The background of the slide is a collage of four photographs showing the aftermath of the 2007 Niigata Chuetsu-oki Earthquake. The top-left photo shows a white truck with a blue tarp covering its cargo area in front of a modern building. The top-right photo shows a close-up of a damaged concrete bridge structure with exposed rebar. The bottom-left photo shows a view of a road and a bridge railing. The bottom-right photo shows a road with orange and white traffic cones and a blue tarp covering a damaged area.

Field Reconnaissance on the Damage of Transportation Facilities in the 2007 Niigata Chuetsu-oki Earthquake

G. Watanabe, K. Iiyama, N. Kawano
Tokyo Institute of Technology

July 20-21, 2007

Damaged Area in Niigata

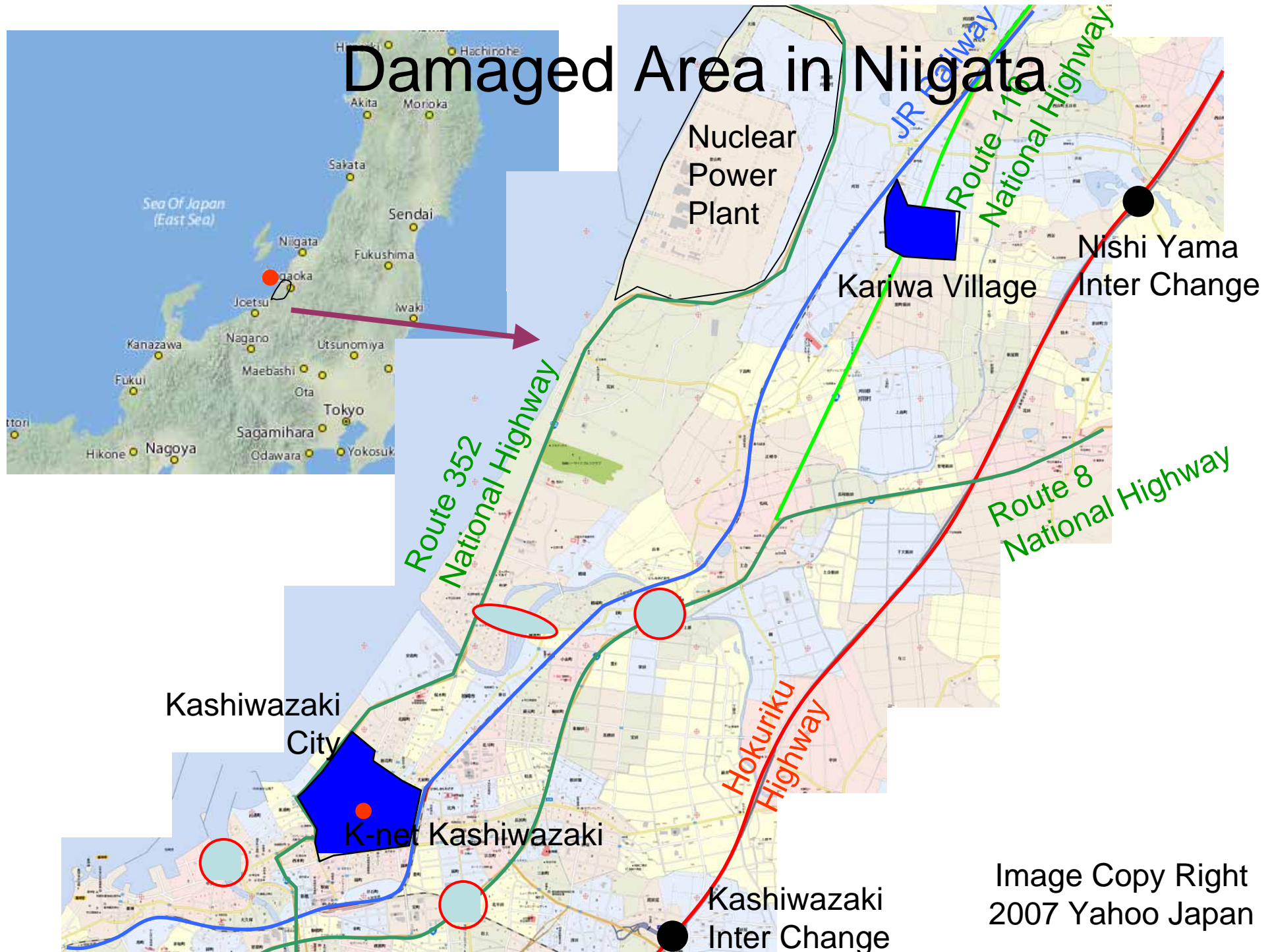


Image Copy Right
2007 Yahoo Japan

Global Location of Toyota Bridge



Toyota Bridge (Curved Bridge)

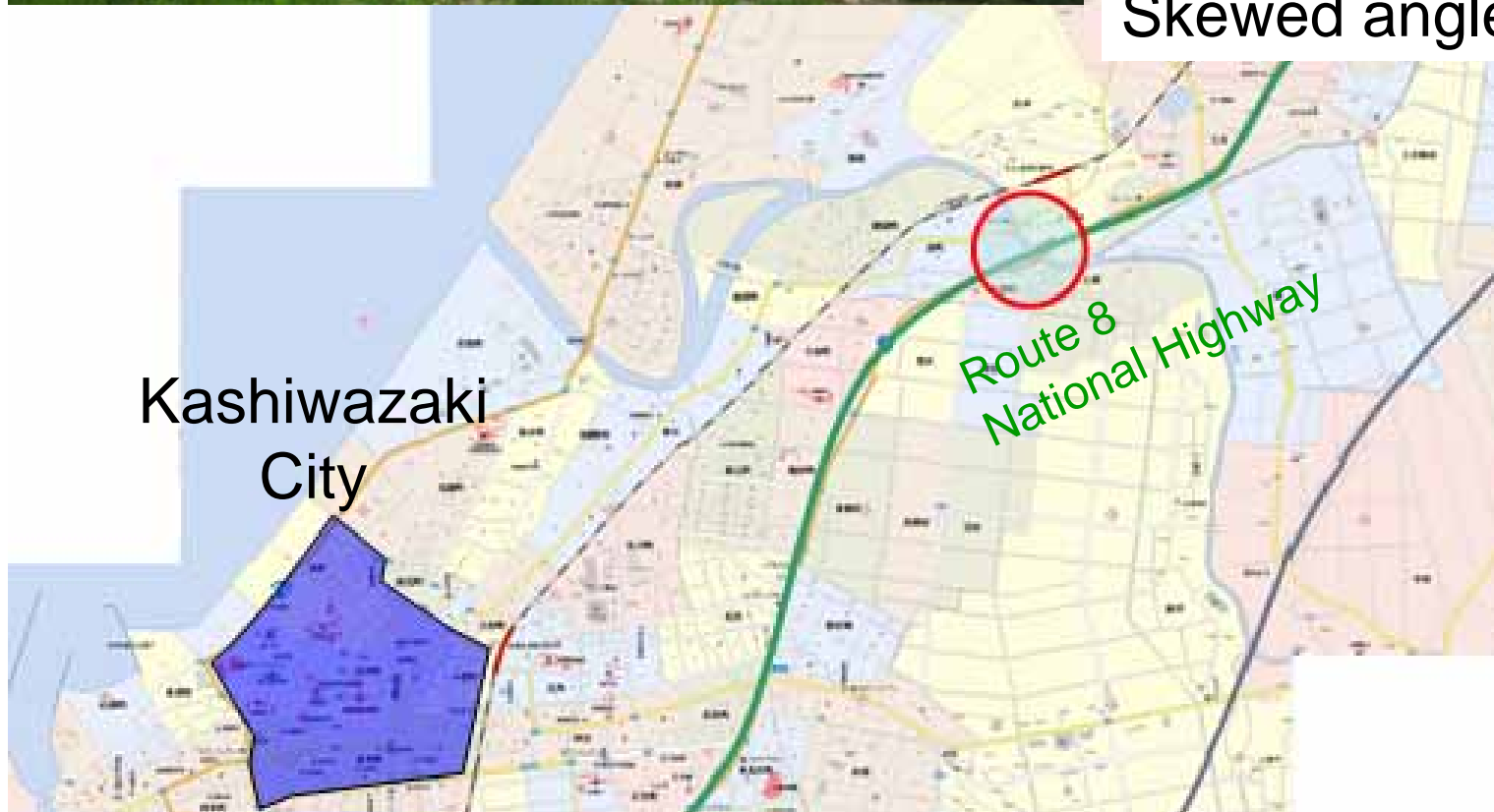


3 span continuous curved bridge

Length: 160m

Width : 12m

Skewed angle : 65 degree



Toyota Bridge (Curved Bridge)

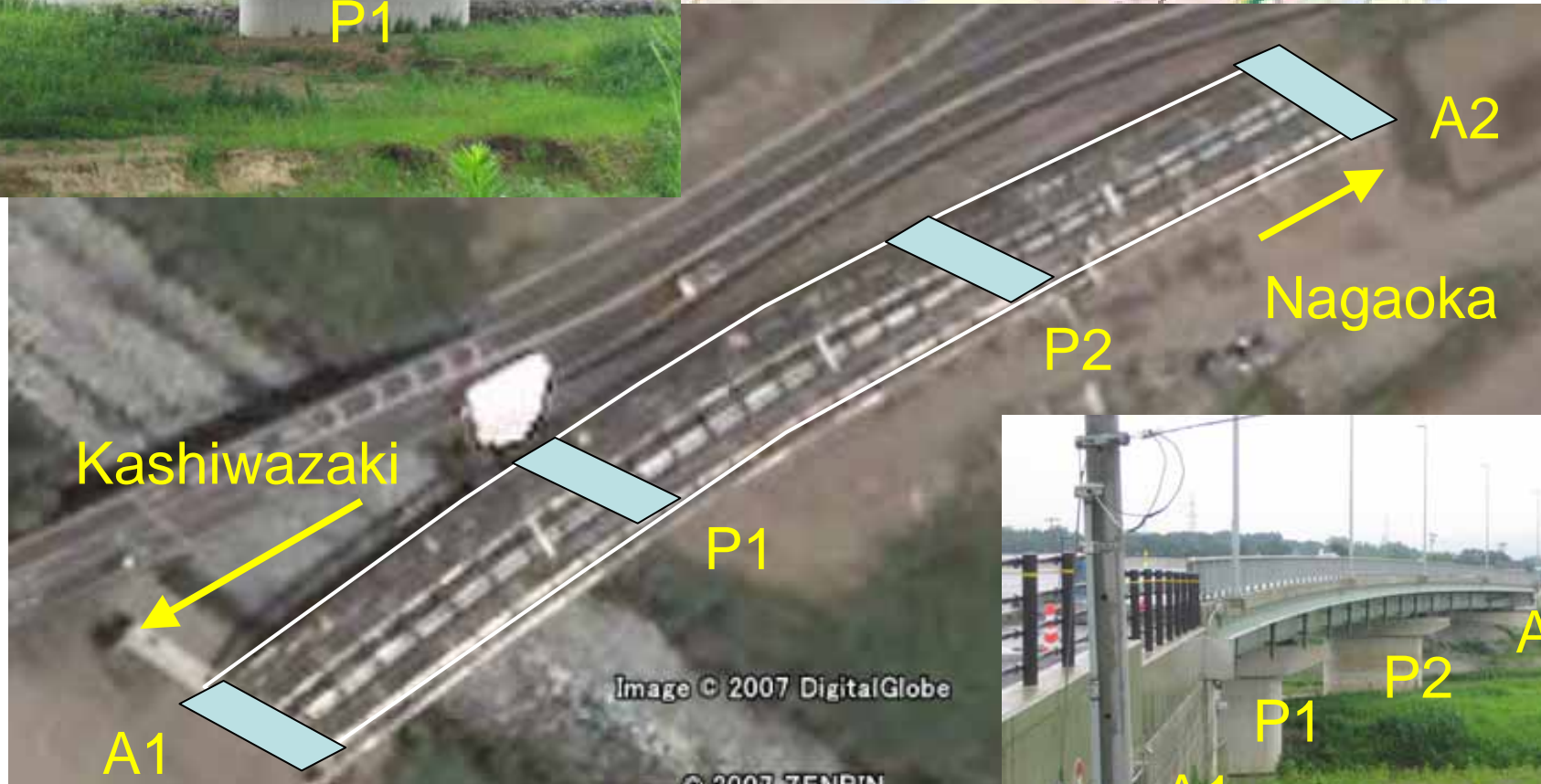
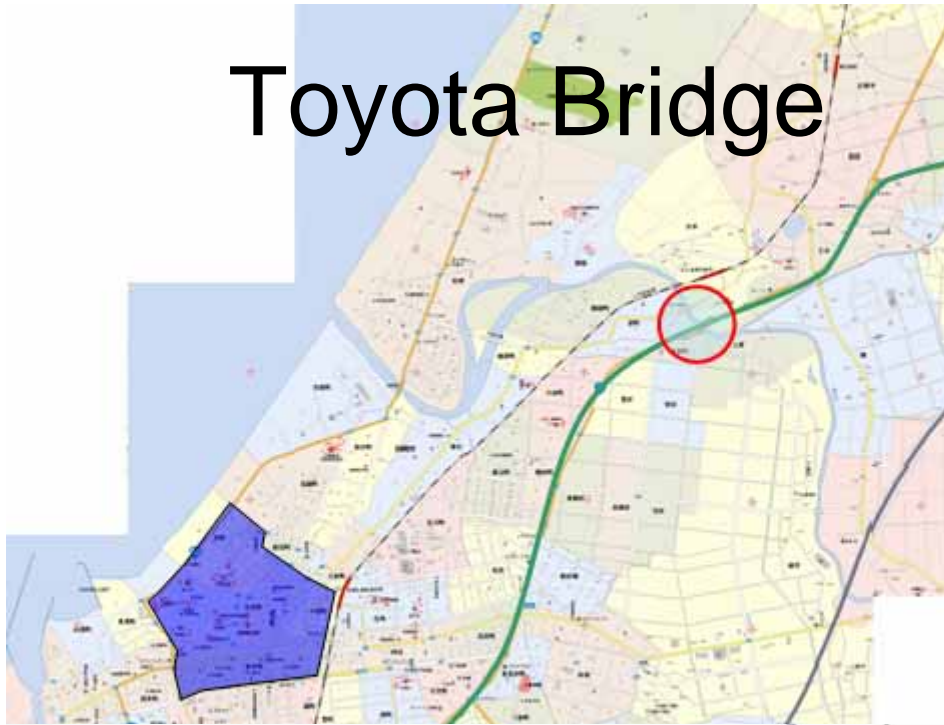


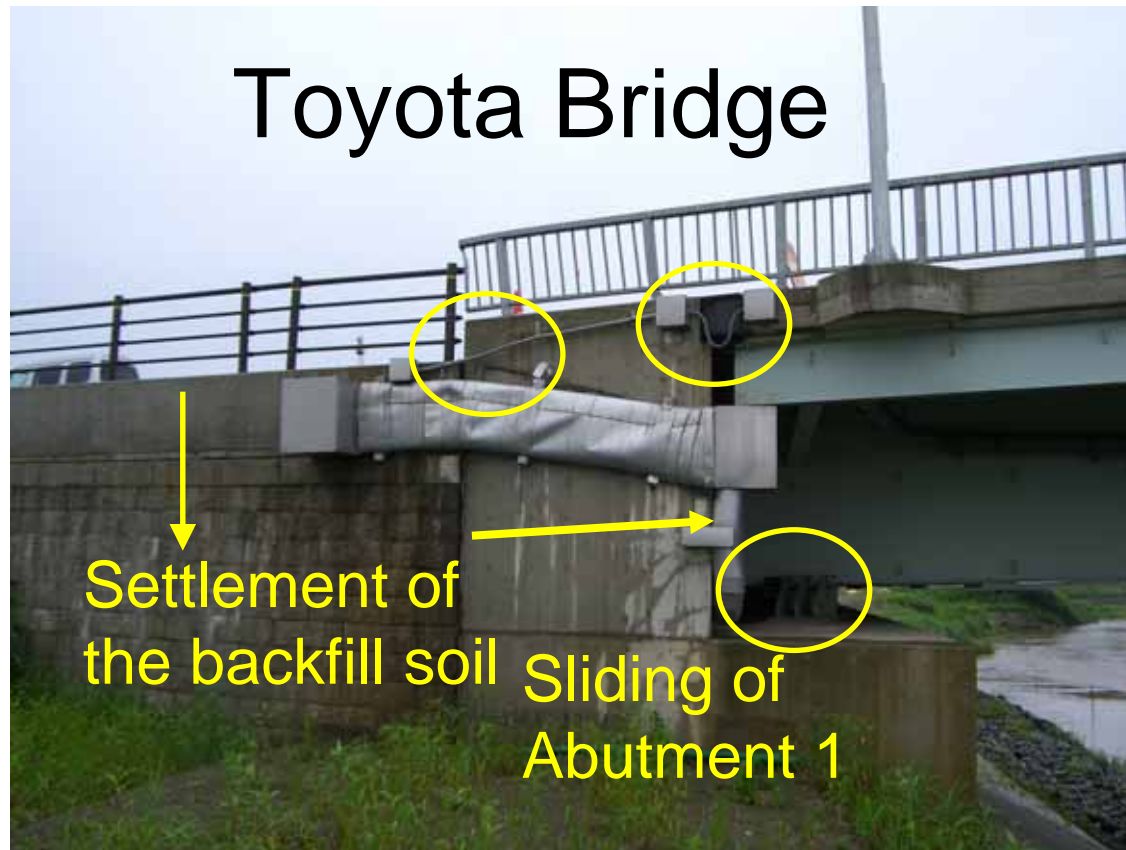
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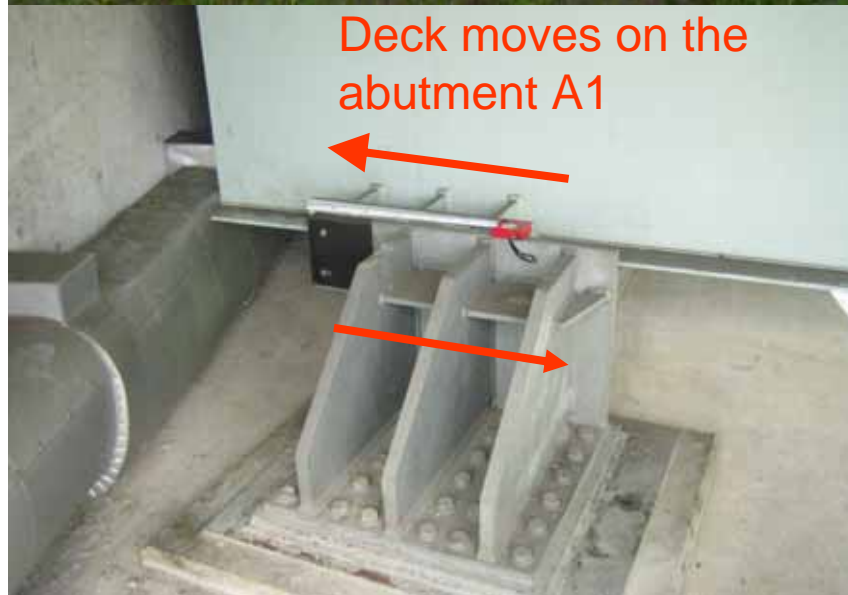
Toyota Bridge



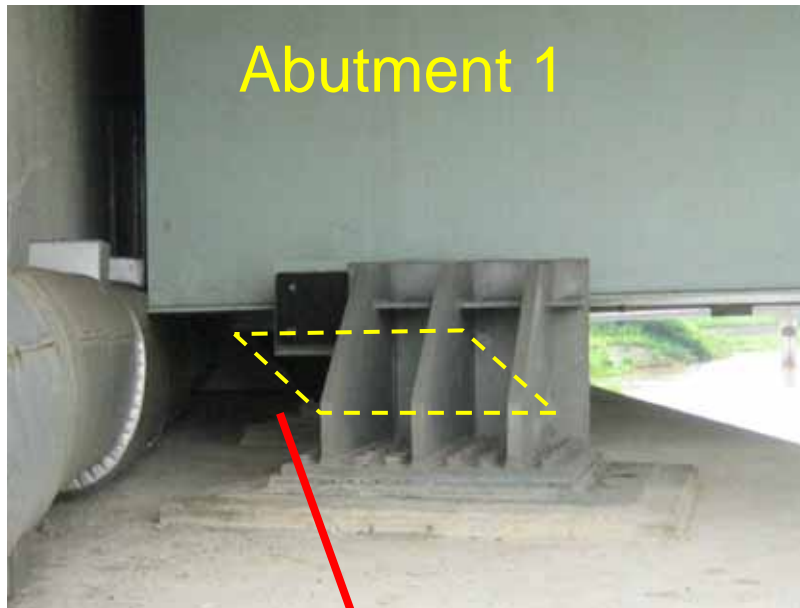
Toyota Bridge



Toyota Bridge



Toyota Bridge



Estimation of the Global Deformation of Toyota Bridge

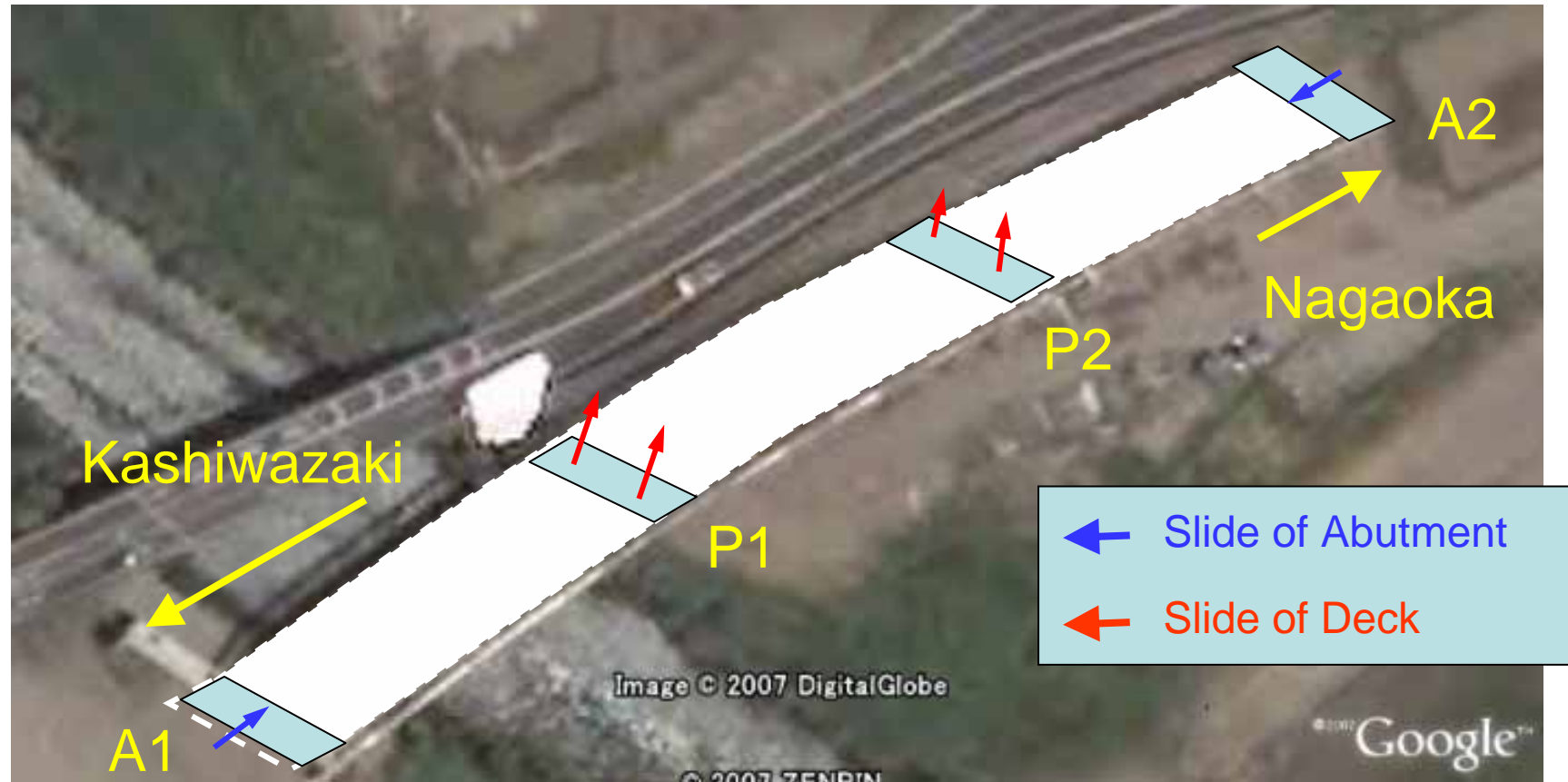


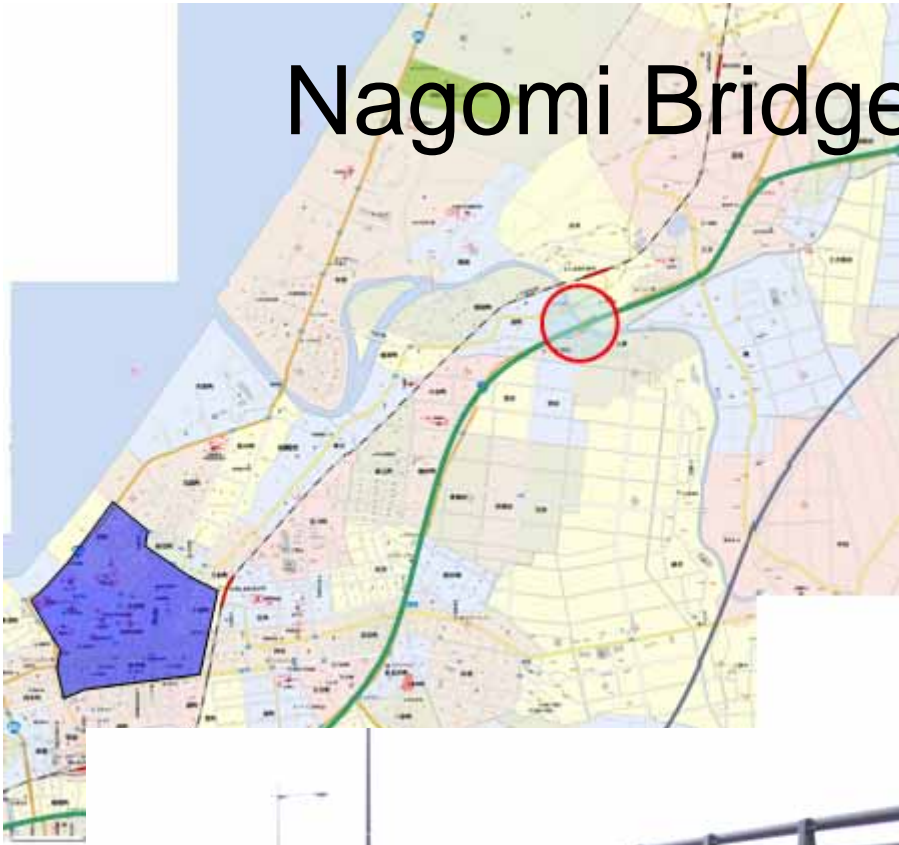
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Global Location of Nagomi Bridge



Nagomi Bridge (Straight Bridge)



Damage of Expansion joint of Nagomi Bridge



Gap closed
at the Expansion Joint

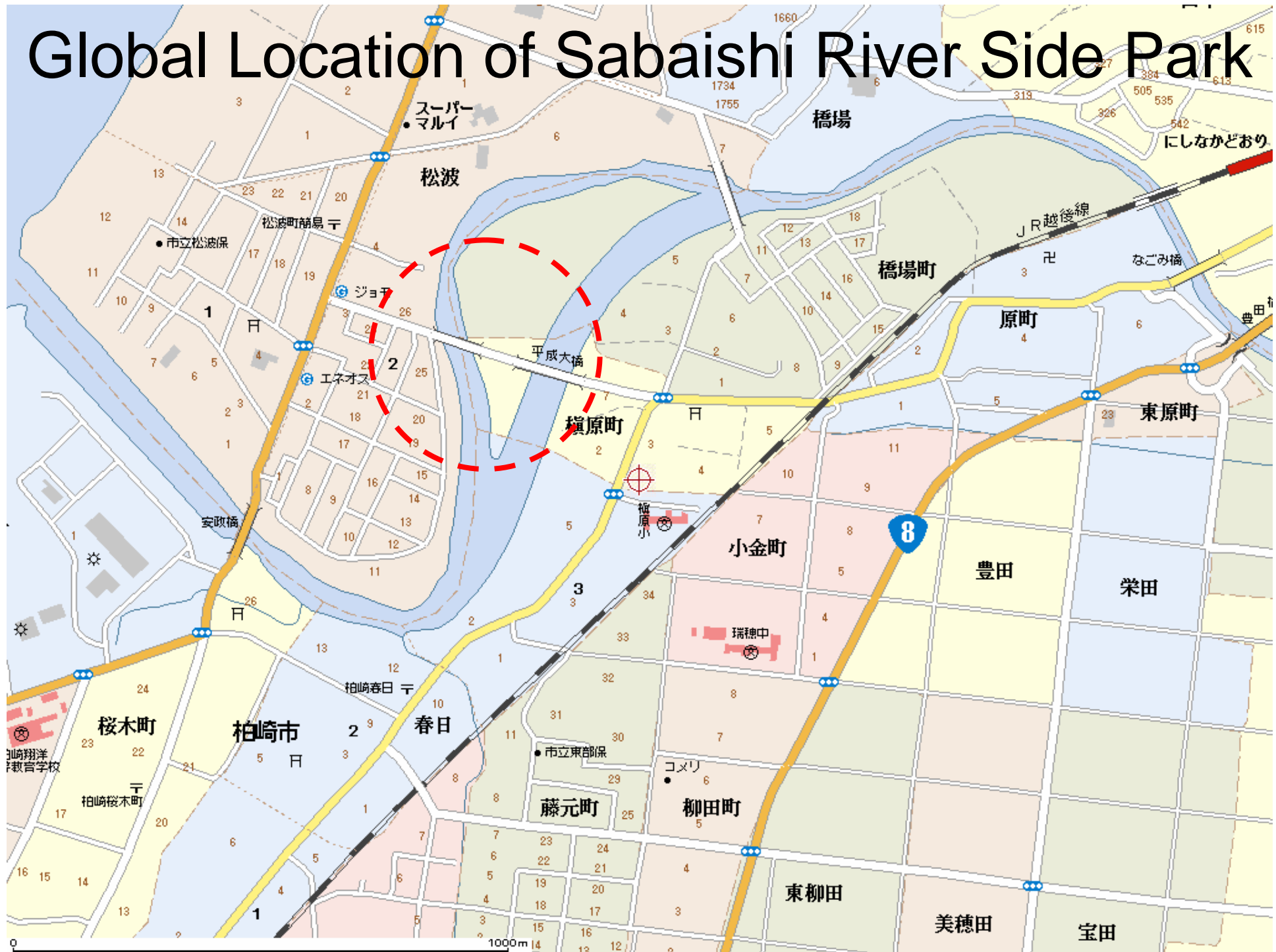


Rubber among the
Expansion Joint has
squeezed out due to
the closure of gap

Sliding of Embankment and Cracking of Concrete at the Abutment



Global Location of Sabaishi River Side Park



Liquefaction at the Parking Area



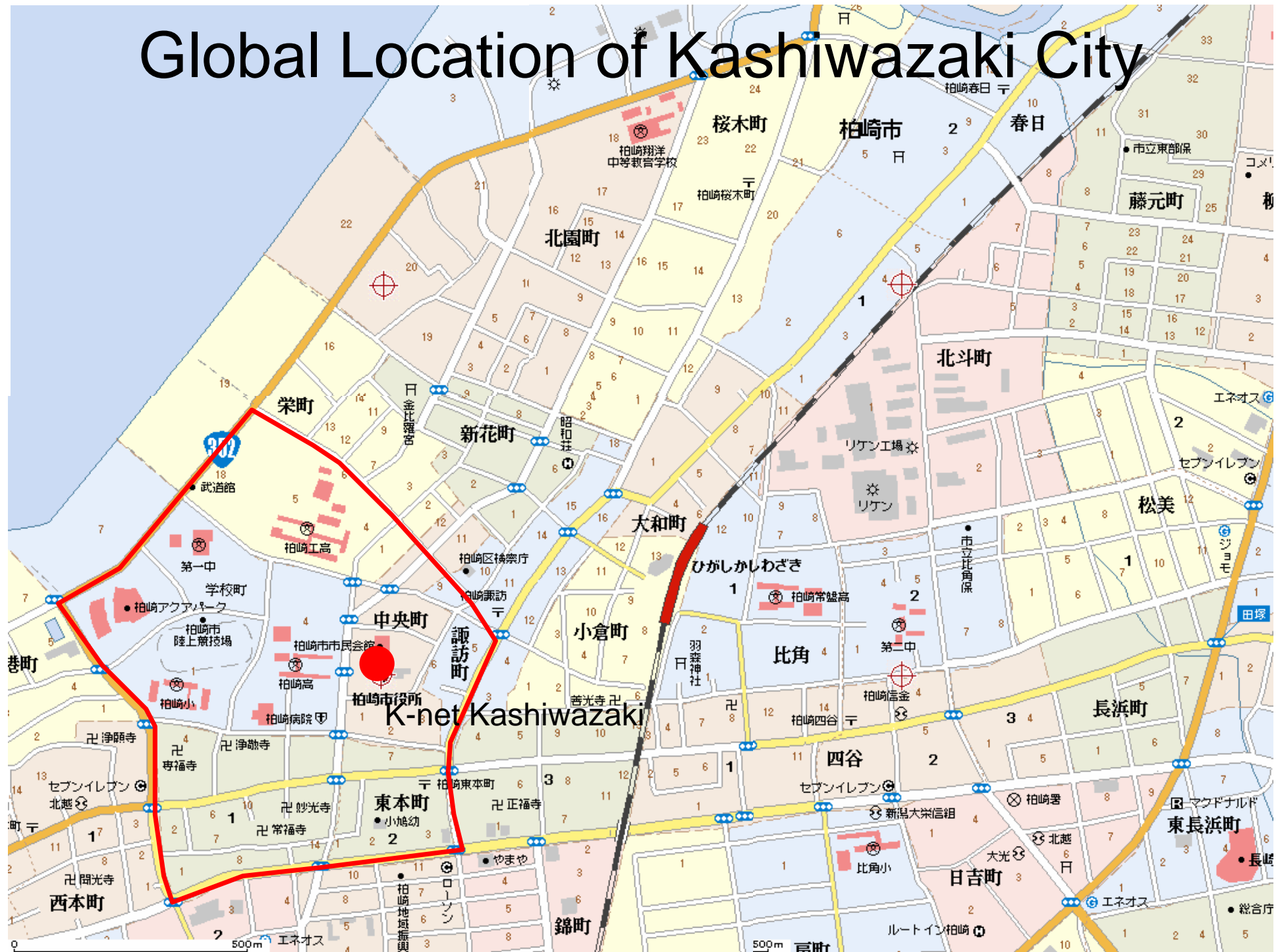
Liquefaction and Soil boiling



Settlement of Backfill Soil



Global Location of Kashiwazaki City



Kashiwazaki City Local Government Office Building



Kashiwazaki City (Chu-Ou Chou)



Kashiwazaki City (Kashiwazaki High School)



Kashiwazaki City (Public space)



Kashiwazaki City (Kashiwazaki Elementary School)



Outskirts of Kashiwazaki City



Damage observed in Market Street, Kashiwazaki



Settlement of Ground



Old Market Street (Most Damaged Area)



Old Market Street (Most Damaged Area)



Inspector check the safety of building and houses



応急危険度判定結果

要注意

LIMITED ENTRY

◆この建築物に立ち入る場合は十分注意して下さい
◆応急的に補強する場合には専門家に相談下さい

建築物名称 永田 雅明

注記
コンクリート基礎の比高比が不足。

災害調査員別直改訂後 27

整理番号 96-1

判定日時 7月17日 (金) 午後 10時現在

柏崎市 災害対策本部 電話 71-2290

Kashiwazaki Hospital



Residential Area



Seaside Park (Supply Base of Disaster Relief Activity by Military Service)



Seaside Bridge



Settlement of backfill soil



Sliding of Slope

Route 8 National Highway



Route 8 National Highway



Settlement of backfill soil



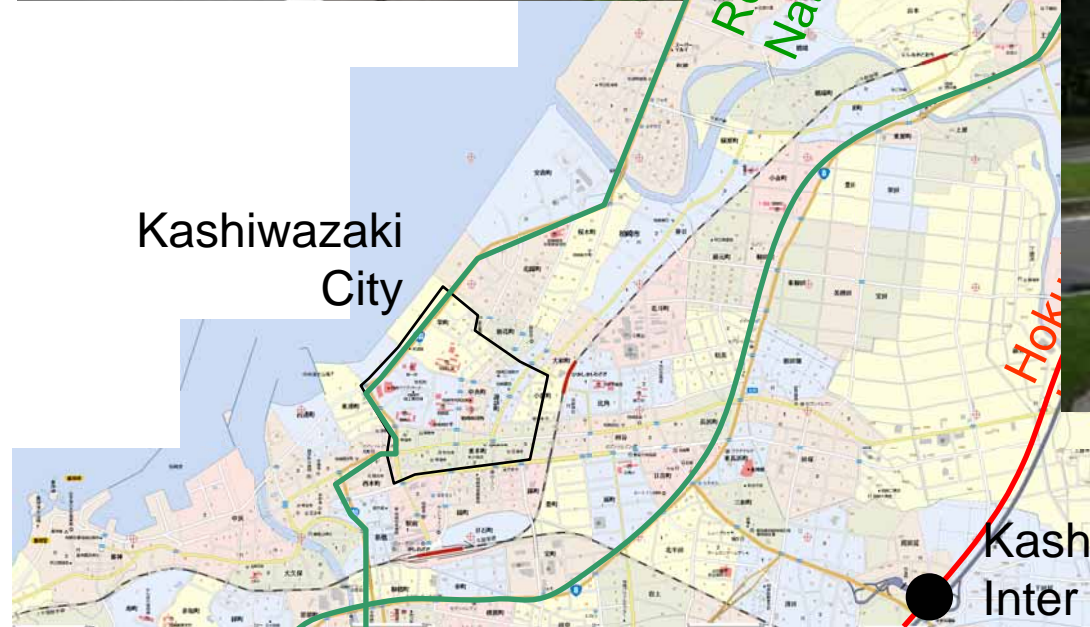
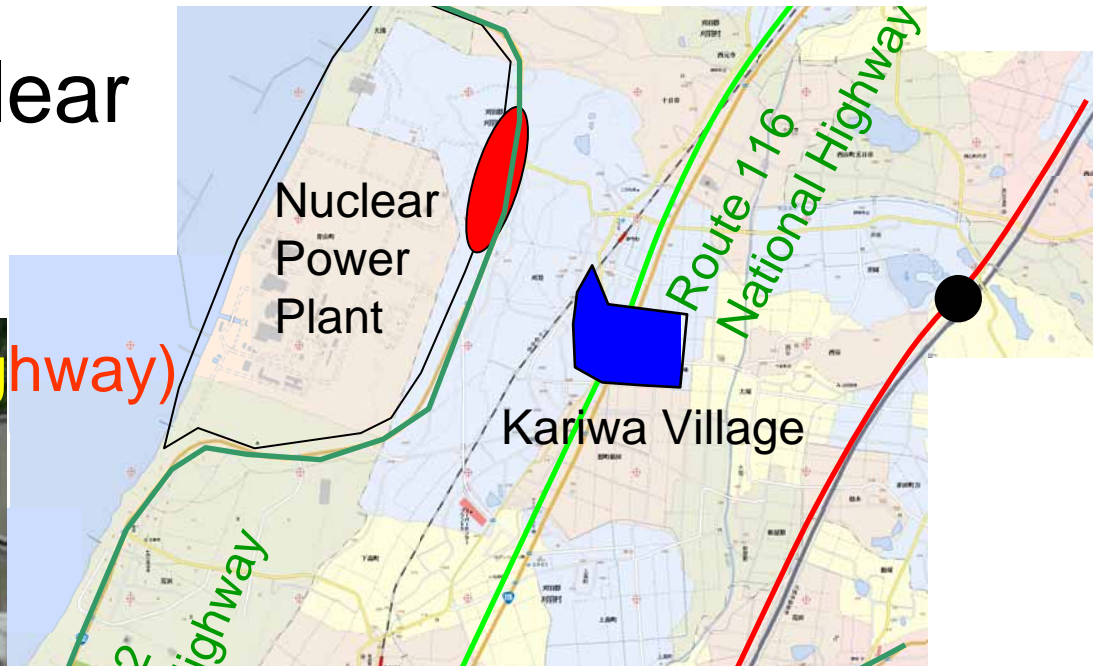
Sliding of Pavement



Kashiwazaki Nuclear Power Plant

Side Road

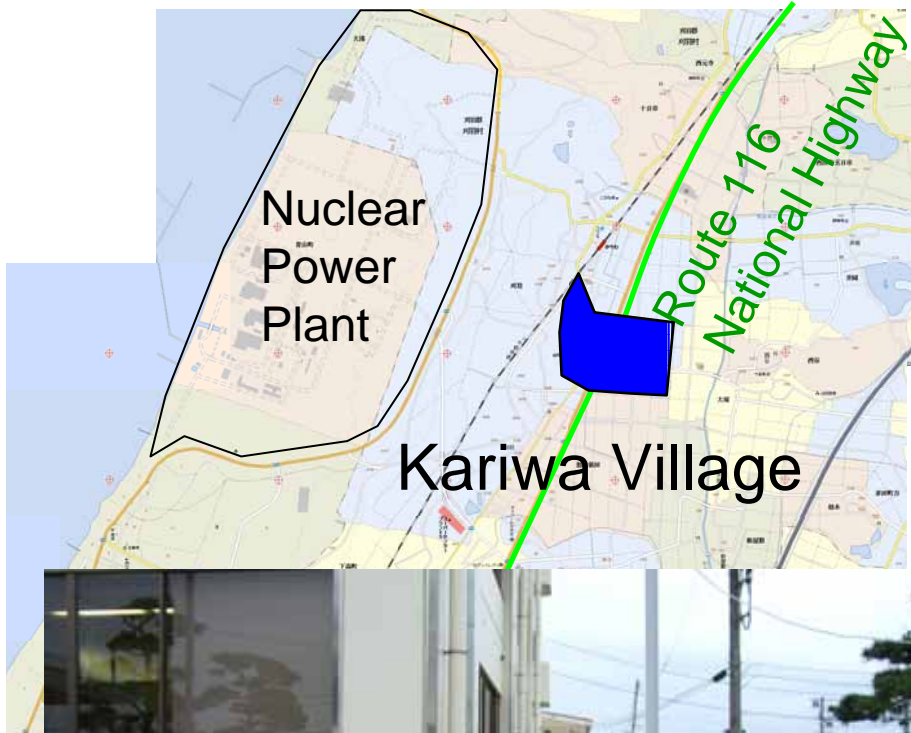
(Route 352 National Highway)



Tokyo Electric Company
Nuclear Power Plant
Entrance Gate

Kashiwazaki
Inter Change

Kariwa Village



Volunteer Activity by Citizens



Settlement of Soil Foundation

Kariwa Village

