

My Disaster Preparedness Memo

My Evacuation Site / Shelter		Fire/Emerg. Dial 119
Family Rendezvous Place (In case of separation)		Police Dial 110

●Contact Info for Family Members

Name	Date of Birth	Blood Type	Cell Phone No.	Workplace / School / etc. Tel.

●Emergency Contacts

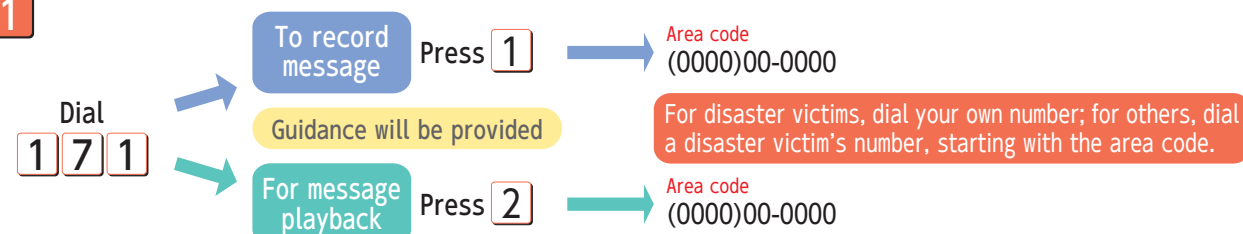
Municipal Offices		Police Stations / Kōban / Chūzai-sho			
1 Shikokuchūō City Hall	28-6000	1 Shikokuchūō Police Station	24-0110	8 Doi Chūzai-sho	74-2004
2 Shikokuchūō City Hall Kawanoe Branch	28-6181	2 Mishima Kōban	24-1906	9 Tsune Chūzai-sho	74-6618
3 Shikokuchūō City Hall Doi Branch	28-6320	3 Kawanoe Kōban	56-2059	10 Kobayashi Chūzai-sho	74-6799
4 Shikokuchūō City Hall Shingū Branch	28-6402	4 Toyo-oka Chūzai-sho	25-2302	11 Tenma Chūzai-sho	74-6790
Fire Depts. / Fire Stations / Substations		5 Kinsha Chūzai-sho	29-0008	12 Sangawa Police Officer Patrol Point	25-1179
1 Fire and Disaster Management Center (Fire Department / Fire Station)	28-9119	6 Kawataki Chūzai-sho	56-5684	13 Kanada Police Officer Patrol Point	56-6469
2 Higashi Fire Substation	28-8119	7 Shingū Chūzai-sho	72-2030		
3 Nishi Fire Substation	28-7119				
4 Shingū Branch	28-6409				
5 Reinan Branch	28-6899				

Contact	Tel. No.	Contact	Tel. No.
Gas		Sewer	
Power			
Water			
Hospital			

Disaster Emergency Message Dial

1 7 1

A voice-based message board service operated by NTT during disasters (earthquakes with seismic intensity of 6 or higher, etc.), useful for relaying safety status and contact information between family and friends when disaster has struck.



* The start of Disaster Emergency Message Dial service will be announced via TV, radio, etc.
 * Compatible with general (rotary-dial / touch-tone) subscriber telephones, public payphones, and mobile phones (excl. certain carriers).

For inquiries regarding 171 Disaster Emergency Message Dial, please dial 116 with no area code or contact your local NTT branch or sales office.

Shikokuchūō City

Disaster Prevention Hazard Map

\ Be prepared in case of emergency! /

Tsunamis



Sediment Disasters



Storm Surges



Reservoir Flooding



Floods



Large-Scale Infilling



Introduction

Greetings from the Mayor

In recent years, large-scale disasters have occurred throughout Japan. Even in our city, we can never be sure when or where a natural disaster might strike: a Nankai Trough megaquake, which is feared to have a high probability of occurrence within the next 30 years, flooding caused by heavy rainfall, a landslide or other sediment disaster... the list goes on.

While it may not be possible to prevent the occurrence of natural disasters completely, we can all work to be ready for them and prepare for evacuation to reduce the level of damage incurred.

Shikokuchūō City is committed to taking disaster prevention and mitigation steps. As for you who call this city home, we ask for your cooperation in making preparations now, using this Shikokuchūō City Disaster Prevention Hazard Map we have put together, so that we may realize our goal of making our city a place where we can all live with safety and security. Thank you in advance.



SHINOHARA Minoru
Shikokuchūō City Mayor

How to Use the Disaster Prevention Hazard Map

The Shikokuchūō City Disaster Prevention Hazard Map was created to provide information on disasters that could be anticipated to occur in the city and evacuation with the goal of helping you make advance preparations.

Please use this map to review places around you that are associated with disaster risk, as well as evacuation sites, shelters, and routes, together with family members, co-workers, or others to make sure you are prepared for disasters on a routine basis.

STEP 1 Review risks of disaster around your home, etc.

Review places you visit on a regular basis, such as your home, workplace, school, etc. to identify what kinds of disaster risks there may be in such locations.

STEP 2 Review evacuation sites and shelters

Review evacuation sites and shelters located in the vicinity of your home, etc. Be sure to also review whether these evacuation sites, etc. are appropriate for the disaster risks you have identified in Step 1.

STEP 3 Review evacuation routes

Review evacuation routes from your home, etc. to evacuation sites and shelters. If there are risks of flooding, sediment disasters, etc. along the route, be sure to also review evacuation routes that will allow you to avoid such places.

Also be sure to actually walk the evacuation route on foot yourself to see how long it will take you and to check if there are any places along the route that may pose hazards during evacuation; for example, dilapidated vacant houses or concrete-block walls along narrow roadways.

STEP 4 Have family or workplace discussions

Discuss disaster risks, evacuation sites, shelters, and routes with family members, co-workers, or others to review what you all need to do to ensure your safety.



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Earthquakes & Tsunamis

About Earthquakes

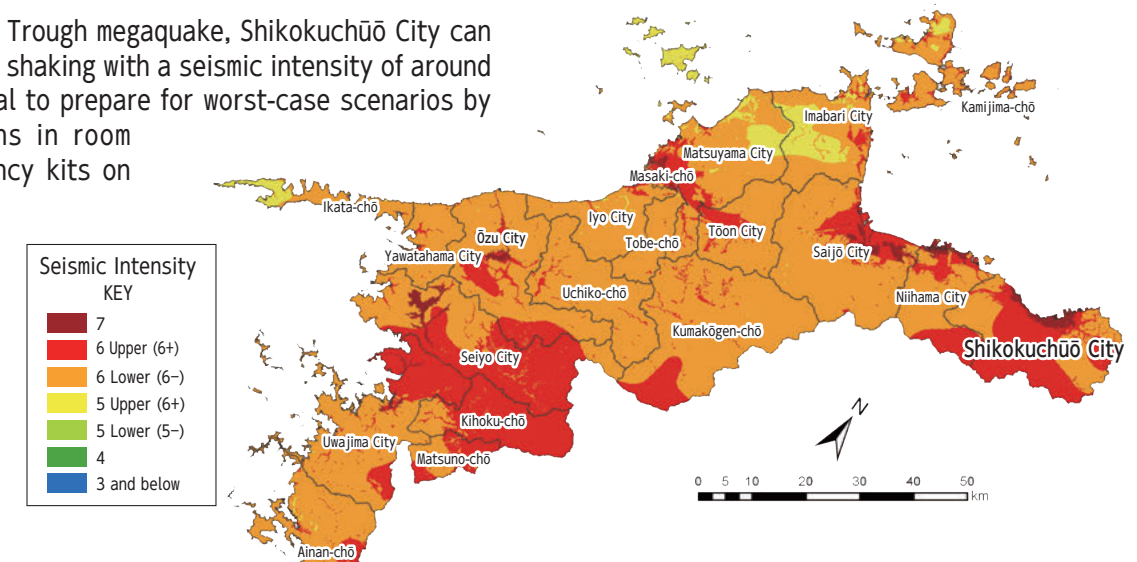
While Japan accounts for less than 1% of the world's surface area, about 10% of the earthquakes in the world occur here. With the inclusion of tremors too minor to be sensed physically, Japan can be said to be one of the very most earthquake-prone countries in the world, a place where earthquakes are always occurring somewhere.

Earthquakes occur due to the shifting or slippage of bedrock underground and can be separated into two main types: trench-type (or subduction-zone) earthquakes and near-field inland earthquakes.

In the Shikoku region, there is concern that earthquakes such as a trench-type Nankai Trough megaquake or inland earthquakes along the Median Tectonic Line may occur. Major earthquakes can also bring about complex disasters, with the potential of causing the destruction of houses and the co-occurrence of other disasters such as tsunamis, sediment disasters, fires, etc., and they pose serious hazards to human lives, property, etc.

Seismic Intensity of a Nankai Trough Megaquake

In the event of a Nankai Trough megaquake, Shikokuchūō City can be expected to experience shaking with a seismic intensity of around lower 6 (6-) to 7. It is vital to prepare for worst-case scenarios by taking safety precautions in room interiors, keeping emergency kits on hand, and so on.



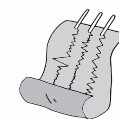
Seismic Intensity

Seismic intensity (shindo) expresses the strength of shaking from an earthquake. A device called a seismometer or seismograph is used to measure seismic intensity by sensing earthquake-induced shaking and calculating its intensity automatically. Below is an outline of the phenomena that may occur in an area where a certain level of seismic intensity has been observed along with the general extent of damage that can be expected.

Here's what to expect!

Seismic Intensity 0

- Imperceptible to people but recorded by seismometers.



Seismic Intensity 1

- Shaking is felt slightly by some people keeping quiet indoors.



Seismic Intensity 2

- Shaking is felt by many people keeping quiet indoors.



Seismic Intensity 3

- Shaking is felt by most people indoors.



Seismic Intensity 4

- Most people are startled.
- Hanging objects such as lights sway considerably.
- Unstable ornaments may fall.



Seismic Intensity 5 Lower

- Many people are frightened and feel the need to hold on to something stable.
- Dishes and books on shelves may fall.
- Unsecured furniture may move, and unstable objects may fall.



Seismic Intensity 5 Upper

- Walking is difficult without holding on to something stable.
- Dishes and books on shelves are more likely to fall.
- Unsecured furniture may topple over.
- Unreinforced concrete-block walls may collapse.



Seismic Intensity 6 Lower

- It is difficult to remain standing.
- Many unsecured pieces of furniture move and may topple over. Doors may become wedged shut.
- Wall tiles and windows may sustain damage and fall.
- Wooden houses with low earthquake resistance may lean or collapse, and tiles may fall.



Seismic Intensity 6 Upper

- It is impossible to move without crawling. People may be thrown through the air.
- Most unsecured furniture moves and is more likely to topple over.
- Wooden houses with low earthquake resistance are more likely to lean or collapse.
- Large cracks may form in the ground. Major landslides and massif collapses may occur.



Seismic Intensity 7

- Wooden houses with low earthquake resistance are even more likely to lean or collapse.
- Even wooden houses with high earthquake resistance may lean in some cases.
- Reinforced-concrete buildings with low earthquake resistance are more likely to collapse.



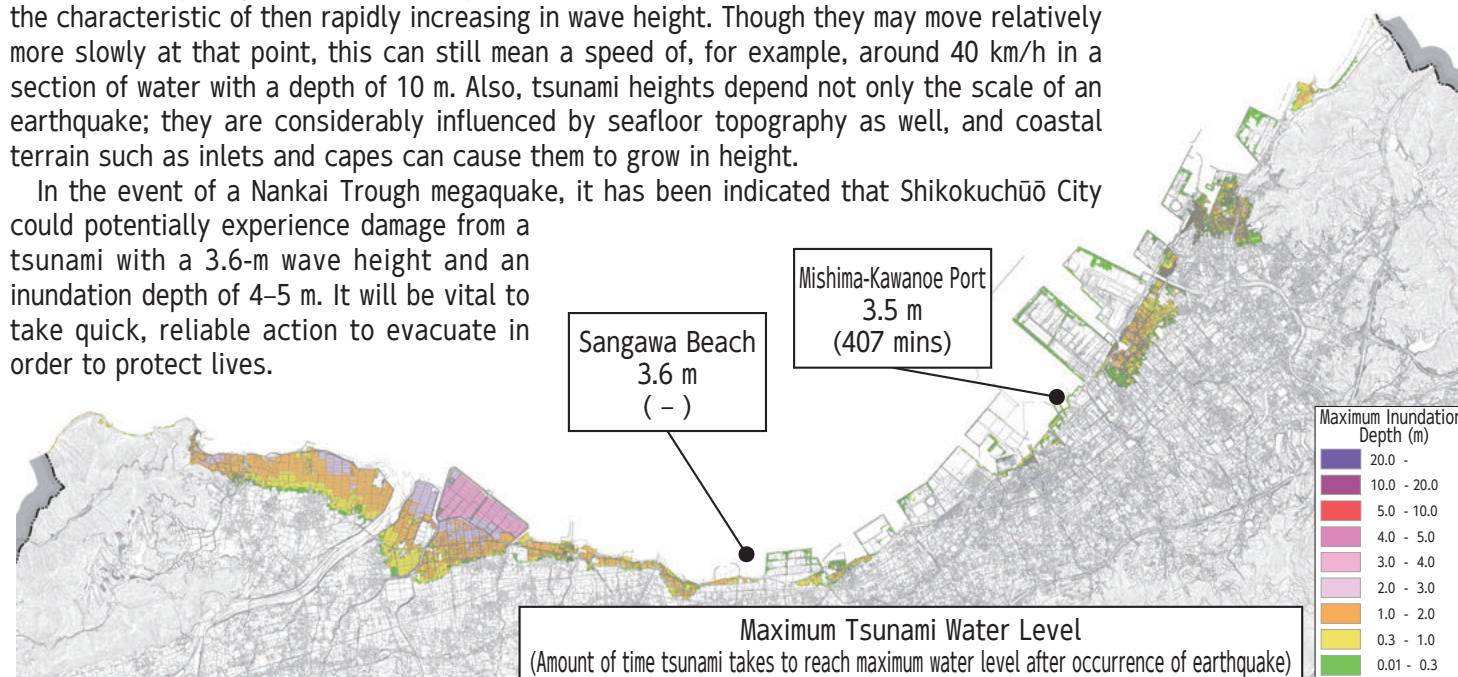
Earthquakes & Tsunamis

About Tsunamis

Tsunamis are phenomena in which earthquakes occurring on the seafloor thrust masses of sea water onto land. In the 2011 Great East Japan Earthquake, a tsunami took many lives.

While slowing in speed when reaching shallow water depths closer to shore, tsunamis have the characteristic of then rapidly increasing in wave height. Though they may move relatively more slowly at that point, this can still mean a speed of, for example, around 40 km/h in a section of water with a depth of 10 m. Also, tsunami heights depend not only the scale of an earthquake; they are considerably influenced by seafloor topography as well, and coastal terrain such as inlets and capes can cause them to grow in height.

In the event of a Nankai Trough megaquake, it has been indicated that Shikokuchū City could potentially experience damage from a tsunami with a 3.6-m wave height and an inundation depth of 4–5 m. It will be vital to take quick, reliable action to evacuate in order to protect lives.



Actions to Take When Tsunamis/Earthquakes Occur

When earthquakes occur, stay calm and first act to ensure physical safety. Also, if you are near the seacoast and feel strong or sustained shaking, evacuate to somewhere like high ground immediately as tsunamis can sweep in right away.

Damage Projections for a Nankai Trough Megaquake

Below is an outline of the damages that could be expected to occur in Shikokuchū City in the event of a Nankai Trough megaquake according to the findings of the Ehime Prefecture Earthquake Damage Projection Survey (Final Report : Dec. 26, 2013).

■ Scale of earthquake : M9.0

■ Maximum seismic intensity : 7

■ Maximum tsunami water level & shortest arrival time

	Maximum Tsunami Water Level	Tsunami Arrival Time		
		±20 cm	+1 m	Maximum Tsunami Water Level
Shikokuchū City	3.6 m	5 mins	231 mins (3 hrs 51 mins)	404 mins (6 hrs 44 mins)

■ Damage to Buildings (6PM, Winter)

Completely destroyed : 26,288 (incl. 14,945 caused by shaking, 66 by tsunami)

Partially destroyed : 11,014 (incl. 9,329 caused by shaking, 459 by tsunami)

■ Harm to People (Late Night, Winter)

Fatalities : 1,043 (incl. 756 caused by building collapse, 26 by tsunami)

Injuries : 4,833 (incl. 4,696 caused by building collapse, 13 by tsunami)

■ Damage to Lifeline Utilities (6PM, Winter / Immediate Aftermath)

People with water outages : 89,930 (99.9%)

Households with tipped over LP gas containers : 1,250

People affected by damage to sewage system : 52,109 (96.8%)

Households with LP gas leaks : 887

Houses with power outages : 47,367 (100.0%)

Landline telephone line outages : 67,534 (99.9%)

■ Disruptions to Life (6PM, Winter)

Evacuees(1 day after) : 31,999 (incl. 19,559 at evacuation shelters)

(1 week after) : 43,554 (incl. 22,828 at evacuation shelters)

(1 month after) : 60,249 (incl. 18,075 at evacuation shelters)

Earthquake Strikes

Intense, sustained shaking (2–3 mins)

1 Earthquake Early Warning (EEW)

An Earthquake Early Warning may provide advance notice before shaking occurs.

2 Protect yourself first

Use something like a cushion to protect your head. Duck under a desk or table.



3 Turn off gas when shaking subsides

Turn off your gas and stove and unplug electrical appliances.

4 Open windows and secure a way out

Open your front door and windows to secure ways to get out.



1–3 Mins

Check family members' safety when shaking subsides

1 Check all sources of fire

Turn off your gas at the mains and shut down the circuit breaker. If a fire has started, stay calm and extinguish the flames before they spread.



2 Check family members' safety

Double-check that no one has gotten pinned under toppled furniture.

3 Protect your feet from broken glass, etc.

Put on footwear like athletic shoes or thick-soled slippers.



In areas at risk of tsunamis, slope failures, etc., evacuate right away!

3–10 Mins

Beware of aftershocks and check neighbors' safety

1 Reach out to neighbors and help each other

Double-check that no one has gotten injured or has gone missing.



2 Work together to put out any fires early

Double-check that no fires have started in the area. If you notice a fire, call out loudly to alert others, and work together to put it out early using a fire extinguisher, bucket brigade, etc.



10 Mins–Several Hrs

Try to maintain access to accurate information and avoid false rumors' & misinformation.

1 Find accurate information

Collect accurate information through TV, radio, etc. Check information from sources like municipal offices and voluntary disaster prevention organizations.

2 Prioritize emergency contacts for phone use

Avoid making casual phone calls and use something like 171 Disaster Emergency Message Dial for checking others' safety.

3 Evacuate right away if there is a risk of houses being destroyed

Activities include collecting information on damages sustained, fighting fires, and rescuing or providing aid to people in need.

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Beware of Aftershocks

Strong aftershocks can occur after major earthquakes. Be sure to stay alert!

Several Hrs–3 Days

Work together to fight fires and rescue/aid people

1 Work together to fight fires, rescue or provide aid to people in need, and collect information



2 Refrain from entering houses that have collapsed or at risk of collapsing

Regularly maintain at least a three-day stock of drinking water and food supplies in case of emergency.



Evacuation

Maintain a spirit of mutual aid after evacuating

1 Cooperate with evacuation shelter management

Cooperate with the city, voluntary disaster prevention organizations, etc. on matters regarding the operation or management of the evacuation shelter.

2 Assist people with special needs

Work together as a community to provide support for people who may experience difficulties in protecting themselves during times of disaster, including the elderly, infants, people with disabilities, and people from outside Japan who are familiar only with foreign languages.

3 COVID-19 precautions

Be careful to take precautions to reduce the risk of COVID-19 infection.

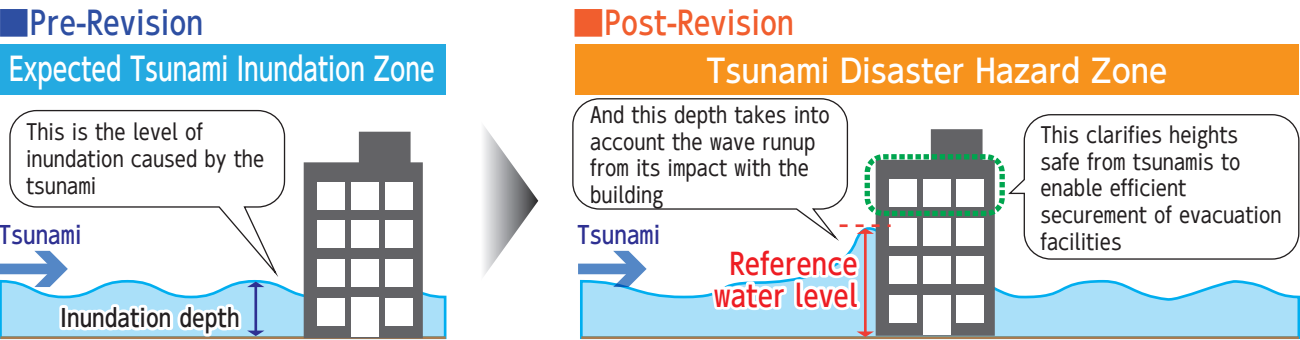
4 Be mindful of privacy protection

Earthquakes & Tsunamis

Designation of Tsunami Disaster Hazard Zones

In March 2020, Ehime Prefecture designated Tsunami Disaster Hazard Zones as areas where warning and evacuation systems were in particular need of being put in place and maintained. In areas designated as Tsunami Disaster Hazard Zones, reference water levels will be indicated, and tsunami evacuation measures will be strengthened.

While the previous Shikokuchūō City Disaster Prevention Hazard Map indicated inundation depths for Expected Tsunami Inundation Zones, this current revision indicates reference water levels for Tsunami Disaster Hazard Zones. As depths that take into account the wave runup that occurs when tsunamis make impact with structures such as buildings, these reference water levels indicate heights influenced by tsunamis with the actual potential of occurrence. Be sure to review the level of danger near your places such as your home.



Make Safety Improvements in and Around Your House to Prepare for Earthquakes & Tsunamis

It is important to make safety improvements in and around your house in order to prepare for earthquakes and tsunamis. Shikokuchūō City has worked to put in place a range of support measures aimed at strongly disaster-resilient community planning and be prepared for earthquakes and tsunamis. You may want to consider making use of support service programs in making safety improvements in and around your house.

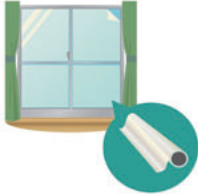
■Preventing Furniture from Toppling Over or Falling

Keep furniture that seems unstable out of bedrooms, avoid placing furniture where it may block a doorway, and use devices such as L-brackets and tension rods to secure furniture.



■Making Glass Shatter-Resistant

Apply anti-shatter film to the glass of windows, cabinets, display cases, etc. Also be sure to store footwear like athletic shoes or thick-soled slippers where they can be readily retrieved to ensure your safety in the event glass has shattered.



■Seismic Retrofitting of Wooden Houses

Subsidies are offered to reimburse part of the costs of having seismic resistance evaluations and retrofitting work done in order to improve the safety of houses during earthquakes. Please consider looking into seismic retrofitting if you live in a house built in 1981 or earlier.



Overview of Support
(City website)

■Installing Earthquake-Resistant Shelters in Wooden Houses

Another effective way to improve safety is to construct a strong wooden or steel-framed, box-shaped space, or shelter, in even a single room (living room, bedroom, etc.) in your house. As with seismic retrofitting, subsidies are offered to reimburse part of the costs of having earthquake-resistant shelters installed in wooden houses. Please consider looking into this option if you live in an applicable house.



Overview of Support
(City website)

■Safety Measures for Concrete-Block Walls, etc.

Subsidies are offered to reimburse part of the costs required for the removal or reconstruction of concrete-block walls that face roadways and have been designated as dangerous by the City in order to ensure safety during disasters and to ensure the functionality of evacuation routes, etc. Be sure to take appropriate countermeasures if inspection of a concrete-block wall reveals a risk of collapse.



Overview of Support
(City website)

Announcement of Tsunami Warnings/Advisories, etc.

In the event a tsunami is expected to cause damage after an earthquake has occurred, the Japan Meteorological Agency (JMA) may issue a Major Tsunami Warning, Tsunami Warning, or Tsunami Advisory.

Make sure you understand the content of the Warning or Advisory and take the relevant actions outlined below in the event a Warning or Advisory is issued.

	Expected tsunami height		Expected damage	Action to take
	Quantitative expression (Expected tsunami height classification)	Qualitative expression after megaquake		
Major Tsunami Warning (Emergency Warning)	Over 10 m (10 m < expected height)	Huge	Wooden structures are expected to be completely destroyed and/or washed away, and anybody exposed will be caught in tsunami currents. 	Evacuate from coastal or river areas immediately to safer places such as high ground or a nearby building.
	10 m (5 m < expected height ≤ 10 m)			
	5 m (3 m < expected height ≤ 5 m)			
Tsunami Warning	3 m (1 m < expected height ≤ 3 m)	High	Tsunami waves will hit, causing damage to low-lying areas. Buildings will be flooded and anybody exposed will be caught in tsunami currents.	Do not assume you are in a safe place; keep evacuating to higher ground wherever possible.
Tsunami Advisory	1 m (20 cm < expected height ≤ 1 m)	(None)	Anybody exposed will be caught in strong tsunami currents in the sea. Fish farming facilities will be washed away and small vessels may capsize.	Get out of the water and leave coastal areas immediately.

Key Points to Protect Yourself from Tsunamis

In order to protect yourself from a tsunami, it is important to get away from the shore to a higher location as quickly as possible. Try to remember these key points to stay safe when tsunamis occur.

1 Be alert even with minor tremors

Even minor earthquakes have the potential to cause major tsunamis. In Expected Tsunami Inundation Zones, be alert even when there are minor levels of shaking and make evacuation a first priority.



2 Beware of Misinformation & Myths

While a popular belief claims that the tide will always ebb prior to a tsunami, large waves can actually surge in all of a sudden depending on the type of earthquake that has occurred. Be careful not to put too much trust in misinformation or myths; instead try to locate evacuation information from the City, information from JMA broadcasts on the radio or television, etc. and take action to evacuate as quickly as you can.



3 Don't evacuate by car

Using cars to evacuate can lead to traffic jams and potentially cause greater damage. As a general rule, try to evacuate on foot.



4 Head Higher Rather than Farther Away

If inundation from the tsunami is already underway, try to evacuate to a higher place, like higher ground in the vicinity or a nearby building rather than traveling farther from the shore.



Participating in The Great Ehime ShakeOut (Prefectural Residents' Collective Earthquake Drill)

In Ehime Prefecture, collective earthquake drills for prefectural residents are held simultaneously throughout the prefecture as "The Great Ehime ShakeOut," to help residents and business operators in the prefecture review actions to ensure safety when earthquakes occur and raise their awareness of disaster prevention in anticipation of a Nankai Trough megaquake.

Participants spend about a minute practicing this safety drill: 1. DROP! (Crouch down) → 2. COVER! (Protect your head) → 3. HOLD ON! (Stay put)

Anyone can take part anywhere, so we urge you to join in!



Earthquakes & Tsunamis

Nankai Trough Earthquake Extra Information

The Japan Meteorological Agency (JMA) makes announcements of Nankai Trough Earthquake Extra Information when it has been assessed that there is a relatively high risk of a major earthquake along the Nankai Trough.

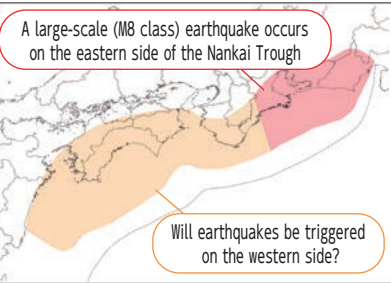
Make sure you understand the content of Nankai Trough Earthquake Extra Information announcements and relevant actions to take in order to ensure your safety.

Anomalous Phenomena that Prompt Nankai Trough Earthquake Extra Information Announcements & the Announcement Process

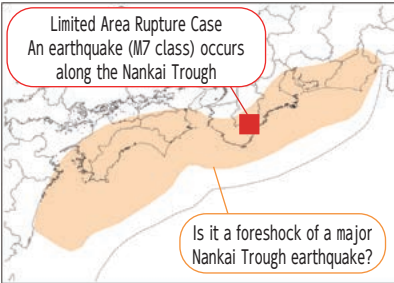
Anomalous phenomena that may prompt announcement of Extra Information can be grouped into three categories: partial area rupture cases, limited area rupture cases, and slow slip cases. The information announced will vary depending on the type of case involved.

Start by learning about the types of information that may be announced.

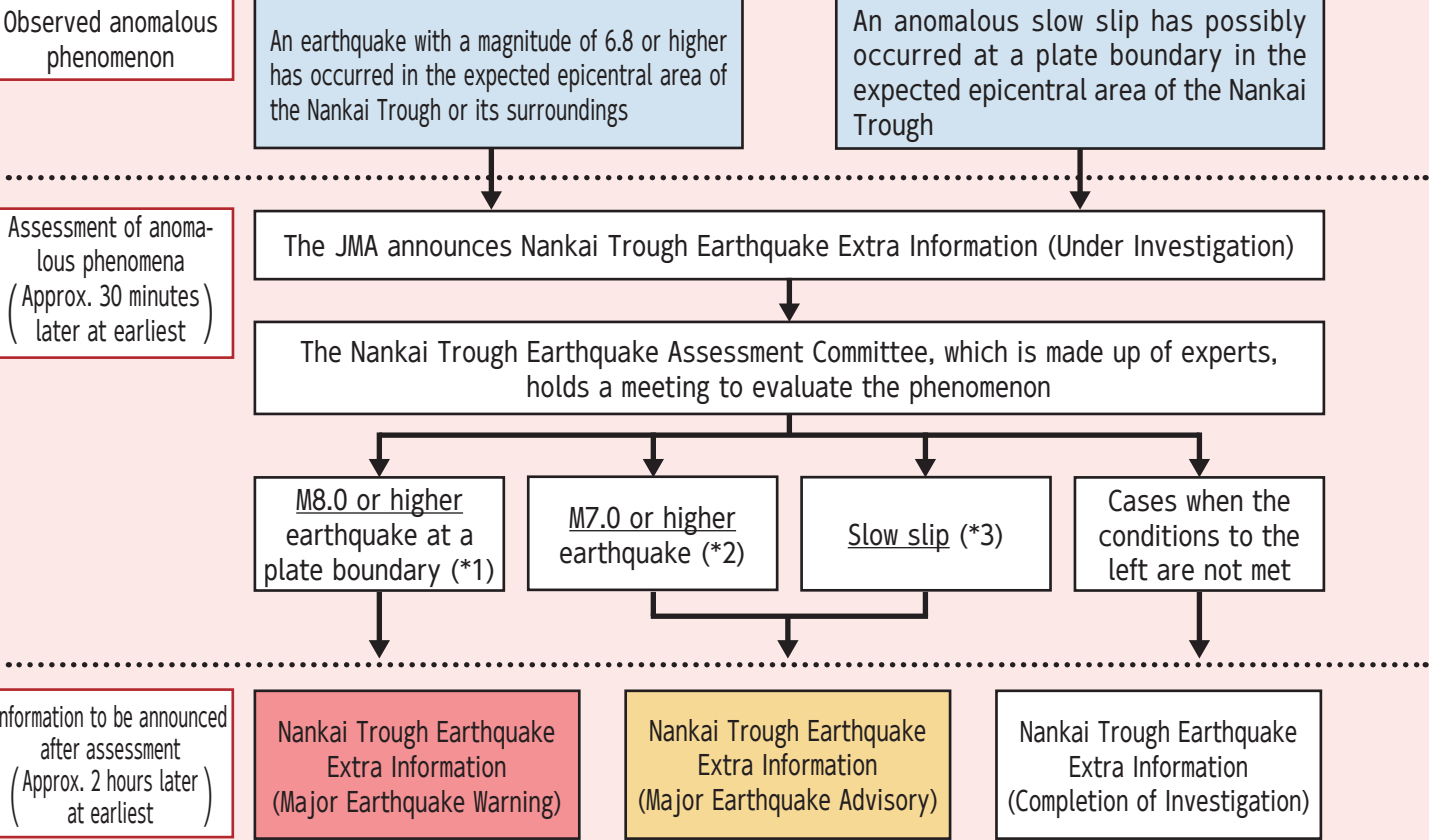
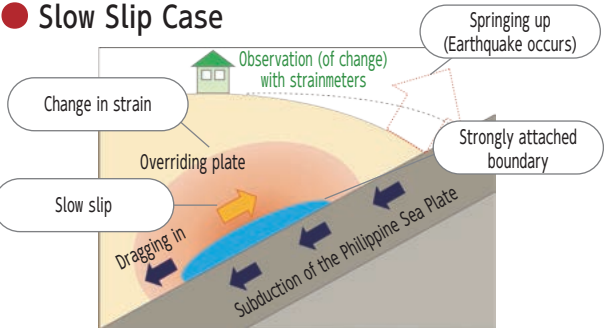
● Partial Area Rupture Case



● Limited Area Rupture Case



● Slow Slip Case



*1 When an earthquake with a magnitude of 8.0 or higher has occurred on a plate boundary in the expected epicentral area of the Nankai Trough (Partial area rupture case)

*2 When an earthquake with a magnitude between 7.0 and 8.0 has occurred on a plate boundary in the expected epicentral area of the Nankai Trough, or when an earthquake with a magnitude of 7.0 or higher has occurred in a spot other than a plate boundary in the expected epicentral area of the Nankai Trough or within a 50 km radius of the trench axis of the expected epicentral area (Limited area rupture case)

*3 When an anomalous slow slip has been observed during which a significant change was observed with a strainmeter and the state of plate boundaries' fixation has obviously changed over a short period (Slow slip case)

(Source: Guidelines for Formulating Disaster Risk Management Measures Based on Various Nankai Trough Earthquake Scenarios, 1st ed.)

Nankai Trough Earthquake Extra Information Categories of & Conditions for Their Announcement

Nankai Trough Earthquake Extra Information announcements are made in conjunction with key phrases corresponding to the threat level (Major Earthquake Warning, Major Earthquake Advisory, etc.) to help local residents receiving the information envision appropriate disaster responses and prepare accordingly.

Be sure to familiarize yourself with their key phrases and the conditions for their announcement to be prepared for disaster on a routine basis.

Key Phrase	Conditions for Announcement
Under Investigation	When an anomalous phenomenon (an earthquake with a magnitude of M6.8 or higher) is observed along the Nankai Trough and an investigation has been started to check the correlation of the phenomenon with major earthquakes along the Nankai Trough, or an investigation is being continued
Major Earthquake Warning	When vigilance is required regarding the possible occurrence of a megaquake * When an earthquake with a magnitude of 8.0 or higher is assessed as having occurred on a plate boundary in the expected epicentral area of the Nankai Trough
Major Earthquake Advisory	When caution is required regarding the possible occurrence of a megaquake * When an earthquake with a magnitude between 7.0 and 8.0 or an anomalous slow slip is assessed as having occurred on a plate boundary in the expected epicentral area of the Nankai Trough, etc.
Completion of Investigation	When the phenomenon is assessed as corresponding to neither the conditions for a Major Earthquake Warning nor a Major Earthquake Advisory

Disaster Response When Extra Information Has Been Announced

After a Major Tsunami Warning or Tsunami Warning that had been issued immediately following the occurrence of an earthquake with a magnitude of M8.0 or higher has been revised to a Tsunami Advisory, it will be necessary to review whether ongoing evacuation is called for. National guidelines indicate that determinations on the necessity of ongoing evacuation are to be made on the basis of reviews regarding whether evacuation made following the occurrence of aftershocks will allow evacuees sufficient time.

Specifically, areas where inundation depths of 30 cm or more from tsunamis are expected to occur within 30 minutes of the occurrence of the earthquake are designated Zones Subject to Review of Evacuation Necessity, and those where evacuation made following the occurrence of aftershocks may not allow evacuees sufficient time are designated as Zones Subject to Advance Evacuation. Evacuation orders, etc. may be announced for residents of these zones, and they may need to continue their evacuation.

While there are no areas in Shikokuchūō City where inundation depths of 30 cm or more are expected to occur from tsunamis within 30 minutes, Ehime Prefecture guidelines prescribe that “areas subject to inundation due to primary factors other than tsunamis, including ground subsidence, seawall/embankment destruction, etc. are also to be designated Zones Subject to Review”; accordingly, we have designated all of the following areas that appear as Zones Subject to Review of Evacuation Necessity in the Expected Inundation Zone Map for Ehime Prefecture as Zones Subject to Advance Evacuation.

Zones Subject to Advance Evacuation

- Part of Kawanoe-chō
- Part of 1 Mishima-Chūō
- Part of Toyo-oka-chō
- Part of Kaburasaki, Doi-chō
- Part of Mendori-chō
- Part of Sangawa-chō
- Part of Tsune, Doi-chō
- Part of Tenma, Doi-chō
- Part of Muramatsu-chō
- Part of Toyoda, Toyo-oka-chō
- Part of 7-ban Kōchi, Fujiwara, Doi-chō



Zones Subject to Advance Evacuation (City website)

If Extra Information is announced, those who live outside of Zones Subject to Advance Evacuation should also double-check to make sure they are prepared for earthquakes.

■ Examples of double-checking to ensure earthquake preparedness on a routine basis

- Reviewing evacuation sites, shelters, and routes
- Reviewing safety status confirmation methods with family members
- Checking that furniture, etc. is secured
- Checking emergency kit, etc.

■ Examples of actions to ensure safe disaster preparedness as much as possible

- Not placing items in high locations
- Living in the safest locations inside your home
- Being prepared to evacuate immediately (preparing emergency kits, etc.)
- Staying away from dangerous places as much as possible, etc.

Flooding & Sediment Disasters (Landslides)

About Storm & Flood Damage

Types of storm and flood damage caused by wind, rain, and so on include water damage (flooding and storm surges), sediment disasters, and wind damage (storm damage). Typhoons and heavy rain are primary causes of these types of damage.

Typhoons are a type of tropical cyclone that mainly approach Japan from July through September, bringing strong winds and heavy rain. Torrential rain is another phenomenon, where a concentration of heavy rain falls in a short period of time in a localized area.

The occurrence of typhoons and torrential rain can bring about damage caused by river flooding, landslides from slope failure, etc., so it is essential to exercise sufficient caution in the vicinity of places like land reclamation sites and cliffs.

It is extremely important to make preparations for storm and flood damage. The frequent typhoons that struck Shikokuchūō City in 2004 caused considerable damage, including five fatalities.

The arrival time and scale of typhoons and heavy rain can be forecast, so be sure to pay attention to weather-related information on a routine basis and take sufficient countermeasures. If there is danger of a disaster occurring, try to evacuate promptly.



Past Damage		Fatalities	Injuries	Instances of above-floor inundation	Instances of below-floor inundation
2004	Typhoon Megi	1	–	20	76
	Typhoon Chaba	–	3	22	–
	Typhoon Songda	–	8	–	–
	Typhoon Meari	2	3	175	928
	Typhoon Tokage	2	1	19	197

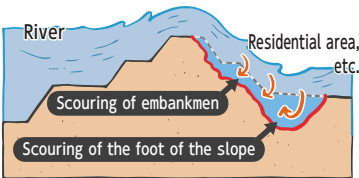
Mechanisms of Flood Occurrence

Flooding (river flooding) is a phenomenon that occurs when a downpour or other event causes the volume of water in rivers to swell rapidly and overflow into residential areas, agricultural land, etc. when it washes over embankments or causes them to collapse. Houses and cars can be swept away by this overflowing water and cause other forms of inundation damage as well.

The main causes of embankment collapse can be grouped in three categories: overflowing, scouring, and infiltration.

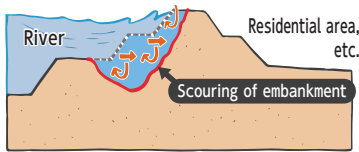
Overflowing

A phenomenon where river water washes over an embankment. This flow of water can erode the embankment's back slope (i.e. the side facing a residential area, etc.). Water that flows into places that have been eroded can gradually weaken the embankment, eventually leading to its collapse.



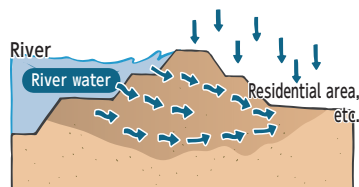
Scouring

A phenomenon where the flow of river water or its force washes away an embankment's front slope (i.e. the side facing the river). Water that flows into places that have been washed away can gradually weaken the embankment, eventually leading to its collapse.



Infiltration

A phenomenon where water pressure when a river's water level is high causes river water to leak through an embankment's back side (i.e. the side facing a residential area, etc.), causing erosion of the embankment. Water that further flows into places where leakage has occurred can cause the embankment to expand, eventually leading to its collapse.



Criteria for Rain Intensity & Rainfall Patterns

General amounts of rainfall can be estimated by observing rain as it falls. Learn to make determinations yourself so you are able to evacuate before conditions become dangerous.

Rain intensity (Forecast terminology)	Slightly heavy rain	Heavy rain	Intense rain	Extremely intense rain	Violent rain
Hourly rainfall	10 ~ 20 mm	20 ~ 30 mm	30 ~ 50 mm	50 ~ 80 mm	80 mm ~
People's impression	Pouring rain	A downpour	Like buckets of rain coming down	Cascading deluges of ongoing, thunderous rain	Induces stifling feelings of oppression and fear
Impact on people	 Rain splashes back from the ground and gets feet wet	 Even an umbrella won't keep you dry	 Umbrellas rendered completely useless		
Disaster situation	 • Caution needed even at this level if it continues for a long period of time	 • Gutters, drainage ditches, and small rivers overflow; minor occurrences of slope failure begin	 • Landslides and slope failures become more likely to occur; evacuation preparations necessary in danger zones • Water overflows from sewer pipes in urban areas	 • Rainwater may flow into basements in urban areas • Water spouts out of manholes • Debris flows become more likely to occur, and many disasters occur	 • Strong risk of a major disaster occurring; a state of heightened alert is necessary
Evacuation system				Prepare	BE ALERT

Record-breaking Short-Time Heavy Rainfall Information

Record-breaking Short-Time Heavy Rainfall Information is announced when a Heavy Rain Warning has been issued and short-time heavy rainfall of a level that occurs only once every few years has been observed or analyzed. The announcement of this Information means that violent rain is falling that may lead to the occurrence of sediment disasters or damage from small- to medium-sized rivers in the local area.

If you live in an area where a disaster is expected, like a Sediment Disaster (Special) Hazard Zone or Expected Inundation Zone, be sure to take appropriate evacuation actions immediately in accordance with evacuation information that has been issued.

Record-breaking Short-Time Heavy Rainfall Information Announcement Criteria

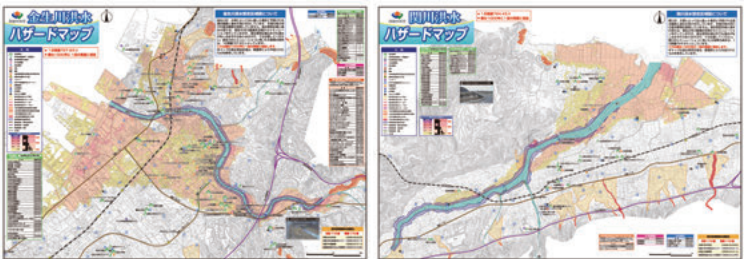
Hourly rainfall 100 mm (Ehime Pref.)

About Flood Hazard Maps

Shikokuchūō City has created Flood Hazard Maps for the Kinsei-gawa and Seki-gawa Rivers to provide information such as expected inundation depths during the occurrence of flood disasters, evacuation sites and shelters, disaster prevention-related facilities, etc.

This Shikokuchūō City Disaster Prevention Hazard Map indicates the boundaries of Expected Inundation Zones. Be sure to check Hazard Maps for expected inundation depths and other details to be prepared for flooding on a routine basis.

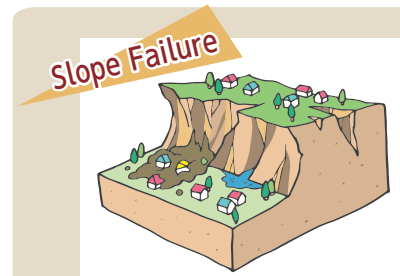
Flood Hazard Maps for Kinsei-gawa & Seki-gawa Rivers (City website)



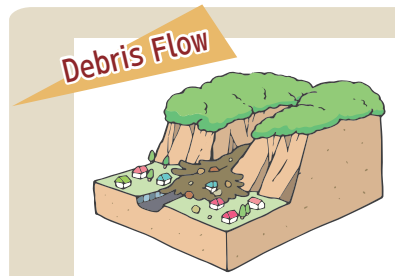
Flooding & Sediment Disasters (Landslides)

Sediment Disaster Types & Their Precursors

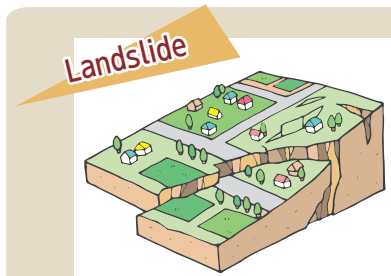
When sediment disasters such as slope failures, debris flows, and landslides occur, the tremendous destructive force of the earth and sand can cause considerable loss of life or property in the blink of an eye, making them terrifying natural phenomena. Particularly if you live somewhere like a Sediment Disaster (Special) Hazard Zone, be sure to be sufficiently cautious of precursors, etc. and evacuate at an early stage.



Slope Failure
A phenomenon whereby a slope suddenly comes crashing down. They can occur when heavy or sustained rainfall causes water to permeate the ground and can also be caused by earthquakes. There are few precursors to look for; they tend to occur suddenly.



Debris Flow
A phenomenon whereby earth, sand, stones, etc. on a mountainside or in a riverbed suddenly come rushing down together with heavy or sustained rainfall. The flows can travel very quickly, at speeds of 20 to 40 km/h or higher, and large boulders may also be mixed in with them.



Landslide
Ground is made up of many layers with different properties and levels of hardness. Landslides occur when groundwater has collected on top of layers that are susceptible to sliding, such as clay, and the layers of earth above it slowly begin to give way.

Precursors to watch out for!

- Cliffs develop cracks/fissures
- Scattered falling of little rocks/pebbles
- Water issuing from a cliffside
- Springwater ceases to flow, muddies
- Sound of ground rumbling

- Sound of mountain rumbling
- Sudden muddying of river water with tree/wood debris starting to be mixed in
- Smell of decaying soil
- Falling water level in rivers despite ongoing rain
- Sounds of trees splitting & rocks/boulders clacking together

- Ground develops cracks/fissures or caves in
- Water issuing from a cliff or sloped ground
- Muddy-looking well water or streams
- Sounds of ground/mountain rumbling
- Trees leaning
- Cracks/fissures or unevenness develop

Designation of Sediment Disaster (Special) Hazard Zones

Ehime Prefecture has designated Sediment Disaster (Special) Hazard Zones in accordance with the Sediment Disaster Prevention Act to help protect residents from sediment disasters (slope failures, debris flows, and landslides) by indicating areas at risk of such disasters.

Sediment Disaster Hazard Zones (Yellow Zones)

Areas at risk of experiencing sediment disasters

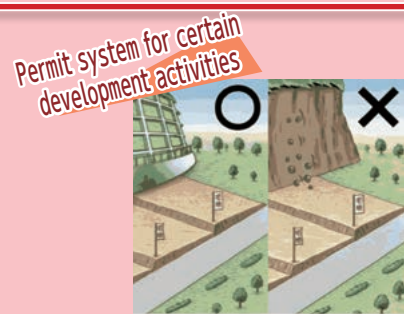
Zones indicating areas where the lives and wellbeing of residents, etc. may be threatened if a sediment disaster occurs. In these zones, efforts are made to make residents aware of hazards, and warning and evacuation systems are maintained.

Sediment Disaster Hazard Zones (Red Zones)

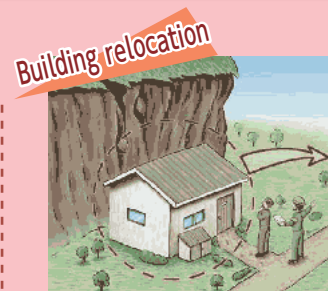
Areas where houses are at risk of destruction and lives are considerably threatened



Building construction regulations
Building permits certifying that buildings satisfy specified structural criteria to withstand the impact of debris flows, etc. that may occur in conjunction with the collapse of a steeply sloped site are required.



Permit system for certain development activities
Engaging in certain development activities, including making residential building lot sales and constructing facilities for persons requiring special care, require countermeasure work aimed at the prevention of sediment disasters to be performed. Such development activities will be approved only if the countermeasure work conforms to specified technical standards.



Building relocation
In the event that the collapse of a steeply sloped site, etc. would considerably threaten the lives and wellbeing of a building's inhabitants, the owner of the building may be advised to relocate it.

Preparing for the Occurrence of Storm & Flood Damage

In recent years, weather events such as localized heavy rainfall are causing frequent occurrences of storm and flood damage in all regions from flooding, sediment disasters, etc. Although most storm and flood damage is brought about by heavy rain, localized heavy rainfall is difficult to forecast, and the damage tends to occur instantaneously.

Be sure to take the time to consider what you should be careful of on a routine basis in order to be prepared for the occurrence of storm and flood damage, and what actions you should take when it looks likely to occur.

Preparing in Advance

■ Make Inspections/Repairs in Advance

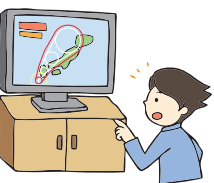
- Securely lock windows/amad storm shutters, and if needed, nail boards over them from the outside to reinforce them.
- Clean out gutters/drainage ditches to keep water flowing.
- Secure any items that might get blown away in the wind, such as garbage cans and potted plants.

■ Prepare for Evacuation

- Review evacuation routes to evacuation sites and places designated as evacuation sites, such as schools and community centers.
- Prepare emergency kits.

■ Obtain Accurate Information

- Pay attention to weather-related information from the radio, TV, etc.
- Review methods of accessing information from the City and disaster prevention-related organizations.



Learn More About Evacuating

■ Bring Only the Essentials with You

- Carry your belongings in a backpack, etc. to keep both hands free.

■ Check Neighbors' Safety

- When evacuating, reach out to neighbors and make sure no one is injured or missing, etc.

■ Work Together to Help Elderly People Evacuate

- Elderly people, children, and sick people will need to evacuate early. Be sure to offer good guidance and assistance as well when evacuating by holding their hands or carrying others on your back.
- For people with disabilities, consider putting together a specific support system; providing assistance with multiple people, for instance.



■ Be Careful of Manholes & Ditches

- Inundation from heavy rain and tsunamis can displace manhole covers. Getting stuck in a manhole or ditch when roadways are inundated with water is hazardous, so try to keep your distance from them.
- If by chance you need to evacuate from an inundated area, use a long walking stick to probe beneath the water ahead of you.



■ Avoid Hazardous Places when Evacuating

- During heavy rain or earthquakes, you can never be sure when or where a sediment disaster might occur.
- Review where dangerous spots might be located on a routine basis. Avoid passing by hazardous locations when evacuating and try to act and move together with at least one other person.

Key Points for Evacuation

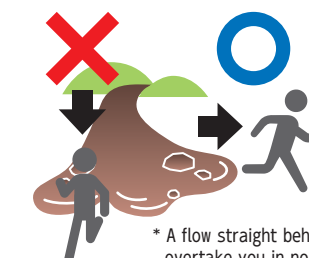
■ First & Foremost: Evacuate the Area

The basic rule in evacuating from sediment disasters is to evacuate the area and head to a safe location, such as the home of a relative or friend, a designated evacuation site, etc. Consider multiple evacuation options.



■ Run Away Perpendicular to the Flow

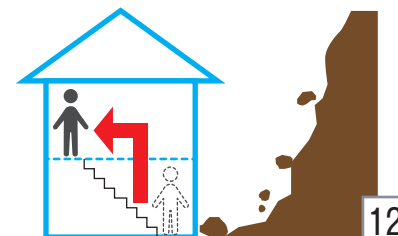
Debris flows come rushing down at such a fast pace that you must run away at a right angle to the direction of their flow. Also, if you are next to a cliff, make sure you run away a distance of at least twice its height.



* A flow straight behind you will overtake you in no time

■ Seek Shelter Indoors, Upstairs, Away from the Cliff

When conditions make it dangerous to be outside due to extremely intense rainfall, lack of visibility at night, etc., seek safe shelter indoors in a building at least 2 floors high, on the side away from the cliff.



Storm Surges

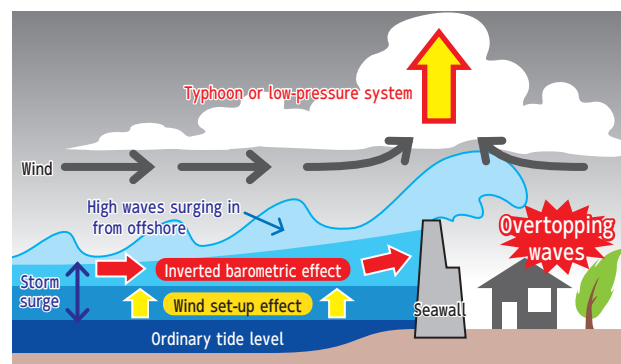
About Storm Surge Disasters

Storm surges are phenomena whereby the approach of a typhoon or low-pressure system causes tide levels to surge significantly higher than usual.

When storm surges occur, the combination of these higher tide levels with waves and strong winds can cause seawater to surge over seawall embankments, increasing the potential for the inundation of land. The higher tide level and waves can also impede the flow of rivers that empty into areas of the sea that are experiencing storm surges, potentially causing river flooding and causing damage even in inland areas far from the coast.

Mechanisms of Storm Surge Occurrence & Tide Levels

The occurrence of storm surges is associated with two main factors: the inverted barometric effect and the wind set-up effect. Storm surge heights can vary depending on the location and the impact of these effects.



Inverted barometric effect

Since the atmospheric pressure is lower at the center of a typhoon than its periphery, the air at its periphery will press down on the sea below, while the air toward its center creates an upward suctioning effect, causing the sea surface to swell upward toward the center of the typhoon.

Wind Set-Up Effect

When strong winds caused by typhoons or similar phenomena continually blow shoreward for long periods of time, they have the effect of pushing seawater toward downwind shores, causing the sea surface to swell upward.

Being Prepared for Storm Surge Disasters

On a Routine Basis

Check the listed inundation depth, etc. for the location of your home on the Storm Surge Hazard Map included with this Shikokuchūō City Disaster Prevention Hazard Map to determine whether you will need to evacuate the area.

When Typhoons Approach

When a typhoon, low-pressure system, etc. approaches, abrupt tide level surges can occur in short periods of time. Also, once a storm with strong wind gets underway, it will be difficult to evacuate out of doors.

If you live in an Expected Storm Surge Inundation Zone and a typhoon, low-pressure system, etc. is expected to approach, be sure to check for Storm Surge Warning/Advisory, evacuation information from the City, etc. and evacuate to a safe location at an early stage before a storm with strong wind gets underway.

Weather Conditions	1 day to half-day before closest approach of typhoon	Several hours before entering the storm area	Several hours before closest approach of typhoon	Storm surge at closest approach of typhoon	Inundation from storm surge occurs
Information from JMA	Storm Surge Advisory with high potential of being changed to Storm Surge Warning		Storm Surge Warning (or Storm Surge Emergency Warning)		
Information from the City	Storm Advisory with high potential of being changed to Storm Warning		Storm Warning (or Storm Emergency Warning)		
Actions for All Residents to Take	Alert Level 2 Review evacuation actions for yourself	Alert Level 3 Evacuation of the elderly, etc. from areas of danger	Alert Level 4 Evacuation of all residents from areas of danger	Alert Level 5 Risk of death – Protect yourself at once!	

Land Reclamation Sites with Large-Scale Infilling

About Land Reclamation Sites with Large-Scale Infilling

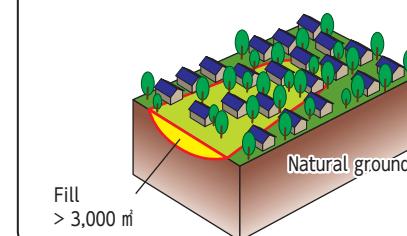
Disasters such as the 2004 Mid Niigata Prefecture Earthquake and 2011 Great East Japan Earthquake caused landslide-like variations (sliding collapses) of entire artificially reclaimed ground surfaces to occur at sites such as building lots on reclaimed land where valley-like depressions and streams or wetlands had been infilled and land reclamation sites with large-scale infilling, causing damage due to slope failures, flows of earth and sand, and so on.

For that reason, we have made a survey of such land reclamation sites and are announcing the findings in order to make it known that such sites may be found in familiar areas close at hand to raise awareness and help lessen damage from related disasters or help prevent their occurrence.

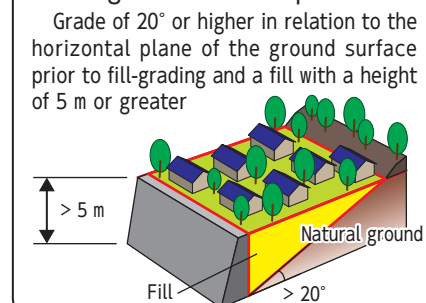
Identifying Land Reclamation Sites with Large-Scale Infilling

Corresponding sites are defined as those that satisfy the conditions of one of the two types shown to the right; namely, sites of land reclamation through depression infilling – where valley-like depressions and streams or wetlands have been reclaimed through artificial infilling and valley slopes are often found to the sides; and fill-slopes with artificial grades raised high above the original foundation of the slope.

1 Land Reclamation Sites with Large-Scale Depression Infills
Infilled ground with surface area of 3,000 m² or greater



2 Land Reclamation Sites with Large-Scale Fill-Slopes
Grade of 20° or higher in relation to the horizontal plane of the ground surface prior to fill-grading and a fill with a height of 5 m or greater



Preparations Regarding Land Reclamation Sites with Large-Scale Infilling

These sites were identified by methods including overlapping topographic maps of before and after their developments. While such sites do not necessarily carry immediate risks, in the event of a disaster such as a Nankai Trough megaquake, they may be at risk of experiencing slope failures, flows of earth and sand, etc.

The locations and boundaries of corresponding sites are shown on this Shikokuchūō City Disaster Prevention Hazard Map. Be sure to check whether any such sites are located near you.

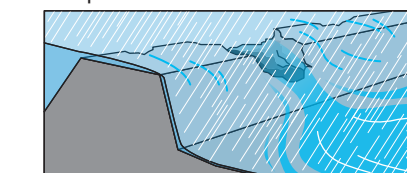
Reservoirs

Reservoir Flooding

Earthquakes, downpours, and other events can cause a reservoir's levee to develop fissures/cracks or slip down, after which the leaking water may enlarge the damaged spots and cause the reservoir to collapse and flood when it can no longer withstand the pressure of the stored water.

In the event of heavy rain:

The water level in reservoirs may swell and overflow the embankments, causing the embankments to erode or collapse.



In the event of earthquakes:

Shaking from earthquakes can cause cracks or fissures in embankments, which may cause the embankments to collapse due to ground liquefaction.



Being Prepared for Reservoir Flooding Disasters

Shikokuchūō City has put together Reservoir Flooding Hazard Maps to assist residents in evacuating quickly in the event reservoir flooding occurs or is at risk of occurring and in maintaining disaster prevention-related awareness on a routine basis.

This Shikokuchūō City Disaster Prevention Hazard Map shows the boundaries of Expected Inundation Zones. Be sure to review them on Reservoir Flooding Hazard Maps in order to be prepared.

Reservoir Flooding Hazard Maps (City website)



Disaster Information & Preparations

The Five Alert Levels

To help all residents understand levels of risk during the occurrence of disasters intuitively and make accurate determinations of evacuation actions to be taken, a system of five alert levels is used in conjunction with announcements of evacuation information, weather information for disaster prevention, and so on.

Be sure to act in accordance with evacuation information announced by Shikokuchūō City, and even in cases when evacuation information has not been announced, try to make determinations concerning evacuation at an early stage, taking into account weather information, information from surrounding areas, etc.

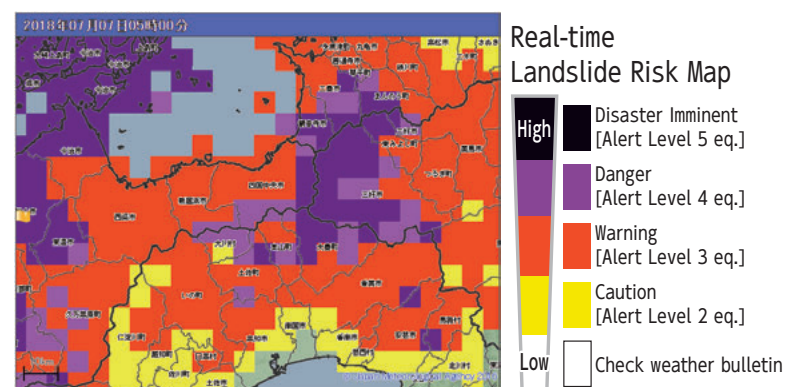
Alert Level	Weather Information for Disaster Prevention	Kikikuru (Real-time Risk Maps)	Evacuation information, etc. announced by the City	Actions for All Residents to Take
5	Heavy Rain Emergency Warning	Disaster Imminent	Emergency Safety Measures * May not be announced in all cases	Risk of death – Protect yourself at once! • A disaster is already underway and lives are at risk. Take the best action you can to protect your life, such as immediately leaving where you are now for a safer location.
Be sure to evacuate by Level 4!				
4	Landslide Alert Information	Storm Surge Warning Storm Surge Emergency Warning	Danger	Evacuation Order
3	Heavy Rain/Flood Warning	Advisory with high potential of being changed to Storm Surge Warning	Warning	Evacuation of the elderly, etc. from areas of danger
2	Advisory with high potential of being changed to Heavy Rain Warning Heavy Rain/Flood Advisory	Storm Surge Advisory	Caution	Review evacuation actions for yourself
1	Early Advisory Information (may be Warning-level information)			Mentally prepare for disaster

Landslide Alert Information

Landslide Alert Information is information announced by Ehime Prefecture in cooperation with the Matsuyama Local Meteorological Observatory when there is considered to be an increased risk of sediment disasters due to heavy rain following the announcement of a Heavy Rain Warning.

In Shikokuchūō City, Evacuation Orders, etc. may be announced for areas with increased risk when Landslide Alert Information is announced. Please be sure to evacuate immediately, as this means there is that potentially life-threatening risk of sediment disasters that could occur at any time.

The Real-Time Landslide Risk Map made available online by JMA can be used to check detailed boundaries of areas at increased risk.

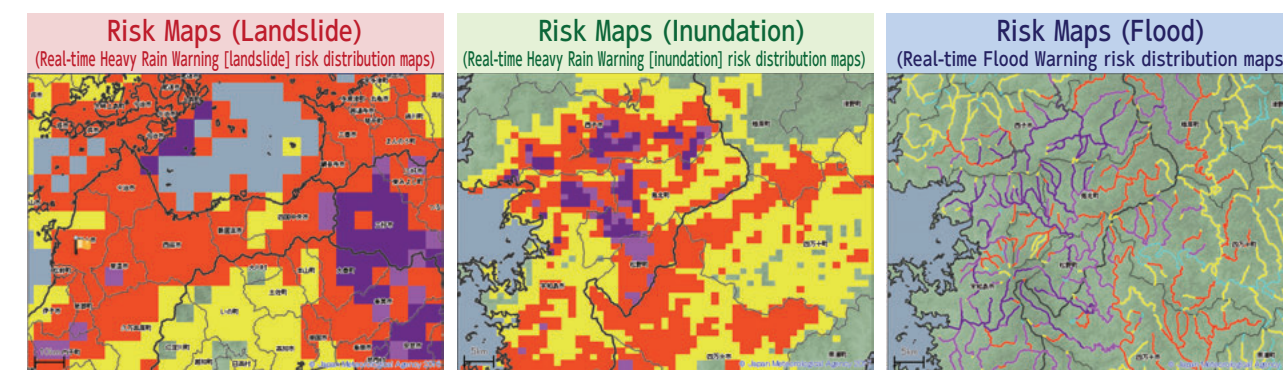


Example Screenshot of Real-time Landslide Risk Map

KIKIKURU (Real-time Risk Maps)

KIKIKURU Risk Maps made available online by JMA provide information intended to save lives, allowing users to find out where there are increased risks of sediment disasters, inundation, and flooding when warnings have been issued, strong rain is falling, etc.

Areas with increased risks of sediment disasters, inundation, or flooding are shown on the map with a color-coded indication of the level of risk, from low to high: yellow→red→light purple→black.



JMA has also joined forces with a private carrier to offer a service that alerts users with push notifications to notify of increased risk in an area, such as “Danger” (Alert Level 4 eq., shown in light purple), the level at which prompt evacuation is required. You may find it useful for making your own determinations regarding evacuation actions.



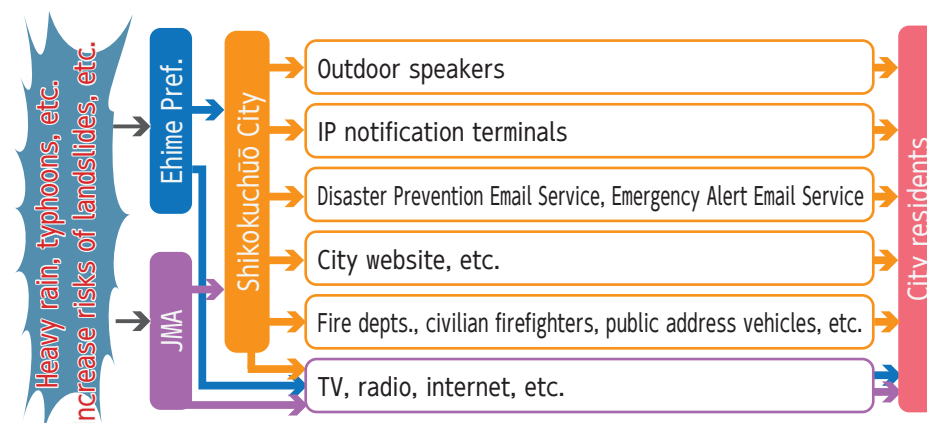
KIKIKURU
(Real-time Risk Maps)
(JMA website)

Accessing Disaster-Related Information

Weather information, evacuation-related information, etc. is conveyed to area residents through a range of different methods, as outlined at the right.

Be proactive in gathering weather information, evacuation information, etc. via mobile phones, TV, or other means.

If you are unclear about ways to access disaster-related information, get in touch with the Shikokuchūō City General Affairs Department's Disaster Prevention Community Planning Division.



■ Japan Meteorological Agency (JMA) Website
Check warnings, information on typhoons, KIKIKURU (Risk Maps), etc.



■ River Flood Information (MLIT)
Access cross-sectional views of water levels at river water level monitoring stations and water level forecasts for 1–3 hours ahead.



■ “Ehime Kawa Mail” river-related information email alert service (Ehime Pref.)
Sign up in advance to receive email alerts when water levels in rivers or amounts of rainfall exceed certain levels, etc.



■ Ehime Disaster Prevention & Crisis Management (Ehime Pref.)
Check emergency information, the status of Evacuation Order announcements, etc., along with information on sediment disasters, earthquakes, and more.



■ River & Sediment Disaster Prevention Information System (Ehime Pref.)
Check weather information for Ehime Prefecture, including information on various alerts, rainfalls, etc.



■ Shikokuchūō City Disaster Prevention Cable Announcement System Portal Website
Check the content of cable-broadcast disaster prevention-related announcements and other information useful during emergencies and disasters collected together in one place.



■ Disaster prevention/public relations email registration (Shikokuchūō City)
Sign up to receive the content of municipal office audio broadcasts, including information on disaster prevention, events, and more by email.



■ Terrestrial digital broadcasts (d button on TV remote)
Use the d button on your remote to access NHK Data Broadcasting and check for evacuation information, such as the status of Evacuation Order announcements, the establishment of evacuation shelters, and more.



"My Timeline" Creation

Fill Out "My Timeline" (A Disaster Prevention Action Plan)!

"My Timeline" forms provide a convenient way to put together individual disaster prevention action plans, making it easier to visualize the course of actions and evacuation preparations you will take when typhoons approach, heavy rainfall occurs, etc. and to lay out a chronological schedule of actions for yourself.

While one can never be sure when or where a natural disaster might strike, for sediment disasters, flooding, and storm surge disasters caused by heavy rain, etc., it is possible to check if there is an increased risk of disaster from weather information and other sources. So make sure each member of your family decides in advance what actions they will take, prioritizing actions that will protect your lives.

① Use the Disaster Prevention Hazard Map and other Hazard Maps to check levels of risk around your home, etc.

② Review evacuation sites/shelters appropriate for each relevant type of disaster.

③ Consider the timing of your evacuation based on alert levels, evacuation information, weather information, etc.

④ Consider what actions you will take in the leadup to your evacuation.

STEP 1

Use Disaster Prevention Hazard Map, etc. to check levels of risk around your home, etc.

Type of Disaster	Is there risk in the area around your home, etc.?
Sediment Disaster (Landslide)	<input type="checkbox"/> Yes <input type="checkbox"/> Located in Sediment Disaster Special Hazard Zone <input type="checkbox"/> Located in Sediment Disaster Hazard Zone <input type="checkbox"/> No
Storm Surge	<input type="checkbox"/> Yes (Located in Expected Storm Surge Inundation Zone) → Inundation depth:(m) <input type="checkbox"/> No
Flood	<input type="checkbox"/> Yes (Expected Flood Inundation Zone) <input type="checkbox"/> Kinsei-gawa River Inundation depth:(m) <input type="checkbox"/> Seki-gawa River Inundation depth:(m) <input type="checkbox"/> No
Other	<input type="checkbox"/> Reservoir flooding → (Reservoir) <input type="checkbox"/> Disaster experienced in the past → ()

Use Kinsei-gawa and Seki-gawa River Flood Hazard Maps to check expected inundation depths for river floods, reservoir flooding, etc.

Hazard Maps (City website)



STEP 2

Review evacuation sites, etc. for each type of disaster

	Name	Time required for evacuation	Confirmation of disaster type applicability
Potential evacuation destination 1			
Potential evacuation destination 2			
Potential evacuation destination 3			

STEP 3

Consider the timing of your evacuation

Type	Timing of evacuation
Evacuation information	Will anyone require assistance when evacuating? (For ex., elderly people, people with disabilities, babies/small children, expectant mothers, etc.) <input type="checkbox"/> Yes → Evacuate when is announced <input type="checkbox"/> No → Evacuate when is announced
Other basis for timing determination	

STEP 4

Review actions to take in the leadup to evacuation

Timing	Alert Level	Weather Information, Information from the City, etc.	My Family's Evacuation Actions
Sev. days ~ 1 day before heavy rain	Level 1	Early Advisory Information (may be Warning-level information)	Mentally Prepare for Disaster <input type="checkbox"/> Check weather information, etc. through TV, radio, internet, etc. <input type="checkbox"/> Double-check evacuation sites, shelters, and routes with Disaster Prevention Hazard Map, Hazard Maps, etc. <input type="checkbox"/> Check your disaster prevention items/emergency kit <input type="checkbox"/> Check around your house to make sure the rain shutter is secured, no items are left where the wind will blow them away, etc. <input type="checkbox"/> Check family members' whereabouts & plans _____ _____ _____
Half-day ~ sev. hrs before heavy rain	Level 2	Heavy Rain Advisory Flood Advisory Storm Surge Advisory KIKIKURU (Risk Maps) : "Caution" (Yellow)	Review evacuation actions for yourself <input type="checkbox"/> Check weather information, etc. through TV, radio, internet, etc. <input type="checkbox"/> Charge mobile phones/chargers, etc. <input type="checkbox"/> Prepare emergency kit <input type="checkbox"/> Prepare clothing suited to evacuation (raincoat, tall boots, etc.) <input type="checkbox"/> Reviews way of receiving evacuation information, etc. announced by the City: <input type="checkbox"/> Emergency Broadcast System <input type="checkbox"/> Disaster Prevention Cable Announcement System <input type="checkbox"/> Disaster prevention/public relations email (Reg. req'd) <input type="checkbox"/> Other _____ _____ _____
Approx. several hrs ~ 2 hrs before heavy rain	Level 3	Evacuation of the Elderly, etc. Heavy Rain Warning Flood Warning Storm Surge Advisory (with high potential of being changed to Warning) KIKIKURU (Risk Maps) : "Warning" (Red) Information that threshold water level for evacuation has been reached	Evacuation of the elderly, etc. from areas of danger <input type="checkbox"/> Begin evacuation when Evacuation of the Elderly, etc. is announced <input type="checkbox"/> Begin evacuation based on other determination () <input type="checkbox"/> Check weather information, etc. through TV, radio, internet, etc. <input type="checkbox"/> Assist neighbors who need help evacuating _____ _____ _____
Threat of disaster	Level 4	Evacuation Order Landslide Alert Information KIKIKURU (Risk Maps) : "Danger" (Light purple) Information that threshold water level indicating flood threat has been reached Storm Surge Warning, Storm Surge Emergency Warning	Evacuation of all residents from areas of danger <input type="checkbox"/> Begin evacuation when Evacuation Order is announced <input type="checkbox"/> Begin evacuation based on other determination () <input type="checkbox"/> Check weather information, etc. through TV, radio, internet, etc. <input type="checkbox"/> Check that your home is secured with doors locked, etc. _____ _____ _____
Disaster strikes	Level 5	Emergency Safety Measures Heavy Rain Emergency Warning KIKIKURU (Risk Maps) : "Disaster Imminent" (Black)	Risk of death – Protect yourself at once! A disaster is already underway or imminent. Move immediately to a location in your home, a nearby building, etc. where there may be any lower risk of injury or damage.

Be sure to evacuate by Level 4!

Emergency Kit

If an earthquake or other disaster occurs, you can expect to have your ordinary life interrupted. Use the list below as a reference to prepare an appropriate emergency kit for your household with a minimum of three days' worth of supplies and keep it somewhere readily accessible, such as in a backpack. Be sure to also inspect the contents on a regular basis and replace them as needed.

Valuables

- ☐ Cash
- ☐ Bankbook
- ☐ Hanko seal
- ☐ ID
- ☐ Health insurance card
- ☐ Spare eyeglasses & contact lenses

Medical Supplies

- ☐ Household medicine
- ☐ Prescription notebook
- ☐ Mask
- ☐ Disinfectant

Water & Food Supplies

- ☐ Drinking water
- ☐ Emergency food supply

Electric Devices, etc.

- ☐ Flashlight
- ☐ Batteries
- ☐ Radio
- ☐ Mobile phone & charger

Other Items

- ☐ Tissue paper
- ☐ Wet wipes
- ☐ Towel
- ☐ Work gloves
- ☐ Raingear/cold-weather clothes
- ☐ Helmet/disaster prevention hood
- ☐ Feminine hygiene products
- ☐ Disposable diapers (for babies, small children, elderly people, etc.)
- ☐ Baby formula/bottle (items needed for babies)

For more details on My Timeline creation, refer to the "My Timeline Review Guide" put together by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), where you can see how completed forms may look and review the process of putting yours together.

My Timeline (MLIT website)



List of Designated Evacuation Shelters,
Designated Emergency Evacuation Sites & Designated Welfare Evacuation Shelters

Designated Evacuation Shelters

No.	Name of Facility	Tel #	Flood	Land-slide	Earth-quake	Reser-voir	Tsu-nami
1	Kawanoe Elementary School	28-6285	×	×	○	○	×
2	Kinsei Dai-ichi Elementary School	28-6282	×	○	○	○	○
3	Kinsei Dai-ni Elementary School	28-6283	○	○	○	○	○
4	Mendori Elementary School	28-6281	○	○	○	○	○
5	Kamibun Elementary School	28-6284	×	○	○	○	○
6	Minami Elementary School	28-6280	○	○	○	○	○
7	Kawanoe-Kita Junior High School	28-6287	×	○	○	○	×
8	Kawanoe-Minami Junior High School	28-6286	×	○	○	×	○
9	Kawanoe Fureai Kōryū Center	28-6247	○	○	○	○	○
10	Kinsei Community Center	28-6249	×	○	○	○	○
11	Kamibun Community Center	28-6248	×	○	○	○	○
12	Mendori Community Center	28-6250	○	○	○	○	○
13	Kanada Community Center	28-6251	○	○	○	○	○
14	Kawataki Community Center	28-6252	○	×	○	○	○
15	Kawanoe Kodomo-en Nursery School	28-6270	×	○	○	○	○
16	Kinsei Nursery School	28-6273	×	○	○	○	○
17	Kamibun Nursery School	28-6272	×	○	○	×	○
18	Kanada Kodomo-en Nursery School	28-6275	○	○	○	○	○
19	Ishikawa Nursery School	—	○	○	○	○	○
20	Negio Fureai Hiroba	—	○	×	○	○	○
21	Kawanoe High School	58-2061	×	○	○	○	○
22	Shikochū Hall	59-4510	○	○	○	○	○
23	Kawanoe Gymnasium	28-6255	○	○	○	○	○
24	Kawanoe Community Center	28-6253	○	×	○	×	○
25	Kiriya Meeting Place	—	○	○	○	○	○
26	Handa Public Hall	—	×	○	×	○	○
27	Shibō Public Hall	—	○	○	×	○	○
28	Shimokawa Meeting Place	—	○	○	×	○	○
29	Ikigai Cultural Activity Center	28-6262	○	○	○	×	○
30	Kawanoe-Nishi Cultural Activity House for the Elderly	—	×	○	○	○	○
31	Shōhaku Elementary School	28-6094	○	○	○	○	○
32	Mishima Elementary School	28-6095	○	○	○	○	○
33	Nakazone Elementary School	28-6093	○	○	○	○	○
34	Nakanoshō Elementary School	28-6092	○	○	○	○	○
35	Sangawa Elementary School	28-6096	○	×	○	○	○
36	Toyo-oka Elementary School	28-6097	○	×	○	○	○
37	Mishima-Higashi Junior High School	28-6098	○	○	○	○	○
38	Mishima-Nishi Junior High School	28-6100	○	×	○	○	○
39	Mishima-Minami Junior High School	28-6099	○	×	○	×	○
40	Mishima High School	23-2136	○	△	○	○	○
41	Shōhaku Community Center	28-6062	○	○	○	○	○
42	Mishima Community Center	28-6063	○	○	○	○	○
43	Nakazone Community Center	28-6061	○	○	○	○	○
44	Nakanoshō Community Center	28-6065	○	○	○	○	○
45	Sangawa Community Center	28-6066	○	×	○	○	○
46	Toyo-oka Community Center	28-6067	○	×	○	○	○
47	Iyo-Mishima Athletic Park Gymnasium	28-6071	○	○	○	○	○
48	Kamiogawa Meeting Place	—	○	×	○	○	○
49	Fujiwara Meeting Place	—	○	×	○	○	○
50	Sangawayama Meeting Place	—	○	○	○	○	○

No.	Name of Facility	Tel #	Flood	Land-slide	Earth-quake	Reser-voir	Tsu-nami
51	Sekigawa Elementary School	28-6369	○	○	○	○	○
52	Doi Elementary School	28-6366	○	○	○	○	○
53	Kofuji Elementary School	28-6367	○	○	○	×	○
54	Nagatsu Elementary School	28-6370	○	○	○	○	○
55	Kita Elementary School	28-6368	○	○	○	○	○
56	Doi Junior High School	28-6371	○	○	○	×	○
57	Doi High School	74-2017	○	○	○	○	○
58	Kofuji Community Center	28-6359	○	○	○	×	○
59	Nagatsu Community Center	28-6362	○	○	○	○	○
60	Tenma Community Center	28-6360	○	○	○	○	○
61	Kaburasaki Community Center	28-6361	○	○	○	○	○
62	Doi Community Center	28-6358	○	○	○	○	○
63	Kitano Nursery School	28-6376	×	○	○	○	○
64	Doi Nursery School	28-6372	○	○	○	○	○
65	Kobayashi Nursery School	28-6373	○	○	○	×	○
66	Doi-Higashi Kodomo-en Nursery School	28-6375	○	○	○	○	○
67	Kita Nursery School	28-6374	○	○	○	○	○
68	Doi-Higashi Kindergarten	28-6364	×	○	○	○	×
69	Doi-Nishi Kindergarten	—	○	○	○	○	○
70	Noda Chūō Hall	—	○	○	○	○	○
71	Rural Environment Improvement Center	28-6300	○	○	○	○	○
72	Doi Cultural Hall	28-6353	○	○	○	○	○
73	Shingū Elementary School/Junior High School	28-6424	○	×	○	○	○
74	Shingū Community Center	28-6410	○	×	○	○	○
75	Sōno Community Center	—	○	○	○	○	○
76	Shōnen Shizen-no-ie (Youth Outdoor Education Center)	28-6417	○	○	○	○	○
77	Shinsei/Dōnaru Meeting Place	—	○	○	○	○	○
78	Kubogauchi Meeting Place	—	○	○	○	○	○
79	Kanayama Meeting Place	—	○	×	○	○	○
80	Kono Meeting Place	—	○	×	○	○	○
81	Former Nishishō Elementary School Auditorium	—	○	○	○	○	○
82	Nakaue Meeting Place	—	○	×	○	○	○
83	Nakanishi District Meeting Place	—	○	×	○	○	○
84	Nagase Seikatsu-kaizen Center	—	○	×	○	○	○
85	Joyfull Hachikubo	—	○	×	○	○	○

Evacuation Shelter/Site Disaster Type Classifications

- All:
○ : Located outside Hazard Zone ... Available
× : Located inside Hazard Zone ... Not available
- Landslide:
△ : Risk of sediment disaster on part of site
- Earthquake:
○ : Seismic retrofitting completed/planned
× : Not seismically retrofitted
- Tsunami:
△ : Isolated due to expected tsunami water level in surrounding area

* Use of shelters/sites marked x for a certain type of disaster may be hazardous during occurrences of the corresponding type of disaster.

Designated Emergency Evacuation Sites

No.	Name of Facility	Tel #	Flood	Land-slide	Earth-quake	Reser-voir	Tsu-nami
1	Kinsei Dai-ichi Elementary School Ground	28-6282	×	○	○	○	○
2	Kinsei Dai-ni Elementary School Ground	28-6283	○	○	○	×	○
3	Mendori Elementary School Ground	28-6281	○	○	○	○	○
4	Kamibun Elementary School Ground	28-6284	×	○	○	○	○
5	Minami Elementary School Ground	28-6280	○	○	○	○	○
6	Kawanoe Elementary School Ground	28-6285	×	×	○	×	×
7	Kawanoe-Kita Junior High School Ground	28-6287	×	○	○	×	×
8	Kawanoe-Minami Junior High School Ground	28-6286	×	○	○	×	○
9	Kawanoe High School Ground	58-2061	×	○	○	○	○
10	Kawanoe Kodomo-en Ground	28-6270	×	○	○	○	○
11	Kanada Ground	—	○	○	○	○	○
12	Kawanoe Sports Ground	—	×	○	○	○	×
13	Kawanoe Reclaimed Ground	—	×	○	○	○	△
14	Mukaiyama Park Ground	—	○	○	○	○	○
15	Hama Park Multipurpose Ground	—	○	○	○	○	△
16	Kawanoe Gymnasium Disaster Prevention Park	28-6231	○	○	○	○	○
17	Mori-to-Kohan Park	28-6269	○	○	○	○	○
18	Ōe Ryokuchi Park No.1	—	×	○	○	○	×
19	Nitta Park	—	○	○	○	○	○
20	Mishima High School Ground	23-2136	○	×	○	○	○
21	Shōhaku Elementary School Ground	28-6094	○	○	○	○	○
22	Mishima Elementary School Ground	28-6095	○	○	○	○	○
23	Nakazone Elementary School Ground	28-6093	○	○	○	○	○
24	Nakanoshō Elementary School Ground	28-6092	○	○	○	○	○
25	Sangawa Elementary School Ground	28-6096	○	×	○	○	○
26	Toyo-oka Elementary School Ground	28-6097	○	×	○	○	○
27	Shōhaku Ground	28-6062	○	○	○	○	○
28	Mishima-Higashi Junior High School Ground	28-6098	○	○	○	○	○
29	Iyo-Mishima Athletic Park	28-6071	○	○	○	○	○
30	Sekigawa Elementary School Ground	28-6369	○	○	○	○	○
31	Doi Elementary School Ground	28-6366	○	○	○	○	○
32	Kofuji Elementary School Ground	28-6367	○	○	○	×	○
33	Nagatsu Elementary School Ground	28-6370	○	○	○	○	○
34	Kita Elementary School Ground	28-6368	○	○	○	○	○
35	Doi Junior High School Ground	28-6271	○	○	○	×	○
36	Doi High School Ground	74-2017	○	○	○	○	○
37	Yamajikaze Park	74-8882	○	×	○	○	○

About the City's Evacuation Shelter Operation Manual

Evacuation shelters need to be mainly operated by local residents themselves. We ask for your cooperation in working together and proactively participating in the operation of evacuation shelters. For your reference, the City has formulated an Evacuation Shelter Operation Manual.

We will work to revise and update the guidelines to correspond to special features of different local areas to help us all keep shelters running smoothly in the event a disaster occurs.



Designated Welfare Evacuation Shelters

No.	Name of Facility	Tel #	Flood	Land-slide	Earth-quake	Reser-voir	Tsu-nami	Intended for: *
1	Kawanoe Cultural Hall	28-6236	×	○	○	○	○	People with special needs
2	Child and Youth Development Support Center "Palette"	28-6029	○	○	○	○	○	People with special needs
3	Public Health Center	28-6054	○	○	○	○	○	People with special needs
4	Doi Rōjin Iko-no-ie (Senior Citizen's Recreation Center)	28-6352	○	○	○	○	○	People with special needs
5	Doi Welfare Center	—	○	○	○	○	○	People with special needs
6	Doi Kodomo-kan (Child Support Center)	28-2395	○	○	○	○	○	People with special needs
7	Nakamatachi/Social Welfare Corporation Chōshin	25-3633	○	○	○	○	○	People with Intellectual Disabilities/Mental Disabilities/Physical Disabilities
8	Step by Step/Social Welfare Corporation Chōshin	59-1370	×	○	○	○	×	People with intellectual disabilities
9	Yūyū/ Social Welfare Corporation Hikari-to-kaze	24-4006	○	○	○	○	○	People with mental disabilities
10	Porepore Winkaru (WIN4)/Social Welfare Corporation Chōshin	22-3346	○	○	○	○	○	People with Intellectual Disabilities/Mental Disabilities/Physical Disabilities
11	Shiawase-no-ie Elderly Day Care Center/Social Welfare Corporation Makoto	28-2871	○	○	○	○	×	People certified for Support Need/ Long-Term Care
12	Tanpopo-Elderly Day Care & Rehabilitation Center/Medical Corporation Meisei-kai	22-3805	×	○	○	○	○	People certified for Support Need/ Long-Term Care
13	Honobono-Elderly Day Care Center/Medical Corporation Meisei-kai	22-3803	×	○	○	○	○	People certified for Support Need/ Long-Term Care
14	Iki-iki Elderly Day Care Center/Medical Corporation Meisei-kai	22-3843	×	○	○	○	○	People certified for Support Need/ Long-Term Care
15	"Inclusive" Center Imajin Mishima/Non-profit Organization Imajin Club	74-2991	○	○	○	○	○	People with Intellectual Disabilities/Physical Disabilities
16	Mamenoki-Support Office for Persons with Disabilities/General Incorporated Association Kōwa-kai	22-3922	○	○	○	×	○	People with Intellectual Disabilities/Mental Disabilities/Physical Disabilities
17	Kokokara After-School Day Service Center for Children with Disabilities/TRUST Co., Ltd	77-4975	○	○	○	○	○	People with Intellectual Disabilities/Mental Disabilities/Physical Disabilities
18	Kokokara Leap/TRUST Co., Ltd	77-4975	×	×	×	×	○	People with Intellectual Disabilities/Physical Disabilities

* Family members, etc. accepted as well (Current as of Dec. 1, 2022)

Considerations for Shelter Living

■ Infection Control Measures

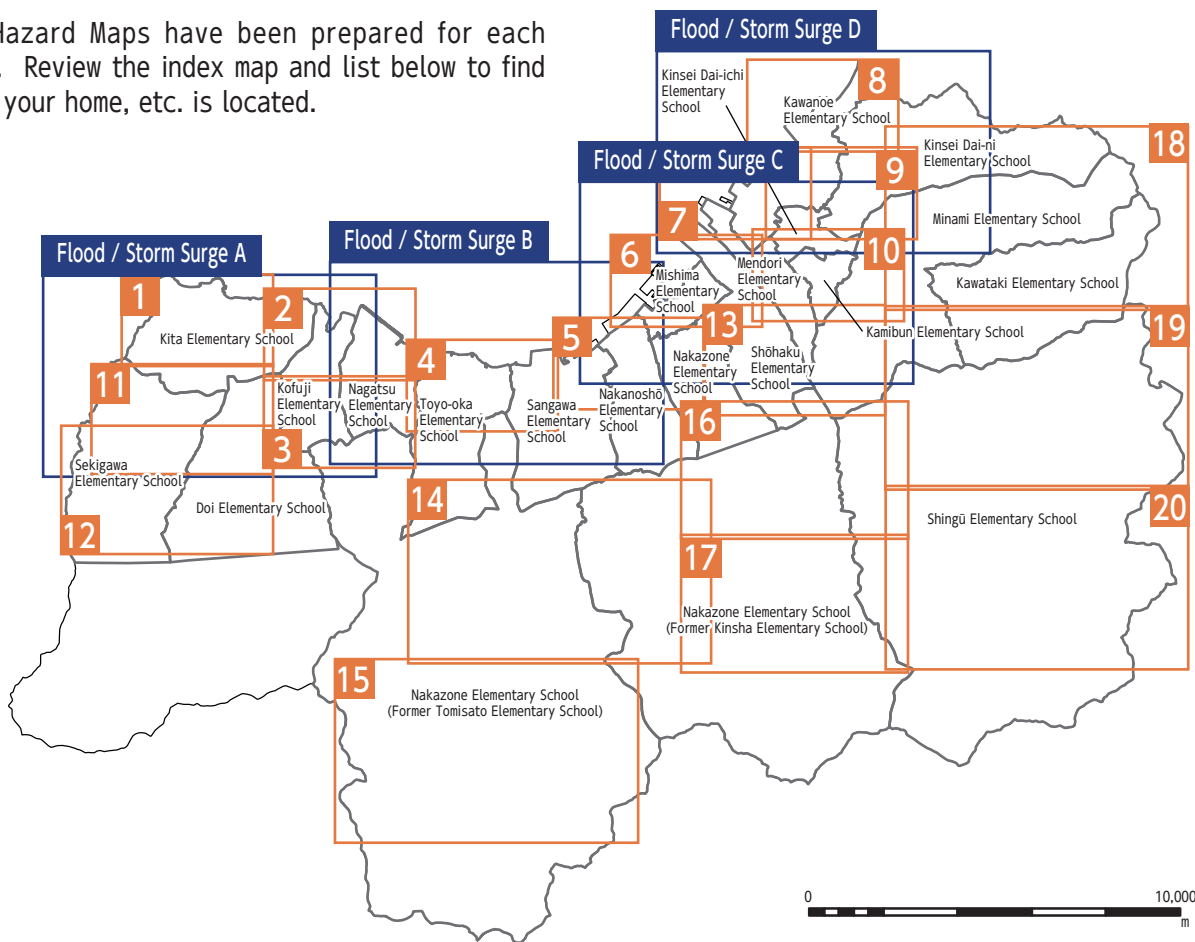
- In evacuation shelters where many people stay in the same quarters, there is an increased risk of infectious diseases, including influenza, norovirus, and COVID-19. Be sure to exercise maximum caution.



How to Read Hazard Maps (Map Section)

INDEX MAP

Individual Hazard Maps have been prepared for each section shown. Review the index map and list below to find the map where your home, etc. is located.



* Sections 1–20 indicate hazards for Tsunami Disaster Hazard Zones, Sediment Disaster Hazard Zones, and Expected Reservoir Flooding Inundation Zones. Sections A–D indicate hazards for Expected Flood Inundation Zones and Expected Storm Surge Inundation Zones.

List of Elementary School Districts & Corresponding Map Sections

Elementary School District	Corresponding Map Sections		Elementary School District	Corresponding Map Sections	
	Hazard Maps (Tsunami/Sediment Disaster/Reservoir Flooding)	Flood/Storm Surge		Hazard Maps (Tsunami/Sediment Disaster/Reservoir Flooding)	Flood/Storm Surge
Kawanoe Elementary School	6, 7, 8, 9, 10	C, D	Nakazone Elementary School (Former Tomisato Elementary School)	3, 4, 14, 15	A, B
Kinsei Dai-ichi Elementary School	7, 9, 10	C, D	Nakanoshō Elementary School	5, 6, 16	B, C
Kinsei Dai-ni Elementary School	8, 9, 10, 18	C, D	Sangawa Elementary School	4, 5, 14	B, C
Kamibun Elementary School	10, 13	C, D	Toyo-oka Elementary School	3, 4, 14	B
Minami Elementary School	9, 10, 13, 16, 18, 19	C, D	Shingū Elementary School	13, 16, 17, 18, 19, 20	C
Kawataki Elementary School	18, 19		Nagatsu Elementary School	2, 3, 4	A, B
Mendori Elementary School	6, 7, 9, 10, 13	C, D	Kofuji Elementary School	2, 3	A, B
Shōhaku Elementary School	6, 7, 10, 13, 16	C, D	Kita Elementary School	1, 2, 11	A
Mishima Elementary School	5, 6, 13	B, C	Doi Elementary School	2, 3, 11, 12	A
Nakazone Elementary School	5, 6, 13, 16	B, C	Sekigawa Elementary School	1, 11, 12	A
Nakazone Elementary School (Former Kinsha Elementary School)	13, 14, 15, 16, 17, 20				

Types of Disasters Shown in Hazard Maps

Tsunami Hazard Zones

(Act on Regional Development for Tsunami Disaster Prevention, Article 53, Clause 1)

Zones indicating areas where the lives and wellbeing of residents, etc. may be at risk in the event of a tsunami, designated by the Governor of Ehime Prefecture as areas where there is a particular need for warning and evacuation systems to be put in place to prevent man-made disasters brought about by tsunamis.

Sediment Disaster (Special) Hazard Zones

(Act on Promotion of Sediment Disaster Countermeasures in Sediment Disaster Hazard Areas)

Zones clearly indicating areas with risks of sediment disasters (slope failures, debris flows, and landslides) in order to help protect residents' lives, designated by the Governor of Ehime Prefecture as zones where warning and evacuation systems are to be put in place and restrictions are to be put on certain actions.

Landslide Prevention Zones(Landslide Prevention Act)

Zones designated by the Minister of Land, Infrastructure, Transport and Tourism or the Agriculture, Forestry and Fisheries Minister as areas where necessary infrastructure (drainage facilities, retaining walls, etc.) needs to be put in place and restrictions need to be put on certain actions in order to prevent landslide-caused collapses, etc.

Steep Slope Failure Hazard Zones

(Act on Prevention of Disasters Caused by Steep Slope Failure)

Zones designated by the Governor of Ehime Prefecture as areas of steeply sloped ground that may be at risk of collapse and would potentially cause damage to a considerable number of residents, etc. in the event of their collapse, areas where restrictions need to be put on certain actions, etc.

Land Reclamation Sites with Large-Scale Infilling

Sites of large-scale land reclamation development where valley-like depressions or streams/wetlands have been infilled or slopes have been fill-graded. General location and scales of corresponding sites are indicated in accordance with nationally prescribed guidelines due to their potential risks, as earthquakes may cause shifting or collapse of their fill ground.

Expected Reservoir Flooding Inundation Zones

(Act on Agricultural Reservoir Management and Conservation)

Zones expected to experience inundation in the event of reservoir collapse, as assessed by the City in order to raise routine disaster-related awareness and facilitate residents in making preparations to evacuate quickly, for reservoirs that risk causing inundation in areas with residential housing, etc. in the event of their collapse and where residents could potentially experience difficulty in evacuating. Expected inundation depths and inundation start times, etc. are posted on the City website.



Reservoir Flooding Hazard Map

Expected Flood Inundation Zones

Zones expected to experience inundation from flooding of the Kinsei-gawa or Seki-gawa Rivers, which have been designated as rivers subject to water-level notifications, in the event of a “thousand-year rain event,” in which they receive the maximum foreseeable level of rainfall, an event with a 0.1% probability of occurrence in any given year. Expected inundation depths and Expected Flood Zones with Destruction of Houses, etc. are posted on the City website.



Kinsei-gawa & Seki-gawa River Flood Hazard Maps

Expected Storm Surge Inundation Zones(Flood Control Act, Article 14-3, Clause 1)

Expected Storm Surge Inundation Zones designated by the Governor of Ehime Prefecture. These maps indicate expected inundation zones and depths in the event of flooding caused by a storm surge of the largest foreseeable scale. Ehime Prefecture has announced expected durations of inundation as well.



Ehime Prefecture Expected Storm Surge Inundation Zones

Sediment Disaster Special Hazard Zones

- Debris flow
- Steep slope collapse

Sediment Disaster Hazard Zones

- Debris flow
- Landslide
- Steep slope collapse

Legally Designated Zones

- Steep Slope Collapse Danger Zones
- Landslide Prevention Zones

Land Reclamation Sites with Large-Scale Infilling

Type of development:

- Fill-slope
- Depression infill

Tsunami Disaster Hazard Zones

- Standard Water Level
- Under 0.3 m
 - 0.3 - 0.5 m
 - 0.5 - 1.0 m
 - 1.0 - 3.0 m
 - 3.0 - 5.0 m
 - 5.0 m and over

Expected Reservoir Flooding Inundation Zones

- Expected Reservoir Flooding Inundation Zones

Median Tectonic Line Fault Zone

- Median Tectonic Line Fault Zone

Evacuation Facilities

- Designated Evacuation Shelter
- Designated Emergency Evacuation Site
- Designated Welfare Evacuation Shelter
- Administrative Facilities, etc.

Emergency Transportation Routes

- Primary Emergency Transportation Route
- Secondary Emergency Transportation Route

Key Facilities

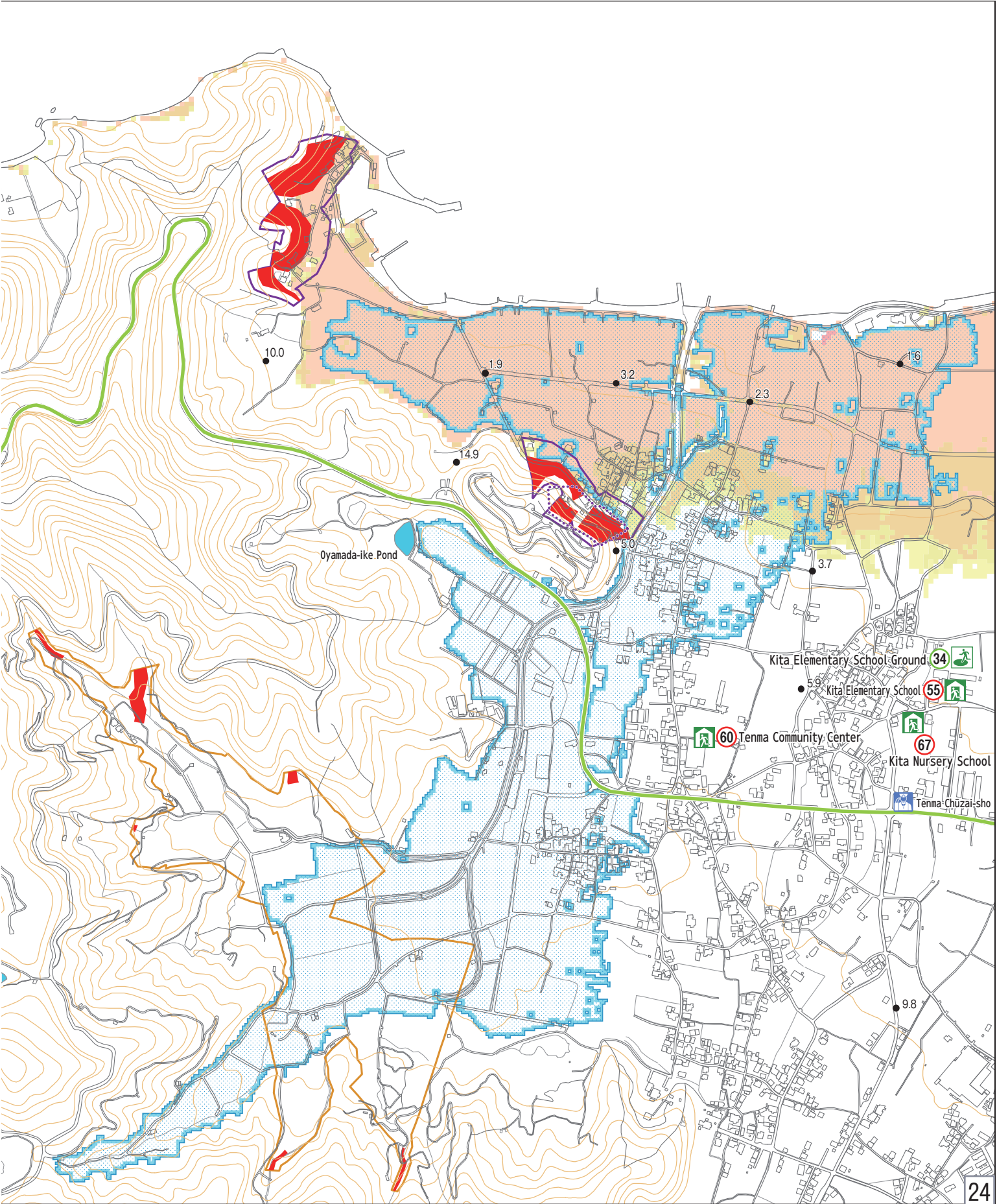
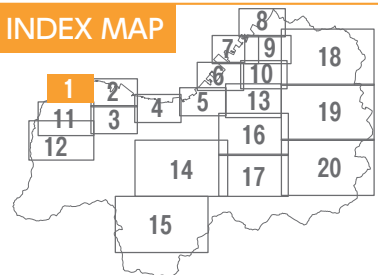
- Police Station / Kōban / Chūzai-sho
- Fire Dept. / Fire Station / Substation
- Medical Facility
- Emergency Helicopter Landing Pad
- Sand Storage Site for Sandbag-Making
- Elevation (m)



0 500 m
1:10,000

* Locations of areas that may be affected by sediment disasters are approximate. Be sure to contact the Shikokuchūō Civil Engineering Office to confirm precise zone boundaries.

INDEX MAP



Sediment Disaster Special Hazard Zones

- Debris flow
- Steep slope collapse

Sediment Disaster Hazard Zones

- Debris flow
- Landslide
- Steep slope collapse

Legally Designated Zones

- Steep Slope Collapse Danger Zones
- Landslide Prevention Zones

Land Reclamation Sites with Large-Scale Infilling

Type of development:

- Fill-slope
- Depression infill

Tsunami Disaster Hazard Zones

- Standard Water Level
- Under 0.3 m
 - 0.3 - 0.5 m
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 - 1.0 - 3.0 m
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Expected Reservoir Flooding Inundation Zones

- Expected Reservoir Flooding Inundation Zones

Median Tectonic Line Fault Zone

- Median Tectonic Line Fault Zone

Evacuation Facilities

- Designated Evacuation Shelter
- Designated Emergency Evacuation Site
- Designated Welfare Evacuation Shelter
- Administrative Facilities, etc.

Emergency Transportation Routes

- Primary Emergency Transportation Route
- Secondary Emergency Transportation Route

Key Facilities

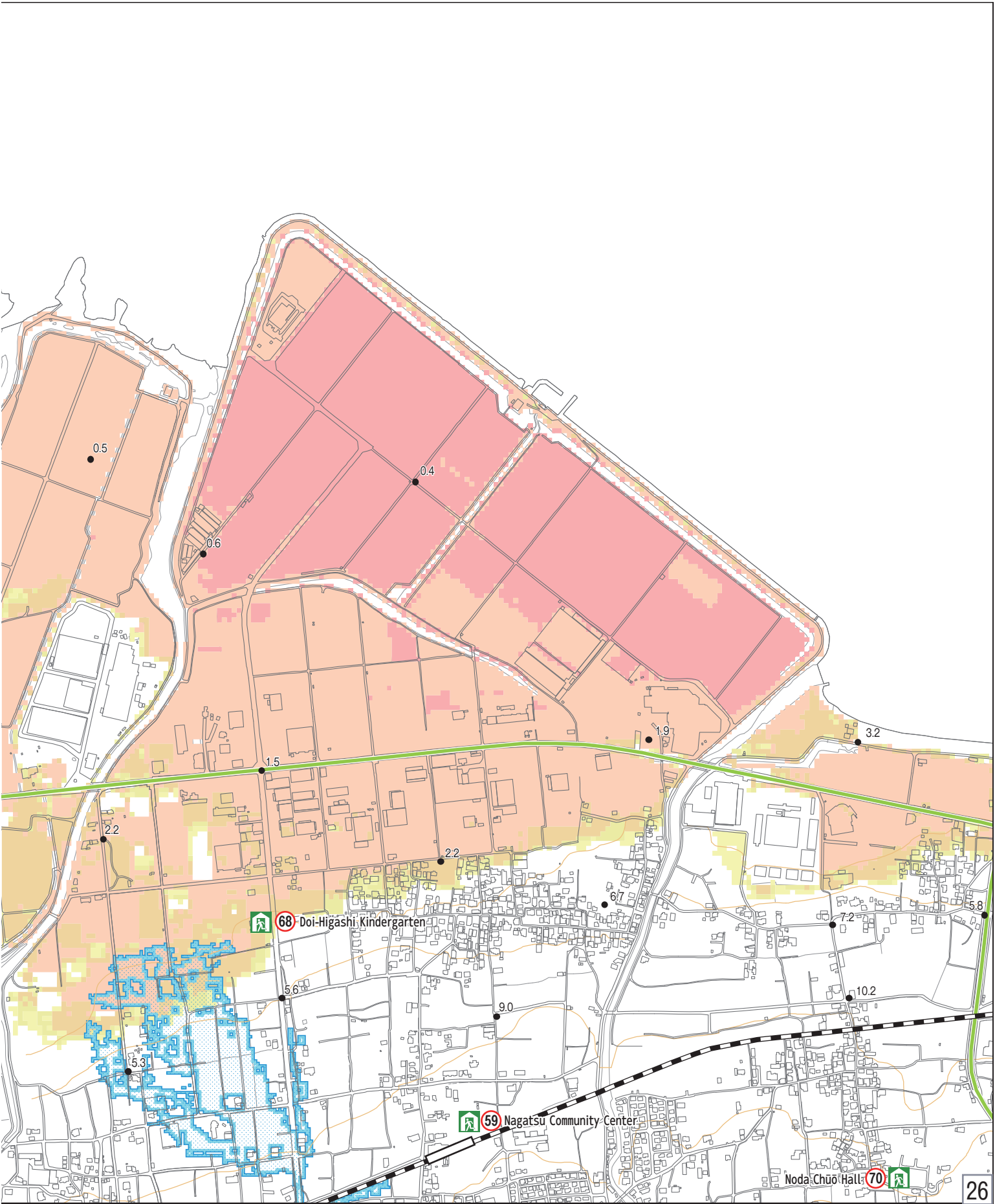
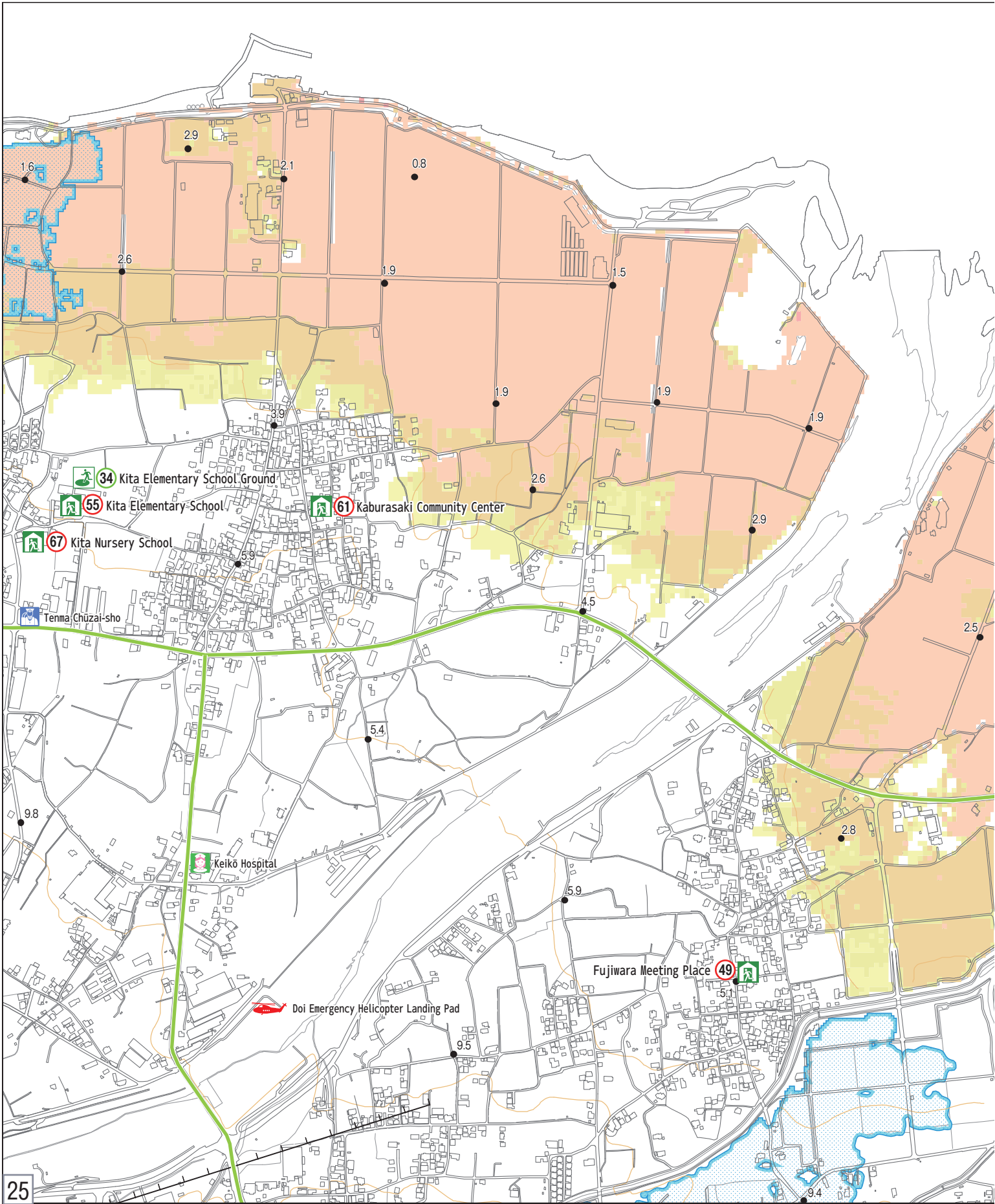
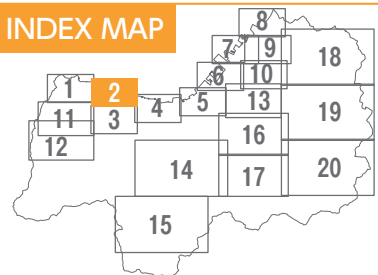
- Police Station / Kōban / Chūzai-sho
- Fire Dept. / Fire Station / Substation
- Medical Facility
- Emergency Helicopter Landing Pad
- Sand Storage Site for Sandbag-Making
- Elevation (m)



0 500 m
1:10,000

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Sediment Disaster Special Hazard Zones

- Debris flow
- Steep slope collapse

Sediment Disaster Hazard Zones

- Debris flow
- Landslide
- Steep slope collapse

Legally Designated Zones

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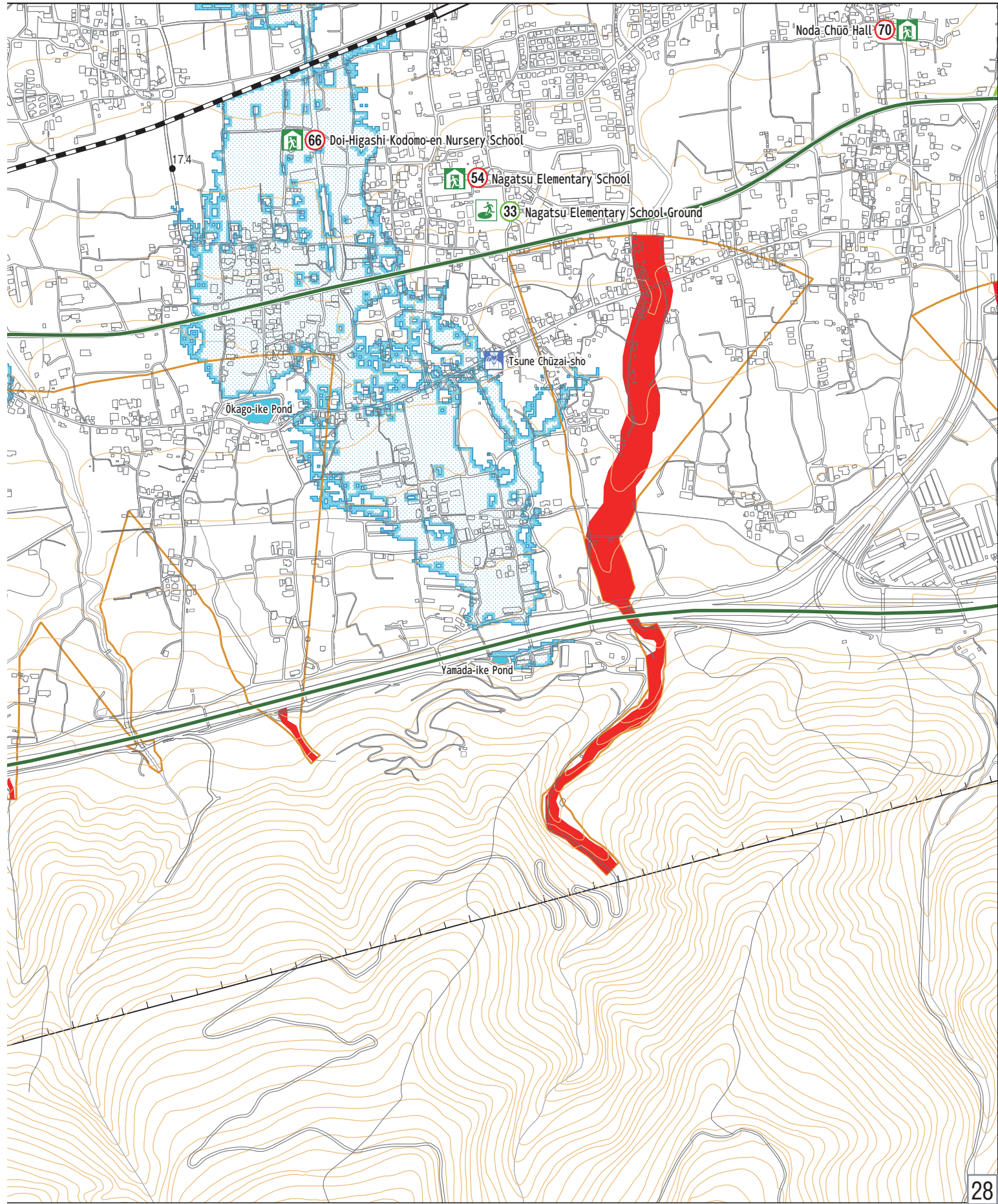
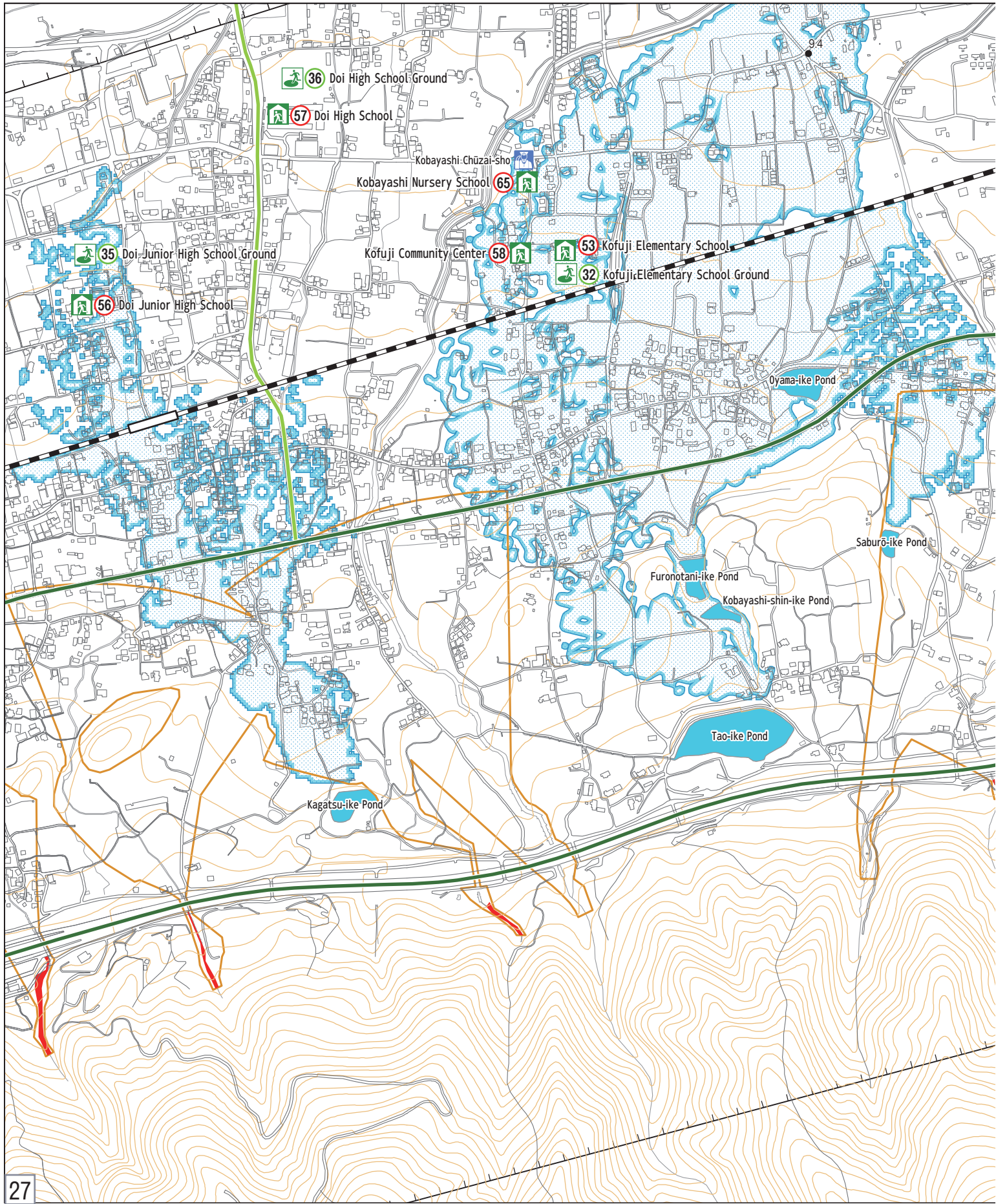
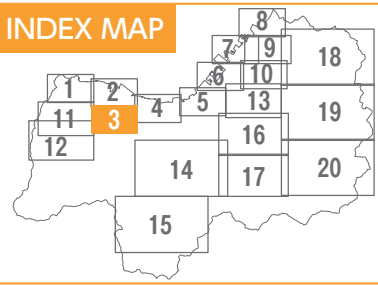
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0 500 m
1:10,000

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Sediment Disaster Special Hazard Zones

- Debris flow
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Sediment Disaster Hazard Zones

- Debris flow
- Landslide
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Legally Designated Zones

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Land Reclamation Sites with Large-Scale Infill

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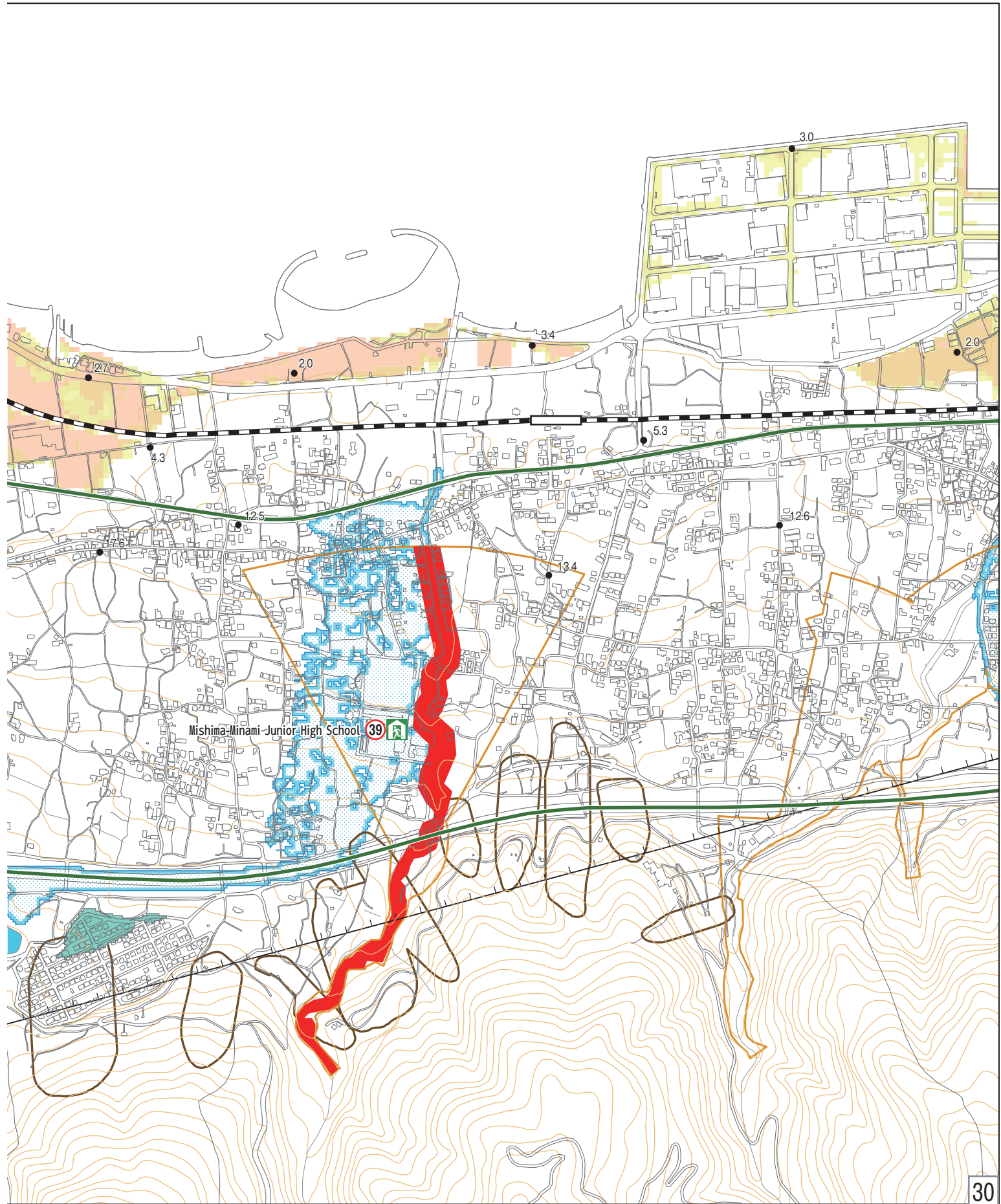
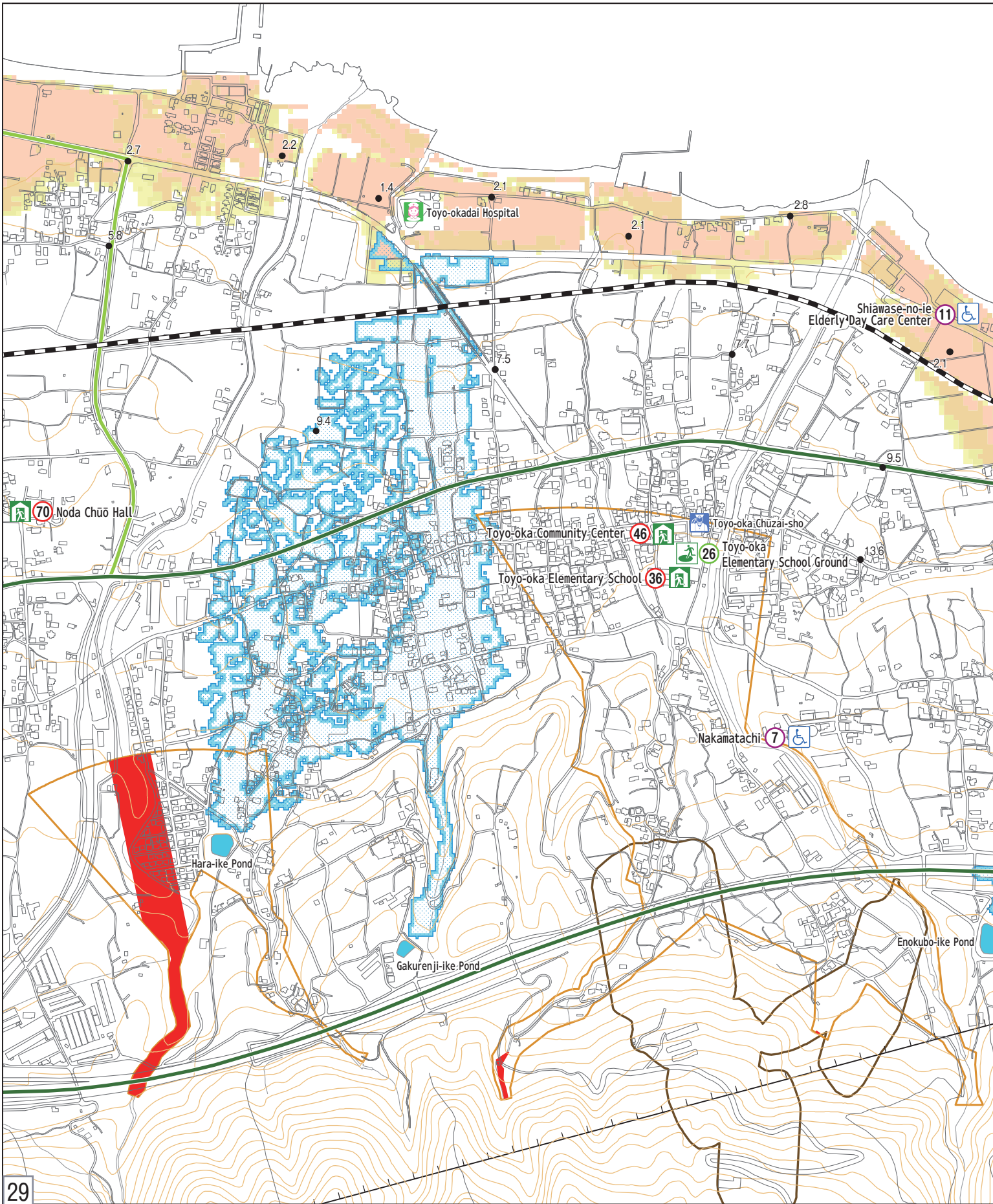
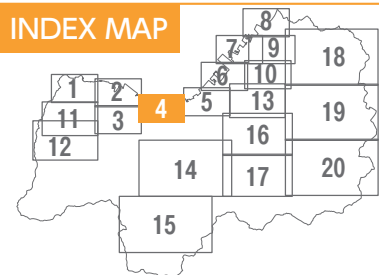
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1:10,000

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- Steep slope collapse

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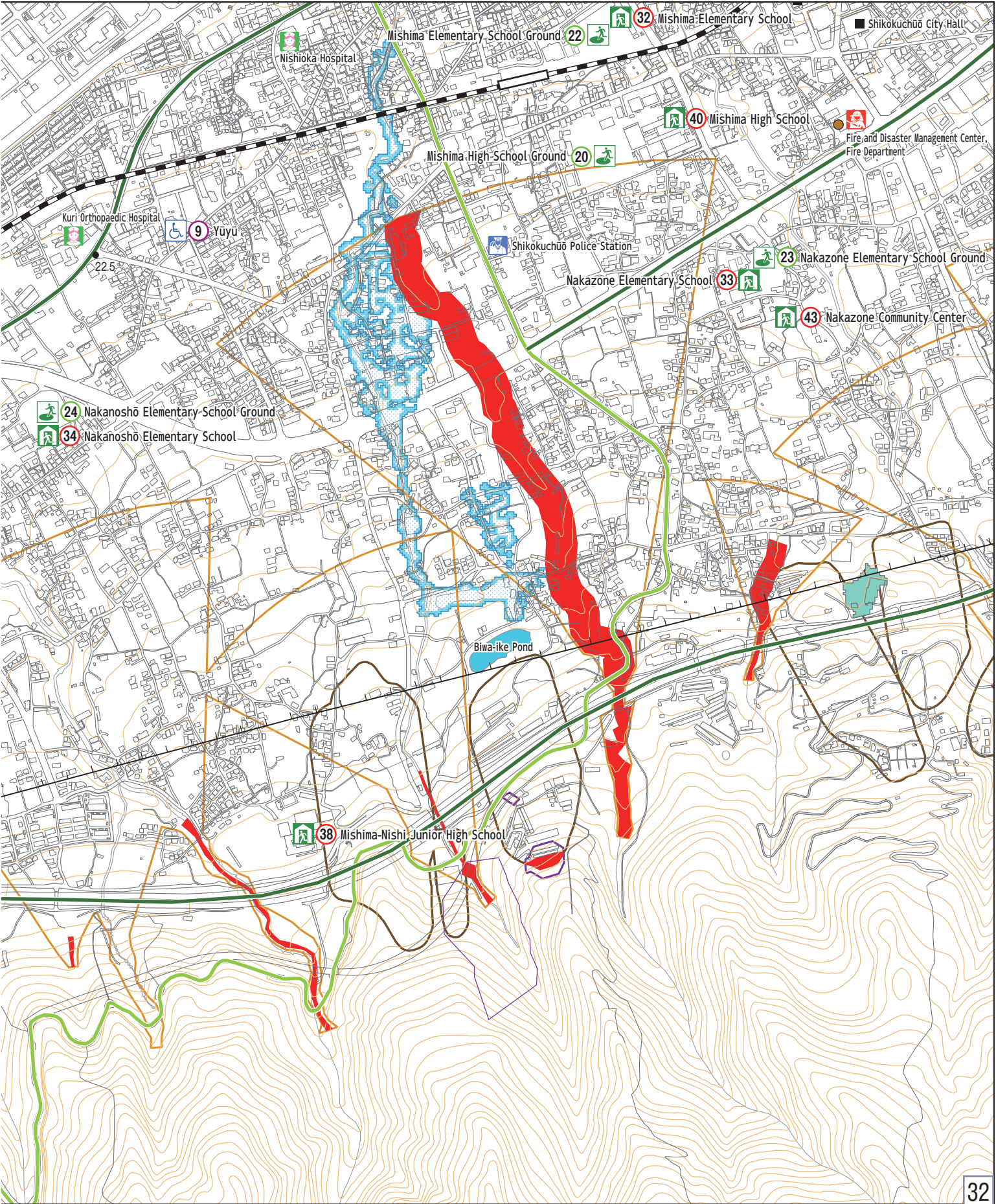
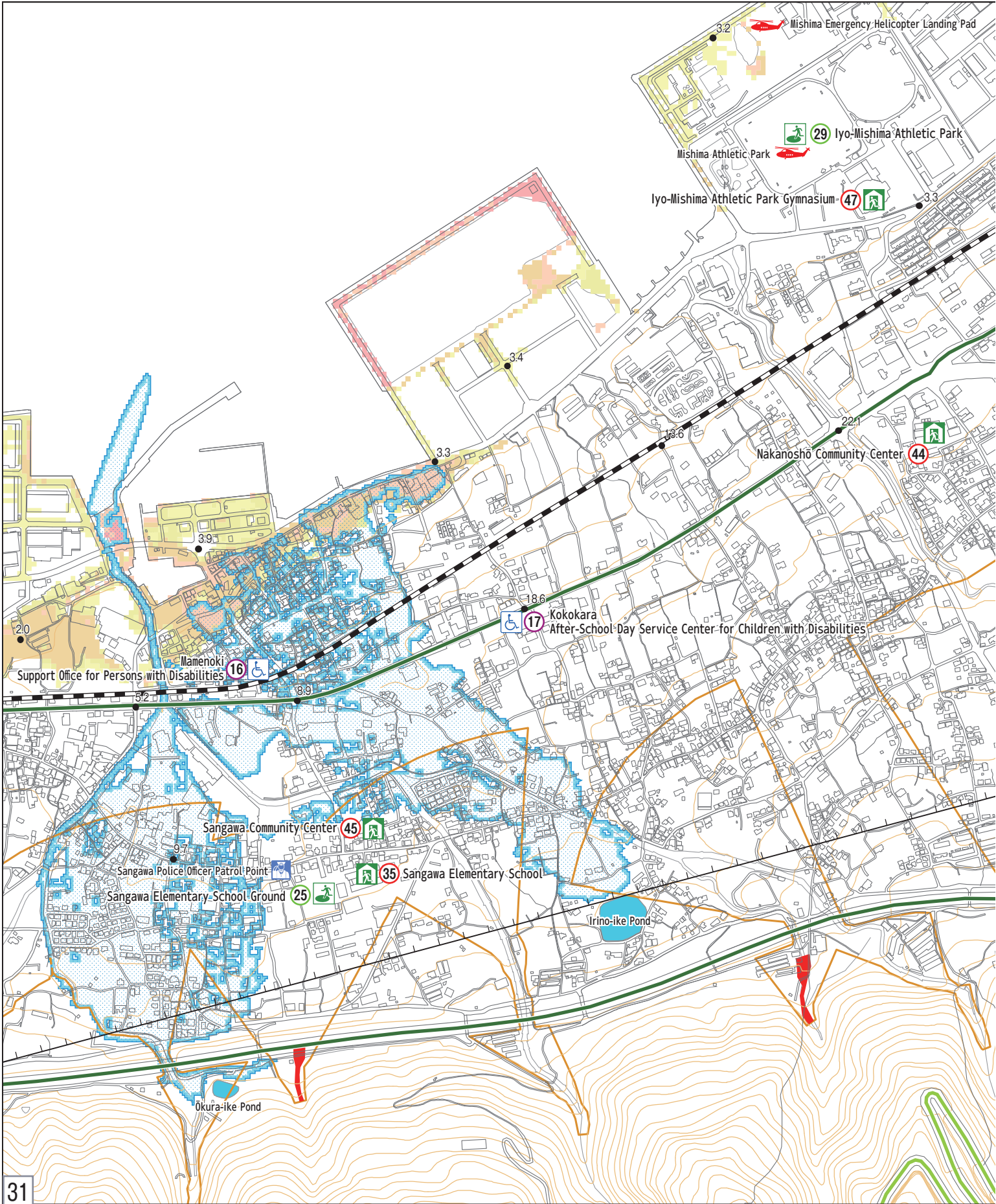
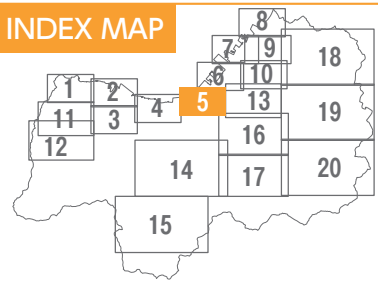
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1:10,000

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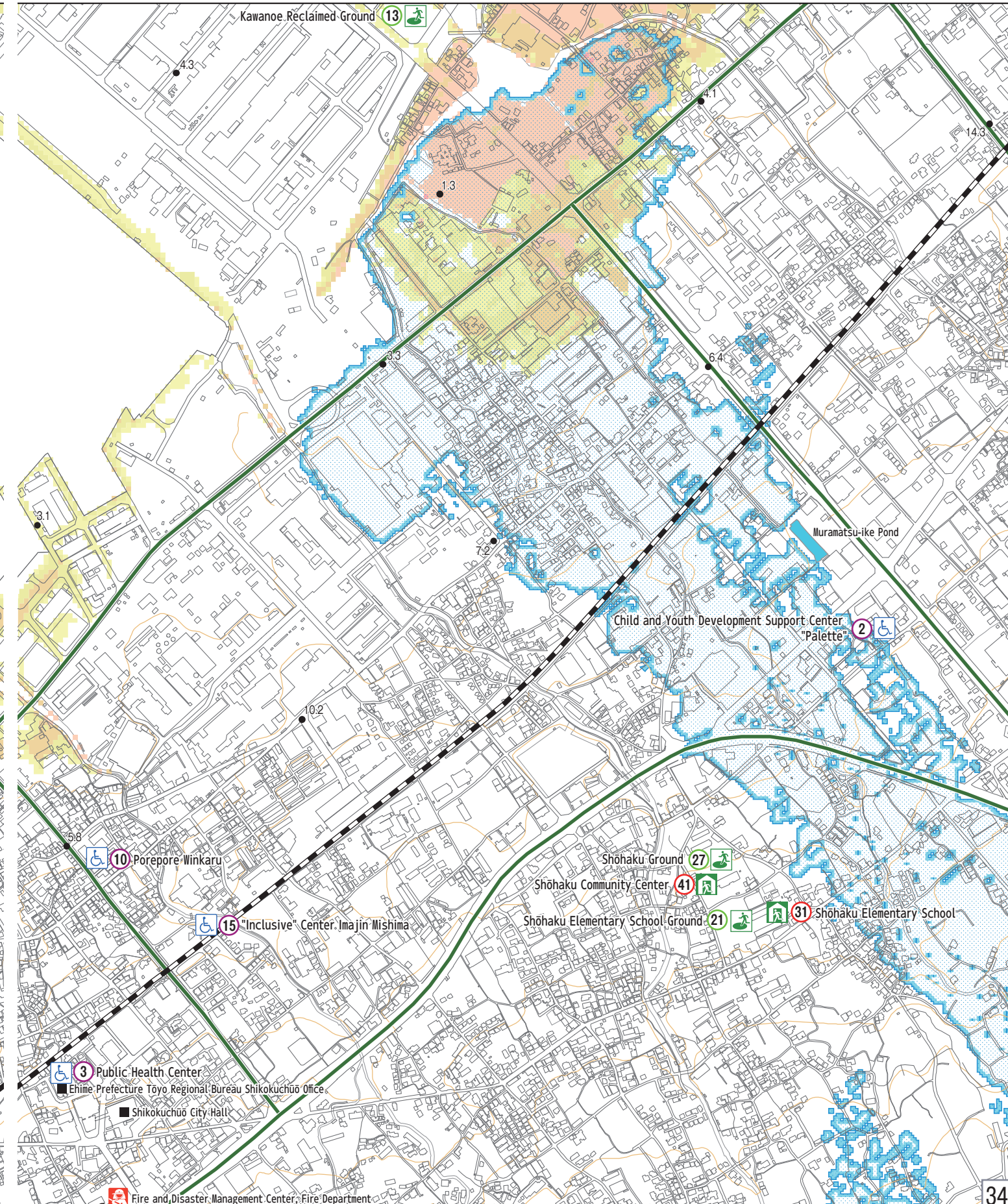
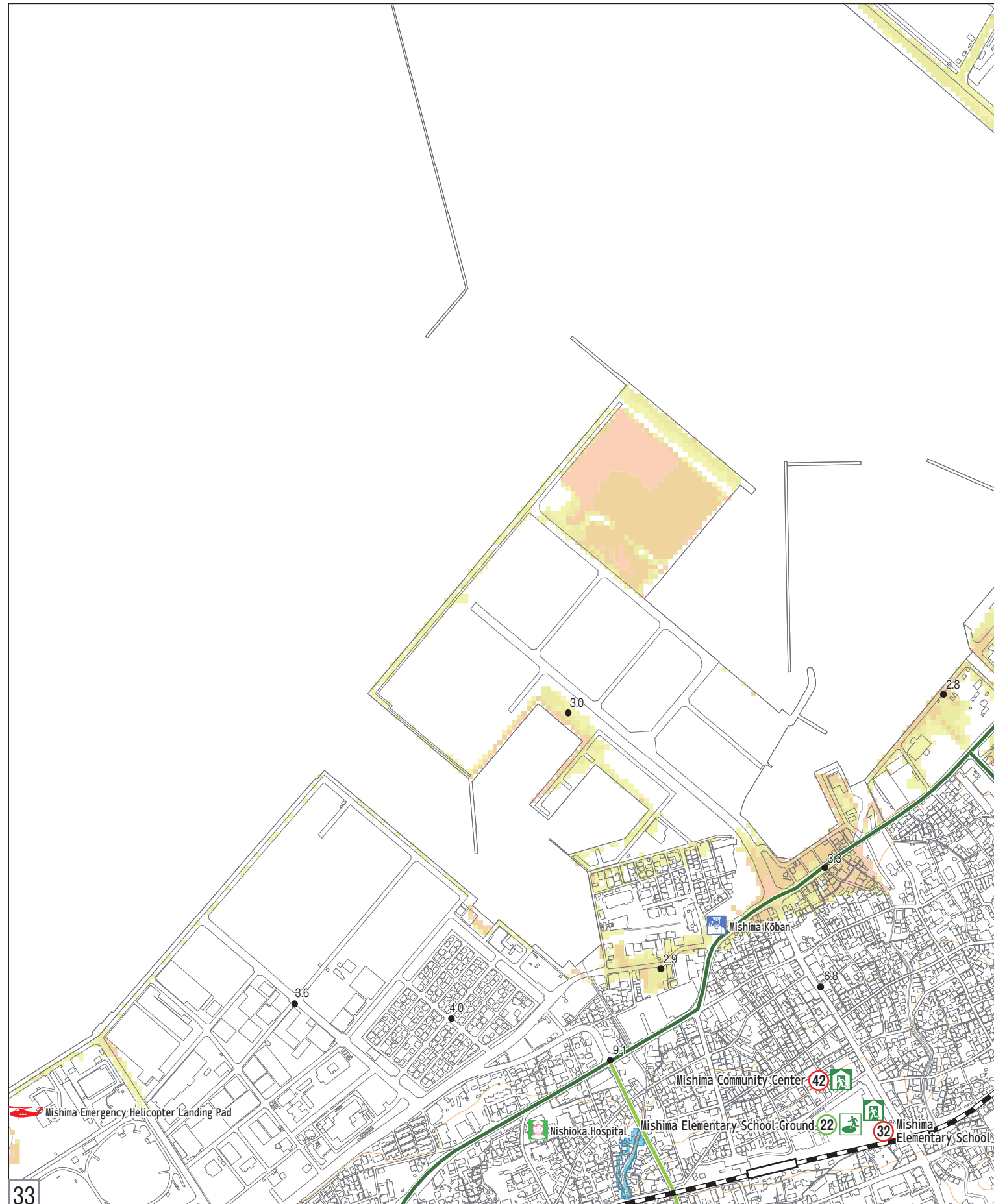
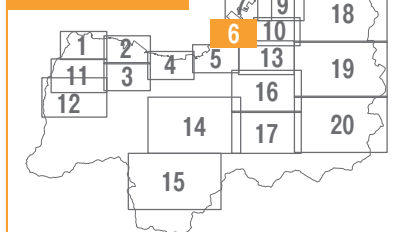
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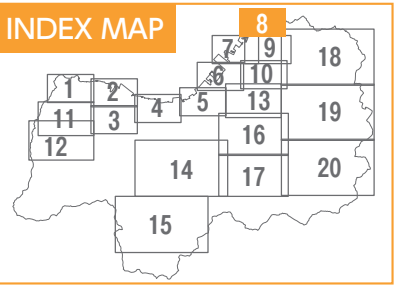
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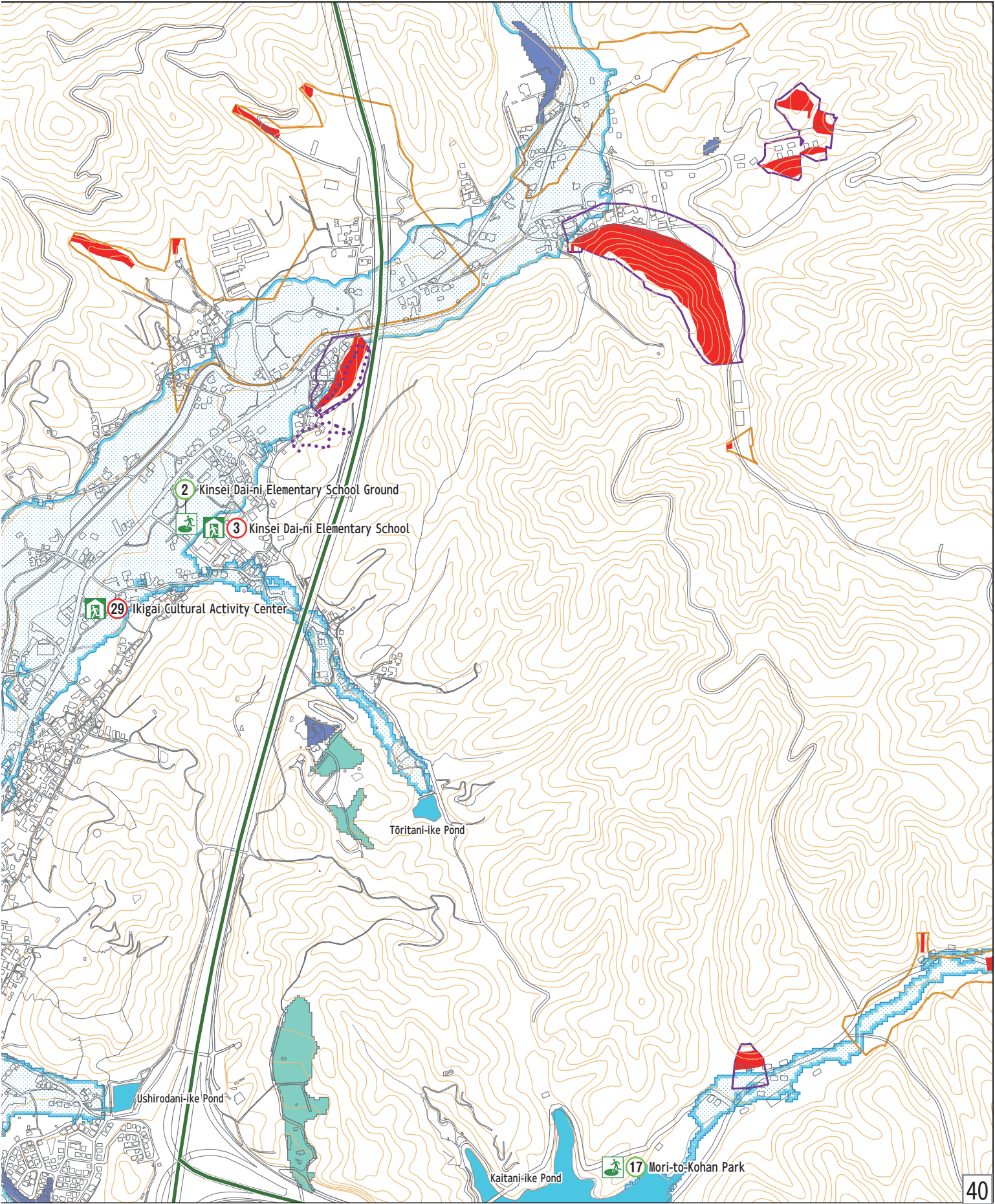
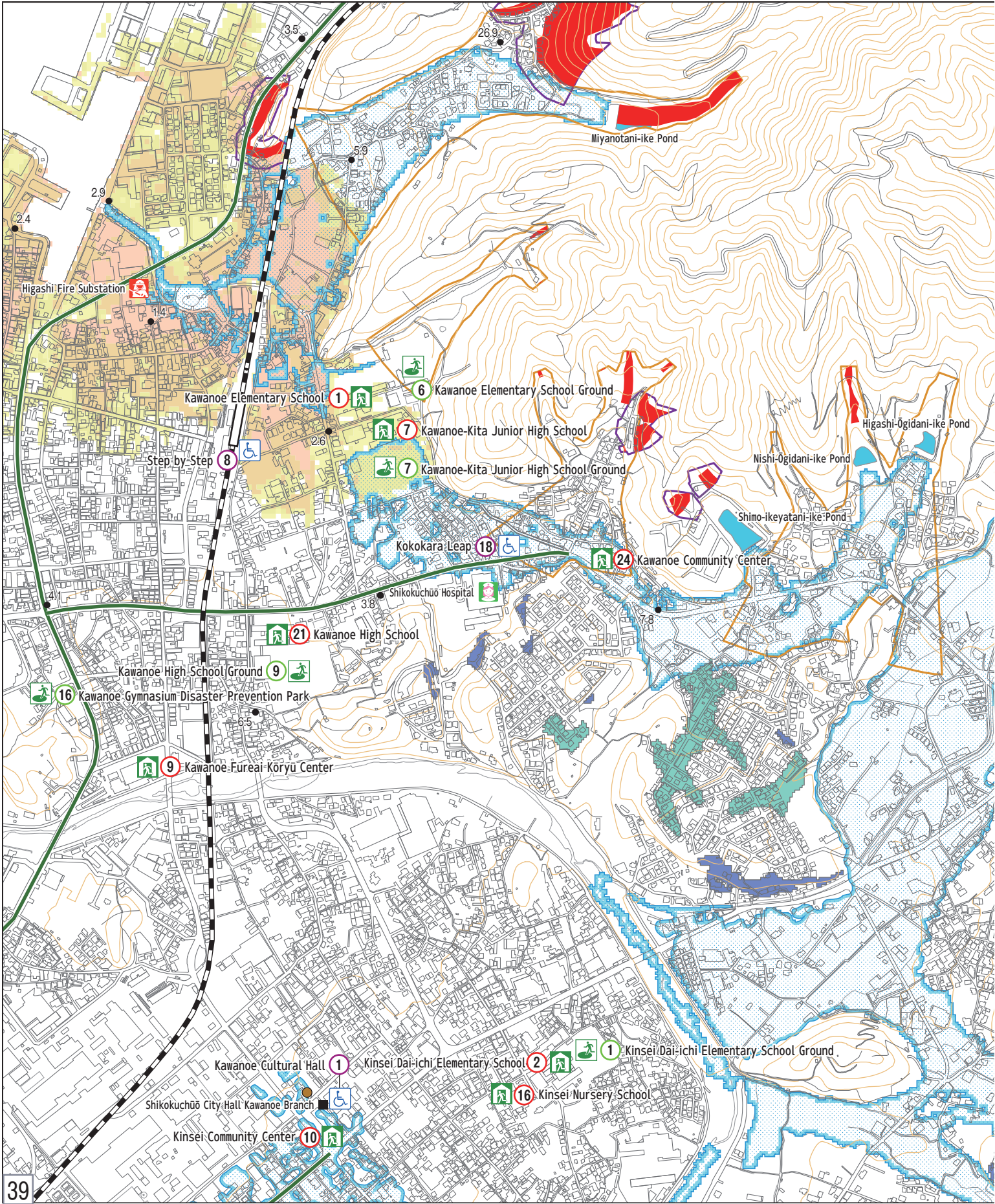
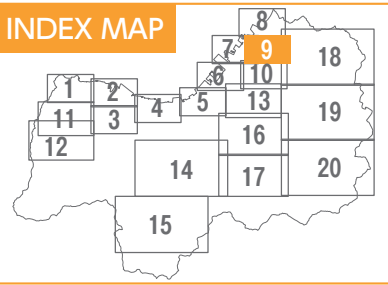
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0 500 m
1:10,000

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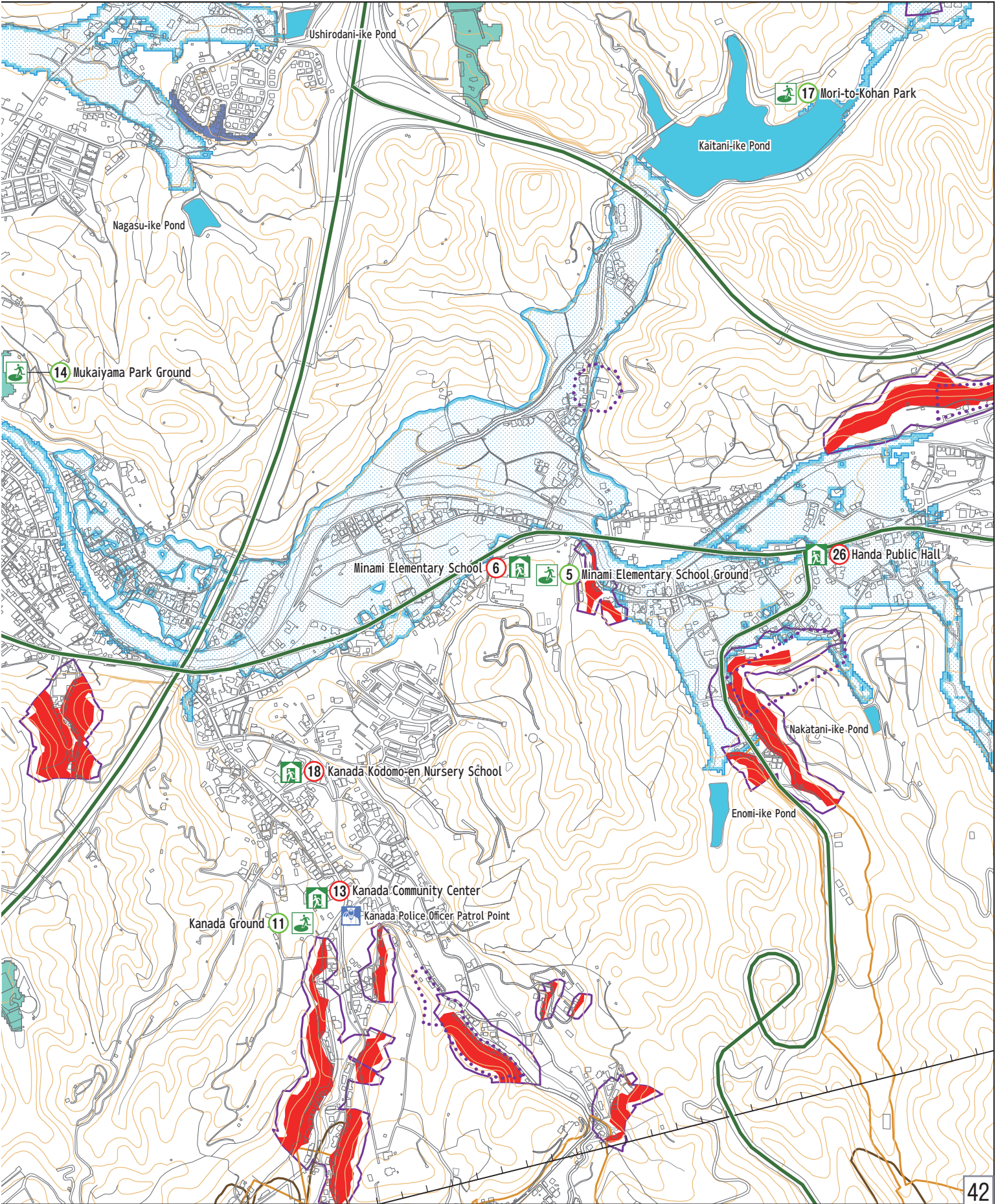
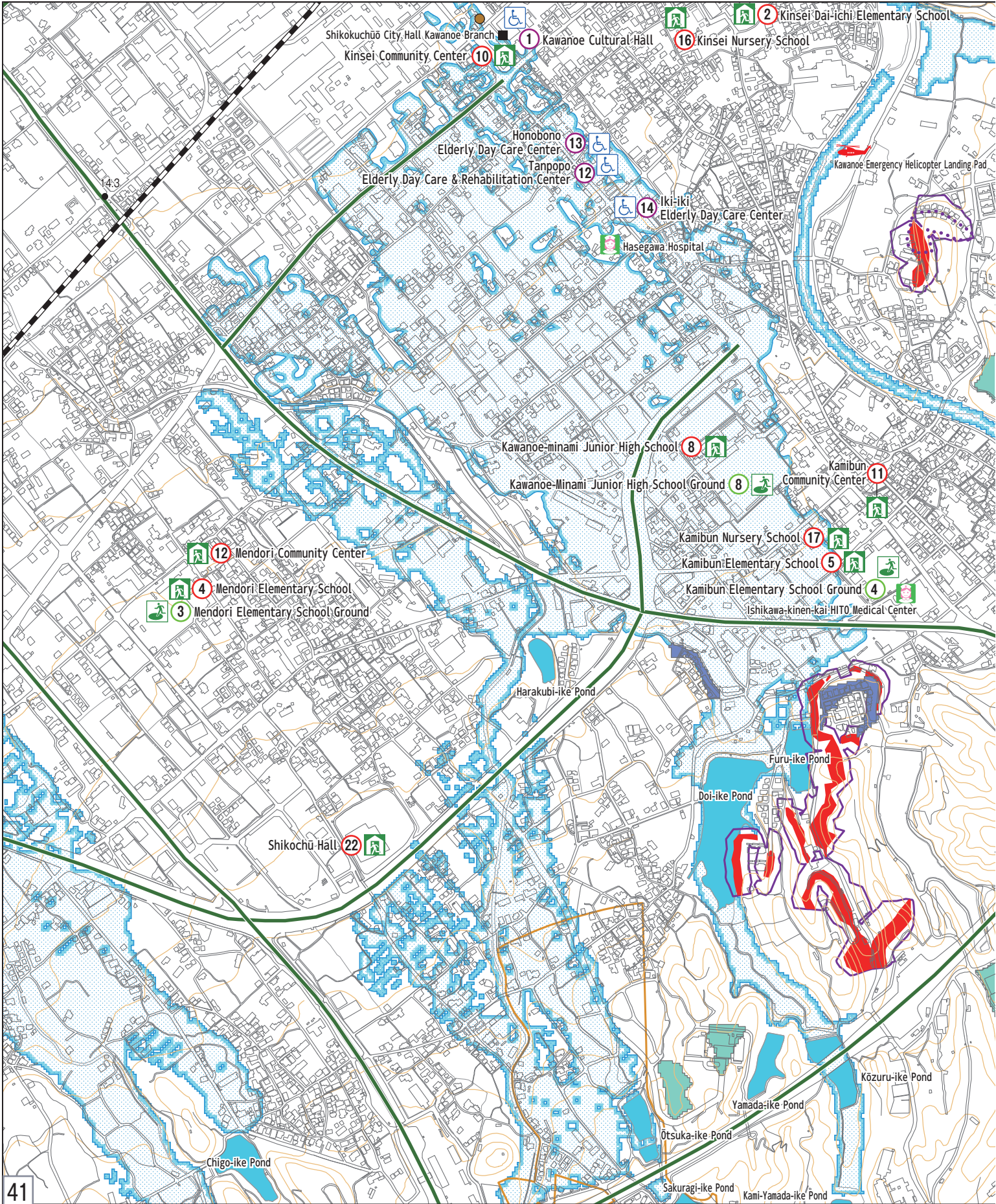
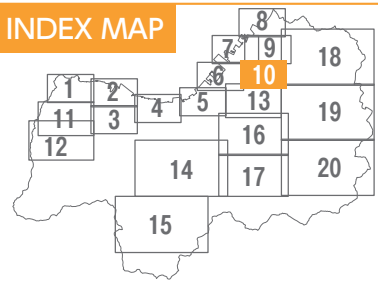
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0 500 m
1:10,000

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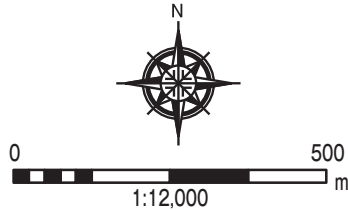
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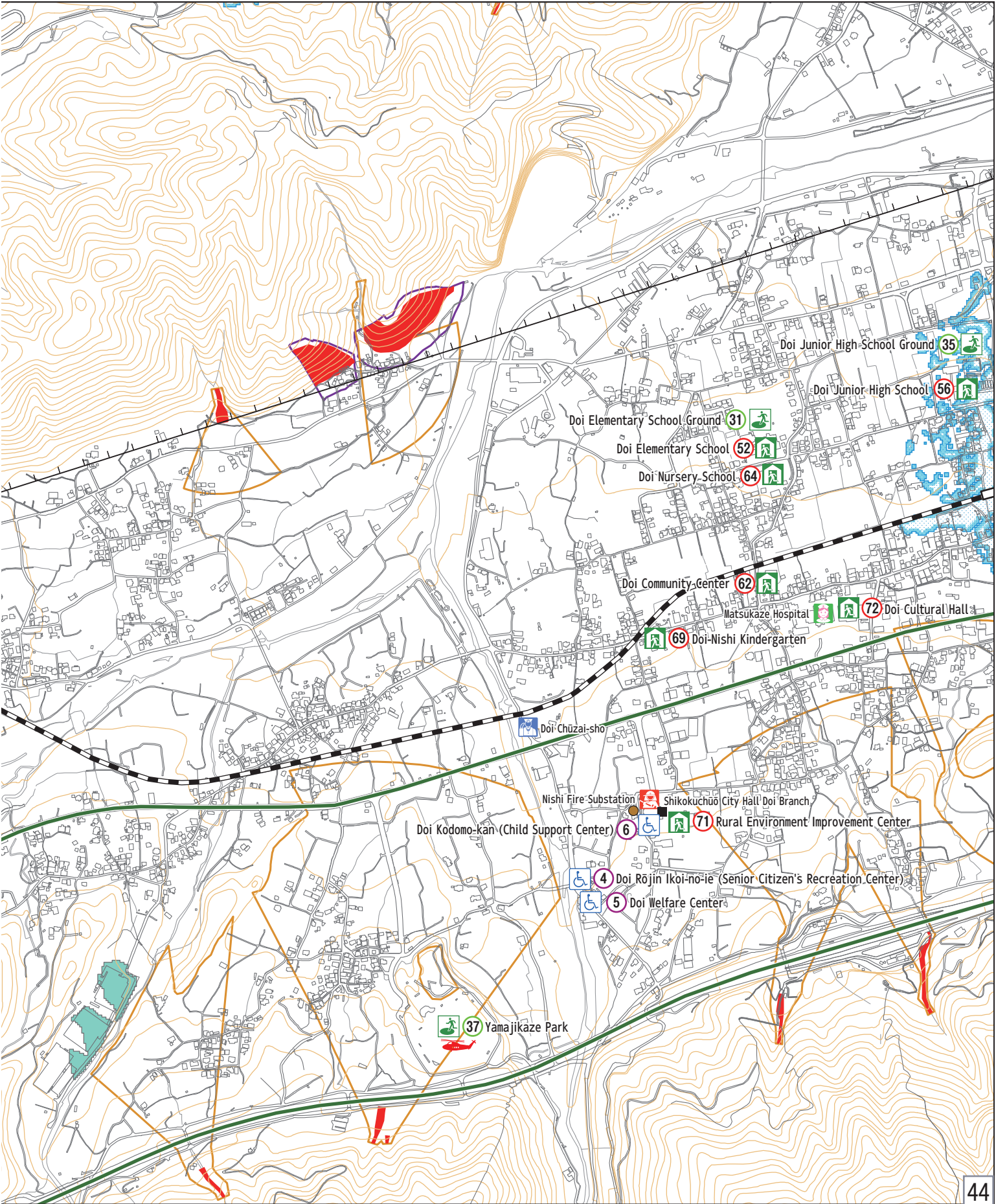
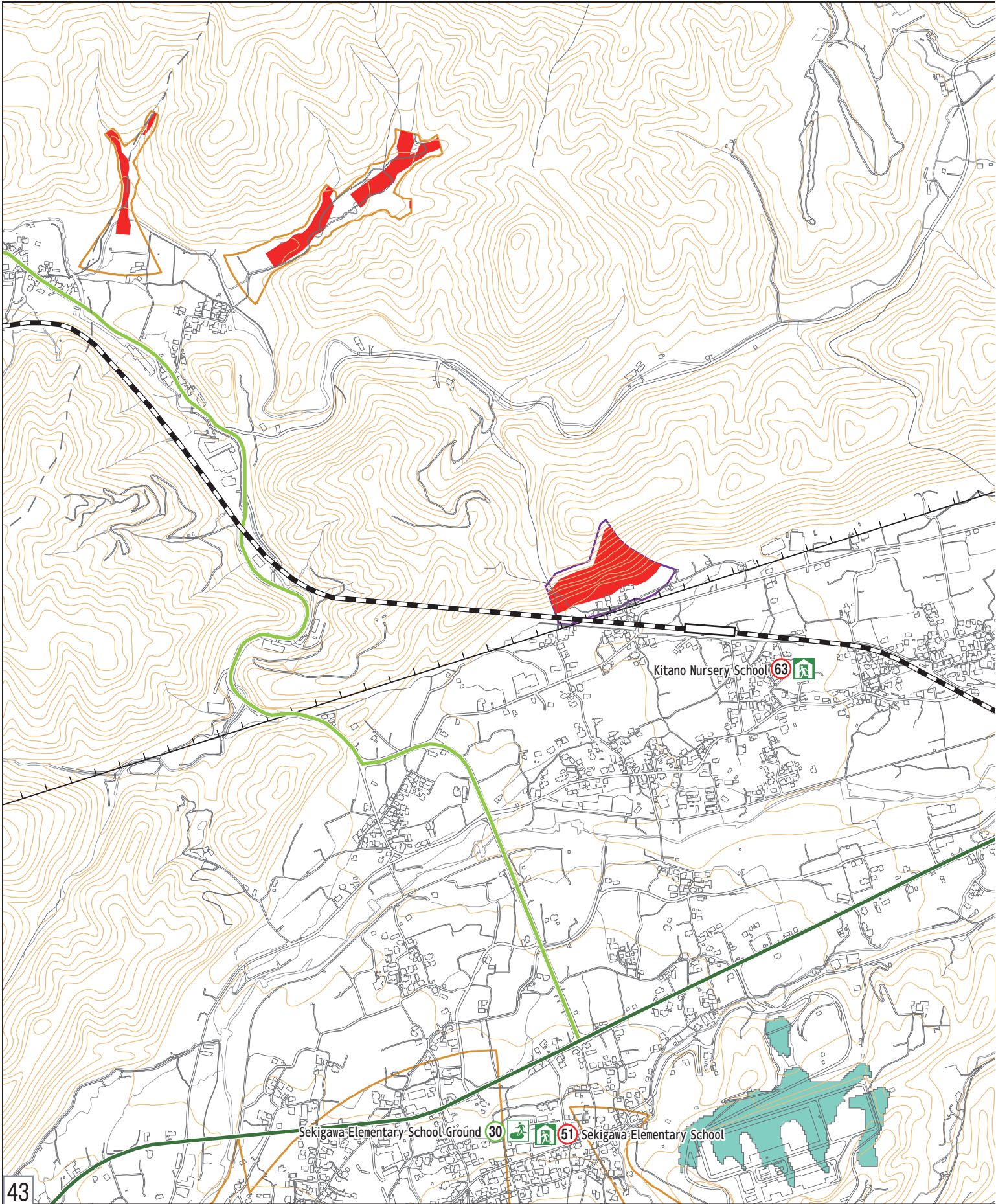
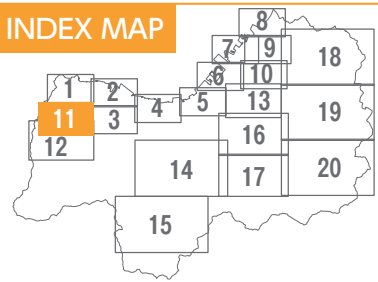
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Median Tectonic Line Fault Zone

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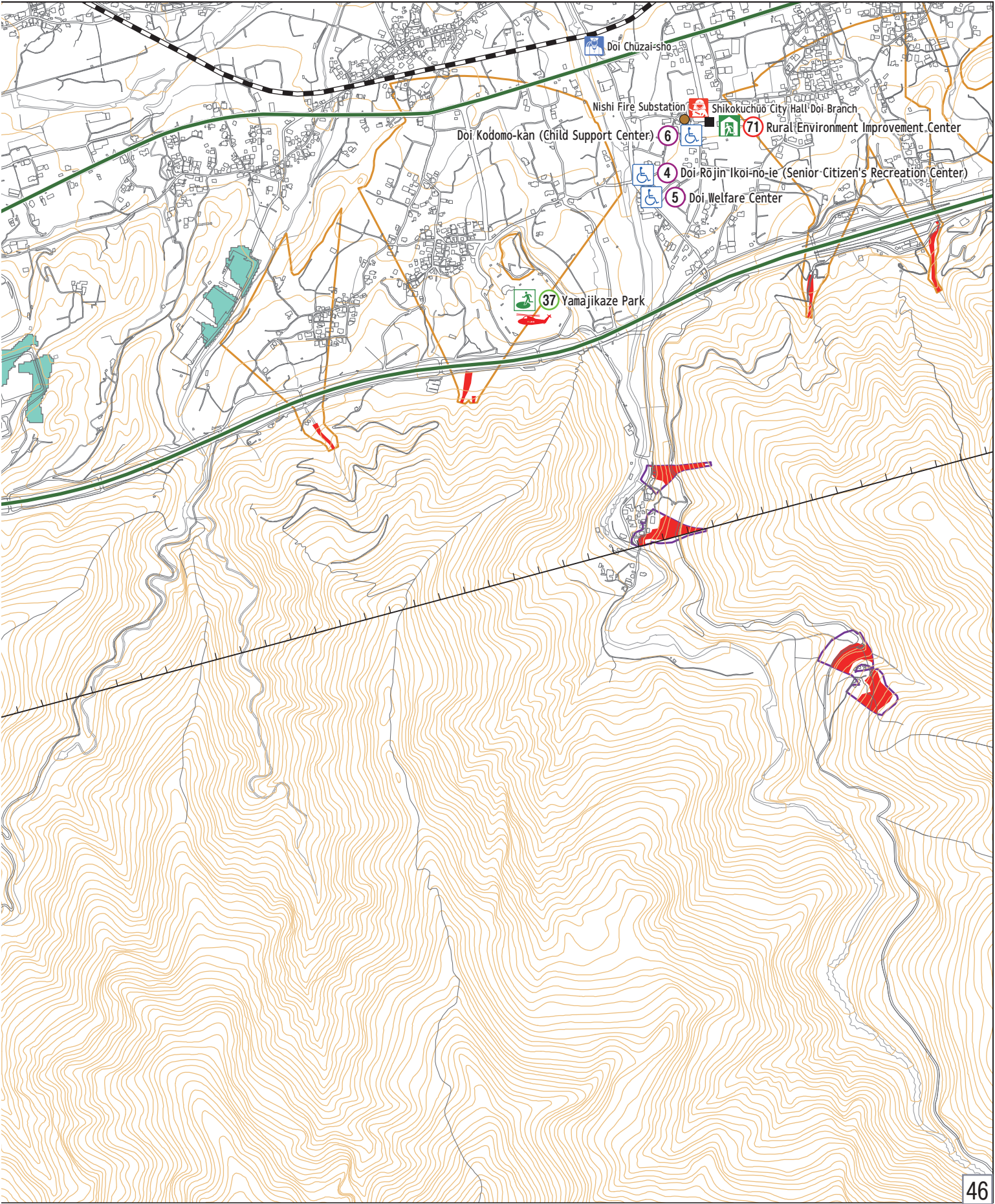
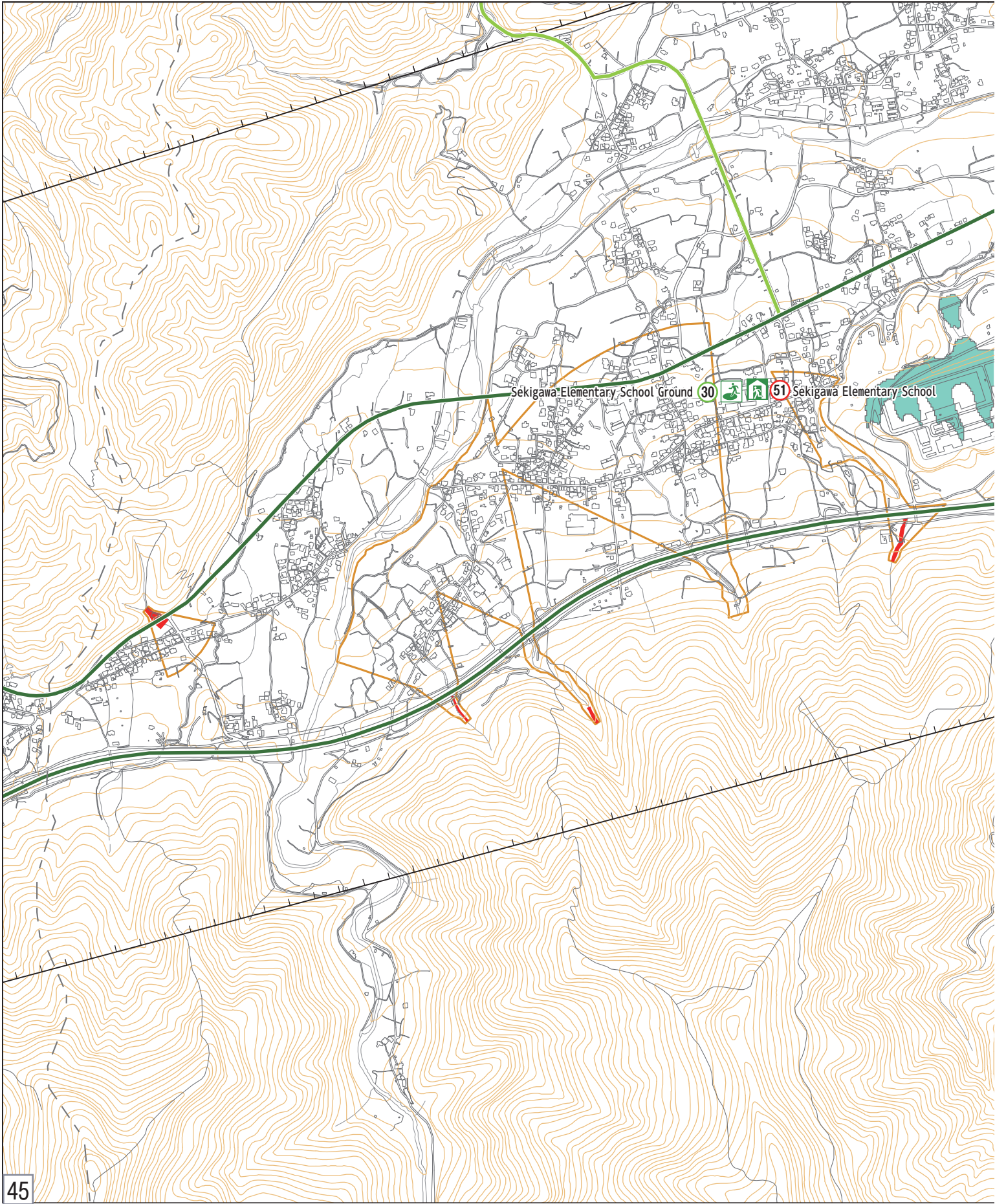
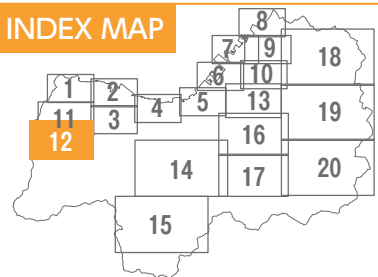
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0 500 m
1:14,000

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Sediment Disaster Hazard Zones

- Debris flow
- Landslide
- Steep slope collapse

Legally Designated Zones

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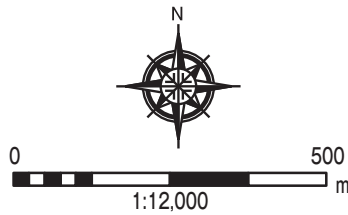
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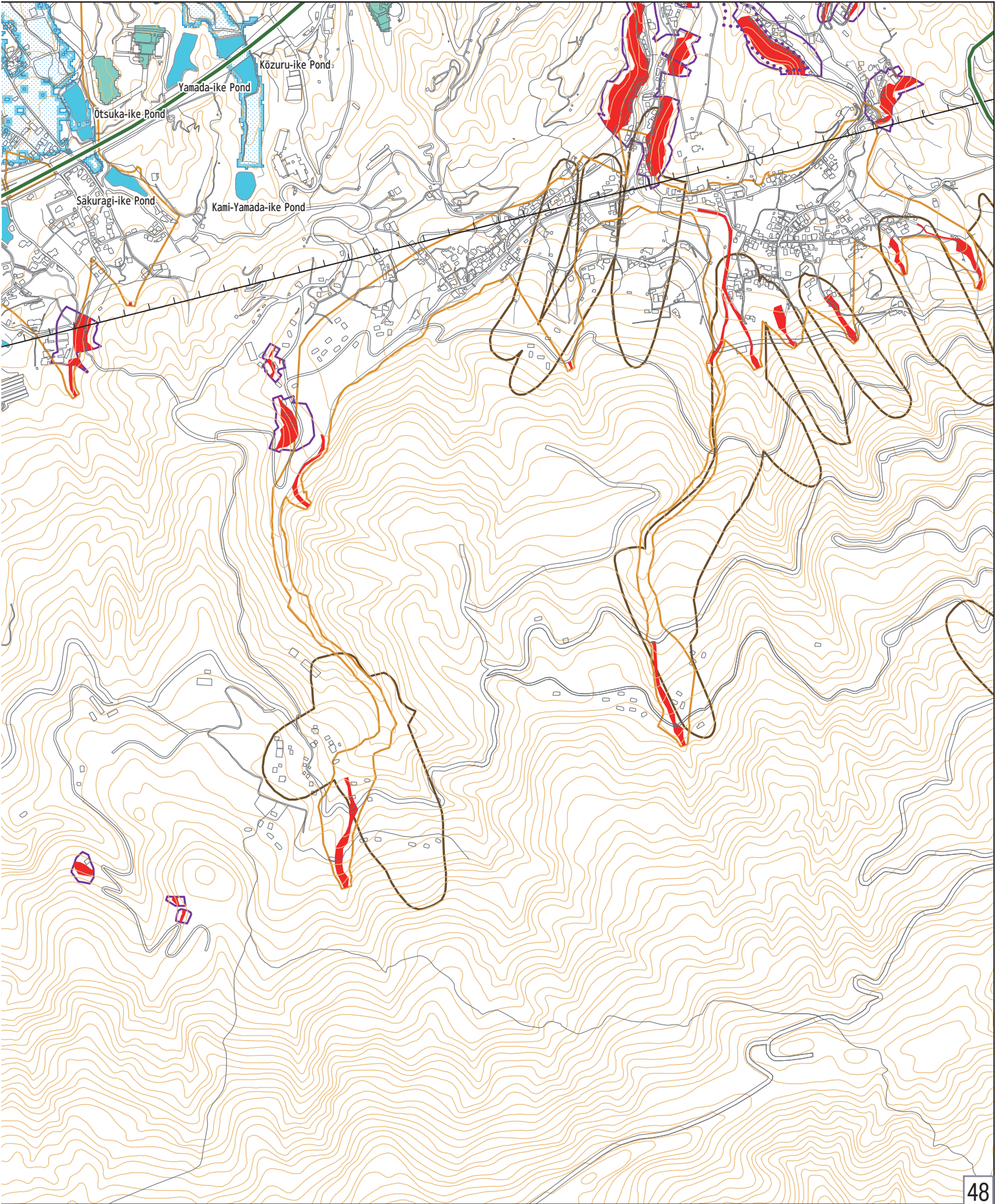
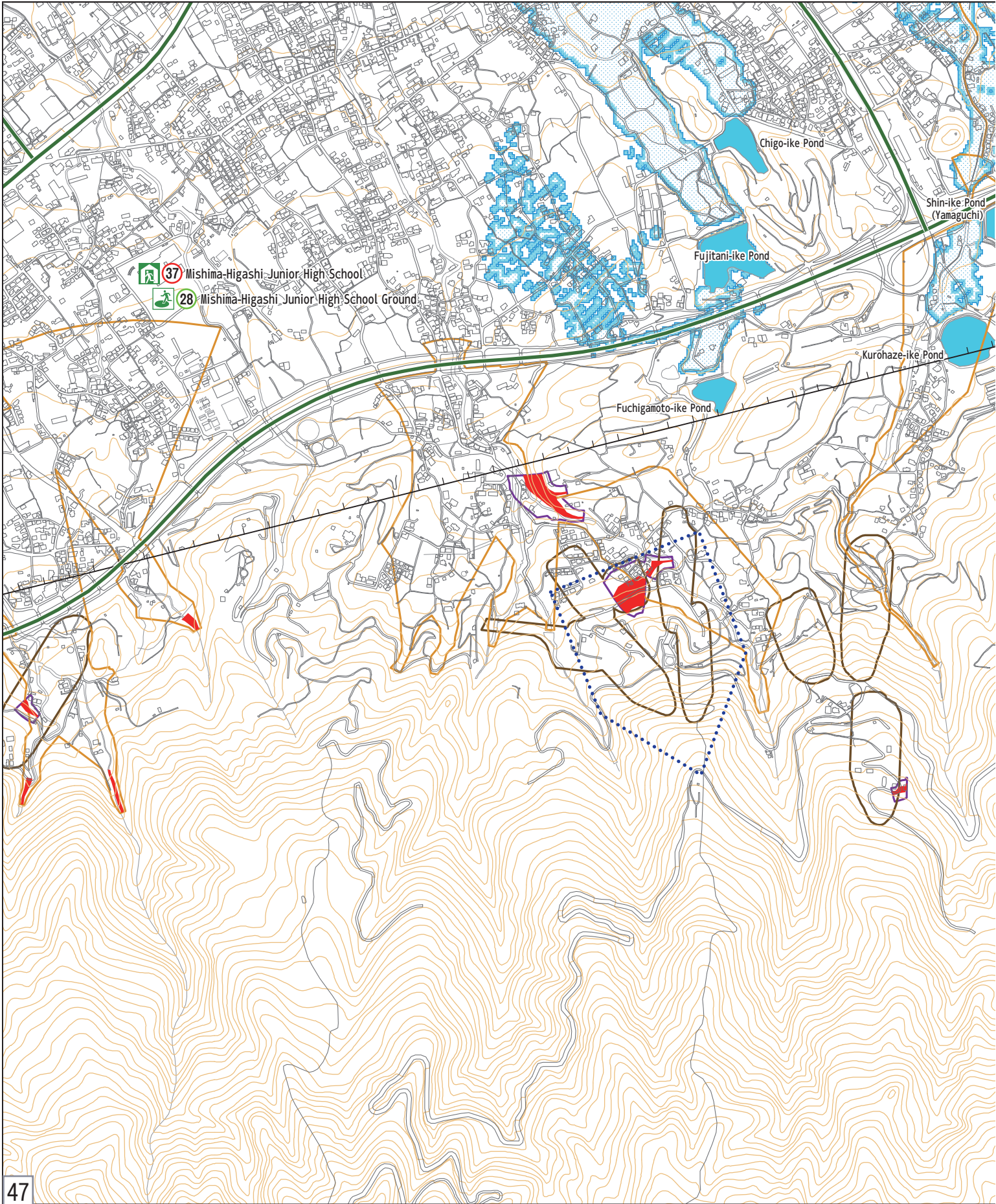
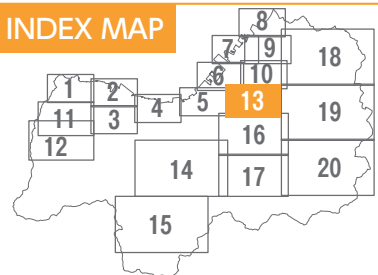
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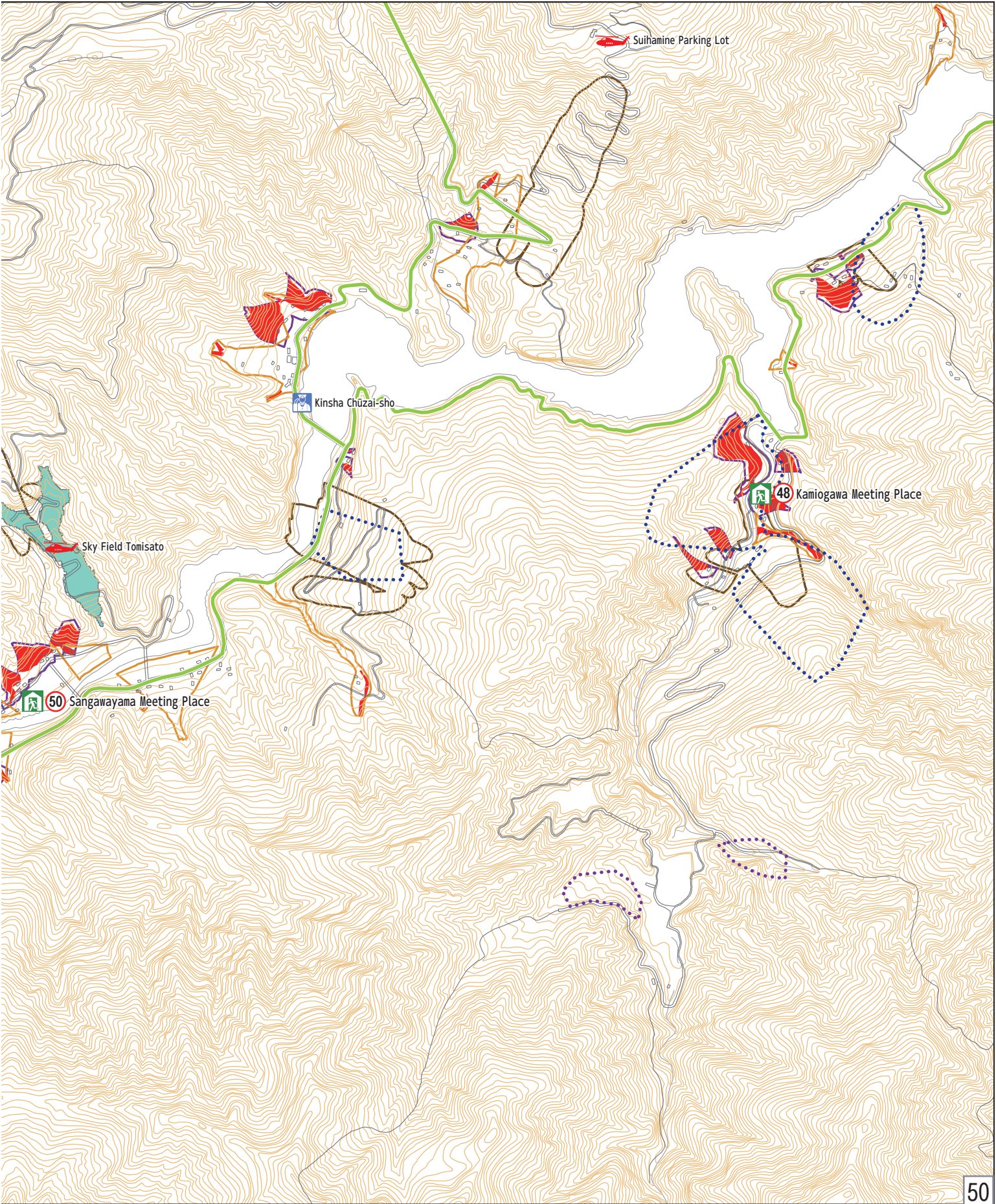
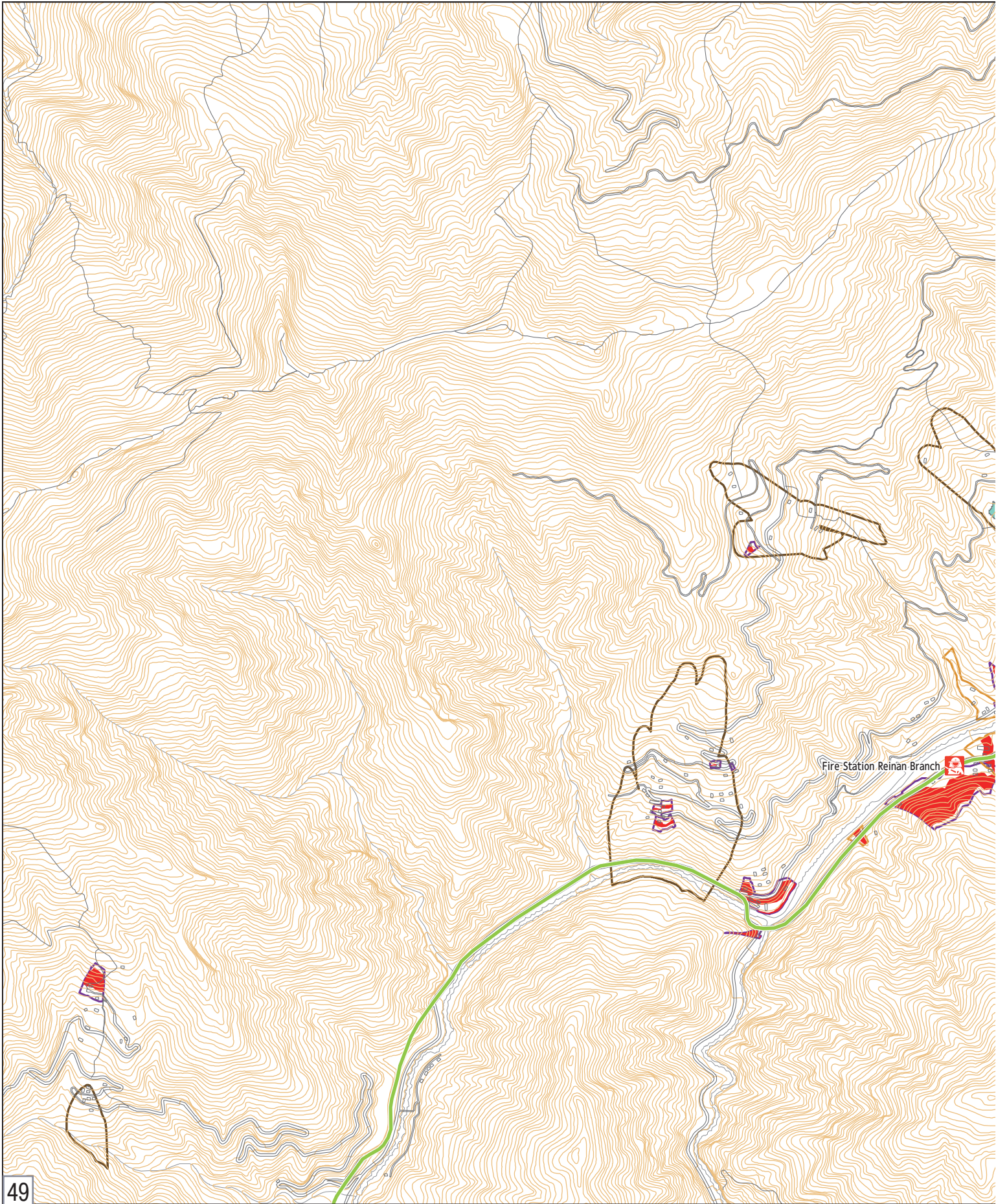
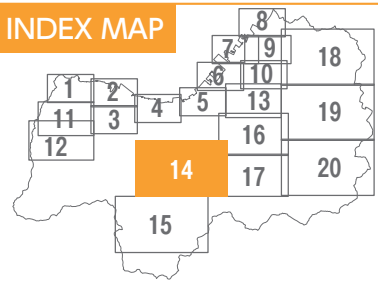
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0 1,000 m
1:20,000

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Expected Reservoir Flooding Inundation Zones

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Median Tectonic Line Fault Zone

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Evacuation Facilities

- Designated Evacuation Shelter
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- Designated Welfare Evacuation Shelter
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Emergency Transportation Routes

- Primary Emergency Transportation Route
- Secondary Emergency Transportation Route

Key Facilities

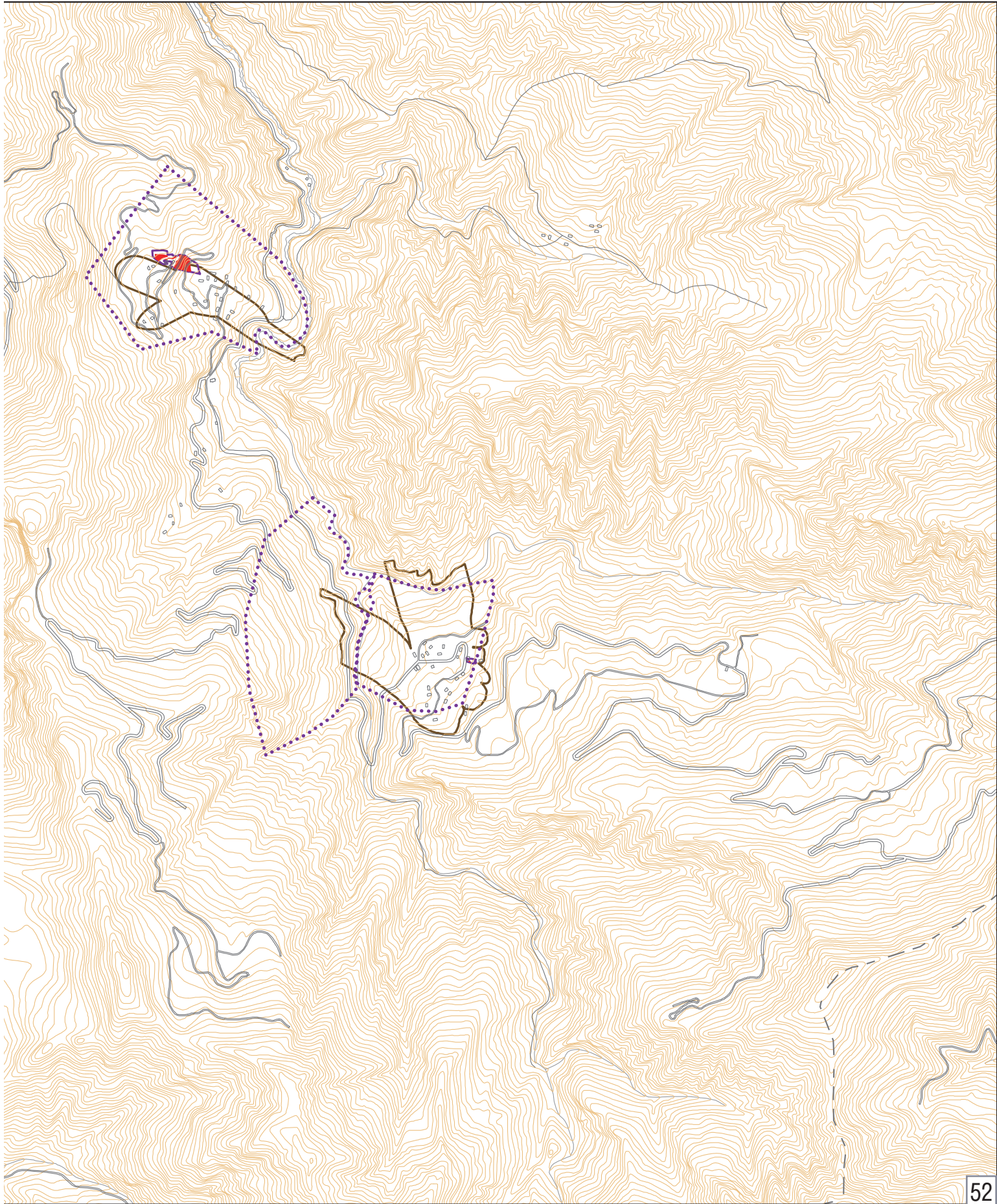
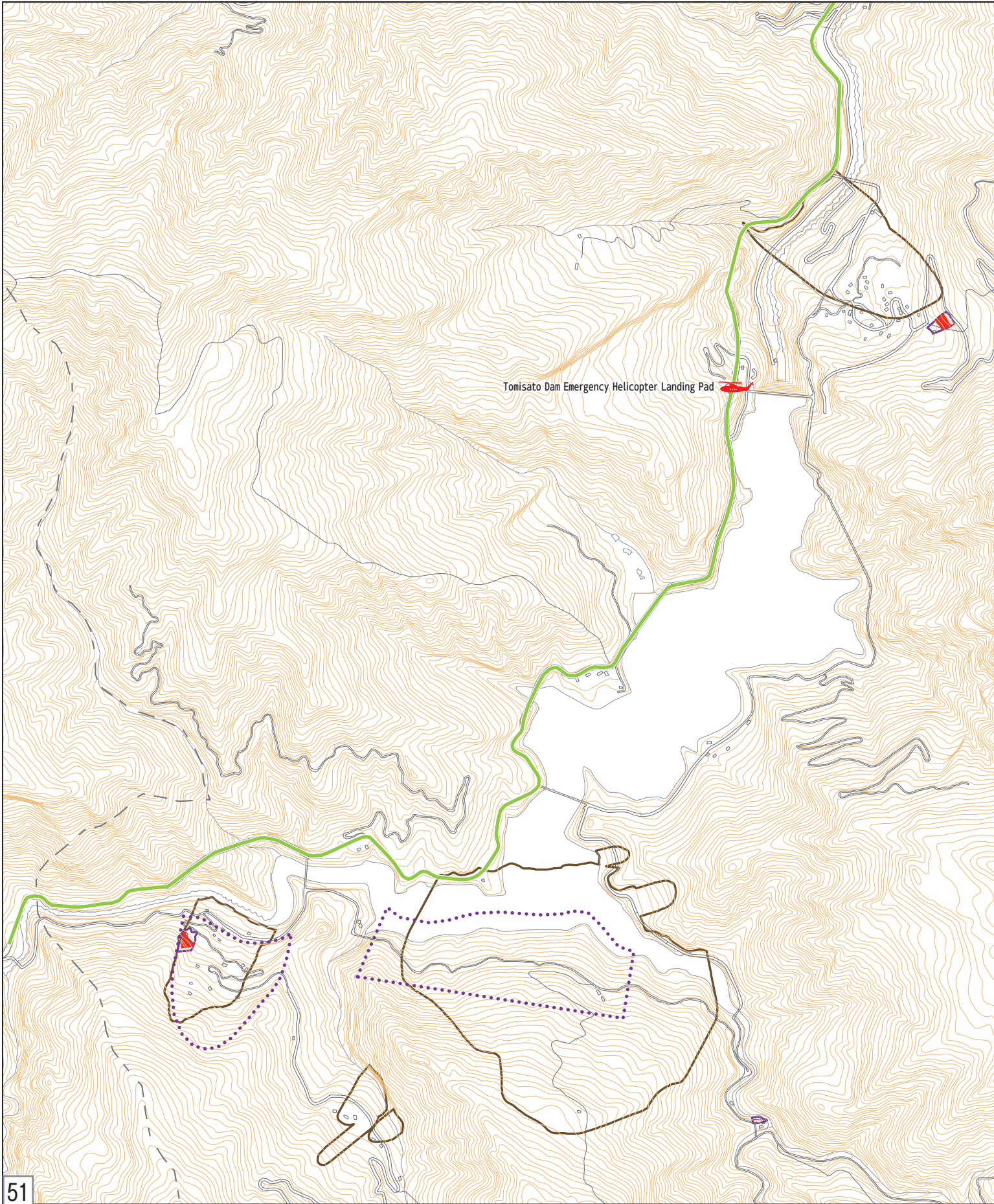
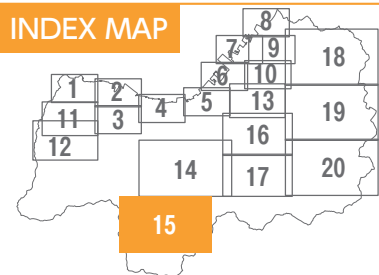
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0 1,000 m
1:20,000

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Sediment Disaster Special Hazard Zones

- Debris flow
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Sediment Disaster Hazard Zones

- Debris flow
- Landslide
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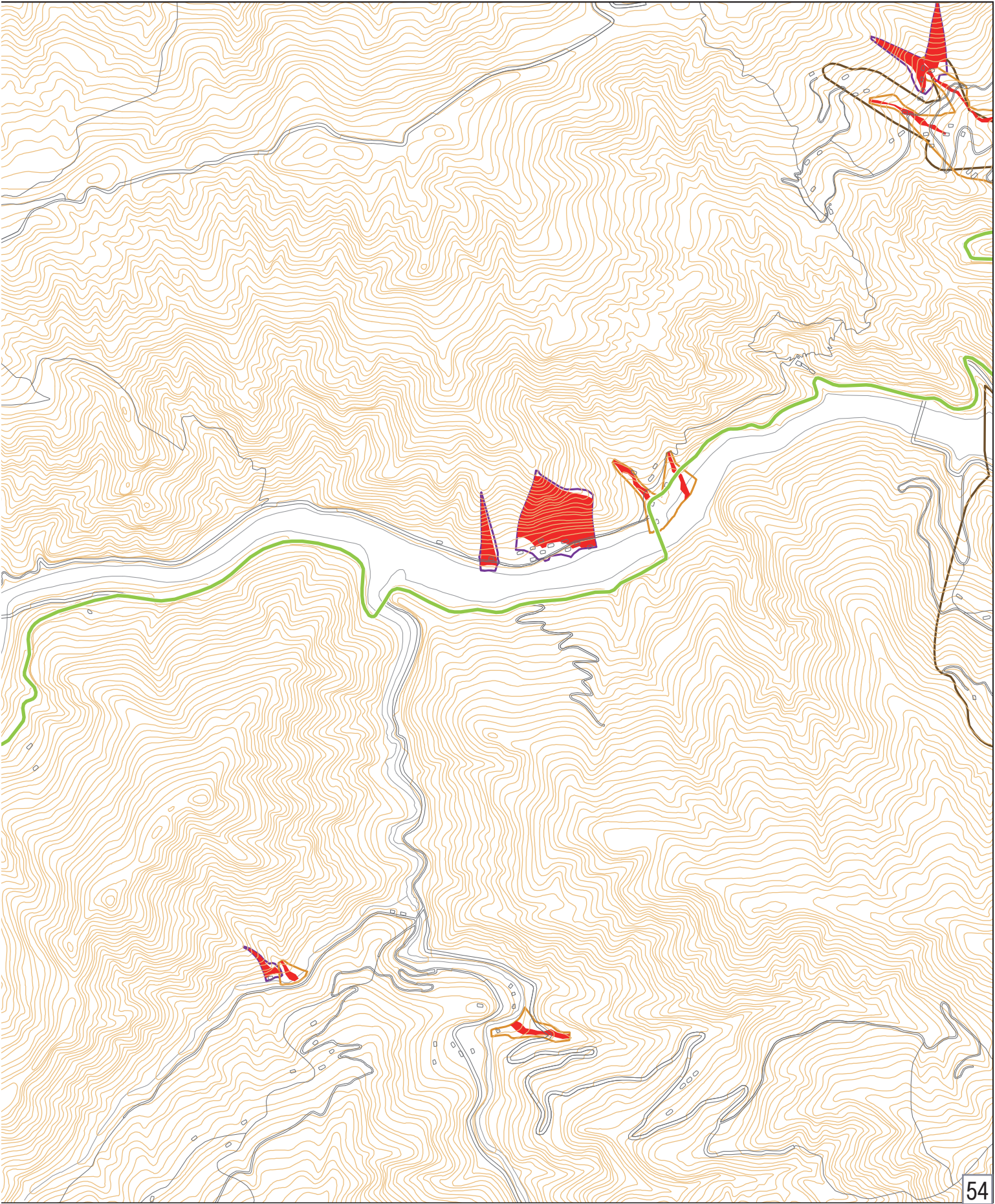
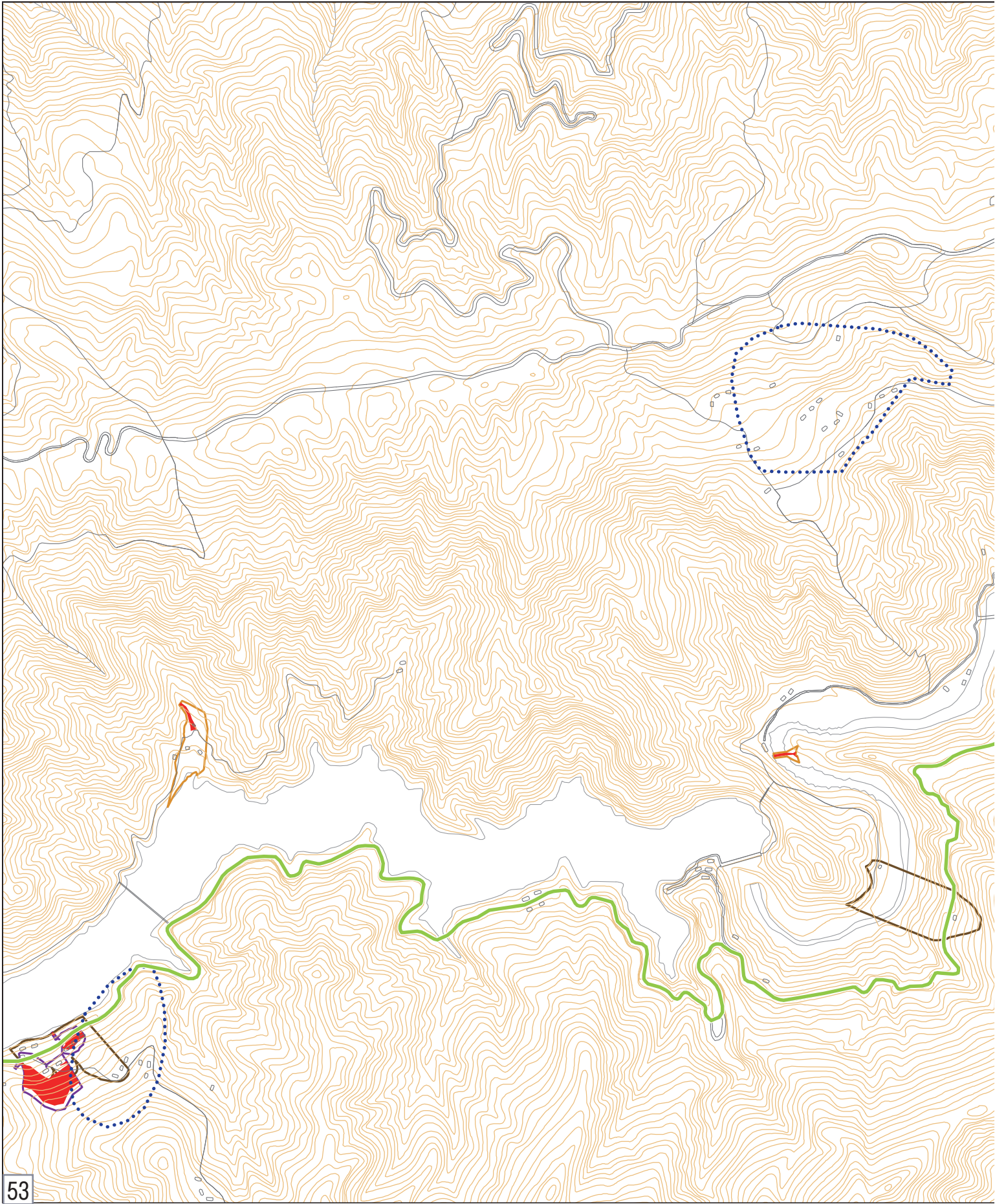
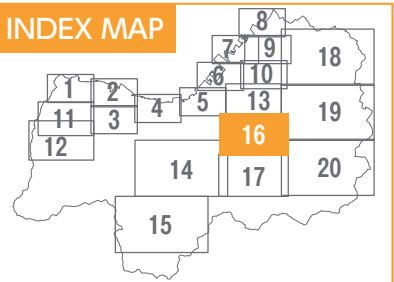
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0 500 m
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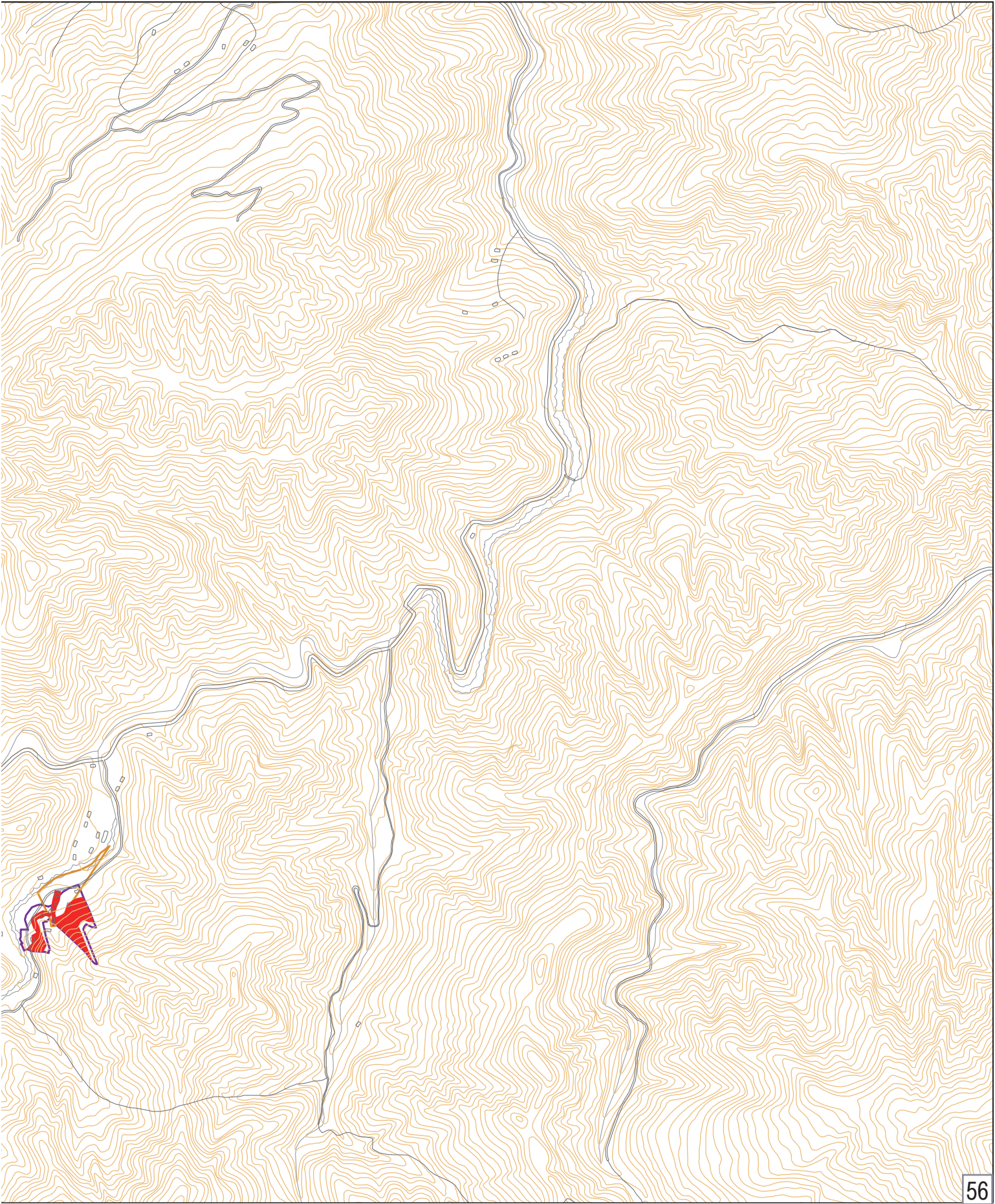
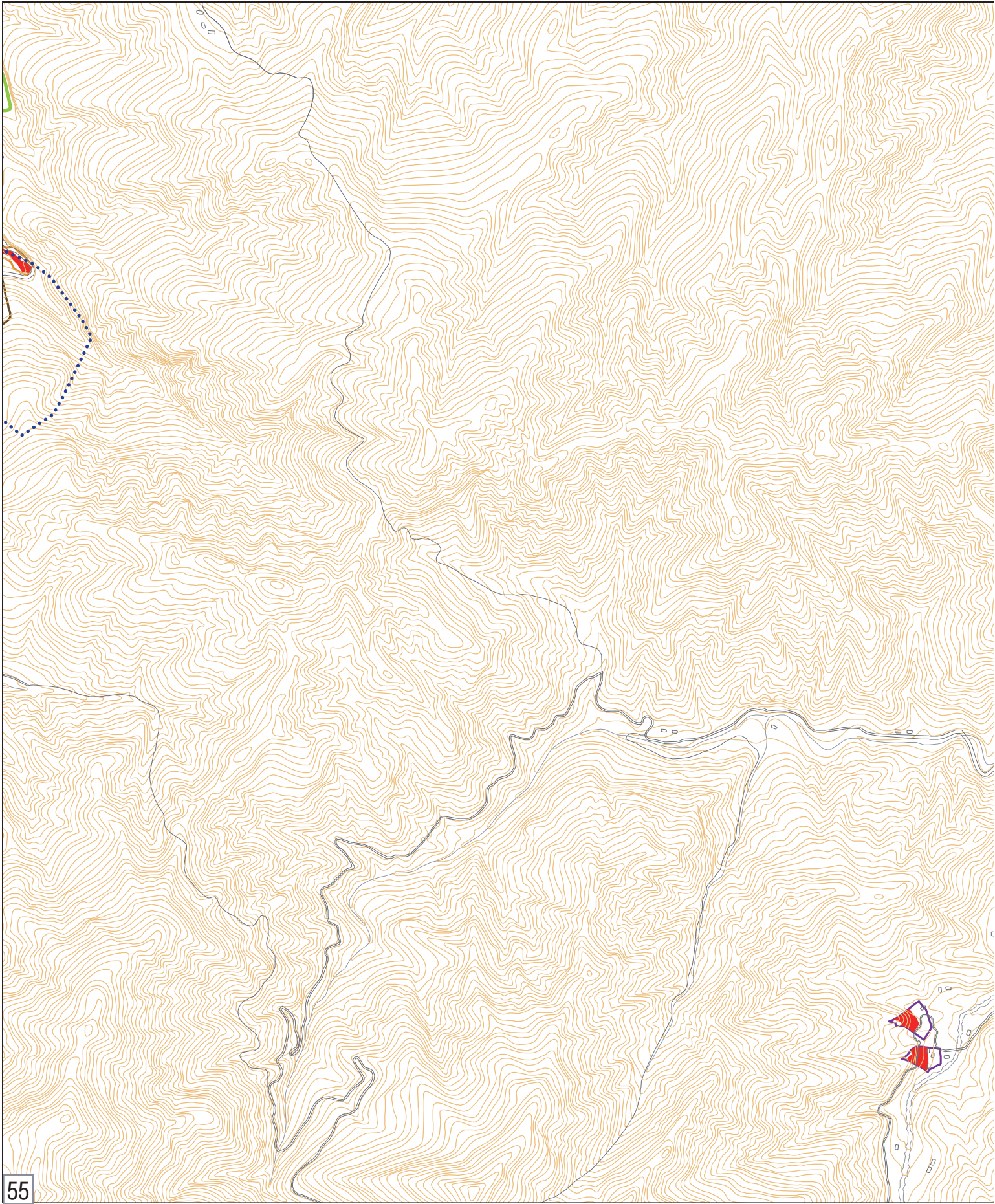
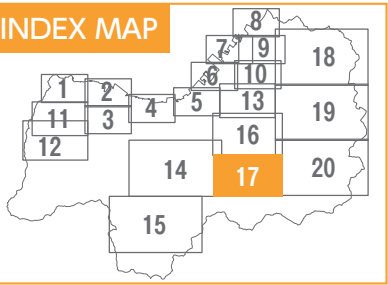
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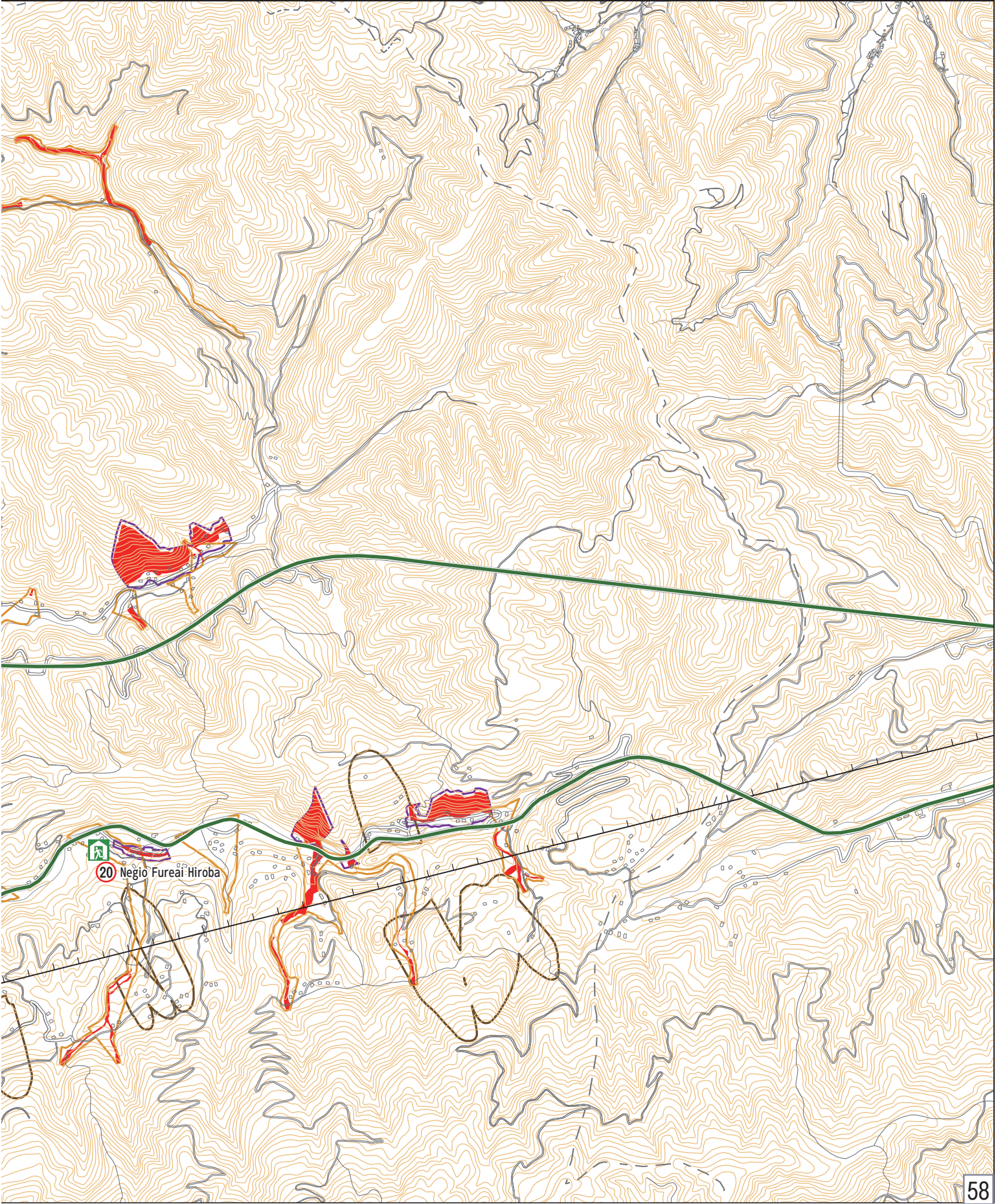
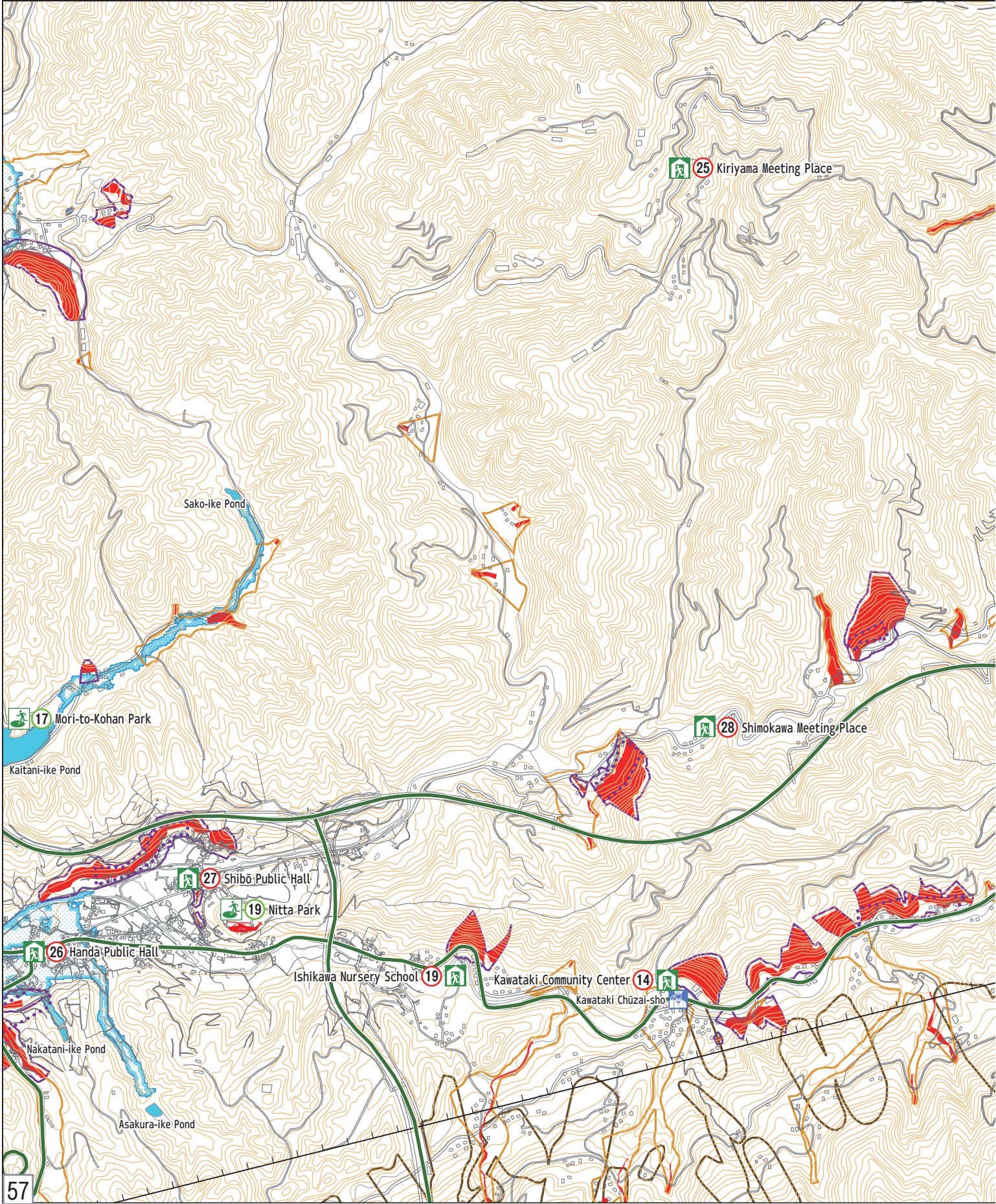
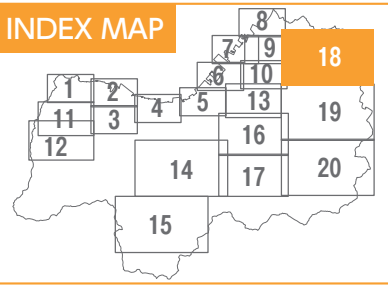
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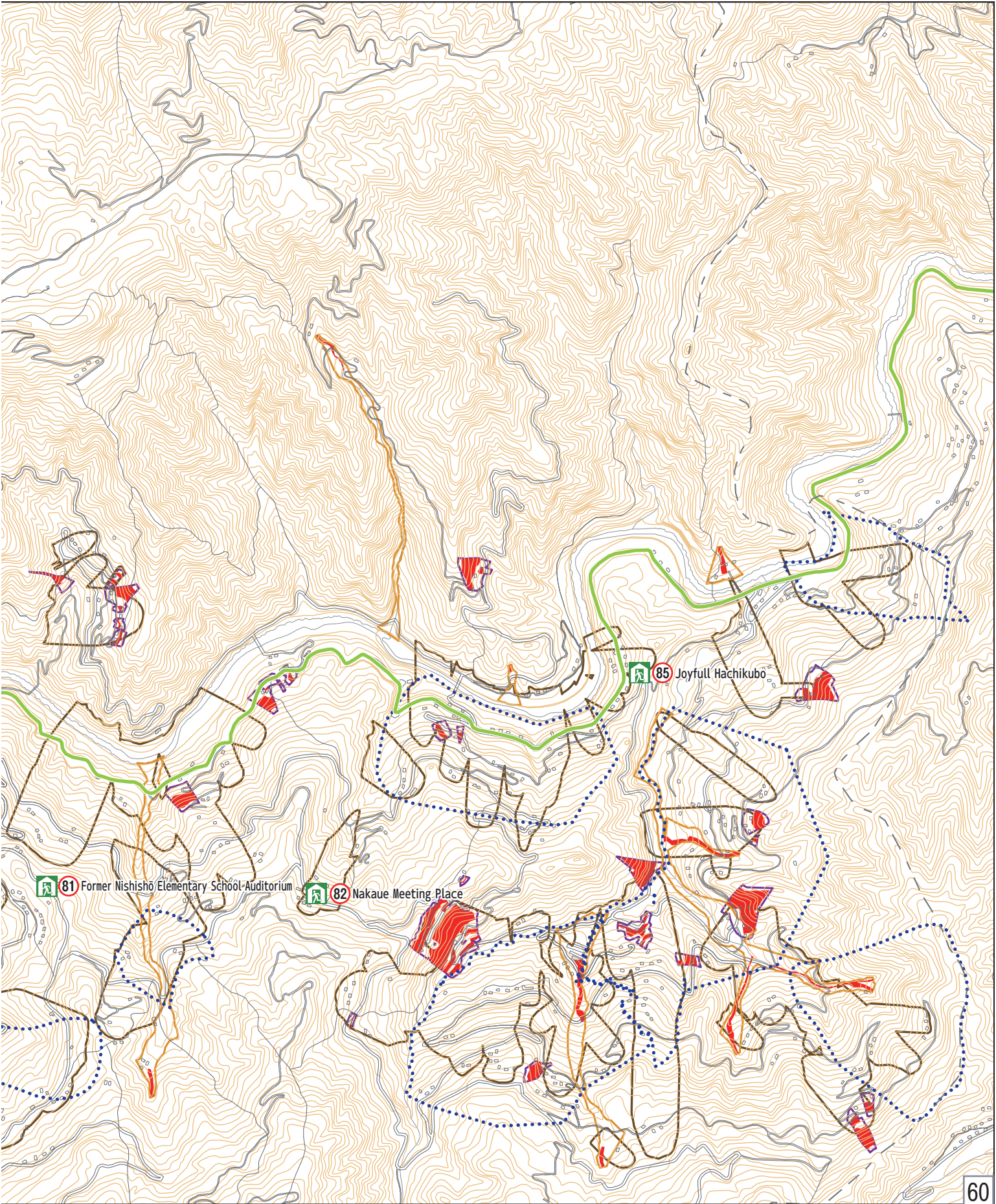
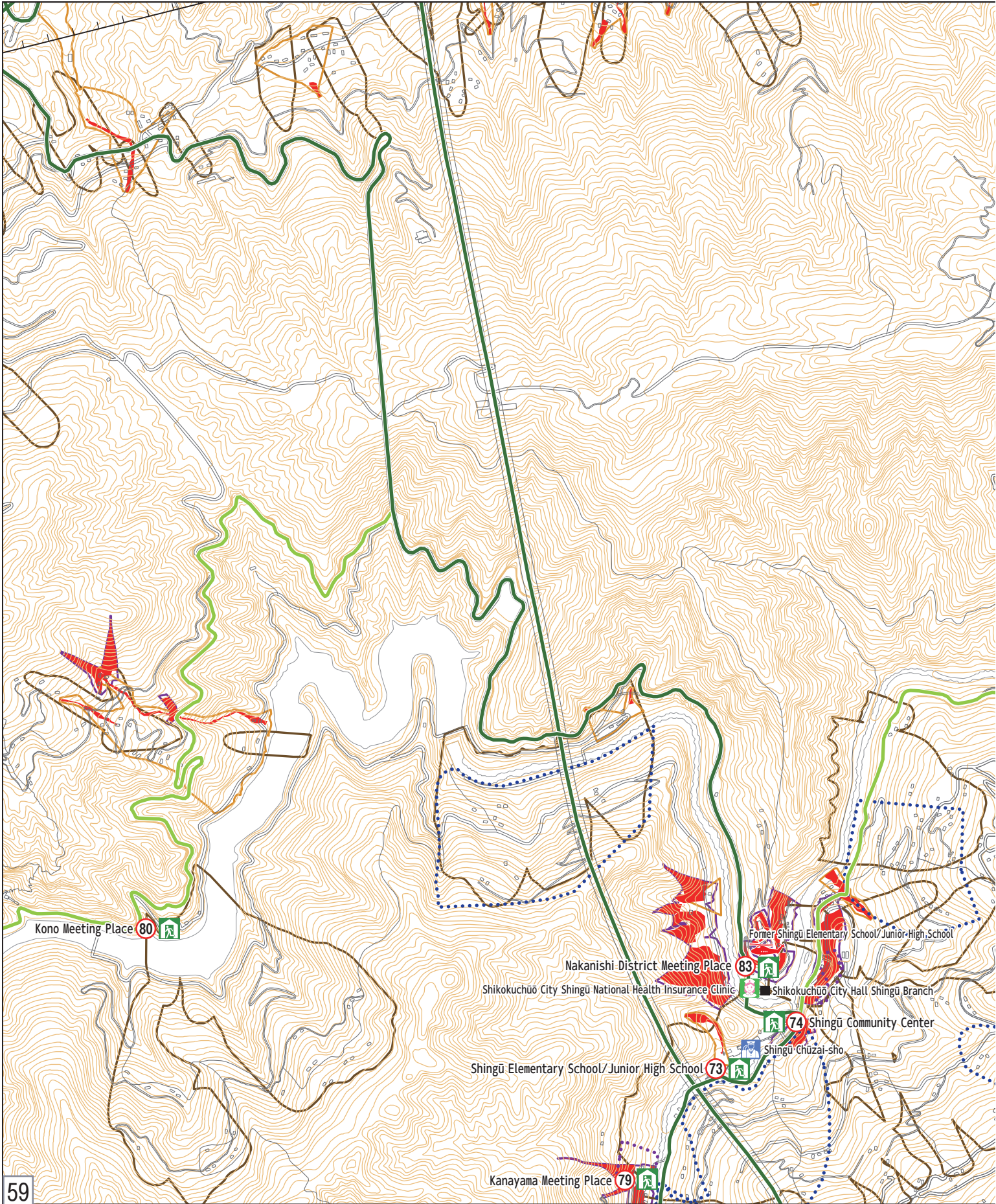
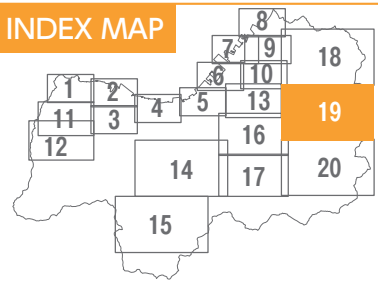
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 - Steep slope collapse

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- Land Reclamation Sites with Large-Scale Infilling
- Type of development:
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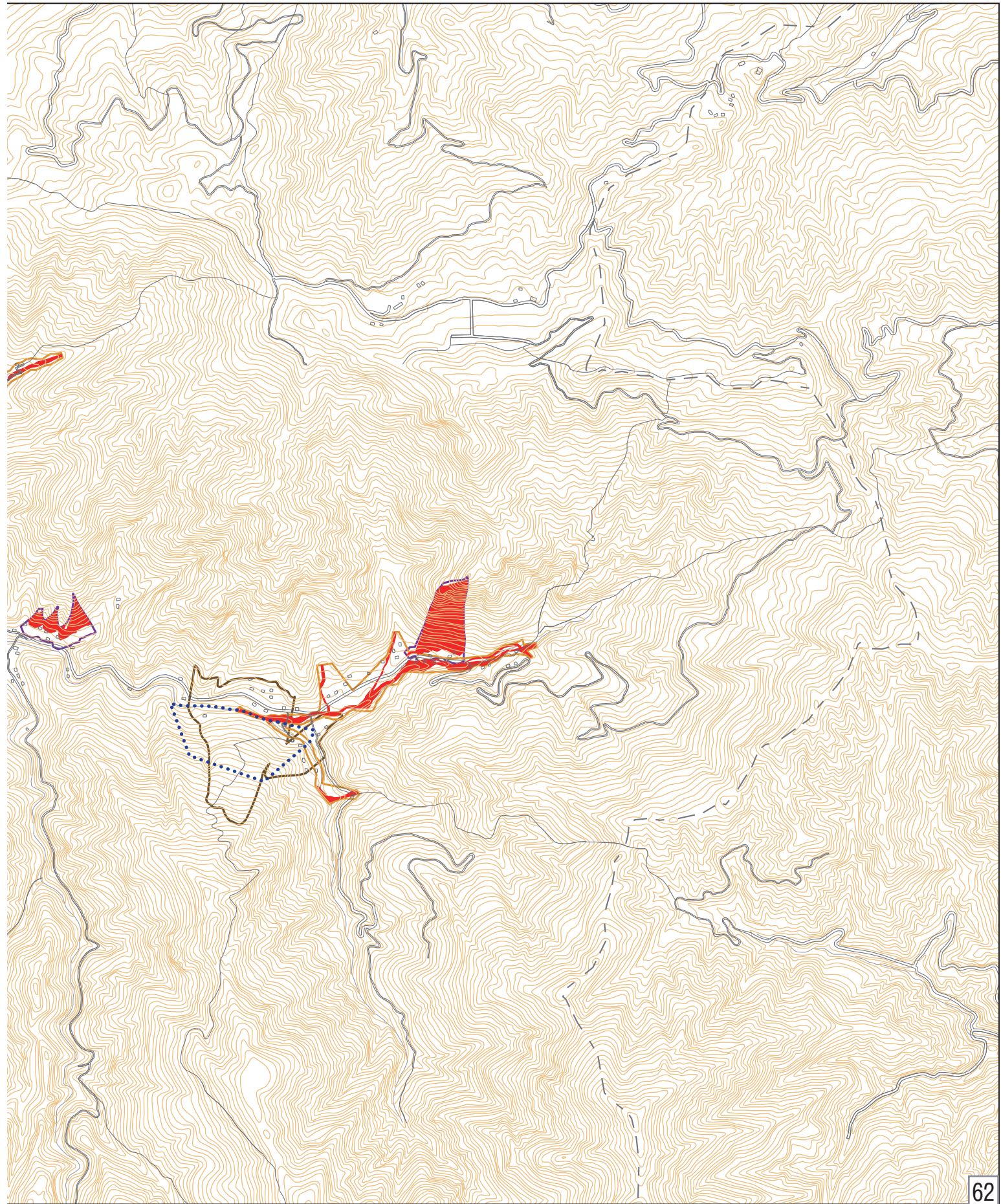
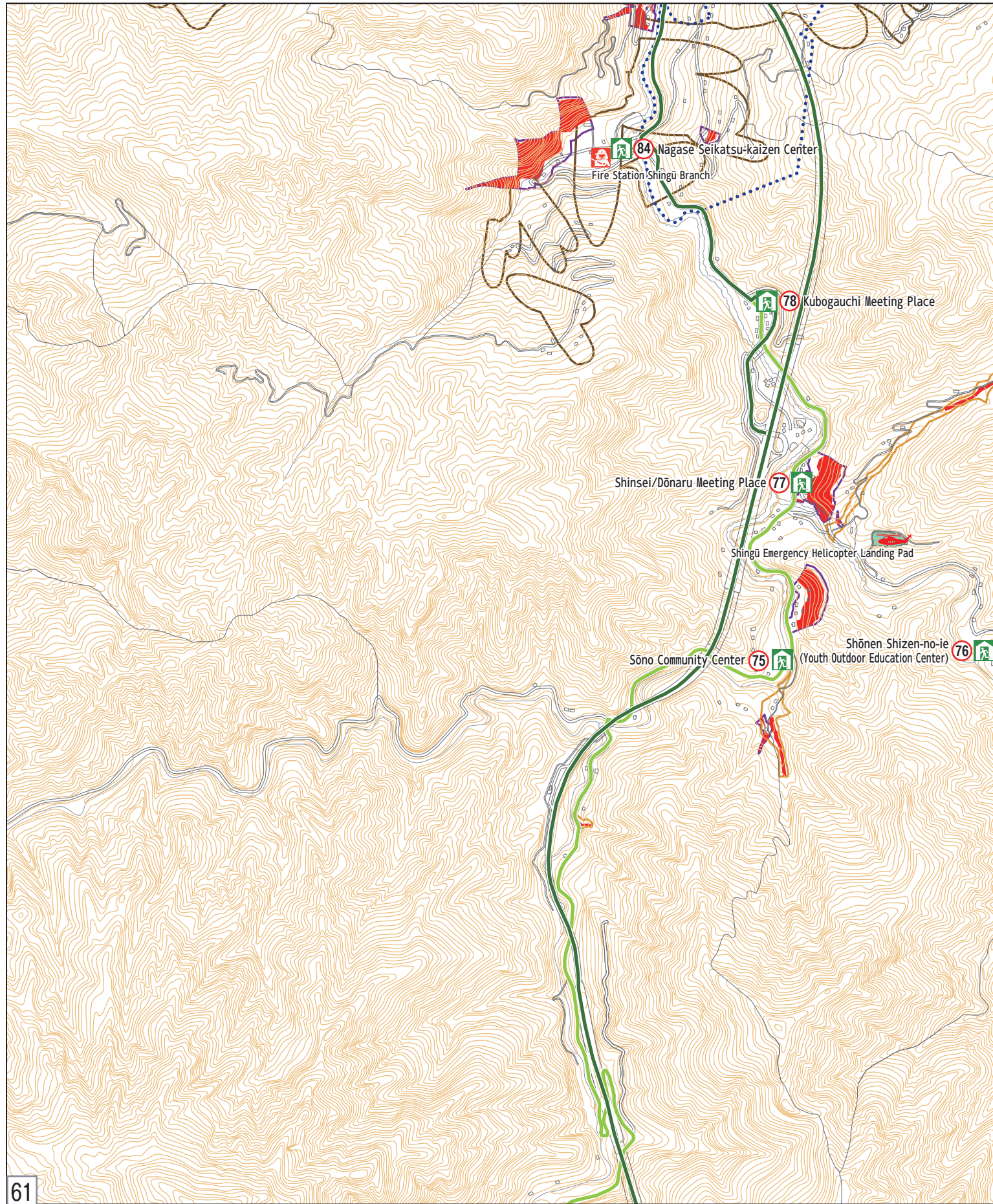
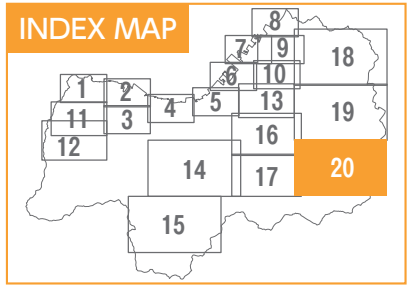
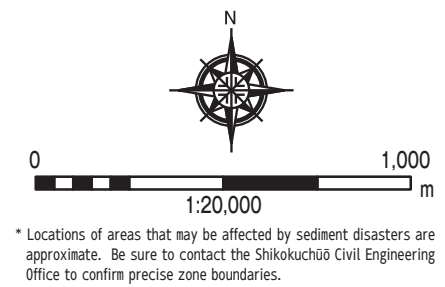
Usage approved by Director-General of the Geospatial Information Authority of Japan (GSI) in accordance with the Survey Act [R 4JHs 479]

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Flood / Storm Surge, etc.

A

Sediment Disaster Special Hazard Zones

- Debris flow
- Steep slope collapse

Sediment Disaster Hazard Zones

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Legally Designated Zones

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Land Reclamation Sites with Large-Scale Infilling

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Storm Surge Disaster Hazard Zones

Inundation Depth

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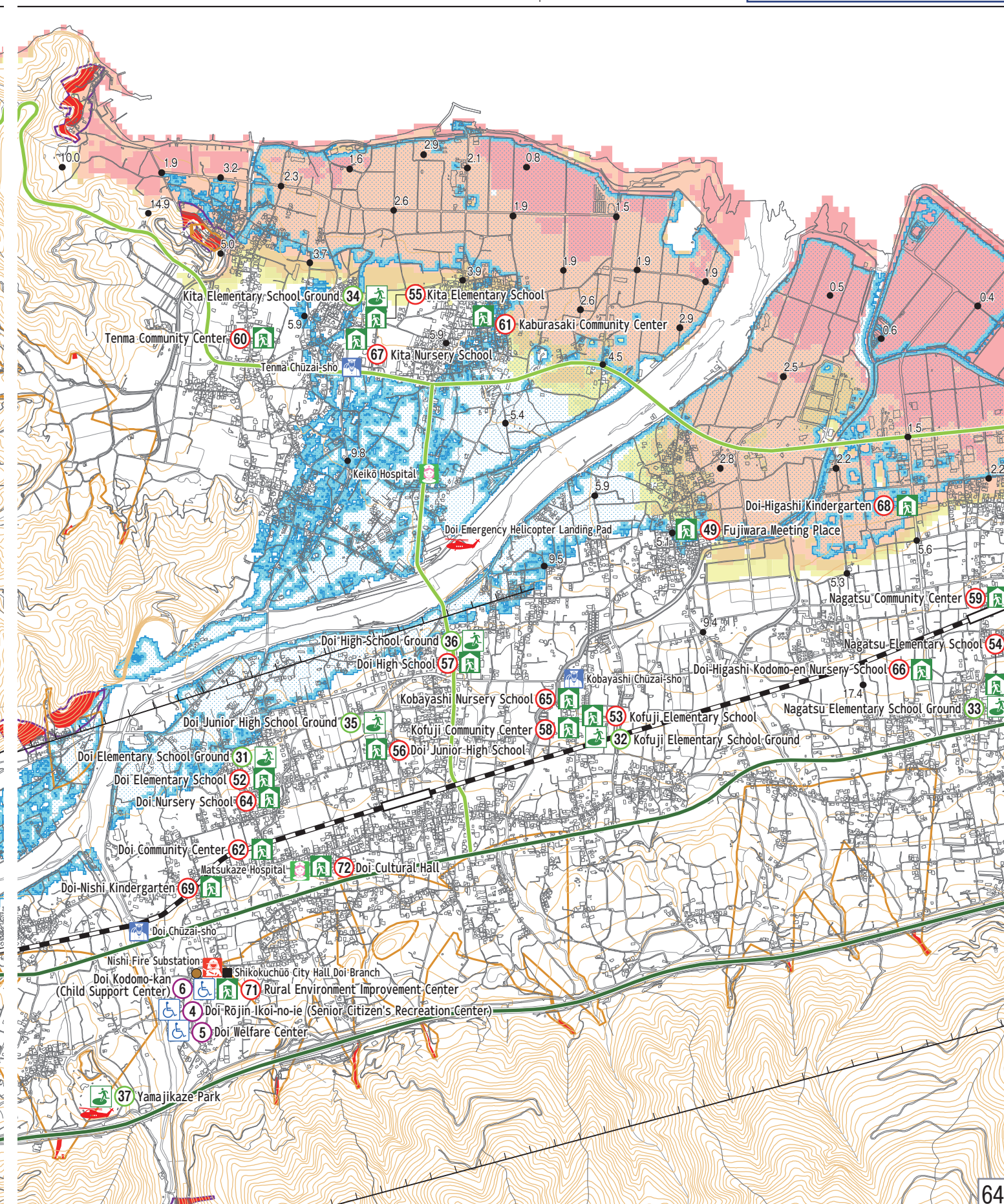
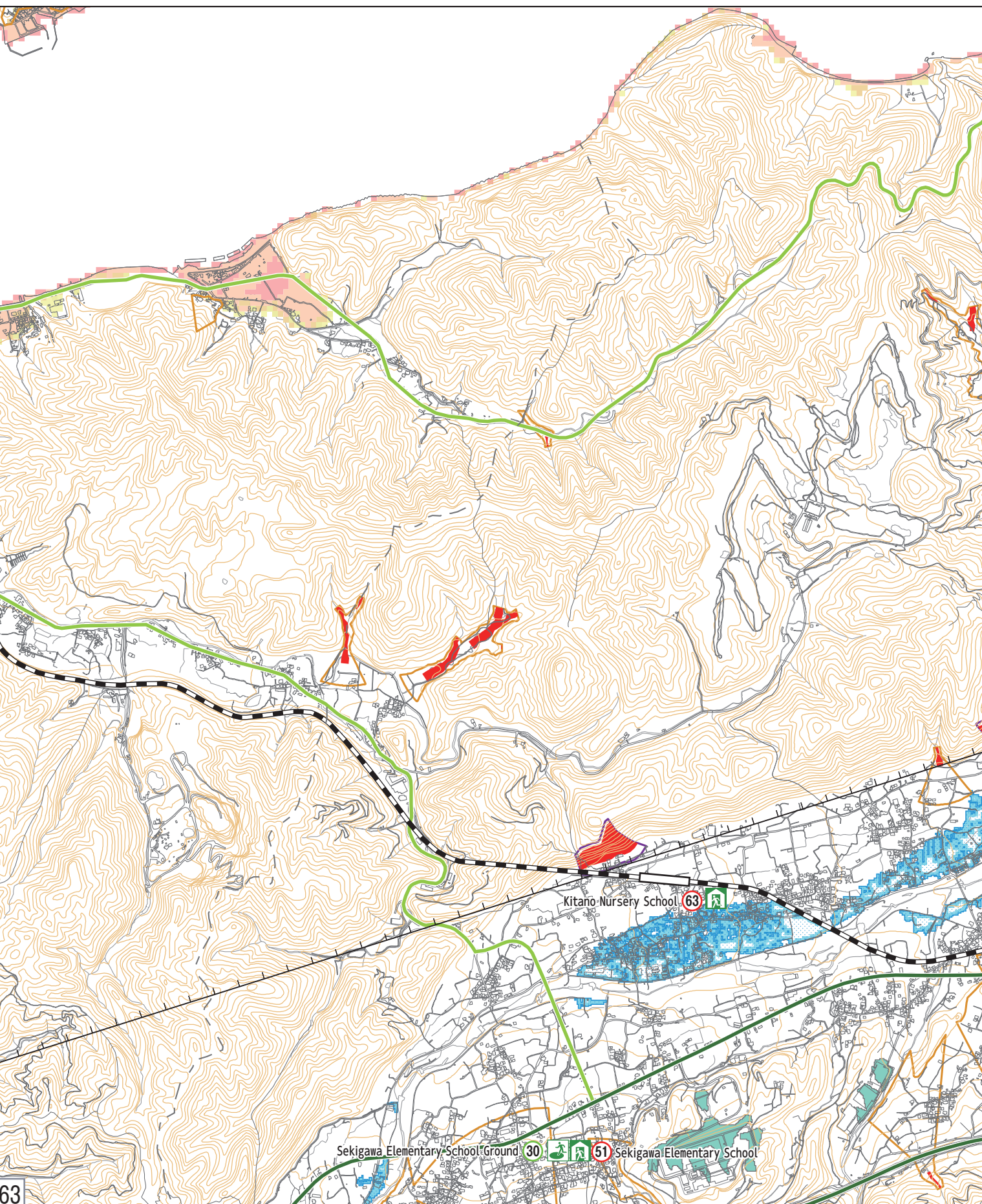
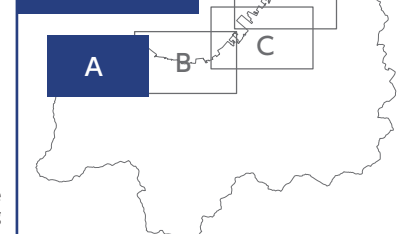
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0 1,000 m
1:22,000

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Flood / Storm Surge, etc.

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Sediment Disaster Special Hazard Zones

- Debris flow
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Sediment Disaster Hazard Zones

- Debris flow
- Landslide
- Steep slope collapse

Legally Designated Zones

- Steep Slope Collapse Danger Zones
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Land Reclamation Sites with Large-Scale Infilling

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Storm Surge Disaster Hazard Zones

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Expected Flood Inundation Zones

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Median Tectonic Line Fault Zone

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Evacuation Facilities

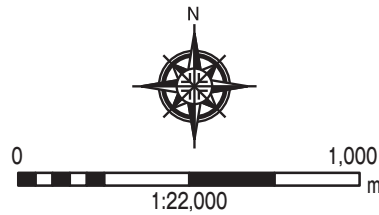
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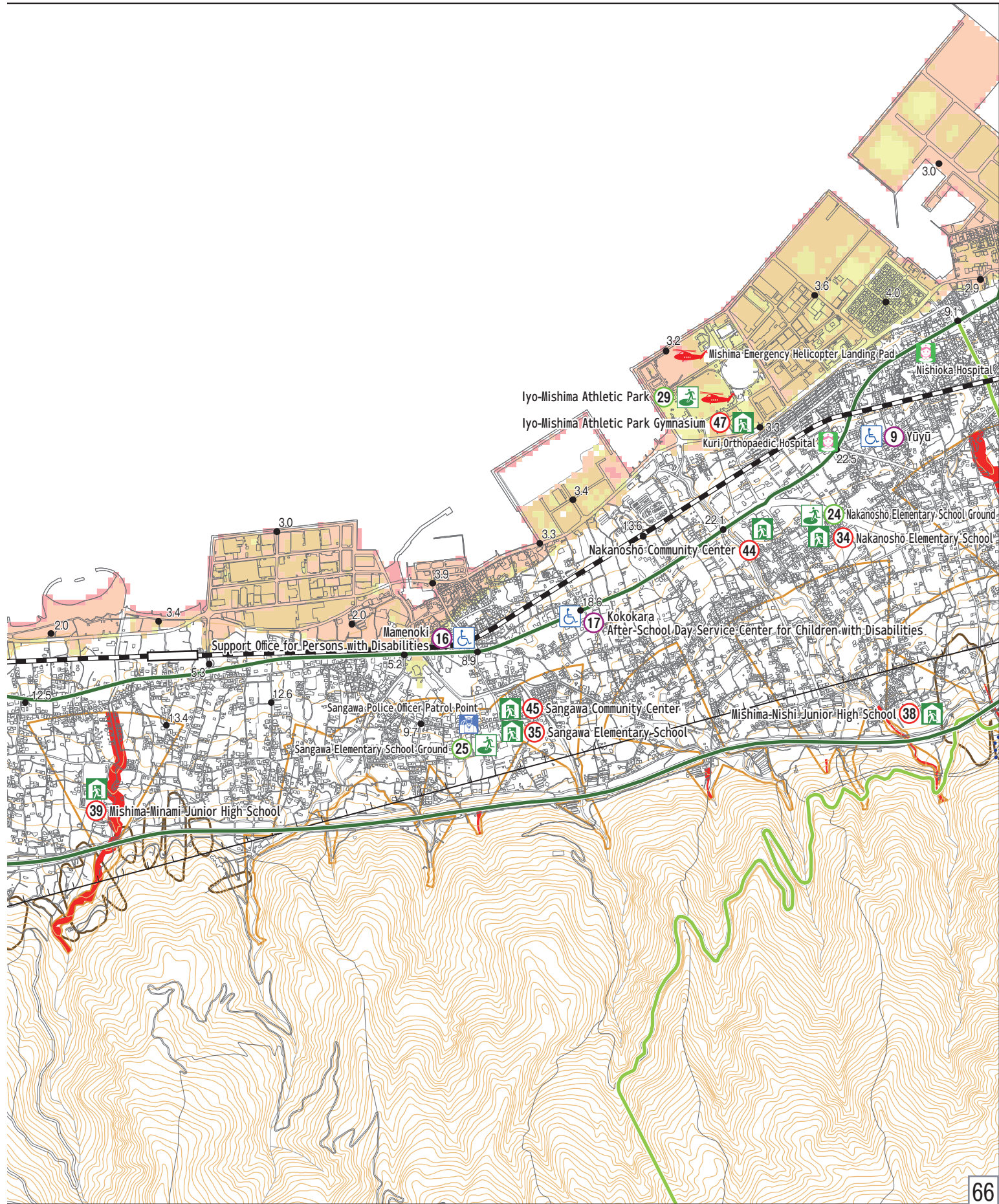
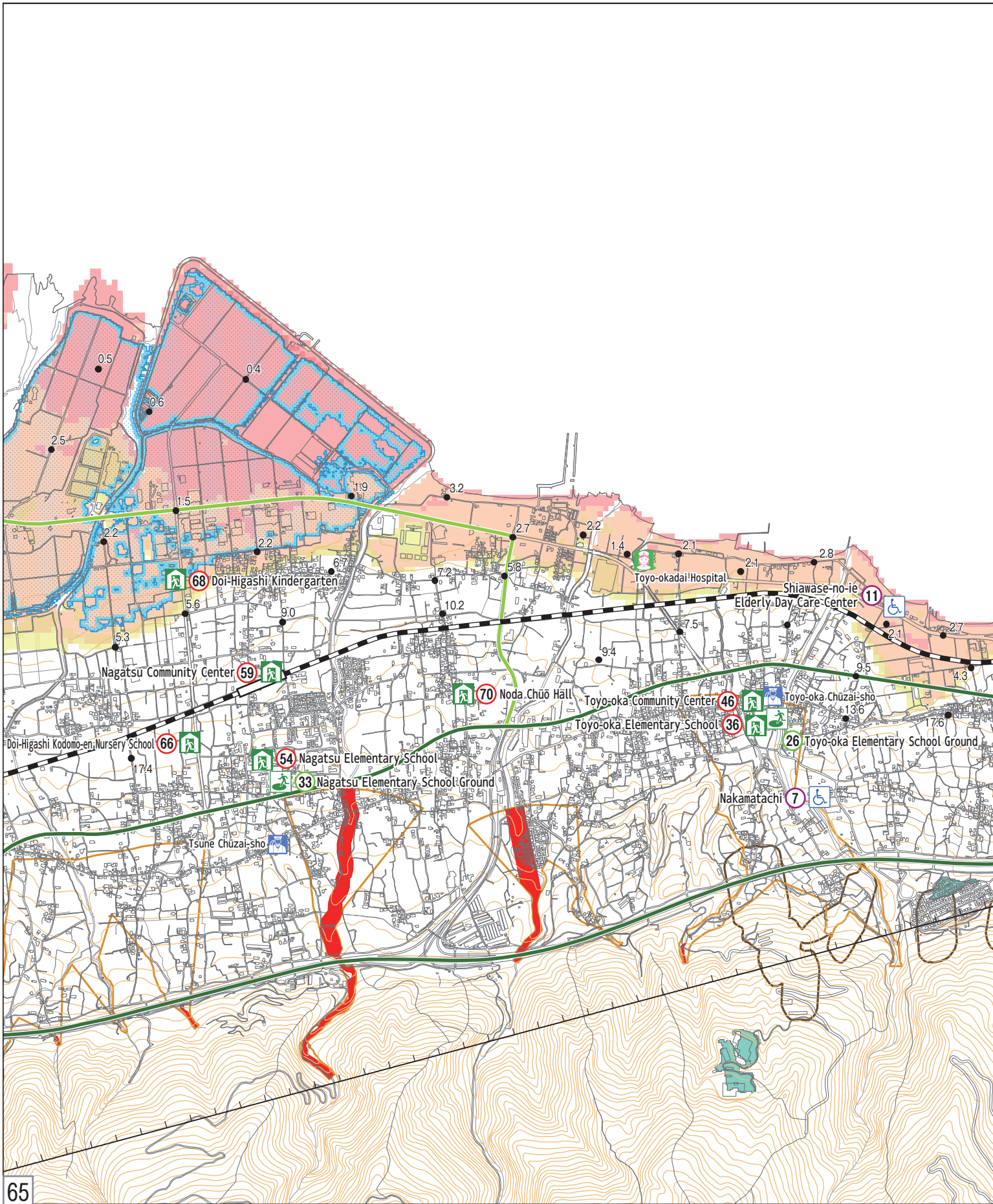
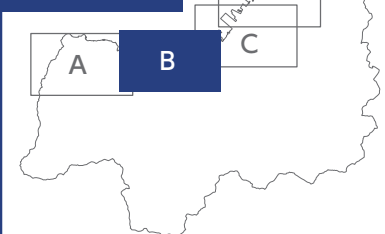
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Flood / Storm Surge, etc.



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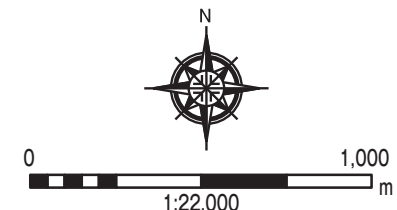
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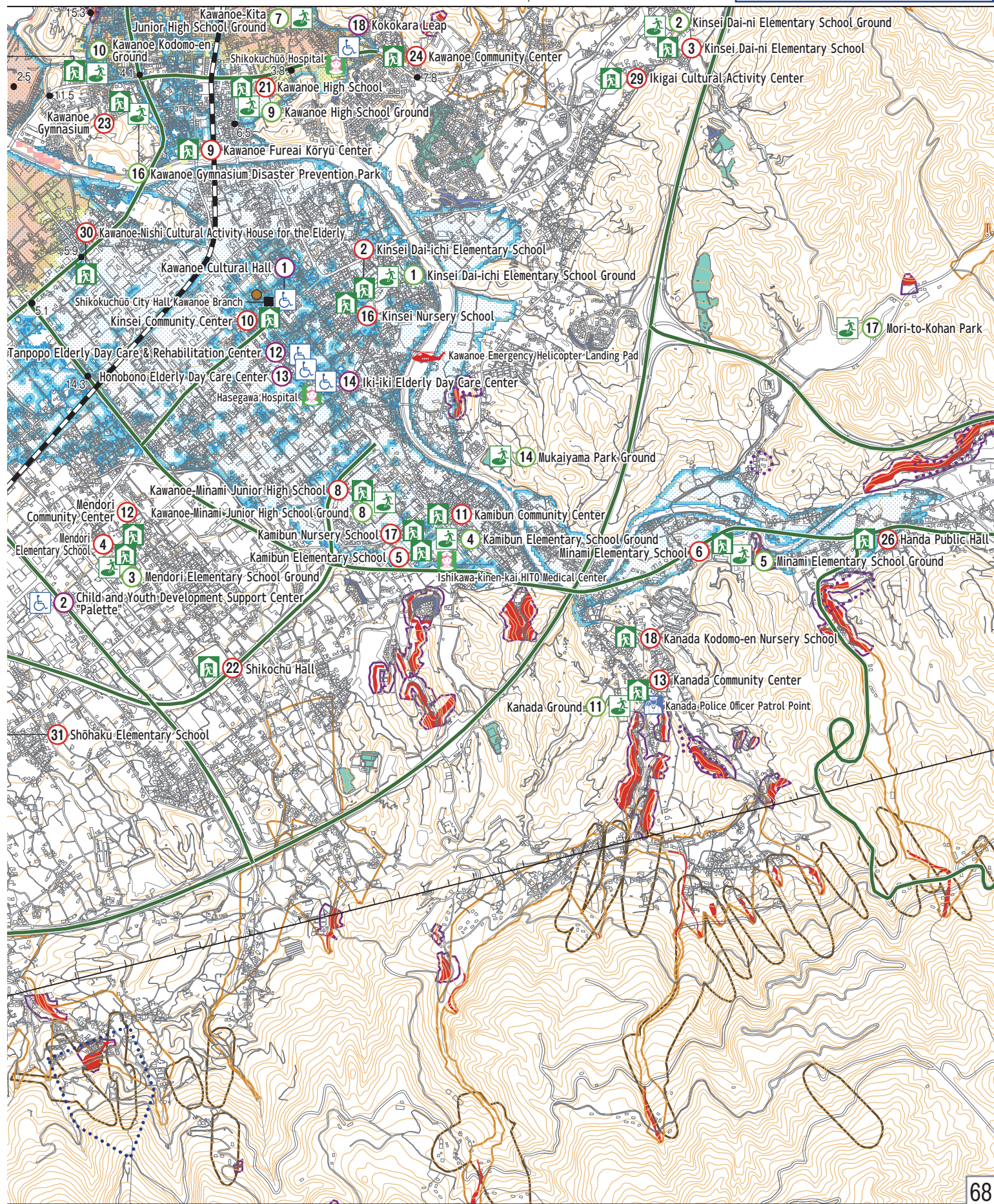
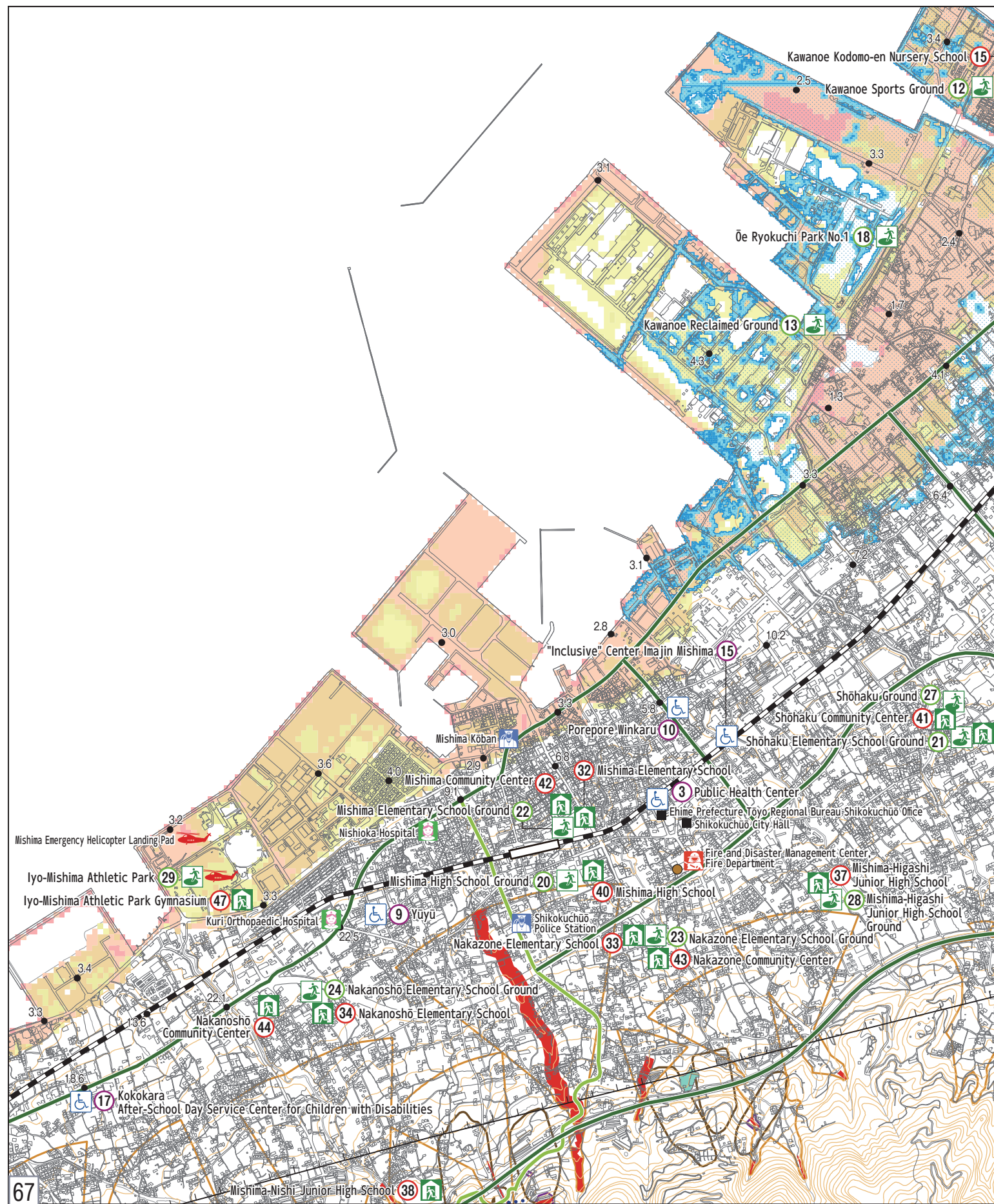
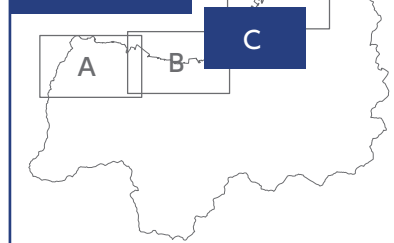
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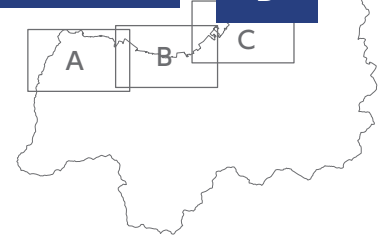
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0 1,000 m
1:22,000

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Step by Step 8

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Kawanoe Kita Junior High School Ground 7

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Shikokuchū Hospital 9

Kawanoe High School 21

Kawanoe High School Ground 9

Kawanoe Fureai Kōryū Center 9

Kawanoe Community Center 24

Kinsei Dai-ichi Elementary School Ground 1

Kinsei Dai-ichi Elementary School 2

Kawanoe Cultural Hall 1

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Kinsei Community Center 10

Kinsei Nursery School 16

Tanpopo Elderly Day Care & Rehabilitation Center 12

Honobono Elderly Day Care Center 13

Hasegawa Hospital 14

Iki-iki Elderly Day Care Center 14

Kawanoe Emergency Helicopter Landing Pad

Kawanoe Reclaimed Ground 13

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Kawanoe Fureai Kōryū Center 9

Kawanoe Community Center 24

Kinsei Dai-ichi Elementary School Ground 1

Kinsei Dai-ichi Elementary School 2

Kawanoe Cultural Hall 1

Shikokuchū City Hall Kawanoe Branch 10

Kinsei Community Center 10

Kinsei Nursery School 16

Tanpopo Elderly Day Care & Rehabilitation Center 12

Honobono Elderly Day Care Center 13

Hasegawa Hospital 14

Iki-iki Elderly Day Care Center 14

Kawanoe Emergency Helicopter Landing Pad

Kawanoe Reclaimed Ground 13

Ōe Ryokuchi Park No.1 18

Kawanoe Nishi Cultural Activity House for the Elderly 30

Kawanoe Gymnasium 23

Kawanoe Kodomo-en Nursery School 15

Kawanoe Sports Ground 12

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