

台南市淹水風險分級

Flood Risk Classifications in Tainan City

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摘 要

台灣颱風災害發生頻繁，隨著社會經濟發展的密度增加，淹水損失益形嚴重，風險管理成為相當重要的工作，而淹水損失推估與風險分析為洪災風險管理之基礎。根據 ISO 31000，風險分析架構包括危險度評估、暴露量分析、易損性分析與風險分析等。為了解台南市範圍之淹水風險分佈，本研究推估 2 年、5 年、10 年、25 年、50 年、100 年各重現期之淹水損失，再以 ISO31000 架構進行年平均淹水損失與年平均淹水深度。為了解區域的風險情形，本研究以 Natural-Break 將年平均淹水損失與年平均淹水深度分為高中低風險。比較結果中可得知淹水深度高的區域，不一定有較多的經濟活動，因此不一定有較大的淹水損失。年平均淹水深度分析結果(EAFD)可得知區域內長期下來淹水較為嚴重的範圍區域。年平均淹水損失(EAD)分析結果可得知區域內長期下來淹水損失較大的範圍，有助於排水規劃方案之選定。

關鍵詞：淹水損失分析、年平均淹水損失、年平均淹水深度

Abstract

Taiwan encounters frequent flood attack due to typhoon or storm events. Flood hazards usually cause major loss of assets and casualties with high density of population and economical activities. Flood risk management becomes an important task for the government. Flood damage assessment and risk analysis are the basis of flood risk management and disaster mitigation. According to ISO 31000, the risk analysis framework includes hazard assessment, exposure analysis, vulnerability analysis, and risk analysis. In order to understand the distribution of flood risk in Tainan City, this study estimated the flood damage in each return period of 2 years, 5 years, 10 years, 25 years, 50 years, and 100 years. This study uses the ISO31000 framework to estimate the average annual flood depth and the annual average flood damage, and compare the results of the two. From the comparison results, it can be seen that areas with high flood depth may not have more economic activities and therefore may not have greater flood damages. The expected annual flood depth (EAFD) and expected annual

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damages (EAD) were divided into high, medium and low risk by Natural-Break. The results of EAFD analysis results can be used to know the severely flooded areas in the area over a long period of time. The EAD analysis results show that the area has a large range of flooding damages over a long period of time, which is helpful for the selection of drainage planning.

Keywords: Flood Damage Analysis, Expected Annual Flood Depth, Expected Annual Damages