

NEXCO-West's Initiatives to Strengthen Disaster Response Capabilities on Expressways - 1

“Quick Recovery of Accessibility in the Event of a Disaster”

NEXCO-West et ses initiatives visant à renforcer ses capacités de gestion des catastrophes sur ses autoroutes - 1

“Rétablissement rapide de l'accessibilité en cas de catastrophe”



1. Major earthquakes and heavy rains that have occurred in west Japan in recent years

Earthquakes

The Japanese islands is located in one of the world's most seismically active regions, and earthquakes occur frequently.



Landslide



- **The 2016 Kumamoto Earthquake** [Magnitude 7.3]
April 16, 2016 (Epicenter: inland)
- **2018 Osaka Earthquake** [Magnitude 6.1]
June 18, 2018 (Epicenter: inland)
- **2024 Hyuga-nada Earthquake** [Magnitude 7.1]
August 8, 2024 (Epicenter: ocean)

Heavy rains

In recent years, the number of torrential rain disasters is also on the rise due to climate change.





- **2018 West Japan Torrential Rainfall**,
(Area: from Chugoku area to Shikoku island), July 3-8, 2018
- **Torrential Rainfall at Stationary rainy front**,
June 2023 (Area: Kouyama tunnel portals), June 28, 2023
- **2024 10th Typhoon “Shanshan”**
(Area: Eastern Kyushu) August 27-September 1, 2024

2. Missions and roles in the initial response to disasters

Mission① : Saving human life

Target① : Securing access for emergency services within 24 hrs

- Support the activities of [police departments\(PD\)](#), [fire departments\(FD\)](#), [the Self-Defense Forces\(SDF\)](#), [medical service\(DMAT\)](#), etc., who are assembled from **across the country within 72 hrs.**, when survival rate drops significantly.



Mission② : Early recovery of economic activity

Target② : Within 72 hrs, securing access for emergency transport for logistics, and within **one week**, opening expressway to the public.

- Restoring carriageways for **transport of emergency supplies** to disaster area


→


Flat surface for carriageway

3. Challenges and solutions for securing access for emergency transport within 24 hrs

Challenge 1: Grasp the damage along expressways

- Large-scale disasters require time to assess damage due to road disruptions and numerous damages



Damage from the Kumamoto Earthquake
Approx. 400 locations

Solution 2: Sharing video surveillance by SDF

- Quickly and comprehensively grasping the damages over area and its scale from the sky(**by Helicopter**)



Cooperation with organizations at same stake

Securing materials and equipment

[reference] Kumamoto earthquake 2016

SDF(Self Defense Force) → NEXCO WEST

※ Video footage provided by a Ground Self-Defense Force Helicopter

Solution 1: Data collection using PDA

On-site : Smartphone



real time

Office : PC browsing, form output







SDF Personnel



NEXCO Personnel



Joint training of Helicopter surveillance video transmission

