'Disaster-resilient Waterworks Model, Connecting all to the Water of Life' and the countermeasures against natural disasters example

The 10th JWWA/ERF/CTWWA Water System Seismic Conference



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- 2. The 3rd WCDRR
- 3. Correspondence Between The Model and Our Current Countermeasures Against Disasters
- 4. Sharing the specific measures
 - A: "Mutual Help" with local communities
 - B: "Cooperation" by local plumber corporation or network of water supply utilities all over Japan
- 5. Conclusion

1. Outline of Sendai City



Data of Sendai City		
Population	1,084,616	
Area	786 km ²	
Average temperature	12.4°C(54.3°F)	
Rain fall	1,254 mm/y	

Data of Waterworks		
Beginning of supply	March, 1923	
Service area	approx. 363 km²	
Total length of pipeline	approx. 3,442 km	
Population served	1,050,160	
Percentage served	99.7 %	
Average distribution per a day	328,139 m ³ /day	
Effective rate	97.0%	



Waterworks bureau Mascot "Watter-Kun"

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2. The 3rd WCDRR

Sendai CityThe 3rd WCDRR in 2015

(14th to 18th March)

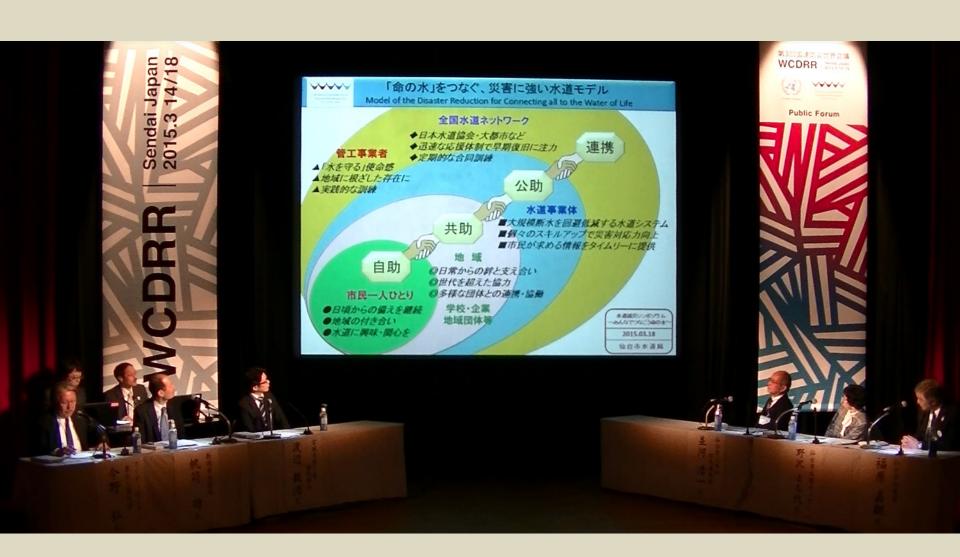
- ✓ Over 6,500 participants from 185 countries
- ✓ Including the Secretary-General of the UN
- √ 150,000 participants in public forum

Sendai Framework for Disaster Risk Reduction 2015-2030



Hyogo PrefectureThe 2nd WCDR in 2005

Symposium for Water Disaster Risk Reduction





Disaster-resilient Waterworks Model, Connecting all to the Water of Life

National Water Supply Network

- ◆ Japan Water Works Association, major cities, etc.
- ◆ Focus on an early restoration of water services through a smooth support system.
- **◆ Conduct regular joint training.**

Cooperation

Plumbing Constructors

- ▲ Have a mission to protect the water supply.
- **▲ Take root in a community.**
- **▲ Conduct practical training.**

Public Support

Mutual Help

Communities

- Have mutual support and bonds between people in daily life.
- © Cooperate with each other regardless of age or generation.
- Cooperate and collaborate with a wide range of organizations.

Self-Help

Individual Citizens

- Continue to store water in daily life.
- Interact with people in their community.
- Schools, Businesses, Become interested in water supply.

Water Suppliers

- Provide a water management system to avoid or reduce. large-scale suspensions of service.
- **■** Improve disaster resp<mark>onse ability</mark> by upgrading individual skills.
- **■** Provide necessary information to citizens in a timely manner.

Symposium for the Reduction of Water Service Disaster Risk: ~ Connecting All to the Water of Life ~

18th March 2015

Sendai City Waterworks Bureau

Community, Groups, etc.

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3 . Correspondence Between The Model and Our Current Countermeasures Against Disasters

current countermeasures against disasters

Basic Plan (FY2010 ~ 2019)

Mid-term Management Plan

(FY2010 ~ 2014)

(FY2015 ~ 2019)

Annual Project Plan and Budget





3. Correspondence Between The Model and Our Current Countermeasures Against Disasters

- ◆ Enhancing cooperation with other cities and associations (emergency drills, technological exchange)
- ▲ Enhancing cooperation with plumbing constructors (practical training, information exchange)
- Renewing water pipes and facilities, and reinforcing them against earthquakes
- **■** Constructing a dual water system
- **■** Enhancing the risk management system
- **■** Installing more emergency water supply equipment
- Passing on the lessons learnt from the Great East Japan Earthquake
- Enhancing cooperation with local communities
 (local disaster prevention drills, training sessions to teach how to operate emergency water supply taps)
- Enhancing business operation in collaboration with customers
- Enhancing interactive publicity (events, visiting lectures)

Self -Help

Individual Citizens

- Continue to store water in everyday life
- Interact with people in their community
- Become interested in water supply

Mutual Help

Communities

- Have mutual support and bonds between people in everyday life
- Cooperate with each other regardless of age or generation
- Cooperate and collaborate with a wide range of organizations

Schools, Businesses and Community Groups etc.

Public Support

Water Suppliers

- Provide a water management system to avoid or reduce large-scale suspensions of service
- Improve disaster response ability by upgrading individual skills
- Provide necessary information to citizens in a timely manner

Cooperation

Cooperation with entire Stakeholders including:

National Water Supply Network

- ◆ Japan Water Works Association, major cities, etc.
- ◆ Focus on the early restoration of water services through a smooth support system
- **♦** Conduct joint drills regularly

 Neighboring

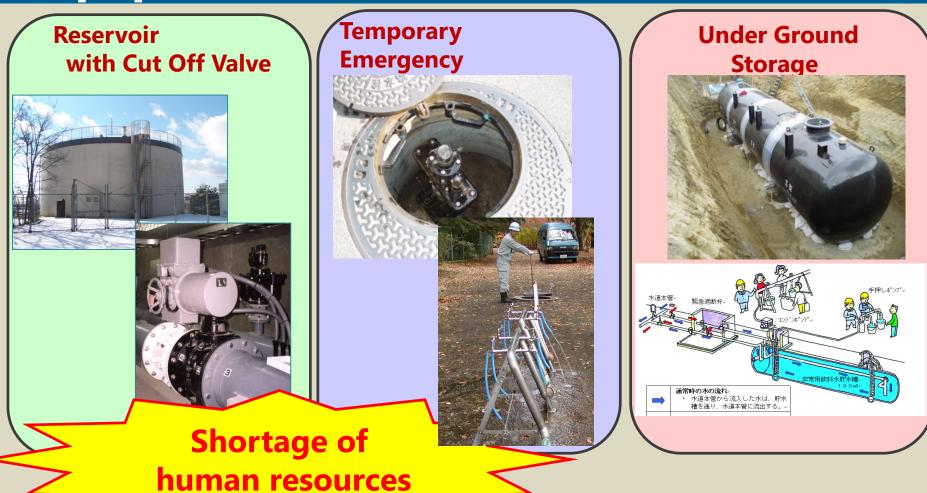
 Plumbing Constructors
- ▲ Have a mission to protect the water supply
- ▲ Take root in local communities
- ▲ Conduct practical training

Mode

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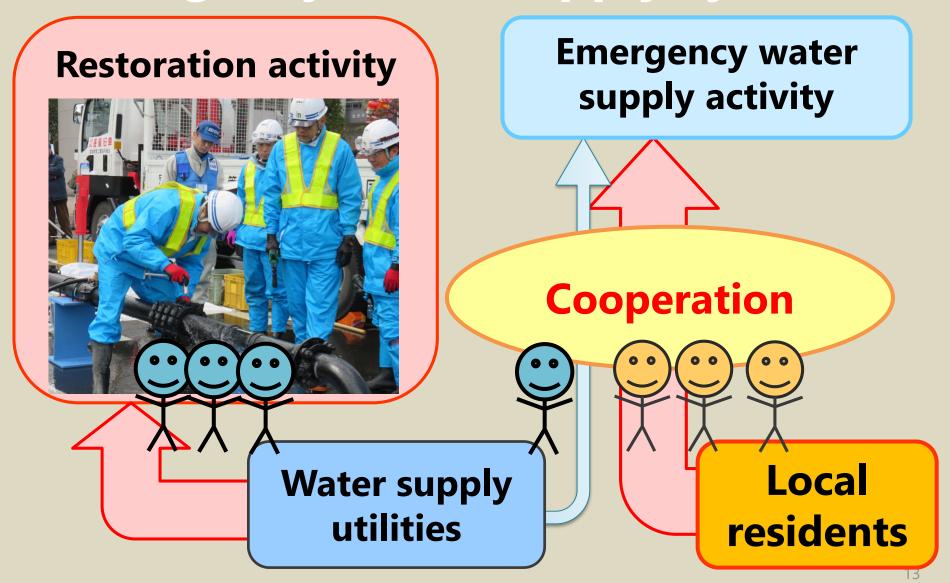
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Emergency Water Supply equipment before Disaster

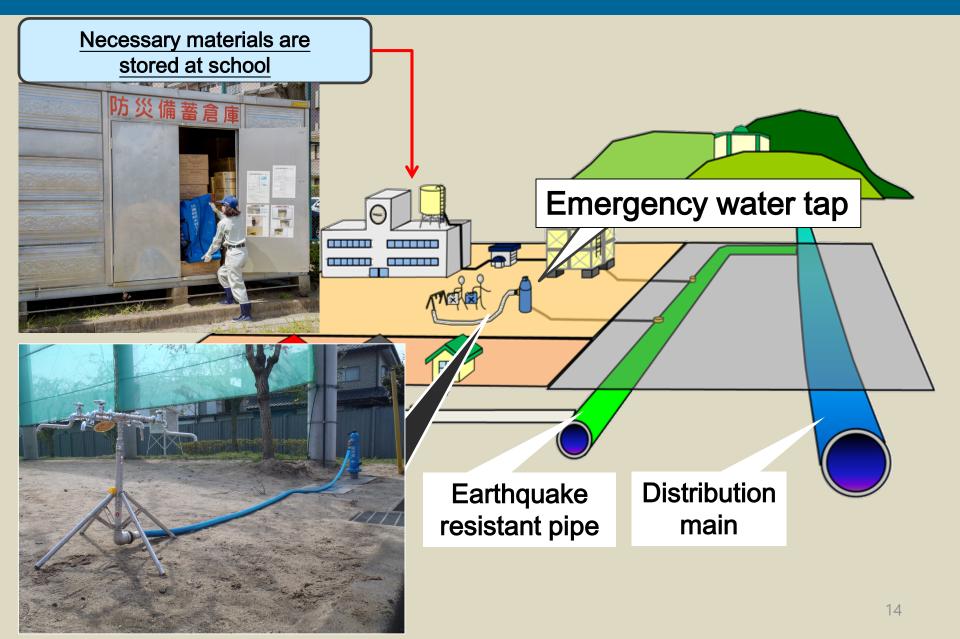


Only 20/60 facilities were able to be used !!

The improvement of emergency water supply system

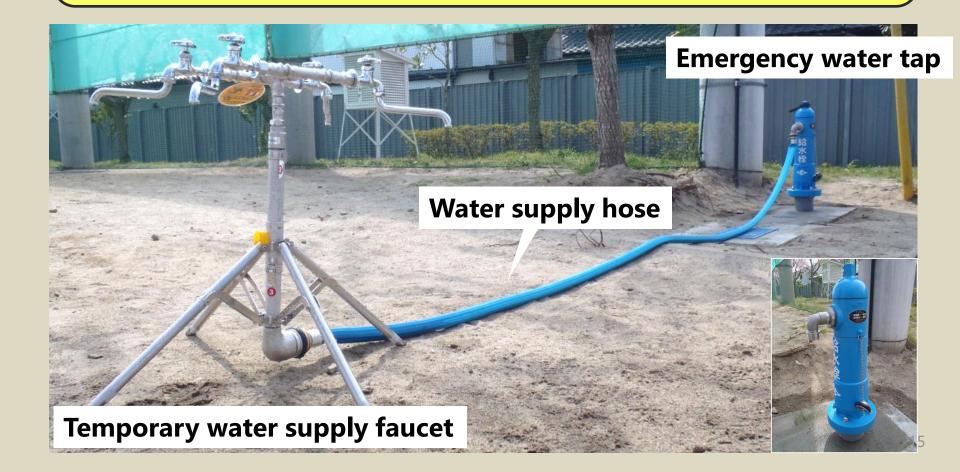


Summary of "Emergency water tap"



Summary of "Emergency water tap"

Local residents can set up and operate



Briefing session on how to use "Emergency water tap"



Progress status of installation of "Emergency water tap"

Emergency Water Taps

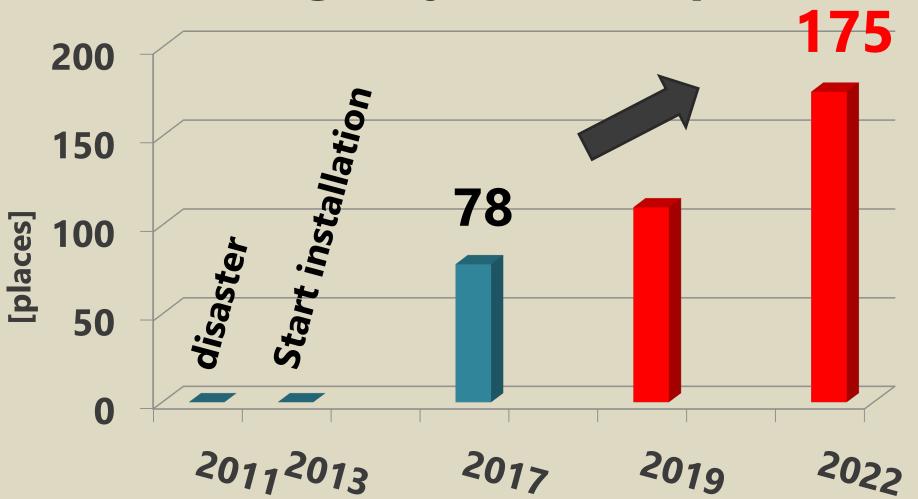


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5. "Cooperation" from local plumbing corporations or network of water supply utilities from all over Japan

The JWWA mutual support framework

"Guidance for Response to Earthquakes and other Emergencies"

The framework of mutual support between major cities

 "Memorandum of Understandings on Mutual Disaster Support between Waterworks Bureaus of 19 Cities"

The other memorandums and agreement

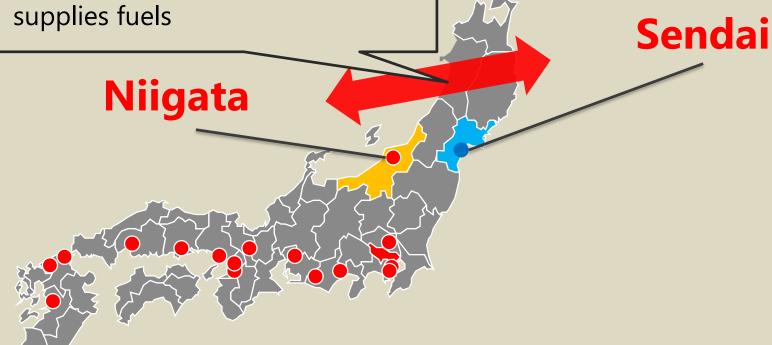
- "Memorandum of Understandings on Mutual Disaster Support" with Niigata City
- Memorandum on Activities as a Waterworks utility responsible for Information Coordination between Tokyo Metropolitan Government and Sendai City".
- Memorandum of

The "Memorandum of Understandings on Mutual Disaster Support between Waterworks Bureaus of 19 Cities" 19 major Cities The reader city 1st: Sapporo City **Sendai City** 2nd: Tokyo metropolitan

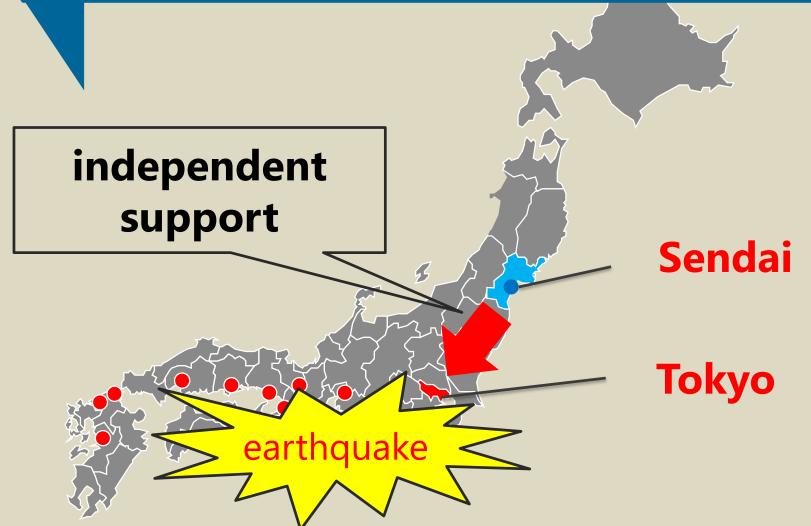
The "Memorandum of Understandings on Mutual Disaster Support" with Niigata City

Mutual aids

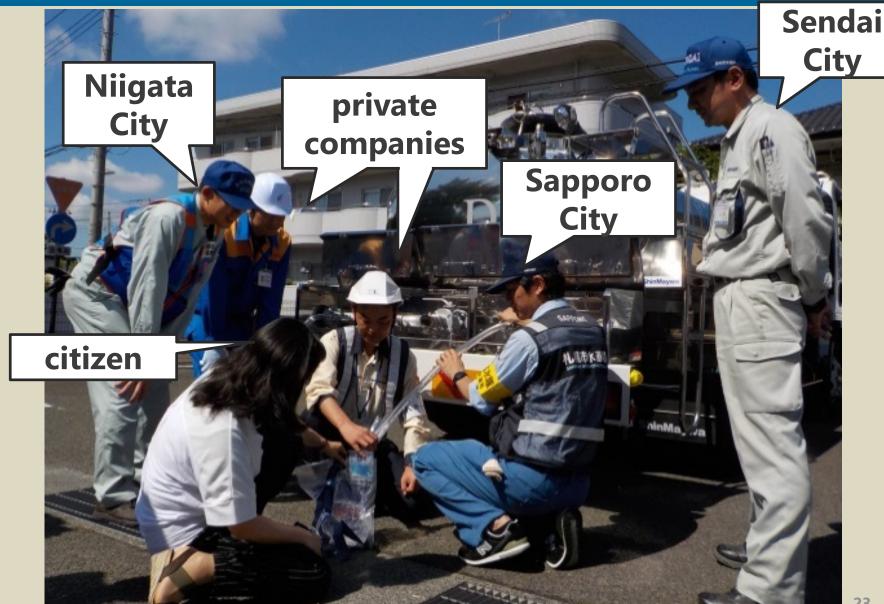
- planning to emergency water supply
- early restoration of water services



Memorandum on Activities as a Waterworks utility responsible for Information Coordination between Tokyo Metropolitan Government and Sendai City".



The Scene of practical training



5. Conclusion



Cooperation





Thank You for Your Attention!

謝謝

感謝



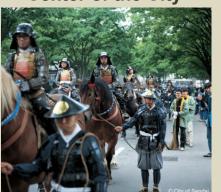
Outline of Sendai City



Data of Sendai City		
Population	1,084,616	
Area	786 km²	
Average temperature	12.4°C(54.3°F)	
Rain fall	1,254 mm/y	



Center of the City



Aoba Festival





Hirose River



Date Masamune



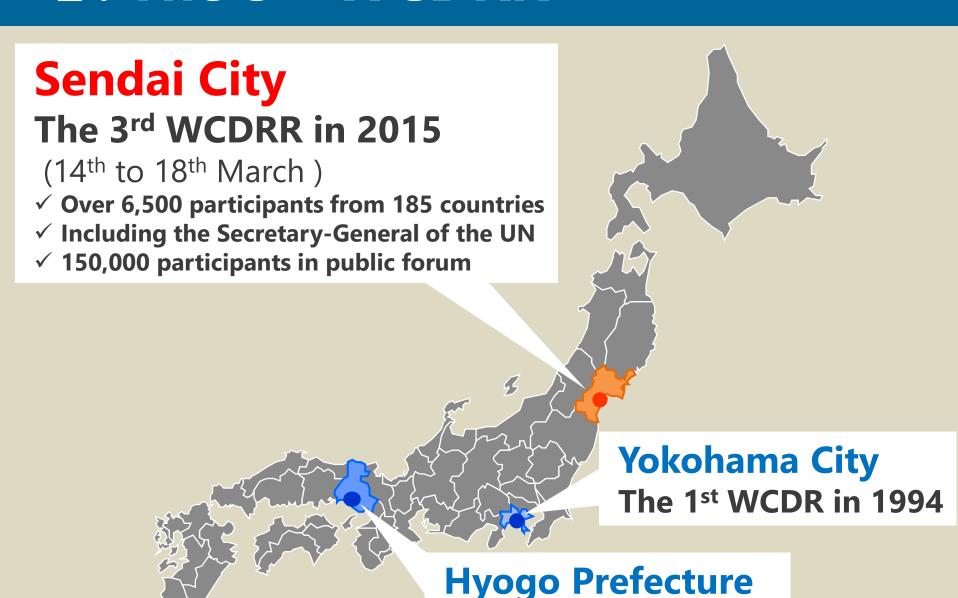
Star Festival

Outline of Sendai City

Outline of Sendai City Waterworks Bureau		
Beginning of supply	March, 1923	
Service area	approx. 363 km ²	
Total length of pipeline	approx. 3,442 km	
Number of Purification plants	4 main and 4 small plants + Received from Miyagi Prefectural Wide-area Water Supply	
Population served	1,050,160	
Percentage served	99.7 %	
Average distribution per a day	328,139 m ³ /day	
Effective rate	97.0%	
Number of the staff	407	



2. The 3rd WCDRR



The 2nd WCDR in 2005

Sendai Framework for Disaster Risk Reduction 2015 - 2030



- ✓ The first agreement on global targets
- √ 'Build Back Better'
- ✓ Emphasis on the roles of various parties (women, children, the private sector etc.)

Outdoor exhibitions and hands-on experience events

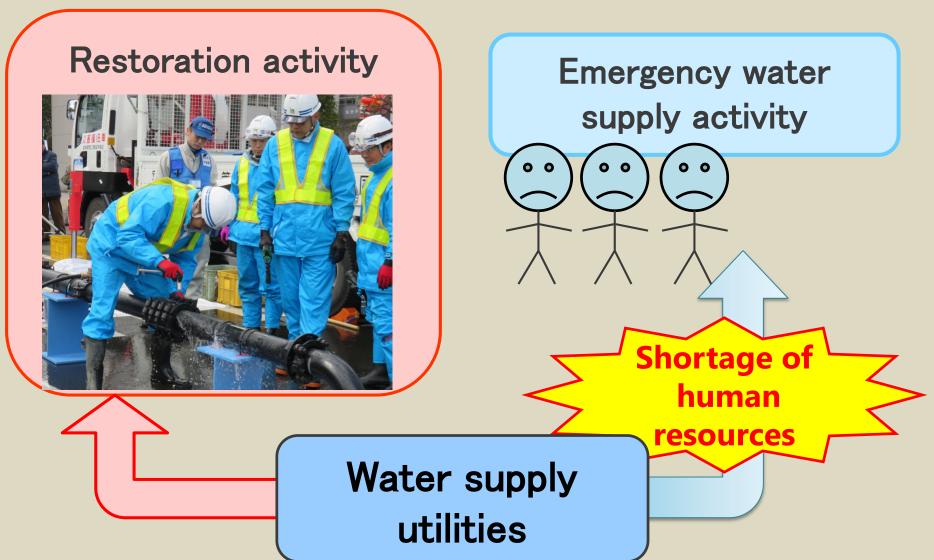




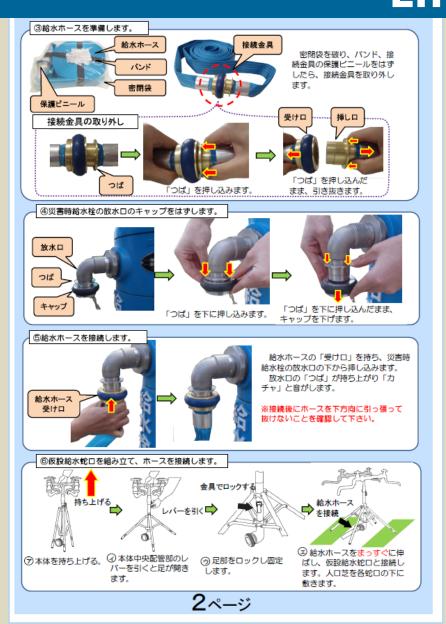




The improvement of emergency water supply system



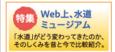
Instruction manual of "Emergency water tap"





Enlightenment activities for citizens





水道局の災害対策

水道局からのお知らせ

- > H₂O vol.167トップへ
- → H₂Oバックナンバーへ
- ≥ 仙台市水道局トップへ

水道局の災害対策

東日本大震災では約23万戸が断水し、給水所では給水を受ける方々の長蛇の列ができ、 混乱が生じました。このため、平成29年度までに、非常用飲料水貯水槽が設置されてい ない市内107の市立小学校に、地域の皆さまが給水所を開設できる「災害時給水栓」の設 置を行う予定です。

災害時給水栓を使用する給水所の開設方法

1 給水所の開設に必要な用具類「災害 時給水栓セット」を指定避難所の防災 備蓄倉庫から取り出し、給水栓のある 場所まで運びます。







防災訓練では災害時給水栓を ご活用ください

災害時給水栓は指定避難所の防災備蓄倉庫に保管してある 「災害時給水栓セット」を使用して、地域の方々が給水所を開設 することができる災害時給水施設です。

災害時の円滑な「水の確保」のため、防災訓練などの際には 災害時給水栓をご活用ください。



the "Memorandum of Understandings on Mutual Disaster Support between Waterworks Bureaus of 19 Cities"

The disaster	The leader city	
affected city	First leader city	Second leader city
Sapporo city	Sendai city	Kawasaki city
Sendai city	Sapporo city	Tokyo metropolitan
Tokyo metropolitan	Yokohama city	Sendai city
Niigata city	Saitama city	Shizuoka city
Etc		

The memorandum specifies designated leader cities and their roles when a disaster occurs.

The "Memorandum of Understandings on Mutual Disaster Support between Waterworks Bureaus of 19 Cities"

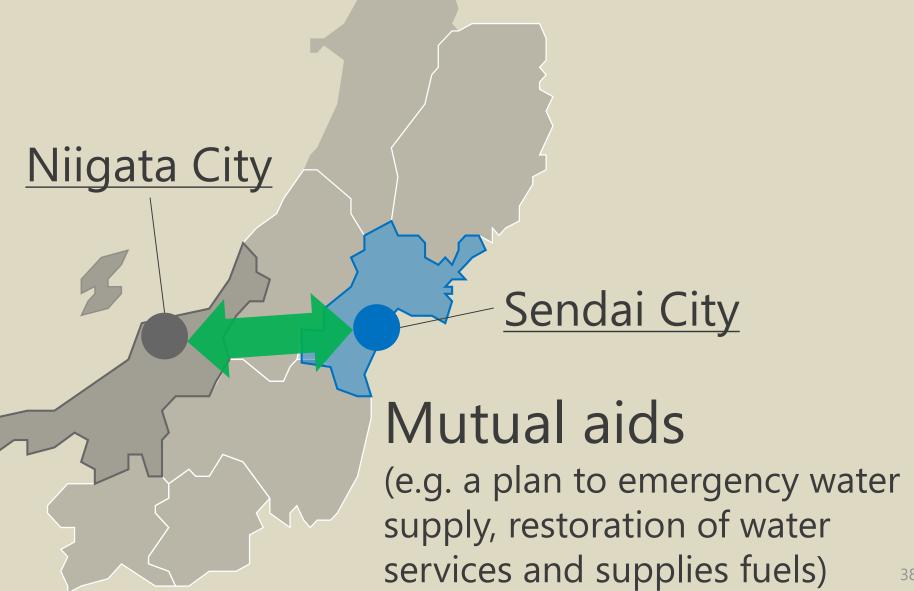
The disaster	The leader City	
affected city	1st	2nd
Sapporo City	Sendai city	Kawasaki city
Sendai City	Sapporo city	Tokyo metropolitan
Tokyo Metropolitan	Yokohama city	Sendai city
Niigata City	Saitama city	Shizuoka city
Etc		

The memorandum specifies designated leader cities and their roles when a disaster occurs.

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