



State Comptroller of Israel | Annual Report 72a – Part Two | 2021

Netivei Israel – The National
Transportation Infrastructure
Company Ltd.

Inter-City Roads Maintenance – Follow-up Audit



Inter-City Roads Maintenance – Follow-up Audit

Background

Netivei Israel – National Transportation Infrastructure Company Ltd (the Company or Netivei Israel) is a government company responsible for planning, developing and maintaining the network of inter-city roads in Israel and for the development of railway lines. The Company is responsible for an inventory of approximately 8,500 km of roads including all components – pavements, marking and painting, drainage, road signs and signposting – and including 9,000 road structures and bridges (in 2021, according to Netivei Israel's data).

Transportation infrastructure is of the utmost importance for the proper and efficient functioning of Israel's economy, and therefore the great importance of road maintenance and preventing neglect. The roads network serves as a vital infrastructure for all the residents of Israel, particularly periphery residents, and the maintenance activities contribute to ensure the road safety.

In 2017 the State Comptroller, published as part of Annual Report 68a a chapter on "The maintenance of inter-city roads" (the previous audit), in which the following deficiencies were detailed: reduction of the budget designated for road maintenance at Netivei Israel, the lack of supervision by the Ministry of Transport over road maintenance, the maintenance of pavements not according to a comprehensive plan, and more. The follow up audit indicated that since 2017 the Company has taken many actions to rectify the deficiencies presented in the previous audit and to improve the level of road maintenance regarding all components. However, since 2019 the budgets allocation to the Company for road maintenance works have decreased, and therefore there is a decrease in the scale of maintenance works performed.



Key figures

Approx. 8,500 km	x 5.4	x 3-3.5	Approx. 29%
The length of roads, including all components, maintained by Netivei Israel (2019).	The growth rate in bridges and road structure inventory under Netivei Israel maintenance between years 2005–2021 (around 9,000 structures, of which 700 are bridges).	The growth rate in number of vehicles and mileage in 2018 compared to 1990.	The growth rate in length of roads under Netivei Israel maintenance between 2010 and 2018.
NIS 1.1 billion	NIS 2.4 billion	Approx. 34%	Approx. 1% only
The Netivei Israel budget for road maintenance, restoration and resurfacing for 2019.	The optimal maintenance budget required for Netivei Israel in 2019 according to the model it constructed.	A decrease in the updated maintenance budget for 2019 compared to the original budget according to the 2017 agreement.	The extent of expected road resurfacing in 2021 of the total roads network.

Audit actions



From October 2020 to February 2021 the State Comptroller's office conducted a follow-up audit following the previous audit (the current audit or the follow up audit), where the actions taken by Netivei Israel to rectify the deficiencies raised in the previous audit were examined as well as the level of improvement following the rectification. This audit was conducted mainly at Netivei Israel, with supplementary examination at the Ministry of Transport and the Ministry of Finance.



Key findings



The Company's Road maintenance budget – in the previous audit the State Comptroller's office recommended, among others, that "the Ministry of Transport and Ministry of Finance together with the company, examine whether the allocation of funds for road maintenance provides an appropriate solution to requirements". The follow up audit indicated that the actual updated road maintenance budget of Netivei Israel for 2017 and 2018 adhered to the agreed budget of 2016, and even higher; whereas the budget for 2019–2021 (same number of years) is significantly lower compared to the planned budget according to that agreed in 2016 – from an average of NIS 1,375 million to an average of NIS 1,106 million for these years (a decrease ranging from 4.72%–34.4%). It appears that this deficiency was not rectified by the follow up audit completion date.



Maintenance of pavements and road resurfacing – the previous audit indicated that: "In 2015–2016 the Company performed resurfacing works on 168 road segments, which are only 6% of the roads that do not adhere to standard pavement indexes as shown by pavement surveys performed by the Company. The Company budgets do not suit the road network requirements, and many road segments requiring maintenance are not included in the annual work plan". Moreover, the Company noted in the previous audit, that it wished to invest NIS 550 million in resurfacing, but in fact only NIS 238 million were approved. The follow up audit indicated that the extent of road resurfacing (in km) performed by the Company in 2020 dropped by 37% compared to 2017 – from 655 km to 410 km – and that the main reason for this is the absence of budget designated for road resurfacing. This trend is expected to continue in 2021, where the forecast drop for 2021 is even greater – a rate of 91% compared to 2017 – from 655 km to only 60 km – according to the total budgets allocated for this purpose at the audit completion date. It was found that this deficiency was not rectified by the follow up audit completion date.



The Ministry of Transport supervision and control over bridge maintenance – in the previous audit it was found that: "The Ministry of Transport did not deal with bridge maintenance and did not issue instructions for their maintenance. For this reason, the Company operates in this area without any professional support, and the professional instructions it prepared on the subject of bridge maintenance were not approved by any external entity". The follow up audit indicated that the Ministry of Transport has not yet prepared or initiated the preparation of instructions and procedures that regulate bridge maintenance. It should be stated that in the area of lighting and road marking the Ministry of Transport has set instructions and procedures. It was found that this deficiency was not rectified by the follow up audit completion date.



Maintenance of lighting facilities – the previous audit stated: "According to the Company data, the last survey on the matter was conducted in 2014 which showed that 580 junctions and over 1,200 segments are not illuminated according to these instructions [according to Ministry of Transport instructions from 1996]". The follow up audit found that the Company is handling road lighting according to an approved annual budget, and that the updated budget for maintaining lighting facilities for 2020 decreased by 27% compared to the updated budget for maintaining lighting facilities the previous year.



Road markings – the previous audit found that in November 2014 the Transportation Planning Department at the Ministry of Transport published directives for selecting and implementing standard materials for road marking. According to these directives Netivei Israel is required to use bi-component marking materials with long life spans or permanent sheeting with estimated durability of three to five years. The previous audit further indicated: "By audit completion date [previous] March 2017, the Company had not implemented the directives nor prepared for their implementation, mainly because no budgets had been allocated for this activity". The follow up audit found that at the follow up audit completion date the Company continued to use one-component ("simple") marking materials, mainly to renew the old existing markings. At the same time, it was said that the Company is acting in as much as possible to use bi-component marking materials in some of the new projects. The follow up audit indicated that this deficiency had been rectified only slightly, mainly due to the absence of budgeting for painting.



The road maintenance projects transferred from local authorities to the Company responsibility – the previous audit shows that the Company did not utilize of all the budgets allocated for this project during 2012–2016. In 2015–2016 this situation worsened as the project budgets increased significantly, but the performance rates were very low (45% and 35% accordingly). The follow up audit indicated that the Company fully utilized the budget allocated for maintenance of roads transferred to its responsibility from local authorities during 2018–2020, but there is a decrease in the level of the annual budget - from NIS 55 million in 2018 to NIS 15 million in 2020.








Deficiencies rectified by Netivei Israel since the previous according to the budgets allocated for the performance of maintenance actions:

- A. Adapting the bridges under its responsibility to earthquake resistant.
- B. Increasing lighting at junctions and unlit road segments; publication of a tender for replacing existing road lighting with led lighting, which is more environmentally friendly and with great savings potential.



- C. Using budgets to handle roads transferred from local authorities to the Company responsibility and roads that do not have a clearly defined entity responsible for maintenance.
- D. Activity to improve Company control of its maintenance actions.



Key recommendations

-  The Ministry of Transport and the Ministry of Finance should formulate and approve the maintenance model as determined in Appendix E of the Operating and Financing Agreement. It should be stated that the budget allocation should also relate to the aspect of the major effect to be caused as a result of delaying preventive maintenance that may become breakdown maintenance, which will lead to higher costs compared to preventive maintenance.
-  The Company should continue to promote bridge maintenance on a regular basis, prioritize bridges with inferior maintenance conditions and present the Ministry of Transport and the Ministry of Finance with the importance of allocating appropriate budgets for bridges maintenance, both to prevent safety hazards and to reduce maintenance costs.
-  It is recommended that the Ministry of Transport and the Ministry of Finance examine the budget allocated for road resurfacing and adjust it to requirements. Incompatibility will in the future lead to higher costs for repairing roads, whereas the future saving exceeds the expected investment. An investment of NIS 1 will yield a future saving of NIS 2.76. According to the Company data, the lost benefit to the economy as a result of delaying maintenance actions for road resurfacing ranges between NIS 88 million and NIS 450 million¹.
-  The Company should operate with the Ministry of Transport and the Ministry of Finance to allocate appropriate budgets for road lighting, due to the importance lighting facilities have in preventing severe road accidents in general and in unlit junctions in particular.
-  The Company, together with the Ministry of Transport and the Ministry of Finance should examine the road marking directives and decide on the allocation of an appropriate budget for their implementation. Marking roads with better quality materials may improve road safety and even lead to savings in the interim and long term.

¹ Depending on the various scenarios Netivei Israel presented to the State Comptroller during the follow up audit period, and according to the "Road Maintenance Budgeting Model 2019" document of September 2019. The scenarios present various frequencies of performing road resurfacing actions – between 8 to 10 years, which is a reasonable and worldwide common period of time for performing road resurfacing actions; between 10 to 12 years; between 12 to 14 years – according to the ratio of benefit for the economy and the resurfacing costs.





The key findings of the follow-up audit – inter-city roads maintenance

Audit Chapter	The audited body	the deficiency raised in the previous report	The measure of deficiencies rectification raised in the follow up audit			
			Not rectified	slightly rectified	Considerably rectified	Fully rectified
Netivei Israel Company road maintenance budget	Ministry of Transport, Ministry of Finance	The Ministry of Transport and the Ministry of Finance, together with the Company, should examine whether the funds allocated for road maintenance provide an appropriate response to the Netivei Israel requirements. Moreover, they should examine whether the budget division between areas is optimal.				
Pavement maintenance and road resurfacing	Netivei Israel	In 2015–2016 the Company performed resurfacing works on 168 road segments, which are only 6% of the roads that do not adhere to standard measures, as shown by surveys conducted by the Company.				





Audit Chapter	The audited body	the deficiency raised in the previous report	The measure of deficiencies rectification raised in the follow up audit			
			Not rectified	slightly rectified	Considerably rectified	Fully rectified
	Netivei Israel	Around 20% of the roads included in the annual work plan are not determined by the Company surveys, but by professional entities in the various areas. No professional reasons for the selection process of these roads by the Company were found.				
Bridge maintenance	Netivei Israel	According to a Company review, deficiencies were found in many structures: 145 structures were categorized as "severe"; 517 structures were categorized as "very bad"; 442 were categorized as "bad".				
	Netivei Israel	In the earthquake resistance survey conducted by the Company in 2011, 72 bridges were rated under two severe categories. At the audit completion date, March 2017, the Company had restored two bridges only for earthquake resistance.				



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			Not rectified	slightly rectified	Considerably rectified	Fully rectified
	Ministry of Transport	The Ministry of Transport did not deal with bridges maintenance nor did it issue any directives for their maintenance. As a result, the Company operates in this field without any professional support and the professional directives it prepared have not been approved by any external entity.				
Maintaining lighting facilities	Netivei Israel	In the last survey on road lighting conducted in 2014 it was found that 580 junctions and over 1,200 road segments are not illuminated according to directives.				



Audit Chapter	The audited body	the deficiency raised in the previous report	The measure of deficiencies rectification raised in the follow up audit			
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Road painting	Netivei Israel	In November 2014 the Transportation Planning Department at the Ministry of Transport published directives for the selection and implementation of standardized products for road marking. By the audit completion date, March 2017, the Company had not implemented nor prepared to implement these directives because no budgets had been allocated for this activity.				
Supervision of contractors work	Netivei Israel	It was found that in July 2016, when the contract with the companies performing the integrated supervision expired, the Company ceased this activity.				



Audit Chapter	The audited body	the deficiency raised in the previous report	The measure of deficiencies rectification raised in the follow up audit			
			Not rectified	slightly rectified	Considerably rectified	Fully rectified
Maintenance of roads transferred from local authorities to the Company responsibility	Netivei Israel	The Company did not fully utilize the budgets allocated for this project during 2012–2016. In 2015–2016 this situation worsened: the project budgets increased significantly, but the performance rates were very low (45% and 35% accordingly).				
The road maintenance project with private sector participation	Netivei Israel	Although five years have already passed since commencing operation of the project, the Ministry of Transport and the Ministry of Finance have not yet performed any analysis to examine the advantages and disadvantages of the PFI model and its feasibility.				



Summary

Maintenance of roads, bridges and road structures is important on many aspects: road safety, preventing erosion of roads financial value and preventing greater future damage, advantages from saving in travel time of road users, etc. Road maintenance becomes more important in face of the increase in distances travelled and density of traffic on the roads, and due to the large investments made over the past decades, investments that have extended the roads and increased the number of bridges for maintenance. To perform maintenance activities an appropriate budget is required that will enable Netivei Israel to optimally maintain the transportation infrastructures.

The follow up audit indicated that the Company took action to rectify the deficiencies raised in the previous audit. Most of the deficiencies that were not rectified, derived from reduction in the maintenance budget allocated to the company by the Ministry of Transport and the Ministry of Finance.

As stated in the previous audit, the Ministry of Transport and the Ministry of Finance, together with the Company, should examine whether the allocations of funds for road maintenance provides an adequate solution to requirements, particularly in view of the new maintenance model developed by the Company in 2017. They should review whether budget division between the performance areas is optimal. These actions are vital for the Company to improve in the areas where the reality is disparate to necessity, particularly concerning pavements, road resurfacing, road markings and lighting. The Company should act to rectify the deficiencies in the maintenance of Hadera region according to the PFI model and consider feasibility of its expansion.

