

Re: Request for Information (RFI)

On: Special-Purpose Safety Devices for the Fast Lane Project

1. General

Netivei Ayalon Ltd. (hereinafter: **“Netivei Ayalon”**) hereby requests information on the subject of Special-Purpose Safety Devices for the Fast Lane Project (hereinafter: **the “Request”**), as detailed below.

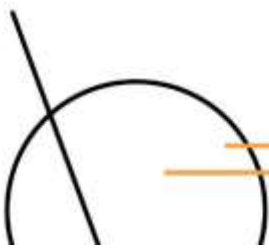
2. Background

2.1. Neteivi Ayalon is a government company, dealing, pursuant to government decisions and its constitutional documents, in the management, planning and execution of transportation projects. Since its founding, Neteivi Ayalon accumulated vast engineering and managerial experience in large and complex city and metropolitan projects, and is at present one of Israel’s leading companies in the planning and execution of projects in the field of infrastructures and transportation.

2.2. As part of its activities, Neteivi Ayalon promotes public transportation in Israel, with a focus on creating sustainable transportation solutions in the city and metropolitan area, with the purpose of reducing traffic congestions, improving the service to passengers and ensuring road users’ safety. As part of this, the Company is at present promoting the execution of the **“Fast Lane”** project (hereinafter: **the “Project”**).

2.3. The purpose of the Project is to build approximately 90km of fast lanes along Highway 20 and along Highway 2, which will include traffic control and toll systems, integrated transport hubs (ITH) with “park and ride” facilities and public transportation hubs in Rishon Lezion and Shfayim and operating a shuttle system, control centers and accessory facilities.

2.4. The Project is divided into two main segments:



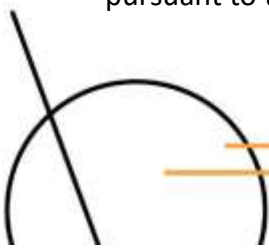
- 2.4.1 Highway 20, from Mevo Ayalon Interchange to Shfayim (30km in each direction) - Adding a fast lane in each direction, separated from the normal lanes with a 60cm separation, with flexible delineators, except for the areas of the entrance and exit gates along the road (hereinafter: **“Segment A”**).
- 2.4.2 Highway 2, from Shfayim Interchange to Netanya Interchange (Road No. 57) (15km in each direction) - 2 fast lanes in the center of the road, in the form of reversible lanes, with closing and opening entrance and exit gates in accordance with the direction of traffic: in the morning - to the south, in the afternoon - to the north (hereinafter: **“Segment B”**).

3. Request for Information

- 3.1. The purpose of this Request is to receive information on the safety devices required for the purpose of the final traffic arrangements for the Project, in the following distribution:
- 3.1.1. In Segment A - A device for separating the fast lane from the ordinary lanes.
- 3.1.2. In Segment B - Devices for managing and regulating the traffic in the area of the entrance gates to and exits from the reversible lanes.
- 3.2. The device described in Section 9.1 is intended for Segment A, and the devices described in Sections 9.2 to 9.4 are intended for Segment B.
- 3.3. This request is for receiving information only.
- 3.4. Further to receiving the data, the Company reserves the right to contact any of the responders and/or additional factors in order to receive a solution and/or any additional information required by the Company.

4. The Respondents

- 4.1. This Request is intended for entities/companies that possess the information required in order to respond to this Request.
- 4.2. Any person who believes himself to possess the information and experience in the fields detailed in this Request, is requested to respond to this Request by completing **Appendix A**, attached hereto, pursuant to the provisions detailed therein and together with additional relevant documents.



5. Response to the Request

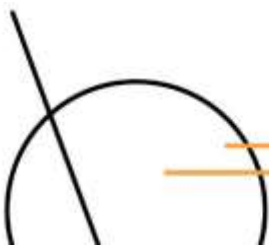
As part of the response to the Request, we request that the following information be provided:

- 5.1. **General and business details on the respondent:** Name of the respondent, general description of the entity/company (years of professional experience, number of employees, key projects in the last 5 years etc.), existing certificates and approvals (ISO, etc.), contact information etc. The response should be sent using the form attached as **Appendix A** hereto.
- 5.2. **All of the information detailed in Appendix A hereto, with regard to the device/s regarding which the respondent to the Request desires to provide information**, including answers to the questions detailed with respect to each of the devices.
- 5.3. Estimated cost of the device/s (with/without installation).
- 5.4. Information on whether the respondent is a local supplier, or alternatively the possibility of engaging a local supplier.
- 5.5. Will the respondent supply the required device/s in practice.
- 5.6. Information on existing regulations for the device/s (or regulation in process) which meets the requirements of the Israeli Interministerial Committee for Inspecting Traffic and Safety Devices, which shall allow the approval of the device/s by the committee.

The response must include details regarding the issues detailed in Sections 5.1-5.6, to which the requirements of Appendix A to the Request must be attached, according to the relevant device.

The response to the Request must be submitted in Hebrew or in English only, together with the documents and details required as detailed above, including any relevant information such as presentations, videos, pictures, documents, trials, studies etc., by email to: galm@ayalonhw.co.il , no later than 15/05/2019.

Questions and requests for clarification with regard to the Request may be submitted by no later than **30/04/2019** , by email to galm@ayalonhw.co.il.

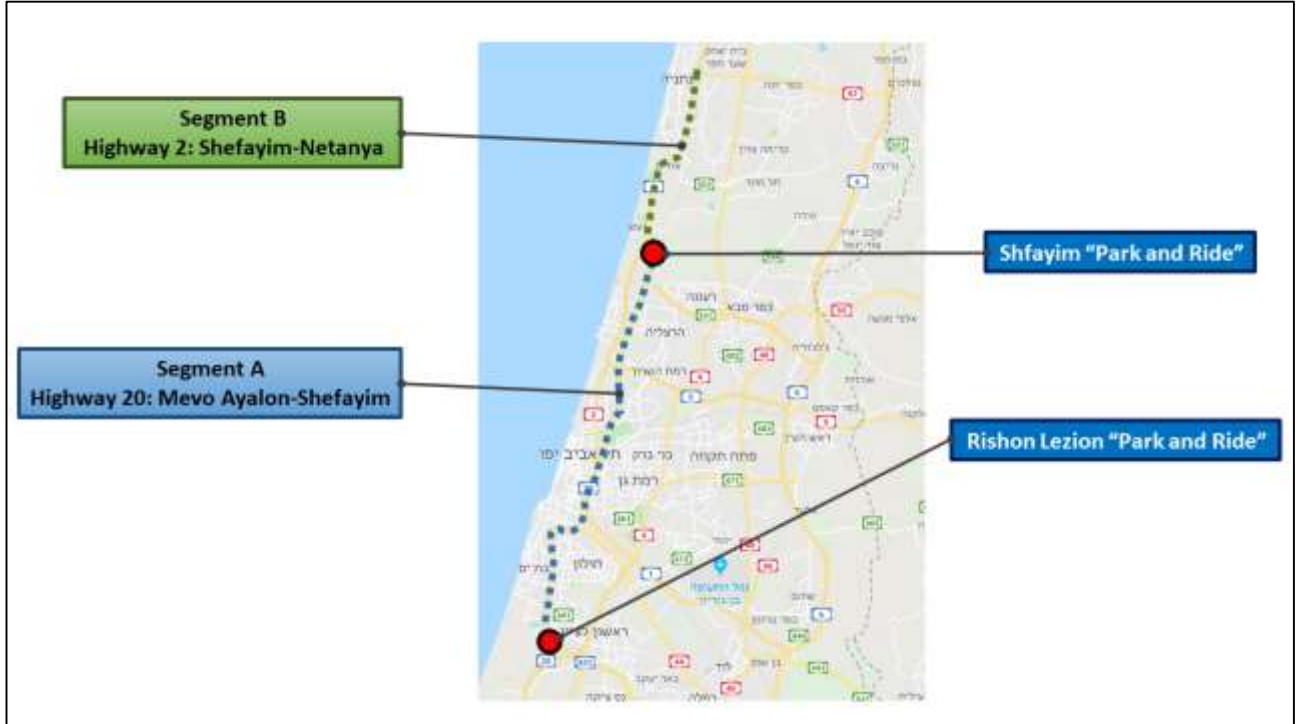


6. **Manner of Submitting the Response**

6.1. The response shall be submitted in writing to the following email address: galm@ayalonhw.co.il, care of Gal Movshovitz. The Respondents should note that a file containing **Appendix A** to the Request was uploaded to the Company's website.

7. General Description of the Project

Diagram 1: Diagram of the Project's Environment, Divided into Segments



7.1. Segment A - On a suburban freeway (speed limit - 90km), a flexible means of separation is required between the fast lane (one in each direction, the leftmost in each carriageway) and the other ordinary lanes, as detailed in Section 9.1 below.

Diagram 2: Typical Cross-Section in Segment A (Highway 20)

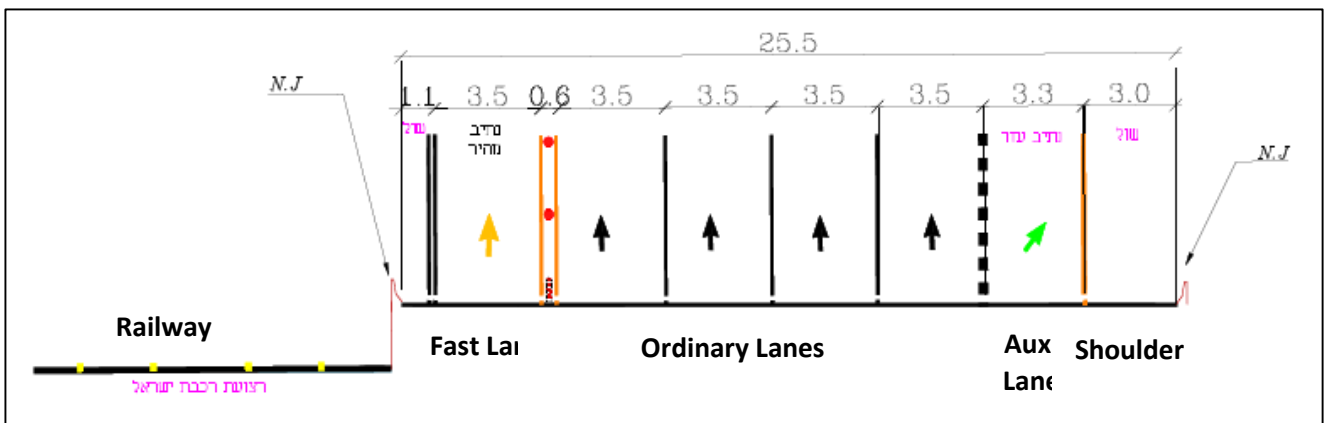
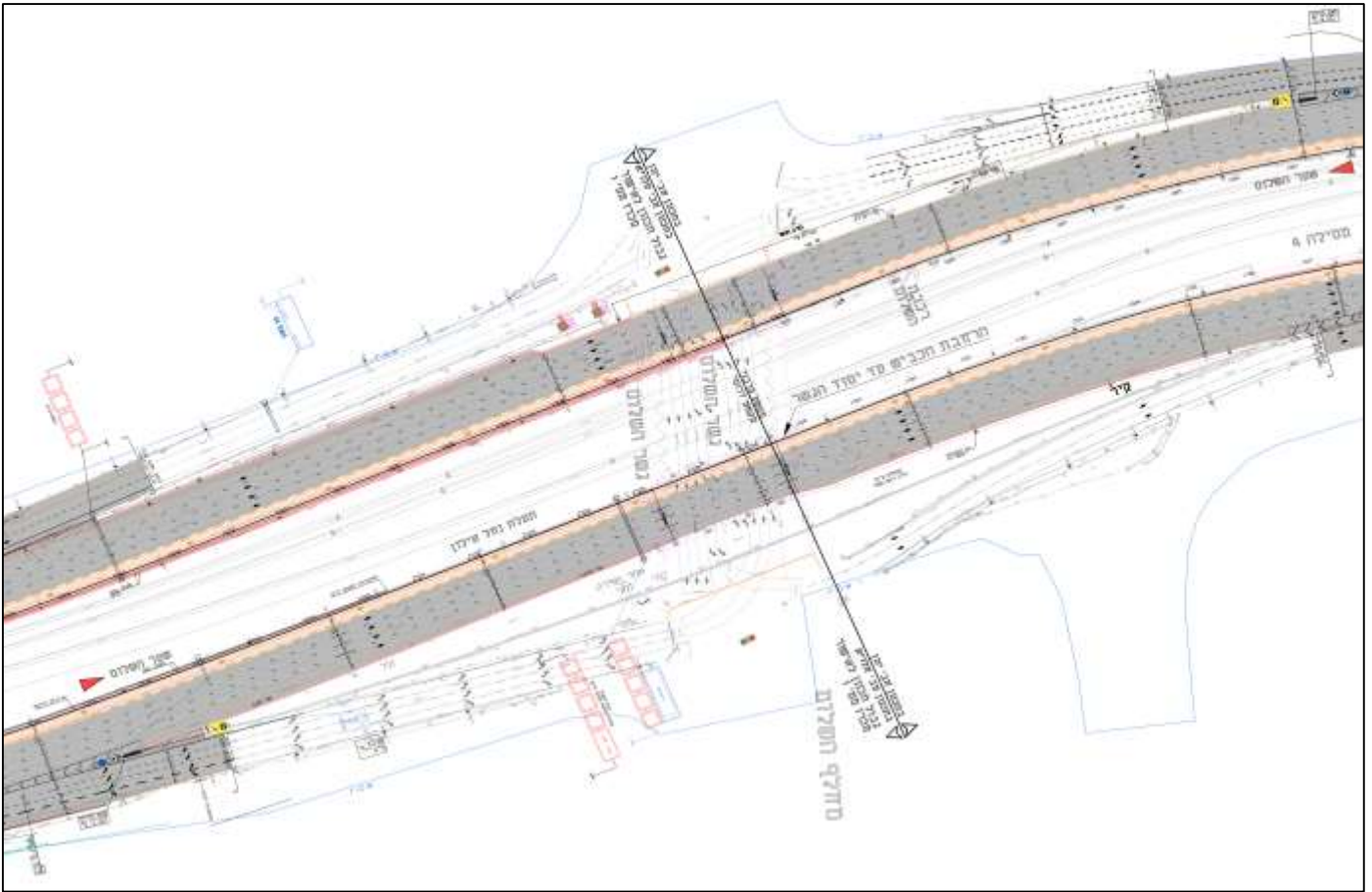


Diagram 3: Sample Gate in Segment A – Ha'Shalom Interchange, Highway 20



7.2. Segment B - In the area of the middle separator of a fully-interchanged intercity road, two lanes are paved which are designated for use in peak hours as a lane for public transportation, high occupancy vehicles (3+) and toll-paying vehicles (excluding trucks). The entire two-lane carriageway is designated for travel to the south in the morning peak hours, and to the north in the evening peak hours, with a speed limit of 90km. At other times, the lanes shall be vacant for the purpose of maintenance and control. The pavement is a conventional asphalt pavement.

The two lanes are separated throughout from the lanes besides them, with continuous safety barriers, on H2 level pursuant to European Standard EN 1317-2. On one side the barrier is a continuous concrete barrier with a STEP-like profile, with a height of 90cm above the road surface. On the other side, the barrier alternates between a two-sided steel barrier and a concrete barrier.

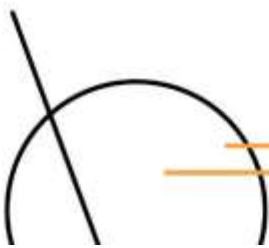
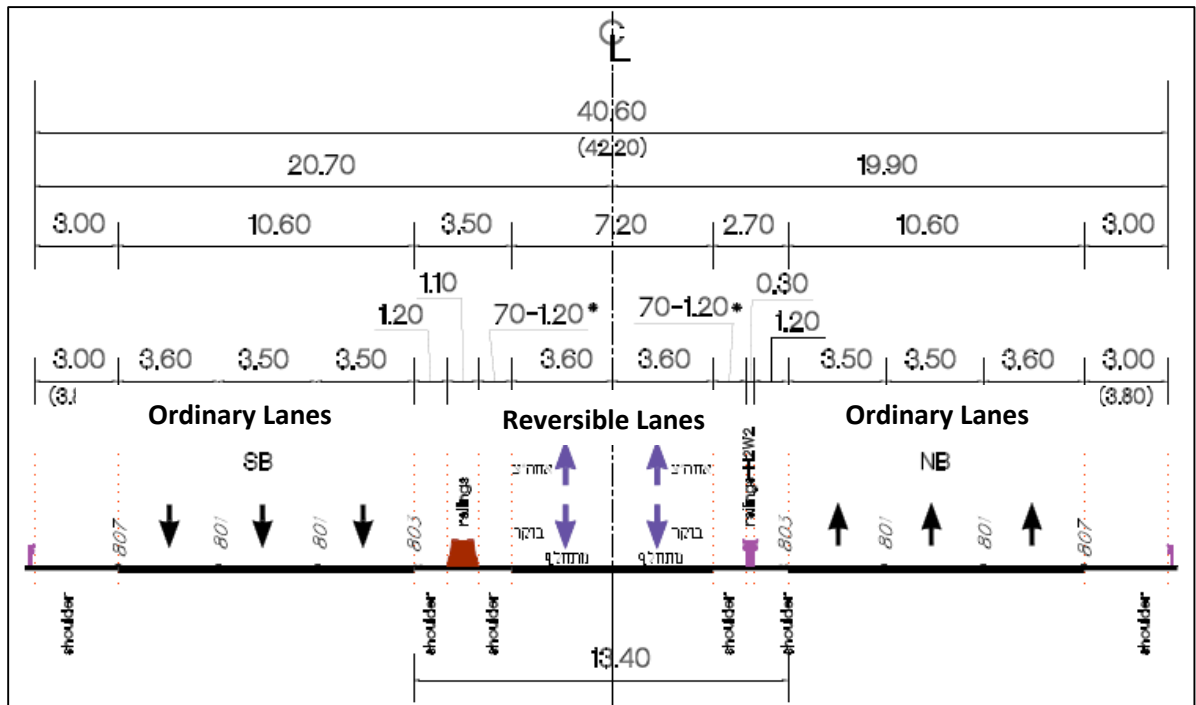
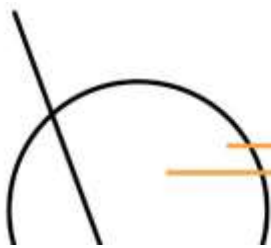


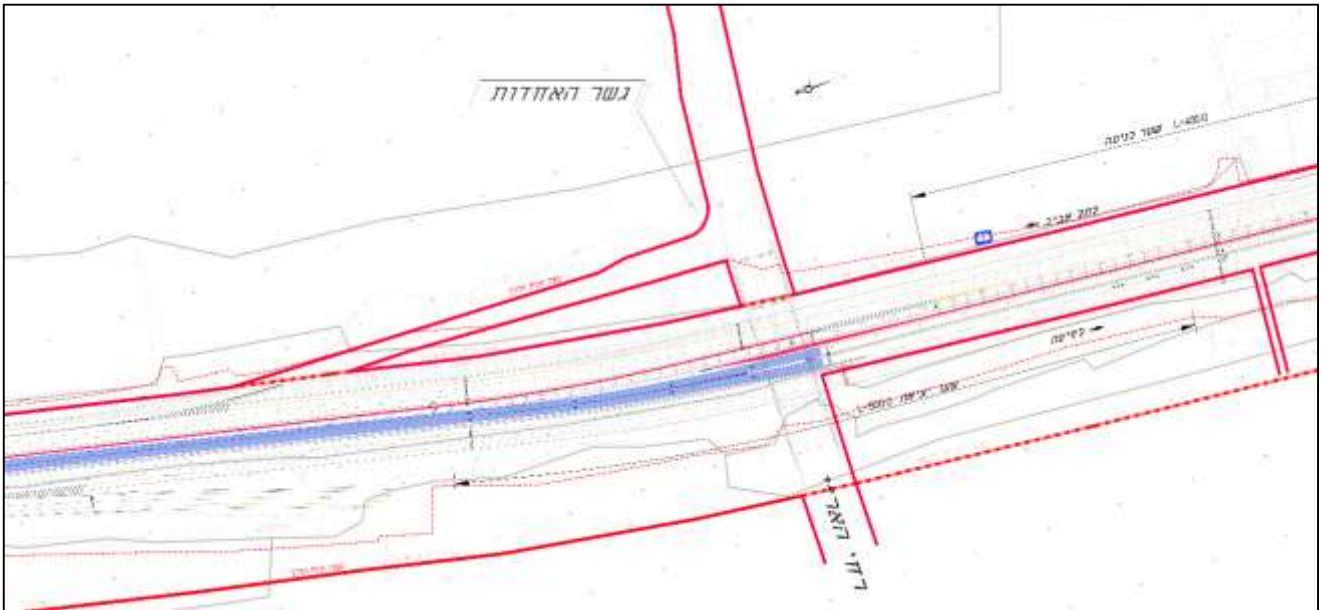
Diagram 4: Typical Cross-Section in Segment B (Highway 2)



There are 3 sites with entrances to the middle separator from one of the directions in the designated hours - and these entrances require making openings in the barrier from one of the sides of the separator, in order to bring in one lane of traffic in the direction of demand. The opening is created by creating an overlap with a width of 4.6m between two STEP-profile concrete barriers, which overlap in a short segment. At the 3 sites, it is necessary to prevent the risk of exiting by mistake to the left, an exit which will cause wrong-way driving in the adjacent ordinary lanes. This requires the devices detailed in Sections 9.2 and 9.3 below.



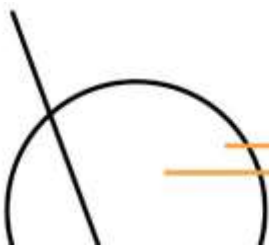
**Diagram 5: Sample Gate in Segment B – Ha'Ahdut Bridge, Highway 2
 (Afternoon hours - the reversible lanes are operating to the north)**



7.3. The entire lane shall be operated by a concessionaire, from a control center; the same concessionaire shall also install and maintain all of the lane's command and control systems. Instructions to drivers regarding open or closed lanes shall be given using a system of variable electronic lane control signs (LCS), to be installed above the lanes and operated according to the direction of traffic on the lanes.

8. General Instructions

8.1. The respondents to this Request are requested to state what data and/or documents, included in the response submitted by them, constitute in their opinion a trade secret. Subject to any law, Netivei Ayalon shall keep confidential and shall not disclose and/or transfer any information that constitutes a trade secret, which it received under this Request, excluding to employees of Netivei Ayalon and consultants on its behalf, which require such information for the purpose of performing their functions. In addition, it is clarified that the respondents to the Request may submit documents and certificates in which they redacted details that are not relevant to this Request.



- 8.2. This Request does not constitute any obligation by Netivei Ayalon to publish a tender on the subject of this Request, and responding to this Request shall not constitute a condition to participating in any tender held following it or grant any advantage in any such tender, if published, and shall not guarantee compliance with the threshold conditions or any other condition on the matter of such tender.
- 8.3. For the avoidance of doubt, it is hereby clarified that this Request or the response to it shall not constitute any stage of and/or basis for any engagement by Netivei Ayalon or any person on its behalf with any of the respondents to the Request, and the Request shall not grant any factor any right and/or expectation of any type.
- 8.4. If Netivei Ayalon decides to publish a tender as foregoing, or engage with any of the respondents in any other way pursuant to the provisions of any law, it shall be allowed to demand goods and/or services that are different from those presented in this Request, and shall be allowed to set additional or different conditions to those presented in this Request, at its professional discretion.
- 8.5. Netivei Ayalon shall be allowed to request clarifications, completions or additional information from any factor responding to this Request, or from other entities, and also visit its sites or places where it conducts its operations, all as it sees fit.
- 8.6. Netivei Ayalon shall be allowed to invite any of the respondents to present its response to its representatives. It is clarified that Netivei Ayalon is not obligated to invite all respondents, but reserves the right to hold a meeting to which the respondents shall be invited.
- 8.7. Each and every respondent to this Request declares that it agrees that Netivei Ayalon shall be allowed to use the information provided by it, in whole or part, for the purpose of preparing a tender or for any other need as it sees fit, excluding information which it was explicitly stated constitutes the respondent's trade secret.
- 8.8. The respondent to this Request declares that it waives in advance any claim, including on intellectual property matters, and/or claim and/or demand against Netivei Ayalon or any person on its behalf and/or against the Ministry of Transportation, for the information included as part of its response to this Request, or as part of the requests for clarification following it, if any.
- 8.9. Netivei Ayalon may cancel this Request at any stage for any reason.

8.10. All expenses entailed in submitting the response to the Request shall apply to the respondent to the Request only, and in no case shall the respondent to the Request be entitled to any refund and/or any compensation and/or indemnification for any expenses and/or damages caused to it in connection to the response to the Request and/or preparation and submission of the response.

8.11. It is clarified that Netivei Ayalon does not obligate to select any device and/or service offered under this Request, and that it is allowed not to implement any device and/or service offered under this Request, all at its exclusive discretion.

8.12. By the very submission of the responses, the respondents declare that they agree to all terms of the Request, and waive any claim and/or demand and/or suit in connection with the contents of the Request.

9. Details of the Required Devices

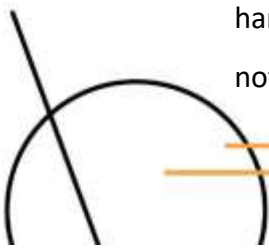
9.1. Delineator

9.1.1. Product description:

Flexible means of separation for the purpose of separating the fast lane (the leftmost in each carriageway) and the other ordinary lanes. The delineators shall be placed in a separator of 60cm in width, which includes two color stripes, each 10cm wide, and at a distance of 3.5m-5.0m between every two delineators. Delineator height: 36in, diameter: 3in.

9.1.2. Product requirements:

- The details of paint and reflective materials must comply with the requirements of the standard by the Israeli Interministerial Committee for the Inspection of Traffic and Safety Devices.
- The paint composition approved in Israel is a black delineator with a yellow reflect material (since it is implemented in a public transport lane). This, unless the committee decides that it is possible to allow other paint combinations also.
- The delineator must withstand many repeated collisions by vehicles, while on the other hand not posing any risk to any vehicle that collides with it. Since detailed guidelines have not yet been formulated for the requirements of such a mandatory test, in the United



States or in Europe, at this stage the US guidelines (NCHRP Report 350: Devices in Work Zones - Category 1) are adopted.

- In addition to the requirements dealing with self-certification of this product by the manufacturer, the delineators must undergo another test practiced in the USA for products of this type, performed by AASHTO as part of the National Transportation Product Evaluation Program (NTPEP).
- The compliance of the product with European Standard EN 12899-3 must also be examined.

9.2. Retractable barrier

9.2.1. Product description:

The entrance to/exit from the fast lanes is performed through gates that allow “sliding” from the ordinary lanes to the fast lane, or alternatively “sliding” from the fast to the ordinary lanes.

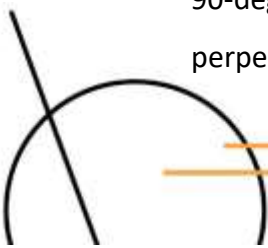
It is necessary to warn the driver against “sliding” in the direction of a gate, at hours when the direction of traffic in the fast or ordinary lanes is opposite to such’s driver’s direction of travel.

The solution to this need requires bars that open to a position where they are perpendicular to the vehicle’s direction of travel, to warn the driver against continuing driving in this direction. Operation shall be electrical, by control from the control center.

The bars shall always be in one of two positions:

1. Retracted position - The bar is parallel and above the concrete STEP-profile safety barrier. In this position, the bar must allow the STEP barrier to operate as necessary.
2. Activated position - The bar shall rotate to be perpendicular to the concrete barrier, above the lane to be blocked.

At the top of the concrete barrier, a motor box will be installed, connected to the top of the barrier, with a connection to a power and communication source. The bar shall move with a 90-degree fan movement - between the position parallel to the barrier and the position perpendicular to the barrier.



The bars shall be spread over distances of hundreds of meters, with distances at the range of 20m to 40m between one bar and the next.

The length of the bars shall be variable, at the range of 1.5m to 6.5m. The bar's vertical dimension, perpendicular to the road, shall be 30cm, and shall include reflective adhesive markings.

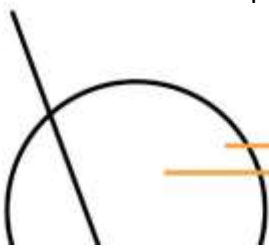
9.2.2. Product requirements:

- All bar components shall be made of a stainless material.
- The arm's surface shall be made of a nondestructive material, in case of impact by an erring vehicle, including the vehicle's windscreen.
- In case of breakage of the bar upon impact, it shall break into pieces that are as small as possible, without any sharp edges, which may cause a flat tire or damage to any other vehicle passing next to the site of the event.
- It must be possible to open and close the bar manually, in case of power source failure.
- In the closed position, there shall be no protrusion by the engine box and the retracted bar, beyond the profile line of the STEP barrier, so that the safety level of the installed barrier is not undermined.
- The bar must meet the requirements of the MASH or NCHRP 350 test relevant to a product of this type. Any other product must comply with the requirements of the European standard, if applicable, as well as the US requirements stated above.
- Details of the paint and light reflection must meet the US MUTCD requirements.

9.3. Mobile safety barrier

9.3.1. Product description:

In order to hermetically close the openings between the 2 barriers, so as to prevent entry by drivers to the lane designated for opposite traffic, an engineering solution for a device that can connect to one of the concrete barriers must be presented, and that can switch between two possible positions:

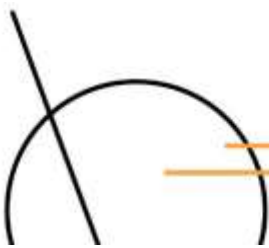


1. Parallel in the direction of the lanes, continuing one of the concrete safety barriers.
2. Diagonally shifted, with a shift of at least 1:10, so as to create a continuity between the 2 separated concrete barriers, in such a manner as to prevent potential passage by a private vehicle.

Operating the barrier between the two positions must be with independent movement by the barrier, through remote operation from the control room. However, opening to traffic in the opposite direction shall not occur before human control by the operator, to ensure that the opening was indeed closed as necessary.

9.3.2. Product requirements:

- Certificate of compliance with tests on at least the H2 level, pursuant to European Standard EN-1317, 2010 or any later edition, from an institute certified to inspect safety barriers, or alternatively compliance with the requirements of MASH tests in the USA, on at least the TL-4 level.
- Made of durable materials.
- Does not require regular maintenance between operations, excluding periodic maintenance according to the manufacturer's instructions.
- Possibility of remote operation, with no need for any additional intervention when closing or opening.
- Provides an unequivocal indication of open/closed position.
- May be anchored at one end to a concrete STEP-like safety barrier.
- Preferably - Optional connection of a portable or fixed energy absorbing device on its other end.
- Details of the paint and light reflection must meet the US MUTCD requirements.



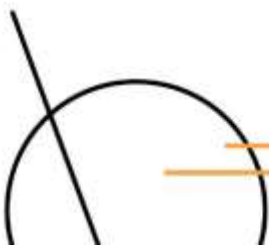
9.4. Dynamic Routing

9.4.1. Product description:

Dynamic light-emitting indicators, intended to allow changing and dynamically indicating the traffic lanes in accordance with the permitted traffic directions, in all hours of day.

9.4.2. Product requirements:

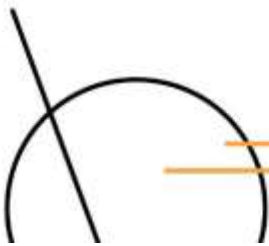
- Bidirectional lighting - The indicators must be observable in 2 traffic directions.
- A profile of up to 5mm from the pavement surface (embedded into the pavement).
- Visible to a range of at least 500m.
- Waterproof/impermeability - IP68.
- Operational temperature range: -10°C to +75°C
- Diode color (to enable presentation of a different hue in each direction of approach): Red, white, yellow or green.
- Bidirectional communication: Remote operation and broadcast of information at least on the basic level of the unit's proper working order status.
- Landline or wireless connection.
- Separate function ability of the indicator system (independent rather than serial communication, so that in case of failure in one indicator, the remaining series of indicators continues to function).
- Service period - A minimum of 5 years.
- Preference to devices that allow identifying exceptional events such as a slowdown in traffic, extreme weather conditions.
- Preference for devices that enable dimming in accordance with lighting conditions.
- Relevant standards: ASTM D4280, EN-1463.
- The device must have an installation history in the service of at least one intercity highway in the world.



Appendix A1 - Response for Delineator

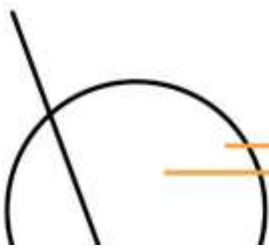
A. General details on the respondent

Respondent name	
General description of the entity/company (years of professional experience, number of employees, key projects in the last 5 years etc.).	
Existing certifications and approvals (ISO etc.)	
Contact Person	
Address	
Tel.	
Mobile	
Email	
Details of the documents attached to the response (company profile, certifications and approvals, brochures, test results etc.)	



B. Questions relating to the delineator

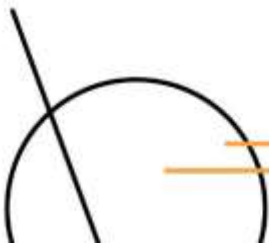
1. Are you a manufacturer/know of a manufacturer of delineators that can meet the described conditions?
2. Was the device tested according to the generally-accepted US standards on this matter - self-certification and the AASHTO NTPEP testing program?
3. Was the device tested according to European Standard EN 12899?
4. Are there any test reports from an independent institute, and is it possible to receive them?
5. Can we receive the device's specifications?
6. What are the existing colors and color combinations of the delineator and light reflector?
7. How is the delineator anchored to the asphalt?
8. Will the device's manufacturer be willing to appoint a local supplier in Israel?
9. What are the details of the training and certificate required for the device's installation and what are the details of training and certification required for its maintenance?
10. Is a warranty given for the device, and for what period?
11. Will the manufacturer be willing to undertake for a period of time for supplying the product and technical support to the local representative?
12. Is there any data on projects where the manufacturer's device was used? If so - Are there independent opinions by the road authorities?
13. What is the estimated cost of the delineator, including assembly?



Appendix A2 - Response for Retractable Barrier

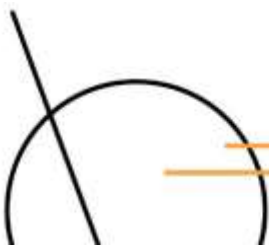
A. General details on the respondent

Respondent name	
General description of the entity/company (years of professional experience, number of employees, key projects in the last 5 years etc.).	
Existing certifications and approvals (ISO etc.)	
Contact Person	
Address	
Tel.	
Mobile	
Email	
Details of the documents attached to the response (company profile, certifications and approvals, brochures, test results etc.)	



B. Questions regarding the retractable barrier

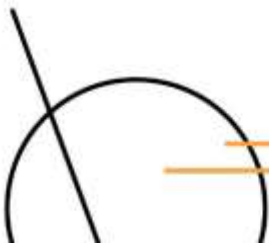
1. Are you a manufacturer/know of a manufacturer of lane blocking bars, that can meet the described conditions?
2. Was the device tested pursuant to European Standard EN 1317-2 or the US MASH standard? If tested, what functioning level did it receive?
3. Are there any test reports from an independent institute, and is it possible to receive them?
4. Can we receive the device's specifications?
5. What are the details of the anchoring solution of the side anchored to the safety barrier? State the dimensions.
6. How much time does closing take from the moment of activation?
7. What is the command and control solution for the device? What is the maximum distance from which the device can be operated?
8. Is there an indication for the fully closed and fully open positions?
9. Will the device's manufacturer be willing to appoint a local supplier in Israel?
10. What training and certification are required for installing the device, and what training and certification are required for its operation?
11. Is a warranty given for this device? For what period?
12. For what period can the manufacturer undertake supply of spare parts for the device and technical assistance to the local representative?
13. Is there any data on projects where this device was used? If so - Are there opinions by the authorities that used it?
14. What is the estimated cost of the barrier/arm, including installation?



Appendix A3 - Response for the Mobile Safety Barrier

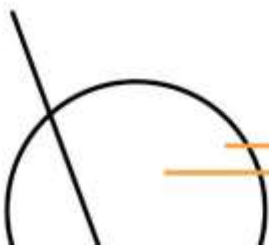
A. General details on the respondent

Respondent name	
General description of the entity/company (years of professional experience, number of employees, key projects in the last 5 years etc.).	
Existing certifications and approvals (ISO etc.)	
Contact Person	
Address	
Tel.	
Mobile	
Email	
Details of the documents attached to the response (company profile, certifications and approvals, brochures, test results etc.)	



B. Questions regarding the mobile safety barrier

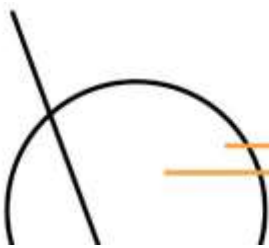
1. Are you a manufacturer/know of a manufacturer of mobile safety barriers, that can meet the described conditions?
2. Was the device tested pursuant to European Standard EN 1317-2 or the US MASH standard? If tested, what functioning level did it receive?
3. Are there any test reports from an independent institute, and is it possible to receive them?
4. Can we receive the device's specifications?
5. What is the anchoring solution of the side fixed to the safety barrier?
6. Is it possible to connect to one of the device's sides a forgiving-design or energy absorbing barrier end device?
7. What is the length of the device required for closing an opening with a width of approximately 5m?
8. How much time does closing take from the moment of activation?
9. What is the command and control solution for the device? What is the maximum distance from which the device can be operated?
10. Is there an indication for the fully closed and fully open positions?
11. Will the device's manufacturer be willing to appoint a local supplier in Israel?
12. What training and certification are required for installing the device, and what training and certification are required for its operation?
13. Is a warranty given for this device? For what period?
14. For what period can the manufacturer undertake supply of spare parts for the device and technical assistance to the local representative?
15. Is there any data on projects where this device was used? If so - Are there opinions by the authorities that used it?
16. What is the estimated cost of the barrier, including installation?



Appendix A4 - Response for Dynamic Routing

A. General details on the respondent

Respondent name	
General description of the entity/company (years of professional experience, number of employees, key projects in the last 5 years etc.).	
Existing certifications and approvals (ISO etc.)	
Contact Person	
Address	
Tel.	
Mobile	
Email	
Details of the documents attached to the response (company profile, certifications and approvals, brochures, test results etc.)	



B. Questions regarding dynamic routing

1. Are you a manufacturer/know of a manufacturer of “smart” light-emitting indicators that allow communication between the units and/or communication and command from a central traffic control and management center?
2. Were the devices tested pursuant to Draft Standard PR-EN1463-03?
3. Does the proposed device provide any solution to the functional requirements set forth in Draft Standard 1463-03?
4. Are there any test reports from an independent institute, and is it possible to receive them?
5. Can we receive the device’s specifications?
6. What are the anchoring solution of the indicator in the pavement and the embedding depth?
7. Is there any option for independent solar-powered devices?
8. What is the maximum number of indicators that can be connected serially?
9. What is the service/declared period of the devices on a suburban freeway such as Highway 20 - Netaivei Ayalon?
10. Is there any load limit (the devices are designated for public transport lanes)?
11. Is it possible to dim the lighting level according to the time of day under the external lighting conditions?
12. Will the device’s manufacturer be willing to appoint a local supplier in Israel?
13. What training and certification are required for installing the device, and what training and certification are required for its operation?
14. What is the operating voltage of the devices?
15. For what period can the manufacturer undertake supply of spare parts for the device and technical assistance to the local representative?
16. Is there any data on projects where this device was used? If so - Are there opinions by the authorities that used it?
17. What is the estimated cost of one unit, including installation?

