

(Coat of arms)

Environment State Bureau

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In Riga

Opinion No. 5

**The environmental impact assessment statement on the construction of the bypass
(Ķekava bypass) within the state main road A7 Riga – Bauska – Lithuanian
border (Grenctāle) in the section from ~ 7.90 km to 25.5 km**

Valid until 3 March 2020

Initiator of the intended activity:

SJSC “*Latvijas Valsts ceļi*”, registration No. 40003344207, address: 3 Gogoļa Street,
Riga, LV – 1050 (hereinafter referred to as the “Proposer”).

Developer of the statement:

Ltd. “*Vides Eksperti*”, registration number: 40003820612, address: 24D – 317A
Ganību dambis, Riga, LV - 1005 (hereinafter referred to as the “Developer”) in
collaboration with “*Project 3*”, registration No. 40003578510, address: 12 – cab. 117,
Riga, LV – 1007.

**The Statement has been submitted to the Environment State Bureau (hereinafter
referred to as the “Bureau”):**

The environmental impact assessment statement on the intended activity of the
construction of the bypass (Ķekava bypass) within the state main road A7 Riga –
Bauska – Lithuanian border (Grenctāle) in the section from ~ 7.90 km to 25.5 km was
submitted to the Bureau on 1 November 2016. The actual wording of the report on the
environmental impact assessment (hereinafter referred to as the “Report”) was
submitted to the Bureau on 19 January 2017. Additional information was submitted to
the Bureau on 27 February 2017.

**The opinion on the statement is issued in accordance with Section 20, Paragraph
one and four of the Law on Environmental Impact Assessment (hereinafter
referred to as the Assessment Law), and the provisions included in it in
accordance with Section 20, Paragraph ten of this law.**

1. Name of the intended activity:

The construction of the bypass (Ķekava bypass) within the state main road A7 Riga –
Bauska – Lithuanian border (Grenctāle) in the section from ~ 7.90 km to 25.5 km
(hereinafter referred to as the “Intended activity”).

2. Possible area of the intended activity:

The intended activity is planned to be performed in the area of Ķekava municipality,
Ķekava rural territory and Baloži town. The construction of the Ķekava bypass includes
the construction of a new section of the road having a total length of ~ 14.5 km long and
the reconstruction of the existing road A7 in the sections from ~ 7.9 – 9.9 km and from
~ 22.74 – 25 km (hereinafter referred to as the Location of the Intended activity).

Note: The specified numerical values of the a/c A7 section characterising the activity area are indicative as the intended activity includes the reconstruction of the existing road A7 and the construction of the related traffic connection solution.

3. Short description of the Intended activity:

3.1. General information on the Intended activity:

- 3.1.1. Within the framework of the Intended activity in the Ķekava Municipality, there is a plan to carry out the construction of the bypass (Ķekava bypass) within the state main road (hereinafter also referred to as – the road) A7 Riga – Bauska – Lithuanian border (Grenctāle) includes the reconstruction of the existing road and the construction of a completely new section of the road. It can be concluded from the information contained by the drawings attached to the Statement and its annexes that the Ķekava bypass is planned to be ~ 14.5 km in length; the beginning of the route is planned at the existing road A7 9.91 km, but the end of the route is planned at the existing road A7 ~ 24.067 km. In addition, the reconstruction of the existing road A7 is planned in two sections ~ 4.26 km of total length in the sections from ~ 7.9 – 9.9 km and from ~ 22.74 – 25 km (the calculation of the total length of a/c A7 route to be reconstructed also includes the areas where, after the performance of the Intended activity instead of the existing road route, there will be the connecting points of two levels).
- 3.1.2. The Bureau, issuing this opinion, takes into account that the parameters or numerical values of the bypass and the related infrastructures to be reconstructed or newly constructed are given in the Statement (and accordingly in this opinion) on the basis of the solutions set in the current design phase and information available, they are indicative and may be specified in the future design course.
- 3.1.3. The Ķekava bypass is planned as a class A1 fast traffic-state main road with road sign A7, which will be included into the international E-road network with the number of E67 “Via Baltica”, which will connect the road network of the Republic of Latvia with the road networks of other countries. While the significance of the A7 motorway in the section between the planned bypass connections would change (it would become a general use road of regional significance or main streets within the borders of the populated areas). According to the information provided by the Statement the construction design work of the Ķekava bypass is planned to be started in ~ 2019, while the construction is planned to be started in ~ 2020. It is planned that the works will be completed by ~ 2023.
- 3.1.4. The necessity for the Intended activity is based on the fact that the road A7 is very busy and the traffic flow during peak hours significantly exceeds its capacity. This is because near Riga (in the direction of Ķekava) an urban agglomeration area has been developed, as well as the fact that the road is the state main road that provides the most straightforward and fastest connection of the capital of the state with the neighbouring country of Lithuania and other European countries. It is estimated that the road surfacing geometry, width and throughput capabilities of the road A7 in the section from Riga to Ķekava do not correspond to the modern requirements and that the road junctions and connecting points do not comply with the

regulatory requirements in the road section. As the transit traffic flow during the most intensive peak hours of the day is uneven, it causes serious traffic problems on the motorway and road traffic intensity and comfort level in the analysed motorway stage are estimated as D (very bad) – it is characterized by driving in long lines behind the slow-moving vehicles, impossibility of overtaking and driving speed that is ~ 55% of the speed under free flowing conditions, as well as the growing number of traffic accidents.

- 3.1.5. It is projected that in the future, by increasing the volume of traffic and the construction volume around the Riga agglomeration zone and by not in a timely manner solving the above-mentioned traffic problems, these problems can only increase, causing discomfort for the residents and the companies of the surrounding area and businesses, as well as to the transit traffic participants. Taking into account the above mentioned, it is concluded that in relation to the section of the road from the capital of Latvia to the Riga bypass (road A5) there is an urgent need to find solutions for the redistribution of traffic flow in order to ensure the throughput capabilities, traffic quality and safety according to the parameters (it is required to separate the cargo traffic flow from the local traffic).
- 3.1.6. The intended activity meets the conditions of Section 4, Paragraph one, Clause 1 and Annex 1 of the four of the Assessment Law on the performance of the environmental impact assessment. The Initiator has had the intention to develop and implement the Ķekava bypass construction project since ~ 2003 when the pre-feasibility study project of the Ķekava bypass was developed and environmental impact assessment was carried out an environmental impact assessment. According to the Statement, the initial project of the Ķekava bypass was started during the period 2003 – 2005. The opinion on the original intention of the environmental impact assessment statement was issued by the Bureau on 3 October 2006 – Opinion No.11 “*The environmental impact final assessment statement on the construction of the bypass (Ķekava bypass) within the state main road A7 Riga – Bauska – Lithuanian border (Grenctāle) in the section from 10.5 km to 24 km*” According to the Statement development of a sketch project of the bypass ended in 2008, but after the completion of the environmental impact assessment within the prescribed period the decision to accept the intended activity was not received as provided by the Assessment Law. Pursuant to the condition provided by Section 20, Paragraph eleven of the Assessment Law that in such a case a new impact assessment shall be performed, as well as taking into account the fact that while continuing the work on the project development some solutions have been changed and improved, the environmental impact assessment procedure has been applied and started again.
- 3.1.7. The environmental impact assessment procedure for the Intended activity was applied by the Decision No. 129 of the Bureau, dated 20 May 2015 “On the application of the environmental impact assessment procedure.” Based on the above mentioned and taking into account the fact that the Intended activity corresponds to the activity contained by Annex 1 of the Assessment Law. The program for the environmental impact assessment of the Intended activity was issued by the Bureau on 17 February 2016. It can be concluded

that the Ķekava bypass trace axis assessed within the framework of the re-assessment has not been changed (changes are expected to be made to the connecting points and the local (parallel) road network).

3.2. Description of the possible Activity area and the existing situation:

- 3.2.1. The area – the planned Ķekava bypass route includes the sections of the existing road A7 and the section of the newly built road, which cross mostly the areas of Ķekava municipality, Ķekava rural territory, including the inhabited places. The section of the existing road to be reconstructed passes through Krustkalni, Rāmava, Valdlauči, Lapenieki and Katlakalns, but the newly built section mainly passes through the sparsely populated areas (the nearest populated place is Skujenieki village). Only a small part of the route of the beginning of the road A7 bypass is located in Baloži town, in Ķekava municipality.
- 3.2.2. The existing road A7 has two 4 m wide lanes with a 1.5 m wide hard shoulder. Taking into account the traffic records, it is concluded that already in 2009 the number of cars on the road A7 in the section from Riga to Pļavniekkalns exceeded 18 000, which according to ISO 190-2: 2007 “Technical parameters, standard cross sections of roads” is the daily usage limit of this kind of roads. It is concluded that the width and other characteristic parameters of the section of the existing road have exhausted their technical capabilities and throughput (during the daily peak hours, drivers face with serious problems with reaching the final destination). According to the facts indicated in the Statement, the current traffic organization and traffic safety (including junction zones of the roads of different importance) do not correspond to modern requirements. The current situation in many places is characterized by intersections and connections, which do not have compliant left or right travelling lanes, as a result the transit traffic flow is intermittent and uneven. Besides, travelling visibility in certain intersections and junctions is critical, some areas are illuminated, causing high-risk conditions for all road users, including pedestrians and cyclists, especially at night period, as well as the autumn and winter periods.
- 3.2.3. According to the information provided by the Statement, within the framework of the impact re-assessment the bypass study area is 500 m wide, and it is shown in Annex 7 of the Statement. According to the assessment of the current situation, the study area is now briefly characterized by the conditions listed below.
- 3.2.4. The area crossed by the planned Ķekava bypass route, especially in the territory of the existing road, taking into account its nearness to Riga and its inhabited places, is relatively densely populated, and in accordance with the information provided by the Statement this area is inhabited by ~ 37% or ~ 5800 inhabitants of Ķekava rural territory. It is estimated that in the surrounding area of the sector of the existing road A7 to be reconstructed, at a distance of 100 m on either side of the road axis, ~ 240 residents of the rural territory live.
- 3.2.5. The sector of the bypass to be reconstructed crosses relatively low populated areas, mainly occupied by forestry and agriculture used land and

swamp areas. It is estimated that in the surrounding area of the perspective road route, at a distance of 350 m on either side of the road, ~ 150 live.

- 3.2.6. According to the territorial planning of Ķekava municipality (hereinafter referred to as the Territorial Planning). The sections of the road A7 to be reconstructed mainly run along the residential building zones, which include low-rise residential building areas (MDzMI), as well as the places along the mixed building areas, which include mixed residential and commercial development areas (JDzDI), mixed public and business building areas (JSD1) and mixed production and business building areas (JRD). In some places, the existing road A7 runs also along the forest areas (M), which are mainly owned by the private owners and the municipality (Annex 6 of the Statement).
- 3.2.7. With regard to the newly built Ķekava bypass route – it is estimated in the Statement that in accordance with the Territorial Planning it crosses the forest areas (M) and only in some places the bypass route passes through the low-rise residential building areas (MDzMI), mixed production and business building area (JRD) and agricultural areas (L) (Annex 6 of the Statement).
- 3.2.8. It can be concluded from the information provided by the Statement that the planned Ķekava bypass route area passes through the plots of land owned by natural persons and legal persons, owned by state and local government. In the road sections where it is planned to reconstruct the sections of the existing road A7, the plots of land under the public road or the unit of land of the road A7 and the motorway partition zone of at least 25 m wide zone, managed by the Ministry of Transport of the Republic of Latvia, will also be included. As a whole, the reconstruction of the sections of the existing road A7 will include 82 natural and legal persons and land properties of Ķekava municipality that are adjacent to the existing road partition zone. It is projected that in most cases it will be necessary to repurchase the small property areas along the edge of the road, except for the property located in the planned transport interchanges in the places where it will be necessary to dispose of some property (by setting a compensation). While the newly constructed Ķekava bypass route will cross 66 plots of land, most of which are owned by natural persons.
- 3.2.9. The section of the road A7 to be reconstructed passes along a number of public interest buildings, shops and business institutions located closer than 100 meters away from the existing road, as well as the objects of this type, which are located a bit further away from the existing road, for example, the car service, which is located 150 m from the road and the pre-school educational institution “*Bitīte*”, which is located 250 m from the road and which is one of the nearest public interest buildings to the newly constructed Ķekava bypass. While the Ķekava bypass route is located ~ 300 m from the nearest land property owned by JSC “*Putnu fabrika Ķekava*” (the poultry factory complex consists of several buildings and land properties).
- 3.2.10. The most significant water courses, which are crossed by the planned bypass route, are the Titurga river, the Ostvalda canal, the Daugava - Misa canal, the Butleru stream and the Ķekava or Ķekaviņa river. Their more detailed description is provided by Section 3.2.1 of the Statement. The

outflow of all the watercourses is directed towards E to the Sausā Daugava, which in turn is connected to the Daugava. According to the information provided by the Statement all of these watercourses are regulated, straightened, adapted or specially designed for drainage needs. A great part of them are the watercourses of state significance (Ķekava (ŪSIK code 41324:01), Titurga (ŪSIK code 41322:01), Butleru stream (ŪSIK code 413244:01), Ostvalda channel (ŪSIK code 413222:01)).

- 3.2.11. The surface runoff in the Activity area and its adjacent areas is also made by a dense network of drainage systems, ditches and canals. Most of the ameliorated areas in the Ķekava municipality are drained with closed drainage system (Annex 8 of the Statement). The outflow of the drainage systems is also directed towards E, with the exception of the territory between the Titurga and Ostvalda canal, where the planned bypass route crosses the marsh areas with difficult runoff, and thus the surface water runoff is directed also towards the SE.
- 3.2.12. The perspective Ķekava bypass route is located in Middle Latvian Lowland, windblown plain, in the area with a flat or gently sloping wavy terrain. The gently sloping terrain reductions are often marshy and they contain peat deposits. Basing on the geological research of the area (sampling points are shown in Annex 10 of the Statement), it is determined that the geological conditions in the area are relatively simple and they can be conditionally divided into two areas – to the S and to the N from the road A5, the geological structure of which is similar, but on the whole the area to the N of the road A5 is different with less quaternary cover thickness, which is only 5-6 meters (detailed description of the geological conditions in each area is provided by Clause 3.3 of the Statement). It should be noted that the planned bypass route in one of its parts (between the 8th and 15th drillings) crosses the marsh, besides the peat deposits were also found in two drillings outside the marsh areas. Around the perspective Ķekava bypass route and its surrounding area, no significant intensive modern geodynamic processes have been observed, including the ancient karstic phenomena, which can affect the construction or operation of the intended bypass. In some places of this area, bogging processes are spread. These processes are regulated by draining.
- 3.2.13. From the information provided in the Statement, it is clear that the level of groundwater in the area of the Intended activity is located at a depth of ~ 2 m from the ground surface, the highest – 0.7-1.1m, it is in the swamp area and the adjacent plain between Dzelzkalni and Skujnieki as well as in other relatively reduced and undrained areas. Besides, the groundwater levels are characterized by seasonal fluctuations, which are different in the places of widespread sand or turf. In the area under consideration, the groundwater is closely hydraulically connected with the surface water.
- 3.2.14. Describing the groundwater complexes, which are used in water supply, the Statement indicates that, for the centralized water supply of Ķekava rural territory, the water complexes of the Upper Devonian Daugava - Plavinas and Amata - Gauja are used. These water complexes are distributed throughout the territory and are relatively well protected from pollution infiltration. According the information provided by Annex 11 of the

Statement a large part of the newly constructed bypass and the section of the road A7 to be reconstructed is located in the water source chemical protection areas.

- 3.2.15. From the opinions of the nature experts invited to the course of the environmental impact assessment procedures it can be concluded that on the whole the surveyed Activity area and its adjacent areas are located in the areas, which are significantly affected by human activities. They are drained. The wartime trenches are often found in them. Part of the territory is located in the peat fields, developed during the last century, which are overgrown with forests or transformed for building. The area required for the bypass route construction is mainly occupied by ruderal meadows (cultivated meadows and pastures) and drained forests (mainly pine, spruce and birch), in some places also by bushes, fields and gardens. The identified tracts of forest are fragmented; in many places, there are clearings and young stands.
- 3.2.16. In the area of the Intended activity, there is not any special area of conservation and micro-reserves. The nearest special protection area (*Natura 2000*) – the Nature park “*Doles sala*” is located more than 1.6 km to the N/NE from the Activity area. Taking into account the nature park location, according to the estimates it cannot be expected that the Ķekava bypass construction would affect the ecological functions of integrity, development and conservation objectives of the area *Natura 2000*. While the nearest territory of the Ķekava bypass route, to which the ornithofauna related conservation status is applied, has a micro reserve for the protection of lesser spotted eagle (*Aquila pomarina*), is located ~1 km SE from the bypass junction to the existing road 7 at the farmstead “*Smiltnieki*”.
- 3.2.17. According to the specially protected natural value assessment of the Intended activity and its adjacent areas, performed in the course of the environmental impact assessment procedures, the planned bypass route in a small section, where drained bogs habitats are widespread, crosses 1 European Union protected bog habitat in Latvia. In turn, not far from the planned bypass route, 1 forest habitat and 1 grassland habitat are found, the protection of which is determined by the Cabinet Regulation No. 421 of 5 December 2000 “*Regulations of the List of the Specially Protected Biotopes*”. They are also the European Union protected habitats in Latvia and are included in Cabinet Regulation No. 153 of 21 February 2006 “*Regulations of the List of Priority Species and Biotopes of the European Union Encountered in Latvia*”, as well as 2 species, which are included in Annex 2 “List of the Specially Protected whose use is Limited” of the Cabinet Regulation No. 396 of 14 November 2000 “*Regulations of the Lists of the Specially Protected Species and the Specially Protected Species whose use is Limited*”.
- 3.2.18. From the landscape point of view, the territory as a whole is characterized by a mosaic of open space and forest alternation, which depending on the dominant element belongs to landscapes of open space or woodlands. It is estimated that an important element of the landscape is wet lands and bogs, which can be found in the areas of the Ķekava bypass route. The area of the Ķekava bypass route contains also landscapes of drained bogs with small biological and landscape diversity. The biodiversity of open space and

woodland is reduced by uncultivated fallow land and ruderal grasslands, as well as people's economic activities, which significantly have transformed the natural habitats. The landscape quality is also affected by the existing construction in the area, as a result, it is highly urbanized with linear uniform building character. In general, the visual assessment of the existing landscape in the area of the planned the bypass route is low as it does not stand out of the common surrounding background and lacks sightseeing objects.

- 3.2.19. Evaluating the cultural and historical importance of the Intended activity and its surrounding areas, it was found that near the section of the road A7 to be reconstructed and near the planned newly built bypass route, there are several monuments and cultural objects that are specified in Annex 9 of the Statement. According to this Annex, near the section of the road A7 to be reconstructed, the historical monument of national significance "*Rakstnieka G.Merķeļa dzīves vieta*" (the residence of the writer Garlībs Merķelis) (state protection No. 92). There is also the monument to the fallen motorcycle riders near the route. According to the Territorial Planning, the road A7 borders on the state protected cultural monuments zone. The Statement informs that in the surrounding area of the planned bypass route, there is no cultural monument of State significance, but there are several cultural monuments of local significance – several First World War cemeteries. The closest of them is located ~200-400m from the bypass route (Annex 9 of the Statement) and around them a 500 m protection zone (defence zone) is set. According to the information set out in Annex 9, in the immediate vicinity or zone of influence of the planned bypass route, there are also a number of potential burial grounds of the soldiers of the First World War; therefore the planned construction works in these areas shall be carried out with great care.
- 3.2.20. According to the Statement, the new Ķekava bypass route crosses the mineral resources "*Tirurgas*", most of which is now occupied by the old Ķekava landfill, where restoration works are being performed. Cartographic materials and observations in nature point also to the gravel pit "*Lādes*" located in the immediate vicinity of the bypass route; however, there is no information whether the extraction is carried out there.
- 3.2.21. Within the framework of the previous environmental impact assessment and the current environmental impact assessment, the soil and ground pollution assessment of the perspective bypass route area has made of soil and soil pollution assessment (in total, 25 samples were analysed); Annex 10 of the Statement on the basis of the terms provided by Regulations of the Cabinet of Ministers No. 804 of 25 October, 2005 "Regulations on Quality Standards for Soil and Ground" specified. Overall, the assessment results show that in many cases the concentration of heavy metals and petroleum products exceeds the limit value A, which indicates the maximum level beyond which it is impossible to ensure sustainable soil and ground quality. However, the concentration in any of the samples does not reach and does not exceed B thresholds, which determine the maximum level beyond which negative effects on human health or the environment can arise. A more detailed description of the results of the assessment is included in

Section 3.1.3 of the Statement. It is concluded that the relatively higher concentrations of chemical parameters are found near the section of the existing road A7, which shows that the surveyed area contains a slightly elevated background of anthropogenic influences, especially close to the road A7. At the same time, the chemical parameter values are relatively far from the set precautionary thresholds. The Statement contains the conclusion that by the implementation of the Intended activity, there is not expected to be any negative impact on human health or the environment from the aspect of soil and ground pollution, and that this circumstance is not limiting in nature.

- 3.2.22. Also according to the information provided by the Statement and the database “*Contaminated and potentially contaminated sites register*” of the limited liability company “*Latvijas Vides, ģeoloģijas un meteoroloģijas centrs*” (hereinafter referred to as LEGMC), the Ķekava bypass perspective route does not cross any contaminated or potentially contaminated sites. The closest object of this kind (contaminated site) to the area of the Intended activity – Ltd. “*Tilpums*” gas station and car wash (reg. No. 80708 /1481) is located ~100 m away.
- 3.2.23. In order to identify the current situation and plan the necessary further actions, within the framework of the environmental impact assessment the following measures were taken:
- 3.2.23.1. The public transport traffic analysis on various routes. According to the assessment in the analysed section of the road A7, it is sufficient (Section 2.2.1 of the Statement);
- 3.2.23.2. The road accident analysis which shows that in the analysed section of the existing road A7, according to the data of SJSC “*Latvijas Valsts ceļi*” several “*black*” points are identified, which cross the relatively densely populated areas, including Ķekava rural territory (Section 2.2.2 of the Statement);
- 3.2.23.3. The analysis of adverse weather conditions causing negative impacts on traffic safety, based on the information provided by LEGMC on long-term meteorological observation data from the Riga meteorological observation station (Section 2.2.3 of the Statement).
- 3.2.24. It can be concluded that the construction of other planned or accepted, but still unrealized, significant objects, including road infrastructure, is connected with the Activity area and the areas in its immediate vicinity. Within the framework of the Statement (in conjunction with the Intended activity) the implementation of the following projects is analysed:
- 3.2.24.1. The intention for the reconstruction of the section of A5 Highway Riga Bypass (Salaspils–Babīte) from 11.6 km (crossing with the road A7) to 34.6 km (crossing with the road A9), the environmental impact assessment of which was completed in 2010. On 28 September 2010, the Bureau issued the opinion to the Initiator, which was prepared within the framework of the environmental impact assessment. It is concluded that all the affected municipalities have adopted the acceptance decisions on implementation of the action (Section 2.4.11 of the Statement). In the context of the Intended action, it can be concluded that the relationship is included in the fact that

within the framework of the reconstruction of A5 Highway it is planned to construct a two-level road junctions with the planned Kekava bypass. In accordance with the previously planned, the road reconstruction works were expected to start in 2017, but, at the moment, they have not yet started.

3.2.24.2. The intention for the construction of the section A4 Saulkalne – Bauska (Ārce) of the state main road E67, the environmental impact assessment of which was completed in 2009. On 6 November 2009, the Bureau issued the opinion to the Initiator, which was prepared within the framework of the environmental impact assessment. It is concluded that all the affected municipalities have adopted the acceptance decisions on implementation of the action (Section 2.4.12 of the Statement). In the context of the Intended action, it can be concluded that the relationship is included in the fact that the construction area of the Kekava bypass construction area overlaps with the Section 1 of A4 – Bauska route of the road E67, which, besides other rebuilding and new construction works planned within section 1, which would provide also the extension to 4 lanes of the Kekava bypass (in the section from the road A5 to the end of the Kekava bypass). The mentioned intention is assessed, but the construction works are not yet started. Regardless of the solution incorporated in the intention for the Kekava bypass, the Initiator foresees implementing the construction of the bypass within the solution of the Intended activity.

3.2.24.3. Construction of the European standard gauge public railway infrastructure line "*Rail Baltica*" (hereinafter referred to as the Rail Baltica), which provides the construction of the electrified standard track gauge (1435 mm) public railway infrastructure line public railway infrastructure for combined passenger and freight traffic. The total length of Rail Baltica is planned to be ~ 730 km of which ~ 260 km will be in the territory of Latvia. The environmental impact assessment was completed in 2016 (On 3 May 2016, the Bureau issued the opinion to the Ministry of Transport, which was prepared within the framework of the environmental impact assessment. The Cabinet issued the decision on acceptance on 24 August 2016. In the context of the Intended action it can be concluded that the relationship is included in the fact that the Rail Baltica route and the Kekava bypass route in a small section to D from the road A5 is designed to be directed in a single corridor and their construction area partially overlaps ((Section 2.4.13 of the Statement). As the implementation of the two projects could be carried out at the same time, the Statement contains the assessment of the related construction solutions and the total impact on the environment.

3.3. Information on the Intended activity and its provision:

3.3.1. During the course of the Intended activity, it is planned to construct a new bypass route with a water drainage system (parallel and crossing ditches, culverts), including the construction of bypass crossings solutions of different types (two-level traffic overpasses or junctions, tunnels, bridges), as well as to build a local (parallel, municipality) road network, which will provide the access to the Kekava bypass nearby properties and residential areas. In the places where the bypass route will cross the existing engineering networks, if necessary, it is provided to carry out their reconstruction or protection.

- 3.3.2. According to the Statement the Ķekava bypass newly built section construction works and the existing road A7 reconstruction works are planned so as to not be directly affect any residential or public building (it is not intended to demolish any residential or public building). It is estimated that in the immediate proximity distance of up to 100 m of the road A7 to be reconstructed, there are 57 residential buildings, of which 4 are located at a distance of up to 20 m, and 12 – at a distance of up to 50 m (Table 3.1.1 of the Statement). While in the immediate proximity distance of up to 350 m of the section of the newly constructed bypass, there are 50 residential buildings, of which 1 is located at a distance of 20 m, 5 – at a distance of up to 50 m, 7 – at a distance of up to 100 m, and 16 – at a distance of up to 150 m inclusive (Table 3.1.2 of the Statement).
- 3.3.3. It is concluded that the set of actions to be performed for the construction of the bypass depending on the place of their performance and their specific character can be divided into two parts:
- 3.3.3.1. The reconstruction of the existing road A7 is planned in two sections – in the section from ~ 7.9¹ to 9.9 km and in the section from 22.74 to 25 km. The planned reconstruction works of the road A7 mainly include the reduction of the number of direct motorway exits and junctions by creating parallel carriageways through which the transportation vehicles of the adjacent areas will be able to get to the connecting points of two levels and then to the road A7. Accesses to the plots of land will be provided by parallel or downstream roads, such as municipal roads. In the section from ~ 7.8 to 9.9 km (to the beginning of Ķekava bypass new route construction), it is planned to reconstruct the existing road and create a dual carriageway road and in the section from 22.74 km to 25 km, where the bypass will be connected back to the existing road, it is planned to keep one carriageway road.
- 3.3.3.2. The construction of the newly built bypass ~ 14.5 km in length, which will most directly affect the driving conditions of the local road users and the route adjacent landowners as around the newly built route, it is designed to remove the existing road junction, new parallel roads will be built, the construction of the bypass will affect the land properties, the access to them. The construction of the section to the A5 Highway Riga Bypass (Salaspils–Babīte) is planned to include a four-lane profile (roadway width of 29.5 m), and in the further section to the junction to the existing road A7 – two lanes (roadway width of 14.5 m). In the places of the bypass crossings with the existing state and local roads, project solutions provide for the construction of traffic overpasses and tunnels, which technologically are designed in two levels.
- 3.3.4. According to the facts indicated in the Statement before the beginning of the bypass construction works, detailed projects on the organization and performance of works were developed. These projects included solutions for installation of construction sites and provision of the existing

¹ Unlike the referred to (7.9 km) in Name of the intended activity, it is indicated in the text of the Statement that the activity section begins from 7.8 km, so later in this opinion, the Bureau refers to the numerical values used in the text of the Statement, which in any case are indicative.

infrastructure and engineering network operations. It is planned to coordinate these measures and related changes that may occur in the work process with the owners or possessors of the related infrastructure and engineering networks. Describing the standard or principal solutions, the Statement informs that for provision of the construction works, as it is similar to the usual practice in the existing road construction, it is planned to create areas in the road right-of-way (compartment lanes) for placing the techniques and materials used in the construction works, as well as for personnel sanitary purposes. Such areas will be installed in tunnels, overpasses, bridge construction sites, where, if necessary, the assembly and other works will be performed according to the construction technology needs.

- 3.3.5. It is planned to start the implementation of the Intended activity with the road route preparatory works. These works include the survey and demarcation of the road route, tree and bush cutting, ditch digging and cleaning, soil excavation. After the performance of preparatory works provided for the bypass the construction works shall be carried out in the following order:
 - 3.3.5.1. subgrade construction, which provides profiling and grading of the base of the bypass route, creation of grades, formation of embankments and/or trenches;
 - 3.3.5.2. Construction of subbase (antifreeze) in one or more layers, followed by the construction of pavement or asphalt concrete laying;
 - 3.3.5.3. Construction of traffic junctions or overpasses and elevated roads, construction of the bridge over the Çekava river, as well as construction of other watercourses and drainage ditches that cross the bypass route, the culvert construction (the works are planned to be carried out in three stages, where the first step is the formation of engineering structures foundations and structure construction in the ground, followed by the construction of supports and the support walls and construction of span structures);
 - 3.3.5.4. If necessary, reorganization or protection of the existing engineering networks (lighting, power lines, gas pipelines, etc.) shall be carried out;
 - 3.3.5.5. Performance of improvement works, providing the bypass slope greening and installation of the road indications, barriers and fences.
- 3.3.6. In the section of the Çekava bypass, no junctions on the same level shall be provided. The Statement states that it is recommended in the standard LVS 190-3 “*Road junctions at grade*” for all public roads in class A1 to organize all approach and exit manoeuvres through the road junctions, and only class AI - AV roads can be directly connected to class A1 roads, and the minimum distance between the junctions of this type is at least 1.5 km. Hence, it is planned to remove the existing road junctions and to provide the possibility to exit the bypass through the connecting points of two levels, including in both bypass junctions with the road A7. For providing the connecting points of two levels in the section of the road A7 and the newly constructed bypass section it is planned to build a number of new infrastructures (tunnels, bridges, overpasses and other artificial structures). According to the indicated in the Statement, these infrastructure objects will

be designed taking into account the location of the bypass route and crossings (intersections) with other roads. At the same time, it is also planned to construct parallel roads and carriageways to connect the minor roads (for which no crossings will be built crossings) to the traffic network. According to the Statement, the sites of this solution are identified. At the same time, they will be designed in detail in the development phase of the technical project.

- 3.3.7. Overall, apart from the necessary small size culverts, it is concluded that within the framework of the Intended activity, it will be necessary to build 9 artificial engineering structures – 4 underpasses, 4 overpasses and 1 bridge for the Ķekava river crossing, as well as a number of large size culverts through which under the road the following objects will be crossed: Titurga (2.00 km long), the Daugava - Misa canal (8.65 km long) and the Butleru stream (11.3 km long). These solutions are described and schematically shown in Section 2.4.7 of the Statement).
- 3.3.8. In the traffic junction area of the planned bypass compartment lane there are the existing engineering objects, therefore their reconstruction is necessary and is planned. The reconstruction works can include the works required for the protection of engineering networks, or their reconstruction by putting them outside the territory of the bypass route. According to the Statement, in the area of the Intended activity, there are the following engineering networks to which the Intended activity refers (Annex 7 of the Statement):
 - 3.3.8.1. Water supply pipelines 2x1200 mm, built along the road A7 and passes through the bypass zone ~1.0 km.
 - 3.3.8.2. JSC “Latvijas Gāze” main high pressure ($P < 1$ MPa) gas pipeline with the diameter 500 mm that crosses the existing Baložu Street, in the area of the Ķekava bypass start and end road junctions.
 - 3.3.8.3. The main 110 kV and 330 kV transmission lines, which cross the area planned for the construction of the bypass in several places. The 330 kV power lines, constructed in the direction towards Riga HES, pass through the bypass at 8.8 km, while the 110 kV power lines – at 1.0 km and 2.2 km. The 0.4 to 20 kV power lines, lighting lines and communication lines are constructed in several places parallel to the bypass route cross it.
 - 3.3.8.4. Ltd “Lattelekom” optical communications cables, which are built in the section of the road A7 to be reconstructed from the Riga border to the turn to Baldone at 20.4 km, on the right side of the road (direction from Riga). The distance from the carriageway varies.
 - 3.3.8.5. In the planned connecting point zones, construction sections and their vicinity, the reconstruction of the existing communications and/or crossings (communication networks, lighting, power supply networks, rainwater drainage, water supply, drainage, etc.) shall be provided.
- 3.3.9. According to the Statement the road and street maintenance shall be provided in accordance with the according to the Regulations No. 224 of 9 March 2010, of the Cabinet of Ministers “*Regulations on state and municipal road routine maintenance requirements and implementation control*”. The planned Ķekava bypass will meet the criteria of the highest class of road maintenance or class A significance roads. Although after the

construction of the Çekava bypass in the existing section from ~ 8.9 km to ~ 22.74 km of the road A7 the significance will change, the Statement indicates that also its maintenance after the construction of the bypass will be provided by the Initiator, at the same time examining the possibility of transferring the duty of maintenance of the existing section of the road A7 passing through the populated areas (respectively the main road) to the municipality. According to the indicated in the Statement – maintenance (summer, winter and periodical) of the main carriageway of the Çekava bypass, including the section of the road A7, contained in the total length, and the related engineering constructions in the period of 20 years will be provided by the developer (the private partner) of the project who will get the right of the project implementation in an open tender. While the maintenance of new local roads and streets constructed during the course of the Intended activity will be provided by the municipality in accordance with the requirements of the laws and regulations and the road maintenance class determined by the municipality.

3.4. Possible alternative solutions of the Intended activity:

- 3.4.1. The basic principles of the environmental impact assessment provide that during the course of the assessment, the acceptable alternatives, which might be suitable for the proposed project and its specific characteristics shall be evaluated. Alternatives can be evaluated in relation to the technological process and activity area. In the present case, alternatives concerning the most suitable solution and the motorway route placement for the planned Çekava bypass have been searched since 2003, including the time when the environmental impact assessment procedure for the Çekava bypass construction was carried out for the first time.
- 3.4.2. The evaluated alternatives within the framework of the previously carried out environmental impact assessment were: reconstruction of the existing road A7 or construction of a bypass. Within the framework of this environmental impact assessment the reconstruction of the existing road A7 as the alternative of the Intended activity is no longer being considered as it is concluded that due to the increasing volume of traffic it would not solve the main problem – relieving traffic congestion in the area of Çekava rural territory. Consequently, within the framework of the environmental impact assessment to alternatives of the Intended activity are being compared:
 - 3.4.2.1. *Alternative 1* or the baseline option: construction of the Çekava bypass and reconstruction of the section of the road A7 according to the latest developed solution, which is incorporated and assessed in the Statement. *Alternative 1* provides for the construction of a new road route ~ 14.5 km in length and the reconstruction of the section of the existing road A7 having a total length of ~ 4.26 km.
 - 3.4.2.2. *Alternative 2* or the comparable option: construction of the Çekava bypass according to solution incorporated in the sketch project has been built into the solution, based on the results of the prior environmental impact assessment (different solutions are discussed in more detail in Section 2.4 of the Statement).

- 3.4.3. From the comparable alternative perspective the location of the bypass route is no different (main route axis parameters are not changed), but the solutions of the traffic junctions and local (parallel) road networks. Considered to be the difference between the assessed alternatives of the traffic junctions and parallel road networks is discussed in more detail in Section 2.4 of the Statement).
- 3.4.4. In addition, the Intended activity is assessed in the scenario which would involve the abandonment of its implementation (*Alternative "0"*). In this way, the development of the situation and its impact on the environment would be assessed if the road A7 in its assessed section are maintained without change in the current parameters.
- 3.4.5. For the mutual comparison and evaluation of the alternatives (*Alternatives 1 and 2*) of the Intended activity within the framework of the Statement, definite criteria were set out. They are specified in Section 8.1 of the Statement and cover a number of the possible impact degrees, which are defined from the unfavourable situation where the expected impact is predicted as a significant and negative, to more favourable – the impact is significant and positive. The comparison of the alternatives assessed according to the criteria defined is performed for a number of the aspects of the expected impacts and is provided in the Table 8.1 of the Statement.
- 3.4.6. The comparison shows that the two compared alternatives of the route from the environmental impact point of view have minimal differences – none of these options are subject to any impact which can have the effect of restricting or even turn excluding the motorway construction opportunity provided that the works are carried out in accordance with the legislative requirements and the planned measures to reduce negative impacts are implemented. However, it is concluded that by the implementation of *Alternatives 2*, it would not be possible to achieve all the objectives which were the basis for the development of the baseline option (*Alternative*) (provision of the road safety and accessibility in view of the current traffic conditions). It is also concluded that *Alternatives 1* better reflects the balance of the interests of the parties involved, as it has been developed taking into account the proposals of the local governments, local residents and entrepreneurs, including taking into account the changes since 2008.

4. Assessed documentation:

- 4.1. Application No. 2. /1881 of the Initiator, dated 11 May 2015 "*Application of National Joint Stock Company "Latvijas Valsts ceļi" " to the Environment State Bureau (ESB) of the Republic of Latvia in relation to the construction of the Ķekava bypass"* and the documents attached thereto.
- 4.2. Letter No. 2.1/ 1883 of the Initiator, dated 11 May 2015 Letter No. 2.1 / 1883 "*On environmental impact assessment of the Ķekava bypass"*.
- 4.3. Decision No. 129, dated on 20 May 2015 of the Bureau "*On application of the Environmental Impact Assessment procedure"* (hereinafter referred to as Decision No. 129).
- 4.4. Letter No. 1-7/15/1160 of the Ķekava Municipality Self-government, dated 26 May 2015 "*On the initial public consultation meeting."*

- 4.5. E-mail message of the Initiator, dated 12 January 2016, by which the notice on the intended initial public consultation was submitted to the Bureau.
- 4.6. Letter of the Developer, dated 19 January 2016 *"On request for the program in the environmental impact assessment"*, by which the power of attorney of the Initiator, dated 18 January 2016, by which it authorizes the Developer on behalf of the Initiator to submit and to receive all documentation, as well as to take the necessary action related to the environmental impact assessment of the Intended activity, was sent to the Bureau.
- 4.7. Letter of the Developer, dated 19 January 2016 *"On the initial public consultation of the environmental impact assessment"* and the related documents, including the Notice on the intended initial public consultation, a copy of the publication of the Notice in the Ķekava municipality newspaper *"Ķekavas Novads"*, printouts from websites of the publication of the Notice, information on the individual information of the owners of the real property adjacent to the area of the Intended activity.
- 4.8. Application of Ltd "Akvedukts", Ltd "Maxima Latvija", Ltd "Toode" and Ltd "Piepilsētas Nī", dated 27 January 2016, *"On "Notice on the initial public consultation on the environmental impact assessment of the possible construction of the Ķekava bypass"*.
- 4.9. E-mail message of the private person, dated 31 January 2016 *"Discussion on the environmental impact assessment of the construction of the Ķekava bypass"* with 18 signatures of the residents.
- 4.10. Letter No. 1-7/16/147 of Ķekava Municipality Self-government, dated 2 February 2016 *"On environmental impact assessment of the possible construction of the Ķekava bypass"*.
- 4.11. Program for the environmental impact assessment of the Intended Activity, issued by the Bureau on 17 February in 2016.
- 4.12. E-mail message of the Developer, dated 8 August 2016, by which the notice on the public discussion of the Notice on environmental impact assessment of the Intended activity was submitted to the Bureau.
- 4.13. E-mail message of the representative of Ltd VARMAA *"Zemturi"*, dated 26 August 2016.
- 4.14. E-mail message of the Developer, dated 1 September 2016, by which the protocol on the public consultation meeting of the environmental impact assessment was submitted to the Bureau.
- 4.15. Application of the private person, dated 5 September 2016, by which the application of the private person, dated 18 February 2015, was also sent (on provision of information).
- 4.16. Application No.03/2016 of Ltd "Akvedukts" and Ltd "Maxima Latvija", dated 6 September 2016 on *"The initial public consultation on the environmental impact assessment of the possible construction of the Ķekava bypass"*.
- 4.17. E-mail message with an opinion of the private person, dated 7 September 2016.

- 4.18. Letter No.1-7/16/1866 of the Ķekava Municipality Self-government, dated 8 September 2016, "On the statement of the environmental impact assessment of the construction of the road A7 (Ķekava bypass)."
- 4.19. E-mail message of the representative of the Department of Spatial Planning of the Ķekava Municipality Self-government, dated 9 September 2016.
- 4.20. E-mail message of the private person, dated 9 September 2016.
- 4.21. Letter Nr.1-7/16/2157 of the Ķekava Municipality Self-government, dated 15 September 2016, "On the statement of the environmental impact assessment of the construction of the road A7 (Ķekava bypass) and the real estate "Mellupji".
- 4.22. Letter of the Developer, dated 1 November 2016 "On the submission of the environmental impact assessment statement on the construction of the bypass (Ķekava bypass) within the state main road A7 Riga – Bauska – Lithuanian border (Grenctāle) in the section from ~ 7.90 km to 25.0 km, planned by SJSC "Latvijas Valsts ceļi", by which the notice on the submission of the notice of the environmental impact assessment statement to the Bureau, as well as the Statement and the related materials were submitted.
- 4.23. Letter No.4.5.-20/9896 of the State Environmental Service (hereinafter referred to as SES Lielrīga Board) "*On the environmental impact assessment statement*".
- 4.24. Letter of the Developer, dated 19 January 2017 "On the submission of the actual version on the environmental impact assessment statement on the construction of the bypass (Ķekava bypass) within the state main road A7 Riga – Bauska – Lithuanian border (Grenctāle) in the section from ~ 7.90 km to 25.0 km, planned by SJSC "Latvijas Valsts ceļi", by which the notice on the submission of the notice of the actual wording of the Statement, as well as the Statement and the related materials were submitted.
- 4.25. Letter of the Developer, dated 22 February 2017 *on the provision of additional information* relating to "The environmental impact assessment statement on the construction of the bypass (Ķekava bypass) within the state main road A7 Riga – Bauska – Lithuanian border (Grenctāle) in the section from ~ 7.90 km to 25.0 km, planned by SJSC "Latvijas Valsts ceļi".
- 4.26. Letter of the Developer, dated 27 February 2017, "On supplement to the submission of the actual version on the environmental impact assessment statement on the construction of the bypass (Ķekava bypass) within the state main road A7 Riga – Bauska – Lithuanian border (Grenctāle) in the section from ~ 7.90 km to 25.0 km, planned by SJSC "Latvijas Valsts ceļi", *by which the supplement to the noise assessment is provided (Attached to the Statement as Annex 24).*
- 5. Information on the opinions and arguments (including the results of public consultation) of the interested parties in the course of assessment of the Intended activity:**
- 5.1. Initial information to the public, the initial public consultation meeting, opinions and arguments of the interested parties:**

- 5.1.1. The initial public consultation of the Intended activity took place from 12 January 2016 until 31 January 2016. The notice on the initiation of the environmental impact assessment procedure and the public consultation of the Intended activity was published in the Ķekava municipality newspaper “*Ķekavas Novads*”, issue No.1 on 12 January 2016, as well as on the website of the Ķekava Municipality Self-government www.kekava.lv, on the website of the Developer www.videseksperti.lv and on the website of the Bureau www.vpvb.gov.lv. The information on the Intended activity was presented on the above-mentioned websites and on the spot in the Ķekava Municipality Self-government customer service centres during business hours 19 k-19 Gaismas Street, Ķekava, Ķekava rural territory, Ķekava municipality and Uzvaras Prospect, Baloži, Ķekava municipality. The information on the Intended activity and its initial public consultation individually was also sent to the adjacent property owners of the Intended activity area.
- 5.1.2. During the initial public consultation on the environmental impact assessment, the Bureau received:
- 5.1.2.1. Collective e-mail message of the private persons, dated 31 January 2016, which argued that the residents stand for creation of a safe pedestrian connection between Rāmava and Baloži in the course of Intended activity. In the letter, the residents recommended to build a pedestrian-bicycle tunnel or a bridge, which would be located opposite Kāpu and Lakstīgalu streets. Similarly, the citizens were interested in the issue of the planned traffic organization concerning the minibus in the route Ķekava - Rīga/Rīga - Ķekava, expressing concern about the future of the accessibility of public transport services for the inhabitants of Rāmava and Baloži.
- 5.1.2.2. Application of Ltd “*Akvedukts*”, Ltd “*Maxima Latvia*”, Ltd “*Toode*” and Ltd “*Piepilsētas Nī*”, dated 31 January 2016, which contains proposals concerning the changes to the Intended activity to ensure that its implementation will not negatively affect corporate business and corporate staff mobility. The group of companies in their letter provided information about the average road freight transport movement in each of the companies and repeatedly pointed out that planning the traffic junctions from the corporate areas to the section of the road A7 to be reconstructed, their suitability for freight transport movements (for example, height of tractors with trailer, turning (manoeuvring) radius, etc.) must be taken into account, as well as they pointed out that it is necessary to solve the problem of the location of staging points of the public transport, so that it is appropriate and safely accessible for employees.
- 5.1.2.3. Letter Nr.1-7/16/147 of the Ķekava Municipality Self-government, dated 2 February 2016, in which it made a number of proposals for the implementation of the Intended activity and on the environmental impact assessment, among other things, it advised to make the research on the impact of the Intended activity on floodplains and their changes, water courses, drainage and ground water, animal and bird migration routes, the flora, the noise level changes. The self-government also asks to take into account the route solutions of the planned Rail Baltica project and match them with the planned bypass route, ensuring the matching for provision of

the access to the planned parallel road area, including matching of the crossings solutions with the municipal, private and public roads. Among other things, the self-government asked to provide the construction of parallel roads from the motorway A7 to several properties, the owners of which with such a request have repeatedly turned to the self-government, as well as to provide the creation of several pedestrian overpasses.

- 5.1.3. Based on the information provided by the Initiator and on the results of the initial public consultation, the Bureau prepared and on 17 February 2016, issued the Program for the environmental impact assessment of the Intended activity, which includes the requirements and conditions relating to the assessment of the Intended activity. All the received letters containing opinions and suggestions on the Intended activity together with the Program were sent by the Bureau to the Initiator for evaluation.

5.2. Information for the public, the public consultation meeting, opinion of the interested parties in the Statement development phase:

- 5.2.1. The public consultation on the Statement took place from 9 August until 7 September. The notice of the public consultation on the Statement of public consultation report was published in in the Ķekava municipality newspaper “Ķekavas Novads”, issue No.8 on 9 August 2016, as well as on the website of the Ķekava Municipality Self-government www.kekava.lv, on the website of the Developer www.videseksperti.lv and on the website of the Bureau www.vpvb.gov.lv. The information on the Statement and other prepared materials were presented on the above-mentioned websites and on the spot in the Ķekava Municipality Self-government customer service centres during business hours 19 k-19 Gaismas Street, Ķekava, Ķekava rural territory, Ķekava municipality and Uzvaras Prospect, Baloži, Ķekava municipality.
- 5.2.2. The public consultation meeting on the Statement on location was held on the spot on 25 August at 6 p.m. in the Ķekavas culture house (17 Gaismas Street 17), Kekava, Kekava municipality, Ķekava rural territory. The public consultation meeting on the Statement was attended by 39 interested persons, including the representatives of the Initiator, Developer, self-government, designers, inhabitants of Ķekava municipality and the representatives of the companies located nearby the planned bypass. The public consultation meeting was opened by the head of the Ķekava Municipality Self-government. He presented the bypass project implementation plans, explaining the significance of the bypath at national and municipal level and informing about the funding model. During the meeting, the participants were acquainted with the bypass design history and the solutions developed, as well as with the two bypass solution alternatives. The participants were explained the proposals to be supported or not under the project. These proposals were made during the initial public consultation on the Intended activity. Next, the participants were acquainted with the prepared Statement and the main conclusions about the impacts on the environment and people caused by the Intended activity. The present persons had a chance to ask questions about the issues they are interested in and express their opinions. The participants mainly asked and pointed to the places where it would be necessary to create pedestrian crosswalks,

discussed various pedestrian crossing solutions, the need to create access roads and connections to the business areas and the properties, the planned public transport organization and the planned anti-noise measures, their effectiveness and implementation sites, and other issues. In addition, the residents were interested in the issues on expropriation, compensation and the procedures of acquisition and payment.

5.2.3. In the course of the public consultation on the Statement, the Bureau received:

5.2.3.1. E-mail message of the representative of Ltd VARMAA “*Zemturi*”, dated 26 August 2016, which stated that the Statement does not provide for the access to the company's properties (a possible new access is marked; however, in nature this place is not a street, but an area of poor quality or even impassable). Similarly, the entrepreneur pointed out that already now it is difficult for customers to find the company and expressed concern that after the implementation of the reconstruction of the planned access road (by extending it), the access will become even more complex. In the letter, the entrepreneur also made other suggestions in connection with the solutions of the planned exit ramps, parallel roads, crossings and roundabouts.

5.2.3.2. Application of the private person, dated 5 September 2016, stating that the planned bypass will divide the person's belongings in several parts. Therefore, the private person in her application asks to re-examine the previously submitted proposals and requests to provide the construction of access roads to the remaining parts of the real estate owned by her after the implementation of the bypass construction. Similarly, the private person points out that, if such an option is not found, then the situation can be solved by changing the plot.

5.2.3.3. Application No.03/2016 of Ltd “Akvedukts” and Ltd “Maxima Latvija”, dated 6 September 2016, which focuses on provision of safe crossings for pedestrians and cyclists in the areas near the companies, the planned public transport routes and their easy accessibility (for corporate employees and Krustkalni population).

5.2.3.4. E-mail message of the private person, dated 7 September 2016, in which the inhabitants of Krogsils the immovable properties of whom are situated in one place ~ 350 m from the planned bypass expressed their opinion on the Intended activity. The letter contains their concern about the expected noise exceedances at the individual residential houses along the bypass construction. It is also indicated in the letter that from the information provided by the Statement it can be concluded that no anti-noise measures in the vicinity of the properties of the residents are expected to be taken.

5.2.3.5. Letter No.1-7/16/1866 of the Ķekava Municipality Self-government, dated 8 September 2016, gives an opinion on the Statement developed and proposals requesting to take them into account in the future planning. The main proposals are related to the need to provide public transport stops at the planned Ramava and Baloži circles, to find solution of access to/from the parallel roads for the real estates specified in the letter, to provide anti-noise solutions on both sides of the motorway to the connecting points

of the Southern Bridge and Ziepniekkalna Street, to inform the self-government about the maintenance and management procedures of the parallel roads for the planned motorway after their construction, to identify possible burial sites of soldiers in the area of the planned bypass and its connecting point to the existing road A7.

5.2.3.6. E-mail message of the representative of the Department of Spatial Planning of the Ķekava Municipality Self-government, dated 9 September 2016, by which the application of the private person on the opinion on the Intended activity was sent to the Bureau. The above-mentioned application was also received by the Bureau from the private person on 9 September 2016. In particular, the private person in the e-mail message of 9 September 2016 expressed opposition to the Intended activity as the project does not sufficiently take into account the interests and needs of pedestrians (the previously provided proposal for the creation of crossing for pedestrians and cyclists between Rāmava and Baloži is not supported). Another objection concerns the fact that within the framework of the project instead of one adjustable pedestrian crossing it is planned to install three uncontrolled crossings, which from the point of view of pedestrian safety must be assessed as the situation worsening.

5.2.3.7. Letter No.1-7/16/2157 of the Ķekava Municipality Self-government, dated 15 September 2016, in which it informs that during the public consultation on the Statement, it received the application of the owner of the real estate “*Mellupji*” (on September 9, the Bureau received it from the same private person and individuals and the Department of Spatial Planning of the Ķekava Municipality Self-government) with the request to re-examine the previously made request to provide the construction of access roads to the land plots owned by this person in the course of the Intended activity. The self-government asked to examine the application also in the context of the location of the planned Rail Baltica project route.

5.2.4. All the opinions and proposals received during the public consultation on the Statement, were sent to the Initiator and Developer for assessment, including the overview on the proposals submitted by the public in the Statement, as well as the information on whether they are taken into account or not.

5.3. Information for the public and the opinion of the interested parties in the Statement assessment phase:

5.3.1. The Statement was submitted to the Bureau on 1 November 2016. The notice on the submission of the Statement to the Bureau was published on the website of the Bureau www.vpvp.gov.lv, on the website of the Ķekava Municipality Self-government www.kekava.lv and on the website of the Developer www.videseksperti.lv.

5.3.2. During the assessment of the Statement, the Bureau received the letter No.4.5.-20/9896 of SES Lielrīga Board, dated 15 December 2016. Objections or comments on the Statement on the merits are not included in the letter.

5.3.3. Based on the conditions of Section 20, Paragraph three of the Assessment Law, the Bureau by inter-decision No.3-01/400 of 27 December requested

to supplement the Statement and the assessment contained by it. The supplemented Statement was submitted to the Bureau on 19 January 2017. The notice on the submission of the supplemented Statement was published on the website of the Bureau www.vpvb.gov.lv, on the website of the Ķekava Municipality Self-government www.kekava.lv and on the website of the Developer www.videseksperti.lv. The Developer submitted the supplements to the Statement to the Bureau on 27 February 2017, and they were made public on the website of the Developer www.videseksperti.lv. Information on the submission of additional information was made public on the website of the Bureau www.vpvb.gov.lv.

6. The conditions under which the Intended activity is to be implemented or not allowed:

- 6.1. After the assessment of the Statement, the Bureau concludes that the authors of the Statement have identified the key factors related to the Activity area and the Intended activity, which may have adverse effects on the environment, including taking into account the existing land-use type and the state of the environment, protected nature values, density of the surrounding area and population, nature and volume of the Intended activity, pollution and disturbance types, etc. Within the framework of the environmental impact assessment, the authors of the Statement have compiled the available information on the Activity area and have examined the impact resulting from the necessary constructions, management of the waste incurred during the construction process, have weighted air pollutant emissions, noise level changes, impact of environmental changes on ecosystems and biodiversity, protected nature areas, species and habitats, cultural and historical objects, scenic areas, soil and ground water quality, and other areas. Within the framework of such an assessment, the Bureau has concluded that the most important aspect of the construction impacts related to the Intended activity is the change of the use of the existing area, which includes spatial loss at the expense of the construction of the road and the impact on the immovable properties and the need to solve the access and mobility issues. The Intended activity, on the one hand, would deal with the major traffic problems on a larger scale, but, on the other hand, (from the point of view of accessibility and mobility) would cause changes at the local level, most directly experienced by the locals, etc. The construction works will also include the reconstruction of the existing buildings, including infrastructure and utilities objects. During the construction activities, disturbances and traffic restrictions are expected. The possible impact on the hydrological, geological and hydrogeological conditions, as well as the surface water bodies and natural, cultural and historical values depends on the solutions of the Intended activity. Also during the operation, the motorway has its own characteristic effects – air pollutants and noise emissions are expected. Therefore, planning, assessment and design must provide that the road is integrated into the existing natural and human living space in an optimal way and with less damage to all the components of the environment (including without creating a burden, which exceeds the environmental quality standards), as well as must provide that, as far as possible, the existing infrastructure and utilities objects function in the most optimal way, the territory integrity is preserved, ensuring mobility and accessibility of the areas.

6.2. Consequently, the following environmental impact aspects related to the implementation of the Intended activities are identified by the Bureau as the most important:

- 6.2.1. Fragmentation of the areas, changes in the current use of the areas, the accessibility of the real property and impact on the real property.**
- 6.2.2. The construction process organization and the construction-related impacts, including impacts on the infrastructure and engineering communications objects, their demolition or reconstruction necessity, the impact on their functioning.**
- 6.2.3. Impact on the hydrological, geological and hydrogeological conditions, as well as surface water bodies and soil quality, including in relation to the construction in the new area.**
- 6.2.4. Impact on biodiversity and specially protected natural values.**
- 6.2.5. Noise and vibration.**
- 6.2.6. Air pollutant emissions and air quality changes.**
- 6.2.7. Impact on the landscape and cultural heritage.**

6.3. After assessing the identified and evaluated environmental impacts caused by the Intended activity, specified in the Statement, the Bureau concludes the following:

6.3.1. Fragmentation of the areas, changes in the current use of the areas, the accessibility of the real property and impact on the real property.

6.3.1.1. Implementation of the Intended activity in the area of the construction of the planned bypass will produce a wide range of physical changes. Construction of the bypass infrastructure will result in the change of the current use of the area throughout the selected zone, as well as under the related objects, including traffic overpasses and access roads. The changes will not be only physical, but also will manifest as a change in the purpose of the use of the area and as a change in the functional zoning, as the current purpose of use will be changed to the transport infrastructure area and will remain during the time of the K kava bypass existence. At the same time, it can be concluded that the implementation idea of the Intended activity is already relatively old and once an environmental impact assessment of it has been carried out and the sketch project has been developed. Therefore, the route planned for the construction of the K kava bypass is already shown in the Territorial planning and has been repeatedly publicly discussed during the stages of developing planning documents and planning the Intended Activity. It is also established that as the direct result of the public debate, including with regard to the proposals of the local authorities and citizens, a new baseline option (*Alternative 1*), offering supplemented (matched to different interests) solutions of traffic junctions and parallel roads.

6.3.1.2. It is assessed that the section of the road to be reconstructed crosses the relatively densely populated areas; however, implementing the Intended activity, demolition of the residential buildings and other structures will not be necessary. It is estimated that in the immediate proximity distance of up

to 100 m on each side of the axis of the road of the road A7 to be reconstructed, ~240 inhabitants of the K kava rural territory live. During the course of the Intended activity, in the immediate vicinity (at a distance of 100 m), there are 57 residential buildings, of which 4 are located at a distance of up to 20 m, and 12 – at a distance of up to 50 m. While the area planned for the construction of the K kava bypass crosses the most sparsely populated areas, which are mostly occupied by forestry and agricultural land, as well as the marsh areas. However, it is estimated that near the bypass route (at a distance of 350 metres on both sides), ~150 inhabitants of the K kava rural territory live. In this area, there are 50 residential buildings, of which 1 is located 20 meters away, 5 – at a distance of up to 50 m, 7 – at a distance of up to 100 m, and 16 – at a distance of up to 150 m.

6.3.1.3. Overall, it is estimated that the new K kava bypass route and the section of the road A7 to be reconstructed crosses/affects the plots of land owned by natural persons and legal persons, owned by state and local government. It is estimated that the reconstruction of the sections of the existing road A7 will affect 82 plots of land that are adjacent to the existing road zone to be reconstructed, while the K kava bypass route will cross 66 plots of land.

6.3.1.4. It is projected that in the area of the newly built road, the affected properties will be mainly divided into different sized parts (a more detailed description of the properties affected by the construction and reconstruction of the planned bypass are presented in Annex 15 of the Statement). Taking into account the planned technical solutions provided by the Intended activity, a preliminary environmental impact assessment of the Intended activity for each property has been carried out, and it was found out that it is very important to take into account the size of the real estate size and to determine whether the route crosses the edge of the real estate, slightly moving into its territory, crosses a part of it (corner, edge, projection), or due to the crossing completely divides the land property (in equal or unequal parts). The Statement contains the conclusion that in case of implementation of the Intended activity 24 land plots will have to be fully repurchased – in most cases they are properties, which are located in the junction area. Other properties will be affected in part. In assessing the impact on the property, it is concluded that the more significant impact would be in those cases where the Intended activity divides the property in half, which means that to get from one part of the land to the other, it will be necessary to cross the new bypass route using the parallel road network and the planned crossing places. It is an additional burden for the residents and land (agricultural) managers. According to the legislative acts it will be necessary to consider and find out in each individual case whether any of the remaining parts of the divided property by expropriation becomes unusable (for example, according to the territorial planning of the local government – due to space, configuration or other reasons). The Statement states that the land expropriation process has been initiated and is being implemented, a large part of the land properties has already been distributed and after the alienation of their parts, separate units of land have been created to be used for the reconstruction and construction of the road. In accordance with the opinion of the Bureau it would be recommended, where possible, to consider the probability of the land consolidation to find

possible logical solutions for reducing impact on the properties, including to effectively rearrange land ownership boundaries, to create efficiently the placement structure of the property objects and not to constitute a disproportionate barrier effect, causing property management problems.

- 6.3.1.5. Essentially, the planned bypass will re-divide its crossing territory conditionally into two parts, so that within the framework of the environmental impact assessment solutions have been studied and searched for how to integrate the bypass in the most optimal way in the area and how to provide access to the property and the areas. Evaluating and developing access solutions, it is taken into account that the existing and newly built road network must provide access to all of the properties. As the Çekava bypass according to the significance and the technical parameters is a fast traffic motorway no direct connections (exits) are planned to the private properties. Access to the private property from the Çekava bypass is planned to be provided through the connecting points of two levels and the parallel road network. The total length of the newly built parallel and local roads network is expected to be of ~ 21.5 km (indicative total length) and their construction places are shown in the graphic annexes of the Statement. The Statement shows that, overall, the reconstruction of the section of the existing road A7 and the construction of the Çekava bypass is planned so as to ensure access to the residential buildings also in cases where the elimination of existing connections is planned. At the same time (it has also been confirmed by the Initiator within the framework of the public consultation), the new road infrastructure undoubtedly will create additional inconvenience to the local residents because in order to get to the places, which until now were directly accessible, after implementation of the Intended activity it may be necessary to drive through the connecting points (to drive longer distances). Such changes are related not only to the commonly agreed road hierarchy, but also traffic safety.
- 6.3.1.6. It can be concluded that the change of the existing access solutions will not affect only the inhabitants living near the planned bypass, but it will also have impact on the enterprises located in the planned bypass impact zones, some of which are actively involved in the public participation activities, including offering their solutions for the construction of the Çekava bypass. The Bureau concludes that the Initiator after assessing the technical solutions of the construction of the road, as well as the economic and security considerations, to the extent possible, has adapted the planned construction solutions to the public interest; however, it is clear that it is not possible to satisfy all public interests in case of implementation of the Intended activity provided by such a substantial construction project. Consequently, compromises shall be found and it shall be verified that the new solutions are not disproportionate (finding solutions to reduce the impact and disturbance).
- 6.3.1.7. It is expected that the implementation of the Intended activity will cause problems to pedestrians, cyclists and public transport users, which will be an inconvenience caused by the changes in accessibility to different areas and objects, by changing transport stops, routes, road crossings arrangement, thus increasing the length of the road to reach various destinations located near the place of residence or work. During the public consultation on the

Statement, several proposals have been received from the public and companies about the desired location of the pedestrian infrastructure elements (pedestrian crossings, footbridges, tunnels and overpasses) and staging points, which in certain cases were included by the Initiator in the project solutions, while in other cases were not included, on the grounds of a variety of the exclusion / influencing factors, such as, additional property disposals, road construction standards, etc. Overall, however, the solutions contained by the project allow to conclude that planning the new infrastructure object, particularly in the residential areas, issues relating to the protection of pedestrians and passenger flow planning and organization, are also incorporated in the project, as far as possible searching for the most appropriate solutions.

6.3.1.8. The Statement contains a separate assessment of the positive benefits, which the construction of the bypass will create to the JSC “*Putnu fabrika Ķekava*” (Poultry Factory Ķekava), the largest production unit of Ķekava rural territory, concluding that the Ķekava bypass will provide an opportunity to improve accessibility to the JSC “*Putnu fabrika Ķekava*” (Poultry Factory Ķekava), to deliver products to consumers in less time, to speed up supply of raw materials and generally improve factory logistics. However, at the same time, it is determined that the Ķekava bypass is intended to be a road of international importance along, which with no sanitation, through a number of national territories the transit traffic moves. The company and the Initiator shall take into account this fact also from the sanitary point of view (the spread of infectious diseases). For example, in case of the spread of the epizootics and infectious diseases, the Food and Veterinary Service according to the requirements of the Cabinet of Ministers of 19 March 2002, Regulations No. 127 “Organisation for elimination of epizootic outbreaks and threats of conventional routines” develops this disease eradication action plan. It may also include a call for a quarantine in the area with the protection and surveillance zones within 3 km and 10 km radius of the affected holding. It can be concluded that the planned bypass and the sections of the existing state main roads are located in such a distance.

6.3.1.9. **Based on the opinions and arguments collected during the public consultation and evaluation of the Statement, it can be concluded that the majority of the residents and entrepreneurs still remain concerned about the expected impact on the accessibility to the territories and objects, especially because of the change of previously customary accessibility and mobility solutions. However, it is not practical and proportionate to provide crossings for all the roads. From the point of view of the environmental impact assessment procedure, it is essential to make sure that the Initiator has fully identified the affected road network and planned the way how to minimize the impact of the barrier effect and fragmentation of the areas. The Bureau concludes that the environmental impact assessment was carried out and the solutions weighted so as to preserve the major road network, providing crossings. Overall, mobility of the population and access to the public objects and property is maintained and provided. Although the area is fragmented, solutions are planned to reduce the barrier effect. In the**

course of the environmental impact assessment, the identification has been performed in relation to all the roads of national, regional and local significance and driveways, which in case of implementation of the Intended activity would be crossed by the planned bypass. In relation to the road crossing places the necessary principle solutions for providing functioning of these objects are defined and new solutions to provide accessibility to the territories are found, which in many cases will cause inconvenience compared with the existing access solutions. However, the implementation of new solutions will also ensure mobility of the population and access to the properties and public objects, as well as provide the public transport network and business objects further functioning. Also, in relation to the property, the Bureau recognizes that in case of the construction of the new roads, changes in the environment and impact on the affected properties are inevitable. Therefore, the task of the environmental impact assessment procedures is to weigh and to provide as far as possible the appropriate compromise solutions, which locally avoid complex effects and reduces the impact to an acceptable level. The impacts arising from the influence and transformation of the affected countries in the context of the property infringement are assessed, and mechanisms for reimbursement (compensation) of such impacts are implemented. The Bureau issuing this opinion observes that the requirements relating to the immovable property necessary for the needs of society, expropriation and compensation for such expropriation have already been established by the laws and regulations, so there is no need and it is not appropriate to repeat the following requirements by the opinion on the Statement drawn up. The external laws also include other requirements relating to encumbrances and protection zones, change of land use category and other related issues, and Section 24, Paragraph one of the Assessment Law provides that the Initiator shall be reliable for implementation of the solutions included in a statement. Consequently, the Bureau considers that according to Section 20, Paragraph ten of the Assessment Law, it is necessary and appropriate to set up by this opinion, the following provisions according to which the Intended activity is to be implemented or is not permissible:

- a) The Initiator of the Intended activity shall provide implementation of the measures included in the Statement or the measures having equivalent effect to prevent and reduce the fragmentation of the territories and impact on the properties.
- b) It must be ensured that none of the existing roads by the implementation of the Intended activity is entirely excluded from the traffic network and that, by the bypass, access to the fragmented territories is provided, where applicable – for this purpose by constructing crossings and the parallel road network or in cooperation with local government and the owners of the affected by agreeing on alternative routes. In case of closure, the existing roads, the distance to the nearest crossing points, which can be reached by the parallel access road or the length of the alternative route of the access to the property

shall not be disproportionate and one which significantly restricts accessibility.

- c) In determining the applicable mechanisms for the property expropriation and compensation value, in each case an individual approach shall be provided in cooperation with the property owners.**
 - d) All solutions of accessibility to the affected property and territory, including a reasonable distance to the access roads, which provide access/exit options to/from the bypass, shall be expected and incorporated into the construction design, among other things, in cooperation with the local government.**
- 6.3.2. The construction process organization and the construction-related impacts, including impacts on the infrastructure and engineering communications objects, the necessity of their demolition or reconstruction, the impact on their functioning.**
- 6.3.2.1. The construction and reconstruction works of new infrastructure objects, particularly if they are located in densely populated areas, are associated with different types of impacts, the expression of which depends on the nearness of the settlements and residential buildings and the characteristic conditions of the Location of the Intended activity. In the present case, it is planned that the K kava bypass will run through the sparsely populated areas, while the section of the road A7 to be reconstructed basically crosses the relatively densely populated areas.
 - 6.3.2.2. Taking into account that the reconstruction and construction of a traffic infrastructure object is planned to be performed, it is expected that in the territory of the planned works, the traffic organization changes, limitations and inconveniences will take place. According to the assessed – during the performance of the construction works of the planned bypass, the major restrictions are expected at the beginning of the section of the existing road A7, where considerable traffic congestion is already observed. Since the construction is associated with additional traffic restrictions, the impact will be relatively significant. However, it must be taken into account that the purpose of the works to be performed is directly the solution of the current traffic problems.
 - 6.3.2.3. In order to provide that the greatest possible part of the society is informed about the above-mentioned works, according to the assessment it is important to spread such information as widely as possible through the mass media, to place appropriate references not only in the particular place of construction works, but also at the main roads at such a distance to provide that at an early stage it would be possible to change the planned driving route and choose the appropriate bypass roads. In view of the above, in the work performance project, it is expected to include the traffic organization schemes, pointing and providing opportunities to cross or bypass the construction areas, as well as access to the property and other objects in the construction area without causing considerable congestion and changes in the flow of the traffic. It is expected that during the construction process, there can be disturbances and restrictions in relation to the movement of

pedestrians and cyclists, so the solutions must be found concerning the problem of flow organization for the road users.

6.3.2.4. The planned construction works are related not only to the changes/disturbances in the organization of traffic, but also to air pollution, noise and vibrations that arise during the execution of the work:

6.3.2.4.1. During the construction, pollutant emissions into the air are expected due to topsoil removal, unloading on stockpiles, bulk material handling and usage of the equipment provided for construction works and material transportation, changes of traffic flow and intensity. Such impacts will be felt mostly by the inhabitants of the farmsteads located near the Ķekava bypass, as well as in the section of the road A7 to be reconstructed, passing through the residential areas. However, it is to be noted that according to planning the Ķekava bypass mostly will run outside the densely populated areas and the impact on air quality is expected to be local and temporary.

6.3.2.4.2. The construction works are also related to the noise level changes. It is estimated that it is connected with the construction of the bypass and the related work noise in the environment, caused by the use of the necessary equipment and the transportation of materials, as well as the traffic flow and intensity changes. From the point of view of the authors of the Statement, there is no reason to believe that during the construction work carried out could be exceeded the set noise limits (threshold values) determined by the Cabinet Regulation of 7 January 2004 No. 16 "Procedure for assessing and managing noise" (hereinafter referred to as the Noise Regulations No. 16). It is not possible to completely avoid the noise and other impacts caused by the construction works – they can only be sensibly managed and mitigated, including by not working in the late evening and at night, but to work during the hours when, for example, the noise caused by the Intended activity can create lower burden. Taking into account the specifics of the construction works and the fact that the construction works and their effects are temporary, specific to a certain period, Article 2.8 of the Noise Regulations No. 16 provides that these provisions and accordingly set noise limits (threshold values) do not apply to the noise emission caused by construction works. However, such works must be timely coordinated with the local government. Here, too, the Initiator shall ensure appropriate technical solutions and the working hours providing that the disturbances created by the construction works are as small as possible.

6.3.2.4.3. The legislation of Latvia determines the labour protection requirements for the protection of employees against the risk caused by vibration in the working environment; however, the threshold values for the protection of buildings and structures are not regulated. At the same time, the Statement does not show that during the implementation of the Intended activities, planning appropriate technical solutions for a definite location of the Intended activity, the vibration which may substantially affect buildings or structures can be expected. The construction works are assessed as temporary and it is not expected that

the technical units will work in one place in a continuous operating mode. The areas will be subject only to temporary vibration impact. The Statement contains the assessment of the vibrations created during the construction, depending on the type used for the construction. It is estimated that from the technical units to be used in the construction of the bypass, the strongest vibration is created by vibratory rollers, compacting equipment, pile-drivers or extractors. The vibration level, the person will not feel is $\sim 0,10$ mm/s, which in most cases is observed already 50 meters from the vibration source. The exception is the pile driving equipment, the generated vibration of which at a distance of 50 m may be 1-3 mm/s. However, according to the estimated data the vibration levels used during the construction works ~ 25 m from the vibration source are so low that they cannot cause damage to buildings and structures. The Statement contains the solution for preventing and reducing the impacts – during the construction phase, to consider the possibility to perform pile driving necessary for the construction of road viaducts and overpasses by using drilling techniques, instead of driving them with impact, thereby reducing the vibration. The Bureau points out that within the framework of the environmental project assessment on the impact of other intended activities, a previous assessment of the applicable allowable vibration standards in different European countries has been carried out (for example, the British Standard BS 7385 and the German standard DIN 4150). The German standard DIN 4150 sets more restrictive limits, besides, it determines the maximum allowable speed of fluctuations caused by vibrations in relation to particularly sensitive objects. This standard determines, among other things, that for residential buildings the maximum permitted fluctuation speed is 15 mm/s, but for especially sensitive objects – 8mm/s. According to the assessment provided by the Statement the maximum expected vibration level caused by the equipment used in the construction works at a distance of ~ 20 m is expected 3 mm/s. At the same time, the Bureau supports the precautionary approach of the developers of the Statement and considers that in the vicinity of the buildings and structures, the most appropriate (in accordance with the situations) equipment unit shall be assessed and determined.

- 6.3.2.5. The construction works are potentially related to spills of chemicals, including fuel (in case of an accident) during the execution of the construction works, as well as generation of sewage and waste, which, due to inappropriate management, may be released into the environment. It is, therefore, necessary to identify the potential major sources of this contamination and possible accident scenarios for its getting into the environment. Contamination can occur during the execution of the construction works and can spread in the areas intended for storage of construction machinery and materials storage, as well as for staffing needs. Taking into account the projecting stage of the Intended activities, the Statement does not include detailed calculations of the stored quantities of materials in these areas. The exact location of these areas is also not yet known. However, the Statement contains general standard solutions. The Statement also states that the precise requirements and conditions for the construction site installation will be incorporated into the work performance

project developed by the performer of construction work. The Statement also includes the conditions to be raised on the basis of an environmental impact point of view, including the condition that the fuel necessary for filling the equipment used for the construction works shall be stored in specially marked areas with a cover to protect the ground against the fuel leaks. The Statement also indicates that the regular control of the technical condition of the machinery used for the construction works shall be provided. The machinery shall also be equipped with absorbing materials, which, if necessary, can be used for the collection of petroleum products. In addition, it is pointed out in the Statement that after execution of the construction works, the areas, where the building sites were installed, shall be put in order in no worse condition as they were at the start of the construction works. In assessing the potential risks of accidents, the Bureau concludes that they are attributable to the non-standard situations in the construction processes and equipment use. By means of appropriate actions and measures these risks are preventable and manageable. Before the execution of the construction works, in the specific operational areas, the necessary measures shall be taken, including implementation of the necessary drainage solutions for the staff needs, ensuring a proper waste management. The potential environmental risks related to the performance of the construction works are not to be assessed as high-probability events, if appropriate organizational and engineering measures to prevent an accident situation are taken. With regard to waste it is expected that during the construction of the to bypass, the following materials and waste will arise: excavated ground, soil and turf from the road surfacing construction works, timber from the route preparation works, debris from the reconstruction of the existing road, removing the old carriageway and the demolition of the old buildings. Part of the waste is intended to be re-used, recycled and disposed of, including, to use in the construction works, while the recycled waste material are planned to be transferred to licensed waste management companies. According to the assessed data, it is not possible to accurately calculate the amount of waste generated from the construction works. It shall be carried out during the stage of the technical design development.

- 6.3.2.6. The construction impacts assessment of the hydrological aspects, impact on the soil and natural values is included in other subsections of the opinion of the Bureau.
- 6.3.2.7. From the Statement, it is clear that within the framework of the environmental impact assessment, the communications to be crossed are identified. These communications will be affected by the Intended activity and they will be subject to reconstruction or protection measures. The Statement informs that during the reconstruction of the engineering networks, the supply interruptions, for example, power interruptions, to the end users, are possible, for which they need to be informed in a timely manner. It is pointed out that during the development of the work performance project, technical solutions will be coordinated with the relevant owners of the engineering networks, as well as according to the requirements included in the Statement it is expected that upon completion of the construction works, the existing engineering networks will be

restored in the position provided by the construction project or not in a worse position as it was before the commencement of the construction works (if no special requirements are set by the construction project).

6.3.2.8. During the environmental impact assessment, a separate evaluation of the mutual work organization requirements in relation to the construction works of the Ķekava bypass and other planned construction works in the vicinity of the Location of the Intended activity (See Section 3.2.24) of this opinion. From the assessment carried out it can be concluded that:

- 6.3.2.8.1. Simultaneous implementation of the reconstruction of the road A5 and the Intended activity is not planned. The reconstruction works of the road A 5 were planned to be started in 2017 and to be completed before the start of the Intended activity, but the construction works have not yet been started and there is currently no information available on the possible time of performance. Consequently, the impacts of the construction works are likely not to be summed up, and as the initiator of both actions is the Initiator, the Bureau concludes that it is possible to provide a solution interoperability within the framework of the construction project development, it is possible to provide solution interoperability.
- 6.3.2.8.2. Simultaneous implementation of the construction works of the section A4 (Saulkalne - Bauska - Ārce) of the state main road E67 and the Intended activity is not planned. The impacts of the construction works will not be summed up, and as the initiator of both actions is the Initiator, the Bureau concludes that it is possible to provide a solution interoperability within the framework of the construction project development it is possible to provide solution interoperability.
- 6.3.2.8.3. In the section from the bypass junction with the road A5 to 11.5 km of the bypass, it is planned to direct the road in a single corridor with the Rail Baltica railway line. This solution as applicable has been chosen by the designers of Rail Baltica as it is planned that the newly constructed railway will cross Latvia from north to south. Therefore, during the course of the environmental impact assessment, the variant for constructing the linear infrastructure objects as much as possible in a single corridor was looked for. This potentially would less fragment the areas to be crossed, especially the forest tracts and the populated areas, as well as would create a burden on a smaller number of properties. Implementation of the two projects most likely will be carried out simultaneously or in overlapping time segments. Therefore, the Intended activity has mutually subordinated conditions with the Rail Baltica, Interoperability between the projects and their implementation are related to a series of technical and organizational solutions, which require mutual coordination. The related sales conditions mainly result from various project implementation schedules, the need to harmonize technical and location solutions and project implementation phases to provide that the construction works of the two projects at the respective stages are planned maximum simultaneously or sequentially. From the Statement on the Intended activity it can be concluded that the Initiator takes into account these circumstances and that the possible

interoperability solutions of the projects are assessed. From the construction point of view, it can be concluded that the railway line has more stringent projecting standards and conditions (for example, minimal radiuses, curves, distances, etc.); therefore, during the construction of both infrastructure objects, the bypass construction requirements shall be adapted to the Rail Baltica construction requirements (including railway subgrade solutions). The summary adverse effects of these two projects are expected mainly in the context of operational impacts (noise) and territorial fragmentation; however, both technical projects provide corresponding solutions for preventions of fragmentation impacts. The impact noise aspect is discussed in the relevant subsection of the Opinion of the Bureau. In the context of mutual coordination and interaction of various projects, the Bureau has already put forward a number of requirements to the Ministry of Transport in the Opinion of 3 May 2016 on the statement on the environmental impact assessment of Rail Baltica. Also in the context of the Intended activity, it can be concluded that the prevention and mitigation of impacts is largely dependent on the timely planning and cooperation; therefore, the Initiator shall cooperate with the Ministry of Transport and in a mutually coordinated manner shall harmonize the timetables and conditions of the construction of the infrastructure objects of relevant sections. Such conditions generally would reduce the impacts of the construction works. The amount of the works to be performed would be planned as early as possible to the maximum to avoid the situation when after the completion of the works, the excavation and reconstruction works are restarted.

- 6.3.2.9. Taking into account all of the above, the Bureau concludes that the implementation of the Intended activity will involve the construction-induced influences and interferences that cannot be completely eliminated, but they can be wisely managed and minimized by choosing appropriate construction solutions. Such solutions include the measures, which are necessary to create possibly fewer burdens to the inhabitants, company activities and traffic in the vicinity of the bypass and the sections of the road A7 to be reconstructed, as well as the measures necessary to provide that the impact on the quality of the environment does not exceed the threshold values, that the work does no harm to nature and that the other related construction project solutions are taken into account in a timely manner. It can be concluded that by taking various mitigating measures it is planned to minimize the impact of the typical and characteristic disturbances caused by the construction works; however, their effectiveness is largely dependent on the planning of the precautionary measures and their adequate implementation. **When deciding on the necessity of imposing the mandatory requirements, the Bureau emphasizes that the statutory requirements for the construction is an unconditional requirement that is already regulated by external laws and regulations. These requirements are binding on the Initiator and the performers of the works and otherwise the implementation of the Intended activity is not allowed. Therefore, during the further project development process, the construction works and implementation of the Intended activity, the fulfilment of the measures provided by the**

laws and regulations and the Statement (or equivalent in terms of efficiency) for reducing the impact. At the same time, in addition to this, the Bureau considers that in the present case in accordance with Section 20, Paragraph ten of the Assessment Law, it is necessary to indicate the following conditions under which the Intended activity shall be implemented:

- a) Within the framework of the development and implementation of the construction project, interoperability with other construction projects planned in the affected area of the Intended activity. The planned works and construction solutions, as well as construction time schedules and conditions in the K ekava bypass construction area, where it is planned in a single corridor with the Rail Baltica railway infrastructure, the planned works and construction solutions, as well as construction timelines and conditions shall be determined in collaboration with the Ministry of Transport.
- b) Before the commencement of the construction works, the traffic organization plan for the construction affected areas during the construction phase, shall be developed. The traffic organization plan shall include the solutions for the organization of the road transport flows (public transport) and (where necessary) the flow of pedestrians and cyclists in order to reduce congestion and negative impact on the flow of traffic and to ensure access to the fragmented territories of the construction area.
- c) In the course of planning the transport routes to the construction areas and movement solutions in the construction area, maximum use of the existing road infrastructure must be made, if necessary, timely taking the necessary measures to provide the pavement quality or load-bearing capacity, which is necessary for the construction techniques. The construction works shall provide that access to the construction area is organized along the existing roads or the prepared right-of-way (compartment lanes).
- d) The areas necessary for storing construction materials and technical equipment shall be as much as possible located outside the protection zones of the infrastructure objects, watercourses and other objects, specially protected habitat areas and so as not to adversely affect the residential or public buildings. During the construction, the use of heavy machinery to drive over wet areas should be avoided. It is related to the places where such driving causes a significant change in microrelief, vegetation composition and deep holes remaining for a long time.
- e) The Initiator shall ensure the implementation of the activities provided by the Statement, including compliance with the security conditions, which are applied in prevention or reduction of the impacts related to the area preparation and construction. Related measures shall be planned and implemented to prevent during the construction works, but if an accident occurs, to the maximum limit, spreading of oil products, suspended solids and other pollutants in the environment, including soil, drainage trays, surface and underground waters.

- f) All the reconstruction and construction measures shall be planned and carried out so as to respect the use of the territories adjacent and not to impose an undue burden or disruption. Where necessary, for mitigation of the impact of vibration appropriate techniques shall be used to provide that vibration is reduced and it does not pose risks to safety of buildings and structures. Construction works shall be timely coordinated with the relevant local authorities and performance of the construction works and transportation of the construction materials and waste as far as possible shall not be carried out during the holidays and the works shall planned to be performed mostly between 7.00 a.m. and 7. p.m. During the construction process, if necessary, the road wetting or other measures to limit the spread of dust in dry periods nearby the residential buildings shall be taken.
 - g) Construction machinery and equipment, to which it applies, must comply with the requirements provided by Cabinet of 23 April 2002, the Regulation No 163 “*Regulations on noise emission by equipment used outdoors*”.
 - h) A significant lasting impact of the Intended activity on the functioning of the crossed infrastructure and engineering communications structures is not permissible. In case of the implementation of the Intended activity, temporary and lasting solutions shall be provided to ensure the functioning of these objects, including reconstruction or other measures for operation and protection where necessary. The specific requirements imposed on each of the areas and needed for the provision of the operation of the existing infrastructure and communications shall be determined during the construction projecting, developing the work management project. Solutions shall be established in cooperation with the managers of the infrastructure and engineering communications structures and technical regulations shall be provided for their implementation. If necessary, in cooperation with the managers of the infrastructure and engineering communications structures, the possible object disconnection times and durations shall be set up and coordinated to provide that during temporary disturbances functioning breaks, as little disruption as possible is created to end users.
 - i) Performance of the construction works, including construction or reconstruction of the necessary communications shall be planned and carefully designed to maximally avoid the situation when after the completion of the works, excavation and reconstruction activities re-start.
 - j) After the completion of the works, all the necessary re-cultivation measures shall be provided to return the surrounding area affected during the construction in a condition no worse than it was at the moment of the commencement of the construction works. It must be ensured that the embankments, including in the areas of bridges and crossing points, are strengthened and planted with greenery to prevent erosion in case of intense precipitation.
- 6.3.3. Impact on the hydrological, geological and hydrogeological conditions, as well as surface water bodies and soil quality, including in relation to the construction in a new place.

- 6.3.3.1. One of the assessed aspects in the Statement in relation to the selected location of the route – areas of wetlands (flooded, bogged or burdened runoffs). The beginning of the section of the Ķekava bypass route (in the direction of Riga) is characterized by smooth, gently undulating terrain and peat soils, which is the reason for high humidity in the surrounding area. The areas of the bogged and burdened runoffs in the territory of the Ķekava bypass perspective route are shown in Annex 8 of the Statement.
- 6.3.3.2. According to the Statement, taking into account the current level of detail of the project, the planned engineering constructions solutions are approximate, the purpose of which is to provide possibility to predict the impact and the approximate cost of constructions. An accurate and detailed projecting of the planned bypass and the related engineering constructions solutions, selection of parameters and materials and other works will be carried out at the technical stage of the development of the construction project. Before the preparation of technical project, it is planned to carry out a detailed geological (geotechnical) research (within the framework of the sketch project, obtained geological data are made in increments of ~ 300 m), especially in the valleys of the Ķekava river and the Daugava - Misa canal, as well as it will be necessary to determine the physical-mechanical properties of the soil and other parameters according to the Cabinet Regulation No. 333 of 30 June 2014 *“Regulations on Latvian Construction Standard LBN 005-15 “Regulations for construction engineering research”*. However, so far as it is necessary for the performance of the environmental impact assessment, the Statement includes the clarification and assessment of the particular circumstances of the areas of the activity.
- 6.3.3.3. In assessing the engineering-geological conditions, it is concluded that the engineering-geological conditions of the planned bypass route area are appropriate for the construction of the motorway and do not create special burdens. However, according to the assessment made during the implementation of the Intended activity, to create a solid foundation for the construction of the road in a number of areas require the replacement of poor soils will be required, including excavation of peat layer (poor soil). The maximum depth of the excavated layer is 3 m, while the average - 2m. Taking into account that in the road construction the quality and suitability of the base is of great importance in the further motorway service. Within the framework of the Statement, the sections of the bypass containing poor soil (the related areas are reflected in Figure 4.6.1 of the Statement).
- 6.3.3.4. In the vicinity of the Ķekava bypass route, there are a number of water bodies (Annex 8 of the Statement), the most important of which are: the Titurga river, the Ostvalda canal, the Daugava - Misa canal, the Butleru stream and the Ķekava or Ķekaviņa river. In addition to these water courses, the surface runoff in the area of the Location of the Intended activity and the adjacent territories, is formed by a dense network of drainage systems, ditches and canals. It is assessed that most of ameliorated areas in Ķekava municipality are drained by a closed drainage system (Annex 8 of the Statement). According to the Statement the bypass route crosses about 30 drainage ditches and canals of different sizes. The main direction of the runoff from the drainage system is also directed to E; however, local differences have also been found, affected by the geological structure and

relief of the area. Thus, in the area between Titurga and the Ostvalda canal, where the planned bypass route crosses the marsh area with a burdened runoff, the surface water runoff also is directed to SE.

- 6.3.3.5. According to the assessed facts many of the existing ditches of the drainage system are severely overgrown, many of them during the arid periods dry out. From the Statement, it is clear that the Initiator agrees with the fact – implementation of the Intended activity must not impair the quality of the environment. Therefore, already at the stage of projecting the bypass, it is necessary to plan the reconstruction of the drainage systems crossing the area or construction of the additional drainage systems.
- 6.3.3.6. The research has been carried out in the Ķekava bypass route, and it was found out that the level of groundwater embeds mostly at a depth of ~ 2 m from the ground surface, the highest – 0.7-1.1 m, it is in the swamp area and the adjacent plain between *Dzelzkalni* and *Skujnieki*, as well as in the adjacent plains and in the relatively reduced and undrained areas. Depending on the prevailing sediments, seasonal fluctuations of the groundwater level also change, where in the sandy areas it is up to 1.6-1.8 m/in a year, assessing that during the period of the maximal groundwater level in the bypass territory could be only 20-30 cm from the surface of the earth, while in the areas where peat sediments are widespread, the groundwater level may be even higher. The Statement concludes that road construction will not affect the flow of groundwater, which is regionally directed to E (also to NE and SE) (to the Sausā Daugava). The exception is the swampy areas.
- 6.3.3.7. Taking into account the fact that in the area of the planned bypass route and the adjacent territory in the upper layers of the ground, mainly water well permeable sandy sediments are spread, the surface and underground water horizons are well connected hydraulically and the territory is characterized by dynamic fluctuations in water level. Depending on the season, the hydraulic relationship is characterized by the contrary processes – in the wet period of the year, the objects, which are deeper than 1.5 m are fed by the groundwater and serves as a reliever area for the groundwater horizon, but in the dry period, the runoff objects serve as a source for the groundwater supplement.
- 6.3.3.8. In most of the research areas under the water well permeable sandy sediments, there is embedded in the water poorly permeable moraine layer, under which the water horizon complexes of Devonian sediments *Plaviņas - Amula* (*D_{3pl-aml}*) and *Arukila - Amata* (*D_{2-3ar-am}*). Therefore, according to the assessment, the impact of the Intended activity and the motorway operation on the underground waters, which are used for supply of drinking water (the water complexes of the Upper Devonian Daugava - Plavinas and Amata - Gauja) is not expected as they are hydraulically sufficiently protected by ~ 10m and thicker clayey sediments layer formed by the moraine and Upper Devonian rocks. It is also not expected that the quality of the groundwater used in the individual country farms will become worse.
- 6.3.3.9. The Ķekava bypass route according to “*The flood risk management plan for the Daugava river basin for 2016 -2021*” (hereinafter referred to as - the Flood Risk Management Plan), developed by LEGMC in 2015, is located

mostly around the water body Ķekava D414, which in the above-mentioned plan has not been viewed as a flood risk area and no flood risk reduction measures have been determined for it. In turn, a small part of the planned bypass route at Baloži is located in the area of the water body D413SP in the territory, is not exposed to flooding risk. However, according to the Territorial Planning the bypass route at its planned crossing with the Ķekava river crosses the floodable area with the calculated probability of 10% (the probability of flooding at least once every 10 years) (Annex 8 of the Statement). For the flood zones the restrictions determined by Section 37 of Protection Zone Law shall be complied with and the Intended activity must not impair the quality of the environment; therefore, during the design stage, it is necessary to provide appropriate solutions. According to the assessment before the development of the technical project of the bypass construction, it is expected to make clarifying measurements for the watercourses, which are crossed by the bypass perspective route, marking the water level heights and calculating the seasonal fluctuations, to provide that the data collected can be used when designing the bypass at a sufficient height (so that it will not be flooded and not cause damage to the environment or to the road surface). Within the framework of the project, it is planned to set a suitable solution for each watercourse (overpass or culvert), which will not increase the risk of flooding the area and will reduce the impact on the dynamics of the flow of water courses and the water level.

6.3.3.10. According to the assessment, the construction of the planned Ķekava bypass may cause the following effects on the hydrological regime of the territories adjacent to the bypass route:

6.3.3.10.1.1. The drainage and flow rate changes of the surface watercourses and drainage systems (open and closed drainage) that may occur in the road embankment creating culverts of inappropriate diameter, as well as the surface water quality changes. It is expected that most, significantly in relation to changes in the hydrological regime the Daugava - Misa canal, will be affected as during the construction of the bypass; it is planned to transform its bed in the canal and the road crossing point. During the construction of the bypass, for its crossing over the river, it is planned to build a bridge crossing with Ķekava planned to build a bridge, which is the only engineering technical construction of this kind within the framework of this project. However, the planned bridge solution excludes the placement of the bridge supporting columns (piers) in the bed of the river; so in accordance with the assessment, it is not expected that the bridge construction could endanger the hydrological regime of the Ķekava river and sludge formation in early winter or during ice walking in spring. Also, it is not planned to narrow the slope of the river in the crossing point, thus the flow rate of the Ķekava river will not be reduced and the bank erosion will not be promoted.

6.3.3.10.2. The local groundwater level rise in the immediate vicinity of the planned bypass route, which according to the assessment will have no significant impact on the motorway adjacent forest or agricultural land quality. In the areas of wetlands, where during the road construction

works it is planned to take out the poor subsoil, even the groundwater level drop is possible.

- 6.3.3.10.3. The intensification of the territory bogging process, which mainly may take place during the construction of the Kekava bypass in the bypass sections where the terrain reductions are found (in the section between 3.36 km and 3.96 km of the bypass) and where it is planned to create embankments. As a result, soil sealing can be expected in this section, which can cause difficulties to rainfall infiltration possibilities, which in turn can contribute to the deterioration of the natural runoff, water accumulation and the development of the bogging processes.
- 6.3.3.11. To eliminate these impacts, it is planned that at the stage of the development of the technical project, accurate and suitable for the territory culvert installation planning works will be carried out (in relation to position, diameter and depth), if necessary, including also the reconstruction of the adjacent drainage systems, so as not to worsen an existing watercourses mode and flow rate. Also, to avoid the development of bogging processes and deformation of the newly built road, the removal of the poor soils is planned. In turn, to avoid regeneration of the bogging processes, it is planned to keep the existing drainage system in the territory and to ensure its proper functioning (if necessary, by performing restoration of certain sections, if they are overgrown, blocked or otherwise disrupted operation of the drainage systems). The road is planned to be projected and constructed to provide that it is not subject to flooding by ensuring an adequate road embankment height and, if necessary, by building additional ditches, especially in the areas where the terrain elevation or flood zones are located in the immediate vicinity of the bypass.
- 6.3.3.12. The removed soil surface, which during the construction of the bypass construction to be, shall be stored in separate stacks, at the end of the construction of the bypass is planned to be used for the road improvement works –greening of the embankment sections, thus making good use of at least part of the soil surface affected during the construction.
- 6.3.3.13. According to the Statement, the runoff waters (rain and melt water) from the planned bypass, like it happens elsewhere outside built-up areas, shall be drained in a self-flow way into the roadside ditches from which the perceived runoff water infiltrates into the ground.
- 6.3.3.14. It can be concluded that the planned Kekava bypass route in a small section crosses the open body of water (the pond). According to the report partial backfilling of the pond (water body) will be required (a schematic representation of the planned solution is shown in Figure 4.6.3 of the Statement). Analysing in this area the soil suitability for construction of the road and its engineering and technical elements, it is estimated that the soil geological conditions for construction of the road in this area are suitable, the road embankment height is sufficient and the impact of the spatial hydrological conditions on the road construction is insignificant.
- 6.3.3.15. According to the assessment the construction works are recommended to be carried out during the dry period to provide that their performance is not burdened by a high groundwater level. Analysing the potential impact of

the planned construction of the bypass on the hydrological conditions of the surrounding areas, it is assessed that the road construction practically will have no impact on the groundwater flow and direction. In the areas where it is planned to replace the bog sediments or in the depressions where a high groundwater level is found, gullies shall be constructed along the road to prevent washing away the road sides with ground water. The concrete solutions shall be incorporated in the construction project. According to the assessment – during the removal of the peat layer, a transient groundwater accumulation in the foundation ditch and depression cone formation can be expected, which, taking into account peat sediment filtration properties (less than 10^{-3} m/dnn), will be small and it will be short-term in nature. According to the information provided by the Statement, in the course of peat sediment removal, pumping the water from the foundation ditch will be required. The amount of pumped water and drainage solutions shall be determined at the future design stages.

6.3.3.16. After the assessment of the Statement, the Bureau concludes that it includes the measures necessary for the elimination/reduction of the potential impacts and no conditions have been detected, which from the point of view of the assessed impact aspect would be the reason of not to allow implementation of the Intended activity. If the safety precautions are observed and, if during the development of the construction project in a timely manner, the specific hydrological and hydrogeological conditions of the location of the Intended activity, the soils stability and other conditions are taken into account, prevention and management of the adverse effects is possible. Subject to the above, the Bureau in accordance with Section 20, Paragraph ten of the Assessment Law determines the following conditions under which the implementation of the Intended activity is possible:

- a) The Initiator shall ensure the implementation of the activities provided by the Statement, including compliance with the security conditions for prevention or reduction of the impacts. In the areas where there may be peat soil of a low load-bearing capacity, the hydrogeological and engineering geological conditions shall be taken into account, providing replacement of the soils and the road stability.**
- b) The bypass construction shall not negatively affect the hydrological regime of the adjacent area and the usage of the properties and buildings in the surrounding area. The functioning of the ameliorative systems and structures to be crossed by constructing adequate culverts or through the re-planning and restructuring. If necessary, the ways of providing timely information to the public, interested persons or affected enterprises, landowners, legal possessors or local governments and cooperation in solution of the temporary changes shall be ensured.**
- c) For watercourse crossing constructive solutions and construction techniques shall be chosen to provide that the water quality of the watercourses and hydrological regime during the construction period will be affected as little as possible. Suitable technical solutions for each particular area shall be provided according to the width, flow rate and maximum levels of the watercourse and the valley to be crossed. In**

determining the appropriate solutions for the building constructions and location in the watercourses crossing points, the flood prone areas shall be taken into account, stating the reasons for the choice of the most appropriate solution.

- d) For performance of works the solutions and techniques preventing contamination of the underground water horizons. In the areas where there will be need for groundwater pumping, groundwater volume calculations shall be provided and within the framework of technical design the most appropriate solution for draining shall be justified. Such draining shall not significantly affect the watercourses water quality and hydrological regime. Where necessary, ensure settling of the pumped water.
- e) If, however, as a result of the construction of the bypass and set up of the related objects, any of the boreholes/wells of the undergoes significant changes of groundwater resources or quality, which affect the water supply, the Initiator shall provide alternative water supply options in the concrete farmsteads.

6.3.4. Impacts on biodiversity and specially protected natural values.

6.3.4.1. By the implementation of the Intended activity, the current state of the environment in the Location of the Intended activity will be transformed and in case of the construction of the bypass, the existing vegetation would be lost. The Location of the Intended activity is outside specially protected nature territories; however, the construction is planned to not take place in a densely built-up area where protected natural values can also be located. The planned bypass will also cross a number of watercourses. Therefore, it is appropriate to weigh up whether in the planned construction area, there are protected natural values and what impact can be caused on ichthyofauna and water quality by crossing the watercourses.

6.3.4.2. The assessment of the existing natural values in the area of the K kava bypass planned route and the potential impact on them by the Intended activity was made at different times in 2016 by the experts in the fields of species and habitats, ornithology and fish fauna (hereinafter referred to as the Expert or Experts of species and habitats, ornithology and fish fauna) (Annex 2 of the Statement). The Expert of species and habitats has inspected the bypass route corridor in width of ~ 100 m on either side of the planned route. In the inspected territory, 2 specially protected species were found – Fir Club Moss *Huperzia selago* and interrupted Clubmoss *Lycopodium annotinum* included in Annex 2 of the Cabinet Regulation No. 396 of 14 November 2000 “*Regulations of the Lists of the Specially Protected Species and the Specially Protected Species whose use is Limited*” (hereinafter referred to as CM Regulations No. 396) as the specially protected species whose use is limited. While in the boggy part of the area, genus Sphagnum moss was identified, which is included in Council Directive 92/43/EEC of 21 May 1992 “*On the conservation of natural habitats and of wild fauna and flora*” (hereinafter referred to as the Habitats Directive), in Annex V “*Animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures*”.

- 6.3.4.3. According to the assessment of the Expert of species and habitats, the interrupted Clubmoss, in the inspected area, is often detectable in drained peat lands and forests on drained peat soils, in some places forming large stands, while a small stand of Fir Club Moss in the bypass route impact zone has been found only in one place. The Expert of species and habitats, in assessing the findings of protected species in Latvia, indicates that the species lycopodioides mostly grow and spread in the drained peat soils, along the ditch edges and clearings. Outside the typical natural forest habitats, they could be considered as the indicator species of the affected areas, reflecting the impact of drainage. Although by the implementation of the Intended activity, the habitat areas suitable for lycopodioides species will be reduced, according to the assessment included in the Statement the planned construction of the bypass, on the whole, will not affect the favourable conservation opportunities of the lycopodioides population in the adjacent territories of the Intended activity contains favourable conditions for their development – drained forests, swamps and clearings are widely spread there.
- 6.3.4.4. The research area is a boggy, but a drained land, which ~ 0.4 km in length crosses the planned Ķekava bypass route. It is found that the area corresponds to the criteria of European Union protected habitats in Latvia: *7120 Degraded raised bogs where natural regeneration is possible or is taking place* criteria. It is estimated that the implementation of the Intended activity would result in loss of ~ 7.7 hectares of the habitat. The Expert has assessed that by performing the construction of the bypass, the adjacent degraded bog habitat areas will continue becoming dryer and potentially will develop into a drained pine forest habitat. However, in assessing the spread of the habitat in Latvia and in specifically for this purpose made protection areas (including the protected areas of European importance *Natura 2000*), the expert admitted that the areas affected by the Intended activity are not significant for conservation of protected marsh habitats. The habitat in the place of activity has developed in the drained bog area and, although there are still preserved bog inherent moisture loving plant species, it is not a natural or almost untouched territory and it does not have a functional relationship with natural or minimally affected bog habitat. For these reasons, according to the Expert's opinion, it is not appropriate to plan the specific measures for habitat conservation. At the same time, the Expert recommends to carry out the compaction of the outer edges of the ditches of the bypass (directed towards habitat *7120 Degraded raised bogs where natural regeneration is possible or is taking place*, by compacting them with heavy machinery. It is concluded that such a measure will hinder the performance of water filtration and will reduce the impact intensity of drainage. It is also recommended to consider the possibility of not building culverts under the bypass (in the habitat area), which would reduce the drainage impact if such a solution is allowed and does not conflict with the road construction requirements.
- 6.3.4.5. In the immediate vicinity of the planned bypass route, the specially protected habitats also identified: *91D0 * Old or natural boreal forests* and *6120 * Sandy grasslands*, which in the European Union, are considered as priority habitats to be protected (accordingly ~ 50 m and ~ 20 m from the

bypass). According to the assessment of the Expert of species and habitats (considering their location) it is not expected that the Intended activity will affect the existence of these habitats since the habitats areas are spatially sufficiently separated.

6.3.4.6. According to the assessment of the Expert of ornithology, no significant concentration or nesting places of protected birds (mainly the typical forest bird species have been observed in the area) are detected. However, the Expert notes that in the course of inspection, in the surrounding area of Krogšils, at Titurga, the place which is located near the existing road A7, also found in at least three vocalising corncrakes *Crex crex* were found. This bird belongs to a protected species and is included also in the European Parliament and Council Directive 2009/147/EC “On the conservation of wild birds” (Annex I) (Directive replacing Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, hereinafter referred to as the Birds Directive). Although the Expert of ornithology in his opinion notes that it cannot be completely ruled out that in some of the planned bypass route sections, some of the protected bird species are nesting or staying, he considers that during the implementation of the Intended activity, firstly, its importance and public interest shall be taken into account. Overall, therefore, in accordance with the situation found by the Expert and the provided assessment the construction of the planned bypass most likely will not have a significant impact on the existing ornithofauna in the area of the road route. However, in order not to cause a negative impact on the ornithofauna during the implementation of the Intended activity the Expert recommends performing the felling in the area of the planned bypass route before or after the nesting period or during the period from 1 August to 31 March.

6.3.4.7. The impact on the fish resources, in the course of the environmental impact assessment of the Intended activity, was assessed by the Expert of fish fauna. According to the assessment of the Expert the main factors which determine the impact of the roads, also of the planned bypass on the fish resources, are the rinsed/fallen substances, compounds and materials of the surface of bridges and roads and ditches near the road bypass, the vibration and noise levels increase, as well as the reconstruction works of the road or its parts. According to the assessment of the Expert – within the framework of the implementation of the Intended activity framework should take into account the watercourse type (which in this case is different because the bypass route will cross the natural and artificial watercourses and drainage system gutters) and the planned crossing type (it is planned to build a bridge over the Ķekava river, but over the small rivers, canals and drainage systems - culverts), shall be taken into account. The main problems relating to fish fauna can be disrupted fish migration, so it may be necessary to limit the works in the riverbed during the spawning period. Also troublesome is the activation of sedimentation processes and increased sediment input in the watercourses ecosystems and the construction work, which may adversely affect the quality and the area of the habitat, as well as be the cause of fish death. However, the overall impact of sedimentation on the Ķekava bypass watercourses is assessed by the Expert as a transient. The Expert notes that the impact on fish habitat or even their loss directly relates to the placement

of the bridge supports in the bed of the watercourse. The constructed culverts may affect such essential fish suitable habitat parameters as speed of the current, temperature, hydrological regime and water quality, as well as can restrict the possibility of fish movement and cause the fragmentation of habitats and populations. The culvert construction is related to the physical factors, which limit the movement of fish - the culvert slope, width and the height of the gutter in comparison with the river level.

- 6.3.4.8. According to the opinion provided by the Expert of fish fauna, it is difficult to assess the vibrations and noise impact related to the Intended activity and the road operation. Overall, the fish behaviour change is observed, but it has not been found that the watercourses crossings built in the past have had over the years a significant impact on fish migration, so according to the opinion of the Expert such impact is deemed to be non-essential. While, during the road reconstruction works, depending on their type and the used materials, the possibility of ecological risk may increase, so when planning such activities, the measures to prevent such possible risks shall also be planned in a timely manner.
- 6.3.4.9. According to the assessment provided by the Expert of fish fauna in order to prevent the negative impact of the Intended activity on the fish fauna of the watercourses crossed by the bypass during the operation of the crossings (the bridge over the Ķekava river and the culverts) and during the operation of the bypass, it is necessary to take the impact mitigation measures. It is concluded that at the current project stage, they can be set only in general terms (they shall be provided by the construction project). Taking into account that most of the watercourses, crossed by the planned Ķekava bypass, are artificial or modified for the rainwater drainage systems, their fisheries' potential is insignificant and they are inhabited by ecologically tolerant species (nine-stickleback, roach, bearded stone loach, belica (sunbleak), pike. In view of the above, according to the assessment of the Expert the restrictions in relation to the planned construction works shall be applied only during the performance of the construction works, associated with the construction of the Ķekava river crossing or bridge. The construction works shall not be performed during the period of migratory fish spawning and spawning migration (the optimal execution of the construction works of the Ķekava bypass in the aspect of the impact on fish resources is determined in the period from June to September (inclusive).
- 6.3.4.10. Taking into account that the Intended activity is mainly the construction of a new linear infrastructures object in the natural area where until now, this type of object has never been located there, resulting in the redistribution of the area - the authors of the Statement have assessed the existing animal migration corridors in the area of the activity and the possible impact of the bypass on them. Within the framework of this assessment, the information provided by the State Forest Service has been used. According to the assessment, taking into account the areas crossed by the planned bypass, the location between the Riga and Ķekava building territories, the mammal density there is and the arrival of the animals in this area is more on a casual basis. In the territory, practically no suitable corridors for animal migration are left as this area is one of the most densely populated areas Latvia. Therefore, no significant impact of the Intended

activity and the operation of the planned bypass on the animal migration corridors is expected. However, for security purposes, along the forests and in the section of the existing road A7 to be reconstructed and the Ķekava bypass, enclosures shall be provided to reduce the risk of accidents caused by collisions with animals.

6.3.4.11. After assessing the opinions provided by the Statement and the Expert, the Bureau concludes that in case of implementation of the solutions of the Intended activity included in the Statement and the environmental impact mitigation measures indicated by the Experts, it is not expected that the Intended activity will have a significant negative impact on biodiversity and specially protected natural values. The Bureau considers that in accordance with Section 20, Paragraph ten of the Assessment, it is not necessary to include any additional compulsory conditions under which the Intended activity shall be implemented or is not allowed to be implemented because they already are regulated by law or incorporated into the Statement. In accordance with the rules provided by the laws and regulations, before the commencement of the construction works, under the procedures set by the laws and regulations, fishery expert-examination shall be performed to determine the amounts, potential losses and the amount of compensation and types of the impact and effects on the fisheries resources. The performance terms of the construction works, which can cause contamination of watercourses and possible impact mitigation or compensation measures shall be determined by technical regulations, where appropriate, taking into account the results of the fishery expert-examination.

6.3.5. Noise and vibration.

- 6.3.5.1. The noise level change is one of the most important impacts, which can be observed in the vicinity of the existing and newly constructed infrastructure objects – the roads. Besides, depending on the distance in which the road route is directed along other objects, an important factor may also be the vibrations. Such noise and vibration expressions in case of intense traffic, cause discomfort to the surrounding inhabitants; therefore, they are assessed in the context of the Intended activity.
- 6.3.5.2. To protect people from the long-term burden caused by noise, the legislation of Latvia determines permissible noise threshold values. The threshold detection approach in relation to the industrial nature of the noise in relation to the noise created by the road operation currently does not provide different regulations, but determines equally applicable condition of long-term noise indicators L_{day} , $L_{evening}$, L_{night} . According to Noise Regulations No. 16 the protection zones along the road (including along the road on which the traffic volume is less than three million vehicles per year), noise threshold values are considered as target values.
- 6.3.5.3. Noise indicators - physical values characterizing the noise, which can cause adverse effects, their application procedures and assessment methods are provided by Noise Regulations No.16. Paragraph 1 of Annex 2 to Noise Regulations No. 16 provides noise threshold values:

- 6.3.5.3.1. In the territories of individual (private houses, low-rise buildings or farmstead) residential buildings, children's institutions, medical, health and social care institutions building areas, noise threshold value L_{day} is 55dB(A), $L_{evening}$ is 50 dB(A), but L_{night} - 45dB(A);
- 6.3.5.3.2. In the territories of high-rise residential buildings and areas of public land areas (with residential buildings) noise threshold value L_{day} is 60dB(A), $L_{evening}$ is 55dB(A), but L_{night} - 50dB(A);
- 6.3.5.3.3. While in the mixed building territories (with residential buildings) L_{day} is 65dB (A), $L_{evening}$ is 60dB(A), but L_{night} - 55dB(A).
- 6.3.5.4. Noise threshold values for day, evening and night are set also for the premises, taking into account the usage function of premises (Annex 4 to Noise Regulations No. 16). In the living and sleeping premises, noise threshold values are the lowest (35bB (A) in the day; 35dB (A) in the evening and 30dB (A) at night). In addition, Annex 4 of the Regulations to provides that in the premises, the maximum allowable (i.e. - the highest permissible) emission of noise in the receiver location within the evaluation time interval. With regard to the noise threshold values in premises Noise Regulations No. 16 do not require that in the protection zones of the roads, they should be considered as target values.
- 6.3.5.5. In view of the above, provided that the development of transport infrastructure is carried out, and in particular in the circumstances when the newly built infrastructure object will create an increase in noise level - should be guided by the principle that the implementation of the Intended activity by itself is not a reason for exceedance of threshold value determined by Noise Regulations No.16 or on aggregate with the existing environmental noise does not become a precondition for reaching and exceeding the noise threshold values. Identifying such circumstances or the likelihood (the precautionary principle) restrictive measures for the implementation of the Intended activity and impact prevention (mandatory conditions and restrictions).
- 6.3.5.6. Environmental impact assessment of the Intended activity has been carried out on the basis of this principle and within the framework of the Statement, a weighted noise impact assessment has been performed, by drawing basic scenario calculation models (development of the existing situation) and the calculation models of the noise created by the Intended activity. According to the assessment results, it is concluded that by the Intended activity the increase in noise is expected and that without taking mitigation measures to reduce the noise according to the level determined by the laws and regulations the implementation of the Intended action shall not allowed. Therefore, the areas are identified where the noise reduction measures shall be taken.
- 6.3.5.7. With regard to the assessment the following summary of conclusions can be made:
 - 6.3.5.7.1. Taking into account that the K kava bypass construction completion is scheduled for 2023, among other things, to assess the current state of the environment and the development of the situation in the case the Intended activity would not be implemented - within the framework of

the environmental impact assessment (both in terms of noise and air quality changes), as a baseline condition, the projected situation in 2023 is assessed. Such a situation would occur if the Ķekava bypass construction would not be implemented and the main road traffic flow in the direction from Riga to Ķekava, Bauska and Lithuanian border would continue to move mainly only along the existing road A7 through Ķekava and other existing residential areas in Ķekava municipality. In the assessment (also through the assessment of the Intended activity), the information about the projected increase of the traffic intensity is also taken into account, including the expected changes in separation of the flows of passenger and freight transport and traffic speed, depending on the defined road sections.

6.3.5.7.2. The environmental noise for the ground scenario and the expected noise level in relation to the implementation of the Intended activity is assessed by using the software *SoundPLAN Essential* (license No. 7073) developed by *SoundPLAN GmbH*, which provides noise calculations also in accordance with the calculation methods specified by Annex 1 of Regulations No. 16. Explaining the noise predictions, the Developer in the application of 27 February 2017, (Supplements to the Statement, prepared as Annex 24 to the Statement) indicates that, in order to get the most objective forecast of the expected noise level, the Statement initially included the compilation of the two most common methods of calculating in Europe for the roads – “*NMPB- Routes-96 (SETRA-CERT-LCPC-CSTB)*” (France) and “*RLS-90*” (Germany). The Initiator indicates that the noise spread calculation algorithms of these methods are a bit different; therefore, the results obtained are not identical (that is - if performing assessment using each of the methods separately). However, Paragraph 6.3 of Annex 1 to Noise Regulations No. 16 provides that for evaluation of traffic noise only the computation method, developed in France, “*NMPB- Routes-96 (SETRA-CERT-LCPC-CSTB)*”, referred to in the issue “*Arrêté du 5 mai 1995 relatif au bruit des infrastructures routier, Journal Officiel du 10 mai 1995, Article 6*” and in the French standard XPS 31-133, can be used. Against this background, before issuing the opinion of the Bureau, the additional information is provided, and the Statement is supplemented by the assessment, using only the French calculation method “*NMPB-Routes-96*”.

6.3.5.7.3. In general, changes in noise levels after implementation of the Intended activity (reconstruction of the section of the road A7 and the construction of the bypass) is characterized by the fact that the construction of the Ķekava bypass will result in significant reduction of the total annual average daily traffic intensity in the section of the road A7 - planned as much as four to five times; besides, it is planned to use the new Ķekava for heavy road transport and the rest of the transit traffic (by using the existing section of the road A7 from km 9.78 to km 19.427 as the road of regional significance, which will mainly be used by the local residents and public transport). Consequently, it is concluded that the noise level in the section of traffic relief will be significantly reduced.

- 6.3.5.7.4. At the same time, the operation of the planned Ķekava bypass will increase the total noise level in the new route area. It will be particularly felt in the places where up to now there is no significant source of noise. It follows that by the implementation of the Intended activity, along with the expected changes of traffic intensity, there will be also changes in the impact on the environment and the surrounding population's quality of life, caused by the change in the traffic noise level (also air pollution). According to the results of modelling in case of the construction of the Ķekava bypass, a number of areas will develop where besides additional noise-reducing measures overruns of the noise regulations are expected. The noise discomfort zones are identified in Annex 19 of the Statement and the noise distribution maps.
- 6.3.5.7.5. In relation to the conception of Ķekava bypass, the provisional environmental impact assessment was carried out and the sketch project was developed, in which were indicated concrete places where noise barriers shall be built (three sections of the road A7 to be reconstructed). These barriers have been taken into account in the re-assessment of the impact. They are depicted in the graphic noise assessment maps, and the adequate implementation of the measures for noise impact reduction shall be provided in these places, implementing the Intended activity (that is – no change in measures to be provided compared to previously decided are expected). At the same time, it does not mean that in other places, the adequate implementation of the measures for noise impact reduction is not planned. As it is clear from the Statement, the precise calculations will be needed once again (already at the construction project stage), by determining appropriate solutions for each specific location (among other things, taking into account the extent to which the reduction of the spread of noise shall be achieved).
- 6.3.5.7.6. Describing the possible noise levels reduction measures, it is indicated in the Statement that there is a possibility of reducing the noise levels by using noise barriers (wall), which is one of the most common and most effective noise reduction measures. However, because of the relatively high cost they can be effectively replaced and be combined with other cheaper solutions, such as soil retaining walls, vegetation zones, as well as in yet unbuilt areas - suitable planning of building territories, building placement, shape and design planning according to the requirements set by Paragraph 147 of the Cabinet Regulation No. 240, adopted 30 April 2013, “*General regulations for the planning, use and building of the territory*” and Latvian construction standard LBN 016-03 “Construction Acoustics”. LBN 016-15 “*Building Acoustics*”. In relation to the new construction planning, it is indicated in the Statement that, according to the Territorial Planning, despite the construction of the Ķekava bypass for more than 10 years and the known current and anticipated noise spread problems in the areas surrounding the motorway, low-storey residential building territories are also permitted. Thus, according to the Statement, at the stage of technical project, it is planned to create the most appropriate and optimal technical solution for each specific place where it is necessary to provide additional noise-reducing measures, taking into account the conditions of each place report specified in the

technical design stage in detail, taking into account the site conditions and the current factual and legal situation and the expected noise indicators.

- 6.3.5.7.7. Comparing the noise assessment results (depending on the assessment method), it is concluded that they essentially show only the noise discomfort zones originally assessed by the Statement. According to the supplements provided, by forecasting, using only the calculation method, developed in France, "NMPB- Routes-96", – the noise discomfort zones set out in Annex 19 of the Statement, where additional noise-reducing measures shall be taken, do not change significantly; however, several immovable properties, which are located further away from the planned road would not be located in the discomfort zone (the changes in the in the assessment of the affected properties are included in Annex 24 of the Statement). However, although the results, obtained by computation of the noise level are lower, the need for additional noise-reducing measures in the identified areas remains and the obligation to determine, justify and implement specific solutions also remains.
- 6.3.5.7.8. As one of the most important additional aspects to be taken into account in defining and implementing the most appropriate noise mitigation measures is the fact that in the section to S from the road A5, it is planned to direct the bypass in a united corridor with the Rail Baltica railway line. The routes of both infrastructure objects cross relatively sparsely populated areas; however, in a small section (Figure 4.4.1 of the Statement) the routes of both objects run relatively close to the individual farmsteads ("*Ozolkalni 2*", "*Ozolkalni*", "*Jaunkrasti*", "*Zaubes*", "*Magrietiņas*" etc.). According to the planned construction the Rail Baltica route will be located closer to these residential houses and within the framework of the environmental impact assessment of Rail Baltica, it is already established that in the area along these residential farmsteads, it will be necessary to implement the noise-reducing measures. It should be noted that the noise-reducing measures, which are implemented in an isolated and uncoordinated way may not provide the desired effect, but may even reinforce the spread of noise caused by other objects. On the one hand, by increasing the distance between the noise source and the noise barrier, its effectiveness decreases (accordingly, it may not be effective for restricting the spread of noise to build only one, that is - Rail Baltica noise barrier. However, on the other hand, noise reduction measures can become ineffective if noise barriers are designed for non-harmonized heights or distances from each other (sound reflection). Consequently, the Bureau finds that taking into account the assessment of the impacts of the construction, for prevention of the expected impacts and provision of effective management, it is necessary to cooperate with the Ministry of Transport and the Rail Baltica project implementers by coordinating and justifying the conditions in relation to the sections of both objects. Such a coordinated and coherent cooperation is required also coordinating and justifying the conditions on the implementation of the noise reduction measures.

- 6.3.5.7.9. Consequently, According to the Statement, it is concluded that by adequate projection and implementation of noise reduction measures, it is possible to provide that the Intended activity is not the cause of the threshold value (determined by Noise Regulations No.16), including taking into account the cumulative impact of the road crossing. However, in several areas, in the Bureau's opinion the solutions for reduction of impact caused by the Intended activity, it is necessary to perform planning with extra care to provide that the Intended activity is not a prerequisite for deterioration of the situation. Such areas include the above mentioned Rail Baltica route and the areas where in the future, the implementation of the traffic infrastructure reconstruction projects specified by the Statement (but still not implemented) is possible. Besides, solutions shall be planned with great care also for the areas where, within the framework of the implementation of the Intended activity, the construction of parallel streets is planned (including, for example, the new Ķekavas street at the existing road A7 in Baloži section). However, as the initiator of the projects on the reconstruction of the road traffic objects in all cases is the Initiator, from the Bureau's point of view it is possible to clarify the impact reduction measures and to provide their implementation in a coherent and coordinated manner.
- 6.3.5.7.10. At the same time, it is important to note that planning and permitting new building, the local government must ensure that account is taken of the location of the planned transport infrastructure objects, potential noise threshold exceedance zones, as in case of implementation of several intended activities, the current situation will change. Paragraph 16 14.1 of Noise Regulations provides that in the territory where the noise ratio value in accordance with the environmental noise assessment exceeds the noise threshold value specified in Annex 2, the construction of buildings, which corresponds to the territorial planning of the local government is permissible if the initiator of the construction designs and implements anti-noise measures in accordance with the requirements of the Latvian Construction Standard LBN 016-11 "*Building Acoustics*". The local government is responsible for the management and security of the above issues, adjusting them to the conditions of territorial planning, assessment of the construction intentions admissibility and conditions. The local government is also responsible for issuing building permits.
- 6.3.5.8. The environmental impact assessment includes the assessment of the vibration caused during the operation of the planned bypass and its impact on the surrounding area. It is estimated that the vibration impact zone size during the operation of the road depends on several factors - the road surface pavement, the vehicle speed, vehicle weight and suspension systems, soil composition of the road and surrounding area and its flexibility and seasonal weather. Although, unlike the impact of the vibration generated from construction activities (which will be relatively short-lived and transient) the impact of the vibrations generated during the bypass operation can be assessed as a permanent and long-term; however, according to the information provided by the Statement (Table 4.4.4 and 4.4.5) the level of the vibration induced by road traffic along smooth surfaces 10-20 m from

the road reaches only about 0.01 to 0.2 mm/s, which is hardly perceptible by a person.

6.3.5.9. In view of the foregoing and in accordance with the assessment included in the Statement, the Bureau concludes that within the framework of the construction of K kava bypass the expected noise levels have been identified and during the further design stage in each case the most appropriate solutions to reduce noise levels will be searched for. **The statutory requirements, including compliance with the noise regulations is an unconditional requirement; otherwise the Intended activity is not permitted. However, at the same time, Section 24, Paragraph one, Clause 2 of the Assessment Law determines that the Initiator shall be also reliable for the implementation of the solutions included in a Statement; therefore, the Initiator shall provide the solutions, which would reduce the impact to an acceptable level of environmental quality. From the Statement it is clear that the Initiator is aware – by the implementation of the Intended activity without the complex of noise reduction measures it would not be possible to ensure compliance with noise regulations, and, therefore, the necessary extent of measures will be provided, accurately designing them and determining in the construction project. Thus, if a decision on the admissibility of the Intended activity is made, the Bureau, among other things, on the basis of the considerations expressed in this subclause of the Opinion, considers that in accordance with Section 20, Paragraph ten of the Assessment Law there is a basis for determining the following minimum conditions:**

- a) **By the Intended activity, it is not permitted to create the noise discomfort, which is prohibited by the laws and regulations; therefore, the implementation of the Intended activity without the provision of the noise reduction measures is not permitted. The Initiator is responsible for the provision, assessment and implementation of such measures that provides the compliance with statutory requirements.**
- b) **In planning and implementing anti-noise measures, the noise threshold values set by the laws and regulations, shall be provided in all the territories affected by the noise discomfort zone in which the noise threshold values shall be applied.**
- c) **Taking into account that a detailed development of the noise reduction measures and solutions, which are suitable for a particular section or situation of the Rail Baltica and the situation, is intended within the framework of further designing, the Initiator must take into account that it will be necessary to perform repetitive calculations, including to carry out the effectiveness check in relation to the noise reduction measures. In these calculations, justifying the choice of the most appropriate solution, the cumulative environmental noise with the existing and planned other road objects shall be taken into account.**
- d) **Within the framework of the development and implementation of the construction project the mutual interoperability of the solutions**

with other construction projects, planned in impact zone of the Intended activity. In the area of the construction of the Ķekava bypass, where it is planned in a united corridor with the Rail Baltica railway infrastructure, the planned solutions and conditions for their implementation shall be determined in collaboration with the Ministry of Transport and/or the Rail Baltica project implementers.

6.3.6. Emissions of air pollutants and air quality changes.

- 6.3.6.1. One of the major anthropogenic sources of pollution with an impact on air quality is transport. Consequently, provision of measures for reduction of air pollutant emissions and greenhouse gas emissions, caused by traffic and transport, is one of the key strategic objectives for development of the sector at the level of European Union as well as at the level of Latvia. In case of the Intended activity, a new section would be constructed; however, it cannot be established that the activity itself would be a major cause of air pollutants and GHG emissions. The Intended activity is planned to solve the existing traffic problems and as much as possible balance the related impacts.
- 6.3.6.2. To assess the impact of the Intended activity on the air quality, the pollutant emission volumes and concentrations in the situation if the Intended activity would not be implemented and in case of the Predicted activity, are predicted.
- 6.3.6.3. The air pollutant emission calculations are made by LEGMC, using the model COPERTIV (*Computer Program to Calculate Emissions from Road Transport*) model, which is established by the order of the European Environment Agency and is an approved transport emissions calculation computer program, on the basis of atmospheric emission stock CORINAIR emission factor database (methodology) (Annex 13 of the Statement). This database contains emission factors based on the vehicle type, engine type and displacement, etc. conditions. Within the framework of the environmental impact assessment, amounts of the emissions are established to the following substances - carbon monoxide (CO), nitrogen dioxide (NO₂), particles P PM₁₀ and PM_{2.5} and sulfur dioxide (SO₂) (Annex 13 of the Statement).
- 6.3.6.4. According to the information provided by Annex 13 of the Statement, the air pollutant dispersion modelling is made by LEGMC, using OPSIS AB (Sweden) developed computer program *EnviMan* (perpetual license No. 0479-7349-8007; version 3.0), using Gaussian mathematical model. In the calculations, the peculiarities of local terrain and building characteristics are taken into account. For characteristics of meteorological observation, the permanent observation data of the Riga observation station are used. The air pollutant dispersion calculations are made for the substances for which in accordance with the Cabinet Ministers of 3 November 2009 Regulation No. 1290, “*Air Quality*” (hereinafter referred to CM Regulations No. 1290); air quality threshold values are established.
- 6.3.6.5. Although transport generates emissions and in case of the construction of the bypass, they are predicted in the additional areas (while decreasing in the relieved section of the road A7. The Statement contains the conclusion

that in the existing and the planned situation, the main sources of air pollution in the impact zone of the Intended activity, would not be road transport, but stationary sources of pollution sources around which the highest air pollutant emission concentration is observed. The maximum predicted air concentrations of pollutants are not found nearby the roads, but in the populated areas or business areas. It is concluded that for most of the air pollutants, the maximum aggregate concentration in the impact zone of the Intended activity will not exceed 30% of the air quality standards. It is concluded that:

- 6.3.6.5.1. Assessing 19th highest 1-hour NO₂ concentration, it is concluded that in the present situation on the road A7 and the road directly adjacent territory, 1-hour N NO₂ concentration will not exceed 10 µg/m³, which is only -5% of the required air quality standards for the substance. By constructing the K kava bypass, in its route area NO₂ concentration would be equivalent, while in the section of the road A7, which will be relieved from transit traffic, it is predicted to decline below ~ 5µg/m³. Similar conclusions have been done also in relation to the annual average NO₂ concentration – the expected concentrations are not high (~ 10% of the prescribed air quality standards) and in the section of the road A7 in which transit traffic will be relieved, the impact on air quality will be reduced.
- 6.3.6.5.2. Assessing the 36th highest daily PM₁₀ concentration, it is concluded that in the current and in planned situations, the contamination is similar and it is largely unaffected by the planned construction of the bypass, as the road A7 and the bypass route in the current and in the planned situations will be located in the zone in which the 36th highest daily PM₁₀ concentration of the particles will be ~ 20 µg/m³, which is about 40% of the required air quality standards. The exception is the section of the road A7 between K kava and the road A5 where after the construction of the bypass, the PM₁₀ concentration of the particles around the road A7 will be lower than ~14µg/m³. In turn, assessing the average annual PM₁₀ concentration of the particles, the most of the territory assessed in the current situation and in the planned situation will be located in the zone in which the PM₁₀ concentration of the particles will be up to ~12µg/m³, which is -30% of the required air quality standards. However, compared to the current situation and the planned situation, the most significant changes are expected in the sections of the road A7, where to the existing road A7 the newly constructed section of the K kava bypass was connected – in the current situation, the average annual PM₁₀ concentration of the particles is higher in the area around the road A7, but after the construction of the K kava bypass construction, it in the sections of the existing road A7, from which the traffic will be turned off, will decrease, but will increase in the K kava bypass route adjacent area. A similar tendency is observed in predicting the average annual PM_{2.5} concentration of the particles, which in the current situation and in the planned situation in the K kava bypass route adjacent areas will not exceed ~ 6.5µg/m³ or ~32.5% of the prescribed standards.
- 6.3.6.6. Analysing the air pollution maps, it is concluded that the threshold values set by the regulations are not exceeded. Taking into account that the highest

air pollutant concentrations in the existing situation and in the planned situation are calculated outside the impact zone of the road A7 and the Ķekava bypass, it is concluded that the impact of the mobile sources of pollution (road transport) on air quality, regardless of the situation in the vicinity of the assessed roads, is not assessed as an essential. Statutory threshold values exceedances are not predicted. **In assessing the information provided by the Statement and in the framework of the environmental impact assessment, as well as in the light of the observations already made in this Opinion, the Bureau does not find that by the implementation of the Intended activity could be expected significant negative impact on air quality. Therefore, the Bureau considers that in addition to the requirements provided by the laws and regulations and the Opinion of the Bureau in accordance with Section 20, Paragraph ten of the Assessment Law, it is not necessary to impose any additional compulsory conditions for the implementation of the Intended activity.**

6.3.7. The impact on the landscape and cultural heritage.

6.3.7.1. The Statement contains information and assessment of the landscape and the cultural and historical significance of the Location of the Intended activity and the surrounding area, as well as the assessment of the impact of the Intended activity and its relevance in the light of the conservation values.

6.3.7.2. In assessing the impact of the Intended activity on the landscape, it is concluded in the Statement that the new Ķekava bypass will cross the territory, where now there is no motorway, hence the construction of it will bring a significant change for the surrounding landscape and the road itself will be one of the functional landscape elements, while the existing section of the road A7 after reconstruction will keep the existing trace, thus will not cause any significant changes in the landscape.

6.3.7.3. The authors of the Statement have pointed out that in general, adverse changes in the landscape in relation to the construction of the Ķekava bypass could be the following:

6.3.7.3.1. In case of designing unsuitable technical constructions, including road noise barriers, if they do not fit well in the structure of the landscape;

6.3.7.3.2. landscape transformation units – objects in the road route crossings to the places in the road alignment crossings of the existing roads, constructed bridges, overpasses and underpasses, which are new road infrastructure objects, by the construction of which certain landscape elements are changed;

6.3.7.3.3. forest fragmentation with a new road route, which is negatively assessed also from the environmental and forest development perspective.

6.3.7.4. At the same time, it shall be taken into account that in the impact zone of the Intended activity, the existing territory already now contains typical traits of Pierīga landscape, which is severely affected by people and has no specific landscape characteristics. The Ķekava bypass route will cross the landscapes with little marked contrasts as uniform forest site types dominate, the route will cross drained marsh landscapes, agricultural land, including

degraded landscape, consisting of uncultivated meadows and tillages. On the basis of visual perception of landscape, close and closed sights dominate, but in the places where the bypass will cross the drained marsh landscapes, more spacious sights will open. The bypass construction will change the view of the landscape from the buildings of Silgaļi, Dzelzkalni, Skujnieki, Lejaspavāri, Mežmalas, Mežapumpuri, Brauri, Ozolkalni and Pārupes, where you will catch the sight of a new bypass. The Statement contains the conclusion that the construction of the Ķekava bypass will create a joint impact on the landscape with the planned Rail Baltica railway track construction (in the section where the two objects are planned in the same corridor). In turn, the landscape of the section of the road A7 to be reconstructed is already now urban in nature, so, on the whole, the visual assessment is low. Overall, on the basis of landscape perspective, the Statement does not include any exclusive or essential factors concerning the location of the planned route.

- 6.3.7.5. Assessing the implementation of the Intended activity in the aspect of the cultural and historical objects of the surrounding area, it is concluded in the Statement that the construction of the new road in the impact zone of the Intended activity, will not significantly affect the cultural and historical objects, although it will cross the protection area. During the construction works, no cultural and historical object of national or local importance will be affected or destroyed; however, the authors of the Statement indicate that during the construction of the new bypass, the attention should be paid to the possible digging up the burial places of unknown soldiers of World War I. In the context of the possible burial places of soldiers in the area of the construction of the Ķekava bypass route, the association “*Brāļu kapu komiteja*” (hereinafter referred to as BKK) (Annex 23 of the Statement) has also expressed its opinion, pointing to the measures to be taken, if during the construction the burial places of so far unidentified soldiers of World War I and World War II, as well as the potentially explosive objects, are found in the former battle sites.
- 6.3.7.6. Having assessed the information gathered in the process of developing of the Statement and the environmental impact assessment, the Bureau concludes that the Intended activity will inevitably change the landscape; however, in the Location of the Intended there are no high quality, sensitive to changes and protected landscapes. Besides, taking into account that the landscape in the area of the route construction is mostly closed and the surrounding area in the territory of construction is sparsely populated, the Ķekava bypass view will be open to a relatively small proportion of the surrounding population (according to the Statement the bypass will be visible from 9 houses). While in the section of the road A7 to be reconstructed, significant landscape changes are not predictable. The forest areas will be fragmented and the lost lands currently provide CO₂ attraction in biomass; however, the changes will not be large-scale and from the point of view of the value of nature, the implementation of the Intended activity contains no significant exclusionary or limiting conditions. The action needed, if conservation values are identified, is incorporated in the heritage protection laws and regulations and identified during the development of the Statement. If the actions are performed in the protection zones around

the cultural monuments, the permission of the State Administration of Cultural Heritage and the owner of the cultural monument shall be received. Consequently, within the framework of the Intended activity, the planned route construction solutions enable the Bureau to conclude that the Intended activity will not cause an unacceptable impact on the landscape and cultural heritage; at the same time, precautions must be observed in case of finding the possible burial places of soldiers or detecting explosive objects. It must be taken into account by the Initiator. **When deciding on the necessity of imposing compulsory requirements, the Bureau takes into account that they are already determined by the external laws; therefore, in addition to the conditions imposed already by the laws and regulations, the Bureau considers that according to Section 20, Paragraph ten of the Assessment Law in relation to the performance of works it shall be determined that for the implementation of the Intended activity, possibly, noise spread restrictive solutions shall be provided, which as far as possible fit in the landscape, while ensuring the required noise level reduction.**

Summarizing the above, the Bureau concludes that the Initiator has assessed the Intended activity and its possible alternatives, as well as the expected impacts in the most essential aspects in relation with the Intended activity. Such an assessment leads to the conclusion that there is no reason to prohibit the activities planned by the Initiator as a whole; however, based on our assessment, the Bureau agrees with the authors of the Statement that the most appropriate would be considered the implementation of Alternative 1, if a decision is made on the acceptance of the Intended Activity. At the same time, it can be concluded that – as not all the construction technical solutions in the planning stage are known, a number of technical solutions shall be already developed at a particular stage, and the environmental technical regulations shall be received according to the procedures provided by the construction normative acts, taking into account the accepted alternative as well as the current factual and legal situation.

The Opinion of the Bureau is the opinion of the competent authority on the secured Statement of the Initiator, the included environmental impact assessment and assessment weaknesses. The decision on the admissibility of the Intended activity shall be made in accordance with Section 21 of the Assessment Law. The relevant government agency, local government or other statutory authority shall comprehensively evaluate the Statement, the opinion of the local government and public, and subject to the Bureau's opinion on the Statement, under the procedures provided by the normative acts, makes a decision on the acceptance or non-acceptance of the Intended activity. If a decision on the admissibility of the Intended activity, the Intended activity may be implemented only subject to the conditions, determined by the external normative acts, provided by the Statement and put forward by this Opinion of the Bureau, on the basis of which it can be implemented.

Director *(personal signature)* A. Lukšēvics

3 March, 2017.