

# **Supplemental section**

**Response to The 2016  
Kumamoto Earthquake**

# Response to The 2016 Kumamoto Earthquake

A number of earthquakes have occurred over Kumamoto and Oita prefectures since April 14, 2016. The series of the earthquakes was named “The 2016 Kumamoto Earthquake ( hereinafter referred to as “Kumamoto Earthquake”)” by the Japan Meteorological Agency (JMA). The strong ground motion at the highest seismic intensity level of 7 was observed due to the earthquakes with a magnitude of 6.5 on April 14 and with a magnitude of 7.3 on April 16, respectively <sup>Note 1</sup>. It was the first time in recorded history of JMA that larger earthquake occurred in the same area after the occurrence of an inland earthquake with a magnitude 6.5 or larger. It was also observed at “Kumamoto Earthquake” that seismic activity widely spreaded over the contiguous prefecture, Oita. “Kumamoto Earthquake” brought severe damages on lands, constructions and people’s live.

In this supplemental section, we will report additional part about the response provided by the MLIT as much as possible as of the mid-May 2016.

## 1 Disaster status

According to the report by JMA at 09:00 on May 16, 2016, two earthquakes with seismic intensity of 7, two earthquakes with seismic intensity of 6-upper, three earthquakes with seismic intensity of 6-lower, and 1,464 earthquakes with seismic intensity 1 or greater occurred in the series of seismic activities <sup>Note 2</sup>. Very large numbers of earthquake continue to occur, thereby impeding the recovery and reconstruction of disaster-stricken areas.

According to observations made by the Geospatial Information Authority of Japan, the estimated fault plane constitutes a dextral strike-slip fault of approximately thirty-five kilometers in length. The northwest side of the Futagawa fault zone subsided by up to two meters.

The Kumamoto Earthquake caused forty-nine deaths <sup>Note 3</sup> and resulted in over 190,000 evacuees at the height of the crisis. It also gave rise to extensive damage. For example, large numbers of homes sustained damage, sediment-related disasters occurred, the Kyushu Shinkansen derailed during operations, road blockages and other examples of damaged transportation infrastructure arose, and multiple points of damage affecting electrical and natural gas lifelines emerged.

Furthermore, the plants of automotive-related companies were temporarily shut down, thereby crippling supply chains and negatively affecting corporate activities in a number of different ways.

**Note 1** Since 1996, when seismic intensity began to be measured with a seismic intensity meter, this is the first time that seismic intensity 7 have been measured twice in the same region.

**Note 2** A detailed survey on the Kumamoto Earthquake conducted later by JMA showed that two earthquakes with seismic intensity of 7, two earthquakes with seismic intensity of 6-upper, three earthquakes with seismic intensity of 6-lower, and 3,412 earthquakes with seismic intensity of 1 or greater occurred from April 14 to May 16, 2016. ([http://www.jma.go.jp/jma/press/1610/11c/kumamoto\\_seisa1610.html](http://www.jma.go.jp/jma/press/1610/11c/kumamoto_seisa1610.html))

**Note 3** Excludes fatalities believed to have emerged due to a worsening of injuries sustained in a disaster occurring after the earthquake struck or to illnesses caused by having to deal with physical burdens.

Figure 1

Disaster status <sup>Note 4</sup>

## Human casualties

49 deaths, 360 seriously injured persons, 1,311 slightly injured persons

## Property damage

- Damaged dwellings: 2,848 completely destroyed dwellings, 5,333 partially destroyed dwellings, 33,726 partially damaged dwellings
- Damaged non-residential buildings: 247 public buildings, 517 other structures

## Lifelines

- Electricity (power failures): affecting up to 476,600 dwellings (as determined by METI)
- \* As of April 20, the restoration of power transmission to high-tension distribution lines was completed with the exception of locations where restoration was difficult because of the impact of landslides or damaged roads.
- General gas (maximum number of dwellings subject to disruption): approx. 105,000 (as determined by METI)
- \* As of April 30, the supply of natural gas to all customers was resumed with the exception of customers for whom a resumption of supply was not possible due to the destruction of dwellings or other such factors.
- Waterworks (number of dwellings affected by the disruption of running water): 445,857 (as determined by the MHLW)
- \* As of May 16, running water was restored to 99.9 percent of dwellings with the exception of areas consisting of destroyed dwellings (as determined by the MHLW).
- Communications (maximum number of interrupted lines and maximum number of disrupted transmitting base stations)
  - Landlines: 300 lines; mobile phones/PHS: 628 transmitting base stations
- \* According to information that is current as of May 16, all landline telephone lines and PHS transmitting base stations were restored while two transmitting base stations for mobile phones remained out of service.
- Sewage systems: 13 treatment stations were affected by the disaster (treatment functions have been secured).
  - In Aso-shi and Mashiki-machi, 10 sites suffered fractures of sewage pipes (flow-down functions have been secured using temporary pipes).

## Roads (disaster-affected sites)

- Expressways: Seven lines
  - Kyushu Expressway, Nagasaki Expressway, Oita Expressway, Higashi-Kyushu Expressway, Miyazaki Expressway, Trans-Kyushu Expressway, Minami-Kyushu Westbound Expressway, Fukuoka Urban Expressway, Matsushima Road (Kumamoto Road Public Corporation)
- \* April 29: All sections of the Kyushu Expressway reopened to the general public; May 9: With the reopening of all sections of the Oita Expressway to the general public, all expressways in Kyushu came to be fully reopened to the general public.
- National highways under the direct control of MLIT: Seven sections
  - National Route 3 (two sections), National Route 57 (four sections), National Route 210 (one section)
- Auxiliary national roads: 31 sections
  - National Route 212 (five sections), National Route 218 (three sections), National Route 251 (one section), National Route 265 (two sections), National Route 266 (one section), National Route 325 (four sections), National Route 387 (five sections), National Route 442 (three sections), National Route 443 (three sections), National Route 445 (three sections), National Route 498 (one section)
- Prefectural and government ordinance-designated city roads: 160 sections
- \* Also see "4. State of recovery of key infrastructure" below for more information on the state of recovery.

## Rivers

- Rivers managed by the national government (damage status)
  - A total of 172 sites on six rivers (Emergency measures fully completed. At 11 sites where levees were deformed to a relatively large degree, emergency restoration work was carried out; this work was fully completed by May 9.)
- Rivers managed by the governors of prefectures or mayors of government ordinance cities (damage status)
  - 322 sites on 48 rivers (318 sites in total throughout Kumamoto, three sites in total throughout Kumamoto-shi, 1 site in Oita)

## Sediment-related disasters

Number of sediment-related disasters: 125 (54 debris flows, 9 landslides, and 62 slope failures)  
 Human casualties caused by sediment-related disasters: Nine deaths  
 \* Emergency restoration work at damage-affected sites, which includes work to prevent the spread of damage through the placement of sandbags and sediment excavation on rivers clogged with sediment, is ongoing.

## Rail

- Kyushu Shinkansen
  - All lines suspended;
  - Deadhead trains derailed (no injuries) between Kumamoto Station and the Kumamoto Rolling Stock Depot.
- \* Operations resumed between Shin-Minamata and Kagoshima-Chuo on April 20; operations resumed between Hakata and Kumamoto on April 23; operations resumed on all lines by April 27.
- Conventional lines
  - 36 lines belonging to 11 operators suspended
  - (The following are the key lines whose operations were temporarily suspended in Kumamoto)
  - JR Kyushu (Kagoshima Line between Arao and Yatsushiro), (Hohi Line <sup>Note 5</sup>, all sections);
  - Kumamoto-shi (Suizenji Line, all sections);
  - Kumamotodentetsu (Kikuchi Line, all sections);
  - Minami-Aso Railway (Takamori Line <sup>Note 6</sup>, all sections);
  - Hisatsu Orange Railway (Hisatsu Orange Railway Line between Yatsushiro and Higo-Koda).
- \* All lines have resumed operations with the exception of JR Kyushu (Hohi Line between Higo-Ozu and Bungo-Ogi) and the Minami-Aso Railway (Takamori Line, all sections).

## Ports and harbors

- Kumamoto Port (regular ferry operations resumed on April 22, regular foreign container vessel operations resumed on April 23).
- Yatsushiro Port (in operations after safety measures implemented).
- Misumi Port (in operations after safety measures implemented).
- Beppu Port (as of 05:00, May 16, measures to prevent entry at two seaside locations remain in force).

## Airports

- Kumamoto Airport
  - The terminal building sustained damage from the seismic intensity 7 earthquake that struck on April 16.
  - Traffic-control functions: no impediments to continued operations.
  - Regular passenger flights: While these flights were suspended after the earthquake struck on April 16, the airport has been resuming them in a phased manner since April 19. (The terminal building partially resumed operations on April 19.)

## City facilities (damage status)

- Park facilities: 152 parks sustained damage (damage information provided by the MLIT as of May 17).

**Note 4** Unless otherwise indicated, stated information has been excerpted from information current as of May 16, 2016, according to information provided by the Cabinet Office's headquarters for major disaster countermeasures for "human casualties", "property damage", and "lifelines (excluding sewage lines)" and according to disaster information provided by the MLIT for all other items.

**Note 5** Such as sediment inflow between Akamizu and Tateno.

**Note 6** Such as cracks in the inner walls of tunnels and bridge deformations between Tateno and Choyo.

## 2

## Response of the MLIT immediately after the earthquake struck

Immediately after the earthquake struck, the government established a headquarters for major disaster countermeasures to comprehensively coordinate disaster emergency measures undertaken by relevant organizations.

The MLIT also set up an emergency system concurrent to the occurrence of the earthquake at 21:26 on April 14, 2016. After a headquarters for major disaster countermeasures was established under the auspices of the MLIT at 22:10 on the same day, the first meeting of the headquarters for major disaster countermeasures was held at 23:00 on the same day. As of May 19, 2016, a total of twenty meetings of the headquarters for major disaster countermeasures have been held.

The MLIT has been helping to facilitate disaster recovery efforts and providing support for the rebuilding of lives since the earthquake struck, such as by checking the status of damage sustained, dispatching TEC-FORCE (Technical Emergency Control Force) personnel, reinforcing evacuation systems through a lowering of the threshold for issuing a sediment-disaster alert, providing daily commodities, and securing temporary housing. Specifically, these efforts have consisted of the following:

#### (1) Surveying the damage caused to facilities under the jurisdiction of the MLIT

The damage caused to roads, rivers, dams, ports and harbors, airports, sewage systems, governmental facilities, and other facilities was promptly investigated. Immediately after the disaster struck, patrol vessels and aircraft were dispatched to survey the damage along coastal areas and elsewhere and provide information to nearby vessels through the issuance of navigation warnings and other means.

#### (2) Support provided by TEC-FORCE (emergency disaster measures contingent) personnel for local governments affected by the disaster

The MLIT dispatched liaison personnel to local governments affected by the disaster beginning overnight on April 14 immediately after the magnitude 6.5 earthquake struck overnight on April 14, 2016. On the fifteenth, TEC-FORCE personnel attached to the Kyushu, as well as Kinki, Chugoku, and Shikoku Regional Development Bureaus, and the Geospatial Information Authority of Japan arrived in Kyushu and began taking action. Up to sixty one liaisons from Regional Development Bureaus nationwide from Hokkaido to Okinawa for a total of 1,617 person-days as well as up to 440 TEC-FORCE members for a total of 8,183 person-days (preliminary numbers as of May 16 of the same year) were dispatched to seventeen municipalities to provide support to local governments affected by the disaster.

#### (Conducting disaster surveys on behalf of local governments)

Specifically, disaster surveys were promptly conducted on behalf of local governments to supplement information on the disaster and on support needs ascertained by liaisons and interpretations of aerial photographs taken of the affected areas to help contribute to a shortening of the time required to designate this event as a serious disaster.

#### (Emergency inspections of sites at risk of suffering a sediment-related disaster)

In order to prevent secondary damage caused by aftershocks or rainfall, 1,155 sites at high risk of suffering a sediment-related disaster were inspected in nine days. The governor of Kumamoto and the mayors of thirteen concerned municipalities were apprised of the results and advised on what actions should be taken going forward.

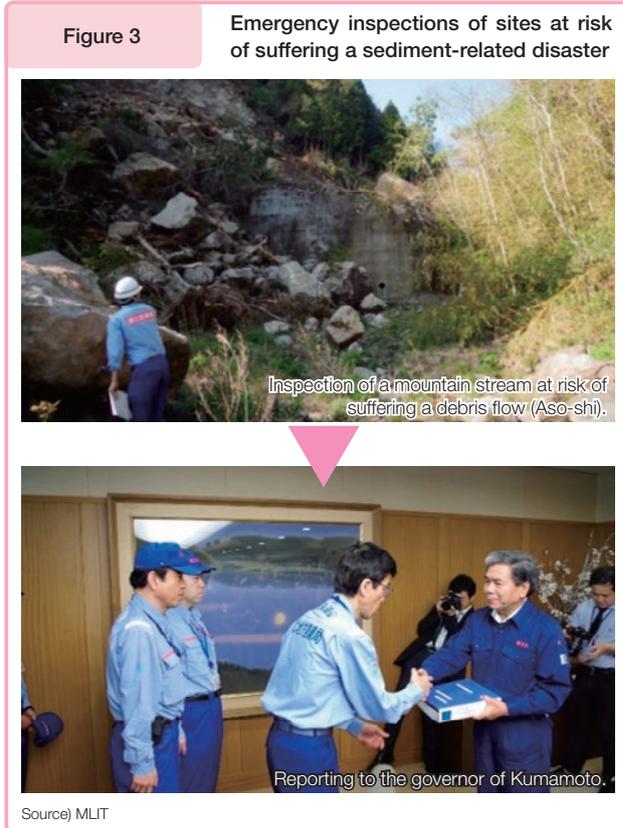
#### (Support provided by advisors concerning measures to deal with sediment-related disasters)

With many cases of sediment-related disasters occurring in the wake of the earthquake, advice on sediment-related disasters was sought by local governments. In response, a team of advisors in charge of measures to deal with sediment-related disasters was established. By having engineers belonging to the MLIT with expertise on sediment-related disasters provide advice at a local level in response to requests made by local governments and relevant organizations, we helped ensure the safety of search activities.

#### (Securing transportation routes by eliminating road obstacles)

We carried out emergency recovery work on prefectural and municipal roads blocked by subsidence and landslides of earth and sand to reopen transportation routes going from Kumamoto-shi towards Minami-Aso and otherwise secured

transportation routes for the flow of relief goods and other such items.



(Dispatching machinery for disaster measures)

Vehicles for satellite communications, illumination vehicles, sprinkler trucks, and other machinery for disaster measures were dispatched by regional development bureaus based in Kyushu, Kanto, Hokuriku, Chubu, Kinki, Chugoku, and Shikoku to support disaster-recovery work. Illumination vehicles, vehicles for satellite communications, and vehicles attached to the headquarters for major disaster countermeasures were provided to municipalities lacking electricity and means of communications with the outside world and whose government offices had been damaged. The need for support to help sustain the activities of the headquarters for major disaster countermeasures has been painstakingly accommodated.

Up to eighty-three units at a time for a total of 2,117 unit-days have thus far been dispatched (as of May 16, 2016).

Figure 7 Dispatching disaster response machinery



Source) MLIT

(Utilizing advanced machinery for disaster measures)

For locations at risk of sustaining secondary damage and locations that are geographically difficult to reach, actions based on the use of advanced equipment for disaster measures have been deployed, such as by using multi-copter (drones), rapidly and safely surveying the damage caused to sites affected by landslides of earth and sand as well as the state of faults, and removing soil using unmanned backhoes (hydraulic shovels) owned by regional development bureaus.

Figure 8 Utilizing advanced machinery for disaster measures



Source) MLIT

### (3) Utilizing helicopters, aircraft, satellites, and ships

Aerial surveys were conducted to obtain a full picture of sediment-related disasters and other damage caused by this earthquake using three disaster prevention helicopters (the Harukaze, as provided by the Kyushu Regional Development Bureau; the Airando as provided by the Chugoku/Shikoku Regional Development Bureau; and the Hokuriku, as provided by the Hokuriku Regional Development Bureau).

The state of the disaster was also ascertained by taking aerial photographs and conducting aerial laser surveys using the Kunikaze III (a survey aircraft provided by the Geospatial Information Authority of Japan) while crustal movements were ascertained with the Daichi-2, an earth-observation satellite.

Patrol vessels and aircraft (belonging to the Japan Coast Guard) were also deployed to conduct damage surveys along coastal sections while a helicopter image-transmission system was harnessed to share data in real time. Information was provided to nearby vessels through navigation warnings.

### (4) Emergency medical support

From April 16 to 22, 2016, Japan Coast Guard helicopters were used to transport a total of nineteen persons, including two insured persons and eleven medical doctors, at the request of Kumamoto and others.

Figure 9

Emergency photography carried out with survey aircraft



Source) MLIT

Figure 10

Transporting the injured by helicopters belonging to the Japan Coast Guard



Source) MLIT

## 3

### Initiatives to provide support for disaster-affected persons

#### (1) Transporting relief goods in collaboration with logistics companies

Without waiting for specific requests to be made by affected local governments, the national government proceeded to procure goods expected to be essential primarily for the provision of support to evacuees at evacuation sites and provide push-type support for transporting goods on an emergency basis to affected areas in collaboration with private sectors.

For the provision of material support in the wake of the Kumamoto Earthquake, push-type support was provided and relief goods, including foodstuffs for 2.63 million meals, were otherwise transported in collaboration with Kumamoto prefectural government, logistics businesses and the Self-Defense Forces. Relief goods were delivered to evacuation centers through private sites accepting relief goods situated in Tosu-shi, Saga, and Hisayama-machi, Fukuoka.

#### (2) Providing potable water and transporting goods using ships

From April 16 to May 2, 2016, two survey and cleanup vessels—named the Kaiki and Kaiko—delivered a total of 112,340 liters of potable water to 3,583 persons in Kumamoto Port. Ten patrol vessels (belonging to the Japan Coast

Guard) also delivered a total of 189,766 liters of potable water in Kumamoto Port, Misumi Port, and Yatsushiro Port between April 16 and May 13, 2016.

To deliver goods (potable water, provisions, medical supplies, sanitary supplies, and more), vessels belonging to various regional development bureaus also made successive port calls in Beppu Port, Oita Port, Hakata Port, and other ports throughout Kyushu. Private-sector ferry operators also delivered a total of 87,000 liters of potable water at a pier near a movable bridge in Kumamoto Port and transported goods.

### (3) Support for search and rescue at airports

To provide support for search-and-rescue operations by aircraft, around-the-clock air-traffic control functions were operated <sup>Note 7</sup> to provide support for the operations of aircraft (belonging to the Self-Defense Forces, U.S. military, and private-sector cargo carriers) engaged in dispatching disaster medical assistance teams (DMATs), search-and-rescue operations, and the transportation of relief goods.

### (4) Securing secondary evacuation sites and providing life support

The MLIT submitted requests to accommodations-related organizations for their cooperation in getting inns and hotels to accept disaster victims. As of May 16, 2016, it has been determined that 1,768 persons can be housed at inns and hotels in Kumamoto, Fukuoka, Saga, Nagasaki, Miyazaki, and Kagoshima.

As a project of the Ministry of Defense, the Ministry of Defense began providing accommodations, meals, and bathing services on board the Hakuo, a private-sector vessel contracted through a private-finance initiative (PFI) to serve as a resting facility in Yatsushiro Port on April 23, 2016, with the backing of the Ministry of Defense and the Self-Defense Forces. This facility was used by 2,092 persons by May 17 of the same year. The MLIT supported this initiative by helping draw and communicate with users and provide support for docking purposes. In addition to the provision of bathing services to 6,323 people on board patrol vessels (belonging to the Japan Coast Guard) in Kumamoto Port, Misumi Port, and Yatsushiro Port, bathing services were also provided in Misumi Port on board large dredging and oil-recovery vessels.

Evacuation center washrooms are visited and inspected by officials with the MLIT. Emergency measures are taken for washrooms that are found to be defective and efforts have otherwise been undertaken to improve the environment in which evacuation center washrooms operate.

### (5) Emergency safety checks performed on buildings and assessing the risks posed by dwellings

In order to support affected local governments engaged in the task of performing postearthquake quick inspections on buildings and assessing the risks posed by dwellings, the MLIT has submitted requests to local governments nationwide to have experts dispatched, as well as dispatched its own staff members to perform 54,028 checks on buildings in eighteen municipalities <sup>Note 8</sup> (as of May 16, 2016) and 15,656 assessments on dwellings in five municipalities <sup>Note 9</sup> (as of May 15, 2016).

### (6) Securing temporary housing

In order to enable evacuees to resume their pre-evacuation lives as soon as possible, the MLIT submitted a request to the Japan Prefabricated Construction Suppliers and Manufacturers Association to make preparations to be able to respond promptly to a request made by a prefectural government for temporary housing. Construction on 1,192 dwellings in thirteen municipalities (Nishihara Village, Kosa Town, Mashiki Town, Kashima Town, Uto City, Uki City, Mifune Town, Minami-Aso Village, Ozu Town, Yamato Town, Kumamoto City, Aso City, and Hikawa Town) has begun (as of May 16, 2016) and construction is slated to begin immediately in response to requests received from municipalities.

With respect to private rental housing, a request was submitted to a real estate industry organization on April 17, 2016, for cooperation required in connection with the provision of information on private-sector rental housing to disaster-

**Note 7** Around-the-clock operations were carried out at Kumamoto Airport between April 14 and 28, 2016. At Oita Airport, around-the-clock operations were carried out between April 16 and 19, 2016; thereafter, air-traffic control functions began operating each day one hour earlier than normal until April 22.

**Note 8** Performed for 6,505 person-days as of May 16, 2016.

**Note 9** Performed for 2,138 person-days as of May 15, 2016.

affected persons. On May 9, 2016, another request to provide cooperation required in connection with the borrowing of private-sector rental housing as temporary emergency housing was made. The real estate industry organization that received a request for cooperation from a prefectural government as concerns the provision of vacant private-sector rental housing units has been providing information and 2,526 dwellings for which applications have been received from disaster-affected persons have been provided on a sequential basis within Kumamoto (total as of May 16, 2016).

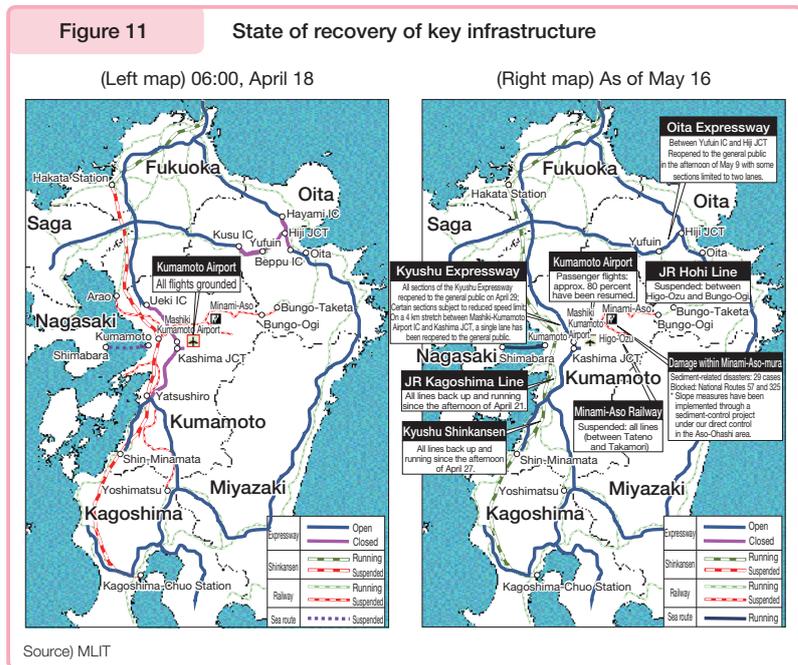
With respect to public housing, a request was submitted to all prefectural governments throughout the country on April 18, 2016, for cooperation to be extended for the provision of vacant public housing and other dwelling units as temporary housing for disaster-affected persons. Nationwide, 10,905 vacant public housing and other dwelling units have been secured (988 units in Kumamoto and 4,822 units in all of Kyushu, including Kumamoto); it has been determined that 1,025 units will be occupied (442 units in Kumamoto and 913 units in all of Kyushu, including Kumamoto) (totals as of May 16, 2016).

## 4 State of recovery of key infrastructure

The Kumamoto Earthquake significantly damaged key infrastructural elements <sup>Note 10</sup> and crippled the transportation network, such as by giving rise to traffic blockages on roads and the derailment of a Kyushu Shinkansen train that was in operation at the time of the earthquake.

While it is not possible to make an accurate prediction on this matter given that aftershocks continue to occur, the recovery of key pieces of infrastructure through rapid, effective responses made by concerned parties is proceeding expeditiously. For example, hard work put in by concerned persons allowed the Kyushu Shinkansen to be fully restored on all lines by April 27, thirteen days after the earthquake struck. This represented a major step towards the reconstruction of stricken areas.

In order to indicate the state of recovery, Figure 11 sets out a comparison of the state of key infrastructure on April 18, 2016, two days after a second tremor of seismic intensity 7 struck, with the state of key infrastructure as of May 16, 2016, approximately one month after the original earthquake struck.



## 5 Recovery of infrastructure that has sustained significant damage

The Kumamoto Earthquake caused damage to an extensive range of infrastructure, including significant slope failures in the Aso-Ohashi area, traffic stoppages on National Routes 57 and 325, and suspended operations on the JR Hoho Line. For these areas, it has been decided that new slope measures will be implemented through projects to establish national government-controlled sediment-control facilities. It was decided on May 13, 2016, that the Aso-Ohashi Bridge on

**Note 10** Typically consisting of Shinkansen lines, conventional railway lines, expressways, airports, and sea routes; disaster-affected infrastructural elements are not limited to these examples.

National Route 325 will be developed on an agency basis under our direct control. In implementing measures, the stabilization of collapsed slopes and the integrated recovery of national highways and railways will be required, such that we hope to quickly restore and resume operations through the orchestration of the collective technical strengths of the national government for this purpose.

The government has designated disasters caused by the Kumamoto Earthquake as extraordinary disasters according to the Act on Large-Scale Disaster Restoration <sup>Note 11</sup> to enable the national government to take over restoration work on bridges, tunnels, and roads subject to administration by disaster-affected local governments. This will allow us to carry out restoration work on the Kumamoto-Takamori Section (a prefectural highway), which includes the Tawarayama Tunnel for which a request was received from the government of Kumamoto, and on the Tochinoki-Tateno Section (a village road), which includes the Aso Choyo Ohashi Bridge for which a request was received from Minami-Aso-mura, on an agency basis under the direct control of the national government and fully engage in rapid recovery efforts accordingly.

## 6

## Initiatives for the revival of tourism, including in terms of the recovery of tourism resources

With respect to the tourism sector, the facilities and equipment of inns and hotels sustained direct damage, as well as indirect damage through cancellations of accommodations and other such factors. The MLIT is engaged in financing measures and the transmission of information to promote a recovery in tourism demand in collaboration with the relevant ministries and agencies in accordance with requests for support concerning the reconstruction of tourism in Kyushu as received from local areas.

Kumamoto Castle, an iconic tourism resource in Kumamoto, and its surroundings also suffered significant damage.

In light of its jurisdiction over city parks, the MLIT is slated to support recovery construction projects for park facilities <sup>Note 12</sup> in collaboration with concerned parties by holding liaison and coordination meetings with the Agency for Cultural Affairs and the governments of Kumamoto City and Kumamoto Prefecture.

With respect to measures for the reconstruction of tourism in Kyushu, the government plans to put together a general support program for the reconstruction of tourism in Kyushu in short order and is engaged in efforts to promote the reconstruction of tourism as quickly as possible by closely cooperating with local governments.

## 7

## Supplementary budget

In order to support efforts to restore infrastructure, develop temporary housing, and rebuild the lives of disaster victims, a supplementary budget totaling 778 billion JPY was enacted on May 17, 2016.

## 8

## Conclusion

As stated in the above text, the MLIT has been dispatching TEC-FORCE personnel from across the nation to disaster-affected municipalities since the disaster first struck and has mobilized lifesaving rescue efforts, shipped relief goods for disaster-affected residents, responded to large-scale sediment-related disasters, assessed the risks posed by buildings, supported efforts to rebuild lives, and promoted the recovery of infrastructure.

We have also promoted the flexible use of hotels, inns, and ships for evacuees, prepared a system for supplying temporary housing, and secured public housing as measures in support of disaster victims.

Safety and security underpin all economic activities and the lives of all citizens and the securing of safety and security constitutes a fundamental function of social capital. Systematic enhancements to structural measures in concert with non-structural measures that promote rapid evacuations in response to intensifying natural disasters and large-scale disasters are important in Japan, a country that possesses a national land structure and regional structure that can be described as vulnerable.

**Note 11** Designated in accordance with a Cabinet order concerning the designation of an extraordinary disaster in connection with disasters caused by the 2016 Kumamoto Earthquake (Cabinet decision of May 10, 2016).

**Note 12** The 2016 Kumamoto Earthquake was designated a major disaster according to the Act on Special Financial Support to Deal with Extremely Severe Disasters (Cabinet decision of April 25, 2016). Accordingly, costs incurred by local governments for disaster-recovery projects for park facilities and other public civil-engineering facilities are mitigated.