



National Disaster Management Institute

Urban Flood Damage Analysis & Development of an Integrated Inundation Analysis Technology on Ground and Underground in Inland Area



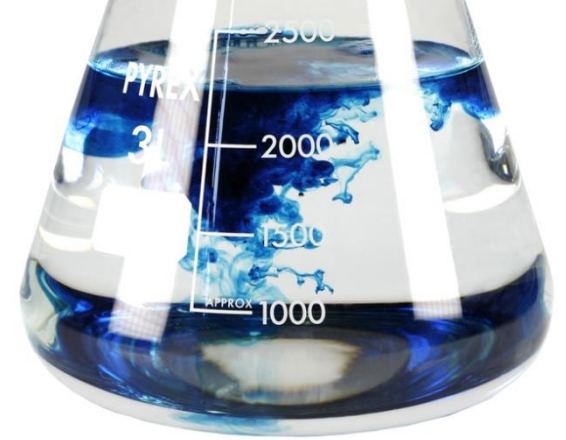
(Eugene) Jung Hum, YU, Ph.D.
Disaster Prevention Research Department

CONTENTS



- one** **Cause of Urban Flood Disaster**
- two** **Urban Flood Damage Case**
- three** **Disaster Prevention Measures
for Future Urban Flood**
- four** **NDMI's Measures & Strategy
for Urban Flood Mitigation**





one

Cause of Urban Flood Disaster

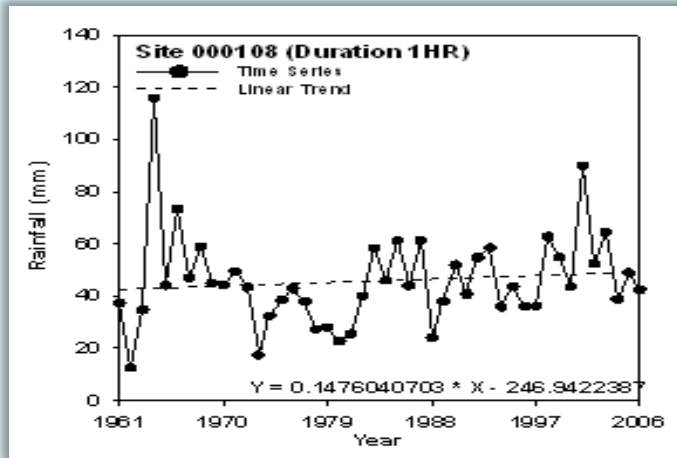
Major Cause of Urban Flood Disaster



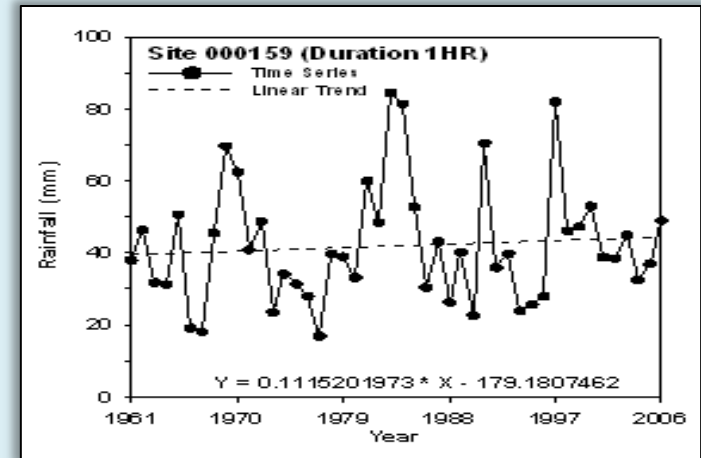
Cause of Urban Flood Disaster (Torrential rain increases)



◆ Hourly rainfall of Seoul and Busan cities



Seoul city



Busan city

◆ Rainfall has increased and typhoon has become larger

Kind	1990s(average)	2000s(average)	Remark
Max. rainfall intensity	94.6mm/hr	97.4mm/hr	↑ 2.8mm/hr
Max. daily rainfall	355.8mm	415.2mm	↑ 59.4mm
Typhoon central pressure	951hPa	944hPa	Larger

Cause of Urban Flood Disaster

Development of riversides lowlands

- Ground level lower than river plan flood elevation

Land use change

- Impervious surface increases due to various urban development

Urbanization and concentration of population

- Increase in casualties and property damage

Capacity deficit of disaster prevention facility

- Urban drainage facility design criterion : Trunk ; 10years, Branch ; 5 years
- Urban river design criterion : small and medium streams ; 50 or 100 years

Construction of a large underground space

- Construction of large underground space such as shopping mall and subway



two

Urban flood damage case

Major cases of urban flood damage in Korea

July 2001 , Seoul

Damage history

Casualties	Death 35, Injury 104
Flooded Buildings	94,375
Major causes	<ul style="list-style-type: none">•Sewer capacity deficit•Insufficient capacity of internal drainage•Lowland flooding•Insufficient capacity of pumping station and detention pond• Poorly drainage due to sediment spill



July 2009, Busan

Damage history

Casualties	Death 2, Injury 3
Flooded Buildings	1,428



预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_5610

