water level in rivers rises, sewers and waterways are unable to drain into the rivers. Low-lying areas are also prone to inland flooding because water tends to be easily collected from the surrounding

# Various inland flooding

Pay attention to calls for evacuation

may call for evacuation

immediately when you

hear the evacuation call.

Those in need, such as elderly

handicapped, must evacuate

people, children, and the

Help those around you to

Please evacuate

When danger is approaching, the city hall or fire department



# (1) Evacuation information

Get information corresponding to each alert level ASAP and use it to make decisions on evacuation

Pay attention to the announcements of evacuation information and others from your municipal and judge whether to evacuate or not on your own, even if evacuation information have not been issued.

It is important to evacuate at the alert level 3 or 4. It will be impossible to evacuate because a disaster has already occured in a situation where

If heavy rainfall continues, there is an increased risk of river flooding.

## (2) Gathering information

Information is sent via both push notifications (notifications sent automatically) and pull notifications (notifications that one gets by themselves). Some push notifications are delivered automatically, while others can be delivered automatically by registering in advance. Pay close attention to weather and river related warnings, and evacuation information; and remain calm, judge and act promptly.

### **Email Notification**

the alert level is 5.

Emergency Warning E-mail/ Area E-mail

Users of cell phones (NTT Docomo, KDDI/Okinawa Cellular (au), Softbank, and Rakuten Mobile) in the distribution target municipalities can automatically receive the evacuation information delivered from the municipal governments

**2.** Information to Protect Life and Property

Levels

Situations

Occurrence

or imminent

high risk of

occurrence

There is a risk

of worsening

weather conditions

in the future

\*Implemented from May 20, 2021

List of new alert levels\*

Actions to be

Your life is

in danger.

Evacuate before the alert level reaches 4!

Evacuate all

people from

dangerous areas

elderly, etc.

areas

behavior

Increase

preparedness

for disasters

ccurrence | from dangerous | the elderly, etc

threat of a | Immediately

Weather | Confirm your

2 conditions own evacuation

disaster | ensure safety!

 Saitama City Wireless Disaster Prevention System E-mail You can automatically receive the contents such as the emergency information

broadcasted on the Wireless Disaster Prevention System, by registering in advance. URL https://www.city.saitama.jp/001/011/015/004/002/p054192.html

### Disaster Prevention Wireless Telephone Service

The service delivers the evacuation information, etc. to landline phones and faxes for those who do not have cell phones or smartphones and have difficulty using email, etc. URL https://www.city.saitama.jp/001/011/015/004/002/p071187.html

### You can get information on warnings.

Weather information -

Weather information including the warnings from Saitama City

https://saitama-city.bosai. info/ui/dashboard

Yahoo Weather app. https://weather.yahoo.co.jp/weather/promo/app/



# River water level information live cameras, etc. of rivers and sewers.

Ministry of Land, Infrastructure, Transport and Tourism (MLIT) - Information on River Disaster Prevention https://www.river.go.jp/

Saitama City Water Level Information System

https://www.flood-info.citv.

saitama.jp/JP/index.html

# Flood Hazard Map of Saitama City https://www.city.saitama.jp/ 001/011/015/002/003/ p008311 html

# taken by citizens encourage actions

Information to

Emergency

securement

instructions

Evacuation o

Storm surge advisory

Japan Meteorologica

Agency)

Early warning

information

Japan Meteorological

Agency)

Disaster Prevention Information -

information on disaster preparedness

Crisis Management, Disaster Prevention and Weather Information of Saitama City

https://www.city.saitama.jp/bousai/index.html

You can get hazard map and

When issuing warnings and alerts, not only the amount of rainfall, but also the amount of rainfall in the upstream area and the time it takes to flow down from the upstream areas are considered. In addition, the warnings and alerts will be continued when there is a risk of a disaster due to the rain infiltrated in the ground. [ Types ] [ Period of announcements ] Heavy rain special warning When typhoons or torrential rains are expected to cause heavey rains with precipitation once every several decades. When heavy rains could cause severe disasters When flooding could cause severe disasters Flood warning

When heavy rains could cause disasters.

please refer to the Japan Meteorological Agency website.

When flooding could cause disasters.

leavy rains for a short period of time, which only occurs once every few years, are observed or analyzed when a

heavy rainfall warning is issued. \*In the case of Saitama City, the amount of rainfall in one hour is 100 mm or more.

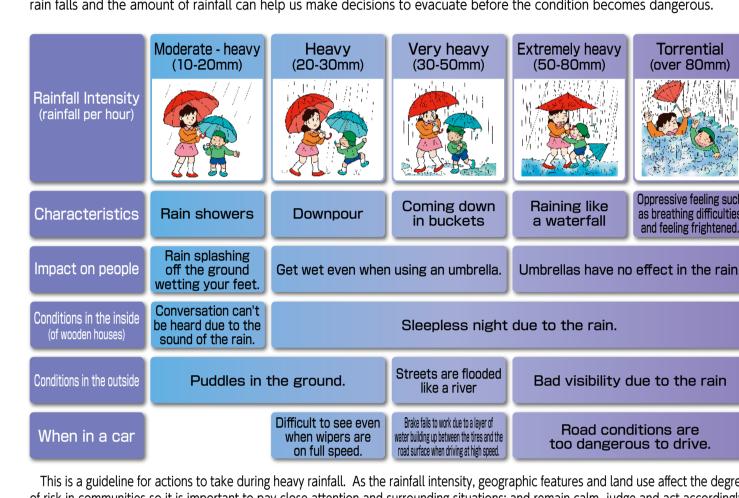
\*For more information on the criteria applicable to heavy rainfall and flood warnings, and each rainfall index,

3. Weather Information

(1) Warnings and alerts issued by the Japan Meteorological Agency

# (2) Rainfall guide

We can roughly grasp the amount of rainfall by observing how the rain falls. By knowing the relationship between how the rain falls and the amount of rainfall can help us make decisions to evacuate before the condition becomes dangerous.



This is a guideline for actions to take during heavy rainfall. As the rainfall intensity, geographic features and land use affect the degree of risk in communities so it is important to pay close attention and surrounding situations; and remain calm, judge and act accordingly.

7. Tell Me, Mr. Nu!

Mr. Nu is going to teach us about this hazard map!

Will you take measures to eliminate inundation in the places that are

The hazard map has been created to promote self help and mutu assistance of evacuation. Therefore, inundation prevention measures w

not be developed to eliminate all inundation assumptions on the hazard map, but wi

e developed in accordance with the development standards of Saitama City.

As for the estimated maximum amount of rainfall, the estimate maximum amount of rainfall at the present moment is set, usi

he results of available meteorological observations, etc. based on the

It is a comprehensive analysis of how the city will be inundated

of Saitama City by reproducing in a computer topographical information su

is ground height, drainage facilities such as major sewers and water channel and the conditions of the rivers to where rain water is discharged or the like

This hazard map is created based on the estimated maximum amount of rainfall but is there any possibility

water channels, or clogged rainwater basins, so the simulation results w

Also, please note that inundation areas and depths will change dependir on how rain falls, even if the amount of rainfall is same.

that an inundation damage greater than this will occur?

estimated maximum amount of rainfall falls on the entire ar

rent scientific knowledge. In fact, Katori City in Chiba Prefecture observed

Q6 Do such large-scale inundation damages actually occur?

What is this simulation

expected to be inundated in the Inland Water Hazard Map in the future?

# 4. Inquiries

# (1) Contacts

# Contact details

Prepare for Inundation

O Disaster Prevention Measures Disaster Prevention Division, Department of Risk Management, General Affairs Bureau : 🕿 048-829-1126 Disaster Prevention Division, Department of Risk Management, General Affairs Bureau : 2048-829-1126 Flood Hazard Map

During an Inundation ○ When your property or roads are inundated : Nishi Ward Office

O Information on situation of evacuation shelters: General Affairs Division, Department of Daily Life Affairs of Ward Residents, Nishi Ward Office: 

O48-620-2613 Ambulance or Fire Department service required for urgent situations : Fire Bureau

◆After suffering from Inundation damage

O Issuance of Disaster Victim Certificate : General Affairs Division, Department of Daily Life Affairs of Ward Residents, Nishi Ward Office: 🕿 048-620-2613 Daily Life Support Office, Nishi Ward 2048-620-2626 Disinfection of flooded roads

# **Useful Contact Methods in times of a disaster**

When a large-scale disaster such as a flood or an earthquake occurs, phone calls to the affected areas are concentrated and it becomes difficult to connect. If you are in such a situation, in order to perform confirmation of the safety of family members and acquaintances, or to make contact with evacuation sites smoothly, "the Disaster Message Dial service", which allows users to register messages in "voice form", and "the Disaster Message Board" service", which allows users to register messages in "text form", are provided using fixed-line phones, cell phones, and the Internet.

# Use of the "Disaster Message Dial 171"

This is a service provided by NTT that allows you to save and play back messages regarding the information such as the safety of your family members in times of a large-scale disaster.

Recording method

Guidance will be played Method of reproduction of recorded message Guidance will be played

# Disaster Prevention Community Development Information Map

Saitama City uses the geographic information system (GIS) "Saitama City Map Information" on its website (https://www.sonicweb asp.jp/saitama\_g/), which provides the risk information etc. on earthquake disasters such, as well as the various disaster prevention maps such as the Flood Hazard Map of class A rivers. You can check the pinpoint and the familiar information on disaster risks by entering your home address.



# (2) Disaster prevention memo for my family

	nily's Evacuation Site nily's Evacuation Site		Family Gathering Place Contact information in times of a disaster			
Family	Name	Blood type	Phone number	Company / school name	Company / school contact information	
contact						
information						

ntact information 💮 Sewer Planning Division, Sewer Department, Construction Bureau 🛮 TEL 048-829-1566 FAX 048-829-197

River Division, Civil Engineering Department, Construction Bureau TEL 048-829-1585 FAX 048-829-19

# 5. Precautions When Evacuating

Inundation may occur suddenly due to localized heavy rainfall so keep in mind to take prompt action. Walking becomes difficult even at a water depth of about 20 cm depending on the flow of water. It is dangerous

for the elderly and children. If you fall behind, stay in a high place and wait for rescue.

# Gather the accurate information and evacuate on your own initiative

Pay close attention to the latest weather forecast, disaster-related

and evacuation information from radio.TV and internet Keep an eye out on the how the rain falls and the inundation situation. If you feel there is

danger, evacuate on your own initiative.

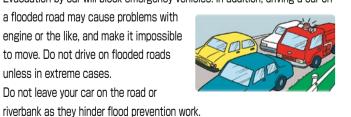
 Keep in mind to wear comfortable clothes and in pairs or with more persons when evacuating.



unless in extreme cases

Do not leave your car on the road or

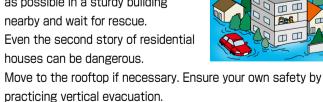
 Evacuation by car will block emergency vehicles. In addition, driving a car on a flooded road may cause problems with engine or the like, and make it impossible



# you fall behind.

evacuate.

 Evacuate to as higher floor as much as possible in a sturdy building nearby and wait for rescue. Even the second story of residential



# Use caution in places such as underpasses

There are many multi-level crossing in Saitama

It is necessary to avoid underpasses and such in times of inundation especially those that are expected to increase in depth when inundated.

Water flows in at a stretch when the

such as ventilation holes and windows.

Electrical power may be cut off in

If electrical power is cut off, there will be

Water may enter through unexpected places

Also, you can't walk up the stairs due to the

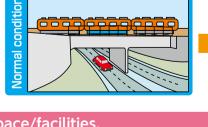
ground level is flooded.

flowing water.

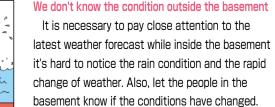
times of inundation.

a blackout and darkness.

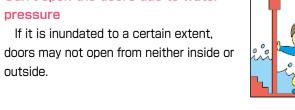
And elevators will be out of order.



# The potential danger of underground space/facilities.



# Can't open the doors due to water



# 6. Daily Preparations

# Preparedness at buildings

(1) Advance preparations

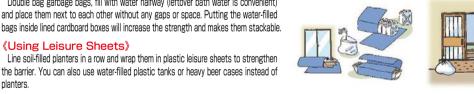
 Clean the ditches and the rainwater basins. Avoid placing things such as car step slopes on top of ditches and basins.

• Pick up the things around your building in preparation for flooding. Board up glass windows without shutters from the outside in case flying objects enter. If there is a risk of flooding, move important household goods to the second floor or a higher, safer place.

Rainwater basin How to make a simple sandbag

leisure sheets/mats and planters as emergency measures. (Using Garbage Bags) Double bag garbage bags, fill with water halfway (leftover bath water is convenient

and place them next to each other without any gaps or space. Putting the water-filled bags inside lined cardboard boxes will increase the strength and makes them stackable.





### Advance preparations in the Family • Store water for daily use. (Drinking water should be 3 liters per person per day.)

• Decide the route to the designated emergency evacuation site in advance, and make sure that it is safe to pass through.

# (2) Emergency items and stockpiles In times of a large-scale disaster, it is said to take approximately three days for relief goods to reach the disaster

area. For emergency items, select, at minimum, the basic supplies and store them in one place where you can take them out immediately. Also, prepare stockpiles to support you for several days when evacuating at home and emergency items separately until recovery from the disaster. In particular, buy a little more of food and drinking water than usual on a regular basis, and keep in mind the idea of "rolling stock" by repeating daily consumption and buying.



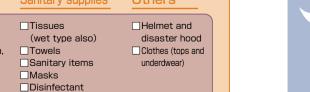
to your emergency or stockpiling list.

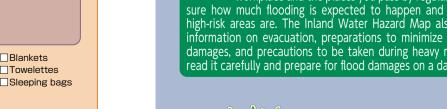


the family structure, such as the elderly and infants, add them

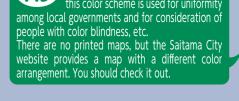
Regularly check the storage conditions and expiration dates of

emergency items, and replace them with new ones as needed.





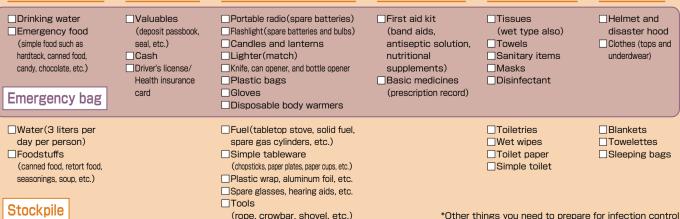
According to the national regulation this color scheme is used for uniform color scheme is used for unifo



not be exactly the same as the actual phenomena.

Please read this hazard map on a daily basis and prepare for inundation damages! (^^





### (3) Creating My Timeline "My Timeline" is to make a "disaster prevention action plan" for each resident.

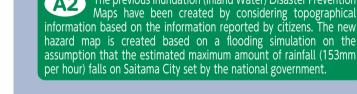
low places tend to accumulate water.

Checklist

When the water level of a river rises because of the approach of a typhoon, organize the standard disaster prevention actions you will take in the "Saitama City My Timeline" (Create a "My Timeline" in preparation for wind and flood disasters: https://www.city.saitama.jp/001/011/015/003/003/p063827.html). Also, check the height of your area on the GSI's website (https://www.gsi.go.jp/) or Saitama City's website (https://www.city.saitama.jp/001/010/014/008/p047050.html). In general,

# If the water depth is shallow, use household items such as garbage bags,

# What is the difference between this map and the previous nundation (Inland Water) Disaster Prevention Map? he previous Inundation (Inland Water) Disaster Prever



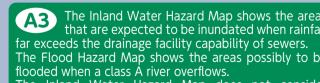
Are non-colored areas on

The hazard map is a colored map that highlights area. which are at high risk of inundation. Since areas with

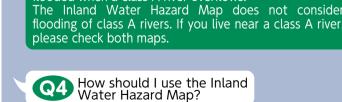
at inundation may occur even in non-colored areas.

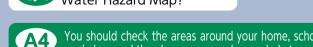
dation depth of less than 20 cm are not shown, please note

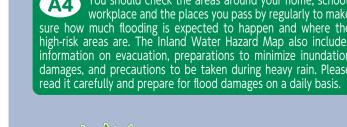
the hazard map safe?



What is the difference from the Flood Hazard Map?







It is difficult to distinguish the colors of the estimated injundation areas. Is there any man posiciate and inundation areas. Is there any map easier to see?



equests to all local residents from Mr. Nu!

For more information, please see the Q & A on our website at https://www.city.saitama.jp/001/006/003/002/001/p078773.html