Progress on Off-site Cleanup Efforts in Japan

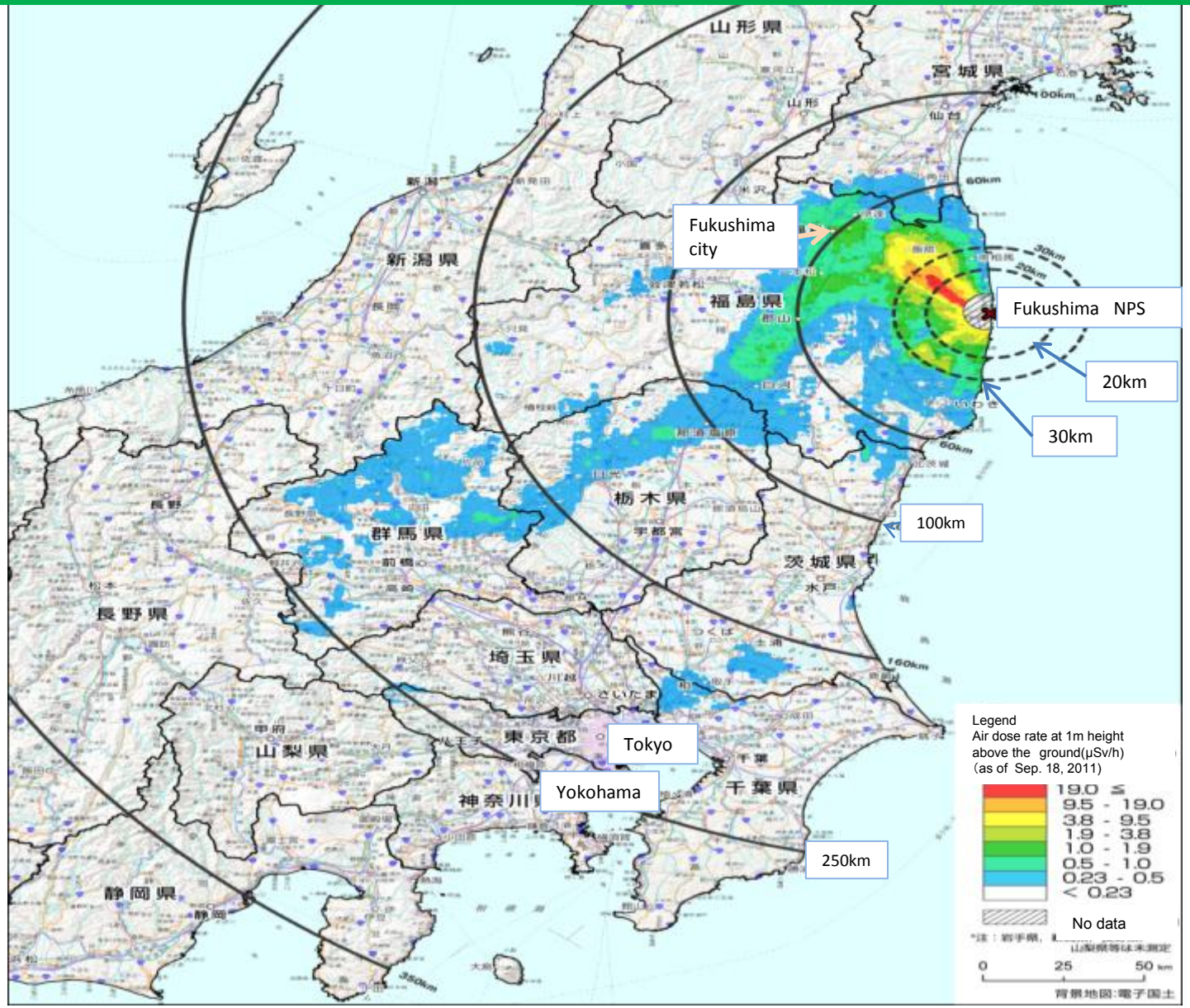
April, 2014

Ministry of the Environment, Japan

Outline

- **Policy Framework**
- Progress in Special Decontamination Area
- Progress in Intensive Contamination Survey Area
- Decontamination technology
- New policies announced in Sep 2013
- Efforts to secure Interim Storage Facility

Radioactive Pollution Caused by the Accident at TEPCO's Fukushima Dai-ichi NPS



Framework of Decontamination

Legislation for Promoting Decontamination

- The Act on Special Measures Concerning the Handling of Radioactive Pollution came into force on January 1, 2012.
- Based on this Act the followings are carried out:
  - Planning and implementation of decontamination work
  - Collection, transfer, temporary storage, and final disposal

Special Decontamination Area

- 11 municipalities in (former) restricted zone or planned evacuation zone (<20km from the NPS, or annual cumulative dose is >20mSv)
- Decontamination is implemented by the national government

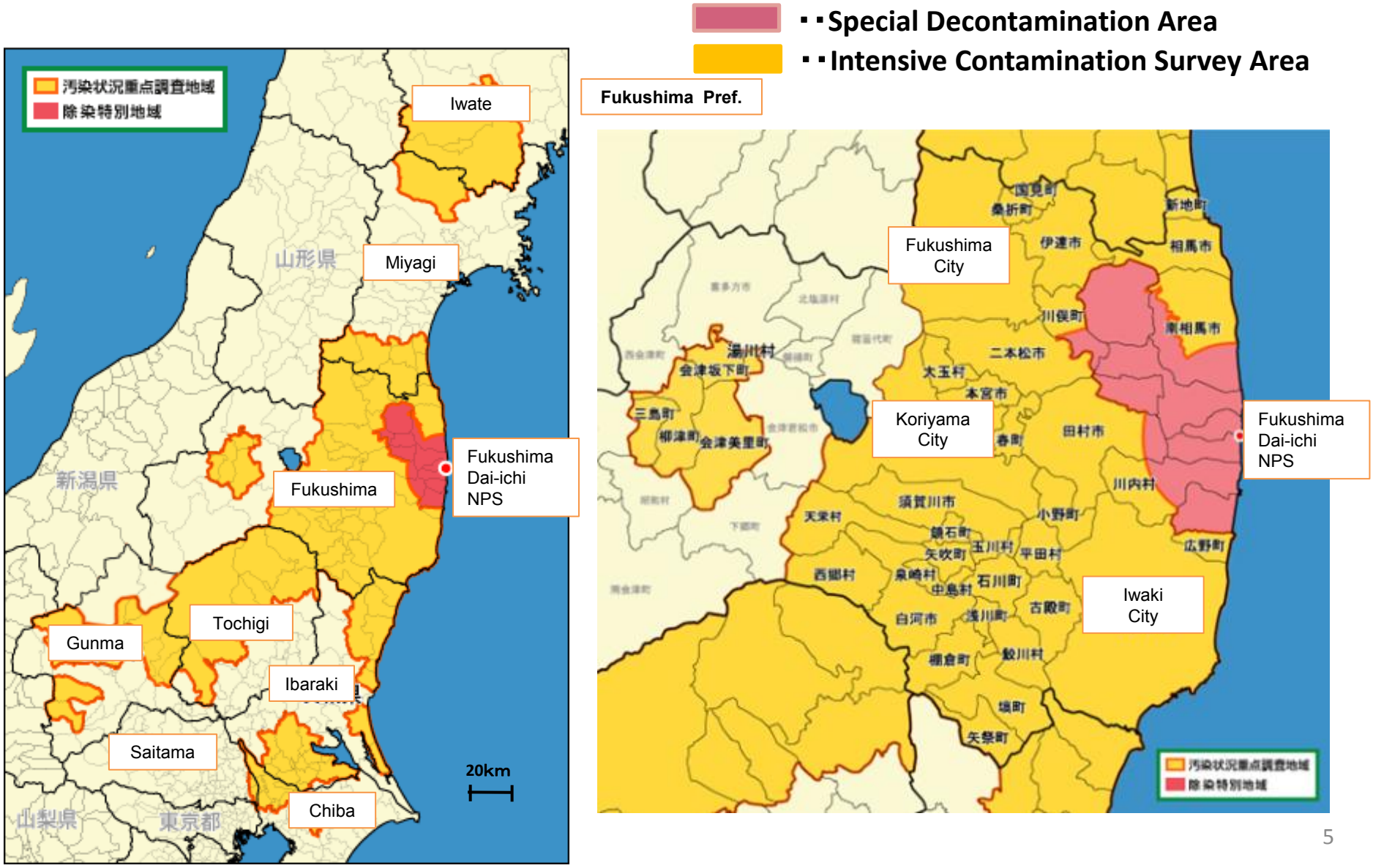
(*) Entire area of Naraha, Tomioka, Okuma, Futaba, Namie, Katsurao, and Iitate.
Some area of Tamura, Minami Soma, Kawamata, and Kawauchi.

Intensive Contamination Survey Area

- 100 municipalities in 8 prefectures (*), in which over 0.23 μSv/hour of air dose rate (regarded as being over 1 mSv/Year under a certain condition) is observed, were designated.
- Decontamination is implemented by each municipality. The national government will take financial and technical measures.

(*) Iwate, Miyagi, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, and Chiba

Special Decontamination Area and Intensive Contamination Survey Area



Outline

- Policy Framework
- **Progress in Special Decontamination Area**
- Progress in Intensive Contamination Survey Area
- Decontamination technology
- New policies announced in Sep 2013
- Efforts to secure Interim Storage Facility

Current Status of the Areas to Which Evacuation Order have been Issued (as of End of Aug, 2013)

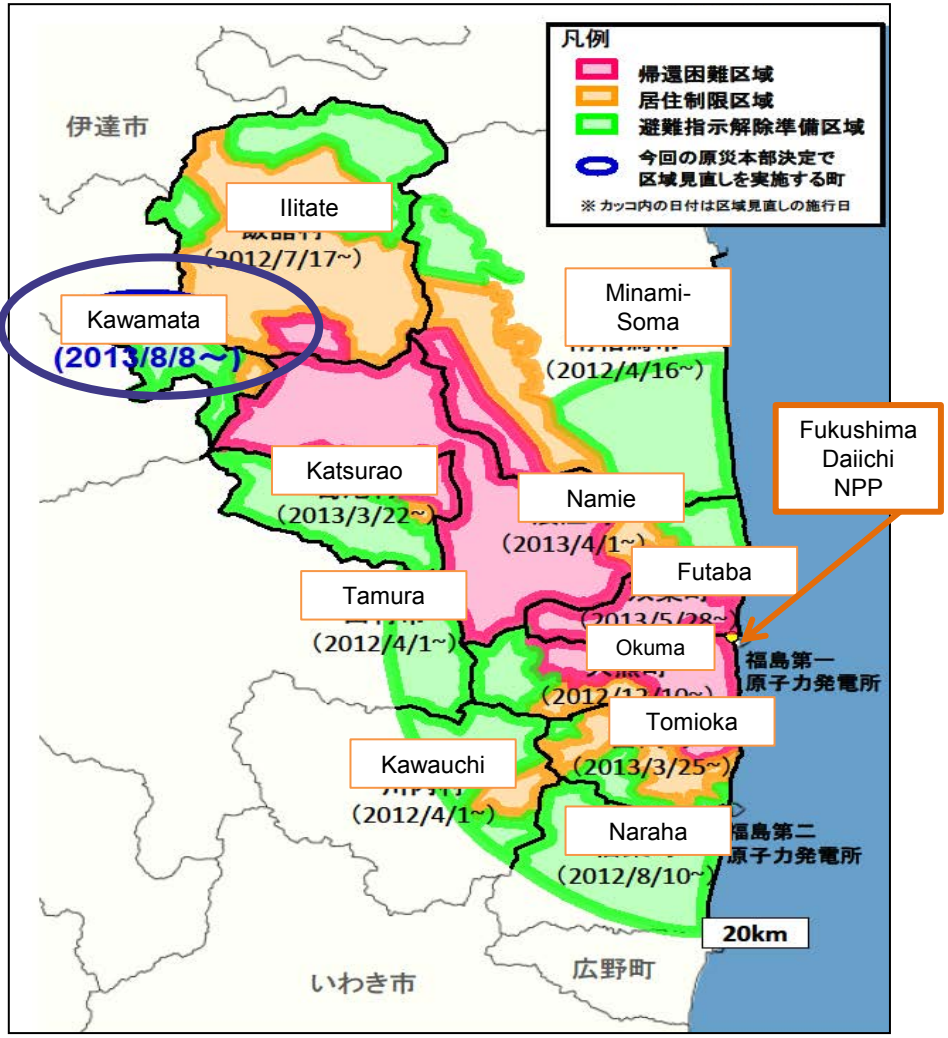
Ahead of the decontamination in the Special Decontamination Area, Decontamination Plans are to be elaborated taking into account the progress of rearrangement of the Restricted Areas and Deliberate Evacuation Area.
The rearrangement has been completed on Aug 7 2013.

3 categories after the rearrangement:

Area 1: <20mSv/yr
Evacuation orders are ready to be lifted:

Area 2: 20 – 50 mSv/yr
Residents are not permitted to live:

Area3: >50 mSv/yr
Residents will have difficulties in returning for a long time:



Decontamination Policy for Special Decontamination Area

Policy in FY2012 and 2013

Decontamination should be implemented taking into account the level of air dose rate.

- **Area less than 20mSv/year**: Aiming to reduce additional exposure dose to less than 1mSv/year as long-term goal.
- **Area from 20～50mSv/year**: Aiming to reduce exposure dose in residential and farmland area to less than 20mSv/year.
  - > Decontamination work in all municipalities in the Area has been uniformly scheduled to be completed within 2 years, assuming the securing of temporary storage sites and consent of landowners, etc.
  - > In the case of areas more than 50mSv/year, demonstration projects are in progress. Lessons learned will be taken into consideration in future decontamination policy.

Policy Review at Sep. 2013

-Decontamination work will be implemented in cooperation with reconstruction measures depending on the situation of each municipality. Additional measures for further progress will be conducted.

-The decontamination plans in six municipalities were revised and new schedules were set up in December, 2013

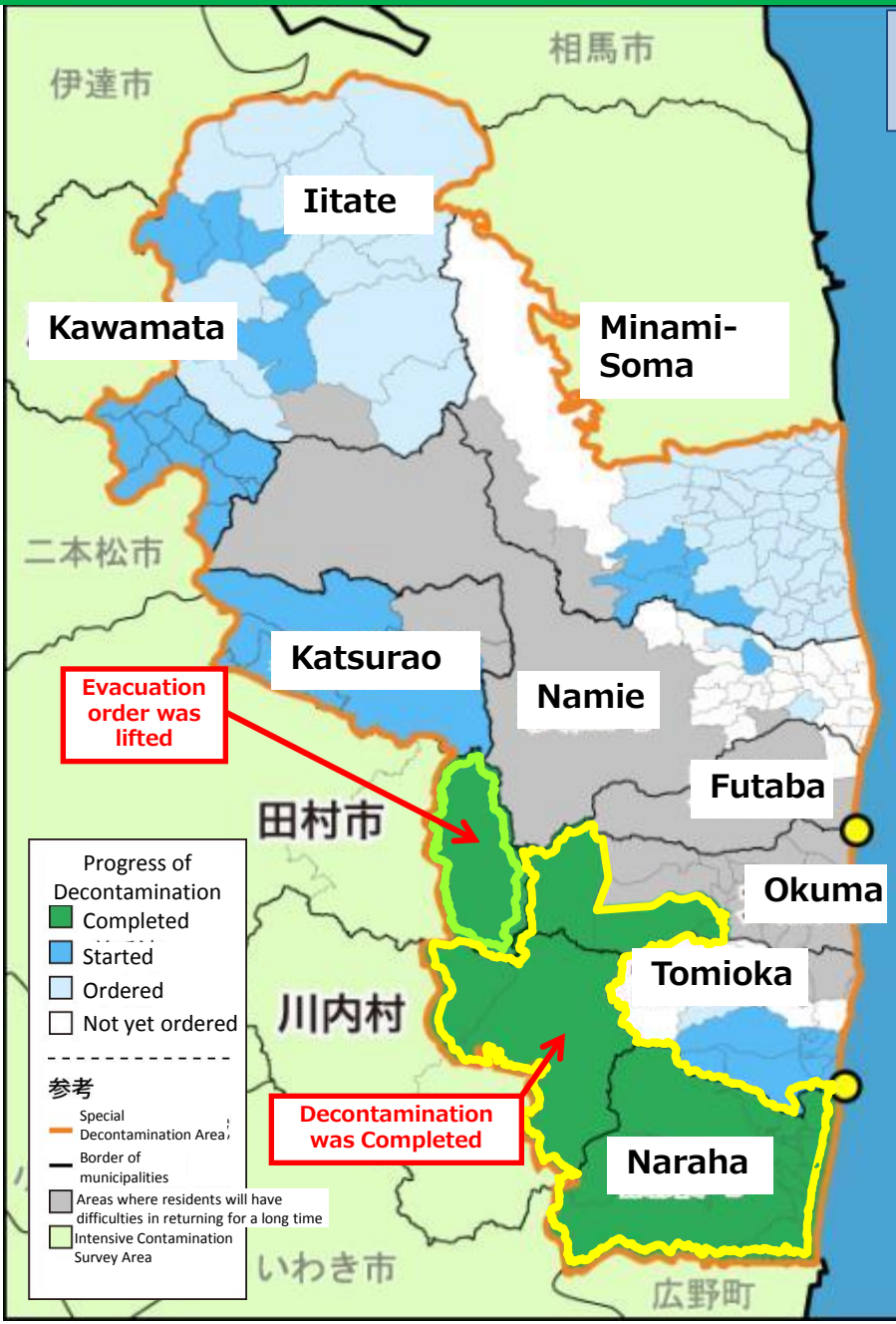
Progress in the Special Decontamination Area ①

Decontamination Plan has been established in 10 municipalities out of 11 target municipalities and the progress has been made.
Decontamination works in Tamura, Naraha, Kawauchi and Okuma have been completed at the end of March, 2014

	Population in Decontamination Target Area(person) (approx. Figure)	Decontamination Target Area (ha) (approx. figure)	Rearrangement of the Restricted areas, etc.	Progress of the Decontamination Work < as of the end of Mar., 2014 >				Schedule	
				Decontamination Plan	Temporary Storage Site	Consent of landowners, etc.	Decontamination activities	Residential Areas completed	The rest of other areas completed
Tamura	400	500	Apr. 2012	Apr. 2012	Secured	Completed	Completed in June. 2013	Already completed in FY2013	
Naraha	7,700	2,100	Aug. 2012	Apr. 2012	Secured	completed	Completed in March, 2014	Already completed in FY2013	
Kawauchi	400	500	Apr. 2012	Apr. 2012	Secured	Completed	Completed in March, 2014	Already completed in FY2013	
Okuma	400	400	Nov. 2012	Dec. 2012	Secured	Completed	Completed in March, 2014	Already completed in FY2013	
Minami-Soma	13,300	6,100	Apr. 2012	Apr. 2012	approx. 60% secured	approx. 30%	In progress	FY2015	FY2016
Iitate	6,000	5,600	Oct. 2012	May 2012	approx. 50% secured	approx. 80%	In progress	Within 2014	Within2016
Kawamata	1,200	1,600	Aug. 2013	Aug. 2012	approx. 80% secured	Almost completed	In progress	Summer, 2014	Within 2015
Katsurao	1,400	1,700	Mar. 2013	Sep. 2012	approx. 30% secured	Almost completed	In progress	Summer, 2014	Within 2015
Namie	18,800	3,300	Apr. 2013	Nov. 2012	approx. 20% secured	approx. 40%	In progress	FY2015	FY2016
Tomioka	11,300	2,800	Mar. 2013	Jun. 2013	approx. 40% secured	approx. 20%	In progress	FY2015	FY2016
Futaba	300	200	May, 2013	Under coordination	Under coordination	Under coordination	Under coordination (plans not formulated)	Still under coordination to formulate a plan	

Note 1: In Namie and Futaba, where residents will have difficulties in returning for a long time, model projects for the areas, are in progress
Note 2: Necessary areas for securing Temporary Storage Sites might be reviewed in future survey
Note 3: The plan was already reviewed at the end of 2013

Progress in the Special Decontamination Area②



Municipalities in which the decontamination work has been completed according to the plan

Tamura	Completed in June, 2013 Evacuation order was lifted on Apr. 1, 2014
Joban Expressway	Completed (Reopened between Hirono and Joban-Tomioka)
Kawauchi	Completed in Mar., 2014
Naraha	Completed in Mar., 2014
Okuma	Completed in Mar., 2014

Other Municipalities

Katsurao & Kawamata	Decontamination in residential houses is aimed to be completed in the Summer of 2014
Iitate	Decontamination in residential houses is aimed to be completed within 2014

◆The plan was already reviewed at the end of 2013
◆Decontamination will be accelerated with full force and will be implemented based on the reviewed plan for evacuees to return home

Progress in the Special Decontamination Area ③-1

Progress on decontamination works (executing ratio and ordering ratio) are as follows:

As of the end of March, 2014 < Unit: % >	Tamura		Naraha		Kawauchi		Iitate		Kawamata	
	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio
Residential area	100	100	100	100	100	100	9	100	17	100
Farmland	100	100	100	100	100	100	4	40	5	100
Forest	100	100	100	100	100	100	5	45	14	100
Road	100	100	100	100	100	100	0.9	28	0.3	100

Note 1: Executing ratio is calculated as follows: ①Areas in which decontamination works(weeding, removal of sediment, and cleaning, etc.) are completed / ②Target areas to be decontaminated

Note 2: Ordering ratio is calculated as follows: ③Areas already contracted for decontamination / Target areas to be decontaminated

Note 3: ①, ②, ③ might be modified with further review

Note 4: "—"indicates that decontamination work has been signed for decontamination and in process of partial operation

Progress in the Special Decontamination Area ③-2

As of the end of March, 2014	Katsurao		Okuma		Minami Soma		Tomioka		Namie	
	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio
Residential area	59	100	100	100	—	26	0.1	50	0.6	4
Farmland	0.1	100	100	100	0.4	46	0.2	42	0.7	15
Forest	99	100	100	100	1	43	0.1	62	4	14
Road	1	100	100	100	0.3	21	17	51	—	23

Note 1: Executing ratio is calculated as follows: ①Areas in which decontamination works(weeding, removal of sediment, and cleaning, etc.) are completed / ②Target areas to be decontaminated
Note 2: Ordering ratio is calculated as follows: ③Areas already contracted for decontamination / Target areas to be decontaminated
Note 3: ①, ②, ③ might be modified with further review
Note 4: "—"indicates that decontamination work has been signed for decontamination and in process of partial operation

New schedule to be targeted for Special Decontamination Area ①

- **Among 11 municipalities, the decontamination work for Tamura has been completed. For Naraha, Kawauchi, and Okuma, the decontamination work has been completed by the end of March, 2014 as scheduled in the original plan.**
- **For Minami-Soma, Iitate, Kawamata, Katsurao, Namie, and Tomioka, the decontamination plans were revised in Dec. '13 and a realistic schedule that meets the condition of each area were set up in consultation with each municipality and community.**
- **Decontamination of residential areas and their surroundings will be prioritized for the evacuees to return home.**
- **The Decontamination works for the infrastructure which are important for the evacuees to return home(such as water supply, sewage, and major roads) will be started in advance.**
- **The decontamination projects should be implemented in an accelerated and smooth manner and the project terms should be shortened as much as possible. The work process should be fully controlled and the progress status should be made open to public.**

Minami-Soma	● The residential areas and their surroundings will be decontaminated on a priority basis by the end of March, 2016. ● The rest will be decontaminated by the end of March, 2017. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible.
Iitate	● The residential areas and their surroundings will be decontaminated on a priority basis by the end of March, 2015. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of 2014. ● The rest will be decontaminated by the end of March, 2017. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of 2016.

Note: Decontamination work in a municipality is to be implemented based on the premises of formulation of the decontamination plan, securing of temporary storage sites, consent of land owners ,and the ensuring of workers.

New schedule to be targeted for Special Decontamination Area ②

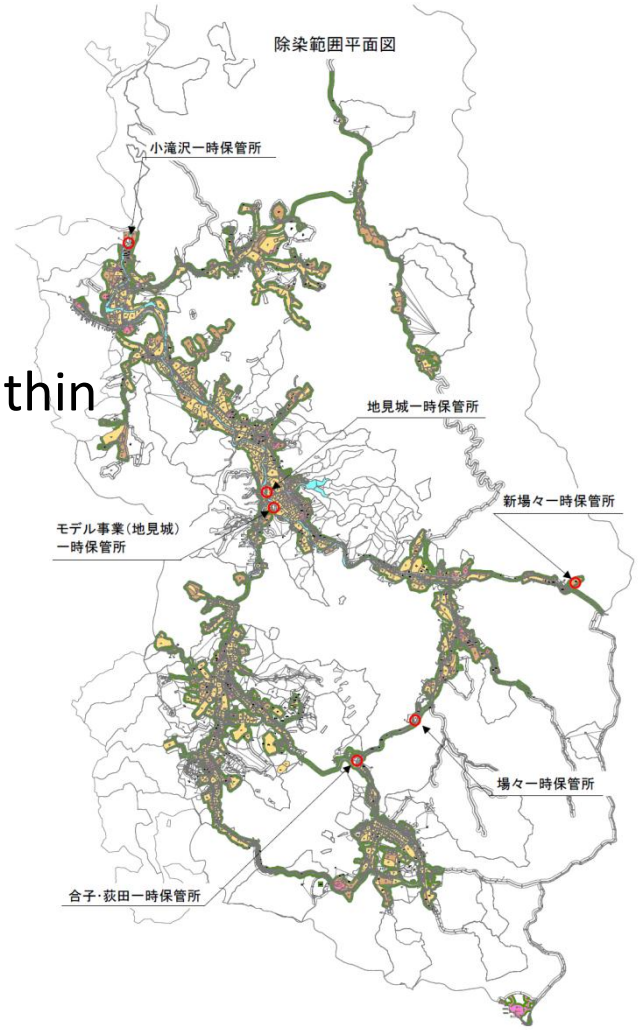
Kawamata	● The residential areas and their surroundings will be decontaminated on a priority basis by the end of March, 2015.The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of summer in 2014. ● The rest will be decontaminated by the end of March 2016. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of 2015.
Katsurao	● The residential areas and their surroundings will be decontaminated on a priority basis by the end of March, 2015. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of summer in 2014. ● The rest will be decontaminated by the end of March, 2016. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of 2015.
Namie	● Areas to be decontaminated, other than the tsunami-devastated areas (Minami-Tanashio, Ukedo-Kita, Ukedo-Minami, Nakahama, Morotake), will be decontaminated on a priority basis by the end of March, 2016. ● For the tsunami-devastated areas, the residential areas and their surroundings will be decontaminated on a priority basis by the end of March, 2016 by paying attention to the treatment of disaster waste. The rest will be decontaminated by the end of March, 2017. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible.
Tomioka	● The residential areas and their surroundings will be decontaminated on a priority basis by the end of March, 2016. ● The rest will be decontaminated by the end of March, 2017. The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible.
Futaba	● Decontamination will be discussed to establish a decontamination plan by taking account of the results of the model projects, the reconstruction plan, and the dose level.

Note: Decontamination work in a municipality is to be implemented based on the premises of formulation of the decontamination plan, securing of temporary storage sites, consent of land owners ,and the ensuring of workers.

Overview of the Decontamination Project in Tamura City

Decontamination work based on the Decontamination Implementation Plan has been finished in Tamura City.

- Work Period：July 5, 2012～June 28, 2013
- Number of Workers：Max. 1,300/day
  （A total of 120,000 man day）
- Decontamination target area：
  residential area and a part of forests (area within 20m from the edge) in Furumichi, Miyakoji district
- Volumes of work
  - Buildings　228,249㎡(121 family unit)
  - Roads　95.6km
  - Farmland　1,274,021㎡
  - Forests　1,921,546㎡



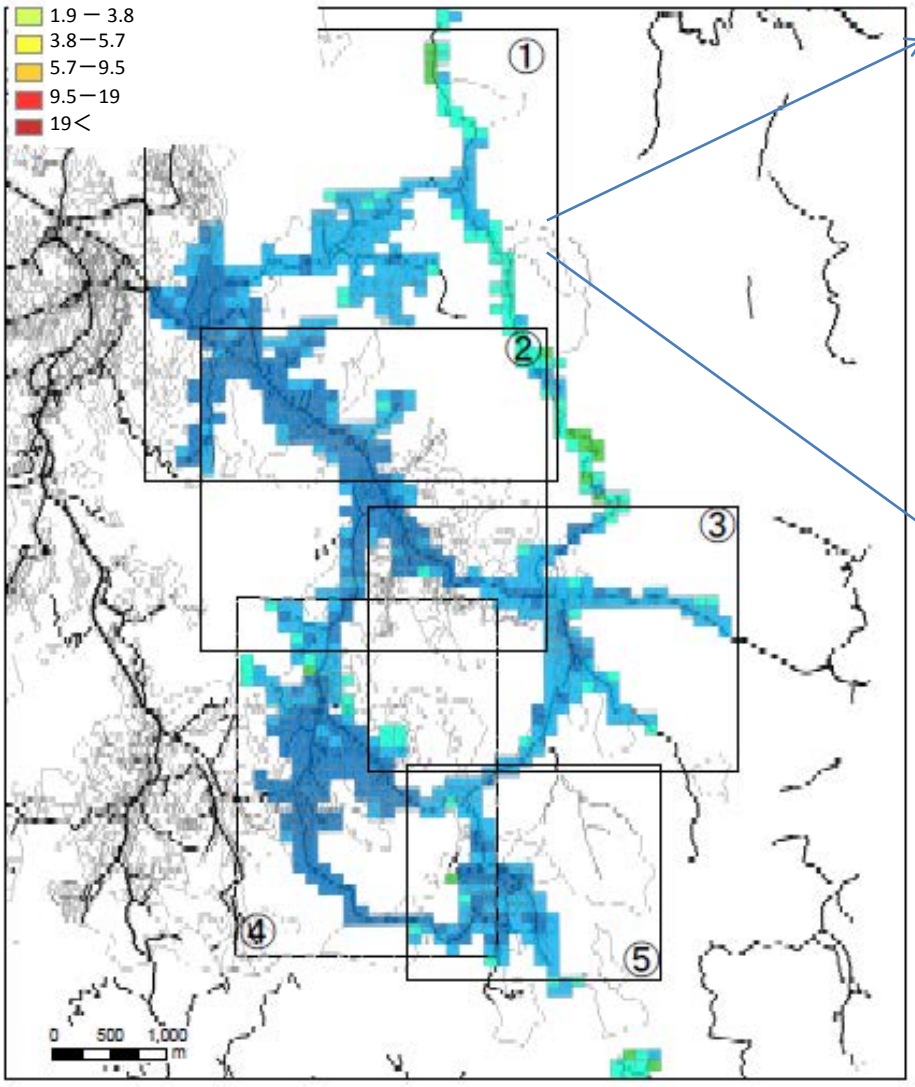
Effect of Radiation Dose Reduction by Decontamination Work in Tamura City

Tamura City

(Average of Air Dose Rate at the height of 1m above ground)

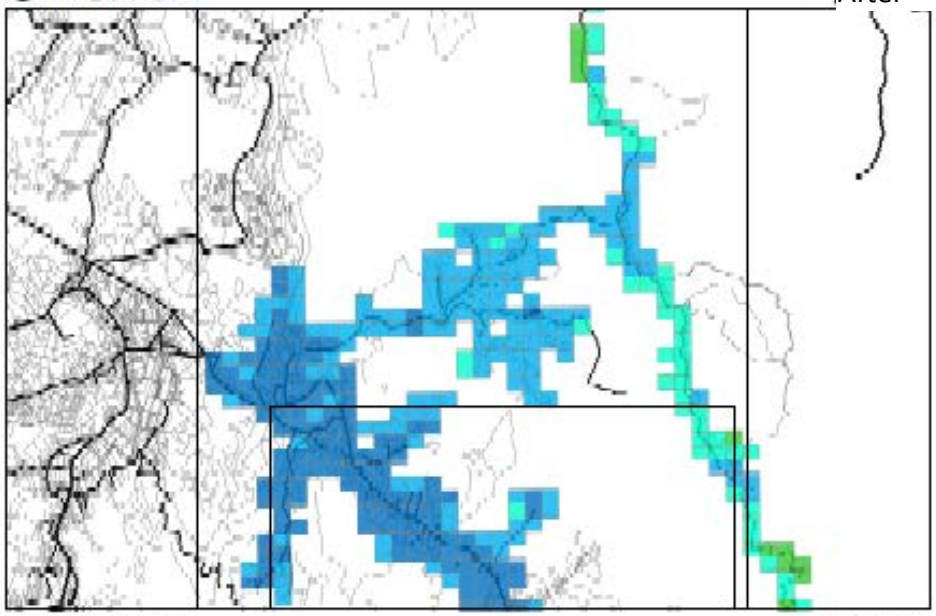
≦ 0.23
0.23－0.5
0.5 － 0.75
0.75 － 1.0
1.0 － 1.9
1.9 － 3.8
3.8－5.7
5.7－9.5
9.5－19
19＜

After



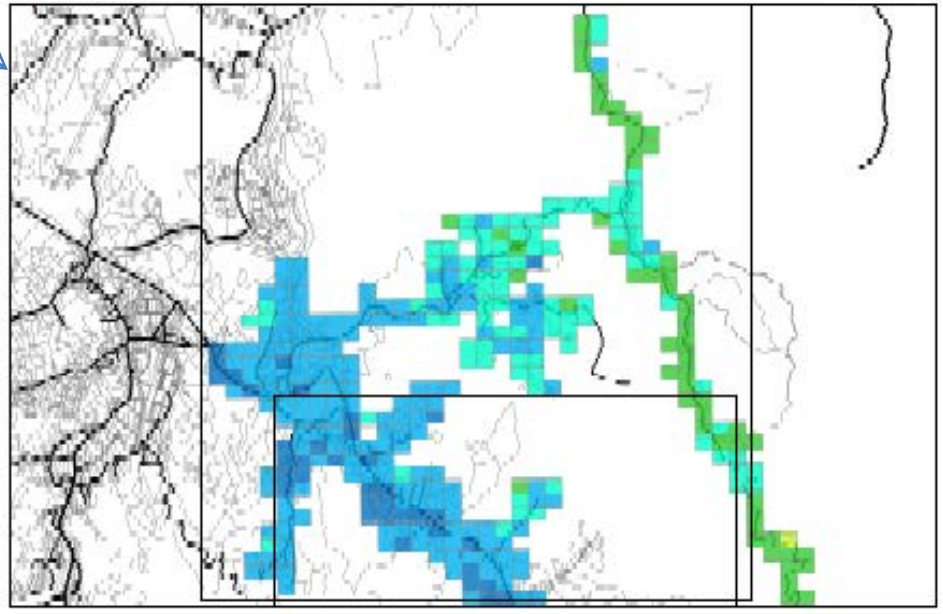
①Kotakizawa District

After

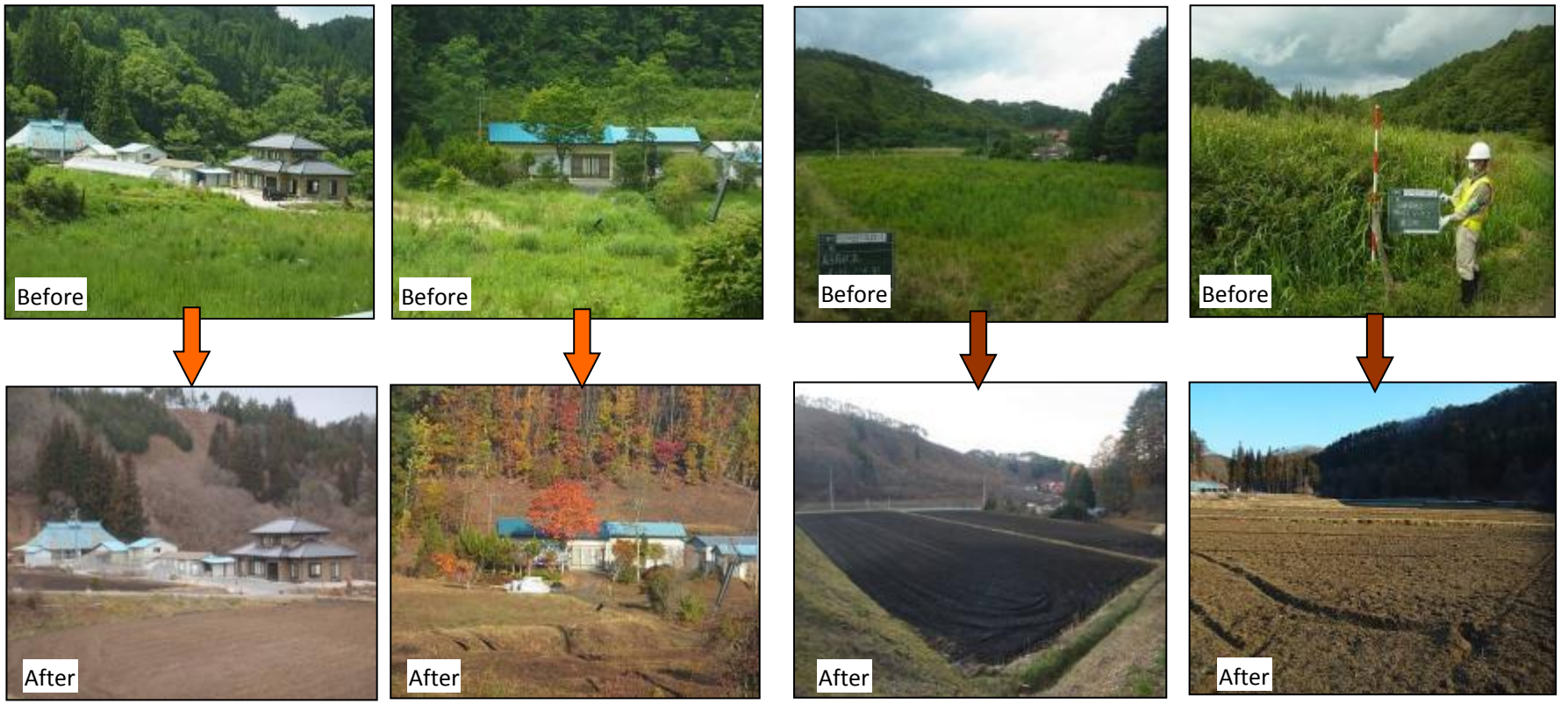


①Kotakizawa District

Before



Before & After the Decontamination Work



Decontamination Activities

Wiping off rooftop and walls

Wiping off a gutter

High pressure water cleaning of a drain pipe

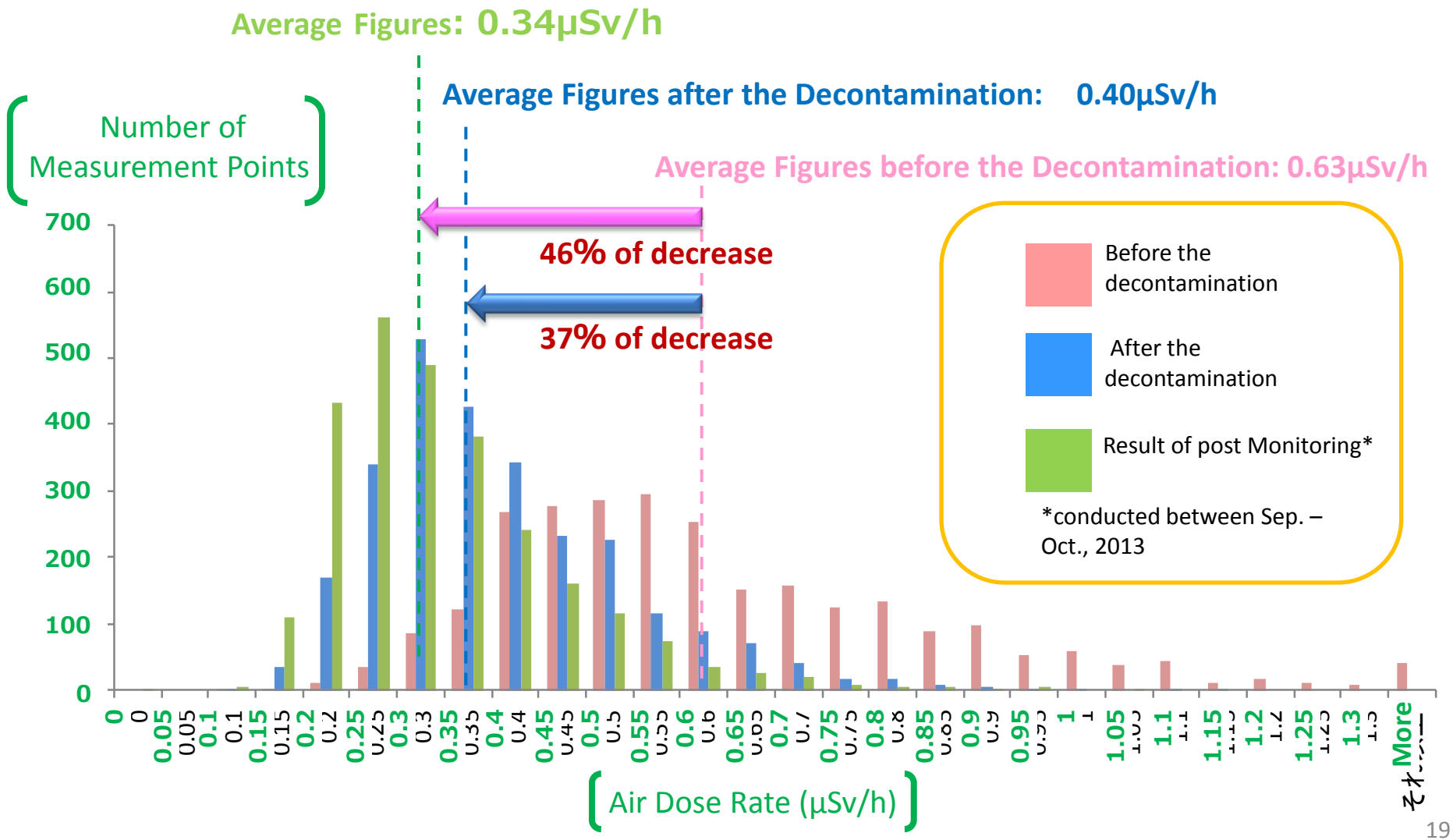
High pressure water cleaning of paved road

Mowing and removal of sludge

Removal of crushed stones and topsoil, and cover with clean soil

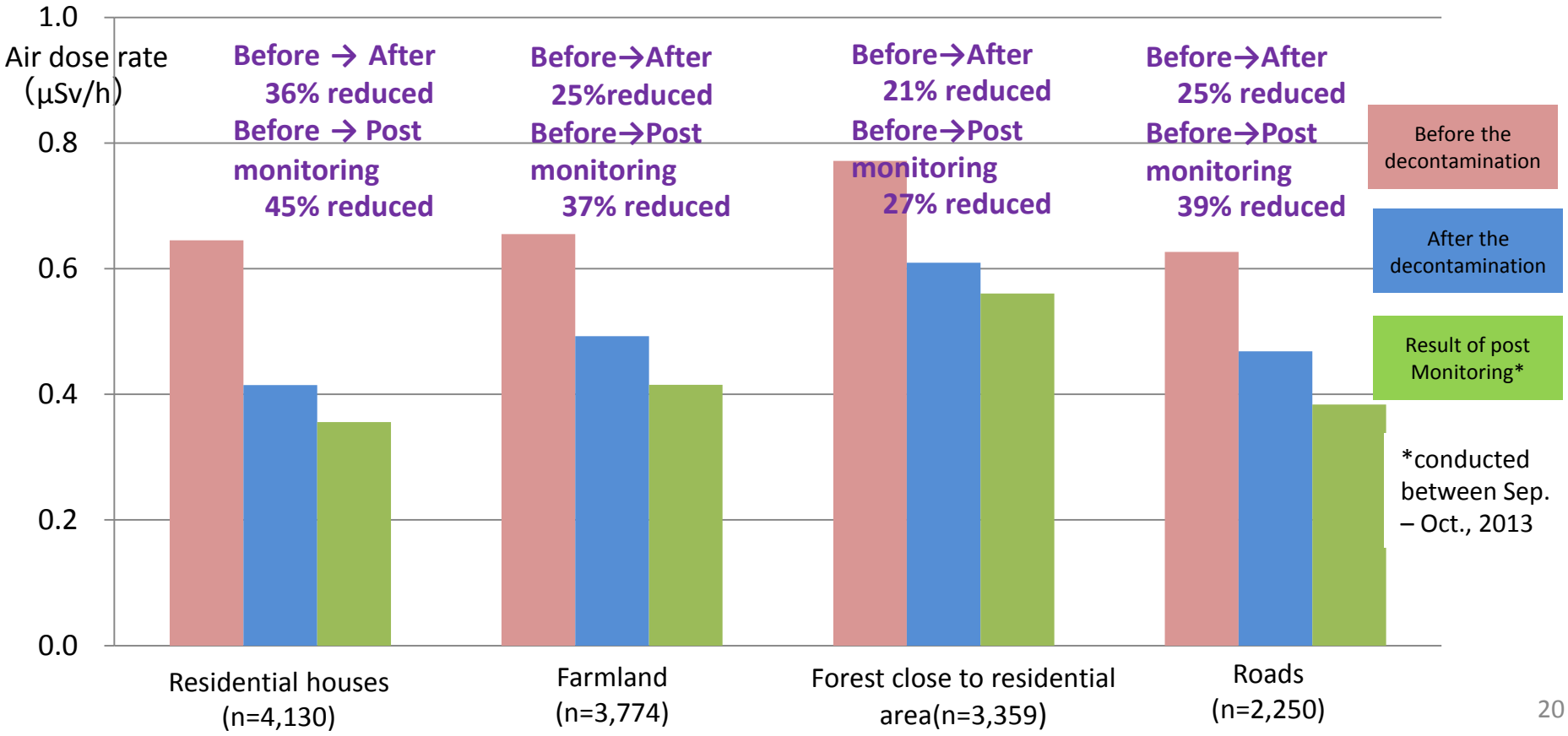
Effect on Decontamination Work（a case of Tamura） ①

Air Dose Rate 1m above surface



Effect on Decontamination Work（a case of Tamura） ②

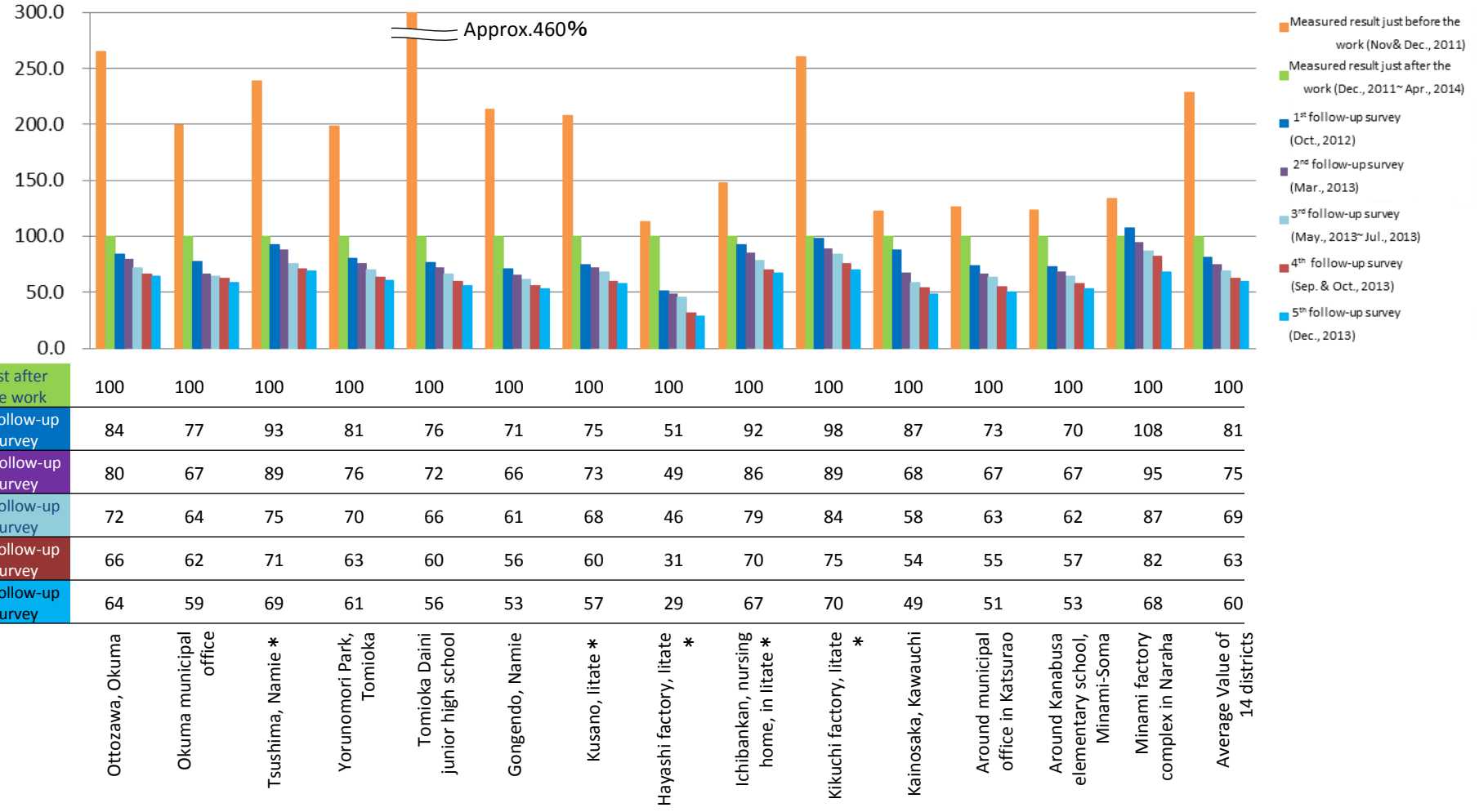
- ◆Decontamination work decreased radiation dose:
  e.g. approx. 36% in residential area
- ◆It is confirmed that the effect on decontamination work in whole area has been maintained, and post monitoring survey shows that radiation dose has been continuously decreasing



The result of Post Decontamination Monitoring

◆Decontamination effect in the decontamination model project area is almost maintained
◆Air dose rate is decreased approx. 40% after a year and 9monthes of the work

Comparison of average figure on air dose rate
(assuming the figure after the work as 100)



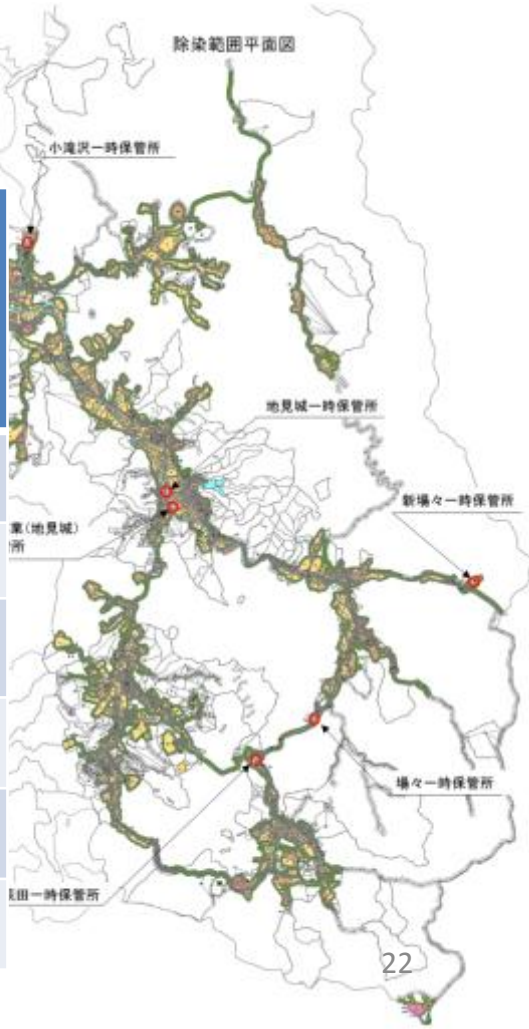
	Ottozawa, Okuma	Okuma municipal office	Tsushima, Namie *	Yorunomori Park, Tomioka	Tomioka Daini junior high school	Gongendo, Namie	Kusano, Iitate *	Hayashi factory, Iitate *	Ichibankan, nursing home, in Iitate *	Kikuchi factory, Iitate *	Kainosaka, Kawauchi	Around municipal office in Katsurao	Around Kanabusa elementary school, Minami-Soma	Minami factory complex in Naraha	Average Value of 14 districts
Just after the work	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1st follow-up survey	84	77	93	81	76	71	75	51	92	98	87	73	70	108	81
2nd follow-up survey	80	67	89	76	72	66	73	49	86	89	68	67	67	95	75
3rd follow-up survey	72	64	75	70	66	61	68	46	79	84	58	63	62	87	69
4th follow-up survey	66	62	71	63	60	56	60	31	70	75	54	55	57	82	63
5th follow-up survey	64	59	69	61	56	53	57	29	67	70	49	51	53	68	60

＊：Measurement result just after the decontamination work in Tsushima, Namie and Iitate, might be possibly low because of accumulated snow
Note 1: Measurement figure might be changed by environmental condition, e.g. climate condition, such as rainfall, snowfall,
Note 2: It's have passed about one year and nine months from measurement result just after the decontamination work until 5th follow-up survey, during that time, the dose rate resulting from radiocaesium, about 30% of reduction is expected by physical attenuation.

Overview of Temporary Storage Site

- Removal soil and etc. has been collected and stored in temporary storage sites.
- Air dose rate at the entrance of the sites shows no difference after removed soil, tec. are stored.
- Radioactive materials has never been detected from leachate or groundwater under the sites.

District	Air Dose Rate just after Installation (1m)	Latest (5/27) Air dose Rate（1m）	Amount of Removed soil （㎥）	Measurement Result of Leachate	Measurement Result of Groundwater
Kotakizawa	0.36	0.36	4,242	ND	ND
Jikenjo	0.32	0.38	2,743	ND	ND
Jikenjo (Model Project)	0.38	0.34	2,626	ND	ND
Shin-Baba	0.60	0.56	7,985	ND	ND
Baba	0.40	0.45	1,974	ND	ND
Goshi, Ogita	0.39	0.43	12,149	ND	ND



Progress of Decontamination Work on Joban Expressway
< Hirono ～ Joban-Tomioka >

◆Decontamination work on Joban expressway was implemented between Dec. 2012～Jun. 2013.
Target section=approx. 3.3km: over 3.8μSv/h～less than 9.5μSv/h (in a part of Hirono～Joban-Tomioka, 16.4km)

◆As the result of running survey by monitoring car, air dose rate has been much more decreased than the target value described in the "Decontamination Policy"*

Target Value Less than approx. 3.8μSv/h by the reopening

Actual Value 1.5～1.7μSv/h average (as of Jan. 23, 2014)

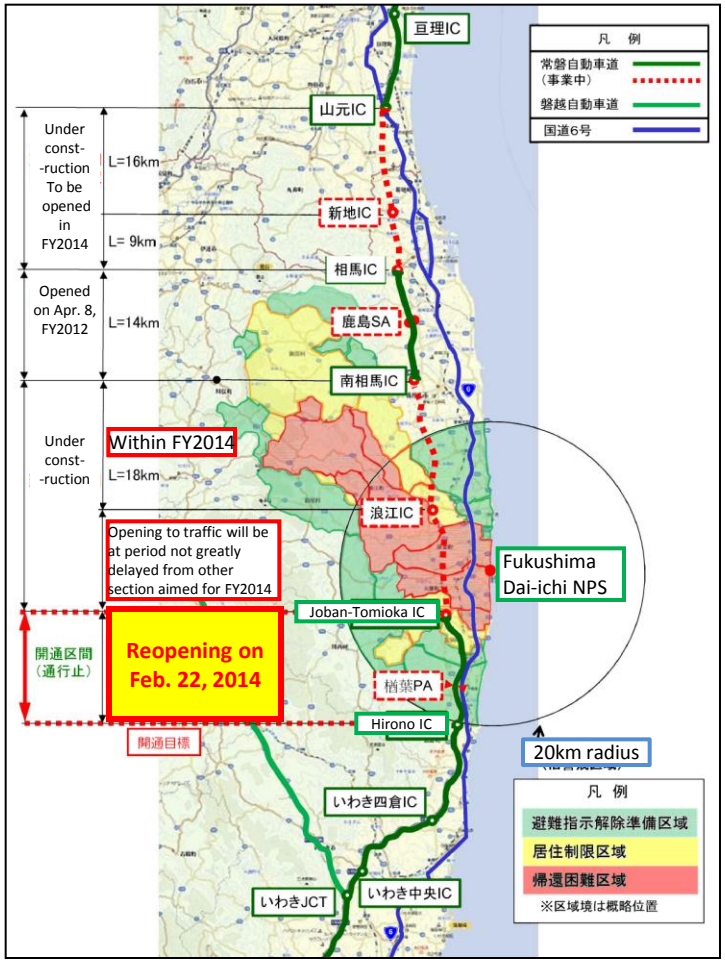
*Decontamination policy includes the decrease of radiation dose which will be expected by the roadwork such as road pavement etc

Main Method of Decontamination

Slope : Weeding
Road surface & ditches: High pressure water spray

Weeding of slope

High pressure water spray on the road surface

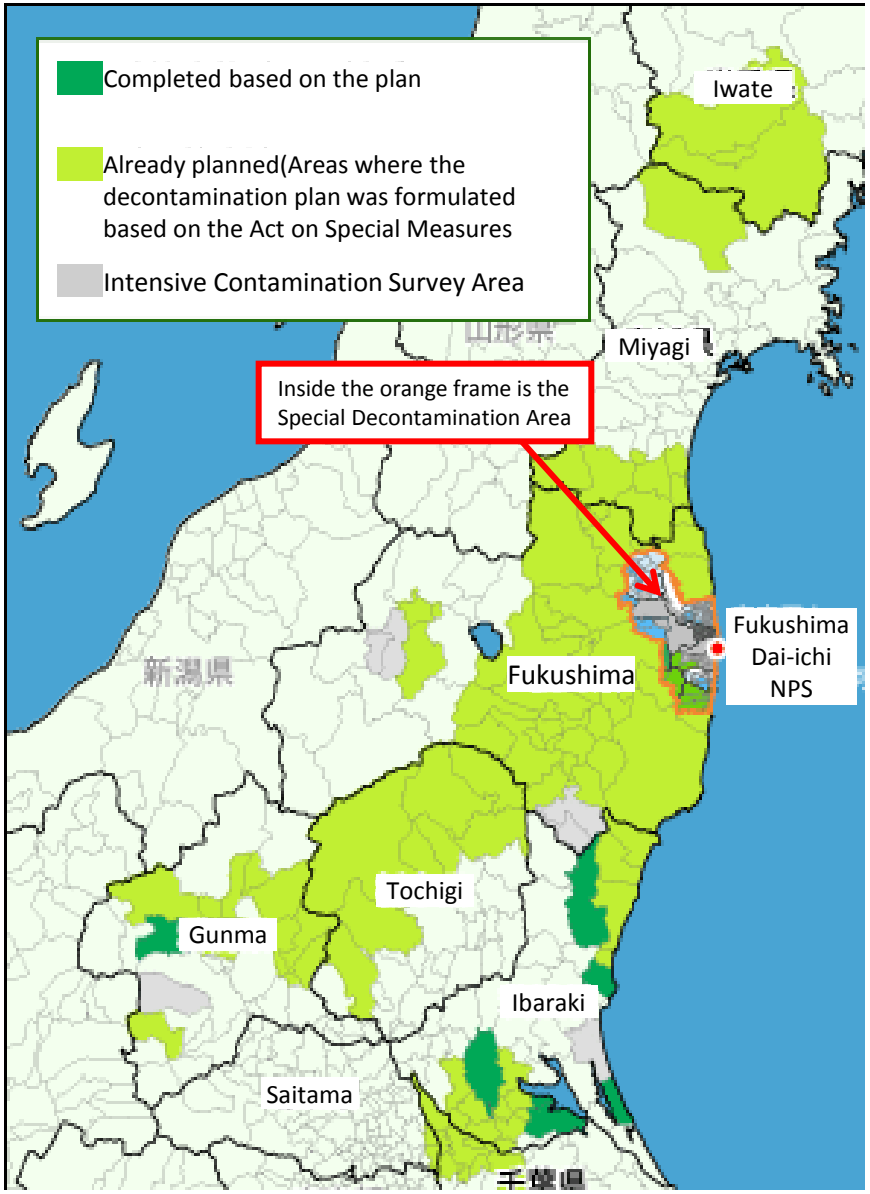


Outline

- Policy Framework
- Progress in Special Decontamination Area
- **Progress in Intensive Contamination Survey Area**
- Decontamination technology
- New policies announced in Sep 2013
- Efforts to secure Interim Storage Facility

Progress in Intensive Contamination Survey Area ①

As of Mar. 2014



◇Decontamination work as planned in public facilities including living environment of children is coming to an end with more than 80%

◇Also the decontamination work in residential areas , farmland/meadows and roads, more than 60% have been ordered

◇Steady progress has been made and there are municipalities who have already completed the planned work

○Number of municipalities designated as Intensive Contamination Survey Area:
104 (at first) → 100 (at present)
If the conditions would not be fulfilled, the designation of Intensive Contamination Survey Area can be lifted
The designation was lifted in 4municipalities up to now because of radiation dose decrease, etc.

○Decontamination implementation plans formulated (for all municipalities which have the intention):
94municipalities

○Publicly announced the completion of decontamination work based on the plan (monitoring survey will be continued):
7municipalities

○In process of implementing decontamination work based on the plan:
87municipalities
Completion of the plan is set between FY2015~FY2016 (34municipalities) in Fukushima prefecture and most of other municipalities, between FY2012~FY2013 (45municipalities)

○According to the plans, most municipalities in Fukushima are setting their ending periods at the end of FY2015 and FY2016, while many municipalities in other prefectures are setting them at the end of FY2012 and FY2013

Progress in Intensive Contamination Survey Area ②

Decontamination implementation plans were formulated in 94municipalities, and progress has been made (As of March, 2014)

	Number of municipalities	Municipalities designated as Intensive Contamination Survey Area		
		Already formulated the plans		No plan at present
		decontamination work in progress	Completed	
Iwate	3	3		
Miyagi	8	8		
Fukushima	40	36		4
Ibaraki	20	13	6	1
Tochigi	8	8		
Gunma	10	8	1	1
Saitama	2	2		
Chiba	9	9		
Total	100	87	7	6

Progress in Intensive Contamination Survey Area ③

Within Fukushima prefecture (As of the end of Feb., 2013)	Ordering Ratio (Number of ordering/Number of planning	Executing Ratio (Number of actual achievement/Number of planning)
Public facilities, etc.	approx. 90%	approx. 80%
Residential houses	approx. 70%	approx. 40%
Roads	approx. 70%	approx. 30%
Farmlands & meadows	approx. 80%	approx. 70%
Forests(in living areas)	approx. 40%	approx. 20%

Note: The table is based on the investigation result conducted by Fukushima prefecture.
The number of planning is the total number until the end of FY2013, which might be increased in future depending on each municipality's status.

Outside Fukushima pref. (As of the end of Dec., 2013)	**Ordering Ratio （Number of Ordering/number of planning）**	**Executing Ratio (Number of actual achievement/number of planning）**
Schools and nurseries	almost on order	almost completed
Park, Sports facilities	almost on order	almost completed
Residential houses	approx. 60%	approx. 60%
Other facilities	approx. 80%	approx. 80%
Roads	approx. 90%	approx. 90%
Farmlands & meadows	approx. 90%	approx.70%
Forests(in living areas)	approx. 50%	Approx.10%

Note: The number of planning is the total number including future plan as of the end of 2013, and might be increased aftertime

Result of the review on decontamination at Sep. 2013

Checkup the status of municipalities tackling leading decontamination and completing decontamination work based on on-going decontamination plan. Effective information shall be shared widely among municipalities in consideration of municipalities' status.

○The municipalities, implementing leading decontamination work, have been accumulating various original and innovative measures and know-hows, from the view point of the promotion of effective and efficient decontamination work and mutual understanding between local residents.

Example: Excerpted from " Good Practice Collection"(compiled by Fukushima Office for Environmental Restoration, MOE)

・Volume reduction of the waste(twigs, etc.) discharged from decontamination work (in Date city)

Chipping operation in decontamination site

・Cooperation with local residents, delivery of Q &A materials for smooth operation for explanatory meetings (in Fukushima city)

Committee for countermeasures for decontamination area

Questionnaire booth

○There are municipalities of which decontamination work have completed according to the plan as of Jun., 2013

With accelerating and streamlining of decontamination work in consideration of each municipality's status, information shall be shared by updating Good Practice Collection and by guidelines, and also exchanging opinions among municipalities.

Dissemination of Information regarding Decontamination Progress on the Website

In case of Fukushima City:

Information Site on Decontamination
URL: http://josen.env.go.jp/en/

Outline

- Policy Framework
- Progress in Special Decontamination Area
- Progress in Intensive Contamination Survey Area
- **Decontamination technology**
- New policies announced in Sep 2013
- Efforts to secure Interim Storage Facility

Formulation of the Decontamination Guidelines

- Technical guidelines for carrying out decontamination
- Developed to complement the Ordinance of the Ministry of the Environment
- Used as reference when ordering decontamination projects and the like

Contents

1. Guidelines on the methods of investigating and measuring the status of environmental pollution in intensive survey areas
2. Guidelines pertaining to measures on decontamination and the like
3. Guidelines pertaining to the collection and transportation of the removed soil
4. Guidelines pertaining to the storage of the removed soil

URL:
http://josen.env.go.jp/en/framework/pdf/decontamination_guidelines_2nd.pdf

Techniques used for decontamination ①

- **Houses, buildings**
  - **Removal of deposits from the roof, deck , and gutters**
  - **Wiping off the roofs and walls, high-pressure washing etc.**
- **Gardens and standing trees**
  - **Mowing, removal of fallen leaves, topsoil stripping etc.**
- **Roads**
  - **Removal of deposits in the ditch, high-pressure washing etc.**

Decontaminating paved surfaces (by a collective type high-pressure water cleaner)

Decontaminating roofing tiles (by wiping-off)

Decontaminating gardens (by removing soils etc.)

Photos provided by: Date City

Techniques used for decontamination ②

- **Schoolyards, gardens and parks**
  Stripping of soils and topsoils etc.
- **Farmlands**
  Reversal tillage, soil disturbance using water, stripping of topsoils etc.
- **Forests and woods**
  Removal of fallen leaves and lower twigs, pruning etc.

Decontaminating a schoolyard

Photo provided by: JAEA

Decontaminating a grass plot

Photo provided by: Japanese Society of Turf grass Science

Decontaminating a forest (by removing fallen leaves)

Photo provided by: JAEA

Summary on Decontamination Effect

Effect of decontamination works by national and local governments (Major results)

Air dose rate[*1,2] (Measured at 1m height)	Before decontamination: **0.36-0.93** μSv/h ↓ After decontamination: **0.25-0.57** μSv/h		
Reduction rate (average) of air dose rate[*2,3]	<1μSv/h before decontamination	1-3.8μSv/h before decontamination	> 3.8μSv/h before decontamination
	32%	**43%**	**51%**
Example of reduction rate of surface concentration of contamination [*4]	Asphalt-paved roads: 50-70% by washing, 30-70% by high-pressure washing Playground(Soil): 80-90% by stripping off surface-dirt		

*1: Range from 25 to 75 percentile values of the air dose rate.
*2: Data measured at 50cm height in children's living environment are not included.
*3: Average reduction rate of the air dose rate for different dose levels before decontamination.
(Reduction rate (%)= (1-air dose rate after decontamination / air dose rate before decontamination) x100.)
*4: Already in press release of "Announcement on 'Effectiveness of decontamination work which is implemented by the national government and relevant municipalities in decontamination project'（Jan. 18, 2013）"

<Original Data>

○Projects: Mostly, decontamination projects after FY2012

(Projects by national government: 10 municipalities;
Projects by municipalities: 90 municipalities in 8 prefectures)

○Data measurement term : Roughly from Mar. 2012 to Oct. 2013

○Measured item: Air dose rate (measured at 1m and 50cm heights; Unit: μSv/h)

○Number of data: About 250,000 (A pair of data collected before and after decontamination is counted as one item of data)

Outline

- Policy Framework
- Progress in Special Decontamination Area
- Progress in Intensive Contamination Survey Area
- Decontamination technology
- **New policies announced in Sep 2013**
- Efforts to secure Interim Storage Facility

New Policies announced in Sep 2013

MOE has announced new policies for two items below in September 2013.

1. Follow-up policy after decontamination work is completed

Follow-up policy has newly been established by MOE, according to the completion of decontamination work based on the decontamination plans in several municipalities.

2. Decontamination policy in forest areas

Decontamination in forest area has been limited to within 20 m from the residential area under the current policy.
Taking into account voices from Fukushima that hope to widen decontamination target area, decontamination policy for forest areas is also renewed based on relevant results of research.

1. Follow up measures after completion of decontamination work based on a plan

(Confirmation of maintenance of decontamination effects)

- Conduct relevant monitoring so as to confirm whether air dose reduction by decontamination would be maintained.

(Follow-up decontamination work)

- Implement decontamination work in the case of that newly-found contaminated areas(*) or areas in which un-decontaminated points are found, while considering radiation level there.

  (*) Supposing such area whose air dose rate is higher than that of surrounding area because contaminated soil, etc. is re-accumulated there associated with fallen leaves or rain water and, as a result, air dose rate goes up significantly after the decontamination.

- Require a careful judgment to decide the follow-up decontamination implementation, considering various circumstances of each case. MOE will publish guidance for it by analyzing actual cases.

(Others)

- Take relevant measures including risk communication matters based on the ongoing discussion at the Nuclear Emergency Response Headquarters on radiation protection measures.
- In regard with measures on rivers and lakes, monitoring will have been conducted.

2. Measures on forest areas

A. Around residential areas

- Make an additional measure possible to remove organic residuals 5m in width from the edge in the case the effects of prior decontamination (by removing organic deposits such as fallen leaves 20m in width) is found to be limited.
- Make an exceptional measure possible to widen the area of decontamination to over 20m in case relatively high air dose rate is monitored around the house even though prior decontamination has been done, supposing such a house located in a valley, etc.

⇒ Reflected to “Decontamination Guidelines” (December, 2013)

B. Cultivating farm for mushroom

- Make the implementation of standard decontamination method possible, which have been approved around residential areas (20m wide), in a case where cultivating business is expected to be sustained.

⇒ Described a decontamination method clearly in “Q&A for decontamination” (October, 2013)

C. Forest in whole

- Collaborative measures will be conducted by Ministry of the Environment and Forestry Agency.

MOE: measures regarding monitoring on runoff and/or diffusion of contaminated soil as well as countermeasures against them

Forestry Agency: measures to take proper forestry management

⇒ Implementation planned in FY2014

(Reference) Related responses towards evacuees returning home

"The Policy for accelerating Fukushima's reconstruction from the nuclear disaster" (Cabinet Decision, December 20, 2013)

Integrated and multi-tiered protective actions are taken by the related ministries in collaboration with each other. The ministries conduct, or continue to examine, measures of measuring and managing individual doses, reducing radiation exposure in various manners, and establishing a consultation system. With these measures, we continue to pursue the long-term goal (additional individual dose of 1mSv per year or below) for the returned evacuees.

URL; http://www.kantei.go.jp/foreign/96_abe/actions/201312/20gensiryoku_e.html

"Practical Measures for Evacuees to Return Their Homes" (Nuclear Regulation Authority, November 20, 2013)

One of the practical measures for evacuees to return their home is to focus on the individual dose. For the evacuees to return home, measures that contribute to measure, manage the individual dose, and to reduce radiation exposure of residents are suggested. Also, to establish a system of supporting the evacuees who choose to return home in a comprehensive manner, the necessity of allocating counseling staff and developing a system of supporting them was suggested.

URL; http://www.nsr.go.jp/english/library/data/special-report_20140204.pdf

Outline

- Policy Framework
- Progress in Special Decontamination Area
- Progress in Intensive Contamination Survey Area
- Decontamination technology
- New policies announced in Sep 2013
- **Efforts to secure Interim Storage Facility**

Efforts to secure Interim Storage Facility①

Oct., 2011 Ministry of the Environment announced the Basic Principles for Interim Storage Facility (ISF) (the roadmap), and explained to the heads of relevant municipalities

※Main Contents

- The National Government shall secure, maintain and manage ISF
- The National Government shall make utmost efforts **to start the operation of ISF within about 3 years(by January, 2015)**
- Materials to be stored are limited to soil and waste generated in Fukushima prefecture

Dec., 2011 The Ministry requested Fukushima Prefecture and 8 towns in Futaba County to examine location sites within Futaba county

Mar., 2012 The Ministry explained the Fukushima Prefecture and 8 towns that IFS may be located separately in 3 towns (Futaba, Okuma and Naraha)

Aug., 2012 The Ministry proposed the investigation for ISF to Fukushima Prefecture and 8 towns

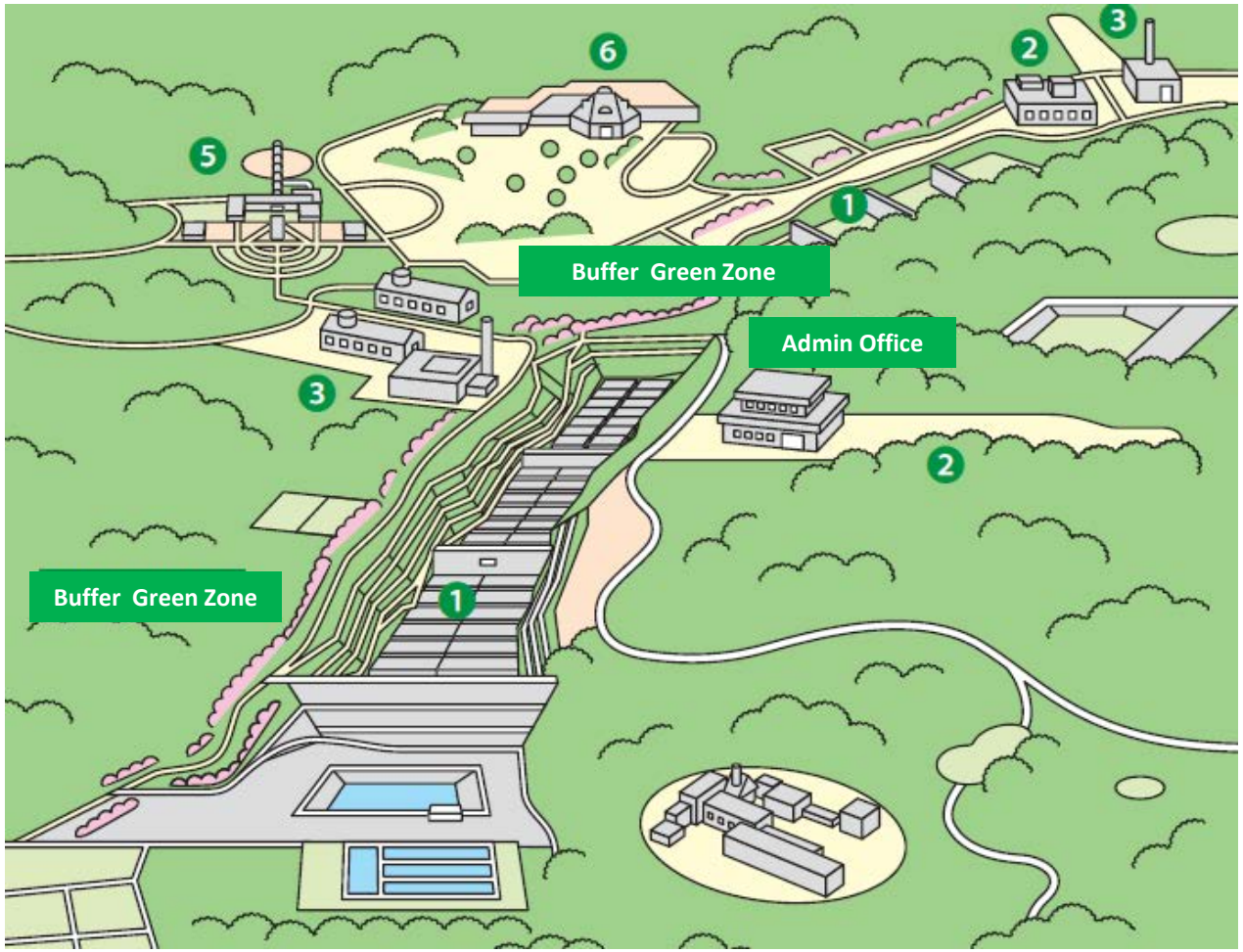
Nov., 2012 The Governor of Fukushima Prefecture announced the acceptance of the investigation proposed by the Ministry at the consultation meeting with the mayors of Futaba County's towns and villages

Efforts to secure Interim Storage Facility ②

Apr., 2013	Field survey started in Naraha and Okuma
May., 2013	Boring survey started in Okuma
Jul., 2013	Boring survey started in Naraha
Jun.-Sep., 2013	Studied by a study Group on environmental protection and safety measures for ISF
Oct., 2013	Field survey and boring survey started in Futaba
Dec., 2013	The Ministry requested the Fukushima prefecture and 3towns (Futaba, Okuma and Naraha) for the establishment of ISF
Dec., 2013-	A study group on transportation was established
Feb., 2014	The Governor of Fukushima prefecture requested the Ministry to review the plan to consolidate ISF in Okuma and Futaba
Mar., 2014	The Ministry responded to consolidate ISF in 2towns

Illustration of Interim Storage Facility

ISF will be consisted of facilities with various functions



①Storage Facility

②Emplacement & Segregation Facility

③Volume Reduction Facility

④24-hour monitoring Equipment(placed in several points, not specifically indicated in the figure)

⑤R & D Facility

⑥Public information Center

Scale of the whole facility（estimation）
Total storage volume ranges between 15-28 million ㎥, which is 12-23 times big as a baseball stadium(approx. 1.24million ㎥)

Concept of Structure of Storage Facility

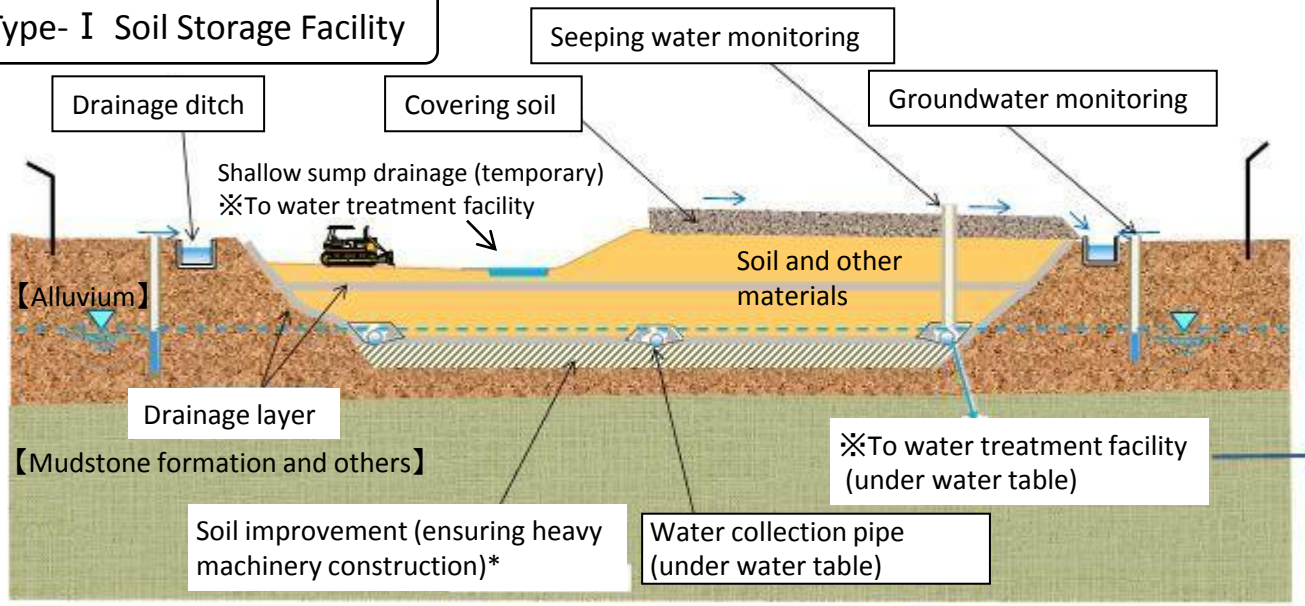
	Type-I Soil Storage Facility	Type-II Soil Storage Facility	Waste Storage Facility
Main substances for storage (Radioactive cesium concentration)	Soil and other materials that do not risk polluting public water area and groundwater with radioactive cesium （ 8,000Bq/kg or less ）	Soil and other materials exceeding the condition shown in left column (More than 8,000Bq/kg)	Waste
Measures to prevent water seeping into ground water	—	Seepage control and other infrastructure (Seepage control sheet and other infrastructure or low-permeability soil layer)	Package

Schematic View of Type- Ⅰ Soil Storage Facility

<Type-I >

Applicable geography and geology
Any low land

Radioactive cesium concentration
8,000Bq/kg or less



*Basement: In the case of alluvium, soil improvement (approximately up to 1m depth) will be performed. In the case of mudstone formation, no action will be needed.

Concept of Structure of Storage Facility

Schematic View of Type- II Soil Storage Facility

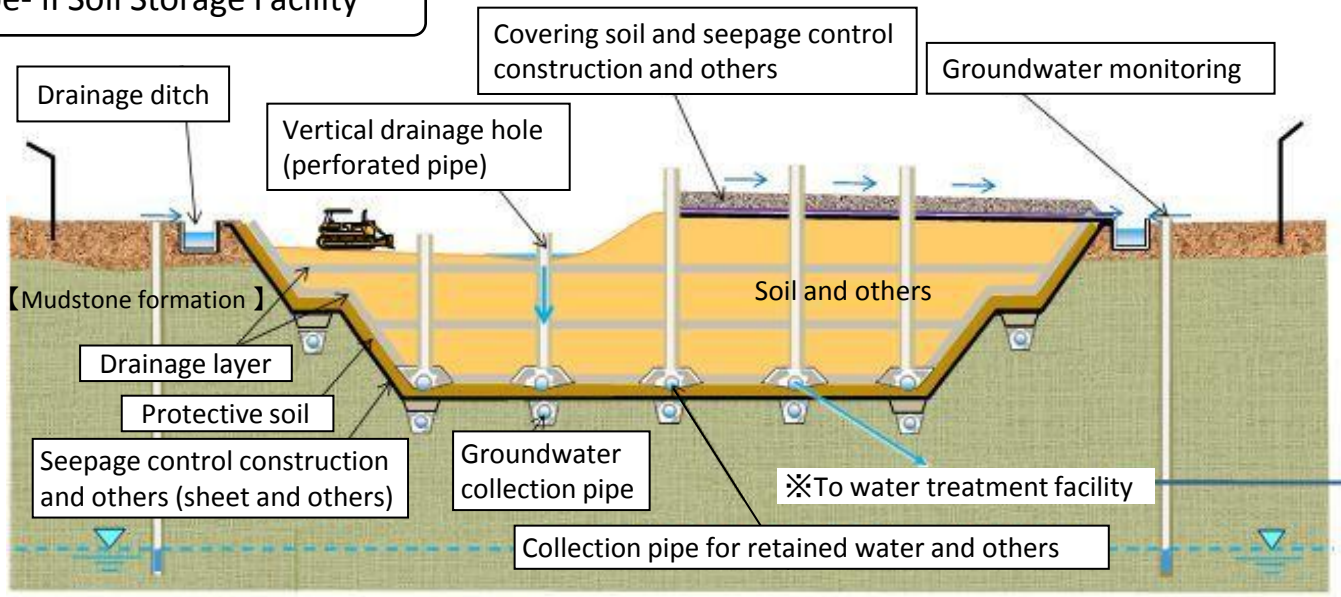
<Type – II >

Leakage control
Seepage control sheet patterns

Applicable geography and geology

Hill , Tableland

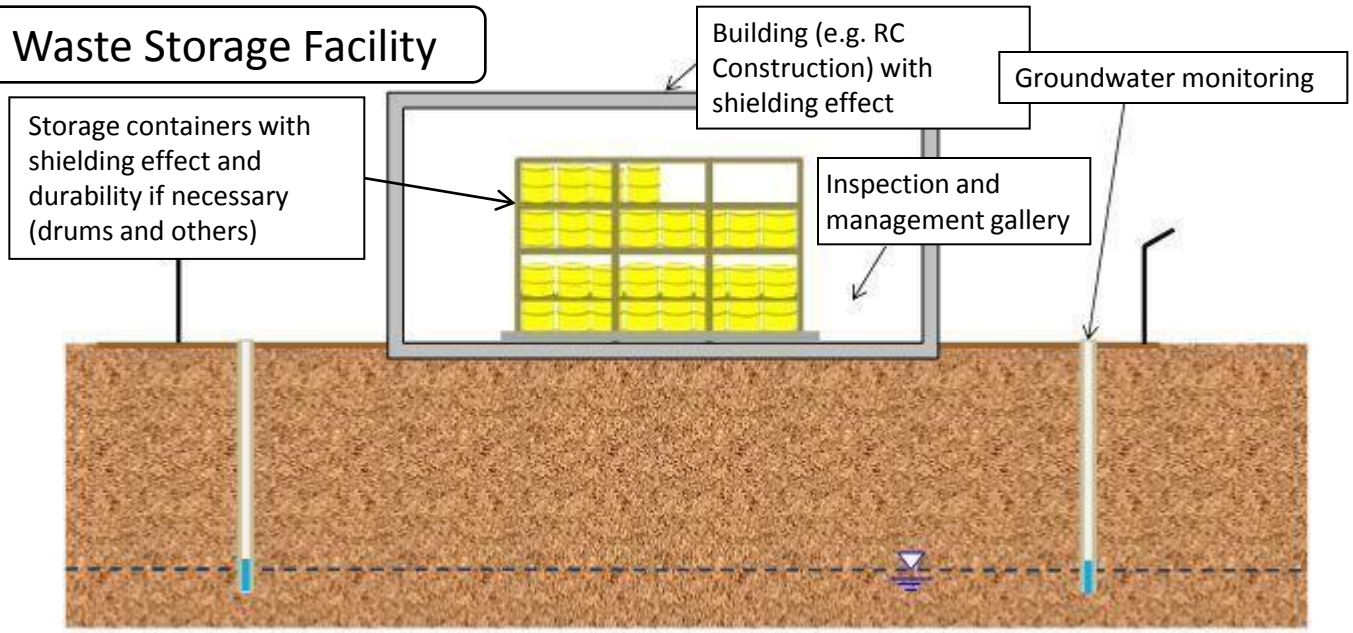
Radioactive cesium concentration
more than 8,000Bq/kg



Schematic View of Waste Storage Facility

Applicable geography and geology
Hill, Tableland

Radioactive cesium concentration
More than 100,000Bq/kg



Current Plan