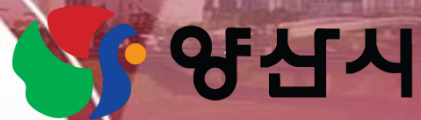소통과 공정 다시 뛰는 양산

# Smart and Safe City Yangsan

**Safety City Bureau**
**Director, Jeon Jin-Seung**

양산시

# Overview of Yangsan



**Population**
362,601

**Area**
485.617㎢

**Administrative Regions**
1 eup, 4 myuns, 8 dongs

**Government employee**
1,368

**Budget**
KRW 1,658 billion

Geochang
Hamyang
Hapcheon
Changnyeong
Miryang
Sancheong
Uiryeong
**Yangsan**
**Gyeongsangnam-do**
Haman
Gimhae
Jinju
Changwon
Hadong
Sacheon
Goseong
Tongyeong
Geoje
Namhae

Sangbuk-Myeon
Soju-Dong
Seochang-Dong
Wondong-Myeon
Gangseo-Dong
Pyungsan-Dong
Samsung-Dong
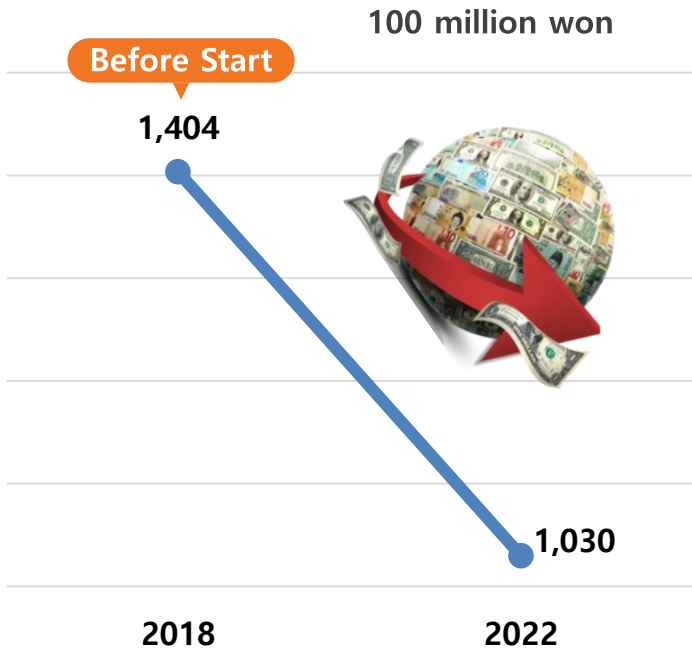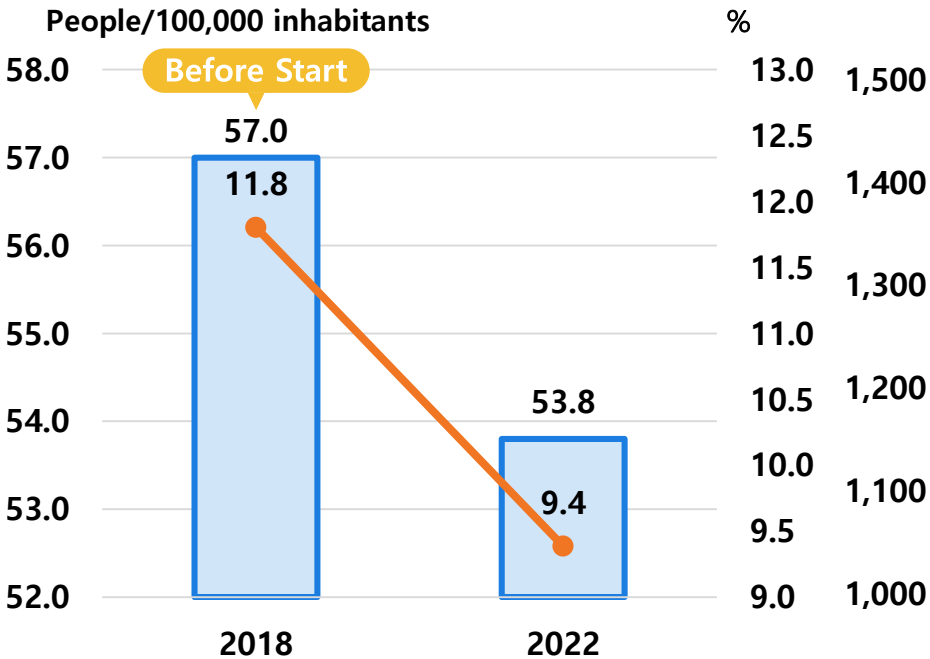Deokgye-Dong
Jungang-Dong
Yangju-Dong
Mulgeum-Eup
Dong-Myeon

# Achievement : Decrease in the Injury Death Rates
# & Economic Loss



## Decrease in the crude Injury Death Rates

## Decrease in Economic Loss

People/100,000 inhabitants          %

100 million won

**Before Start**

58.0 / 13.0

57.0
11.8

53.8
9.4

2018          2022

1,500
1,404

**Before Start**

1,030

2018          2022

☐ The injury death rate per 100,000 inhabitants (people)

● The injury death percentage among total deaths (%)

# Disaster Management Paradigms of Yangsan City

Combine the city safety infrastructure with Internet of Things (IoT) to provide interconnected safety information and services

Provide and monitor real-time information for citizen safety

- Improve quality of life with safety promotion
- Create a sustainable foundation for Safe Community
- Enhance the city's competitiveness
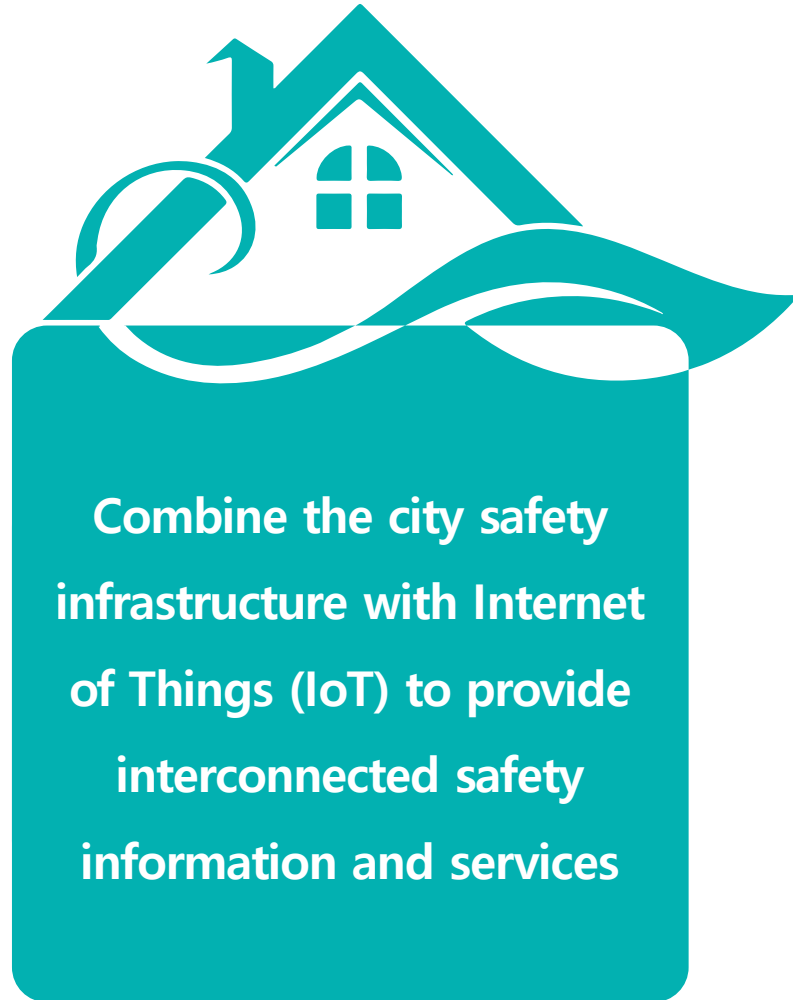
Smart and Safe Community
Yangsan

**Smart Residential Safety Environment**

AI Smart Apartment

**Smart Traffic Safety**

Intelligent Transport System (ITS)

**Smart Life Safety**

Location Management System

**Smart Care**

Smart Care Doll

**Smart Disaster Preparation Management**

Disaster Information Broadcasting System

# 1. AI Smart City Project

**Spreading Smart City Solutions based on Citizen Needs**

- **Smart crosswalks**
  - Detect stop lane violations, voice assistant for pedestrian signals, and right turn alerts
- **Smart shared parking**
  - Provide services for checking parking locations, number of available parking spaces and parking lot details
- **Smart bus stops**
  - Bus arrival information monitors, air conditioners, heaters, air purifiers, heating benches , CCTV, Wi-Fi

**Smart Crosswalk**

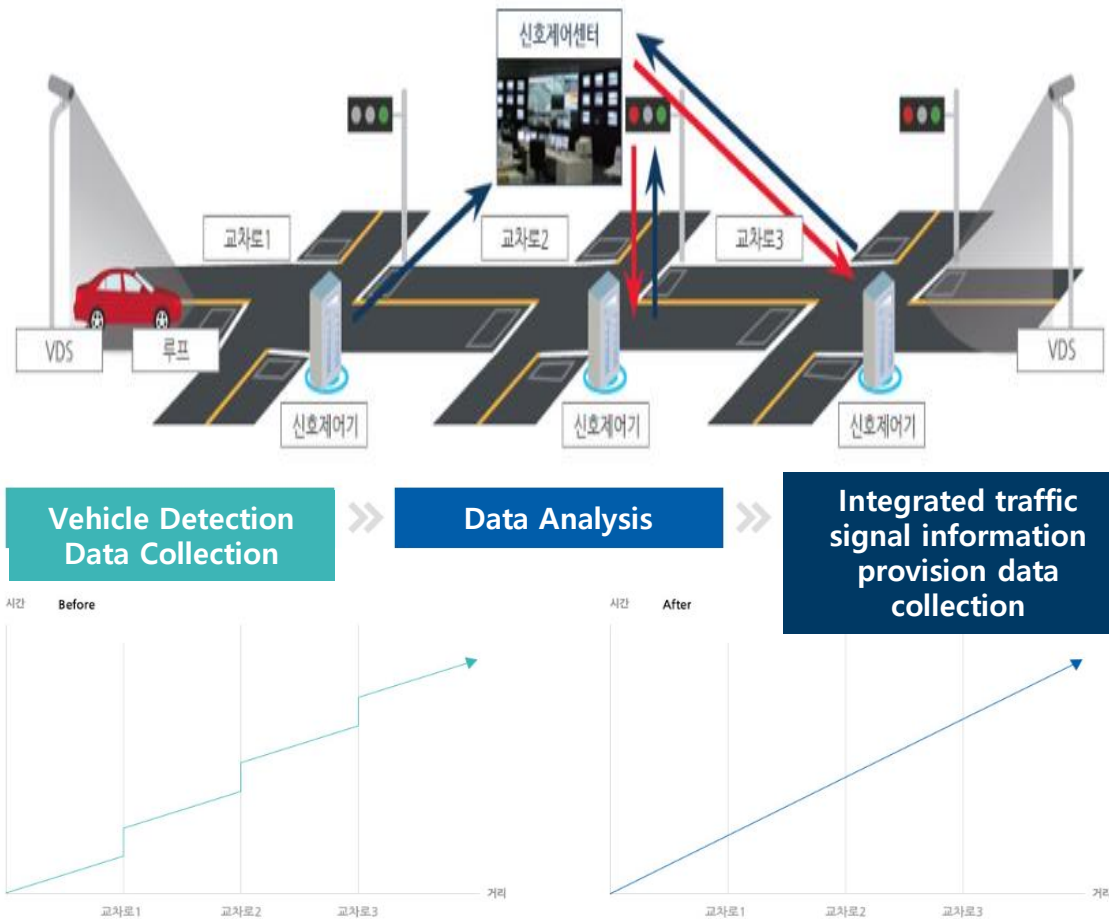**Smart Parking**

**Smart Bus Stop**

# 2. Intelligent Transport System (ITS)

**Overview**

- **Intelligent Transport System (ITS)**

  - Prevent traffic accidents by automatically controlling traffic signal flows

  - **(Method)** Use the intelligent traffic information system (ITS) technology to have the onboard equipment (OBE) and roadside equipment (RSE) to exchange traffic information

  - **(Effects)** Provide real-time traffic information to the UTIs device within cars, and send information such as vehicle location and speed to the traffic information center using GPS

# ITS Service Provision Method

- **Signal control through real-time intersection traffic analysis**



**Vehicle Detection Data Collection** » **Data Analysis** » **Integrated traffic signal information provision data collection**

## System Flow Diagram

| Collect traffic data | Data Analysis | Signal Control |
|---|---|---|

**Transmitting and receiving signal data**

**Real-time traffic transmission** → **Electronic Traffic Signal Controller** → **Traffic signal adjustment**

# 3. Smart Location Management System for the Socially Vulnerable Group

## System Configuration Diagram



**The Socially Vulnerable**
· Dementia patients
· Physically disabled people
· Elementary school students, etc.

GPS

Wireless Communication

Emergency call

Safety Tag

Recognition within 2-5km

**CCTV Network**

LoRa with location management sensor attached

Line coupling

Receive SMS

**Guardian**

Wireless communication

**School Education Network**

Zigbee

AP    NEIS

Safety tag

School route control device

Emergency call

Local government owned network Dedicated line

Location management server in the City hall

**Administrator (Police station, etc.)**

Inform

# 4. Smart Care for the Elderly Living Alone

**Purpose**

- Provide care dolls to the elderly living alone to provide one-on-one, always-on, non-contact service
- Provide a variety of safety management services such as support for daily activities, emergency monitoring, and companionship with care dolls
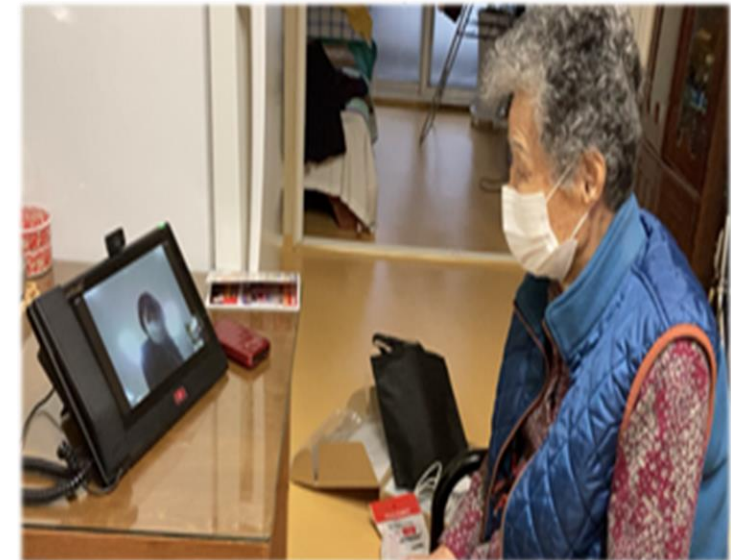
**Smart Care Dolls**



**Remote Support System based on AI Speaker**



**Building a Video Call Infrastructure**

# 5. AI Smart Disaster Management
## (City Integrated Control Center)

**Overview**

❍ Establishment of an efficient operation and rapid response system for CCTV cameras, which are being added every year.
❍ Establishment of a safe city infrastructure by protecting lives and property from crime.
❍ Improvement of citizen service quality through real-time collection and provision of traffic and road condition information.

**Operating Status**

❍ CCTV integration and real-time monitoring (crime detection, parking enforcement, traffic monitoring)
  - CCTV : 3,425 cameras, 20 real-time CCTV monitoring operators (4 shifts, 3 rotations)
❍ Provision of real-time traffic information on major roads
❍ Operation of intelligent traffic signal control systems at major intersections
❍ Operation and management of bus information systems

# Crime Analysis by the Yangsan City Integrated Control Center (Second Quarter of 2025)

○ **(Period)** Second quarter of 2025 (April 1, 2025 to June 30, 2025) ○ **(Location)** Entire Yangsan City

○ **(Data)** CCTV data from the Control Center, Crime analysis data by the Yangsan City Integrated Control Center (Second Quarter of 2025)

○ **(Results)**

- 'A total of **734 CCTV footage files** were used for investigation purposes during the second quarter of 2025.

- By region: **Mulgeum-eup → Jungang-dong → Yangju-dong**

- By type: **Traffic accident → Theft → Others**

- By time: **6:00 p.m. to 9:00 p.m.** (traffic accidents, theft)

  * 6:00 p.m. to 9:00 p.m. in Mulgeum-eup: Intensive monitoring is required, focusing on intersections, entertainment districts, and densely populated residential areas.
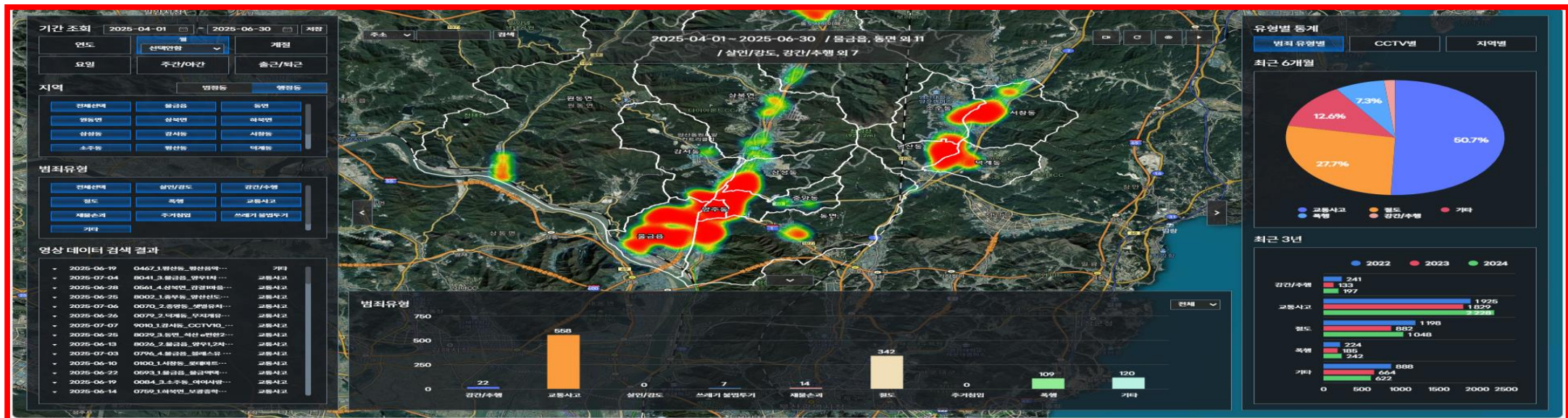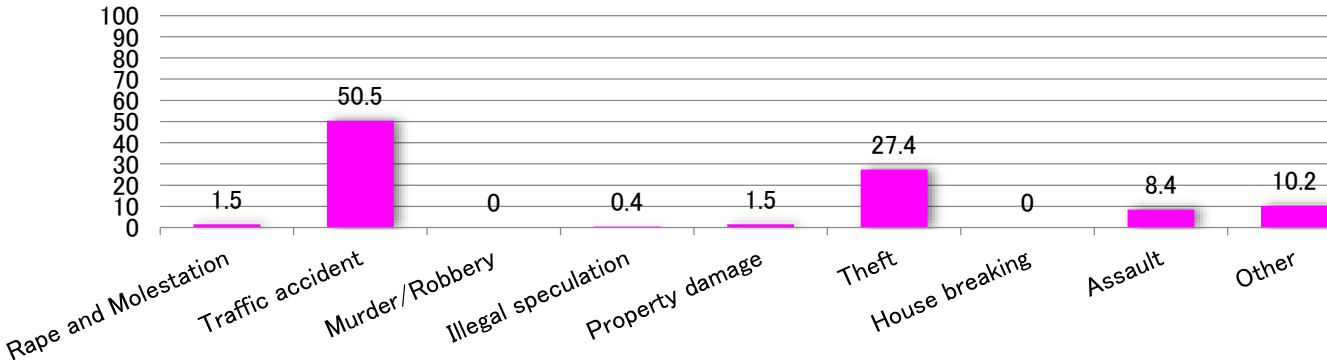
## ○ Status by region
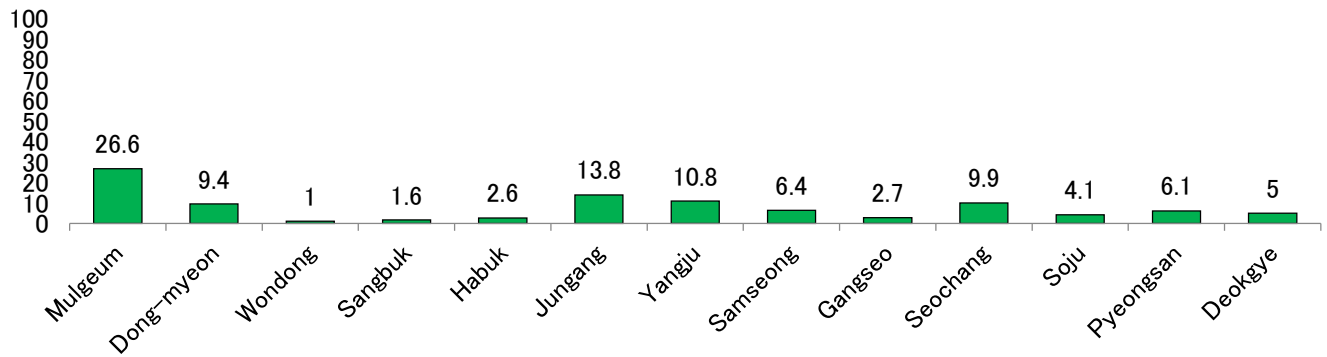


| Eup Myeon Dong | total | Mulgeum | Dong-myeon | Wondong | Sangbuk | Habuk | Jungang | Yangju | Samseong | Gangseo | Seochang | Soju | Pyeongsan | Deokgye |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of cases | 734 | 195 | 69 | 7 | 12 | 19 | 101 | 79 | 47 | 20 | 73 | 30 | 45 | 37 |

## ○ Status by type



| type | total | Rape and Molestation | Traffic accident | Murder/ Robbery | Illegal speculation | Property damage | Theft | House breaking | Assault | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of cases | 734 | 11 | 371 | 0 | 3 | 11 | 201 | 0 | 62 | 75 |

## ○ Status by time
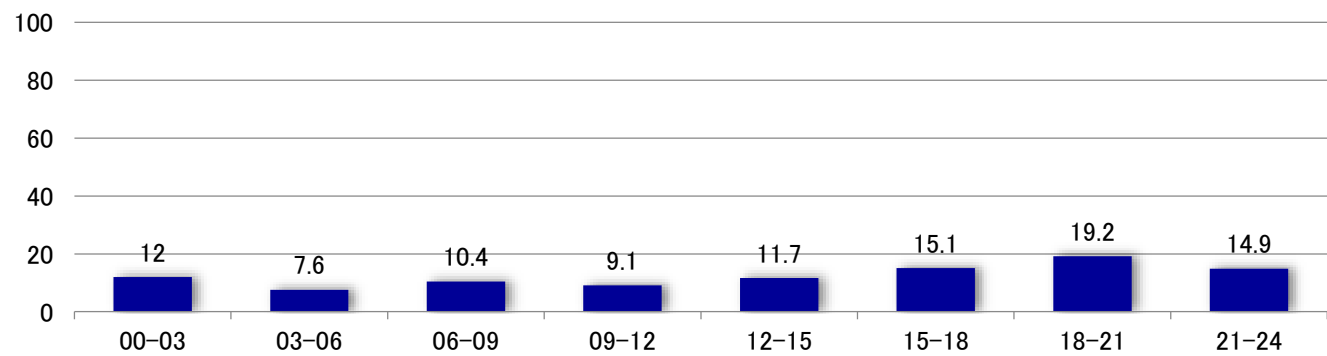


| time | total | 00-03 | 03-06 | 06-09 | 09-12 | 12-15 | 15-18 | 18-21 | 21-24 |
|---|---|---|---|---|---|---|---|---|---|
| Number of cases | 734 | 88 | 56 | 76 | 67 | 86 | 111 | 141 | 109 |

**13**

## 통합관제센터 운영 사례

**Integrated Control Monitoring** → **Council Meeting** → **Crime prevention (installation of streetlights)**



Before | After

## Expected Effects

- Rapid response in case of accidents to keep citizens safe and secure
- Easy to expand the platform into a city-based integrated information center for heavy rains, crime prevention, life safety, and transportation

# Expected Effects

**Smart and Safe Community**
**Yangsan**

**Leverage safety data across all aspects of citizens' lives to boost the competitive edge of the city**

**Data-driven safety administration with digital citizen safety monitoring**

**Spread a safety culture based on citizen participation with an information sharing platform among Yangsan - City - Safety management organizations-Citizens**

소통과 공정 다시 뛰는 양산

THANK YOU