

# LANDSCAPE STUDY



**LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL HIPPODROME PARK, MUREȘ RIVERBANK, TURBINEI CHANNEL**

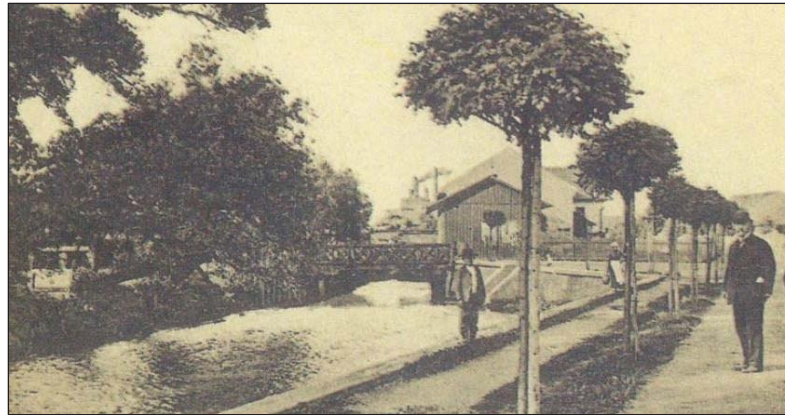
**LANDSCAPING ASSESSMENT, ANALYSIS OF THE EXISTING SITUATION, RECOMMENDATIONS**

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PARK, MURES RIVERBANK, TURBINEI CHANNEL

LANDSCAPING ASSESSMENT, ANALYSIS OF THE EXISTING SITUATION, RECOMMENDATIONS

TARGU MURES MUNICIPALITY, MURES COUNTY



SEPTEMBER, 2024

**Title of the work:** LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL HIPPODROME PARK, MURES RIVERBANK, TURBINEI CHANNEL

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Piata Victoriei, nr. 3, Municipiul Targu Mures, Judetul Mures

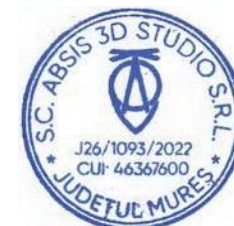
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## INTRODUCTION

Târgu Mureș is one of the Transylvanian cities whose development and evolution have been deeply influenced by the presence of watercourses, which have always been integrated into the urban structure. The spatial and morphological development of the city has been closely linked to these natural elements, and this relationship is still maintained today.

Numerous historical documents and maps provide evidence of how changes in the riverbed and diversions of watercourses have impacted the urban structure. In his work, Paul Niedermaier (*The Genesis of Medieval Cities in Transylvania*) mentions the existence of evidence that in the 19th century, the remains of a watermill were discovered in "Trandafir" Square, as well as the toponym "Mureșul Sec". These references, along with historical maps, suggest that the analysis of urban green spaces should also include an exploration of the historical evolution of watercourses.

In this study, we aim to examine urban green areas, and the watercourses designated according to these principles. After an in-depth analysis of historical sources, we assessed the current state of these spaces. This analysis aims to present the relevant landscape aspects in the architectural-urban context and the natural environment. The working methodology is based on information collected from field visits, online research, and historical cartographic studies. The recommendations formulated for the analyzed areas aim to stimulate development proposals that focus on the conservation and valorization of existing natural heritage.

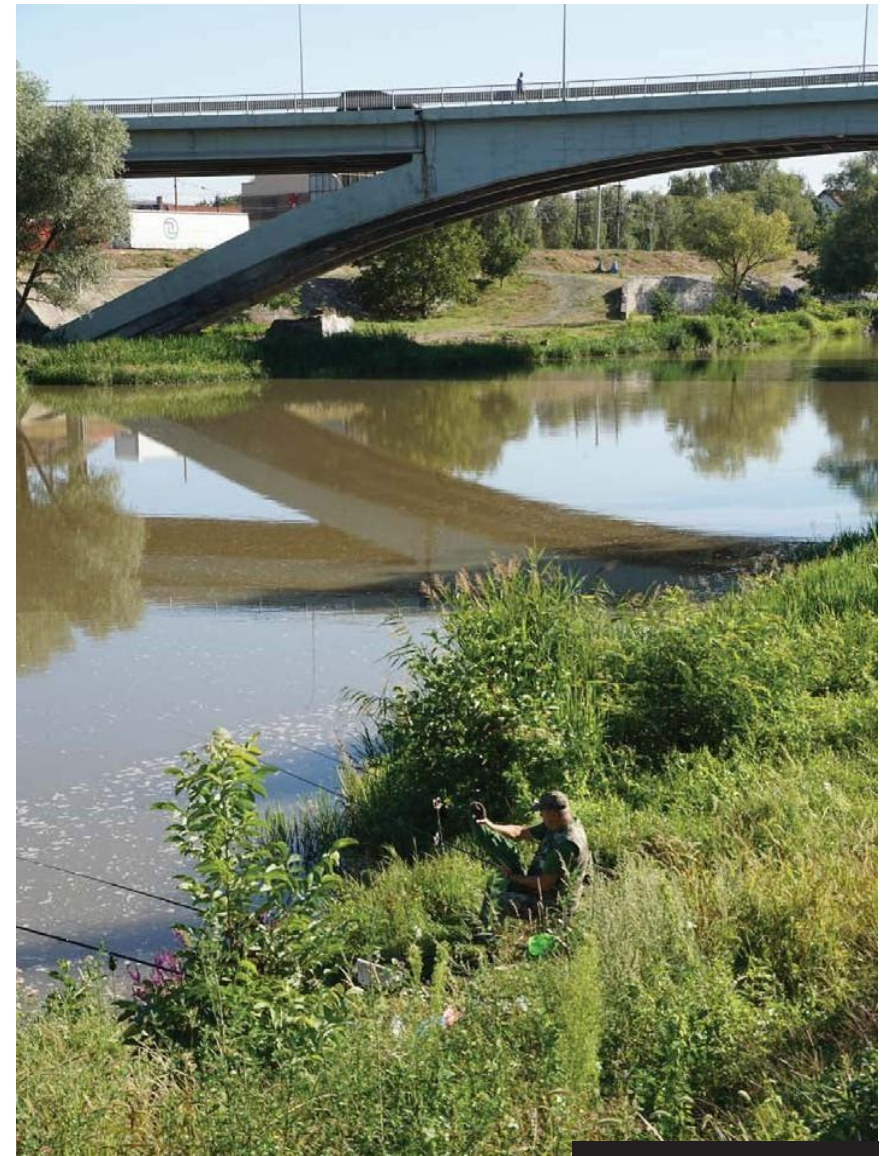


Figure no. 1: Fisherman on the banks of the Mures River



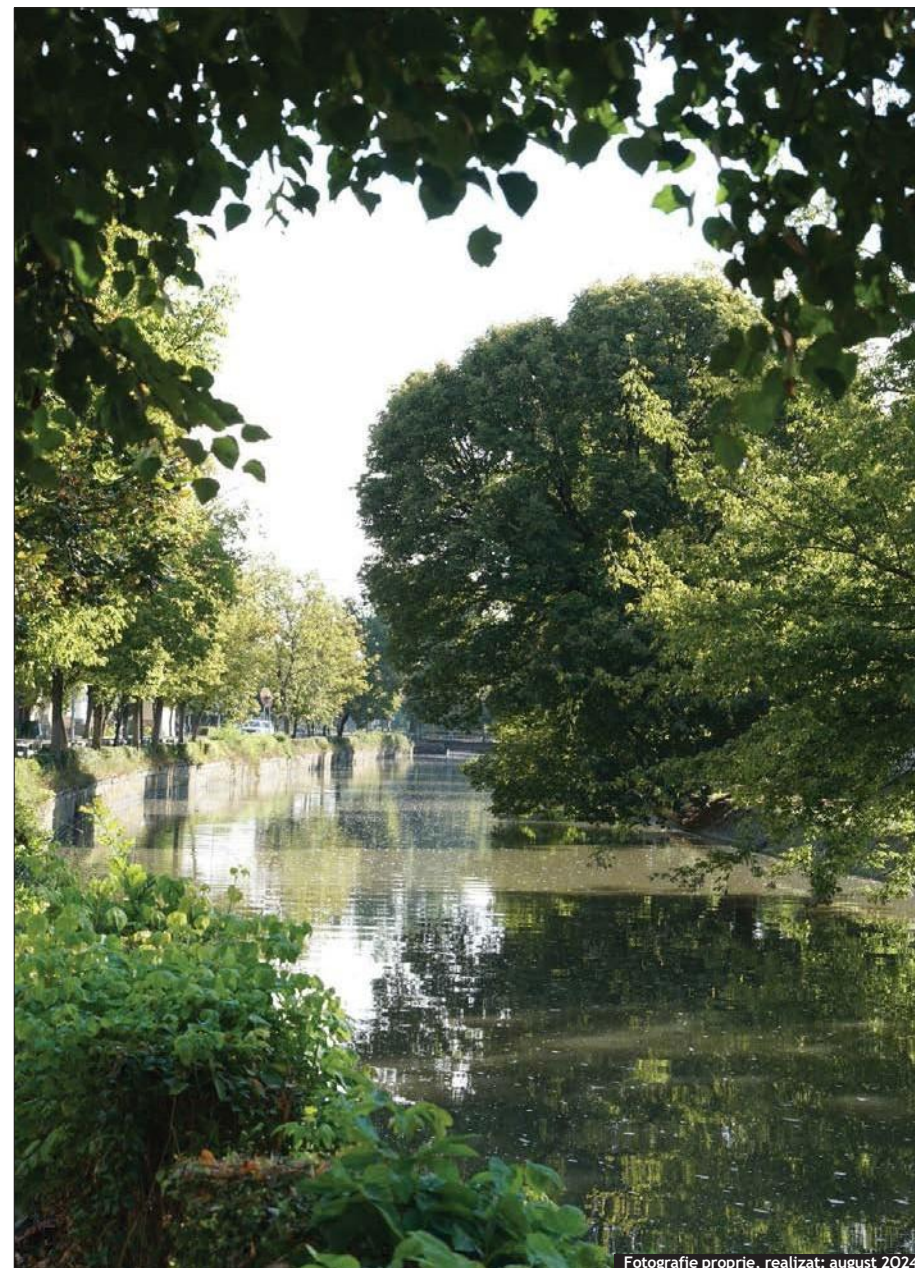
## PURPOSE OF THE STUDY

The Municipality of Târgu Mureș is organizing, in collaboration with the Romanian Order of Architects, a design competition for the investment objective "*Hipodrome Municipal Park*". The area proposed for study, located in the vicinity of the Mures riverbank, is emerging as an essential component in the green structure of the city, being part of an interconnected system of green spaces and having a high potential to contribute to increasing the quality of urban life by protecting and restoring biodiversity, by increasing air quality and by creating a pleasant, friendly and educational environment for leisure, sports, and tourism.

The purpose of the design competition is to obtain the best design for: Masterplan and development project for the regeneration of the green-blue network in the space between the left bank of the Mures and the old Mures meander/Turbinei channel.

The project is part of a broader process of increasing the quality of life and preventing and reversing the effects of climate change, reducing pollution by absorbing carbon dioxide, and reducing flood risks by absorbing rainwater, as well as reversing biodiversity loss.

Considering the above, in order to achieve the objectives proposed by the design competition, it is noted that there is a need to develop a landscape study for the study area established for the competition, which would substantiate the designs that will be proposed by the specialists.



Fotografie proprie, realizat: august 2024

Figure no. 2: Turbinei Channel in the Carpati Alley area





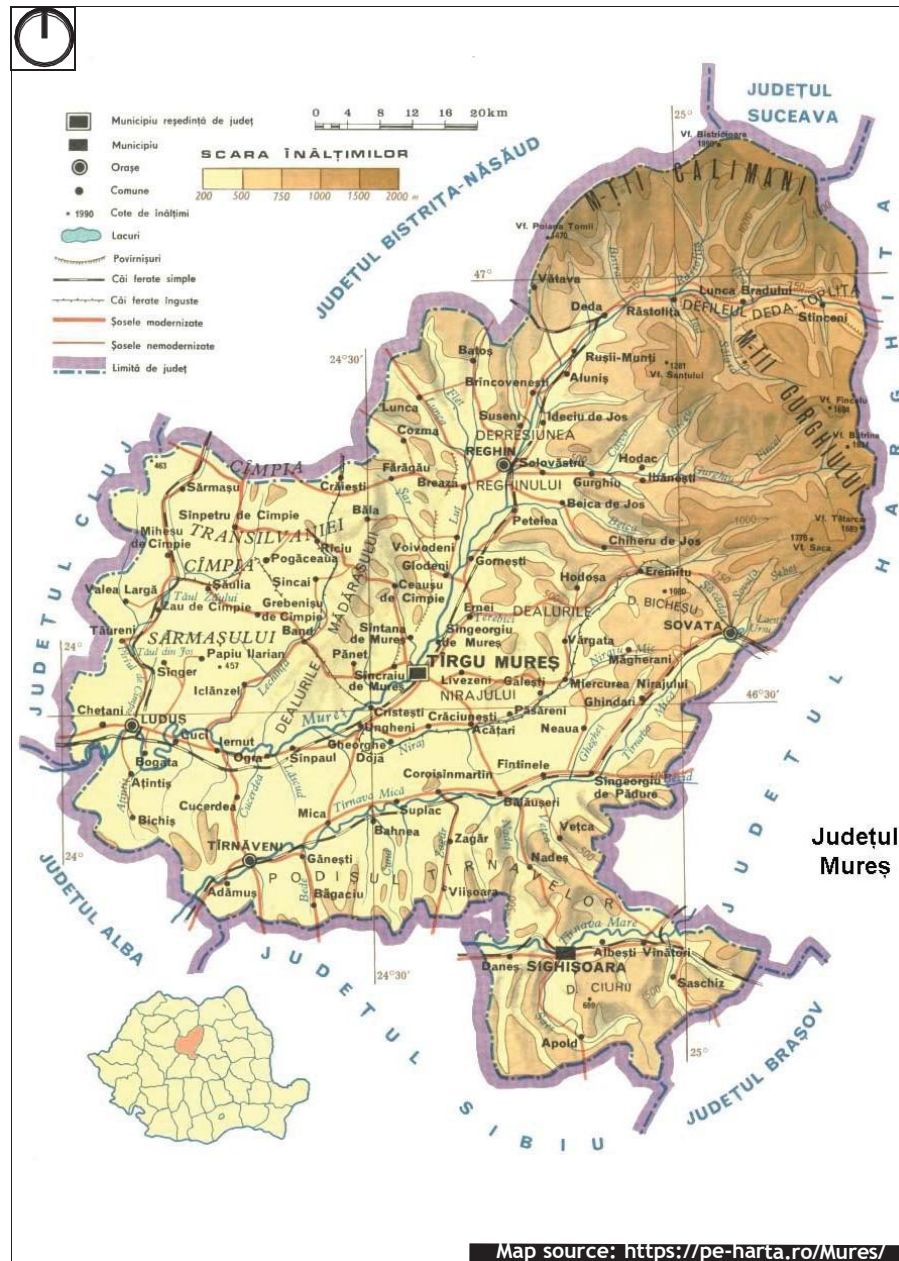


Figure no. 3: Map with relief areas of Mureș County

## NATURAL FRAMEWORK - LANDSCAPE ANALYSIS AT MICRO AND MEZZO LEVELS

### RELIEF

From the point of view of relief, the Targu Mures Municipality has an advantage that makes it unique: just a few kilometers towards the four cardinal points, you can find plains, hills, or mountains.

The hearth of the town is arranged in altitude levels as follows: between 310 meters on the Mures meadow and 450 meters on the top of the Cornesti hill. The arrangement in altitude levels gives it a pronounced amphitheater configuration. The wide Mures valley offers easy access to the town. Along it, communication routes, roads, and railways, were channeled, which developed, boosting the evolution of the town. The very name of the town as "fair" suggests the position at the intersection of important roads between regions with varied economic potential, between which there were exchanges of products. [1.]

The area where the city is located is one of the areas with the weakest seismic activity reported nationally, being preferable for the location of activities that require a high degree of protection against seismic risk.

[1.] General Urban Plan of Targu-Mures Municipality - Substantiation Study - Economic Potential and Development Perspectives of Targu-Mures Municipality, page 22



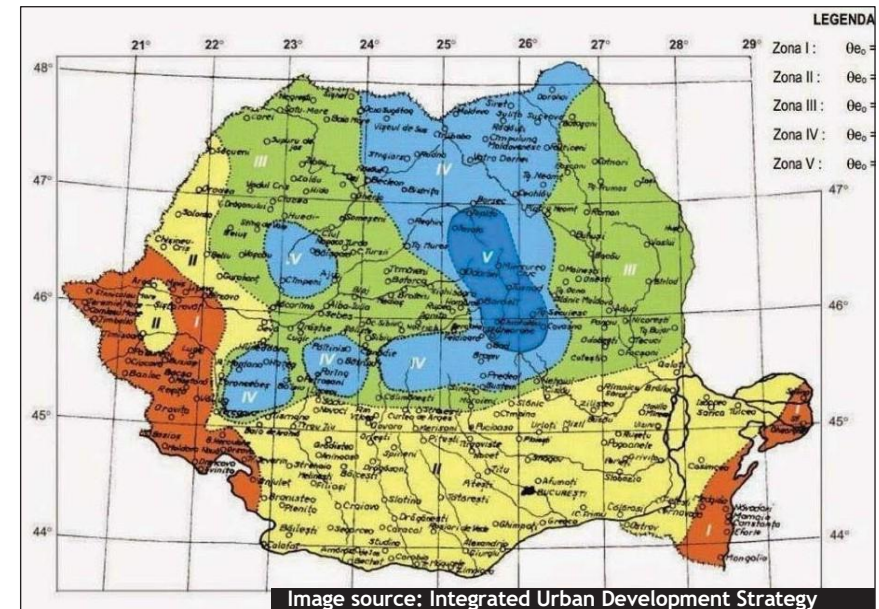
## CLIMATE

The climatic features of the area are a consequence of its position in the center of Transylvania, respectively in the temperate-continental climate zone. The average thermal amplitude is 23-24°C. Absolute maximums can rise to 38-39°C, and absolute minimums can drop below -32°C.

Atmospheric precipitation is not very consistent, reaching around 600 mm annually. Atmospheric humidity is quite high (77% annually). Torrential rains are not very pronounced. Temperature inversions are quite frequent in the city perimeter, although the Mures Valley attenuates their intensity.

The most frequent winds are those from the northern and north-western sectors, favored by the general orientation of the relief and, especially, by the orientation of the Mures Valley corridor. One of the important pieces of information needed to calculate the heat loss of a building is that relating to the climatic zone in which the building is located. Depending on this, the calculation external temperature is established, which, in turn, decisively influences the thermal exchange through the elements that make up the building envelope.

Târgu Mureș is located in climate area IV, with minimum temperatures down to -21°C. [2.]



[2.] Integrated Urban Development Strategy of Targu Mures Municipality - 2016 -2023

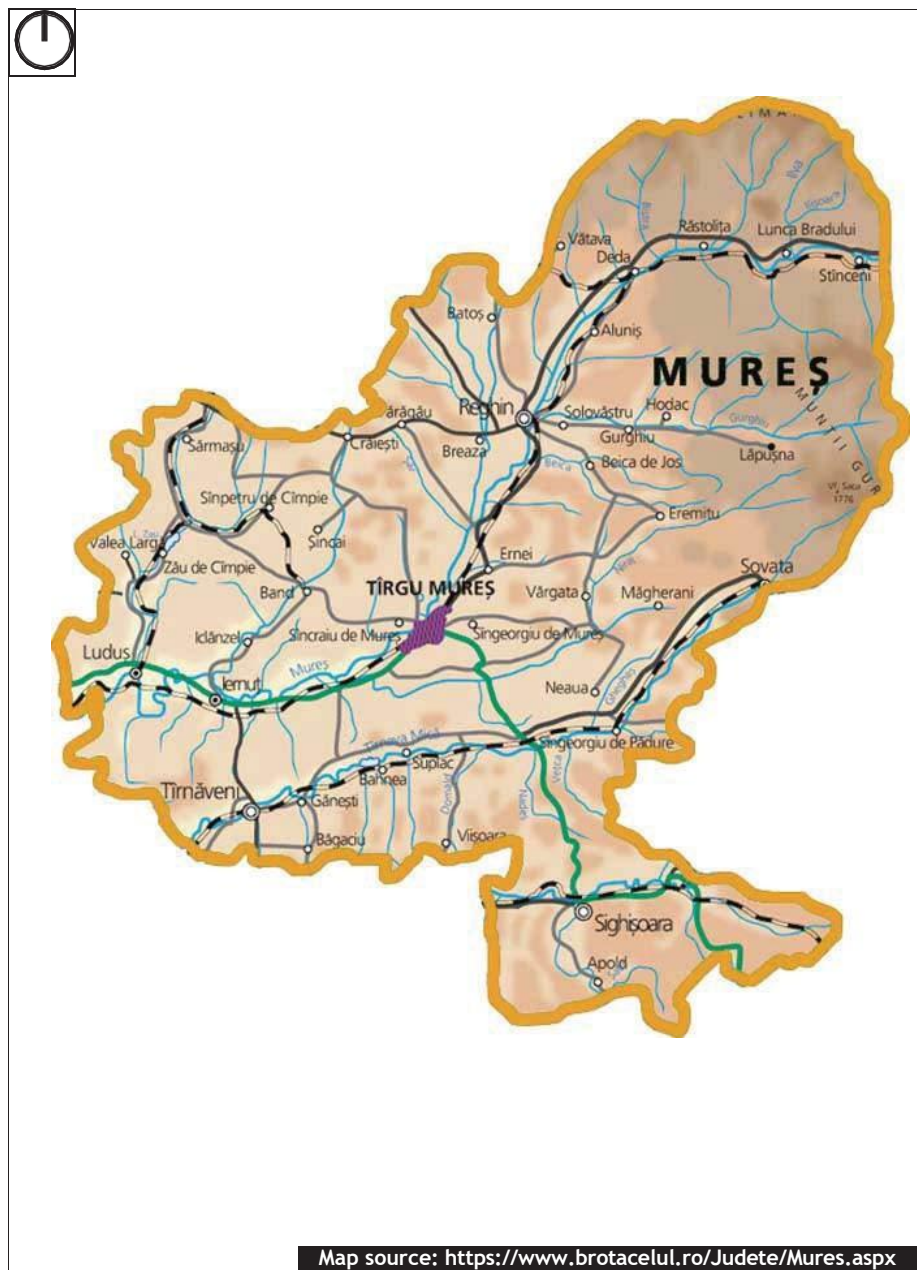


Figure no. 5: Hydrographic network of Mureș County

## HYDROGRAPHY

The hydrographic network of the county belongs entirely to the Mureș River, which springs from the Hasmasu Mare Mountains, being the main water collector in the entire Transylvanian basin. The Mureș River crosses the county territory over a length of 187 km, from Ciobotani, where it enters the county, and downstream of Chetani, where it leaves it. Other more important watercourses that cross the county are the Tarnava Mica River, the second longest in the county (115 km), the Tarnava Mare River (43 km), the Niraj River (78 km), and the Gurghiu River (55 km).

Lakes, ponds, and retention basins complete the hydrography of the county. The municipality of Targu Mures is also crossed by the Mureș River, for a length of approx. 9.1 km, the city stretches on both sides of the river (more pronounced on the left side). The city's urban area is also crossed by 5 streams:

- Poclos stream
- Salty stream
- Budiul stream
- Mureseni stream
- Cocos stream

Poclos stream springs from the hills of the villages of Corunca, Acataari and Livezeni and enters the territory of the Municipality from the southeast. It crosses the Tudor Vladimirescu neighborhood, passes through the central area of the city and flows into the relict meander of the Mures river. Quantitatively, it can be characterized by maximum flows with the insurances of 0.5% (148 mc/s) and 2% (96 mc/s). Qualitatively, upstream of the confluence with the Mures River, of the five quality classes, it enters the quality class

IV-a (polluted). The high pollution level is due to organized rainwater runoff, especially from the Tudor Vladimirescu neighborhood and the spillways of the unified sewage system, as well as unorganized pollution from the rural and urban areas visited.

**Budiu Stream** springs from the hills in the upstream area of Budiu village, with a course parallel to the first section of Budiu street, continues on Bega street, crosses Gh. Doja street and the railway lines in the area of the railway station, crosses Gh. Doja street and the railway lines in the area of the railway station, crosses the Depozitelor area, and after a short section parallel to Libertatii street, leads the waters into the Mures river downstream of dam no. 2 (AzoMures). Quantitatively, it is characterized by maximum flows of 2% (42 mc/s), respectively 0.5% (63 mc/s).

**The “Róka” stream** is a tributary of the Budiu stream. It enters the municipality from the south, passes behind the Dambul Pietros neighborhood, but before entering built-up areas it joins the Budiu stream.

**Beşa Stream** enters the municipality perimeter from the northwest, parallel to the municipal road DC 136 Tg. Mures - Madaras. Parallel to Remetea Street it crosses the Remetea neighborhood, then leaves the urban area parallel to Ceilingor Street, crosses the territory of the Sancraiu de Mures commune, having the confluence with the Mures river immediately downstream of dam no. 2 (AzoMures).

Cocos stream arrives in the city centre from the south-east, passes through the Baumax and Metro supermarkets, crosses str. Gh. Doja,

passes downstream of the AzoMures territory and its floodplain area, with a confluence point with the Mures river downstream of AzoMures. The maximum characteristic flows are: with 0.5% insurance (43 mc/s) and with 2% insurance (20 mc/s).

**Salty stream enters** the municipality area from the northeast. It was once connected to Weekend Lake. Along with the regularization works, the Weekend Recreation Area was also dammed and the **Salty** stream was diverted and led towards Mures, with a confluence point upstream of dam no.

#### **Sources of drinking water in the administrative territory of the municipality:**

- surface sources are represented by the watercourses that cross the built-up area, of which only the Mures River has a permanent flow, therefore suitable to be taken into consideration as a source for water supply.
- - underground sources. Their flow rate is extremely low and shows great variability in time and space.

#### **Water surface:**

There are two lakes in the northeast part of the city as follows:

- the artificial Turbinei channel having a length of 1.6 km and an area of approximately 0.51 ha.
- the lake in the Weekend Recreation area with an area of approximately 5.2 ha.<sup>[3.]</sup>

[3.] Update of the General Urban Plan of Tîrgu Mures - Substantiation study: Major municipal equipment - 2010

## Major sources of water pollution in the Tg. Mures Municipality

The main sources of pollution of water bodies are the returns of insufficiently treated wastewater from the chemical platform SC AZOMURES SA Targu Mures and the municipal treatment plant, operated by SC Compania AQUASERV SA Targu Mures.

The river section, located downstream of the Tg. Mureş Municipality is affected from a physicochemical and especially bacteriological point of view, due to the pollution produced by SC AZOMURES SA and SC Compania AQUASERV SA (Cristesti Wastewater Treatment Plant). During 2009, the quality category on this section was determined by the nutrient regime indicators. Particular problems with these indicators occur in the months with low flows (January, February, July, August, December). This river section is considered sensitive to eutrophication due to the concentrations of nutrients, nitrogen, and phosphorus compounds.

Diffuse sources of water pollution negatively influence the water quality of the tributaries of the Mures River. Thus, the water quality of the Poclos stream is deteriorated due to the unorganized discharge of domestic water and waste, and the Cocos stream is affected by the leachate from the municipal waste landfill. Groundwater is mainly affected by exfiltration from the internal sewage networks of social and economic objectives, municipal sewage collectors, the 30 ha landfill on the SC AZOMURES SA chemical platform and unorganized waste disposal.<sup>[4.]</sup>

[4.] Substantiation study on environmental protection - Related to the General Urban Plan, Tîrgu Mures Municipality - 2010

Currently, although there are favorable locations, they have not developed wetlands in or outside the city. The water of the Mures River, upstream of Targu-Mures, generally meets the quality requirements for a drinking water supply source. However, at low flows, some indicators (chemical oxygen consumption, ammonium, nitrates, phosphates) are exceeded. The most important sources of pollution of the Mures River, upstream of the city, are: Reghin Water Treatment Plant, SC Testsuin SA Gorneşti, the ballast pits, the Sarat stream, which brings dirty water from the Sângeorgiu de Mures area, and the Voiniceni stream, which brings impure water from the Santana de Mures and Cevasu de Campie areas.

- On the territory of Târgu Mureş Municipality, the water of the Mureş River is additionally polluted due to:
- the discharge of domestic wastewater through the discharge openings of the collectors in the municipal storm water sewer network, as a result of incorrectly executed connections;
- wastewater discharges through sewer outlets, spillways that control the unitary sewage system, due to their hydraulic incapacity;
- pollution of tributaries (Pocloş, Sarat, Budiu, and Mureşeni streams), caused by wastewater discharges through storm drains, faulty connections, improper waste management, and the lack of domestic sewage systems in these localities.<sup>[5.]</sup>

[5.] Integrated urban development plan of Tîrgu Mures Municipality - 201



## BIODIVERSITY

### FLORA AND FAUNA

The flora and fauna respect the geographical zonality imposed by the latitude, with three levels emerging: beech (*Fagus sylvatica*) at over 700 m, oak (*Quercus petraea*) between 400-700 m, and oak groves in the corridors of the main hydrographic arteries. Intrazonal vegetation appears in river meadows, near lakes, on saline lands and is represented by poplar (*Populus* sp.), willow (*Salix* sp.), reed (*Phragmites australis*), bulrush (*Typha* sp.), sedge (*Carex* sp.), hygrophilous and halophilous species. The fauna includes deer (*Cervus elaphus*), wild boar (*Sus scrofa*), wolf (*Canis lupus*), rodents (*Rodentia* sp.), insects, numerous species of birds and fish. Several species of fish also live in the Mures River, such as: asp, perch, crucian carp, carp, tench, trout, roach, catfish, zander, pike, and chub.

The largest forest area in Tîrgu Mures is located at the highest elevation of the city, the Great Forest, on the Cornesti Plateau. This is located 505 m above the Black Sea and 190 m above the town and is made up of oak and hornbeam. The oak and hornbeam forest, called "Great Forest", offers ideal conditions for the zoo's animals and is part of the 2000 Nature Site: "ROSCI10342 Tîrgu Mureş Forest". The Platou Zoo is a place of attraction for locals and tourists, being the largest, most diverse, and populated in Romania. Currently, there are around 500 animals belonging to 120 species, both local and exotic fauna.



Figure no. 6: Plant species from the spontaneous flora

On the terraces of the Mures River, especially the lower ones, recent alluvium dominates as well as hydromorphic and swamp soils. In the meadow areas, alluvial and lacostyle soils appear, soil types generated both by the parental material and by the hydro-geological and hydrological characteristics of the area.

The hilly area is covered with a layer of black soils, brown acid soils, colluvial soils, chernozems, and regosols. In the case of watercourses with small or seasonal flows (e.g. Poclos), tributaries of the MureS river, gleyic soils from the hydromorphic soil class develop.





Figure no. 7: Study area (competition area)



## DATA REGARDING THE LOCATION OF THE STUDY AREA

The study area has an area of approximately 65.26 ha, is located on the left bank of the Mures River, is located on the administrative territory of the Municipality of Târgu Mureș, and includes the following sub-areas delimited according to the attached plan, respectively:

- Left bank of the Turbinei Channel, from the Weekend Complex to Furnicilor Street - Margaretelor Street
- Left bank of the Turbinei Channel, from Furnicilor Street to Calarasilor Street
- Right bank of the Turbinei Channel, from Weekend Complex / SGA Mures to Calarasilor Street -Carpati Alley Street
- Banks of the Turbinei Channel in the area of the Water Plant
- Uzinei Street
- The left bank of the Turbinei Channel, Tamás Ernő str
- Municipal Park Area - including the stadium, the entire Municipal Park, except for the Multipurpose Hall, the artificial ice rink and the headquarters
- T.V.R. - only interstitial spaces
- Access area to the Hippodrome adjacent to the railway/Insulei Street
- Poclos Stream - the discharge area into the Turbinei Channel
- Natural area of the canal
- Access area to the Hippodrome adjacent to the north - Insulei Street and the 3 neighboring fields
- The Hippodrome area itself
- Area adjacent to existing buildings Hippodrome
- Mures bank area
- UTR V1A left bank of the canal, Rovinari area
- UTR V4 channel downstream of Barajului street

The land consists of public property and private property that is intended to be expropriated. The site is currently developed with individual parking lots. [7.]

[7.] DESIGN BRIEF for the preparation of the Landscape Study necessary to substantiate the HIPODROM MUNICIPAL PARK Design Competition.



## HISTORY OF THE AREA

### ABOUT THE SEWAGE SYSTEM AND MEASURES TAKEN FOR ANTI-FLOODING

In 1831, the engineer József Sófalvi made a project that would have regulated the course of the river with its three arms and three bends. The already mentioned hydrological works also included the wooden bridge built in 1821 by Bodor Péter over the Mureș River, which was unique in that it did not contain a single iron nail. Since this bridge proved insufficient for crossing the river, the Rákóczi Bridge, designed by the royal engineers Béla Fodor and Dénes Péterffy, was built shortly after. The first bridge was damaged as a result of the First World War, and the second was destroyed during the Second World War.

The Chief Architect of the city, Jelinek Antal, presented the development plan of the Mures and the Morii Canal to the city hall on July 30, 1889. In order to carry out this project, the city purchased the mill of the Reformed church, in the place where the headquarters of the Water Management Directorate is located today. On July 27, 1900, Jelinek Antal proposed to the local council the construction of a dam and a canal, on which an electric generator would also be built.

At the request of furniture manufacturer Farkas Mendel, a water collection arm was built, which brought the water needed



Sursă fotografie: <https://gallery.hungaricana.hu/>

Figure no. 9: View of the city of Targu Mures (postcard from 1941)

to extinguish fires, closer to the factory, but it also functioned as a landing stage for processing tree trunks transported on rafts. The latter was used to develop the space used for boat trips within today's Weekend Leisure Complex. In 1909, a plan was drawn up that presented the development of the Mures River and the Poclos stream.<sup>[8.]</sup>

Construction of the sewage system of the city of Târgu-Mureș was initiated at the end of the 19th century. However, a significant development was observed under the mandate of Mayor Bernády György. In 1913, the *Water Monitor (in Hungarian Vizügyi Közlemény)*, series 3, no. 5, mentions that Târgu-Mureș is one of the cities that experienced a vertiginous development at the beginning of the century. It also refers to the fact that, during the choice of sewerage systems, it had to be taken into account that, on the area to be subject to the works, there were two tributaries of the Mures River, the Morii Pond (currently the Turbinei Channel) and the Poclos Stream. These open water areas were still at a considerable distance from the sewerable area, so rainwater could only be discharged into the river through the sewerage system built for this purpose.

The main collector of the sewage network is adjacent to the Mures River and flows into it under the residential areas of the city. Due to the relatively low altitude of the lower part

[8.] Vajda Gy. (People's newspaper) "Népújság". Százéves a marosvásárhelyi régi gát. 2013, December, 05. Source: <https://nepujsg.ro/articles/szazeves-marosvasarhelyi-regi-gat>

of the city, the sewage water cannot flow freely and directly into the river, except rarely, and most of the time, the wastewater will have to be pumped artificially. The artificial filtration of wastewater has not yet been a topic of discussion, because the Mures, even at its highest elevations, has dissolved the wastewater to such a large extent that it has ensured its unhindered discharge into the Mures. Therefore, it is easy to see that the discharge of wastewater into the Mures River is not a new phenomenon in the city of Targu-Mures, because the situation was the same at the beginning of the last century. The major difference compared to now is that the volume of toxic and non-degradable substances in the wastewater was much lower at that time.<sup>[9.]</sup>

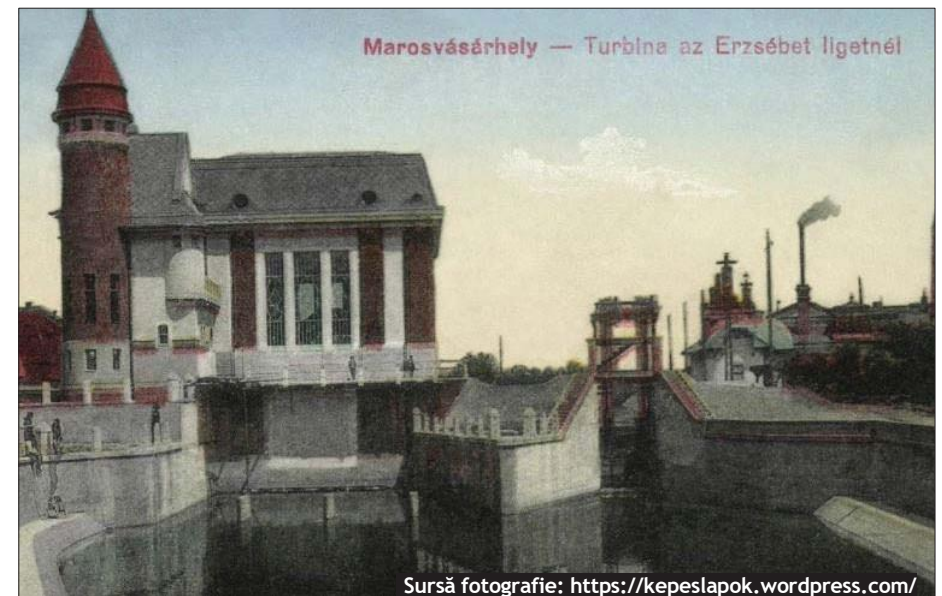


Figure no. 10: Turbinei Channel near Elisabeta Park(1916)

[9.] Forbáth I. (Sewerage of the city of Targu Mureș) Marosvásárhely kánálvezása. 90-106 - 1913 Source: <https://hungaricana.hu>

## AREA MAJOR FLOODS IN THE HISTORY OF THE CITY OF TÂRGU MUREŞ

Starting in the 1910s, numerous articles reported the problems caused in the city of Târgu-Mureş by the overflowing of the Mureş River, as a result of heavy rains. The article published in the daily newspaper "Északkelet" (*in Romanian Nord-Est*) in May 1912 mentions that in Târgu-Mureş, Ernei, and in numerous hamlets in the Mureş Valley, *"the flood swept away entire herds of pigs and cows"*. A note from the same year states that after the flood the army was involved in this hazard all night, because the citizens did not want to listen to the soldiers, refusing to leave their homes.<sup>[10.]</sup>

In the July 15, 1913 issue of the daily newspaper "Délmagyarország" (*in Romanian Southern Hungary*), it is mentioned that the floods also affected the city of Târgu-Mureş: *"The water rushed into the Elisabeta Park and also spilled over the stage. The water flooded the water and electricity plant, and thus its activity had to be interrupted. In Podeni, a commune neighboring Târgu-Mureş, the residents were in great danger. The rescue operation was impossible. The water brought entire houses with its waves. In Podeni, 22 houses collapsed."*<sup>[11.]</sup>

The floods of the fall of 1912 and the spring of 1913 forced the city to build the current "old" dam. A curiosity about the dam is that the middle sluice was designed to continue to allow the transport of

[10.] Veréczy E. (Northwest) "Északkelet." 3 sides. Végítélet Marostordában. 1912, május hó 27. Szatmáron.

## HISTORY OF THE AREA MAJOR FLOODS IN THE HISTORY OF THE CITY OF TÂRGU MURES

wood by raft. The costs of building the dam, recalculated at today's value (because at that time the official currency was the crown) exceed half a billion lei. The generator, powered by the dead branch of the Mures, today's Turbinei Channel, cost considerably less. In keeping with the fashion of the time, the turbine hall was built in the Secession style.

The newspaper "Keleti Újság" (*in Romanian Ziarul de Est*) from April 1932 reports on the floods caused by the Mures river in the territory of the city of Târgu Mures. The newspaper analyzes several aspects of the disasters caused by the floods: *"The overflow of the Mureş also endangered the city of Târgu Mures. The Podeni area (in Hungarian Hidvég) in the peripheral area on the right bank was in great danger, because it was completely flooded. During the day yesterday, several commercial and residential buildings collapsed in the overflow that reached a level of two meters. The flight of agitated animals and frightened people offered a desolate image. The city's firefighters carried out a dedicated activity with permanent boat races to help the victims."*<sup>[12.]</sup>

The article also mentions that rail traffic became impossible between Târgu-Mureş and Bandi, because all the access roads between the two towns were flooded. In the area of Strandul Ritz, the banks were so damaged that the construction of a protective dam became inevitable, because without it, the Mureş could have

[11.] (Southern Hungary) "Délmagyarország". A Tisza és Maros mengéti Szeged Környékét. 1913, july, 15. 3 pages.

[12.] (East Newspaper) "Keleti Ujság". Rendőzál alapos és éles kritikában résésítéte Gyárfás szenátor a hórumel közgazdasági politikáját. XV. ÉVF. 81. SZÁM. Bucharest. April 6.



torn a valuable and considerable territory from the city's surface. The riverside fortifications above the concrete dam must also be rebuilt, because the flood destroyed the dam built in 1928.

The April 1941 issue of the Hungarian Telegraph Office (*in Hungarian, Magyar Távirati Iroda*) reports on a new overflow of the Mures River and the serious damage that could be caused by the flood: *"The surroundings of the city of Târgu-Mureş, the outskirts called Podeni, and the national road that crossed the area were flooded. Traffic in this area was carried out with great difficulty. In the commune of Sancraiu de Mureş, the flood reached the end of the village, and the danger of flooding was also increased by the heavy rains that lasted for several days. In the peripheral areas of the city, the water also entered the houses. The level of the Mures exceeded the normal amount by approximately three meters. Among the nearby communes, Curteni, Cristuru de Mures, Santana, Santioana, and Chinari were underwater, in several places the flood waves washed away the railway embankment. Nirajul and Tarnava Mica They left their nest in places. Part of the cities of Reghin and Târgu-Mureş were underwater"*. [13.]

Following the floods of 1941, "the city councilors considered that 'It is time to take some serious measures against the increasingly worrying situation caused by floods'. [14.] In order to prevent damage caused by frequent floods, the local Council

submitted a request to the Ministry of Agriculture with a view to establishing associations against flooding of the Olt and Mures rivers, from government funds. In the spring of 1941, the Hungarian Telegraph Office reported that the most recent flood caused by the Mures river had prompted the prefectural leadership to study the problem of river management.

The decision was made to finance the development works by taking out major loans. The plans of the Office of Bridges and Roads were approved by the Prefecture. According to the plans, the redevelopment works were to be initiated in the same year, in the Glodeni area. [15.]



Photo source: <https://fortepan.hu/hu/photos/?id=348>

Figure no. 11: The dam on the Mures River in 1942

[13.] (Opposition newspaper) "Ellenzék". 1941, April 1. 62 ÉVF. 74-98.

[14.] Hézszer ZS. (Hungarian Telegraph Office) "Magyar Távirati Iroda". 1941, April 10. 40. release

[15.] Konecsni K. (Hydrological Report) "Hidrológiai Közlöny". A kisvizek kacetsei. 90. ÉVF. 1 No.



The July 1943 issue of the newspaper "Ellenzék" (*in Romanian Opozitia*) reports on the completion of some hydrological works to redevelop the banks and on the process of initiating other stages of the work. The completion of the general redevelopment was, however, hampered by the fact that only the upper course of the river came under the jurisdiction of Hungary at that time. The hydrological redevelopment works in the upper course of the Mures had to be started with caution in order to avoid the danger of flooding its lower course. In the Niraj Valley, the redevelopment works of the Vetca stream, to which the flood waters were to be redirected, were underway. <sup>[16.]</sup>

Shortly after, the war spread to Transylvania, so that on September 7, 1944, the retreating German troops bombed the city's economic buildings, including the dam and bridges. Under the coordination of Chief Architect Radó Kálmán, the three sites (the dam, the observation post and the turbine) were rebuilt relatively quickly between 1948 and 1949. The old dam deteriorated in 1969. The largest flood in the city's existence on May 10, 1970, caused major damage both in the city and on the site. This was followed by a considerably smaller flood, but which caused quite significant damage, in 1975, with the mention that this time the Poclos Stream caused more material damage than the Mures River. From that moment on, only maintenance work was possible, then after the Revolution, between 2009 - 2012 The Mures Water Directorate

[16.] Konecsni K. (Hydrological Report) "Hidrológiai Közlöny". A kisvizek kacetsei. 90. ÉVF. 1 No. 2010. 05.

## HISTORY OF THE AREA MAJOR FLOODS IN THE HISTORY OF THE CITY OF TARGU MURES

started major rehabilitation works from its own funds: it was renewed and modernized not only the old dam, but also the embankment on both banks of the Mures. In addition to this operation, the upper area of the dam was deepened to facilitate the supply of the water plant. This was the largest modernization work in the entire existence of the dam. The building was declared a historical monument for restoring its "original splendor" both technically and architecturally. The systems that operate the sluice gates still function today, with the difference that instead of manual force, they are operated with electricity. Their mechanical components are the original ones that are already 100 years old. <sup>[17.]</sup>

### THE MUDDY STREAM, THE TURBINEI CHANNEL AND THE MURES RIVER

In the past, the Poclos stream flowed as one of the branches of the Muresu river also through today's Trandafirilor Square, so that the two water courses really influenced the life of the city. This state of affairs was practically maintained until the 19th century. Mátyus István, a renowned physician of the Mures County, drew the attention of the city's citizens, as both the defensive moat of the fortress, as well as the marshy bank of the Mures River in the immediate vicinity of the city could constitute possible foci of infection and that for this reason some hydrological works would be necessary. The first effective intervention was proposed by the French engineer Houchard

[17.] Vajda Gy. (People's newspaper) "Népújság". Százéves a marosvásárhelyi régi gát. 2013, December, 05.

Joseph and was completed between 1816 and 1817. This is how Elba Island was laid out, which later became the city's Central Park. Also, the Bodor Péter fountain was built on the city's water supply system. It was fed from the spring flowing near the fortress, respectively from a 300-gallon collection basin.

The first major regulation of the Poclos stream took place during the term of Mayor György Bernády, in the first decades of the last century. At that time, the Serpuitor Poclos stream was somewhat regulated. After the floods of the 1970s, the regulation of the Mures and Poclos streams was discussed again. Subsequently, a series of studies were published that proposed basins that control the volume of water and store water in the vicinity of the villages of Livezeni and Corunca, including the Vatman and Sasvar streams. The plans and strategies developed in recent decades emphasize the watercourses that appear on the city's canvas and that are not sufficiently used. Today, one of the possible directions for development would be to create blue-green corridors, and "green roads" along the rivers could adequately connect the parks and green areas adjacent to the waters. The constant flow of the Poclos stream has not been resolved to date, nor has the case of uncontrolled water flowing into the watercourses. [18.]

[18.] Vajda Gy. (People's newspaper) "Népújság". Százéves a marosvásárhelyi régi gát. 2013, December, 05.



Figure no. 12 - The floods of 1970



Figure no. 13 - The floods of 1970

## MURES RIVER AND BAIA RITZ FROM TÂRGU MUREȘ

In 1883, the town of Targu Mureș, Károly Ritz, had a fabric dyeing factory on Călărașilor Street. Károly bought the melon field and the orchard on the banks of the Mures River, sold individual plots of land, and repaid the loans for their purchase from the proceeds. On the remaining plot, he built a house and established a textile dyeing and polishing factory, and next to it he created a Strand, at the entrance of which he later built a restaurant and a pastry shop. The proximity of the water facilitated the basic activity of the dyeing factory, the processing of wool, which was washed, spun, pressed and dyed. Later, the business was expanded to include a dry cleaner.

Because travel was difficult at the time, initially, they would go by horse-drawn carriage to the fairs in the Transylvanian Plain, Reghin, where they would collect materials for dyeing and sewing, and then return with the finished product.

In the 1930s, the restaurant became increasingly famous, it was mostly operated independently, but there was also a period when it was rented. The area between the Mures River and the Turbinei Channel was often inundated by floods that destroyed buildings and washed away the reinforced bank. The repair cost a lot of money and he was officially promised reimbursement of the costs, but he only recovered them after 1940 and unfortunately the money was taken by the Second World War.

In the third volume of the book "Időtár" written by Mihály Sebestyén (*Historical Chronologies of Targu Mures*) which traces the history of the city between 1919 and 1944, one can often read about the Ritz bath, which, according to information published in newspapers, was of great interest to the public. We can also read a detailed description of how it looked at that time: "bridge over the Mures, open beach, boat rides, diving tower and slide, beach area built of cement, sand pools, swimming pools for women and children, gymnastics equipment".

The development of the business was interrupted by nationalization. The factory was nationalized in 1949, when approximately 36 people worked in the painting, processing and cleaning plant, the buildings of which were transformed and which still exist to a large extent today.

The Baia Ritz was not just a bath, but also an industrial complex, where Mr. Ritz had a dyeing, washing and cleaning factory. An extendable wooden bridge was built on the waters of the Mures River, reaching almost to the other bank, from where, after a few steps, one could reach the other bank.

Those who wanted to see the Mures Valley had the opportunity with the help of rafts. The restaurant built on the land, in the 1930s, soon became famous for its sleepovers. That's why the street was called Somnului Street.



## HISTORY OF THE AREA MURES RIVER AND BAIA RITZ FROM TÂRGU MUREŞ

He brought machines from Germany, which were generally operated by 36 workers. In large water towers, the water was purified so that swimmers could get rid of the dirt of the Mures water, and small children could bathe in clean water in the pools. Those who wanted to get a tan sat in the sun on the balcony around the water tower. <sup>[19.]</sup>

LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL HIPPODROME PARK, MURES RIVERBANK, TURBINEI CHANNEL



Photo source: <https://transtelex.ro/>

Figure no. 14 - Baia Ritz in Targu Mures



Photo source: <https://transtelex.ro/>

Figure no. 15 - Baia Ritz in Targu Mures

[19.] (The people's newspaper) "Népújság" - A Ritz család titka.  
Source: <https://www.e-nepujsag.ro/articles/ritz-csalad-titka>)

## MUNICIPAL PARK - ELISABETA PARK

According to historical sources, during the famine of 1816-1817, Houchard József, a horticultural engineer of French origin, created the first public urban park called Elba Island. At that time, it was called Elba Island, to remind him of his hometown. Later, it was called Elisabeta Park, and today it is known as the Municipal Park.

The Elba Island is among the city's top recreational spots, being equipped with "*elegant, hot and cold baths, brick rooms, and an adequate restaurant*".

According to available sources, József Houchard requested permission from the city council on August 12, 1814, to develop a pleasure garden on a plot of land near the Canal de Morii. The council, taking into account the good intentions of the French engineer, ceded the land for the purpose of developing a pleasure garden for a period of 15 years. Thus, the first location known as Elba Island was established.

József Houchard died in 1841, and in 1858 the city council decided to erect a granite pillar in his honor. Money was collected for the construction of the monument, but not enough was collected. On July 21, 1905, in the meeting of the municipal commission, it was decided to build a tennis court and a

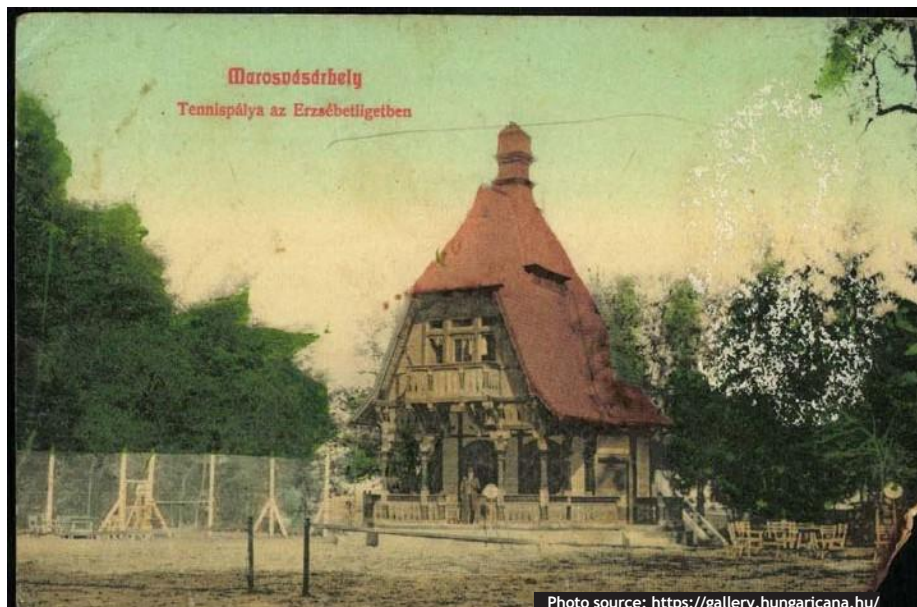


Figure no. 16 - The Tennis Court in Elisabeta Park, interwar period.



Figure no. 17 - Elisabeta Park at the beginning of the 20th century.



pavilion in Elisabeta Park, and to include a corresponding inscription commemorating its creator. The costs of these works were covered from the fund intended for the memorial monument of József Houchard. Although the tennis court and the pavilion were successfully built, the placement of the commemorative plaque dedicated to Houchard was not possible.

At the end of the century (1890-1914), new functions appeared in the park, which led to a new social and cultural importance in the life of the city. During this period, the name of the park was changed to Elizabeth Park, in honor of Queen Elizabeth.

A theatre was also built, where the best Hungarian theatre troupes in Transylvania performed for a long time. The first public bath with hot water in the city was also established here. In 1905, a tennis court and a pavilion were built from the funds collected for the erection of the granite pillar in memory of Houchard.

On February 6, 1916, an ice festival and fireworks display, accompanied by military music, were organized at the skating rink in Elisabeta Park, the proceeds being intended for disabled soldiers. Starting with the spring of 1916, several large-scale events were organized in the city, attended by Archduke Franz Joseph, Archduke Joseph, and Archduchess

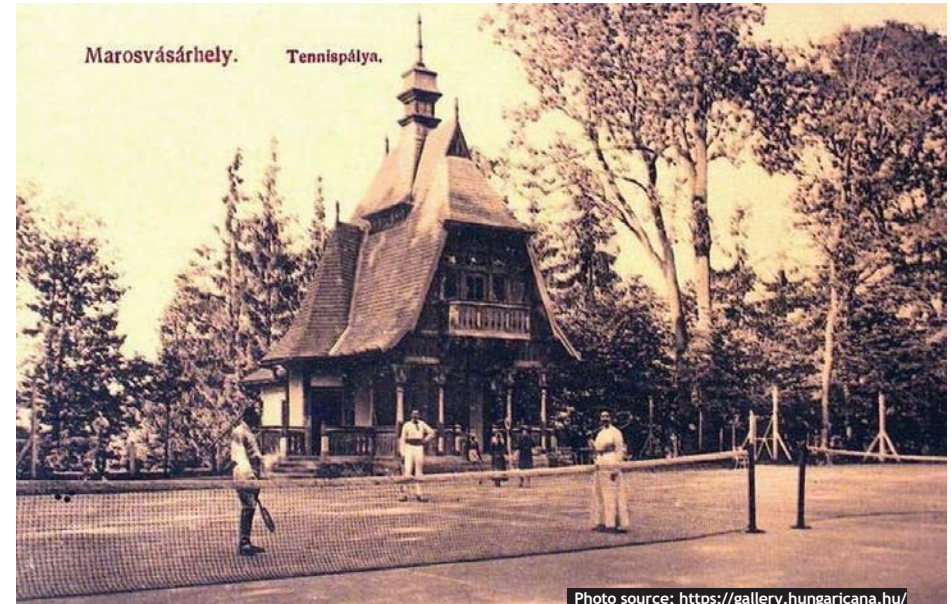


Figure no. 18 - The Tennis Court in Elisabeta Park, interwar period.



Figure no. 19 - Elisabeta Park at the beginning of the 20th century.



Augusta.<sup>[20.]</sup> Currently, the park is known by several names: Park, Municipal Park, Municipal Sports Park, the most recent name emphasizing the way in which the functions of the area have been reinterpreted and the emphasis placed on them. In addition, the social and cultural role of the park is worth mentioning, as it still hosts numerous events. Among the events organized in the Municipal Park are: the Valtoarea Mureseana Festival (in Hungarian *Vásárhelyi Forgatag*), the Wine Festival, concerts, City Days, firemen's meetings and meetings of vintage car collectors.



Photo source: <https://maszol.ro/>

Figure no. 20 - Valtoarea Mureseana Festival in the Municipal Park



Photo source: <https://www.dreamstime.com/>

Figure no. 21 - Meetings of car collectors in the park

[20.] Sebestyén M. (Chronological history of Mun. Tg. Mures - II.). "Időtár II., Marosvásárhely storényti kronológiája 1848-1918, Marosvásárhely" - 2010





## HISTORICAL CARTOGRAPHIC ANALYSIS OF THE STUDY AREA



Plan of the city of Târgu Mureș - (1750) - „Plan von der Marosch der Calvinischen Stadt Marosch Vasarhely”

The cartographic representation from 1750 reveals a watercourse with two branches, which start from the northeast of the fortress, but they go in two different directions. One of them crosses today's Trandafirilor Square, then stops at today's Bernády György Square. The other branch, likewise, starts from the north and goes south. In the northern part of the fortress, one can identify the relict meander of the Mureș River, which also has two arms interconnected at a point, on today's Republicii Street. At the meeting point of the two arms, one can assume the existence of a water mill.





### First Military Uprising of the Habsburg Empire - (1769 -1773)

The plan of the First Military Uprising shows the Mureș still irregular, its winding and winding bed flowing northwest of the city of Târgu-Mureș. It has several branches, in the vicinity of which one can observe how the formation of the following localities began: Mureșeni, Nazna, Sancaiu de Mureș, Remetea, Podeni. One can also see the construction of several bridges connecting Podeni and Târgu Mureș. The city of Târgu Mureș is notable for its pronounced development, which is delimited to the north by the relict meander of the Mureș River, today's Turbinei Channel. It has two branches, one of which crosses today's Revoluției Street, the other starts from the Relict Meander, interconnects on Revoluției Street with the other branch and continues its course northeast. According to the plan, the Poclos stream does not flow into the Mureș river, it divides into two watercourses, one of them crossing the center, and the other flowing at the border of the city of Târgu Mureș, in the southern part.

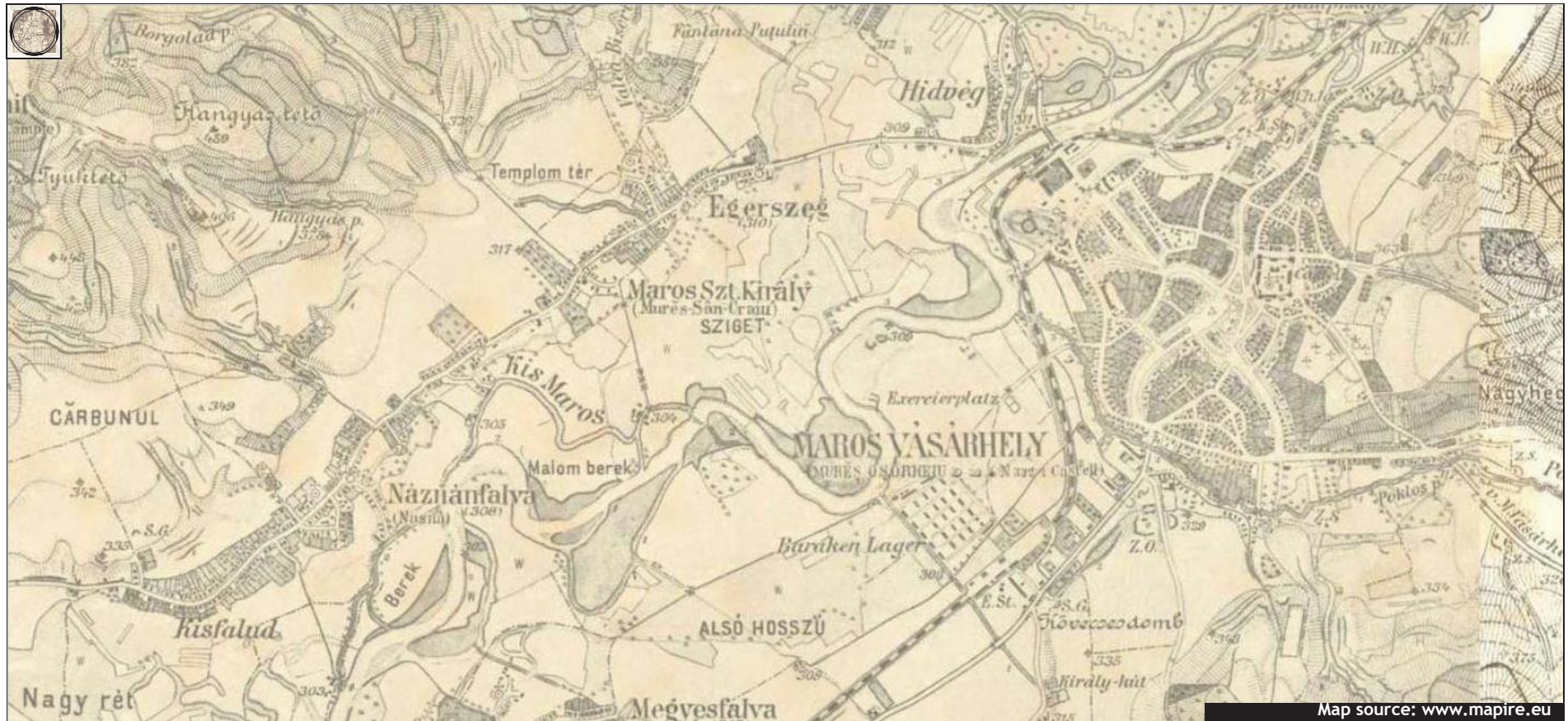




### Second Military Uprising of the Austro-Hungarian Empire - (1869 -1887)

During the Second Military Uprising, several interventions can be observed on the natural course of the Mureș River and its branches. The watercourse that previously ran through the city center disappears, the Relict Meander of the Mureș River is regulated, thus a wooded island appears, called Elba Island at the time. It appears surrounded by a water branch and the Canalul Morii and is divided into two by a main axis. The Canalul Morii begins its watercourse from the bend of the Mureș River, continues eastward and flows into the Mureș River. To the northeast, a relict meander appears, with a forest around it. The Poclos Stream appears as an irregular watercourse, which starts from the west, from the edge of the city and connects to a bend of the Mureș River.

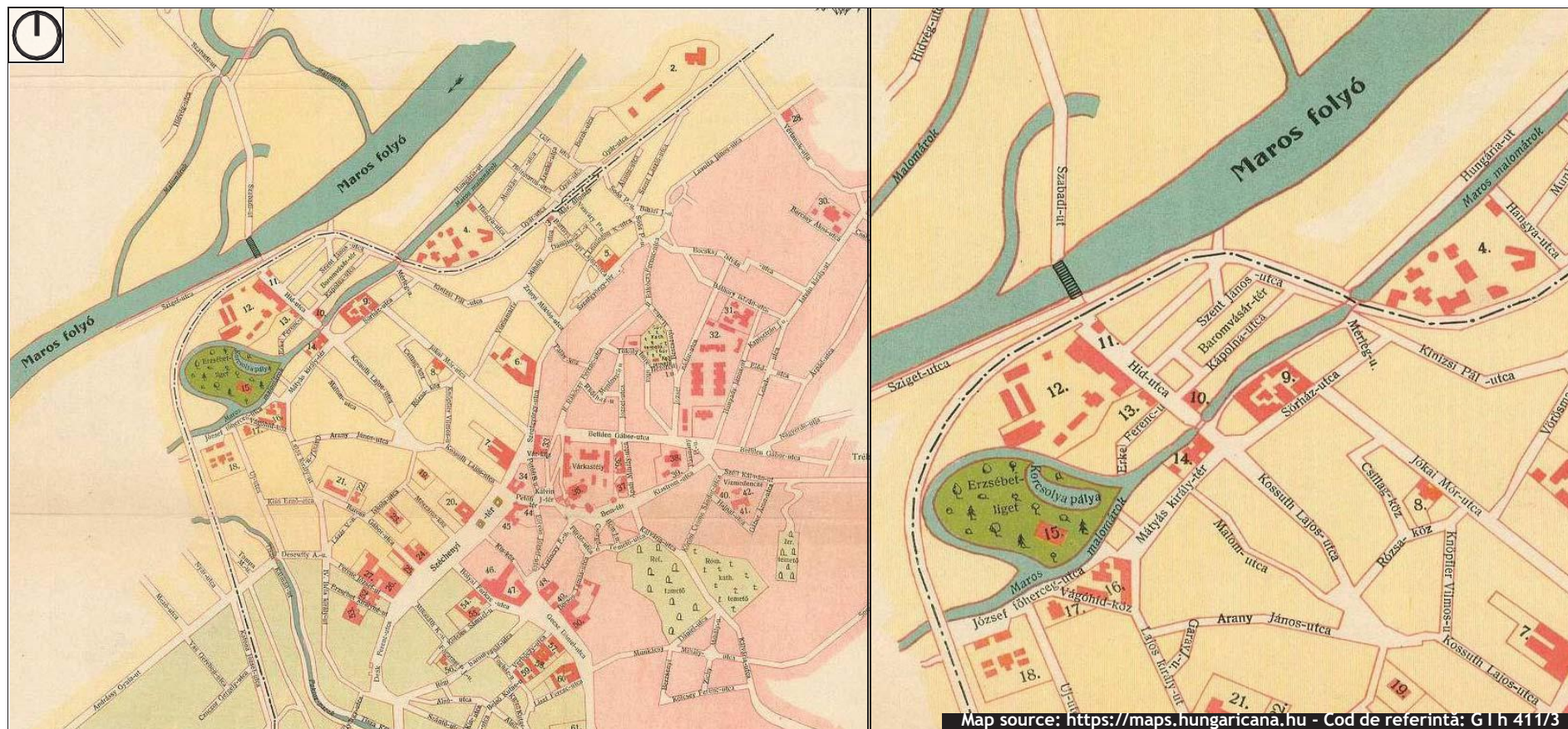




### Third Military Uprising of the Austro-Hungarian Empire - (1869 -1887)

In the Third Military Uprising, the railway network that influences the bed of the Mureș river and its branches is also present. It comes from the south, crosses the Poclos stream, the Morii Channel, continues its path in the vicinity of the Mureș river and heads northeast, along the Relict Meander towards Sangeorgiu de Mureș. The island of Elba appears surrounded by a water canal and inside with a network of roads and a roundabout. The route of the Morii Channel is also highlighted, which begins its water course from the bend of the Mureș river and the intersection with the railway, to the relict meander, which it crosses and flows back into the Mureș river. The Poclos stream is still visible with its curly bed.





Plan of the city of Târgu Mureș – "Free Royal City" - (Years 1900)

The plan from the 1900s shows the Morii Channel (in Hungarian Malomárok) with a well-defined route, without buildings in its vicinity. The island, previously called Elba, changed its name to Elisabeta Park, a name received in honor of the queen. It has a different structure than the previous one and different functions: a green area with trees, a water arm that extends into the park and is used as a skating rink, and a summer theater marked with the number 15. Military buildings appear around the park: no. 12 - Barracks of the Royal Hungarian Army, no. 14 - Summer Steam Bath, no. 16 - Barracks of Archduke Joseph, and no. 17 - Army Depot. The bed of the Poclos stream appears in its natural form, the location of its discharge into the Mureș river is not visible on the map.

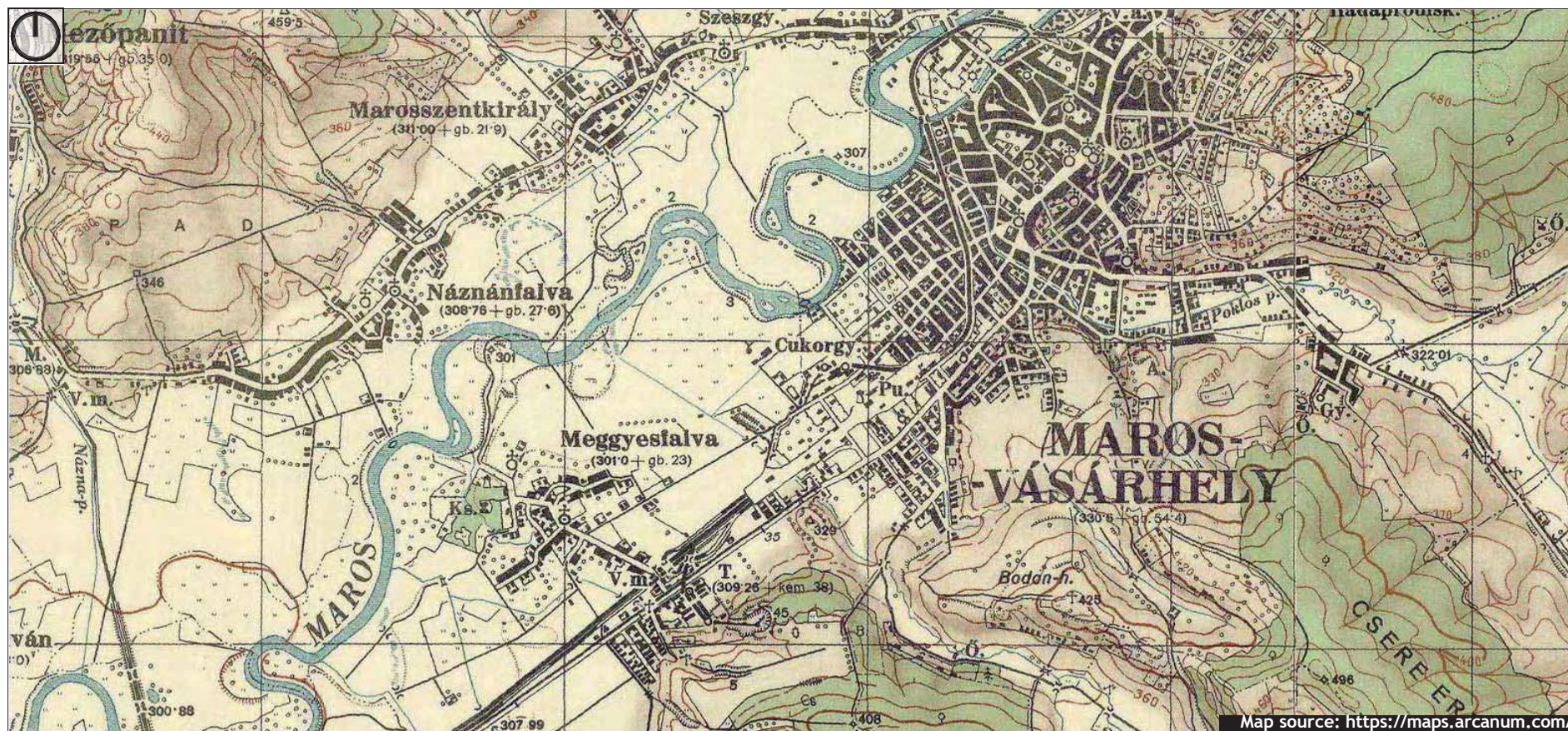




City plan of Târgu Mureș – "Free Royal City" - (1935)

The first Romanian cartographic representation of the city of Târgu Mureș appeared in 1935. The impressive detail of the map is constituted from both Romanian and Hungarian text fragments. The route of the Mureș River to Sanraiu de Mureș is still visible in its natural state. Along it, two wooded areas appear: Bercul de sus and Bercul de jos. The bed of the Poclos stream already appears in a regulated form. The Morii Channel here already appears under the name of the Turbinei Channel. The following functions appear in the territory of Elisabeta Park: no. 76 - City Garden, no. 77 - Barracks of Great Voivode Mihai, south of the park, with no. 78 - Primary School, no. 79 - Summer Bath, 80 - Communal Bath and with no. 81 - Turbine Hydraulic Power Plant. As a reflection of the past, northwest of Elisabeta Park, Insulei Street appears. We can observe two interesting things: the appearance of two islands in the Mureș River bed, west of Elisabeta Park, and the disappearance of the water channel that surrounded the park.

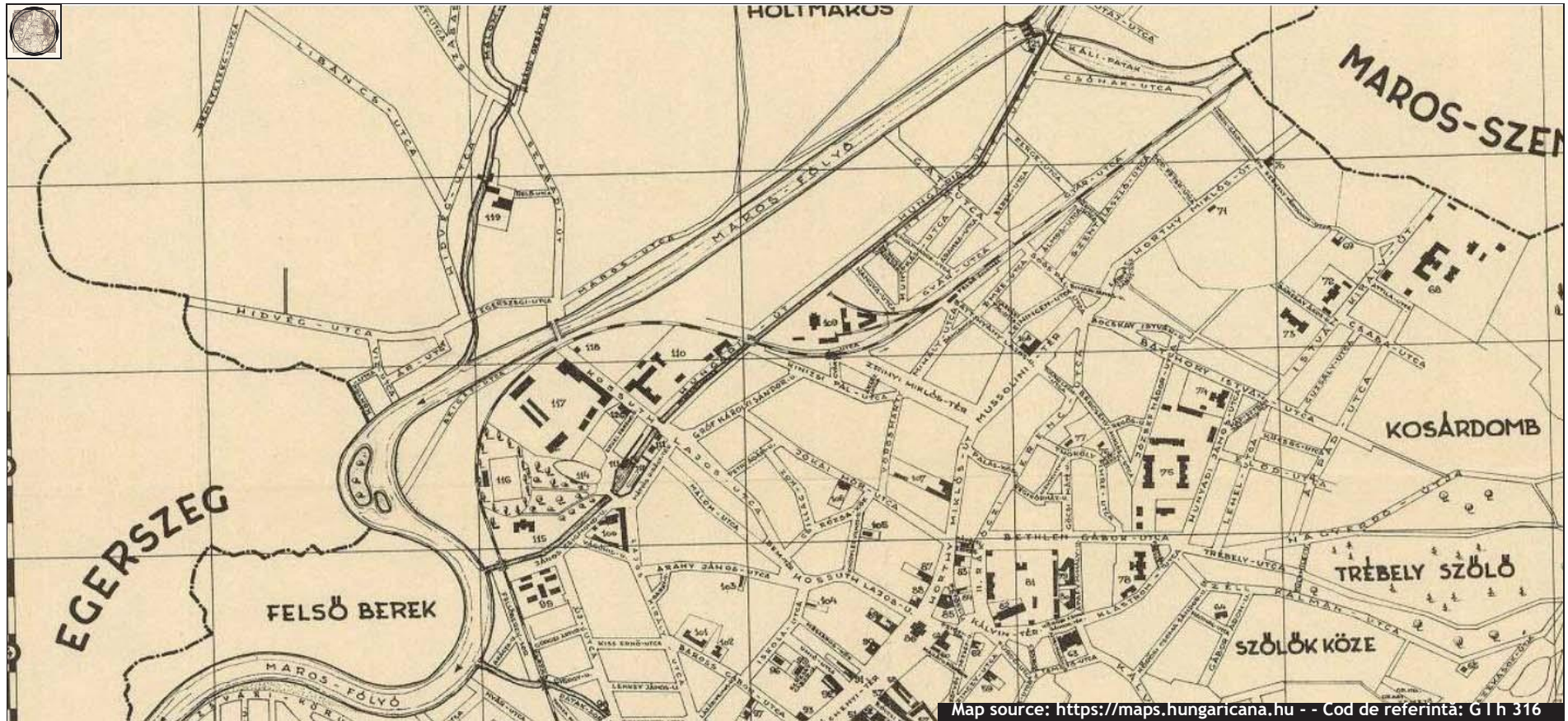




Hungarian Military Plan of the year 1941

The 1941 plan reveals a sharp development of the city of Târgu Mureș, on a larger scale. The Poclos stream can be identified, which appears with a well-defined shape, and the Mureș river with a serpentine shape, in the bed of which several islands appear. The Turbinei Channel appears with a regular, intermittent shape due to the railway and the road infrastructure that crosses it. In the western part of the park, several buildings also appear, between the curve of the Mureș river and the railway.





Târgu Mureș city plan - (1943)

The 1943 plan is on a smaller scale, with more detail, a clear infrastructure and more built-up areas. The railway that runs through the city follows the same route as today, which is also the boundary of the park. This map is very similar to the 1935 one, the only difference being the number of buildings built.





**Târgu Mureş city in military satellite images - (1966)**

Images captured by a military satellite in 1966 show the Mureş River in its natural bed, stretching towards Sancaiu de Mureş. On the section between the Turbinei Channel and the Mureş River, on today's Carpati Alley, can be seen strongly the crookedly built blocks. On the northern side of the Mureş you can see the dam, as well as the Mureş Bridge on the western side, which is used for crossing. Also, the football field next to the park is visible and new buildings have appeared on the park grounds.





Google Earth Map - (2024)

Starting in the 1970s, after long rains, both the Mureş River and the Poclos Stream overflowed, and many residential areas were submerged at that time. This led to the consolidation of the beds and banks of the two watercourses.





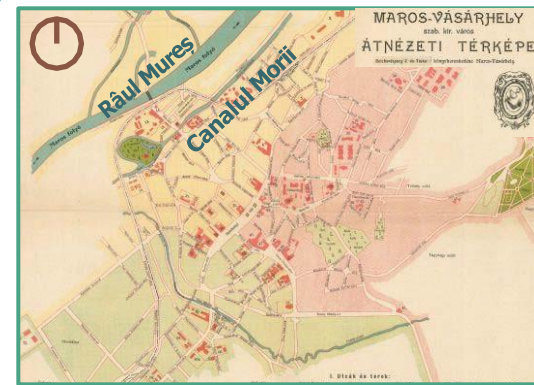
The cartographic representation from 1750 reveals a course of water that divides into two branches with different directions to the northeast of the fortress area. One of them crosses today's Trandafirilor Square, then stops at today's Bernády György Square.

1750



In the Second Military Uprising the course disappears of water that previously crossed the city center, the relict meander of the Mureș River was developed, thus creating a wooded island, called Elba Island at the time

1853



The plan from the 1900s shows the Morii Channel (in Hungarian Malomárók) with a well-defined route, without buildings in its vicinity. The island, previously called Elba, changed its name to Elisabeta Park, a name received in honor of the queen.

1900

## HISTORICAL CARTOGRAPHIC ANALYSIS OF THE STUDY AREA - EVOLUTION OF RIVER WATERS

1769 - 1773

The plan of the First Military Uprising shows the Mureș still undeveloped, its winding and winding bed flowing northwest of the city of Târgu Mureș. It had several branches, in the vicinity of which one can observe how the formation of the localities in the area began.



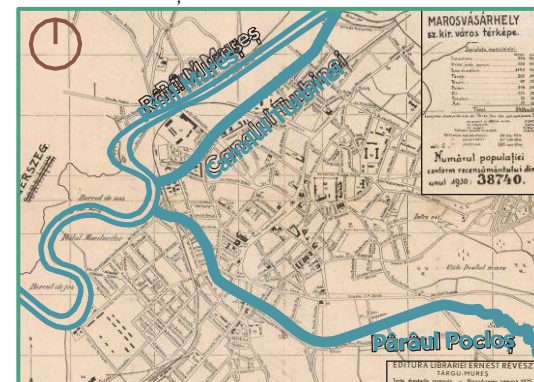
1869 - 1887

In the Third Military Uprising, the railway network also makes its presence felt, modifying the bed of the Mureș River and its branches. It comes from the south, crosses the Poclos stream, the Canalul Morii, continues its route in the vicinity of the Mureș River and heads northeast.



1935

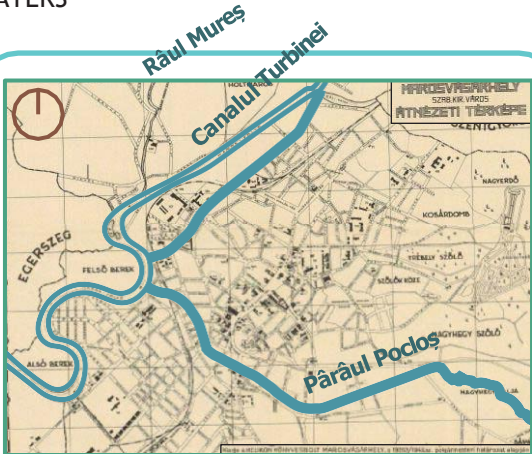
The first Romanian cartographic representation of the city of Târgu Mureș appeared in 1935. The detail of the plan impresses by combining Romanian and Hungarian text fragments. The route of the Mure River towards Sâncraiu de Mureș is still visible in the current situation.





HISTORY OF THE AREA  
HISTORICAL CARTOGRAPHIC ANALYSIS OF THE STUDY AREA - EVOLUTION OF RIVER WATERS

LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL HIPPODROME PARK, MUREŞ RIVERBANK, TURBINEI CHANNEL



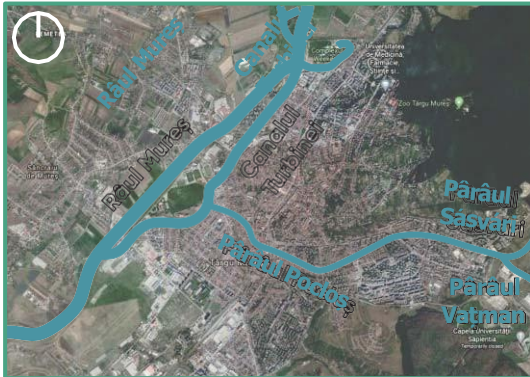
The 1943 plan is on a smaller scale but shows many details: a clear infrastructure with several built-up areas. The railway that runs through the city follows the same route as today, which also constitutes the boundary of the Park.

1943



Starting in the 1970s, following heavy and long-lasting rainfall, both the Mureş River and the Poclos Stream exceeded the hydraulic capacity of the riverbeds, causing extensive flooding in several residential areas.

1970 - 1981



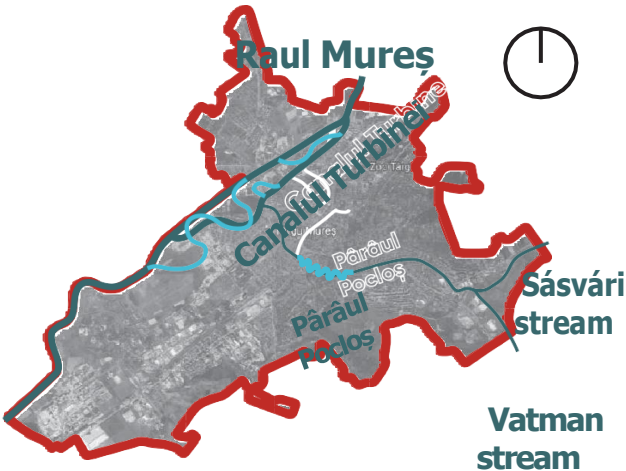
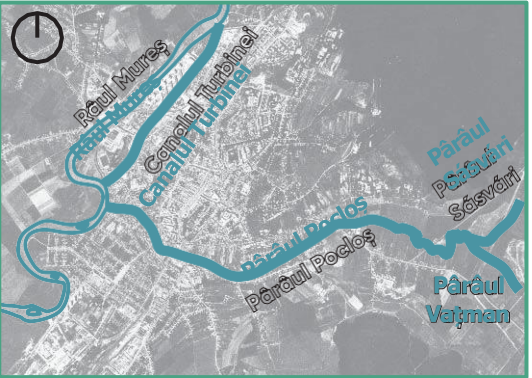
Starting in the 1970s, after long rains, both the Mureş River and the Poclos Stream overflowed their banks, and many residential areas were flooded at the time. This led to the consolidation of the riverbeds and banks of the two watercourses today.

2024

HISTORICAL CARTOGRAPHIC ANALYSIS OF THE STUDY AREA - EVOLUTION OF RIVER WATERS

1966

Military satellite images from 1966 show that the Mureş River was still visible in its natural bed, stretching towards Sâncraiu de Mureş. The football field next to the park can also be seen, and other buildings are starting to appear in the Hippodrome area.



LEGEND

- Urban limit
- The route of watercourses in 2020
- The route of watercourses in 20<sup>th</sup> century
- The route of watercourses in the 19<sup>th</sup> century.
- The route of watercourses in the 18<sup>th</sup> century.





Figure no. 22 - Zoning of the studied area



## FUNCTIONAL ANALYSIS OF THE EXISTING SITUATION ZONING

In the following chapters of the study, according to the division related to the Design Brief, the study area is analyzed in five distinct sub-areas. For a clear and detailed understanding, each sub-area will be addressed separately within the various specific analyses.

### **Area A - Turbinei Channel**

This area extends along an elongated surface, delimited by Carpati Alley and Margaretelor Street. The urban context presents an architectural diversity through the presence of both high-rise collective buildings and individual dwellings. The northern and northwestern area is characterized by a series of green spaces interspersed between the buildings, thus offering a diverse landscape relief. On this section there are several bridges along the Turbinei Channel, and the urban railway network also crosses the area.

### **Area B - Municipal Park (Elisabeth Park)**

The city's Public Park has undergone significant transformations, gradually losing its original functionality. The island of Elba, once a green area defined by the presence of water surfaces, is today subject to intense urban expansion, dominated by large buildings. The proportion of green space has been significantly reduced following the numerous urban interventions and changes of functions that have occurred in recent decades, thus affecting the landscape balance of the area.

### **Area C - Hippodrome**

A large undeveloped green space, which has major potential for its transformation into an urban public park. Although accessibility is limited due to its peripheral positioning, this isolation can be interpreted as an advantage, offering a quiet recreational space, away from the hustle and bustle and noise pollution of the city center.

### **Area D - Relict Meander of Mureş**

An area characterized by a landscape and ecological complexity. The right bank of the old course of the Mureş (northern part) is covered by dense and impenetrable vegetation, preserving fragments of orchards that belonged to the back gardens. This section presents a high ecological value by preserving the local biodiversity. The part adjacent to Ady Endre Street continues to be a point of attraction for fishermen and for those looking for quiet areas

### **Zone E - Mureş River Bank**

An extensive area of green space that currently serves mainly flood protection functions. However, the area frequently attracts residents for recreational activities, being visited by fishermen and citizens walking their pets. This green space offers opportunities for the integration of landscape design that could improve the quality of the urban environment and accessibility for recreational activities.



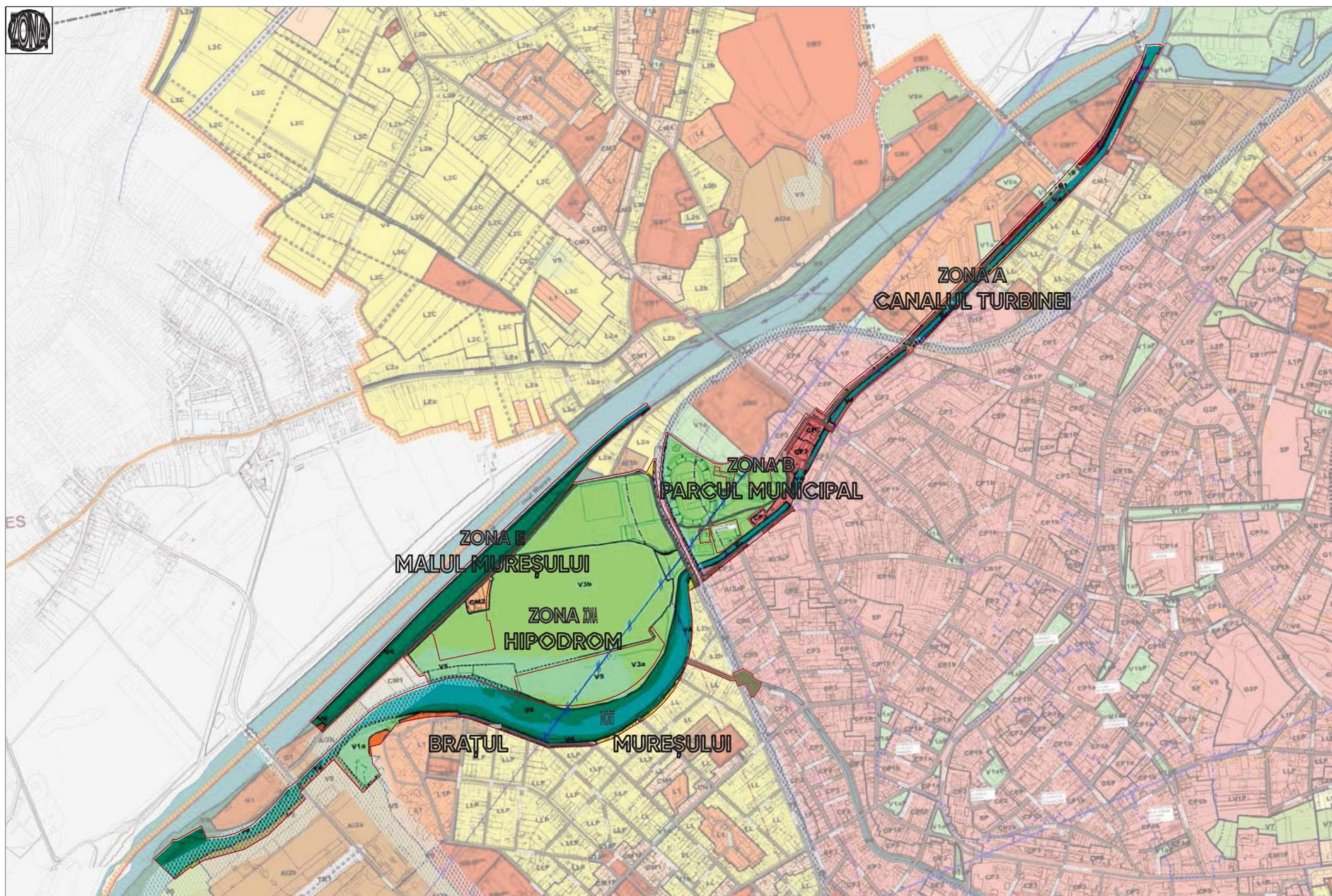


Figure no. 23 - General urban plan - Târgu Mureș



## REGULATIONS RELATED TO THE GENERAL URBAN PLAN OF THE TÂRGU MUREȘ MUNICIPALITY

### AREA A - TURBINEI CHANNEL

- **CB1P**- Existing dispersed sub-areas located within the Protected Built-up Area
- **CM3**- Sub-area formed by insertions of mixed functions and reconversions of dwellings located predominantly on the ground floor into other functions, in the existing fronts consisting of collective housing blocks
- **V1a** - Parks, public city and neighborhood gardens, squares in the central area or in residential complexes and public planted strips
- **TR1** - road communication routes and related facilities (roadway platforms, their protection strips, areas affected by vertical systematization works, engineering constructions, road junction surfaces, etc.)
- **V4** - Green spaces for the protection of watercourses and wetlands
- **LL** - Area of small individual and collective housing, in isolated and grouped construction regime, with height regime G, G+1, made based on pre-established lotteries
- **DC**- Sub-area of existing neighborhood centers and neighborhood centers in expansion areas
- **V5** - Protective color for technical infrastructure
- **G1P** -Area of constructions and facilities for communal management located in the Protected Built Area
- **L1** - Area of medium (G+3) and large (G+4.5÷G+8.10) collective housing, located in predominantly residential complexes.
- **L1P**- Area of medium (G+3) and large (G+4.5÷G+8.10) collective housing, located in the Protected Built Area
- **CEP** - Sub-area of public facilities located inside the Protected Built Area
- **CP3** - The central area located inside the Protected Built Area, outside the historic core
- **CP2** - The central area superimposed on the historic core, formed by building insertions built in recent decades

### AREA B - MUNICIPAL PARK

- **TF** - Railway transport area and related facilities
- **V4** - Green spaces for the protection of watercourses and wetlands
- **CP3** -The central area located inside the Protected Built Area, outside the historic core.
- **V3bP** - Sports complexes and bases located in the Protected Built Area
- **V1a** - Parks, public city and neighborhood gardens, squares in the central area or in residential complexes and public planted strips

## AREA C - HIPPODROME

- **V3b** - Sports complexes and facilities
- **V3a** - Recreation centers, amusement parks
- **V5** - Color of protection against technical infrastructure
- **CM2** - Mixed sub-area with buildings with continuous or discontinuous construction regime and maximum heights of G+5

## AREA D - RELICT MEANDER OF THE MUREŞ RIVER

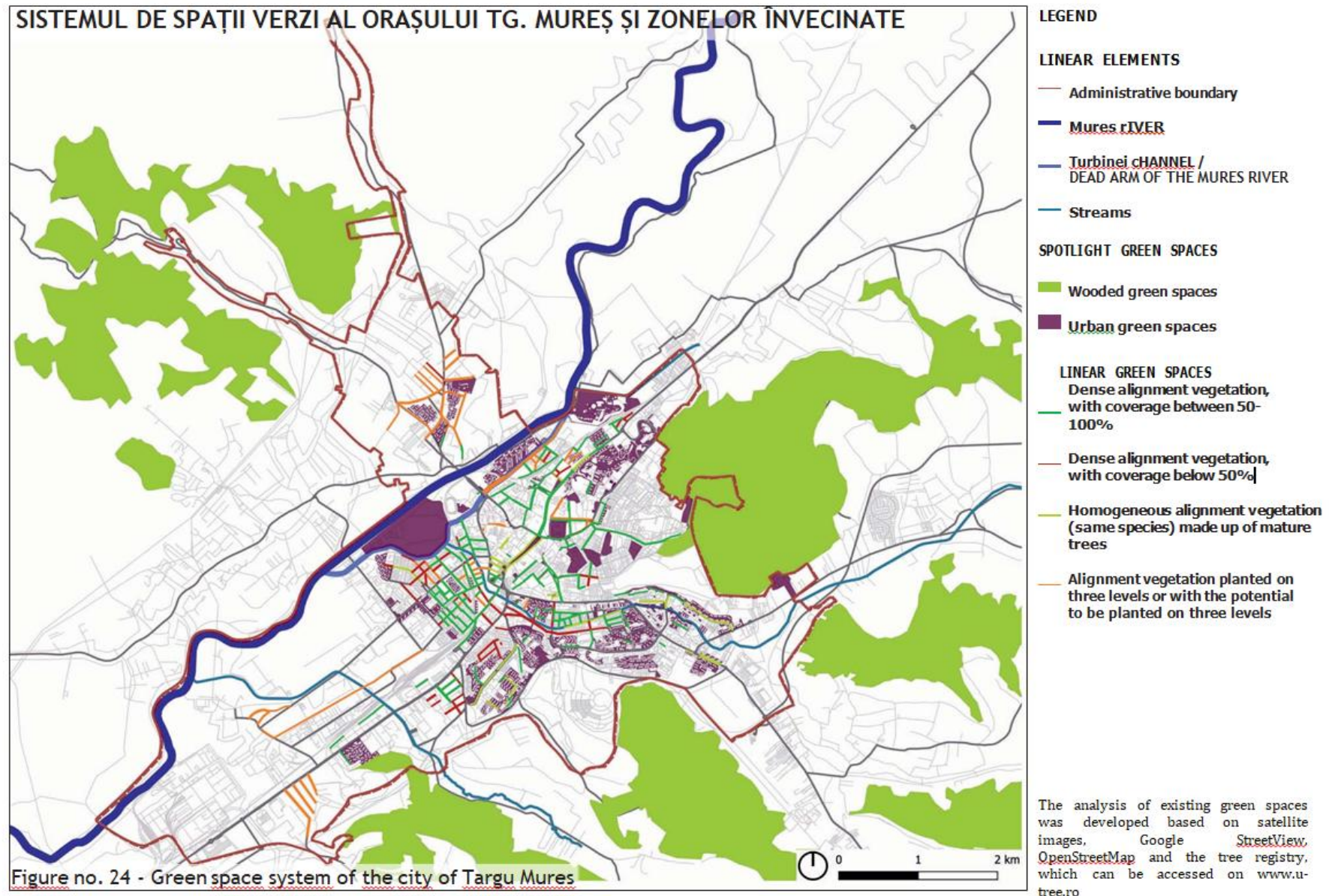
- **V4** - Green spaces for the protection of watercourses and wetlands
- **LL** - Area of small individual and collective housing, in isolated and grouped construction regime, with height regime P, P+1, made based on pre-established lotteries
- **LLP** - Sub-area of small individual and collective housing, in isolated and grouped construction regime, with height regime P, P+1, built on the basis of pre-established subdivisions, located in the Protected Built Area
- **L2b** - Sub-area of small individual and collective housing with G+1,2 levels, arranged in alignment, with a predominantly discontinuous construction regime
- **AI3aP** - Sub-area of units that are maintained, located in the Protected Built Area
- **L1** - The area of medium (G+3) and large (G+4.5-G+8.10) collective housing, located in predominantly residential complexes;
- **V1A** - Parks, public city and neighborhood gardens, squares in the central area or in residential complexes and public planted strips
- **G1** - Area of construction and arrangements for communal management;
- **V5** - Color of protection against technical infrastructure
- **V8** - Planted sanitary protection strips
- **cm-1** - Mixed sub-area with buildings with continuous or discontinuous construction regime and maximum heights of G+3.
- **AI2b** - Sub-area of industrial and quasi-industrial productive and service SMEs.



## AREA E - MUREȘ RIVERBANK

- **V4** -Green spaces for the protection of watercourses and wetlands
- **L2a** -Sub-area of small individual and collective housing with G+1.2 levels, set back from the alignment with a predominantly discontinuous construction regime
- **G1** -Area of construction and facilities for communal management <sup>[21.]</sup>

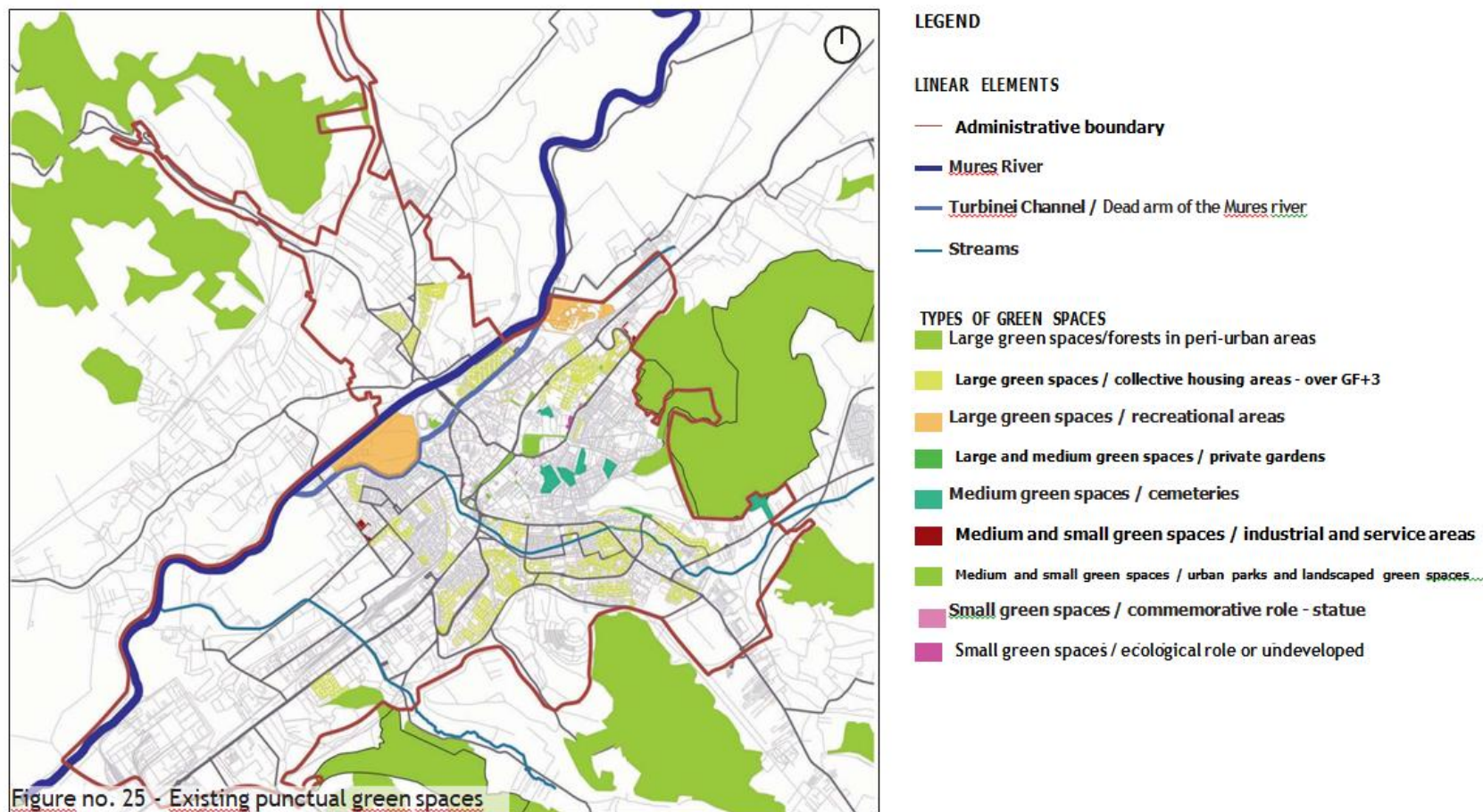
[21.] Regulation related to the General Urban Plan of the Tg. Mureș Municipality - 2022



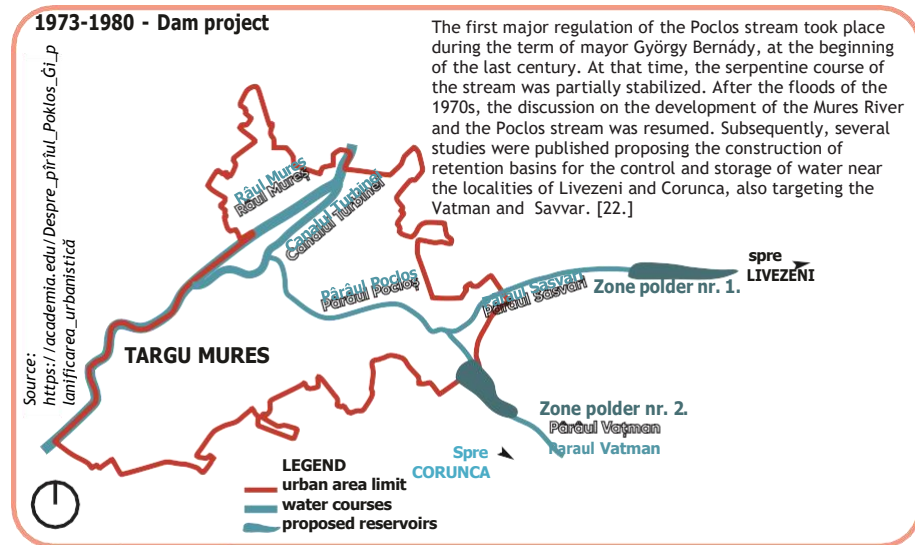


THE GREEN SPACES SYSTEM OF THE  
CITY OF TARGU MURES AND THE  
SURROUNDING AREAS

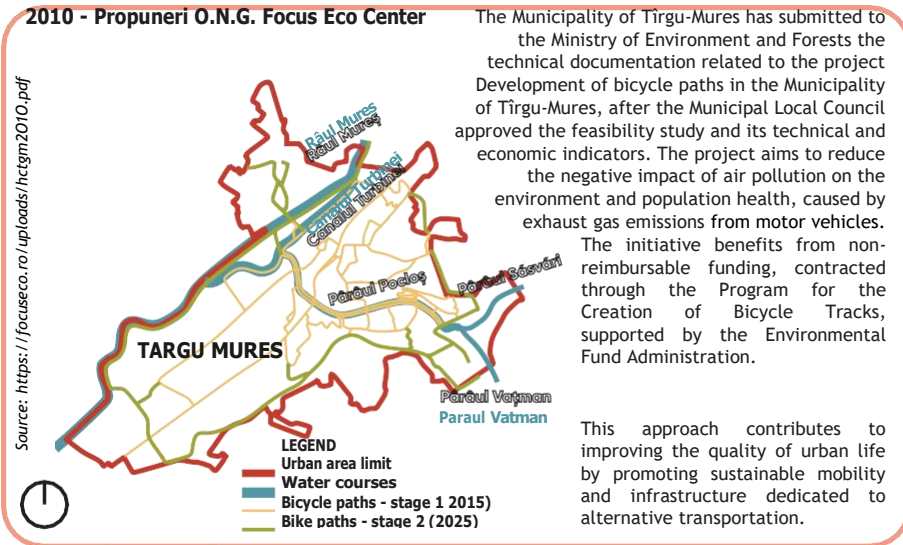
LANDSCAPE STUDY REQUIRED TO FOUND THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK SOLUTIONS. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA,  
MUNICIPAL HIPPODROME PARK,  
MURES RIVER BANK, TURBINEI CHANNEL



The attached analyses focus on the current system of green spaces within the city. Overall, it can be noted the presence of green areas with significant potential, but they are arranged in isolation, without a coherent connection between them. Green corridors, which could ensure the connection between these spaces, are rare or non-existent, which fragments the urban green network. In recent years, several proposals and strategies have been formulated that aim to strengthen these links within the city's urban development plans, by creating functional green axes. The proposals that, over the past decades, have addressed this issue will be presented in detail. These recommendations aim to provide integrated solutions for the connectivity and sustainable development of the green space network, emphasizing their integration into the urban context and the creation of efficient green corridors.

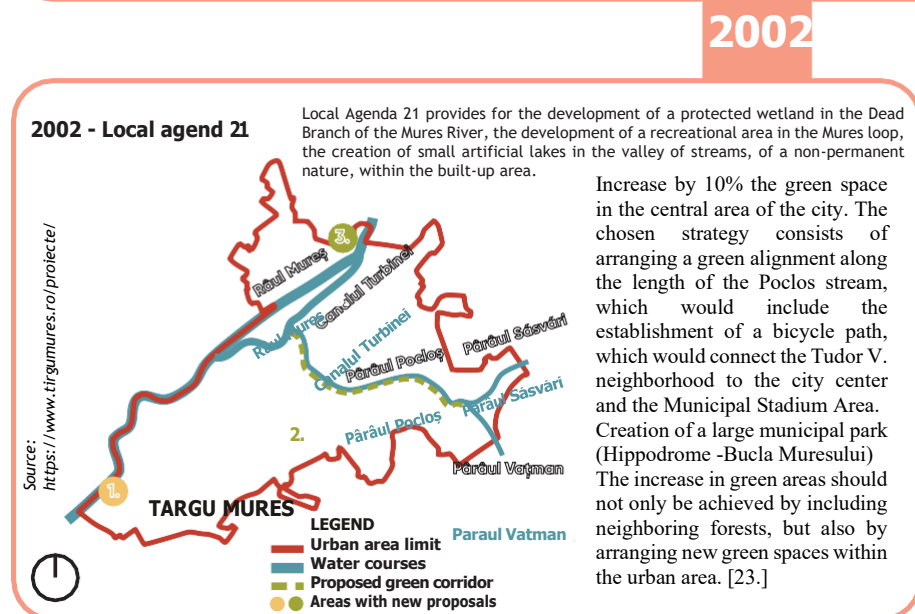


1973

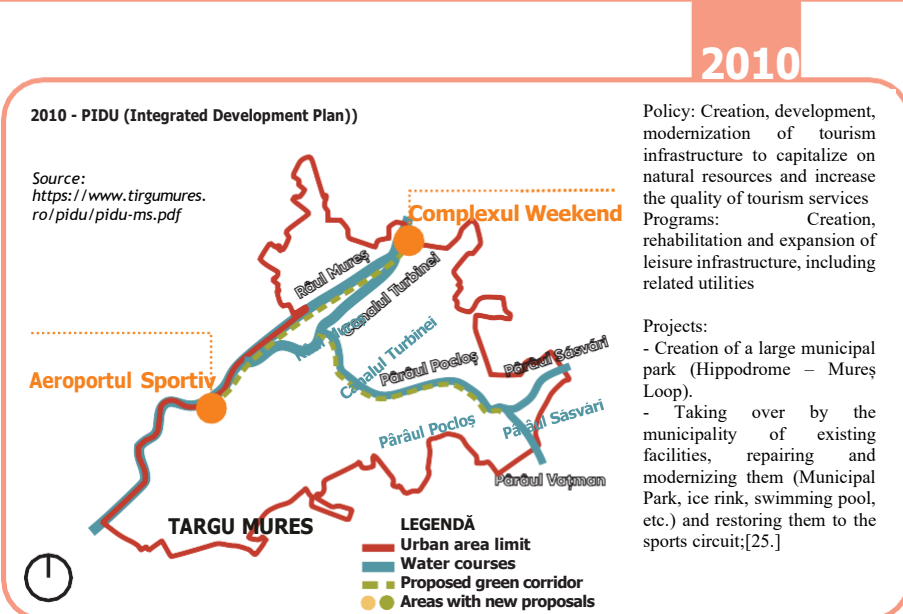


2010

## LOCAL REGULATIONS - LOCAL DEVELOPMENT STRATEGIES



2002



2010

[22.] Kelemen Á. (On the Poclos Stream and Urban Planning) - 2019

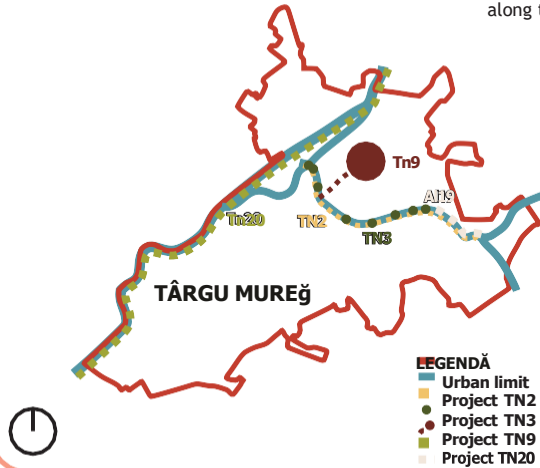
[23.] Local Agenda 21 - Local Sustainable Development Plan of Targu Mures Municipality - 2002

[24.] Focus ECO Center Association (Non-Governmental Organization for Environmental Protection) - <https://focuseco.ro/> [25.] Integrated Urban Development Plan of Tîrgu Mures Municipality - 2010



### 2017 - PMUD (Sustainable Urban Mobility Plan)

Projects proposed under the 2017 PMUD: TN2 - Construction of a bicycle path along the Poclos stream.



TN3 - Modernization (widening) of pedestrian bridges over Pocloș to allow bicycles to cross.

TN9 - Construction of a bicycle path connecting Poclos and Trandafirilor Square.

TN20 - Green corridors on the banks of the Mures and Poclos rivers.

in the Tudor Vladimirescu neighborhood across the Poclos

**LEGENDĂ**  
Urban limit  
Project TN2  
Project TN3  
Project TN9  
Project TN20

### CONCLUSIONS:

The plans and strategies developed in the last decades indicate that the watercourses that cross the city are not used to their full potential. There is a possibility to create green-blue corridors, and "green roads" along the rivers could effectively connect the parks and green areas adjacent to them. The problem of the constant flow of the Poclos stream has not yet been solved, just as the uncontrolled waters that flow into these watercourses have not been managed.

Currently, the urban green spaces in Târgu Mureș are arranged in isolation, without a functional interconnection network between them. This connectivity problem has not yet been solved.

The city does not have a large urban green park, capable of accommodating a significant number of people. The population mainly uses the Cornesti Plateau area, the green area in the courtyard of the citadel. Green Park Substejeris, a new community space, was recently completed. In the Municipality of Târgu Mureș, there are no parks located near watercourses, so the banks of the watercourses are not adequately exploited and used.

2017

## CONCLUSIONS

## LOCAL REGULATIONS - LOCAL DEVELOPMENT STRATEGIES

2020-2022

### 2020 - General Urban Plan (Proposals)

Proposals for green spaces, alternative circulation, leisure

Creating a green belt that capitalizes on the major elements of the natural environment (Mureș River, forests). Alternative circulation system that connects the green center to the network of parks within the city, using green lanes on free routes or along waterways.  
- "Green corridors" system towards the periurban space

Source: PUG Preliminar Târgu Mureș - Anul



**LEGEND**  
Urban limit  
Watercourses  
Wooded areas  
Alternative circulations  
Existing and proposed green spaces



**LEGEND**  
Urban limit  
Water courses  
Wooded areas  
Proposed development poles  
Historic center

Proposals for multipolar development  
- Multipolar development with several cores of centrality (development areas) with the force of polarization in the urban and peri-urban space. The following development centers are proposed:  
- Development area on the right bank of the Mures  
- Calea Sighisoarei development area  
- New center with public utility objectives on the left bank of the Mures (Târgu Mures Sports Airport area)  
- The historic core/center of the city. [27.]

[26.] Sustainable Urban Mobility Plan of Tîrgu Mures Municipality - 2017  
[27.] Preliminary General Urban Plan of Targu Mures Municipality - 2022



Figure no. 26 - AREA A - TURBINEI CHANNEL - VISUAL AXES, LANDMARKS AND PERSPECTIVES



A-AV01.



A-AV02.





Own photo, taken: August 2024

A-AV03.



Own photo, taken: August 2024

A-AV04.



Own photo, taken: August 2024

A-AV05.



Own photo, taken: August 2024

A-AV06.



Own photo, taken: August 2024

A-AV07.



Own photo, taken: August 2024

A-AV08.



Own photo, taken: August 2024

A-AV09.





A-AV10.

Own photo, taken: August 2024



A-AV11.

Own photo, taken: August 2024



A-AV12.

Own photo, taken: August 2024



A-AV13.

Own photo, taken: August 2024



A-AV14.

Own photo, taken: August 2024



A-AV15.

Own photo, taken: August 2024



A-AV16

Own photo, taken: August 2024



A-AV17.

Own photo, taken: August 2024



A-AV18.

Own photo, taken: August 2024





A-AV19.



A-AV20.



A-AV21.



A-AV22.



A-AV23.



A-AV24.

## DESCRIPTION/CONCLUSIONS

Photo **A-AV01** shows the promenade on the banks of the Mureş River, which is not included in the study area, but constitutes an important link for the inhabitants of the city, so they can enjoy the proximity of the Mureş River. It also connects the dam with the small bridge of the Mureş and continues until near the main bridge.

Photo **A-AV02** shows a structure built on the Mureş River, in front of it a metal structure with suspended pipes.

A tributary of the Mureş River is located south of the Weekend Complex, which serves as a water surface used for boating. Image **A-AV03** (Strada Plutelor) shows the dam and its building in the background on the right, and further on Strada Margaretelor and, behind a blue fence, the Mobex factory building complex.

Starting from Alea Carpati Street, which is parallel to the course of the Turbina Canal, there are several secondary streets leading between the buildings, which are visible in images **A-AV04**, **A-AV06**, **A-AV09**. These are generally mixed traffic streets, but there are also exclusively pedestrian areas, such as streets **A-AV13** or **A-AV15**.

Numerous bridges are present on the Turbine Canal, from which long visual connections open to the streets that appear further on (e.g. **A-AV08**). The study area is also crossed by a railway, which will be presented in detail.

in the following chapters. An important visual axis is the part of the land located next to the railway (**A-AV10**, **A-AV12**).

The study area extends to one of the busiest intersections in the city, to the Cocoşul de Aur restaurant. From here, a long view opens up to the Mureş bridge (Călăraşilor Street - **A-AV16**), to the continuation of the Turbinei Canal, next to the DEER building (**A-AV17**) and to the continuation of Călăraşilor Street, towards the city center. We can also identify two important visual elements: the Orthodox Cathedral on the Rose Square and the Continental Hotel on the right (**A-AV18**).

The other side of the Turbine Canal is mostly the pedestrian area, from where we have access to the quieter adjacent streets, generally with private houses/individual dwellings (**A-AV22**, **A-AV23**). Also, this section is crossed by the railway line, with a dominant visibility in the northwest and southeast direction (**A-AV19**, **A-AV12**).







Figure no. 27 - AREA A - TURBINEI CHANNEL - BUILT ELEMENTS



Own photo, taken: August 2024

A-EC01.



Own photo, taken: August 2024

A-EC02.



FUNCTIONAL ANALYSIS- AREA A - TURBINEI CHANNEL  
BUILT ELEMENTS

LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK,  
MURES RIVER BANK, TURBINEI CHANNEL



Own photo, taken: August 2024

A-EC03.



Own photo, taken: August 2024

A-EC04.



Own photo, taken: August 2024

A-EC05.



Own photo, taken: August 2024

A-EC06.



Own photo, taken: August 2024

A-EC07.



Own photo, taken: August 2024

A-EC08.



Own photo, taken: August 2024

A-EC09.



Own photo, taken: August 2024

A-EC10.



Own photo, taken: August 2024

A-EC11.

## DESCRIPTIONS/CONCLUSIONS

Around the dam, we have an industrial area. Here we have the SGA Mureș building, the former Mobex factory - a building with investment potential and a pedestrian bridge over the canal that connects to the Mureș bank.

Moving on, after the SGA Mureș building, we have the Olympic Pool and the Gallery event hall.

On the left side of the canal, we have residential houses with a G+M regime, and on the right side, there are residential blocks with a G+4 and a G+9 regime. Between the road bridge (Zagazului Street) and the pedestrian bridge leading to the Lidl supermarket, we find a complex with public functions with a P regime (cafe, bar, shops, gym, hairdresser, and library branch) and a Darina grocery store. Next to the pedestrian bridge, we also have a railway bridge that crosses the Turbinei Canal.

It is important to mention the Aquaserv building complex, which was designed at the beginning of the 20th century and whose land is in the vicinity of the Turbinei Canal.

On the right side of the canal, we have several important buildings: the public institution, the Chamber of Accounts and the Traian Savulescu Agricultural College, G+3 with a reference tower, and on the left side, next to the roundabout we have the Cocoșul de Aur restaurant and hotel, a recently rehabilitated historical monument.





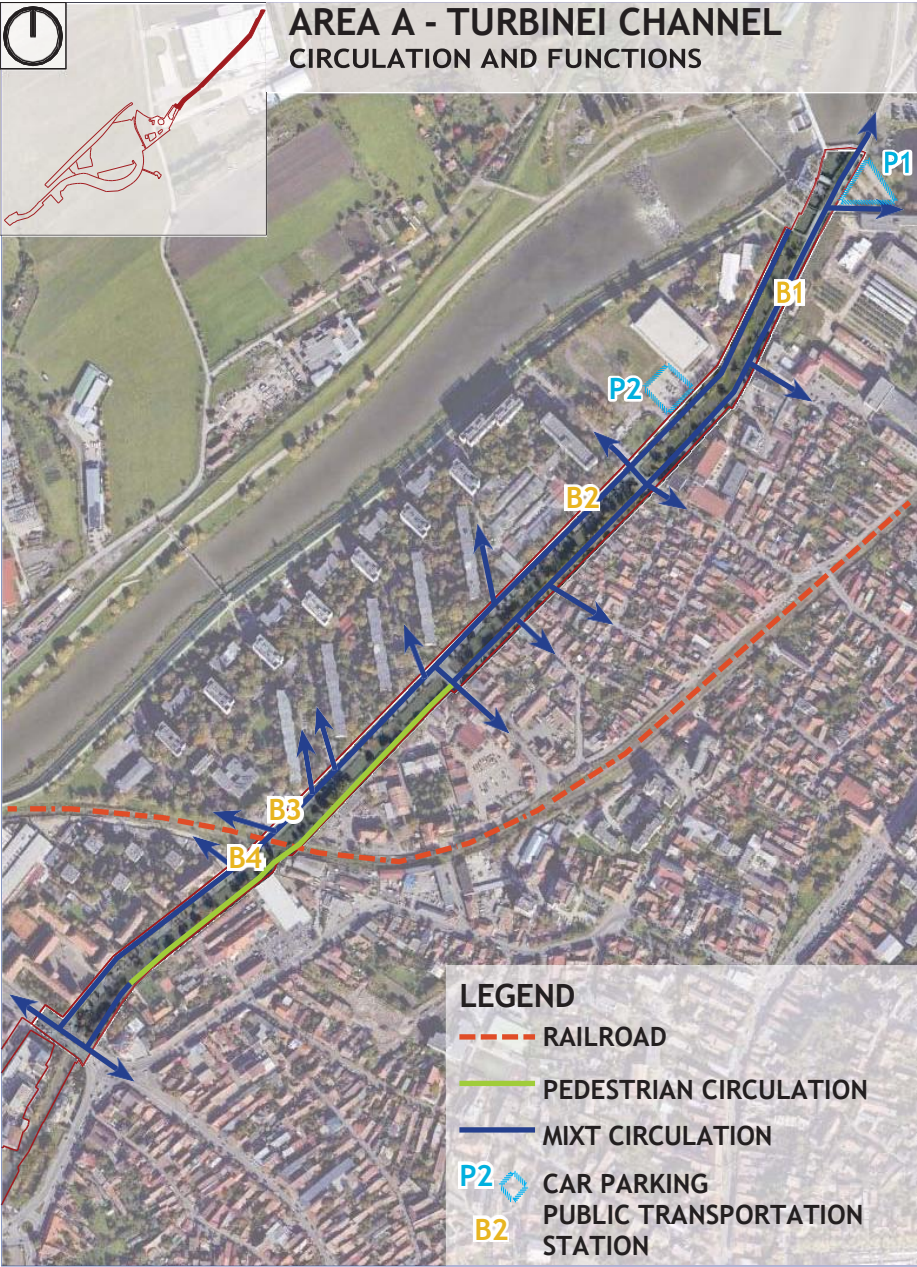


Figure no. 28 - AREA A - TURBINEI CHANNEL - CIRCULATION AND FUNCTIONS



A-CF01.



A-CF02.





A-CF03.



A-CF04.



A-CF05.



A-CF06.



A-CF07.



A-CF08.



A-CF09.



A-CF10.



A-CF11.

## DESCRIPTION/CONCLUSIONS

The streets around the Turbine Canal are mostly designed for both vehicle and pedestrian traffic. Images A-CF07 and A-CF08 capture Carpati Alley with the area for vehicle and pedestrian traffic.

On the other side of Turbinei, Margaretelor Street has a varied distribution, with sections exclusively for pedestrians. Starting from the back entrance of CocoSului de Aur, to the intersection with Furnicilor Street, there is only a pedestrian walkway (A-CF09), from here to Plutelor Street, there is again a mixed pedestrian and car street (A-CF01), and parallel to the street, between the parking lane and the Turbinei bank, unpaved paths can be observed (A-CF10). In this section, the presence of fishermen in the morning is a common phenomenon.

Along the Turbine Canal there are several stationsbus (A-CF01, A-CF02, A-CF03) And along Carpati Alley in many places you can see a stop painted on the traffic lane or indicated only by a sign.

In the vicinity of the study area there are many areas used as parking lots. Such is the parking lot in the public area between Plutelor Street and Luntrașilor Street (P1 - A-CF04) and the private fenced parking lot marked with P2 - A-CF05. But cars are parked all over the promenade in Carpați Alley, between the blocks of flats and along Margaretelor Street. In the long term, a task to be solved will be the arrangement of parking spaces and the creation of more areas for pedestrians.

It is not part of the study area, but it is worth mentioning the promenade on the banks of the Mureș River, which connects the area between the dam and Insulei Street. In the long term, this section should also be a pedestrian/bicycle section (A-CF06).

The presence of the railway (A-CF11) is also a problem that needs to be solved, as the intersections of pedestrian routes and railways need to be safer.



LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK,  
MURES RIVER BANK, TURBINEI CHANNEL



Figure no. 29 - AREA A - TURBINEI CHANNEL - URBAN



A-MU01.



FURNITURE A-MU02.





A-MU03.



A-MU04.



A-MU05.



A-MU06.



A-MU07.



A-MU08.



A-MU09.



A-MU10.



A-MU11.

## DESCRIPTIONS/CONCLUSIONS

There is no uniform furniture in the area, so there are several types of trash cans and benches. In general, the benches are metal structures with wooden seats and backs. In images A-MU10 and A-MU11, you can see a recently renovated park with uniform urban furniture.

Photo A-MU09 shows the billboards in a deteriorated state, with cracks where water enters. It would be recommended to use a uniform urban furniture or similar product families.



LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK,  
MURES RIVER BANK, TURBINEI CHANNEL



Figure no. 30 - AREA A - TURBINEI CHANNEL - PAVED



A-SP01.



SURFACES A-SP02.

Own photo, taken: August 2024



FUNCTIONAL ANALYSIS- AREA A - TURBINEI CHANNEL  
PAVED SURFACES

LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK,  
MURES RIVERBANK, TURBINEI CHANNEL



A-SP03.



A-SP04.



A-SP05.



A-SP06.



A-SP07.



A-SP08.

## DESCRIPTIONS/CONCLUSIONS

It is not part of the study area, but an important part of the area is the promenade on the banks of the Mureș River, which stretches between the dam and Insulei Street. In this section, there is a concrete surface with a pressed shape imitating the shape of natural stone (A-SPO1).

In addition to the asphalted lanes of Carpați Alley, there are sidewalks covered with concrete paving (concrete slabs), also with concrete curbs (A-SPO2).

In the small parks in the vicinity of the study area, we also have alleys paved with concrete pavement. For example, in the case of the small park in front of Strândul 1 Mai (A-SPO3).

To the southwest, we have gyms (TBT Gym, 18 Gym), cafes (Mr. Pop), with concrete slab surfaces and asphalt surfaces, alternating between them (A-SPO4).

In the case of the green areas between the blocks, there are several paved areas, these being mostly a combination of small concrete elements or concrete slabs (A-SPO5).

Between Călărași Street and the railway, there are some narrow streets that connect the pedestrian section, which is parallel to the road section, to the areas between the buildings and behind the buildings. Their material varies, and surfaces covered with asphalt, concrete pavement and concrete slabs can be observed (A-SPO6, A-SPO7).

On Margaretelor Street, in the case of sections with mixed traffic, the pavement is predominantly made of concrete pavement or concrete slabs with concrete curbs. Here, on small sections, we also find historical yellow brick (ceramic) curbs. On the edge of the Turbine Canal, the car surfaces are paved with asphalt, with a concrete curb.

Image A-SPO8 shows a dirt road, between trees, parallel to the road section.



LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK,  
MURES RIVER BANK, TURBINEI CHANNEL



## DESCRIPTIONS/CONCLUSIONS

One of the major problems of the study area is the railway that crosses the canal.

The road section is relatively well thought out compared to the pedestrian section. Image A-CNO1 captures an unsecured pedestrian crossing, making crossing difficult and dangerous, especially for people with disabilities and the elderly.

Images A-CNO3 and A-CNO4 show illegal garbage dumps and homeless shelters. These spoil the overall image of the area both from an atmospheric and visual point of view.

Disturbing visual elements are also the pipes passing above the Turbine Canal in image A-CNO6.

The equipment in the image A-CNO7 is used to load water into Aquaserv machines. It is a disturbing element from a visual point of view and from the point of view of pedestrians.





A-CN01.



A-CN02.



Own photo, taken: August 2024

A-CN03.



Own photo, taken: August 2024

A-CN04.



Own photo, taken: August 2024

A-CN05.



Own photo, taken: August 2024

A-CN06.



Own photo, taken: August 2024

A-CN07.



Own photo, taken: August 2024

A-CN08.





Figure no. 32 - AREA A - TURBINEI CHANNEL - VEGETATION



A-V01.



A-V02.





Own photo, taken: August 2024

A-V03.



Own photo, taken: August 2024

A-V04.



Own photo, taken: August 2024

A-V05.



Own photo, taken: August 2024

A-V06.



Own photo, taken: August 2024

A-V07.



Own photo, taken: August 2024

A-V08.



Own photo, taken: August 2024



Own photo, taken: August 2024



Own photo, taken: August 2024



## DESCRIPTIONS/CONCLUSIONS

The Turbinei Channel is dominated by the presence of trees, which constitute the main vegetal element of the landscape. The channel is partially outlined by a vegetation alignment, but this is not fully developed along its entire length. The trees in the area are in good overall condition, but are clearly neglected, requiring pruning to ensure the health and aesthetics of the landscape. These interventions include, in particular, cutting dry branches and removing any damaged parts.

Regarding shrub vegetation, it is absent along the water body, which could represent an opportunity for future landscaping to improve the diversity and structure of the vegetation. At the time of collecting information from the field, the drought period we were in had visibly affected the herbaceous vegetation, which was completely dry.

Among the tree genera present in this area are maple (*Acer*), apple (*Malus*), lime (*Tilia*), walnut (*Juglans*), acacia (*Robinia*), white oak (*Ailanthus*), and poplar (*Populus*), each contributing in its own way to the composition and character of the landscape around the Turbinei Channel. Among these species, some offer both aesthetic and ecological value, but there are species that are invasive and must be controlled.

Existing mature specimens require proper maintenance to maintain their role in the landscape. The Turbinei Channel is notable for the diversity of tree species that outline the banks of the canal, contributing to a dynamic

chromatic and textured throughout the seasons (**A-VO1**, **A-VO2**). This diversity adds aesthetic value to the landscape, but the lack of groups of shrubs along the canal allows the visibility of some unsightly elements, which otherwise could have been masked by vegetation (**A-VO3**).

The poplars in the area function as important visual landmarks, guiding the eye and providing a point of reference in the landscape (**AVO4**). However, there are some trees that have dried up and must be removed to maintain the overall health of the vegetation and the safety of the site (**A-VO5**).

The shade provided by the trees creates spaces conducive to relaxation on hot days, which adds extra comfort to the area's users (**A-VO6**). On the other hand, in some places, the crowns of the willows are so low that they impede free movement, forcing passersby to bypass them (**A-VO7**). These specimens require crown levelling interventions to allow easier circulation.

Although shrub vegetation is absent along the canal, it is present in the neighbouring areas, especially in front of the blocks of flats, contributing to the landscape diversity in the vicinity (**A-VO8**). In addition, climbing plants play a functional role, covering less aesthetic elements, such as old fences, thus contributing to improving the overall appearance of the area (**A-VO9**).

An aspect that requires special attention is the presence of invasive plants, which can negatively affect local biodiversity and create difficulties in long-term vegetation management (**A-V10**, **A-V11**). These must be monitored and managed appropriately to prevent their spread.







Figure no. 33 - Area B - Municipal Park - Visual axes, rep. and pers.



B-AV01.



B-AV02.





B-AV03.



B-AV04.



B-AV05.



B-AV06.



B-AV07.



B-AV08.



B-AV09.





B-AV10.



B-AV11.



B-AV12.



B-AV13.



B-AV14.



B-AV15.



B-AV16.



B-AV17.



B-AV18.





B-AV19.



B-AV20.



B-AV21.



B-AV22.



B-AV23.



B-AV24.

## DESCRIPTION/CONCLUSIONS

The pedestrian area next to Canalul Turbinei is interrupted by a heavily trafficked street, Călărașilor Street, with a short section that continues next to the DEER building (**B-AVO1**) and stops at the entrance to the property. On the other side of the Turbine Canal, you can see the rear facades of buildings built directly on the edge of the riverbank (**B-AVO2**).

Entrance to the parking lot in front of the Municipal Park is also possible from Uzinei Street. On one side of the road are built private houses and residential buildings (**B-AVO3**), and on the other side is the DEER building (**B-AVO4**). The space in front of the Municipal Park is an area dominated by parking lots and a green area with trees (**B-AVO5** and **B-AVO6**).

In the image **B-AVO7** you can already see the bridge that crosses the Turbine Canal, this being another entrance to the parking lot in front of the Municipal Park, at the intersection of Matei Corvin Square, Tamás Ernő Street and Cuza Voda Street. From this point you can see both the TVR headquarters building and the Multipurpose Hall- Sala Polivalenta (**B-AVO8**). This area during the day is dominated by parked cars, which can be considered visually disruptive elements.

Image **B-AVO9** captures the Municipal Park, from the main entrance. On the right side of the square is the Multipurpose Hall, in front of it is a service building, and on the left side is the TVR headquarters and the ice rink building. The space is largely enclosed from the rear by the Bölöni Stadium (on the left of the photo). **A-AV20**). Behind the stadium, after the Sports Club building, we have a field left in disrepair, currently unbuilt.

From Tamás Ernő Street, next to the Turbine Canal, we have a variety of visual elements, almost always defined by the sides of buildings and the crowns of trees (**A-AV10**). The Turbine Channel is not accessible to residents (**B-AV12**, **B-AV13**).

The studied location can also be accessed from the direction of the railway which is located parallel to Insulei Street, from this point we have the views **B-AV14** and **B-AV15**.

The road, which is parallel to Insulei Street, starts under the Mures Bridge and reaches the northern side of the László Bölöni Stadium. (**B-AV16** and **B-AV17**). The stadium is fenced off, so you can't enter the area.



LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK, MURES RIVERBANK, TURBINEI CHANNEL



Figure no. 34 - Area B - Municipal Park - Built Elements



B-EC01.



B-EC02.





B-EC03.

Own photo, taken: August 2024



B-EC04.

Own photo, taken: August 2024



B-EC05.

Own photo, taken: August 2024



B-EC06.

Own photo, taken: August 2024



B-EC07.

Own photo, taken: August 2024



B-EC08.

Own photo, taken: August 2024



B-EC09.



B-EC10.



B-EC11.

Own photo, taken: August 2024

## DESCRIPTIONS/CONCLUSIONS

The buildings that appear on the edge of the study area are the Electrica building complex, with a **G+2**, respectively **G+5**, including the former turbine, with the character of an industrial monument. Next to the turbine we have restaurant and guesthouse functions, namely the former Strand, where the Jewish baths used to operate. This is currently non-functional.

North of the park we have the yard of the former Military Barracks, which for a while was used as a flea market, but is now non-functional, abandoned, in a degraded state. Next to the private land of the Barracks we have a road that leads to a secondary access to the park.

The main public entrance is between the Multipurpose Hall, built during the socialist period and the TVR building, and two secondary entrances, possibly for services, we have next to the main entrance and between the Everest Hotel and the Multipurpose Hall - Sala Polivalenta.

After entering the park, on the left we have the TVR building, the skating rink building, which is currently being completed, and the Sports Club building, partially unused. In front of us is the Bölöni László Stadium, with its concrete stands, which is currently being renovated, practically a materials warehouse. On the right side we have the **G+1** building for clubs and annexes, partially unused.

On the other side of the canal, on the left side, we have buildings with mixed functions: the Richter Gedeon factory complex, Hotel Arena and other commercial functions.

The park's connections with neighboring areas are restricted by the railway that surrounds it to the West and North.





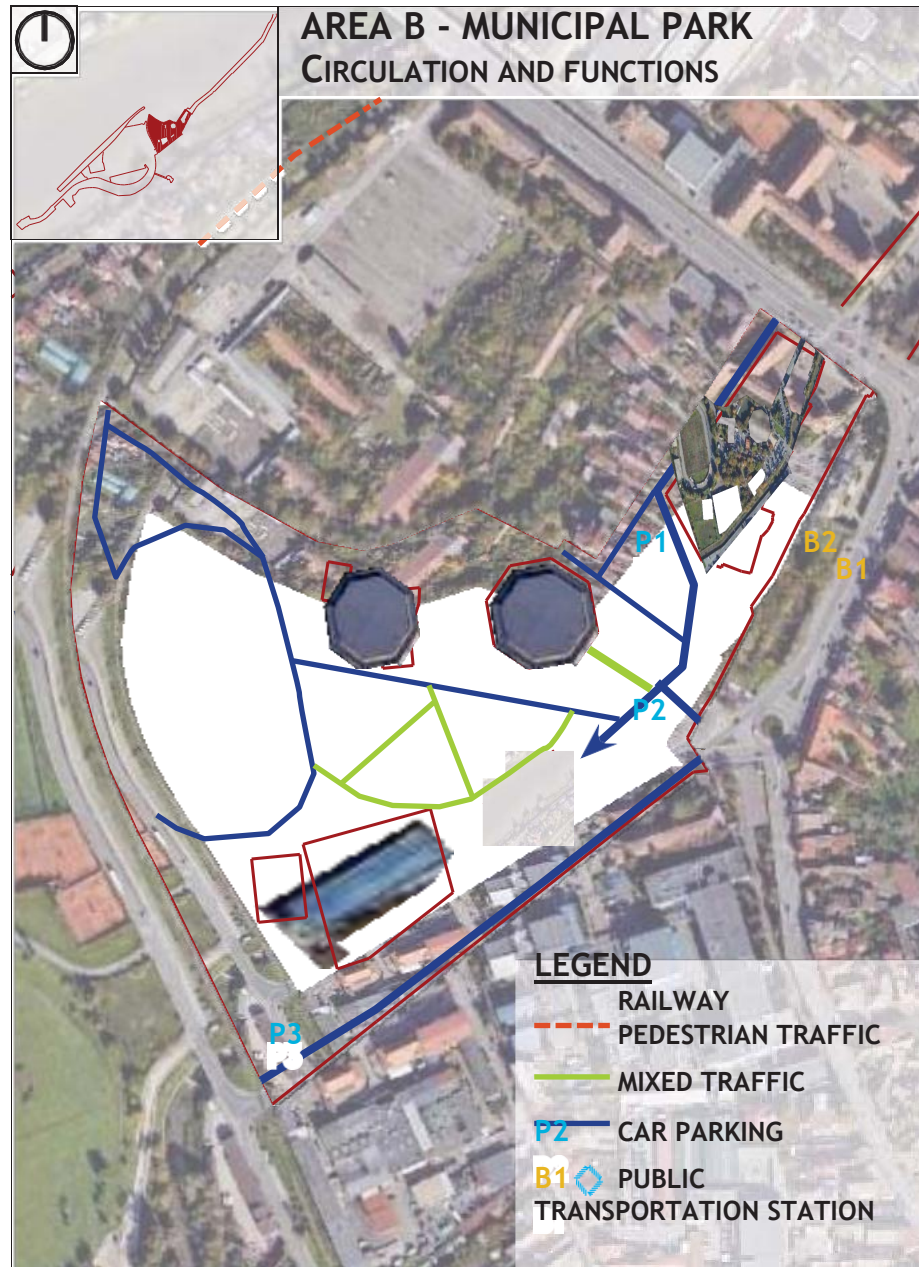


Figure no. 35 - Zone B - Municipal Park - Circulation and functions



B-CF01.



B-CF02.





Own photo, taken: August 2024

B-CF03.



Own photo, taken: August 2024

B-CF04.



Own photo, taken: August 2024

B-CF05.



Own photo, taken: August 2024

B-CF06.



Own photo, taken: August 2024

B-CF07.

## DESCRIPTION/CONCLUSIONS

In the studied area we have a large number of parking spaces, as can be seen on Uzinei Street (**B-CF01**). Car traffic is present almost everywhere, as in the image for example **B-CF02** and **B-CF03**. On the huge asphalt surfaces, on weekdays, cars are parked all day. The Municipal Park can also be accessed by car. After entering the park we have a marked asphalt road, as in image **B-CF04**, but also other surfaces dominated by cars, e.g.: **B-CF05**. We also have parking spaces on the banks of the Turbine Canal, parallel to Tamás Ernő Street, near the intersection with the railway (**B-CF06**). The buildings in the park and nearby can also be accessed by car (**B-CF07**).





Figure no. 36 - Area B - Municipal Park - Urban furniture



B-MU01.



B-MU02.





Own photo, taken: August 2024

B-MU03.



Own photo, taken: August 2024

B-MU04.



Own photo, taken: August 2024

B-MU05.



Own photo, taken: August 2024

B-MU06.



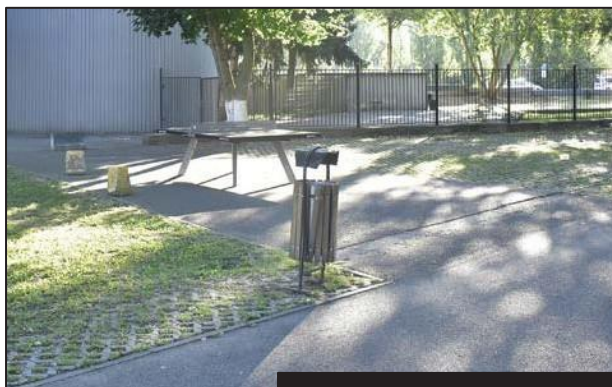
Own photo, taken: August 2024

B-MU07.



Own photo, taken: August 2024

B-MU08.



B-MU09.



B-MU10.

## DESCRIPTIONS/CONCLUSIONS

In front of the Sports Hall, there is a recently renovated space with seating areas and boundary posts(**B-MU04**).

In the rest of the area, the furniture is very varied, we do not have a unified urban furniture. Near the entrance, we find bicycle racks (**B-MU02**), signs with the inscription Aquaserv (**B-MU03**), benches with backrests in poor condition (**B-MU05**) and seating areas around trees (**B-MU06**).

In the southeast corner of the area, in the courtyard of the turn-of-the-century building, a fire hydrant from the turn of the century can be seen (**B-MU07**). There are a few of them in the city and attention should be paid to their long-term preservation

Images **B-MU08** and **B-MU09** show bike racks and trash cans from the catalogue. Colourful plastic chairs can be seen around the sports fields (**B-MU10**).

In the future, the goal is to equip the area with uniform urban furniture and uniform use of colours.



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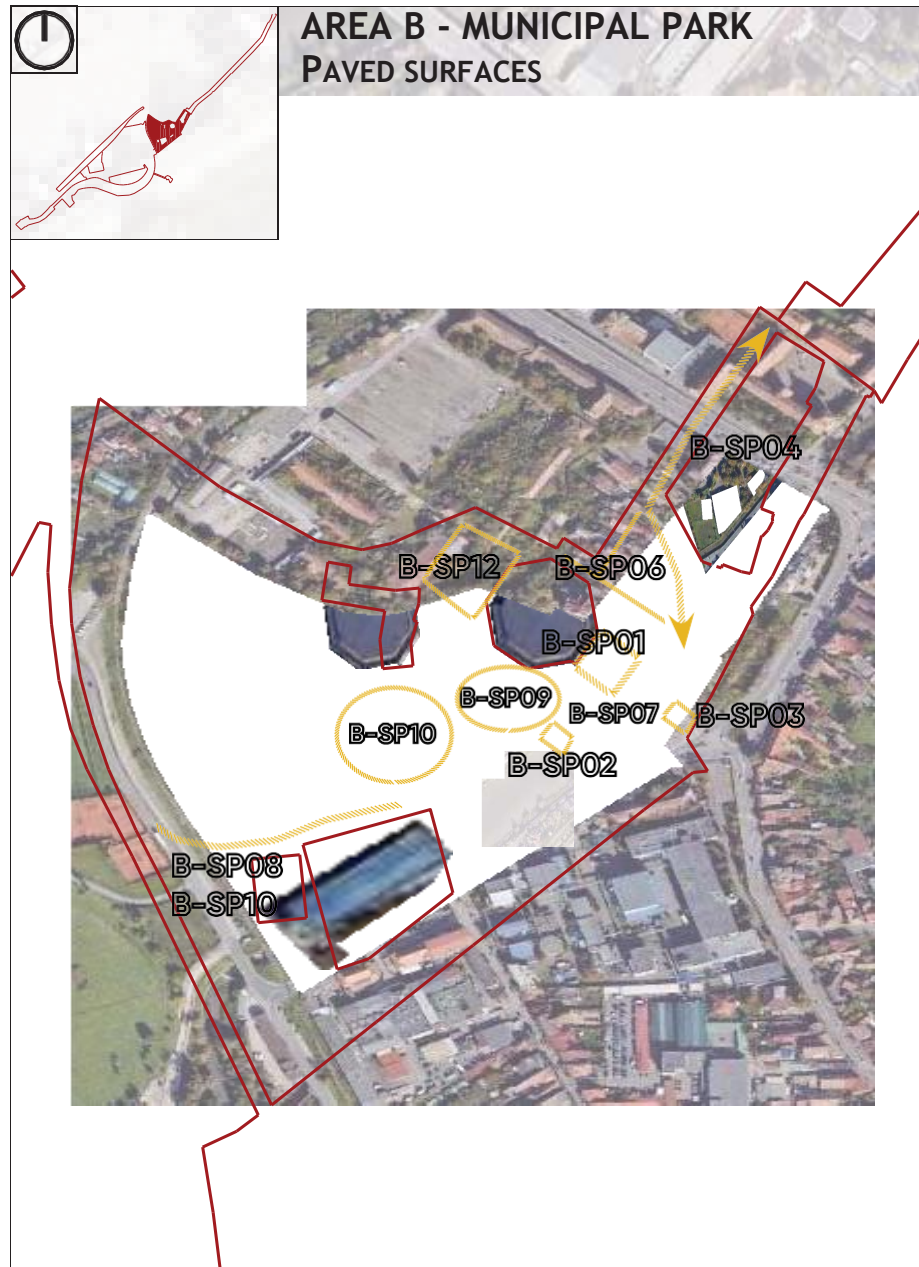


Figure no. 37 - Area B - Municipal Park - Paved surfaces



B-SP01.



B-SP02.





Own photo, taken: August 2024

B-SP03.



Own photo, taken: August 2024

B-SP04.



Own photo, taken: August 2024

B-SP05.



Own photo, taken: August 2024

B-SP06.



Own photo, taken: August 2024

B-SP07.



Own photo, taken: August 2024

B-SP08.



Own photo, taken: August 2024

B-SP09.





B-SP10.



B-SP11.



B-SP12.

## DESCRIPTIONS/CONCLUSIONS

The study area connects to the urban fabric at several points, therefore we have a variety of paved surfaces. In several cases, asphalt surfaces are encountered, especially on sections that are open to vehicles, such as Uzinei Street, where the street surface and sidewalks are covered with asphalt and have concrete curbs. In certain places we can also observe the historical ceramic brick dating back to the beginning of the century (**B-SPO4**).

On the section between the entrance on Uzinei Street and the Multipurpose Hall we have asphalt surfaces, which are mostly parking lots (**B-SPO5**, **B-SPO6**).

The open space in front of the Multipurpose Hall breaks the asphalt mass, the space being covered with a recently renovated concrete pavement (**B-SPO1**).

The area in front of the TVR building and the Municipal Park has a huge parking area, covered with asphalt (**B-SPO7**).

Inside the park we have a variety of surfaces. After the entrance, on the main sidewalk, we have alternating sections with asphalt and concrete paving (**B-SPO9**), and on the edge of the sidewalk, grid-type paving (**B-SPO2**).

Inside the park, asphalt (**B-SP10**) and coloured concrete pavement (for example, **B-SP11** near the playground) are alternately present.). The surfaces of the sports fields are made of cast tartan.

In the western part of the ice rink building we have an asphalt surface in poor condition (**B-SPO8**), in the northwest, at the boundary of the land we have a combination of asphalt with concrete paving, in some cases cobblestone surfaces (*see Area B - Municipal Park - Visual axes, landmarks and perspectives*)





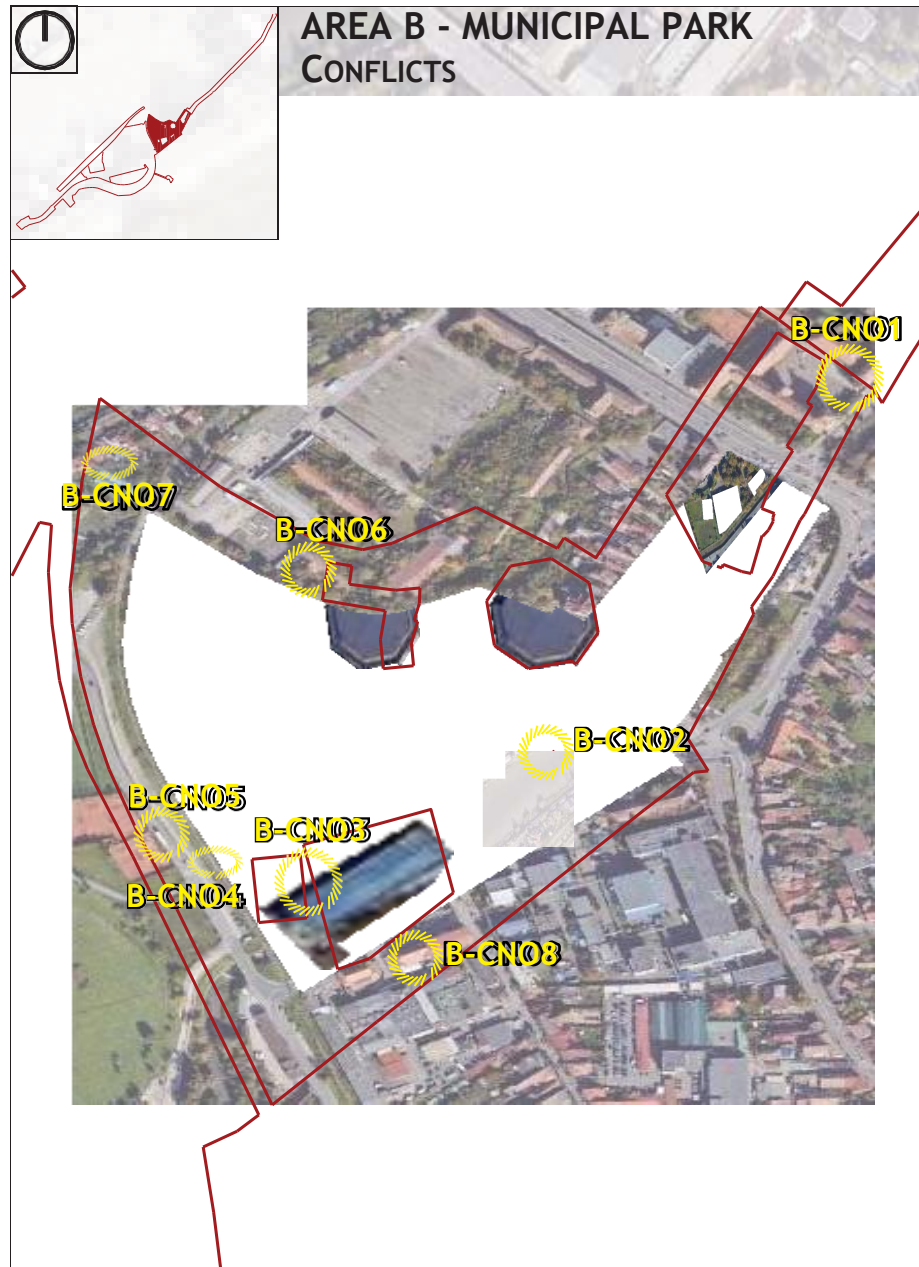


Figure no. 38 - Area B - Municipal Park - Conflicts



B-CN01.



B-CN02.





Own photo, taken: August 2024

B-CN03.



Own photo, taken: August 2024

B-CN04.



Own photo, taken: August 2024

B-CN05.



Own photo, taken: August 2024

B-CN06.



Own photo, taken: August 2024

B-CN07.



Own photo, taken: August 2024

B-CN08.

## DESCRIPTIONS/CONCLUSIONS

We have several conflicts in the area. There are several situations in which, from the park, we have an unfavorable view of the walls of neighboring buildings. Due to the construction site in progress, the walls of the ice rink building, the containers and the boundary cordons offer a negative view (**B-CNO2**). The two-story building, built at the beginning of the century together with the ice rink building, also offers an unfavorable view. The pipes that pass over the water are disturbing elements (**B-CNO2** and **B-CNO8**). We can also see fences in a damaged condition (**B-CNO4**) and fences that close off some areas, so part of the Bölöni stadium cannot be accessed because it has been used as a construction warehouse for years (**B-CNO5**). Image **B-CNO6** captures the parking of various equipment, trailers in the spaces dedicated to visitors (**B-CNO6**).





Figure no. 39 - Area B - Municipal Park - Vegetation



B-V01.



B-V02.





B-V03.



B-V04.

Own photo, taken: August 2024



B-V05.

Own photo, taken: August 2024



B-V06.

Own photo, taken: August 2024



B-V07.

Own photo, taken: August 2024

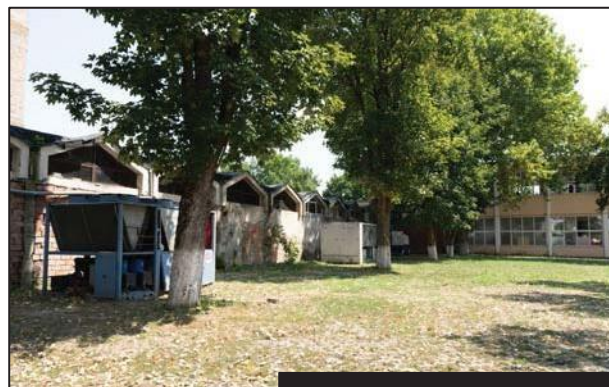


B-V08.

Own photo, taken: August 2024



B-V09.



B-V10.



B-V11.

Own photo, taken: August 2024

## DESCRIPTION/CONCLUSIONS

The Municipal Park is distinguished by the presence of a variety of mature trees, belonging to the genera oak (*Quercus*), chestnut (*Aesculus*), linden (*Tilia*), ash (*Fraxinus*), maple (*Acer*), hornbeam (*Carpinus*), birch (*Betula*) and spruce (*Picea*). These trees contribute significantly to the landscape appearance of the park, offering a diversity of shapes, textures and sizes. The age of the trees varies, with both well-developed specimens and more recent plantings present in the park, which creates an interesting stratification of the vegetation. (**B-V03, B-V04**).

Despite these advantages, shrub vegetation is completely absent, which reduces the potential to fully mask unsightly elements, such as unattractive buildings in the vicinity. Although the crowns of mature trees manage to partially cover these constructions, the integration of groups of shrubs would contribute to improving the landscape and creating a more pleasant background (**B-V07, B-V08, B-V09, B-V10**).

The lawn represents the main herbaceous vegetation in the park, but it is affected by drought, being partially dry, which degrades the aesthetic and functional quality of the green space. The tree trunks were whitewashed, which proved to be an ineffective intervention, and no longer corresponds to modern methods of vegetation maintenance (**B-V06**).

Another aspect that affects tree development is the presence of pavement in the vicinity of parcels, which limits root growth and, implicitly, tree vitality. It is also necessary to rethink the functions and highlight the important elements

from a landscape point of view, in order to fully exploit the potential of this space (**B-V05**).

Currently, the park's reception area is used as a concrete parking lot, which diminishes the attractiveness of the entrance and does not reflect the landscape importance of the park. Redevelopment of this area should be a priority, to create an entrance that invites and prepares visitors for the experience offered by the park. (**B-V11**).



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Fig. no. 40 - AREA C - HIPPODROME - Visual axes, landmarks, and perspectives



C-AV01.



C-AV02.





Own photo, taken: August 2024

C-AV03.



Own photo, taken: August 2024

C-AV04.



Own photo, taken: August 2024

C-AV05.



Own photo, taken: August 2024

C-AV06.



Own photo, taken: August 2024

C-AV07.



Own photo, taken: August 2024

C-AV08.



C-AV09.





C-AV10.



C-AV11.



C-AV12.



## DESCRIPTION/CONCLUSIONS

The **C-AVO2** image captures an area with wild vegetation in the southwest, and an impenetrable part of the area is visible to the west, in the image **C-AVO3**. The territory is delimited in the west by a set of stable buildings (**C- AVO5**).

In this part of the area, there are large areas of lawn, with many interesting visual elements in the background. Looking in the direction of Mures, we have the horse racing grandstand building(**C- AVO6**) And more fenced sports fields and related facilities (**C-AVO8**).

From point **C-AVO7**, the view is dominated by the main building of the equestrian center and the APIA building.

Panoramic image **C-AVO9** shows the southern part of the area, delimited by buildings and dense vegetation.. Several unfinished multi-story buildings appear, and a building with a tower in the center.

The image of **C-AV10** was taken from the Autonet parking lot, on Insulei Street. From here you can see on the left, the grandstand of the László Bölöni stadium and the LPS Targu Mures sports field.

Image **C-AV11** shows the buildings on the west side of the Hippodrome and, in the distance, the towns of Sancraiu de Mures, Nazna and the hills behind them.

The image **C-AV12** was taken from the pier on the banks of the Mures River, in the background you can see tall buildings that define the city, such as the Administrative Palace and on the left the Cornesti Plateau.



Figure no. 41 - AREA C - HIPPODROME - Built elements



C-EC01.



C-EC02.





Own photo, taken: August 2024

C-EC03.



Own photo, taken: August 2024

C-EC04.



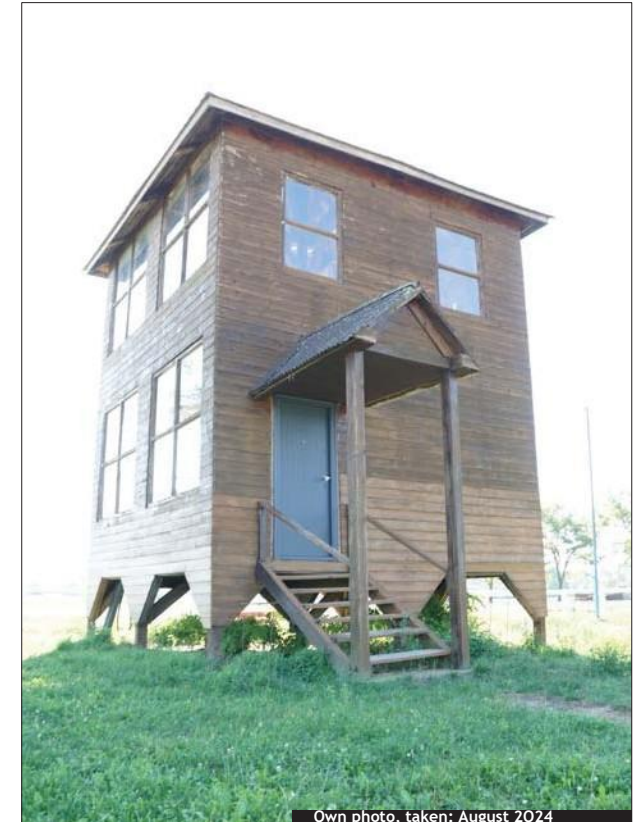
Own photo, taken: August 2024

C-EC05.



Own photo, taken: August 2024

C-EC06.



Own photo, taken: August 2024

C-EC07.

## DESCRIPTIONS/CONCLUSIONS

In the study area we have new stadiums, with metal stands and lighting poles, respectively adjacent sports fields and ground floor annexes, a riding center with stables, an outdoor training area and a small wooden building **G+1**. Next to the sports facilities we have the Amicii club and restaurant **G+1+M**, numerous fenced and uncovered areas and a non-functioning building.





Figure no. 42 - AREA C - HIPPODROME - Circulation and functions







C-CF03.



C-CF04.



C-CF05.

## DESCRIPTION/CONCLUSIONS

In the studied area, we do not have well-defined and marked traffic lanes. Most of the surface is grassed, so almost the entire surface can be crossed on foot or with the machinery used for maintenance.

The area can also be accessed from the direction of Bratului Mort, on a lawn area as seen in the image **C-CF01**. Most of the studied area is dominated by grass, as can be seen in the images: **C-CF03**, **C-CF04** AND **C-CF05**.

The study area is surrounded, in principle, by units serving the equestrian center, as well as by sports fields and stands. The paved space between these is used for parking (**C-CF02**).



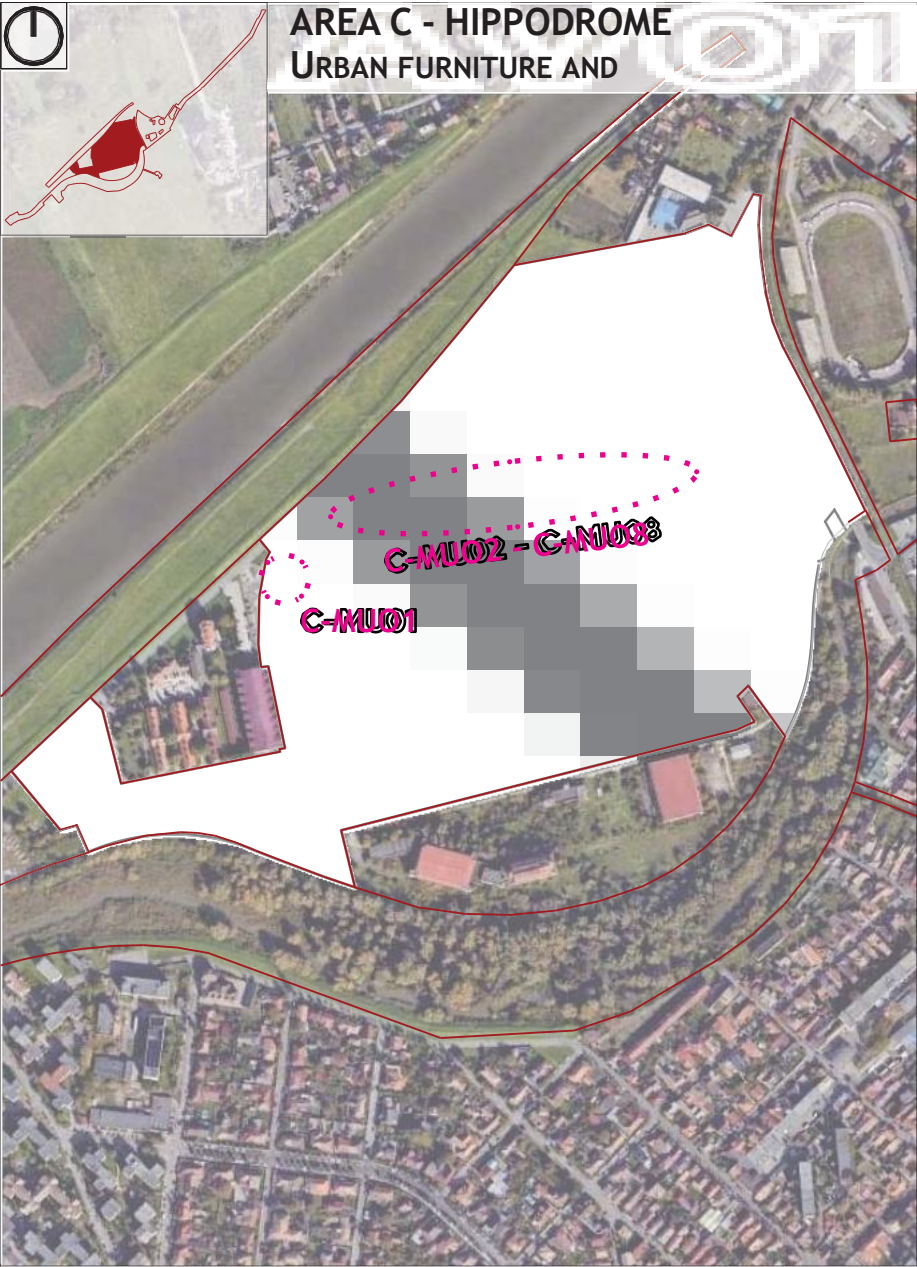


Figure no. 43 - AREA C - HIPPODROME - Urban furniture and installations



C-MU01.



C-MU02.





Own photo, taken: August 2024

C-MU03.



Own photo, taken: August 2024

C-MU04.



Own photo, taken: August 2024

C-MU05.



Own photo, taken: August 2024

C-MU06.



Own photo, taken: August 2024

C-MU07.



Own photo, taken: August 2024

C-MU08.

## DESCRIPTIONS/CONCLUSIONS

In the image **C-MU01** the back of the grandstand was covered. With such initiatives visually disturbing elements can be hidden. In this area, we can see various installations suitable for demonstrations and horse trials.

Rest areas and garbage bins are missing from almost the entire area, it is not treated as a suitable space to accommodate a lot of people. In this sense, changes will have to be made in the future.



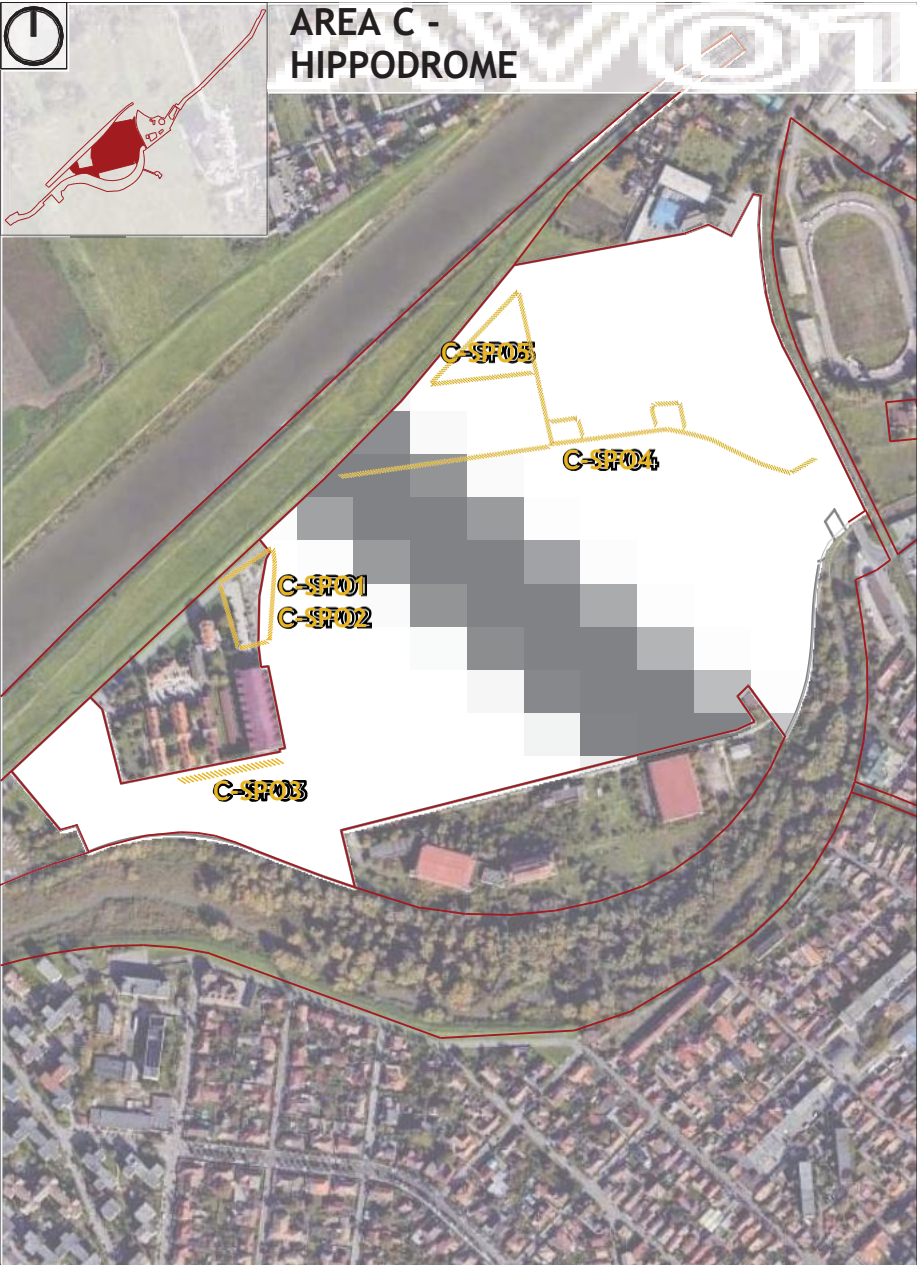


Figure no. 44 - AREA C - HIPPODROME - Paved surfaces



C-SP01.



C-SP02.





C-SP03.



C-SP04.



C-SP05.

## DESCRIPTION/CONCLUSIONS

Near the Hippodrome, there are relatively few paved surfaces, only in the sections where it is connected to the surrounding streets and parking lots, we have paved surfaces. From the two-lane road (Insulei Street) that separates us from the Mures riverbank, you can reach an asphalt parking lot in a degraded state, in front of the APIA building (**C-SPO1**, **C-SPO2**).

In the vicinity of the sports fields on the north side, we can see numerous surfaces covered with asphalt, concrete pavement and grid type (**C-SPO4**). In the picture **C-SPO3**, near the equestrian center, on the west side of the area, we have unpaved alleys.





Figure no. 45 - AREA C - HIPPODROME - Conflicts



C-CN01.



C-CN02.





C-CN03.



C-CN04.



C-CN05.

## DESCRIPTIONS/CONCLUSIONS

The biggest conflict of the study area is that there is no harmony between the functions. Almost all the built elements and buildings have different styles. Next to the sports facilities, we have numerous built extensions and fences. A variety of materials were used in their construction, so they are very disturbing both visually and functionally.

Image **C-CNO1** captures the garbage cans stored near the entrance to the stadium. In image **C-CNO2** we see the facade of the restaurant and club Amicii, in front of which we have a pile of rubble. Image **C-CNO3** captures a fenced and uncovered area with kayaks.

In image **C-CNO4** we see a non-functional building, which offers an unfavorable view. The stadium entrances are in a degraded state, we have unkempt and unused surfaces.





Figure no. 46 - AREA C - HIPPODROME - Vegetation



C-V01.



C-V02.





Own photo, taken: August 2024

C-V03.



Own photo, taken: August 2024

C-V04.



Own photo, taken: August 2024

C-V05.



Own photo, taken: August 2024

C-V06.



Own photo, taken: August 2024

C-V07.



Own photo, taken: August 2024

C-V08.



C-V09.



C-V10.



Own photo, taken: August 2024

C-V11.

## DESCRIPTION/CONCLUSIONS

The Hippodrome area is characterized by the presence of trees from the genera walnut (*Juglans*), acacia (*Robinia*), poplar (*Populus*), linden (*Tilia*), apple (*Malus*) and chestnut (*Aesculus*). These trees contribute to the landscape structure of the area, but the level of shrubs is completely absent, which reduces the diversity of vegetation and the landscape structure.

The vegetation in this area is predominantly herbaceous, with spontaneous species, identified during the field visit, such as yarrow (*Achillea*) (C-V11), alfalfa (*Medicago*), sorrel (*Rumex*), bindweed (*Convolvulus*) (C-VO9) and nettle (*Urtica*) (C-V10). This herbaceous vegetation, although spontaneous, plays an important role in maintaining local biodiversity and stabilizing the soil.

A special ecological role is played by the apple tree (*Malus*) (C-VO6), which provides food for animals, such as birds and hedgehogs, thus contributing to the support of the local fauna.

From a landscape point of view, several elements stand out in particular: the white acacia alignment (C-V02), which adds a distinct character to the area, the poplar alignment, which provides an impressive vertical structure (C-V02), and the mature solitary acacia (C-V01), which serves as a focal point in the landscape. These elements not only visually enrich the landscape but also contribute to the ecological functionality of the area.

In the vicinity of Zone C - Hippodrome is the Payment and Intervention Agency for Agriculture Mures. The building is

partially visually masked by non-native vegetation, consisting of specimens of thuja (*Thuja sp.*) (C-V08). These conifers contribute to the partial camouflage of the construction, adding an element of greenery, but exotic vegetation does not always integrate harmoniously into the local landscape, dominated by autochthonous species. A careful analysis of this vegetation might be necessary to ensure a more natural visual transition and better integrated into the landscape context of the area.



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Figure no. 47 - Area D - Relict Meander - Visual axes, landmarks and perspectives



D-AV01.



D-AV02.





D-AV03.

Own photo, taken: August 2024



D-AV04.

Own photo, taken: August 2024



D-AV05.

Own photo, taken: August 2024



D-AV06.

Own photo, taken: August 2024



D-AV07.





D-AV08.



D-AV09.



D-AV10.



D-



D-AV12.



D-AV13.



D-AV14.



## DESCRIPTION/CONCLUSIONS

On the banks of the Turbinei Channel, numerous fishermen can be seen (**D-AV01**), especially in the early hours of the day, even in the rectangular riverbed. In the densely covered area with vegetation, the Pocloş stream can be observed, which flows into the relict meander of the Mures River (**D-AV02**). Many of the buildings shown at the entrance to the Hippodrome are also visible from here, but due to the dense vegetation, only a few details are visible. The area is much more accessible from the direction of Ady Endre Street, between the embankment and the water surface. A portion of the riverbed densely covered with vegetation can also be seen, with groups of willows in the background (**D-AV06** and **D-AV07**). Images **D-AV09** and **D-AV10** show the residential buildings on the other side of Ady Endre Street, as well as the streets leading south. Image **D-AV11** captures the group of buildings starting at the end of Ady Endre Street.



Figure no. 48 - Area D - relict meander - Built elements



D-EC01.



D-EC02.





D-EC03.



D-EC04.



D-EC05.



D-EC06.



D-EC07.



D-EC08.

## DESCRIPTIONS/CONCLUSIONS

The Relict Meander of the Mures River is characterized, for the most part, by a wild green area, without buildings. Only a private, abandoned area, located outside the studied area, is visible from the Hippodrome, where we have several unfinished buildings: a large hall, a hotel complex **G+3+M**, a tower, a building **G+1+M**. On the left side of the Relict Meander we have a residential area with ground floor, **G+1**, and **G+M** buildings.

Near Ady Endre Street, we have a residential area with ground floor buildings, **G+2** offices, industrial buildings and **G+4** apartment blocks.

Near the last bridge (Barajului str.), which crosses the Relict Meander and the Mures River, we have a fuel station and industrial buildings.





Figure no. 49 - Area D - relict meander - Built elements







Own photo, taken: August 2024

D-CF03.



Own photo, taken: August 2024

D-CF04.



Own photo, taken: August 2024

D-CF05.



Own photo, taken: August 2024

D-CF06.



D-CF07.



Own photo, taken: August 2024

D-CF08.

## DESCRIPTIONS/CONCLUSIONS

There are few paved surfaces in the area, so the study area is only accessible on foot, especially coming from the northern direction and in the area near the Hippodrome. Although the area, from Ady Endre Street is delimited by an asphalt road (*as presented in the previous chapters*), the riverbank and the embankment can only be accessed on foot or by bicycle in the dry season. There are parts of the area so wild that they can only be accessed on foot (**D-CF06, D-CF07, D-CF08**)

In the south-eastern part of the area we have a gravel/asphalted surface. Since in this area we have many old industrial buildings and a factory that is still operating and today also many communities that live in favela-like buildings, this attracts few visitors and people who want to walk. In the long term, through changes in functions, a better delimitation, making the area safer, it will be possible to connect the area to an urban green infrastructure.





Figure no. 50 - Area D - Relict Meander- Paved surfaces



D-SP01.



D-SP02.





D-SP03.



D-SP04.



D-SP05.



D-SP06.



D-SP07.

## DESCRIPTIONS/CONCLUSIONS

The area is mostly densely covered with vegetation, the paved surfaces are less visible, especially in the section near the Hippodrome. On the right bank of the relict meander, through dense vegetation, you reach the equestrian center building, where we do not have paved surfaces. The left bank connects to Ady Endre Street, which leads to the Rovinari neighborhood. In this part, the sections leading to the residential blocks are paved (**D-SPO1**, **D-SPO2**). Near the industrial park at the corner of Barajului Street, we have a road in a degraded state, with gravel, with concrete remains (**D-SPO5**). Between the residential blocks, a combination of asphalt and concrete surfaces can be observed (**D-SPO6**, **D-SPO7**). On the banks of the Turbinei Channel we have unpaved paths, with some gravel sections (**D-SPO3**, **D-SPO4**)





Figure no. 51 - Area D - Relict Meander - Conflicts



D-CN01.



D-CN02.





Own photo, taken: August 2024

D-CN03.



Own photo, taken: August 2024

D-CN04.



Own photo, taken: August 2024

D-CN05.



Own photo, taken: August 2024

D-CN06.



Own photo, taken: August 2024

D-CN07.



Own photo, taken: August 2024

D-CN08.

## DESCRIPTIONS/CONCLUSIONS

Due to the private and fenced space inside the study area, the right side of the Relict Meander can only be accessed on foot, passing over dense vegetation (D-CN01). In the dense vegetation we can also see mountains of garbage, which are washed by the high-water level to the higher points of the coastline, but we can also observe mountains of garbage intentionally thrown away (D-CN02). Image D-CN03 shows some ditches whose purpose is unknown. Image D-CN04 shows concrete rings that could be part of a fountain or a sewage system. In the area of the blocks (Ady Endre Street) we have garbage dumps in poor condition and an environment full of garbage, in the hot summer period accompanied by an unpleasant smell (D-CN05, D-CN06). In the photo D-CN07, under the bridge we see piles of garbage and parallel to the bridge rusty pipes. Image D-CN08 captures traces of uncontrolled fires in the area of Ady Endre Street.





Figure no. 52 - Area D - Relict Meander - Vegetation



D-V01.



D-V02.





D-V03.



D-V04.



D-V05.



D-V06.



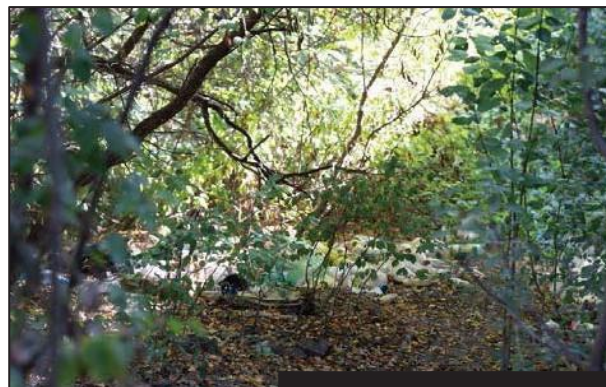
D-V07.



D-V08.



D-V09.



D-V10.



D-V11.

Own photo, taken: August 2024



## DESCRIPTION/CONCLUSIONS

The relict arm of the Mures river is characterized by abundant and diversified vegetation, including trees, shrubs and herbaceous plants. At the tree level, the willow (*Salix*) and walnut (*Juglans*) genera predominate, accompanied by acacia (*Robinia*), plum (*Prunus*), hornbeam (*Carpinus*) and poplar (*Populus*).

The vegetation is extensive and dense, which makes access difficult or even impossible in some areas due to vegetation congestion. This creates a valuable natural habitat, but the difficulty of movement can represent a challenge for the management of the area.

The diversity of herbaceous plants is particularly rich, with species such as common reed (*Phragmites australis*), wild blackberry (*Rubus caesius*), stinging nettle (*Urtica dioica*), species of nettle (*Lamium* spp.), curly thistle (*Carduus crispus*), burdock (*Arctium lappa*), great flatweed (*Agrimonia eupatoria*), tansy (*Tanacetum vulgare*), chicory (*Cichorium intybus*), wild carrot (*Daucus carota*), celandine (*Chelidonium majus*), yarrow (*Achillea millefolium*), forest mallow (*Malva sylvestris*), great plantain (*Plantago major*), species of Styr (*Amaranthus* spp.), morning glory (*Ipomoea purpurea*), white mixed grass (*Melandrium album*), soft grass (*Senecio vulgaris*), wild mustard (*Sinapis arvensis*), white lobada (*Chenopodium album*), Canada weed (*Conyza canadensis*), wattle (*Lythrum salicaria*), Japanese knotweed (*Fallopia japonica*), hemlock (*Conium maculatum*), bindweed (*Convolvulus arvensis*), wild cucumber (*Echinocystis lobata*), hops (*Humulus lupulus*), wild pea (*Lathyrus tuberosus*), annual grass (*Poa annua*) and

Knotgrass (*Polygonum aviculare*). A problematic aspect is the presence of a considerable volume of waste, which negatively affects the quality of the landscape and the ecological balance of the area (**D- V10**, **D-V11**). An intervention is necessary to clean up and maintain this ecologically valuable area.

In the study area, there are numerous spaces between the right bank of the Relict meander of the Mures river and the boundary of the land delimited by the fence, which, in the past, could have been gardens behind the houses. Among the fruit trees present here are the following species: apple (*Malus* sp.), walnut (*Juglans regia*), plum (*Prunus domestica* spp.), etc.

In the southwestern part of the area, the vegetation is less rich compared to the rest of the area (**D-VO8**). This aspect is reflected both in the density of trees and shrubs, and in the diversity of herbaceous species, creating a less dense and accessible area. This variation in the vegetation structure can be influenced by soil conditions, humidity or human interventions in the area.







E-AV01.



E-AV02

Figure no. 53 - Area E - Mures Riverbank - Visual axes





Own photo, taken: August 2024

E-AV03.



Own photo, taken: August 2024

E-AV04.



Own photo, taken: August 2024

E-AV05.

## CONCLUSIONS

Image **E-AV01** is a view of the Mures bridge, with a sidewalk passing under the bridge and running parallel to Insulei Street on the Mures riverbank. Image **E-AV02** is taken from under the Mures bridge, you can see the two ends of the bridge and the remains of a former bridge. Here it would be possible to build a pedestrian bridge. In the western part of the Mures, you can see Insulei Street on the left, the promenade that stops at the place where the photo was taken (**E-AV03**). The photo **E-AV04** was taken on the pier on the bank of the Mures, on the right is the Mures and its bank, on the left are the sports fields in the Hippodrome area, in the background is the APIA building. The defining visual elements on the right bank of the Mures are the buildings captured in the image **E-AV05**.





Figure no. 54 - Area E - Mures Bank - Built elements and conflicts



E-EC01.



E-EC02.

Own photo, taken: August 2024





Own photo, taken: August 2024

E-EC03.



Own photo, taken: August 2024

E-EC04.



Own photo, taken: August 2024

E-EC05.



Own photo, taken: August 2024

E-EC06.



Own photo, taken: August 2024

E-EC07.



Own photo, taken: August 2024

E-EC08.

## DESCRIPTIONS/CONCLUSIONS

The promenade on the riverbank, in the direction of the Mures bridge, is unjustifiably interrupted, so we do not have a connection between the bridge and the promenade (**D-CNO3**). On the embankment, we have pavements in poor condition and some stairs, as can also be seen in image **E-ECO2**. On the bank, we have elements that create a negative view, such as the concrete yard in image **D-CNO5**, with disturbingly high fences. These used to be gardens, which reached the embankment. The Mures is only accessible on foot and there are some concrete elements, which are also negative visual objects (**D-CNO6**). We can list as negative visual elements the varied number of facades (**D-CNO7**) and

accesses that lead to the water along Insulei Street.

Along the Mures Riverbank, we have a residential area with **G** and **G+1** residential houses and between the Mures Riverbank and the Relict Meander, a narrow area with industrial buildings. Insulei Street is the street that connects with the area under the Mures Bridge, and between it and the Mures River we have a free area with a pier, without constructions.





Figure no. 55 - Area E - Mures riverbank - Vegetation



E-V01.



E-V02.





E-V03.



E-V04.



E-V05.



E-V06.



E-V07.



E-V08.

## DESCRIPTIONS/CONCLUSIONS

The Mures riverbank is distinguished by the reduced presence of trees and shrubs compared to the other analyzed areas. The few specimens of trees are found especially near the bridge leading to the Unirii neighborhood, and in the vicinity of the dam, several very young specimens of acacia (*Robinia*), which have grown spontaneously, can be seen. Also, several young specimens of hazel (*Corylus*) have appeared spontaneously near the water.

The predominant vegetation in this area is made up of spontaneous herbaceous plants, among which species such as reed (*Phragmites*), rush (*Typha*), bulrush (*Solidago*), and wild carrot (*Daucus carota*). During the field visit, the drought strongly affected the herbaceous vegetation, most of it being dry.

**Favorable positioning:** The area has an advantageous location, being located in an urban area well connected to the rest of the city, with easy access to the main infrastructure.

**Functional diversity:** The area allows the integration of a variety of functions - recreation, sports, educational and social activities - which contributes to its attractiveness.

**Presence of blue and green infrastructure elements:** The existence of the Mureș River, the Turbina Canal and the Brașului Mort constitute a valuable resource for creating an area with multiple ecological and recreational functions.

**Flora diversity:** The area benefits from a diverse vegetation, which not only enriches the landscape, but also supports its biodiversity and offers opportunities for ecological exploration.

**Good accessibility for motorized and non-motorized means:** The location is well connected to the road network, allowing easy access by car, public transport, bicycle or on foot.

## STRENGTHS

## OPPORTUNITIES

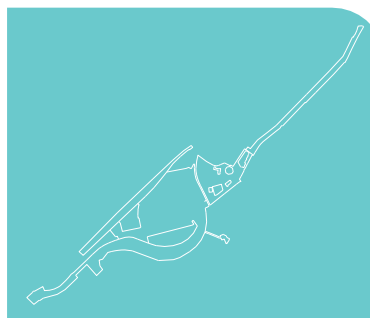
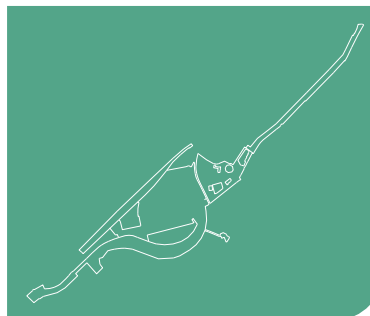
**Creation and expansion of green and blue infrastructure:** The studied area has the potential to become the core of an integrated green-blue infrastructure, which can be expanded over time, having an important ecological and recreational role.

**Raising awareness among the population and authorities regarding the importance of conserving natural elements:** The area can become a living example for educating the community and decision-makers regarding the protection and integration of nature in the urban environment.

**Connecting various functions for a complex recreational experience:** Integrating recreational areas, sports, ecological education and social activities can provide a complete experience for residents.

**Preserving dense vegetation areas to conserve and enhance biodiversity:** The proposal can capitalize on these green areas to support biodiversity and protect existing natural habitats.

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**Unkempt green spaces and the presence of waste:** Part of the area is unkempt, and the accumulation of waste affects its attractiveness and functionality.

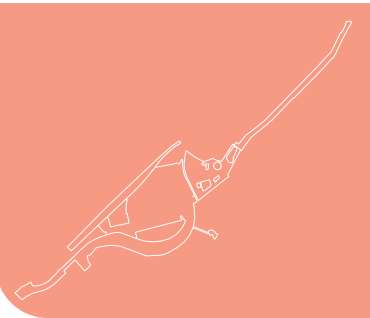
**Presence of invasive and exotic species:** The flora includes non-native plants, which can affect the local ecosystem and reduce the diversity of native species.

**Unexploited lands:** A large part of the territory is underused or even unused, which is a waste of resources.

**High degree of development in some areas:** In some parts of the city, adjacent areas are already heavily built up, limiting opportunities for expansion of this area.

**Limited location on only one part of the city:** The area is located in an area that does not uniformly serve the entire city, which may limit accessibility for some residents.

## WEAK POINTS



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## THREATS

**Difficulties in coordinating the interests of the parties involved:** The project may encounter difficulties in aligning the interests of the different parties - authorities, local communities and other entities involved.

**Lack of regulations may lead to uncontrolled developments that threaten natural and architectural values:** Without a well-defined protection strategy, there is a risk that urban developments will affect natural elements and cultural heritage.

**Delays in projects due to high budgets and limited resources:** Major projects, which require significant investments, risk being postponed or even abandoned due to financial constraints.

**Continued pollution in the absence of public awareness:** If effective education and awareness campaigns are not carried out, residents may continue to pollute, thus affecting the ecological health of the area.

**Obstacles from certain public institutions:** In some cases, bureaucracy and the lack of effective collaboration between institutions can delay project implementation or block initiatives.

## GENERAL RECOMMENDATIONS

### CHARACTER

**The areas that make up the design area have various positive features that must be taken into account and preserved.** It is important to preserve and capitalize on the distinct characteristics of each area within the design perimeter, whether they are natural elements or built structures. This approach will contribute to preserving the identity of the area and maximizing its ecological and recreational potential.

### INFRASTRUCTURE

**The landscape proposal must include suggestions related to infrastructure, paying special attention to public transport and accessibility for people with disabilities:** Infrastructure is an essential element of the project, and measures must target environmentally friendly solutions, such as green transport, bicycle paths, and pedestrian routes. It is also necessary to ensure full accessibility for people with reduced mobility.

### WATER SURFACES

**It is essential to preserve water surfaces in their natural state:** Any intervention on aquatic elements, such as the Mures River, the Turbinei Channel, or the Relict Meander of the Mures River must be delicate and respectful of the natural environment. Aggressive modifications can have negative effects on biodiversity, affecting the natural habitats of local species.

### **Visitors' access to water surfaces must be facilitated:**

The design must integrate access points for visitors, allowing them to enjoy the proximity of the water without disturbing the ecological balance. These points can be integrated through promenade solutions or terraces overlooking the water, which should provide a pleasant and peaceful experience.

## BUILT ELEMENTS AND URBAN FURNITURE

### **It is important to create constructions and urban furniture that harmonize with the surrounding environment:**

Any built structures must be in accordance with the natural landscape, avoiding strong contrast or negative visual impact. Materials and shapes must be carefully chosen to reflect the natural character of the area.

**Use of natural materials in areas close to nature:** It is recommended to use ecological materials, such as wood, stone, or other materials that have a low impact on the environment and that integrate organically into the landscape.

**Promotion of recycled and recyclable materials and the circular economy:** In order to achieve sustainable design, it is essential to opt for the use of recycled and recyclable materials, thus reducing the ecological footprint of the project. Promoting the circular economy contributes to efficient resource management, reducing waste and encouraging the reuse of materials.



## DISFUNCTIONS AND CONFLICTS

The landscape project will prioritize the resolution of all dysfunctions and conflicts identified in the preliminary analysis. These dysfunctions may include problems related to accessibility, deterioration of green areas, lack of maintenance of existing infrastructure, or the presence of elements that do not integrate harmoniously into the landscape. Through an integrated and strategic approach, the project will propose concrete measures to remedy these aspects, aiming to improve the functionality and general aesthetics of the area. Measures to prevent other possible dysfunctions that may occur in the future will also be taken into account, thus ensuring long-term sustainability of the interventions carried out.

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## VISUAL AXES

Within the landscape solution, special attention will be paid to the valorization of spectacular visual perspectives and important visual axes. Landscape elements must contribute to a pleasant visual experience, guiding the gaze towards natural or built points of interest. Through the judicious use of vegetation masses, negative visual axes, such as those that highlight unpleasant or dissonant elements, can be blurred or completely eliminated, while positive visual axes will be supported and amplified. The perception of the area from the outside, such as the view from tall buildings or hills, will also be taken into account, to ensure a harmonious integration of the entire area into the urban and natural context.

## RECOMMENDATIONS ON THE TECHNICAL SOLUTION

- Regarding technical solutions, it is essential to apply sustainable and ecological principles, which contribute to protecting the environment and reducing the negative impact on the ecosystem. Specific recommendations include:

- Use of high-quality materials, which guarantee the durability and sustainability of the constructions.

- Preference for natural, recycled or recyclable materials, which reduce the carbon footprint and promote the circular economy.

- Implementation of technologies that facilitate the retention and efficient management of rainwater, thus contributing to reducing flood risks and sustaining water resources.

- In natural areas, constructions will be demountable, avoiding the use of synthetic materials and strident colors, in order to preserve the natural character of the place.

- Avoiding all elements or constructions that could pose a danger to biodiversity or that would affect the ecological balance.

- Creating biodrainage surfaces and correlating plantings with the specific hydrological profile of the area, to facilitate the natural circulation of water and support local vegetation.

## RECOMMENDATIONS ON VEGETATION

Vegetation has an essential role in this project, and protecting mature trees and indigenous species is a major priority. These natural elements contribute to maintaining biodiversity, improving air quality, and creating a pleasant landscape. It is recommended to eliminate invasive species, as well as control those that tend to expand spontaneously, such as reeds in the vicinity of watercourses. At the same time, the use of exotic species will be avoided, favoring the planting of indigenous species, better adapted to local conditions.

To support biodiversity, it is proposed to create green corridors, green-blue corridors that connect urban and peri-urban green spaces, thus ensuring ecological continuity and the necessary habitat for various species of flora and fauna. Vegetation also plays an important landscape role; the alternation of species with different heights, textures and colors will allow the creation of spaces with a varied character, offering a special visual experience throughout the year.

In addition to their aesthetic and ecological value, mature trees can become landmarks for orientation in urban space. It is necessary to protect them, through appropriate grooming and phytopathological treatments where necessary. For efficient vegetation management, it is recommended to develop a maintenance plan that takes into account the specifics of each species and the habitat in which they develop. Excessive cutting should be avoided so as not to affect the balance of the local ecosystem.

In order to increase biodiversity, it is recommended to plant in layers, using trees, shrubs and perennials, so as to create a rich leaf mass, which contributes to improving the microclimate. Also, the selection of plants must be carried out so that in each season, there are species that offer a pleasant visual impact.

To protect water courses and adjacent areas, it is recommended to plant a protective vegetation strip, consisting of trees and shrubs. In the context of climate change, species capable of adapting to new climatic conditions will be chosen, as well as species that require low maintenance and are adaptable to the urban environment.

This holistic approach to vegetation and infrastructure will contribute to the creation of a sustainable and ecological urban landscape, which will bring benefits to both the local community and the environment.



## RECOMMENDATIONS ON THE STUDY AREAS

### AREA A - TURBINEI CHANNEL

**Connection with Carpati Alley:** It is essential to improve the connectivity between Turbinei Channel and Carpati Alley, in order to facilitate pedestrian and bicycle access between the two areas.

**Crossings between the two sides of the channel:** The project will propose solutions for easy crossing of the Turbinei Channel, through pedestrian sections or even new pedestrian bridges, ensuring easy access between its banks.

**Secured railway crossing (CFR):** It is necessary to ensure a safe crossing of the railway, possibly through an above-ground or underground pedestrian crossing, in order to improve mobility between the two sides of the street

**Renewal of existing green areas and creation of new playgrounds for children:** The rehabilitation and expansion of green spaces along the Turbinei Channel will be prioritized, integrating modern and attractive playgrounds for children.

**Cycle paths:** Creating cycle paths along the Turbinei Channel will encourage alternative mobility and better connect the area with the urban cycling network.

### AREA B - MUNICIPAL PARK

**Access to the park near the DEER building, along the Turbinei Channel:** Access to the Municipal Park will be improved by creating a pedestrian and cycling route near the DEER building, along the Turbinei Channel, ensuring the continuity of mobility in the area.

**Access from the Mures Bridge:** The proposal will analyze solutions to create an efficient connection between the Municipal Park and the Mures Bridge, facilitating access for visitors from the northern part of the city.

**Secured railway crossing (CFR) to the Hippodrome:** A safe and accessible crossing for pedestrians and bicycles will be created across the railway, connecting the Municipal Park with the Hippodrome area.

**Putting the Stadium into Operation:** It is proposed to rehabilitate and reopen the stadium, to become a focal point for sports activities in the park and to attract a greater number of visitors

**Rethinking the road traffic around the park:** A reorganization of the road traffic is necessary to reduce car traffic (by solving the parking problem) around the Municipal Park and to facilitate pedestrian and bicycle access.

## AREA C - HIPPODROME

**Access to the land behind the equestrian center:** Access to the land behind the Hippodrome will be optimized, especially for recreational and sports activities.

**Dismantling the non-functional building:** Abandoned or unused buildings will be demolished to make way for new functions that will contribute to the revitalization of the area.

**Open spaces for outdoor sports and forest parks:** Consideration will be given to the creation of large spaces for outdoor sports and recreational activities, possibly in the form of a forest park, which will offer visitors a green haven.

**Radial connections:** Well-defined and safe connections will be created between the various points of interest in the Hippodrome area, ensuring efficient pedestrian and cyclist circulation.

## AREA D - RELICT MEANDER OF THE MURES RIVER

**Connection to the green network near the Poclos River:** This area will be integrated into the existing green network, ensuring connectivity with other natural spaces along the Poclos River.

**Secured passage to Ady Endre Street:** A safe solution for crossing the Relict Meander towards Ady Street will be proposed, to facilitate access for residents and visitors.

**Public space near the Ady Endre neighborhood:** A

modern public space will be created, which will offer residents of the Ady Endre neighborhood a place for relaxation and recreation in the vicinity of the Relict Meander.

**Public access platform at the confluence of the Relict Meander into the Mures River:** A public access platform open to the public at the confluence of the Relict Meander into the Mures River, allowing visitors to interact with the water and enjoy the landscape.

## AREA E - MURES RIVERBANK

**Continuity to the Mures Bridge:** Continuity of pedestrian and cycling routes along the Mures Riverbank will be ensured, up to the Mures Bridge, for increased connectivity between the various points of interest.

**Connection with Carpati Alley:** The connection between the Mures Riverbank and the Carpati Alley will be improved, to facilitate pedestrian and cyclist access between these two areas.

**Access platforms and sports clubs for water sports:** The Mures Riverbank will need to be equipped with access platforms and sports facilities that encourage the practice of water sports, such as kayaking or rowing.

**Creation of access to the Municipal Park:** A pedestrian path to connect the Mures Riverbank to the Municipal Park, thus improving accessibility between these areas.



LANDSCAPE STUDY REQUIRED TO SUBSTANTIATE THE DESIGN COMPETITION FOR THE MUNICIPAL  
HIPPODROME PARK. URBAN REGENERATION PROJECT OF THE HIPPODROME AREA, MUNICIPAL  
HIPPODROME PARK,MURES RIVERBANK, TURBINEI CHANNEL

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