

INTERNATIONAL DISASTER RESILIENCE LEADERS FORUM 2026

Incheon, Republic of Korea

ALMATY SMART DISASTER MANAGEMENT FOR EVERYONE

Digital tools, community readiness and disability inclusion

WARNING

UNDERSTANDING

SAFE ROUTE

ASSISTANCE

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TECHNOLOGY BECOMES RESILIENCE WHEN **EVERY RESIDENT** CAN ACT SAFELY.

INTERCONNECTED RISKS REQUIRE **CONNECTED ACTION**

2.5M

residents

MOUNTAIN CITY

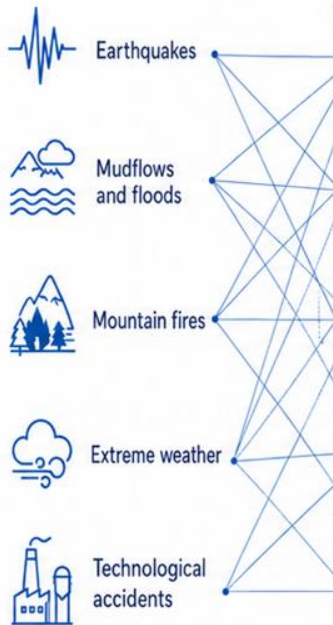
- Earthquakes
- Mudflows and floods
- Mountain fires
- Extreme weather
- Technological accidents

ONE EVENT CAN AFFECT:

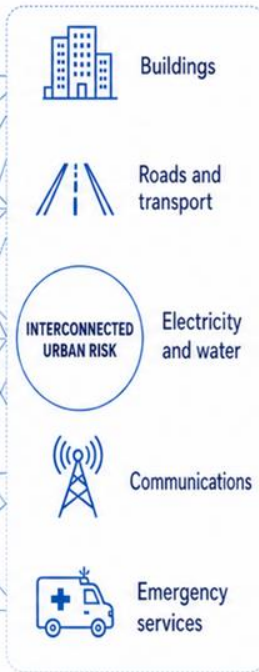
Buildings
Roads and transport
Electricity and water
Communications
Emergency services

**Risk information matters only
when it supports safe action.**

HAZARD CONTEXT



CITY SYSTEMS AFFECTED



SAFE ACTION PATHWAY



ALMATY: EIGHT URBAN DISTRICTS

Administrative boundaries based on the provided Almaty district map.

Source: Almaty Situation Centre and Department of Emergency Situations of Almaty

RISK IDENTIFIED

Multiple hazards



DECISION SUPPORTED

Verified information



WARNING RECEIVED

Clear instruction



SAFE LOCATION REACHED

Accessible route

ALMATY: CURRENT CAPABILITIES

58

earthquake
early-warning stations

30 added in 2025 • 40 more planned by end-2026

843

siren and voice units
across the city

31

mudflow-monitoring
stations

3

thermal and optical
fire cameras

MASS ALERT

Integrated Mass Alert,
sirens and voice alerts

The earthquake warning chain
is already integrated.

The wider multi-hazard system
is not yet one citywide platform.

MONITOR

Detect and observe



ANALYSE

Assess and interpret



ALERT

Warn the public



RESPOND

Coordinate and act

FOUR SYSTEMS. ONE OPPORTUNITY. ALMATY IS BUILDING THE FOUNDATIONS.

EARTHQUAKE EARLY WARNING

58 stations across the city



PUBLIC WARNING

843 siren and voice units



MUDFLOW MONITORING

31 monitoring stations in mudflow-prone areas



FIRE MONITORING

3 thermal and optical fire cameras



EARTHQUAKE WARNING CHAIN ALREADY INTEGRATED

ASRO • Mass Alert • city sirens

NEXT OPPORTUNITY

Wider multi-hazard data
Accessible public information

OPERATIONAL CAPABILITIES IN USE



24/7 monitoring



Field verification



Data analysis



Rapid alerting

**THE NEXT STEP IS TO CONNECT
ALL HAZARDS AND SERVICES
AROUND THE RESIDENT.**

Data sources: Department of Emergency
Situations of Almaty; Almaty Department of
Mobilisation Preparation, Territorial and
Civil Defence, 2026

FROM RISK DATA TO DECISION SUPPORT

70+
GIS layers

40+
data sources

10,000+
indicators

ANALYTICAL SUPPORT

- Seismic and geohazard risk
- Building vulnerability
- Emergency location planning
- Service coverage analysis
- Mudflow scenarios

The Situation Centre provides
analysis and recommendations.
Responsible authorities make
and implement decisions.

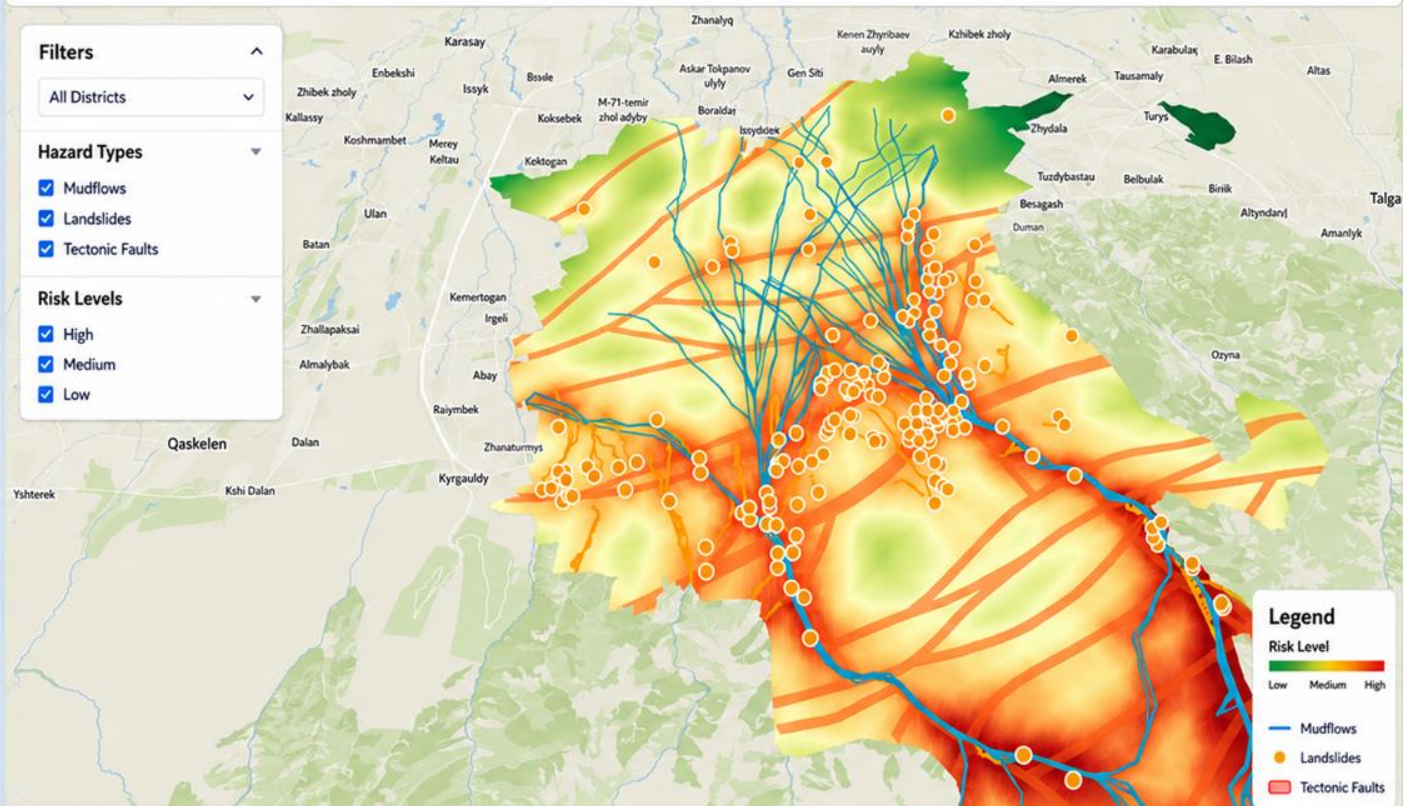
Integrated Geohazard Monitoring in Almaty

Methodology

Geo-risks

Infrastructure

Analytics



Source: Almaty Situation Centre

CITY DATA

Hazards and infrastructure



SPATIAL ANALYSIS

Risk areas and service gaps



RECOMMENDATIONS

Planning priorities



RESPONSIBLE AUTHORITIES

Decisions and implementation

Analytical visualisation: Almaty Situation Centre

Data source: Department of Emergency Situations of Almaty

CAPACITY IS IN PLACE ACCESS MUST BE VERIFIED

384

EMERGENCY RECEPTION POINTS

Across 8 city districts

- ▶ 225 schools
- ▶ 115 kindergartens
- ▶ 15 universities
- ▶ 17 colleges
- ▶ 12 other public locations

100 EQUIPPED MODULES

Installed in 2025

Equipment for temporary accommodation of:

20,000 PEOPLE

50 MORE MODULES PLANNED

Additional equipment for:

10,000 PEOPLE

Operational capacity is important.
But capacity becomes safety only when
every resident can reach and use it.

A MAPPED POINT IS NOT YET SAFE ACCESS

The full journey must work before, during and after arrival.



1 CORRECT POINT IDENTIFIED

Current location and
offline information.

2 SAFE ROUTE VERIFIED

Sidewalks, crossings
and hazard conditions.

3 ACCESSIBLE ENTRANCE

Step-free entry and
clear navigation.

4 ASSISTANCE ON ARRIVAL

Registration, communication
and temporary support.



A RESIDENT STILL NEEDS:

- ☒ a correct and current location;
- ☒ information without internet;
- ☒ a verified safe route;
- ☒ an accessible entrance;
- ☒ assistance on arrival.



POINT IDENTIFIED
Correct and current
information



ROUTE VERIFIED
Physical and hazard
conditions checked



ENTRANCE ACCESSIBLE
Step-free and
understandable access



ASSISTANCE AVAILABLE
Registration and
support provided

**A SAFE ROUTE
MUST BE VERIFIED,
NOT IMAGINED.**

14 MAY 2026 CITYWIDE DRILL

WARNING SENT ACTION LIMITED

Sirens, television, radio
and Mass Alert were activated.

MOST RESIDENTS OF APARTMENT BUILDINGS DID NOT EVACUATE

ACTION REQUIRES:

- Notice the warning
- Understand the instruction
- Trust the source
- Know the next step

Sending a warning is only
one part of the system.

ONE WARNING SEVERAL ACCESSIBLE FORMATS



GLOBAL CONTEXT UNDRR GLOBAL SURVEY 2023

6,342
respondents

132
countries

86% not involved in
community
DRR decisions

8% said local plans
addressed
disability-related needs

LIMITED GLOBAL PROGRESS
OVER TEN YEARS

NOTICE
Accessible format



UNDERSTAND
Clear instruction



TRUST
Credible source



ACT SAFELY
Known next step

The challenge is not only sending information.
It is turning warning into safe action.

Almaty evidence: Official response of the Department of Emergency Situations of Almaty, 12 August 2026

Global evidence: UNDRR Global Survey on Persons with Disabilities and Disasters, 2023

A DIRECTION NOT YET AN OUTCOME

WHAT EXISTS TODAY

- Analytical modules
- Risk and infrastructure data
- Development initiatives
- Partnership agreements

POTENTIAL

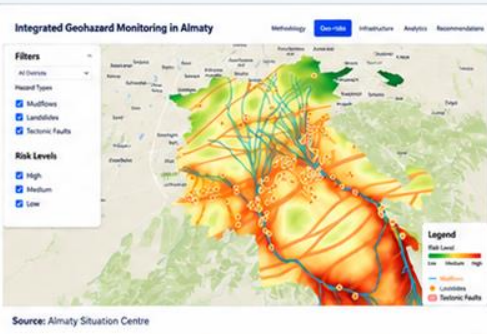
- Connected urban data
- Scenario modelling
- Coordinated decisions
- Better emergency planning

Not yet
a fully operational
citywide digital twin.

CURRENT ANALYTICAL FOUNDATIONS → FUTURE DIGITAL TWIN CAPABILITY

TODAY

Existing analytical capacity



Separate analytical modules
Verified data sources
Institutional recommendations

*Current value: evidence for
planning, not automatic command.*

DEVELOPMENT PATH

- Data quality
- Interoperability
- Financing
- Cybersecurity
- Clear ownership
- Accessibility

Governance, funding
and accessibility
determine whether
capability becomes
operational.

FUTURE CAPABILITY

Direction for development

Connected city and risk data

Integrated scenarios

Coordinated planning

Resident-centred services

NOT A CLAIM OF FULL OPERATION

The capability remains under development
until data, governance, financing,
cybersecurity and accessibility are in place.

DATA QUALITY
Verified information



INTEROPERABILITY
Systems can exchange data



CLEAR OWNERSHIP
Responsibility assigned



TRUSTED SYSTEM
Institutions and residents can act

FROM COMMITMENT TO LOCAL ACTION

Persons with disabilities are
CONTRIBUTING STAKEHOLDERS
in disaster risk reduction.

THEY SHOULD PARTICIPATE IN:

- Planning
- Testing
- Evaluation
- Decision-making

CONNECT THE SYSTEM AROUND THE RESIDENT

VERIFIED DATA
Accessible format



ACCESSIBLE DESIGN
Clear and inclusive



COMMUNITY TESTING
Real contexts



PUBLIC ACCOUNTABILITY
Continuous improvement

**SMART RESILIENCE IS TRUSTED ACTION
THAT LEAVES NO ONE BEHIND**

FOUR PRACTICAL STEPS

1. INTEGRATE

Verified risk, infrastructure
and service data



2. REQUIRE

Accessibility and interoperability
before procurement



3. TEST

The full warning-to-safety journey
with communities



4. PUBLISH

Service status, identified gaps
and lessons from drills



THE RESIDENT JOURNEY

WARNING RECEIVED
Accessible format



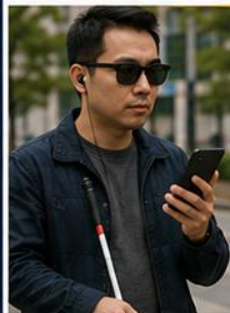
INSTRUCTIONS UNDERSTOOD
Clear and practical action



SAFE ROUTE FOLLOWED
Verified physical access



ASSISTANCE REACHED
Operational and inclusive service



ALMATY: SMART DISASTER MANAGEMENT FOR EVERYONE

SMART RESILIENCE IS TRUSTED ACTION THAT LEAVES NO ONE BEHIND

THANK YOU

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CONNECT ON LINKEDIN

LET US CONNECT TECHNOLOGY, INSTITUTIONS AND COMMUNITIES AROUND **EVERY RESIDENT.**