Report of the State comptroller of Israel | January 2024

Systemic Topics

The State's Preparedness for an Earthquake – National Infrastructures and Buildings – Extended Follow-up Audit

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Background

An earthquake is a common natural phenomenon that may cause significant damage. The State of Israel sits on the border between the African and the Arabian Plate, in a region where exposure to a significantly powerful earthquake is possible. Israel experiences frequent earthquakes, most low in magnitude and not felt. Expert assessments suggest that a high-magnitude earthquake may indeed occur in Israel in the immediate future. Such an earthquake could result in human casualties and damage to infrastructure and buildings.

In February 2023, a 7.8 magnitude earthquake whose epicenter was in the south of Turkey, and the aftershocks, some of which reached 7.7 in magnitude, resulted in the collapse of over 12,000 buildings, about 59,000 fatalities, and over 121,000 injuries in Turkey and Syria, as of March 2023. This earthquake was a reminder of the destructive effects of a high-magnitude earthquake, such as one that could hit the State of Israel.

In 2018, the State Comptroller's Office published a report on "The State's Preparedness for Earthquakes – National Infrastructure and Buildings" (the previous report)[1]. The prior audit delineated deficiencies in the government's contending with this issue, including limited authority of the steering committee, a lack of redundancy in the natural gas sector in an emergency, a lack of essential infrastructure connection to the fuel transmission system in times of emergency, deficiencies in the water sector's preparedness for earthquakes, deficiencies in the seaports' readiness for earthquakes, incomplete information regarding the deployment of LPG accumulators, deficiencies in the airports' readiness for earthquakes, deficiencies in the readiness of land transportation infrastructure for earthquakes, minimal reinforcement of educational buildings, minimal reinforcement of hospitals and healthcare institutions, a lack of information regarding tourist sites and fire station facilities, inadequate monitoring of industrial facilities and hazardous material installations, the absence of central guidness for infrastructure reinforcement, delays in the reinforcement of residential buildings, the lack of building regulations, delays in the completion of the warning system, and deficiencies in the preparedness of the financial and insurance system.

1 State Comptroller, Special Report – The State's Preparedness for Earthquakes – National Infrastructure and Buildings (2018).

In addition to the previous report, the State Comptroller's Office published a special report in March 2023, "The Local Authorities' Preparedness for Earthquakes" (the 2023 State Comptroller's report)[2].

This report follows up on rectifying deficiencies at the national level mentioned in the previous report and expands on additional topics (the follow-up audit).

Key Figures

59,000

fatalities in Turkey and Syria, over 121,000 injured, and at least one and a half million people homeless following an earthquake in February 2023

55%

of all victims of natural disasters in the world in 2001–2020 were affected by earthquakes

USD 25–50 billion

the National Economic Council's 2010 estimate of financial damage from an earthquake in Israel[3]

USD 1–13 dollars

savings on rehabilitation for every dollar invested in preparedness by reinforcing infrastructure, buildings, and their contents[4]

2 See the State Comptroller's report, The Local Authorities' Preparedness for Earthquakes (March 2023).

3 This amount is a rough monetary estimate based on the probability that an earthquake will occur every 500 years. According to this estimate, if the earthquake occurs in the Tel Aviv area, the amount will increase by 50%.

4 This was the finding in the framework of a study conducted in the U.S. – FEMA, EDA – Economic Development Department, HUD – U.S Department of Housing and Urban Development.

44%

the extent of private and public insurance coverage for economic damages following natural disasters in Israel[5]. Relatively low compared to advanced countries, including France – with insurance coverage of 67%, Switzerland 71%, Belgium 73%, Great Britain 75%, New Zealand 77% and other advanced countries with similar insurance coverage

only 4%

the budget utilization rate for reinforcing buildings against earthquakes. NIS 7 million spent out of NIS 186 million allocated for reinforcing buildings

about 60%

of the hospitals are not earthquake resistant, or their level of earthquake resistance is unknown (28 out of 38) as of 2022

only 6%

the percentage of residential buildings with an approved National Outline Plan 38 (NOP 38) (Reinforcement and Strengthening) out of all the buildings that require reinforcing in Israel as of the end of 2021 (4,755 out of 80,000). In 2,852 buildings, 3.5% of all the buildings that require reinforcing, the reinforcing process has been completed

only 87

educational buildings where the reinforcement works have been completed or are in the execution stages – about 5% of the 1,600 educational buildings as of October 2022

18 years

since NOP 38 was approved, it has not achieved its primary goal – to promote the reinforcing of residential buildings against earthquakes. Only 2,852 buildings were reinforced; 3.6% of the buildings that required reinforcing in the country

only 3

permanent staff members in the Inter-Ministerial Steering Committee for Earthquake Preparedness

0

the Steering Committee's legal authority to compel the government ministries and other relevant bodies to implement its instructions and the government's resolutions on earthquake preparedness

5 Both for the private and the public sector.

Audit Actions

From July 2022 to March 2023 (the audit end), the State Comptroller's Office conducted a follow-up audit on the State's earthquake preparedness. The audit focused on deficiencies noted in the previous report and the gap between the prior audit findings and the current situation. This report is an addition to an earlier special report on the preparedness of five local authorities in the periphery for earthquakes[6].

The follow-up audit was conducted at the National Emergency Management Authority (NEMA), the Inter-Ministerial Steering Committee for Earthquake Preparedness, the Ministry of Energy, the Government Water and Sewage Authority (the Water Authority), the Public Utilities Authority – Electricity (the Electricity Authority), Noga – The Israel Electricity Independent System Operator Ltd., the Ministry of Transport and Road Safety, the Ministry of Finance – the Accountant General's Department (the Accountant General) and the Budget Division, the Israel Securities Authority, the Capital Market Authority, Insurance and Savings, the Ministry of Education, the Ministry of Construction and Housing, the Ministry of Health, the Ministry of Environmental Protection, the Ministry of Tourism, the Geological Survey of Israel (the Geological Institute), the Israel Electric Corporation Ltd. (IEC), Mekorot – the National Water Company Ltd. (Mekorot), Israel Ports Development and Assets Ltd. (IPC), Ashdod Port Company Ltd., Haifa Port Company Ltd., Netivei Israel – National Transport Infrastructure Company Ltd. (Netivei Israel), Israel Railways Ltd., Energy Infrastructures Company Ltd. (EI)[7], Europe Asia Pipeline Company Ltd. (EAPC), the Israel Standards Institute, Inbal Insurance Company Ltd. (Inbal), and the Internal Government Insurance Fund (IGIF), the Water Corporations (Mei Carmel and Hagihon Company), the Home Front Command (HFC), the Civil Administration in Judea and Samaria (the Civil Administration), the Ministry of National Security[8], the Israel Police, the Israel Prison Service (IPS), the Israel Fire and Rescue Authority (the Fire Authority or IFA), Magen David Adom in Israel (MDA), Clalit HMO (Clalit), Maccabi HMO (Maccabi), Meuhedet HMO (Meuhedet), Leumit HMO (Leumit), the Israel Airports Authority, and the Prime Minister's Office.

6 State Comptroller's report, Special Audit Report – The Local Authorities' Preparedness for Earthquakes (March 2023).

7 EI (Energy Infrastructures Company Ltd.) is a government company wholly owned by the State, and defined as a national infrastructure company for the fuel and energy sector in Israel. It was formerly named PEI (Petroleum Energy Infrastructures).

8 In a government resolution from January 22, 2023, it was decided to change the name of the Ministry of Internal Security to the "Ministry of National Security". This report refers to the Ministry of Internal Security mentioned in the previous report as the Ministry of National Security.

Supplementary examinations were conducted in the Ministry of Interior, Eilat Port Company Ltd., and the following municipalities: Eilat, Ashdod, Holon, Yokneam Illit, Hod Hasharon, Tel Aviv-Jaffa, Ramat Gan, and in the Israel Federation of Local Authorities.

Key Findings

- **Budgeting Government Preparedness for Earthquakes –** the economic damage following an earthquake in Israel and the financial resources required for the rehabilitation could burden the economy significantly. In 2018, the Ministerial Committee on National Security Affairs (the Security Cabinet) adopted Resolution No. 302/B about the home front's preparedness for emergencies, including the formation of a multi-year plan for 2019−2030, with a budget of NIS 5 billion for civil defense and improving earthquake preparedness (the "Northern Shield" plan). The follow-up audit found that as of 2022, in collaboration with the National Emergency Management Authority (NEMA) and the Home Front Command, the Ministry of Finance found a budgetary source of only NIS 890 million (18% of the NIS 5 billion) for implementing this resolution. By the conclusion of the audit, only NIS 186 million had been allocated, of which only NIS 7 million (4%) were dedicated to reinforcing buildings against earthquakes. Furthermore, an inter-ministerial steering committee of only three staff members manages the government's earthquake preparedness, and its budget has decreased from 2016 to 2022 to only NIS 6 million in 2022.

- **The Resistance of Residential Buildings to Earthquakes – The Implementation of NOP (National Outline Plan) 38 –** the previous audit noted that over a decade after NOP 38 was approved, it had not achieved its primary goal of significantly reinforcing residential buildings against earthquakes. **The follow-up audit found that the deficiency had not been rectified.** NOP 38 did not achieve its objectives, but has become a tool for urban renewal, particularly in areas with high land value. By the end of 2022, only 4,755 of 80,000 buildings, about 6% of all buildings requiring reinforcement in Israel, had been authorized for reinforcement[9]. The reinforcement process was completed for 2,852 buildings, 3.5% of all buildings requiring reinforcement. Most of these buildings are located in high-demand areas. In contrast, in peripheral areas close to the Syrian-African rift valley, less than 1% (715 buildings) are reinforced, and about 15% of the buildings that had undergone reinforcement[10]. Hence the NOP 38 is not

9 According to the estimates of the Ministry of Construction and Housing, in Israel there are about 80,000 buildings of three stories and more that require reinforcing, comprised of approximately 810,000 apartments.

10 715 Buildings were reinforced, by the end of 2022, in the southern and Haifa districts. This is one percent of all the buildings needing reinforcement nationally. This also represents 15% (715 out of 4,755) of the total number of building reinforced nationally.

economically viable in these areas and, therefore, is hardly implemented. This long-time failure exposes about 4.3 million residents living in buildings built before 1980 to earthquake hazards[11]. In July 2022, the Knesset approved the Planning and Building Bill[12] (submitted in November 2021[13]) (Amendment No. 139). The amendment includes an outline for building reinforcement as an alternative to NOP 38.

The Stability of Residential Buildings in Public Housing and Rehabilitation Areas – the previous audit noted that since 2016, the budget allocated for reinforcing residential buildings in rehabilitation areas has decreased. Between 2011 and 2018, approximately 80 buildings were reinforced in six local authorities along the Syrian-African Rift Valley. In 2018–2022, the average budget for reinforcing buildings along the Syrian-African Rift Valley was 48% of the budget for projects to rehabilitate buildings in neighborhoods that do not include reinforcement of buildings for earthquakes. **The follow-up audit found that the deficiency had been rectified to a small extent.** In 2013–2016, 113 buildings were reinforced; in 2016–2022, an additional 101 buildings were reinforced or are in the process of reinforcement. According to the Ministry of Housing criteria from 2016, there are still 1,010 buildings needing reinforcement in areas along the Syrian-African rift valley. The Ministry of Housing plans to reinforce an additional 126 buildings in 2023–2028 at a cost of NIS 460 million, indicating that the completion of reinforcement for all buildings in the ten local authorities may take up to 48 years, even though the plan's goal is to try to reinforce as many buildings as possible, particularly in high-risk areas before an earthquake occurs.

Regulation of Earthquake Preparedness

- **The Authority of the Steering Committee for the Promotion of Earthquake Preparedness –** the Inter-Ministerial Earthquake Preparedness Steering Committee is an advisory body to the Ministerial Committee on Earthquake Preparedness. The Committee was established in 2000 to promote and develop operational measures for earthquake preparedness, and its task is to coordinate the preparedness of different entities and implement the policy of the Ministerial Committee. The Committee coordinates the national activity of all government ministries, emergency agencies, and research institutions and oversees these operations. The previous audit noted that as long as the Steering Committee lacks legal authority to compel government ministries, infrastructure bodies, and local authorities to implement its guidelines, it cannot enforce the necessary actions required for mitigation[14]. **The follow-up audit found that this deficiency had**

11 According to the calculation of 72,000 buildings with each of them housing 60 residents.

12 The bill passed second and third reading on July 10, 2022 as Amendment No. 139 to the Planning and Building Law.

13 Amendment No. 136 earthquake (resilience plan and a plan that includes a provision for the transfer of ownership in a public section), 2021.

14 Mitigation – the series of actions taken before the occurrence of an anticipated disaster in order to reduce its scope and damage.

not been rectified. Despite the appeals made by the director of the Steering Committee to the National Emergency Management Authority (NEMA) in 2019–2021, until the audit end, NEMA did not submit to the Ministerial Committee a proposal to legally authorize the Steering Committee to compel government ministries to act according to its guidelines.

- **The Steering Committee staff –** the follow-up audit found that the Committee does not perform four out of its thirteen task groups (about 31%): defining and monitoring construction regulations, enforcing building regulations, determining procedures for dealing with at-risk buildings and facilities, data collection, building rating according to criteria, promoting building reinforcement, monitoring implementation, reporting on implementation, and providing recommendations for changes. This is mainly because the Committee has only three permanent employees; additional specialized personnel are needed for these tasks. It was further noted that the Committee thoroughly performs five task groups (about 38%) and partially performs four task groups (about 31%) – this aspect was not examined in the previous report.

- **The Steering Committee budget –** the Steering Committee assists in funding various earthquake preparedness activities conducted by different specialized bodies. The follow-up audit found that the Committee's budget decreased between 2016 and 2022. The approved budget for 2022 was about NIS 6 million, about 60% lower than the approved budget for 2016, which was NIS 15 million. The cumulative budget reduction totaled NIS 39 million. It should be noted that the budget utilization rate for 2022 increased by about 22% compared to the utilization rate in 2016. However, about NIS 20 million was not utilized in 2016–2022 for various reasons.

- **The Ministerial Committee on the Civilian Arena's Preparedness for Emergency Situations –** the consolidated ministerial committee established in 2013, composed of the Minister of Defense (chairman), the Minister of Finance, the Minister of National Security, the Minister of Interior, the Minister of Construction and Housing, the Minister of Economy, the Minister of the Negev and Galilee, the Minister of Agriculture, the Minister of Energy, the Minister of Social Equality, the Minister of Environmental Protection, the Minister of Regional Cooperation, and the Minister of Welfare and Social Affairs, convened several times: three times in 2017, once in 2021, and twice in 2022. In 2017, the Committee discussed earthquakes but did not reach any decisions. In 2021, the Committee did not address or decide on these matters, and in 2022, the Committee received a review from the Steering Committee regarding a warning system that became operational several months prior but did not address earthquakes. Therefore, the Committee last discussed earthquakes approximately six years ago.

- **The Resilience of Gas Infrastructures to Earthquakes LPG (liquefied petroleum gas) Infrastructures in Residential Buildings –** an LPG tank is a gas tank landfilled in the ground, and its capacity ranges between half a ton to five tons[15]. The previous audit found that implementing Israeli Standard (IS) 158 regarding installing devices to prevent gas leaks in an earthquake concerns only tanks installed after 2012. **The follow-up audit found that the deficiency was not rectified** and that the Ministry of Energy did not complete a standard requiring the installation of a device to prevent gas leaks from tanks during an earthquake for tanks installed before 2012. The follow-up audit found that the Ministry of Energy has information on the location of these devices for only 30% of the tanks.

- **The Resilience of the Electricity Infrastructure to Earthquakes –** even though the Israel Electric Company (IEC) has mapped the devices and components in the electricity grid that require reinforcement against earthquakes, formulated a multi-year plan until 2028 and allocated a budget to reinforce these facilities, the most updated reinforcement status indicates that 96 (about 52%) of the facilities belonging to group A[16], 5 (100%) of the facilities belonging to group B[17] and 46 (98%) of the facilities belonging to group C[18] were not reinforced, ten other facilities (from group A) were partially reinforced and only one facility from group C (about 2%) was reinforced against earthquakes.

- **The Resilience of the Water Infrastructure to Earthquakes**

  - **The Standard for the Resistance of Water Infrastructures to Earthquakes –** the previous audit found no standard for reinforcing existing water tanks. **The follow-up audit found that the deficiency was not rectified** and that although the Water Authority today states that there is no need for a dedicated regulation to reinforce existing water facilities, the Mekorot company and professionals believe that the planners lack knowledge and that the existing Israeli standard for new water facilities does not provide an adequate response to the reinforcing of existing water facilities.

  - **Municipal Water Infrastructures –** the previous audit found that according to the guideline documents of the Water Authority, the water corporations were not required to indicate which infrastructures are not earthquake resistant, whether surveys are conducted to locate the infrastructures that need reinforcing, how these infrastructures are inspected and the plans to reinforce them, if necessary. **The follow-up audit found that the deficiency was rectified to a small extent.**

15 The amount of LPG in the interred tank is larger than in an above-ground tank, and LPG leaks from the interred tank are relatively rare. Fifteen years after the interring of the LPG tank, it must be removed, its integrity should be inspected, and it must be repaired if needed.

16 Group A includes components whose upgrade in the near future is recommended.

17 Group B includes components whose upgrade in the medium term is recommended.

18 Group C includes components whose upgrade will be done according to a set of priorities.

At the end of 2018, following the deficiency raised in the previous audit, the Water Authority turned to the 56 water corporations, requiring them to conduct surveys within six months. Despite the above, four water corporations are expected to complete the surveys in 2023. Hence, the Water Authority did not follow up on the surveys.

- **Local Authorities Without Water Corporations and Other Water Suppliers –** in addition to the Mekorot Company (the national water carrier) and the water corporations, 1,302 water suppliers united in regional organizations, and 23 local authorities did not establish a water corporation or join an existing water corporation. The previous audit found that the Water Authority does not have the tools to check all 1,302 water suppliers. **The follow-up audit found that the deficiency was rectified to a small extent** and that the Water Authority had not yet transferred the responsibility for the unincorporated rural sector to the regional councils.

- **Water Suppliers in Judea and Samaria –** the head of the Civil Administration and the Water Staff Officer are not authorized to compel the water suppliers in Judea and Samaria to carry out the required reinforcements and supervise them. **The follow-up audit found that the deficiency was not rectified.** Even at the conclusion of the audit , the head of the Civil Administration and the Water Staff Officer did not possess this authority.

The Resilience of the Transportation Infrastructure to Earthquakes

- **The Fuel Dock at the Haifa Port –** the fuel dock at the Haifa Port, owned by the Israel Ports Company and operated by the Energy Infrastructures Company, transports fuel for exporters and importers. The dock is located in a port established during the British Mandate (1920–1948). The previous audit found that although the fuel dock had been reinforced in the past, due to the age of the dock and its condition, it must be examined to determine whether it is resistant to an earthquake and the danger from potential damage. **The follow-up audit found that the deficiency had been rectified to a small extent.** Planning a new fuel port resistant to earthquakes has been initiated. The port is expected to be operational in 2028. Until then, the project to reinforce the existing fuel port will not be undertaken.

- **The Ashdod Port –** the previous audit found that due to the differences of opinion between Israel Ports Development and Assets Ltd. (IPC) and the Ashdod Port Company and the Haifa Port Company, a risk survey was not conducted to examine the buildings resistance. Therefore, none of the above has complete information on the condition of the properties in the ports and their degree of earthquake resistance. **The follow-up audit found that the deficiency had been rectified to a small extent.** The Ashdod Port Company inspected all the buildings under its

responsibility built before 1980 and found that 96% are not earthquake-resistant. Furthermore, reinforcing the buildings has not yet begun under the responsibility of the Ashdod Port Company since the Ministry of Transport has yet to decide on the party that will reinforce the structures.

- **Ports Under the Responsibility of the Europe Asia Pipeline Company Ltd. (EAPC) –** EAPC operates two oil ports: a pier for crude oil in the port of Eilat and an oil port in Ashkelon. The follow-up audit found that EAPC inspected its longitudinal infrastructure and installed measures against earthquakes, and it reinforced Pier 2 in Eilat. However, about 21% of the buildings EAPC is responsible for (about 1,100 square meters) are not earthquake-resistant.

- **Tunnels –** Netivei Israel (the National Transport Infrastructure Company) is responsible for three tunnels. Netivei Israel has appointed a planning office specializing in tunneling for each of its tunnels to conduct an in-depth survey of the tunnel, prepare a status report on the tunnel's condition, and recommend tunnel maintenance for the next five years. The follow-up audit found that Netivei Israel received the survey results of the three tunnels. However, the Ministry of Transport did not formulate uniform inspection guidelines for all the infrastructure companies and local authorities responsible for the tunnels.

The Resilience of Educational Buildings to Earthquakes

- **Reinforcing Educational Buildings –** in Israel, there are 5,440 educational buildings used by approximately 2.5 million pupils in grades 1–12. The previous audit found that the lack of guidelines and the need to adopt international standards prevented or significantly delayed the reinforcement of the educational buildings. By the end of 2017, in 50 out of about 1,600 educational buildings potentially suited for reinforcement (about 3%), the reinforcement program had been completed or was in advanced stages. **The follow-up audit found that the deficiency had been rectified to a small extent.** Only 87 of 1,600 educational buildings (about 5%) were completely reinforced or were in the execution stages.

- **Reinforcement of Educational Prefabricated Buildings –** the previous audit found that educational prefabricated buildings are not resilient to earthquakes, there is no standard for reinforcing these buildings, and that the reinforcement budget did not include their reinforcing. **The follow-up audit found that the deficiency had been rectified to a small extent.** 166 out of about 1,600 educational (about 10%) of the prefabricated buildings were reinforced. The Ministry of Education has done extensive work to characterize prefabricated buildings. However, the Ministry of Education stated that as of June 2023, the procedure was carried out in approximately 50 local authorities (out of 258 authorities) and that in the authorities examined, a decision was made to demolish and rebuild 27 prefabricated buildings (about 16% of the total prefabricated

buildings) and reinforce two buildings (about 1 % of the total prefabricated buildings).

- **Educational Private Buildings –** the previous audit found dozens of private educational buildings in Israel (in the recognized unofficial system), not owned by the local authority, whose earthquake resistance was not examined. The risks to the thousands of pupils studying in them were not mapped. **The follow-up audit found that the deficiency had been rectified to a small extent.** The Steering Committee and the Ministry of Education were required to address the private educational buildings, map them, and examine the tools to ensure their resistance to all types of earthquakes. Nevertheless, only three out of about 620 (about 0.5%) entered the reinforcement program.

The Resilience of Health Institutions to Earthquakes

- **The Resilience of Government Hospitals –** the previous audit found that the Ministry of Health only partially promoted the reinforcement of the four hospitals selected to undergo reinforcement. **The follow-up audit found that the deficiency had been rectified to a small extent.** Although 13 years have passed since the government's resolution to reinforce hospitals and about five years since the survey was carried out by the Ministry of Health and the Civil Defense Authority (in 2018), the reinforcement of the three hospitals selected to undergo reinforcement (50%) has not been completed. Furthermore, there is no multi-year budget for hospital reinforcement, and in 2018–2023, there was no annual budget for reinforcing the government hospitals.

- **The Resilience of Clalit HMO Hospitals –** the follow-up audit found that six of the seven Clalit HMO hospitals surveyed in 2018 are partially resilient to earthquakes, and the critical infrastructures of five of the seven hospitals are not resilient in an emergency. It was further found that the Ministry of Health transferred NIS 20 million out of the NIS 250 million agreed upon in 2011 (8% of the budget), and the Ministry of Finance did not transfer a budget at all for reinforcing the Clalit HMO hospital buildings and reinforcing their critical infrastructures.

- **The Resilience of Geriatric Institutions –** the previous audit found that the Ministry of Health did not map the state of nursing and geriatric institutions and their resilience to earthquakes. **The follow-up audit found that the deficiency was not rectified.** The Ministry of Health did not map the resilience of all the nursing and geriatric institutions to an earthquake, did not examine with the Ministerial Committee and determine which party should reinforce them, and did not promote an appropriate regulation.

- **The HMO Clinics' Resistance –** the follow-up audit found that the HMOs did not conduct earthquake resilience surveys for the community clinics. In the Maccabi, Meuhedet, and Leumit HMO, 70 out of 468 community clinics (about 15%) were built before 1980. The Clalit HMO, with the most significant number of community clinics (1,600), has no information on the number of rented buildings built before 1980 where some clinics are located. The HMOs did not reinforce the community clinics. The Clalit HMO has reinforced one clinic and is reinforcing, as required, its clinics undergoing renovation.

- **The Resilience of Magen David Adom (MDA – the national first aid provider) Stations –** the follow-up audit found that due to the lack of budget and even though MDA stations are included in group A[19], MDA did not reinforce its stations against earthquakes. The blood bank, a strategic, critical, and unique facility for emergency treatment and functioning, is located in a building that does not meet the standard for building resistance to earthquakes and is supposed to be relocated to a new building in 2023.

The Earthquake Resilience of Auxiliary Units Buildings of the Ministry of National Security

- **The Resilience of Fire and Rescue Stations –** the previous audit found that the Fire Authority did not map the stations that could be damaged by an earthquake. **The follow-up audit found that the deficiency was rectified to a small extent.** Twenty-five fire stations were reviewed, five shut down, and 20 were assigned a level of earthquake resistance. However, seven stations have not been reviewed, and a budget has not been allocated for their review. A budget of NIS 16 million has not been allocated for the reinforcing against an earthquake of 15 fire stations.

- **The Resistance of Israel Police Buildings –** the follow-up audit found that the Police did not carry out an earthquake resilience survey for all 111 stations built before 1980 and did not reinforce the stations that required reinforcing. It was further found that the Police did not check whether the 239 stations built after 1980 meet the requirements of the standard for group A – buildings that all of their systems during and after an earthquake will be able to function.

- **The Resilience of the Prison Service Buildings –** the follow-up audit found that the Israel Prison Service does not yet have a complete mapping of all the prison facilities needing reinforcement. The Prison Service does not have an approved plan detailing which facilities will be closed after the "Eshkol Megido" prison opens and which facilities will continue functioning and may need reinforcing.

19 IS 413 determined that MDA stations are included in group A – a group of buildings of high public importance, that are supposed to function, on all of their systems, during and after an earthquake.

The Resilience of Tourist Tacilities to Earthquakes – the previous audit found that the Ministry of Tourism did not have comprehensive information about hotels in Israel, their proximity to the Syrian-African rift valley, and their resilience to earthquakes according to the existing standards. **The follow-up audit found that the deficiency was rectified to a small extent.** The Ministry of Tourism has only carried out a partial mapping regarding, among other things, the preparedness of the hotels for an earthquake. Still, there is no status report on the condition of the hotels and the extent of their resistance to an earthquake.

The Resistance of Industrial Buildings to Earthquakes

- **Building Standards for Industrial Buildings with Hazardous Materials –** standard 413, titled "Design Provisions for Earthquake Resistance of Structures,"provides a partial solution to buildings that contain hazardous materials. The previous audit found that in 2014, the Ministerial Committee on the Civilian Arena's Preparedness for Emergency Situations, chaired by the Minister of Home Front Defense, tasked the Minister of Construction and Housing with "formulating, through the Israel Standards Institute, one or more Israeli standards for the reinforcing of existing buildings considering the classifications and designations of various buildings, including public institutions, residential buildings, and infrastructure facilities." **The follow-up audit found that as of the audit end date, no standard had been established** by the Standards Institute in cooperation with the Ministry of Environmental Protection for the earthquake resistance of new and existing hazardous materials facilities.

- **Inspections at Hazardous Materials Factories –** the previous audit recommended that the Ministry of Environmental Protection examine the use of existing staff to enforce its directives in earthquakes. Alternatively it should consider authoriz additional officials in the Ministry to conduct audits at hazardous materials factories. **The follow-up audit found that the deficiency was rectified to a small extent.** Given the lack of inspectors in the Ministry of Environmental Protection, the Ministry carried out about 25 annual audits on average in 2019–2022 on the 4,000 hazardous materials factories that should be inspected.

The Insurance Coverage for Earthquakes

- **The Scope of Insurance Coverage in Israel –** in Israel, the scope of insurance coverage for financial damages following natural disasters assessed in the report is 44%[20], about 2% higher than the average in the countries examined but low compared to advanced countries, including France with insurance coverage at 67%, Switzerland 71%, Belgium 73%, Great Britain 75%, New Zealand 77% and other

20 Both for the private and the public sector.

advanced countries with a similar scope of insurance coverage. Furthermore, based on a conservative estimate, as of 2021, between 65% and 70% of the apartments in Israel are covered by earthquake insurance. The follow-up audit found that the Capital Market Authority launched a home insurance calculator and the "Insurance Mountain" software. Still, the audit recommendations to provide financial incentives for the purchase of earthquake insurance and to advertise the benefit of purchasing insurance to the public were not implemented due to the lack of a budget.

- **Right to Financial Compensation from an Insurance Company upon the Occurrence of an Earthquake –** the previous audit found that to receive financial compensation, the insured must complete the repair of the apartment ("rebuilding") within 12 months from the date of the incident and that the extension of the rebuilding period requires coordination between the insured and the insurer. However, the time defined for rebuilding an apartment of up to 12 months is significantly shorter than the time for issuing a building permit and completing construction in Israel, which averages five years. Therefore, without coordination between the insured and the insurer on extending the reinstatement period, there will be no insurance coverage for an earthquake event. **The follow-up audit found that the deficiency was not rectified.** The Capital Market Authority did not extend the rebuilding period in the provisions of the standard policy against earthquake risks. The existing wording remains 12 months, and its extension requires coordination with the insurer.

- The personal accident policy for pupils does not include accidents caused by or following an earthquake, and the insurance companies consider this insurance a significant risk for them and do not wish to insure pupils without this exclusion. It was found that the responsibility for the educational buildings, the pupils, and the employees in the academic buildings is divided between the Ministry of Education and the local authorities. They purchase insurance according to their share of this responsibility. The insurance companies consider earthquake coverage a considerable risk for them and do not wish to insure the pupils without excluding this coverage. On the other hand, the Ministry of Education and the local authorities insure themselves against lawsuits for damages resulting from an earthquake if negligence in their conduct is proven. As part of the Compulsory Education Law, the State requires every parent in Israel to send their child to school. Therefore, the State is responsible for the safety and security of the pupils during their stay in the educational institution and to the extent possible, including during an earthquake. This situation is critical since approximately 95% of schools and educational institutions are not resistant to earthquakes.

Standardization and Methodology

- **Standards for New Engineering Buildings –** the Standards Committee for Design and Construction determined that a set of standards for engineering

buildings must be prepared as part of Israeli Standard 413 for earthquakes. The previous audit found that since 2006, standards were set for four types of buildings. The standardization committee determined that nine additional standards should be established to complete the standards for engineering buildings. **The follow-up audit found that the deficiency was not rectified.** The Standards Institute did not complete the missing design standards.

- **Adoption of International Standards –** in May 2012, the Central Committee for Israeli Standards 5100, which deals with building standards, decided to consider adopting international building design standards. The previous audit found that the standard adoption process had not been completed. **The follow-up audit found that the deficiency was rectified to a small extent.** Eleven years after the decision of Central Committee 5100, the adoption of the standard for reinforced concrete buildings has not yet been completed.

Airports – the previous audit noted that the 2017 earthquake drill at the Airports Authority showed that if Ben Gurion Airport is damaged, the alternative airports provide only a limited and inadequate response, both in civil aviation and receiving international aid. **The follow-up audit found that the deficiency had been rectified to a large extent.** Discussions on the need for an alternative airport took place, and as a result, alternative airports were chosen for Ben Gurion Airport in the event of an earthquake, areas of responsibility were determined for the various bodies as well as procedures for the operation of alternative airfields. However, the audit found that a plan for establishing an additional airport was not initiated.

Preparation for Long-term Rehabilitation – the State Comptroller's Office commends the establishment of the inter-ministerial team in 2022 and the policy formulation for long-term rehabilitation following an earthquake. Given the long time needed to identify the needs necessary for the above rehabilitation (the initial rehabilitation of the population and the rehabilitation of the community and the physical infrastructure), it is essential to determine a balanced and coherent policy on the subject in advance.

Establishment of the 'Truah' System – government resolution 4738 from 2012 established a national real-time earthquake and tsunami warning system (the "Truaa System") that will detect earthquakes using seismic stations located throughout the country, some of them close to active geological faults, and will warn of them ahead of time. The previous audit found that the Truaa System has not yet been completed. **The follow-up audit found that the deficiency was fully rectified.** In January 2022, the Truah System was completed, and in October 2022, the Geological Institute finished building the 120 seismic stations. The State Comptroller's Office commends the Geological Institute, the Home Front Command, and the Steering Committee for

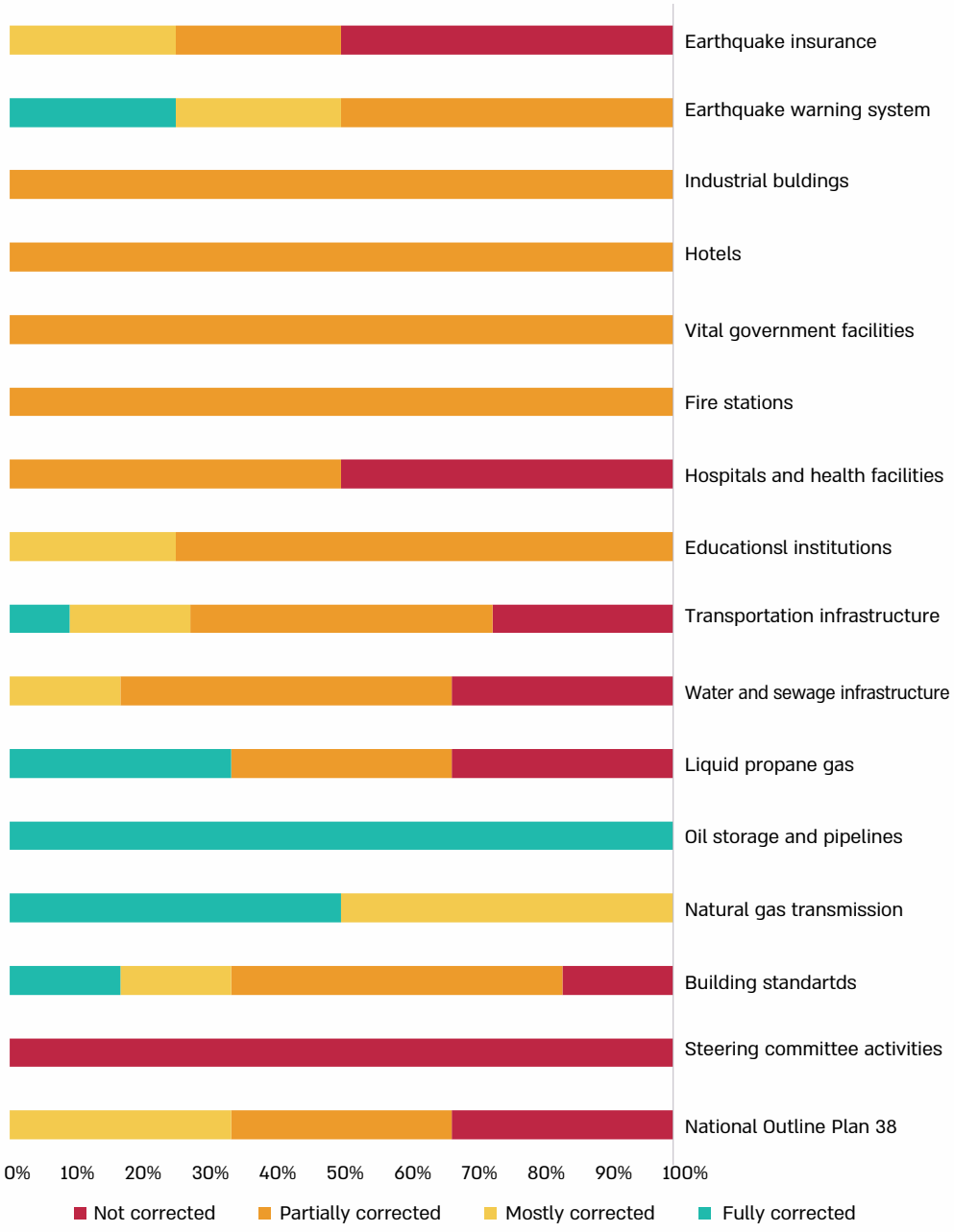
completing the construction of the Truah System and making it operational and the construction of the 120 seismic stations.

Updating the Ground Acceleration Map – the previous audit found that the acceleration map does not meet the standards used in developed countries. **The follow-up audit found that the deficiency had been rectified to a large extent.** The Geological Institute updated the maps, including research, data collection, examining the model, and running it.

Land Transportation – the previous audit found that there is no complete map of all the intercity roads in the country and that no government body, knows the condition of the city road infrastructures and does not know if bridges located in the local authorities are earthquake resistant. **The follow-up audit revealed that the deficiency had been largely rectified.** Netivei Israel stated in its answer that it has information on the condition of most of the intercity roads under its responsibility. However, neither the Ministry of Transport nor Netivei Israel have information on the condition of the intercity roads, which is under the jurisdiction of the other infrastructure companies. Without updated information, the decision-makers will have difficulty formulating a comprehensive situation report of traffic options after an earthquake. It should be noted that some of these intercity traffic routes lead to essential facilities, such as hospitals, ports, and energy infrastructures.

Development of the System for Earthquake Assessment by Measurements for Integrated Response (EQ – AMIR) for Damage Assessment – at the audit end, the system for rapid damage assessment and for forming a situation report, developed by the Steering Committee, became operational. During an earthquake, the system will synchronize all bodies by connecting them to the data of the initial situation assessment. The system will enable the prioritization of the response of the operative forces.

Mapping the Government Bodies' Preparedness to Earthquake by Topic



Key Recommendations

- It is recommended that the Prime Minister, the Minister of Defense, the Minister of Construction and Housing, and all the ministers who are members of the Ministerial Committee on the Civilian Arena's Preparedness for Emergency Situations, in cooperation with the National Security Council and the Inter-Ministerial Earthquake Preparedness Steering Committee, accelerate the State of Israel's preparedness for earthquakes, form a long-term action plan and allocate a multi-year dedicated budget to realize the goals defined therein – the sooner, the better.

- It is recommended that the Minister of Construction and Housing, the Housing Cabinet, the Planning Administration, the Urban Renewal Authority, and the Ministry of Construction and Housing, in cooperation with the Earthquake Preparedness Steering Committee, set goals, including deadlines for reinforcing buildings against earthquakes, frequently monitor the implementation of plans according to Amendment No. 139 to the Planning and Building Law and Government Resolution 875 and ensure that they constitute a viable alternative to NOP 38 for reinforcing buildings within the shortest possible time and in financing and creating incentives for performing the reinforcement.

Sectoral Recommendations

- **Gas –** it is recommended that the Ministry of Energy require the installation of devices preventing gas leaks on liquid propane tanks installed before 2012, either through a ministerial order or through a change in Israeli Standard (IS) 158 or in any other legal way. It is further recommended that the Ministry of Energy regularly transfer to the National Fire and Rescue Authority, as soon as possible the database on the LPG tanks, including their location and the location of the devices for their automatic closure during an earthquake. Furthermore, it is recommended that the Ministry of Energy and the National Fire and Rescue Authority set the conditions required for protecting the data transferred regularly online to the Fire and Rescue Authority and the information about all the tanks (including those installed before 2012).

- **Electricity –** it is recommended that the Israel Electric Company (IEC) maintain its facilities in order of priority and their proximity to the risk areas, as well as update the reinforcement status of the facilities and components of the electricity grid. This action will enable the IEC to prepare an updated situation report on these operations and the extent of the resources necessary to complete necessary repairs.

- **Water –** it is recommended that the Water Authority continue to inform all water suppliers, including those in the rural sector, regarding the Ministry of Energy's service goals for the water sector after an earthquake. These goals include resuming the water supply to 50% of all residents' homes that were disconnected within seven days and resuming the water supply to 90% of the residents whose homes were disconnected within 30 days. It is

recommended that it be done through preparedness inspections and preparation for water supply and sewage disposal in an emergency and a water crisis within a reasonable time.

- **Transportation –** it is recommended that the Ministry of Transport, in cooperation with the Ministry of Defense, the Airports Authority, the IDF, and the Home Front Command, coordinate to operate the Ramon Airports and Airport B as alternatives to the Ben Gurion Airport during an earthquake and frequently practice operating them. It is recommended that the Ministry of Transport and the Administration of Shipping and Ports determine which agency will reinforce the buildings under the responsibility of the Ashdod Port Company and the other ports. Given the extent of the Europe Asia Pipeline Company Ltd. (EAPC) infrastructure and the seismic risks it faces, EAPC should reinforce its buildings. It is recommended that the Ministry of Transport coordinate a complete and comprehensive mapping of the transportation infrastructure, including the bridges in the cities and local authorities. This information will enable the Transport Ministry to obtain a comprehensive situation report of the transportation infrastructure risks in each local authority.

- **Education –** it is recommended that the Ministry of Education accelerate the reinforcement of educational institutions. The Ministry of Interior should cooperate with the local authorities to remove bureaucratic barriers, complete the inspection of all the prefabricated buildings in educational institutions, and decide whether to prohibit their use or upgrade them. The Steering Committee and the Ministry of Education should encourage the educational institutions in private buildings to implement the reinforcement program and determine the actions necessary to ensure that all pupils in Israel will study in earthquake-resistant buildings.

- **Health –** it is recommended that the Ministries of Health and Finance budget the reinforcement of the government hospitals that are not earthquake resistant and reinforce them while focusing on hospitals in the risk areas.

- **The Ministry of National Security Bodies –** the Police, in cooperation with the Ministry of National Security, should conduct a resilience survey of all buildings built before 1980, reinforce the buildings that require reinforcing, and ensure that all police stations can function after an earthquake. The Prison Service, in cooperation with the Ministry of National Security, should carry out a resilience survey of all the prison facilities built before 1980 and reinforce the facilities that require reinforcing in priority order, considering their location in risk areas and the plans regarding the continuation of their usage, in a multi-year work plan.

- **Insurance –** it is recommended that the Capital Market Authority consider changing the provisions of the standard policy by extending the time for the rebuilding of a structure to a period corresponding to the expected time in Israel for its reconstruction. This period must be longer than the current period of 12 months. Moreover, the Capital Market Authority should ensure that the policy clarifies the period for rebuilding the structure. Extending the rebuilding period in the standard policy will eliminate the need for each insured to negotiate an extension with their insurer. This is very important as the insurer

is interested in not extending the period. The Capital Market Authority should also examine the gap between the extent of insurance coverage in Israel, which is low as compared to advanced countries. It is further recommended that the Ministry of Education, the Ministry of Finance, and the Israel Federation of Local Authorities reconsider the State's liability for pupils injured by earthquakes while they are in the educational frameworks. This will enable parents to expand the student's insurance policy to include earthquake coverage.

Summary

A powerful earthquake in Israel is a matter of time. Therefore, it is essential to prepare for it. A poignant reminder of the importance of preparing for an earthquake can be gleaned from past events in other countries where advance preparation had a decisive effect on protecting human life and mitigating the damage caused to infrastructure, buildings, and property.

In February 2023, two devastating earthquakes took place in Turkey and Syria, claiming the lives of 59,000 people.

The follow-up audit found that government agencies have not used the five years since the previous audit to improve earthquake preparedness and that the country is still unprepared for an earthquake.

The Prime Minister, the Minister of Defense, the Minister of Construction and Housing, and all the ministers who are members of the Ministerial Committee on the Civilian Arena's Preparedness for Emergency Situations, in cooperation with the National Security Council and the Inter-Ministerial Earthquake Preparedness Steering Committee, should accelerate the State of Israel's preparedness to earthquake, form long-term action plans and allocate a multi-year dedicated budget to realize the goals defined therein – the sooner, the better.

The Rectification Extent of the Key Deficiencies Noted in the Previous Report

The Audit Chapter	The Audited Body	The Deficiency/ Recommendation in the Previous Audit Report	The Rectification Extent of the Deficiency Noted in the Follow-up Audit			
			Not Rectified	Slightly Rectified	Significantly Rectified	Fully Rectified
The Steering Committee's powers	The Steering Committee	The Steering Committee is not authorized to compel the government ministries, infrastructure bodies, and local authorities to follow its instructions.				
Redundancy in the natural gas sector	The Ministry of Energy	The economy's dependence on natural gas and the risks specified in the preparedness framework and other reference scenarios further illustrate the need to establish an additional natural gas entry to the land system to ensure redundancy in gas supply to the economy and decentralization of risks.				

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The study of seabed behavior	The Geological Institute	The absence of complete data on the behavior of the seabed in the Israeli region during an earthquake makes it difficult for the Geological Institute to determine the degree of damage that may be caused to infrastructures located at sea.				
Fuel infrastructure – the layout of fuel lines	The Ministry of Energy	Only one private electricity producer (PEP) is connected to the fuel lines, with a production capacity of about 840 megawatts. NOP 37/3 will only allow PEPs whose production capacity is higher than 250 megawatts to be connected to the Energy Infrastructures Company fuel pipeline megawatt.				
Coping with damage to fuel infrastructure	The Ministry of Energy	The Ministry of Energy did not instruct the fuel companies on the manner and frequency of earthquake resistance tests to be conducted on fuel infrastructure.				

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			Not Rectified	Slightly Rectified	Significantly Rectified	Fully Rectified
LPG infrastructure in residential buildings – the obligation to install a device for the prevention of gas leakage during an earthquake	The Ministry of Energy	The application of IS 158 regarding installing devices to prevent gas leaks in an earthquake only concerns accumulators installed after 2012.				
LPG infrastructures in residential buildings – the absence of information about the liquid propane gas tanks held by the Ministry of Energy	The Ministry of Energy	The Ministry of Energy's updating of the database of LPG tanks has not been completed.				
LPG infrastructures in residential buildings – transfer of information about gas accumulators to the Fire Authority	The Ministry of Energy	Information about the location of LPG gas accumulators and the devices installed to prevent leaks has not been forwarded to the Fire Authority.				
Water infrastructure – the goals of the water supply service after an earthquake	The Water Authority	Not all water suppliers are familiar with the service goals set by the Ministry of Energy.				
A standard for the resistance of water infrastructures to earthquakes	The Water Authority	There is no standard for reinforcing existing water tanks.				

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Municipal infrastructure	The Water Authority	According to the guideline documents of the Water Authority, the water corporations were not required to indicate which infrastructures are not earthquake resistant, whether surveys were conducted to locate the infrastructures that need reinforcing, how they are inspected, and the plans to reinforce them, if necessary.				
Local authorities without water corporations and other water suppliers	The Water Authority	The Water Authority does not have the tools to inspect all 1,100 water suppliers and the water suppliers in Judea and Samaria, and it is not authorized to compel them to carry out the necessary reinforcement.				

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Local authorities without water corporations and other water suppliers	The Water Authority	The head of the Civil Administration and the Water Staff Officer are not authorized to compel the water suppliers in Judea and Samaria to reinforce and supervise them, not even through licenses that the Water Staff Officer issues them. Even though the Water Authority is responsible for providing professional guidance to the Water Staff Officer in Judea and Samaria, it is not authorized or has the resources to guide the water suppliers in Judea and Samaria or audit them.				
Sewage infrastructures	The Water Authority	The Water Authority has not yet signed agreements with chemical toilets companies to guarantee their supply to the affected areas and regulate how they will be delivered to disaster areas.				

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Transportation infrastructure – Airports	The Ministry of Transport	Despite the resolution adopted in 2016 as part of the preparations, there was no organized staff work to establish an additional airport for Israel, no appropriate orders were prepared, and no necessary adjustments were made at the alternative airport to accommodate transport aircraft of the expected size.				
Seaports – the fuel dock	Israel Ports Company	The resistance of the fuel dock to an earthquake and the inherent danger if damaged by it were not examined.				
Mapping of buildings in the port	Haifa Port	Due to the differences of opinion between Israel Ports Development and Assets Ltd. (IPC) and Haifa Port, no risk survey was carried out regarding the buildings in the ports. Therefore, no party had complete information on the buildings' condition and degree of earthquake resistance.				

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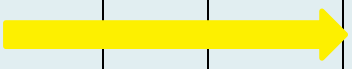
Mapping of buildings in the port	Ashdod Port	Due to the differences of opinion between Israel Ports Development and Assets Ltd. (IPC) and Ashdod Port, no risk survey was carried out regarding the buildings in the ports. Therefore, no party had complete information on the buildings' condition and degree of earthquake resistance.				
Bridges and intercity roads under Netivei Israel's responsibility	Netivei Israel – National Transport Infrastructure Company Ltd.	Netivei Israel performed comprehensive inspections of only seven bridges and reinforced only three, of which only two were from the first risk group and one from the second risk group.				
Formulation of guidelines for reinforcing bridges in the absence of a standard	The Ministry of Transport and Standards Institute	The absence of a binding standard for reinforcing existing bridges.				

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			Not Rectified	Slightly Rectified	Significantly Rectified	Fully Rectified
Netivei Israel's authority vis-à-vis the infrastructure companies	The Ministry of Transport	There is no regulation as to Netivei Israel's authority to issue the infrastructure companies instructions and guidelines in preparation for an emergency, nor as to the subordination of the companies to its instructions.				
Information and guidance regarding all intercity roads	The Ministry of Transport	Netivei Israel has no authority over the infrastructure companies.				
Information on the condition of the intercity roads	The Ministry of Transport	The Ministry of Transport does not have information on the condition of all intercity roads in the country.				
City roads	The Ministry of Transport	There is no complete mapping of all the city roads in the country, and no government body knows the condition of the city road infrastructures and does not know if bridges located in the local authorities are earthquake-resistant.				

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Bridges, tunnels, and railways under the responsibility of Israel Railways	Israel Railways	An engineering survey conducted by Israel Railways found that 13 of the 55 bridges passing over the railways need reinforcing and rehabilitation. At the end of the audit, the reinforcement work was in the planning stages.				

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Reinforcement of educational facilities	The Ministry of Education	By the end of 2017, the state of reinforcement of about 1,600 educational buildings potentially suited for reinforcement works was as follows: in 50 educational buildings (about 3%), the reinforcement works had been completed or were in advanced stages; 20 – were approved for demolition and rebuilding; 40 – were in various planning stages and in 135 schools the reinforcement project was across multiple starting stages. In the remaining 1,355 buildings designated for reinforcement, the reinforcement project has not yet started, and they will undergo inspection and reinforcement in the coming years, according to the allocated Ministry of Education budget.				

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Reinforcement of educational facilities – utilization of budget	The Ministry of Education	The budget for reinforcing educational buildings in 2010–2017 – a joint budget of the Ministry of Education and the Ministry of Finance, from NIS 12.4 to 80 million – was not fully utilized. The average budget utilization rate in these years was about 49%.			→	
Prefabricated buildings	The Ministry of Education	The reinforcement budget did not include the reinforcement of the schools located in prefabricated buildings, and there was no information on the scope of the prefabricated buildings in the schools or the number of pupils studying in them.		→		
Educational facilities housed in private structures	The Ministry of Education	Thousands of pupils in Israel study in buildings that have not been inspected for earthquake resistance and the risks to the pupils have not been mapped.		→		
Government hospitals	The Ministry of Health	The Ministry of Health only partially reinforced the four hospitals selected to undergo reinforcement.		→		

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Geriatric institutions	The Ministry of Health	The Ministry of Health has no information on the degree of resistance of the nursing and geriatric institutions in a powerful earthquake.				
Reinforcement of fire and rescue stations	The Israel Fire and Rescue Authority	the Fire Authority did not have a map of the stations that an earthquake could damage.				
Government buildings and critical public buildings are under the responsibility of the Government Housing Administration	The Government Housing Administration	A mapping conducted by the Government Housing Administration in 2012 found that of the 6,500 buildings under its management, about 1,110 were built before 1980, and every day, hundreds of thousands of people stay in them.				
Tourist facilities	The Ministry of Tourism	The Ministry of Tourism did not have comprehensive information about hotels in Israel, their proximity to active faults, and their resistance to an earthquake according to existing standards.				

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Industrial buildings – construction standards for industrial facilities with hazardous materials	The Ministry of Environmental Protection	There is an absence of a standard for planning new and existing facilities with hazardous materials.		→		
Industrial buildings – audits in facilities housing hazardous materials	The Ministry of Environmental Protection	The Hazardous Materials Division in the Ministry of Environmental Protection, which has the sole authority to conduct audits in these facilities, does not have the necessary personnel.		→		
NOP 38	The Ministry of Construction and Housing	Over a decade after NOP 38 was approved, it did not achieve its main goal – to promote, to a large extent, the reinforcement of residential buildings against earthquakes.	→			
NOP 38 – NOP 38 application database	The Ministry of Construction and Housing	Two years and more after the Ministry of Housing established the computerized system to collect data on the implementation of NOP 38, as of the previous audit end, February 2018, the Ministry of Housing did not have this data.			→	

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NOP 38 – reinforcing residential buildings in public housing and restoration areas	The Ministry of Construction and Housing	The Ministry of Housing has allocated budgets to reinforce buildings in cities along the Syrian-African rift valley. Still, the chance that reinforcement works will be carried out in the future in a building that has already been renovated as part of an urban renewal project is meager.				
Standardization and methodology – updating construction standards	The Geological Institute	The acceleration map of IS 413 for an earthquake does not meet the standards used in developed countries.				
Standardization and methodology – standards for new engineering structures	The Israel Standards Institute	Standardization is absent for seven types of engineering structures, and the standardization committees have begun initial preparatory work on two additional types of structures.				

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Standardization and methodology – standards for reinforcing existing buildings and improving their earthquake resistance	The Israel Standards Institute	IS 413, Part 3, assesses the resistance of existing buildings and their improvement but does not apply to engineering buildings, hazardous materials facilities, and bridges.				
Standardization and methodology – building design (building)	The Israel Standards Institute	Five years after adopting the government's resolutions in January 2012, the Standards Institute has not yet completed Phase 1 of adopting the European standards for design standards in construction, which are also relevant to earthquakes.				
Standardization and methodology – material standards (concrete)	The Israel Standards Institute	Updated European standards for concrete (material) have not yet been adopted.				
Standardization and methodology – design standards	The Israel Standards Institute	In the past decade, since the recommendation of the standardization committee until the audit end date in 2018, the required parts were not enacted into IS 940.				

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The Truaa System – establishment of the Truaa System	The Home Front Command and the Geological Institute	Even though the Geological Institute is cooperating with the Steering Committee and the Home Front Command to reduce the timetables for establishing the Truaa System, the system has not yet been completed.				
Warning systems in recognized educational institutions	The Steering Committee and the Ministry of Education	Few local authorities chose not to install warning systems in their schools to avoid bearing the cost of their annual maintenance.				
Warning systems in unofficial educational institutions	The Ministry of Education	Installing warning systems in educational institutions that are not owned by a local authority or a non-profit is subject to the discretion of these institutions.				

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			Not Rectified	Slightly Rectified	Significantly Rectified	Fully Rectified
Warning systems in public places	The Steering Committee	There are no set guidelines or standards for installing local warning systems (except for schools); anybody who decides to install such a system is forced to define for himself the criteria for its operation, i.e., the conditions for declaring an earthquake.		→		
Financial and insurance preparedness for the risks of earthquakes – insurance of public assets against earthquake damage	The Accountant General	The Accountant General does not have current data on the scope of assets in local authorities and public bodies, the amount of insurance they purchased, the extent of insurance coverage of their assets, and the terms of deductibles.			→	
Financial and insurance preparedness for earthquake risks – the households insured with an insurance policy against earthquakes	The Capital Market Authority	The rate of apartments insured against earthquake damage was 65% in 2010.		→		

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			Not Rectified	Slightly Rectified	Significantly Rectified	Fully Rectified
Financial and insurance preparedness for earthquake risks – the amount of time required for reinstatement of the building	The Capital Market Authority	To receive the right to financial compensation, the insured must begin the construction within a reasonable time after the loss or damage, and in any event, must complete building the apartment, within 12 months from the date of the insurance event.				
Financial and insurance preparedness for earthquake risks – insurance coverage in the education system for earthquake risks	The Ministry of Education	The student insurance policy does not cover damage caused by an earthquake or a resulting accident.