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LOBAU AUTOBAHN: THE LAST HIGHWAY IN AUSTRIA?

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ABSTRACT

The building of the Lobau Autobahn was cancelled after 20 years of preparations and disputes. It should be the last part of the Vienna's new 203 km long bypass. The Lobau Autobahn includes the Lobau tunnel under the Danube and the Donau-Auen National Park. The analysis of reports on this project and some press materials shows that the cancellation of the project results from the reschedule relations between further development of road network, the compact city concept, and environment protection. Reports were prepared by the Expert Group and by the TU Wien. The first suggests the necessity to build the Lobau Autobahn for further development of Vienna. The climate targets should be fulfilled by introducing other measures than stopping building new car roads. The second report postulates to cancel the plan of building the Lobau Autobahn. According to this report, the project is incompatible with the climate targets and the compact city concept. Additionally, the organisation 'Science for Future' supports the position expressed in the report prepared by the TU Wien. The presented differences have a reason in different assumptions adopted by the authors of the reports, not in the incorrectness of one of the reports.

KEYWORDS

Lobau; Donau-Auen; Vienna; Regionenring; bypass; compact city; climate targets; tunnel; predict and provide; car traffic

1. Introduction

On 1 December 2021, Leonore Gewessler, the Austrian Minister of Climate Action, Environment, Energy, Mobility, Innovation and Technology from the Green Party, announced that Lobau Autobahn would not, after almost 20 years of preparations and disputes, be built.[1] On the one hand, it is only the Austrian government's internal decision that has triggered a wave of comments as this highway is the last missing part of the Vienna ring road. On the other hand, the Lobau Autobahn is almost a symbol of reshaping the relationship between the further development of road network, the compact city concept, and environmental protection.[2] Such a radical stance seems to be impossible in Polish realities now. On 20 December 2021, the longest car tunnel under Ursynów (2.335 m long) was opened as a part of the Warsaw bypass.[3] However, the author believes there will also be Polish Lobau Autobahn somewhere in the future. Therefore, it is advisable to analyses arguments presented for and against the Lobau Autobahn.

This article analysed three representative documents prepared by scientists that supporting or denying the need to build the Lobau Autobahn. Additionally, the subject of the analysis are articles from the Austrian press. Such analysis should familiarise the reader with the case of Lobau Autobahn, which is possibly the first big car traffic project in Central Europe which will not be built just because it is for cars.

2. The Lobau Autobahn

The Lobau Autobahn is a part of the larger project called 'Regionenring', a joint bypass for the Vienna and Sankt Pölten, the capital city of Lower Austria. Initially, it should be 203 km long and was going to be finished in 2018. Last but one part of the project, a bridge over the Danube in Traismauer (Donaubrücke Traismauer), was finished in 2010. The last part of the project, the Lobau Autobahn, has not yet been started to be built.[4] The Lobau Autobahn should be 19 km long, including an 8,2 km long tunnel under the National Park Donau-Auen – the Lobau tunnel and S1 Spange – additional short highway from the bypass in the direction of the city centre. The Lobau Autobahn should link Schwechat (where Vienna International Airport and OMV Refinery are located) with Süßenbrunn. In Schwechat and Süßenbrunn are located two endings of the highway S1. The project aims to reduce car traffic volume on the roads no. A23 and A4 and to connect the district no. 22 with the city (S1 Spange). The tunnel should go 60 m below the Danube. The overall costs of the Lobau Autobahn are estimated at the amount of 1,9 billion euros.[5] The postulate to build a Vienna Nord-East bypass was first expressed in 1994. In the environmental assessment prepared for Nord-East Vienna in 2003, it was stated that the most appropriate solution for the Vienna Nord-East bypass would be a tunnel under the Danube in the Lobau area, which has been a nature reserve since 1978 and a part of the Donau-Auen National Park since its establishment in 1996.[6] In April 2005, ASFiNAG, an Austrian institution responsible for planning, building and maintaining highways, declared publicly a will to build the Loubau Autobahn, including the Lobau tunnel. After two years, ASFiNAG presented a detailed plan concerning the Lobau Autobahn. A required environment assessment for this investment should have been obtained by 2011, and the investment should have been completed till 2018. Unfortunately, because of political changes in the Vienna local government and intensive public debates, issuing the environmental assessment was delayed several years. Finally, the positive environment assessment was issued in 2015, which the Federal Administrative Court confirmed in 2018. Formally, construction works should have been started,[7] but it did not happen.

It is worth mentioning that areas where the Lobau Autobahn should be built, also has political symbolic significance.[1] The National Park Donau-Auen, through which the Lobau Autobahn should go, was established after a big protest against building in this part of the Danube, in Hainburg, a big dam and hydropower plant. In the frame of the so-called 'Konrad-Lorenz petition for a referendum', in 1985 it was collected 353.906 signatures to organise a referendum against this hydropower plant. Resignation from building the hydropower plan and establishing the National Park was essential in forming an environmental movement in Austria and the Green Party.[8]

[1] It also has historical symbolic significance. In 1809 Napoleon crossed the Danube in Aspern (Lobau), where he built a pontoon bridge and suffered the first defeat. This skirmish is heroized in Austrian historiography. R. Golembiowski, G. Navara, op. cit., p. 81.

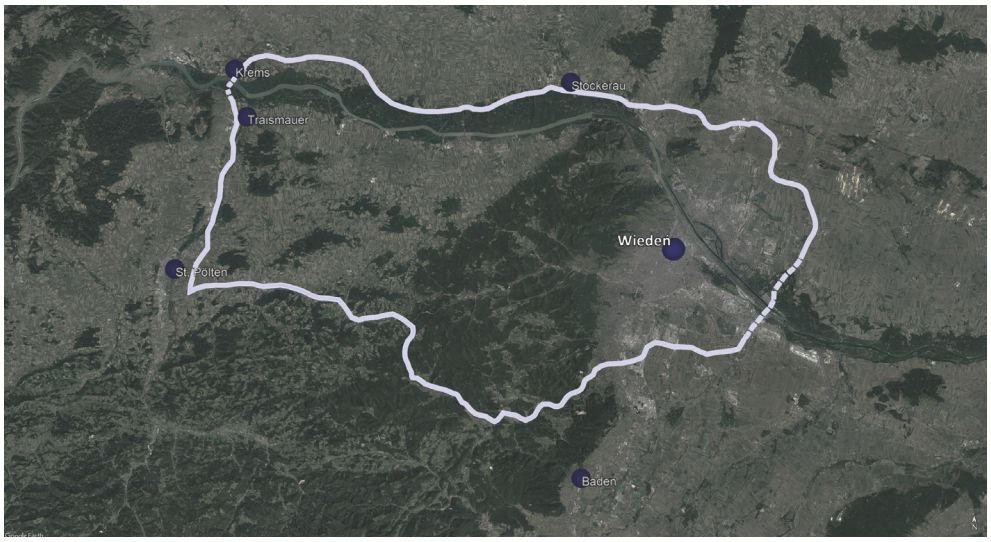

Photo 1: Regionenring: the Vienna ring road. Source: Buława P., Nagel P., based on *www.google.pl/maps*, 2021.

3. Research

3.1.Expert Group report

In 2017 Maria Vassilakou, the then City of Vienna Councillor for Transport from the Green Party, appointed an external expert team to evaluate the need to build the Lobau Autobahn. The report was published in 2018. The team included, among others, the following specialists: prof. Gerd-Axel Ahrens (TUD), prof. Dernd Scholl (ETH), Prof. Sibylla Zech (TU Wien), Christof Schremmer (ÖIR).[9] At the beginning of the report, it is stated that Vienna population is fast-growing, and by 2028 it will have achieved a population of 2 ml people. The main part of the report presents five alternative scenarios to the building of the Lobau Autobahn – (B+, C, D, E and F). Additionally, as the 'A' scenario is a situation as is in 2015 and the 'B' scenario as it should be in 2030 without taking any action. The scenario 'B+' concentrates on public transport and parking space management measures without building the Lobau Autobahn or other new local roads. Following, the scenarios 'C' and 'D' provide for building the Lobau Autobahn. The scenario 'C' pays attention to the replenishment of a high-ranking street network. The mix of measures provided for in the scenarios 'B+' and 'C' is marked as the scenario 'D'. Finally, the scenarios 'E' and 'F' anticipate fully resignation from building any new Danube crossing but provide for an extension of new local roads. In the scenario 'F' should be additionally introduced measures provided for in the scenario 'B+'. The team analyses all scenarios with transport models. The analyse shows that:
- the increase of traffic movement is observed in three cases: (i) scenario 'B' – increase up to 8%, scenario 'C' – increase up to 9% and (iii) scenario 'E' – increase up to 9 %
- the decrease of traffic movement is observed in three cases: (i) scenario 'B+' – decrease up to 1%, (ii) scenario 'D' – up to 1%, (iii) scenario 'F' up to 1%.

It may be concluded that introducing measures relating to public transport and parking space management provided for in the scenario 'B+' is crucial for reducing/keeping traffic volume. Both scenarios 'D' and 'F' included measures from the scenario 'B+'. Moreover, the same or similar car traffic volume may be achieved with and without

building the Lobau Autobahn. The authors further analyse car traffic volume and check how traffic volume will be changed in particular local centres in 21 and 22 districts – Aspern, Essling, and Groß Enzersdorf. The analysis shows that scenario 'D' leads to a reduction of traffic volume in Aspern and Essling. The scenarios 'C' and 'F' decrease traffic volume in Aspern, but in the case of scenario 'C' the decrease is substantially more considerable. Other scenarios do not significantly affect car traffic volume in those local centres. Therefore, it may be stated that only the building of the Lobau Autobahn can reduce traffic volume in both local centres in no. 21 and 22 districts. None of scenarios affect car traffic volume in Essling.

The authors agree that the Lobau Autobahn will generate additional ca. 38.000 t of greenhouses, but it is only 0,05% of Austrian or 0,5% of Vienna greenhouses emission. Moreover, it is underlined that neither highway construction results in a direct reduction of greenhouses. In the authors' opinion, such reduction may be achieved by reducing dispersed settlement development and promoting e-mobility, not by stopping a new infrastructure investment. Hold-up of building the Lobau Autobahn will have a significant negative influence on the further development of the Nord-East part of Vienna (21 and 22 districts). As the authors state, it will also have a negative impact on Vienna's competitiveness towards other European metropolises and further implementation of the smart-city concept fostered by Vienna. Therefore, the authors indirectly support building of the Lobau Autobahn.

Photo 2: Lobau Autobahn; dashbed line: the Lobau tunnel and S1 Spange. Source: Buława P., Nagel P., based on *www.google.pl/maps*, 2021.

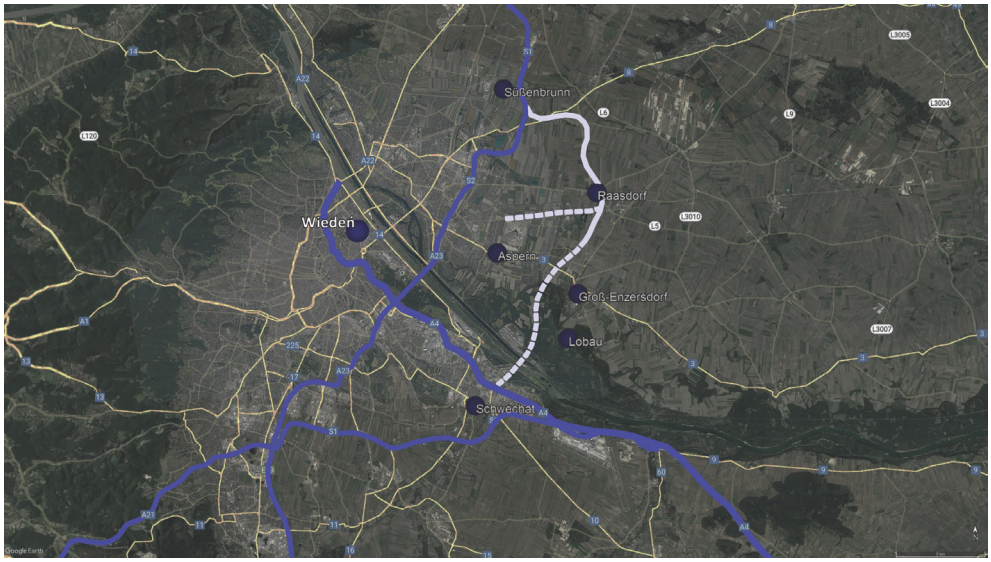

Photo 3: Lobau Autobahn from the perspective of Vienna. Source: Buława P., Nagel P., based on *www.google.pl/maps*, 2021.

3.2. TU Wien report

In response to the above report, the Institute for Traffic Science of the Vienna University of Technology (TU Wien) prepared an alternative report under Prof. Hermann Knoflacher.[10] Like the above one, the report was also commissioned by the City of Vienna. Therefore, the authors adopt the same scenarios and introduce the same labels for them as it was made in the Expert Group report. Consequently, both reports are comparable. In the TU Wien report, the scenario 'B+', which does not provide for building the Lobau Autobahn, is unambiguously supported. The authors present many arguments which advocate their opinion.

First of all, the authors recall that the idea to build the Lobau Autobahn is back to the '90s of the 20th century. During this period, other goals were set for the traffic system, and greenhouses emission did not play an important role. The correlation between city development and increasing car traffic volume is currently not a dogma for the authors. Even though the population of Vienna has been growing continuously, the car traffic volume has been noticeable reducing. Further, only 4% of all car traffic volume in Vienna concerns crossing the Danube. It suggests that the Lobau Autobahn would, in fact, induce car traffic volume, which is now relatively small.

The authors agree with the Expert Group from the previous report that a similar reduction of the car traffic volume may be achieved with and without the Lobau Autobahn – the scenarios 'B+', 'D' and 'F'. However, in their opinion it means that only measures relating to public transport and parking space management provided for in all three scenarios are relevant for reducing car traffic volume. The Lobau Autobahn would not have any impact on such reduction. In addition, building, exploiting, and conserving Lobau Autobahn will create an extended emission of greenhouses. It concerns mainly the Lobau tunnel. Moreover, the authors express concern if all measures relating to public transport and parking space management will be implemented if the Lobau Autobahn is built. They underline that implementing those measures required following complicated proceedings and participation of many subjects. Therefore,

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such implementation is not apparent, and scenario where the Autobahn is built and all or majority of measures are not implemented is high possible.

Then, the report analyses the issue of the concept of the smart city. According to this concept, the authors mentioned that Vienna should reduce car traffic volume to 20% in whole traffic volume till 2025 and to 15% till 2030. Building a new highway like the Lobau Autobahn will not help achieve those parameters. The Lobau Autobahn should also not help strengthen Vienna's competitive position. On the contrary, it makes it possible to relocate business activity to a neighbouring town in Lower Austria, where real properties are cheaper than in Vienna. Further, the Lobau Autobahn will induce dispersing housing settlements. The most attractive daily commuter distance is 20-40 minutes in one way. If the Lobau Autobahn were built, this commuter distance would mean a longer distance as the Lobau Autobahn is a highway that allows driving longer distances within the same time. Consequently, people would often decide to settle down far away from the city. The Lobau Autobahn would play a compensation role for a longer commuter distance from a faraway located settlement outside the city.

The final argument against the Lobau Autobahn is presented on page 56 of the report and concerns fundamental issues. The authors claim that the close relationship between urban development and transport is well-known. The transport system may even determine urban development. The compact city was and is based on pedestrians as the primary mode of transport, supplemented by cycling and public transport and car transport necessary for business activities. Urban sprawl is primarily the result of car traffic. If a city strives for compact urban development, the abovementioned environment-friendly means of transport, which have been massively disadvantaged in the 20th century, should play a central role in transport again. Consequently, the Lobau Autobahn, which directly supports car transport, should not be built.

3.3. Position of Science for Future

The third analysed document is an appeal of the 'Scientist for Future: Wien' issued on 5 August 2021.[11] The organisation has more than 1.500 scientists supporting climate politics based on science. In this appeal, the organisation expresses its support for the civil society critic of building the Lobau Autobahn. According to the appeal, the construction is against climate targets set on the 2015 UN Climate Change Conference held in Paris and other climate targets binding for Austria or the City of Vienna. Especially if Vienna wants to achieve climate neutrality till 2040, the Lobau Autobahn is contra-productive. In order to adjust the traffic transport in Vienna and fulfil the climate targets, Vienna should (i) extent public transport infrastructure, (ii) intensive parking management with small zones, (iii) introduce measures like traffic-calm centres, and (iv) extent further infrastructure for cyclists and pedestrian traffic. Those recommendations are very close to measures presented in the TU Wien report. The concurrence is not accidental. The appeal cites this report directly. Additionally, the build of this Autobahn will also lead to poisoning of water and lowering of its ground level in the Donau-Auen National Park where the tunnel should be built.

The most important arguments included in the appeal concern the shift of paradigm related to building new road infrastructure. The signatories of the appeal say openly that the Lobau Autobahn is a project from the 20th century and does not fit to the present day. The project is based on the 'predict and provide' paradigm, which has been the dominating philosophy for several decades as far as building new road infrastructure

is concerned. According to this paradigm, we should estimate future road network demands and build infrastructure that fulfils these demands. This paradigm is often criticised because it does not consider induced traffic resulting from building such new road infrastructure. It is a vicious circle – a new infrastructure is built to fulfil demands; it creates new demands.[12] Consequently, the authors of the appeal claim that the Lobau Autobahn will not solve traffic problems but generate intense car traffic volume in a longer period.

4. Discussion

In the dispute about the Lobau Tunnel, there have also been used typical arguments concerning environmental protection, where project concerns protected areas. The Lobau tunnel will be located in an environmentally sensitive area of the National Park Donau-Auen. The Park is home to 700 plant species, more than 30 mammals and 100 breeding bird species, eight reptiles, 13 amphibians and 60 fish species. Therefore, such construction may partly or fully destroy this area's natural diversity. The destruction may take place during construction works or later. International Union for Conservation of Nature (IUCN) warmed that if the Lobau Autobahn had been built, they would have withdrawn their recognition of the National Park Donau-Auen as IUCN protected area category II.[13] Some arguments concern also using green fields to build the highway. The Lobau Autobahn should be generally built on the currently green areas planted with trees or used for recreation purposed by Viennese. On the other hand, it is worth mentioning that in the area where exactly the tunnel should be built is located the OMV Central Warehouse for petroleum and similar substances. Therefore, some arguments about the significant destruction of nature due to building the Lobau Autobahn may be exaggerated as an industry has been already used this area.

Beyond their fundamental correctness, the arguments expressed in the TU Wien report and the appeal of the Science for Future may be treated as radical and may be not acceptable by the society accustomed to a car. However, an opinion prepared in October 2021 by the VCÖ stated that 63% of Austrian is against the highway road network development (extension).[14] In Poland, but also in most countries outside Europe, the opinions may be significantly different. It is worth mentioning that road network is a key element of human infrastructure. It is even the only sign of human occurrence in some low-inhabited areas. Moreover, it may be assumed as essential elements of civilization to build a road as examples can be mentioned roman roads or the Silk Road. As its development stimulates economic development, it has been continuously extended. Therefore, presented arguments against the Lobau Autobahn may change transport policy and fundamentally influence unforeseen and even dangerous civilisation. It can be why the authors of the Expert Group report support the budling of the Lobau Autobahn. It is worth mentioning that reports concentrate on Vienna; they do not include analysis from the point of view of Lower Austria.

5. Conclusion

The presented documents show that we can observe how the fundamental paradigm concerning building car road networks is shifting in Austria. The Expert Group report and TU Wien report present correct analysis, but they provide for different results. The reason for this is to make different assumptions by the authors. In the first report, the authors accept that the need to build new car road infrastructure and environmental protection and the concept of the compact city may or must be achieved. The TU Wien

report expresses that to achieve climate targets and develop a compact city, the Lobau Autobahn, and other similar projects must be stopped. The third document confirms that the reason of differences are different assumptions that can be labelled as worldview assumptions. In Poland, such dispute may take place in the future.

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LOBAU AUTOBAHN: OSTATNIA AUTOSTRADA W AUSTRII?

STRESZCZENIE

Budowa autostrady Lobau została odwołana po 20 latach przygotowań. Miała to być ostatnią częścią nowej 203-kilometrowej obwodnicy Wiednia. Autostrada Lobau obejmuje tunel Lobau pod Dunajem i Parkiem Narodowym Donau-Auen. Z analizy raportów dotyczących tego projektów oraz niektórych materiałów prasowych wynika, że rezygnacja z projektów wynika z przesunięcia środka ciężkości w relacji pomiędzy dalszym rozwojem sieci drogowej a koncepcją miasta kompaktowego i ochroną środowiska. Raporty zostały przygotowane przez Grupę Ekspertów oraz TU Wiedeń. Pierwszy z nich wskazuje na konieczność budowy autostrady Lobau dla dalszego rozwoju Wiednia. Cele klimatyczne powinny zostać osiągnięte poprzez wprowadzenie innych środków niż zaprzestanie budowy dróg samochodowych. Drugi raport postuluje anulowanie planu budowy autostrady Lobau. Według tego raportu projekt ten jest niezgodny z celami klimatycznymi i koncepcją miasta kompaktowego. Dodatkowo organizacja „Science for Future" poparła w swoim apelu stanowisko wyrażone w raporcie przygotowanym przez TU Wiedeń. Przedstawione różnice mają przyczynę w odmiennych założeniach przyjętych przez autorów raportów, a nie w błędności jednego z raportów.

SŁOWA KLUCZOWE

Lobau, Donau-Auen, Wiedeń, Regionenring, obwodnica, miasto kompaktowe, cele klimatyczne, tunel, predict and provide, ruch samochodowy.