

# Steps for Revitalization in Fukushima

◇ December 23rd, 2019 edition ◇



Rice harvested in farming trials aiming for resumption of planting for commercial sales.  
(Ogawara district, Okuma Town)



The Great East Japan Earthquake occurred on March 11, 2011 at 14:46. Centered off the Sanriku coast in North Eastern Japan, its magnitude was a record high of M9.0, measuring a 7 on the JMA seismic intensity scale. Heavy shaking resulted in a large tsunami that struck a wide area along the coast.

## Disaster status after the earthquake and tsunami

### ◆ Disaster status in Fukushima Prefecture [As of 2019.12.5]

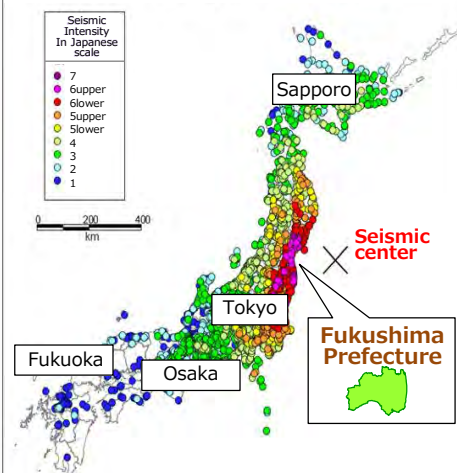
- Deaths: 4,109  
(This number includes 2,279 disaster-related deaths(\*))
- Missing: 1  
(\*Disaster-related deaths are not caused directly by the disaster, but occur afterwards due to indirect causes including stress and decline in health from living as evacuees.

### ◆ Cost of damage in Fukushima Prefecture [As of 2012.3.23]

- Reported cost of damage for public works facilities: About JPY 316.2 billion
- Reported amount of damage on agricultural, forestry and fishery facilities: About JPY 245.3 billion
- Reported amount of damage on educational facilities: About JPY 37.9 billion
- Total of reported amount of damage on public facilities: About JPY 599.4 billion

※Areas under the jurisdiction of the prefectural government: for the 30km radius surrounding the Fukushima Daiichi Nuclear Power Station (F1NPS), damage costs were estimated based on aerial photographs.  
 ※Areas under the jurisdiction of municipalities: Excludes approximate cost of damage for a part of Minamisoma City and 8 municipalities located in the Futaba area.  
 ※Data : Land Rehabilitation & Development Group, Fukushima Restoration & Revitalization Headquarters for Great East Japan Earthquake

Data: Japan Meteorological Agency (JMA)



**2:46 p.m. March 11, 2011: the Great East Japan Earthquake**  
 38.1 degrees north latitude, 142.5 degrees east longitude,  
 Appox.24 km deep (provisional value)  
 /M9 (provisional value)



Iwaki City: Levee



Soma City: Agricultural Facilities



Shirakawa City: Public Facilities

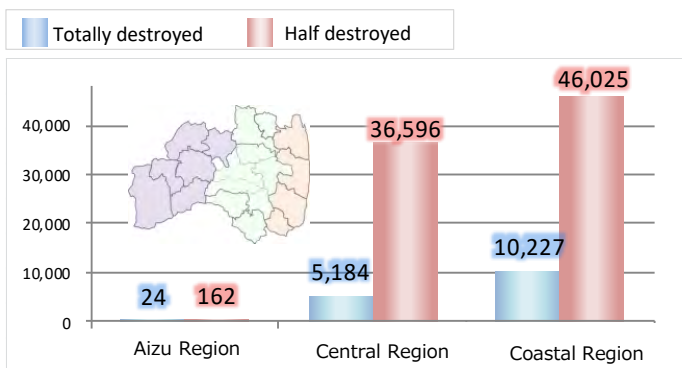


Kagamiishi Town: Educational Facilities

## Status of housing damage by region

### ◆ Damage status [As of 2019.12.5]

- Totally destroyed: 15,435 houses
- Half destroyed: 82,783 houses



Extensive damage caused by Tsunami (Iwaki City)



Status of housing damage (Ukedo district, Namie Town)

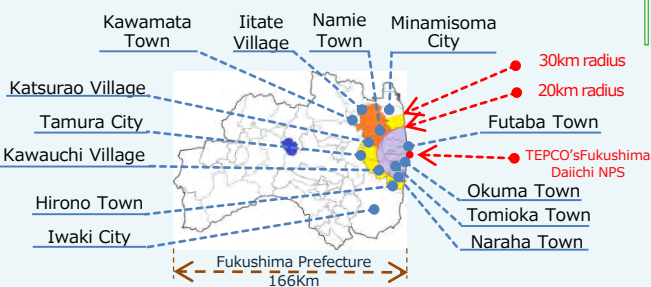


The number of evacuees peaked in May 2012 at 164,865 and has since decreased, but as of Dec 2019 roughly 41 thousand people are still under evacuation. Most of the evacuation orders issued to the evacuation-designated zones (excluding the Difficult-to-Return zones) have been lifted. Additionally, the Difficult-to-Return zones have been recognized in the Plans for Reconstruction and Revitalization for Special Zones. Accordingly, reconstruction and revitalization in the evacuation-designated zones are already showing steady progress with remediation and construction underway.

## Areas to which evacuation orders have been issued in the wake of nuclear power station (NPS) accident

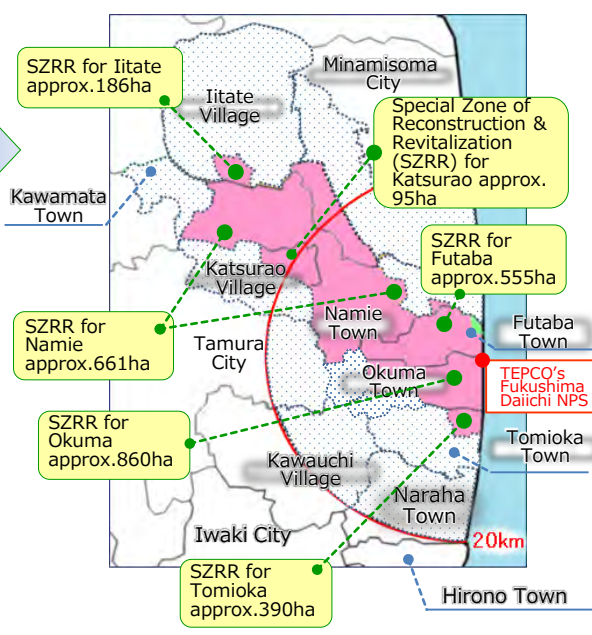
### ◆ 2011.4.22

- Evacuation-designated areas (Restricted areas)
- Deliberate evacuation areas
- Emergency evacuation preparation areas  
(The order was lifted on September 30, 2011)
- ※Part of Date City, Minamisoma City and Kawauchi Village are designated as specific spots recommended for evacuation.



Current status

### Evacuation-Designated Zones About 2.5% of the whole Fukushima Prefecture area since Apr 10, 2019



Difficult-to-return zone	<ul style="list-style-type: none"> <li>• Annual integrated doses are over 50mSv.</li> <li>• Entry is prohibited with some exceptions.</li> <li>• Lodging is prohibited.</li> </ul>
Restricted residence zone	<ul style="list-style-type: none"> <li>• Annual integrated doses are between 20 and 50 mSv.</li> <li>• Entry is permitted, and business operation is partially permitted.</li> <li>• Lodging is prohibited with some exceptions.</li> </ul>
Evacuation order cancellation preparation zone	<ul style="list-style-type: none"> <li>• Annual integrated doses are below 20 mSv.</li> <li>• Entry is permitted, and business operation is permitted.</li> <li>• Lodging is prohibited with some exceptions.</li> </ul>
(Dotted pattern)	• Areas where evacuation orders have been lifted.

### Approved plans for the Reconstruction and Revitalization of the Special Zone

■ Following the revision of the Act for Special Measures for the Reconstruction and Revitalization of Fukushima (May, 2017), the national government was able to designate special zones for reconstruction and revitalization (SZRR).

Plans by the following municipalities were recognized by the national government in the Plans for Reconstruction and Revitalization for Special Zones which stipulated SZRR.

Futaba Town (Sep 2017), Okuma Town (Nov 2017)

Namie Town (Dec 2017), Tomioka Town (Mar 2018)

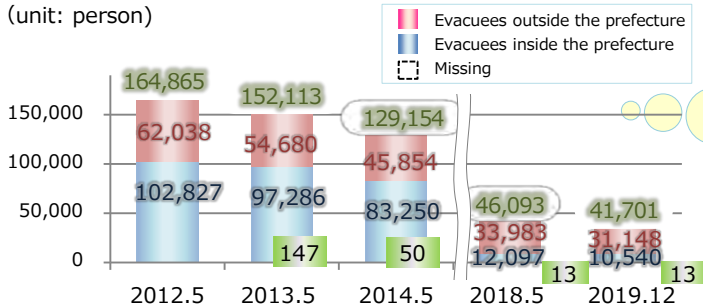
Iitate Village (Apr 2018), Katsurao Village (May 2018)

The revised act is to concentrate on carrying out decontamination and infrastructure development of the designated zones in order to create an environment which people can return to.

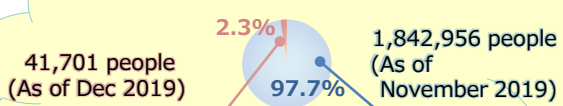
### ◆ Transition of evacuees:

#### Earthquake, Tsunami, NPS accident

(unit: person)



### Numbers of evacuees v.s. prefecture's entire population



The prefectural government is working to create an environment where evacuees can return home with peace of mind by establishing medical and caregiving services, as well as, housing and shopping facilities.

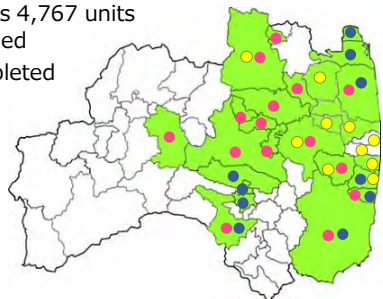
## Reconstruction of housing environment

### Construction of Revitalization Public Housing, etc.

The prefectural government is continuing to build Revitalization Public Housing in order to provide evacuees and those affected by the disaster with housing stability. In the wake of the nuclear power station accident, the prefectural government is taking the initiative for this project, and is planning to construct a total of 4,890 housing units.

### 【 Progress of business investment by municipality 】

- For nuclear disaster evacuees 4,767 units completed/4,890 units planned
- For returnees 510 units completed /688 units completed
- For earthquake and tsunami affected people All 2,807 units completed



[As of 2019.10.31]

## ◆ Thorough support for evacuees

### ■ Counselors

177 life support counsellors have been assigned to social welfare councils in 22 municipalities throughout the prefecture (as of 2019.6.1)

In addition to taking care of elderly and preventing isolation, they are also actively involved in working to help with relieving residents' health worries.



### ■ Community Communications Coordinator

The prefectural government allocates Community Communications Coordinators to areas with revitalization public housing in order to build and support those communities. The Community Communications Coordinators support exchange activities between tenants of revitalization public housing and local residents by planning and carrying out exchange activities while establishing neighborhood associations and creating opportunities for community dialogue.

### ■ Support base for elderly people

Since many of tenants in the temporary housing units are elderly, the prefectural government established a Support Base for Elderly People out of concern to prevent their isolation and support them by providing opportunities for them to consult with counselors about personal problems in daily life, communicate with others and take health care classes.



## Futaba Medical Center-affiliated Hospital was opened in April, 2018.

Futaba Medical Center-affiliated hospital operates as a secondary emergency medical facility in Futaba district accepting patients 24/7, 365 days a year (including on public holidays).

It also provides medical services required in communities including home-visit caregiving in order to support an environment where residents and people engaged in revitalization-related projects can live and work with peace of mind, from the aspect of medical services. In October, 2018, a multi-purpose medical helicopter started operation.

The operation allows us to transport patients between a medical institution in the coastal region and Fukushima Medical University which is capable of providing highly expertized treatment.



Futaba Medical Center-affiliated hospital, located in Tomioka Town Opens on April 23, 2018 A 24/7/365 emergency medical services provided

## Police activities to protect the safety of affected people

After the disaster, Fukushima Prefecture has received support from many police officers around Japan.

The police nicknamed "Ultra Police Force" have continued efforts to protect evacuees and ensure their safety, including patrols of the disaster affected areas, providing information for residents in the temporary housing units and disaster public housing, prevention of crimes in collaboration with the national government, municipalities and volunteers and measures against traffic accidents. With the partial lifting of evacuation orders in Okuma Town, a temporary Okuma police substation was opened and free transit along Route 35 was resumed to ensure development of the revitalization hub which is carried out in a safe and secure manner. The prefectural government is increasing security in the area including patrols to prevent crimes and accidents.



■ In order to steadily cope with rapid progress of ongoing revitalization efforts and changing circumstances surrounding the affected areas, the prefectural government continues to work closely with municipalities for the safety and security of its residents.

A ceremony held on dispatching patrol units following the opening of free transit along Route 35

## Development of shopping facilities

Miyakoji District, Tamura City



Domo store in Furumichi  
Apr. 2014 (Opened)

Hirono Town



Hirono Terrace (shopping mall)  
Mar. 2016 (Opened)

Kawamata Town



YO-TASHI  
Mar. 2016 (Opened)

Namie Town



Machi Nami Marche  
Oct. 2016 (Opened)

Tomioka Town



Sakura Mall Tomioka  
Mar. 2017 (Opened)

Kawauchi Village



Tonya no Sato  
Jul. 2017 (Opened)

Katsurao Village



Yamazaki Y-Shop Yamasa  
Jul. 2017 (Opened)

Iidate Village



Madei-Hall at the roadside rest house of Iidate village  
Aug. 2017 (Opened)

Naraha Town



KOKONARA Shopping Mall  
Aug. 2017 (Opened)

Odaka District, Minamisoma City



Odaka Store (supermarket)  
Jun. 2018 (Opened)

Okuma Town

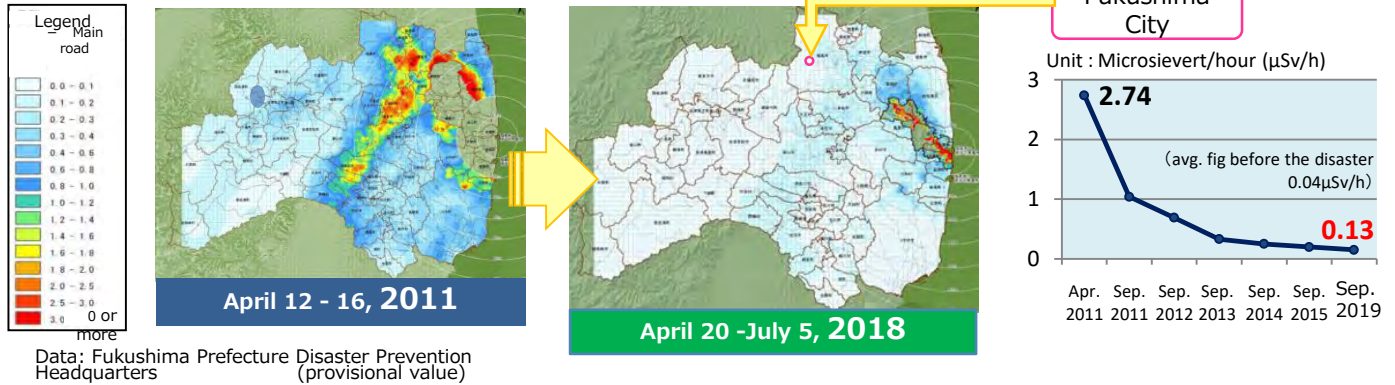


Yamazaki Y-Shop  
Jun. 2019 (Opened)

Air radiation levels in the prefecture have significantly decreased compared to April, 2011. Decontamination of prefectural land has been completed in all areas except for the Difficult-to-return zone.

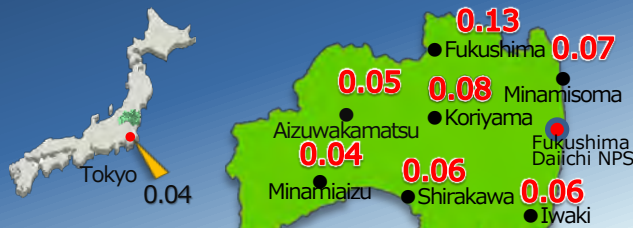
## Transition of air radiation dose in Fukushima Prefecture

◆ Radiation dose level map covering the whole area of the prefecture based on the monitoring mesh survey of environmental radiation by Fukushima Prefecture.



## ◆ Transition of measurements(2)

[Unit:  $\mu\text{Sv/h}$ ]



※Figures shown on Fukushima map are as of 2019.11.15 <http://fukushima-radioactivity.jp/>

## Comparison to major cities

[Unit:  $\mu\text{Sv/h}$ ]



Data: Japan National Tourism Organization

## Fukushima Prefectural Centre for Environmental Creation <CEC>

We have to quickly restore environment in Fukushima to create environment where citizens can live with peace of mind over the future. For that, we are conducting detailed environmental monitoring, research and information release as well as taking measures to help children learn about environment and radiation at the Information and Communication building, "Communita Fukushima."

### ■ Environmental Radiation Monitoring Centre (Minamisoma City)



### ■ Inawashiro Aquatic Environment Centre (Inawashiro Town)



### ■ Wildlife Symbiosis Centre (Otama Village)



### ■ Fukushima Prefectural Centre for Environmental Creation Main Facilities (Miharu Town)



### ■ IAEA cooperation



Fukushima Prefecture currently proceeding projects in cooperation with IAEA\* Projects include the review of decontamination technology used for rivers and lakes, and studying the movement of radioactive materials contained in wild animals. \*IAEA : International Atomic Energy Agency



On-site inspection by IAEA experts

### ■ IAEA proposed project

- Decontamination in Fukushima
- Support for utilization of radiation monitoring data for drawing of easily understandable maps ...

### ■ Our proposed projects

- Project to review the decontamination technology for rivers, lakes and ponds
- Behavioral survey of radionuclide in wild lives ...

## Disposal of waste

### ◆ Disaster waste disposal

[As of 2019.9.30]

■ The disposal of targeted 3.04 million tons of disaster waste handled by municipalities has been completed. In areas handled by the national government, 2.03 million tons of waste has been processed so far.



Dealing with disaster waste



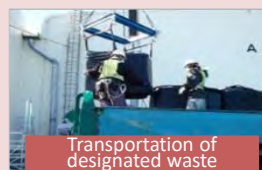
A temporary incinerator

### ◆ Disposal of designated waste

[As of 2019.10.31]

■ Designated waste is being disposed of at the nationally designated landfill facility in Tomioka Town. As of today, 98,000 bags have been disposed of by landfill.

The prefectural government inspects the sites and conducts environmental monitoring in order to ensure safety and security. These activities are based on the safety agreement between the national government, the prefectural government, Tomioka and Naraha Town. The results of the environmental monitoring are released on the internet.



Transportation of designated waste



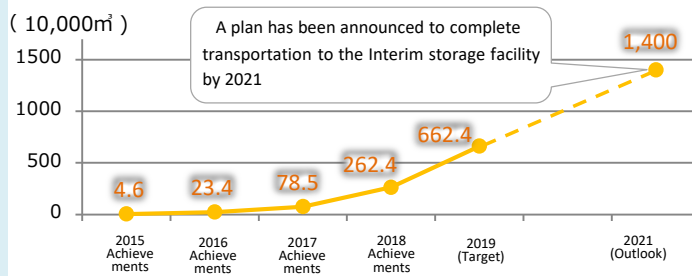
Landfill disposal facility

### ◆ Receiving of removed soil and development of facilities

■ For the transportation of removed soil into the interim storage facility, about the total of 333,000m<sup>3</sup> was transferred from March, 2015 when the transportation started to the end of June, 2019, and transportation for 23 municipalities out of intended 52 has been completed.

A plan has been announced to complete transporting most of the removed soil that is temporarily located within the prefecture into an interim storage facility by the end of FY 2021. By the end of FY 2019, 4,000,000 m<sup>3</sup> of waste is expected to be transported into the interim storage facility. The prefectural government inspects the sites and conducts environmental monitoring in order to ensure safety and security. These activities are based on the safety agreement between the national government, the prefectural government, Okuma and Futaba Town.

#### 【Accumulation of transportation volume into the interim storage facility and future perspective】



## Decontamination

Decontamination of prefectural land has been completed in all areas except for the Difficult-to-return zone.

### ◆ The need for decontamination

Radiation doses decrease naturally overtime and from the effects of natural phenomena, such as wind and rainfall. However this process can take a long time. Therefore, the Prefectural Government began carrying out decontamination efforts in order to lower radiation doses and reduce the impact on communities and on the health of residents at the earliest possible time.

### ◆ Effects of decontamination

When averages of air radiation dose rates were compared for before and after decontamination work in the Intensive Contamination Survey Area carried out by local municipalities, it was found that radiation levels were reduced by 42% in residential areas, by 55% at schools and parks and by 21% in forests. This shows the effectiveness of lowering radiation levels through environmental decontamination work.



Area the national government conducts decontamination (11 municipalities.)

Area where decontamination conducted has been lifted(8 municipalities)

Area each municipalities conducts decontamination (33 municipalities).

Reconstruction work has begun for 98% of public works facilities, and 94% have already been completed. Currently the prefecture is focused on the tsunami affected area, and is aiming to complete reconstruction as soon as possible, while developing and strengthening roads and other infrastructure, and ensuring that recovery efforts proceed in a safe and secure manner.

## Progress by reconstruction work

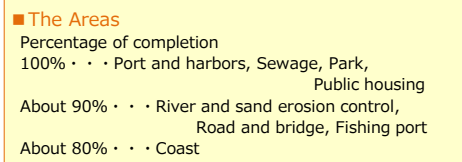
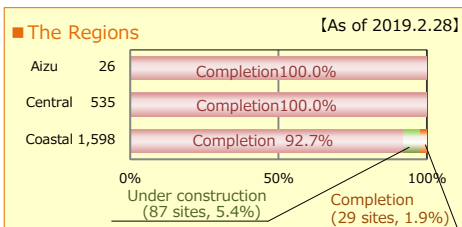
### ◆ Situation of reconstruction work

■ The prefecture is focusing on installing a road network to speed up the revitalization of zones where evacuation orders have been lifted or are to be lifted. The network includes 8 main routes covering the coastal region surrounded by express and national highways.

※ **8 Main Routes**

### ◆ Progress by construction site

■ Reconstruction work has begun for 2,130 (98%) of 2,159 public works sites which had been assessed for restoration work. 2,043 (94%) sites have already been completed.

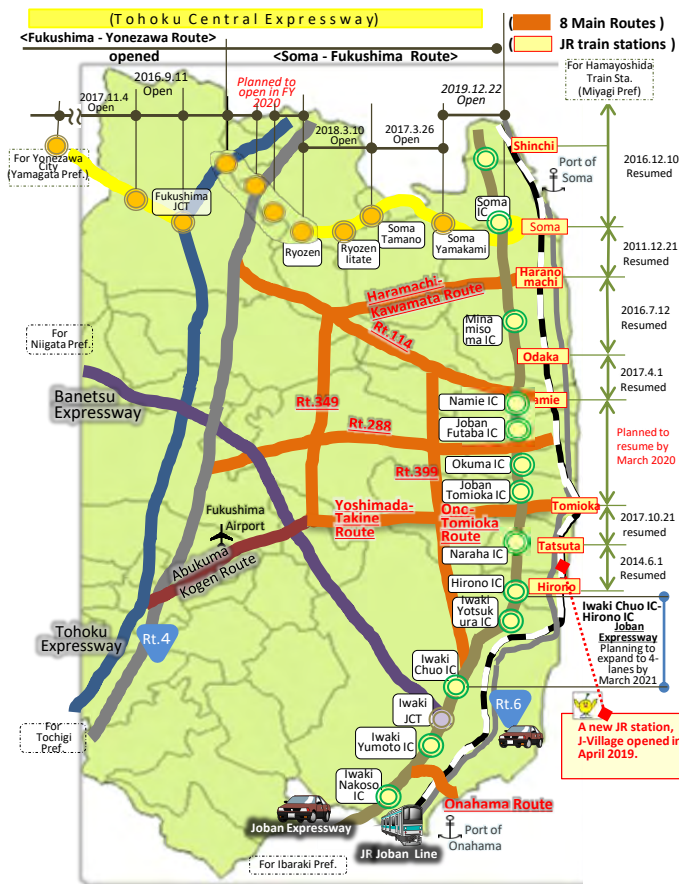


### ◆ Progress inside the evacuation zones

■ Of the 373 sites assessed for restoration work in the evacuation order cancellation preparation zone and the restricted residence zone, work has begun for 344 sites (92%), and 267 sites (71%) have been already completed. Restoration work in the difficult-to-return zone is also underway in tandem with decontamination work handled by the central government.

**New roads for restoration are under construction**

The prefecture is currently installing a road network in order to provide strong support for seriously damaged zones. The network is aimed to be completed by 2023, and will include 8 main routes covering the coastal region, in the areas surrounded by express and national highways.



**Joban Expressway** <March 1, 2015 Completion>

- ◆ Iwaki Chuo IC - Hirono IC, aiming expand to 4 lanes by the end of FY2020.
- ◆ The NEXCO East Japan Co. announced that they are planning to install added lanes at 6 points between Hirono IC and Yamamoto IC to alleviate traffic congestion.

• Naraha Smart Inter Change (IC)  
→ Opened in Mar. 2019  
• Okuma IC  
→ Opened in Mar. 2019  
• Futaba IC (Temporary)  
→ to open in 2019

**JR Joban Line**

Operation status as of Mar. 2019

- Namie-Odaka Station <resumed in April 2017>
- Tatsuta-Tomioka Station <resumed in Oct. 2017>
- Tomioka-Namie Sta. <To resume in 1Q of 2020>

**Substitute bus operation**

- Tomioka-Namie Station 11 trips/day (Incl. Tomioka-Namie-Haranomachi Sta. 1trip)

**Operation of wide area bus services in the evacuation zone**

Operation starts in April, 2017

- 1: Iwaki-Tomioka
- 2: Funehiki (Tamura City) -Katsurao
- 3: Funehiki (Tamura City) -Kawauchi

Operation starts in Oct., 2017

- 4: Kawauchi-Kamisimasa (Iwaki City)
- 5: Minamisoma - Fukushima City (via Fukushima Medical Univ.)

Operation starts in April, 2018

- 6: Tomioka -- Kawauchi

These services have been done with cooperation of bus operators and municipalities in the areas.

The prefecture has implemented the 'Fukushima Health Management Survey' in order to protect the physical and mental health of citizens, and maintain and improve health in Fukushima into the future. The survey includes the estimation of citizens' radiation exposure and thyroid examinations.

## Fukushima Health Management Survey

### Basic Survey

Citizens residing in the prefecture as of March 11, 2011 (2,055,248 persons)

Self-administered questionnaires: 27.7%  
[568,331 respondents/2,055,248 subjects]

<Results of estimate on external exposure dose>

【All citizens surveyed】Ratio of dose from 0 to 2mSv accounts for 93.8% of all.

※Estimate of external exposure dose for the 4 months from the nuclear accident (March-July 2011)

### Thyroid Ultrasound Examination

Citizens aged 18 or younger at the time of the disaster (About 380,000 persons)

#### Primary Examination (April 2011 to March 2014)

Inspection to confirm the present situation of children who aged 18 or younger at the time of the disaster, about 300,000 were examined by March 2014.

#### Full-scale Examination (April 2014 - present)

The second inspection for the comparison with the primary inspection. The subjects will include infants born till April 1, 2012. The inspection will be conducted every 2 years with the subjects to the age of 20, and after 20 it will take place every 5 years.



### Primary Examination: Ultrasound Examination

Number of Examinations	Screening category	Implementation Period	Coverage
1 <sup>st</sup> round	Primary Examination (Check on the situation of people's thyroids)	Oct. 2011-Mar. 2014	Citizens aged 18 or younger at the time of disaster (About 370,000 persons/Born on April.2,1992-April.1,2011)
2 <sup>nd</sup> round	Full-scale Examination (Compare with Primary Examination)	April. 2014-Mar. 2016	Citizens born on April.2,1992-April.1,2012 (About 380,000 persons/The inspection will be conducted every 2 years with the subjects to the age of 20, and after 20 it will take place every 5 years.)
3 <sup>rd</sup> round		May. 2016-Mar. 2018	
4 <sup>th</sup> round		April. 2018-Mar. 2020	

### Secondary examination: Thorough thyroid ultrasound examination and blood testing

Fine-needle aspiration cytology is conducted as deemed necessary by the doctor. As of Jun. 30, 2019, 231 cases were diagnosed as malignant or suspected malignant in the secondary examination.



### Internal exposure examinations using whole body counters

#### <Results of Examination\*>

Committed effective dose (internal exposure dose radiated within the body throughout one's lifetime)

Results :	Below 1mSv	1mSv	2mSv	3mSv
number of examinees	341,404	14	10	2

- Figures were not high enough to affect the health of all those involved. (June 2011 - September 2019)
- The examination results have shown figures below 1mSv since March 2012.

#### Reference

Results of survey for findings on thyroid glands over three prefectures other than Fukushima Prefecture

#### Surveyed in 3 cities in Japan

Hirosaki City, Aomori Pref.  
Kofu City, Yamanashi Pref.  
Nagasaki City, Nagasaki Pre.

#### Persons surveyed

Aged 3 to 18: 4,365 examinees

#### Results of survey

- 【A1】1,853examinees (42.5%)
  - 【A2】2,468examinees (56.5%)
  - (A1+A2=99.0%)
  - 【B】44examinees ( 1.0%)
  - 【C】0examinees ( 0.0%)
- Data: Released to press by the Ministry of the Environment

### Free medical care for all citizens aged 18 or under



Fukushima has increased the age range for those eligible to received medical subsidies. This is part of an effort to support child-raising in the prefecture through creating an environment focused on child health, where it is easy to give birth to and raise children. As of October 2012, free medical care is provided to citizens aged 18 or younger.

## Development of a hub for cutting-edge radiological research and medical care & Fostering of human resources in medical fields

### Fukushima Global Medical Science Center

In order to protect the health of citizens into the future, Fukushima has developed a hub for cutting-edge radiological research and medical care.

December 2016  
Opened



Fukushima Medical University  
(Fukushima City)  
URL: <https://www.fmu.ac.jp/univ/en/>

#### 8 Functions

- Radiation Medical Science Center for the Fukushima Health Management Survey
- Advanced clinical research center
- Advanced medical treatment section
- Education and personnel training section
- Medical Industry Translational Research Center
- Thyroid and Endocrinology Center
- Health Promotion Center
- Assuring medical services in Futaba district

### School of Health Sciences (tentative name) Fukushima Medical University

The Prefectural Government will establish a new department at the Fukushima Medical University in order to foster and stably secure human resources for health and medical services who are in short supply in the prefecture.

The school is expected to open in April, 2021.

#### Outline

- Name of the school and departments (tentative name)
  - School of Health Sciences
    - Department of Physical Therapy
    - Department of Occupational Therapy
    - Department of Radiological Sciences
    - Department of Laboratory Sciences
- Facility outline
  - Location: Sakae-machi, Fukushima City
  - Facility scale (total floor space): Approx. 18,300㎡
  - Floor count: 9 (including 1 basement floor)
  - Antiseismic style: Earthquake-resistant structure

