Seismic Evaluation and Retrofit of Old Buildings located along the specific emergency transportation roads in Tokyo

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1. Emergency transportation roads

Photo. 1 Great fire disaster

Photo. 2 Over turned building

Hanshin Awaji great earthquake disaster in 1995

2. Tokyo Metropolitan government earthquake disaster prevention measures

a. Seismic retrofitting of the buildings located along the highways

b. Fire-proof and seismic retrofitting of the wooden housing populated areas

c. Buildings that shall be mainly planned to be seismic retrofitted

3. Ordinance to promote the seismic retrofitting of the buildings located along the emergency transportation roads in Tokyo

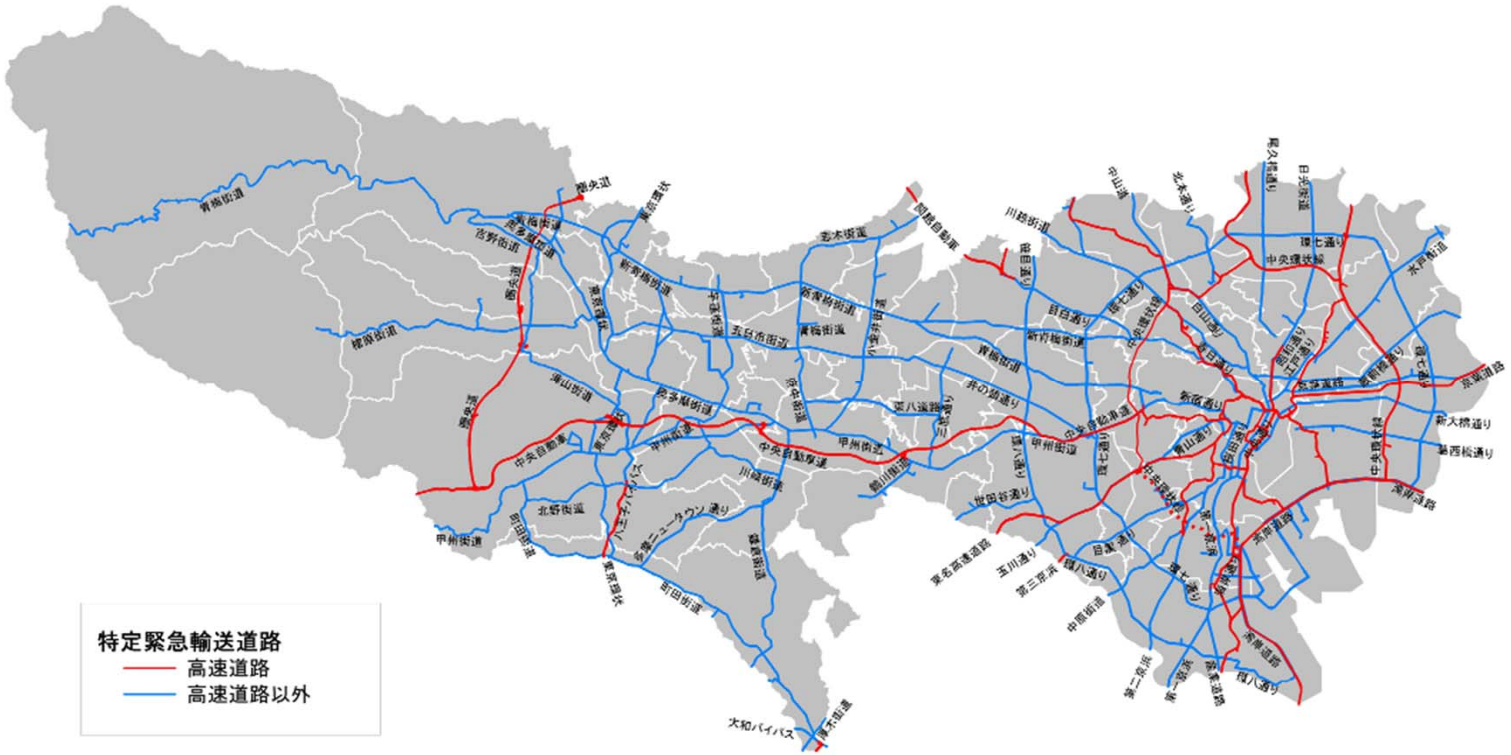


Fig. 1 Specific emergency transportation roads with distances of about 1,000km

3.1. Buildings located along the specific emergency transportation roads

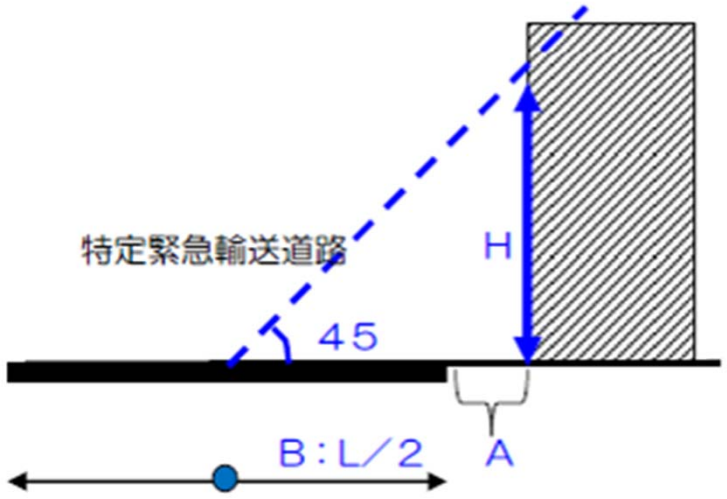


Fig. 2 Front road width L is over 12m.

H≧A+L/2 (m)

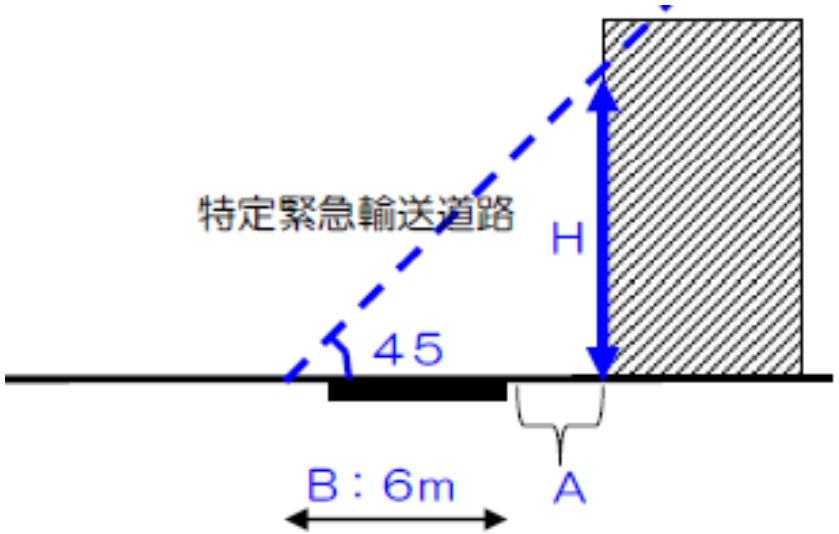


Fig. 3 Front road width L is less than equal 12m.

H≧A+6 (m)

3.2 Duty report seismic states

3.3 Duty conduct seismic assessments

3.4 Effort obligation for the implementation of seismic retrofitting

3.5 Subsidy costs of the seismic assessment and retrofitting

3.6 Others

4. Spread information and environmental maintenance

Fig. 4 Tokyo Metropolitan seismic mark label

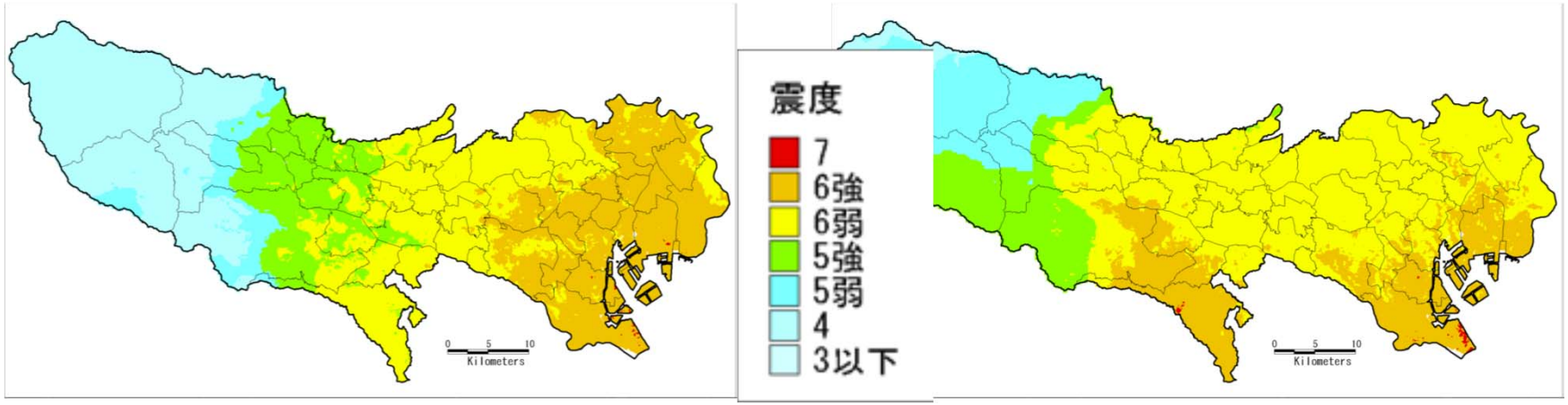
5. Agreement on cooperation with related organizations

Tokyo Association of Architectural firms

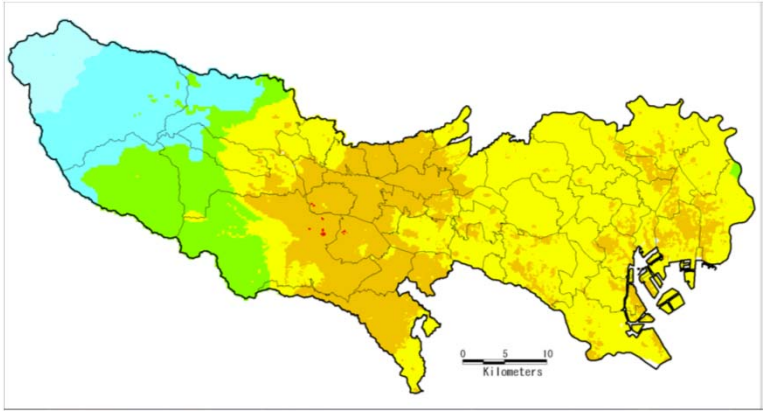
Japan Structural Consultant Association

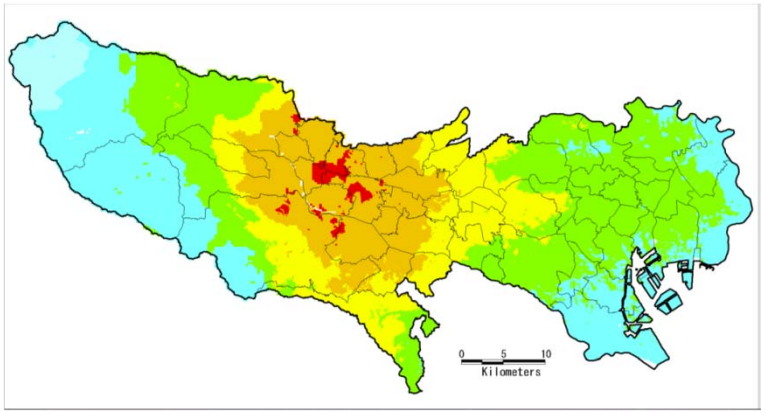
Japan Aseismic Safety Organization

6. Review the damage estimation



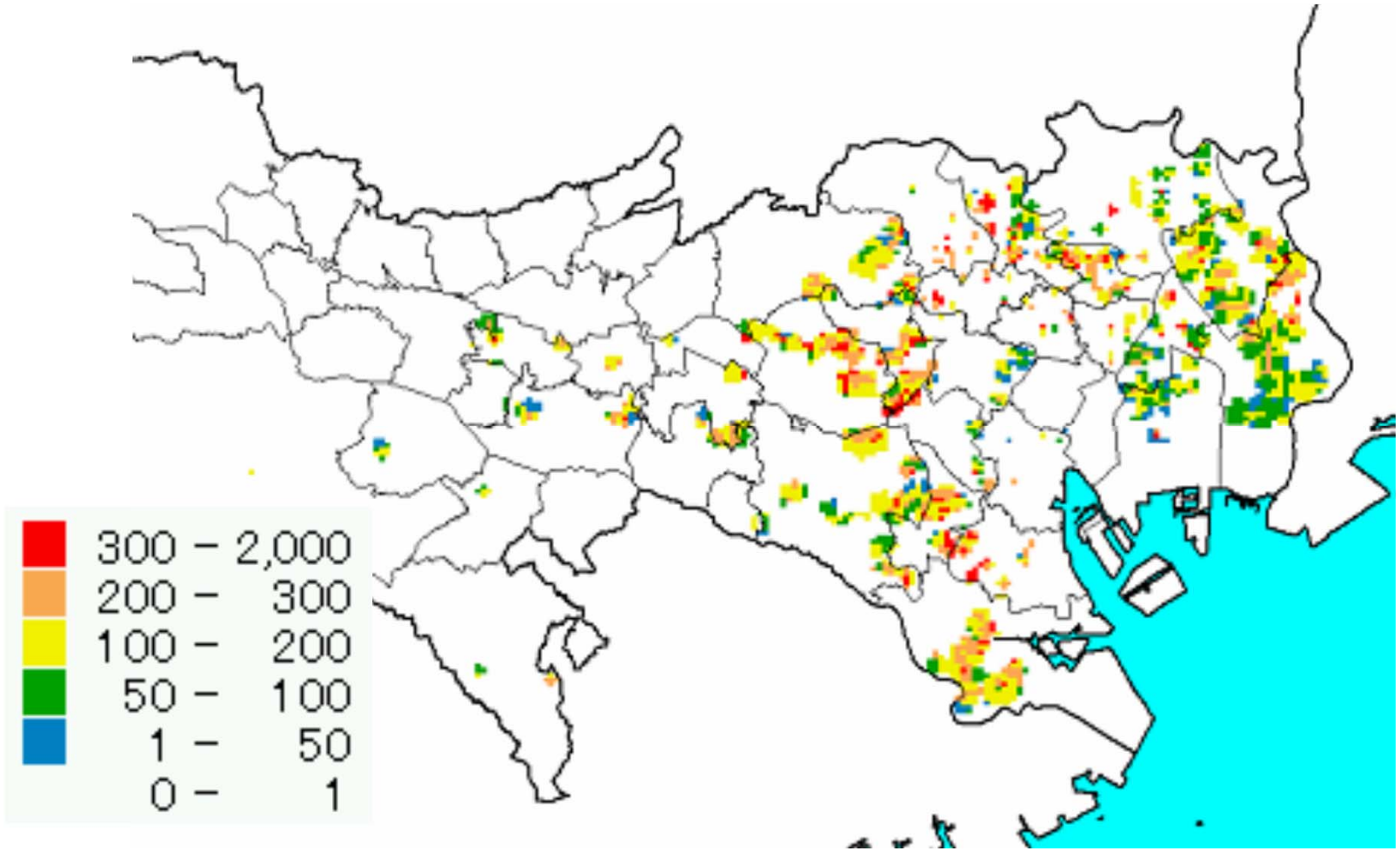
(a) North Tokyo Bay EQ (M7.3)　(b) Genroku type Kantou EQ (M8.2)





(c) Tama EQ (M7.3)　(c) Tachikawa fault EQ (M7.4)

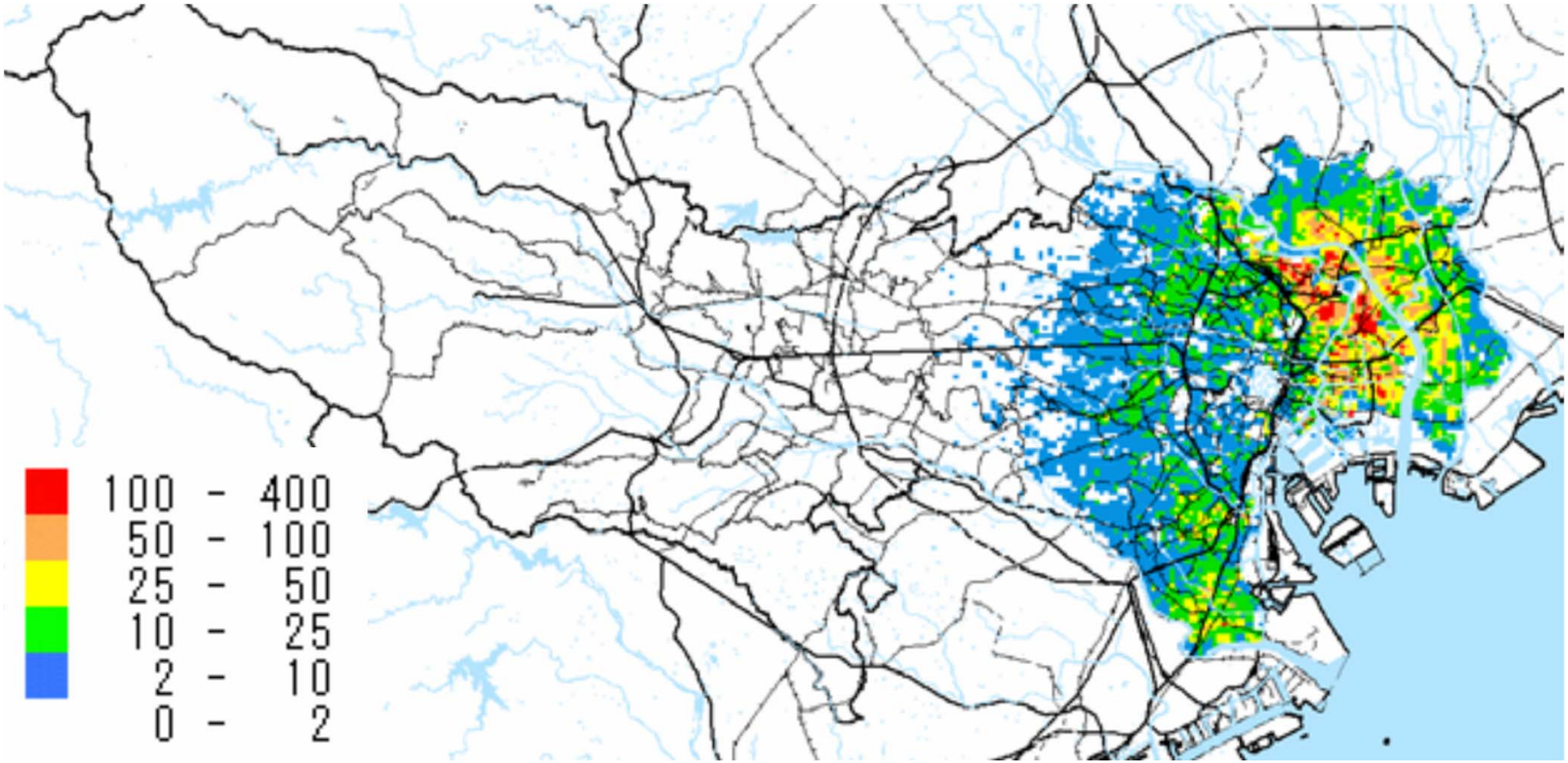
Fig. 5 Expected distributions of seismic intensity



(Numbers of buildings)

(a) Fire disaster map at evening (V=15m/s)

Fig. 6 Disaster map by North Tokyo Bay EQ (M7.3)



(Numbers of buildings)

(b) Collapsed buildings disaster map

Fig. 6 Disaster map by North Tokyo Bay EQ (M7.3)

7. Present condition of these assessment

4,921 buildings

4,221 buildings (85.8%) : submitted
700 buildings : not submitted

The status reports 984 buildings

199 buildings : satisfy
335 buildings : conducted retrofit
450 buildings : not satisfy

left 3,237 buildings (65.8%) : not conducted seismic assessment