

Chikusei City Local disaster management plan
(General Provisions, Wind and Flood Damage Control Plans)

Excerpt

March 2013

Chikusei City Disaster Prevention Council

Section 3: Plans Related to Weather Information, etc.

1. Basic Policy

The plan shall be for promptly and infallibly implementing such actions as transmission of disaster-related weather and flood prevention warnings, advisories, and information; collection of disaster information; and transmission of orders necessary for emergency disaster control measures.

2. Types of weather advisories, weather warnings, etc. and criteria for announcements

The types of weather advisories, weather warnings, etc. and criteria for announcements are as follows. Advisories are issued when there is a risk of occurrence of disasters due to heavy rain, strong winds, etc., while warnings are issued when it is forecast that serious disasters may potentially occur. Since the criteria for making such announcements have been prepared as a general indicator for such disasters, these may be changed according to changes in the social environment.

(1) Weather advisories

Type		Criteria for announcement
Weather advisories	Advisory for gale and snow	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to gale accompanied by snow • Specifically, when it is predicted that the average ground wind speed will reach 12 m/s or more, accompanied by snow
	Advisory for gale	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to gale • Specifically, when it is predicted that the average ground wind speed will reach 12 m/s or more
	Advisory for heavy rain	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to heavy rain • Specifically, when it is predicted that the hourly precipitation will reach 40 mm or more
	Advisory for heavy snow	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to heavy snow • Specifically, when it is predicted that the depth of snowfall will reach 10 cm or more in 24 hours
	Advisory for dense fog	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to dense fog • Specifically, when it is predicted that the visibility range will fall to 100 m or less
	Advisory for thunderstorm	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to lightning
	Advisory for dry air	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to dry air • Specifically, when it is predicted that the minimum humidity will fall to 40% or the effective humidity will fall to 60% or less at Mito Local Meteorological Observatory
	Advisory for ice (snow) accretion	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to significant ice (snow) accretion
	Advisory for frost	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to frost • Specifically, when it is predicted that the minimum temperature will fall to 3 °C or lower during the early and late frost periods
Advisory for low temperature	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to low temperature • Specifically, when it is predicted that a minimum temperature of 15 °C or below will continue for two or more days during the summer, or when the minimum temperature will fall to 7 °C below zero or lower during the winter 	
* Terrestrial phenomena advisory	Terrestrial phenomena advisory	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to inundation caused by such phenomena as heavy rainfall, long spells of rain, and melting of snow
* Inundation advisory	Inundation advisory	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to inundation caused by such phenomena as heavy rainfall, long spells of rain, and melting snow
Advisory for flood (precipitation)	Overflow advisory information Advisory for flood (precipitation)	<ul style="list-style-type: none"> • When it is predicted that disasters may occur due to the rise in river water level caused by heavy rainfall, long spells of rain, etc. • Specifically, when it is predicted that the hourly precipitation will reach 40 mm or more

(2) Weather warnings

Type		Criteria for announcements
Meteorological warnings	Warning for storm	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to a storm • Specifically, when it is predicted that the average ground wind speed will reach 20 m/s or more
	Warning for snow-storm	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to a storm accompanied by snow • Specifically, when it is predicted that the average ground wind speed will reach 20 m/s or more (accompanied by snow)
	Warning for heavy rain	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to heavy rain • Specifically, when it is predicted that the hourly precipitation will reach 70 mm or more
	Warning for heavy snow	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to heavy snow • Specifically, when it is predicted that the depth of snowfall will reach 30 cm or more in 24 hours
* Terrestrial phenomena warning	Terrestrial phenomena warning	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to mountain failures, landslides, etc. caused by heavy rain, heavy snow, etc.
* Inundation warning	Inundation warning	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to inundation accompanying such phenomena as heavy rain, long spells of rain, and melting snow
Warning for flood (precipitation)	Overflow alert information Warning for flood (precipitation)	<ul style="list-style-type: none"> • When it is predicted that serious disasters may occur due to the rise in river water level caused by heavy rainfall, long spells of rain, etc. • Specifically, when it is predicted that the hourly precipitation will reach 70 mm or more

*1 The numerical values listed in the announcement criteria column are those that have been determined by investigating the relationship between weather conditions and the frequency of occurrence of disasters in Ibaraki Prefecture in the past; they are general indicators for predicting the occurrence of disaster depending on meteorological factors.

2 Advisories and warnings marked with asterisks () are issued without their titles by including them in weather advisories and warnings. (Article 12 of the Japan Meteorological Agency (JMA) Forecast and Warning Regulations (Ministry of Transportation Notice No. 63 of 1953))

*3 Advisories and warnings, regardless of their types, continue to be in effect until they are cleared. In addition, when new advisories or warnings are announced, the advisories or warnings that have continued to be in effect so far are automatically cleared or updated and replaced with the new advisories or warnings.

(3) Others

① Typhoon Information (weather information about Typhoon No. xx)

Typhoon information consists of a typhoon's central pressure, maximum wind speed, maximum instantaneous wind speed, area of 25 m/s or greater winds, area of 15 m/s or greater winds, and track

forecast. When a typhoon approaches Japan, its position is announced hourly (on the hour), while the track forecast is announced every three hours (at 0300, 0600, 0900, 1200, 1500, 1800, 2100, and 2400 hours).

② Heavy rain information (information about heavy rain, etc.)

Heavy rain information is specifically described and graphically represented with regard to such conditions as its currently observed or predicted distribution, intensity, rise and decline, and movement.

③ Record short-term heavy rain information

In order to arouse further caution, the information in record short-term heavy rain information indicates only “when,” “where,” and “to what extent” in the event that intense rainfall that occurs only once every several years is observed or analyzed while a heavy rain warning is in effect.

④ Tornado advisory information

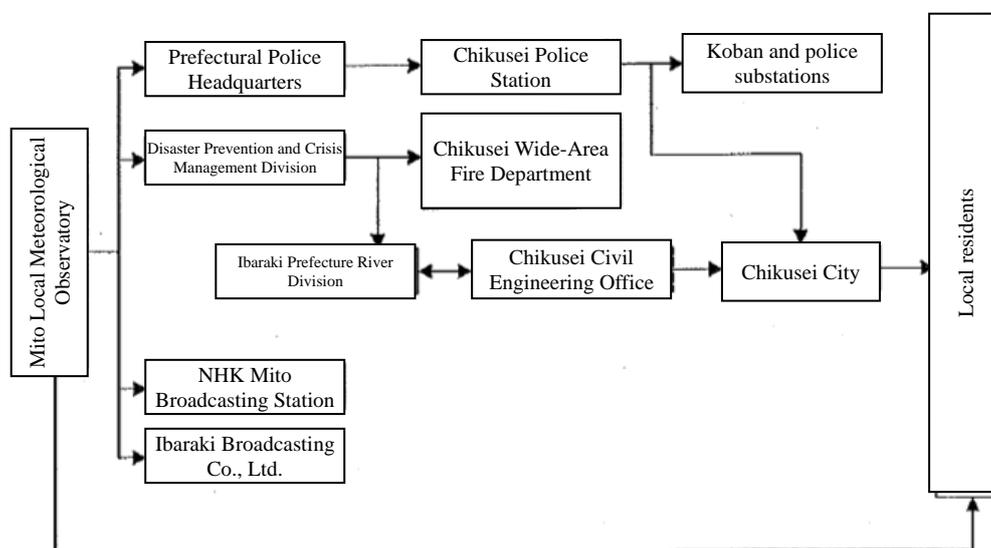
In case of increased possibility of the occurrence of intense sudden wind phenomena such as tornadoes, downbursts, or gust fronts in a situation where a thunderstorm advisory has been announced calling for attention to thunder, gusts, hail, etc., a flash report is issued to that effect.

In addition, for preventing and reducing disasters due to intense gusts and thunderstorms that suddenly develop in localized areas, Mito Local Meteorological Observatory provides “tornado occurrence accuracy nowcast” and “thunderstorm nowcast” services that respectively forecast the accuracy of the occurrence of tornadoes, etc. and the intensity of thunderstorms.

⑤ Landslide disaster warning information

In case of increased risk of the occurrence of landslide disaster due to heavy rain while a heavy rain warning is in effect, this information is issued for each municipality to serve as reference when the heads of municipalities make judgments when issuing evacuation advisories or when residents evacuate voluntarily.

3. Transmission of weather advisories and warnings



4. Flood forecasts and flood prevention warnings

(1) Types of flood forecasts and flood prevention warnings

① Types of flood water forecasts

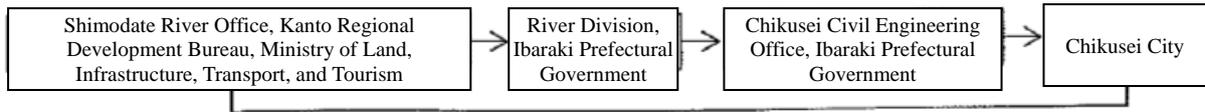
XX River overflow advisory information	When the river reaches the overflow advisory water level
XX River overflow warning information	When the river reaches the evacuation decision water level, or when it is expected that the river will reach the overflow risk water level based on the water level forecast
XX River overflow risk information	When the river reaches the overflow risk water level
XX River overflow occurrence information	When overflow has occurred

② Types of flood prevention warnings

Type	Description	Announcement Criteria
Standby	<p>1. A warning issued to the effect that there is a need to be on standby so that flood prevention agencies can be mobilized immediately depending on the situation in such cases as an unexpected overflow or it is predicted that the water level will rise again</p> <p>2. A warning issued to the effect that if the length of deployment of flood prevention agencies is prolonged, there is no problem in reducing mobilization of personnel, but flood prevention activities may not be discontinued</p>	When deemed necessary according to weather forecasts and river conditions
Preparation	A warning issued to the effect that there is a need to have flood prevention agencies prepare to be mobilized, in addition to having them make efforts concerning communication of information on flood prevention, maintenance of flood prevention materials and equipment, inspection of drainage sluice pipes, securing of communications and transportation, etc.	When deemed necessary according to precipitation, water level, flow rate, and other river conditions
Deployment	A warning issued to the effect that there is a need for mobilization of flood prevention agencies	When there is a possibility that the river may exceed the overflow advisory water level according to flood advisories or the water level, flow rate, and other river conditions
Instructions and information	A warning issued by pointing out matters that require vigilance depending on overtopping, leakage, slope failure, cracks, and other river conditions, in addition to clearly showing conditions required for flood prevention activities such as the water level and time of submergence	When there is a possibility of disaster due to the river exceeding the overflow advisory water level according to flood warnings, etc. or the river has already exceeded the overflow advisory water level
All clear	A notification issued to the effect that flood conditions requiring flood prevention activities have been resolved and that an all-clear has been declared for a series of flood prevention activities undertaken under the name of the relevant standard water level observation station.	When the river has fallen below the overflow advisory water level or when it is recognized that river conditions requiring flood prevention work have been resolved even if the river still exceeds the overflow advisory water level

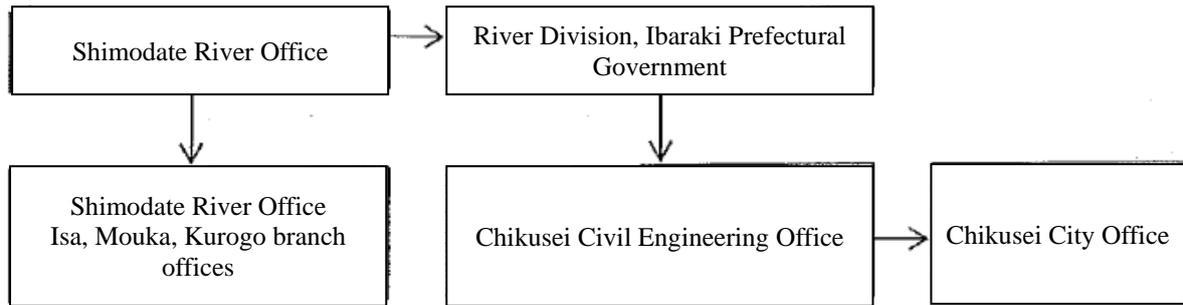
(2) Transmission of flood forecasts and flood prevention warnings

① Transmission of flood forecasts

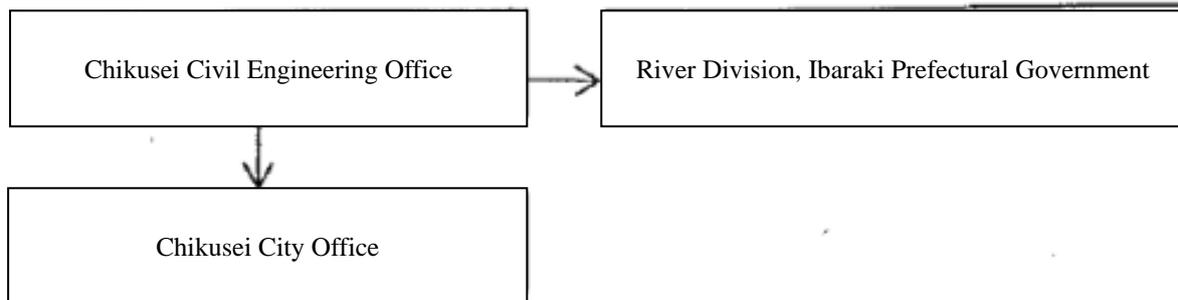


② Transmission of flood warnings

A. Designated rivers



B. Water level information communication river



5. Fire Weather Notification

On the basis of the Fire Service Act, if Mito Local Meteorological Observatory deems that the weather conditions are dangerous in terms of fire prevention, it shall notify the governor of that situation with a fire weather notification. Upon receiving this notification from the governor, mayors shall issue fire alarms as necessary. The criteria for implementing such notifications are as follows.

(1) When the effective humidity is less than 60% and it is predicted that the minimum humidity will become less than 40%

(2) When it is predicted that the average wind speed will become 12 m/s or higher; however, a notification may not be issued if the weather conditions are such that there will be rain and/or snow.

6. Notification by persons who discovered unusual phenomena and measures to be taken

(1) Those who have discovered unusual phenomena under which disasters may occur must promptly make a notification to that effect to the mayor, firefighting agencies, or policemen.

(2) If the Fire Department or police receives notification from residents, they shall promptly notify the mayor.

(3) A mayor who has received notification from persons who discovered the unusual phenomena shall promptly make a notification to that effect to the prefectural government, Mito Local Meteorological observatory, and disaster prevention-related agencies, and at the same time notify the residents and related organizations.

Section 8: Flood Prevention Measures During a Disaster

Name of district	Base facilities
Shimodate district	Chikusei Fire Station (Kawashima Substation), City Fire Department Units 1-3
Sekijo district	Chikusei Fire Station (Sekijo Substation), City Fire Department Unit 4
Akeno district	Chikusei Fire Station (Akeno Substation), City Fire Department Unit 5
Kyowa district	Chikusei Fire Station (Kyowa Substation), City Fire Department Unit 6

1. Basic Policy

Flood prevention activities shall be undertaken pursuant to the provisions of this plan and the city flood prevention plan.

2. Responsibilities of flood prevention management organizations (Article 3 of the Flood Prevention Act)

Flood prevention management organizations shall develop and establish the following matters so that flood prevention activities can be sufficiently performed in the areas under their jurisdiction.

- (1) Establishment of flood prevention organizations
- (2) Development of flood prevention teams and fire-fighting teams
- (3) Maintenance of flood prevention warehouse and materials/equipment
- (4) Establishment of communication/contact system
- (5) Patrolling of rivers, embankments, sluice pipes, etc.
- (6) Implementation of appropriate flood prevention activities during floods
 - ① Securing of funds for self-payment of expenses required in flood prevention
 - ② Securing of mobilization system for flood prevention teams or fire-fighting teams
 - ③ Re-inspection of communication networks
 - ④ Maintenance, inspection, and procurement of flood prevention materials and equipment, as well as securing of the transportation
 - ⑤ Accurate observations of precipitation and water levels
 - ⑥ Operation of agricultural diversion weirs, storage reservoirs etc.
 - ⑦ Collapse of embankments, storage reservoirs, etc. and appropriate post-collapse measures
 - ⑧ Exercise of public burden authority when there is an urgent need in terms of flood prevention
 - ⑨ Instructions to residents to engage in flood prevention activities
 - ⑩ Request for mobilization of police officers
 - ⑪ Instructions on evacuation for refuge
 - ⑫ Mutual cooperation and support among flood prevention management organizations
 - ⑬ Instructions on all-clear announcement regarding flood prevention activities
 - ⑭ Submission of full-account report on flood prevention activities

3. The City's Measures

(1) Flood prevention system

In the event that water-related damage is expected to occur or has occurred due to the collapse of embankments and revetments of storage reservoirs, rivers, etc. or due to flooding caused by discharging of water, the system of communications, information, warning, inspection, and prevention shall be strengthened, based on the flood prevention plan and other plans related to flood prevention. At the same time, with regard to these activities, priority shall be placed particularly on evacuation and rescue of disaster victims by establishing close cooperation with the managers of facilities such as embankments, various police and fire-fighting institutions, as well as community organizations, etc.

(2) Emergency disaster control measures for river management facilities, etc.

If embankments, revetments, sluice pipes and gates, drainage pump stations, and other river management facilities of Kinugawa River, Kokaigawa River, Otanigawa River, and other rivers as well as their inner drainage channels receive damage, initiatives shall be taken to implement emergency and restoration measures by cooperating with institutions that have jurisdiction over various facilities, and at the same time, utmost efforts will be made toward draining water as indicated below.

① Along with flood control activities, patrols shall be conducted on a priority basis with regard to facilities in jurisdictional areas, especially sections under construction and hazardous sections, and reports on damaged sections shall be promptly made to the MLIT and the prefectural government. At the same time, necessary measures shall be implemented such as removing disaster waste materials in blocked river channel sections and covering cracks, etc. on collapsed slopes of embankments and storage reservoirs with plastic sheets to prevent the cracks, etc. from enlarging due to seepage of rainwater.

② In the event of damage to floodgates, drainage pumps, etc., emergency stoppage of floodwaters shall be performed using sandbags, sheet piles, etc. as necessary. At the same time, this matter shall be promptly reported to the MLIT and the prefectural government, and a system to prevent further spreading of the damage due to water inside embankments shall be secured by requesting deployment of mobile drainage pumps and thereby continuing drainage work as needed. Emergency restoration of facilities, excluding those of a large scale, shall be implemented under the guidance of the MLIT and the prefectural government.

4. Activities of Fire Stations (Substations) and Fire Departments

(1) Flood prevention system of fire stations (substations) and the fire departments

① Organization of flood prevention corps and flood prevention teams

In the event of the issuance of a flood prevention deployment order, fire stations and fire departments shall set up flood prevention corps at the fire stations and flood prevention teams at the fire-fighting teams.

② Deployment of flood prevention corps and flood prevention teams

At the mayor's instructions, the chief of Chikusei City Fire Station and the chief of the flood prevention

teams shall implement flood prevention activities by deploying flood prevention corps and flood prevention teams in accordance with plans set forth in advance.

(2) Monitoring of river embankments, agricultural water intake weirs, and sluice gates (pipes)

The Fire Department Secretariat, the Civil Engineering Department, and the Economic Affairs Department shall perform monitoring of river embankments, agricultural water intake weirs, and sluice gates (pipes).

In addition, if necessary, the flood prevention corps of the fire stations shall conduct such activities as security patrols in areas under their jurisdiction and deployment of security personnel to hazardous areas.

(3) Other necessary matters

Other necessary matters shall be in accordance with the city flood prevention plan and the Fire Department's fire-fighting plan.

5. Activities of Citizens/Voluntary Disaster Prevention Organizations, Private Fire-fighting Teams, etc.

Citizens/voluntary disaster prevention organizations, private fire-fighting teams, various industry organizations, and business establishments shall constantly pay attention to weather conditions, flood prevention conditions, etc., and in the event that water-related damage is expected in their areas of residence, they shall be on the alert against water-related damage due to floods, etc., and voluntary cooperate in flood prevention activities to reduce damage due to such causes. In particular, if requests have been received from disaster prevention officials such as those of the city, flood prevention corps, flood prevention teams, etc. for construction machinery, materials, and equipment necessary for flood prevention activities, they shall actively try to provide such machinery, materials, and equipment.

* List of Designated Hazardous Areas Based on Laws, Regulations, etc. (References No. 1.2)

* List of Sluice Pipes, etc. (References No. 1.3)

* Matters related to flood prevention warnings and flood forecasts (References No. 7.3)

* Examples of public announcements during disasters (References No. 7.5)

No. 5: Current State of Fire Control Service, etc.

1. Chikusei City Fire-fighting Team (Flood Prevention Team) Organizational Chart

(As of November 1, 2012)

