

# Recommendations for Full-scale Maintenance of Aging Roads

[1. Current situation surrounding our road infrastructure]

## (1) Road Infrastructure

- Of the 700,000 road bridges across the country, **500,000 bridges are situated on the municipal roads.**
- Some structures are **deteriorating.**
- The number of the municipal bridges that are **restricted for traffic increased more than double in the last 5 years.**

## (2) Issues around aging road maintenance

- **Maintenance and rehabilitation budget of national highways under MLIT jurisdiction has dropped by 20% in the last decade.**
- **50% of all towns and 70% of all villages in the country have no civil engineering technicians for bridge maintenance in their workforce.**
- Most municipalities use **a problematic guideline** for bridge inspection that instructs only **distant visual** inspection.

## (3) Current status (2 fundamental issues)

No established rules or standards for proper maintenance



no mechanism to facilitate "maintenance cycle".

[2. MLIT's efforts and its direction ahead]

## (1) Efforts in the First Year of Maintenance Era

MLIT has already started actions to facilitate full-scale maintenance cycle.

### Amended Road Act (June 2013)

Legal requirement for inspection standards  
National government to carry out  
maintenance on behalf of a municipality

### "Basic Plan to Prolong the Life of Our Infrastructure" (Nov. 2013)

"Liaison meeting among relevant ministries and agencies for aging infrastructure"  
is developing "Action Plan to Prolong the Life of Our Infrastructure".

## (2) Direction ahead

- i) Establish a mechanism to facilitate the maintenance cycle    ii) Establish a mechanism to facilitate the maintenance cycle

**Devote financial, human and technical resources from all sectors to start the full-scale maintenance cycle ("all hands operation")**

[3. Actions to be taken]

## (1) Establish a maintenance cycle (i.e. road administrators' responsibilities to be clarified)

Each road administrator takes responsibility for the following components in the maintenance cycle.

[Inspection]

- **Implement once-a-five-year close visual inspections for all bridges and tunnels according to the uniform national standard.**
- Pavement and lighting support are inspected or replaced based on an appropriate renewal period depending on their deterioration level.

[Evaluation]

**Evaluate conditions of bridges across the nation by a uniform standard.**  
**"Road health checkup"**

(The ministerial ordinance and notice was promulgated on Mar 31, 2014 and is expected to be enacted on July 1, 2014.)

Category	Condition
I Good	No structural deficiency.
II Preventive maintenance	Preventive maintenance is desirable although no structural deficiency is found.
III Early rehabilitation	The structure needs early rehabilitation, or it can become deficient.
IV Emergency rehabilitation	The structure needs emergency rehabilitation, because it is deficient or it will most likely become deficient.

[Actions]

- Repair the facilities according to the inspection results. The facilities in need of repairs should be closed or restricted for traffic, if they cannot be immediately repaired due to financial or technical constraints.
- Combine or remove unnecessary bridges according to changing demands. Recommend or instruct non-compliant municipalities to take necessary maintenance actions.
- Launch a "Committee of Road Infrastructure Safety", which is responsible for investigation into the cause and future preventive measures upon request of road administrator in the event of serious accident.

[Data-recording]

- Disclose all assessed results from the inspections, evaluations and actions taken for road facilities (visualization).

## (2) Establish a mechanism to facilitate the maintenance cycle

Establish the following mechanism to facilitate the maintenance cycle.

[Funding]

- |   |   |
|---|---|
| (Expressways) -----                               | Secure stable funding for a rehabilitation project<br>( <b>amendment bill to be considered in the ordinary Diet</b> ) |
| (National Highways under MLIT jurisdiction) ----- | Give a priority to funding for inspections and repairs.   |
| (Municipal roads) -----                           | Multi-year <b>financial support system</b> for intensive<br><b>rehabilitation and reconstruction.</b>                 |

[Institutional framework]

- **Launch a "Road Maintenance Panel"** at each prefecture.
- Introduce **an area-wide lump sum ordering** and **multi-year contract** for maintenance projects.
- Establish **technical assistance** system such as dispatching a "road maintenance specialist team", comprised of national government officials, to evaluate bridges of social importance.
- **On behalf of a municipality, MLIT or expressway companies carry out inspections and repairs** of bridges that are either important or in need of immediate repair (e.g. overpass).
- **Provide extensive training courses** in maintenance skills for municipal government officials and private business employees.

[Technology]

- Establish **a proper estimation standard** for practical inspection/repair work.
- Create **a qualification system** to keep the pool of technicians who have special knowledge of inspection and evaluation along with necessary skills and experiences.
- Promote **developing maintenance technologies in a strategic manner** by involving business, academia and government entities.

[Building public consensus]

- Build the public consensus about the current situation of aging infrastructure and ongoing measures.