

An aerial photograph of Seoul, South Korea, showing a dense urban landscape with numerous high-rise buildings and a mix of architectural styles. In the background, a range of green mountains is visible under a bright blue sky with scattered white clouds. The foreground is a solid green field.

Seoul's Disaster & Safety Management Policy

Seoul Metropolitan Government

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I

Disasters in the Past



Recent Disasters in Asia

■ Indian Ocean earthquake and tsunami

(Dec. 26, 2004.)

- Sumatra, Indonesia
 - Magnitude of 9.0
 - Tsunami



- Death toll of 290,000
- 5 mil people displaced



■ Great Sichuan Earthquake (May 12, 2008)

- 90km NW of Chengdu
- Magnitude of 8.0



- 70,000 Dead
- 18,000 Missing
- 370,000 Injured



■ Typhoon Ketsana, Philippines (Sep. 27, 2009)

- Worst Typhoon in 40 yrs
- Torrential Rainfall & Landslide



- 144 Dead



Past Disasters in Korea

■ Typhoon Rusa (Oct. 2002)

- Central Pressure: 850hPa,
- Highest Precipitation/day: 871mm

- 209 Dead, 37 Missing
- Property damage of 5.1 tril KRW

■ Typhoon Maemi (Sep. 2003)

- Biggest Typhoon in 99 yrs
- Highest Winds: 60m/s

- 119 Dead, 13 Missing, 366 Injured
- 10,975 Displaced
- Property Damage: 4.8 Tril KRW



■ Daegu Subway Fire

(Feb. 2003)

- Act of Aggression Toward the Society, Committed by an Arsonist Suffering from Depression

- 192 Dead, 148 Injured
- Property Damage of 61.4 bil KRW



■ Oil Spill in Taean

(Dec. 2007)

- Clash between Crane Barge and Crude Carrier
- Crude Oil Spill of 12,547kℓ

- Polluted 5,159ha
- 573,000 People for Control Efforts



■ Heavy Snow

(Jan 2010)

- Heaviest Snowfall Recorded
- 17cm in 4 hrs
- Urban Transportation Paralyzed
- Subways Stopped Operating
- 2,381 tons of Calcium Chloride Used

■ Umyeonsan Landslide

(July, 2011)

- Heavy Rainfall of up to 100mm/hr
- Soil, Stone & Driftwood Clogged Water Drainage
- 16 Dead



II

Disaster Management Environment of Seoul



Increasing Threat to Safety

■ Higher Risk of Natural Disaster



Heavy Rain or Snow
caused by changes
in climate

Sudden Snowfall (Jan, 2010)
- 25.8cm(Highest in Record)

Localized Heavy Rain (July, 2011)
- Up to 100mm/hr



Increasing Threat to Safety

■ Higher Risk of Large Scale Damage



Highly Concentrated
City Structure

132 Skyscrapers

- World's 5th Highest Density
- Increase 6% Every Year

Increasing City Facilities

- 34,387 in 2010
- Multi Complex Buildings increase by 4% since 2003.



■ Higher Disaster Risk



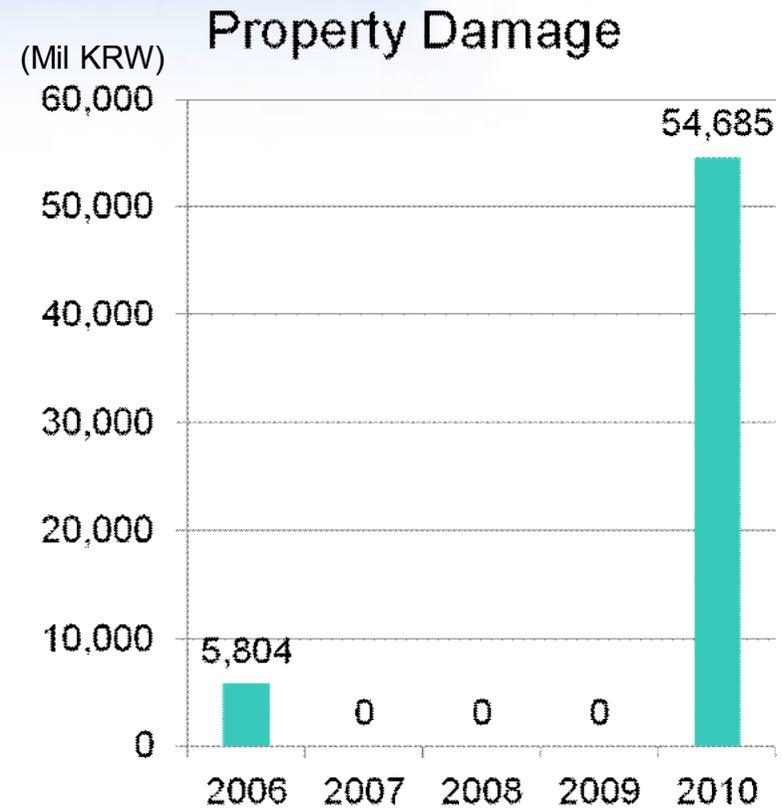
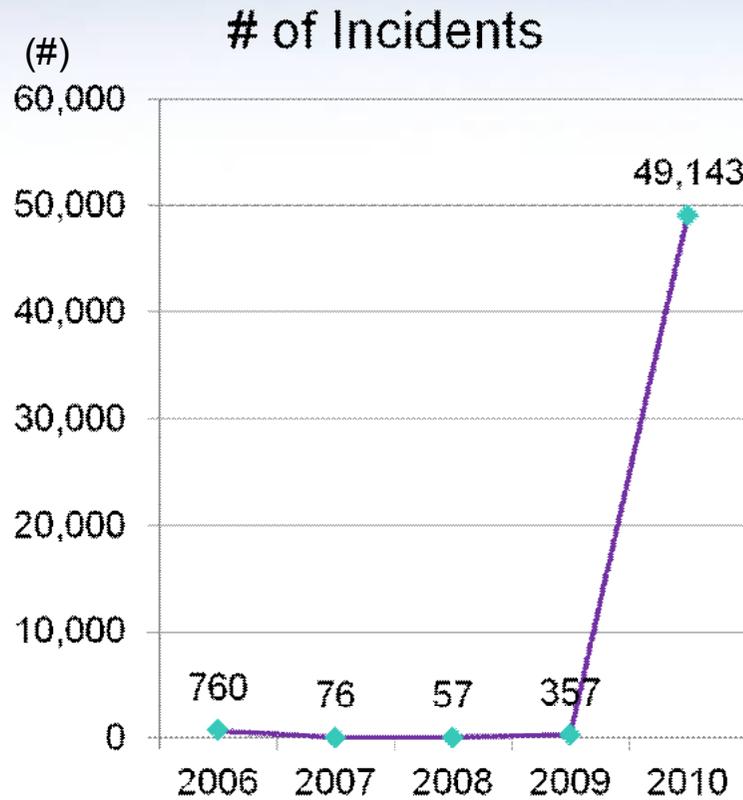
City Infrastructure
Performance Decline

Ageing Basic City Infrastructures
e.g. Bridges, Overpasses



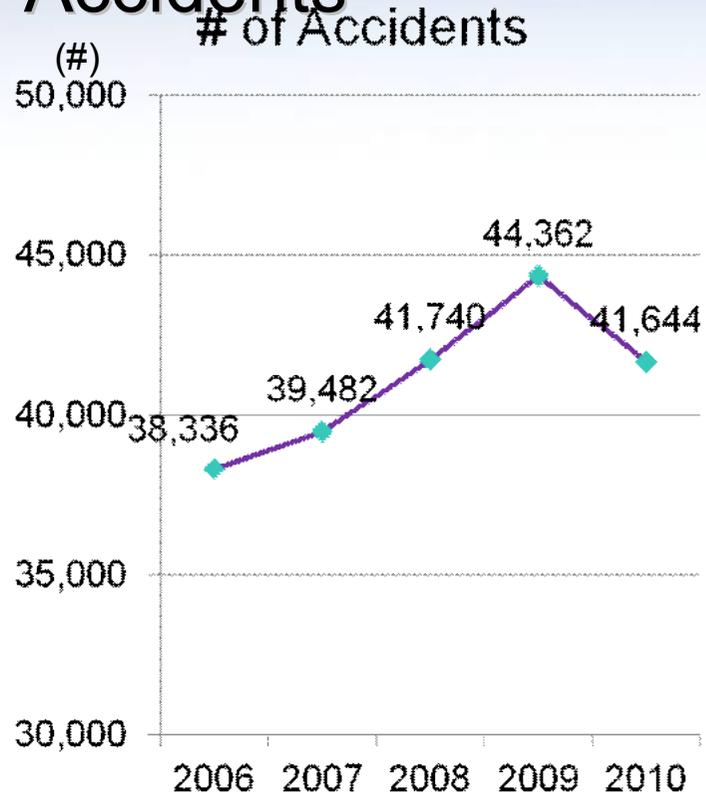
※ Disaster Statistics for Recent 5 yrs

■ Natural Disasters (Storm & Flood)

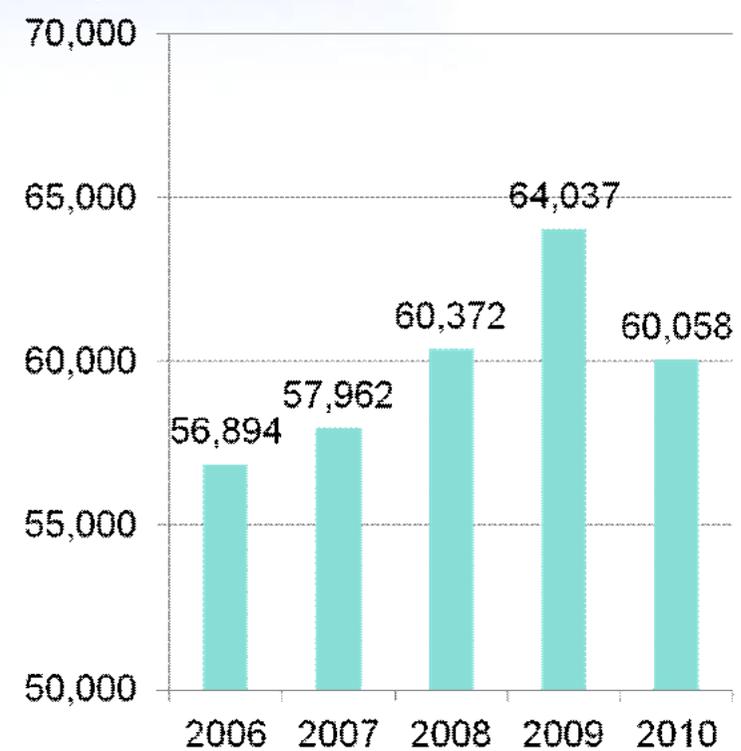


■ Manmade Disasters-Traffic

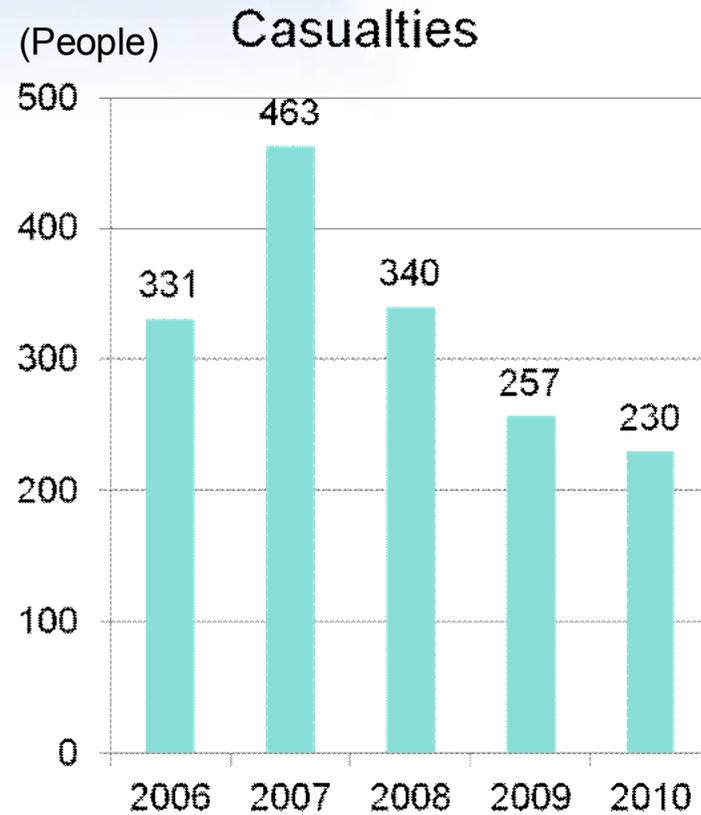
Accidents



(People) Casualties



■ Manmade Disasters -



III

Disaster Management Policies of Seoul



New Disaster Mgmt Headquarters (Sep. 27, 2010)

Purpose

-Concentrate Disaster Related Divisions to Enable Effective & Prompt Disaster Prevention and Response

Mission

- Develop Measures for Disaster Prevention, Recovery & Management
- Operate Urban Safety Headquarters

System

Disaster Mgmt Headquarters

Overall Control

Control
→
Command

Division in Charge

Disaster Mgmt



Changes & Policy Direction

Changes in the Environment

Climate

Climate Change
(Natural Disasters)

City Facilities

Highly Dense & Aged

Socio Economic

Socioeconomic Structure
Change

Policy Demand

Large Scale
& Compound
Disaster
Response
Tailored for
Seoul

Facilities
Mgmt. in
Disaster
Vulnerable
Areas

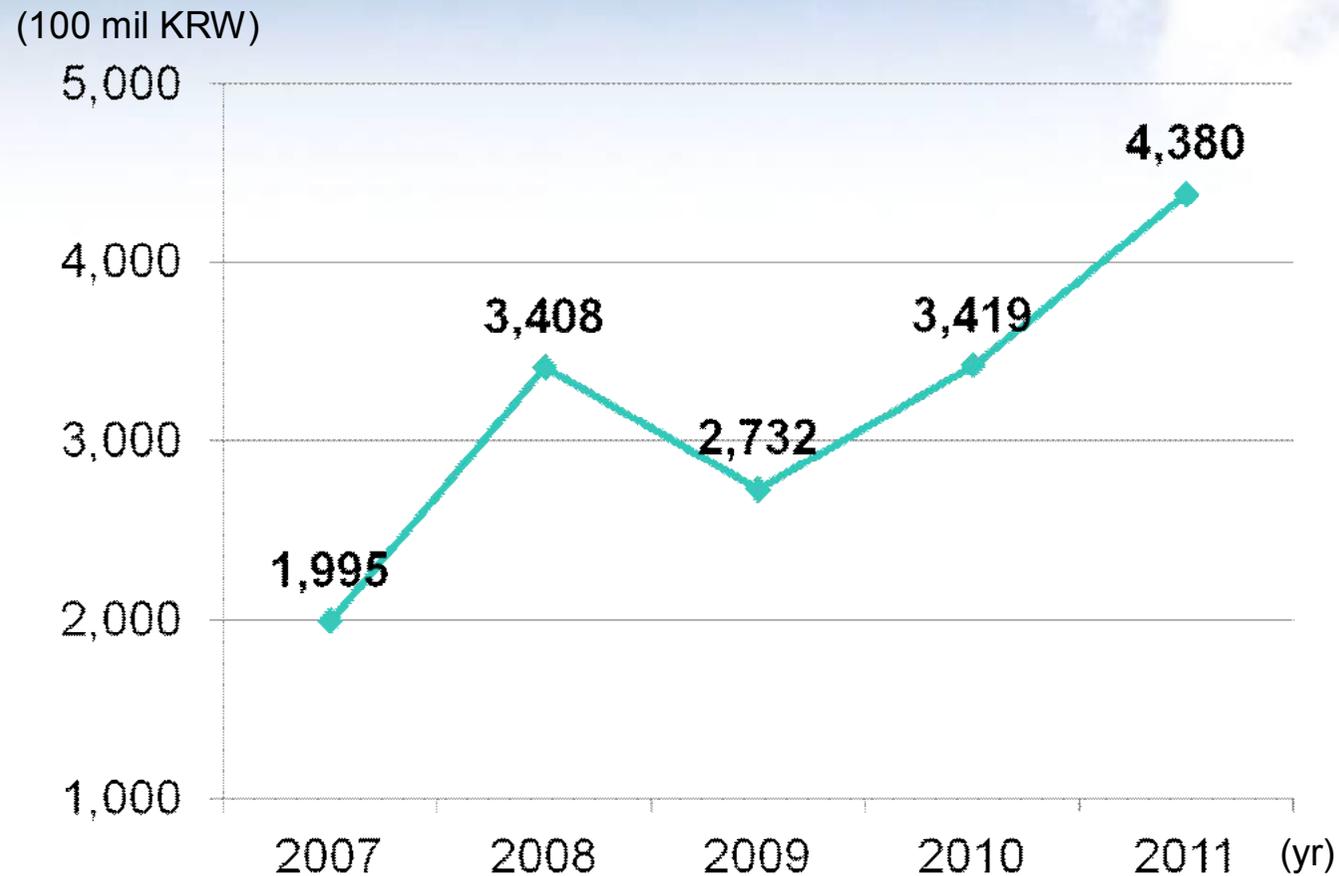
Major Policy Direction

- Disaster Mgmt for Skyscrapers & Underground Space
- Information & Science Based Disaster Management

- Improve Living Environment in Disaster Vulnerable Areas
- Protect People Vulnerable to Disasters

Disaster Mgmt Related Budget of Seoul

■ Recent 5-year Budget



Policy Goal

SEOUL IS SAFE 24/7
SEOUL IS SAFE 24/7



ENHANCED DISASTER MANAGEMENT

Establish
Disaster
Prevention
System

Develop
Management
Measures,
Improve &
Manage Facilities

Prompt
Response &
Recovery

Establish Disaster Prevention System

■ Basic Guideline and Index

Disaster/Safety Guideline

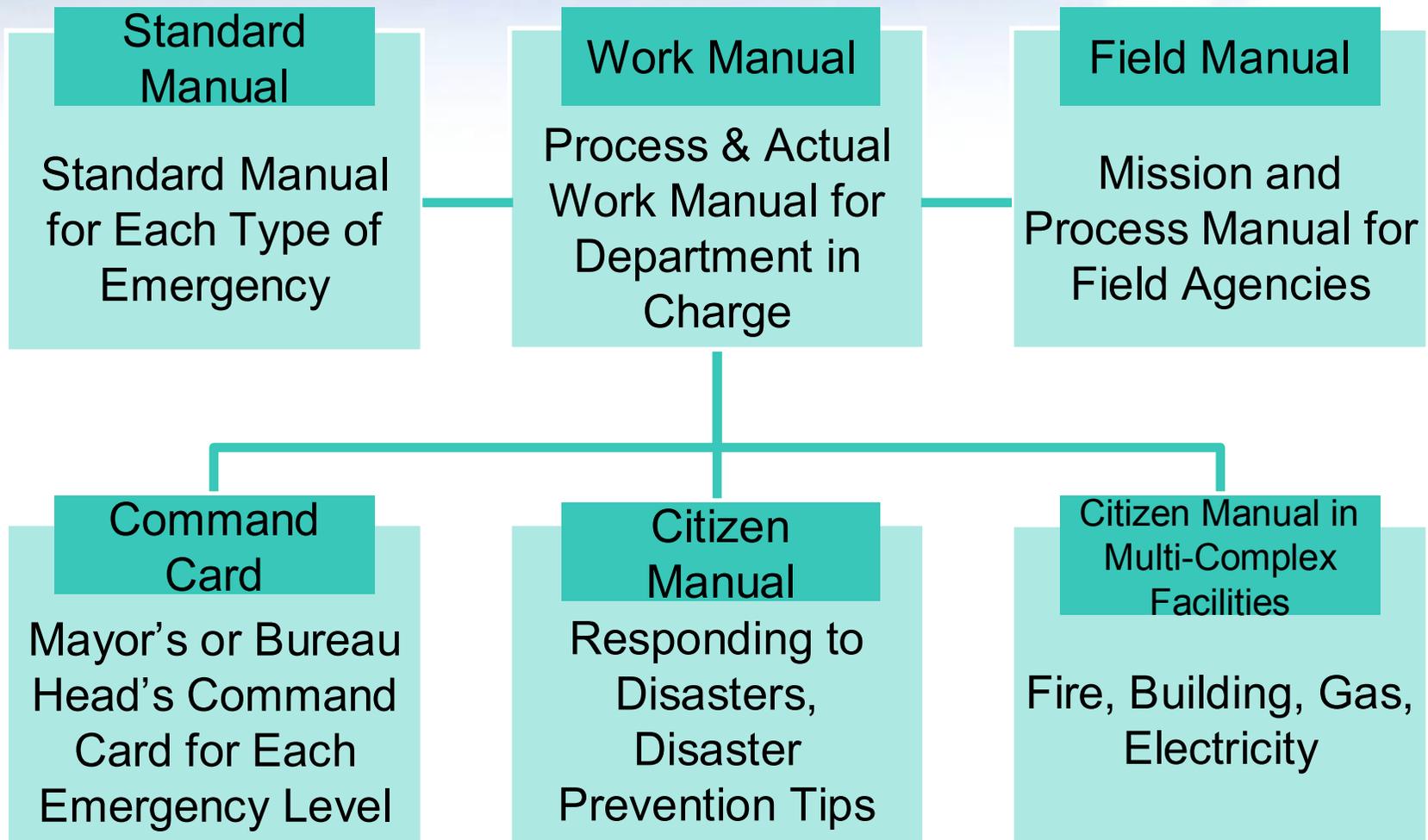
- Common Standard for Urban Safety
- Specialized Guideline for Different Disaster Types

Develop Safety Index

- Index to Measure Local Disaster Vulnerability & Risk
- Index to Measure Potential Risk & the Level of Safety



■ Risk Management Manual



Disaster Prevention & Facilities Improvement

■ Better Storm/Flood Preparation & Response

All Time Monitoring

- 6 People on 24-Hour Watch

Establish Real Time Flood Control System

- Provide Flood Prevention Information
- Establish System to Send Video Feed of Disaster Area, Wireless & Real Time

Improve Drainage System

- Increase Underground Road Water Pump Capacity
- Optimal Management System for Rain Water Pump



Smart Snow Removal

- Snow Removal Using Vehicles Equipped with Smart System e.g. GPS
⇒ Multi-faceted, Comprehensive Command & Control of Fields



<System Chart>



<Bulletin Screen>

■ Responding to Cold Wave/Heat Wave

- Expand Care Service for the Vulnerable (e.g. the elderly living alone, the disabled, etc.)
- Prevent Water Meter Freezing and Free Safety Check on Welfare Facilities



■ Better Earthquake Resistance in Infrastructure

- Secure Earthquake Resistance in Major Public Facilities
- Strengthen Screening for Earthquake Resistance for New Construction



✘ Securing Earthquake Resistant Buildings

Facilities Requiring Earthquake Resistance		Total	# of Resistant Buildings	% of Resistant Buildings	Goal (%)	
					2015	2020
Public Building	(#)	719	227	31.6	50	100
Urban Railway	(km)	335.9	234	70	100	-
Road (above-ground)	(#)	349	238	68.2	88	100
Hospitals	(#)	441	280	63.5	70	100

■ Facilities Safety Management

❖ Conduct Safety Checks & Inspection

Purpose

- Safety Checks & Management
- Prevention & Emergency Response to Disasters

Target

- Bridges, Large Buildings, Public Residence etc.

Safety Grade

Safety Grade

Condition of the Facility

Grade A (Excellent)

Best Condition without Any Problems

Grade B (Good)

In Good Condition with Minor Damage

Grade C (Average)

Average Level with No Safety Issues

Grade D (Below-Average)

Fault(s) Exists in Major Parts

Grade E (Poor)

Threat to Safety

※ Facilities (as of Sept. of 2011)

- Current Status

Total	Facilities								Buildings
	Sub-total	Bridges	Tunnel	River Facility	Water-works	Retaining Walls	Pedestrian Overpass	Others	
34,877	3,177	515	375	240	47	867	152	981	31,700

- Status by Grades

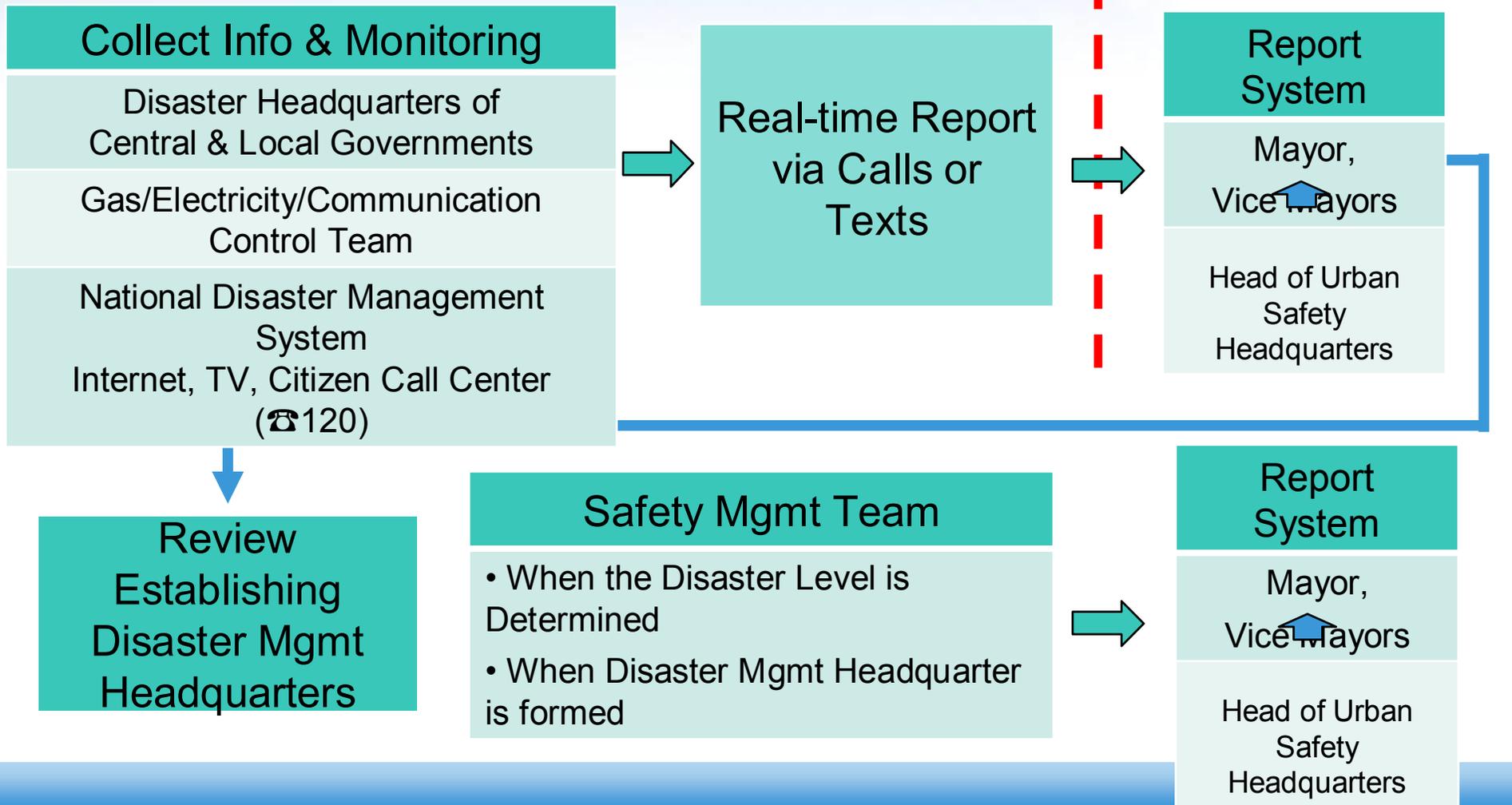
Total	Facilities (Grade A-C)	Facilities Vulnerable to Disasters		
		Sub-total	Grade D	Grade E
34,877	34,434	443	406	37

Prompt Response & Recovery

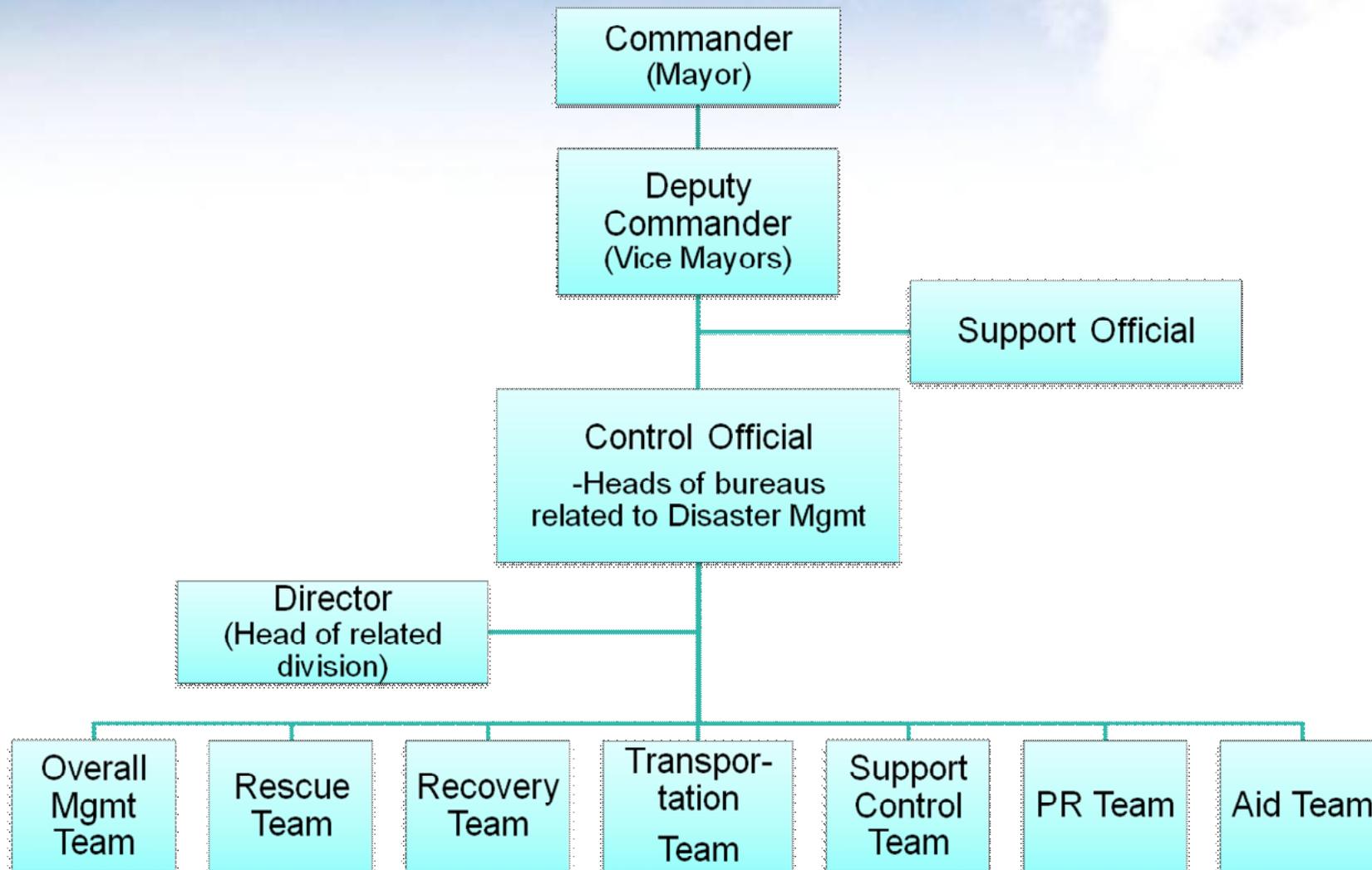
■ Monitoring & Reponse

< Non-Emergency >

< Emergency >



■ Disaster Mgmt Headquarters





Thank you

