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Brno Railway Junction Feasibility Study Assesses All Suggested Options as Beneficial

Today, Správa železniční dopravní cesty (SŽDC) presented results of the Brno Railway Junction (BRJ) Feasibility Study settling, *inter alia*, the location of a new main railway station as a pivotal part of the reconstruction of the entire junction. Each suggested option of the BRJ brings about the added value of a different volume, albeit any suggested option shows significant benefits. The benefits will be felt mainly by the passengers, particularly by reducing the travelling times, enhancing the railway services and increasing travelling comfort considerably.

The Brno Railway Junction is a very important part of the railway network of the Czech Republic and in terms of congestions caused by rail transport it represents one of the most congested part of infrastructure on the SŽDC network. Railway lines of European significance and other nation-wide railways are interconnected therein. The latest significant improvements of arrangements, technical parameters and capacity were carried out in the seventies of the last century. Since then, however, the requirements imposed on the railway transport in the city of Brno and its vicinity have changed considerably. The present status of railway infrastructure does not correspond to current requirements, does not meet modern standards of the railway infrastructure and at the same time it is an obstacle to the development of certain parts of the city of Brno. Over the past few decades, these facts have been the main reason for considerations given to the reconstruction or modernization of the Brno Railway Junction.

The solution of BRJ is related to a number of transport and other overall social areas. It is why the feasibility study is conceived in a comprehensive way not only for transport by rail, but it also affects the changes of the concept of public transport in Brno and the public transport throughout the whole Jihomoravský Region and the impact on the related transport infrastructure as well.

"The main objective of preparing a Brno Railway Junction Feasibility Study was to provide a technical basis for the Ministry of Transport in co-operation with the Jihomoravský Region, the statutory city of Brno and SŽDC to be able to take a decision on a specific BRJ final arrangement and further action of the project preparation to be lead to its successful implementation," Deputy Minister of Transport, Mr. Tomáš Čoček was quoted as saying.

"The BRJ reconstruction project arrangements were processed by this study with two options of each arrangement, one being prepared according to the resolution of the Government of the Czech Republic and the other one being suggested by a civic coalition Station in the Centre. Identification of the first arrangement under the name of Option A – River and the second one by the Option B - Petrov became usual," SŽDC Director General Pavel Surý explained by adding that based on initiatives made on the arrangements of both options mentioned and other recommendations, the draft alternate options of BRJ reconstruction was acceded to. These new arrangements of the reconstruction were always based on the basic principle of the first or the second basic option.

Arrangement according to the options

Option A – River Arrangement includes the implementation of a common through line on Rail Transit Corridor I both for passenger and for freight transport. The main station is carried out in a completely new position in the area of an existing lower station. The railway lines from Přerov and Veselí nad Moravou are connected to the junction by opening the capacity of the current line section via Slatina and Černovice, connected subsequently to the northern station head of a new main station. A draft arrangement is prepared in four options representing a combination of the project arrangements of railway lines from Břeclav and Třebíč, and a combination of connecting the line from Chrlice to the main station (by levels to the northern station head vs. a separate tunnel with the underground station perpendicularly to the platforms of the main station).

Option B – Petrov Arrangement includes the implementation of a separate through line on Rail Transit Corridor I both for passenger and for freight transport according to the present arrangement. The main station is carried out almost on the existing site. The railway lines from Přerov and Veselí nad Moravou are connected to the junction by several options combining the opening of capacity of the current lines with the construction of new lines, albeit always leading to the southern station head of the main station.

Each option brings a benefit

The above drafts of project arrangements have been assessed in terms of the assumed benefits, costs incurred and potential risks occurred. *"Each suggested option of BRJ arrangement brings about the added value of a different volume, albeit any suggested option of the project shows a significant benefit for the company in general. **The benefits will be felt mainly by the passengers, particularly by reducing the travelling times, enhancing railway services and increasing travelling comfort considerably as well as safety in their movement in transport terminals and by embarking and disembarking the trainsets,**"* SŽDC Deputy Director General for infrastructure modernization Mr. Mojmir Nejezchleb explained. As noted by him, the transport service of the city of Brno will be improved simultaneously thanks to the implementation of new railway stops and suitable transfer links between the railway and mass urban transport systems.

A significant part of expenditures of the implementation of each BRJ arrangement is represented by the capital costs of the railway infrastructure with a smaller part being the investment costs of a municipal transport infrastructure and the costs to ensure their operability. With a view to the project preparation, there are costs to prepare the project documents included as well as costs of engineering and investment activity and costs to be incurred due to property settlement. With a view to the implementation, this includes costs of each construction facility and operation units including the reserves. The construction costs of each specific option amount to an interval from 30 to 40 billion Czech Crowns. Total investment costs amount to an interval from 41 to 56 billion Czech Crowns.

Total Investment Costs including the Reserve excl. VAT in billion CZK

	A	Aa	Ab	Ac	B1	B1a	B1b	B1c	B1d	B1f (300)	B1f (500)
Railway Infrastructure	39.8	41.9	40.8	43.1	52.3	55.8	47.1	48.3	50.9	41.2	42.8
Municipal Infrastructure	2.3	2.3	2.3	2.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total	42.1	44.1	43.1	45.4	53.0	56.5	47.8	49.0	51.6	41.9	43.6

As the higher costs are not always adequately compensated by benefits of a higher volume, the ratio of the benefits and costs of each option is always different. *"A benefit-to-cost ratio of each option varies between values of 1.1 to 1.4. In this way, a ratio of each option reaches the incurred benefits compensated by the costs incurred inevitably due to the implementation provision and the project operation, and by this, any BRJ reconstruction arrangement is beneficial for the company,"* Deputy Minister of Transport Mr. Tomáš Čoček assessed the results of a study.

The BRJ Feasibility Study has been prepared by the association of companies SUDOP BRNO, MORAVIA CONSULT and AF-CITYPLAN on the basis of a contract concluded 20 May 2015. An almost eleven months postponement of the final fulfillment to 10 October 2017 was due to additional requirements for the preparation of more options of the project arrangements, an opposition opinion on the calculation of capital costs and last but not least, a timetable optimization of the bus connection lines to the rail lines in Jihomoravský Region serving to make the calculations of time savings incurred to passengers more accurate. All reasonable requirements represented a labor-intensity increase in preparing the feasibility study that lead to an increase of the original price of the feasibility study amounting to 17.5 million Czech Crowns up to a final amount of ca. 22.7 million.

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