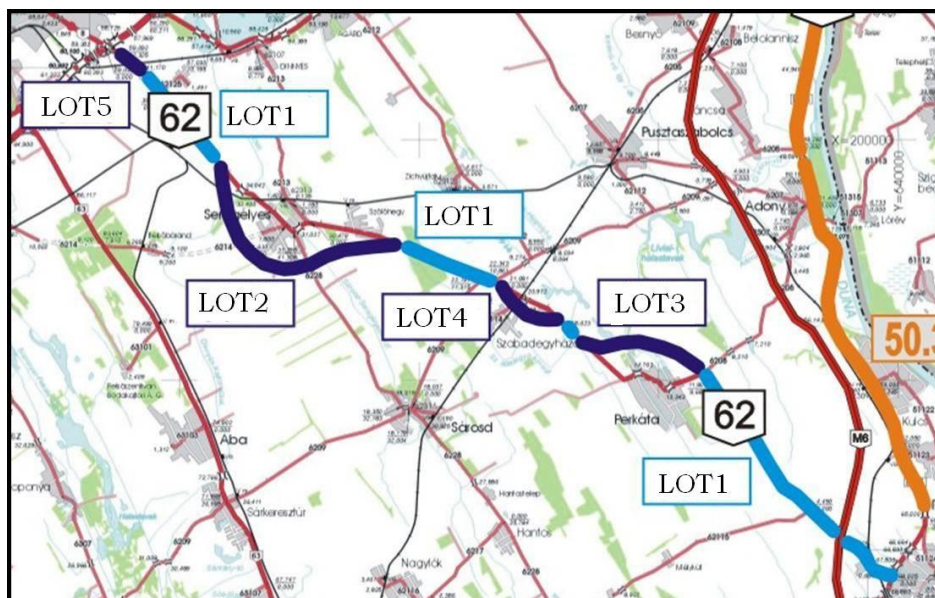


The preparation of supplementary documentation necessary for the grant of support of the European Regional Development Fund regarding the construction of development of highway no. 62 sections between M8 (new Danube-bridge) and Székesfehérvár

Application for Grant

Annex No. IV/A: Environmental summary / Performance evaluation



Budapest, September 2013

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	6
1. PRELIMINARY CONDITIONS	21
1.1. MAIN OBJECTIVE OF THE COMMISSION	21
1.2. THE EXTENT OF THE TASK AND THE EXAMINED DOCUMENTS	22
1.3. ASSUMPTIONS AND LIMITATIONS	24
1.4. NECESSITY OF THE PROJECT	24
1.5. TECHNICAL VERSIONS CONSIDERED	27
2. LEGISLATION AND DESIGN BACKGROUND	30
2.1. RELEVANT ENVIRONMENTAL REGULATION	30
2.1.1. <i>Overview</i>	30
2.1.2. <i>Geological medium and the quality of under-the-surface waters</i>	30
2.1.3. <i>Quality of surface waters</i>	31
2.1.4. <i>Nature conservation</i>	31
2.1.5. <i>Noise and vibration</i>	32
2.1.6. <i>Air quality</i>	34
2.2. APPLIED RULES OF ENVIRONMENTAL AND CONSTRUCTION AUTHORIZATION PROCESSES	35
2.2.1. <i>Environmental authorization</i>	35
2.2.2. <i>Construction authorization</i>	38
2.3. CURRENT STATUS OF PERMITS	41
2.3.1. <i>Environmental decisions and information of the public</i>	41
2.3.2. <i>Construction permits and information of the public</i>	43
3. DESCRIPTION OF THE RECOMMENDED PROJECT	45
3.1. MAIN ELEMENTS OF THE PROJECT	45
3.2. TRAFFIC FORECAST	50
3.3. MAIN CONSTRUCTION ACTIVITIES AND SCHEDULES	51
3.4. OPERATIONAL AND MAINTENANCE ACTIVITIES	52
4. PRESENT STATUS OF THE ENVIRONMENT	52
4.1. TOPOGRAPHIC, GEOLOGIC, GEOHYDROLOGIC AND SOIL CONDITIONS	52
4.2. SURFACE WATERS	53
4.2.1. <i>Hydrographical characteristics</i>	53
4.2.2. <i>Water drainage solutions</i>	54
4.3. HABITAT, FLORA AND FAUNA, NATURA 2000	62
4.4. LANDSCAPE	69
4.5. BUILT ENVIRONMENT	70
4.6. AIR QUALITY	73
4.7. NOISE AND VIBRATION	78
4.8. WASTES	80
5. STUDY OF IMPACTS	81
5.1. CONSTRUCTION PHASE	81
5.1.1. <i>Geologic medium and sub-surface water</i>	81
5.1.2. <i>Surface waters</i>	81

5.1.3. <i>Habitat, flora and fauna, Natura 2000</i>	82
5.1.4. <i>Landscape</i>	83
5.1.5. <i>Built environment</i>	84
5.1.6. <i>Air quality</i>	86
5.1.7 <i>Noise and vibration protection</i>	86
5.1.8. <i>Wastes and hazardous materials</i>	87
5.2. OPERATION PHASE	88
5.2.1. <i>Geologic medium and sub-surface water</i>	88
5.2.2. <i>Surface waters</i>	88
5.2.3. <i>Habitats, flora and fauna</i>	89
5.2.4. <i>Landscape</i>	91
5.2.5. <i>Built environment</i>	91
5.2.6. <i>Air quality</i>	91
5.2.7. <i>Noise and vibration protection</i>	94
6. IMPACT REDUCING MEASURES	96
6.1. GEOLOGICAL MEDIUM AND UNDER-THE-SURFACE WATER	96
6.2. SURFACE WATERS	97
6.3. HABITATS, FLORA AND FAUNA	99
6.4. LANDSCAPE	100
6.5. BUILT ENVIRONMENT	102
6.6. AIR QUALITY	104
6.7. NOISE AND VIBRATION	104
6.8. WASTE	105
7. MONITORING PLAN	105
7.1. HABITATS, FLORA AND FAUNA	105
7.2. NOISE AND VIBRATION	106
7.3. AIR QUALITY	107

ATTACHMENTS

- I. General attachment
- II. Biota protection attachment
- III. Noise protection attachment

PLOT PLANS

EXECUTIVE SUMMARY

Transinvest Budapest Kft., project leader of National Infrastructure Development (NIF Zrt.), commissioned Vibrocomp Kft. to prepare the performance evaluation necessary in connection with the gaining of European Regional Development Fund support of development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár.

Necessity of the project

In connection with the development of motorways M6 and M8, the development of highway no. 62 also became necessary, as the traffic situation changed due to the construction of the new Danube bridge opened in 2007, as the transit traffic arriving from the Danube bridge of Dunaújváros finds its way towards West and North-West through highway no. 62. This means unbearable loads for the population living in this transition zones with significant traffic already before the construction of the bridge. The transition zone of current highway 62 does not meet the demands of the travellers; its characteristics are narrow built-in areas, small-radius curves and unfavourable grades.

The results shown in the Traffic evaluation belonging to the Support request prepared by TeRRaCe Kft. in November 2010 also support the necessity of the development of highway no. 62. In 2010 average daily traffic is an estimated 8000 vehicles/day, 9500 vehicle units/day. These values are valid for the section between M7 and Seregélyes and the downtown area of Seregélyes. These sections have the highest traffic.

The Governmental Decision 1004/2007 (30 January), the National and the Fejér County Regional Planning indicate the importance of the development of main road no. 62 in connection with the construction of the expressways.

The Governmental Decision 1004/2007 (30 January) that contains the indicative list of the transport development projects planned to be implemented between 2007-2013 provides the development of main road no. 62 between M8 (new Danube bridge) and Székesfehérvár.

The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár has been divided into five sections. The main aspect of planning was ensuring bypass of the towns and villages, as well as the surface reinforcement in the sections between the towns, and the construction of a different level crossing at the correction of railway line between Budapest and Nagykanizsa.

The sections to be developed are the following:

LOT1: sections of 11.5t surface reinforcement between segments 0+000 and 40+465 km,

The planning section is divided into the following subsections by the bypass roads:

Phase I: between 0+000 and 1+800 km (between the roundabout junction at highway 6 of highway 62 and the junction of motorway M6 at highway 62)

Phase II: between 3+055 and 11+528 (junction of M6 motorway and Perkáta bypass road)

Phase III: between 17+600 and 18+605 (Perkáta bypass road and Szabadegyháza bypass road)

Phase IV: between 21+717 and 26+447 km (Szabadegyháza bypass road and Seregélyes bypass road)

Phase V: between 35+446 and 40+471 km (between Seregélyes bypass road and different level crossing of MÁV Budapest – Nagykanizsa railway line)

LOT2: Seregélyes bypass section between segments 26+400 to 36+960 km

LOT3: Perkáta bypass section between segments 11+672 to 17+598 km,

LOT4: Szabadegyháza Industrial Site bypass section between segments 18+965 to 21+713 km

LOT5: Different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km

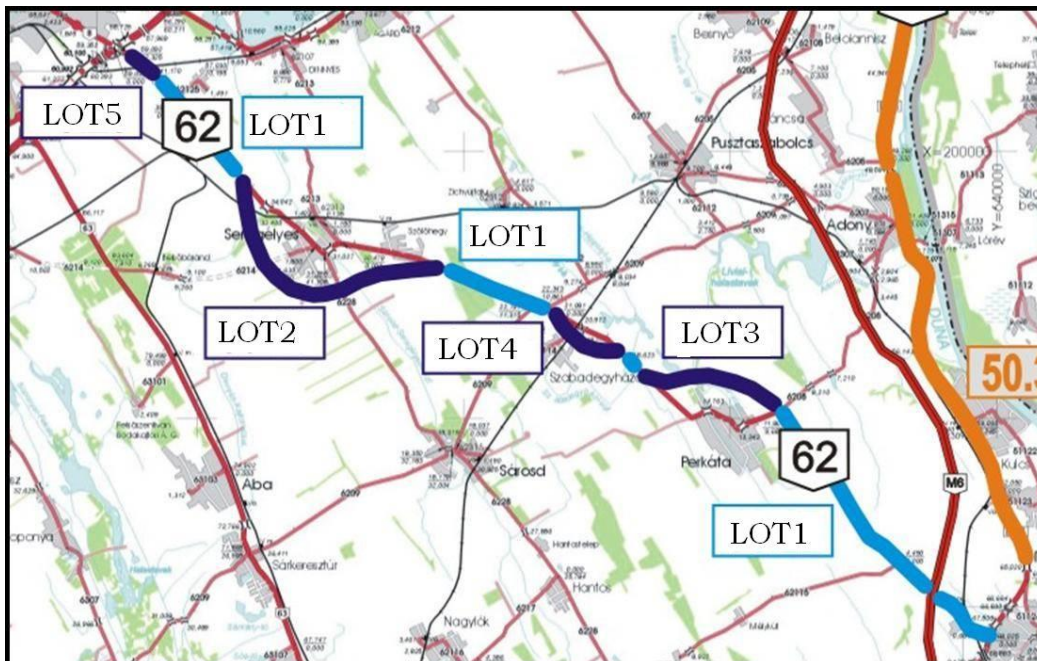


Figure 1: Sections of highway no. 62 development

Technical versions considered

Section LOT1 includes the sections of the existing highway no. 62 subject to surface reinforcement; therefore in this case there are no path changes.

The study of Seregélyes bypass section of highway no. 62 (LOT2) prepared by Roden Bt. in 1991 included 5 main versions and various sub- and inset versions. Main versions A and B passed by Seregélyes in Northern direction, versions C and D went towards South from the downtown of the town, and version E went through Seregélyes.

The Local Government of Seregélyes, as well as Fejér County Road Management Company recommended the further development of version C, and Budapest Nature Protection Directorate had no objections against version C passing by the town from the South, either, being favourable from air purity aspects, as it goes windward, and, furthermore, it crosses less valuable lands than versions A and B.

The study of Perkáta bypass section of highway no. 62 (LOT3) prepared by Tethely Mérnöki és Szolgáltató Kft. in 2003 included Southern (Southern versions 1 and 2) and Northern versions (Northern version 1 and 2).

In summary, from environmental and economic aspects, the most favourable version is Northern version 2. In the later planning phases Northern version 2 was further developed.

In case of Szabadegyháza Industrial site bypass section (LOT4), the path study prepared by Encon Kft., in cooperation with Tandem Kft., commissioned by NIF Zrt., included version I and II.

The recommended path versions were again negotiated with the Network Department of GKM (Ministry of Economy and Transport), the Transport Development Coordination Centre (earlier UKIG) and the Local Government in November 2007, and based on that, path II became the authorized path, completely bypassing residential downtown areas.

In case of the different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km (LOT5) one technical version has been designed.

For the plot plans showing path versions of all the sections see General attachment I.

Environmental and construction permits, information of the public

Environmental authorization

In case of the development of main road no. 62 between M8 (new Danube bridge) and Székesfehérvár for the sections LOT1, LOT2, LOT3, LOT4 and LOT5 the environmental authorization was not proceeding. During the construction permit procedure, it was possible to take the environmental issues into consideration.

In order to examine the cumulative impacts of the LOT sections the Vibrocomp Ltd. completed in May 2011 the environmental impact performance evaluation of the main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár. The performance evaluation was submitted to the Central-Transdanubian Environmental, Nature Conservation and Water Management Authority. 14 May 2011 environmental performance evaluation procedure has been started.

During the procedure the Inspectorate determined that based on the performed examination it can be stated that the development of main road no. 62 between M8 (new Danube bridge) and Székesfehérvár has no significant environmental impact.

The project results significant decrease in transport emissions and noise along the sections touching the settlements. Based on the above the Authority issued its official

approval to the performance evaluation in its decision under registration no. 68760/11.

31 May 2011, during the environmental performance evaluation procedure, the Inspectorate published an announcement in the office, on the website and in the central system. 27 May 2011 the Inspectorate sent the announcement, the application and its attachments to the notaries of the concerned local governments in order to promulgate it on public area and by means of the locally customary methods.

The Inspectorate sent the announcement on electronic way to the relevant social organizations, in order to inform the social organizations about the start of the procedure.

No comments on the documentation had been submitted nor to the local governments nor the Inspectorate. The social organization formed to represent the interests of environmental issues did not report its willingness to participate as customer to the Inspectorate.

Previously (before 2010-2011), there was no **Preliminary Evaluation Documentation (PED)** made for the Seregélyes bypass section (LOT2), either, but due to the changes in legislations (Natura 2000 areas were designated in Hungary in 2004, and the list of the areas with registration numbers were announced in 2006 in Regulation of the Ministry of Environment and Water no. 45/2006 (XII. 8.)), as the second extension of the construction permit has been expired in March 2011, the restart of the construction authorization process required the preparation of PED.

Based on the point 88 of Attachment 3 of Government Decree 314/2005 (25 December) on environmental impact analysis and unified environment use authorization procedure any road belonging to national road network category (if Attachment 1 does not apply) is required to have, subject to the decision of the authority, environmental impact analysis, if it crosses a forest larger than 50 ha or any protected natural areas.

As Seregélyes bypass section of highway no. 62 reaches the Natura 2000 area of Belsőbáránd loess valley (between segments 35+200 and 35+450 km), a preliminary evaluation must be made before the construction authorization process in order to identify any material environmental impacts resulted from the planned activity. If significant environmental impact is assumed, an environmental impact analysis must be prepared.

Transinvest Budapest Ltd. commissioned Vibrocomp Kft. to prepare the Preliminary Evaluation Documentation of the Seregélyes bypass section planned segments 26+400 - 36+960 km of main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár (investor: National Infrastructure Development (NIF Zrt.)) and the Natura 2000 Preliminary Impact Assessment for the Belsőbárándi Loess Valley SCI Natura 2000 site (HUDI20006) attached to the document. These were submitted to the Central-Transdanubian Environmental, Nature Conservation and Water Management Authority in January 2011.

11 April 2011 the Inspectorate published an announcement in the office, on the website and in the central system. Furthermore, 7 April 2011 the Inspectorate sent the announcement, the application and its attachments to the notaries of the concerned local governments in order to promulgate it on public area and by means of the locally customary methods.

The Inspectorate sent the announcement on electronic way to the relevant social organizations, in order to inform the social organizations about the start of the procedure.

The Inspectorate, in its injunction no. 33155/2011 ordered public hearings scheduled for 4 May 2011. The injunction about the public hearing was published on the website of the Inspectorate, on magyarorszag.hu and on the notice board of the Inspectorate. Furthermore, the injunction was sent to the involved professional authorities, local governments. Nobody of the public appeared on the public hearing. The official record no. 40977/2011 records the fact of the cancellation of public hearing.

27 June 2011 Central-Transdanubian Environmental, Nature Conservation and Water Management Inspectorate issued the closing decision about the preliminary assessment procedure of the development of Seregélyes bypass section planned segments 26+400 - 36+960 km of main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár (reg. no 56234/11., see General Annex I.). The Inspectorate stated in its decision that no significant environmental effects comes from the implementation and operation of the planned facility, so the environmental impact assessment procedure is not justified, and concluded that the planned activity is not environmental use licensed.

The Inspectorate sent the decision to the notaries of the local governments concerned of the activity and ruled to announce to promulgate it on public area and by means of the locally customary methods within eight days of receiving it. The decision was posted on the notice board and published on its website.

Construction authorization

The National Transport Authority, in its decisions no. 9/26/2009., 10/28/2009., 13/26/2009., 394/34/2009., and 58/36/2009. authorized in 2009 the **115 KN axle load surface-reinforcement** of highway no. a 62. in segments (LOT1) 0+000 – 1+800, 3+055 – 11+528, 17+600 – 18+606, 21+717 – 26+447, and 35+446 – 40+471 km.

During the construction authorization procedure of segments between 0+000 – 1+800 km, 3+055 – 11+528 km and 17+600 – 18+606 km of highway no. 62, the National Transport Authority reviewed the site on 17th December 2008, before granting the permit, and its notice no. 5381/4/2008 was, at the same time, the notice for the professional authorities, as well.

During the construction authorization procedure of segments between 21+717 – 26+447 km and 35+446 – 40+471 km of highway no. 62, the National Transport Authority reviewed the site on 15th December 2008.

The Transport Authority of Fejér County issued a construction permit no. FE/UV/NS/A/181/0/2004 for the construction of **Seregélyes bypass section A** (LOT2) of highway no. 62, which was issued on 29th March 2004 under no. FE/UV/NS/A/181/1/2004.

The National Transport Authority issued its decision no. 1778/31/2008 on the transfer, extension and modification of the construction permit, therefore the construction permit was extended until 26th March 2009, and then until 26th March 2011.

Following the preparation of the study of Seregélyes bypass section of highway no. 62 by Roden Bt. in 1991 there was a meeting held for the residents of the village on 8th November 1991, where the Local Government of Seregélyes recommended the further development of version C of the draft study.

As the second extension of the construction permit has been expired in March 2011, new construction authorization procedure was required. Therefore, Transinvest-Budapest Ltd (on behalf of NIF) submitted the application to the Road Transport Department of the Transportation Inspectorate of Fejér County Government Office.

The Transport Inspectorate granted the application and allowed in its decision no. FE/UT/NS/B/102/16/2011 the construction of **Seregélyes bypass section** of main road no. 62 and the authorization of the execution plans of the engineer artificial structures based on the plans (plan no. 51.978/503) of UVATERV Road, Railway Planer Co (UVATERV Út-,Vasúttervező Zrt) prepared December 2008 (See decision in General Annex I.). It stated that the submitted authorization plan documentation (plan no. 51.978/503) of UVATERV Road, Railway Planer Co (UVATERV Út-,Vasúttervező Zrt) prepared in December 2008 is capable of authorization, the applied technical solutions meet the technical specifications of standard no. 2-1.201:2008 ROAD on design of public roads.

National Transport Authority issued the permit of **Perkáta bypass section** (LOT3) of highway no. 62, and the construction permit of the related bridge and dirt roads on 4th December 2007 under registration no. 226/35/2007.

Under Article 14 of KöViM (Ministry of Environment and Water) Regulation 15/2000 (XI.16) the National Transport Authority reviewed the site on 10th July 2007, before issuing the permit.

In the case of construction authorization of the **bypass road of Szabadegyháza Industrial site** (LOT4) of highway no. 62 the National Transport Authority issued its construction permit on 4th May 2009, under registration no. 32/12/2009.

Under Article 14 of KöViM (Ministry of Environment and Water) Regulation 15/2000 (XI.16) the National Transport Authority reviewed the site on 19th November 2008, before issuing the permit.

The National Transport Authority issued its construction permit on 5th March 2007, under registration no. 07/KV/NS/A/198/6/2007, for the construction works of the **different level crossing of railway line between Budapest and Székesfehérvár on highway no. 62.** (LOT5)

During the construction authorization procedure, the National Transport Authority reviewed the site on 5th December 2006, and the participants did not raise objections against the construction of the bridge.

Project description

The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár is planned to be carried out in five sections. (see Figure 1)

The planned technical characteristics of Highway no. 62

Main technical data:

Design class: K.IV.A.

Design speed: $v_t=90$ km/h.

Relief conditions: plain area

road structure corresponding to 11.5 t axle load

The highway developed with corrections, surface reinforcement, extension and bypasses has 2x1 lanes; its cross-sectional layout is the following:

Width of traffic lanes:	3.50 m
Width of side verge:	2.50 m
Safety lane width (within the side verge):	0.25 m
Crown width:	12.00 m

During the identification of the current conditions and the evaluation of the expected impacts, the following main conclusions can be stated:

Present status

Soil conditions: corresponding to the geological structure, usually loess-type, humus sand, humus mud, and foul and flat clay can be found in the whole design area.

The **ground-water** is usually deeper around the road; its estimated maximum level is deeper than 2 metres below the road level.

Water courses affected by the path:

Nyugat-völgyi trench, Perkáta (Pistolai) water course, Szabadegyháza water course, Sárosd – Seregélyes water course, Pálinkaházi trench, Dinnyés-Kajtori channel, Seregélyes road trench

Natural habitats are in 200 m lane of the path, the forest belts by the road, and the waterside belt of the channels (e.g.: Dinnyés-Kajtori-channel, Sárosd-Seregélyesi water course, Pálinkaházi trench, Pistolai brook).

Protected natural area is only reached by the path in the Seregélyes bypass (LOT2) section. This bypass road crosses the Belsőbáránd loess valley Natura 2000 area in the section between the planned segments 35+200 and 35+450 km.

For the affected Natura 2000 area Natura 2000 impact analysis documentation was prepared.

Habitat and species of community importance for the base of designation:

<i>Code</i>	<i>Habitat-type of Community importance</i>
6250*	Plain-area Pannonian loess swards
6240*	Sub-Pannonian steppes
<i>* community habitat of special importance</i>	
<i>Code</i>	<i>Plant species of Community importance</i>
4091	Tartar bread plant (<i>Crambe tataria</i>)
<i>Code</i>	<i>Animal-species of Community importance</i>
<i>Birds</i>	
A338	Red-backed shrike (<i>Lanius collurio</i>)

According to the habitat survey of the impact analysis, the North-Eastern part of the valley of the Dinnyés-Kajtori channel is in a grass cultivation section in the approximately 250 meter section, where it crosses the path, where there are fens and hayfields (35+200 to 35+450 planned km segments).

The habitats “Plain-area Pannonian loess swards – 6250” and “Sub-Pannonian steppes – 6240” are not affected by the path of the road.

The road does not get close to the habitats of the two marking species tartar bread plant (*Crambe tataria* (4091) and red-backed shrike – *Lanius collurio* (A338)).

The path reaches **ecological corridors** in the following sections:

- between segments 15+440 km and 15+600 km, Perkáta (Pistolai) water course,
- between segments 29+798 km and 29+850 km, Sárosd-Seregélyesi water course,
- between segments 35+200 km and 35+450 km: Dinnyés-Kajtori channel,
- between planned segments 35+970 km and 36+090 km, at the crossing of Rác valley.

Typical landscape use: The areas directly connected to the roads are typically agricultural lands. The road crosses larger forests in the Perkáta and the Seregélyes bypass sections (Perkáta: 6943 m², Seregélyes: 2394 m²)

The path goes through the administrative area of the following **towns and villages**: Dunaújváros, Perkáta, Szabadegyháza, Seregélyes, Aba, Székesfehérvár.

Monument-type buildings are not affected by the construction works in the whole analysed path.

During the preliminary researches of files, literature and topography it was concluded that the development area affects several registered **archaeological sites**. Most of these sites are close to the Seregélyes bypass section (three of them were identified).

In Perkáta and Seregélyes the preliminary research of archaeological sites and exploration plots are in progress.

The **air purity** calculations show that, in the current situation, all the analysed components (CO, NO_x, PM₁₀) correspond to both the daily and the annual limit values for all three distances (10, 20, and 50 metres) within the directly and the indirectly affected areas. The most significant air pollution can be detected in the Seregélyes – M7 section.

Comparing the current **noise load** values calculated along the examined towns and paths with the limit values under 27/2008. (XII. 3.) Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health), we can draw the conclusion that daytime noise load exceeds the limit values prescribed for newly designed areas by 0 to 3.1 dB, and night-time noise load by 0 to 4.5 dB along the transit sections of the towns of the bypass roads, and it does not exceed the relevant limit values along the sections with unchanged paths.

The path leads in outskirts areas, typically farther from the residential areas, and as the visual inspection of the site review shows, there is no significant amount of industrial, municipal or agricultural **waste** in the examined area.

Impacts during construction

In the area of the road construction the original functions of the **soil** will change. Its current natural status will end; this area will become part of an infrastructural facility.

The road should not cause detectable, significant changes in the **ground-water** level.

Under KvVM (Ministry of Environment and Water) Regulation 7/2005 (III.1.) amending KvVM Regulation 27/2004.(XII.25.) on the classification of towns located in sensitive areas with respect to the conditions of underground waters, all the towns and villages affected by the path are located in sensitive, underground water-protected areas.

In case of the **surface waters**, the water courses located close to the path, serving as recipients, are sensitive to pollution. These are the following:

Lebuki brook, Nyugat-völgyi trench, Perkáta (Pistolai) water course, Szabadegyháza water course, Sárosd – Seregélyes water course, Pálinkaházi trench, Dinnyés-Kajtori channel

From **biota protection** aspects the road construction mainly causes disappearance of habitats and living spaces.

Highway no. 62 crosses the water habitats and green hayfields around Sárosd-Seregélyesi water course, Dinnyés-Kajtori channel, and Perkáta (Pistolai) water course, and the larger forests located between Seregélyes and Perkáta (planted acacia-groves, and oak-groves mixed with acacias).

The Seregélyes bypass section crosses the Belsőbáránd loess valley SCI Natura 2000 area in a section of approximately 250 m.

The 6250 “Plain-type Pannonian loess swards” and 6240 “Sub-Pannonian steppes” marking habitats are not reached by highway no. 62; they are not endangered due to their distance.

The planned highway no. 62 does not endanger the population of marking specie (4091) tartar bread plant (*Crambe Tataria*), because that is far (appr. 1800 m) from the path. In the examined area only Red-backed shrike (*Lanius collurio*) is classified as Natura 2000 marking animal species (A338). We have no information of them having constant hatching stock in the area of the investment; therefore we cannot talk about their disappearance or disturbance.

The responsible authority is the Central Transdanubian Environmental Protection, Nature Conservation and Water Management Inspectorate. After the evaluation of the project application about the main road no. 62. development that should be achieved between M8 (new Danube-bridge) and Székesfehérvár the Inspectorate determined in its Statement no. 71933/2011 which was clarified in the Statement no. 41484/2012. that the project does not have a significant impact on NATURA 2000 site.

The planned section of highway no. 62 does not reach any downtown **residential area** in any of the cases, however, in the following cases it gets near to residential buildings or areas:

- In the Szabadegyháza Industrial site bypass section of the path of highway no. 62, near to segment 20+900 km, the road gets to 50 m from a residential building.
- In the Seregélyes bypass section, near to planned segment 31+500 km and planned segment 32+450 km, the road leads from approximately 150 m from the residential area of Seregélyes.

Earth works of the planned investments (landscaping, levelling works, embankment construction, etc.) will affect registered archaeological sites, which were identified during the site reviews.

From **air quality** aspects, the air emission load (especially nitrogen oxides, carbon deposit and airborne dust) caused by the road transport of construction material and machinery operation may be concentrated in place and time, therefore it can cause problems in the direct neighbourhood of the construction. Air pollution of the road construction is temporary in all cases.

During construction works the following sources may result in environmental **noise** pollution: construction technology, machines, loading operation, transport. As the main road construction of the bypass sections will be mostly sufficiently far away from residential areas, it is expected that there will be no need to take special measures (adequate schedules, noise protection covers) to decrease the noise caused by the construction so that the construction works do not cause over the limit noise loads.

During the construction of the facilities (including barrow pits), it is expected that dangerous and not-dangerous **wastes** will be generated.

Impacts during operation

From **soil protection** aspects, with the disappearance of lead-containing fuels no lead condensation is expected, other air polluting materials will condense in a diffuse way, in a not-determinable area, meaning also that concentration in the areas close to the road is not significant.

Extra load of the **water courses** will be caused by the water quantity arriving from the paved surface in a concentrated way in the section following the introduction, where it cannot infiltrate into the soil.

During the operation of the road, significant pollution regarding the impacts of the water courses may be caused by oil and oil derivatives.

In case of covered trenches, the most part of the oil will demix together with the sediment; therefore sediment catcher is to be built in these sections.

From **biota protection** aspects, the most significant danger impact of the path-type facilities is the habitat division effect. The habitats crossed by the road are listed in section “Impacts during construction”. Ecological transit routes are aimed to counterbalance the negative effects of division.

Probable favourable and unfavourable effects in **Natura 2000 areas**:

There is no fragmentation regarding the marking habitats (6250 “Plain-type Pannonian loess swards” and 6240 “Sub-Pannonian steppes”). Fragmentation of the habitat is only expected in case of the hayfield located on both sides of the path.

Habitat-fragmentation may mainly affect the birds flying along the channel in the beginning period (later the birds get used to it).

The habitat of red-backed shrike (*Lanius collurio*) will not be endangered during the investment; neither will the free motion of this bird be limited.

The investment does not have a significant impact on the habitats and species of community importance of the examined Natura 2000 area.

The responsible authority is the Central Transdanubian Environmental Protection, Nature Conservation and Water Management Inspectorate. After the evaluation of the project application about the main road no. 62. development that should be achieved between M8 (new Danube-bridge) and Székesfehérvár the Inspectorate determined in its statement no. 71933/2011 which was clarified in the Statement no. 41484/2012. that the project does not have a significant impact on NATURA 2000 site.

The path leads through plain areas, the height of the embankments of the road is low, so from **landscape aspects**, only the different-level crossings may have unfavourable visual impact.

With the development of highway no. 62 the life quality of the residents of the affected **towns and villages** will improve, and the investment indirectly helps to protect the conditions of the buildings and built environmental elements.

From **air quality aspects**, if the development is carried out, the traffic emission will decrease in the residential area of the affected towns and villages (in the directly affected area), so comparing the *With* and *Without* status regarding the directly affected area, the *With* option is more favourable from air quality aspects.

In the indirectly affected area, the highest concentration values can be expected in the Perkáta transit section.

Based on the calculation it can be deducted that, in the direct neighbourhood of the path, the air quality values caused by traffic, calculated for average daily traffic, do not reach, for any of the components, the health limit values in the future, not even at 10 metres.

From **noise protection** aspects, comparing the future noise load values calculated along the examined villages/towns, with the limit values under 27/2008. (XII. 3.)

Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health), we can draw the conclusion that the noise load of the examined areas, both along the bypass roads, and in the road sections with surface reinforcement, correspond to the limit values prescribed by the regulation.

Along the crossing sections of the existing highway no. 62, if the bypass sections of these sections will be constructed, the noise load will decrease compared to the future conditions by a detectable amount (by 1.5 to 2.7 dB).

The **wastes** produced during the operation may be wastes of maintenance, repair, usage, as well as wastes caused by accidents or damages.

In case of damages mostly the water drainage trenches and the soil may be polluted, and consequently, the surface waters and the ground-water, which may indirectly cause the pollution of underground waters.

Impact reducing measures

Geological medium, under-the-surface water

During construction

Earth works may only be carried out in appropriate weather conditions. In winter, end of winter and early spring periods with snow melting, or in rainy weather earthwork construction is not recommended in areas with cohesive sub-soil, while the quality of the earthwork cannot be ensured.

During operation

The water drainage concept of the road is to catch rain-water arriving from the road or from the neighbouring areas in grooves. The water collected in grooves is transmitted to recipients, where possible, or, where it is not possible, to desiccating or evaporating reservoirs.

Surface waters

During construction

Size and design of the bridges and culverts correspond to environmental conditions, too, so they do not cause neither alluviation, nor wash-out.

Alluviation and wash-out prevention of culverts and bridges is planned to be solved with the surface.

The construction of new bridge is necessary:

- in segment 15+520.70 km, at the crossing of Perkáta (Pistolai) brook
- in planned segment 29+798 km, at the crossing of Sárossd-Seregélyesi water course,
- in planned segment 35+192 km, at the crossing of Dinnyés-Kajtori channel,

Bridge renovation is necessary:

In the railway crossing at Szabadegyháza in segment 18+305 km

Habitats, flora and fauna

During construction

From biota protection aspects, the following valuable habitats require special attention during the construction works:

- between segment 36+000 km: on both sides in Rác-valley (green hayfield)
- between segments 35+260 – 35+310 km: on both sides in the valley of Dinnyés-Kajtori channel (green hayfield, fen, loess steppe)
- between segments 29+120 – 30+000 km: on both sides in the valley of Sárosd-Seregélyesi channel (reed-bed, green hayfield)
- between segments 26+400 – 23+900 km: a larger forest on the left hand side of the road (oak-grove mixed with acacia and pine, acacia-grove), a smaller forest on the right hand side of the road (oak-grove, poplar-grove)
- between segments 18+300-18+500 km: on the right (saline meadows)
- between segments 15+700 – 16+000 km: on the right (reed-bed) along the Cikotai water course
- between segments 15+300 – 15+600 km: on the left (green hayfield and loess steppe) in the valley of Perkátai water course.

In the neighbourhood of the above habitats borrows, spoil areas cannot be made; these areas cannot be used as construction sites.

During operation

At the crossing of Sárosd- Seregélyesi water course (segment 29+780 km) and Dinnyés-Kajtori channel (segment 35+192 km) a minimum 20-m wide forest lane must be planted in 100-m length, respectively, in order to ensure waterfowl protection, to elevate the fly of the birds.

At the crossing of Rác-valley (Seregélyes) 2-m diameter culvert must be built. This structure must be built with a 30-cm high and 50-cm wide concrete bench (ecological transit route).

Landscape

During operation

Corresponding to Decision no. 22.3/3906/7/2010 of the Forestry Directorate of Budapest and Pest County Central Agricultural Office, as a replacement of the used forest areas (7185 m²) in the Perkáta bypass section of highway no. 62, 800 metres to the East, between segments 13+900-14+620 km, on the Northern side of the planned road a snow-shield forest lane will be planted. The dimensions of the forest lane are as follows: 720-m long, 26-m wide and its area is 1.8 ha. In this forest lane the distance of the side lines of the tree-type plants is 20.0 m, bordered by a lane of bushes at 3.0 metres, respectively.

Snow-shield forest lane to be planted in the Seregélyes bypass section between the planned segments 26+400-27+507 km, in 15-m width.

In case of cutting a biologically active surface block, if the two blocks on the two sides of the road are viable individually, ecological corridor must be constructed, which enables connection between the two parts. Following the negotiations with Duna-Ipoly National Park, a 2-m wide pipe culvert will be placed in the crossing of the Rác-valley.

Built environment

Before construction

The surface reinforcement planned in the existing path generally means minimal risks from heritage protection aspects, therefore preliminary archaeological intervention is not recommended in this area. Archaeological professional surveillance must be ensured in order to document and save the occurring phenomena.

Based on the heritage protection impact assessment, preliminary excavations and test excavations are necessary in the Seregélyes and Perkáta bypass sections and the Szabadegyháza Industrial site bypass section.

It is not expected to find archaeological sites in the sections along the different-level crossing of the Budapest-Székesfehérvár railway line and road correction of highway no. 62 (segments 40+465 – 41+650 km), therefore additional research and preventing measures (test excavation, preliminary excavation) are not necessary before the beginning of the investment.

Air quality

During operation

Under paragraph 1) of Article 29 of Government Decree 306/2010. (XII. 23.), in case of creating double-digit national road line source, no residential building, recreational building, educational, schooling, health, social and administrative buildings can be located and placed within 25 metres from the centre of the traffic facility.

Noise protection

It would be reasonable to request the construction authorities to take into account the protective distance necessary along the new bypass road sections when issuing the construction permits, and in the development plans to be prepared. Within the protective distance, it is not recommended to place residential and recreational buildings, only industrial, commercial and service facilities. In case of office construction, adequate noise protection can be achieved with proper orientation, and improved sound-proof doors and windows.

In case of the buildings to be built in the future, noise protection must be ensured by observing the protective distance, with the orientation of the buildings, the shadowing effect of the existing or service facilities, etc.

In case of the towns and villages relieved due to the bypass road sections, the following measures are recommended in order to reduce noise caused by traffic:

- prohibiting freight traffic to enter the towns (except destination traffic),
- surface reinforcement managed by the local governments.

Monitoring plan

Developing and operating the monitoring system is related to the investment. A separate plan has to be developed for this activity in order to be able to follow the

changes in the environmental elements. General purpose of monitoring is to establish the possibility of correction of the activities carried out during investment and operation in order to improve harmful effects.

Monitoring plan is to be prepared from biota protection, air quality, and noise- and vibration protection aspects.

1. Preliminary conditions

1.1. Main objective of the commission

In order to ensure the special development works of the road network, the Republic of Hungary, in addition to domestic resources, is planning to use additional resources for the supportable projects from the European Regional Development Fund.

The road network role of the section between M8 (new Danube bridge) and Székesfehérvár of highway no. 62 has increased from 2007, after the new Danube bridge (Pentele bridge) was opened in that year. This bridge is related to the M8 motorway construction. This road ensures traffic in East to West, or rather West to South-East direction, bypassing the capital. M6 motorway already constructed in the region of Dunaújváros also increases the load of highway no. 62. However, highway no. 62, in its current state, cannot handle safely the increased traffic demands, therefore developments are needed in the whole section of highway no. 62.

The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár has been divided into five sections. During planning, the sections were designated according to the following aspects:

- bypass of towns (in case of Perkáta, Seregélyes, Szabadegyháza Industrial site designation of bypass sections)
- in the sections between the towns surface reinforcement is needed in order to safely handle the increased traffic demands.

As for the different-level crossing between Budapest – Nagykanizsa railway correction (between segments 40+465-41+863 km), the current same-level crossing definitely has to be replaced by a different-level crossing, because MÁV has already started the development of railway line between Budapest and Nagykanizsa to 160 km/h. Therefore NIF Zrt. has included this section into the sections of highway no. 62 to be developed, so the whole road section between Dunaújváros and Székesfehérvár city border (M7) will be renovated.

The sections to be developed are the following:

LOT1: sections of 11.5t surface reinforcement between segments 0+000 and 40+465km,

The planning section is divided into the following subsections by the bypass roads:

Phase I: between 0+000 and 1+800 km (between the roundabout junction at highway 6 of highway 62 and the junction of motorway M6 at highway 62)

Phase II: between 3+055 and 11+528 (junction of M6 motorway and Perkáta bypass road)

Phase III: between 17+600 and 18+605 (Perkáta bypass road and Szabadegyháza bypass road)

Phase IV: between 21+717 and 26+447 km (Szabadegyháza bypass road and Seregélyes bypass road)

Phase V: between 35+446 and 40+471 km (between Seregélyes bypass road and different level crossing of MÁV Budapest – Nagykanizsa railway line)

LOT2: Seregélyes bypass section between segments 26+400 to 36+960 km

LOT3: Perkáta bypass section between segments 11+672 to 17+598 km,

LOT4: Szabadegyháza Industrial Site bypass section between segments 18+965 to 21+713 km

LOT5: Different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km

Development sections of highway no. 62 are shown in Figure 1.1.1.

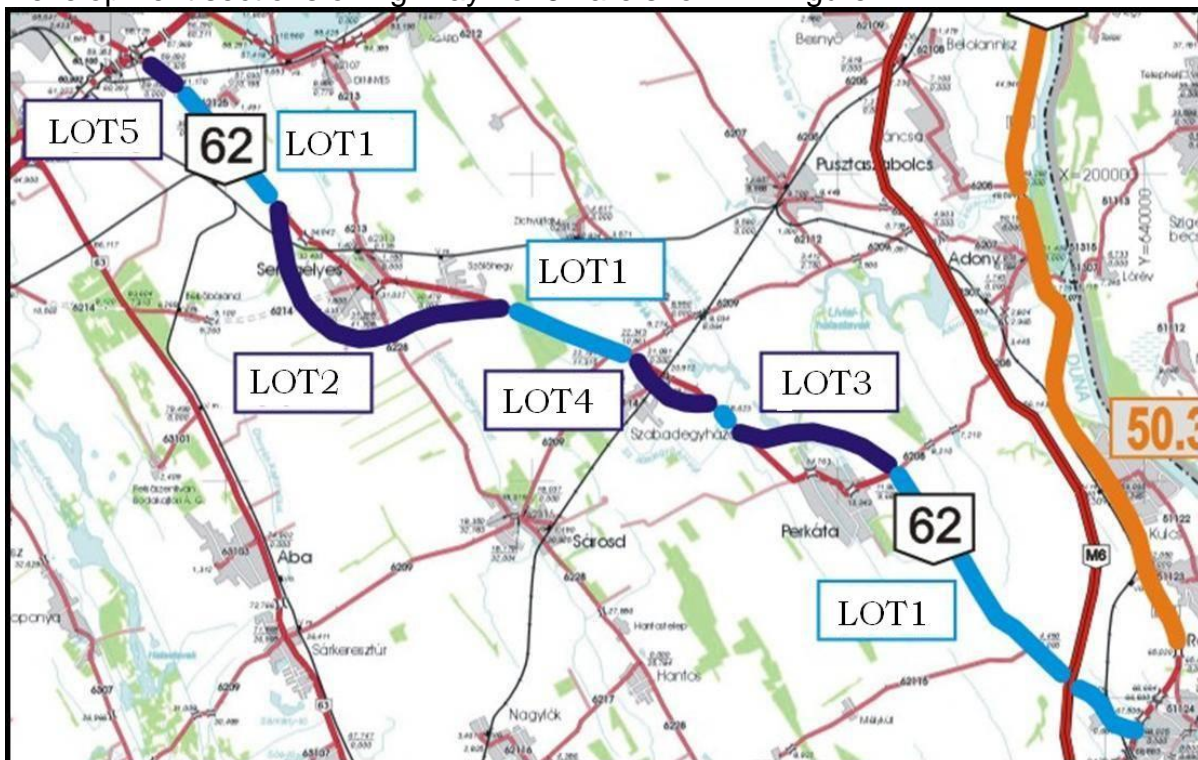


Figure 1.1.1: Sections of highway no. 62 development

In this study the five sections are examined together

The main objective of this study is to review and summarize the current environmental conditions, the environmental impacts arising during construction and operation, the impact reduction measures, and the description of the valid legislation background.

1.2. The extent of the task and the examined documents

This analysis is based on the review of all relevant documents provided by the Client, which are the following:

Whole section of highway no. 62

Review of road network role of highway no. 62, for the period following the opening of motorway M6 and the Danube bridge of Dunaújváros of motorway M8 (2005)

Made by: C-Terv Kft.

LOT1: Sections of 11.5 t surface reinforcement between segments 0+000 and 40+465 km

Cultural Heritage Protection Impact Assessment, 2008.

Made by: Cultural Heritage Protection Service

The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – 11.5-ton surface-reinforced sections between sections 0+000 and 40+465km. – Implementation plan (2009)

Phase I: 0+000 - 1+800

Phase II: 3+055 - 11+528

Phase III: 17+600 - 18+605

Phase IV: 21+717 - 26+447

Phase V: 35+446 - 40+471

Designer: Főmterv Zrt.- Turaterv Kft Consortium

LOT2: Seregélyes bypass section between segments 26+400 to 36+960 km

Study of Seregélyes bypass section of highway no. 62. (1991)

Made by: Roden Bt.

Cultural Heritage Protection Impact Assessment (2007)

Made by: Cultural Heritage Protection Service

Highway no. 62. Seregélyes bypass section between 26+400 and 36+960 km, Implementation plan (2008)

Designer: UVATERV Zrt.

LOT3: Perkáta bypass section between segments 11+672 to 17+598 km

Study of Perkáta bypass section of highway no. 62., 2003

Made by: Tethely Mérnöki és Szolgáltató Kft.

Cultural Heritage Protection Impact Assessment, 2007

Made by: Cultural Heritage Protection Service

Perkáta bypass section of highway no. 62., Implementation plan (2008)

Designer: Speciálterv Kft.

LOT4: Szabadegyháza Industrial Site bypass section between segments 18+965 to 21+713 km

Path study of different-level railway crossing of highway no. 62 and Pusztaszabolcs railway line between segments 18+965 – 21+713 km, 2007
Made by: Tandem Kft.

Cultural Heritage Protection Impact Assessment (2008)
Made by: Cultural Heritage Protection Service

Szabadegyháza Industrial site bypass section of highway no. 62., Implementation plan (2009)
Designer: Partner Kft

LOT5: Different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km

Cultural Heritage Protection Impact Assessment (2007)
Made by: Cultural Heritage Protection Service

Different-level crossing and road correction of highway no. 62 with Budapest-Székesfehérvár railway line – Implementation plan; and surface reinforcement section – Unified plan (2008)
Designer: Unitef 83' Rt.

1.3. Assumptions and limitations

In case of the basic data, the uncertainties arise mostly from traffic forecasts and future emission data.

Traffic forecast (forecast regarding the expected traffic magnitude) may include, generally, $\pm 20\%$ uncertainty.

The future emission data (forecast of the air polluting emissions of vehicles) also contain uncertainties. In forecasting, the international regulations regarding vehicles and the vehicles replacement trends are taken into consideration.

1.4. Necessity of the project

In the national road network it is typical that the main roads of the road network (motorways and class I and II highways) start from the capital, and they create a radial network. The motorway connections, that are part of the international transit and element of the Pan-European road network and the Helsinki corridor, are largely missing.

Therefore M6 motorway (that will connect Budapest to Pécs, when completed) and the future M8 motorway (that will connect the Szentgotthárd border to Austria with M4 motorway, also planned, at Szolnok) are important elements of the national motorway network with regional impacts. In case of M6 motorway, the Érd to Dunaújváros section was completed in 2006, then the section between M0 ring road

and Érd in 2008, and the sections between Dunaújváros and Szekszárd, and Szekszárd and Bóly were opened on 31st March 2010. In case of M8 motorway, the section of M6 motorway connecting to Dunaújváros end junction between Dunaújváros and Dunavecse (between M6 motorway and highway no. 51) was completed in 2007, including the new Pentele bridge.

M6 and M8 motorways are part of V. Pan-European (Helsinki) traffic corridor (Venice – Trieste – Ljubljana – Budapest – Lvov – Kiev), i.e. the Trans-European Traffic Network (TEN-T). It is a priority of the Hungarian Government to construct the Hungarian sections of the traffic corridors accepted in the Third Pan-European Transport Conference (Helsinki, June 1997).

In connection with the development of motorways M6 and M8, the development of highway no. 62 also became necessary, as the traffic situation changed due to the construction of the new Danube bridge, as the transit traffic arriving from the Danube bridge of Dunaújváros finds its way towards West and North-West through highway no. 62. This means unbearable loads for the population living in this transition zones with significant traffic already before the construction of the bridge. The transition zones of current highway 62 do not meet the demands of the travellers; its characteristics are narrow built-in areas, small-radius curves and unfavourable grades.

There are several curve radiuses in the horizontal path alignment that do not correspond to the standards, both in downtown and outskirts areas. In downtown areas the sharp turn of highway no. 62 within Seregélyes can be mentioned, where the path continues through a junction with a left-turn lane. At both ends of Perkáta, in the incoming sections, there are sharp, small-radius curves. The vertical alignment is adequate; any significant elevation can only be detected at the Adony junction (in Perkáta transit section) in segment 11+811 km, where the junction is in a height peak, so visibility conditions are bad.

The results shown in the Traffic evaluation belonging to the Support request prepared by TeRRaCe Kft. in November 2010 also support the necessity of the development of highway no. 62. In 2010 average daily traffic is an estimated 8000 vehicles/day, 9500 vehicle units/day. These values are valid for the section between M7 and Seregélyes and the downtown area of Seregélyes. These sections have the highest traffic.

The importance of the development of highway no. 62, connected to the construction of motorways, is also shown by the fact it is included in Government Decree 1004/2007 (I.30) and the National, and Fejér County Development Plans.

Government Decree 1004/2007 (I.30) on the indicative list of transport development projects to be carried out in the period of 2007 to 2013 prescribes the development of section between M8 (new Danube bridge) and Székesfehérvár of highway no. 62.

The National Development Plan includes the construction Perkáta and Seregélyes bypass sections of highway no. 62 (Act XXVI of 2003, amended by Act L of 2008). (See Figure 1.4.1 – National Development Plan (fragment))

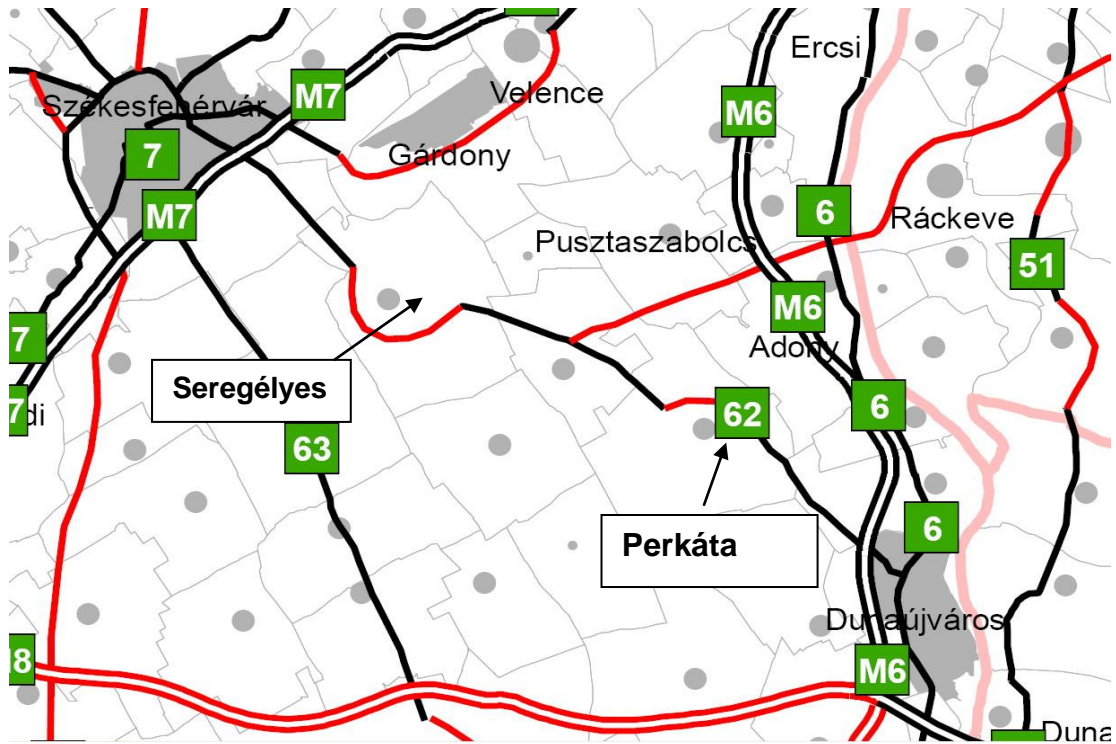


Figure 1.4.1 – National Development Plan (fragment)

The *County Development Plan* also includes the construction of Perkáta and Seregélyes bypass sections of highway no. 62. (See Figure 1.4.2 – Fejér County Development Plan (fragment))

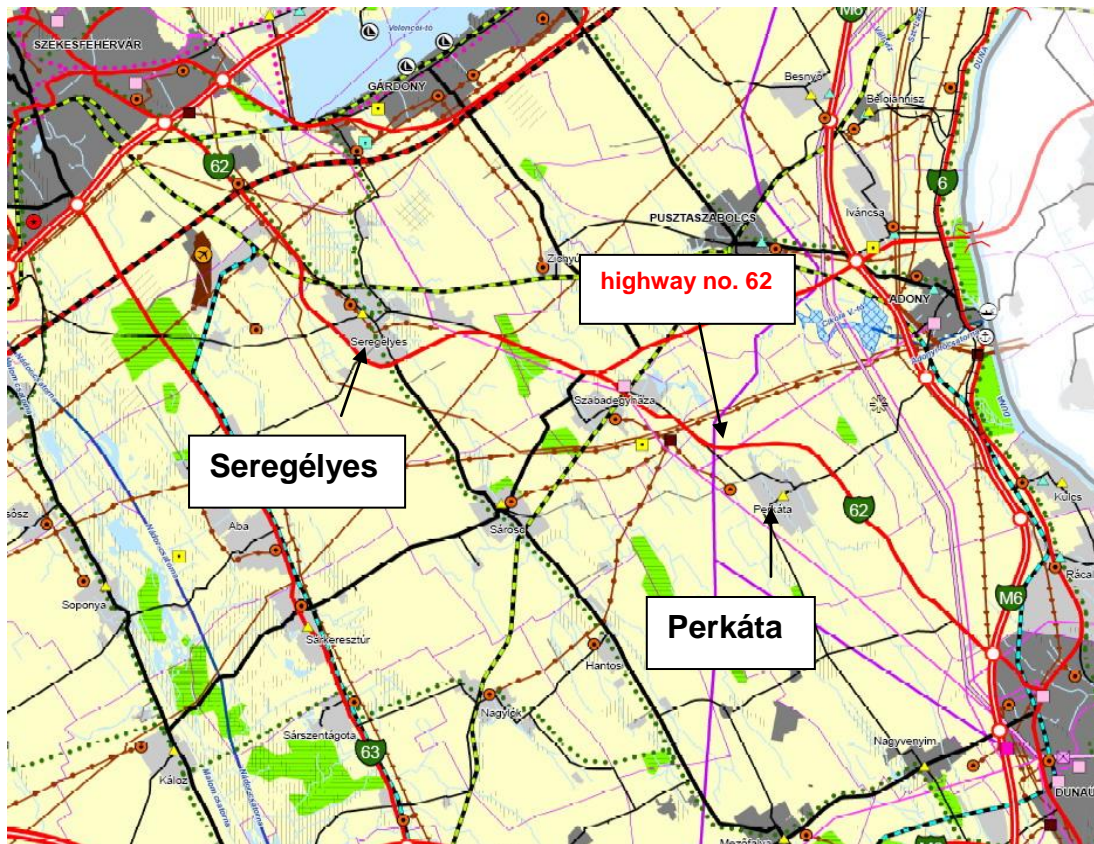


Figure 1.4.2 – Fejér County Development Plan (fragment)

1.5. Technical versions considered

General Attachment I includes the plot plans showing the considered and earlier discarded technical versions.

LOT1: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – 11.5-ton surface-reinforced sections between sections 0+000 and 40+465 km.

Section LOT1 includes the sections of the existing highway no. 62 subject to surface reinforcement; therefore in this case there are no path changes.

LOT2: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Seregélyes bypass section between sections 26+400 and 36+960 km.

The study of Seregélyes bypass section of highway no. 62 prepared by Roden Bt. in 1991 included 5 main versions and various sub- and inset versions. Main versions A and B passed by Seregélyes in Northern direction, versions C and D went towards South from the downtown of the town, and version E went through Seregélyes.

In addition to main versions A, B, C, D, E, sub-versions A1, A2, B1, D1 were also elaborated, as well as inset-versions ensuring connections between the main versions (B-A, A-B-A, B-B-A, D-C). The sub-versions are connected to the main version marked by the same letter.

Version A got near (100 m) to the already built-in areas of Seregélyes in the region of "Seregélyes Northern junction", and this was unfavourable from air purity and noise protection aspects, and it also crossed a less valuable forest spot for a short distance, being unfavourable from landscape protection aspects.

Version B, just as version A, got approx. 100 metres close to the Northern part of the town, which was unfavourable from air purity and noise protection aspects. However, compared to version A, version B avoided the forest spot.

Version C by-passed Seregélyes from the South. As it goes windward, it is favourable from air purity aspects, and it also crosses less valuable lands than version A and B.

Version D by-passed Seregélyes from the South, just like version C, but it had a longer section going close to the downtown areas, than version C.

Version E did not meet the criteria expected from the bypass sections, as it re-routes the transit traffic crossing the town into another street of the town, therefore both environmental and capacity problems remain unsolved.

According to the aspects described above, version C was the most favourable from all examined main, sub- and inset versions from environmental point of view, and this was further developed in later plan phases.

Budapest Nature Protection Directorate issued a declaration on 22nd October 1991, classifying versions A and B, bypassing Seregélyes from the North, less acceptable from nature-protection aspects, but raised no objection against versions C and D, bypassing the town from the South.

The Local Government of Seregélyes also supported the further development of version C on its village-meeting held on 8th November 1991, and then the Local Government confirmed that they support version C on the negotiation of 20th June 2002.

Fejér county Road Management Company and Road Management and Coordination Directorate, based on network development aspects, also supported the further development of path C in their declaration issued on 27th June 2002.

The declarations and the minutes of the meeting of the residents (village-meeting) are included in General Attachment I.

LOT3: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Perkáta bypass section between planned segments 11+672 and 17+598 km.

The study of Perkáta bypass section of highway no. 62 prepared by Tetthely Mérnöki és Szolgáltató Kft. in 2003 included Southern (Southern versions 1 and 2) and Northern versions (Northern version 1 and 2).

The Southern versions by-passed the towns from the South, and their lengths are almost identical. If the Southern industrial area would be established, both versions would be suitable to serve this site without causing extra loads to the residents of the town. From environmental aspects, the dominating wind direction being from North-West meant an advantage for these versions, as air pollution would not affect the downtown areas.

The Northern versions by-passed Perkáta from the North. Northern version 1 was deemed to be a less favourable path version both from horizontal and vertical line alignment aspects, as at the same-level crossing of junction 2 and the following large trench at the construction of the bridge the stability of the road could only be ensured by additional, expensive investments.

The air pollution caused by the dominating wind direction meant a disadvantage for the Northern versions, but this problem can be reduced with adequate size and design protective forests.

Fejér County Road Management Company, on its negotiation held on 29th September 2003, found one of the Northern versions the most feasible.

Hungarian Regional Development and Urbanism Association also suggested that one of the Northern versions should be accepted, as both in the National Development Plan (Act XXVI of 2003) and in the Fejér County Development Plan Northern version 1 of the bypass road path was included.

In summary, from environmental and economic aspects, the most favourable version is Northern version 2. In the later planning phases Northern version 2 was further developed.

LOT4: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Szabadegyháza Industrial Site bypass road between planned segments 18+965 and 21+713 km.

TÓNUS Association made a draft study in 1993 about the section of highway no. 62 between segments 18+965 and 21+700 km bypassing Szabadegyháza Industrial site and residential area. Following to this draft study, a modified study was prepared in 1995, also by TÓNUS Association. According to the modified study, highway no. 62 would bypass the residential area, the petrol station and the two residential buildings next to it, and the industrial site (alcohol factory) from Southern – South-Eastern direction, and then it would cross by a different-level crossing the railway line Budapest-Pusztaszabolcs-Pécs-Gyékényes and the industrial track of the alcohol factory on the Pusztaszabolcs entrance side of Szabadegyháza railway station. In order to ensure the constructability of the road section in two phases, the study included an intermittent road connection between the petrol station and the residential area, therefore phase I would have been built between segments 20+306 and 21+713 km, and phase II (the section bypassing the residential area) between segments 18+965 and 21+050 km.

Road Department of KVHM (ministry of Transport, Telecommunications and Water Management) authorized the study under no. 56.0825/1995, and ordered the elaboration of the authorization plan for both phases, in separate documentations for each phases. According to the authorization, the planning had to be made with the technical characteristics belonging to 80 km/h design speed under Technical Regulation ME-07-3713/1994 “Road design” corresponding to design class K.II.a.B., i.e. with crown width of 11.0 m, and surface width of 7.0 m.

Tónus Association prepared a unified plan for Phase I, and authorization plan for Phase II in 1996, under design no. 1390.

Following to that, commissioned by NIF Zrt., Encon Kft., in cooperation with Tandem Kft., prepared a path study and cost-benefit analysis under work no. 533/2007 for the implementation and cost-benefit examinations.

The recommended path versions were again negotiated with the Network Department of GKM (Ministry of Economy and Transport), the Transport Development Coordination Centre (earlier UKIG) and the Local Government in November 2007, and based on that, path II became the authorized path.

LOT5: different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km

In case of the different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km (LOT5) one technical version has been designed.

This study examines the approved, final path (having received construction permits) for all sections with different path versions.

2. Legislation and design background

2.1. Relevant environmental regulation

2.1.1. Overview

Act LIII of 1995 on the general rules of environment protection determines the principles, administrative and economic bases of environmental protection, the role and responsibilities of the government and the local governments, and the authorization processes and the information of the public.

In the following sub-sections we provide a summary of the Hungarian legislation regarding the geological medium, the under-the-surface and surface waters, and the protection of nature, noise and air purity.

2.1.2. Geological medium and the quality of under-the-surface waters

According to Act LV of 1994 on Arable land, the protection of arable land is a common responsibility of the state and the land user, and the investor and the operator.

Government Decree 219/2004. (VI.21.) on the protection of under-the-surface waters lists all activities that are related to the quality (and quantity) of under-the-surface waters. The territory of Hungary is divided into three categories from the under-the-surface sensitivity aspect: extra sensitive, sensitive and less sensitive areas.

Common Regulation 10/2000. (VI. 2.) of KÖM (ministry of Environment Protection), EÜM (Ministry of Health), FVM (Ministry of Rural Development), and KHVM (Ministry of Transport, Telecommunications and Water) amended by Common Regulation 6/2009. (IV.14.) of KvVM (Ministry of Environment and Water), EüM (Ministry of Health) and FVM (Ministry of Rural Development) determines the limit value system and numerical data regarding the geological medium and the under-the-surface waters. The limit value types are totally corresponding to the limit values determined in the above mentioned Government Decree 219/2004.

Government Decree 123/1997. (VII.18.) determines the rules regarding the protection of water bases, future water bases and water facilities of potable water provision. The protection structures and protection areas of the under-the-surface water bases must be divided into the following protection zones and areas (the respective access times in parentheses):

- internal zone (20 days)
- external zone (6 months)
- zone A of hydro-geological protection zone (5 years)
- zone B of hydro-geological protection zone (50 years)

All sections (LOT1, LOT2, LOT3, LOT4, LOT5) correspond to the prescription of the above laws on the protection of geological medium and under-the-surface waters.

Regarding under-the-surface sensitivity, the areas affected by the path is classified as sensitive area. The path does not affect protection structures and protection areas of water bases.

2.1.3. Quality of surface waters

Government Decree 220/2004. (VII.21.) determines the rules of emission of various water polluting materials, especially dangerous materials, and of the activities resulting in waste water emission. This Government Decree determines the general rules of surface waters, the general responsibilities of waste water emitting entities, and the system of the emission limit values.

Regulation 28/2004 (XII.25) of KvVM (Ministry of Environment and Water) contains both technological and area limit values, and determines the rules of their application. There are no technological limit values specified for the cleaning structures along the motorways and highways (e.g. sediment catchers), therefore for them the relevant area emission limit values must be taken into account.

Regulation 31/2004 (XII.30) of KvVM (Ministry of Environment and Water) contains the special rules of observation and status evaluation of surface waters.

In order to ensure the protection and improvement of surface water body, and to achieve good conditions, good ecological conditions and potentials, the conditions of the water body must be regularly monitored and evaluated, ensuring, under Article 7 of this regulation, the adequate surveillance of the changes in the conditions of the water body, and the possibility to intervene in time and make water protection measures, if necessary.

In order to ensure observation of limit values regarding surface and under-the-surface waters, before introductions sediment catcher and cleaning structures will be built (for details see Section 6.2).

2.1.4. Nature conservation

Act LIII of 1996 on nature conservation determines the rights and obligations of the state, the users of the environment, and other organizations regarding nature conservation. Motorways, highways and other path facilities crossing the travelling routes of wild animals must be constructed in a way that enables the crossing of animals at certain distances. According to Hungarian legislations the protected nature conservation areas, depending on the extent, aim of the protection, and the domestic and international importance of the area, are divided into four categories:

- National park
- Zone of protection
- Nature conservation territory
- Natural monument

Natura 2000 is the European ecological network of designated protected areas of the European Union member states, based on the Directives Habitats, 92/43/EEC and Birds, 79/409/EEC. According to Article 3 of the Habitats Directive, Natura 2000 is a

coherent European network of two types of protected areas: Special Areas of Conservation, SAC and Special Protection Areas for birds, SPA.

Government Decree 275/2004. (X.8.) amended by Government Decree 266/2008. (XI. 6.) determines the Hungarian regulations related to Natura 2000 areas, and also contains the lists of 55 SPAs and 467 SCIs. The attachments of this decree contain the species and habitat-types of European importance, as determined by the above directive. This Government Decree also determines the scope of activities that require the approval of the environmental, nature conservation and water management authorities, as authorities responsible for the Natura 2000 areas. (E.g. for sward breaking and other uses of agricultural areas.)

This planned section crosses the Belsőbáránd loess valley SCI (HUDI20006) Natura 2000 area in Seregélyes bypass section (between the planned segments 35+200 and 35+450 km). Natura 2000 impact assessment documentation was prepared for the affected Natura 2000 area, which is required for the new construction permit procedure, together with the Preliminary Examination Documentation of the Seregélyes bypass section.

Natura 2000 areas were designated in Hungary in 2004, and the list of the areas together with their registration numbers was published in 2006 with the Ministerial Decree 45/2006. (XII. 8.) of the Ministry of Environment and Water on the land parcels affected by nature conservation areas with European Community Importance. Consequently, the construction authorization process of Seregélyes bypass section (the Transport Authority of Fejér County issued the construction permit no. FE/UV/NS/A/181/0/2004 on 29th March 2004), where there was no preliminary examination documentation and the related Natura 2000 preliminary impact assessment made.

2.1.5. Noise and vibration

Under the regulations of Government Decree 284/2007. (X. 29.) on the special rules of protection against environmental noise and vibration, the facilities emitting noise or vibration into the environment must be designed and built so that the noise and vibration load in the area, building and room to be protected correspond to the noise and vibration load requirements.

Noise load $L_{AM'k\ddot{o}}$ estimation levels under Attachment no. 3 of 27/2008. (XII. 3.) Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health) for newly designed areas or areas with modified area usage, in front of the facades to be protected under Noise Protection Regulation, in case of village-type built-in areas, for the noises caused by Class II highways belonging to the national road network cannot reach the following values:

daytime	$L_{AM'k\ddot{o}} = 65 \text{ dB}$
night-time	$L_{AM'k\ddot{o}} = 55 \text{ dB}$

Reference time: 16 hours during the day, 8 hours during the night.

The limit values are 5 dB lower in recreational areas, and health facilities.

Attachment 5 of 27/2008. (XII. 3.) Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health) specifies the limit values of environmental vibrations.

Section 5 of Article 4 of 27/2008. (XII. 3.) Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health) prescribes the followings for the conditions following modernization of existing transport routes or facilities, and extension of road capacities:

- the limit values of Attachment 3 are to applied, if the calculations and measurements directly before the changes verify the observation of limit values;
- the minimum requirement is to meet the noise load levels before the changes, if the calculations and measurements directly before the changes verify that the limit values are exceeded.

The impact area has to be determined according to the prescriptions of Articles 5 and 6 of Government Decree 284/2007. (X. 29.) on the special rules of protection against environmental noise and vibration.

From noise protection, and air purity aspects, the distance of the road from the downtown areas of the town, i.e. from the residential areas to be protected, is especially important, and with regard to this aspect the limit values prescribed in the legislations must be met.

One of the main aims of the development of highway no. 62 is to relieve the residential areas of the towns from the increased traffic; this is why the investment contains the construction of the bypass sections.

During the planning works, and the selection of the path versions of the bypass sections, it was an important aspect to ensure that the road goes the farthest possible from the downtown areas, which is favourable in the observance of noise- and air purity limit values.

In case of the Perkáta bypass section (between planned segments 11+672 to 17+598 km) the Northern version 2 was further developed, which gets less closer to the downtown area of the town, as Northern version 1 and the Southern versions (see General Attachment I).

In case of the Seregélyes bypass section (between planned segments 26+400 and 36+960 km), version C bypassing the town from the South was further developed, which goes close to the downtown areas for a shorter section, than version D, also bypassing the town from the South, and, for the whole bypass section, it goes farther from the downtown areas of the town, than the Northern versions (Versions A and B) (See the Seregélyes bypass section versions in General Attachment I.)

For the bypass section of Szabadegyháza Industrial site (between planned segments 18+965 and 21+713 km) the version avoiding better the residential areas was selected, too (Version II, see General Attachment I).

In the noise protection sections of this study, the calculations made based on the actualized traffic data show that the limit values are observed for the facilities to be protected along the path, even if the development is carried out.

2.1.6. Air quality

The air purity protection prescriptions are included in Government Decree 306/2010 (XII.23) on the special rules regarding the protection of air.

Zones are defined by 14/2001. (V. 9.) Common Regulation of KöM (Ministry of Environment), EüM (Ministry of Health) and FVM (Ministry of Rural Development) amended by 25/2008. (X.17.) Common Regulation of KvVM (Ministry of Environment and Water), EüM (Ministry of Health) and FVM (Ministry of Rural Development) on “the limits of air pollution and emission of immovable air polluting point sources”, its health limit values are shown in Table 2.1.2.

Table 2.1.2. Health hazard limit values of air pollution ($\mu\text{g}/\text{m}^3$)

Air polluting material	Hourly	24 hours	Annual	Danger classification
Sulphur-dioxide	250	125	50	III.
Nitrogen-dioxide	100	85	40	II.
Nitrogen oxides (as NO₂)	200	150	70	II.
Ozone^x	-	120	-	I.
Carbon monoxide^{xx}	10,000	5,000	3,000	II.
Airborne dust PM₁₀	-	50	40	III.
Airborne dust TSPM	200	100	50	III.
Lead	-	-	0,3	I.

x 8-hour, not overlapping, moving average

xx 8-hour moving average

	30-day	annual	Danger classification
Settling dust, non-toxic	16 g/m ²	120 t/km ²	IV.

The air polluting materials, based on their danger level, are classified into four danger degrees: from extremely dangerous level I to moderately dangerous level IV.

During the planning, from air purity aspects the dominating wind direction (North-Western) has to be taken into account, in addition to the distance from residential areas, as it can influence the dispersion of air polluting materials.

In case of Seregélyes bypass section (between planned segments 26+400 and 36+960 km) and Szabadegyháza Industrial site bypass section (between planned segments 18+965 and 21+713 km) the path version developed further goes South of the residential areas, windward, so the polluting materials do not spread in the direction of the residential areas.

In case of Perkáta bypass section (between planned segments 11+672 and 17+598 km), although the further developed Northern version 2 is less favourable taken into account the dominating N-W wind direction, but the path goes farther away from the downtown areas, so it does not cause air pollution over the limit values within the town.

In the air purity protection sections of the performance evaluation, our calculations made based on the actualized traffic data show that the air purity limit values are observed for the facilities to be protected along the path, even if the development is carried out.

2.2. Applied rules of environmental and construction authorization processes

2.2.1. Environmental authorization

In case of the development of main road no. 62 between M8 (new Danube bridge) and Székesfehérvár the environmental authorization was not proceeding for sections LOT1, LOT3, LOT4 and LOT5, because the valid Hungarian legislation did not prescribe preliminary assessment documentation and environmental impact assessment for the planning and authorization of these sections. During the construction permit procedure, it was possible to take the environmental issues into consideration.

The contribution of the professional authorities is attached to the construction permit issued by the Central-Transdanubian Environmental, Nature Conservation and Water Management Inspectorate contains the environmental specifications for the sections.

In case of section LOT2 the preliminary assessment procedure took place January 2011.

In order to examine the cumulative impacts of the LOT sections the Vibrocomp Ltd. completed in May 2011 the environmental impact **performance evaluation** of the main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár. The performance evaluation was submitted to the Central-Transdanubian Environmental, Nature Conservation and Water Management Authority. 14 May 2011 environmental performance evaluation procedure has been started.

During the procedure the Inspectorate determined that based on the performed examination it can be stated that the development of main road no. 62 between M8 (new Danube bridge) and Székesfehérvár has no significant environmental impact. The project results significant decrease in transport emissions and noise along the sections touching the settlements.

Based on the above the Inspectorate approved in its decision no. 68760/11 the completed environmental impact performance evaluation for the project 'gaining of European Regional Development Fund support of development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár' (See decision in General Annex I.).

See below the information of the authorization divided into sections:

LOT1: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – 11.5-ton surface-reinforced sections between sections 0+000 and 40+465 km.

The National Transport Authority, in its Decision no. 9/26/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 0+000 and 1+800 km; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development on 27th February 2009, under registration no. 18815/2009.

The National Transport Authority, in its Decision no. 10/28/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 3+055 and 11+528 km; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development on 23rd February 2009, under registration no. 16443/2009.

The National Transport Authority, in its Decision no. 13/26/2009, authorized the surface reinforcement of main road no. 62 for 115KN axle load between sections 17+600 and 18+606 km; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development on 15th January 2009, under registration no. 3573/2009.

The National Transport Authority, in its Decision no. 394/34/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 21+717 and 26+447 km; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development on 13th August 2009, under registration no. 71287/2009.

The National Transport Authority, in its Decision no. 58/36/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 35+446 and 40+471 km; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development on 26th February 2009, under registration no. 18008/2009.

LOT2: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Seregélyes bypass section between sections 26+400 and 36+960 km.

Previously (before 2010-2011), there was no Preliminary Evaluation Documentation (PED) made for the Seregélyes bypass section (LOT2), either, but due to the changes in legislations (Natura 2000 areas were designated in Hungary in 2004, and the list of the areas with registration numbers were announced in 2006 in Regulation of the Ministry of Environment and Water no. 45/2006 (8 December)), as the second extension of the construction permit has been expired in March 2011, the restart of the construction authorization process required the preparation of PED.

Based on the point 88 of Attachment 3 of Government Decree 314/2005 (25 December) on environmental impact analysis and unified environment use authorization procedure any road belonging to national road network category (if

Attachment 1 does not apply) is required to have, subject to the decision of the authority, environmental impact analysis, if it crosses a forest larger than 50 ha or any protected natural areas.

As Seregélyes bypass section of highway no. 62 reaches the Natura 2000 area of Belsőbáránd loess valley (between segments 35+200 and 35+450 km), a preliminary evaluation must be made before the construction authorization process in order to identify any material environmental impacts resulted from the planned activity. If significant environmental impact is assumed, an environmental impact analysis must be prepared.

Transinvest Budapest Ltd. commissioned Vibrocomp Kft. to prepare the Preliminary Evaluation Documentation of the Seregélyes bypass section planned segments 26+400 - 36+960 km of main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár (investor: National Infrastructure Development (NIF Zrt.)) and the Natura 2000 Preliminary Impact Assessment for the Belsőbárándi Loess Valley SCI Natura 2000 site (HUDI20006) attached to the document. These were submitted to the Central-Transdanubian Environmental, Nature Conservation and Water Management Authority in January 2011.

27 June 2011 Central-Transdanubian Environmental, Nature Conservation and Water Management Inspectorate issued the closing decision about the preliminary assessment procedure of the Seregélyes bypass section planned segments 26+400 - 36+960 km of main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár (reg. no 56234/11., see General Annex I.). The Inspectorate stated in its decision that no significant environmental effects comes from the implementation and operation of the planned facility, so the environmental impact assessment procedure is not justified, and concluded that the planned activity is not environmental use licensed.

LOT3: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Perkáta bypass section between planned segments 11+672 and 17+598km.

The Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the construction of Perkáta bypass section of highway no. 62 of National Transport Authority and the related bridge and dirt roads on 28th August 2007, under registration no. 61316/2007.

LOT4: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Szabadegyháza Industrial Site bypass road between planned segments 18+965 and 21+713 km.

The Nemzeti Közlekedési Hatóság (National Transport Authority) issued a construction permit to authorize the construction of Szabadegyháza Industrial site bypass section of highway no. 62; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development on 4th March 2009, under registration no. 20271/2009.

LOT5: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – different-level crossing between railway correction of Budapest - Nagykanizsa between sections 40+465 and 41+863 km.

The National Transport Authority issued a construction permit to authorize the construction of the different-level crossing of highway no. 62 and the Budapest-Székesfehérvár railway line; the Central-Transdanubian Environmental, Nature Conservation and Water Authority issued its official approval to the above development under registration no. 85034/06.

2.2.2. Construction authorization

The construction authorization request containing the technical and environmental plans was submitted to the transport authority. The request of construction permit was examined again by the environmental authority, acting as professional authority in this authorization process, and the affected local governments. The conditions and requirements prescribed by the environmental authority are included in the construction permit issued by the transport authority.

LOT1: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – 11.5-ton surface-reinforced sections between sections 0+000 and 40+465km.

The unified authorization and implementation plans of section LOT1 of development of highway no. 62 between M8 (Danube bridge) and Székesfehérvár – 11.5-ton surface-reinforced sections between sections 0+000 and 40+465km. – was prepared by Főmterv Zrt.- Turaterv Kft Consortium in 2009.

On 16th September 2009 the National Transport Authority, in its Decision no. 9/26/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 0+000 and 1+800 km.

On 15th September 2009 the National Transport Authority, in its Decision no. 10/28/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 3+055 and 11+528 km.

On 15th September 2009 the National Transport Authority, in its Decision no. 13/26/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 17+600 and 18+606 km.

On 15th September 2009 the National Transport Authority, in its Decision no. 394/34/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 21+717 and 26+447 km.

On 16th October 2009 the National Transport Authority, in its Decision no. 58/36/2009, authorized the surface reinforcement of highway no. 62 for 115KN axle load between sections 35+446 and 40+471 km.

LOT2: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Seregélyes bypass section between sections 26+400 and 36+960km.

Commissioned by the Transport Authority of Fejér County, Tetthely Kft. prepared the authorization plan of Seregélyes bypass section of highway no. 62 in January 2003; and for this the Transport Authority of Fejér County issued the construction permit no. FE/UV/NS/A/181/0/2004, which came into force on 29th March 2004 under no. FE/UV/NS/A/181/1/2004.

After the Fejér County Directorate of Magyar Közút Kht. (Hungarian Road Management Authority) had transferred the construction tasks to NIF Zrt., NIF Zrt. requested the transfer and extension of the construction permit, and then the suspension of the procedure. Central-Transdanubian Regional Directorate of the National Transport Authority, in its decision no. 1220/2/2007 suspended the procedure of the transfer of the construction permit and the extension of its validity until the modernity review of the plan documentation is carried out and issued to the authority.

The documentation of modernization supervision (under plan no. 51.978/503) was submitted to the transport authority by UvaterV Zrt. in February 2008. The National Transport Authority, following consultations with the relevant professional authorities, issued its decision no. 1778/31/2008 on the transfer, extension and modification of the construction permit, therefore the construction permit was extended until 26th March 2009.

Commissioned by Nemzeti Infrastruktúra Fejlesztő Zrt (NIF Zrt.) (National Infrastructure Development Zrt.), Út-, Vasúttervező Zrt. (UVATERV Zrt) prepared the modified authorization and implementation plans of the Seregélyes bypass section of highway 62 in December 2008.

Based on the request of National Infrastructure Development Zrt., submitted to the Department of Transport Sub-branches of the Trans-Danubian Regional Directorate of the National Transport Authority on 15th December 2008, the validity of FE/UV/NS/A/181/0/2004 construction permit of Fejér County Transport Authority was extended until 26th March 2011 (decision registered under no. 1469/13/2009).

As the second extension of the construction permit has been expired in March 2011, new construction authorization procedure was required. Therefore, Transinvest-Budapest Ltd (on behalf of NIF) submitted the application to the Road Transport Department of the Transportation Inspectorate of Fejér County Government Office.

The Transport Inspectorate granted the application and approved in its decision no. FE/UT/NS/B/102/16/2011 the construction of **Seregélyes bypass section** of main road no. 62 and the authorization of the execution plans of the engineer structures based on the plans (plan no. 51.978/503) of UVATERV Road, Railway Planer Co (UVATERV Út-,Vasúttervező Zrt) prepared December 2008 (See decision in General Annex I.). It stated that the submitted authorization plan documentation (plan no. 51.978/503) of UVATERV Road, Railway Planer Co (UVATERV Út-,Vasúttervező Zrt) prepared in December 2008 is capable of authorization, the applied technical solutions meet the technical specifications of standard no. 2-1.201:2008 ROAD on design of public roads.

LOT3: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Perkáta bypass section between planned segments 11+672 and 17+598km.

The authorization plan of Perkáta bypass section of highway no. 62, the related bridge and dirt roads was prepared by Tethely Mérnöki és Szolgáltató Kft in October 2006.

National Transport Authority issued the permit of Perkáta bypass section of highway no. 62, and the construction permit of the related bridge and dirt roads on 4th December 2007 under registration no. 226/35/2007.

The implementation plan of Perkáta bypass section of highway no. 62., was prepared by Speciálterv Kft. in July 2008.

LOT4: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Szabadegyháza Industrial Site bypass road between planned segments 18+965 and 21+713 km.

The authorization plan of the bypass road of Szabadegyháza Industrial site of highway no. 62 was prepared by Partner Kft in 2008, and based on this the National Transport Authority issued the construction permit of the bypass road of Szabadegyháza Industrial site of highway no. 62 on 4th May 2009, under registration no. 32/12/2009.

Based on the construction permit, Partner Kft. prepared the implementation plan of Szabadegyháza Industrial site of highway no. 62 in 2009.

LOT5: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – different-level crossing between railway correction of Budapest - Nagykanizsa between sections 40+465 and 41+863 km.

The authorization plan of different-level crossing of highway no. 62 and MÁV Dinnyés-Székesfehérvár railway line section was prepared by Unitef 83' Zrt. in January 2006. The National Transport Authority issued its construction permit on 5th March 2007, under registration no. 07/KV/NS/A/198/6/2007, for the construction works of the different level crossing of railway line between Budapest and Székesfehérvár on highway no. 62.

Based on the construction permit, the implementation plan of different-level crossing and road correction of highway no. 62 with Budapest-Székesfehérvár railway line and the unified plan of the surface reinforcement section was prepared by Unitef 83' Rt in July 2008.

2.3. Current status of permits

2.3.1. Environmental decisions and information of the public

Environmental impact performance evaluation of main road 62 between M8 (new Danube bridge) and Székesfehérvár

31 May 2011, during the environmental performance evaluation procedure, the Inspectorate published an announcement in the office, on the website and in the central system. 27 May 2011 the Inspectorate sent the announcement, the application and its attachments to the notaries of the concerned local governments Seregélyes and Perkáta village community, Szabadegyháza, Székesfehérvár and Dunaújváros City of Country Rank in order to promulgate it on public area and by means of the locally customary methods.

The Inspectorate sent the announcement on electronic way to the social organizations Nettle Environment and Nature Protection Society, the Hungarian Climate Protection Association, the Reflex Environmental Association, High Bakony Environmental Association, Balance Environmental Association, Green Resource Environmental Association and the Golden Deer Association in order to inform the social organizations about the start of the procedure.

No comments on the documentation had been submitted nor to the local governments nor the Inspectorate. The social organization formed to represent the interests of environmental issues did not report its willingness to participate as customer to the Inspectorate.

Development of main road 62 between M8 (new Danube bridge) and Székesfehérvár-Seregélyes bypass section between sections 26+400 and 36+960km.

27 June 2011 Central-Transdanubian Environmental, Nature Conservation and Water Management Inspectorate issued the closing decision about the preliminary assessment procedure of the Seregélyes bypass section planned segments 26+400 - 36+960 km of main road no. 62 between the section M8 (new Danube-bridge) and Székesfehérvár (reg. no 56234/11., see General Annex I.).

The Inspectorate contacted the notaries of the concerned local governments Seregélyes and Aba in order to promulgate it on public area and by means of the locally customary methods within eight days of receiving it. Within five days after publication the notary shall inform the Inspectorate about the date, place and the possible access method. The decision was published on the notice board of the Inspectorate and on its website

11 April 2011 the Inspectorate published an announcement in the office, on the website and in the central system. Furthermore, 7 April 2011 the Inspectorate sent the announcement, the application and its attachments to the notaries of the concerned local governments Seregélyes and Aba in order to promulgate it on public area and by means of the locally customary methods.

The Inspectorate sent the announcement on electronic way to the relevant social organizations Nettle Environment and Nature Protection Society, Drava Association Hungarian Climate Protection Association, the Reflex Environmental Association, High Bakony Environmental Association, Balance Environmental Association, Green Resource Environmental Association and the Golden Deer Association, in order to inform the social organizations about the start of the procedure.

3 May 2011 Attila Csaba Bujtás and his wife, Bujtás Attila Csabáné argued in their submission (registered as no. 41841/2011.) in relation to letter (no. 33155/2011.) of the Inspectorate that after the construction of the planned road the dirt road in its possession leading fishing pond will be useless and that the Inspectorate should be take this in consideration in the preliminary assessment procedure.

The Inspectorate in its decision no. 46087/2011. ordered that Transinvest - Budapest Ltd. shall provide a customer statement.

30 May 2011 Transinvest - Budapest Ltd. informed in the registered customer statement (as no. 48167/2011.) the followings:

"24 May 2011, after receiving the ordered customer statement we have contacted Attila Csaba Bujtás and his wife, Bujtás Attila Csabáné who are the owners of the fishing pond along the planned road and submitted an application to the Mayor's office of Aba 3 May 2011. Based on the attached map the stakeholders acknowledged that fishing pond owned by them will be accessible after the construction the bypass will be accessible after the construction."

No further comments in relation to the preliminary assessment documentation had been submitted nor to the local governments nor the Inspectorate about the announcement registered as letter no. 33152/2011. The social organization formed to represent the interests of environmental issues did not report its willingness to participate as customer to the Inspectorate.

The Inspectorate, in its injunction no. 33155/2011. ordered public hearings scheduled for 4 May 2011. The injunction about the public hearing was published on the website of the Inspectorate, on magyarorszag.hu and on the notice board of the Inspectorate 11 April 2011. Furthermore, 7 April 2011 the Inspectorate sent the injunction to the National Infrastructure Development Co., Transinvest - Budapest Ltd., the concerned professional authorities and the Parliamentary Commissioner for Future Generations. The Inspectorate asked in its letter no. 33159/2011. the notaries of the concerned local governments Seregélyes and Aba in order to publish it in the Mayor's Office and by means of the locally customary methods. On the public hearing held 4th May 2011 in the Inspectorate appeared representatives of the National Infrastructure Development Co. and the Transinvest - Budapest Ltd. Nobody of the public appeared on the public hearing. The official record no. 40977/2011. records the fact of the cancellation of public hearing.

The Inspectorate obtained the resolution of the concerned professional authorities before the substantive decision-making.

2.3.2. Construction permits and information of the public

LOT1: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – 11.5-ton surface-reinforced sections between sections 0+000 and 40+465km.

During the construction authorization procedure of segments between 0+000 – 1+800 km, 3+055 – 11+528 km and 17+600 – 18+606 km of highway no. 62, the National Transport Authority, in compliance with Article 14 of regulation no. 15/2000 (XI.16) of KöViM (Ministry of Environment and Water) reviewed the site on 17th December 2008, before granting the permit, and its notice no. 5381/4/2008. was, at the same time, the notice for the professional authorities, as well.

During the construction authorization procedure of segments between 21+717 – 26+447 km and 35+446 – 40+471 km of highway no. 62, the National Transport Authority reviewed the site on 15th December 2008.

The affected clients were informed about the start of the procedure and the site review under section b) of paragraph (2) of Article 29/B of Act I of 1988. Minutes were made during the site review, which was available for the affected parties at the National Transport Authority.

The affected parties may request special information about this issue via the shown contacts, they can look into the documents of this matter, and they can make declarations personally or through their representatives. The clients may exercise their appeal rights against the statements of the professional authorities under paragraph (2) of Article 45 of Commercial Act, in the framework of appealing against the substantive decision.

The National Transport Authority, in its decisions no. 9/26/2009., 10/28/2009., 13/26/2009., 394/34/2009., and 58/36/2009. authorized in 2009 the 115 KN axle load surface-reinforcement of highway no. a 62. in segments 0+000 – 1+800, 3+055 – 11+528, 17+600 – 18+606, 21+717 – 26+447, and 35+446 – 40+471 km.

LOT2: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Seregélyes bypass section between sections 26+400 and 36+960km.

Following the preparation of the study of Seregélyes bypass section of highway no. 62 by Roden Bt. in 1991 there was a meeting held for the residents of the village on 8th November 1991, where the Local Government of Seregélyes recommended the further development of version C of the draft study. (See the minutes of the village-meeting in General Attachment I.)

The authorization plan prepared by Tethely Kft. in January 2003 was made based on version C of the study plans.

During the construction authorization procedure of Seregélyes bypass section of highway no. 62, under Article 14 of KöViM (Ministry of Environment and Water) Regulation 15/2000 (XI.16) the National Transport Authority reviewed the site on 15th May 2003, before issuing the permit. The parties participating in the site review did not raise objections against the planned construction.

The Transport Authority of Fejér County issued a construction permit no. FE/UV/NS/A/181/0/2004, which came into force on 29th March 2004 under no. FE/UV/NS/A/181/1/2004.

As the second extension of the construction permit has been expired in March 2011, new construction authorization procedure was required. The Transport Inspectorate granted the application and allowed in its decision no. FE/UT/NS/B/102/16/2011 the construction of Seregélyes bypass section of main road no. 62 and the authorization of the execution plans of the engineer artificial structures based on the plans (plan no. 51.978/503) of UVATERV Road, Railway Planer Co (UVATERV Út-, Vasúttervező Zrt) prepared December 2008.

17 May 2011 the Transport Inspectorate held an on-site survey during the authorization procedure. The Transport Inspectorate, in its sent letter (reg. no. 269/8/2011.), informed the investor, utilities and road operators about the on-site surveys. The adjacent property owners were notified by the announcement which was published on www.magyarorszag.hu, the website of the Fejér County Government Office and on the notice board of the Transport Inspectorate. The Inspectorate contacted with the on-site survey invitation the concerned professional authorities in order to obtain their official opinion. A protocol of the on-site survey was attached to the file.

LOT3: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Perkáta bypass section between planned segments 11+672 and 17+598km.

During the authorization procedure of Perkáta bypass section of highway no. 62, the related bridge and dirt roads, the affected parties were informed by the National Transport Authority directly by mail, and by proclamation. Under Article 14 of KöViM (Ministry of Environment and Water) Regulation 15/2000 (XI.16) the National Transport Authority reviewed the site on 10th July 2007, before issuing the permit. The official notes of this review are attached to the documents of this matter. (See in details in General Attachment I.)

With regard to the authorization process of dirt road F8 of the Perkáta bypass section of highway no. 62, the National Transport Authority reviewed the site on 18th September 2008, and attached the minutes of this review to the documents of this procedure. Under Article 5 of Regulation 15/2000 (XI.16) of KöViM, they requested the statements of the relevant professional authorities. See the notification of the site review in General Attachment I.

LOT4: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – Szabadegyháza Industrial Site bypass road between planned segments 18+965 and 21+713 km.

During the authorization procedure of Szabadegyháza Industrial site bypass section of highway no. 62, the affected parties were informed by the National Transport Authority directly by mail, and by proclamation. Under Article 14 of KöViM (Ministry of Environment and Water) Regulation 15/2000 (XI.16) the National Transport Authority

reviewed the site on 19th November 2008, before issuing the permit. The official notes of this review are attached to the documents of this matter.

LOT5: The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár – different-level crossing between railway correction of Budapest - Nagykanizsa between sections 40+465 and 41+863 km.

During the construction authorization procedure of the construction works of the different-level crossing of highway no. 62 and the Budapest-Székesfehérvár railway line, the National Transport Authority reviewed the site on 5th December 2006, and the participants did not raise objections against the construction of the bridge.

3. Description of the recommended project

3.1. Main elements of the project

The development of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár is planned to be carried out in five sections. (see Figure 1.1.1)

Sections of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár are as follows:

- **LOT1:** sections of 11.5t surface reinforcement between segments 0+000 and 40+465km,
- **LOT2:** Seregélyes bypass section between segments 26+400 to 36+960 km
- **LOT3:** Perkáta bypass section between segments 11+672 to 17+598 km,
- **LOT4:** Szabadegyháza Industrial Site bypass section between segments 18+965 to 21+713 km
- **LOT5:** Different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km

This study reviews the development of highway no. 62 by examining these five sections together.

The planned technical characteristics of Highway no. 62:

Main technical data:

Design class: K.IV.A.
Design speed: $v_t=90$ km/h.
Relief conditions: plain area
road structure corresponding to 11.5 t axle load

The highway developed with corrections, surface reinforcement, extension and bypasses has 2x1 lanes; its cross-sectional layout is the following:

Width of traffic lanes:	3.50 m
Width of side verge:	2.50 m

Safety lane width (within the side verge): 0.25 m
Crown width: 12.00 m

In the following section we describe the current and planned technical characteristics of the design sections of highway no. 62.

LOT1: Sections of 11.5t surface reinforcement between segments 0+000 and 40+465km

The planning section is divided into the following subsections by the bypass roads:

Phase I: between 0+000 and 1+800 km (between the roundabout junction at highway 6 of highway 62 and the junction of motorway M6 at highway 62)

Phase II: between 3+055 and 11+528 (junction of M6 motorway and Perkáta bypass road)

Phase III: between 17+600 and 18+605 km (Perkáta bypass road and Szabadegyháza bypass road)

Phase IV: between 21+717 and 26+447 km (Szabadegyháza bypass road and Seregélyes bypass road)

Phase V: between 35+446 and 40+471 km (between Seregélyes bypass road and different level crossing of MÁV Budapest – Nagykanizsa railway line)

Present status

The existing highway no. 62 is currently a highly deteriorated road with considerable transit traffic and of network importance. Because of its conditions, this highway is very dangerous, and due to the road defects, there are constant speed limitations on this road.

The design section has 2x1 traffic lanes. Neither the current surface width (an average 7.00 metres), nor the existing side-verge width are sufficient.

The design section is crossed by MÁV Pusztaszabolcs-Dunaújváros main railway line in the region of segment 0+690 km (section I).

Between segments 21+717 - 26+447 km (section IV), and 35+446 - 40+471 km (section V) the road was originally built with 3.00 m wide macadam surfacing, then it was widened in two phases to 6.00 m, and then to 7.00 m. According to the geodesy measurements, the real width of the surface is an average 6.80 to 7.00 m.

Planned status

The aim of the development is to replace the existing and damaged surface in a way that increases the load-bearing capacity of the whole road track according to the prescriptions of 11.5 t axle load. Therefore the crown was designed to be 12.00 m, including 2 x 2.25 m side verge + 7.50 m road width.

Within this road renovation, the replacement of the surface course of the roundabout junction located in the beginning segment, and the turn-lane reconstruction of seven existing road connections, and the development of the parallel dirt roads and their connections are also planned.

The horizontal line alignment of the planned status is the same as the existing track. In the design sections, the traverse best following the existing vertical geometry is to be fitted on the centre of the track.

Table 3.1.1 shows the summary of the intervention of the five surface-reinforcement sections between segments 0+000 and 40+465 km.

Table 3.1.1 The planned interventions of the five surface-reinforcement sections between segments 0+000 and 40+465 km.

Starting km	End km	Necessary intervention
0+000	1+800	With roundabout junction no. 6-62, surface reinforcement with surface widening, with the supervision of culverts, maintaining the same-level railway crossing
3+055	11+528	Surface reinforcement with surface widening, with the correction of small-radius curves
17+600	18+605	Surface reinforcement with surface widening, with the supervision of the bridge
21+717	26+447	Surface reinforcement with surface widening, with the supervision of the junction and the culvert
35+446	40+471	Surface reinforcement with surface widening, with the development of the junctions of Börgönd-puszta and János Major, supervision of the culvert

LOT2: Seregélyes bypass section between segments 26+400 to 36+960 km

Present status

The existing highway no. 62 is crossing Seregélyes. The transit traffic means a very heavy load for the life of the residents. In order to ensure the discontinuation of the environment polluting effects caused by the traffic, the path bypassing the towns must be constructed.

Planned status

The planned bypass road will start from segment 26+400 km of the existing highway no. 62, located in the part called Szőlőhegy of Seregélyes, and will return to the existing path in planned segment 36+960 km. Length: 10,560 m.

The plan of the bypass road contains the crossing of two watercourses, a railway crossing with structure, two roundabout junctions and a turn-lane junction, and the development of the parallel dirt roads and their connections.

Junctions:

planned segment 27+520 km: roundabout junction

planned segment 30+455 km: roundabout junction

planned segment 33+390 km: 6214. road crossing

planned segment 36+340 km: three-legged end junction with drive-in lane

Structures:

29+798 km s. Bridge "A"

Overbridge over Sárosd-Seregélyes water course.

35+192 km s. Bridge "B"

Overbridge over Dinnyés-Kajtori channel.

35+732 km s. Bridge "C"

Overbridge over MÁV railway line between Székesfehérvár and Pusztaszabolcs, and the dirt road

LOT3: Perkáta bypass section between segments 11+672 to 17+598 km

Present status

Highway no. 62 currently is crossing Perkáta. Highway no. 62 is a class II highway with considerable traffic. The traffic of the highway causes restrictions in the life of the residents, and the danger of accidents is also very high due to the narrow spaces between the buildings, therefore the construction of a class II highway of 2x1 lanes bypassing the town is necessary.

Planned status

The planned bypass section will deflect from the existing surface of road 62 at section 11+672.86 km with a short straight section.

At the end of the design section is in segment 15+598,98 km, where the surface of the planned road connects to the existing surface.

The plan of the bypass road contains the crossing of a watercourse by a structure, a roundabout and a turn-lane junction, and the development of the parallel dirt roads and their connections.

Roundabout junction:

In segment 11+852.11 km, at the crossing of road 6208 connecting Adony to Perkáta

Structure:

15+520,70 km s.

a simple bridge of V-leg at the crossing of Perkáta (Pistolai) brook.

15+531,26 km s.

Above dirt road no. 5

The construction of Perkáta bypass section was started in 2010.

LOT4: Szabadegyháza Industrial Site bypass section between segments 18+965 to 21+713 km

Present status

The existing highway no. 62 has a same-level crossing with the high-traffic railway line of Budapest-Dombóvár and an industrial track. The same-level crossing is a significant barrier in the seamless traffic of the road, and it means a considerable danger of accidents.

In the downtown areas, the possibilities of local modernization are limited due to the traffic of the alcohol plant, and the situation of the buildings. Therefore the different-level crossing of the railway lines and the bypassing of the downtown areas is necessary.

Planned status

The plan of the bypass road includes the construction of a road-railway different-level crossing with 100-m long structure, two turn-lane junctions, and a same-level crossing.

The path of the highway crosses with a different-level crossing railway line no. 40 between Budapest-Pusztaszabolcs-Pécs and access road no. 62114 in segment 21+201 km (the construction of the bypass road is mainly justified by this design), and then the path is drawn back to the existing path.

LOT5: Different level crossing of Budapest – Nagykanizsa railway line correction between segments 40+465 and 41+863 km

Present status

Highway no. 62 crosses 30/A main double-tracked railway line in a same-level crossing (road segment: 41+170 km; railway segment: 610+94 km). The same-level crossing is a significant barrier in the seamless traffic of the road, and it means a considerable danger of accidents.

About 1150 metres from the existing railway crossing the highway crosses motorway M7 by a highway bridge. Connecting to the different-level junction existing here the surface of the highway was modernized during the reconstruction of the motorway; the design area lasts until the edge of this renovated section.

Planned status

The beginning (0+000 km s.) of the corrected highway section, planned in segment 0+862.27 km of the new road section, including the road overbridge is the same as segment 40+465,68 km of the existing highway. The 1215 m long road connects back to the existing road at 41+637,81 km segment of the current highway (i.e. the new road section is 42.87 m longer than the current one).

The plan also includes the correction section and the surface reinforcement of the section between M7 motorway and the earlier reconstructed part at the junction of

highway no. 62, this altogether affects a 225.37 long section. Therefore the whole design length is 1440.37 m, and it ends at segment 41+863,18 km of the existing road.

The planned engineering structure ensures the standard thoroughfare of the clearance chart of the electrified railway, taking into account the super elevation of the railway track laying in the transition curve here. The engineering structure was designed so that it can be built in case of both the existing and the planned railway track.

The embankment of the planned correction section crosses the dirt road (registration no. 20336) connecting to highway no. 62 on the left hand side, near to the same-level crossing. In agreement with the owners and management companies concerned, the planned (and authorized) dirt road correction is below the bridge overpass the railway, leading beside the railway track (on its left hand side); therefore there is no need to build several hundred metres of new dirt roads along the embankment. The length of the corrected dirt road section is only 475.18 m, with 7.0 m crown width on the whole length, to be built under the overbridge with 4.5 m wide surface. (length: 26 m)

3.2. Traffic forecast

The Traffic study belonging to the Support request was prepared by TeRRaCe Kft. in November 2010.

The traffic analyses were prepared for the whole section of highway no. 62 between M8 (new Danube bridge) and Székesfehérvár.

Based on the summary of the traffic examination results shown in the Traffic study, the following **conclusions** can be deduced:

1) As a result of the completed project, the traffic of the road increases by **an average of 20 to 25%** [up to ~13500 vehicle unit/day], and mainly passenger car traffic is expected to increase. As a side effect, the traffic of the neighbouring side roads and the parallel roads located in the impact area decreases, with the exception of roads 6214 and 6209, which have good network locations. Another effect is the increase of the traffic of the area located from N-NW to Székesfehérvár, and the region of Kecskemét and highway no. 52.

2) In case of the completion of the project, after the first year of operation, i.e. after 2015, the majority of the **passenger cars** using highway no. 62 (nearly **80%**) would **use the newly built bypass sections**.

3) However, only **30 to 40% of the truck traffic** would use the bypass sections. This is due to the usage-proportional **road fee** system assumed to be introduced from 2012, the operation of the highway close to its capacity after 2024, and the significant downtown destination traffic of trucks (e.g. in case of Szabadegyháza Industrial site).

Recommendations:

- a) In the long run, it should be considered to **reduce the specific** (calculated on km) **value of the usage-proportional road fee** in some highlighted network elements, such as in highway no. 62. This would result in the truck traffic using the road more frequently, and fewer vehicles would cross the downtown sections, therefore the environmental pollution would decrease.
- b) Also, it could be considered **to prohibit truck traffic, other than destination traffic, to enter the transit areas.**

3.3. Main construction activities and schedules

- Archaeological excavations, ammunition clearance – the archaeological excavations must be started at least one year before the start of the construction. Following the closing of Cultural Heritage Protection Service, the rescue of findings is made by the National Museum.
In case of LOT1 sections, as the present surface will be extended by only 2x0.25 m, based on the heritage protection impact assessment it is not necessary to carry out preliminary archaeological excavation, the archaeological supervision will provide adequate protection and documentation for the archaeological findings expected to be found here.
In order to ensure safe working, the ammunition clearance of the area has to be carried out, too.
- Cutting of trees and bushes – part of the preparation works. The plants have to be removed from the area to be expropriated.
- Humus removal – the humus has to be removed up to the thickness determined in the soil mechanics professional report. A part of it will be stockpiled; this will be reused later, during terrain correction works. The superfluous quantity has to be transported to agricultural areas to be used there, in agreement with the owner of the agricultural area.
- Construction of public utility replacements and provision pipes – the crossing public utilities have to be removed to a correct path, and the height correction of the wires has to be prepared. In case of provision pipes, construction of public utility from the connection point.
- Earth works – terrain correction, soil transportation, spreading, compaction, and building of trenches. The soil transportation includes the supply of the necessary quantity, and the removal of any soil not suitable for embankment construction to the deposit sites.
- Surface construction – construction of road base, asphalt.
- Construction of other technical facilities – construction of bridges, culverts, trench covers, transit routes, painting of traffic signals, placement of barriers and road sign posts.
- Invasion by grass, plants – it can be completed following the final terrain correction.

3.4. Operational and maintenance activities

General rules of maintenance and operation of roads are regulated by the Management Regulation of National Roads.

- Elimination of winter slipperiness
- Mowing, maintenance of trenches – the grassy areas have to be mowed in the frequency determined by the management regulations regarding the relevant road category. Maintenance of the trenches includes the removal of plants and sediments, and also the collection of wastes and debris.
- Road sign paintings, maintenance of barriers and traffic technology equipments – including, mainly, painting and cleaning.
- Maintenance of structures – control, repair, corrosion prevention.
- Waste collection, temporary storage – collection of the wastes scattered along the road, transportation of dangerous wastes into adequate collection sites, and then their dispatch

4. Present status of the environment

4.1. Topographic, geologic, geohydrologic and soil conditions

Geographic conditions

The full path runs through the Main Region "Alföld", within it through the Mid-region "Mezőföld" and mostly in the Small Region "Mid-Mezőföld", but it also touches the Small Region "Sárrét" along a short section.

A The Small Region "Mid-Mezőföld" is an alluvial fan plain covered with loess and having elevation levels between 97 and 204 m, and the Small Region "Sárrét" has elevation levels between 104 and 222 m, its central part is a basin plain, and its southern part is a series of gently rolling piedmont hummocks split by tectonically preformed valleys.

Soil conditions

In accordance with the geological structure, the detailed geotechnical study generally describes for the whole land area involved in design planning humus sand of loess characteristics, sandy mud, as well as lean and fatty clay types. Existing soil types include lime-coated black soil, carbonate black meadow soil and carbonate meadow soil.

In the km sections 3+055 - 11+528, 17+600 - 18+605 and 35+446 - 40+471, the clay bedrock is situated nearby the surface.

On the section bypassing Perkáta, the line path touches the area of a sand mine. (See Overview Plot Plan– Perkáta bypass section between the design km sections 11+672-17+598.)

Groundwater conditions

The line path does not touch the protective zone, demarcated in advance, of any water base, and there is no thermal well in its vicinity.

In the surroundings of the road, ground water is typically located deeper, and its estimated maximum level is at a depth of more than 2 m under the track level.

Between the km sections 11+672-17+598 (Perkáta bypass section), the appearance of ground water should be expected in the surroundings of Perkátai (Pistolai) Brook and also in the local depressions by the end of the plan section. Ground water levels do not have any impact on the planned road construction works. The authentic flood level of Perkátai (Pistolai) Brook is at 107.51 mBf (above Baltic level), and ground water levels should be expected around that level in periods of high ground water level.

In between the km sections 17+600 - 18+605 (between Perkáta bypass road and Szabadegyháza bypass road), the estimated maximum level of ground water is in the depth of 1 m below ground level, and in the surroundings of Szabadegyházi Water Course, it can be given equal to the authentic flood level of the Water Course.

In between the planned km sections 26+400-36+960 (on Seregélyes bypass section), according to the borehole logs, the estimated maximum levels of ground water range between: 108.2 mBf and 129.0 mBf.

4.2. Surface waters

4.2.1. Hydrographical characteristics

The geographic small region "Mid-Mezőföld" has only smaller water courses. Running through the north-western part of the Small Region, such a water course is the 35 km long Dinnyés- Kajtori Channel with a water-catchment area of 923 km²), and it is the drainage channel of Velencei Lake. The water levels of Velencei Lake and Dinnyés-Kajtori Channel are man-controlled.

Water courses affected by the line path:

Nyugat-völgy Trench
Perkáta (Pistola) Water Course
Szabadegyháza Water Course
Sároisd-Seregélyes Water Course
Pálinkaház Trench
Dinnyés-Kajtor Channel
Seregélyes Road Trench

4.2.2. Water drainage solutions

LOT1: 11.5 t surface-reinforced sections between the km sections 0+000-40+465

Present status

Water is drained away by open trenches on both sides, (in the section 0+000 - 0+315, a covered trench on the right-hand side), however, those trenches have no substantial water-catchment area due to the features of the environment (the road mostly runs on a ridge).

Planned water drainage

Open-trench rainwater drainage was planned for the whole design plan area. Along the planned line path, connection into natural recipients could only partly be provided.

In the case of the section between the km sections 0+000 - 11+540, the public road was mostly built on a natural horseback, and therefore it does not cross any water course.

There are several sections where there is no substantial external water-catchment area and therefore no substantial amount of water is given, however, rainwater cannot be lead into a recipient. At those locations, the establishment of infiltration trenches was planned. The relative slight sloping of the ground surface allowed for planning infiltration / evaporation trenches for both sides of the road.

Along the planned road, culverts will be built at crossings on water courses and along connecting roads, or will be the either extended or converted due to the widening. Planned water drainage will not change the runoff conditions of the area.

LOT2, LOT3, LOT4, LOT5: The crossings at different levels of the bypass sections and the Budapest-Nagykanizsa railway line of MÁV

Planned water drainage

Rainwater running off the planned road and also caught here from the surrounding areas are lead into the recipient through grooves built on both sides of the road. The planned grooves are either covered trenches or earth trenches protected biologically by humus and grassing.

Along the sections on embankment, grooves with a slope ratio equal to that of the road, having a bottom width of min. 40 cm and depth of minimum 50 cm are designed. Groove sections with a gradient above 2.0% need to be sheeted.

In the sections where the road runs on high embankment ($H \geq 3.0$ m) or has a significant gradient ($I \geq 10\%$), drainage rim, built on the edge of the road surface, is planned to lead rainwater falling on the road surface to the slope chutes located at 50 m intersections, and the chutes take collected rainwater down to the groove.

Along road sections built in undercuts, road drainage applies road trenches where the undercut is shallow and the gradient is small, or covered undercut gutters where the undercut is deeper.

In the plan sections, culverts are to be built to lead trenches through under the road as necessary.

11.5 t surface-reinforced section between the km sections 0+000 - 1+800
 (between the roundabout junction of Highway no. 62 on Road 6 and the junction of Motorway M6 on Highway no. 62)

At the connection into Road 6, connected into the trench on the right-hand side of the public road, where continued leading is provided into the public purpose Lebuki Brook.

The only more substantial external water-catchment area it has is between the Motorway M6 and the railway crossing, connected into the road trench on the left-hand side. Due to the substantial amounts of water, construction of a reservoir/evaporation trench is planned here.

Culverts

Location of construction (Km section)	Culvert	Diameter (m)
On the left-hand side of public road		
0+148,9- 0+155,1	existing	40
0+155,1- 0+186,8	existing	50
0+307,2- 0+333,5	to be reconstructed	80/50
0+928,7- 0+948,2	planned	50
1+375,0- 1+410,0	planned	50
On the right-hand side of public road		
0+315,2- 0+325,2	planned	50
0+369,8- 0+371,8	planned	50
0+502,8- 0+505,8	to be reconstructed	50
0+524,6- 0+555,6	to be reconstructed	50
0+929,2- 0+951,4	existing	50
1+407,4- 1+420,9	planned	50

11.5 t surface-reinforcement section between the km sections 3+055 - 11+528
 (between the junction on Motorway M6 and the Perkáta bypass road)

At the connection on Adony Road No. 6208, continued leading through the trench of Road No. 6208 into Nyugat-völgy Trench is possible.

In the section in word, there is no public road culvert under the Highway no. 62.

Culverts:

Location of construction (km section)	Culvert	Diameter (m)
On the left-hand side of public road		
3+096,3- 3+166,1	planned	0,60
3+989,7- 4+015,5	planned	0,50
4+348,0- 4+373,0 Road No. 6115	planned	0,60
6+556,7- 6+573,3	planned	0,50
6+564,5- 6+571,5	to be demolished	0,50
6+902,4- 6+906,4	planned	0,50
7+354,2- 7+377,8	planned	0,50
8+116,5- 8+120,5	planned	0,50
Towards Perkáta 0+166.5- 0+163	planned	0,50
On the left-hand side of public road		
3+123,0- 3+158,8	planned	0,50
3+427,0- 3+443,7	planned	0,50
3+985,2- 4+010,5	planned	0,50
4+434,0- 4+436,0	planned	0,50
5+266,3- 5+287,7	planned	0,50
6+557,5- 6+572,0	planned	0,50
8+504,1- 8+518,5	planned	0,50
9+515,8- 9+529,6	planned	0,50

Perkáta bypass section between the planned km sections 11+672-17+598

The Perkáta (Pistola) Brook is indicated as recipient.

Bridge structure is built:

In the km section 15+520.70, at the crossing on Perkáta (Pistola) Brook

On the sections on embankment, water drainage trenches were designed on both sides all along the road section. Pursuant to the geotechnical expert study, covered trenches are built everywhere, and in the section with a gradient over 10%, covered trench is built including energy dissipater. Along road sections built in undercuts, road drainage applies road trenches where the undercut is shallow and the gradient is small, or covered undercut gutters where the undercut is deeper.

The natural drainage of waters running off the area is provided by culverts of Ø 0.8 – 1.8 m to be built under the road.

Culverts:

Location of construction		Diameter
Designation of road	km section	(m)
Highway no. 62	11+820	0,80
Highway no. 62	14+656 - 14+678	1,00
Highway no. 62	14+658 - 14+682	1,00
Highway no. 62	14+850	1,80
Highway no. 62	16+896 - 16+925	0,60
Highway no. 62	16+950	1,00
Adony Road	9+525 - 9+540 right-h. side	TB40/70/50
Adony Road	9+525 - 9+540 left- h. side	TB40/70/50
Dirt Road No. F1	0+035	TB40/70/50
Dirt Road No. F5	0+152	TB40/70/50
Dirt Road No. F5	0+227	TB40/70/50
Dirt Road No. F9	0+019	0,60
Dirt Road No. F9	0+089	0,60
Drainage bed	0+002 - 0+008	1,00

11.5 t surface-reinforcement section between the km sections 17+600 - 18+605
 (between Perkáta bypass road and Szabadegyháza bypass road)

In the middle part of the section, at the km section 18+305, there is the crossing on Szabadegyháza Water Course managed by Dunaújváros Water Association, with a reinforced concrete bridge that has an 8.0 m wide opening.

Downstream and upstream of the bridge, sheeting is made in the length of 8.50 m and 7.50 m, respectively.
 Rainwater of four road trenches is connected in here through the planned mud and oil trap .

Culverts

Location of construction (km section)	Culvert	Diameter (m)
On the right-hand side of public road		
18+248,3- 18+269,9	planned	0,80
18+521,5- 18+539,6	planned	0,80

Szabadegyháza Industrial Park bypass section between the planned km sections 18+965-21+713.

There is no natural rainwater recipient on the planned line path.

Rainwater collected in the first third of the planned section is discharged into the existing system.

Rainwater collected in the second third of the planned section is discharged into the planned storm water reservoir of 852 m³ capacity. Dimensions of the reservoir: 30×30 m in the bottom, depth 1.0 m.

Rainwater from the third third of the planned section is discharged into the planned evaporation trenches.

The bridge at the km section 18+305 at the crossing on Szabadegyháza Water Course is planned for reconstruction.

Culverts:

Location of construction		Diameter
Designation of road	km section	(m)
Highway no. 62	18+923.3-18+940.9	0,60
Highway no. 62	19+767.7-19+792.4	0,60
Highway no. 62	19+769.5-19+789.7	0,60
Highway no. 62	20+284.37	1,00
Industrial Site Road No. 1	0+128.1-0+138.0	0,60
Industrial Site Road No. 1	0+243.9-0+258.7	0,60
Industrial Site Road No. 1	0+285.3-0+291.0	0,60
Industrial Site Road No. 1	0+332.0-0+353.9	0,60
Industrial Site Road No. 1	0+424.2-0+445.3	0,60
Industrial Site Road No. 1	0+019.67	0,60
Industrial Site Road No. 1	0+241.5	0,60

11.5 t surface-reinforcement section between the km sections 21+717 - 26+447
 (between Szabadegyháza bypass road and Seregélyes bypass road)

The following water courses presently function as recipients:

- Km section 22+711, water course on the right-hand side
- Km section 26+155 Szabadegyháza Water Course on the left-hand side.

Planned water drainage

Culverts:

Location of construction (km section)	Culvert	Diameter (m)
Culverts of the main track		

Highway no. 62	22+711	to be reconstructed	1,00
Highway no. 62	24+400	planned	1,00
Highway no. 62	26+062	to be reconstructed	1,00
Affected culverts of roads connecting in or crossing			
		Culvert	Diameter (m)
Road No. 6209 10+850	22+422 - 22+445	planned	0,550
Dirt Road marked „FA” 0+009	22+425 - 22+443	planned	0,50
Road No. 6209 11+328	22+830 - 22+855	planned	0,50
Dirt Road marked „FF” 0+011	25+348 - 25+372	planned	0,50
Surface connection on the left-hand side 0+007	26+002 - 26+014	planned	0,50

Seregélyes bypass section between the planned km sections 26+400-36+960

Regarding the water courses in the land area, the planned line path touches the Sárosd – Seregélyes Water Course, the Pálinkaház Trench and the Dinnyés-Kajtor Channel.

The crossed three water courses function as recipients (Pálinkaház Trench two times).

- Sárosd-Seregélyes Water Course
- Pálinkaház Trench
- Dinnyés-Kajtor Channel

Bridge structure is built:

In the km section 29+798, at the crossing on Sárosd – Seregélyes Water Course
 In the km section 35+192, at the crossing on Dinnyés-Kajtor Water Course

Pálinkaház Trench is crossed by the road in the km section 34+650 by a culvert. Where it is not possible owing to the features of the topography, location of recipients or structures in the way, reservoir / infiltration / evaporation trenches were planned. Considering the above points, reservoir / infiltration / evaporation trenches need to be established in the beginning of the planning section (actually up to the roundabout), and also at the end of the planning section from the crossing beyond the railway line.

Culverts:

With the purpose of transporting the water further on, culverts were planned under the roadway at the following locations:

Location of construction		Diameter
Designation of road	km section	(m)
Highway no. 62	26+420	0,80
Highway no. 62, marked F1, 0+010	27+520	0,80
Highway no. 62, marked 6213, 0+010	27+520	0,80
Highway no. 62	28+195	1,00
Highway no. 62, marked F3-4, 0+035	28+810	0,80
Highway no. 62, marked F3-4, 0+065	28+810	0,80
Highway no. 62	29+220	1,00
Highway no. 62, marked F15, 0+015.9	29+760	0,80
Highway no. 62, marked F16, 0+015.7	29+760	0,80
Highway no. 62, marked F17, 0+014.9	29+835	0,80
Highway no. 62, marked F18, 0+015.3	29+835	0,80
Highway no. 62	30+495	0,80
Highway no. 62, marked 6228, 30+935	30+455	0,80
Highway no. 62, marked F12, 0+010	30+455	0,80
Highway no. 62, marked F5, 0+013	30+455	0,60
Highway no. 62, marked F6, 0+014	30+455	0,60
Highway no. 62	31+035	1,00
Highway no. 62, marked F8-9, 0+030	31+730	0,80
Highway no. 62, marked F8-9, 0+067	31+730	0,80
Highway no. 62, marked F7, 0+009	31+730	0,60
Highway no. 62	31+900	1,00
Highway no. 62, marked 6214, 0+020	33+390	0,80
Highway no. 62, marked F13, 0+015	33+390	0,80
Highway no. 62	34+650	1,40
Highway no. 62, marked F11, 0+022	35+140	1,00
Highway no. 62, marked F10, 0+035.4	35+140	1,40

Highway no. 62, marked F10/A, 0+010	35+140	0,80
Highway no. 62, marked F19, 0+020.3	35+235	0,80
Highway no. 62, marked F20, 0+019.4	35+235	0,80
Highway no. 62	36+048	2,00
Highway no. 62	36+315	1,00
Highway no. 62	36+365	1,00

11.5 t surface-reinforcement section between the km sections 35+446 - 40+471
 (between the Seregélyes bypass road and the crossing at different levels of Budapest-Nagykanizsa railway line of MÁV)

The only single possible recipient on the planning section:
 – Km section 40+463, water course on the right-hand side

Culverts:

Location of construction (km section)		Culvert	Diameter (m)
Culvert of the main track			
Highway no. 62	40+463	to be reconstructed	1,00
Affected culverts of roads connecting in or crossing			
Dirt Road marked "FN", 0+006	38+673 - 38+683	planned	0,50

Different-level crossing between railway correction of Budapest - Nagykanizsa line between the km sections 40+465-41+863

Present status

The recipient of rainwater from the main road south of the railway line is the trench of Seregélyes Road, and collected rainwater is forwarded to the trench by the grooves on the two sides of the road. Seregélyes Road trench is lead through under the main road by a 1.0 m diameter culvert (km section 40+457).

Planned water drainage

Between the beginning of the design section and the railway line, discharging of rainwater into Seregélyes Road trench is planned by grooves on the two sides. The plan is to connect the grooves on the two sides of the remaining main road into the grooves of the corrected main road at the junction of the dirt road marked by II.

Based on topographic features, the recipient of rainwater between the railway crossing and the end of the design section is the unnamed channel for excess surface water on the right-hand side of Highway no. 62.

The existing channel for excess surface water need to be corrected. (For details of bed correction, see the Section 6.2.)

Besides the road correction, an earth trench of trapezoid cross section was planned on the lower side in accordance with the cross descent of the surface cover.

Excess surface water from the area between the surface water channel and the railway line is drained away by the grooves on the two sides of the present main road. Following the refurbishment of the road, drainage of excess surface water is planned by a line depression on the ground, led into the channel.

A slope of 1:15, 1.20 was planned for the line depression to still provide the option for agricultural cultivation.

Culverts:

Location of construction		Diameter
Designation of road	km section	(m)
Highway no. 62	41+440	1,00
Highway no. 62	41+730-41+745	0,60
Highway no. 62	41+265-41+750	0,60
Connecting Dirt Road I	0+012	0,80
Connecting Dirt Road I	0+039	0,80
Correction of excess surface water channel	40+471-40+478	0,80
Correction of excess surface water channel	40+671-40+677	0,80

4.3. Habitat, flora and fauna, Natura 2000

Regarding the space categorization of flora, the examined land area belongs to the Flora District *Colocense* which includes Mezőföld and the Solti Plain. The Flora District is part of the Flora Region Alföld (*Eupannonicum*) and is located on the two sides of the Danube.

The Small Region Mid-Mezőföld is part of the forest steppe zone with a continental feature enhancing in the eastern direction. Most of the loess plateau is a potential forest area. Erstwhile loess oak groves with Mongolian acer (*Aceri tatarico - Quercetum*), steppe meadows and on the steeper slopes plains-scrub could have formed a mosaic vegetation here. In the valley bottoms, original vegetation could have been formed by marsh meadows, reed-beds and genista willow-beds or perhaps soft-wood groves, but those can be found only in traces today except for areas of high water table where spots of the ancient vegetation could have survived. Degraded marsh meadows with reeds spreading can be seen along the Dinnyés-Kajtor Channel – and also in the examined area.

This land has been cultivated for centuries and is featured by large pieces of plough-land today. Remnants of vegetation reflecting natural vegetation have survived in the

smaller loess valleys that cut into the rolling country, in the system of valleys branching off in multiple directions, in the flat spots with sandy bottom, and the balks between large strips of plough-land also often preserve ancient vegetation. In certain parts of the Small Region there are contiguous networks of quasi-natural habitat spots that preserve significant habitat diversity Steep valley sides are covered by ancient loess plains-grass, semi-dry forest steppe meadows (with spear grass) and loess wall vegetation of semi-arid nature on torn edges.

Arborous vegetation includes plantations of mainly robinia and other tree species alien to this land. Loess oak fragments have hardly survived but amygdale shrubs (*Amygdalus nana*) still occur at a number of places. Shrubby spots with hawthorn are frequently seen - they are gaining ground against the grassland as grazing has been much stopped.

In the valley bottoms reedy marshland, sedgy meadows, green and drying marsh meadows that are scythed and sometimes grazed, here and there small floodplain forest groves have survived Marsh meadows with bluegrass and saline combinations also occur on sandy soil. Arid and semi-arid loess steppe meadows have outstanding diversity even in the national context.

In the 200 m strip of the line path, forest strips and the strips along the channel shores represent natural habitats (for example, Dinnyés-Kajtor Channel, Sárosd-Seregélyes Trench, Pálinkaház Trench, Pistola Brook) The habitat spots worth of preservation are the more arid hayfields disturbed by scything, robinia plantations, oak groves mixed with robinia and the reedy wet habitat areas.

Natural habitat areas in the 200 m strip were presented in the plot plans (see the Flora/fauna Protection Attachment). Typical habitat areas are as follows (habitat areas of Community significance marked with Á-NÉR2007 codes and underlining, incl. Natura 2000 codes) [with serial numbers of habitat spots], see Flora/fauna Protection Attachment):

LOT3: Perkáta bypass:

- S1=Robinia plantations
- P2b=areas becoming shrubby spontaneously
- RA=group of trees
- OB=hayfield
- H5a=loess steppe (of Community significance: 6250)
- S2=poplar
- OA=reed-bed

LOT2: Seregélyes bypass:

Surroundings of Seregélyes-Szőlőhegy (km section 27)

- S1=Robinia plantations [24]

The valley of Sárosd-Seregélyes Water Course (km section 29-31)

- BA=Fragmented marsh areas and smaller tangly spots developed in the shore zones and near-shore water body of channels, regulated brooks, artificial lakes (Sárosd-Seregélyes Water Course) [not displayed]
- B1a=Reed-beds, typha and bulrush not creating peat (extensive reed-bed along the line path) [22]

- OB= featureless areas of green grass and high weed (extensive haying / grazing meadow in the broadening valley, spot named “Telkesek legelője” and smaller haymaking spot by the cemetery) [23, 33]
- S1=Robinia plantations (forest lanes) [20, 21]
- RA=Group of trees in the line path (poplars)[20, 21]

Valley of Dinnyés-Kajtor Channel (planned km sections 35+200-35+450):

- BA=Fragmented marsh areas and smaller tangly spots developed in the shore zones and near-shore water body of channels, regulated brooks, artificial lakes (Dinnyés-Kajtor Channel)
- D34 (6440)=Marsh meadows (in the valley bottoms surrounding the reed-beds)
- H5a (6250)=Steppe meadows with cohesive soil (loess, clay, not stony slope drift) (species fragments in the valley side and also in Háromágú Valley)
- OA= Featureless unwooded wet habitat (smaller reedy habitat spots in the valley)
- OB= Featureless green grass and high weed (extensive hayfield in the valley bottom)
- RC= Featureless hardwood or planted other forests (oak grove on the valley side)
- RD= Featureless forests mixed with alien species and plantations (oak plantation mixed with robinia and poplar on the valley side and the plateau)
- S1=Robinia plantations
- S7=Groups of not domestic tree species, forest lanes and alleys (robinia alleys)
- T7=Large-scale vineyards and fruit tree plantations (fruit tree plantation on the plateau)
- U9=Still water (Bujtás Lake)
- U11=Road and railway network (Embankments of Road No. 62 and the railway)

Rác Valley (km section 36)

- OB=Featureless green grass and high weed (smaller hayfield in the valley bottom) [15]
- S1=Robinia plantations [12, 13, 14]

Among the natural habitat areas, most valuable is the loess valley of Belsőbáránd SCI (HU 20006), special nature conservation area (Natura 2000 area) of outstanding importance

Owing to intensive landscape conversion, the valley of Dinnyés-Kajtor Channel as a regional ecologic corridor is very narrow at some locations (150-200 m in the surroundings of the planned line path), however, remnants of the natural habitat in medium and good condition can also be observed at several places. Those habitat areas have survived in strongly fragmented spots (several hundreds of square meters in average): willow grove fragments, remnants of loess steppe meadow, reedy marsh, marsh meadows converted into hayfield. More valuable vegetation capable of regeneration is found mainly in the loess valleys and valley systems branching off from the valley of the brook, west and southwest of the planned line

path, relatively far (for example, Háromágú Valley approx. 800 m, area of Ebvár (“Kalap Mountain”) approx. 1,800 m). Arborous vegetation mostly consists of robinia plantations and mixed oak groves on the valley side and the loess plateau. Willow groves along the brook have virtually disappeared, just a few trees and shrubs refer to earlier extensive soft-wood groves. Regarding wet habitat areas, the drying reed-beds and marsh meadows around Bujtás Lake should be mentioned.

Description of Belsőbáránd Loess Valley SCI (HUDI 20006), an approved special nature conservation area of outstanding importance (Natura 2000 area)

The basis for Nature 2000 classification

Name of area	BELSŐBÁRÁND LOESS VALLEY SCI
Identifier	HUDI20006
Competent NPI	DINPI
Competent KTVF	KDTKTVF
Full area	352.55 hectares
Status:	approved nature conservation area of outstanding importance

Habitat and species of Community importance for the base of designation:

Code *Habitat-type of Community importance*

6250*	Plain-area Pannonian loess swards
6240*	Sub-Pannonian steppes

* *Community habitat of special importance*

Code *Plant species of Community importance*

4091	Tartar bread plant (<i>Crambe tataria</i>)
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Code *Animal-species of Community importance*

Mammals

-	There are no designating species in the area
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Birds

A338	Red-backed shrike (<i>Lanius collurio</i>)
------	--

Reptiles and amphibians

-	There are no designating species in the area
-	There are no designating species in the area

Evertebrate

-	There are no designating species in the area
---	--

Degree of representation and extension of the designating habitat in the full SCI:

Habitat code	Habitat type	Degree of representation	Extension in the full SCI:
6250*	Plain-area Pannonian loess swards	B	30%
6240*	Sub-Pannonian steppes	B	15%

The degree of representation shows "how much typical" the given habitat is in the *whole SCI*. A: excellent, B: good, C: significant, D: not typical (source: TIR data base)

Size and density of the populations of designating species against the national levels. Degree of preservation in the whole SCI:

Species code	Hungarian name (<i>Latin name</i>)	Population	Degree of preservation
4091	Tartar bread plant (<i>Crambe tataria</i>)	B (101-250 individuals)	B
A338	Red-backed shrike (<i>Lanius collurio</i>)	D (1-5 pairs)	-

Population: size and density of the species population *in the whole SCI* against the national levels. A:100%-15%, B:15%-2%, C:2%-0%, D: not typical

General degree of preservation: From the point of the degree of preservation of the given species, it means the general evaluation of the *full SCI*. A: excellent, B: good, C: acceptable (source: TIR data base)

Short description of “6240 Sub-Pannonian steppe” and “6250 Pannonian plains loess swards” (source: Nature Conservation Management Plan 2007, SCI standard data sheet 2008):

Arid, short-grassed loess sward (Festuca pseudovina – type Cytisus austriacus). Develops in the valley sides facing south. The soil is poor in humus, thin, generally with poor water household. Vegetation is either just closing up, or (more frequently) is open (with a total coverage of 80-90%). It is a significant association also regarding the conservation of protected species because it is the location of tartar bread plant, a Natura 2000 designating species (*Crambe tataria*) (habitat code: 6240).

Loess forest steppe meadow (Brachypodium – type Peucedanum) The closed and multi-level sward of generally steep slopes facing north. That association was the one mostly flourishing in the clearings of erstwhile loess plains forests but parallel to the felling of the forests the association also largely disappeared. Although it could secondarily spread in the place of felled forests but intensive grazing shifted it towards the type *Festuca rupicola* or in the even more extreme cases towards the type *Festuca pseudovina – Cytisus austriacus* (habitat code: 6250). (note: the above described habitats have a number of transitional types.)

Short description and hazard factors of „4091 *Crambe Tataria* (*Crambe tataria*)” designated for Natura 2000 area and having Community importance (source: Species Conservation Plan 2005):

Spreading:

Tartar bread plant (*CrambeTataria*) is a postglacial, warm era relict plant of Hungary, characteristic species of the Pannonian region which has become rare by today. A Pontus-Pannon flora element which has its boundary of spreading westwards on the rim of the Carpatian Basin. Although it has an extensive area east of Hungary, around the Black Sea and the Caspian Sea, in Hungary it has only local and isolated populations.

Its occurrence in Hungary:

More than two-third of Hungarian populations, known from literature, have been destroyed. Today only five locations of occurrence are known which are totally isolated from each other. The total size of natural habitat spots that serve as its living areas is only around 30-40 hectares. Its habitat areas in Hungary are in five smaller regions of three large regions. Out of those five small regions four are protected (Megyaszó Tartar Bread Plant Nature Conservation Area, Balatonkenese Tartar Bread Plant Nature Conservation Area, South-Mezőföld Region Protection District, Belsőbáránd Tartar Bread Plant Nature Conservation Area), and one is not protected (surroundings of Vácduka / Rád).

Its number of plants:

The total population recorded in Hungary counts some 2600-3000 plants in several smaller or bigger spots. The number of plants in the known populations has been decreasing in the last few decades.

Its habitat :

The habitats of tartar bread plant in Hungary are linked to loess forest steppe. Most of its habitat areas are natural loess swards, and some habitat areas belong to the degraded types of loess sward. Additional important habitat areas are the torn edges, xeromesophyll swards, loess swards becoming shrubby spontaneously, the disturbed weedy swards of abandoned grape yards and orchards.

Endangering factors:

It is actually endangered in Hungary. Primary reason for the reduction of the population in Hungary is the degradation and termination of habitat areas. The most significant endangering factor is the spontaneous process of shrubs spreading on loess swards. In addition to the conversion and degradation of habitat areas, that process may result in completely pushing tartar bread plant out. As one-third of habitat areas are bordered by plough-lands, large-scale agriculture is the next most significant endangering factor. Its impact is manifested in the strong spreading of weeds on the valley edges. A significant limiting factor is the decreasing intensity or full termination of grazing. Invasion species alien to the region (for example, robinia or solidago) as well as the domestic, aggressively spreading grasses (for example, *Calamagrostis Epigeios*) may also strongly reduce the population numbers of tartar bread plant .

Protection:

In Hungary, tartar bread plant has enhanced protection. Its notional value is HUF 100,000. It is included in the IUCN International Red Book and also among the taxa registered by the EU Habitat Directive (Annex II).

Description of animal species designated for the Natura 2000 area and having Community significance:

Name of species: Red-backed shrike (*Lanius collurio*) Natura 2000 code: A338

Attachment to the Directive: Bird Directive, Attachment I

Other protection provided by Hungarian rule of law: Protected (notional value HUF 10 000 Ft)

Hungarian Red Book: Not included in it.

Occurrence of the species in the area: Species potentially nesting in forest edges, shrubs and orchards. Birds searching for nutrition may turn up in open areas any time.

Population size: No permanent hatching population is known in the examined area but a few pair may occasionally settle at habitat areas suitable for them.

Tendencies in change of population, and reasons: Domestic populations are steady.

Description of the conditions of occurrence of the species: It hatches everywhere in Europe except for the southern part of the Pyrenean Peninsula and the northern areas of Scandinavia and Great Britain. In Asia, its nesting area spreads to Siberia. In Hungary it is a frequent nester in open, wooded and shrubby habitat areas, alleys, forest edges and clearings on the plains and in hilly land, as well. It also hatches in shrub lanes along railway embankments, and in gardens and orchards on the edge of rural villages.

Degree of endangeredness of the species: Based on the degree of spreading, frequency and occurrence in a wide range of habitat areas, it is not endangered in most of the area of spreading.

Endangering factors: Drastic conversion, termination, disturbance of habitat, cutting out of shrubs and alleys may be endangering factors.

Options for species protection: The species require no special species protection action, its populations seems to be steady also on the national level.

As part of the fund application, a preliminary impact analysis study was prepared for the affected Belsőbáránd Loess Valley Natura 2000 Area, which study explored in detail the present status of the habitat and the impact of the planned bypass main road on protected values.

According to the habitat survey of the impact study, the northeast end of the valley of Dinnyés-Kajtor Channel, in the approximately 200 m long section where the line path crosses it, is in the sward cultivation branch with marsh meadows and hayfields on it (planned km sections 35+200-35+450).

Therefore, no reduction in the area of designating habitat or other habitat of Community significance may be expected. The habitats "Plain-area Pannonian loess swards – 6250" and "Sub-Pannonian steppes – 6240" are not affected by the path of the road, and no area loss occurs. The road does not get close to and does not reduce the habitats of the two designating species (tartar bread plant *Crambe Tataria* (4091) and red-backed shrike – *Lanius collurio* (A338)). Individuals of the designating species will assumable be not destroyed.

4.4. Landscape

Natural conditions

In terms of landscape geographical categories, the full path runs through the Main Region "Alföld", within it through the Mid-region "Mezőföld" and mostly in the Small Region "Mid-Mezőföld", but it also touches the Small Region "Sárrét" along a short section.

The Small Region Mid-Mezőföld is an alluvial fan plain covered with loess and having elevation levels between 97 and 204 mBf.

Climate conditions

Its climate is arid, warm, with a moderate continental feature. Annual mean temperature: 10.3 C°. Average annual precipitation: 550-600 mm. Average number of hours with sunshine: 2,000 hours. Dominating wind direction: northwest / north. Most frequent wind direction is north-western, with an average wind speed of around 2.5 m/s.

Soil conditions in the landscape

Mezőföld hill region has type soils developed on loess and loess-type rock.

Vegetation geographical description

A detailed vegetation geographical description is presented in Section 4.3.

The landscape mostly consists of plains which are generally under agricultural cultivation. In addition to agricultural land, the landscape is featured by sand plain swards, some sand forest, saline areas and saline lakes, with the former flood plain of Sárvíz and spots of ancient vegetation still existing at some places on loess gathered during the ice age.

Protected natural area is touched by the path only in the Seregélyes bypass section. This bypass road crosses the Belsőbáránd loess valley Natura 2000 area in the section between the planned segments 35+200 and 35+450 km. For the affected Natura 2000 area, a Natura 2000 impact analysis documentation was prepared (see the Attachment on Habitat Protection).

The path reaches ecological corridors in the following sections:

- between the km section 15+440 and - the km section 15+600, Perkáta (Pistola) Water Course,
- between the km section 29+798 and – the km section 29+850, Sárosd-Seregélyes Water Course,
- between the km sections 35+200 and 35+450: Dinnyés-Kajtor Channel,
- between planned segments 35+970 km and 36+090 km, at the crossing of Rác valley.

Landscape utilization

The areas directly by the road are typically agricultural lands. The percentage of sward and forest areas affected by road construction is low.

The road crosses larger forests in the Perkáta and Seregélyes bypass sections (in Perkáta 6943 m², in Seregélyes: 2394 m²), and regarding the sections with surface reinforcement, the road runs between forest areas out of Szabadegyháza and Seregélyes between the km sections 23+900 and 26+370.

4.5. Built environment

The path runs through the administrative areas of the following settlements: Dunaújváros, Perkáta, Szabadegyháza, Seregélyes, Aba, Székesfehérvár.

The whole design section of highway no. 62 does not touch any dwelling area within the settlement limits.

Up to the km section 0+300, on the right-hand (north) side of the first part of the section with surface reinforcement there is a garden suburb, and on the left-hand side there are industrial facilities. West of the railway line, there is the entrance gate to an industrial site. Across to the Pálhalma branching, there is a dwelling house with garden. At the km section 3+055, there are abandoned buildings on the right-hand side, and a pig farm on the left-hand side.

The planned path of Perkáta bypass section runs away from residential quarters, and there is no industrial plant in its vicinity, either.

The planned path of the bypass road around Szabadegyháza industrial site (km sections 18+965 and 21+713) approaches the nearest dwelling house (1 property) by 50.0 m, and the part of the industrial site with buildings is 110.0 m away.

Out of Seregélyes administrative limits, between the planned km sections 36+461.07 and 36+686, the planned path of the bypass road approaches an industrial site. Seregélyes bypass section approaches residential quarters by about 150 m near the km sections 31+500 and 32+450.

The different-level crossing between railway corrections of Budapest - Nagykanizsa between the km sections 40+465 - 41+863 is away from residential areas or industrial plants.

Monument-type buildings are not affected by the construction works in the whole analyzed path.

Cultural heritage protection impact study

Appointed by Nemzeti Infrastruktúra Fejlesztő Zrt., the Kulturális Örökségvédelmi Szakszolgálat prepared the cultural heritage protection impact study of the section between Dunaújváros and Székesfehérvár (km sections 0+000 – 1+800, 3+055 –

11+528, 17+600 – 18+606) in 2008. The status review of path sections was performed during the field walkabout made in December 2008.

The heritage protection impact study of Perkáta bypass section of Main Road 62 (km section 11+672.68 – 17+598.98) was prepared on 1 October 2007. The cultural heritage protection impact study for the Szabadegyháza Industrial Site bypass section of highway no. 62 was prepared in 2008, and the associated field walkabout was made in late May 2008.

The cultural heritage protection impact study for the Seregélyes bypass section (planned km section 26+400 – 36+960) was prepared by Kulturális Örökségvédelmi Szakszolgálat in October 2007. In the area affected by Seregélyes bypass section, field walkabouts were held on 28 September 2007 and 1 October 2007 based on the Permit No. 430/2189/3/2007. of KÖH dated 27 August 2007.

In the course of the preparation of the impact study associated with the establishment of Nabucco Gas Line, Kulturális Örökségvédelmi Szakszolgálat performed field walkabouts in the outskirts of Seregélyes on 1/2 March 2010 where the planned gas line path runs very close and nearly parallel with the Seregélyes bypass section of highway no. 62. Due to changed, improved observation conditions, new pieces of information were gained which affect also the archaeological works of Seregélyes bypass section of Highway no. 62. Three new archaeological sites were discovered (Seregélyes-Harmadik-vető-Lane, Seregélyes-Belmajor, Seregélyes-Rác-völgy Lane III), and the areas of two archaeological sites substantially increased (Seregélyes-Mészáros Farm I-II., Seregélyes-Réti-lands).

The cultural heritage protection impact study for the section of highway no. 62 along the different-level crossing of Budapest-Székesfehérvár railway line and road correction (km section 40+465 – 41+650) was prepared by Kulturális Örökségvédelmi Szakszolgálat on 1 October 2007, and the related field walkabout was held on 11 September 2007.

Occurrence of archaeological sites

During the preliminary research of files, literature and topography it was concluded that the development area affects a number of registered archaeological sites as follows:

- KÖH 29279 = Perkáta, Sand Mine I.-II.
 - erstwhile ancient site perhaps from the bronze age
- KÖH 29280 = Perkáta, Sand Mine I.-II.
 - late medieval village probably inhabited by the Kuman
- KÖH 22284 = Perkáta, Nyúli Lane I-IV.
 - late bronze age settlement
- KÖH 29288 = Perkáta, Nyúli Lane I-IV.,
 - village site from the Árpád-age
- KÖH 29289 = Perkáta, Nyúli Lane I-IV.,
 - late medieval age settlement
- Szabadegyháza - Halom Lane
 - settlement the Árpád-age
- KÖH 22339 = Szabadegyháza - Halom-pusztá

- Roman settlement

KÖH 22310, 22311 = Seregélyes - Mészáros Farm

KÖH 22310: may be dated for the Roman age,

KÖH 22311: cemetery of probably the Paleolithic age with shrunken skeletons

KÖH 37480 = Seregélyes - Rác Valley Lane

- settlement traces from the bronze age and medieval age

KÖH 37481 = Seregélyes - Rác Valley Lane II

- settlement from the Paleolithic, bronze and medieval ages

Seregélyes - Rác Valley Lane III

- bronze age and Celtic settlement

KÖH 37483 = Seregélyes - Selymes Lane II

- traces of Paleolithic and medieval settlements

KÖH 37484 = Seregélyes - Selymes Lane III

- part of Paleolithic and medieval settlement

KÖH 37485 = Seregélyes - Pálinkaház-puszta

- traces of Paleolithic and medieval settlements

Seregélyes - Harmadik vető Lane

- Neolithic and late Avar / early Árpád-age settlement

KÖH 37486 = Seregélyes - Réti Lands

- Paleolithic and Roman age settlement traces

Seregélyes – Belmajor

- settlement from the migration age

KÖH 37488 = Seregélyes - Városi Meadows II

- part of settlement from the medieval age

Upper Lane at Fehérvári Road

- settlement from the Árpád-age

Out of the archaeological sites registered in the vicinity of the Seregélyes bypass only three sites could be identified (Seregélyes 1. (KÖH 22310, 22311), Seregélyes 2. (KÖH 37480), Seregélyes 3. (KÖH 37486)). The reason for that may be that circumstances of observation were not proper in the corn fields that had not been harvested yet, or had been harvested but had not been disked. At other locations, for example, at the Pálinkafőző Site no traces referring to an archaeological site were found in spite of the good observation circumstances. In those cases, the extension of the sites probably does not reach the line path.

In the case of Perkáta bypass, investigations on the spot identified an archaeological site at Homokbánya Lane that had been unknown before (Perkáta 1), and locations of the previously known sites at Homok Lane and Nyúli Lane were again established (Perkáta 2 (KÖH 29279-6), Perkáta 3, Perkáta 4 (KÖH 29288), Perkáta 5 (KÖH 29284), Perkáta 6 (KÖH 29289)).

In terms of hydrogeology, in the area of Szabadegyháza-Industrial Site bypass, two branches of Cikola Rill play a dominant role: West-Hippolyt Rill and Szabadegyháza Water Course. Hippolyt Rill, flowing in the southeast - northwest direction, and the side of Szabadegyházai Water Course that runs into the Rill in the northeast - southwest direction at the southern end of the area, offered the most suitable conditions for settling down. Most of the sites can be identified at the high elevation points on the southwest side of the Water Course, or are associated with those

points, therefore more findings may be expected in that section. Therefore, the section between the km sections 19+000 – 20+250 is proposed as an area of archaeological interest. In the other areas affected by the changes, there are no traces of archaeological phenomena.

The section of Highway no. 62 along the different-level crossing of Budapest-Székesfehérvár railway line and its road correction (km sections 40+465 – 41+650) does not affect any registered archaeological sites.

4.6. Air quality

Background contamination

Air contamination zone

The KvVM Decree 4/2002. (X. 7.) amended by the KvVM Decree 2/2008. (I.16.) categorizes the area of Hungary as per air contamination levels.

In the region, Dunaújváros and Székesfehérvár form independent zones.

The beginning of the studied line path section is at Dunaújváros, and the end of the line path is at Székesfehérvár, therefore, the beginning of the path belongs to the air contamination zone “Dunaújváros and surroundings”, and the end of the path belongs to the air contamination zone “Székesfehérvár-Veszprém”.

Based on the settlements touched (Perkáta, Szabadegyháza, Seregélyes, Aba), the middle part of the studied path belongs to the contamination zone “other areas of the country”.

The area of the line path is categorized into zone groups (from A to F) as shown in the following Table 4.6.1.

Table 4.6.1.: Categorization of the studied path into air contamination zones

Zone group by contaminants						
	SO ₂	NO ₂	CO	Solid (PM ₁₀)	Benzene	Near-surface ozone
The surroundings of Dunaújváros	F	C	D	D	F	O-I
Székesfehérvár -Veszprém	F	C	F	D	F	O-I
Other parts of the country	F	F	F	E	F	O-I

Concentration ranges may be correlated to the categories from B to F (Table 4.6.2).

Table 4.6.2

ZONES	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)	CO (µg/m ³)
Zone B	-	Above 58	Above 44	-

Zone C	Above 125	40-58	40-44	Above 5000
Zone D	75-125	32-40	14-40	3500-5000
Zone E	50-75	26-32	10-14	2500-3500
Zone F	Below 50	Below 26	Below 10	Below 2500

The zone categorizations B and C mean that the air contamination health limits are exceeded.

Required determination methods for the Groups A – D are measurements, for the Group E the methods are measurements or modelling, and for the Group F, it is modelling or technical estimation.

Group O-I: the area where the concentration of near-surface ozone exceeds the target value.

The figures show that in the area of Dunaújváros, groups of "higher" values, that is, the groups to be regularly checked by measurements occur in the case of NO₂, CO, PM₁₀.

In the zone of "Székesfehérvár-Veszprém", groups of "higher" values, that is, the groups to be regularly checked by measurements occur in the case of NO₂, PM₁₀.

In the air contamination zone "other areas of the country", there are no such groups of higher values which should be regularly checked by measurements.

Data of the National Air Contamination Measurement Network

In the surroundings of the examined path, there are 1 automatic and 1 manual measurement stations in Dunaújváros, and also 1 automatic and 1 manual measurement stations in Székesfehérvár as part of the National Air Contamination Measurement Network.

The automatic measuring station at Dunaújváros, Köztársaság út 14., which is part of the National Air Contamination Measurement Network continuously records SO₂, NO₂, NO_x, CO, ozone and PM₁₀ levels.

Measuring data of the automatic measuring station at Dunaújváros are presented below.

Table 4.6.3. Air quality data of the automatic measuring station at Dunaújváros, Köztársaság út 14. for the heating season in 2009-2010 (half year from October to March) and in the non-heating season in 2010 (half year from April to September)

Measurement	Sulphur dioxide		Nitrogen dioxide		Nitrogen oxides	
	Average	Limit excursion	Average	Limit excursion	Average	Limit excursion
	µg/m ³	%	µg/m ³	%	µg/m ³	%
2009-2010 half year of the heating season	11,8	0	23,7	0	30	5,7
2010 half year outside the heating season	8,2	0	14,46	0	16,8	0
24 hour-limit	125		85		150	

Measurement	Carbon monoxide		Ozone		Floating dustPM ₁₀	
	Average	Limit excursion	Average	Limit excursion	Average	Limit excursion
	µg/m ³	%	µg/m ³	%	g/m ³	%
2009-2010 half year of the heating season	405,5	0	50,47	0	28,42	10,99
2010. half year outside the heating season	361	0	79,1	3,59	18,9	3,3
24-hour limit	5000		120		50	

The automatic measuring station at Székesfehérvár, corner of Palotai út – Mészöly u. which is part of the National Air Contamination Measurement Network continuously records NO₂, NO_x, CO, ozone and PM₁₀ levels.

Measuring data of the automatic measuring station at Székesfehérvár are presented below.

Table 4.6.4. Air quality data of the automatic measuring station at Székesfehérvár, corner of Palotai út – Mészöly u for the heating season in 2009-2010 (half year from October to March) and outside the heating season in 2010 (half year from April to September)

Measurement	nitrogen dioxide		nitrogen oxide		Ozone	
	Average	Limit excursion	Average	Limit excursion	Average	Limit excursion
	µg/m ³	%	µg/m ³	%	µg/m ³	%
2009-2010 half year of the heating season	31,08	0	52,56	1,7	38,84	5,7
2010 half year outside the heating season	19	0	27	0	62,92	0,55
24-hour limit	125		85		150	

Measurement	Carbon monoxide		Floating dustPM ₁₀	
	Average	Limit excursion	Average	Limit excursion
	µg/m ³	%	g/m ³	%
2009-2010 half year of the heating season	821,254	0	39	23,39
2010. half year outside the heating season	458,31	0	24,02	0,75
24-hour limit	5000		50	

The fact that both in Dunaújváros and Székesfehérvár, higher levels of *nitrogen oxides* were measured in the half year of the heating season refers to communal and industrial pollution as well as to unfavourable meteorological conditions.

The average of *floating dust* exceeds the 24-hour limits more significantly at both measuring locations during the winter season. In cooler periods, heating may strongly contribute to exceeding the PM₁₀ limit.

Air quality impact area

Direct impact area

The direct impact area includes the area directly used during construction and the area along the path of the planned road.

Indirect impact area

Regarding air pollution, the following may be interpreted as indirect impact area:

- Such area being beside the existing road network and to be protected where owing to the construction of the new road and restructuring of traffic patterns, changes in air pollution levels (decrease or increase) may be expected.
- Transportation routes, spoil areas and operation areas during the construction are.
- The environment of material gaining pits

Regarding the roads in the neighbourhood, the change in traffic caused by the reinforcement of surface cover and the construction of bypass roads (see Section 3.2) does not have a significant impact in terms of environmental protection as it does not affect the facilities to be protected. The facilities to be protected as part of the indirect impact area are along the transition zones in the inhabited areas in the settlements crossed by Highway no. 62, therefore, for the direct impact area the subject of air protection study are only the transition zones of Highway no. 62 where traffic levels will substantially reduce.

As direct and indirect air quality protection impact areas are within the noise protection impact area, therefore those areas were not separately marked in the plot plan.

Air protection study for the current status

Emission calculations used the traffic data for the current status, received from TeRRaCe Kft.

Air quality calculations were performed for average daily traffic, the most characteristic components, carbon monoxide (CO), nitrogen oxides (NO_x), and floating dust (PM₁₀), for distances of 10 - 50 meters.

Table 4.6.5. presents the current air quality conditions of direct and indirect impact areas, broken down to the sections between the settlements and the transition zones of Highway no. 62.

Current status does not present the study of bypass sections as part of the direct impact area because currently there is no traffic in the affected area.

Table 4.6.5. Current air quality concentration levels for highway no. 62, with average daily traffic ($\mu\text{g}/\text{m}^3$) as the function of distance (m).

Number of public road	Section	Currently								
		CO immi [$\mu\text{g}/\text{m}^3$]			NO _x immi [$\mu\text{g}/\text{m}^3$]			PM ₁₀ immi [$\mu\text{g}/\text{m}^3$]		
		C10 meters	C20 meters	C50 meters	C10 meters	C20 meters	C50 meters	C10 meters	C20 meters	C50 meters
Direct impact area										
Highway no. 62	Highway no. 6, Perkáta	10,77	6,31	2,89	6,76	3,96	1,82	0,37	0,22	0,10
Highway no. 62	Perkáta - Szabadegyháza	10,93	6,40	2,93	6,84	4,01	1,84	0,37	0,22	0,10
Highway no. 62	Szabadegyháza - Seregélyes	11,20	6,56	3,01	6,79	3,98	1,82	0,37	0,21	0,10
Highway no. 62	Seregélyes - M7	15,63	9,15	4,20	8,64	5,06	2,32	0,45	0,26	0,12
Indirect impact area										
Highway no. 62	Perkáta transition zone	11,66	6,83	3,13	7,16	4,19	1,92	0,39	0,23	0,10
Highway no. 62	Szabadegyháza transition zone	9,93	5,81	2,67	6,10	3,57	1,64	0,33	0,19	0,09
Highway no. 62	Seregélyes transition zone	13,41	7,85	3,60	7,71	4,52	2,07	0,41	0,24	0,11

The emission figures of Table 4.6.6. show that in the current status, daily and annual limits are met for all the examined components in the direct and indirect impact areas for all three distances.

Regarding the examined road sections, the most significant air pollution can be detected in the Seregélyes – M7 section.

Regarding the most polluting nitrogen oxide concentration of public traffic, the air quality concentration figure, calculated for the distance of 10 m, on the Seregélyes-

M7 section of highway no. 62, reaches 5.76 % of the 24-hour limit which means that the health limit is met with high certainty also in this case.

4.7. Noise and vibration

Examination methods

Based on authentic traffic data (see the Section on traffic), plot plans, features of coverage by buildings and structures, measurement results and our previous measurement experience, authentic noise load was calculated in accordance with the provisions of Road Technical Specification No. ÚT 2-1.302 “Calculation of road traffic noise” and the KvVM Decree 25/2004. (XII.20.).

Determining the impact areas

Direct impact area (control environment)

Demarcation of the impact area used the value of night noise load for Year 2025. Beyond the impact area determined in such manner, expected noise load does not exceed the limit. In the calculation of the impact area, a spreading in outdoor areas and free of any obstacles was assumed. Where the road runs in undercut, the above figures are lower. Those figures are taken into account as most conservative which, in the present case, is acceptable as a first estimation approximation.

Based on the sectioning of the path, the following protective distances were specified for each area:

Table Z0.: Demarcation of protective distance

Highway no. 62 - path section	Protective distance [m]	
	residential	recreational
Highway no. 6 - Perkáta	29	61
Perkáta	16	35
Perkáta -Szabadegyháza	29	63
Szabadegyháza	12	26
Szabadegyháza - Seregélyes	30	65
Seregélyes	14	31
Seregélyes - M7	33	71
Perkáta bypass	20	43
Szabadegyháza bypass	22	47
Seregélyes bypass	23	50

Protective distance means the distance within which the noise load on the facilities to be protected should be examined in detail. Table Z0 used the 55 dB noise curve to demarcate the protection distance for residential areas, and the 50 dB noise curves to demarcate the protection distance for recreational areas. No noise load above the limit should be expected outside the protection distance.

The noise curves indicating the direct impact area, which curves were specified for the night-time for 45 dB and 55 dB values in accordance with the Government Decree 284/2007. (X. 29.), Section 6(1), run nearly parallel to the planned path as shown in the Long-term noise load figures of the Attachment on Noise Protection.

Indirect impact area

Indirect impact area means the 50-50 m strips along those roads where due to the reconstruction of highway no. 62, lower or higher noise load levels may be expected. Traffic studies suggest that regarding the present design section, indirect impact area means the area of the facilities to be protected beside the following settlements:

Road number, affected settlement

Highway no. 62:	Seregélyes, existing transition zone
Highway no. 62:	Perkáta, existing transition zone
Highway no. 62:	Szabadegyháza, existing transition zone

Reinforcement of the surface cover and the construction of bypass road sections do not cause any detectable change in traffic on the surrounding roads, only on the existing transition zones of highway no. 62 (inhabited areas of the settlements), therefore, the transition zones of highway no. 62 are the subject of the noise protection study concerning the indirect impact area.

Noise conditions of the areas were examined in the following situations:

- current status (2010),
- reference status (2025),(reference state means the long-term situation that would be created if Highway no. 62 was not reconstructed)
- in the planned long-term status in 2025.

The facilities to be protected and being in the vicinity of each impact area are presented as impact areas.

Areas to be protected

The environment of the direct impact area, and its facilities to be protected

The settlements, farms directly affected in the environment of the remaining path of highway no. 62. and the planned bypass sections are presented together with their distances from the road track in the Tables Z2-Z3 (Attachment on Noise Protection, Noise Protection Tables). The rest of the path runs by only agricultural land.

The environment of the indirect impact area, and its facilities to be protected

According to traffic studies, reinforcement of the surface cover and the construction of bypass road sections do not cause any detectable change in traffic on the surrounding roads, only on the existing transition zones of highway no. 62 (inhabited areas of the settlements), therefore, in the indirect impact areas, planning causes a change in noise load levels along the road sections presented in Table Z1 of the Noise Protection Tables, Attachment on Noise Protection.

Evaluation of traffic noise load

Direct and indirect impact areas

In the environment of Highway no. 62 planned for reconstruction, in most of the design area, noise levels are determined by the traffic on the existing main road.

To describe the current status, our calculations were performed for several examination points. Calculations results are presented in Tables Z1 / Z2 of the Noise Protection Tables, Attachment on Noise Protection. Noise load figures stated in the Table were calculated for the transition zones of the settlements affected by the bypass road, with distances of 10 m and 30 m from the axis of the road in word, in accordance with the general characteristic, existing lines of coverage by buildings, and for the sections where the path remains unchanged, noise load levels were given for the distances of buildings to be protected from the noise. Noise load was not examined at locations where there is no building to be protected from the noise along road sections that remain unchanged.

Studied path sections are presented in the form of noise maps by the figures for current noise load in the Attachment on Noise Protection.

Comparing the current noise load levels, determined by calculations for the settlements and road paths indicated in the Table to the limits stated in the KvVM–EüM Joint Decree No. 27/2008. (XII.3.) it can be stated that in the examined areas, along the transition zones of the settlements affected by the bypass road (at distances of 10 m and 30 m from the road), the limits set for newly planned areas are exceeded by 0-3.1 dB during the daytime and 0-4.5 dB during the night-time, while for sections where the path remains unchanged, relevant limits are not exceeded.

4.8. Wastes

Outside the administrative limits of settlements, the path generally runs away from the built-in areas, and as the visual inspection of the site walkabout shows, there is no significant amount of industrial, municipal or agricultural waste in the examined area.

In the south-western part of Seregélyes, there is a recultivated and abandoned waste disposal site (see Overview Plot Plan - Seregélyes bypass section), however, the planned road does not touch the disposal site.

The planned path directly does not affect any waste disposal site.

5. Study of impacts

5.1. Construction phase

5.1.1. Geologic medium and sub-surface water

In the area of the road construction, the original functions of the soil will change. Its current natural status will end; this area will become part of an infrastructural facility.

Besides occupying the area and the demand for earth material, earth works may have other negative effects including soil erosion which is a consequence of disturbing by the road construction the interaction between water flow and the soil. Erosion may be prevented by immediately planting vegetation and regulating runoff water.

In the construction phase, construction machines of large mass will be moving along the future road track and may cause a negative compaction of the soil. Therefore, once construction works are finished, affected agricultural land need to be recultivated (soil cultivation, restoration of the flora and fauna of soil).

The road should not cause detectable, significant changes in groundwater levels.

Sensitivity study of the area:

In accordance with the KvVM Decree 7/2005. (III.1.) on the amendment of the KvVM Decree 27/2004.(XII.25.) on the categorization of settlements sensitive to the condition of sub-surface water all settlements affected by the path (Dunaújváros, Perkáta, Szabadegyháza, Seregélyes, Aba, Székesfehérvár) are located in areas that are protected as being sensitive to the quality of sub-surface water.

5.1.2. Surface waters

During the construction phase, the highest risk on surface waters is posed by emergency incidents.

Oil and fuel leaking from construction machinery (in case of potential emergency incident) may have direct damaging effect, but occurrence of such spillage can be minimized by using construction and transportation machines that are in a proper technical condition.

Water courses located close to the path, serving as recipients, are particularly sensitive to pollution. These are the following water courses:

Lebuki Brook
Nyugat-völgy Trench
Perkáta (Pistola) Water Course
Szabadegyháza Water Course
Sárosd-Seregélyes Water Course
Pálinkaház Trench
Dinnyés-Kajtor Channel

In constructing the bridges at the km section 15+520.70 km over Perkáta (Pistola) Brook, in the km section 29+798 over Sárosd – Seregélyes Water Course and in the km section 35+192 over Dinnyés-Kajtor Channel, as well as during the refurbishment of the bridge in the km section 18+305 (over Szabadegyháza Water Course) special care should be taken that the water courses are not polluted, and the flow of water is not restricted, or only to a slight extent.

Between the km sections 40+465-41+863, during the construction of the different-level crossing built for the Budapest – Nagykanizsa railway correction, runoff conditions will change as following the recultivation of the road, drainage of excess surface water is planned by establishing a line depression on the ground, led into the channel.

Size and design of the bridges and culverts meet to environmental conditions, too, so they do not cause either any alluviation, or wash-out.

Changes in the condition of the bed are primarily related to correction.

During the construction of the planned road track, a bed correction shall be built in the length of 104 m at the crossing on Pálinkaház Trench (planned km section 34+650).

An existing surface water channel net to be corrected at the km section 40+661 – 40+677.

5.1.3. Habitat, flora and fauna, Natura 2000

Building the roads outside the settlement limits will, first of all, cause the **termination of habitat**. Degree of loss of habitat depends on the length of road section to be built and the extension of habitat affected.

Highway no. 62 crosses the water habitats and green hayfields around Sárosd-Seregélyes Water Course, Dinnyés-Kajtor Channel and Perkátai (Pistolai) Water Course, as well as the larger forest blocks between Seregélyes and Perkáta, which are robinia plantations and oak groves mixed with robinia.

The Seregélyes bypass road crosses the SCI Natura 2000 area of Belsőbárándi Loess Valley along an about 250 m long section. Therefore, the direct impact area is approx. 200 m x 40 m (approx. 1ha). Most of it is degraded hayfield (Á-NÉR code: OB).

In the approved, highly important special SCI (HUDI 20006) nature conservation area of Belsőbárándi Loess Valley, no negative effect in the nature conservation status of designating plant and animal species: tartar bread plant (*Crambe tataria*), red-backed shrike (*Lanius collurio*) may be expected.

Road construction also causes additional **temporary loss of habitat**. Transportation routes and construction materials occupy a substantial size of area which destroys and pollutes natural habitat. That hazard is particularly significant where construction is near habitats to be protected or having valuable flora and fauna. Such habitat is the SCI marsh meadow of Belsőbáránd Loess Valley (Natura 2000 area), where the unnecessary use of habitat should be kept to minimum, and also the other habitat areas crossed by the road.

Traffic increased during construction and transportation activities creates a temporary environmental pollution (air quality deterioration, noise load, soil pollution) in an area that is larger than it will be in the future.

Likely favourable and unfavourable effects in Natura 2000 area:

Designating habitat areas: 6250 “Plain-type Pannonian loess swards” and 6240 “Sub-Pannonian steppes” are not affected by the path of highway no. 62, and they are not endangered due to their distance 1. (Attachment 1).

The planned Highway no. 62 does not endanger the population of designating species (4091) tartar bread plant because that is far (approx. 1800 m) away from the path. (See 1. Attachment 1).

In the examined area only red-backed shrike (*Lanius collurio*) is classified as Natura 2000 designating animal species (A338). We have no information of any permanent hatching population in the area of the project; therefore, no destruction or disturbance may be mentioned.

Reduction of the number of populations for each species, and the expected and estimated reduction of the density of affected populations

Population of reptiles and amphibians living in and around the channel (brown spade foot – *Pelobates fuscus*, bombinator – *Bombina bombina*, water-snake – *Natrix natrix*) may slightly damage during construction. Expected reduction in population is 5-10 %.

Changes in the natural conditions (for example, water quality, water household) required for the Natura 2000 area

Water quality of the affected Dinnyés-Kajtor Channel may temporarily and to a slight extent decrease owing to the construction.

The responsible authority is the Central Transdanubian Environmental Protection, Nature Conservation and Water Management Inspectorate. After the evaluation of the project application about the main road no. 62. development that should be achieved between M8 (new Danube-bridge) and Székesfehérvár the Inspectorate determined in its Statement no. 71933/2011 which was clarified in the Statement no. 41484/2012. that the project does not have a significant impact on NATURA 2000 site. (See the Natura 2000 statement in General Annex I.)

Likely favourable and unfavourable effects in the natural habitat areas:

Water quality of the affected Sárosd-Seregélyes Water Course may temporarily and to a slight extent decrease owing to the construction.

5.1.4. Landscape

A positive effect of road construction is that it connects certain areas, for example, settlements, however, it also has the negative effect of separating certain areas from each other.

At the following locations, the path cuts ecological corridors:

- between the km section 15+440 and 15+600, crossing of the Perkáta (Pistola) Water Course
(Perkáta bypass section)
- between the km section 29+798 and 29+850, crossing of the Sárossd-Seregélyes Water Course
(Seregélyes bypass section)
- between the planned km sections 35+970 and 36+090: crossing Rác Valley (Seregélyes bypass section)
- between the planned km sections 35+200 and 35+450: crossing Dinnyés-Kajtor Channel
(Seregélyes bypass section)

The path crosses protected natural sites at the following sections:

- planned km sections 35+200 - 35+450 (Seregélyes bypass section) - Belsőbáránd Loess Valley, Natura 2000 area.

Road construction affects and uses forest areas at the following locations:

- woodlands affected by the section of surface cover-reinforcement: outskirts of Szabadegyháza and Seregélyes (between the km sections 23+900 – 26+370)
- woodland areas used in the Perkáta bypass section (km sections 15+340 -15+470): 6943 m²

For the Perkáta bypass section, in the Resolution No. 22.3/3906/7/2010 dated 26 July 2010, Fővárosi és Pest Megyei Mezőgazdasági Szakigazgatási Hivatal Erdészeti Igazgatósága approved to have the affected forest areas withdrawn from production and utilized as "road taken out".

The following condition was set by the Erdészeti Igazgatóság:

"To replace the forest areas taken out, an approx. 1.80 ha replacement forest needs to be planted 800 m east of the used forest area, between the km sections 13+900-14+620, on the north side of the planned road."

- Forest areas used in the Seregélyes bypass section (planned km sections 32+440 - 32+480, 35+540 - 35+570, 35+970 - 36+090): 2,394 m²

For the Seregélyes bypass section, in the Resolution No. 22.3/5578/6/2008 dated 22 October 2008, Fővárosi és Pest Megyei Mezőgazdasági Szakigazgatási Hivatal Erdészeti Igazgatósága approved to have the affected forest areas withdrawn from production and utilized as "road taken out".

5.1.5. Built environment

The full design section of highway no. 62 does not reach any residential area within settlement limits in any of the cases, however, in the following cases it gets near to residential buildings or areas:

- Highway no. 62 path, Szabadegyháza Industrial Site bypass section

at the km section 20+900, the Road approaches a residential house by 50 m.
- In the Seregélyes bypass section, between the planned km sections 31+500 and 32+450, it runs approx. 150 m from the inhabited areas of Seregélyes.
In the case of the listed residential areas and buildings, the direct impact of construction (noise, vibration, dust etc.) may temporarily reach harmful levels.

The path also affects archaeological sites (see list in Section 4.5.)

In Perkáta and Seregélyes the preventive research of archaeological sites and exploration plots is in progress.

In the 11.5 t cover-reinforcement sections, due to the nature of the work, no major change to the path is planned.

From the point of heritage protection, any work disturbing the soil deeper than 30 cm represents a heritage protection risk. Along the current path of the road, such disturbance had already been made during the building of it, and therefore the expectation is that only the already disturbed layers will again be disturbed during the reinforcement of the cover. Chances for coming across intact archaeological findings are low. Therefore, endangering of archaeological phenomena on site should mainly be expected where the current path is extended. Plans are to extend the current crown at most of the locations, however, only to a slight extent, for example, the road cover is extended by only 25-25 cm on the existing position. On areas affected by archaeological sites, those works have an impact that somewhat increases the disturbance already produced by the road.

In case of the Seregélyes bypass section, registered archaeological sites are mostly in agricultural land, and agricultural cultivation affects those sites. Earth works of the planned investments (landscaping, levelling works, embankment construction etc.) will affect registered archaeological sites, which were identified during our site reviews.

In case of the Perkáta bypass section, registered archaeological sites are mostly in agricultural land, and agricultural cultivation affects those sites. In the area of Nyúli Lane, the church of the Árpád-age and the surrounding cemetery, indicated as Perkáta 3 Site and identified by field walkabout, have already been strongly damaged by ploughing.

Earth works of the planned investments (landscaping, levelling works, embankment construction etc.) will affect registered archaeological sites, which were identified during our site reviews.

In the bypass section of highway no. 62 around Szabadegyháza Industrial Site, road construction works, foundation pillars of the different-level structure and replacement of public utilities will all pose risk on heritage protection as the earth has to be disturbed to a depth below 30 cm. Therefore, construction works on archaeological sites create effects which may have an impact on the archaeological sites existing there.

In the section of highway no. 62 along the different-level crossing of Budapest-Székesfehérvár railway line and its road correction (km sections 40+465 – 41+650), no archaeological sites may be identified and no damage is expected.

5.1.6. Air quality

Construction technology

Numbers, capacity, movement on the site and technical condition of applied construction machinery determine the level of air pollution.

Max. capacity of construction machinery varies between 50 – 250 KWh, and normally only 70 % of that is used, over about 10 working hours a day.

Air pollution by road construction (building the various layers of the embankment and the track structure) is always temporary, and as it is a line facility, the impact is relatively short in time, and is well distributed over the whole impact area both geographically and in time.

Transportation traffic.

Emission load levels, mainly nitrogen oxides, soot and floating dust, generated by the transportation on public roads of construction materials do change over place and time, but do not cause material air pollution beyond the construction site.

Surface air pollution

Occupation of the site, landscaping and foundation works temporarily create dust and air pollution.

The humus layer is removed in stages parallel to road construction, and humus handling does not cause any substantial air pollution. Extent of dust generation depends on the humidity of humus and the vegetation.

5.1.7 Noise and vibration protection

During construction works the following sources may result in environmental noise pollution:

- construction technology, construction machines, loading operation, transport traffic.

At the moment we only have approximate information about the circumstances and technology of the construction, as the construction contractor, the exact technology, machinery etc. are not known yet, therefore the expected effects are estimated based on earlier experience and examinations.

An environmental protection plan has to be prepared for the construction on the level of the construction plan when the organization plan is known, in order to keep the unfavourable effects at minimum level and observe the limits.

Allowed equivalent A-sound pressure levels created by construction works are stated in the KvVM–EüM Joint Decree No. 27/2008. (XII.3.) 3.), Attachment 2.

The feature of line construction works is that various transportation activities (with embankment and cover materials) are performed in the different stages of construction (along a section of several hundreds of meters, in a work site of 2-6 m width, and working is stages), and therefore just one kind of transportation activity creates a burden at one point in time. The total duration of works carried out with machinery in any one given section is not more than half a year.

Previous experience is that in a 100 m long construction section, there are normally 1 to 5 construction machines working, and the intensity of transportation works is 10 to 30 trucks per hour depending on the scheduling of transportation. Materials are usually transported on the existing road tracks, and with adequate organization, avoiding night transport and night construction, no significant increase of noise is expected.

As the main road construction of the bypass sections will be mostly sufficiently far away from residential areas, it is expected that there will be no need to take special measures (adequate schedules, noise protection covers) to decrease the noise caused by the construction so that the construction works do not cause noise loads above the limit.

By taking proper noise and vibration protection measures, construction noise and vibration may be considered tolerable.

5.1.8. Wastes and hazardous materials

In the phase of construction, the following main groups of hazardous and non-hazardous waste will probably be created:

- debris and waste of construction materials (cement, concrete, bricks etc.);
- waste sealing and insulation materials;
- waste bitumen;
- waste paints, lacquers and other coating and corrosion protection materials;
- contaminated thinners and solvents;
- waste metals (iron, steel);
- waste wood materials;
- waste paper;
- plastic waste;
- oil and oily waste;
- other waste materials.

Works create wastes considered hazardous which are subject to reporting liability, and disposal to hazardous waste disposal site and / or through incineration shall follow 15.) the provisions of Government Decree 98/2001. (VI.15.).

Table 5.1.8.1. Hazardous wastes probably and potentially created on the construction site as per the EWC are:

EWC	EWC-categorization:	Possible origin:
EWC 15 02 02*	Absorbents and filter materials contaminated by hazardous materials (including the oil filters not specified in detail), wipe clothes, protective clothing	Repair of machinery, emergency fighting, fuel filling
EWC 15 01 10*	Packaging wastes containing remnants of or contaminated by hazardous materials	Packaging of lubricants used (maintenance)

EWC 13 02 08*	Other motor oils, gear oils and lube oils	Used oil (repair of machinery, maintenance)
EWC 17 05 03*	Earth and stones polluted by hazardous materials	Emergency incident, removal of contaminated soil from the construction site
EWC 17 03 03*	Coal tar and tar products	Cover demolition, insulation
EWC 17 03 01*	Bitumen mixtures containing coal tar	Cover demolition, insulation

The BM-KvVM Joint Decree 45/2004. (VII. 26.) on the detailed rules of handling construction and demolition wastes stipulates the filling out of "Plan sheet on construction wastes created by construction activities" (Present project creates no demolition waste, therefore it is enough to fill out the Plan sheet on construction wastes.)

The construction wastes stated in Attachment 2 of the BM-KvVM Joint Decree 45/2004. (VII. 26.) and their expected volumes are shown in the "Plan sheet on construction wastes" as per Attachment 4 to the Decree which is attached separately in the Attachment on Waste Management.

Construction has a temporary and direct impact on the environment, and that impact ceases once construction is complete.

5.2. Operation phase

5.2.1. Geologic medium and sub-surface water

In the operation phase, negative effects may be created primarily by road traffic emission, pollutants settling from the air and washed off from the road cover by precipitation and then filtrating in.

Such pollutants are the settling dust contamination, attrition materials, drop loss and winter de-icing materials.

With the disappearance of lead-containing fuels no lead condensation is expected, other air polluting materials will condense in a diffuse way, in a not-determinable area, meaning also that concentration in the areas close to the road is not significant.

Planned dewatering solutions assure the usage of as little amounts of salt as possible for de-icing, and the minimization of the risk of infiltration when brine enters ground water.

During operation, substantial contamination may be expected rather as the result of emergency incidents and accidents involving fuel tanker and trucks.

5.2.2. Surface waters

During the operation of the road, significant pollution regarding the impacts on the water courses may be caused by oil and oil derivatives.

Discharging rainwater into natural waters is subject to oil contents below the limit. The upper few cm of soil can catch oil contamination, therefore, where rainwater runs through a substantial long trench before reaching the recipient, no separate oil trap structure is required. In case of covered trenches, settling in the trench is less, and most of the oil will demix together with the sediment; therefore sediment catcher is to be built in these sections.

Extra load on the water courses will be caused by the water quantity arriving from the paved surface in a concentrated way in the section following the introduction where it cannot infiltrate into the soil.

Changes in surface runoff conditions may be caused by deforestation or the opposite process, forest plantation.

Road construction affects and uses forest areas at the following locations:

- woodland areas used in the Perkáta bypass section (km sections 15+340 -15+470): 6943 m²
- between the km section 23+900 – 26+370, forest areas affected by the cover-reinforcement section outside the settlement limits of Szabadegyháza and Seregélyes
- Forest areas used in the Seregélyes bypass section (planned km sections 32+440 - 32+480, 35+540 - 35+570, 35+970 - 36+090): 2,394 m²

In deforested areas infiltration reduces and runoff increases which puts an extra burden on recipients.

Experience shows that annual volumes of salt used are normally below the allowed volumes. Allowed volume is 1200 g/m², and use is normally 900-1000 g/m² depending in the weather.

A disaster may send contamination directly into the water courses. Among the contamination types caused by road operation disasters, the most damaging impact on the water quality - and importantly, on the flora and fauna of water courses is that of hydrocarbon products. However, the likelihood of disasters occurring right in the vicinity of water courses is very low.

5.2.3. Habitats, flora and fauna

The highest hazard set by line facilities is that they **divide habitat areas (fragmentation)**. Nevertheless, with the highway no. 62, such new fragmentation impact will appear only locally along the planned bypass sections, and as there is no fence, even the bypass sections will have a lower fragmentation effect. Furthermore, the planned ecological passageway reduces the negative effect of fragmentation.

Likely favourable and unfavourable effects in Natura 2000 area

There is no fragmentation regarding the designating habitats (6250 “Plain-type Pannonian loess swards” and 6240 “Sub-Pannonian steppes”). Fragmentation of the habitat is only expected in case of the hayfield located on both sides of the path. West of the path, at some 80-100 m there is a medium-degraded marsh meadow

(which also has Community importance but it is not a designating habitat, code: 6440)), its fragmentation is also not expected but any changes in water household, that is, desiccation, may endanger it. According to our current knowledge, that is not influenced by embankment construction because it is not related to the water supply of the area (see Section 3.2. IP)

Habitat-fragmentation may affect mainly the birds flying along the channel in the beginning period (later the birds get used to it). Such birds are, for example, the pewit (*Vanellus vanellus*), the moustached warbler (*Acrocephalus melanopogon*), the blue-throat (*Luscinia svecica*), the common redshank (*Thringa totanus*), the little bittern (*Ixobrychus minutus*). The habitat of red-backed shrike (*Lanius collurio*) will not be endangered during the project; neither will the free motion of this bird be limited.

Reduction of the number of populations for each species, and the expected and estimated reduction of the density of affected populations:

Population of reptiles and amphibians living in and around the channel (brown spade foot – *Pelobates fuscus*), common toad (*Bufo bufo*), bull-frog (*Rana esculenta*), bombinator – *Bombina bombina*, water-snake – *Natrix natrix*) may slightly damage during construction. Expected reduction in population is 1-2 %.

The above described effects apply also to crossing the other permanent and periodical surface water courses: Rác Valley (Seregélyes), Pálinkaház Trench (Seregélyes), Sárosd-Seregélyes Water Course (Seregélyes), Pistola Brook (Perkátá). Those path crossings affect wet habitat, reed-beds, green hayfields (see Attachment).

The responsible authority is the Central Transdanubian Environmental Protection, Nature Conservation and Water Management Inspectorate. After the evaluation of the project application about the main road no. 62. development that should be achieved between M8 (new Danube-bridge) and Székesfehérvár the Inspectorate determined in its Statement no. 71933/2011 which was clarified in the Statement no. 41484/2012. that the project does not have a significant impact on NATURA 2000 site. (See the Natura 2000 statement in General Annex I.)

The Belsőbáránd loess valley SCI (HUDI20006) Natura 2000 area of Nature Conservation priority crosses at the Dinnyés-Kajtori channel is crossing along ca. 250 m the new section of Seregélyes bypass (between the segments 35+200 and 35+450 km). Due to the affected Natura 2000 area the Inspectorate carried out an impact assessment based on the impact assessment documentation proper to the content requirements estimated in Annex 14 of the Government Decree 275/2004 (8 October) on nature conservation areas of European Community importance (in conformity with paragraph (3) of Article 6 of Directive 92/43/EEC). Based on the detailed surveys was confirmed that the planned road does not affect habitats (Sub-Pannonia steppes, lowland Pannonian loess) and species (Tatarican Colewort) indicators of the underlying of Natura 2000 site designation. Their larger holdings are approx. 2 km to the West of the intended track line. Smaller stands are squeezed between the arable land and acacia located approx. 800 m away. Accordingly, it was found that the bypass road has no significant impact on the Natura 2000 site, on its marker habitats and species.

The selection of the actual trail has been the result of the long planning procedure since 1991. The following version possibilities have been examined: trail bypassing the settlement to the south direction, trail passing through the settlement and trail bypassing the settlement to the north direction. The second one, the trail passing through the settlement does not meet the criteria that can be expected from the bypass trail versions, since it directs the transit traffic to pass through another road of the settlement, with this the capacity and environmental problems remain unsolved. The Northern trail versions would approach, or touch Lake Velence and the Dinnyés-slough special protection areas of birds (Natura 2000 site, HUDI10007 area code), which are by all means to avoid.

Accordingly, in the aspect of the combined realization of environmental and conservation the actual trail version is the best.

5.2.4. Landscape

The path leads through plain areas, the height of the embankments of the road is low, so from landscape aspects, only the different-level crossings may have an unfavourable visual impact.

- in the km section 15+531.26 (Perkáta bypass section)
Flyover above the Dirt Road No. 5.
- in the km section 21+201 (Szabadegyháza bypass section)
Flyover above Budapest-Pusztaszabolcs-Pécs MÁV Railway Line No. 40 and the Dirt Road No. 62114
- planned km section 35+732 Bridge "C" (Seregélyes bypass section)
Flyover above MÁV railway line between Székesfehérvár and Pusztaszabolcs, and the dirt road
- km section 41+327 (different-level crossing between Budapest-Nagykanizsa railway correction)
Flyover above the double-track main railway line No. 30/A of MÁV.

5.2.5. Built environment

Improvement of highway no. 62, that is, cover-reinforcement and broadening, the bypass sections and the construction of different-level crossings contribute to a safer managing of increased traffic levels and reduce transit traffic within the affected settlements (Perkáta, Seregélyes, Szabadegyháza).

Thus living standards of the residents of those settlements improve, and the project helps protect the status of structures and components of the built environment.

5.2.6. Air quality

Emission calculations used daily traffic figures for scenarios with the project implemented and not implemented, data for Year 2025 received from TeRRaCe Kft. and also the specific emission values reflecting the expected modernization of vehicle fleet dr. Tamás Merétei, Közlekedéstudományi Intézet Kht.).

Air quality calculations were performed for average daily traffic, the most characteristic components, carbon monoxide (CO), nitrogen oxides (NO_x), and floating dust (PM₁₀), for distances of 10 - 50 meters.

Table 5.2.6.1. presents air quality concentration figures expected in the direct and indirect impact areas for the case the road is not built.

Table 5.2.6.1. Air quality concentration figures for the case the cover-reinforcement and planned bypass roads are not built (reference), with air quality concentration figures for average daily traffic ($\mu\text{g}/\text{m}^3$) as a function of distance (m).

Number of public road	Section	Reference								
		CO immi [$\mu\text{g}/\text{m}^3$]			NO _x immi [$\mu\text{g}/\text{m}^3$]			PM ₁₀ immi [$\mu\text{g}/\text{m}^3$]		
		C10 meters	C20 meters	C50 meters	C10 meters	C20 meters	C50 meters	C10 meters	C20 meters	C50 meters
Direct impact area										
Highway no. 62	Highway no. 6, Perkáta	12,33	7,22	3,31	5,43	3,18	1,46	0,23	0,13	0,06
Highway no. 62	Perkáta - Szabadegyháza	12,55	7,35	3,37	5,53	3,24	1,48	0,23	0,13	0,06
Highway no. 62	Szabadegyháza - Seregélyes	13,37	7,83	3,59	5,82	3,41	1,56	0,24	0,14	0,06
Highway no. 62	Seregélyes - M7	17,01	9,96	4,57	7,19	4,21	1,93	0,29	0,17	0,08
Indirect impact area										
Highway no. 62	Perkáta transition zone	13,60	7,96	3,65	5,94	3,48	1,60	0,25	0,14	0,07
Highway no. 62	Szabadegyháza transition zone	11,54	6,76	3,10	5,00	2,93	1,34	0,21	0,12	0,06
Highway no. 62	Seregélyes transition zone	15,19	8,89	4,08	6,50	3,81	1,75	0,27	0,16	0,07

In the reference scenario, in the direct impact area, on the sections of Highway no. 62. *between the settlements*, only CO concentration may slightly increase but air quality limits will be met with high certainty also for CO.

In the *bypass sections*, as the areas in word are free of traffic, the status of air quality remains unchanged as it is today.

Comparing the current status to the reference scenario, in the indirect impact area, on the transition zones of highway no. 62., in the reference scenario only CO concentration may slightly increase but air quality limits will be met with high certainty.

Concentration figures calculated for the reference status in the direct and indirect impact areas remain well under the 24-hour limits and annual limits for all examined air pollutants and all three distances.

Table 5.2.6.2. presents air quality concentration figures expected in the direct and indirect impact areas for the case the road project is built.

Table 5.2.6.2. Air quality concentration levels for the scenario the road project is built, with average daily traffic ($\mu\text{g}/\text{m}^3$) as the function of distance (m).

Number of public road	Section	Perspective (2025)								
		CO immi [μm^3]			NO _x immi [μm^3]			PM ₁₀ immi [μm^3]		
		C10 meters	C20 meters	C50 meters	C10 meters	C20 meters	C50 meters	C10 meters	C20 meters	C50 meters
Direct impact area										
Highway no. 62	Highway no. 6, Perkáta	14,92	8,74	4,01	6,74	3,95	1,81	0,28	0,17	0,08
Highway no. 62	Perkáta bypass	10,67	6,25	2,87	4,29	2,51	1,15	0,17	0,10	0,05
Highway no. 62	Perkáta - Szabadegyháza	15,90	9,31	4,27	7,13	4,18	1,92	0,30	0,18	0,08
Highway no. 62	Szabadegyháza bypass	12,43	7,28	3,34	5,01	2,93	1,34	0,20	0,12	0,05
Highway no. 62	Szabadegyháza - Seregélyes	17,01	9,96	4,57	7,55	4,42	2,03	0,32	0,18	0,08
Highway no. 62	Seregélyes bypass	13,23	7,74	3,55	5,32	3,11	1,43	0,21	0,12	0,06
Highway no. 62	Seregélyes - M7	19,94	11,68	5,36	8,61	5,04	2,31	0,35	0,21	0,10
Indirect impact area										
Highway no. 62	Perkáta transition zone	5,97	3,49	1,60	3,13	1,84	0,84	0,14	0,08	0,04
Highway no. 62	Szabadegyháza transition zone	2,47	1,45	0,66	1,61	0,94	0,43	0,08	0,05	0,02
Highway no. 62	Seregélyes transition zone	3,97	2,32	1,07	2,31	1,36	0,62	0,11	0,06	0,03

Direct impact area

In the close vicinity of *bypass sections* traffic emission appears which will put a slight burden on the environment.

In the sections *between the settlements*, a slight increase of emission concentration levels can be observed in the *With it*-status as compared to the *Without it*-status.

Based on the calculations it can be deduced that air quality values caused by traffic, calculated for average daily traffic, do not reach for any one component the health limits in the future, not even at 10 meters.

In the direct impact area, the highest concentration values can be expected in the Seregélyes-M7 section. In that section the parameters typical for traffic, that is, NO_x and PM₁₀, as calculated for 24 hours and 10 meters where the levels are the highest, the values reach 5.74 % and 0.7 % of the respective limits. CO-concentration, calculated for 10 m which gives the highest figure, reached 0.4 % of the 24-hour health limit.

Besides traffic emission, the base load along the sections away from settlements is

not significant, therefore it can be stated that the health limits are kept at the boundary of the protection zone even with substantial hourly traffic levels.

Indirect impact area

Comparing the *Without it-* status with the so-called *With it-*status, in the *With it-* scenario where the project is completed, a substantially better air quality is reached in the studied transition zones. Health limits are met with high certainty in each case.

Comparing the *With it-* and *Without it-* scenarios, the *With it-* scenario is more positive in terms of air quality.

In the indirect impact area, the highest concentration values can be expected in the Perkáta transition section.

Regarding nitrogen oxide concentration, the most polluting component of public traffic, the air quality concentration figure calculated for the distance of 10 m in the Perkáta transition section reaches 2.08 % of the 24-hour limit which means that the health limit is met with high certainty.

5.2.7. Noise and vibration protection

A.) Change in status if the project is not realized - noise burden expected in the future reference status, and the evaluation of noise burden

Reference status the situation in 2025 that would be created if highway no. 62 was not reconstructed. Noise load expected for the long term was determined for the impact area of existing Road 62.

Our calculations were performed for the examination points presented to describe the current status Calculation results are presented in Table Z1 (see. Attachment for Noise Protection, Noise Protection Tables).

In the reference status, in the direct impact area of bypass sections, no change in noise levels should be expected as those areas are free of traffic.

For the impact area of existing Road no. 62 calculations suggest a further increase of 0.3-0.6 dB in noise levels in the long run which would further increase the already high noise burden and make even more intolerable the situation for the people living here, therefore, the planned reconstruction project is justified in our view.

B.) Change in status if the project is realized

Direct impact area

Bypass sections of Highway no. 62 planned for reconstruction run on a fully new path away from residential areas. To describe the status in the long term, our calculations were performed for several examination points. Calculation results are presented in Table Z3 (see. Attachment for Noise Protection, Noise Protection Tables).

The sections where only the cover will be reinforced are between the settlements. Calculation results for the long-term status are presented in Table Z2 (see. Attachment for Noise Protection, Noise Protection Tables).

Studied path sections are presented in the form of noise maps by the figures for Long-term noise load in the Attachment on Noise Protection.

Comparing the long-term noise load levels, determined by calculations for the settlements and road paths indicated in the Table to the limits stated in the KvVM–EüM Joint Decree 27/2008. (XII.3.) it can be stated that in the studied areas noise load levels meet the legal limits along the bypass roads as well as in the road sections of cover-reinforcement.

Although along the road sections where only the cover is reinforced, noise load very slightly increases at certain locations against the current status (by approx. 0.1-0.3 dB) but it does not exceed the applicable limit, while at other locations (see LOT 1/5), the level of noise load virtually does not change.

Indirect impact area

In the indirect impact area, along the transition sections of existing highway no. 62, long-term noise load was compared to the reference status. Calculations results are presented in Table Z1 of the Noise Protection Tables, Attachment on Noise Protection.

In case those bypass sections are built, noise load along the transition sections of highway no. 62 changes against the reference long-term status as follows;

- LOT2 Seregélyes: noise load reduces by approx. 2.5-2.6 dB,
- LOT3 Perkáta: noise load reduces by approx. 1.5 dB,
- LOT4 Szabadegyháza: noise load reduces by approx. 2.6-2.7 dB.

Vibration protection

Based on the distances between the planned road and the buildings in the studied area it can be stated that construction of the planned road does not represent a substantial change in terms of the vibration load on existing buildings. Due to the distances it can be stated that no increased vibration load should be expected in the existing buildings as the result of the planned roads, and the weighed equivalent acceleration of vibration still does not exceed the limits set in the KvVM–EüM Joint Decree 27/2008. (XII.3.), that is, 3.) $A_M = 10 \text{ mm/s}^2$ in the daytime, and $A_M = 5 \text{ mm/s}^2$ in the night-time, and the maximum value of $A_{\text{max}}=200 \text{ mm/s}^2$.

Along the transition sections of settlements where traffic levels reduce against the reference status, an improved vibration load status may be achieved by the construction of bypass roads.

5.2.8. Wastes

In the area of the road section, following construction and commissioning, the creation of small volumes of hazardous and non-hazardous wastes should be expected.

Wastes generated during operation may be the following by their origin:

- wastes created by maintenance, upkeeping, use (communal waste, biologically degrading waste, hazardous waste, construction and demolition wastes);
- waste created by accidents and emergency incidents.

In case of incidents, mostly the water drainage trenches and the soil may be polluted, and consequently, the surface waters and the ground-water, which may indirectly cause the pollution of underground waters.

6. Impact reducing measures

6.1. Geological medium and under-the-surface water

During construction

Ground-water not, only rainy weather can cause implementation problems in the sections with cohesive ground surface sections (LOT1 section). Therefore, the surface water drainage of the earth structure must be continuously ensured already during construction.

Earth works may only be carried out in appropriate weather conditions. In winter, end of winter and early spring periods with snow melting, or in rainy weather earthwork construction is not recommended in areas with cohesive sub-soil, while the quality of the earthwork cannot be ensured.

During construction, the location of the temporary waste storage, and the storage of groundworks machines and fuel must be designated taken into account not only the characteristics of the surface layer, but also the ground-water flow directions.

During operation

The water drainage concept of the road is to catch rain-water arriving from the road or from the neighbouring areas in grooves. The water collected in grooves is transmitted to recipients, where possible, or, where it is not possible, to desiccating or evaporating reservoirs.

Considering the present situation of dewatering, evaporating trenches shall be built in the following sections:

Szabadegyháza Industrial Site bypass section between segments 18+965 to 21+713 km

Rainwater from the third third of the planned section is discharged into the planned evaporation trenches.

section 20+896 – 21+151,5 (on both sides)

section 21+247,30 – 21+526,30 (on the left side)

section 21+247,30 – (on the right side)

section 21+558,30 – 21+810 (on the left side)

section 21+558,30 – 21+810 (on the right side)

Perkáta bypass section between segments 11+672 to 17+598 km

Pursuant to the geotechnical expert study, covered trenches are built everywhere, and in the section with a gradient over 10%, covered trench is built including energy dissipater. Along road sections built in undercuts, road drainage applies road trenches where the undercut is shallow and the gradient is small, or covered undercut gutters where the undercut is deeper.

Seregélyes bypass section between segments 26+400 to 36+960 km

Reservoir / infiltration / evaporation trenches need to be established in the beginning of the planning section (actually up to the roundabout), and also at the end of the planning section from the crossing beyond the railway line.

(see in the layout drawings)

6.2. Surface waters

During construction

During the construction of the planned road track, a bed correction shall be built in the length of 104 m at the crossing on Pálinkaház Trench (planned km section 34+650).

Section numbers of the ebed correction: km section 0+495,86 + 0+594

The bed shall be established here the following way:

- | | | | |
|----------------|-------|-------------|-------|
| – Bottom width | 1,0 m | Slope grade | 1:1,5 |
| – Bottom slope | 6 ‰ | | |

The correction of the channel for excess surface water on the right-hand side of highway no. 62 between sections 40+661-40+695 km is necessary (between Budapest - Nagykanizsa railway correction). The length of the correction is appr. 270 m. There are currently 3 culverts in the channel, from which two culverts of Ø 0,80 m, between sections 40+661-40+664 and 40+681-40+695 km shall be demolished.

The culvert of Ø 0,80 m situated between the sections 40+671-40+677 km shall be reconstructed according to the rearranged bottom level. Before the outlet of the channel for excess surface water a new culvert of Ø 0,80 m shall be built in (sections 40+471-40+478 km) due to the request of the owner in order to maintain the cross ability of agricultural areas.

Size and design of the bridges and culverts correspond to environmental conditions, too, so they do not cause neither alluviation, nor wash-out.

Alluviation and wash-out prevention of culverts and bridges is planned to be solved with the surface.

In case of water courses the following new bridges shall be built in the whole section (see the layout drawings):

- in segment 15+520.70 km, at the crossing of Perkáta (Pistolai) brook

The bed of the creek (bed+bed slope) shall be protected by a 10 cm thick hydraulic engineering slab in the affected sections. On both ends of the streambed sheathing, a closing apron of the size 60*40 cm shall be built. The streambed after the closing aprons – both on the inlet and outlet side - shall be established with a 30 cm thick rubble stone layer in 5,00 – 5,00 meter length.

In case of the road section crossing the water course at Perkáta a new bridge opening shall be established, which will assure free crossing for reptiles and amphibians.

The bridge shall be built in a way, that a narrow river bank lane shall be kept between the bridge piers and the water surface in order to assure free crossing of the strictly protected otter.

- in planned segment 29+798 km, at the crossing of Sárosd-Seregélyesi water course,

The streambed shall be protected under the bridge in a length of 36,0 m with rubble stone cover embedded in concrete, and before and after the closing aprons with rubble stone layers in 3-3 meters length.

- in planned segment 35+192 km, at the crossing of Dinnyés-Kajtori channel,

The streambed shall be protected under the bridge in a length of 55.00 m with rubble stone cover embedded in concrete, and before and after the closing aprons with rubble stone layers in 3-3 meters length.

In case of the bridge at the km section 18+305 at the crossing on Szabadegyháza Water Course a rubble stone prism and bottom bed pitching, further bed panel cover shall be made, connected to the breast-wall of the bridge, 12,0 meters long under the bridge. Downstream and upstream of the bridge, sheeting is made in the length of 8.50 m and 7.50 m, respectively.

The bed slope side and the wing wall at the two ends of the culverts shall be sheeted for silt control purposes.

At the connection of the road trenches, the bed of the recipient trenches of the Sárosd-Seregélyes, Dinnyés-Kajtori and Pálinkaházi trenches shall be paved 3,0 meters long in order to avoid damaging wash-outs.

The paving, sheeting of the given sections of the streambed of the affected water courses shall be carried out exclusively outside of the winter rest period of animals, i.e. between 1 April and 1 November.

In case of the trench of the road at Seregélyes, which crosses the route in km section 40+457, tile floor embedded in concrete shall be built 5-5 meters long for streambed protection purposes at the downstream and upstream part of the existing D=1,0 m culvert situated at the inlet section.

Tile floor embedded in concrete shall be built 10-10 meters long for streambed protection purposes at the inlet section of the channel for excess surface water situated at km section 0+200.

6.3. Habitats, flora and fauna

During construction

From biota protection aspects, the following valuable habitats require special attention during the construction works:

- between segments 15+300 – 15+600 km: on the left (green hayfield and loess steppe) in the valley of Perkátai water course.
- between segments 15+700 – 16+000 km: on the right (reed-bed) along the Cikotai water course
- between segments 18+300-18+500 km: on the right (saline meadows)
- between segments 26+400 – 23+900 km: a larger forest on the left hand side of the road (oak-grove mixed with acacia and pine, acacia-grove), a smaller forest on the right hand side of the road (oak-grove, poplar-grove)
- between segments 29+120 – 30+000 km: on both sides in the valley of Sárosd-Seregélyesi channel (reed-bed, green hayfield)
- between segments 35+260 – 35+310 km: on both sides in the valley of Dinnyés-Kajtori channel (green hayfield, fen, loess steppe)
- between segment 36+000 km: on both sides in Rác-valley (green hayfield)

In the neighbourhood of the above habitats borrows, spoil areas cannot be made; these areas cannot be used as construction sites.

In order to apply bird protection aspects: construction works shall be carried out outside of the nesting time if possible (Between end of September and 1 March); 2) high voltage conductor insulations shall be mounted to the support piles of the new 20 kV conductors for the purpose of protection against electric shock.

During operation

At the crossing of Sárosd- Seregélyesi water course (segment 29+780 km) and Dinnyés-Kajtori channel (segment 35+192 km) a minimum 20-m wide forest lane must be planted in 100-m length, respectively, in order to ensure waterfowl protection, to elevate the fly of the birds. Fruit-bearing species shall be avoided when selecting bush and tree species. Vegetation planting shall fit the conditions in the landscape. The usage of local fast growing tree and bush species (trees: - *Fraxinus angustifolia ssp. pannonica*, - *Salix alba*, bushes: - *Salix caprea*, - *Salix purpurea*, - *Viburnum opulus*).

At the crossing of Rác-valley (Seregélyes) 2-m diameter culvert must be built. This structure must be built with a 30-cm high and 50-cm wide concrete bench (ecological transit route).

In case of green grass crossings there should not be any protective trees planted along the road surface, as these trees could serve as resting and nesting places for

several bird species, which could raise the risk of collision, when the birds fly over the road.

The slopes at the built sections shall be grassed and some vegetation shall be planted for the purpose of dust-protection. For grassing the slopes, grass seed mixture with the fastest soil binding features shall be applied. This mixture shall be very similar to the grass species of domestic, commonly spread species of the leas of the area. With the appropriate maintenance of the slopes, and exact care for the vegetation, the appearance of invasion species alien to the region can be avoided.

At the water course crossings, the trenches planned with pavement, sheeting shall be established in a way, that the road side of the trench shall be built vertically at least in a height of 40 cm (protection of amphibians).

Environment-friendly use of the area is necessary during the construction works, i.e. the geological solids, the soil, and the surface and undersurface water resources must not be contaminated. The grass should not be damaged outside of the construction area. The prescribed route must be kept when using heavy construction machinery. Only the marked route shall be used.

The rainwater disposal system, and the reservoir trenches shall be built in a way, that they must assure the protection of geological solids, the soil, and the surface and undersurface water resources even in case of operating breakdowns, or damages. During road construction works, in order to avoid any contamination, the repair works of construction machines must not be performed close to surface waters.

The size of the area used for the construction – for transportation and traffic purposes – in places with valuable protected flora and fauna and in the neighbourhood of it shall be kept as small as possible. Ground must not be extracted in these areas for the purpose of road construction. These places of outstanding importance: The Rác-Valley (ecological corridor), the valley of the Dinnyés-Kajtori-channel (Natura 200 protected area), valley of the Sárosd-Seregélyes water course (ecological corridor for reptiles and small mammals).

The digging of the trenches is recommended to be performed during the winter-autumn period, in order to prevent as many animals as possible from falling into the trenches. In case there is no possibility for this, efforts shall be made to dig in the trenches as soon as possible.

In case of alleys, bushes along the channel attempt shall be made to prevent as many trees and bushes from damaging during the work as possible.

6.4. Landscape

During construction

Corresponding to Decision no. 22.3/3906/7/2010 of the Forestry Directorate of Budapest and Pest County Central Agricultural Office, as a replacement of the used forest areas (7185 m²) in the Perkáta bypass section of highway no. 62, 800 metres to the East, between segments 13+900-14+620 km, on the Northern side of the

planned road a snow-shield forest lane will be planted. The dimensions of the forest lane are as follows: 720-m long, 26-m wide and its area is 1.8 ha. In this forest lane the distance of the side lines of the tree-type plants is 20.0 m, bordered by a lane of bushes at 3.0 metres, respectively.

Species to be planted:

Acer campestre
Ulmus pumila
Quercus cerris

Corresponding to the decision nr. 37810/08 of the Central-Transdanubian Environmental, Nature Conservation and Water Authority, the crossing of Sárosd-Seregélyesi water course (section 29+780 km) and Dinnyés-Kajtori channel (segment 35+192 km) a minimum 20-m wide forest lane must be planted in 100-m length, respectively, in order to ensure waterfowl protection, to elevate the fly of the birds.

Species to be planted:

Fraxinus angustifolia ssp. Pannonica
Salix alba
Salix caprea
Salix purpurea
Viburnum opulus

Snow-shield forest lane to be planted in the Seregélyes bypass section between the planned segments 26+400-27+507 km, in 15-m width.

Species to be planted:

Field Maple bonsai trees (Acer campestre)
Acer tataricum
Cornus sanguinea
Crataegus monogyna
Prunus spinosa
Quercus robur

In case of cutting a biologically active surface block, ecological corridor must be constructed, which enables connection between the two parts. In order to maintain the wildlife connections, crossovers for small mammals, amphibians and large mammals shall be built.

Following the negotiations with Duna-Ipoly National Park, a 2 m wide pipe culvert will be placed in the crossing of the Rác-valley. The angle between the planned culvert in km section 36+048 (in the Seregélyes bypass section) and the axis of the road is 34°, its length is 75 m. A 30 cm high and 50 cm wide paved platform shall be built along the water course, which can be used by the otters to cross from one side to the other.

6.5. Built environment

During construction

The road surface reinforcement planned in the existing route generally means minimal risks from heritage protection aspects, as only the already disturbed layers will again be disturbed during the reinforcement of the surface. The route of the mentioned sections of road no. 62 crosses many areas which are uninteresting from archaeological point of view, where the chances for coming across intact archaeological findings are low.

The actual route crossing the smaller early Árpád-age settlement in the Upper Lane at Fehérvári Road won't be amended, and the road surface shall be extended only by 2x0,25 m. In the course of extending the road crown, it may happen that such details of the archaeological site here will be disturbed which have not been affected by the current embankment and the water drainage trench.

However, this will affect only a small width based on the plans, that there is no need for preliminary archaeological exploration.

Therefore preliminary archaeological intervention is not recommended in this area. Archaeological professional surveillance must be ensured in order to document and save the occurring phenomena. The decision on the type and necessity of the archaeological intervention will be made by the competent Regional Office of KÖH (National Office of Cultural Heritage).

As the investment is qualified as large infrastructural investment, the Office will most probably order archaeological professional surveillance for the whole route according to the law, and of course it is of highest importance in the mentioned section.

The *Szabadegyháza Industrial site bypass section* crosses a smaller early Árpád-age settlement at Halom Lane site. Based on the field walkabout the surface extension of the site seems to be obvious, hence in accordance with the recommendation of the heritage protection impact assessment it is necessary to carry out preliminary archaeological excavation in the section marked on the map, prior to the performance of excavation works.

An archaeological site was identified in 1964, in a hillside next to Halom-pusztá, west of the West-Hippolyt Rill and Szabadegyháza Water Course. The exact site of the surveillance from that time is not known, and it was not possible to localize the archaeological site in the May of 2008 due to heavy coverage. Trial exploration work is recommended for the area between km sections 19+000 – 19+400 in the affected area, marked on the map. Based on the results of these trials it can be obviously decided, whether the area is affected by archaeological works. In the hills along the SW coast of the Hyppolit- Rill, more findings may be expected. Therefore, the section between the km sections 19+000 – 20+250 is proposed as an area of archaeological interest.

In case of the *Seregélyes bypass section*, it can be stated based on database and literature researches, that the finding sites registered to the areas under investigation do affect the area of the planned investment. The finding sites were partially identified by field walkabout: i.e. the discovery of already known archaeological sites may be expected in the following sections of the route Rác-völgy Lane, Selymes Lane, and Réti-Földek: planned km section 29+000 - 30+000, planned km section 34+000 - 35+000, and planned km section 35+000 - 36+000. According to the law,

the preliminary archaeological excavation of these sites must be performed. As in case of the other sites (known from database sources) it cannot be decided by field walkabout, whether the route is affected or not in the following sections (planned km section 27+000 - 28+000; planned km section 31+000 - 32+000; planned km section 32+000 - 33+000; planned km section 33+000 - 34+000; planned km section 36+000 - 36+960.) trial exploration is necessary.

Taking the identification of the archaeological finding sites through field walkabout into consideration, based on the heritage protection impact assessment, preliminary excavations and test excavations are necessary in the Seregélyes and Perkáta bypass sections:

KÖH Database no. of the site	Name of the site	Location of the site according to km section (km s.)	Type of recommended heritage protection process
29279	Perkáta-Homokbánya (Perkáta 1-2.)	between km sections 14+000-15+000	preliminary archaeological exploration
29288, 29289	Perkáta-Nyúli Lane, church and cemetery (Perkáta 3.); settlement from the medieval ages	between km sections 15+000-16+000	preliminary archaeological exploration
22284, 29288, 29289	Perkáta-Nyúli Lane (Perkáta 4-6.), settlement from the late bronze and medieval ages	between km sections 15+000-16+000	preliminary archaeological exploration
22310, 22311	Seregélyes-Mészáros tanya I.-II. (Seregélyes 1.)	34+000-35+000	preliminary archaeological exploration
37480	Seregélyes - Rác Valley Lane (Seregélyes 2.)	35+000-36+000	preliminary archaeological exploration
37481	Seregélyes - Rác Valley Lane II.	36+000-36+960	trial exploration
37483	Seregélyes-Selymes Lane II.	33+000-34+000	trial exploration
37484	Seregélyes-Selymes Lane III.	32+000-33+000	trial exploration
37485	Pálinkaház puszta	31+000-32+000	trial exploration
37486	Seregélyes –Réti földek (Seregélyes 3.)	29+000-30+000	preliminary archaeological exploration
37488	Seregélyes –Városi rétek II.	27+000-28+000	trial exploration

It is not expected to find archaeological sites in the sections along the different-level crossing of the Budapest-Székesfehérvár railway line and road correction of highway no. 62 (segments 40+465 – 41+650 km), therefore additional research and preventing measures (test excavation, preliminary excavation) are not necessary before the beginning of the investment.

6.6. Air quality

During construction

Dust-protection shall be assured during the construction phase also in case of humus deposits and material transport on dirt roads. If necessary, dust-protection shall be assured by irrigation on these sites.

During operation

Under paragraph 1) of Article 29 of Government Decree 306/2010. (XII. 23.) in case of creating double-digit national road line source, no residential building, recreational building, educational, schooling, health, social and administrative buildings can be located and placed within 25 metres from the centre of the traffic facility. (see the layout drawings – borders of the areas with building limitation)

6.7. Noise and vibration

It would be reasonable to request the construction authorities to take into account the protective distance necessary along the new bypass road sections when issuing the construction permits, and in the development plans to be prepared. Within the protective distance, it is not recommended to place residential and recreational buildings, only industrial, commercial and service facilities. In case of office construction, adequate noise protection can be achieved with proper orientation, and improved sound-proof doors and windows.

In case of the buildings to be built in the future, noise protection must be ensured by observing the protective distance, with the orientation of the buildings, the shadowing effect of the existing or service facilities, etc.

In case of the towns and villages relieved due to the bypass road sections, the following measures are recommended in order to reduce noise caused by traffic:

- prohibiting freight traffic to enter the towns (except destination traffic),
- surface reinforcement managed by the local governments.

6.8. Waste

During construction

The collection and appropriate storage of wastes during the construction is the task of the Contractor. Wastes accumulated at the construction headquarters and construction sites shall be collected and disposed according to the law.

During operation

The disposal of communal wastes and hazardous wastes caused by accidents or damages is task of Magyar Közút Nzrt (Hungarian Highway Ltd.).

7. Monitoring plan

7.1. Habitats, flora and fauna

Examination places

1. Travelling bird stocks, vertebral animals crossing the road
Recommended location: hit (by car) examination in the total length of the road

2. Nesting bird stock of high natural value

Recommended location: Environment of the Dinnyés-fertő morass (waterfowl)
Environment of the Dinnyés-Kajtori Channel (Natura 2000 area – Bujtás Lake: waterfowl)
Sárosd-Seregélyes Water Course (reed-bed: waterfowl)
Perkáta bypass (European Bee-Eater habitat in the sand mine, EO:V: 628592, 191019)

3. Small vertebral and non-vertebral animals using the ecological transit routes, and moving on the soil surface.
Recommended location: Rác Valley (Seregélyes bypass)

4. Big games

Recommended location: Dinnyés-Kajtor Channel (under the bridge)
Sárosd-Seregélyesi Water Course (under the bridge)
Pistolai Brook (under the bridge)

5. Plants of high natural value

Recommended location: SCI fen of Belsőbáránd loess valley (on the right of the road)

Time, frequency and subject of the examinations

Sampling of nesting stock of high natural value must be carried out once a year.

The hit (by car) examination must be carried out by the road manager within the daily road checks in the first three years.

In the future location of the ecological transit route an original status review must be made of the small vertebral and invertebrate animals, and then three sampling must be made annually for all the animal groups – in the spring, summer and autumn periods.

In case of plant with high natural value, their original conditions must be surveyed before the construction is started. Monitoring is continuous; it must be carried out once a year. The biota protection examinations are recommended to be carried out for three years.

7.2. Noise and vibration

Noise examination points

Based on the preliminary conditions of the plans and the design location, the following measurement locations are recommended:

- 1. MP measurement point:** Dunaújváros LOT1 (following 6.-62. junction on the left)
- 2. MP measurement point:** along Perkáta bypass road, and along the old highway
- 3. MP measurement point:** along Szabadegyháza bypass road, and along the old highway
- 4. MP measurement point:** along Seregélyes bypass road, and along the old highway

Noise measurement, evaluation method

The measurement of the traffic noise and the determination of reference noise load have to be carried out based on Hungarian Standard no. MSZ 18150/1-98., and the provisions of KvVM (Ministry of Environment and Water) Regulation no. 25/2004. (XII. 20.), as well as the local characteristics, and traffic characteristics. The observation of limit values must be evaluated under the attachments of 27/2008. (XII. 3.) Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health).

Values to be measured: Reference equivalent A-sound pressure level for day and night.

Time of measurements:

Measurement of basic status: before the start of the construction,

During construction: during the noisiest typical working process,

After completion: between 90 to 120 days following the completion of the development.

Vibration examination points

Based on the preliminary conditions of the plans and the design location, the following measurement locations are recommended:

- 1. MP measurement point:** Dunaújváros LOT1 (following 6.-62. junction on the left)
- 2. MP measurement point:** along Perkáta bypass road, and along the old highway
- 3. MP measurement point:** along Szabadegyháza bypass road, and along the old highway
- 4. MP measurement point:** along Seregélyes bypass road, and along the old highway

Vibration measurement, evaluation method

The measurements have to be carried out according to the prescriptions of standard MSZ 18163-2:1998 "Vibration measurement. Examination of the environmental vibrations affecting people, in buildings".

Vibration load regarding people being in the buildings must be evaluated under 27/2008. (XII. 03.) Common Regulation of KvVM (Ministry of Environment and Water) and EüM (Ministry of Health).

Time of measurements:

Measurement of basic status: before the start of the construction,

During construction: during the working process causing the highest vibration,

After completion: between 90 to 120 days following the placing into operation of the road.

7.3. Air quality

Examination places

- 1. MP measurement point:** Dunaújváros LOT1 (following 6.-62. junction on the left)
- 2. MP measurement point:** along Perkáta bypass road, and along the old highway
- 3. MP measurement point:** along Szabadegyháza bypass road, and along the old highway
- 4. MP measurement point:** along Seregélyes bypass road, and along the old highway

Time, frequency of the examinations

It must be carried out in basic status and in operational status, in heating and non-heating periods, twice respectively.

In the construction period the buildings close to the transportation routes can be measured, this can be regular, or, in case of complaints, eventual.

Components to be measured

carbon-monoxide, nitrogen-oxides, settling dust, airborne dust, ozone, benzene

During construction the measurement of nitrogen-oxides and airborne dust is enough.

Budapest, September 2013