

Yokohama Waterworks' Environmental Activities¹

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Introduction

Good morning ladies and gentlemen. I am honored that I can participate in this seminar. I am Yasuko Kume. I'm working for City of Yokohama Waterworks Bureau.

The topic of my presentation today is Yokohama Waterworks' environmental activities.

First, I'll show you the information of Yokohama Waterworks. Next I'll talk about our educational activities for customers and children. Finally I'll introduce you our activities in public participation. This is the mascot of Yokohama city waterworks. His name is Hama-pyon.

I'll show you the location of Japan and Yokohama. As you can see from this map of Asia, Japan is located in the northern part of the Far East. Yokohama is located in the central part of Japan, just 20 kilometers south west of Tokyo. It is in Kanagawa prefecture. Yokohama is the second biggest city in Japan. Tokyo is the most populous city in Japan with over ten million people.

Brief History of Yokohama Waterworks

Now, let's talk about a brief history of our Waterworks. Yokohama Waterworks was established in 1887. It was Japan's first modern waterworks. A big earthquake called the Great Kanto Earthquake caused extensive damage to the waterworks in 1923. In 1952, Local Public Enterprise Law was enforced. Then the national rule of the water utility management was fixed. Due to rapid industrial and economic expansion, the population had increased from the middle of the 1960's to 1970's. The Water Pollution Control Law was revised in 1977, and the regulations of waste water became severe. It meant discharge of the sludge which occurred in water treatment was prohibited, so we changed the discharge of sludge into reusing as earth for gardening or construction.

Water Supply Sources

This chart shows our sources of water supply. The red line is the Doshi river series; this water is the highest quality in our water resources. And this area is Doshi village which is situated in Yamanashi prefecture, here is headwater of Doshi River. In this area we are going to work with our customers. I will talk about it later. And there are 4 purification plants like this.

Present Conditions

This shows our present conditions. Yokohama has been keeping the leakage rate at about 5%. We are repairing about 7,000 leaks per year and the leakage rate is decreasing each year. The decreasing leakage rate is important to water conservation. Last year, the average amount of daily supply water is 1.2 million m³. 1.2 million m³ is about the amount of water which large football stadium can contain. I think you will agree the leakage water is very few.

Management Guidelines

Next I'll show you our educational activities and public participation activities. Why do we do these activities? Because we think environmental conservation is our duty. And we set up some environmental

¹ Summary from proceedings

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programs in our management guidance. For the achievement, we are providing opportunity and information for customers. In addition, we hope that they raise their awareness of using water carefully and of environmental prevention.

Educational Activities

Water Museum

First of all, we set up a water museum. We built this museum in commemoration of hundred age of Yokohama waterworks in 1987. This consists of 2 buildings. One is this picture. There are many models, tools and panels. So guests can learn about the history of waterworks and system of water utility. They can know that how drinkable water is supplied. And this hall has a library; guests can freely reference various books about water.

Another is the technology hall. There are many old tools and materials. We introduce the change of water service technology. When guests watch these displays, they will agree that it is not easy to use water the moment they turn a tap.

Field Studies

In addition, we have much opportunity for customers to visit our facilities and talk with our staff. First, we are inviting children and customers to our purification plants. Then staff members guide them in the plant and explain how water is treated. In most elementary schools of Yokohama, the students are learning about water supply systems. So a lot of schools carry out field study in our plant. The number of visitors, including students and customers, were about 17 thousand people last year. We expect that they know it's important to conserve water resources. In fact we received next messages from students; we are going to use water carefully and not going to pollute rivers.

Water School

Second, we are carrying out water school for parents and children. This purpose is they have more knowledge about the quality of water. In this school, they look around our purification plant and try to do the test of water quality and the examination of filter. We expect that they deepen their understanding and knowledge of water quality. And they will know importance of conservation of the water resources.

Citizens' School

Third, we are carrying out citizen's school in Doshi water conservation forest. We are carrying out 2 types of schools. One is we are inviting some citizens. They try to cut undergrowth for 1 day. Another is we are inviting some parents and children. And they have an experience of forest work. We carry out this school 1 time for 2 days during summer holiday. Participants experience cutting undergrowth, hitting branches and river cleaning. We expect that they understand the importance of forest conservation and environmental preservation. We think they can realize tap water is natural product by looking at the water resources.

Animation Guides

In addition, we are preparing some animation guides. These are tools to understand easily water supply system. We have various guides, for each purification plant, whole Yokohama waterworks and so on. As I told, the children of Yokohama learn about water supply system. So we use animal characters like a sparrow and a frog so that children can enjoy these guides. I'm sorry, but today I have no time to show you this guide. So please come and see them to Yokohama.

Environmental Accounting

Finally, we are calculating environmental accounting and announce it. Environmental accounting is to identify the cost of environmental conservation during the normal course of business and identify benefit gained from such activities. The water utility relates deeply valuable water resources, and we use much electricity in the process of sending water from the water resources to the tap. So we need to pursue environmental conservation activities. We are taking in some storage facilities to save night electricity and an experimenting with the sun light power generation. And we announce these cost and benefit by environmental accounting. Then this leaflet shows the amount of CO₂, NO_x, SO_x at each process of sending water like this. When customers read this paper, they will feel that using water give some impact to natural environment. We carry out these things as educational activities.

Public Participation

Water Service Monitor System

Now we are going to make a stronger partnership with customers. So we are introducing the public participation. One is a water service monitor system. This purpose is to ask citizens their opinions and suggestions about the water utility. And we would like to make our administration better by them. Their term of office is 1 year and we ask 50 people as monitors by an open call for participants. They participate in some facilities visit and simple experiment in water treatment and they discuss about water utility including our staff. As you can see this picture, we are talking dividing into a small group. He is our staff, others are monitors. We think that this style is effective getting better suggestions. Besides, we receive their opinions by 2 times questionnaires and a report. We have ever taken in some monitor's opinions. For example we began new service. It is the delivery of canned water for preparation against disasters.

Cultivation Work in Doshi Village

Second activity is to foster volunteers for cultivation work in Doshi Village. They work in forest under private ownership. The goal of this activity is to raise water-retention capacity of these forests

This is Doshi Village in Yamanashi prefecture. This river is Doshi River which is one of our water resources. We own water conservation forest. Green color shows our forest. Though this village is not our region, we purchased this area for conservation water resources. This forest is about 2800 hectares, 36% of an area of the village. And we manage there as a green dam. On the other hand, the private forest is about 3700 hectares, 47% of an area of the village. Some area of private forest is not maintained adequately because of a labor shortage by aging. But these forests have important role for our water resource. So it's necessary to help them.

Water Conservation Forest and Unmaintained Forest

The left side of a photograph is our water conservation forest, and the right side is the forest which is not maintained. This picture shows sunshine doesn't reach to underground and undergrowth doesn't grow. So water-retention capacity is declining. But it is difficult that we maintain these private forests as well as our forest. In addition, we think that it is a good opportunity to learn environment that citizens have an experiment of forest work. So we decided to carry out cultivation work as activities of public participate.

Activity Plans

This shows the plan of this activity. We register applicants as volunteers among Yokohama citizens. In our plan, the registration number of volunteers was about 300 people in 2006. We carried out tentatively this activity last October, there were 700 applications and as a result of lottery 400 people participated. After that we could get more than 600 registrations of volunteers. This is more than the number of plan at 2006. We think that this result shows citizens have high interest and zeal for water resources preservation.

What do Volunteers Do?

Volunteers go to Doshi village by bus which we prepare. Main their work is trimming branches and thinning, and another work is planting trees, cutting undergrowth and setting the fence of protecting against soil erosion and land slides. At first we will lead them, but we aim that we foster some instructors among them and they can develop independent activities in the future.

Raising Funds for Volunteer Activities

We began sale of the PET bottled water in last October. This water is gathered in Doshi village. This name is Hamakko-Doshi. Hamakko means children living in Yokohama. Doshi is name of the village. This sale income appropriates a fund for volunteer activities. We hope that many people think about importance of forest preservation by purchase of this bottled water and they recognize they are participating in forest preservation. Now we are selling it in only our service station and Water museum, but we are examining a sale in other shops and hotels approving our activities.

Financial Preparation

And we aim that this sales income and other contributions can cover with all expenses of volunteer activities. If these activities demand large expense from water utility management, it's difficult for us to continue this activity. Therefore, financial preparations are important. Some local governments are planning new tax as a resource of the preservation of private forest. They think that tap water users should pay the tax. Of course, we realize the importance of forest, but forest has various many function, not only

water-retention capacity but also atmosphere maintenance and global warming prevention. So we think it is short in fairness that only tap water users pay the tax.

Conclusion

We hope that customers will deepen their understanding of water. So we are announcing the information of water system. In addition, we hope customers will further realize of environment preservation. So we ready activities of public participation.

In conclusion, ladies and gentlemen I would just like to say how much I have enjoyed being with you all here today and to remind you of the main points I covered in my presentation. We are doing some educational activities, that is water museum, field study in purification plant, water school, citizen's school in Doshi, animation guides and environmental accounting. In addition, we are taking in public participation, monitor system and volunteer for cultivation work. We hope that these activities can contribute toward raising customer's awareness.