

# **The Seoul Master Plan for Safety Management :**

## **A New Comprehensive Framework for Safer Seoul**

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# 1. Introduction

## 1. Introduction

❖ **In April 2014, Seoul Metropolitan Government(SMG) made firstly the Seoul Master Plan for Safety Management**

- As a medium-range comprehensive framework on urban safety management

❖ **The new plan gives emphasis on**

- Coordination among different hazards in charge of various sectors
- Balance between structural and non-structural measures
- Citizen participation as well as collaboration among different stakeholders.

❖ **This presentation is...**

- To introduce background and contents of the plan
- To discuss lessons learned and further issues over safety management in Seoul

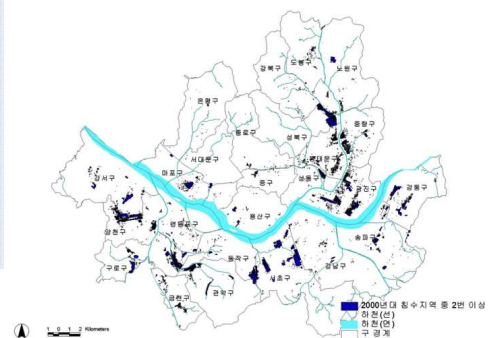
## 2. Urban Safety of Seoul

### ❖ Natural Disaster

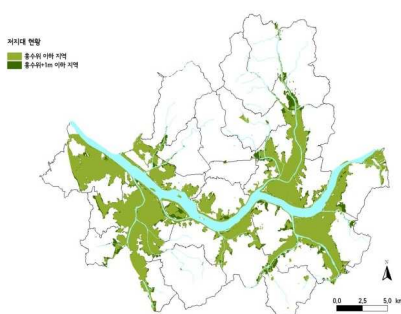
Repetitive, intensified urban flooding and landslides resulting from urban development and extreme weather events due to climate change

## 2. Urban Safety of Seoul

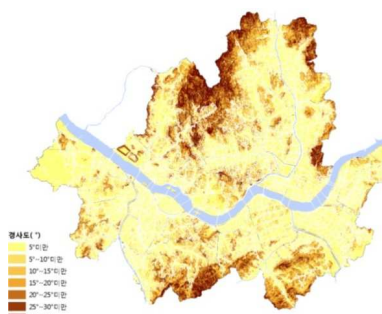
Flood Areas



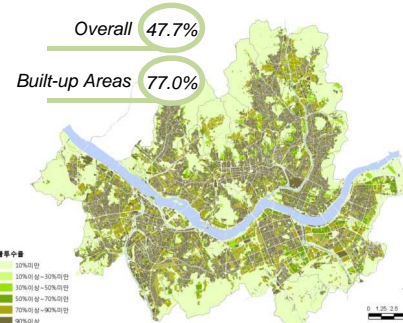
Low Land



Slope



Impervious Ratio



## 2. Urban Safety of Seoul



< Sep. 1984 >



< Aug. 1998 >



< Sep. 2010 >

### ✓ Recent Peak Rainfall Intensity

- Sep. 2010 : 99mm/hour
- Aug. 2011 : 111mm/hour



< Aug. 2011 >



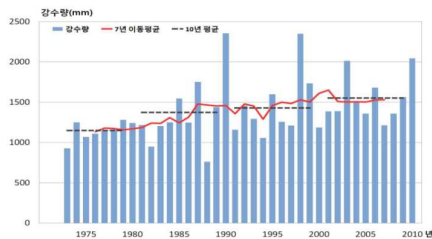
< Aug. 2011 >

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## 2. Urban Safety of Seoul

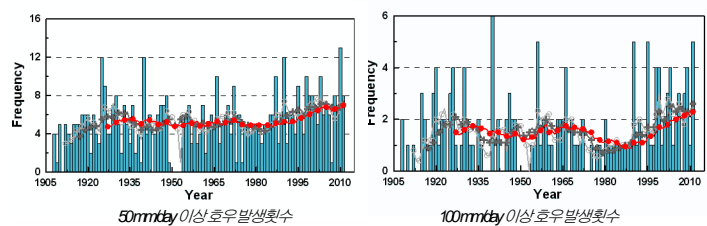
### ❖ Climate Change: Rainfall Precipitation and Intensity

#### Precipitation



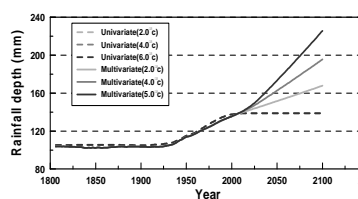
Past  
~ Present

#### Rainfall Intensity



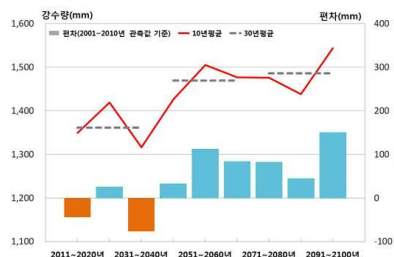
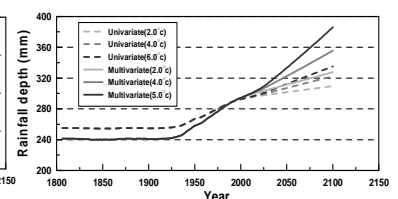
#### Annual Peak Precipitation

12 Hours



#### Probable Precipitation

12 Hours, 50 Yrs. Return Period



Present  
~ Future

Precipitation and intensity of rainfall are expected to increase in the future

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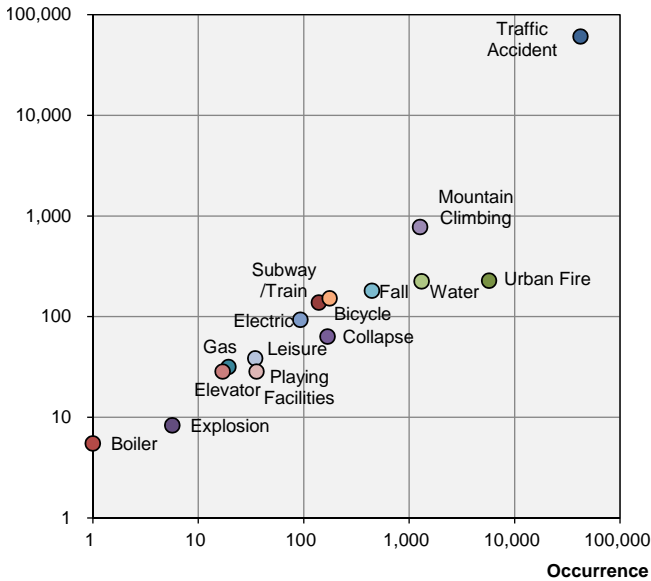


### ❖ Manmade Disaster and Daily-life Accidents

Annual Occurrence vs. Human Damage

2009-2011 Average

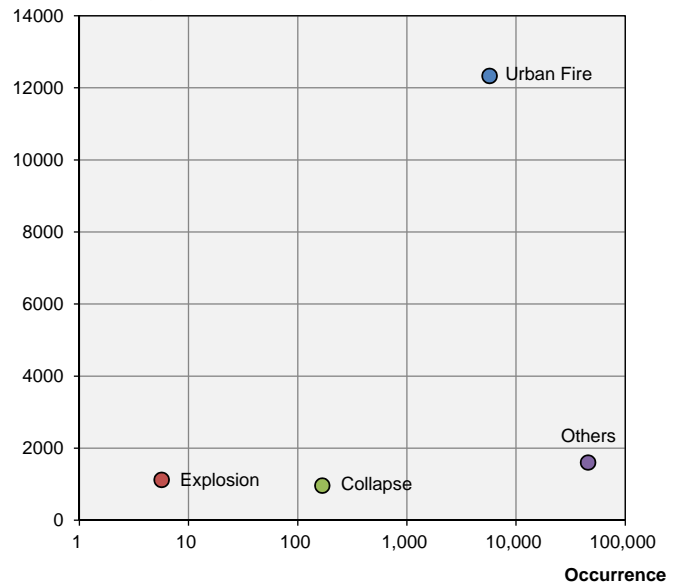
Human Damage(Person)



Annual Occurrence vs. Property Damage

2009-2011 Average

Property Damage(Million Korean Won)



Human casualties are most caused by road traffic accidents

Property damages are caused most by urban fire

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## 2. Urban Safety of Seoul

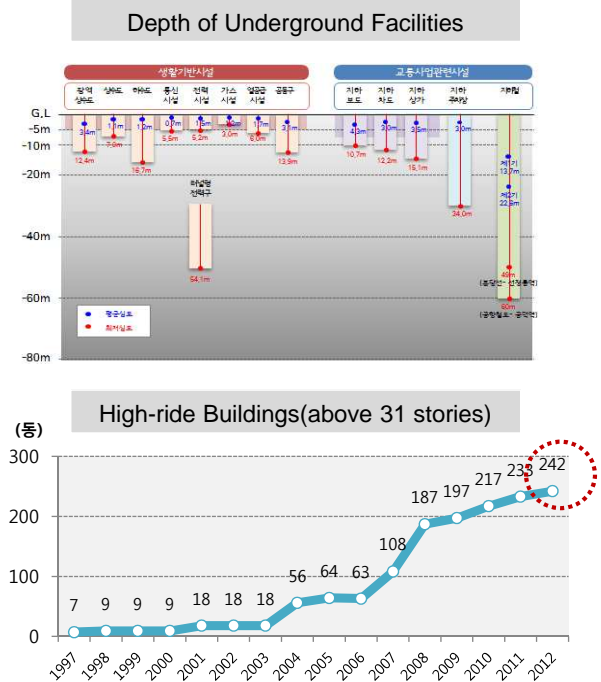
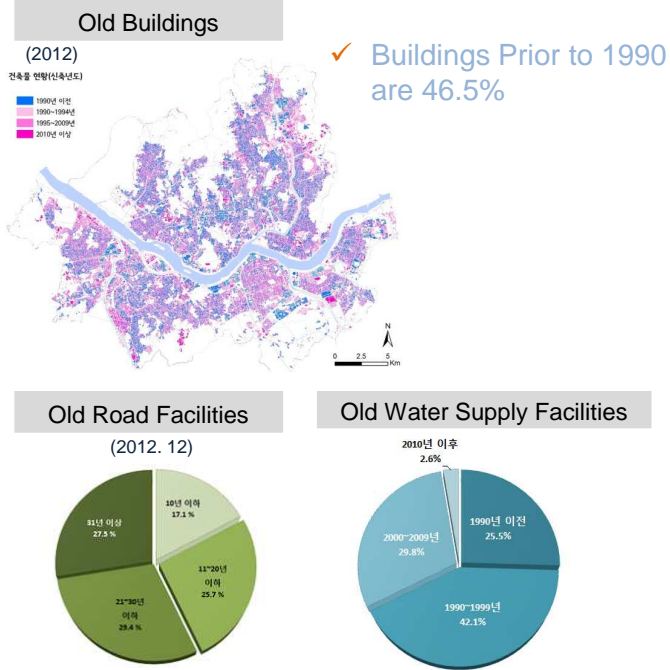
- ✓ Seongsu Bridge Collapse (Oct. 1994)
- 49 Casualties (32 Dead)



- ✓ Sampoong Department Store Collapse
- (Jun. 1995)
- 502 dead, 937 injured, 6 missing

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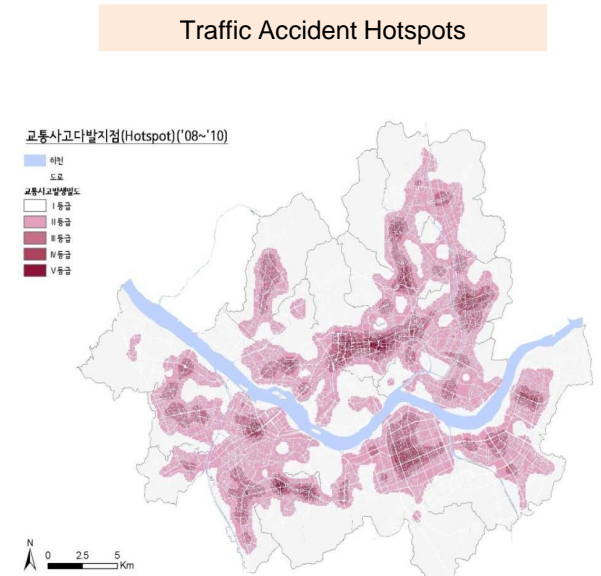
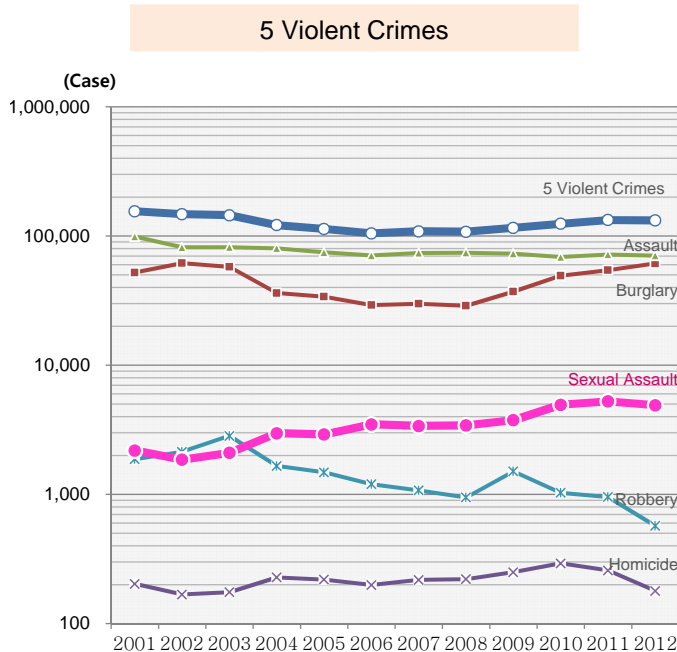
### ❖ Urban Built Environment



Buildings and facilities get older, denser, higher, and bigger  
Urban spaces get more vulnerable to large-scale disaster

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### ❖ Crime and Traffic Accidents

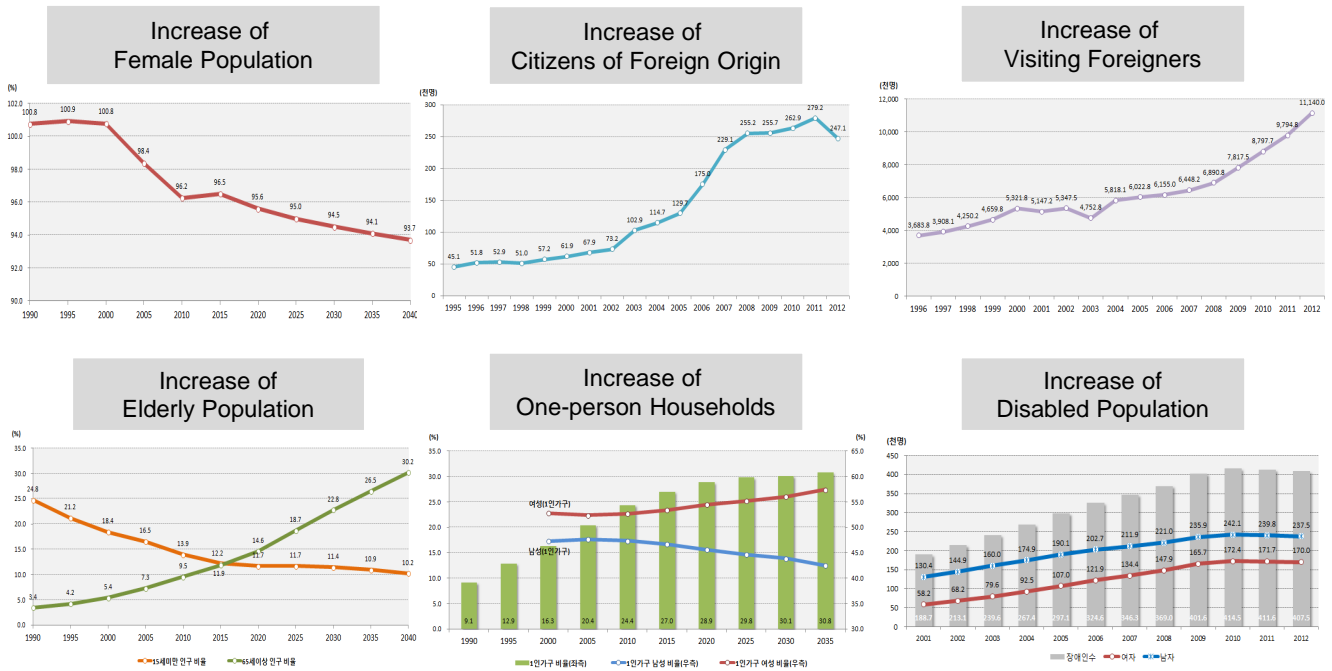


5 violent crimes continue to be at a high level  
Sexual crimes increase rapidly

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## 2. Urban Safety of Seoul

### ❖ Socio-demographic Changes

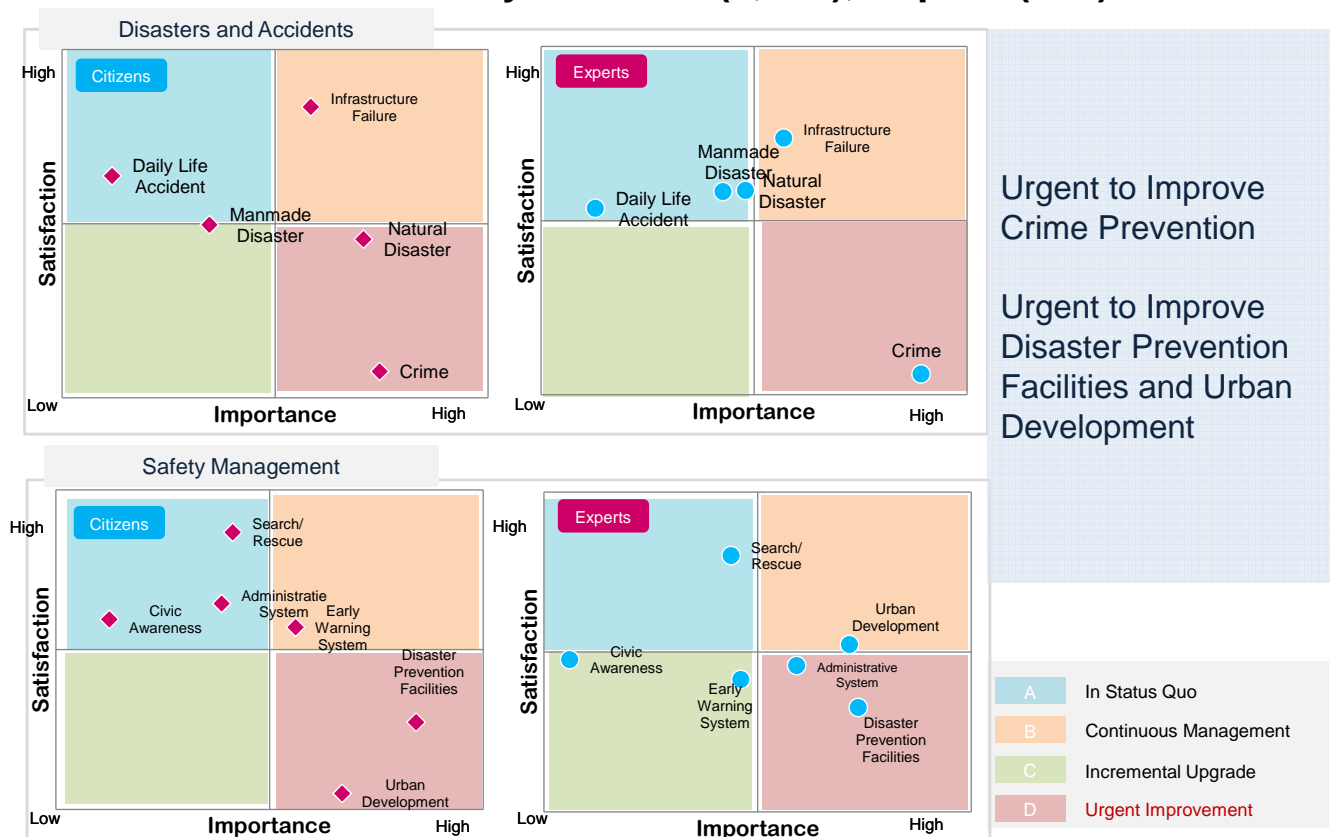


Increase of demand for safety and welfare as vulnerable populations increase

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## 2. Urban Safety of Seoul

### ❖ Attitude to Urban Safety : Citizens(1,000), Experts(101)



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## 3. Making a Comprehensive Plan

### 3. Making a Comprehensive Plan

#### ❖ **Necessity of a New Comprehensive Plan**

##### ✓ **Existing**

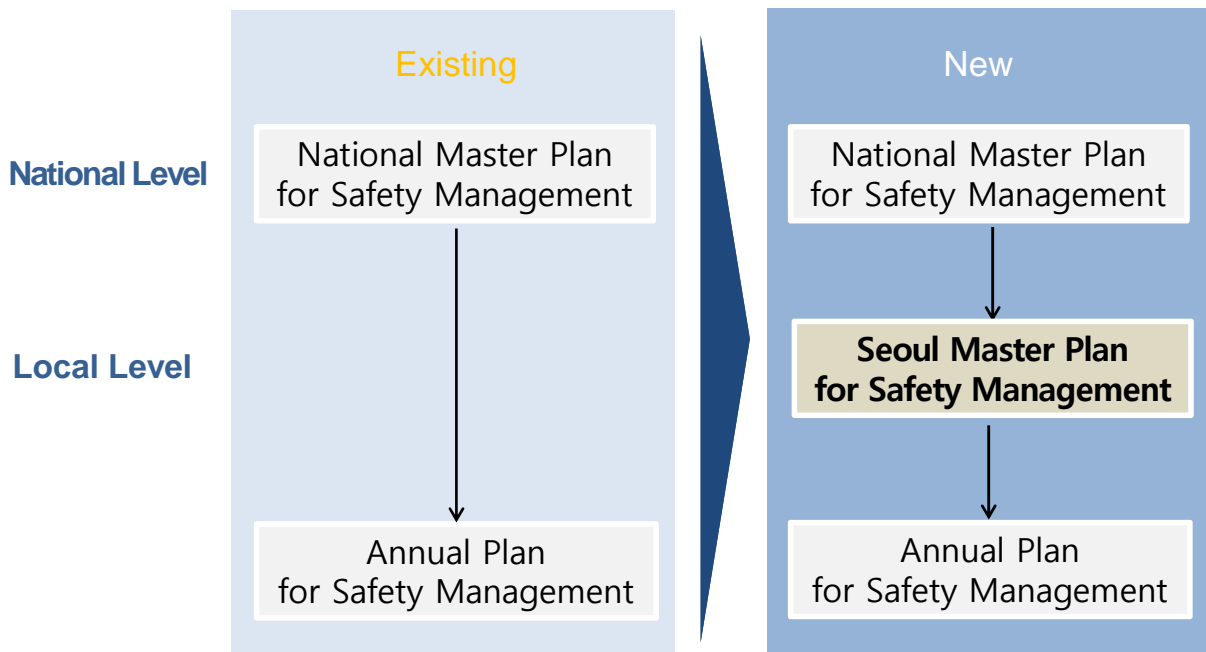
- No medium-to-long range comprehensive plan for safety management at a metropolitan level
- Passive, fragmentary, and myopic approaches to disasters
- Oriented to structural measures

##### ✓ **New**

- Add a medium-range comprehensive plan
- Coordination among different hazards in charge of various sectors
- Balance between structural and non-structural measures
- Citizen participation as well as collaboration
- Daily-life safety as well as disasters

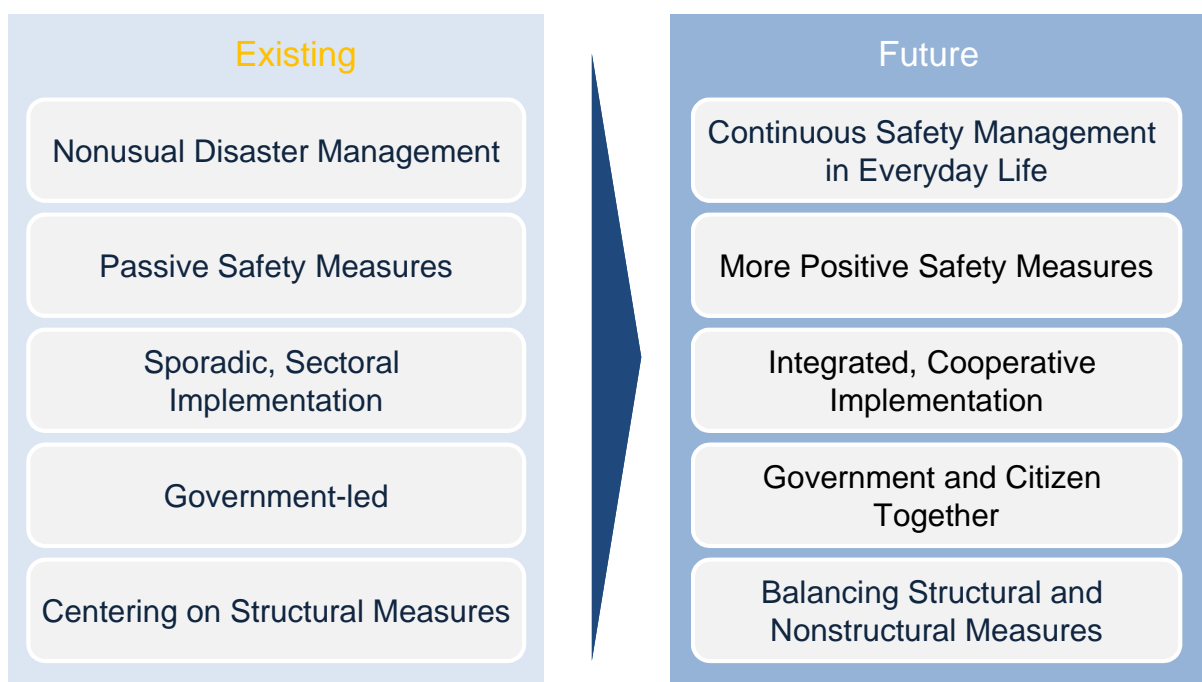


#### ❖ Shift of Planning System for Safety Management



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#### ❖ Paradigm Shift for Urban Safety Frameworks



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### 3. Making a Comprehensive Plan

#### ❖ The Master Plan for Safer Seoul is

##### ✓ Comprehensive Plan

Covering various urban safety issues including natural and manmade disasters, everyday accidents, etc.

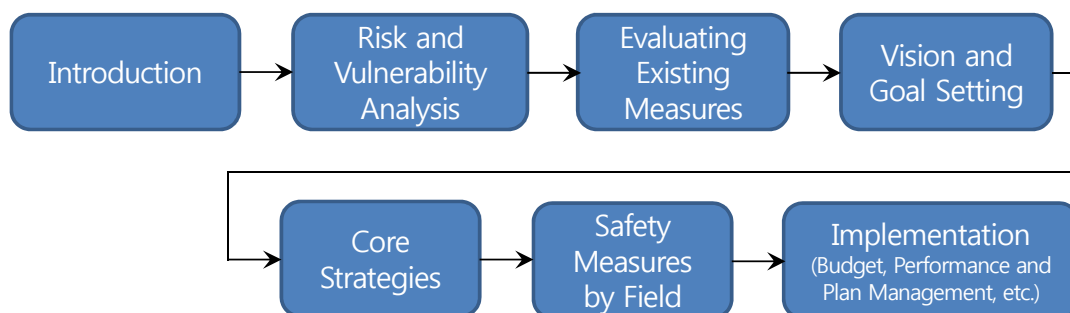
##### ✓ Guidance Plan

Suggesting urban safety policies and programs to various related domains such as urban infrastructure, environment, urban planning, housing, social welfare, etc.

##### ✓ Medium Term Plan

Toward 5~10 years (Current plan looks forward to 2020)

#### ❖ Structure of the Plan



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### 3. Making a Comprehensive Plan

#### ❖ Vision and Goals



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## 4. Core Strategies

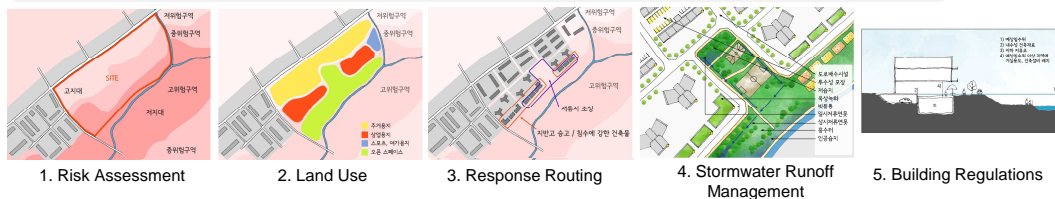
### 4. Core Strategies

#### ❖ Core Strategies

##### A. Strengthen Preventive Safety Management

- Applying safety measures actively from the urban planning stage
- Regular Monitoring urban risk and safety indicators

##### Example of urban planning process for natural disaster management



##### B. Firm Up Disaster Preparedness and Response

- Disaster information and alert systems
- Protecting urban critical infrastructure
- Improving disaster response manuals
- Strengthening resources management and mobilization
- Upgrading search and rescue systems



GIS-based Resource Management and Logistics System



Disaster Medical Assistance Expert Team

### C. Arrange Complete Recovery Systems

- Making long range recovery and revival strategies
- Utilizing specialized organizations and public participation



Long Range recovery and Revival Strategy  
(Case of New Orleans after Hurricane Katrina)

### D. Secure Urban Safety through Participation and Communication

- Opening every information important to citizens
- Developing crisis management communication manuals
- Making citizen-driven safe neighborhoods
- Networking and cooperation



Recovery Activities of Citizen Volunteers



Seoul Metropolitan Government  
Joined UNISDR "Disaster  
Resilient Cities" Campaign, 2013

## 5. Safety Measures by Field

- ❖ **Safety measures by field** suggest various strategies and programs by classifying disasters and accidents into 2 categories, “major” and “minor” based on the risk

### ✓ “Major” Disasters and Accidents (17)

- Flood, Landslide/Erosion, Heavy Snowfall, Heat Wave, Cold Wave
- Facility Collapse(Building, Bridge, Construction Site, Dosshouse, Earthquake, etc.)
- Fire(Urban Fire, Explosion, Wild Fire, etc.)

## ✓ “Minor” Disasters and Accidents (49)

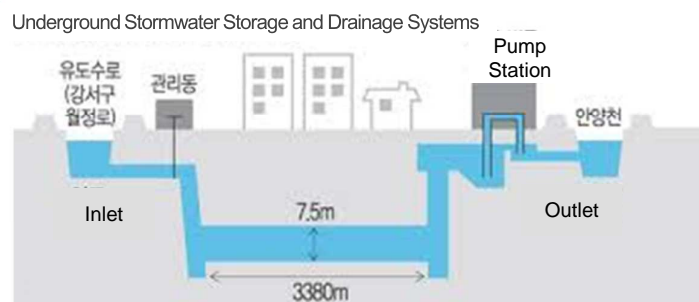
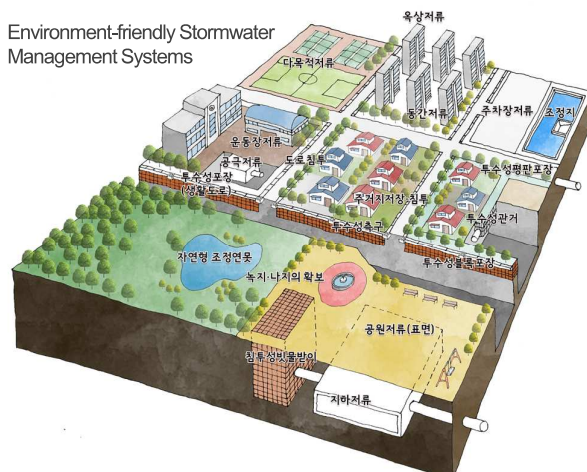
- Drought, Green Tide, Yellow Dust, Thunderstroke, etc.
- Hazardous Material, Infectious Disease, Distribution Crisis, etc.
- Urban Infrastructure Crisis(Energy, Communication, Water, etc.)
- Children's Playground, Drowning, Bicycle, Climbing, etc.

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## ❖ “Major” Disasters and Accidents : Urban Flood

- ✓ Customized strategies to 34 flood-prone areas

- In addition to traditional structural measures (drainage systems, pumps, etc.), apply environment-friendly measures such as stormwater storage and infiltration measures
- Facilitate participation, communication, and cooperation of residents, experts, and public officials

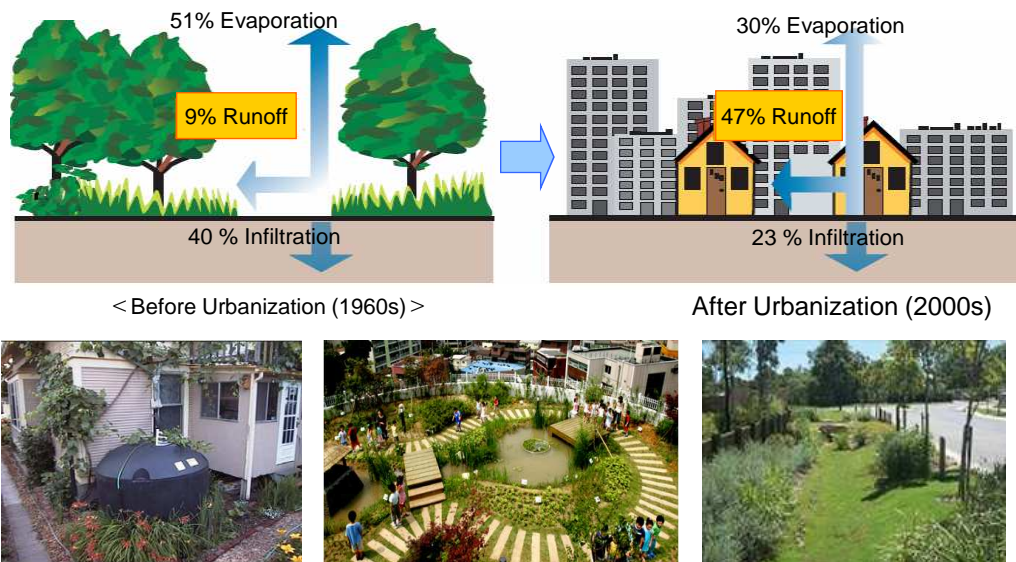


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## 5. Safety Measures by Field

- ✓ Integrated drainage management systems at catchment scale
- ✓ Distributed stormwater management systems
- ✓ Flood insurance program, hazard maps, etc.



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## 5. Safety Measures by Field

### ❖ “Major” Disasters and Accidents : **Landslide, Erosion**

- ✓ Total inspections to hillside areas and evaluation of landslide risk
- ✓ Erosion control facilities
- ✓ Integrated hillside management information systems
- ✓ Development controls in hillside areas
- ✓ Developing new environment-friendly facility design methods, etc.

### ❖ “Major” Disasters and Accidents : **Heavy Snowfall, Heat Wave, and Cold Wave**

- ✓ Early warning and monitoring systems
- ✓ Special cares of vulnerable areas and populations, etc.

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### ❖ “Major” Disasters and Accidents : **Facility Collapse**

- ✓ Reducing old facilities (D & E class)
- ✓ Stronger management of big complex buildings
- ✓ Participation of private experts to facility inspections
- ✓ Seismic-resistant design, etc.

### ❖ “Major” Disasters and Accidents : **Fire and Explosion**

- ✓ Special management of fire-vulnerable buildings and facilities (e.g., old houses, publicly-used facilities)
- ✓ Evaluation of urban fire risk
- ✓ Rapid response systems, etc.

## 6. Implementation

### ❖ Stepwise Implementation toward 2020

✓ Set priorities based on importance and urgency

- ✓ Budget plan
  - Stepwise increase of budget for urban safety

### ❖ Securing Conformity and Cooperation

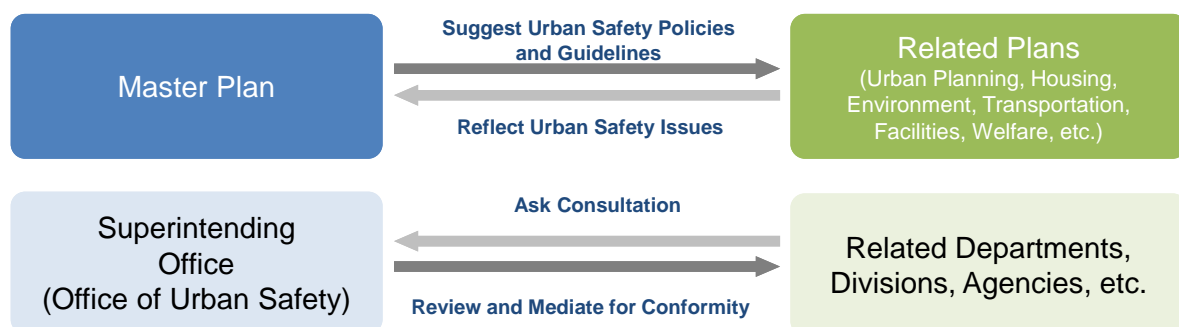


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### ❖ Stepwise Implementation toward 2020

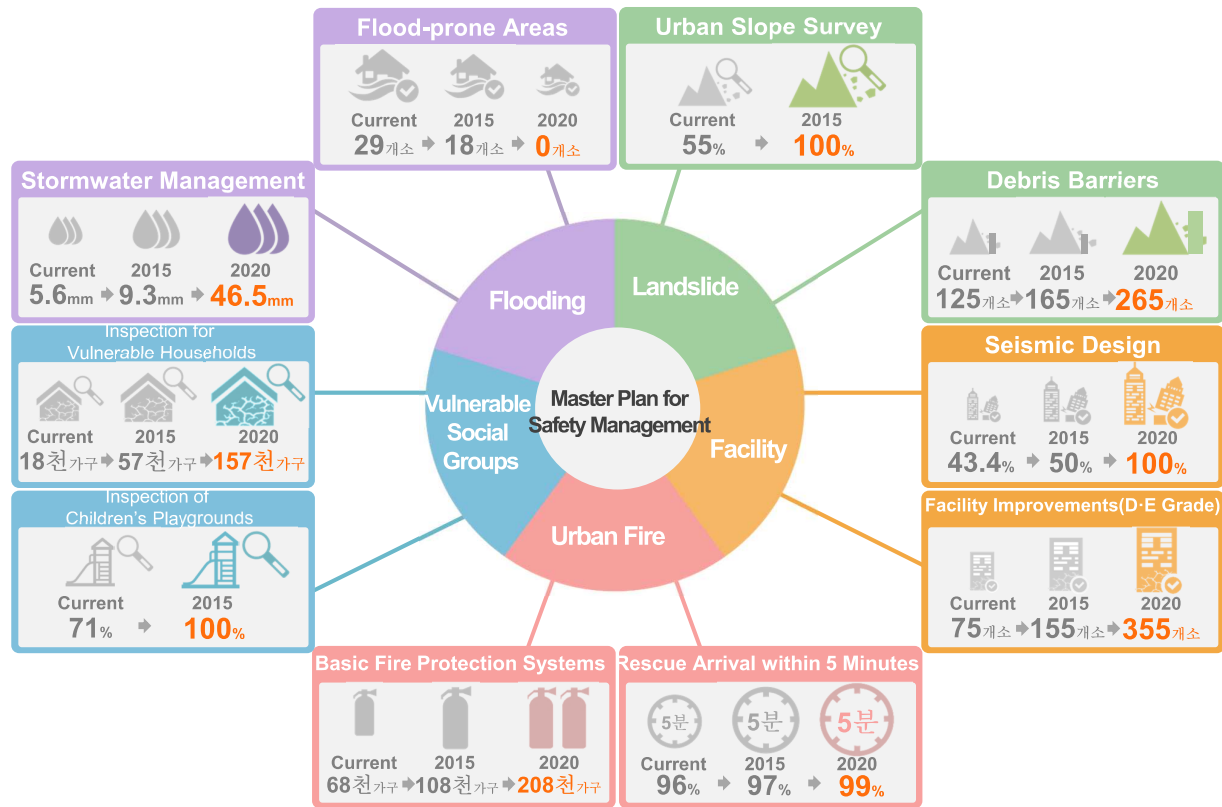
✓ Set priorities based on importance and urgency

### ❖ Securing Conformity and Cooperation



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### ❖ Management of Performance Indicators : Annual Monitoring and Evaluation



## 7. Lessons Learned

### ❖ **The Seoul Master Plan for Safety Management is**

- ✓ A first attempt at the local government level in Korea to make a medium-range comprehensive framework on urban safety management

### ❖ **But, the new plan has several limitations**

- ✓ Insufficient in comprehensiveness
  - For example, it does include crime prevention measures in which citizens are most interested
- ✓ Insufficient in overcoming barriers of and cooperation among departments, divisions, and agencies
- ✓ Ambiguous characters of the plan
  - Strategic guidance plan, or operation plan?

### ❖ **Other Important Plans for Urban Safety**

- ✓ Comprehensive Measures for Female Safety
- ✓ Crime Prevention Through Environmental Design (CPTED) Project, etc.

**Thanks.**