

## Komárno - Komárom, new road bridge over Danube

### FINAL STATEMENT

(Number: 5621/07-3.4/ml)

issued by Ministry of environment SR under the Act. No. 24/2006 on environmental impact assessment and on amendment of certain acts.

#### I. BASIC INFORMATION ABOUT PROPONENT

##### 1. Name

City of Komárno

##### 2. Identification number

00306525

##### 3. Registered office

Námestie Generála Klapku 1, 945 01 Komárno

#### II. ZÁKLADNÉ ÚDAJE O NAVRHOVANEJ ČINNOSTI

##### 1. Title

Komárno - Komárom, new road bridge over Danube

##### 2. Purpose

The purpose of the proposed activity is the construction of a new bridge over the Danube. At present, the line of the road I/63 and I/64 passes through the central part of the Komarno city. The entire border traffic is carried through the current (the only) road bridge that partially meets the road traffic. Successful implementation of the project of a new road bridge will create positive changes in cross-border cooperation, support the further development of the economic potential of border regions and improve environmental quality in Komárno and Komárom.

##### 3. User

City of Komárno

##### 4. Location

District: Nitra  
Region: Komárno  
Cadastra area: Komárno

The proposed activity is located westward of Komarno. The territory is predominantly agricultural land and river Danube. The area of interest of the proposed activity is the territory westward of the built-up area of Komarno between the road I/63 and the Danube River. The affected area will be also Komárno city through which access roads will be held during the construction of the bridge and after its completion the city centre will be affected positively by redirecting of traffic outside the built-up area.

## 5. Dates of start and completion of the construction and operation of the proposed activity

Construction start: year 2008  
Construction completion: year 2011

## 6. Brief description of the technical and technological solution

To select the location of the construction a feasibility study was elaborated in 2005, which assessed two variants and 3 technical alternatives of variant B of the bridge location. Following options were assessed:

**Variant A** - a bridge built close to the existing railway bridge from the west. In this scenario three technical options were assessed.

**Variant B** - a bridge fitted against course of the Danube to the west about 200 to 250 meters away from the existing bridge.

Upon agreement with the Hungarian side the location of the bridge was planned according to **variant B**. Based on this particular choice, it is a construction location of which is in accordance with the land-planning documentation of the city.

### **Basic data about the bridge**

Bridge on a road over the river Danube in km. 1 770,6. The bridge is designed as a steel girder suspended, five-pole, single-storey with the upper deck.

Length of the bridge:	602,0 m
Width of the straight-through road cut:	11,5 m
Height of the bridge:	19,5 m
Shipping gabarit:	190 m x 10 000 m

Establishment of the bridge is expected on large diameter piles at the right bank support and all the pillars. Left bank support will be established across the board.

Supports are designed as wall elements of variable width. The shaft of pillars I to IV will be topped up to the maximum level of stone tiles. The shaft of the supports V to VI is without lining. Storage threshold of pillars will be made of scrubbed concrete. Supporting structure of bridge is a static construction and expansion unit with a strong architectural effect. It is a five pole steel chamber suspended girder bridge with a constant height. Highlight of the bridge supporting structure in addition to the horizontal support girder is 96 m high sloped pylon of an inverted letter "Y" shape erected above pillar no. III. A cone-organized system of ropes in two levels optimizes the distribution of internal forces in the two largest fields. Rectangular cross-sections on the outside of the pylon are rounded. Technological stairs are established inside the pylon in both legs there. They also allow access to a small viewing platform. There are the same structural features along the deck. It consists of 1600 mm high crossbars. Distance among crossbars is of 3000 mm, and they are set in the edge girders of closed cross-section. Pedestrian sidewalk is located on the counter-current side and cycling road is on the downstream side of the bridge. The supporting structure will be imposed on the supports through ring pot bearings. Fixed bearing is on the pillar no. III. Bridge conclusions enabling maximum extension of 400 mm will be the support no. I and no. VI. Drainage of the bridge is solved through drainages and transverse pipelines into the longitudinal sewer pipeline and then to oil separators. The road has a thickness of 120 mm.

The foot bridges for pedestrians and cyclists are designed on the left bank of the Danube. Safe operation of the ship will provide three locations: the daily alarm Navigation, Night Lock alarm

and alarm radar. Public lighting provides comprehensive operation of the bridge. Illumination of the bridge by pylon lighting highlights the bridge structure at night. A route of public water and space for telecommunications and power lines are considered on the bridge.

The construction consists of a total of 34 building structures from which critical (except the bridge) are following:

*SO 101 - The road between the state border of Slovakia - Hungary and the road I/63*

The road is designed in category C 11.5/80 in accordance with the master plan of Komarno. Directional guidance throughout the road is direct. The road is designed as a semi-rigid made of asphaltic concrete. The road is of the embankment along the section. The transverse slope is of rooflike of 2%. Drainage is in the adjacent field.

*SO 102 - Roundabout level junction on the road I/63*

It is designed as a level unguided. In the first stage it will work with the connection of three traffic flows. The fourth will be involved after completion of northern bypass of Komarno. The junction solves all directions connection in category C11,5/80. The design speed of intersection will be reduced to 50 km/h. The radius of the roundabout junction is 18.0 m, road lane will be 3,5 m wide with enlargement by STN. The transverse one-sided slope is of 1%.

### **III. DESCRIPTION OF ASSESSMENT PROCESS**

#### **1. Elaboration of the intent**

Intent was elaborated by Dopravoprojekt, a. s., Bratislava division, Kominárska 2 - 4, 832 03 Bratislava, in november 2006 under the Act no. 24/2006, on environmental impact assessment and on amendment of certain acts (further referred to as „act“).

Proposed activity belongs to the list of activities according to annex no. 8, to category of activities no. 13 Transport and telecommunications, article no. 8 Construction of road bridges on 1<sup>st</sup> class and 2<sup>nd</sup> class roads and railway bridges, part A and therefore it is subject to obligatory assessment.

The intent has been submitted as one variant of the proposed action, as the Ministry of Environment (hereinafter "MoE") dropped the request for an alternative solution of proposed activity due to a reasoned written request of the applicant, on 15<sup>th</sup> May 2006 under § 22 article 7 of the Act.

Considering the assessment of the nature, extent and effects of the action, as well as positive opinions received on the proposed activity, according to § 32 of the Ministry of Environment in cooperation with the departmental bodies, approval authorities and after consultation with the applicant on 2<sup>nd</sup> March 2007 dropped the elaboration of assessment report for the proposed activity.

For the next progress the intent is considered as the assessment report. For the further progress of evaluation according to law provisions of § 33-39 of the Act shall be appropriately applied.

MoE informed all participants of the assessment process about this matter of fact.

#### **2. Distribution and publication of the assessment report**

The proponent, the city of Komárno, submitted to MoE intent by letter dated 27<sup>th</sup> December 2006. The MoE after checking formalities distributed the intent by letter no. 5621/07-3.5/ml dated 2<sup>nd</sup> January 2007 to the following entities: Ministry of Transport, Posts and Telecommunications, Department of roads; Ministry of Interior of SR; Office of Nitra Self-governing Region; Regional Office of Public Health in Komárno; The Ministry of Defence of

SR; Ministry of Environment of SR, Division of water; Regional Environmental Office in Nitra; Regional Land Office in Nitra; Regional Office for Road Transport and Roads Nitra; Regional Monuments Preservation Office of Nitra; Customs Directorate of SR; District Environmental Office in Komárno; District Office for Road Transport and Roads in Komárno; District Office in Komárno, Crisis Management Department; District Directorate of Fire and Rescue Service in Komárno; Slovak Road Administration in Bratislava; State Shipping Administration in Bratislava; District Mining Office in Bratislava; city of Komárno; Ministry of the Environment, Budapest, Hungary; Slovak Environmental Agency in Banska Bystrica.

City of Komárno received intent from MoE by letter no. 5621/07-3.5/ml dated 2<sup>nd</sup> January 2007. City of Komárno informed the public about a public hearing of the report in the usual way (the official boards in city). It informed also that the report is in the Town Hall, Department of Regional Development, Construction and asset management, where it is possible to view the report, make copies of it, depreciation, or take copies at one's own expense. Information for the public was published in the period from 5<sup>th</sup> January 2007 to 29<sup>th</sup> January 2007.

MoE of SR published the intent on its web site [www.enviroportal.sk](http://www.enviroportal.sk) <<http://www.enviroportal.sk>>. without a time limit.

### **3. Public hearing of the assessment report and conclusions**

The public hearing was convened by Komárno under MoE letter no. 5621/07-3.5/ml dated 2<sup>nd</sup> March 2007, which announced that the MoE abandoned the elaboration of the assessment report for the proposed activity.

Komárno under section 34, article 3 of the Act invited concerned authorities and organizations to the public hearing. It also informed the public in the usual way about the public hearing and that the action plan, replacing the assessment report is at the Town Hall, department of spatial development, construction and property management, where it is possible to view the intent, makes it excerpts or to take copies at one's own expense. Notice to the public was published in the period from 12<sup>th</sup> March 2007 to 13<sup>th</sup> April 2007.

Public hearing launched operator of Department of territorial development, construction and assets management in Town Hall of Komarno and informed the participants about the sequence of the hearing under the Act. The processor of the intent - Ing. Long informed participants about the processed intent, stating the environmental impacts of the proposed activity.

After the presentation and information about processed document a discussion was opened. The participants had no comments.

The representative of the Komárno Town Hall, Department of territorial development, construction and assets management, informed participants that the information to the public will be exposed on public boards of Komarno on 12<sup>th</sup> April 2007; to that date the public can submit their comments. The representative informed the processor who provides engineering services, that MoE of SR appointed the processor of an opinion.

The public hearing attended eight participants.

#### *Conclusion:*

Those present agreed to implement the proposed activities under condition that identified negative impacts on the environment are minimized.

Minutes from the public hearing was sent to the MoE by letter dated 13<sup>th</sup> April 2007 and is an archived document.

#### 4. Statements, comments and expert opinions submitted to the assessment report

The following written statements on the intent were delivered to MoE in the statutory deadline:

**The Ministry of Interior of SR** (letter no. 207-2006/02466-2 dated 8.1.2007)

has no comments on the proposed intent.

**Ministry of transport, post and telecommunications of SR** (letter no. 20/2400/07 dated 23.1.2007)

proposed intent of road and bridge construction over the Danube between the I/63 and the state border SR/MR, located in the western part of Komárno, considered as an investment of Komarno.

The reason is that the program of building roads of the Ministry of Transport does not include the proposed activity and in the broader view takes into account in accordance with the Slovak Spatial Development Concept 2001 only the bridging of the Danube River in the eastern part of Komárno in expressway category. The present intent does not consider road and bridge from the several alternatives point of view and as an expressway category construction, as requested. For this reason, the presented intent is only a matter of Komarno city.

**Ministry of Defence of SR** (letter no. SEOPMZ-65-12/2007/OdPOI dated 31. 1. 2007)

after incorporating SZN, under the conditions of the Directive for building of permanent facilities for destroying the roads, ministry does not have comments on the assessed intent.

**Ministry of Environment, Division of water** (letter no. 227/2007-8.3 dated 29.1.2007)

does not have substantive comments on the intent of construction of a new road bridge over the Danube. In terms of navigable conditions, whether the bridge respects the fairway parameters on the Danube, requires an opinion of the watercourse administrator in further proceedings (Slovenský vodohospodársky podnik, š.p., Banská Štiavnica).

**Ministry of Environment, water and nature conservation, Budapest, Hungary** (letter no. KMF . 19/4/2007 dated 14.3.2007)

states that it received the intent and will not take part in the assessment process.

**City of Komárno** (letter no. 982/3370/OÚPA/2007 dated 15.1.2007)

sent following statement:

- The proposed intent of the new Danube bridge is planned to take place in the western part of the city with a new road bridging outside the boundaries of built-up area and connected to I/63 Komárno - Bratislava in accordance with the master plan of Komárno.
- In 2005, a feasibility study for a new Danube bridge Komárno was elaborated, whose conclusions confirmed the need for implementation of the new road bridge, including the adjoining road network, which results from the constantly increasing traffic volumes through the residential area of the town. Currently, city of Komárno implements a joint project with the City of Komárom with the EU financial support for the processing of permitting project dossiers.
- The implementation of the new Danube bridge with traffic diversions outside the built-up area of Komarno will ensure improvement of the environment because the residential environment of the city will be relieved from the negative effects of transport and higher traffic safety will be acquired.

**Office of Nitra Self-governing Region** (letter no. SČ - 245/2007 dated 22.1.2007)

states that the intent of "Komárno - Komárom, a new bridge over the Danube" is not contrary to the Zoning plan of the Nitra region.

**Regional Public Health Office in Komárno** (letter no. RH 214/07, 4.1.2007 dated 25. 1. 2007)

states that according to the submitted material the construction does not affect the water source protection zone of drinking water. To minimize the risk to human health and the environment emergency plans and technical measures to eliminate the negative impacts of construction and operation of roads and bridges on the individual components of the environment will be developed. Monitoring water quality in the river Danube is proposed before and during the

construction of the bridge. According to the material the implementation of the intent does not expected any negative impact on the population, as the location of the intent will not function as residential or recreational area according to the city zoning plan.

Does not object to intent in terms of the requirements for primary protection of human health.

**Regional Environmental Office in Nitra** (letter no. 2007/00056 dated 23.1.2007)

points out that it is necessary to eliminate the possible impact of pollution of surface and ground water in the Danube and in its adjacent parts, and also take measures to prevent such pollution during the construction of the bridge. Since this is a borderline flow project the documentation of planned construction should be discussed and approved by relevant permanent border commissions for surveying and marking of the state borders.

No substantive comments on the intent and no additional requirements for scoping of the proposed activity.

**Regional Office for Road Transport and Roads in Nitra** (letter no. A/2007/00144 dated 19.1.2007)

agrees.

**Regional Monuments Preservation Office in Nitra** (letter no. NR-07/621-2/1440/Dao dated 16.2.2007)

agrees with the intent of the applicant, because the area of construction in question does not contain any national monuments registered in the Central List of monuments or historically protected area under the Monuments Act. Regional Monuments Preservation Office in Nitra or Heritage Office in Bratislava, will express their opinion on a possible disruption of registered and unregistered archaeological sites during the territorial proceedings to the construction in question according to monuments preservation Act.

**Customs Directorate of SR** (letter no. 15700/2007-1459 dated 22.1.2007)

has no comments on the intent. The Customs Administration of SR in the concerned area of "Komárno - Komárom, new bridge over the Danube" construction does not intend to carry out customs activities.

**District Office for Road Transport and Roads in Komárno** (letter no. G/07/00154 dated 15.1.2007)

does not require the intent to be a subject to the law.

**District Office in Komárno, Crisis Management Department** (letter no. 5/2007/0007-002 dated 5.1.2007)

has no comments or objections.

**District Directorate of Fire and Rescue Service** (a letter dated 9.1.2007)

points out that it is not competent to perform the assessment of project documentation in terms of impact on the environment.

**District Mining Office in Bratislava** (letter no. 24/2007 dated 16.1.2007)

has no objections against the submitted intent. In the area of interest are not exclusive mineral deposits and are not other interests that should be protected under the mining laws.

**District Environmental Office in Komárno** (letter no. 2007/00036-03-MA dated 25.1.2007)

in terms of interests of state water authorities and state air conservancy, and waste management plan does not apply any comments on the intent.

In terms of interests of the state nature conservancy applies the following observations:

Given that the proposed works are located in the territory of AR SPA 007 Dunajské Luhy, it is necessary to accept restrictions on trees felling. Felling or carrying out any interference in plants growing outside the forest cannot be done in the breeding season.

In the next stage of project preparation it is necessary for the protection of migrant avifauna to propose technical measures which will avoid mortality due to collision with the body of the bridge.

**Slovak road administration** (letter no. 734/3110/07 dated 22.1.2007)

supports the opinion of LO of Komárno on 6.6.2005, no. 11433/5189/OÚPA. This opinion is

attached.

At the same time states that traffic-engineering comparison of Western and Eastern variants (especially routing of transit truck transport) was not carried out. Western variant of the Danube bridging was clearly recommended by the Hungarian side (p. 2, point II.9. Variant B of Intent). Based on the feasibility study and its conclusions, MoE waived the requirement variant design of intent.

However, it may reasonably be assumed (the results of the national traffic census of r. 2005), that a higher proportion of transit traffic will pass through the road I/64. A significant part of transit traffic of I/63 obviously passes nearby Medvedovo. This would mean that the Western variant of the bridging is for transit from the road I/64 less convenient and economically more demanding and a longer route of northern Komárno bypass, which is to be built. Assessment of variants via traffic-engineering comparison should have confirmed advantage or disadvantage of a variant from the transport point of view.

As is apparent from the Spatial Plan of county Komárom - Esztergom (p. 72 and 73 of intent) Slovak and Hungarian superior road infrastructure, namely the concept of cross-border management of expressways are not coordinated.

For the further progress of decision-making on location of the bridge over the Danube at Komárno the MoTCRD of SR has to express its opinion.

**State Shipping Administration** (letter no.71-3.301/2007 dated 24.1.2007)

states that the chapter II.9.4 Protection zones of technical and transport infrastructure elements is does not include mention of the protection zone of the waterway, which is 5 m away from the bank line (section 4, article 2 of the Act no. 338/2000 Coll., on inland navigation as amended). Activity in this protection zone, which could affect the continuity of navigation, cause temporary or permanent restriction lock shipping operation or interruption of the fairway, can be carried out only with the prior consent of the State Navigation Administration.

Chapter III.11.3 Effects on transport:

In the construction phase navigation restriction or interruption on the Danube waterway may occur for a limited time. At the same time there is an increased risk of a boating accident, that in the case of vessels carrying dangerous substances may have a negative impact on the environment (pollution of surface waters).

No negative impact on shipping traffic is foreseen in the operational phase, and the proposed bridge gabarits are suitable for safe navigation.

**State nature conservancy of SR, management of protected area Dunajské Luhy** (letter no. CHKODL/60/07 dated 22.1.2007)

Intent contains all the important proprieties from the nature conservation point of view under Impact Assessment Act.

States that the proposed activity is located in an area where, according to section 12 of Act no. 543/2002 Coll. on nature and landscape protection applies 1<sup>st</sup> level of protection. The proposed construction of a bridge intervenes directly into the protected area included in the Natura 2000, i.e. protected area 007 Dunajské Luhy.

According to RÚSES the own course of the river Danube with its riparian vegetation in the seawall area represents a supra-regional bio-corridor. It forms an important migration axis of flora and fauna. In terms of impact on flora and spatial stability assessment we consider the impacts of construction as minimum, as the proposed route of construction will require disposal of trees and plants growing in the corridor of the construction in the range of 50 trees, i.e. road alley of total 11 pieces, and seeding stand of poplars and willows in count of 39 pieces, and 80 m<sup>2</sup> shrubby vegetation, which after the construction phase is replaced by planting of native trees species of calculated social value in amount of 798 280, - SKK.

In terms of the effect on DES elements, the road will span bio-corridor of supra-regional significance. NBK Danube, which forms the migration path of plants and animals in the seawall area. Bridge structure creates a barrier with a possible negative impact particularly on animal

population, especially migrant avifauna.

For the negative aspects of the action during construction should be evaluated intervention in the Danube - supra-regional bio-corridor - namely the destruction and disruption of benthic fauna ichthyofauna of the Danube during the construction of bridge piers in the flow, removal of vegetation on both sides of the watercourse, as well as limiting the migration of wildlife. During operation, the construction of the proposed road bridge will create barriers to the significant migration corridor of birds. The area is part of SK protected area 007 Dunajské Luhy, which is an important migration path of birds living at the water and also represents an important wintering of birds.

It presumes that the system of bridge rope fixation with the help of steel supports/ ropes is not appropriate, because under degraded weather conditions the ropes would likely represent a significant barrier element for passing and water birds.

At a given bridge suspension particularly group following representatives are endangered: grebes, loons, spoonbills, waders, wading birds, anatiformes, gruiformes, gulls and laridae. Those are the most vulnerable groups of birds, but taking to account extreme weather conditions some other representatives of other systematic bird families may be involved.

Hanging type of bridge will probably be a significant barrier to the night migration and flights of avifauna, especially if it is a hazy or rainy night, or influenced by climatic fluctuations and bad weather. For that reason, we suggest that the construction designer (investor) ordered evaluation ornithological study, which would deal with this topic. It is recommended to apply to the SOS-BirdLife in this matter.

Given the current state of the environment, the localization of the new bridge (located near the existing railway bridge) can be evaluated as environmentally respectable, but in the next stage of project preparation it is necessary, for the protection of migrant avifauna, to design effective technical measures (e.g. create barriers, sewellings, etc.) to prevent the death of migrant birds caused by crashes on the body of the bridge.

***Suggestions and recommendations:***

- Recommends to assess the intent of „Komárno - Komárom, new road bridge over Danube“ construction under the act.
- Recommends to assess the intent under section 26 art. 4, Act no. 543/2002 Coll. on nature and land conservancy since area in question belongs to protected area 007 Dunajské Luhy.
- Recommends to send the intent to nongovernmental organization Slovak Ornithological Society, SOS-BirdLife Slovakia for comments.
- In case of trees cutting growing outside the forest, it is necessary to proceed under § 47 of Act no. 543/2002 Coll. According to § 69 of this Act, the consent of the intentions of § 47 of the Act gives the municipality. In accordance with § 48 of the municipality imposes the implementation of the replacement tree planting. Agrees on the suggestion of implementing of replacement plantings of social value according to intent.
- Given that the proposed construction is located in the protected 007 Dunajské Luhy, it is necessary to accept restrictions on felling trees. Felling or carrying out of any interference in plants growing outside the forest, an interference that has a negative impact on the subject of protection CVU therefore cannot be done in the breeding season.

Proposed variant B of construction from the nature and landscape conservation point of view represents small burden for ecosystems and is suitable also in terms of nature and landscape. Taking into account the comments, there is no collision of impact of the construction with the interests of nature and land conservation foreseen. Therefore considers necessary taking into account the above comments of SNC SR in the next stage of project preparation.

***Slovak Environmental Agency, Banská Bystrica (letter no. CZ/153/2007 dated 23.1.2007)***  
*Comments, recommendations and suggestions:*



- Economic assessment of the proposed variants - variant "A" at the existing railway bridge and the variant "B" - 250 m from the railway bridge is not clear from the intent. The Hungarian side inclines to the variant "B" (offset of bridge of 200 to 250 m).

- Recommends to develop a plan of landscaping followed by the planting of native trees and bushes with emphasis on traffic safety within the realms of possibility.

Given the above stated, recommends to implement the intent under condition of acceptance of their comments on the construction of a new bridge over the Danube. Requests to incorporate comments into subsequent stages of project documentation (project for zoning and building permit).

## **5. Technical expertise in accordance with § 36 of the Act**

The expertise under § 36 of the Act was elaborated by a person appointed by MoE, Ing. William Pitaka, Strážovská 2, 974 11 Bratislava, registered as a personal entity to the list of qualified persons to assess the environmental impact under no. 381/2006-OPV dated 7.2.2006.

The report states that the plan meets the requirements of the Act and demonstrates the potential positive and negative impacts of the proposed activity sufficiently to decide on the implementation of the activity on that basis.

The intent sufficiently demonstrates that implementation of the proposed activity in the proposed location is substantially in accordance with the standards and criteria of sustainability and environmental capacity. After implementation the positive effects will outweigh the negative effects, whose impact can be reduced according to proposed measures and conditions to increase or eliminate them.

Therefore it is recommended to issue a favourable opinion with determination of conditions and measures to eliminate or reduce the negative impacts of the proposed activity in variant B.

## **IV. COMPREHENSIVE IMPACT EVALUATION OF THE PROPOSED ACTIVITY ON ENVIRONMENT, INCLUDING HEALTH**

### ***Zero state***

Currently, the routes of the state roads I/63 and I/64 pass through the central part of Komárno. The entire cross-border traffic is carried through the current (only) road bridge that meets the road traffic requirements only partially. Successful implementation of the project of a new road bridge will create positive changes in cross-border cooperation, promote further development of the economic potential of adjacent regions and improve environmental quality in Komárno and Komárom.

### ***The expected impacts***

#### ***Impacts on population***

The assessment of impacts of construction and operation of a new road bridge over the Danube at Komárom on the population shows that the residents of the town of Komárno will benefit from the implementation of the proposed activities compared to the current situation, because traffic will be diverted outside the city center. The elaborated intent also points out the potential negative impacts on the population and in particular disturbance of comfort and quality of life during construction.

#### ***Noise***

The new bridge will be located outside the built-up area and is easily accessible from the main roads, especially from the state road I / 63. Thus, noise and air pollutants from passages of heavy construction machinery may be negatively perceived mainly on routes between sources of materials and construction, and also in the vicinity of the building itself. At present sources of construction materials for embankments are not known, therefore it is not possible to estimate

the routes of trucks movement, but judging from the existing road network it is assumed that the main roads and major local roads will be used. Therefore the assumption that around these roads will be increased noise pollution is of high probability during construction.

A noise study (Dopravoprojekt, Inc., 2006) was elaborated with the aim to assess noise conditions near the newly built road and bridge. Sources of noise in the affected area will be road traffic through the new bridge and rail traffic through the existing railway bridge over the Danube, which is located near the new bridge. There are no inhabited houses on the Slovak side of the Danube near the construction site of the new bridge but on the Hungarian side the construction site will end in the location Kopan. It is therefore assumed that population in this location will be affected by noise from road traffic (also spread from the Slovak side). Nevertheless the noise study has proved that expected noise values to be achieved in the near roads and bridges will not exceed the permitted limits. Therefore the construction and adoption of the anti-noise measures is not envisaged (it is not necessary). In regard of taking-over a significant part of the current traffic of the roads I/63 and I/64 from the city center (already exceeding hygienic limits) by the new road and bridge it can be assumed that especially in these, now noise polluted areas, there will be a remarkable situation improvement. Therefore, this solution will have the overall impact on the environment and on human beings more positive than negative in nature. The overall state of the environment will be basically improved in even after the planned construction of a city bypass, where a significant decrease in traffic volumes in the city is to be expected. Noise exposure is detailed in the plan based on the results of the noise study. Increase of noise is expected around the new route, on the contrary, in a built-up parts of town there is expected a significant drop in noise pollution.

#### ***Air pollutants from road traffic***

An air pollution study was elaborated (Dopravoprojekt, Inc., 2006) to determine the amount of pollutants that generates traffic on the new bridge with the relevant road section. The basic input data for the calculation of emissions were estimated traffic volume and composition of the traffic flow. Study has demonstrated that currently the most negatively affected road by the emissions is the busiest state road I/63 (passing through the city). Construction of a new road bridge westwards of the city will bring notable decrease traffic volume of the stretch of the state road I/63. It can be assumed also significant decrease of adverse environment impact in the vicinity of I/63 including emissions.

The concentration of pollutants in the air reduces with distance from the axis of communication. The value of reduction is influenced by the distribution of buildings in the area of the road. During construction only the portion of emissions, which rose above the buildings, where the wind speed is higher than at the level of road, diffuses, so the diffusion of the pollutant is greater. In the case of discontinuous build-up area pollutant penetrates through the area already in the ground surface level and therefore its diffusion is slower.

The above mentioned exhalation study concludes that after opening of the proposed project for traffic the value of the maximum concentrations of pollutants from traffic in the area will not exceed permissible level. This is caused by the new route of the access road to the new bridge (out of the densely build-up area) and favorable diffusion conditions.

#### ***Impacts on geological (rock) environment***

Disruption of the banks and bottoms of the Danube in the construction of the bridge abutments and pillars fall into the most significant impacts of building. But planned intervention related to the project will not have a significant negative impact on the geological environment.

Zone (interest area) of the building is located in an area known for its seismic activity. According to the seismic survey (J. Viskup, 2006) proposed activity is located directly in the source area of seismic risk. The results of the seismic survey, which define the acceleration parameters for such a seismically active area, were the basis for a dynamic calculation of the superstructure

and for the final design of bridge construction and its elements. The building respects the complex geological and hydro-geological conditions, which are reflected in the choice of technology creation for foundations of the bridge piers and for earthworks namely excavations.

#### ***Impacts on air and local climate***

Construction of a new road bridge over the Danube will create much better conditions for road traffic. Fluency of traffic will have a positive impact on air quality in urban built-up part of Komárno and Komárom.

In spite of that during the construction phase is expected higher pollution emission caused by engines of the construction machinery as well as and increased secondary dust nuisance caused by movements of the machinery on the construction site. During the construction the main areal sources of air pollution are the entire building yard, as well as space for the locations of building material stock-piles eventually tips of excavated materials.

Significant adverse effect on the local climate caused by construction and operation of the project is not expected.

#### ***Impacts on water conditions***

##### ***Impacts on groundwater***

The predominant part of the area of interest is built by fluvial sediments of the river Danube, where the underground water is stored in permeable gravel positions (formations). Groundwater in these sediments is largely vulnerable, as the ground cover layer created by sand or gravel clay has a thickness of only 2, 0 m and under groundwater level is at a depth of 3, 0 m below the surface during which time at higher level of the Danube River the groundwater is causing an underflooding through the cover layer. During construction groundwater may be especially vulnerable following an accidental discharge of construction machinery and/or leakage of sewage and waste water system from the construction site and the building yard.

During operation a potential source of groundwater contamination may be also wash water from cleaning and maintenance of the road bridge but due to the proposed technical solutions (impermeable sewage) is not expected cumulative impact on water quality.

##### ***Impacts on surface water***

Construction of the bridge will take place in direct contact with the surface flow and in the river bed of the Danube River. Vulnerability of waters in the Danube river during construction will be high. They may be endangered, particularly by construction machinery and its poor technical conditions - e.g. due to leakage of mechanisms, in the handling of oil products, respectively. in the case of accidents on construction etc.

This is a direct impact on the quality of surface waters, with a relatively short duration, but with consequences that may result in death of aquatic animals. However, there is a significant dilution of any contaminants due to the large flow volume rates of water in the Danube. The investor must have elaborated a detailed plan of emergency measures to eliminate damages caused by such accidents. It is necessary to ensure that the construction of access roads will not disrupt existing flood prevention systems (dams) and at the same time to ensure the safety of buildings in the area of the Danube inundation for high waters (elaborated Flood Plan for the construction site and yard).

##### ***Impacts on soil***

A most serious effects on soil will be permanent (4,24 ha) and temporary (1,56 ha) land-take of the finest soils of the area.

During construction there will be degradation of the temporary taken land due the construction activity and crossover of the construction machinery.

During operation the soil quality can be jeopardized by its contamination from the operation of motor vehicles up to a distance of about 100 m. Some risk is the possibility of an accident and

the subsequent leakage of oil into the soil. Anyway such pollution has reversible character, because its effects can be removed so that the contaminated soil could have been temporarily removed from agricultural use. Consequently the biological customization will be accomplished. Soil within the area of construction belongs to soils with a high ability to absorb organic pollutants. Due to better transport and technical parameters of the new road it can be expected reduction of the accident risk with impact on the soil quality.

#### ***Impacts on flora, fauna and their habitats***

The result of the construction of the new bridge will be disruption of the riverbed bottom of the Danube due to the construction of bridge piers, which are reflected locally in liquidation of benthic fauna and disruption of ichthyo-fauna. Necessary removal of trees will mean the removal of topical and trophic (nutritive) conditions for the existence of certain groups of animals.

According to the results of the dendrologic survey (Dopravoprojekt, Inc., October 2006) construction of a bridge requires removal (felling): a road alley - formed by walnut trees - *Juglans regia* - 11 pieces of trees, self-seeding stand of poplar (*Populus* sp.) and willows (*Salix* sp.) and on the slopes of the stone bank of the Danube 39 pieces of tree and shrub vegetation in scope of 80 m<sup>2</sup>.

It is expected that due to the nature of construction activity and the aerial occurrence of significant ruderal plant communities there is high risk of subsequent expansion of ruderal vegetation, especially riparian vegetation stands and possibly expansion of the floristic spectrum of unwanted adverse neophytes.

In the operational phase, the negative impacts of the proposed activity will be reflected mainly in the creation of migration barriers and negative effects of noise, emissions and road salt on habitats in the vicinity of the new road.

#### ***Impacts on landscape***

Construction and operation of the planned activities will affect the current structure and land use. In terms of the structure of the country there is a change in the proportion of natural and technical elements to the detriment of the natural elements. There will be new areas of transport infrastructure but the area suitable for agricultural use will decrease. The most significant visual impact on the landscape will be the alignment of the new road on the embankment and the bridge structure itself.

The proposed bridge structure is a separate composition capable of response to any determining elements of the area from esthetic and space planning point of view. The new bridge appropriately defines the nature of the riverside area and at the same time it becomes an individual element in the chain of bridges over the Danube. After building the new bridge will create a modern dominant in the scenery of Komárno and Komárom.

#### ***Impacts on protected areas and their protected zones***

##### *Protected birds territories*

The proposed activity intervenes in the bird area Dunajské Luhy (Danube floodplains). Anyway in the area of interest there is not present a habitat (in relation to endangered species of flora and fauna) that could be negatively affected or disposed by this project.

##### *Protected water management area*

No water management area is in the area of interest.

##### *Water source Elizabeth Island*

Water source and/or its protected zones are not directly affected by the proposed activity. With regard to the fact that the groundwater is flowing mainly from the Danube there is certain risk of pollution caused by an accident connected with leakage of oil liquids during the construction and operation.

#### ***Impacts on the spatial system of the ecological stability***

Impacts of the activity can be considered as minimal from the evaluation point of view of the spatial stability, because there are not substantial areal land-takes or significant changes in ecological conditions of landscaping elements with high eco-stabilizing effect. The proposed activity will require disposal plants growing in the corridor of the building.

In terms of influence elements of the territorial system of ecological stability, the bridge structure spans bio-corridor of the over-regional significance NBk Danube, which is an important route of long-distance fauna and flora migration route. Construction will temporarily intervene to the Danube flow and will cause the removal of vegetation on both sides of the watercourse as well as limiting of the terrestrial animals migration.

During operation, have a negative effect of noise and air pollution on biota. Bridge structure creates a barrier to the possible negative impact especially on migrating avifauna. For a more detailed assessment of the impacts of the proposed activity on the avifauna is recommended to prepare a specific study.

#### ***Impacts on urban complex and land use***

The proposed activity is located outside the urban area of Komarno and is fully consistent with the master plan of the city. According this master plan the land in the project vicinity should be used for industry, trade, agriculture and foliage in the future.

The route of the new road on embankment affects agricultural production because it takes farmland and divides a large agricultural site in use at the same time.

New road will connect the planned industrial zones in the area.

During the construction of the bridge current carp fishing ward will be temporarily adversely affected.

During operation this project will positively affect the development of local activities between Slovak and Hungarian side. In the field of tourism it will also create better conditions for transit to Hungary.

Since the bridge structure crosses the waterway, temporary restriction of waterway may occur partially in the construction phase. But in the operational phase the project will satisfy all the conditions related to the navigation on the Danube.

#### ***Impacts on cultural and historical monuments***

Cultural and historical monuments will not be affected by the implementation of the action.

#### ***Impacts on archaeological sites***

One archaeological site is recorded in the route of the proposed activity. Therefore, it is necessary to submit the next stage of the project documentation to the Heritage Office for comments. It will be necessary to conduct a collision archaeological research.

#### ***Impacts on paleontological sites***

In the area of interest there are no known paleontological sites or important geological sites.

#### ***Impacts on infrastructure***

Construction of the new bridge and road will require relocation of the engineering systems, modifying the dam and the Danube riverbed below the bridge.

#### ***Spatial synthesis of the activity effects in the area***

Comprehensive assessment of impacts needs to take into account that the proposed construction of the new bridge and road and their subsequent operation will be carried out in areas with heavily damaged environment.

The environmental load of the area in the existing corridor routes is reflected in the zero option. With the increase in traffic, this burden will increase (air pollution, noise).

The new bridge over the Danube affects temporary the territory mainly with construction activities and interventions into the Danube River during construction phase. .

During operation, the current burden caused by anthropogenic human activity will increase mainly from noise and emission burden caused by road traffic.

The positive impacts manifest themselves in:

- improving of the traffic situation in the central part of settlements Komárno and Komárom,
- improvement of the environment in both cities,
- facilitate mutual access to both cities, improve transport service function in the cross-border area and increase pedestrians safety due reduction of traffic stress
- increase of mutual multilateral activities between Komárno and Komárom.

## **V. OVERALL ASSESSMENT OF THE IMPACT OF THE PROPOSED ACTIVITY ON THE PROPOSED BIRD AREAS, AREAS OF EUROPEAN IMPORTANCE OR THE COHERENT SYSTEM OF PROTECTED AREAS (NATURA 2000)**

Development of the new road bridge Komárno – Komárom has a minimal interference with the proposed bird protection area of Dunajské Luhy (Danube flood meadows) that was included in the National list of bird protection areas by the Slovak government decree no. 636 dated 9. 7. 2003.

As per § 26, section 5 of the law no 543/2002 Coll. it is prohibited to perform such activities in the bird protection areas that would have a negative impact on the subject of protection.

Assessing impacts of the proposed activity it was stated that it has no significant impact on the proposed bird protection area of Dunajské Luhy. Within this area there is no such biotope that could be violated or liquidated in relation to the endangered species of plants and animals.

It is necessary to point out that according to § 28, section 2 of the law no 543/2002 Coll. it is possible to perform such activities in a bird protection areas that would have an impact on the area and it is not necessary to provide care for such area, only based on a permission of a nature and land preservation authority as per § 28a of the law no 543/2002 Coll.

## **VI. CONCLUSIONS**

### **1. Final statement to the proposed activity**

Based on the results of the assessment process performed in compliance with the legal regulations, considering the current condition of the actual area utilisation and capacity of the environment, importance of the expected impacts of the proposed activity on the environment and the health of the inhabitants in terms of its probability, scope and duration, focusing especially on the conformity with the Zoning permit documentation, statements of appropriate authorities and organisation affected by the proposed activity

**it is recommended**

to implement the proposed activity „**Komárno - Komárom, new road bridge over the Danube River**“, under the terms stipulated in part VI.3 of this final statement and under the condition that the irregularities that had occurred in the course of the assessment process will be resolved in the following stages of the project preparation.

### **2. Recommended variant**

The results of the assessment indicate that it is recommended to implement the project variant B as assessed, i.e. the bridge structure within the road over the Danube River at rkm 1 770.6, located approx. 200-250 m from the existing bridge.

### **3. Recommended conditions for the phase of preparation and implementation of the activity**

Based on the investment plan, received statements, expert opinion elaborated in compliance with regulations of § 36 of the law, it is recommended that the permitting authority requires the following conditions for preparation and implementation of the proposed activity and their inclusion in the documentation for the permission process:

1. within the following stages of the project documentation to perform a detailed geological survey for the purpose of designing a proper way of the bridge founding as well as the purpose of assessment of the options for protection of the environment due to the construction activities.
2. to update the noise study with the site situation including the level lines of the daily and nightly noise conditions.
3. to include the requirements of the Slovak Ministry of Defence as per letter no. SEOPMZ-65-12/2007/OdPOI dated 31. 01. 2007 in the project;
4. to discuss all stages of the project documentation with the administrator of the river SVP, š. p., Banská Štiavnica.
5. to mark the protection zone of the waterway in the documentation for the zoning permit and the building permit.
6. to secure approving statement of the State shipping administration prior to issuance of the Zoning permit as per law no. 338/2000 Coll.
7. to discuss the project documentation with the permanent commission for borderline waterways and to discuss and obtain consent from the appropriate permanent borderline commissions for surveying and marking the state borderlines.
8. within the project documentation to propose and accept such technical measures for the phase of construction that would eliminate collisions of the river traffic with the construction.
9. prior to commencement of the construction works to elaborate a plan of accident measures for the case of dangerous substances leakages.
10. prior to commencement of the construction works to elaborate a plan of preventive measures for prevention from uncontrolled leakages of dangerous substances into the environment and proceeding in case of such leakage.
11. to secure waste management in compliance with the Program of the waste management of the city of Komárno. To utilize local damp yards for disposal of the waste.
12. to secure the organisation of the construction so that it is performed only during the working days, off the night hours and that weekends and holidays are followed as non-working time.
13. to approve the transport routes with the city of Komárno.
14. to secure proper maintenance of the access roads, site amenities, site supervision and stock piles especially by means of dust elimination – sweeping, watering and mud removal.
15. to maximally utilize the local construction materials
16. to follow the safety regulations during manipulation with oil substances and to monitor technical condition of the site machinery and to secure its faultless operation.
17. not to place site facilities, stock piles and machinery parks in the vicinity of the Danube River.

18. to follow the rules for protection of underground and over-ground waters when organizing the site facilities (courtyards) on hardened surfaces, to install proper drainage system and secure the stock-piles and damp-yards from leakages of dangerous substances.
19. to minimize the temporary occupation of farmland, to elaborate the scope of top soil removal as per the Methodological regulation of Ministry of Agriculture of SR no. 2341/2006-910 of 2006, the removed top soil to be reutilized in the surrounding farmlands.
20. to submit the project documentation for the zoning permit and the building permit to the Monuments preservation office of SR for evaluation.
21. to make effort for best utilization of the timber mass generated from cutting of trees and bushes on the construction site.
22. to compensate any harm of the owners of occupied land.
23. within the next stage of the project preparation to follow appropriate regulations of the law no. 543/2002 Coll. on nature and country preservation as amended (§26, §28 and §28a).
24. to secure elaboration of an ornithological study that would solve the issue of the barrier impact of the bridge on the migrating birds and based on its results to propose effective technical measures to eliminate kills of the migrating birds due to hitting the suspension rope system of the bridge.
25. in case of application of glass barriers on the bridge to choose a tinted glazing system.
26. to minimize direct impacts into the flora of the river banks and the ecosystem of the Danube river as such.
27. cutting of trees out of the forest to be performed exclusively off the birds nesting season.
28. to limit the movement of the site machinery exclusively on the site and appropriate access roads.
29. subsequent to completion of the construction works to perform appropriate cultivation and greenery planting works in the areas affected by construction and to reconstruct damaged bank flora.
30. to perform greenery planting works in the areas determined by appropriate nature preservation authority. Only the domestic tree species to be applied in these areas in connection to the surrounding land type.
31. to elaborate a project of monitoring of particular environmental issues (entry data for post-project analysis) in the points determined in the final statement.

#### **4. Justification of the final statement including justification of acceptance or non-acceptance of the submitted written statements.**

The final statement was elaborated in compliance with § 37 of the appropriate law and based on all accessible data, results of public negotiations, received statements, expert opinion and other supplementary information. The Ministry of Environment of SR has thoroughly analysed every comment and standpoint of all affected bodies, experts and the public.

The final statement was elaborated based on the following basic data:

- The investment plan elaborated in details of the report on assessment of impacts of the proposed activity Komárno - Komárom, new road bridge over the Danube River (Dopravoprojekt, a. s., Division of Bratislava).
- Received standpoints to the investment plan



- Minutes of the public negotiations.
- Expert opinion on the proposed activity as per § 36 of the law (Ing Viliam Piták, Banská Bystrica, 2007)

Implementation of the proposed activity detachedly relates to irrecoverable impacts to the environment, although minimal. Providing the proposed measures for prevention, elimination, minimisation and compensation of unfavourable impacts on the environment as well as thorough post-project analysis are taken, it is possible to minimize most of the expected and existing negative impacts in the course of construction and operation, and thus secure prevalence of positive impacts of the activity in the assessed region.

In respect of the proposed activity many standpoints with no major comments were received by the Ministry of Environment of SR. The standpoints including some comments were as follows:

**MoE SR, dept. of water systems** – within the next proceedings requires a statement of the water systems administrator (Slovenský vodohospodársky podnik, š. p., Banská Štiavnica).

**Regional office for the environment protection in Nitra** – it is necessary to discuss the project documentation of the planned construction within relevant permanent state-border commissions for surveying and marking the state borders.

**District office for the environment protection in Komárno** – it is necessary to accept the limitations for the ground wood cutting, impacts into the woods outside the forest cannot be performed during the birds nesting season, the next stage of the project preparation must include technical measures to eliminate kills of the migrating birds due to hitting the suspension ropes of the bridge.

**State authority for nature preservation of SR, Administration of the protected area of Dunajské Luhy** – proposes that the designer (investor) orders elaboration of an assessment ornithological study that would deal with the issue of the barrier effect of the bridge on the migrating birds. They propose to address SOS-Birdlife in this respect.

**Slovak agency of the environment in Banská Bystrica** – recommends elaboration of a plan for greenery works with subsequent planting of original species of trees and shrubs with emphasis on safety of the traffic.

The comments and conditions of the particular affected authorities and organisations that are related to the assessed activity are included in the conditions of the project implementations in the point VI.3. of this final statement.

## 5. Required scope of the post-project analysis

Based on the regulations of § 39 of the law the subject that performs the proposed activity assesses in compliance with the law no. 24/2006 Coll. is obliged to secure its monitoring and evaluation, especially:

- to systematically monitor and measure impacts of the activity,
- to control fulfilment of all conditions determined in the permits and in relation with issuance of the permit for the proposed activity and to evaluate their effectiveness,
- to secure professional comparison of the assumed impacts stipulated in the activity assessment report with the actual condition.

The scope and period for such monitoring, as per § 39 section 2 of the law, will be determined by the permitting authority in the process of permit proceedings according to the specific regulations, considering the final statement of the Ministry, so that it will be necessary to monitor especially the impacts of the new bridge construction in different stages of preparation, implementation and operation, in respect to the selected elements of the environment, whereas the role of the post-project analysis is to analyse and evaluate the impacts detected during the monitoring, followed by deduction of implications and acceptance of measures for elimination of

those impacts that will be the most unfavourable according to the assessment report.

The monitoring should focus especial on:

- monitoring of the water quality in the Danube River in the vicinity of the construction site,
- monitoring of the underground water quality in the vicinity of the construction site,
- monitoring of the water quality in the water reservoir of Alžbetin ostrov,
- monitoring of the birds movement within the migration season,
- monitoring of the noise levels.

Project of the monitoring must be discussed with appropriate authority for the environment protection. We propose that the control of observance of the determined conditions is performed by means of submitting final reports from the monitoring process by the investor to the controlling authority:

- prior to commencement of the construction,
- in the yearly intervals during the construction and after one-year operation of the bridge,
- later in the intervals determined by the results of the first monitoring process.

Should it be detected that the actual impacts of the assessed activity are greater than those stipulated in the investment plan the subject that performs the activity is obliged to secure measures for conforming the actual impact to the impact described in the investment plan and in accordance with the conditions stipulated in the building permit as per special regulations.

## **VII. CONFIRMATION OF THE DATA CORRECTNESS**

### **1. Executors of the final statements**

Ministry of the Environment of SR  
Department of the environment impacts assessment  
Ing. Milan Luciak

in cooperation with

Regional office for public healthcare in Komárno

### **2. Confirmation of the data correctness by signature of the authorized representative of appropriate subject, incl. stamp.**

Ing. Viera Husková  
Director of the Department of the environment impacts assessment  
Ministry of the Environment of SR

### **3. Place and date of issuance of the final statement**

Bratislava, 17.7.2007