

## Joint Research to Enact a Comprehensive Earthquake Countermeasure Plan for the Sewerage System of Hamamatsu City

Year of Research

2012

Promotion of earthquake disaster prevention

### **(Purpose)**

The purposes of this research are to enact a Comprehensive Earthquake Countermeasure Plan for the Sewerage System of Hamamatsu City and, learning from the Great East Japan Earthquake, abstract challenges concerning tsunami resistance countermeasures and sewerage system BCP based on information clarified at the present stage and organize the basic items, in order to continue taking earthquake resistance countermeasures that Hamamatsu City has begun to implement.

### **(Results)**

#### (1) Organizing basic information

The following documents were confirmed and organized to obtain the basic information to enact the earthquake preparedness plan, such as, the Hamamatsu City Region Disaster Prevention Plan, the progress reports of sewerage maintenance and the improving of sewer system, plants and pumping stations for earthquake resistance and the other documents related to tsunamis and earthquakes.

#### (2) Enactment of the Comprehensive Earthquake Countermeasure Plan for the Sewerage System of Hamamatsu City

##### 1) Study to select facilities for earthquake resistance countermeasures

As facilities to be improved by comprehensive earthquake resistance countermeasures, considering disaster prevention bases etc., a total of 113 facilities were set—3 disaster countermeasure headquarters, 1 hospital, 10 emergency aid facilities, 85 evacuation sites, and 14 facilities for persons require special assistance—the earthquake resistance improvement of pipelines carrying contaminated wastewater from these facilities, and the earthquake resistance improvement of emergency transport routes, evacuation routes, and pipelines buried under tracks, which are positioned in regional disaster prevention plan, were planned, and considering the total number of projects, these were categorized as short term and as middle and longer-term projects.

Based on results of the diagnosis of earthquake resistance of buildings which are manned facilities at the Inoya, Hosoe, Keta, and Urakawa Purification Centers, it was judged that earthquake resistance retrofitting is necessary, and the project plans included earthquake resistance retrofitting design and earthquake resistance retrofitting works.

##### 2) Setting the countermeasure priority

Among sewerage system facility earthquake resistance countermeasure projects in the plan, countermeasures were prioritized considering the year each treatment plant began operating, population of its served region, and degree of impact of the anticipated earthquake damage. Facility earthquake resistance improvement of the Chubu Treatment District and Seien Treatment District were given priority, and considering the quantity of works, plans to improve the earthquake resistance of facilities in the Kanzanji Treatment District, Koto Treatment District, Hosoe Treatment District, and the Inoya Treatment District (2008 to 2017) were enacted.

##### 3) Study of tsunami resistance countermeasures

In order to study countermeasures to be taken immediately after the tsunami inundation predictions are announced, methods of taking countermeasures to prepare for the predicted tsunami considered based on present technologies were organized.

4) Study of the enactment of sewerage system BCP

Hamamatsu City's plans or manuals concerning disaster mitigation which are now enacted or have been studied were categorized to abstract challenges to the enactment of sewerage system BCP. Studying restrictions on resources after a disaster has occurred and matters related to the period of completion of a post-disaster response has shown that sewerage system BCP can be enacted, and that it is necessary to set substitute bases in Hamamatsu City, to respond outside of working hours, and to provide backup methods such as sewerage treatment ledgers, etc. and information transmission equipment, and to ensure drinking water etc.

**(Future subject)**

The national government and prefectural governments are following up the third-order damage prediction, with a study of earthquake disaster predictions based on the occurrence of the three-linked earthquakes, the Tokai, Tonankai, and Nankai Earthquakes. Based on these damage hypotheses, regional disaster prevention plans are enacted. The Comprehensive Earthquake Countermeasure Plan for Hamamatsu City which was enacted was planned according to the Regional Disaster Prevention Plan based on the third-order damage prediction, and when the damage predictions have been revised in the future, it will be necessary to perform revision at an appropriate stage.

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