

M44 EXPRESSWAY
BÉKÉSCSABA – NAGYSZALONTA (NATIONAL BORDER)
PREPARATION OF THE SECTION
PST: A044.22

ENVIRONMENTAL IMPACT ASSESSMENT
TRANSBOUNDARY IMPACTS

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<https://www.mmk.hu/kereses/tagok>

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1. DESCRIPTION OF THE PLANNED ACTIVITY

Planning parameters, volume of activity

Road category: expressway

Road width: 20 m

Number of traffic lanes: 2×2 lanes, without hard shoulder

Design length: ~43 km (depending on the variant)

The main carriageway is dimensioned in accordance with e-UT 03.01.15 – Design of rural public roads with a 20 m carriageway width and 2×2 lanes.

Horizontal and vertical alignment

The proposed new route would continue towards the national border by constructing a new grade-separated junction in the vicinity of kilometre 111+500 of the existing M44 expressway, with a design matching the technical parameters of the existing expressway. The total length of the planned route is **43,044 m for the V01 option (between km 0+000 and 43+044)** and **43,431 m for the V02 option (between km 0+000 and 43+431)**.

It starts in the vicinity of kilometre 111+650 of the M44 expressway, where a new half-cloverleaf interchange will be constructed. (This point was the former junction of Main Road 47 and the M44 expressway.) The route runs along the boundary between the towns of Murony and Békéscsaba for the first 4 km, crossing Main Road 47 via an overpass (km 3+736) at a half-cloverleaf junction. The route enters the administrative area of Békéscsaba at kilometre marker 4+069, after which it crosses the MÁV No. 120 Szolnok–Békéscsaba – Lökösháza railway line via an overpass at the 4+833 km mark, then bypasses the fishing lakes to the south and reaches main road 470. The route crosses the dirt track at plot no. 0709 via an underpass, which requires the dirt track to be realigned, and the dirt track at plot no. 0111 is also routed through an underpass. Demolition of the farm building concerned in the area is required.

The crossing of Main Road 470 takes place at the 10+411 km mark at a grade-separated junction. A complex rest area will be established at the grade-separated junction. The demolition of the farmhouses affected by the rest area will be necessary.

The Élővíz Canal will be crossed at the 11+482 km mark, followed by the Gerlai backwater at the 12+571 km mark via the planned overpass. The farmsteads located within the route must also be demolished here (at the 9+900 and 13+100 km marks).

Road 4238 will be diverted to a separate level, after which the route turns to the right and runs parallel to the Doboz-Gerlai boundary canal. It bypasses the special Natura 2000 nature conservation area known as the Körösközi forests (HUKM20011) from the north, but does not directly affect it, then turns onto the Kettős-Körös embankment with a left-hand bend. The river is crossed at the 17+700 km mark, where the floodplain is also a Natura 2000 special area of conservation; this crossing is made perpendicular to the river's course, and following the crossing, the route turns slightly to the right.

The planned road bypasses the inner section of Doboz from the north. Following the realignment, Zsibongó Road will be routed on a separate level at kilometre 19+508 through the M44 underpass. It then crosses the Natura 2000 Special Area of Conservation known as the Körösközi forests (HUKM20011) between km 19+800 and 21+150, then, bypassing a solar park to the north, it turns right onto a straight section running parallel to an existing dirt track (plot no. 032).

The crossing of the Varga-hosszai main canal via an overpass takes place at the 20+647 km mark, where the existing dirt track must also be routed. At the end of the bypass section, the route turns slightly to the left, then crosses road 4234.

In conjunction with the junction with road 4234, a grade-separated junction will also be constructed at kilometre marker 21+227. On the northern side of the carriageway, there is scope for the location of an engineering depot to support the operation of the expressway.

After the junction, the route turns slightly to the right, followed by a long straight section.

A wildlife crossing has been located at kilometre 24+346, which also provides a farm track crossing. Subsequently, two alternative versions have been developed for the section of the V01 route between km 24+346 and 30+300:

Option V01

Following the wildlife crossing, the route turns north-east, then crosses into the administrative area of Sarkad after the bridge over the Fekete-éri Canal at kilometre 26+432. It reaches the town of Sarkad by crossing the Gyepes Main Canal – whose bed and riparian zone are also designated as a Natura 2000 special area of conservation – via a bridge.

V02 variant

Given that the V01 variant crosses the Fekete-éri Canal and the Gyepes Main Canal at an angle that is technically unfavourable, an alternative V02 variant has been designed for this section, which branches off from the V01 alignment at the 24+000 mark, thus continuing its straight alignment, and then, after a left-hand bend, crosses the Gyepes Main Canal (Natura 2000) at a more favourable angle. Although this alternative alignment is 387 m longer, its construction costs are significantly lower due to the favourable crossing angle with the watercourses, and it is also expected to be more acceptable from a watercourse management perspective.

Leaving aside the section planned in both variants, at the junction of road 4219 j. connecting Sarkad and Sarkadkeresztúr, a grade-separated cloverleaf junction will be constructed between the M44 and road 4219 j., ensuring the connection between the expressway and the access road leading to the settlements.

A simple rest area will be provided in the vicinity of km 35, ensuring a safe stopping point for both passenger and goods vehicles between the necessary travel distances.

The route borders the settlement of Méhkerék to the north, and the planned M44 expressway will cross the existing and currently operational MÁV line 128 (Békéscsaba–Kötegyán–Vesztő–Püspökladány) at a different level.

A grade-separated junction providing the closest connection to the border will be constructed on the boundary between Újszalonta and Méhkerék. The current road 42153 needs to be realigned because a gas plant and a solar park are located near the route. The grade-separated junction will be designed as a semi-cloverleaf, with its acceleration and deceleration lanes continuing into a collector-distributor lane towards the border to ensure a connection to the road inspection station required for checking heavy goods vehicles. The checkpoint is designed to operate in both directions, ensuring that heavy goods vehicles travelling to and from Romania can be inspected.

The M44 expressway reaches Romania at the 43+044 km mark (43+431 km in the case of the V02 variant); the border crossing complex is not located on Hungarian territory.

2. DESCRIPTION OF THE ENVIRONMENT LIKELY TO BE AFFECTED BY THE VARIANTS OF THE PLANNED ACTIVITY AND DESCRIPTION OF THE POTENTIAL ENVIRONMENTAL IMPACT OF THE PLANNED ACTIVITY AND ASSESSMENT OF ITS SIGNIFICANCE

2.1. Protection of geological formations, soil and groundwater

The landscape is characterised by a fine-grained surface layer, slow infiltration, well-protected deep aquifers and the presence of shallow, sensitive groundwater of variable quality. The surface water network, particularly the Körös rivers and inland waterways, plays a significant role in the dynamics of groundwater, primarily in shallow systems.

The location of **the groundwater table** influences the design of the road's alignment and drainage. Near the Hungarian-Romanian border, the static level of the groundwater table lies between 1 and 2 metres below the surface.

There are no wells with water rights permits within 100–100 m of the planned main route axis. The area affected by the design **does not affect any operational or prospective water protection areas.**

According to information provided by the competent Hungarian Water Authority and the Department of Environmental Protection, Nature Conservation and Waste Management (file reference BE/39/01486-17/2025), there is no known geological contamination in the planning area.

The most significant factor affecting the geological environment in relation to the planned facility and its associated infrastructure is the physical land take, which comprises the 2x2-lane layout as per the design cross-section, plus the land take required for the connecting infrastructure and the temporary land take during construction, however, the planned project does not directly affect Romanian territory.

No hazardous substances will be introduced into the soil during the investment, and no process wastewater will be generated.

No drainage is planned.

No negative impact on soil or groundwater is expected on Romanian territory during the implementation and operation of the project. There are no groundwater resources requiring protection in the border area.

2.2. Surface waters

The planning area is characterised by a dense water network and extensive river valley and inland water effects, where surface hydrological processes are determined by very low gradients, the flood dynamics of the rivers and the regulating role of drainage canal systems.

Inland water bodies are to be expected along the entire length of the planning area.

On the Hungarian-Romanian border, the Határacsatorna watercourse separates the two countries; the route crosses this to reach Romania.

The elevation profile of the planned route follows the existing ground level, with the road surface raised at least 2–3 m above the ground. The road carriageway is embankment-type along its entire length; the carriageway level has been determined to ensure that drainage of the road structure is maintained above the high inland water level and the groundwater level. The crossed watercourses and canals serve as receptacles for rainwater runoff from the road, with the exception of the Határ-csatorna.

At watercourse crossings, the construction of culverts or bridges is planned to allow water to pass through. The culverts are all 1.20 m in diameter.

In places where the planned routes cross watercourses at an angle of less than 60°, or where the route overlaps with the route of an existing canal (near the border, this is the Wimmer Canal), correction of the watercourse bed will be necessary.

According to the hydraulic engineering concept of the draft study prepared for the current plans, rainwater from the section of the route extending to the final border crossing will be drained backwards from the end of the design section, in accordance with the cross-sections, and connected to the storage and evaporation ditch to be constructed in Hungary.

No negative impact on surface waters is expected on Romanian territory during the implementation and operation of the project.

2.3. Wildlife

On the Hungarian side, the planned route development runs through a landscape predominantly characterised by agricultural land, narrow watercourses and forest blocks of varying extent and naturalness, and which is subject to significant anthropogenic impact. There are no protected natural areas on the Hungarian section of the bordering Romania; no wildlife surveys have been carried out across the border.

The planned continuation of the road in Romania runs alongside the Natura 2000 site known as Salonta (ROSCI0387).

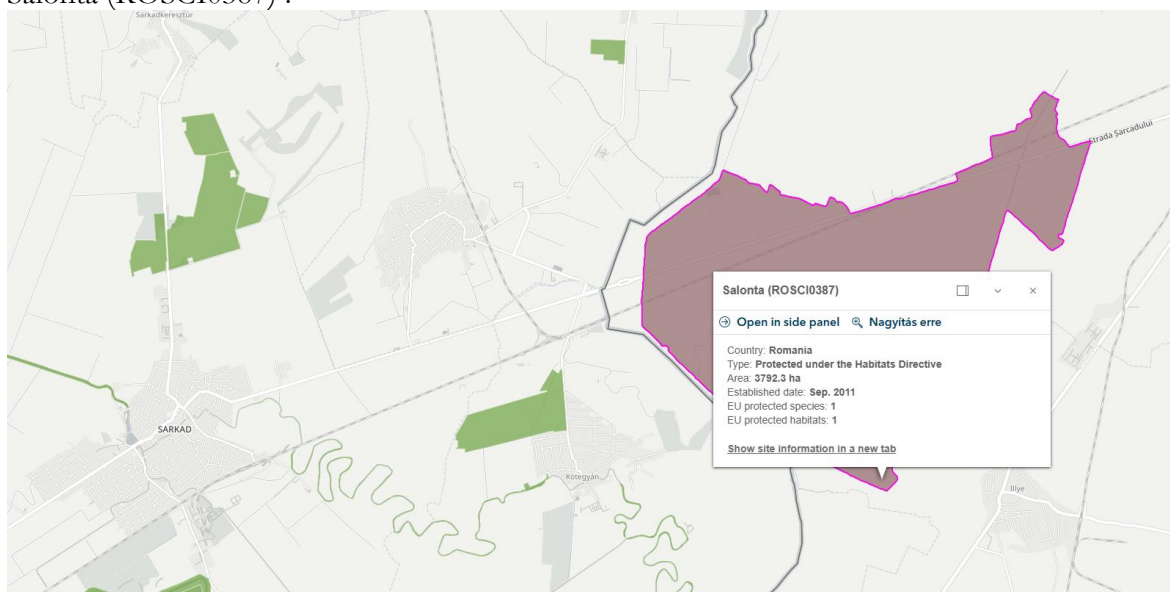


Fig 1. Natura 2000 site on the Romanian side

Based on field surveys, the presence of protected plant and animal species in the border area can be ruled out; therefore, the construction of the examined section of the M44 expressway poses no risk from a wildlife conservation perspective.

2.4. Air quality protection

The facility itself does not cause air pollution problems in areas beyond the border. Operation of the (Hungarian) section of the project will result in negligible air pollution in areas beyond the border. According to the impact assessment calculations, concentrations of air pollutants resulting from the projected traffic on the M44 expressway fall well below their limit values within 50 m of the axis (and even within 10 m). There are no buildings requiring protection within 50 m, so no protective measures are necessary. For the same reasons, monitoring measurements are not required near the border. The border crossing point is located several kilometres from the nearest Romanian settlements. Depending on its route and traffic volumes, the expressway may have an impact on the settlements it passes by. However, this can be assessed on the basis of the plans for the Romanian section, depending on traffic conditions there.

2.5. Noise and vibration protection

The facility itself does not cause noise pollution problems in areas beyond the border.

During construction work, the following sources will result in environmental noise pollution:

- construction technology
- construction machinery
- loading operations
- transport traffic.

Noise pollution stems from the movement of construction, transport and loading machinery. Noise from machinery is likely to cause problems only for buildings close to the road, and even then only temporarily.

In this case, it can be concluded that the increase in noise pollution is negligible, as there will be no transport traffic in the areas beyond the border and there are no buildings close to the border.

The operation of the (Hungarian) section of the project will result in negligible noise pollution in the areas beyond the border. According to the impact assessment calculations, the safety distance near the border is 180 metres, beyond which noise protection limits (65/55 dB day/night) are met, and the border crossing point is several kilometres away from settlements. Depending on its route and traffic volume, the expressway may have an impact on the settlements it passes by. This can only be assessed on the basis of the plans for the Romanian section, taking into account the noise protection limits applicable in Romania.

2.6. Protection of the built environment and cultural heritage

There are agricultural areas along the border strip; no residential properties are located in the immediate vicinity of the border. The construction of the expressway on the Hungarian side will have no impact on the built environment.

2.7. Landscape protection

From a landscape conservation perspective, the construction generally causes temporary changes, but its impact may also be permanent.

The construction of the motorway involves altering the terrain, creating cuttings and embankments, and causing temporary damage to the surface limited to the construction period in cases where land outside the expropriation area is used.

The aforementioned operations will take place exclusively within Hungarian jurisdiction, so the construction will have no impact on areas beyond the border.

3. DESCRIPTION OF MITIGATION MEASURES TO KEEP HARMFUL ENVIRONMENTAL IMPACTS TO A MINIMUM

Based on the studies carried out, no such impact is expected that would necessitate mitigation measures.

4. DETAILED DESCRIPTION OF THE FORECASTING METHODS AND THE ASSUMPTIONS ON WHICH THEY ARE BASED, AS WELL AS THE RELEVANT ENVIRONMENTAL DATA USED

The predictive methods are based on traffic simulation; the assumptions underlying the traffic-related studies and the models and results derived from them are presented below:

The traffic study was carried out using modelling during the preparation of the Study Plan at a macro-simulation level for the development area, i.e. it was conducted between the individual districts of the development area. All directions of movement relevant to traffic departing from or arriving at the defined area can be identified between the districts of the planning area.

In the traffic study, we assume that Phase I of the project will be completed by 2030 and Phase II will be handed over by 2033. We examine the traffic load for the year of commissioning and for a 15-year period following the handover of the entire project, up to 2048.

In 2030, upon completion of Phase I, the short section handed over will only be significant for short-distance, regional traffic, resulting in a traffic volume of ~1,300 EJ/day.

In 2033, traffic volume will vary between 6,800 and 10,200 vehicles per day on the individual sections; traffic is expected to be lower at both ends of the section and higher on the section between Békés and Sarkad.

In 2048, the traffic volume will vary between 7,800 and 12,700 vehicles per day on the individual sections, with lower volumes at both ends of the section and higher volumes expected on the section between Békés and Sarkad.

There is no significant difference in traffic between the V01 and V02 variants.

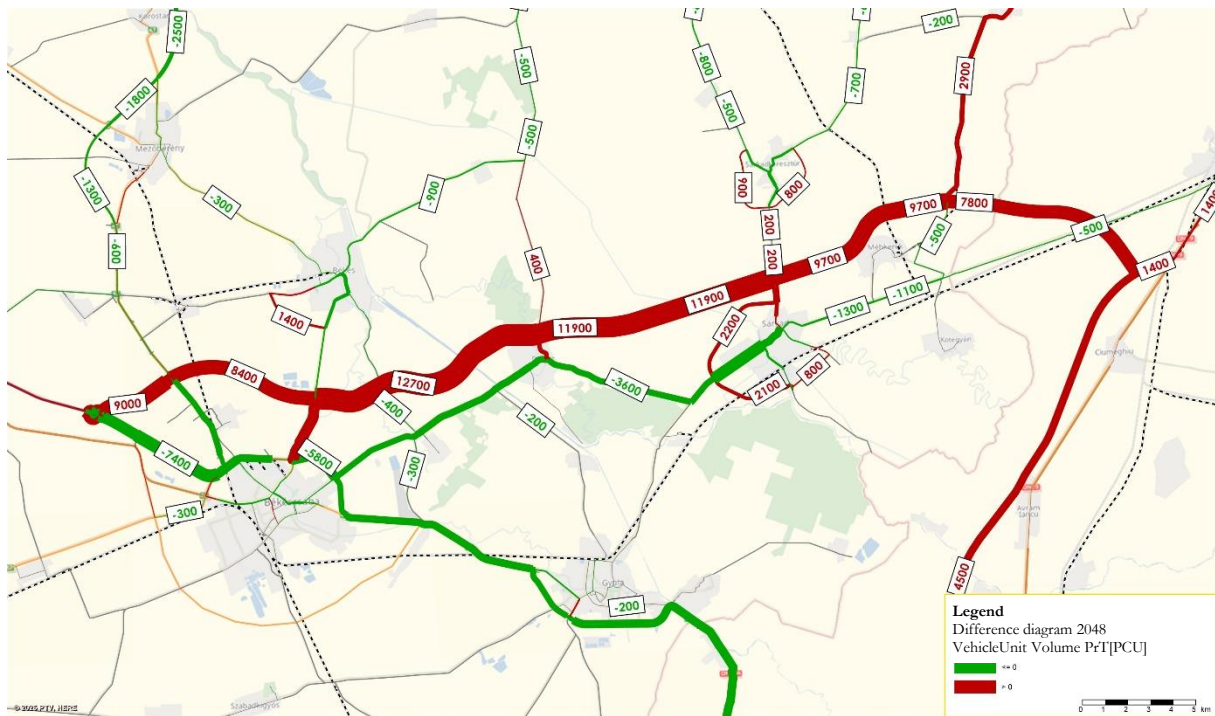


Fig 2. Expected traffic redistribution in 2048 (VehicleUnit/day)