

Study on drafting the comprehensive plan for inundation control in upper waters of Konuma river, Saitama city

Whole term

2006.7~2007.3

(Purpose)

The purpose of the study is to draft the comprehensive plan for inundation control in upper stream of Konuma river, Saitama city. The area, corresponding Nisshin, Kushibiki, Ohnari, and Sakuragi drainage district is residential and has been heavily damaged with inundation till now. During last 10 years, flood above floor level was occurred 5 times, Total 141 houses have been flooded above floor level and total 37 houses below floor level. The area includes many urban functions. therefore, urgent inundation control plan are desired to assure safety social activity.

In the area, The improvement level of the project plan is assured 56 mm/h equivalent for 5 years return period. However, inundations have rushed at points where discharging potentials of sewer pipes and rivers, as it now stands, are lacking. In addition, if rising of river water levels was approaching near high water levels, some areas are damaged due to lower ground level than high water levels of rivers.

(Results)

Combination between hard and soft measure with public and self help has importance in drafting comprehensive plan for inundation control. Some hard measures such as water stop and sandbag will not work without some public soft measures such as inundation information service. The plan must be drafted in consideration of collaborations and comprehensions. The workflow is shown in Figure 1.

STEP 1: Existing plan has to be categorized and cleared.

STEP 2: Common drainage and storage pipe

Linkage with other divisions such as river divisions is essential for drafting the plan. Therefore, common drainage, which had discharge potential for river and storage potential for sewer, was planned and assessed. We must verify that the drainage has a potential for controlling inundation height to 0 cm in Category A, fewer than 20 cm in Category B, fewer than 45 cm in Category C.

STEP 3: Combination with infiltration facilities

Infiltration pavement and home scale infiltration and storage facilities were planned. Introduction of the facilities must have preliminary assessment for infiltration potentials. Judgments were on existing boring experiments and reports. The suitable area is 125 ha (47.5%), the unsuitable is 138 ha (52.5%) in the assessment result. Inundation heights with 75 mm/h intensity of rainfall are simulated in some set patterns.

STEP 4: Localized measures with self-help approach

For saving from strongest recorded class rain, and effectively minimizing inundation damage, collaboration among sewer, river, the other divisions, and habitants, is needed. The results shows functional water levels were kept with the measures. However, it is not perfect in some areas. Water stops and sandbags are prepared for self-help measures in the area.

STEP 5: Soft measures

By poll of residents and meeting, we recognized that needs for soft measures, such as publicity of emergency and flood prevention division contact numbers, enhancement of disaster prevention organizations, conducting emergency drills, are quite strong.

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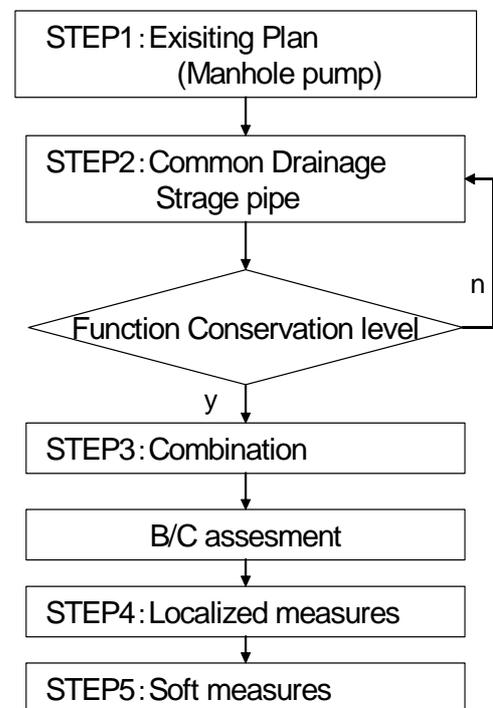


Figure 1 Workflow

Key words

Comprehensive plan for inundation control, Storage pipe, Infiltration and storage facilities