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Non-technical summary

ENVIRONMENTAL IMPACT ASSESSMENT STUDY FOR THE FIRST PHASE OF THE FIRST SECTION OF THE INNER SEMI-RING ROAD FROM OMLADINSKIH BRIGADA STREET TO PAŠTROVIĆEVA STREET







AGENCY FOR LAND DEVELOPMENT AND CONSTRUCTION OF BELGRADE

Njegoševa 84, Belgrade Serbia & Montenegrao



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1 BACKGROUND WIH OBJECTIVES OF THE PROJECT

Directorate for Building Land and Construction of Belgrade is preparing the construction of the Stage 1 of the new road traffic route section around the centre of Belgrade called »Inner Major Road Half-Ring« (hereinafter referred to as: UMP). The presented section includes the construction layout between the of the street Omladinskih Brigada and Paštrovičeva together with the construction of the bridge over the Sava River.

Study on Assessment of Effects on the Living Environment was carried out based on the technical-technological outline project and assessment of a possible effect on the living environment worked out on the basis of the scientific findings and available data, basic investigations for the project, eventual additional research, methods and analyses for determining the importance and effect, but generally in accordance with Law on the Protection of Living Environment (Official Gazette of the Republic of Serbia, No. 135/04), Law on Assessment of the Effects on the Living Environment (Official Gazette of the Republic of Serbia, No. 135/2004) and other laws. There were also used all relevant rules. decisions, reaulations, ratified international agreements relating to the protection of the living environment, international agreements relating to the protection of the living environment under preparation for the ratification process etc., which are relevant for determination of the methodological approach in the risk assessments, explanation of the results of relevant measurements and testing, and suggestions on the measures aiming at protection of the living environment.

In addition to the laws listed above, in carrying out the Study on Assessment of Effects on the Living Environment, there were taken into account also the EBRD Environmental Procedures (28 July 2003) and EIA directive of the European Union



Based on experiences and the studies carried out earlier, in carrying out the Study on Assessment of Effects on the Living Environment we have estimated that with regard to the properties of the space and sensitivity of the environment, the Study needs to discuss the following contents in detail:

- Geologic and geomorphologic characteristics
- ➤ Groundwater
- ➤ Surface waters
- ≻ Soil
- > Air pollution
- ➢ Noise annoyance
- ➤ Vibrations
- \succ Flora, fauna and types of habitats
- > Natural and cultural heritage
- Landscape properties and visual qualities
- Societal environment and public health
- Assessment of the effects on the living environment in case of an accident.

2 **PROJECT DESCRIPTION**

2.1 Overview of main alternatives

»Environmental In the Study Impact Analysis«, which has been prepared within the Study »General Design for the Communication Inner Semi-Ring Road (from the comunication T6 to the Pančevo Bridge)«, three alternatives have been elaborated for the route crossing the Sava in the area of the river island Ada Ciganlija, which are the following:



- 1. Tunnel according to the General Plan of Belgrade until 2021 (alternative V0t)
- 2. Bridge according to the General Plan of Belgrade until 2021 (alternative V0m)
- Bridge at the tip of Ada Ciganlija Island (alternative V1), which was not included in the General Plan for that area, but it turned out to be useful in the course of the preparation of the General Design.

On the basis of a multiciteria evaluation the alternative V1 has been selected as the most suitable one with the bridge over the downstream tip of Ada Ciganlija Island. The selected alternative contained two subalternatives, which referred to the extension of the communication after crossing the Sava. In the sub-alternative V1s the communication proceeds to the tunnel in the area of Senjak, and according to the alternative V1t then proceeds to the tunnel in the area of Topčider, as provided for in the General Plan. The latter alternative has been selected as more suitable.

With the selection of alternatives six options of crossing the River Sava have been evaluated which are:

- VOT basic alternative with the route according to the General Plan: a tunnel under the River Sava
- VOM basic alternative with the route according to the General Plan: a bridge over the River Sava
- V1 alternative »tip of Ada«: a bridge over the River Sava
- VOTC basic alternative with the route according to the General Plan: a tunnel under the River Sava with an entry to the Dedinje tunnel near Careva Ćuprija
- VOMC basic alternative with the route according to the General Plan: a bridge over the River Sava with an entry to the Dedinje tunnel near Careva Ćuprija
- V1S alternative »tip of Ada«: a bridge over the River Sava with an entry to the Dedinje tunnel under Senjak

The alternatives were evaluated according to six criteria such as:

1. Town Planning and Traffic

According to the first criterion **»town planning and traffic**«, the highest grade on the basis of normalized expert evaluation was given to alternative **V1**. Its advantages can be observed in the most favorable ratio between the route and ambiental entities and conditions for settling legal and ownership rights. From the traffic aspect, the selected alternative has the shorthest route and time of transportation, thus providing the lowest exploitation costs. The accesibility of southern parts (Banovo brdo, Vidikovac, Rakovica) is the biggest according to this alternative, and the assesed risk of major accidents is the lowest.

2. Environment and Climate

The best average grade as regards environmental and climatic criteria was given to the alternative V1S, which has advantage when compared to the alternative V1 due to a lesser impact it has on the environmental system in the wider area of the UMP.

3. <u>Costs and Construction Feasibility</u> (general design)

According to the **criteria regarding costs** and **construction feasibility** (city criteria) the alternatives V1, V1S and VOMC are equal.

4. Infrastructure

In the domain of **infrastructure** the alternative V1 proved to be the most suitable one.

5. <u>Hydrotechnical Aspect</u>

From the aspect of **hydrotechnical criteria** the alternatives **V1 i V1S** received the highest grades.

6. Geological Aspect

Geological aspect is the most favorable with the alternative **V1S**, which has the best engineering and geological characteristics and the most favorable performance conditions.

According to the total result the alternative V1 has the biggest value of the average weighted assessment with the bridge over the Sava at the downstream tip of Ada Ciganlija river island.



2.2 Description of the first phase of the first section of the Inner Semi-Ring Road from Omladinskih Brigada Street to Paštrovićeva Street

The Belgrade Land Development Public Agency prepares the construction of the first phase of the first section of the Inner Semi-Ring Road (UMP), 4,5 km long with junction of 2 km. The most important structure on this route is the bridge over the River Sava. The final location of the bridge has been decided in the previous phases, which is the option of the route passing over the very downstream tip of Ada Ciganlija Island.



Figure 1: Presentation of the roadway blueprint from the Ulica Omladinskih Brigada street to the Paštrovičeva Ulica street

The UMP route mainly passes through the complex city tissue, and in the area of the main bridge over the River Sava the contact of the bridge and the banks are certainly of



According to the morphology and the tender requirements the concept of the bridge with inclined tension cables and one pylon has been selected, with longitudinal layout with which all the piers are in dry surface – on the banks, except the pedestal point near the shipyard (with 120m span), where approach ramps start with their pillars. At this point it shall be necessary to adjust the solutions of the superstructure and substructure of the main bridge and approach ramps. Like with all bridges with inclined tension cables the main elements of the supporting system are: pylon, cables and girder, which becomes continuous girder within the same system. The distinctive feature of this solution is the concept and the manner of suspension, cross section and the pylon shape, which allows minimum environmental impact the structure has on the tip of Ada.



2.3 Location description

Within a continually built area of Belgrade it is planned to form an inner semicircular main road around the Central Zone which encompasses the old city centre of Belgrade, the future centre in Sava's Amphitheatre, the old and new centre in New Belgrade (Novi Beograd) and the old core of Zemun. This road line will originate from the T-6 main road and run through the new 2a-2a motorway-south from the railway-in New Belgrade and spread across the Sava River to the downstream tip of the island of Ada Ciganlija, connect to the line of the Bulevar-Vojvode-Mišića boulevard and after Senjačka brae in the Rasadnik zone will enter a tunnel. Through the tunnel the roadway will extend to the old Autokomanda and further by the new part of the South road to the new "Šumice" junction. From the "Sumice" junction this line will be directed to the North, towards the bridge-Pančevački Most _ using the corridors of the streets Ulica Grčića Milenka. Pop Stojanov, Trščanska and the boulevard Severni Bulevar.

An inner semicircular main road will create possibilities for alternative connections between the different parts of the city with the central area circumference, and therefore the central area itself will be protected from local and outside transit traffic. Regarding this line, and for the purpose of unifying Topčiderski Park into one integral area, it was planned to displace part of the road Rakovički Put from its location along the residential Konak Kneza Miloša to the new line along the existing railway.

The part of the roadway from the Ulica Omladinskih brigade street to the Paštrovičeva Ulica street will connect the left bank (New Belgrade side) of the Sava River with its right bank (Belgrade side). As anticipated, this roadway will spread through the three Municipalities as follows: Novi Beograd (New Belgrade), Čukarica and Savski Venac. On the left bank of the Sava the line is planned to run through the urban district which encompasses part of New Belgrade along the bank of the Sava River, the island – which is part of the urban district of Ada Ciganlija; on the left bank of the Sava the line is planned to run through the urban districts of Senjak, Dedinje, Topčider and Sava's Amphitheater (Savski amfiteatar), Prokop.

The planned structures on the New Belgrade side, in the area where the planned line will extend, will be mainly for the commercial and economic sphere of activities. The road line on the left bank of Sava River originates from the crossing of the street Ulica Omladinskih Brigada with the railway and go ahead in the direction northwestsoutheast to the crossing of the street Ulica Milutina Milankovića with the street Ulica Jurija Gagarina. On the west side of this line the commercial zones and city centres are planned, while on the east side the passenger railway station "Novi Beograd" and intercity bus station are planned. From the crossing with the Ulica Jurija Gagarina street the roadway will go as a viaduct on the east side, alongside the Shipyards and through the municipality of Mala Ciganlija and further, via the bridge across the Sava River.

Sub-construction of the bridge across the Sava River will be located at the downstream tip of the island of Ada Ciganlija, which is an important park and because of its valuable natural surroundings is a protected area and at the same time is intended for recreation. The Sava is the right tributary to the Danube, which is the biagest to flow into the Danube near Belgrade at 70 above sea level. Its valley is very wide and is situated between the Neogene embankment of Belgrade's Sava bank and Zemun's wooded flatland. The width of the valley between Bežanija and Čukarica is about 3.5 m. The alluvial plane of the Sava is not completely flat. Coastal beds and elliptical cavities can be seen there, and in the past it had many marshes and creeks,



which are today covered up or drained by artificial channels for the drainage of inland water. The river Topčiderska Reka, which rises near the flatland of Parcanski Vis, flows into the bay of Čukarički Zaliv.

On the Belgrade side, along the Radnička street, there is a zone planned for commercial activities. On the right bank of the Sava, the roadway will go across the street Radnička Ulica as a viaduct and will be led alongside the boulevard Bulevar Vojvode Mišića to the east of the hippodrome and railway passing by the bridge "Careva čuprija". To the west, along the boulevard Bulevar Vojvode Mišića is the area intended for sports activities (Hippodrome) and to the east, on the hill, is a residential district at the location called Senjak. This part is also encompassed in the protected cultural & historical district of Topčidersko brdo-Senjak-Dedinje. The final part of the road will be led through the environs of the natural monument "Mašin maidan". The final section towards the street Petrošičeva ulica is planned to be constructed with embankments and cuttings.

3 ENVIRONMENTAL BASELINE

3.1 Present situation

Geomorphologic and geological characteristics

In the area of the envisaged roadway, three natural morphologic relief formations are visible and these are fluvial relief on the Sava left-bank, fluvial-swampy relief at the tip of the island of Ada Ciganlija and lake relief on the Sava right-bank.

The space along the roadway encompasses different geologic structures which are mainly the result of normal sedimentation, apart from major interruptions or discordances in the history of evolution. The geological base alongside the road is mainly composed of Quaternary sediments,



but on the Sava right-bank only, in the section from the bridge "Careva čuprija" towards Topčider, Cretaceous and Tertiary sediments may also be found.

Groundwater

Geological bases over which the route of the major road with pertaining infrastructure runs, are part of the alluvial deposit of the rivers Sava and Danube. Based on geological research it was established that the quaternary sediment layers in the area of New Belgrade are about 30 m thick. Quaternary sediment layers are a rich aquifer, which draws from precipitation and very intensively from the water from the Sava river on both sides. The water exchange and the replacement of used underground water by water from surface water courses are very intensive in the aquifer. Therefore, pollution of surface waters spreads very quickly to the course of underground water and from there to drinking water.

After passing the Sava river, the route at 7+294 runs towards the Boulevard of the Duke Mišica and ends at km 8+220. In this part of the route the underground water is very deep below the terrain surface (around 40 - 60 m), or slightly above the level of the rivers Sava and Danube. The aquifer is of Karst character, drawing from precipitation and draining through water springs.

The existing condition of underground water is assessed based on data about the quality of drinking water obtained from the programme involving monitoring of drinking water, which is carried out at 17 city water reservoirs and 87 sites of water usage (data for the entire area of the city of Belgrade). In the area where the major road with pertaining infrastructure is planned to be constructed, the monitoring programme is implemented at the water reservoir Topčider (the area of Banovo Brdo) and at usage sites in the area of New Belgrade (on the left bank of the Sava river) as well as along the Boulevard of the Duke Mišica and the railway stop on the right bank of the Sava river. Based on results acquired through the monitoring programme for 2003 and 2004, it can be established that drinking water in influence area of the planned route of the major road with pertaining infrastructure does not contain substances originating from traffic (e.g. heavy metals, mineral oils and other organic substances, for instance polycyclic aromatic hydrocarbons - PAH).

Surface waters

The Sava river is the largest surface water course in the influence area of the major road route with pertaining infrastructure. The Topčider river is the major affluent of the Sava river in the influence area of the route of the discussed road section with pertaining infrastructure, mainly from the point of view pollution by hazardous of additional substances. There are no other major affluents (from the hydrological point of view and in terms of potential additional pollution of the Sava river by hazardous substances) in the area of the discussed road section with pertaining infrastructure.



Figure 2: Sava River

The existing condition of surface waters is estimated based on data about the surface water quality obtained from the monitoring programme of surface water quality carried out in the area of the city of Belgrade. In the area where the major road is planned to be constructed with the pertaining



infrastructure, the monitoring programme is carried out on the Sava river at sampling sites Makiš and Kapetanija (the section of the Sava river before the confluence with the river Danube) and on the Topčider river before the confluence with the Sava river (in the area of Čukarički branch).

Based on the existing data obtained in the scope of the programme for monitoring the quality of the Sava river, it was established that the Sava river is characterised by favourable conditions. oxygen The conditions slightly deteriorate during increased air temperatures, however, favourable trends are recorded compared to 2002 - 2003. Measured content of heavy metals (for instance Cd, Hg, Ni and Pb) does not exceed the regulations of Serbia and Montenegro. Mineral oils and individual compounds from the group of volatile halogenated hydrocarbons are occasionally present at sampling sites upstream from Ada Ciganlija (at Makiša location). The presence of compounds from the group of organochlorine pesticides, PCB, PAH, atrazine pesticides and simazine has not been established in the Sava river. It found that vaporous was aromatic hydrocarbons (benzene and derivatives) are constantly present at the concentration level of the limit set for applied testing methods.

The results of tests covering the sediment of the Sava river as regards the content of pollutants point to pollution by heavy metals, compounds from the PAH group and mineral oils in the entire examined section of the Sava river (from Selo Ušče to the confluence with the Danube river at Kapetanija location). The sediment at the location Kapetanija in the 2001 - 2004 period clearly revealed trends in decreased pollution by cadmium and chrome and higher zinc pollution. The sediment contains also higher content of lead, nickel and mercury. As regards organic substances, the sediment of the Sava river was in 2004 found to contain increased values of mineral oils and individual compounds from the PAH group. The content of mineral oils and PAH are increasing downstream from Selo Ušče.



Figure 3: Topčider River

The Topčider river represents a surface sump for urban and industrial waste water from the area of Rakovica and Banovo Brdo. The river is characterised by unfavourable oxygen conditions (resulting from pollution of the river by organic substances requiring oxygen for decomposition), in addition to which the content of heavy metals, surface active materials and mineral oils occasionally exceeds the limit values.

Soil

Soil is discussed from the point of view of requirements stipulated by regulations with regard to permitted / acceptable pollution with dangerous substances and from the point of view of environmental elements, protecting underground waters from adverse impacts of development on the surface. Soil and underground water are inseparable elements of the environment. Additional pollution of soil is rinsed in underground water by rainfalls, hence determining and monitoring of situation regarding soil is at the same time intended for assessment and forecast of potential impacts of the underlying road section with the appertaining infrastructure on situation regarding underground water.

The road's route with the appertaining infrastructure is placed at its section up to downstream narrowing of Ada Ciganlija in the area of alluvial deposits of the Sava River and the Danube. Quaternary sediment layers are the most common here. After crossing the Sava River, the route passes on karst well water permeable clay and carbonate geological bases.

The genesis of soil in the area on which the route of the underlying road section with the appertaining infrastructure passes is mostly less known, with the exception of particular microlocations, which were studied from the point of view of determining safety areas for drinking water supply facilities. As evident from existing data, the area through which the route of the underlying road section with the appertaining infrastructure passes is mostly urbanised. Technological industrial facilities are located foremost on the bank of the Savski zaliv and in the area of Topčider.

Areas for which restrictions regarding pollution with dangerous substances are used mutatis mutandis are those on the left bank of the Sava River and the entire Ada Ciganlija. There is no farmland, important for food production, in the first part of the route of the underlying road section with the appertaining infrastructure in the New Belgrade area, with the exception of fragmented gardens.

The existing situation regarding pollution of soil in the area, through which the route of the underlying road section with the appertaining infrastructure passes, was assessed on the basis of data from the monitoring carried out by the Institute of Public Health of Belgrade in 2003. The testing programme included soil in the area of Ada Ciganlija and the bank area of the Čukarički branch (as well as other areas, which are not significant from the point of view of assessment of impact of the underlying road section with appertaining infrastructure on additional pollution of soil with dangerous substances).



On the basis of test results, increased pollution of soil with certain dangerous substances was established. Increased pollution of soil with nickel and compounds from the PAH group were established in the roadway area. From the point of view of the existing pollution of soil in the area through which the road route with the appertaining infrastructure passes, pollution of soil with PAH in Ada Ciganlija on the right bank of the Sava River and with cadmium on the narrowing of Ada Ciganlija are significant. Regardless of the potential sources of increased pollution of soil with PAH (the Belgrade thermal power plant and, as regards cadmium, alluvia of the Sava River), the established pollution of soil form the basis for planning mitigation measures during construction of the underlying road section with the appertaining infrastructure.

Air pollution

Belgrade and its wider surroundings lie in the area of moderate subcontinental climate. The Belgrade area is exposed to irruptions of polar and subtropical air masses, which results in unstable weather conditions throughout the year, and most notably during the spring and autumn. Construction of stage I of the inner main half-ring will not affect microclimatic conditions near the new road.

In the Belgrade area, air pollution with concentrations of SO₂, NO_x, soot and total sedimentary materials as well as certain specific pollutants is being monitored. The Institute of Public Health of Belgrade systematically monitors the level of air pollution on 15 measurement points for the purpose of obtaining exact data. The entire Belgrade area was taken into account for the purpose of analysis of the existing situation regarding air pollution on the inner main half-ring corridor, as air pollution cannot be limited to a particular area. Six measurement points were selected for the purpose of the comparative analysis where air pollution was followed on the basis of several years' measurements taking into



account the following indicators: sulphur dioxide, nitrogen oxides, soot and total sedimentary materials.

Results show that in all measurement points average annual immissions of SO₂ and soot were below legally permitted levels. Given the fact that the presented results show average annual values, they do not reveal periodical exceeding of the limit immission value for individual parameters, which occur due to unfavourable climate conditions in particular days or periods of the day. The number of days with immission of SO₂ and soot exceeding the limit immission value is used as the indicator of such occurrences.

Mean annual soot concentrations did not change in 2003 and 2004 with regard to long-term average, while the number of days with exceeded limit immission value gradually decreased compared to previous years.

In 2003 and 2004, and according to data and, the mean annual NO₂ concentration in Belgrade only slightly changed compared to 2002, while the number of days with exceeded limit daily concentration has increased although not significantly.

Noise

The construction of the 1st phase of IMH with all facilities and points of access will represent a major intervention in the area which is due to protected natural monuments and recreational areas and on account of nearby residential buildings sensitive to additional noise annoyance of the living and natural environment.

The existing noise annoyance is mainly the result of traffic on major roads in the discussed area (Bul. Vojvode Mišiča, Bul. Jurija Gagarina, the streets Radnička and Paštrovićeva ulica), railroad traffic over the routes Ruma – Belgrade and Belgrade – Kragujevac, tramcar traffic on routes in the area of Čukarica and the noise produced by industrial facilities at the initial and final part of the route. In the area of Ada ENVIRONMENTAL IMPACT ASSESSMENT STUDY For the first phase of the first section of the Inner Semi-Ring Road from Omladinskih Brigada Street to Paštrovićeva Street

Ciganlija an additional source of noise is represented by traffic over the Sava river (port, shipyard). The comparison of the measured noise levels with the limit values for the 5th degree of noise protection in JUS U.J6.205 (65dB(A) by day and 55 dB(A) by night) shows that during the period of measurements the limit values were not acceded on any measuring location, which indicates, that under existing conditions the area next to the 1st stage of IMH between the street UI. Omladinskih brigada and the street Paštrovićeva ulica is moderately annoyed by noise.

Vibrations

The area along the layout of the Stage I of UMP is relatively scarcely built. In the first part of the layout to the off-grade crossing with Bulevar Jurija Gagarina, there are no residential buildings, the buildings to the south of Bulevar Jurija Gagarina and buildings along UI. Savski nasip are partially loaded with vibrations due to traffic on Bulevar Jurija Gagarina, while the buildings to the south of Sava, in the area of Senjak, are loaded with vibrations due to the road traffic (Bulevar Vojvode Mišića, Radnička ulica, Paštrovićeva ulica), as well as with vibrations due to the railway traffic in the route Belgrade – Kragujevac.

Flora, vegetation, habitat types and fauna

Ruderal growing sites dominate in the area, very few remains of the original biotopes are present. Environmentaly important vegatation appears in the central part around the Summer Stage. Other area of significance with regard to vegetation is the entire area of Ada Ciganlija, where hydrophilic forest vegetation appears with prevailing willow and poplar forests. In the route's area, at the very tip of Ada, the priority habitat type of white willow gallery forests appear. In the list of observed plant species of the area no endangered species were found.



Figure 4: Sava Riverside

The area between Omladinskih brigada Street and Paštrovićeva Sreet is fairly uniform with regard to ornitofauna. It is an urban area with sinatropogenic bird species, otherwise common in the wider city area. The coast of the Sava River, the river itself and Ada offer refuge to many bird species. The area is particularly significant during the winter when many species of swamp birds are present on the Sava River. Although being in the city centre, the area from Ada Ciganlija to outflow in the Danube is characteristic by presence of certain rare and endangered species. The area around Ada Ciganlija itself is characteristic as the endangered pygmy winter area of cormoran (Phalacrocorax pygmaeus).

The total biomass of fish in this part of the main course of the Sava River is relatively small compared to ecosystems with similar characteristics.

Natural and cultural heritage

Along the layout corridor or in its immediate vicinity, there are protected and registered natural goods and registered areas with natural values important for the protection of the quality of life environment. It is particularly worth to mention the natural monuments 'Mašin majdan'', Ada Ciganlija and cultural and historical entity Topčider.



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Figure 5: "Mašin majdan"

Landscape properties and visual qualities

The landscape characteristics of the area of intervention might be divided into the following typical units: 1. The urbanised landscape in the riverside and plane relief, the area on the left river bank of Sava – Novi Beograd: from the street Omladinskih brigada to the Sava River; 2. The landscape of the river water flow, the area of the Sava riverbed – the area between the left and right river banks of Sava; 3. The urbanised landscape in the riverside plane and hilly relief, the area on the right river bank of Sava – Senjak - Topčider: from Sava to Paštrovićeva ulica.

From the aspect of sensual stimulations, the water body with its surroundings and the area of Senjak with Topčiderski park (views to it and from it) are among more attractive sites in the area. The recreation areas along the Sava River have a great value for the quality of life. Ada Ciganlija is one of the most prominent locations in Belgrade, with specific natural and visual qualities.



Figure 6: The Čukarica Bay

Societal environment and public health

Belgrade ranks with other European cities which have developed all types of city traffic. The current role which Belgrade has in the network of South-East European cities is far from those which are suitable with regard to Belgrade's natural and macro traffic location. The road section from Ulica Omladinskih Brigada street to Paštrovičeva Ulica street will run through three municipalities as follows: New Belgrade (Novi Beograd), Čukarica and Savski Venac. The road area on the Sava left-bank is mainly intended for business activities. The Ada Ciganlija area is, according to the city plan, placed among green plots for recreation and relaxation (rowing clubs, bathing places, playgrounds etc.). In the bay of Čukarički Zaliv there is a marina and rafts. The Sava right-bank along Radnička Ulica street, according to the plan, belongs to a commercial zone; the Hippodrome area is intended for sports activities. The road line will run across Radnička Ulica street over viaducts and will be led along Bulevar Vojvode Mišiča boulevard to the East of the Hippodrome and railway, pass by the bridge "Careva čuprija" to Paštrovičeva Ulica street. To the East of the road line is the residential district of Senjak (this area belongs to the district of Topčider which has been proclaimed a cultural and historical district), and at the end of the road line is a natural monument, the "Mašin majdan".



3.2 <u>Environmental impacts and mitigation</u> <u>measures</u>

Geomorphologic and geological characteristics

The beginning and final part of the road is planned with embankments and cuttings, and the roadway between will run via viaducts and across the Sava bridge. The roadway area is on alluvial soil and the final section only, at Topčider, lies on an embankment and wood plateau.

While carrying out the construction works from 7+400 to 8+000 km vibrations may cause damage to a natural geological monument, the "Mašin majdan", and therefore on this section mining and using heavier vibration machines is not recommended.

On the Sava right-bank, from 7+400 to 7+550 km, the terrain is very steep. Because there is a danger of erosion, the construction of a retaining wall is planned. To strengthen protection against erosion, it is envisaged that the retaining wall would be covered with humus and planted with vegetation.

The viaducts and bridge will have deep foundations, and the depth of the foundations will be calculated having regard for the geologic characteristics of the terrain. The works carried out will be a major intervention on the basic ground structure, so these activities should be planned to comply with valid regulations and standards. In addition, for all interventions on the ground structure, it is provide geologist's necessary to а supervision.

construction natural After the the morphological relief formations will be somewhat changed, especially on the sections where the line with runs embankments and cuttings. During construction, as soon as the foundation for pillars and towers is made, a change in the basic geological structure will occur. When the roadway is opened, there will be no

additional influence on the geological ground structure.

Groundwater

Considering the scope of works planned within the framework of the construction of the major road with pertaining infrastructure, it is estimated that no construction works are planned at the discussed road section which would intervene directly with the underground water course. Indirect impacts on conditions in underground water are projected as a consequence of additional pollution of soil by hazardous substances and washing off of these substances by rainwater.

During operation of the major road with pertaining infrastructure, additional pollution of soil is expected to arise due to hazardous substances originating from traffic. It is estimated based on the characteristics of the aquifer in the area of New Belgrade and the part of route on the right bank of the Sava river that additional pollution of soil by hazardous substances will not influence the conditions in underground water.

During construction and operation of the discussed road section additional pollution of soil by hazardous substances may occur in the event of accident involving spillage or release of hazardous liquid or other substances, which could deteriorate the conditions of underground water of the above stated drinking water supply systems. In such event the provisions of the Rules on Methodology for Assessing the Danger of Chemical Accident and Pollution of Living Environment, Setting of Measures and Measures for Eliminating Consequences (Official Journal of RS, no. 60/94) are applied.

In order to prevent the impact of construction and operation of the major road with pertaining infrastructure on additional pollution of soil and consequently underground water, mitigation measures are proposed. Mitigation measures are set on the basis of a field inspection covering the influence area of the route of the



discussed road section with pertaining infrastructure, the assessment of impacts of the planned construction works during implementation and the influences during operation of the discussed road section with pertaining infrastructure.

Surface waters

In view of the scope of the works planned within the framework of the construction of the major road with pertaining infrastructure it is estimated that the planned earthworks and construction works at locations of the Sava Bay and downstream narrowing of Ada Ciganlija will intervene directly with the water course of the Sava river. Direct impact on river conditions is expected, especially in the form of deteriorated oxygen conditions and higher content of undissolved substances. It is projected that their influence on the conditions in the Sava river will be locally restricted and will not have а significant impact on the deterioration of conditions downstream from the site of earthworks and construction works. The mixing zone depends mainly on manner and intensity earth the of excavations and construction works as well as on hydrological conditions in the Sava river.

It is estimated that during operation of the major road and the pertaining infrastructure, the discussed road section with the pertaining infrastructure will not influence the river conditions, if the planned system of collection, treatment and drainage of runoff rainwater from traffic surfaces is suitably designed, constructed in accordance with technical criteria and properly maintained.

During construction and operation of the discussed road section additional pollution of the Sava river by hazardous substances may occur in the event of an accident involving spillage or release of hazardous liquids or other substances. The consequences in terms of poorer conditions in the Sava river depend on the scope of the accident and the characteristics of the substance. The consequences of the accident on the Sava river cannot be predetermined. For these cases the provisions of the Rules on Methodology for Assessing the Danger of Chemical Accident and Pollution of Living Environment, Setting of Measures and Measures for Eliminating Consequences (Official Journal of RS, no. 60/94) are applied, however, an action plan has to be formulated as the project and technical documentation is prepared. The plan should, in addition to the provisions of the above Rules, define also risk assessment procedures, the projection procedures and rehabilitation procedures.

To prevent the impact of construction and operation of the major road with pertaining infrastructure on additional pollution of the Sava river. mitigation measures are proposed. Mitigation measures are set based on a field inspection of the influence area of the discussed road section route with pertaining infrastructure, the estimate of impacts of planned construction works during their implementation and the influence during the operation of the discussed road section route with pertaining infrastructure, as well as on the basis of data about the existing conditions of the Sava river at the section at Ada Ciganlija and downstream from it.

Soil

A part of activities during construction of the road with the appertaining infrastructure is also the work, which will additionally pollute the soil with dust particles (emission of dust particles from open construction areas increases during construction), with which dangerous substances are linked (heavy metals, organic compounds, e.g. compounds from the PAH group). Hence direct impact of construction on additional pollution of soil with dangerous substances is expected.

During operation of the road with appertaining infrastructure additional pollution of soil is expected to arise due to



dangerous substances originating from traffic. In comparison with the existing situation, the operation of the underlying road section with the appertaining infrastructure represents improved situation i.e. reduction of direct pollution.

During construction and operation of the discussed road section additional pollution of soil by dangerous substances may occur in the event of accident involving spillage or release of hazardous liquid or other substances, which could deteriorate the conditions of underground water of the above stated drinking water supply systems. In such event the provisions of the Rules on Methodology for Assessing the Danger of Chemical Accident and Pollution of Living Environment, Setting of Measures and Measures for Eliminating Consequences (Official Journal of the RS, no. 60/94) shall be applied.

To prevent the impact of construction and operation of the road with appertaining infrastructure on additional pollution of soil, mitigation measures are proposed. Mitigation measures are set on the basis of a field inspection covering the influence area of the discussed road section with appertaining infrastructure, the assessment of impacts of the planned construction work during implementation and the impacts during operation of the discussed road section with appertaining infrastructure.

Air pollution

Construction of stage I of the inner main half-ring will constitute a major intervention in urban area, requiring extensive earthwork and construction work in direct vicinity of sensitive natural, recreational and residential areas. Increased air pollution with dust particles and suspended particles as well as emission of internal combustion engines are expected during the construction. Particularly sensitive are areas of Ada Ciganlija, Hippodrome and Senjak, hence extensive monitoring of air pollution is envisaged in these areas during



construction. The construction shall be implemented by strict compliance with which mitigation measures, include prevention of dusting of open parts of the route and construction sites, preventing uncontrolled spreading of construction material from the road's construction site, the bridge, points of access and other structures by means of transport vehicles, complying with emission norms as regards the used construction machinery and transport vehicles and providing for traffic fluidity of the existing road network during construction.

In the final situation in 2028, the projected traffic density on the inner main half-ring section between Ulica omladinskih brigada and the bridge across the Sava River shall be between 32000 and 40000 vehicles per day, the projected AADT across the bridge is more than 77000 vehicles/day and south of the Sava River the AADT shall equal roughly 34000 vehicles/day. The projected share of heavy freight vehicles on all sections is 11.0% and 11.9% during the daytime and night time, respectively. Total annual emissions of harmful substances into the air, resulting from traffic on the inner main half-ring, between Ulica omladinskih brigada and Paštrovićeva ulica shall be 26.7 t of carbon monoxide, 26.7 t of nitrogen oxides, 3.6 t of floating particles and smaller quantities of sulphur dioxide and benzene.

In 2028, the traffic on sections of stage I of the inner main half-ring will result in mean annual concentrations of nitrogen dioxide at the distance of up to 50 m from the axis equalling between 10 and 14 μ g/m³, which represents up to 23% and up to 30% of the annual value in residential and limit recreational areas, respectively. In this area, the 98 percentile values will be between 20 and 30 μ g/m³, which represents up to 20% and up to 35% of the annual limit value in residential and recreational areas, respectively. Calculative mean annual concentrations of floating particles PM10 will with regard to applicable limit values specified in EU regulations ($40\mu g/m^3$) at the distance of 50 m from the axis of the inner main half-ring represent less than 10%, concentrations of carbon monoxide, benzene and sulphur dioxide will be negligible with regard to limit values. In the calculative planning period there will be no more emissions of lead resulting from motor traffic.

Noise

The construction of the 1st phase of IMH between the street UI. omladinskih brigada and the street Paštrovićeva ulica will represent a major intervention in space, which will require extensive earthworks and construction works in the approximate vicinity of sensitive natural, recreational and residential areas. During construction, noise annoyance will be the consequence of preparatory earthworks, the construction of the bridge over the Sava river, the construction of connections with the existing road network and the relocation of the tramcar route in the area of Čukarica. Noise during construction will be caused by earthworks and construction works, removal of excess material from the construction site of the road connection and transport of construction material to the construction site. The noise annoyance of living and natural environment during construction will occasionally exceed the limit in the area of Ada Ciganlija and the settlement Senjak. During construction measures are proposed for reducing noise annoyance of the environment and additional monitoring at six locations is proposed.

Noise annoyance in the area of the 1st stage of IMH between the street UI. omladinskih brigada and the street Paštrovićeva ulica will in the 20-year planning period - in 2028 cause potential excessive noise annoyance of the living environment in the area of the settlement Senjak (UI. Milana Glišića, UI. Drinička, UI. Save Živanović, UI. banjiških žrtava), in the area next to the Bulevar Vojvodine Mišića, the settlement Čukarica (dispersed facilities next to the street Paštrovićeva ulica), recreational area of



Ada Ciganlija and sports recreational area at the hippodrome in the area of Čukarica. In the event of small scope demolition of residential facilities also the facilities next to the street UI. Savski nasip and in the area connected with Bul. Jurija Gagarina will be potentially exposed to excessive annovance. Remedial actions comprise a decrease in noise emissions at source. proposed demolition of individual facilities and additional implementation of active measures for reducing noise expansion in the environment (noise protection barriers) and passive noise protection measures (repairing sound proofness of windows) aimed at reducing noise annoyance in residential facilities. The scope of noise protection measures will be specified in the next phase of design project preparation.



Figure 7: The residential area on Senjak

Vibrations

The construction works between the street Omladinskih brigada and the off-grade crossing with Bulevar J. Gagarina will be implemented on the plane site and over 300 meters away from the nearest residential buildings; in the area between J. Gagarina and the point of access to the bridge over Sava River, there will be several the residential buildings demolished and the construction area will approach the residential buildings along UI. Savski nasip. On the right river bank of Sava, it will be necessary to execute a demanding

connection to Radnička ulica and Bulevar Vojvode Mišiča, which are very loaded with traffic, a crossing of the triple-track railway line and crossing of the tramway line. In this part, extensive earthworks and construction works will be implemented less than 20 meters away from the nearest residential buildings. Due to the construction of the Stage I of UMP, there will be a larger number of residential buildings in the area to the south of Sava loaded by vibrations. In order to prevent too intensive vibrations, the construction works in these areas require the use of working equipment, machines and means of transport made in compliance with the emission standards for vibrations.

Loading with vibrations during operations of Stage I of UMP will increase on the nearest buildings in the area of where the IMP is connected to the existing roads on the right river bank of Sava, and in the area of reconstruction of Bulevar Vojvode Mišića. There is expected a small loading with vibrations. Special measures aiming at preventing the vibrations during operations are not necessary.

Effects on the Living Environment in Case of an Accident

Extraordinary situations are accidents involving spillage of hazardous liquid or release of other dangerous material. These events cannot be predicted nor can their impact on additional pollution of water, sediment, soil and consequently the on the underground water conditions be determined in advance. The plan for handling dangerous waste should be envisaged within the framework of further preparation of the project and technical documentation (also by taking into account provisions of the Rules on Methodology for Assessing the Danger of Chemical Accident and Pollution of Living Environment, Setting of Measures and Measures for Eliminating Consequences (Official Journal of the RS, no. 60/94)). The plan should, in addition to the provisions of the above Rules, also define risk assessment procedures, the

projection procedures and rehabilitation procedures.

The appropriate method for removal / temporary and permanent depositing of removed / excavated material should be envisaged simultaneously and in line with the regulations applicable in Serbia and Montenegro. This means that removing of excavated material in which excessive or unacceptable content of heavy metals and organic compounds is established shall not be permitted on land for which more strict criteria regarding content of pollutants apply (e.g. land for production of food, land on water protection areas).

Flora, vegetation, habitat types and fauna

The road construction will with regard to impacts on flora, fauna, vegetation and habitat types primarily affect the existing forest areas on the narrowing of Ada Ciganlija and in the area of Topčidersko brdo. With regard to the total area covered with forest, construction of the bridge will affect a relatively small area at the very tip of Ada, where environmentally highly valuable habitat type of white willow gallery forest currently exists. The habitat type of thermophilous forests of mixed deciduous trees with black locust (Robinia pseudoacacia) and sometimes white poplar (Populus alba) is presented notably in the area of Topčidersko brdo above the existing bypass and in forest areas around Topčiderska reka. Construction of the planned road will result in loss of a part of forests in the area. According to the with proposed measures regard to protection of habitat types, interventions in forest areas should be minimised and depositing of any waste material in the water should be prevented. After finished construction, the affected areas should be returned to their natural state and planted with indigenous species.

The construction site will represent a noise source affecting wild animals as a disturbance to daily rhythm and rituals. The



species composition of birds of the area will probably also change in the route's vicinity. As regards the impact on birds, the most problematic is the impact on pygmy cormoran, spending the winter in the area of the Ada Ciganlija narrowing. It is particularly important that the dynamics of construction work will be adjusted during the period when pygmy cormorants spend the winter in the area. Measures and solutions minimising the destruction of willow forest on the downstream narrowing of Ada should also be implemented. In addition, lighting of the bridge shall be implemented by using solutions providing clear visibility but with a lighting of moderate luminosity.

Natural and cultural heritage

On the right bank of the Sava River, in the foothills of Senjak, the layout will cross the spatial cultural and historical entity Topčidersko brdo-Senjak-Dedinje and the area of the natural monument ''Mašin majdan''. A higher level of vibration might cause damage to the geological natural heritage in the section from kilometre 7+400 to kilometre 8+000, therefore mining is not recommended in this section and the effects of vibrations have to be reduced by using lighter vibration machines.

In Ada Ciganlija, there are woody areas with natural values important for the protection of the life environment, and the island is also protected. During the intervention, the willow trees on the peak will be destroyed. It is necessary to ensure that the intervention would not accelerate erosion of the sedimentation on the very peak, and it is also necessary to provide accumulation of the material.

At the time of uncovering the ground, there is a possibility of discovering new geologicalpaleontological, mineralogicalpetrographical and archaeological objects and it is necessary to notify the authorised institution about the finding. The traffic route will touch the natural and cultural good (Topčidersko brdo-Senjak-Dedinje and ''Mašin majdan''), which will make it more vulnerable. The area along the roadway needs to be planted by autochthon vegetation of trees or shrubbery. Under the project, there is replanting of willow trees foreseen in the peak of Ada, which will gradually re-establish the original situation.

Landscape properties and visual qualities

The dimensions of the road body, particularly the bridging facility, are of such size that the new element will be very visible. The facility will bring a new structure into the area, change the spatial proportions and establish a new identity of the area. Both, visual and mental, symbolic images of the area will be changed.



Figure 8: The view on the first phase of the first section of the Inner Semi-Ring Road from Omladinskih Brigada Street to Paštrovićeva Street

As a result of the anthropogenic element brought in, the landscape characteristics will be most significantly changed in the layout part crossing the area with a prevailing share of natural elements (Sava River, Ada Ciganlija peak, hippodrome, park areas and areas covered by vegetation along the existing traffic corridors). The effect will be weaker where the landscape is manly urbanised, degraded, and where the road corridors exist already at present (the area of the fair, Brodogradilište and traffic corridor in the foothills of Senjak).



An effect on the visual image of the river area will be one of the most distinctive effects of the planned intervention with the environment. Due to its dimensions, the bridging facility will certainly act as a point attracting the views from all the sights reaching it.

Construction of the bridge will cause a permanent change in the visual image, particularly its central pylon will be obvious from far distance; consequently, the area of the visual effect will significantly exceed the area of intervention. The present views from Senjak will be changed; the sight to Ada Ciganlija will be partially hidden. The most characteristic sights to the bridge crossing Ada will open mainly from the right side of the Sava River, where the relief is hilly and the riverside is concave.



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Societal environment and public health

During the construction works the existing buildings and utility infrastructure, in the vicinity of the building site and along transport roads, may be damaged; it is the obligation operator's to repair such damage and restore the buildings or infrastructure to their condition before the damage occurred. During the construction works the area of the building site will not be easy to access and it is necessary to arrange slip roads; however, roadblocks may occur at times. After completion of construction works any local road infrastructures which have been damaged during the construction, should be promptly repaired.

In the bay of Čukarički Zaliv there are rafts (restaurants and accommodations) and a marina. Mooring in the marina in the area of construction will not be available, nor will the rafts, which should be withdrawn out of the construction area.

In the current situation the River Sava is bottleneck for road traffic and so bridging the Sava with the construction of a road from Ulica Omladinskih Brigada street to Paštrovičeva Ulica street is of key importance for UMP construction. The bridge over the downstream tip of the island of Ada Ciganlija will contribute to easing the traffic on motorways and main roads.

Figure 9: The view from the Senjak

Worsening of the visual and landscape qualities might be moderated by planting in the road-side area: by turfing of the embankment slopes, greening of the pillars surroundings, landscape arrangement of the bridging element contacts with the surface relief, revitalisation of the degraded areas, revitalisation of the edge vegetation.

In the areas of wood patches and green surfaces, the construction site should be limited to the width of the road body and the construction roads should not run outside of the roads stabilised earlier. Where a degradation of the landscape elements





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operations there is a gradual revitalisation of

Construction of the inner semicircular main road around Belgrade will be one of the biggest up-to-date projects, which will put a permanent mark in the natural environment and city built-up area (especially the bridge across the Sava). The new road will be an important generator for further urban development of the metropolis but also the wider region. Reconstruction of the built-up areas and complementation of the existing residential patterns should be reasonably plan. defined in the general city Construction of the whole UMP should be enabled as soon as possible, as this is an important socio-economic and ecological factor of the city's development.

Next to the construction area the level of air pollution will increase because of exhaust gases and dust particles - which might be inhaled – from the vehicles and building machines; the level of noise will also increase. Both will have a negative impact on the quality of life, mainly in areas where the building site will be in the vicinity of residential buildings (Sava right-bank in the district of Senjak). In order to reduce the negative impacts from construction works, the building site in residential districts should be limited to the least possible surface-area, and transport roads should run out of residential districts. The construction works will also have negative impacts on areas intended for relaxation and recreation (Ada Ciganlija, Hippodrome and Park Topčider). We do not expect any impacts on the bathing resort on Ada or on drinking water. The construction works are time-limited and negative impacts may be reduced or even prevented, and so any significant influence on the health of inhabitants and their quality of life is not anticipated.

After completion of the works we expect positive impacts, as the traffic will flow more quickly, which means that the air will be cleaner and the level of noise reduced. Because of the drainage of polluted meteoric water through the oil catcher, the pollution of streams and the risk of environmental accidents will be reduced. The building of noise-control partitions and planting vegetation along the road will assure that the quality of life along road will not deteriorate.

3.3 Monitoring

Geomorphologic and geological characteristics

All construction works, where intervention is to be made on the ground structure, should be carried out under a geologist's supervision. During the supervision, full attention should be paid to the "Mašin majdan" section.

Groundwater

Monitoring is proposed for the implementation of mitigation measures, focusing mainly on monitoring of waste water management (if these are created in the influence area of the route of the planned road section with pertaining infrastructure), management of hazardous substances and waste material (e.g. packaging waste), which may contain hazardous substances.

No additional tests of underground water are projected during the construction and operation of the discussed road section with pertaining infrastructure. It is reasonable to monitor the results of the programme for monitoring the quality of drinking water, with a special emphasis of basic parameters (for instance, conductivity, chloride, sulphate as well as sodium and potassium cations), which are used for monitoring and assessing the consistency of underground water composition.

Surface waters

Monitoring is proposed for the implementation of mitigation measures, focusing mainly on monitoring of waste water management (if these are created in the influence area of the route of the



planned road section with pertaining infrastructure), management of hazardous and waste material substances (e.g. packaging waste), which may contain hazardous substances. Moreover, additional tests of the water and sediment of the Sava river are planned during the construction of the discussed road section with pertaining infrastructure, with an emphasis on monitoring oxygen conditions and nitrogen compounds, while during the operation, also the parameters used for monitoring traffic emissions are planned to be supervised.

Monitoring is planned also during the operation of the major road with pertaining infrastructure, covering the impacts of the major road with pertaining infrastructure on the conditions in the Sava river after the completion of construction works. The programme includes specific parameters used for assessing the impact of traffic emissions and maintenance works on the conditions in the Sava river.

Soil

Monitoring is proposed for the implementation of mitigation measures, mainly focusing on monitoring of wastewater treatment (if these are created in the influence area of the route of the planned road section with appertaining infrastructure), dangerous substances and waste material (e.g. packaging waste), which may contain dangerous substances.

During the construction and operation of the underlying road section with appertainina infrastructure, additional testing of soil is envisaged in the area of Ada Ciganlija (two sampling points, one of which is a comparable location) and on the final part of the route of the underlying road section with appertaining infrastructure (at km 8). The purpose of additional testing of pollution of soil with dangerous substances is to record the distribution of existing pollution of soil with dangerous substances during construction work and earthwork and



assessment of trends related to time and space during operation of the underlying section with appertaining road infrastructure.

Air pollution

Monitoring of air pollution during construction includes monitoring the implementation of mitigation measures on construction site, carrying the out continuous measurements of the total mass of dust deposits and content of heavy metals in dust deposits, continuous measurements of concentration of floating particles PM10 and checking whether immission concentrations are within limit values. Monitoring during the construction is envisaged in five locations.

Noise

During operation, the status of noise annoyance of living environment is planned to be monitored and noise protection checked in the entire area, while noise monitoring has to be provided in accordance with the Directive of the European Commission 2002/49/EC.

From the point of view of noise protection, the construction and operation of the 1st phase of the IMH section between the street Ulica omladinskih brigada and the street Paštrovićeva ulica will be an acceptable intervention in the environment, given that the necessary mitigation measures are implemented.

Vibrations

During the construction, there is monitoring foreseen of the construction conditions for the buildings being less than 20 meters away from the border of the construction site and the areas of the natural heritage Mašin Majdan.

Monitoring in Case of an Accident

In case of an accident with spilling of hazardous liquid or dispersing of hazardous substances, it is necessary to plan additional monitoring, which (based on the accident, might) include also a change in the polluted water and sediments of the Sava River, land and ground waters.

In case of an accident with spilling of hazardous liquid or dispersing of hazardous substances, it is necessary to plan additional monitoring, which (might with respect to the volume of the accident) include also monitoring of the polluted land and ground waters. The content of the programme is determined based on the assessment of the accident volume and the characteristics of the liquid or substance in relation to their possible effects on the ground waters. With no regard to the time of the implementation of the programme on monitoring the conditions of the environment, the programme shall be implemented by the authorised professional institution assigned by the Secretariat for the Protection of the Living Environment of Belgrade.

Flora, vegetation, habitat types and fauna

During construction we propose monitoring by the competent institute for protection of the environment, notably as regards development on the narrowing of Ada Ciganlija and in the Topčider area. Expert supervision should be provided during construction and after completion of the bridge for the purpose of adequate monitoring and following of the effects of work and the bridge itself to the number, allocation and behaviour of birds, especially pygmy cormoran.

Natural and cultural heritage

During the time of construction, the authorised institution should provide permanent supervision over the course of the construction works in the area of Ada Ciganlija and the section on the right bank of the Sava River (especially at the monument »Mašin majdan«)

Landscape properties and visual qualities

During the construction and operations, there is no need for monitoring.

Societal environment and public health

Additional supervision will not be provided for. However, there should be supervision to reduce negative impacts on social environments, as described mainly in the chapters on Water, Noise, Vibration and Air.

4 CONCLUSION

The autors of the EIA study have established that the construction and the operation of the first phase of the first section of the Inner Semi-Ring Road from Omladinskih Brigada Street to Paštrovićeva Street is acceptable from the point of view of nature protection and living environment taking into consideration the proposed mitigation measures.

