Progress on Off-site Cleanup Efforts in Japan

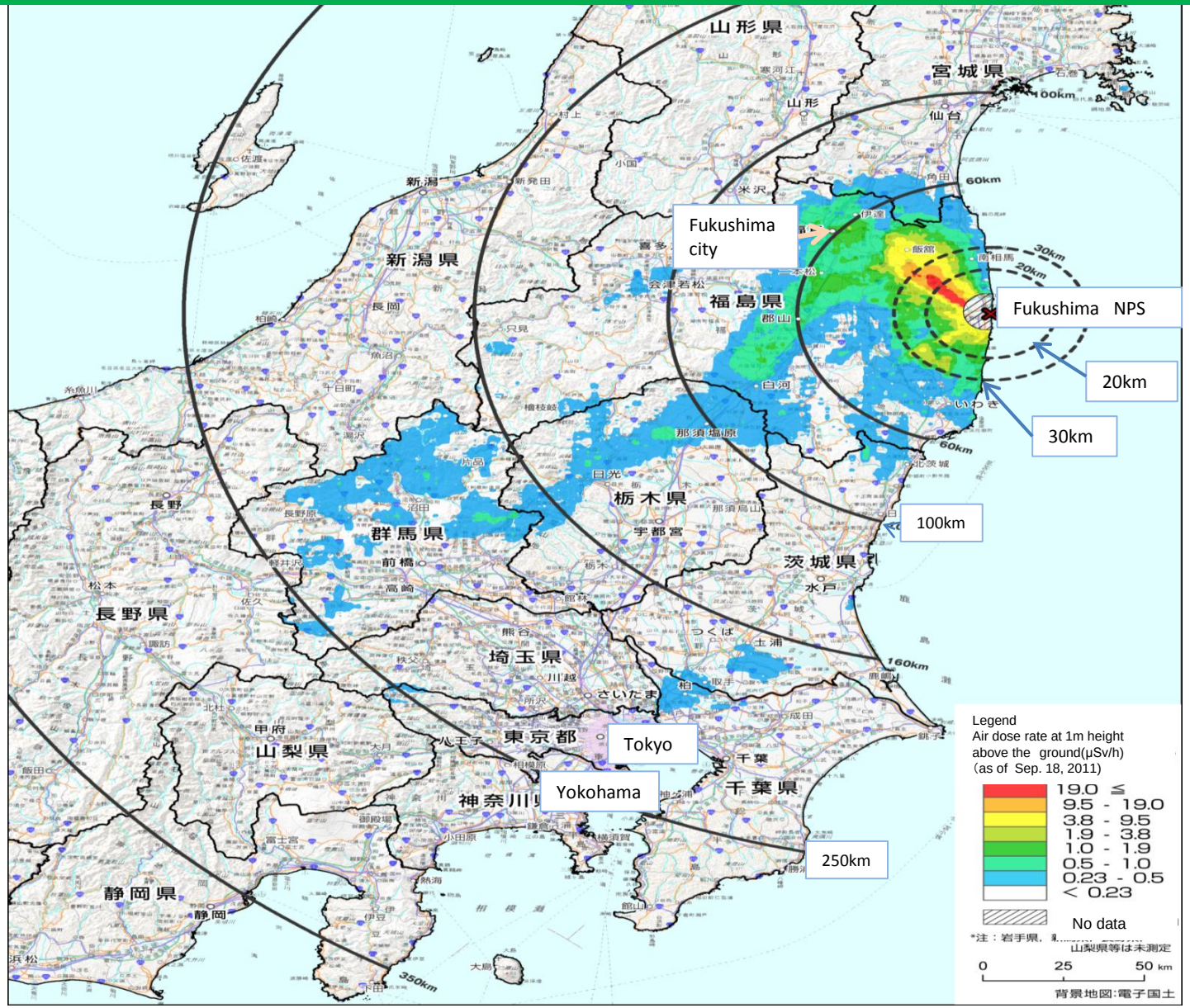
February, 2014

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

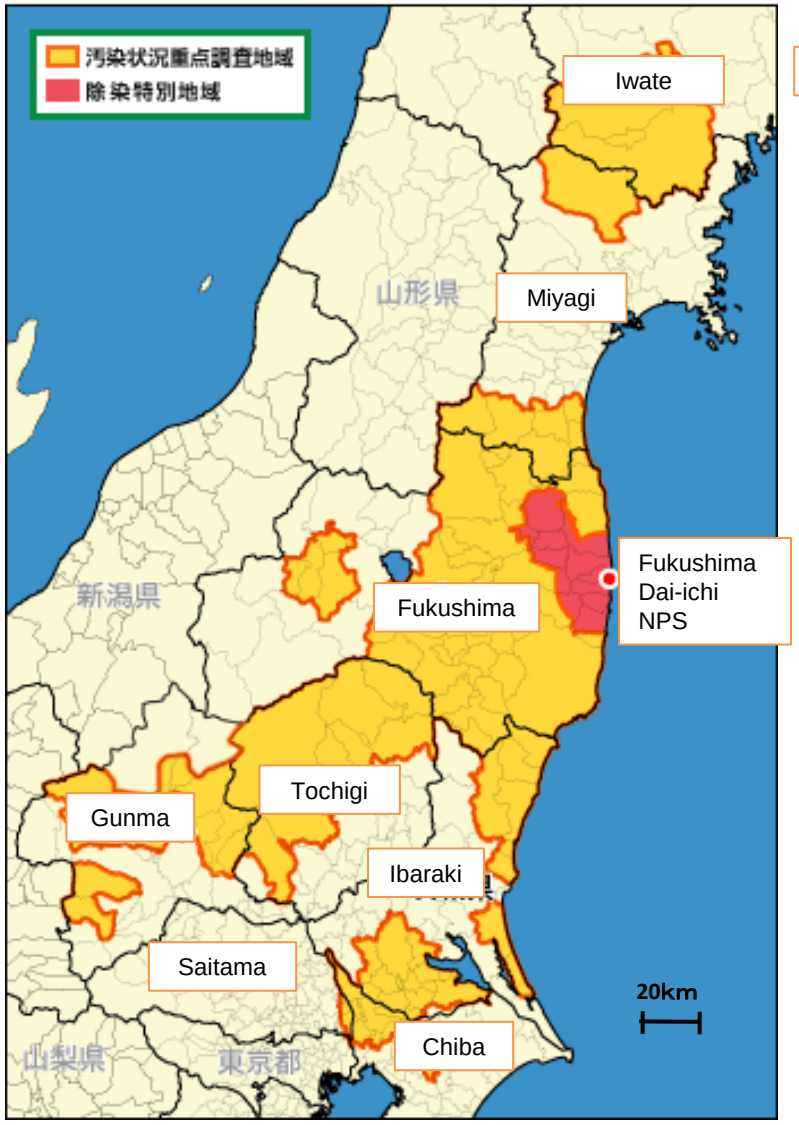
(*) Entire area of Naraha, Tomioka, Okuma, Futaba, Namie, Katsurao, and Iitate.
Some area of Tamura, Minami Soma, Kawamata, and Kawauchi.

Intensive Contamination Survey Area

- 100 municipalities in 8 prefectures (*), in which over 0.23 μSv/hour of air dose rate (equivalent to over 1 mSv/Year) 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

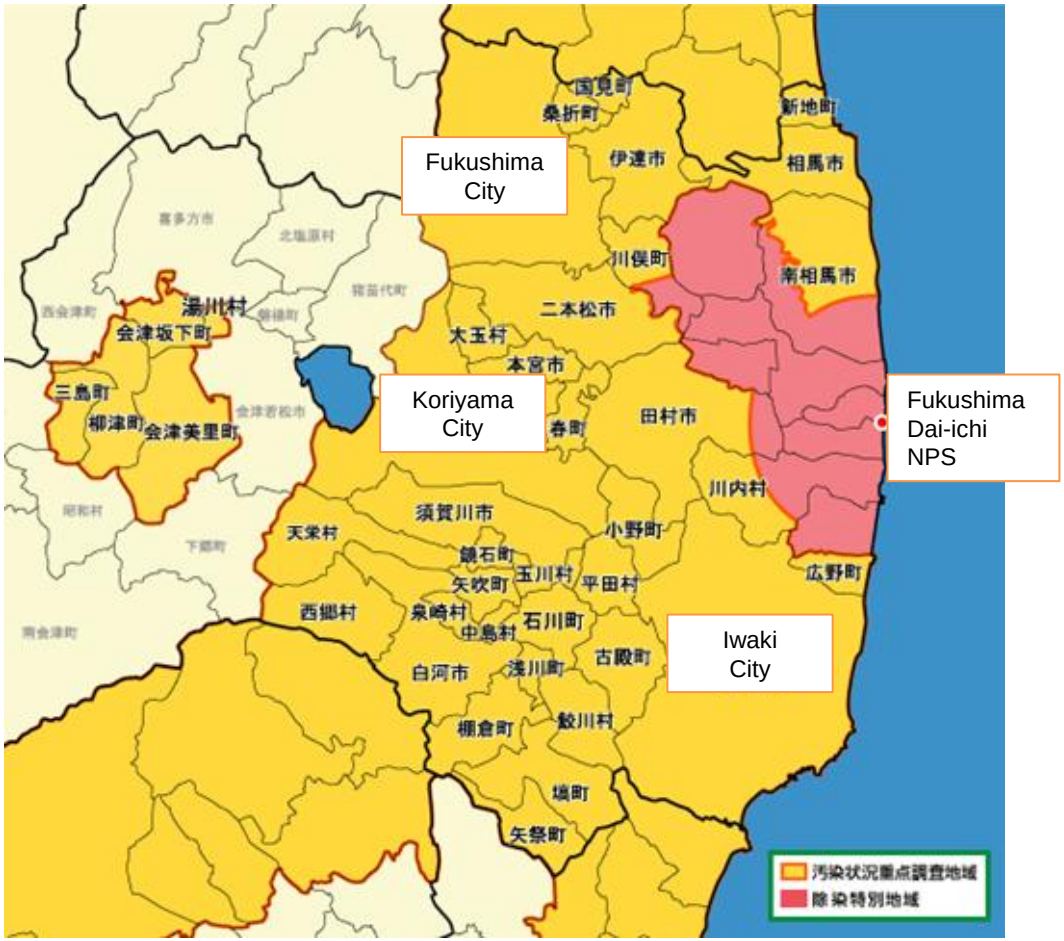
Special Decontamination Area and Intensive Contamination Survey Area



▪▪Special Decontamination Area

▪▪Intensive Contamination Survey Area

Fukushima Pref.



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

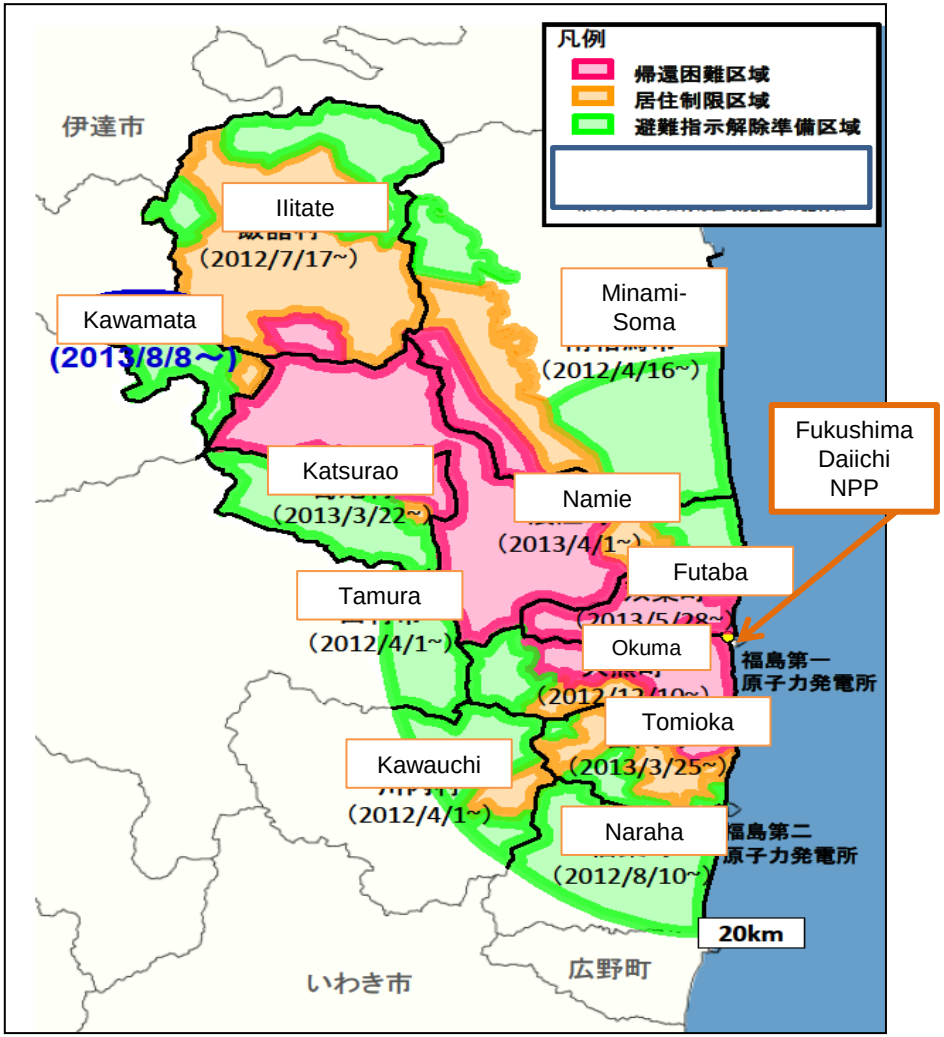
Ahead of the decontamination in the Special Decontamination Area, Decontamination Plans are to be elaborated taking into account the progress of rearrangement of the Restricted Areas and Deliberate Evacuation Area.
The rearrangement has been completed on Aug 7 2013.

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.

Progress in the Special Decontamination Area

Decontamination work are begun from areas in which preparation is completed. As of Sep 2013, Decontamination Plan has been established in 10 municipalities out of 11 target municipalities. Decontamination work has been in operation or in preparation in 9 municipalities and has been completed in 1 city according to its plan.

	Population in Decontamination Target Area (approx. Figure)	Decontamination Target Area (ha) (approx. figure)	Rearrangement of the Restricted areas, etc.	Progress of the Decontamination Work			
				Decontamination Plan	Temporary Storage Site (as of the end of Aug., '13)	Content of landowners, etc. (as of the end of Jul., '13)	Decontamination activities (as of the end of Aug., '13)
TAMURA	400	500	Apr. 2012	Apr. 2012	Secured	Completed	Completed in June. 2013
NARAHA	7,700	2,100	Aug. 2012	Apr. 2012	Secured	Almost completed	In progress
KAWAUCHI	400	500	Apr. 2012	Apr. 2012	Secured	Completed	In progress (houses, roads, and forest completed)
MINAMI-SOMA	13,300	6,100	Apr. 2012	Apr. 2012 (revised in Dec.'13)	approx. 30% secured	approx. 30%	In progress
IITATE	6,000	5,600	Oct. 2012	May 2012 (revised in Dec.'13)	approx. 50% secured	approx. 50%	In progress
KAWAMATA	1,200	1,500	Aug. 2013	Aug. 2012 (revised in Dec.'13)	approx. 80% secured	approx. 90%	In progress
KATSURAO	1,400	1,700	Mar. 2013	Sept. 2012 (revised in Dec.'13)	approx. 30% secured	Almost completed	In progress
NAMIE	18,800	3,300	Apr. 2013	Nov. 2012 (revised in Dec.'13)	approx. 20% secured	approx. 30%	In progress
OKUMA	400	400	Nov. 2012	Dec. 2012	Secured	approx. 90%	In progress
TOMIOKA	11,300	2,800	Mar. 2013	Jun. 2013 (revised in Dec.'13)	approx. 40% secured	In progress	In preparation of work (planned to start from Jan., '14)
FUTABA	300	200	May. 2013	Under coordination	Under coordination	Under coordination	Under coordination

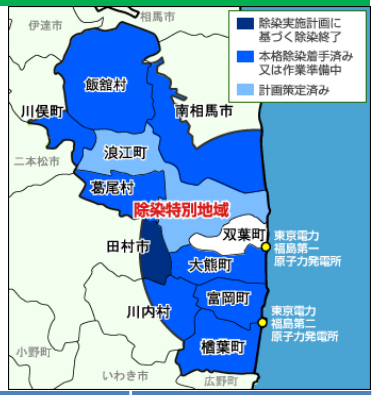
On full scale decontamination work / On preparation

Plans not yet formulated

Note: Decontamination work in a municipality are 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.

Progress in the Special Decontamination Area

- Progress (implementation ratio) of the decontamination work planned in FY2012 and FY2013 are as follows:
- Difference is observed among municipalities depending on circumstances regarding preparation as well as operation of decontamination work.



As of Nov. 2013	Tamura	Naraha	Kawauchi	Iitate	Kawamata	Katsurao	Okuma
Living area	100%	80%	100%	7%	9%	12%	42%
Farmland	100%	81%	83%	2%	3%	0.1%	14%
Forest	100%	78%	100%	3%	14%	88%	59%
Road	100%	77%	100%	0.6%	0.3%	1%	23%

Note 1: Implementation ratio is calculated in a area basis: Areas completed / Areas planned in FY2012 and FY2013.
Note 2: Figures in tables are not finalized yet.
Note 3: Decontamination work has been started in Minami-soma, Tomioka, and Namie although specific data is not available yet.

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 will be completed by the end of FY2013 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 FY2015. ● The rest will be decontaminated by the end of FY2016. 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 FY2014. 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 FY2016. 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 are 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

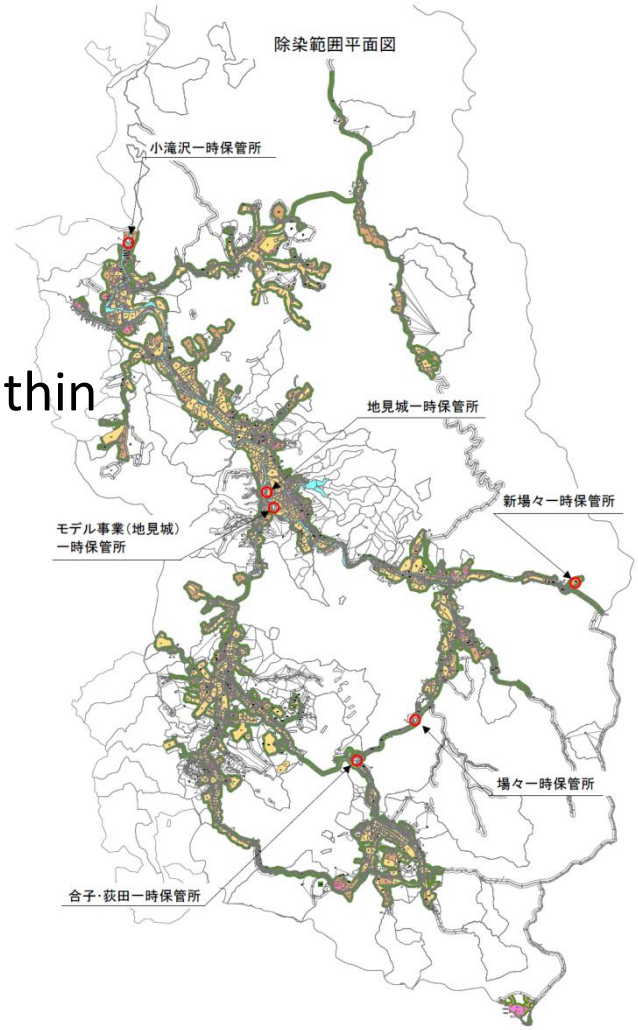
Kawamata	● The residential areas and their surroundings will be decontaminated on a priority basis by the end of FY2014.The decontamination will be made in an accelerated and smooth manner and the work term will be shortened as much as possible to be completed by the end of summer in 2014. ● The rest will be decontaminated by the end of FY2015. 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 FY2014. 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 FY2015. 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 FY2015. ● For the tsunami-devastated areas, the residential areas and their surroundings will be decontaminated on a priority basis by the end of FY2015 by paying attention to the treatment of disaster waste. The rest will be decontaminated by the end of FY2016. 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 FY2015. ● The rest will be decontaminated by the end of FY2016. 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 are 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㎡



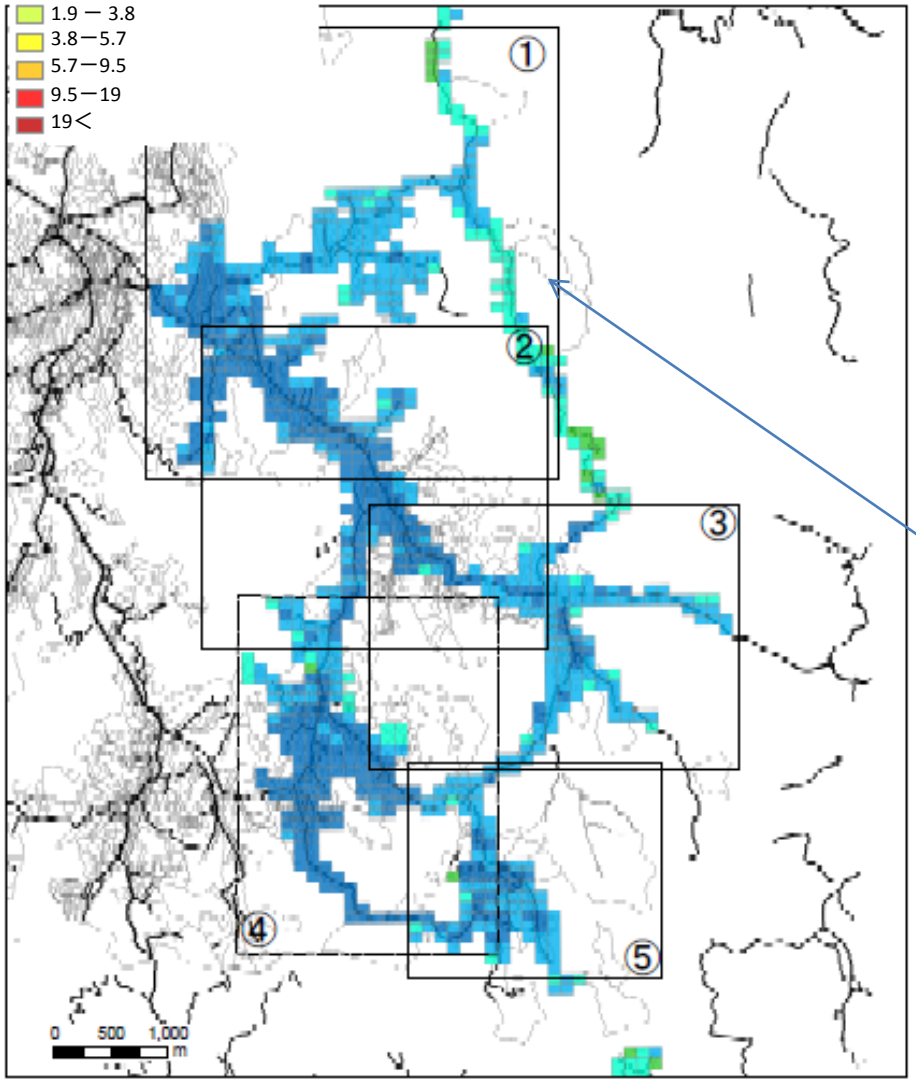
Effect of Radiation Dose Reduction by Decontamination Work in Tamura City

Tamura City

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

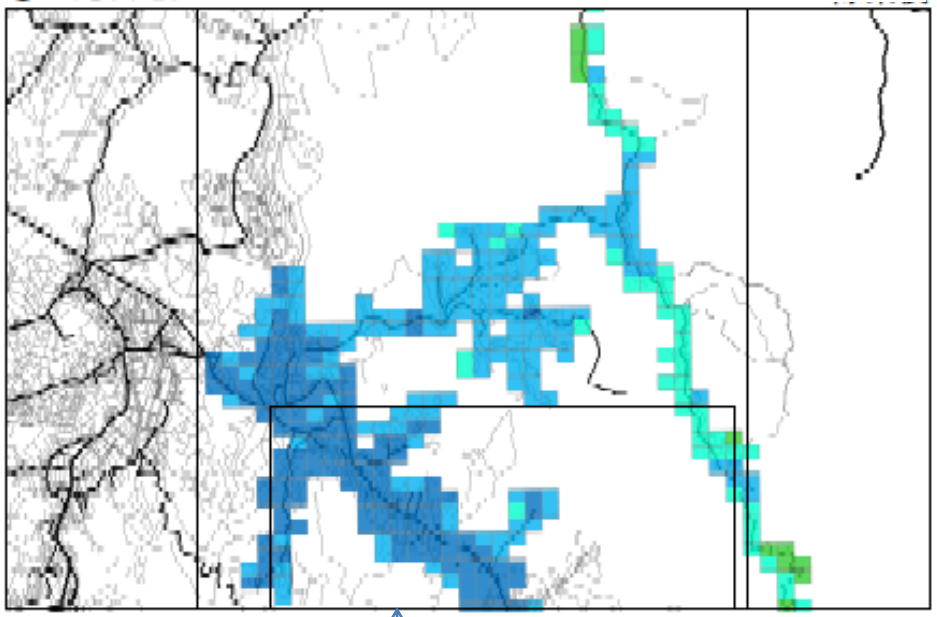
≦ 0.23
0.23－0.5
0.5 － 0.75
0.75 － 1.0
1.0 － 1.9
1.9 － 3.8
3.8－5.7
5.7－9.5
9.5－19
19＜

After



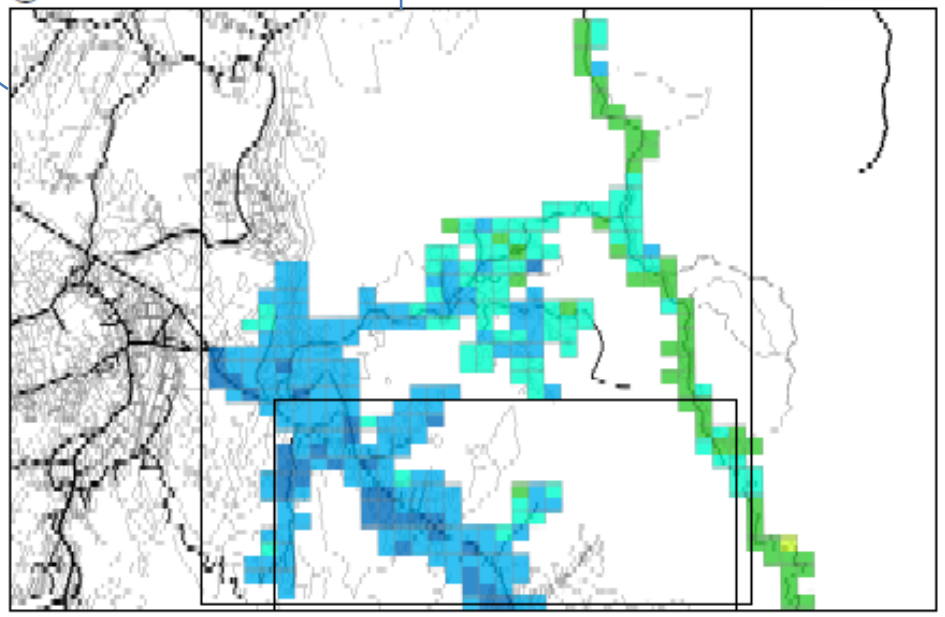
①Kotakizawa District

After



①Kotakizawa District

Before



Before & After the Decontamination Work

Decontamination Activities

Wiping off rooftop and walls

Wiping off a gutter

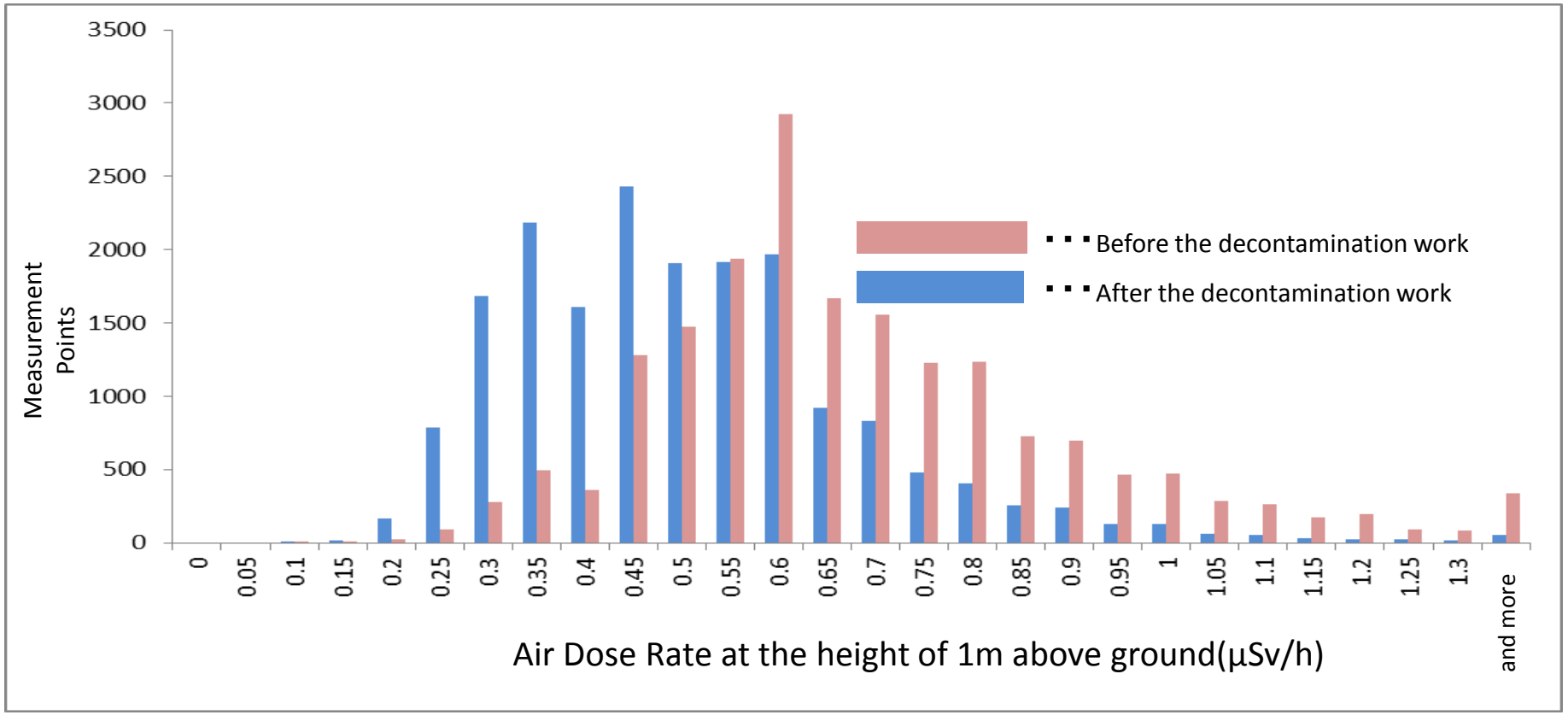
High pressure water cleaning of a drain pipe

High pressure water cleaning of paved road

Mowing and removal of sludge

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

Effect of Radiation Dose Reduction by Decontamination Work (Air Dose Rate at the height of 1m above ground)



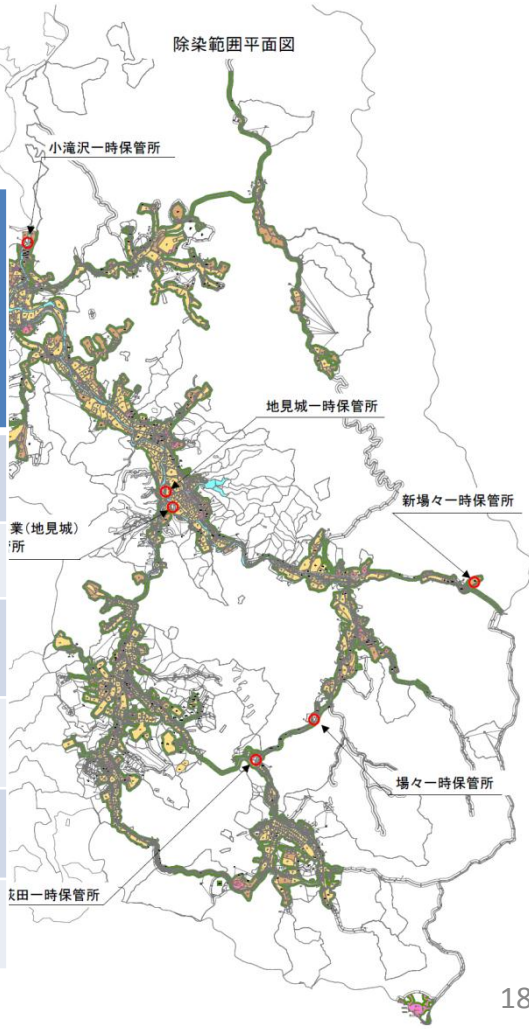
※ The measurement was taken before and after the decontamination work so that natural attenuation effect after the work was not included.

- Measurement period before the decontamination work: July 25, 2012～May 23, 2013
- Measurement period after the decontamination work: August 7, 2012～May 30, 2013

Overview of Temporary Storage Site

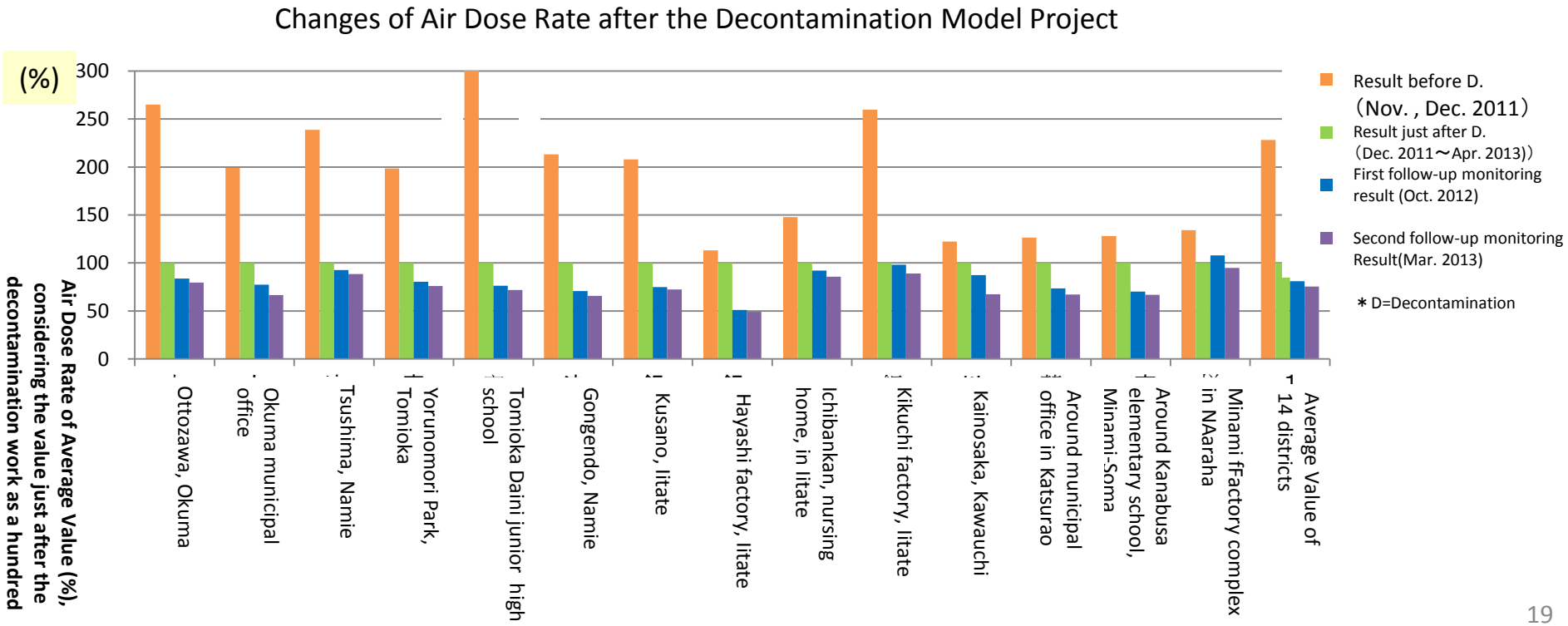
- Removal soil and etc. has been collected and stored in temporary storage sites.
- Air dose rate at the entrance of the sites shows no difference after removed soil, tec. are stored.
- Radioactive materials has never been detected from leachate or groundwater under the sites.

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



Post-Decontamination Monitoring

- Average value of air dose rate has not been increased according to the investigation results up to now.
- Post-Decontamination Monitoring will be conducted in coming autumn at the same points of the previous monitoring in Tamura City.



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)

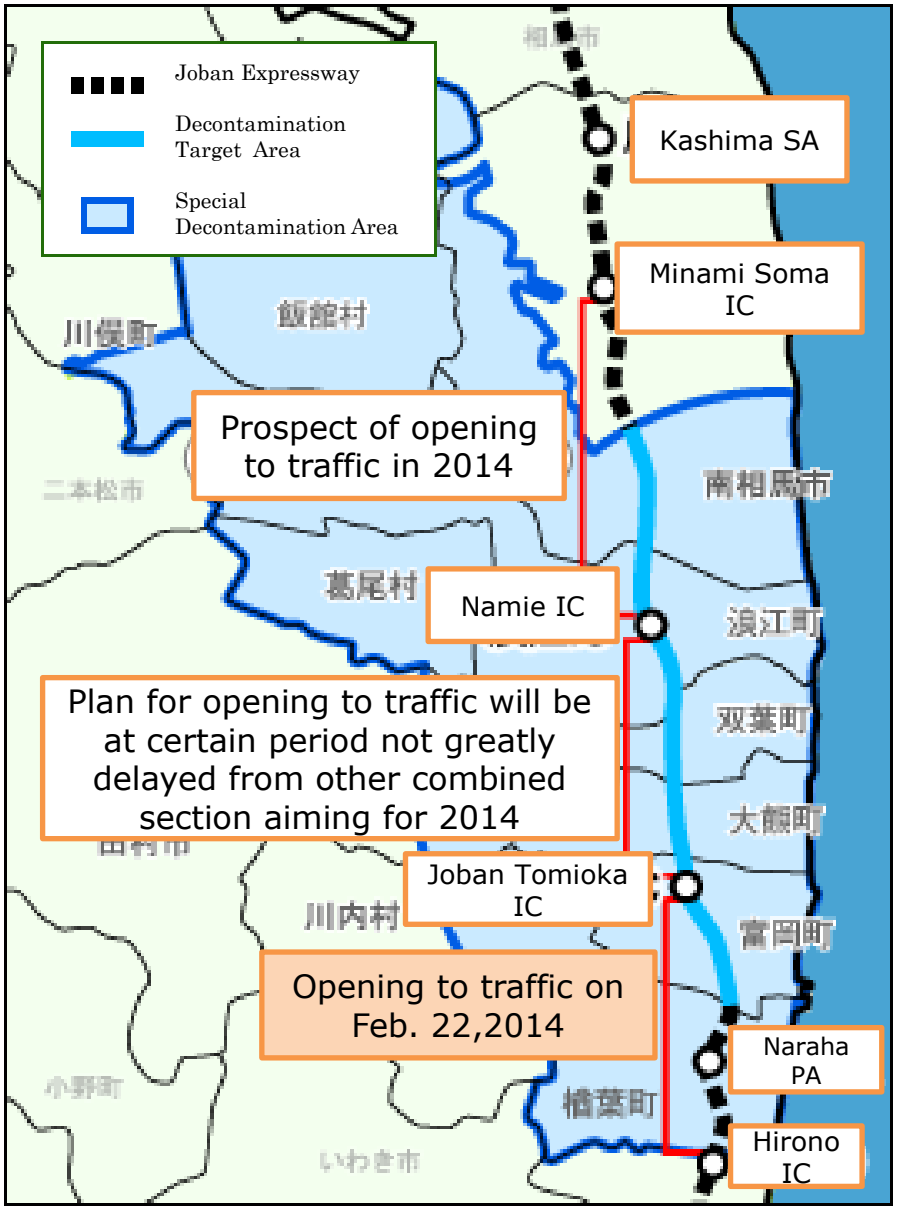
○Data measurement term : Roughly from Mar. 2012 to Oct. 2013

○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)

Progress of Decontamination Work in Joban Expressway

Decontamination work has been completed by the end of June, 2013.



■ Future Schedule

○Parallel to decontamination work, reconstruction and maintenance projects are in progress based on premise that adjustment with related agencies will be set aiming for in-service time as follows:

- Between Hirono IC～Joban Tomioka IC(17km): Feb. 22,2014
- Between Namie IC ～Minami Soma IC(18km): within FY2014
- Between Joban Tomioka～Namie(14km):
  Plan for opening to traffic will be at certain period not greatly delayed from other combined section aiming for 2014

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Progress in Intensive Contamination Survey Area ①

100 municipalities, designated as Intensive Contamination Survey Area, shall implement monitoring surveys and formulate the decontamination implementation plan (the plan) which stipulates area, method and contractors to implement decontamination work.

○As of the end of March 2013, the plans have been formulated in 94 municipalities.

○As the decontamination target covers large areas including public facilities, residential houses, roads, farmland and forest, municipalities shall clarify the objects and priorities, with consideration to the protection of public health.

⇒Decontamination work is being implemented based on decontamination plans developed by each municipality. In regard with the work schedule of the plans, 5 years is set in many municipalities mainly in Fukushima prefecture, and 2-3 years is defined in municipalities in other prefectures.

Progress in Intensive Contamination Survey Area ②

Decontamination work have been progressed according to decontamination plans of each municipality. Especially at spaces related to children and public facilities, it is getting close to the end; however, it might take period of years to be completed in whole.

Outside Fukushima pref. (As of the end of Jun., 2013)	Ordering Ratio (Number of Order/number of planning)	Implementation Ratio (Number of actual achievement/number of planning)
Schools and nurseries	almost on order	almost completed
Park, Sports facilities	approx. 80%	approx. 80%
Residential houses	approx. 60%	approx. 30%
Other facilities	approx. 30%	approx. 30%
Roads	approx. 30%	approx. 30%
Farmlands & meadows	approx. 80%	approx.60%
Forests(in living areas)	Partially on order	Partially implemented

Note: The number of planning is the number which is planed as of the end of Jun, 2013, so it might increase in future.

Within Fukushima pref.※ (As of the end of Jul., 2013)	Ordering Ratio (Number of order/number of planning	Implementation Ratio (Number of actual achievement/Number of planning)
Public facilities, etc.	approx. 80%	approx. 60%
Residential houses	approx. 50%	approx. 20%
Roads	approx. 40%	approx. 20%
Farmlands & meadows	approx. 90%	approx. 80%
Forests(in living areas)	approx. 30%	approx. 10%

Note:
The number of planning is the number planed by the end of FY2013. On the other hand, whole number including that of after FY 2013 is yet fixed, so it might increase in future.

※The table “Within Fukushima pref. “ is based on the investigation result conducted by Fukushima prefecture.

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)

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

Chipping operation in decontamination site

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/

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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

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

Demonstration Project for Decontamination technology

1. Overview

National government is soliciting decontamination technologies potentially usable in decontamination works, aiming to contribute to diffusion of similar technologies and progress of decontamination consequently, by supporting new technologies' development and evaluating effectiveness, economical aspects, and efficiency, etc. of the technologies.

2. Targeted Technologies

-1. Technologies to raise efficiency of decontamination works
-2. Technologies to reduce volume of contaminated waste and soil
-3. Technologies to treat contaminated waste by radioactive material
-4. Technologies to collect and treat contaminated water
-5. Technologies to transport and store removed object

3. Budget: JPY 2.1million(including tax) max. per case

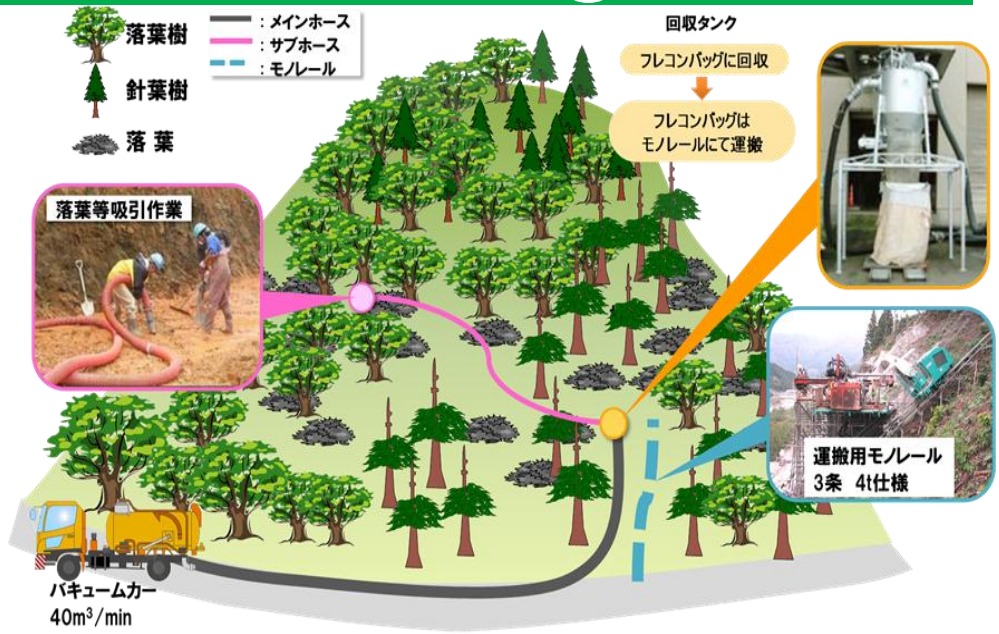
4. Status:

Cabinet office – 25 new technologies (Nov. 2011 – Feb. 2012)
Ministry of the Environment – 22 new technologies (May 2012 – Sep. 2012),
15 new technologies (Nov. 2012 – Mar. 2013),
11 new technologies (Aug.2013 — Dec.2013)

Example of Demonstrated Technologies that was actually used in the Decontamination Site ①

Efficiency of decontamination in forest

This system is collecting fallen leaves in the forest and bagging and transporting them, in the middle point between worker and cleaner truck, In order to work more efficiently and to expand the scope of work.



Decontamination using ultra-high pressure water in road, sidewalk, etc.

Decontamination of pavement using ultra-high pressure water (Up to 280MPa).

Example of Demonstrated Technologies that was actually used in the Decontamination Site ②

The turbid water treatment and reducing sludge

The turbid water left after the washing is purified using coagulation and precipitation. Sludge is processed in a small filter press to obtain dewatered filter cake.

Water treatment equipment

Small filter press

Decontamination method without using water

A decontamination method without using water for contaminated painted surfaces of buildings is demonstrated using a dust vacuum sander and stripping paint.

dust vacuum sander

stripping paint

Portal site to search the technology for decontamination "Decontamination Technology Options eXploration"

1.Overview

Ministry of the Environment established Portal site to provide the information of the useful new decontamination technologies developed by companies.
The following items are published on this Website.

- The registered technology related to decontamination, through a simple evaluation by experts.
- The evaluation by experts in terms of the effectiveness, economical aspects, and efficiency, etc. of the technologies, if the companies which have technologies want the evaluation.
- The technology issues which is registered by decontamination workers, etc.

2.Expected Effects

- Promoting the cooperation between the company which have a new technology and company which carry out decontamination.
- Promoting the use of new technology in the decontamination site.

3.URL

https://www2.env.go.jp/dtox/

Examples of issues at the website “Decontamination Technology Options eXploration (DTOX)

Needs from decontamination contractors are mostly improvement of conventional technology

Item	Issues
Vacuuming fallen leaves	• Blocked hoses, vacuuming soils due to strong suction force • Inefficient for wet leaves • Difficulty in using forested area or garden due to big size of machine
Deep lawn mowing at houses	• Different depth of mowing lawn depends on level of workers’ skill
Stripping topsoil at houses	• Costly and time consuming due to labor intensiveness
Roof of houses	• Leaking into houses and splashing when cleaning with high pressure
dehydrator	• Necessary to use small or medium sized machine to dehydrate by filter press after condensation and precipitation for processing waste water

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

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Efforts to secure Interim Storage Facility

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 the Fukushima Pref. and 8 towns in Futaba County to examine location sites within Futaba county

Mar., 2012 The Ministry explained the Fukushima Pref. 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 Pref. and 8 towns

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

May., 2013 Boring survey has started in Okuma

Jul., 2013 Boring survey has started in Naraha

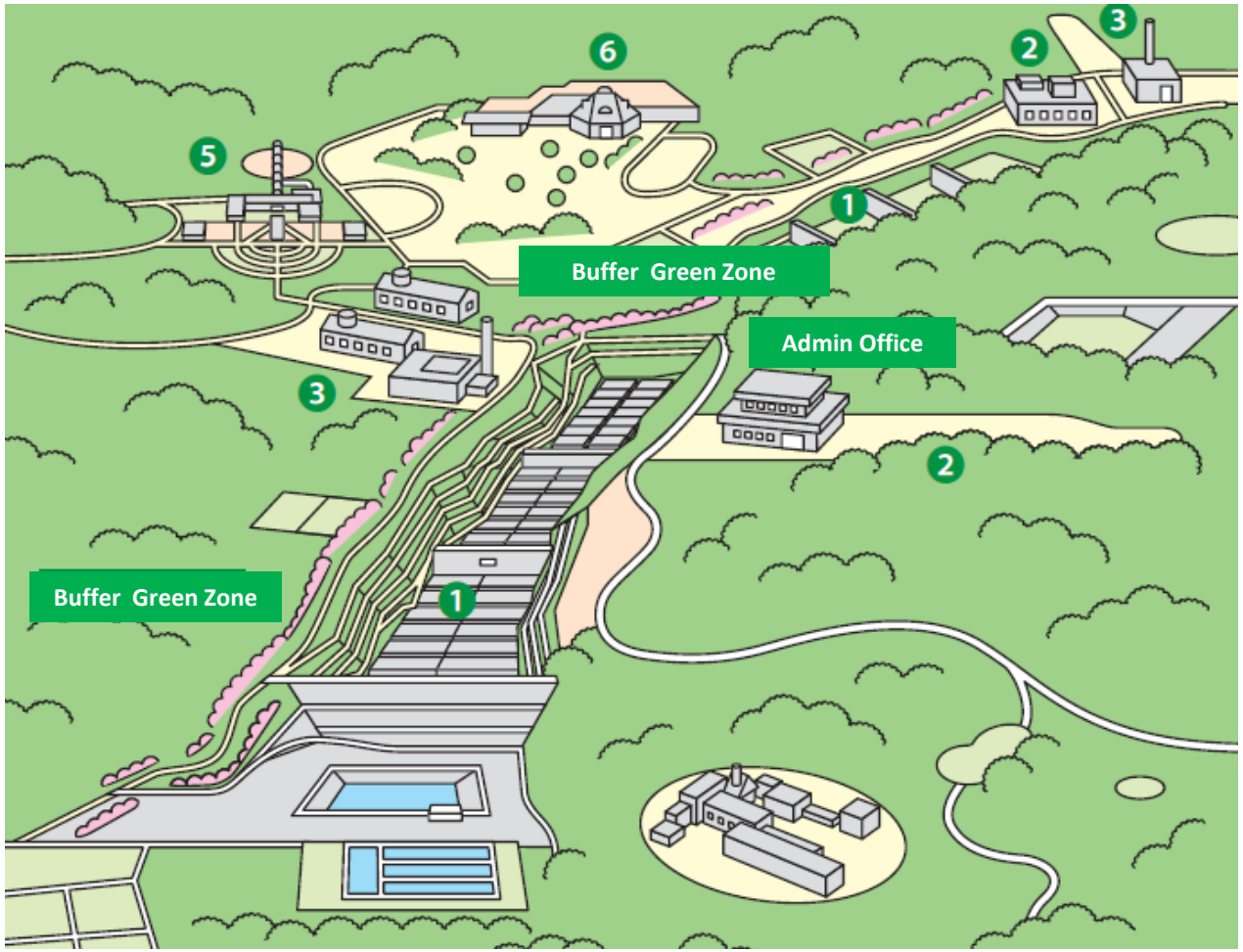
Jun., 2013 Study Group on environmental protection and safety measures for ISF was established.

Sep., 2013 Futaba Town accepted the investigation for ISF.

Dec., 2013 The Ministry requested the Fukushima Pref. and 3towns (Futaba, Okuma and Naraha) for the establishment of ISF.

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

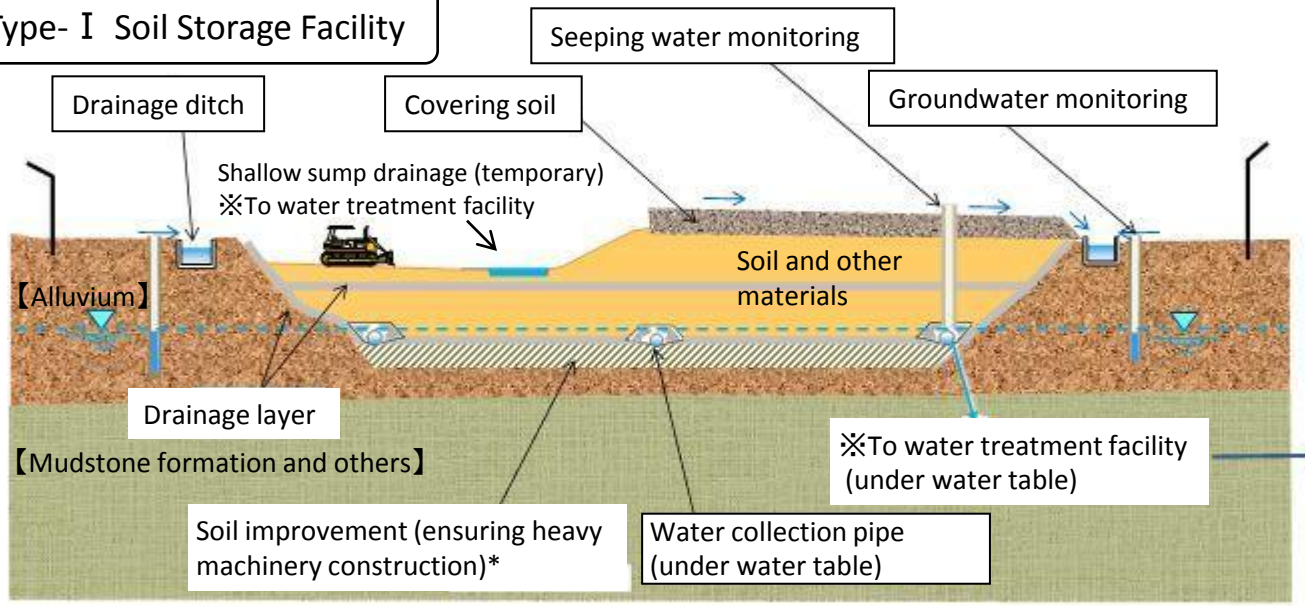
	Type-I Soil Storage Facility	Type-II Soil Storage Facility	Waste Storage Facility
Main substances for storage (Radioactive cesium concentration)	Soil and other materials that do not risk polluting public water area and groundwater with radioactive cesium （ 8,000Bq/kg or less ）	Soil and other materials 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

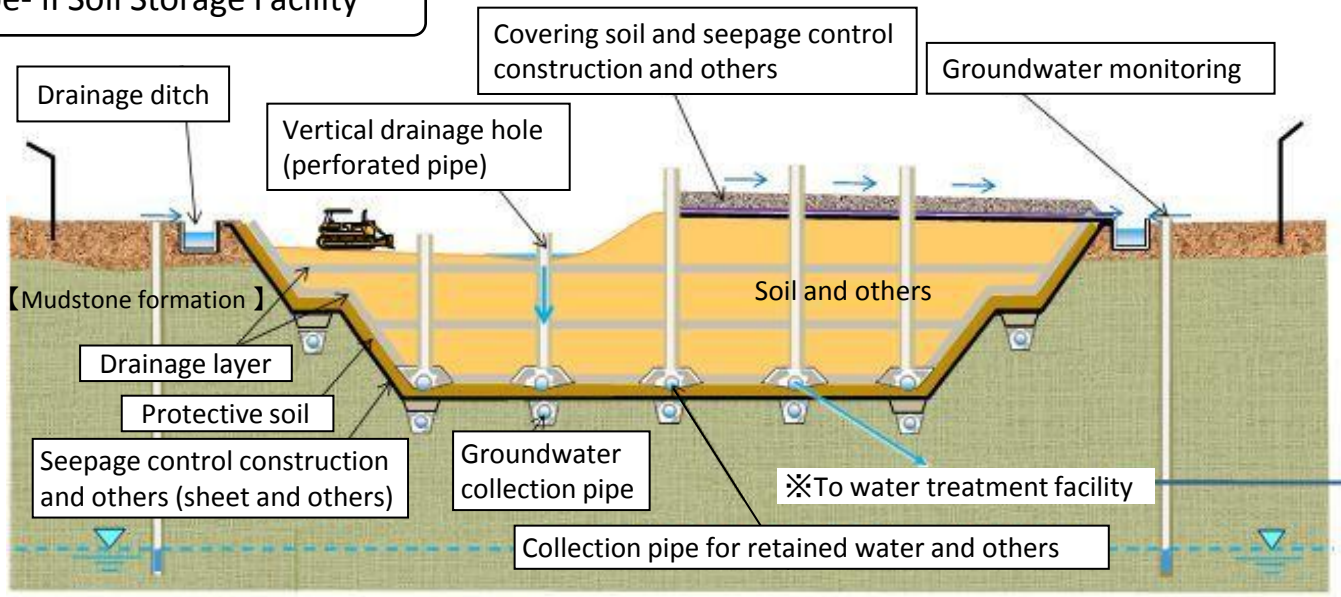
<Type – II >

Leakage control
Seepage control sheet patterns

Applicable geography and geology

Hill , Tableland

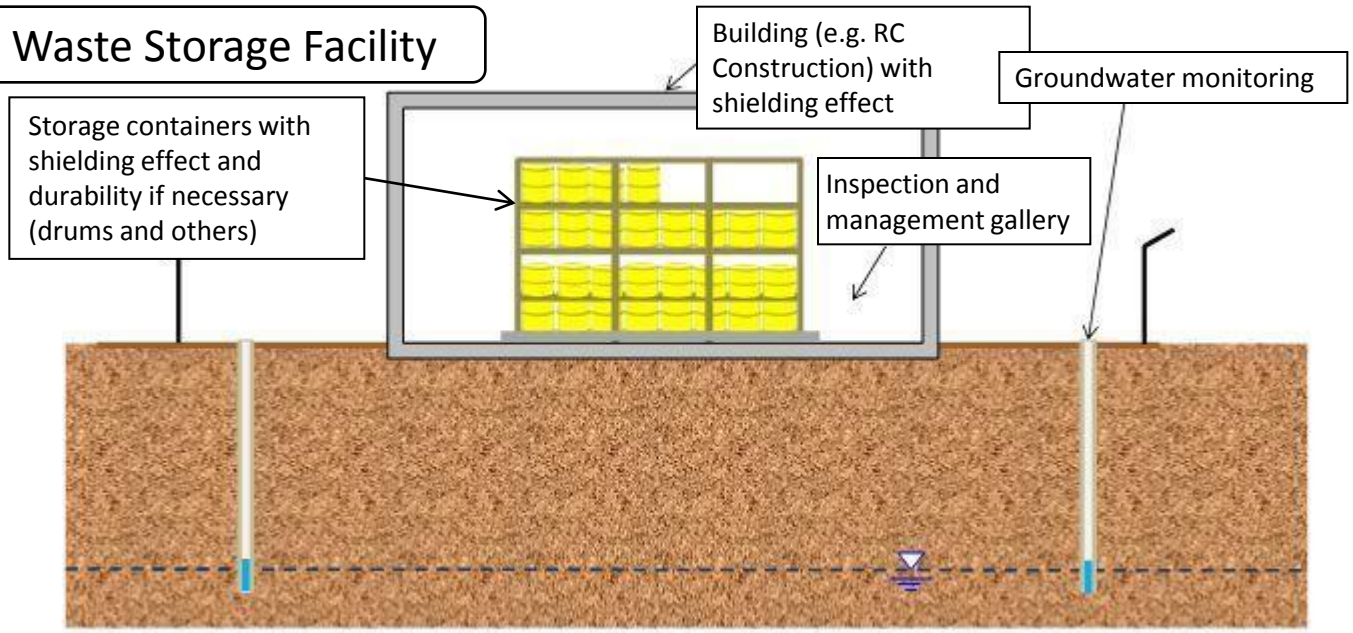
Radioactive cesium concentration
more than 8,000Bq/kg



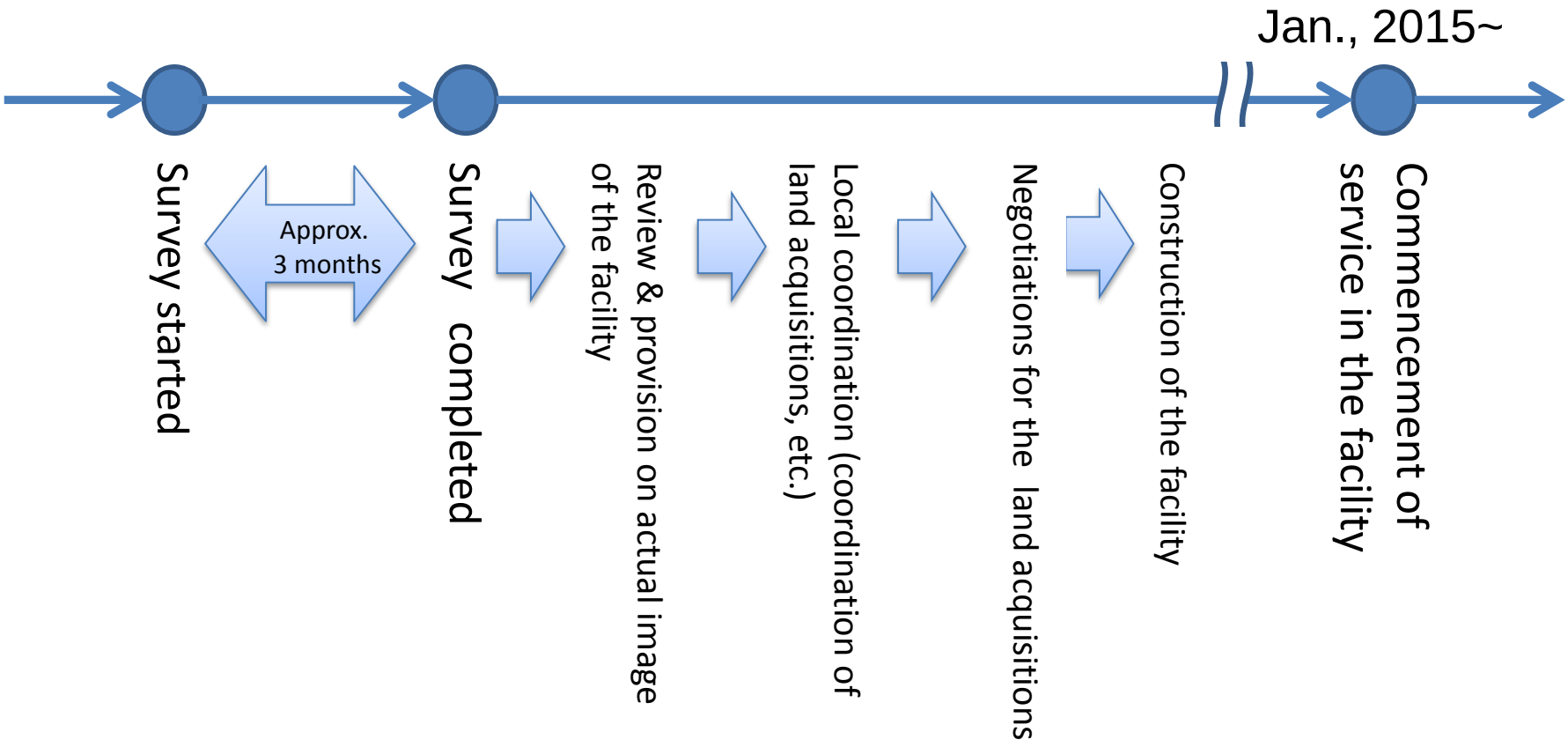
Schematic View of Waste Storage Facility

Applicable geography and geology
Hill, Tableland

Radioactive cesium concentration
More than 100,000Bq/kg



Future Plan


Jan., 2015~
Survey started
Approx.
3 months
Survey completed
Review & provision on actual image of the facility
Local coordination (coordination of land acquisitions, etc.)
Negotiations for the land acquisitions
Construction of the facility
Commencement of service in the facility

Thank you very much!

Decontamination information web site;
http://josen.env.go.jp/en/