

# CITY OF ASAHIKAWA FLOOD HAZARD MAP

March, 2019

## Introduction

This map was created in order to check evacuation routes etc. from day to day in case the river floods.

※ Created based on estimated flood area map of Asahikawa Development Construction Department, Ministry of Land, Infrastructure and Transport, Asahikawa Construction Management Division, Hokkaido

## Flooding Scenarios

It is made by simulating the state of flooding estimated when the river to the below overflows due to heavy rain which occurs once in 1000 years. Therefore, it does not mean that such flooding always occurs.

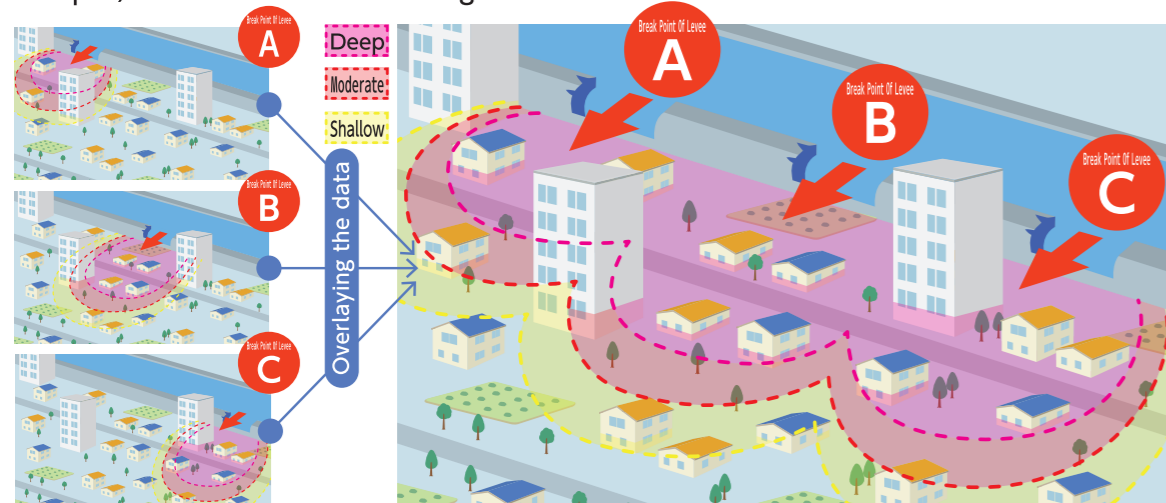
### 《River name and estimated rainfall list》

<b>Ishikari River</b>	Ishikari River upstream basin 72-hour total rainfall 348 mm
<b>Chubetsu River</b>	Chubetsu River Basin 72-hour total rainfall 457 mm
<b>Biei River</b>	Biei River Basin 72-hour total rainfall 422 mm
<b>Ushubetsu River</b>	Ushubetsu River Basin 72-hour total rainfall 466 mm
<b>Osarappe River</b>	Osarappe River Basin 72-hour total rainfall 478 mm
<b>Bebetsu River</b>	Bebetsu River Basin 72-hour total rainfall 477 mm
<b>Nagayama Shinkawa River • Ushubetsu River</b>	Ushubetsu River upstream basin 72-hour total rainfall 474 mm

<b>Etambetsu River</b>	Etambetsu River Basin 24-hour total rainfall 507 mm
<b>Kuranuma River</b>	Kuranuma River Basin 72-hour total rainfall 515 mm
<b>Pippu River</b>	Pippu River Basin 24-hour total rainfall 515 mm
<b>Pon River</b>	Pon River Basin 24 hour total rainfall 527.9 mm
<b>Pepan River</b>	Pepan River Basin 72-hour total rainfall 484 mm
<b>Ushubetsu River •Toma River</b>	Ushubetsu River Basin 72-hour total rainfall 493 mm

### 《Our Simulation Method》

Our projection is based on simulations that analyze all vulnerable bank sites (every site where the bank is prone to collapse) in terms of how water might overflow or flood these various sites.



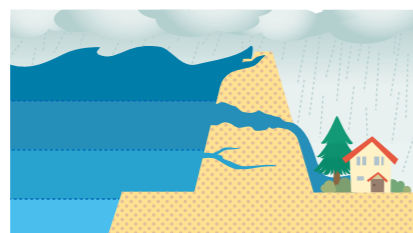
The results depicted on the map show the maximum extent of flooded areas and the deepest water level, taking into account all our projections. In reality, only limited areas would experience flooding as water flows outwards from these flooded regions.

### 《How Floods Occur》

Flooding occurs when rivers rise as a result of heavy rain and cause the bank to collapse or overflow.



When the water level of the river rises to the height of the bank due to heavy rain, the bank starts to come under heavy pressure.



As the water rises, the bank can no longer resist the pressure and a portion of it begins to crack.



The damaged portion of the bank suddenly collapses under the force of the water, which rushes out and inundates the house.

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