



Protecting Yourself from an Earthquake

Recommending My Map

July 2008



Applied Science Technical Group, Tohoku Regional Office, The
Institution of Professional Engineers, Japan
Earthquake Preparedness Working Group
Disaster Prevention Committee, Miyagi Professional Engineers
Association

Try Making a "My Map"

- ◎ Lively dialog and chit chat is welcome! Share your wisdom and knowledge energetically!



It could happen anywhere and at any time. **But...**

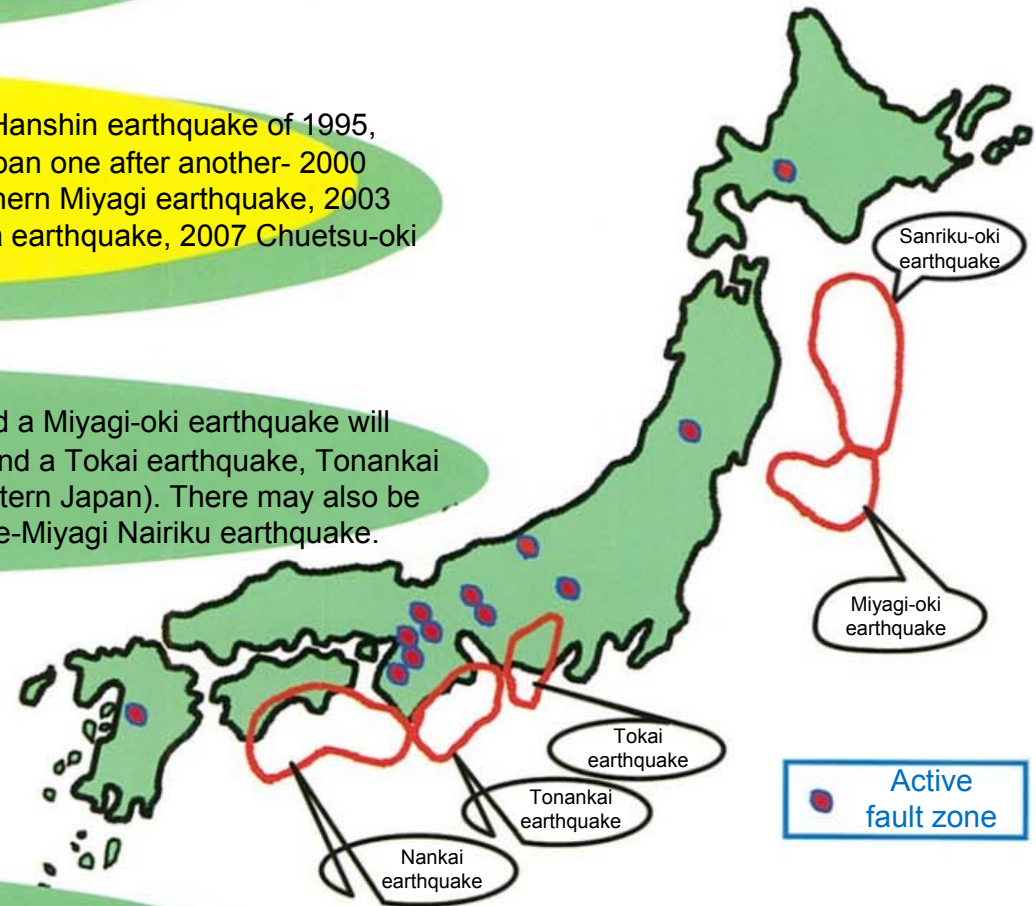
Since the beginning of **the century**, starting with the Great Hanshin earthquake of 1995, earthquakes have caused damage in various regions across Japan one after another- 2000 Western Tottori earthquake, 2001 Geiyo earthquake, 2003 Northern Miyagi earthquake, 2003 Hokkaido earthquake, 2004 Chuetsu earthquake, 2005 Fukuoka earthquake, 2007 Chuetsu-oki earthquake, and 2008 Iwate-Miyagi Nairiku earthquake.

It is predicted that, in the **next** 30 years, a Sanriku-oki earthquake and a Miyagi-oki earthquake will undoubtedly occur (along the Pacific Ocean side of northeastern Japan) and a Tokai earthquake, Tonankai earthquake, and Nankai earthquake (along the Pacific Ocean side of western Japan). There may also be earthquakes in unexpected areas, as was the case with the 2008 Iwate-Miyagi Nairiku earthquake.

Even if we are able to predict **these earthquakes**, and even if we know their mechanism, we cannot prevent the earthquake from occurring.

Therefore, we need to prepare ourselves for calamities caused by these earthquakes. To prepare ourselves, if we each do our part with things we can do, we will be able to mitigate the damage.

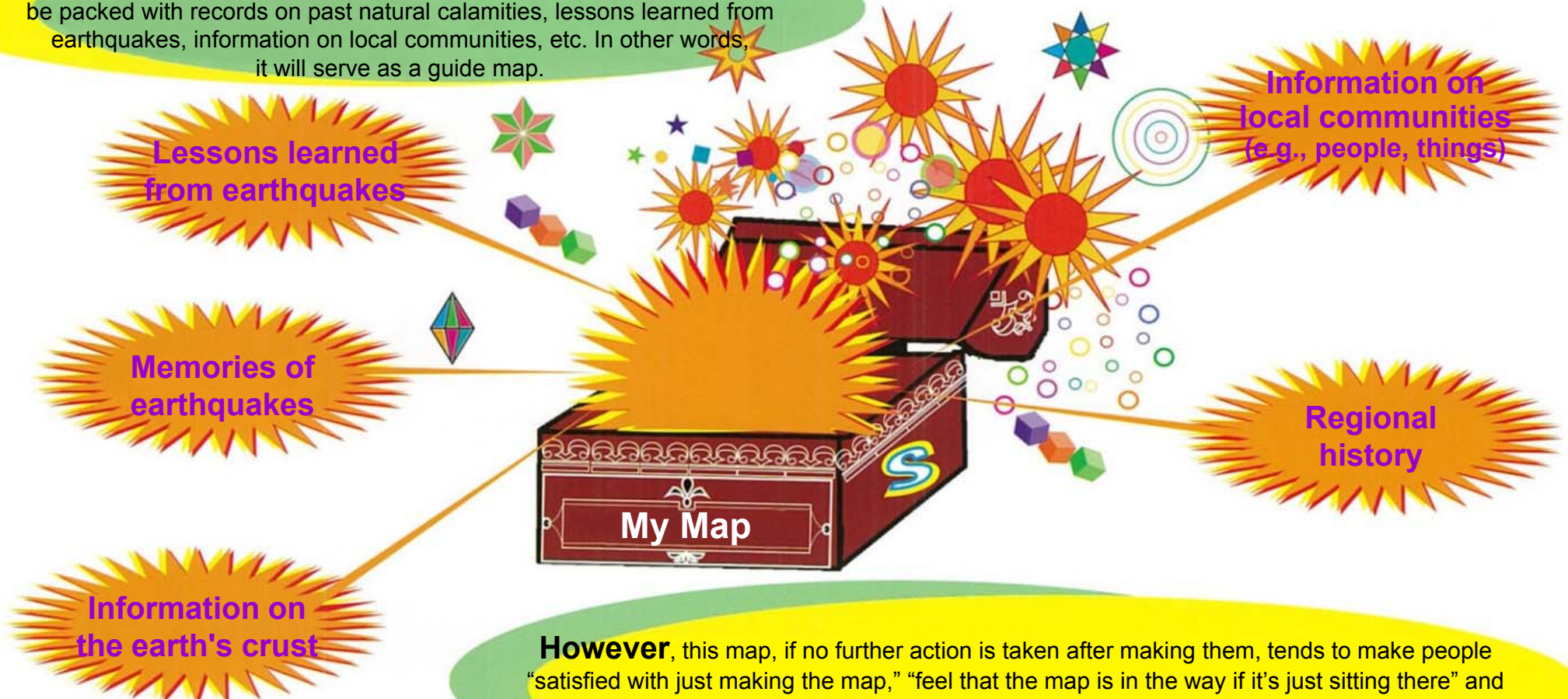
To achieve this, it is important to gather accurate information. If you don't put any thought into it, saying that you will find your way out somehow, a major calamity or state of confusion will result, much like many of the past earthquakes, and you will feel a great deal of grief and sorrow.



- Therefore**, we brainstormed ideas on ways we could protect ourselves and came to the conclusion that we need to do the following while also learning about the lives we live as well as the local community we live in:
- look up records on past natural calamities and gain an understanding of the types of damage that resulted; and
 - find out the causes of those calamities.

We concluded that re-examining how we prepare for a natural calamity (based on **such** small details involving our daily lives) and striving to make handmade disaster prevention maps take root in local communities will lead to community development activities that will be effective in preparing for natural calamities.

Such activities will turn into an information box called **My Map**, which will be packed with records on past natural calamities, lessons learned from earthquakes, information on local communities, etc. In other words, it will serve as a guide map.



However, this map, if no further action is taken after making them, tends to make people “satisfied with just making the map,” “feel that the map is in the way if it’s just sitting there” and “only serves as decoration if they are just looking at it.” We’d like everyone to develop this map fully and utilize it effectively as if it were your alter ego.

What is My Map?

My Map is a handmade disaster prevention map.

My Map is a **disaster prevention map for protecting yourself and your family**. It contains a variety of information including: the town you live in, where you work or go to school, where you go shopping, and the town where your children live.

It is a handmade disaster prevention map.

In the past, prefectural governments, municipalities, as well as neighborhood associations have created community disaster prevention maps. However, those maps contained little to no information on damaged concrete block walls, falling objects, open spaces and drinking water (which will be useful just after an earthquake strikes), or on the earth's crust (which is closely connected with how easily the ground will shake). Those maps also do not include evacuation routes.

That's why you must find the information that affects your lives on your own.

You will not be able to remember everything by merely looking at the conditions. You need to record it. That's what My Map is for. Try looking at your home town or your commute route to school or work from this perspective. You will surely discover something new.

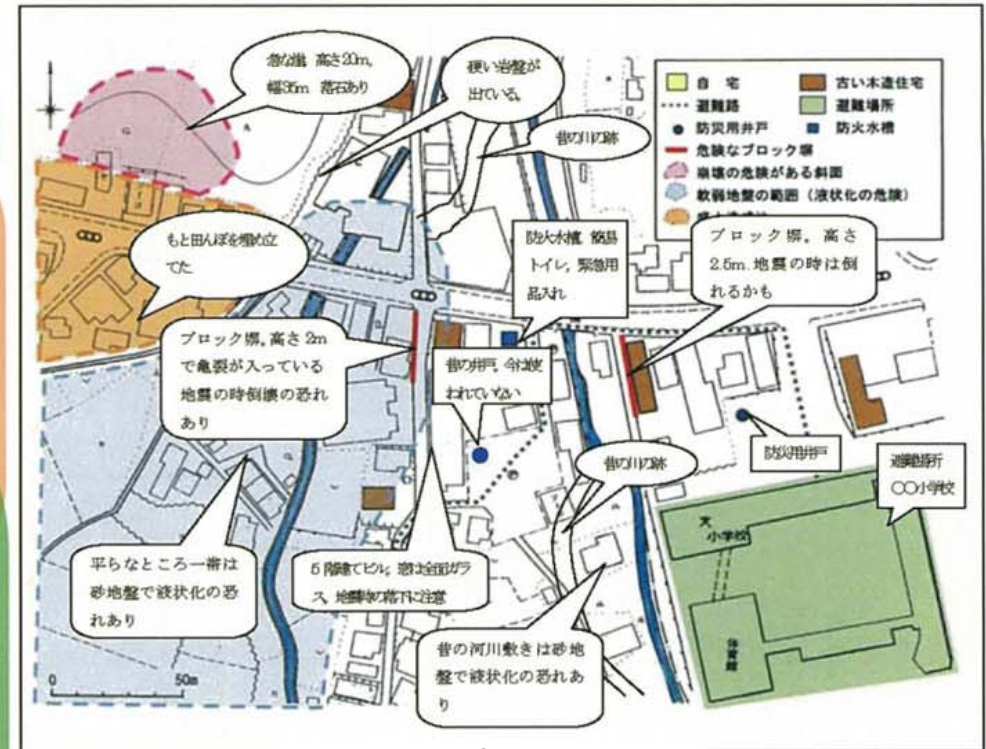


Image of My Map

My Map is a map that you will create for your own good. Therefore, you can make it by using methods that you know. You can use your own methods such as writing and photographs.

What are the advantages of using My Map?

My Map has 10 advantages.

- 1 My Map is **a familiar information box** for protecting yourself from an earthquake.
- 2 My Map will be twice as effective **if you use it along with the disaster prevention maps created by your local community**.
- 3 You will naturally gain the ability to prepare for an earthquake **anytime and anywhere**.
- 4 Since you will know where the evacuation routes are, **you will not panic and will feel confident even if an earthquake does occur**.
- 5 You will be able to take action because **you can create the map yourself**.
- 6 The map can be **used for places other than your home** such as your commute route to school or work.
- 7 The map will help people in local communities **remember their memories of the earthquake as well as prevent senility**.
- 8 Community ties will spread, and you will be able to **create your My Map from a variety of perspectives**.
- 9 The map will serve as an **effective guide for volunteers involved with earthquake recovery**.
- 10 You will be able to **rediscover your hometown**.

Try Making a My Map: Rediscovering your Hometown

A disaster prevention map you can make yourself

What
you will need



- Drawing board (size: A3)
- Base maps, residential maps (Basic Map for Urban Planning*)
- Writing utensils, colored pencils, eraser
- Ruler
- Compass (magnetic)
- Digital camera, film camera

* The Basic Map for Urban Planning may be obtained from the construction division, architecture division, or urban planning division of each municipality.

✓ Fieldwork - Rediscovering local communities - (Learn about your local community)



Provided by SANRIKU KAHOKU INC. (Ishinomaki Kahoku)

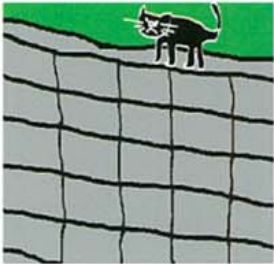
Disaster **Imagination** Game by using a map, and your eyes and ears

- Create a coding system for your map.
Add colors to make it easy to understand!
- Take pictures so you won't forget.

Where are the danger zones?

- Did the topography or the earth's crust undergo changes? What places will be susceptible to shaking?
- Simulate an earthquake. Do it for the safety of yourself as well as your family!
- Create a My Map for you that is designed just for you.
- What places will come in handy if an earthquake strikes? What types of places? What types of things?

☑ What Information to Fill in on My Map



Damage at the time of Earthquake in your Immediate Surroundings

Information on concrete block walls, signs, glass windows, telephone poles, the earth's crust, etc.

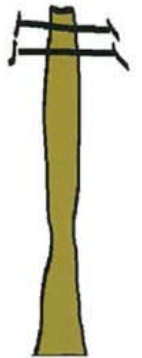
Things that will Be Useful Immediately after the Earthquakes Strikes

Open spaces to be used as temporary evacuation areas, convenience stores, hospitals (doctor's offices), vending machines, information on people's whereabouts, etc.



Post-earthquake Recovery Period

- Hardware stores, home improvement centers, construction-companies, drug stores, etc.



In addition to the above, imagining what it will be like at the time of an earthquake as well as gathering a wide range of information through conversations with earthquake survivors will be important.

Include that information on your map.

By knowing these things and writing them down on your map, you will be prepared for an earthquake. It will serve as your daily, routine preparation for an earthquake. Reexamining your hometown and gathering this type of information will make you better prepared for an earthquake!





Important Points to Consider when Creating My Map: 1

- Hazards at the Time of an Earthquake - (Falling, toppling over, collapsing)



Glass windows and old signs
of tall buildings



Vending machines,
signs, and tile roofs



Old residential buildings and
transformers



Transformers and fire extinguishers



- Narrow path with dead end
- Concrete block walls may collapse in event of earthquake
- May not be able to use path



Cracked concrete block walls

✓ Important Points to Consider when Creating My Map: 2

- Following Earthquake -
(Evacuation areas, hospitals, emergency water supply (wells))



Evacuation areas such as schools



Nearby hospitals



Nearby open spaces and parking lots
(temporary evacuation areas)



Well that is still in use

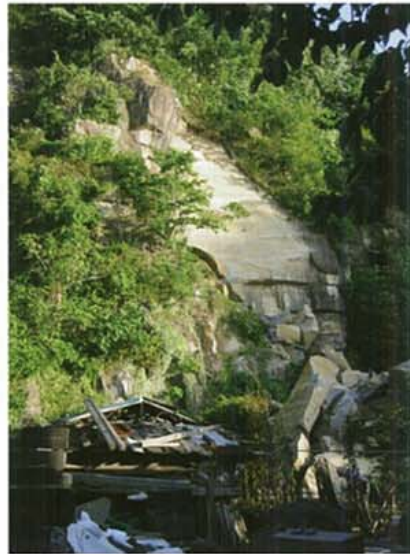
- Where are the danger zones?
- Where should you evacuate?
- Where's a good place to meet up with your family?

✓ Your town's Earthquake Records

- Try to recall a past earthquake -



Landslides along sloping land↑
Photograph on right:
Destruction in vicinity →



Swelling and flooding at Kitakami River
caused by typhoon



1960 Chilean Tsunami
(former Shizugawa-cho)



1933 Sanriku Tsunami Memorial
(former Kitakami-machi)



1978 Miyagi-oki earthquake
(Midorigaoka, Sendai City)



How to Organize My Map

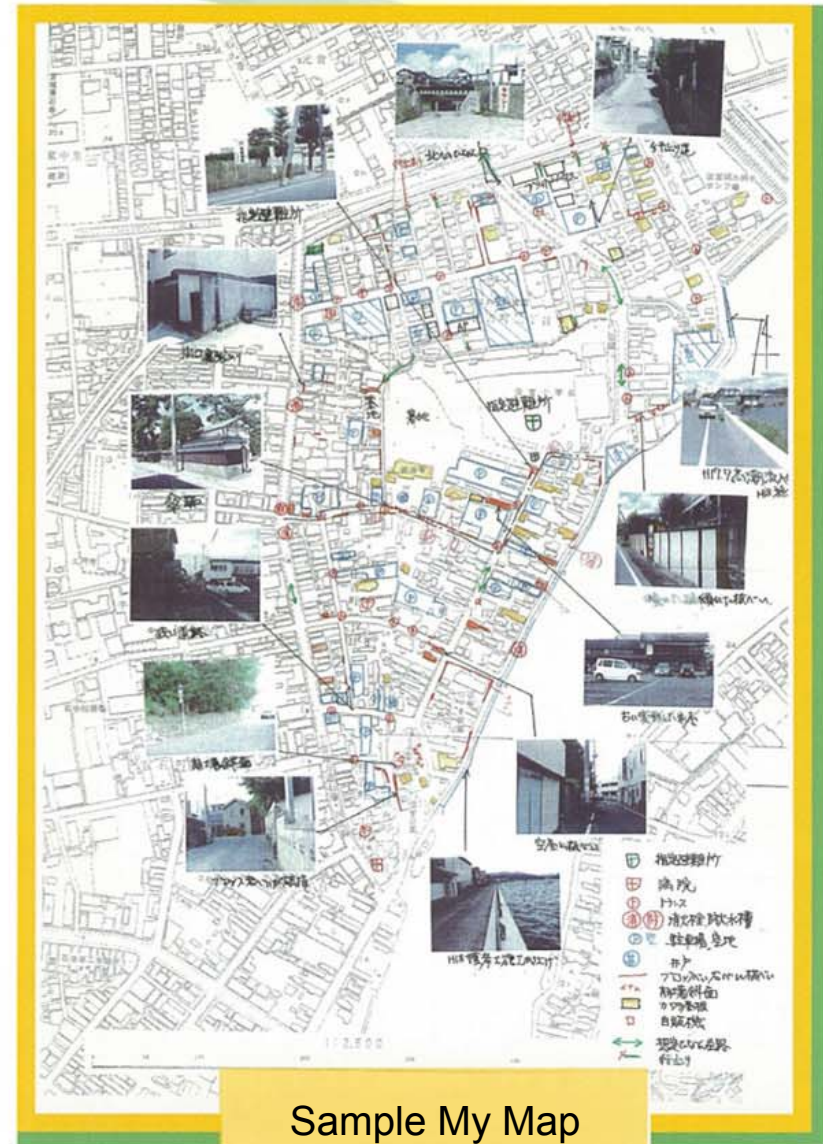
- Communication - (From helping yourself to helping one another)



Organize the My Map collectively

Serves as an opportunity for communicating with one another

- You can also combine everyone's My Maps and create a disaster prevention map for your neighborhood association.
- It would also be good to consider the whereabouts of people who live alone or people with disabilities.
- You should also check and update your map every year



Sample My Map

Try Using a My Map

- Preparing for a Natural Calamity -

When an Earthquake Strikes...

You can check the evacuation routes.

You will know the evacuation routes right away.

You will know the hazardous objects that are nearby.

You will be able to check on the safety of your neighbors and rescue them.

During Restoration and Recovery

You will know where the temporary evacuation areas are.

You will know how to obtain supplies and the people you can ask to help you.

The map will help provide information to volunteers in a smooth manner.



Damaged buildings following the Miyagi-oki earthquake of June 12, 1978

Taken by Koichiro Masuda

Integrated Disaster Prevention Map

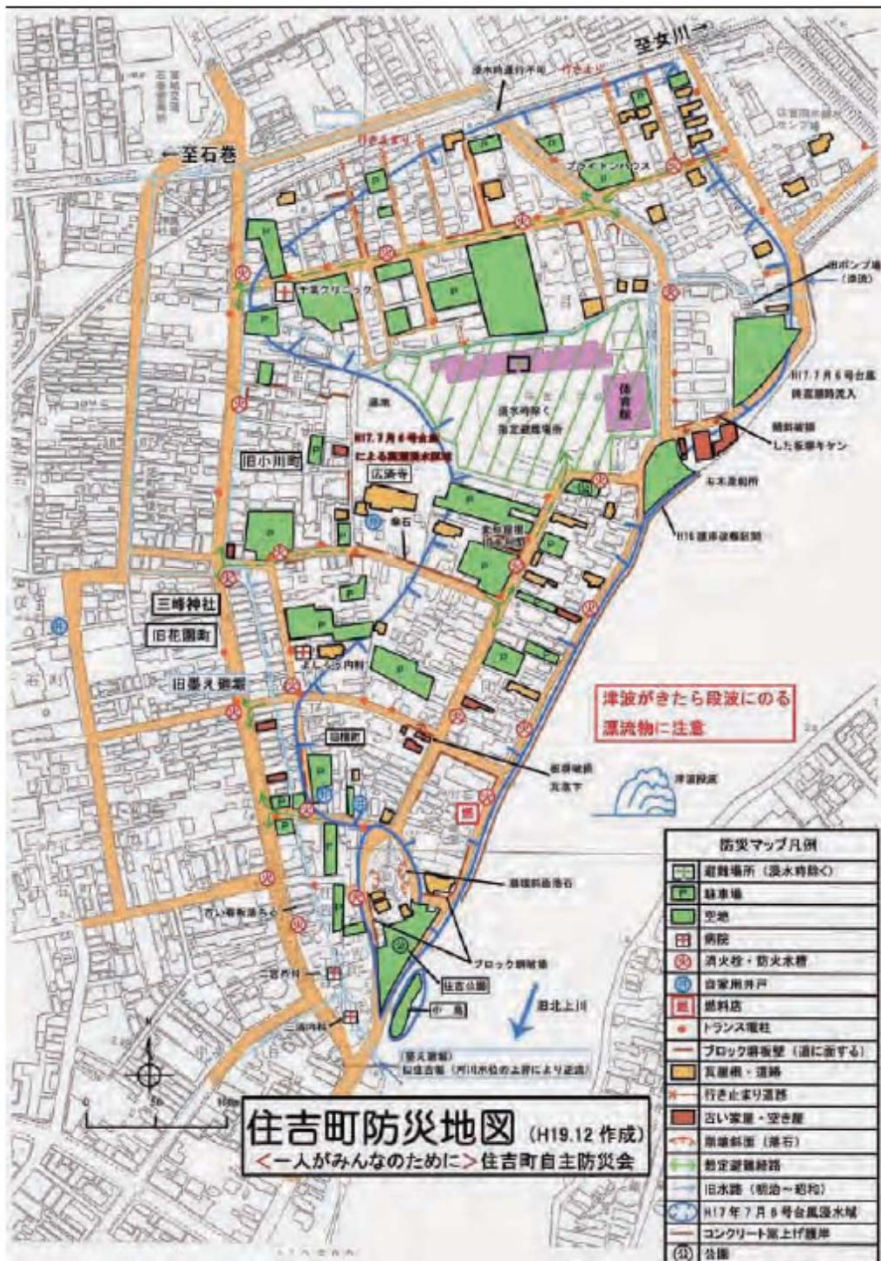
My Map preparation by a group is recommended. Other people can offer different viewpoints and different observations about the community landscape and routes to offices and schools. You can obtain information you may have missed.

Review and updating of the map is essential because the landscape changes constantly.

You can decide how frequently it should be updated. Where new construction and civil works are frequent, a review should be made often, and if not, then not so frequently.

At any rate, an annual review and update is recommended.

Community associations are encouraged to develop their own integrated disaster prevention maps by compiling My Maps of the member residents.



An integrated disaster prevention map prepared using a compilation of My Maps
(Voluntary disaster prevention association, Sumiyoshi-cho, Ishinomaki City; January 2008)

Use the My Map Method

Walk through Town as if you Were Making a My Map

Look at things with a three-dimensional perspective.

... What's beneath your feet? What's above your head?

It is important to gather information by using your hands, feet, and head.

Use your senses... It'll be dangerous if the ground shakes!

Rediscover things in your town as well as its history!

Were there natural calamities in the past?

Don't just focus on earthquakes. Consider floods and landslides as well.

Could you walk home if you had to?

Check the evacuation routes and secure temporary evacuation areas

What places could you use as temporary evacuation areas?

How will you secure food and water...

What about the elderly and children?

Use your imagination and carry out a Disaster Imagination Game.



Don't forget the way you looked at or experienced things when you created your My Map!



Photograph of collapsed stone masonry and concrete block walls following Northern Miyagi earthquake



Will the concrete block walls and evacuation routes survive an earthquake?

Protecting Yourself from a Landslide Disaster

In the 2008 Iwate-Miyagi Nairiku earthquake, which occurred on June 14, 2008, the movement of earth material caused collapses, landslides, and mudslides. Be sure to pay attention to not only what you see nearby, but the topography in the area. Try to be extra conscious of information (alerts) issued by the government office.

There are: Rockfall hazard zones, landslide hazard zones, debris-flow prone torrents, flooding and earthquake maps, etc.



Use your own eyes,
everyone's eyes,
and with bird's-eye vision!

Then,
gather with your group and have
a discussion on disaster prevention and
mitigation!



Early signs of rockfalls

- Water is turbid.
- There are cracks in rocks.
- Small rocks appear to be crumbling.



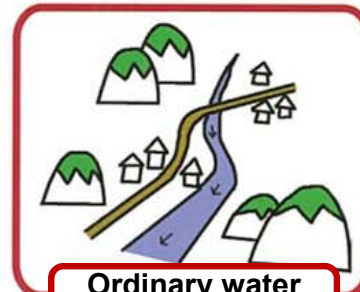
Early signs of landslides

- There are cracks in the ground.
- The water in streams and wells is turbid.
- The water is gushing out.



Early signs of mudslides

- The mountains are rumbling.
- The water level in rivers has gone down.
- The water current is turbid or contains driftwood.



Ordinary water current



Current changes →
Submersion, flooding



Natural damming of river caused by
landslides → Collapse → Debris flow

