



Audit Conclusion

17/05

Construction, Modernization and Overhaul of Motorways

The audit was included in the audit plan of the Supreme Audit Office (SAO) for 2017 under number 17/05. The audit was headed and the Audit Conclusion compiled by SAO member Ing. Jiří Adámek.

The aim of the audit was to verify whether:

- The aims for building the motorway network are being fulfilled;
- The defined implementation targets were met at appropriate cost.

Subject to audit was the period from 2013 until June 2017; for factual contexts, also the preceding and subsequent periods were included. The audit for auditees was performed from January to October 2017.

Auditees:

Ministry of Transport (Ministerstvo dopravy; MD);

State Fund for Transport Infrastructure (Státní fond dopravní infrastruktury; SFDI);

Road and Motorway Directorate of the Czech Republic (Ředitelství silnic a dálnic ČR; ŘSD).

The objections to the audit protocol submitted by the MD were dealt with by the head of the group of auditors by a decision on objections.

The SAO Board in its XVII. meeting held on 27 November 2017

approved by Ruling No. 5/XVII/2017 the following

audit conclusion worded as follows:

I. Initial Information

Motorway is a roadway designed for long-distance and international traffic that is built without level intersections and with separate entry and exit points, and which has directionally separated driving lanes¹. They split into class I and class II motorways².

MD prepares concepts for the field of transport, approves investment plans for motorway construction and issues building permits for motorway construction projects. **SFDI** was established by Act No. 104/2000 Coll.³, is in charge of financing motorway construction projects using approved budgets. **ŘSD** is a public-benefit corporation which, through its General Directorate, its two sites and 11 administrations, carries out investment activities in motorway construction. The audit in ŘSD was performed at the General Directorate, the Prague site and the Chomutov and Zlín administrations.

The SAO verified by means of the audit No. 17/05 in particular:

- Compliance with conceptual aims in motorway construction;
- Creation of prerequisites for a smooth, economic and effective implementation of motorway constructions;
- Planning and implementation of motorway construction projects listed in Annex 1;
- Appropriate costs of motorway construction projects listed in Annex 3;
- Efficiency of measures taken in the wake of the previous SAO audit.

The construction of motorways was audited by SAO previously the last time in 2012 by audit No. 12/18,⁴ *Funds Designated for the Construction of Motorways and Expressways*. The conclusions of the audit were in particular:

- Deficiencies in conceptual planning activities;
- Long preparation times of construction projects;
- Failure to create adequate prerequisites in the preparations for due implementation of the construction projects;
- Inefficient assessment and control tools for construction prices;
- Estimated savings potential in motorway construction efforts of 12% to 20% of total construction costs.

The government ordered by Decree No. 771 of 16 October 2013⁵ the Minister of Transport to implement the series of measures listed by the MD in its opinion on the Audit Conclusion No. 12/18. The measures concerned in particular the conceptual document for planning and construction of transport infrastructure, updating of the documents for valuation of structures, and amendments to internal directives in the field of construction of transport infrastructure.

¹ § 4 of Act No. 13/1997 Coll., on roadways.

² Class II motorways are essentially former class I roads that qualified as expressways and that were reclassified by amendment to Act No. 13/1997 Coll. effective from 1 January 2016 as motorways.

³ Act No. 104/2000 Coll., on the State Fund for Transport Infrastructure.

⁴ The Audit Conclusion No. 12/18 was published in the 3/2013 issue of the *SAO Bulletin* (Věstník NKÚ).

⁵ Decree No. 771 of the government of ČR of 16 October 2013 *on the Audit Conclusion of the Supreme Audit Office No. 12/18, Funds Designated for the Construction of Motorways and Expressways*.

Note: The legal regulations referred to in this Audit Conclusion apply in the versions effective for the period under review.

II. Evaluation and Summary of the Facts Found

The motorway network should have after completion in 2050 the length of 2,073 km. In the period 2013-2017, 11 motorway construction projects with the length of 79 km were put into operation. At the time of conclusion of the audit, 1,240 km of motorways, i.e. about 60% of the planned length of the motorway network, were in operation. The construction of motorways cost CZK 24 billion including VAT in the period 2013-2017, thereof CZK 6 billion from EU funds.

a) The conceptual aims in building the motorway network were not fulfilled. According to the state at the time of the audit, implementation of any of the 15 planned motorway projects will not start by the end of 2017. Over the period 2018-2020, only 7 construction projects with the length of 52 km can be realistically expected to be put into operation. The pace of construction thus does not guarantee completion of the motorway network by the planned deadline of 2050.

The key cause of the slow pace of construction were the problems ŘSD was facing in obtaining respective planning permissions and building permits. Preparation of motorway construction projects from getting a favourable opinion on environmental impacts until obtaining a valid building permit took 13 years on average. Compared to the previous SAO audit, this interval has grown by 4 years.

b) The aims and specifications of the implemented motorway construction projects were observed. The construction prices were lower by 33% to 55% compared to the amounts estimated by ŘSD in tenders for respective suppliers. The average cost of construction of one kilometer of motorways was at CZK 152 million. Compared to the previous SAO audit, this was lower by CZK 188 million. Comparison of the prices of selected construction projects and of valuations of construction work items has shown that the construction prices were not significantly undervalued or overvalued.

ŘSD still did not have an efficient tool for controlling and assessing construction prices, creating prerequisites for a cost-effective implementation of construction projects and for setting their expected value in tenders for suppliers of construction works. A comparison of valuation of selected construction work items has shown that the prices of works set out in the binding reference documents for valuation of structures were overvalued.

Summary of the facts found:

1. The lengths of the sections of motorways put into operation in the past years were very uneven. In the periods 1998-2005 and 2011-2017, an average of about 16 km of motorways was commissioned annually. However, in the 2006-2010 period, it was 56 km

of motorways in annual average. According to the state at the time of the audit, it is realistic to expect to open 52 km of motorways in 2018-2020, which is 17 km annually on average. The pace of construction thus is not sufficient to meet the aim to complete the 2,073 km long motorway network by 2050. To comply with it, 833 km of motorways should be put into operation after 2017, i.e. 25 km of motorways annually on average.

The schedule for the implementation of the construction projects included by the MD in the transport sector strategies (fundamental strategy document for the construction of transport infrastructure) approved by the government in 2013 was not being met. Failure to meet the schedule substantially delays the benefits to be reached from the completion of the construction projects as used in the multi-criteria assessment for the prioritization of the implementation of construction projects in transport sector strategies.

2. A major issue slowing down the pace of motorway construction were the problems faced by ŘSD in the preparation of construction projects, especially in the phase from getting a favourable opinion on environmental impacts until obtaining a valid building permit. This phase of preparation took 13 years on average. The key causes of the long periods were problems with recurring challenges and appeals of participants in planning permission and construction procedures, with obtaining exceptions in the field of protection of specially protected plant and animal species, and in property settlements.

The Ministry of the Environment issued between November 2016 and February 2017 binding favourable opinions in environmental impact assessments for 12 priority motorway construction projects following Government Order No. 283/2016 Coll.⁶. Their implementation was to begin in the period 2015-2017. At the time of the audit however, ŘSD did not have for any of these construction projects a valid building permit.

The findings have shown that the measures taken by the MD based on previous SAO audit to shorten the preparation time of construction projects failed to show their effect in the audited period.

3. a) The binding reference document for valuation of construction works for roadways and for controlling and assessing construction prices, creating prerequisites for a cost-effective implementation of construction projects and setting their expected value in tenders for suppliers of construction works was the sectoral classification manual. The SFDI has updated based on the series of measures adopted by the MD in the wake of the previous SAO audit its prices, but the prices still have remained overvalued.

b) The average cost of construction of one kilometer of motorways was at CZK 152 million. For construction projects assessed in the previous SAO audit, the amount was by CZK 188 million higher at CZK 340 million. The motorway roadbed costs ranged from CZK 2,425/m² to CZK 3,531/m², thereof for the roadway assemblies between CZK 897/m² and CZK 1,392/m², and the costs for motorway bridges from CZK 18,479/m² to CZK 33,071/m².

⁶ Government Order No. 283/2016 Coll., on the definition of priority transport sector plans.

Comparison of the prices of construction projects and of valuations of selected construction work items has shown that the construction prices were not significantly overvalued or undervalued. The average construction price of CZK 6,870/m² was also comparable with the average construction price of CZK 6,882/m² in four countries of the European Union⁷. However, certain valuations of the assessed items of construction work by the chosen bidders were significantly higher than the average.

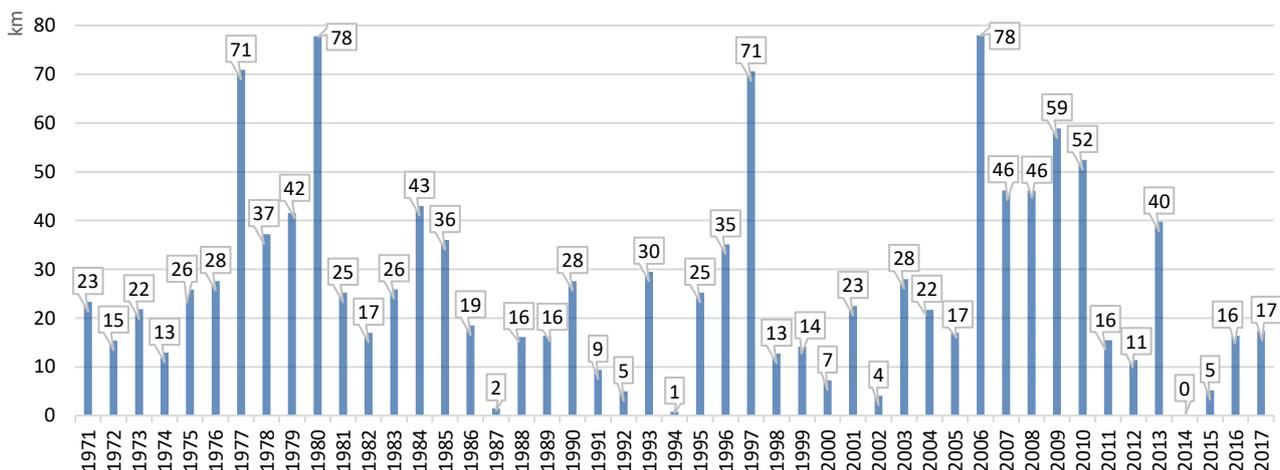
4. For all the audited construction projects, issues and shortcomings have been found that had or could have had negative impacts on cost effectiveness of the construction of motorways. Mostly however, these were the consequences of issues and shortcomings in the preparation of construction projects that arose before 2013 and that were pointed out by the SAO in previous audit.
5. The ŘSD had been launching tenders for suppliers of construction works before respective valid building permits were obtained. Due to this at the time of the audit, 12 out of 13 tender proceedings for suppliers of construction works launched by the ŘSD in September 2016 were still not concluded.

III. The Facts Found

1. The Motorway Network Construction Status

1.1 The motorway network is made up of 19 motorways with a planned total length of 2,073 km after completion. At the time of conclusion of the audit, 1,240 km, i.e. 60% (Annex 2), were in operation. The lengths of motorways commissioned each year in the period 1971-2017 are shown in Graph 1 below.

Graph 1: Lengths of motorways commissioned between 1971-2017



Source: materials of the ŘSD.

Note: the graph also contains sections of former expressways that were not added by amendment to Act No. 13/1997 Coll. to the motorway network as of 1 January 2016.

⁷ Data from the European Court of Auditors' Special Report No. 5/2013 - *Are EU Cohesion Policy funds well spent on roads?*, which assessed the prices of 24 motorway and expressway construction projects in Germany, Greece, Poland and Spain. The costs were converted at the rate of CZK 25.65/€.

The principal government-approved strategic documents of the MD for the 2014-2020 period were the *Transport Policy of the Czech Republic for the Period 2014-2020 with a view to 2050*⁸ and followed by *Transport Sector Strategies of the 2nd Phase*⁹ (see Part 1.2 below). The transport strategies were part of a series of measures to be implemented by the MD pursuant to the Government Decree adopted on the SAO audit No 12/18.

According to the transport policy for the period 2014-2020, the motorway network was to be completed by 2050. After 2017, 833 more km of motorways were still to be completed. Consequently, in order to meet the deadline for the completion of the motorway network, 25 km of motorways on average should be completed annually on average between 2018 and 2050. **The actual pace of construction is unlikely to be sufficient to meet this aim, because:**

In the period 2013-2017, 79 km of motorways were commissioned, which is only 16 km annually on average. The ŘSD expects to complete in 2018 two construction projects of 18 km length, two further projects totalling 19 km in 2019, and fourteen construction projects of 111 km in 2020. Completion of 11 construction projects totalling 96 km out of the projected 14 in 2020 is endangered as these projects, construction works on which were to be launched in 2017, still did not have at the time of the audit a valid building permit. In the period 2018 to 2020, a real prospect only is completion of 7 construction projects of 52 km, which means on average 17 km annually, i.e., less by almost a third than required in order to meet the aim.

The key cause of the slow pace of construction were the problems with obtaining respective planning permissions and building permits (see Parts 2 and 4 below).

The MD assumed the needed funds to complete the remaining 953 km¹⁰ of the motorway network until 2050 to total CZK 385 billion including VAT¹¹, which meant CZK 404 million per kilometer. At the time of the audit, preparations for 86 construction projects totalling 779 km in length were under way with expected costs of CZK 315 billion without VAT, i.e., CZK 404 million/km, and construction works were ongoing for 6 construction projects with 66 km in length and a total cost of CZK 14 billion without VAT, i.e., CZK 212 million/km.

1.2 The *Transport Sector Strategies, Phase 2*, were a medium-term transport infrastructure development plan for the period 2014-2020. For motorway construction, the strategies contained a schedule of 28 construction projects to be completed in 2013-2021. Their total length was 255 km and the estimated construction costs were CZK 124,781 million including VAT. In case of a drop in bid prices, delays in preparations and other variables, the schedule

⁸ Decree of the Government of the Czech Republic of 12 June 2013 No. 449, *on the Transport Policy of the Czech Republic for the period 2014-2020 with a view to 2050*.

⁹ Decree of the Government of the Czech Republic No. 850 of 13 November 2013, *on Transport Sector Strategies, Phase 2*.

¹⁰ Data from the 2013 transport strategies. In connection with the amendment to Act No. 13/1997 Coll., some sections of former expressways were not included in the motorway network in 2016. The length of the motorways needed to complete the network thus decreased to 833 km.

¹¹ In 2012 prices. The VAT rate was at 20%.

also specified 6 alternative construction projects of 107 km and with estimated construction costs of CZK 30,046 million including VAT.

The remaining construction projects needed to complete the motorway network were to be added to the transport strategies as part of an update that was to be submitted by the MD to the government by the end of 2016. The deadline was repeatedly postponed finally to 30 September 2018.

Only 2 construction projects, which were launched in 2010 already, on the D6 and D35 motorways were completed by the deadline foreseen in the implementation schedule. **The expected deadlines for the implementation of the other motorway construction projects have not been or will not be met:**

- By the end of 2017, 11 construction projects were to be finished. However, only 7 construction projects will be completed, and even these 1 to 2 years later than previously expected. For 3 construction projects, completion is expected in 2019 or 2020, and the construction project on the D48 motorway was only in the planning permission procedure phase.
- By the end of 2017, construction was to begin for 15 projects. However, none was launched at the time of the audit. This was due to problems in construction preparations (see Part 2 below).

Failure to meet the expected deadlines has substantially delayed the benefits to be reached from the completion of the construction projects as used in the multi-criteria assessment for the prioritization of the implementation of construction projects in transport strategies.

1.3 The delays in launching the implementation of the motorway construction projects are also documented by the overviews of investment preparations of the projects submitted by the MD to the government bimonthly from July 2016¹². Examples of the numbers of construction projects and years of commencement according to the overviews from January and September 2017 are shown in Table 1.

Table 1 - Construction projects with expected start of implementation in the years 2016-2019

Status to	2016		2017		2018		2019	
	Number of construction projects	Costs (CZK million)	Number of construction projects	Costs (CZK million)	Number of construction projects	Costs (CZK million)	Number of construction projects	Costs (CZK million)
1/2017	1	1,400	15	71,878	9	18,606	7	18,014
9/2017	1	1,400	10	40,706	9	42,283	11	27,035

Source: Overviews of investment preparations of construction projects from 1/2017 and 9/2017.

Note: The table shows total costs including VAT.

¹² According to Decree of the Government of the Czech Republic No. 430 of 11 May 2016, *on further course of procedure in investment preparations of construction projects based on opinions from environmental impact assessments (EIA) issued pursuant to Act No. 244/1992 Coll., on environmental impact assessment for development concepts and programs.*

As can be seen from Table 1, the MD adjusted the number of projects with construction work to start in 2017 downwards from 15 to 10 projects. At the time of the audit, implementation was under way only for the D48 Rybí - Rychaltice construction project, a conversion of a not directionally divided class I four-lane road into a motorway. **For the remaining 9 construction projects, due to problems with obtaining the respective building permits there is a high likelihood that the start of their implementation will be moved into 2018.** For example:

- For the D6 Nové Strašecí - Řevničov construction project with an estimated total cost of CZK 1,445 million, the ŘSD filed the application for building permit on 31 May 2017, but the needed exception in the field of protection of specially protected plant and animal species only was added afterwards. As of the end of September 2017, the building permit still was not issued by the MD.
- For the D11 Hradec Králové - Smiřice construction project with an estimated total cost of CZK 9,064 million, the MD issued a building permit on 1 June 2017, but only for its first part. Against the building permit, an appeal was lodged (see also Part 2.3 below) the MD still did not decide on as of the end of September 2017.
- For the D11 Smiřice - Jaroměř construction project with an estimated total cost of CZK 6,477 million, 97% of the land needed was purchased, and expropriation procedures and inheritance settlements were under way. ŘSD filed an application for building permit in January 2017. As of the end of September 2017, the building permit still was not issued by the MD.

For 8 construction projects with expected start of implementation in 2017 and for 4 construction projects with anticipated launch in 2018, at the time of the audit there were tender procedures for the selection of suppliers of the construction works under way started by the ŘSD although it still did not have valid building permits for the projects. For the D49 Hulín - Fryšták construction project with expected start of implementation in 2018 and for which the ŘSD concluded the tender procedure in 2008, there were construction procedures still under way at the time of the audit (see Part 4.5 below).

2. Preparations of Motorways Construction

2.1 In the wake of the proceedings of the European Commission for breach of Directive 2011/92/EU of the European Parliament and of the Council¹³ commenced in April 2013, Act No. 100/2001 Coll. was amended effective from 1 April 2015¹⁴. The amendment imposed the obligation to complete started environmental impact assessment procedures in accordance with the new regulation and introduced the obligation to obtain a binding opinion to verify changes to the plan (§ 9a (4) and (5) of Act No. 100/2001 Coll.).

¹³ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.

¹⁴ Act No. 100/2001 Coll., on environmental impact assessment and on amendment to certain related acts of law (act on environmental impact assessment).

Following the amendment to Act No. 100/2001 Coll., the government has set, on the basis of a proposal by the MD, priority plans for 12 motorway construction projects¹⁵. The Ministry of the Environment issued binding favourable opinions on the projects between November 2016 and February 2017 (each valid for 5 years). These were construction projects works on which were to be commenced by the schedule in the *Transport Sector Strategies of the 2nd Phase* (see Part 1.2 above) in 2015 and 2016, and one in 2013.

At the time of the audit, no valid building permit had been issued for any of the priority construction projects. The key cause of this were the incomplete preparations of the projects in terms of settling property rights and pertinent ongoing expropriation procedures. In addition, according to the MD, there is a further risk that may significantly delay the start of construction of these projects, which is the course of the appeals in consequent proceedings, in particular for obtaining the building permits, as has already happened for some construction projects (e.g. for the D11 Hradec Králové - Smiřice project in June 2017). In the appeals, *inter alia* a review was demanded of the binding favourable opinions.

For the other construction projects, the environmental impact assessment procedure must be repeated. The ŘSD handled the situation in that simultaneously with preparations for the renewed environmental impact assessments, it still continued with preparations for the construction projects¹⁶. For example, for eight construction projects that already had obtained a valid planning permission, preparations were ongoing of reference documents for environmental impact assessments and at the same time preparations in terms of property right settlements and technical activities to obtain the building permits.

2.2 In order to speed up the preparations of construction projects, the MD set out in the Transport Policy for 2014-2020 (see Part 1.1 above) measures concerning analyses of the possibilities of streamlining and expediting the processes of construction project preparation and of amendments to acts of law. The deadline was until 2020. **Findings from the audit have shown that there has been no acceleration in the preparations of construction projects as of yet** (see, for example, the following Part 2.3).

In October 2014, the MD prepared a draft proposal for the material scope of the act on line transport constructions, which was aimed at streamlining the permit procedures while maintaining adequate possibilities for all the concerned entities to enforce their respective interests. The act was meant to comprehensively redefine the processes of preparation and construction of transport structures and pertinent administrative proceedings into a single administrative decision authorizing construction. The draft proposal was included in the meeting of the Legislative Council of the government in January 2015, but was subsequently withdrawn by the MD. The main reason according to the MD was that the Ministry of

¹⁵ Government Order No. 283/2016 Coll., on the definition of priority transport sector plans.

¹⁶ This approach was in line with the Decree of the Government of the Czech Republic No. 430 of 11 May 2016, *on further course of procedure in investment preparations of construction projects based on opinions from environmental impact assessments (EIA) issued pursuant to Act No. 244/1992 Coll., on environmental impact assessment for development concepts and programmes.*

Regional Development was preparing an amendment to the Building Act¹⁷, which aimed to streamline and expedite the building permit procedures.

The amendment to the Building Act is effective from 1 January 2018. The amendment introduced the possibility of issuing a joint planning permission and building permit by the building authority, which for motorway construction projects is the MD.

According to the MD, the amendment to the Building Act did not fully meet its expectations and the ministry therefore prepared in August 2017 a draft amendment to Act No. 416/2009 Coll.¹⁸ The MD informed that the draft was discussed with the professional public in September 2017 and would be subsequently discussed with other ministries.

2.3 The length of preparations of construction projects from obtaining a favourable opinion on environmental impacts (initiation of works to obtain a planning permission) until obtaining a valid building permit was 13 years on average. **Compared to previous audit No. 12/18, this interval has grown on average by four years.** There were even cases where building permit still was not issued even 15 years from obtaining a favourable opinion on environmental impacts, as illustrated by the examples given in this point or in Point 4 below.

The most frequent causes prolonging the said stage of preparations of construction projects were problems in planning permission and construction procedures, in particular recurring challenges and appeals of participants, with obtaining valid exceptions in the field of protection of specially protected plant and animal species¹⁹, and in property settlements. For example:

- For the D1 Říkovice - Přerov construction project, a favourable opinion on environmental impacts was issued in December 2000, and the planning permission came into legal force in August 2006. At the time of the audit, i.e. after almost 17 years, there were still property settlements ongoing. The ŘSD, due to the change in the shape of the interchange, applied in April 2017 for a change to the planning permission, which required an exception in the field of protection of specially protected plant and animal species. A party to the proceedings lodged an appeal against the exception granted. The ŘSD therefore did not apply for a building permit. Nevertheless, in September 2016, it initiated the tender procedure for the supplier of the construction works. The construction was included in priority construction projects (see Part 2.1 above). The expected implementation period March 2018 - March 2021 will not be observed.
- For the D11 Hradec Králové - Smiřice construction project, a favourable opinion on environmental impacts was issued in October 1996, and the planning permission came into legal force in November 2002. At the time of the audit, i.e. after almost 21 years, the property settlements only were nearing completion (about 0.05% of the land subject to expropriation procedures still was not purchased). The ŘSD

¹⁷ Act No. 183/2006 Coll., on spatial planning and the building code (Building Act).

¹⁸ Act No. 416/2009 Coll., on expediting the construction of transport, water and energy infrastructure and electronic communications infrastructure.

¹⁹ In line with the provisions of § 56 (1) of Act No. 114/1992 Coll., on nature and landscape protection.

applied for a building permit in June 2016 and the MD issued it for the first part of the construction project in June 2017. The building permit did not come into legal force as an appeal was lodged against it by three parties to the construction procedure. For the second part of the construction project, the MD did not issue a building permit. Nevertheless, in September 2016, the ŘSD initiated the tender procedure for the supplier of the construction works. The construction was included in priority construction projects (see Part 2.1 above). The expected implementation period September 2017 – September 2020 will not be observed.

- For the D6 Nové Strašecí - Řevničov construction project, a favourable opinion on environmental impacts was issued in April 2001, and the planning permission came into legal force in September 2006. At the time of the audit, property settlement was already completed and the ŘSD filed an application for a building permit in May 2017. At that time, however, it did not have a valid exception in the field of protection of specially protected plant and animal species. This was only added afterwards, so that at the time of the audit (September 2017), a building permit for the MD still had not been issued. Preparations of the construction project from obtaining a favourable opinion on environmental impacts took 16 years, and the building permit procedure was still ongoing. Nevertheless, in September 2016, the ŘSD initiated the tender procedure for the supplier of the construction works. The construction was included in priority construction projects (see Part 2.1 above). The expected implementation period October 2017 - October 2020 will not be observed.

3. Cost-Effectiveness of the Construction of Motorways

3.1, Following the series of measures adopted in the wake of the previous SAO audit No. 12/18, the MD approved in March 2013 an update of expert prices in the *Sectoral Classification Manual of Building Structures and Construction Works for Roadways*, which was carried out by the SFDI. The sectoral classification manual was used in compiling the binding guidelines for valuation of construction works on roadways in documents for purposes of planning permissions and building permits. Pricing database updates were provided in the coming years by the SFDI. The pricing databases were meant to be used among other purposes to control the costs during preparations of construction projects, to determine the estimated value of public tenders to find suppliers of construction works and for pricing of additional works that arise during implementation.

The SAO carried out a comparison of the unit prices for 78 items in the sectoral classification manual (updated in 2017) with the unit prices quoted in 27 bids of bidders in six tenders for suppliers of works for motorway construction projects completed in the period between 2013 and April 2017. The bids and items were selected from the unit price database (Annex 3)²⁰. The prices of the selected items amounted on average to 33% of the prices of the construction projects.

²⁰ The SAO selected from the database the bids of those bidders that had not been excluded from the tender procedures, and netted the selection of bids with higher prices than the median of the bid prices for the respective structures. The items were selected according to their significance in terms of costs (items

The comparison has shown that **the unit prices of construction works set out in the binding reference documents for valuation of structures were overvalued.** Unit prices of 64 items in the sectoral classification manual, i.e. 82% of the items included in the comparison, were higher than the weighted average²¹ for the respective items from the selected bids. For 55 items, i.e. 71% of those included in the comparison, pricing in the sectoral manual was higher by more than 10%, and for 13 items, i.e. 17% of those included, it was even higher than the highest priced bid. Examples of the differences are provided in Annex 4.

According to the SAO, the price databases therefore are not an effective tool for cost control and for creating prerequisites for a cost-effective implementation of construction projects and for setting expected values in tenders for suppliers of construction works.

3.2 Another problem was the **very uneven distribution in numbers of launched tenders for suppliers of motorway construction works;** In 2010, 2011 and 2013, the ŘSD did not open any tender procedures for motorway construction projects. It launched four tenders in 2012 and 2014 respectively, and two tenders in 2015; one tender procedure was opened in July 2016 while in contrast in September 2016, it announced 13 tenders for motorway construction projects with expected launch of construction works between June 2017 and September 2017.

The prices of the chosen bidders in the 6 tenders for suppliers of motorway construction works that the ŘSD launched between 2012 and 2015 were 33% to 55% lower than the projected value. In the tender procedure launched in July 2016, this price was 25% lower (conversion of a not directionally divided class I four-lane road into a motorway - construction project D48 Rybí - Rychaltice). For the tender procedures announced by the ŘSD in September 2016, bid evaluation only was complete for 3 construction projects at the time of the audit. The bid prices of the chosen bidders were 35% to 56% lower than the projected value. Construction costs for these projects averaged CZK 167 million/km.

3.3 The SAO conducted a **comparison of prices and selected items of construction works of the winning bidders from tenders for suppliers of six motorway construction projects** (see Part 3.1 above). The construction prices, comparisons of valuation of selected items of construction works and examples of valuation of the compared items are provided in Annex 5. The findings from the comparison were:

- The construction costs of one kilometer of motorways decreased significantly. The average construction costs for the projects under review were CZK 152 million/km. For the construction projects assessed in previous audit No. 12/18, this was approx. CZK 340 million/km²².
- The construction costs ranged from CZK 4,142/m² to CZK 8,268/m². The average value was CZK 6,870/m².

assigned a total value by the project architect of more than CZK 1 million) and their occurrence in the structures under consideration.

²¹ The weighted average indicator was chosen because it best reflected the nature of the items under review.

²² This is the average value for motorways and for expressways that were reclassified as motorways as of 1 January 2016.

- The motorway roadbed costs ranged from CZK 2,425/m² to CZK 3,531/m², thereof for the roadway assemblies between CZK 897/m² and CZK 1 392/m².
- The costs of motorway bridges ranged from CZK 18,479/m² to CZK 33,071/m².
- Differences between the calculated²³ and contract prices for the 78 selected items of construction works ranged from -21.5 million CZK to +46.1 million CZK, i.e., from -6.7% to +20.2%.

For every project, there were items valued at a higher unit price than the calculated price. Numbers of such items ranged from 11 to 45 out of the 78 selected items, i.e. from 14% to 58%.

The comparison results imply a conclusion that the total prices of the construction works were not significantly overvalued or undervalued. Most of the differences in unit prices can be explained by local conditions. Some differences though cannot be explained in this way. For example:

- For the D1 Přerov - Lipník nad Bečvou construction project, the chosen bidder priced the item "*steel pile reinforcement 10 505*" at CZK 28,384 CZK/t. The price calculated by the SAO was at CZK 22,793/t, i.e., 20% lower.
- For the D3 Veselí nad Lužnicí - Bošilec construction project, the chosen bidder priced the item "*laying road grit in embankments of purchased materials*" at CZK 393/m³. The price calculated by the SAO was at CZK 254/m³, i.e., 35% lower.
- For the D3 Bošilec - Ševětín construction project, the chosen bidder priced the item "*traffic signs large, steel plates, foil class 5 - supply and assembly*" at CZK 6,160/m². The price calculated by the SAO was at CZK 3,486/m², i.e., 43% lower.
- For the D4 Skalka - junction II/118 construction project, the chosen bidder priced the item "*all-surface insulation of bridge decks with tarmac bands with sealing layer*" at CZK 2,318/m². The price calculated by the SAO was at CZK 470/m², i.e., 80% lower.

More examples of items are provided in Annex 5.

4. Findings from audited Motorway Construction Projects

For all the audited construction projects, **issues and shortcomings have been found that had or could have had negative impacts on cost efficiency of the construction of motorways.** Mostly however, these were the consequences of issues and shortcomings in the preparation of construction projects that arose before 2013. Selected findings are held in Parts 4.1 to 4.6 below.

4.1 D3 0308C Veselí nad Lužnicí - Bošilec

- Problems with purchasing respective plots of land, resulting in a near 9-year delay between the issue of the planning permission in May 2004 and obtaining the building permit in March 2013.

²³ Weighted average of prices (excluding VAT) from valuations in the 27 selected bids (see Part 3.1 above).

- The ŘSD paid as part of the price of CZK 1,737 thousand excluding VAT for the project implementation documentation CZK 284 thousand for the technical part, but the structure did not contain any such part.
- The ŘSD set out in the tender for the selection of investor's technical supervision (with expected value of CZK 45 million) exceedingly high requirements for some competences, which may have contributed to the fact that in the tender, only 3 bidders participated. Some activities of investor's technical supervision overlap with the activities of the construction manager (also outsourced), but the contractual rates for these activities differed by more than a half.
- The deficiencies in the tender specifications and in handling the bidders' objections, which required expert opinions to be compiled, led to the tender procedure for the construction works to take as much as three years from March 2012 to February 2015. The ŘSD did not provide an objective justification as to why a bidder with a price of CZK 598.4 million, which it denoted as extremely low, was excluded from the tender. The price of the chosen bidder was CZK 634.7 million, i.e., higher by CZK 36.3 million, or 6%.
- The delay in the launch of construction works by more than two years led to a price increase by CZK 28.1 million due to the induced change in the construction technology of the overpass in railway corridor IV.

4.2 D3 0309/III Borek - Úsilné

- The project preparations from commencing works to secure the planning permission in June 2004 until all the building permits were obtained in May 2015 took 11 years.
- The ŘSD paid as part of the price of CZK 1,870 thousand excluding VAT for the project implementation documentation CZK 290 thousand for the technical part, but the structure did not contain any such part.
- The ŘSD set out in the tender for the selection of investor's technical supervision (with expected value of CZK 45 million) exceedingly high requirements for some competences, which may have contributed to the fact that in the tender, only 2 bidders participated (one of which was excluded for late bid). In the exercise of investor's technical supervision, a conflict of interest could have arisen as two months after the contract conclusion, the excluded bidder, who also compiled the project documents and was involved in the exercise of the activities of the construction manager, became the new subcontractor. Some activities of investor's technical supervision overlap with the activities of the construction manager (also outsourced), but the contractual rates for these activities differed by more than a half.
- The deficiencies in the tender specifications and in handling the bidders' objections, which required expert opinions to be compiled, led to the tender procedure for the construction works to take as much as three years from March 2012 to February 2015. The ŘSD did not provide an objective justification as to why the bidder with a price of CZK 597.7 million, which it denoted as extremely low, was excluded from the tender. The price of the chosen bidder was CZK 717.6 million, i.e., higher by CZK 119.9 million, or 20%.
- The ŘSD did not secure in time a supplier of works for the high voltage line relay. This delayed the launch of construction works under the project by 125 days. Due to this, the supplier of the works now requests a payment of CZK 30.7 million excluding VAT. By the time the audit ended, the ŘSD still did not decide on this claim.

4.3 D7 Postoloprty - Bitozeves

- The project preparations from commencing works to secure the planning permission until all the building permits were obtained in July 2016 took 10 years.
- In the exercise of investor's technical supervision, a conflict of interest could have arisen as the ŘSD concluded in October 2015 a contract with an association the compiler of the project documents also participated in.
- In April 2010, when it still did not have the building permit, the ŘSD concluded a contract with a construction contractor with a price of CZK 383.6 million excluding VAT. The construction works were not launched until September 2016. In August 2016, the contractor renounced its financial claims in connection with the late commencement of works.

4.4 D7 Vysočany - Droužkovice

- The ŘSD paid out to the construction contractor CZK 41.3 million excluding VAT in settlement of claims arising from the late commencement of construction works in July 2010 (the contract was concluded in October 2008, when it had not yet obtained a building permit).

4.5 D49 Hulín - Fryšták

- The ŘSD did not attach to applications for building permits from 2008 and 2009 the respective decisions to grant exceptions in the field of protection of specially protected plant and animal species (in particular the exception to interfere with the biotope of the European hamster). After they had been obtained, the exceptions were challenged by participants in the construction procedure before competent courts in 2016 and 2017. There were also problems with the purchase of land under the project. As a result, the construction procedure still was not completed at the time of the audit even though the planning permission was issued in November 2004 already.
The ŘSD spent in connection with updating and completing the project documents in 2012-2016 a total of CZK 6.1 million without VAT.
- In September 2008, when it still did not have a building permit, the ŘSD concluded a contract with a construction contractor with a price of CZK 6,556 million excluding VAT and with the completion period October 2008 to October 2011. The contractor carried out preparatory works on the construction site, but in July 2010 the work was interrupted because the ŘSD did not obtain the building permit.

4.6 D55 Otrokovice, SW bypass

- After having obtained the planning permission in February 2004, the ŘSD changed the makeup of the structures within the project. Due to the changes, the respective project documents had to be updated several times at a total cost of CZK 8.4 million excluding VAT. There were also problems with the purchases of land (which had been ongoing since 2009 and were still not complete at the time of the audit).
- The ŘSD applied for a building permit in March 2017, i.e., 13 years after the planning permission was issued. However, the application was withdrawn after less than a month as

the project did not have the respective exception in the field of protection of specially protected plant and animal species. The exception was applied for with the Regional Authority of the Zlín Region in April 2017.

- In September 2016, the ŘSD launched the tender procedure for the supplier of the construction works. At the time of the audit, assessment of competences of the 16 candidates for participation in the second round of the procedure was still ongoing.

5. Tender Procedures for Suppliers of Construction Works

The SAO pointed out in its previous audit No. 12/18 that the **ŘSD would launch tender procedures and conclude contracts for construction works at points in time when it did not yet have valid building permits for the construction projects.** The reason for this was that the ŘSD sought not to delay the subsequent implementation, which however missed its mark as the implementation of projects would be delayed by several years (see also Parts 4.3 to 4.5 above). The ŘSD thus had to compensate construction contractors who did not renounce their claims financial compensation for delays in commencement of construction work. For example:

In 2014, the ŘSD paid to the suppliers of two construction projects such compensations in the total amount of CZK 59.1 million. Contracts with the suppliers were signed in 2008 and the ŘSD obtained the building permits in 2010 and 2011 respectively. For two other construction projects, the ŘSD was assessing such claims totalling CZK 24.9 million. For one construction project, contract for which was signed with the contractor in 2008, the ŘSD at the time of the audit still did not have a building permit, and the contractor thus did not quantify the claims.

The MD adopted based on the findings from previous audit a measure (effective from January 2013) by which an exception to initiate tender procedures in such cases could be granted by the Minister of Transport. In September 2015, the MD modified the measure so that the exception was no longer needed but conditions were laid down under which the tender procedure could be started even before obtaining a valid building permit. One of them was that the ŘSD must not sign a contract for the performance of a public contract if it does not have a valid building permit.

In the audited period, the ŘSD would often start a tender procedure without a valid building permit. After adjustment to the above-mentioned measure in September 2015, the ŘSD launched a tender procedure for a total of 21 construction projects (including the D1 motorway modernization projects), of which 16 had no building permit issued. Unlike in the previous period, and in accordance with the aforementioned condition imposed by the MD, it did not conclude contracts with chosen bidders without having obtained a valid building permit. For example:

- In September 2016, the ŘSD launched a total of 13 (second round²⁴) tender procedures for 107.5 km of motorways with a total estimated value of CZK 45.7 billion. At the time of launch of the second round procedures, there was a valid

²⁴ Pursuant to § 28 of Act No. 137/2006 Coll., on public contracts.

building permit only for 1 structure while for 9 construction projects, it was still not applied for at the time by the ŘSD. Due to this, the ŘSD delayed the second phase of the second round of procedures - a call for bids to candidates who had met the qualification requirements.

- At the time of the audit, the second phase was under way for nine construction projects only, for none of which even then the ŘSD had a valid building permit.

List of Abbreviations

VAT	Value added tax
MD	Ministry of Transport (Ministerstvo dopravy)
SAO	Supreme Audit Office (Nejvyšší kontrolní úřad)
ŘSD	Road and Motorway Directorate of the Czech Republic (Ředitelství silnic a dálnic ČR)
SFDI	State Fund for Transport Infrastructure (Státní fond dopravní infrastruktury)

Fully Audited Events at the ŘSD Administrations and the Prague Site

Construction project	Length	Preparations	Implementation	Construction costs		
				original	contractual	current
1. D3 0308C motorway section Veselí n. L.- Bošilec	5.1	2/01-3/13	4/15-10/2017	705.2	634.7	661.4
2. D3 0309/III motorway section Borek - Úsilné	3.2	6/04-9/14	4/15-9/2017	923.4	717.6	711.0
3. D7 motorway section Postoloprty - Bitozeves	3.8	11/05-7/16	9/16-4/18	286.8	383.6	348.7
4. D7 motorway section Vysočany - Droužkovice	9.4	1/04-6/10	7/10-12/13	944.4	2,378.0	2,314.8
5. D49 motorway section Hulín - Fryšták	16.4	12/01-not finished	x	5,886.2	6,556.0	x
6. D55 motorway section Otrokovice, SW bypass	3.1	12/02-not finished	x	934.9	x	x

Source: materials of the ŘSD.

Note:

Length - length of structure in km.

Preparations - how long the preparations took from obtaining a favourable opinion on environmental impacts (initiation of works to secure a planning permission) until obtaining a valid building permit in month/year.

Implementation - how long actual construction works took from the start until test operation in month/year.

Construction costs - in CZK million excluding VAT:

Original construction costs - costs expected in the investment plan at the time of commencement of preparations.

Contractual construction costs - costs under the contract concluded after the completion of the tender procedure.

Current construction costs - expected construction costs at the time of the audit, or actual.

Motorway Network of the Czech Republic

Number	Route	Total (km)	In operation (km)
D0	Road circuit around the capital city of Prague	82.904	40.514
D1	Prague - Brno - Vyškov - Ostrava - national border Czech Republic/Poland	376.905	352.493
D2	Brno - Břeclav - national border Czech Republic/Slovakia	60.900	60.900
D3	Prague - Č. Budějovice - D. Dvořiště - national border Czech Republic/Austria	171.449	50.289
D4	Prague - Příbram - Nová Hospoda	85.106	44.060
D5	Prague - Pilsen - national border Czech Republic/Germany	151.069	151.069
D6	Prague - Karlovy Vary - national border Czech Republic/Germany	159.144	73.164
D7	Prague - Slaný - Chomutov	78.855	33.775
D8	Prague - Ústí nad Labem - national border Czech Republic/Germany	96.505	94.625
D10	Prague - Mladá Boleslav - Ohrazenice (Turnov)	70.436	70.436
D11	Prague - Hradec Králové - Trutnov - national border Czech Republic/Poland	150.886	91.630
D35	Úlibice - Plotička, Sedlice - Olomouc - Lipník nad Bečvou	205.322	62.362
D43	Brno - Kuřim - Velké Opatovice - Moravská Třebová	78.400	0.000
D46	Vyškov - Prostějov - Olomouc	38.272	38.272
D48	Běloutín - Frýdek-Místek - Český Těšín (Žukov)	72.245	31.109
D49	Hulín - Zlín - Vizovice	35.000	0.000
D52	Brno - Pohořelice - Mikulov - national border Czech Republic/Austria	44.485	16.895
D55	Olomouc - Přerov - Hulín - Břeclav	100.282	16.442
D56	Ostrava - Frýdek-Místek	14.596	12.246
Total		2,072.761	1,240.281

Source: Information of the ŘSD from September 2017.

Database of Unit Prices of Motorway Construction Works

The database of unit prices of motorway construction works contains valuation of construction work items according to bids of 61 bidders in tender procedures for the selection of construction contractor for the following six motorway construction projects (all motorway construction projects for which a tender procedure took place in the period under review, except the D1 motorway modernization project and the D48 Rybí - Rychaltice project, which was a conversion of a four-lane class I road into a motorway) and valuation of items according to the project architect for construction projects 1 to 5 (not available in electronic form for construction project 6).

The database has been published on the SAO website:

<http://data.nku.cz/download/vystupy-z-kontrol/ka-17-05/databaze-ocneni-polozek.xlsx>

Motorway construction projects in the database:

1. D1 Přerov - Lipník nad Bečvou

(class D 26.5/120, length 14.3 km, contract price 2,717 million CZK, commissioning date 11/2018).

2. D3 0308C Veselí nad Lužnicí - Bošilec

(class D 27.5/120, length 5.1 km, contract price CZK 635 million, commissioning date 10/2017).

3. D3 0309/I Bošilec - Ševětín

(class D 27.5/120, length 8.1 km, contract price CZK 1,248 million, commissioning date 8/2019).

4. D3 0309/II Ševětín - Borek

(class D 27.5/120, length 10.7 km, contract price CZK 933 million, commissioning date 12/2019).

5. D3 0309/III Borek - Úsilné

(class D 27.5/120, length 3.2 km, contract price CZK 718 million, commissioning date 9/2017).

6. D4 Skalka - intersection II/118

(class D 22.5/80, length 4.8 km, contract price CZK 417 million, commissioning date 9/2017).

Notes:

The class data refer to the width and design speed of the motorway.
Contract prices are exclusive of VAT.

Examples of valuation of construction work items

Item number ¹	Item name	Unit ²	Project ³	Minimum price ⁴	Maximum price ⁵	Weighted average ⁶	Sectoral classification manual ⁷	Difference ⁸ (in %)
11232	Cutting stumps w diameters up to 0.9 m	piece	2,607	0.1	1,968	248	2,680	-91
21451	Remediation layers of quarry stone	m ³	806	145	688	423	816	-48
224325	C30/37 reinforced concrete piles	m ³	3,648	1,494	4,483	2,637	3,680	-28
272324	Reinforced concrete foundations up to C25/30	m ³	3,552	1,974	16,114	3,262	3,560	-8
272365	Steel reinforcement of foundations 10505	t	24,221	13,229	229,645	20,022	25,100	-20
28997	Geotextile reinforcement	m ²	83	12	443	24	69	-65
421365	Steel reinforcement of bridge plate construction 10505	t	26,636	15,366	26,207	20,329	27,900	-27
56330	Gravel road bedding	m ³	675	188	1,215	472	679	-30
574J54	Mastic asphalt carpet, modified, SMA 11+, 11S, 40 mm thick	m ²	237	161	274	203	259	-22
87446	Piping of plastic sewage pipes w DN up to 400 mm	m	1,564	606	3,573	1,843	1,740	+6
89712	Street sewer inlet of concrete parts, complete	piece	9,658	4,387	16,328	6,549	7,840	-16
9113A1	Single-sided steel guardrail, holding level N1, N2 - supply and assembly	m	1,109	440	2,468	678	975	-30
914531	Traffic signs large, steel plates, foil class 3 - supply and assembly	m ²	7,942	2,036	6,594	3,486	7,840	-56
935212	Ditch gutters of concrete blocks, width up to 600 mm into concrete, thickness 100 mm	m	479	195	988	438	481	-9
93530	Troughs and monolithic concrete gutters	m ³	3,959	2,064	15,093	5,467	3,720	+47

Source: materials of the ŘSD.

- Notes:**
1. Item numbers according to the *Sectoral Classification Manual of Building Structures and Construction Works for Roadways*.
 2. Unit of measure.
 3. Weighted average of unit prices in CZK excluding VAT according to project implementation documentation.
 4. Minimum unit price in CZK excluding VAT from valuations in 27 bids (see Part III.3.1 of the Audit Conclusion).
 5. Maximum unit price in CZK excluding VAT from valuations in 27 bids (see Part III.3.1 of the Audit Conclusion).
 6. Weighted average of unit prices in CZK excluding VAT from valuations in 27 bids (see Part III.3.1 of the Audit Conclusion).
 7. Unit price in CZK excluding VAT according to the *Sectoral Classification Manual of Building Structures and Construction Works for Roadways*.
 8. The difference between the valuations according to weighted average of unit prices and according to the sectoral classification manual.

Construction Costs for Selected Items of Construction Works

1. D1 Přerov - Lipník nad Bečvou construction project (14.3 km length, contract price CZK 2,717 million excluding VAT)

Item	Unit	Quantity	Contract price ⁵⁾		Price calculated ⁶⁾		Difference between calculated and contract price		Minimum price ⁷⁾		Difference between minimum and contract price	
			CZK/unit	CZK million	CZK/unit	CZK million	CZK million	%	CZK/unit	CZK million	CZK million	%
Total for the 78 selected items	x	x	x	825.767	x	857.990	+32.223	+3.9	x	415.974	-409.793	-49.6
Steel reinforcement of foundations 10505 ¹⁾	t	689	23,858	16.438	20,022	13.795	-2.643	-16.1	13,229	9.115	-7.323	-44.5
Gravel road bedding ²⁾	m ³	149,530	288	43.065	472	70.578	+27.513	+63.9	188	28.112	-14.953	-34.7
Asphalt carpet, thickness. 40 mm ³⁾	m ²	173,913	233	40.522	203	35.304	-5.218	-12.8	161	28.000	-12.522	-30.9
Single-sided guardrail, N1, N2 ⁴⁾	m	23,624	740	17.482	678	16.017	-1.465	-8.1	440	10.395	-7.087	-40.5
Motorway roadbed - thereof the roadway assembly	m ²	328,595	2,503 1,204	822.473 395.628	-	-	-	-	-	-	-	-
Highway bridges without overpasses	m ²	14,519	26,799	389.095	-	-	-	-	-	-	-	-

2. D3 Veselí nad Lužnicí - Bošilec construction project (5.1 km length, contract price CZK 635 million excluding VAT)

Item	Unit	Quantity	Contract price ⁵⁾		Price calculated ⁶⁾		Difference between calculated and contract price		Minimum price ⁷⁾		Difference between minimum and contract price	
			CZK/unit	CZK million	CZK/unit	CZK million	CZK million	%	CZK/unit	CZK million	CZK million	%
Total for the 78 selected items	x	x	x	186.701	x	219.939	+33.238	+17.8	x	103.223	-83.478	-44.7
Steel reinforcement of foundations 10505 ¹⁾	t	84	15,408	1.294	20,022	1.682	+0.388	+30.0	13,229	1.111	-0.183	-14.1
Gravel road bedding ²⁾	m ³	42,562	499	21.238	472	20.089	-1.149	-5.4	188	8.002	-13.236	-62.3
Asphalt carpet, thickness. 40 mm ³⁾	m ²	861	172	0.148	203	0.175	+0.027	+18.2	161	0.139	-0.009	-6.1
Single-sided guardrail, N1, N2 ⁴⁾	m	5,460	571	3.118	678	3.702	+0.584	+18.7	440	2.402	-0.715	-22.9
Motorway roadbed - thereof the roadway assembly	m ²	128,708	2,425 1,139	312.117 146.598	-	-	-	-	-	-	-	-
Highway bridges without overpasses	m ²	1,075	32,847	35.311	-	-	-	-	-	-	-	-

3. D3 Bošilec - Ševětín construction project (8.1 km length, contract price CZK 1,248 million excluding VAT)

Item	Unit	Quantity	Contract price ⁵⁾		Price calculated ⁶⁾		Difference between calculated and contract price		Minimum price ⁷⁾		Difference between minimum and contract price	
			CZK/unit	CZK million	CZK/unit	CZK million	CZK million	%	CZK/unit	CZK million	CZK million	%
Total for the 78 selected items	x	x	x	400.936	x	403.092	+2.156	+0.5	x	215.644	-185.292	-46.2
Steel reinforcement of foundations 10505 ¹⁾	t	346	18,045	6.244	20,022	6.928	+0.684	+10.9	13,229	4.577	-1.667	-26.7
Gravel road bedding ²⁾	m ³	59,755	483	28.862	472	28.204	-0.658	-2.3	188	11.234	-17.628	-61.1
Asphalt carpet, thickness. 40 mm ³⁾	m ²	190,200	200	38.040	203	38.611	+0.571	+1.5	161	30.622	-7.418	-19.5
Single-sided guardrail, N1, N2 ⁴⁾	m	11,488	685	7.869	678	7.789	-0.080	-1.0	440	5.055	-2.814	-35.8
Motorway roadbed - thereof the roadway assembly	m ²	181,924	3,043 1,392	553.595 253.238	-	-	-	-	-	-	-	-
Highway bridges without overpasses	m ²	6,147	33,071	203.287	-	-	-	-	-	-	-	-

4. D3 Ševětín - Borek construction project (10.7 km length, contract price CZK 933 million excluding VAT)

Item	Unit	Quantity	Contract price ⁵⁾		Price calculated ⁶⁾		Difference between calculated and contract price		Minimum price ⁷⁾		Difference between minimum and contract price	
			CZK/unit	CZK million	CZK/unit	CZK million	CZK million	%	CZK/unit	CZK million	CZK million	%
Total for the 78 selected items	x	x	x	320.195	x	298.668	-21.527	-6.7	x	144.569	-175.626	-54.8
Steel reinforcement of foundations 10505 ¹⁾	t	57	24,152	1.377	20,022	1.141	-0.236	-17.1	13,229	0.754	-0.623	-45.2
Gravel road bedding ²⁾	m ³	75,477	564	42.569	472	35.625	-6.944	-16.3	188	14.190	-28.379	-66.7
Asphalt carpet, thickness. 40 mm ³⁾	m ²	272,830	162	44.198	203	55.384	+11.186	+25.3	161	43.926	-0.272	-0.6
Single-sided guardrail, N1, N2 ⁴⁾	m	13,043	753	9.821	678	8.843	-0.978	-9.9	440	5.739	+4.082	-41.6
Motorway roadbed - thereof the roadway assembly	m ²	*)	*)	*)	-	-	-	-	-	-	-	-
Highway bridges without overpasses	m ²	*)	*)	*)	-	-	-	-	-	-	-	-

*) For construction items 101 - motorway roadbed and the 200 series - motorway bridges, the budget did not contain data in CZK/m².

5. D3 Borek - Úsilné construction project (3.2 km length, contract price CZK 718 million excluding VAT)

Item	Unit	Quantity	Contract price ⁵⁾		Price calculated ⁶⁾		Difference between calculated and contract price		Minimum price ⁷⁾		Difference between minimum and contract price	
			CZK/unit	CZK million	CZK/unit	CZK million	CZK million	%	CZK/unit	CZK million	CZK million	%
Total for the 78 selected items	x	x	x	228.702	x	274.798	+46.096	+20.2	x	138.813	-89.889	-39.3
Steel reinforcement of foundations 10505 ¹⁾	t	595	15,603	9.284	20,022	11.913	+2.629	+28.3	13,229	7.871	-1.413	-15.2
Gravel road bedding ²⁾	m ³	36,377	466	16.952	472	17.170	+0.218	+1.3	188	6.389	-10.563	-62.3
Asphalt carpet, thickness. 40 mm ³⁾	m ²	10,466	194	2.030	203	2.125	+0.095	+4.7	161	1.685	-0.345	-17.0
Single-sided guardrail, N1, N2 ⁴⁾	m	7,298	555	4.050	678	4.948	+0.898	+22.2	440	3.211	-0,839	-20.7
Motorway roadbed - thereof the roadway assembly	m ²	70,758	3,064 1,150	216.803 81.372	-	-	-	-	-	-	-	-
Highway bridges without overpasses	m ²	11,087	18,479	204.877	-	-	-	-	-	-	-	-

6. D4 Skalka - junction II/118 construction project (4.8 km length, contract price CZK 417 million excluding VAT)

Item	Unit	Quantity	Contract price ⁵⁾		Price calculated ⁶⁾		Difference between calculated and contract price		Minimum price ⁷⁾		Difference between minimum and contract price	
			CZK/unit	CZK million	CZK/unit	CZK million	CZK million	%	CZK/unit	CZK million	CZK million	%
Total for the 78 selected items	x	x	x	158.937	x	174.809	+15.872	+10.0	x	88.274	-70.662	-44.5
Steel reinforcement of foundations 10505 ¹⁾	t	191	18,621	3.557	20,022	3.824	+0.267	+7.5	13,229	2.527	-1.030	-29.0
Gravel road bedding ²⁾	m ³	38,564	374	14.423	472	18.202	+3.779	+26.2	188	7.250	-7.173	-49.7
Asphalt carpet, thickness. 40 mm ³⁾	m ²	111,298	181	20.145	203	22.593	+2.448	+12.2	161	17.919	-2.226	-11.0
Single-sided guardrail, N1, N2 ⁴⁾	m	9,126	583	5.320	678	6.187	+0.867	+16.3	440	4.015	-1.305	-24.5
Motorway roadbed - thereof the roadway assembly	m ²	100,684	3,531 897	355.515 90.314	-	-	-	-	-	-	-	-
Highway bridges without overpasses	m ²	1,878	20,379	38.272	-	-	-	-	-	-	-	-

Source: Valuation of items according to contracts concluded with chosen bidders, own calculations of SAO.

Notes: 1) Item number 272365 - Steel reinforcement of foundations 10505.

2) Item number 56330 - Gravel road bedding

- 3) Item number 574J54, including 574J04 and 574234 - Mastic asphalt carpet, modified, SMA 11+, 11S, 40 mm thick
 - 4) Item number 9113A1, incl. 911322 and 911323 - Single-sided steel guardrail, holding level N1, N2- supply and assembly.
 - 5) Price (excluding VAT) determined from item-based budget in the contract with the construction contractor.
 - 6) Weighted average of the prices (excluding VAT) from valuations in 27 bids (see Part III.3.1 of the Audit Conclusion).
 - 7) The minimum price (excluding VAT) from valuations in 27 bids (see Part III.3.1 of the Audit Conclusion), on eliminating disproportionately low prices.
- unit = unit of measure