

Road Bridges in Japan: Characteristics, Background and Legal System

Caractéristiques, contexte et système juridique des ponts routiers au Japon



Present state of road bridges in Japan

- ✓ There are **about 730,000 road bridges** in Japan.
- ✓ **Over 70% are managed by municipalities.**
- ✓ Progressive aging and deterioration (over 50 years old: **39% → 63%** in 10 years)

Geographical and climate conditions and deterioration

- ✓ Long coastlines
→ Vulnerable to salt damage
- ✓ North regions:
Heavy snow regions → Frost damage
Deicing agents (calcium chloride) accelerate corrosion.

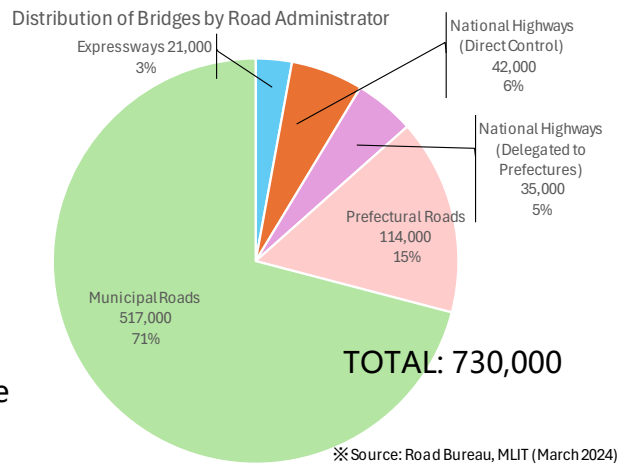


Fig. 1 Proportion of types of bridge owner (Road Maintenance Yearbook, MLIT Road Bureau, August 2025)

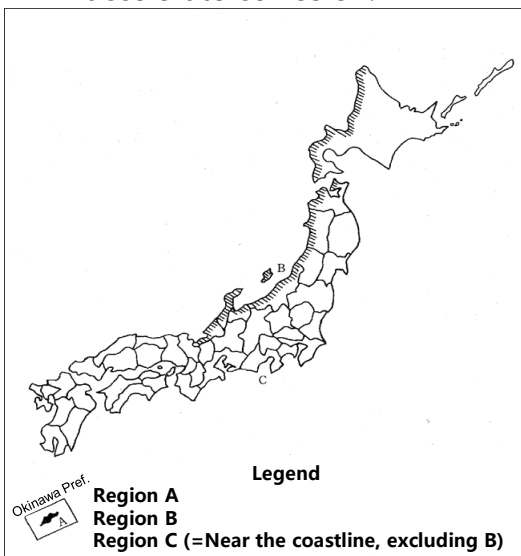


Fig. 2 Degree of salt damage by region (Specifications for Highway Bridges III), Oct. 2025, Japan Road Association)

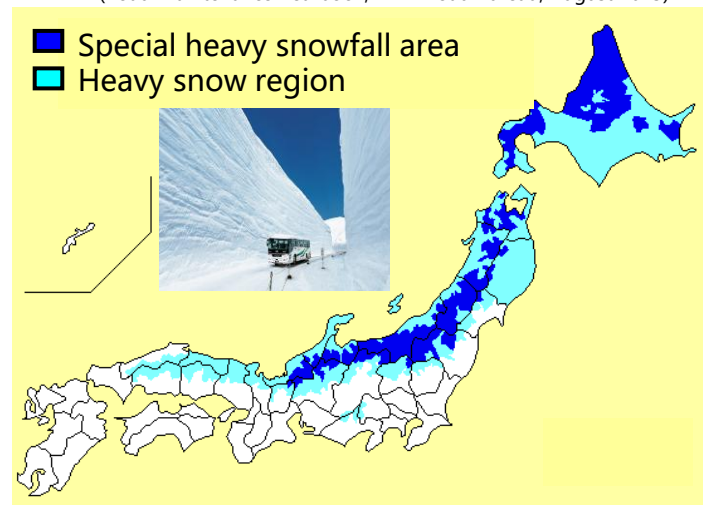


Fig. 3 Designated heavy snow regions and special heavy snowfall regions (<http://www.sekkankyo.org/zenkoku.htm>)

Background summary

- Environmental conditions in Japan are harsh for bridges.
→ Legislative Institutional framework for inspections and diagnosis are essential.

Legal inspection system in Japan (close visual inspection every five years)

Overview of legal inspections

- ✓ Close visual inspections every five years mandated since 2014
- ✓ Rating: I to IV (nationally standardized assessment categories)
- ✓ Records: Nationally standardized MLIT format

Table 1 Classification of structural soundness diagnoses (notification)

Category	Condition
I Sound	Condition in which the structure is fully functional
II Preventive maintenance stage	Although structural functionality is not impaired, preventive measures should be taken from the standpoint of preventive maintenance.
III Early corrective action stage	Structural functionality may be impaired, and early corrective actions should be taken.
IV Urgent corrective action stage	Structural functionality is impaired or is highly likely to be impaired, and urgent correction action should be taken.

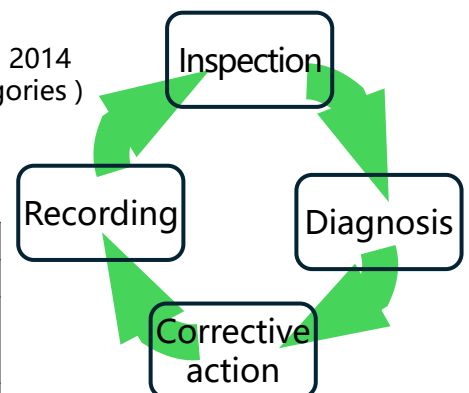


Fig. 4 Institutional framework for effective infrastructure management

