

Cooperative Research on about the development of the guidelines about tsunami measures in case of the earthquake about the sewer of Kochi

Year of Research

2012・2013

Promotion of earthquake disaster prevention

(Purpose)

According to the flood assumption of Kochi announced about the giant earthquake of the Nankai trough in December, 2012, it followed that approximately 70% of sewerage treatment facilities in Kochi received flood damage.

In addition, because the seismic intensity was reviewed, the breakdown of the sewer system at the time of the earthquake is worried about, and earthquake and tsunami measures become the urgent business.

Therefore it is necessary to devise guidelines about the following matter to promote earthquake in sewer facilities of the prefecture and tsunami measures.

- What takes measures had top priority in each sewer facility.
- How do you restore the service of the damaged sewer.

In addition, for the purpose of the securing of sewer function as the society system depending on the local situation, it is necessary to devise guidelines indicating the directionality of an earthquake and tsunami measures.



Photo.-1 Study session

(Results)

(1) Examination and enforcement of an earthquake, the tsunami damage assumption technique.

We examined an earthquake, tsunami damage assumption technique, and the staffs of local government of the prefecture carried out the damage assumption to show it the **Photo-1.**

We held a study session in the enforcement of the damage assumption and assumed the damage caused by the earthquake about pipe, sewage - treatment plant, the pumping station, and the sewer service area.

(2) Investigation into enforcement situation of disaster prevention, disaster prevention measures of the prefecture.

For the purpose of grasp of the situation of disaster prevention measures in the sewer business of the local government and measures to Mitigation,

I carried out questionnaire and arranged it about the situation of the enforcement of disaster prevention measures and measures to Mitigation.

(3) Arrangement about the directionality of earthquake of Kochi and tsunami measures

We arrange the way of thinking of earthquake, tsunami measures in consideration of a regional point in Kochi generally based on earthquake of the greatest class, estimation of damage for the tsunami and disaster prevention.

I prioritized disaster prevention measures and measures to reduce a disaster.

I used a matrix list to show to figure 1 in rearranging. I arranged it about a menu demanded as disaster prevention measures and a certain effectiveness-related BCP development.

Item		The countermeasures against earthquake damage		
		Basic function securable after earthquake	Basic function not securable after earthquake	
			Implementation of possible Disaster preventive measures	Implementation of Complementary earthquake damage mitigation
The countermeasures against Tsunami damage	Basic function securable after Tsunami	Measurements not required	Implementation of Earthquake damage preventive option	Implementation of Earthquake damage mitigation
	Basic function not securable after Tsunami	Implementation of possible Damage preventive measures	Implementation of Tsunami damage prevention option	Parallel Implementation of measures against Tsunami damages and mitigation measures for earthquake disaster
		Implementation of Complementary Tsunami damage mitigation	Implementation of Tsunami damage mitigation option	Parallel Implementation of measures against earthquake disaster prevention and mitigation measures for Tsunami

Figure-1 : Categorization Matrix for STP and PS

(4) Making of guidelines (plan)

We made the guidelines on sewer (plan) about earthquake and tsunami measures based on the contents mentioned above.

(Future subject)

We discuss it about guidelines (plan) that I made in this year sequentially and will arrange the way of thinking for a frequent tsunami in future.

In addition, I include results of the examination of the tsunami measures which utilized tsunami simulation for a sewage disposal plant carrying it out separately-resistant and make guidelines.

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Key words

Tsunami measures, Simulation, Numerical analysis, Crisis control, Disaster prevention measures, Mitigation