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TRANSPORT SECTOR STRATEGIES

PHASE 3

MEDIUM-TERM PLAN FOR MAINTENANCE, DEVELOPMENT AND FINANCING OF TRANSPORT INFRASTRUCTURE FOR THE PERIOD 2024 – 2033 WITH A 2050 PERSPECTIVE

Proposal part

30.06.2023



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1 Introduction

The transport sector strategies of the 3rd phase for the period 2024 – 2033 with a 2050 perspective are the main plan setting the priorities for the development of the rail, road and water transport infrastructure, taking into account financial resources, construction capacities and material resources, and ensuring quality maintenance. The proposal part is based on the fundamental strategic principles presented in the Background section, Chapter 3. The main goals of the transport sector strategies are:

1. to create a database of all known plans to develop transport infrastructure for all modes of transport owned by the state; to identify the extent of financial needs for regional infrastructure,
2. to determine the importance of the plans by the method of multicriteria evaluation and simplified assessment of benefits and costs, using the forecast (for the year 2050) compiled using the national multimodal transport model; the plans are divided into projects and project ideas (there is not a clear-cut borderline between the two types of plans, both categories differ in the level of preparation and the amount of available information),
3. to forecast the financing options,
4. to allocate funds to repairs, maintenance and operation of the infrastructure and to development plans,
5. to determine the schedule for the preparation and implementation of projects and project ideas arranged in clusters based on the order of importance and the availability of financial resources.

Chapter 2 defines the structure of clusters (integrated routes) and project packages, which are made up of individual projects. The clusters are subsequently evaluated in terms of their current state, i.e. it is evaluated which parts of the cluster have already been built, modernized or optimized, which parts of the cluster are covered by proposed projects, and which parts of the cluster are not yet covered by any implementation plans. The clusters are assessed by the National Multimodal Transport Model. This assessment results in proposals for any additions or reassessment of parameters in the projects. The actual prioritization of the clusters based on a multi-criteria analysis is carried out in Chapter 3. The clusters consisting of individual projects are prioritised in order to cover the main needs of the Czech Republic (CZ) in the development of transport infrastructure. In contrast to previous strategies, the prioritization is determined multimodally and not for each transport mode infrastructure separately, and a financial analysis is added (Chapter 4). An overview of the clusters to be implemented in each period is given in Annex K10T2.

With regard to the assessment of the impact of the concept on Natura 2000 sites according to Section 45i of Act No 114/1992 Coll., on nature and landscape protection as amended, the following facts must be taken into account:

- As part of the processing of the SEA and the Natura 2000 assessment, variants of the submitted concept proposal were examined in cooperation with the concept designer, as several of the sub-plans included in TSS3 were evaluated as having a significantly negative impact on the objects of protection by the Natura 2000 system. The review resulted in excluding the plan "Lock of Děčín", as this plan had already been evaluated in the Water Transport Policy Concept as having a significant negative impact, for which public interest was also demonstrated, however, according to the nature conservation authority, the compensatory measures cannot be determined. Without these compensatory measures in accordance with Section 45i, paragraph 11 of Act No 114/1992 Coll., on the protection of nature and landscape, the concept cannot be approved. For another sub-plan for RL 1 HSL Hranice na Moravě (excl.) – Ostrava – Svinov, other variants were examined by the submitter, but due to the morphology of the terrain, the technical requirements of future structures and the need to maintain the connection between specific destinations, no other variant can be presented in the submitted



TSS3. After preliminary consultations with the Nature Conservation Agency CZ, regional branch administering the Protected Landscape Area Poodří, it is possible to compensate for the object of protection - the great crested newt (*Triturus cristatus*), so the variant with the least possible impact is presented in TSS3.

- Any bypasses of municipalities to be implemented after 2030, which are not yet in preparation, must be planned with regard to the location of Natura 2000 sites.
- The plan variants that have a significant negative impact on the Natura 2000 system will not be implemented and new variants will be sought.
- The proposed solutions are the only possible solutions with the least possible impact on Natura 2000.

In the course of the SEA process, a significant negative impact on the Poodří EVL or its object of protection, the great crested newt and its habitat, was identified due to the inclusion of the RS 1 VRT Hranice na Moravě (outside) - Ostrava - Svinov project in this concept. This significant negative impact was found in the opinion of the Ministry of the Environment on the environmental impact assessment of DSS3 pursuant to Section 10g(1) of the Environmental Protection Act, No.: MZP/2024/710/2401 of 15 April 2024 (Annex: SEA_DSS3 opinion).

Another necessary condition for the approval of the DSS3 in accordance with the procedure under Section 45i(4) et seq. of the ZOPK is the existence of urgent reasons of overriding public interest. In the case of concepts with national scope approved by the Government of the Czech Republic, including the DSS3, it is necessary that the public interest in its approval and its urgent reasons be assessed and determined at the level of the Government of the Czech Republic. This step was taken on 3 April 2024, when the Government of the Czech Republic discussed and took note of the material "Transport Sector Strategies, Phase 3 - Medium-term plan for maintenance, development and financing of transport infrastructure for the period 2024-2033 with a view to 2050 and their significantly negative impact on Natura 2000 sites, description and assessment of the public interests concerned from the point of view of Council Directive 92/43/EEC" and in its Resolution no. 213, on the basis of the assessment and comparison of the intensity of the two public interests concerned, stated in point II. that it "agrees that there are overriding reasons of overriding public interest for the approval of the concept of the Transport Sector Strategy, Phase 3, including measure RS 1 VRT Hranice na Moravě (outside) - Ostrava - Svinov" in relation to the protection of the Natura 2000 sites significantly adversely affected. This legal condition for the determination of compensatory measures or the approval of DSS3 has also been fulfilled

In accordance with Section 45i(6) of the Nature Conservation Act, the Nature Conservation Agency, as the nature conservation authority substantively and locally competent for the exercise of state administration in the protection of nature and landscape in the Poodří Protected Landscape Area and the Poodří Protected Landscape Area, has, pursuant to Section 78(1) of the Nature Conservation Act in conjunction with Section 78(5) of the Nature Conservation Act, set out compensatory measures, including a proposal for measures to secure them for the purposes of DSS3, as set out in the operative part of this opinion. The operative part of this opinion states verbatim:

"In relation to the adverse effects on the Poodrie European Site of European Importance and its subject of conservation Great Crested Newt (*Triturus cristatus*) and integrity as a result of the approval of DSS3, the Agency sets out the following compensatory measures:

1. On the pond Spasitel in the area of. Polanka nad Odrou (land parcel no. 541): Dewatering of the reservoir, in a substantial part of the reservoir sloping of the sloping banks, adequate draining of the bottom of the reservoir, implementation of the restoration of the inlet and outlet equipment, removal of all mature trees from the eastern and south-eastern side of the reservoir and modification of the terrestrial biotope on the pond. Number Implementation period for these measures: from 20 August to 30 September of the calendar year.



2. On the area adjacent to the Palarňový pond in the area of the municipality of the town of K. Polanka nad Odrou (land parc. Number č. 3077/1, 3077/2, 3078 a 3079): Construction of a system of pools with a diversified shoreline, varying water level and gradual slope of the banks, with the possibility of partial draining, demolition of the structure, clearing of trees in the places where the pools are built and leaving areas with mature trees to preserve the terrestrial biotope and construction of a feeder stream from the watercourse. Duration of these measures: at any time during the calendar year
3. In the locality "In the triangle" in the area of. Pustějov (plots of land parcel no. 1190/74, 1190/59, 1190/60, 1190/62, 1191/1, 1188/1 and 1190/1): Construction of a system of pools with a diversified shoreline, different water level and gradual slope of the banks, partial de-watering of the existing pool including partial clearing of bushes. Duration of the measures: on parcels 1191/1 and 1188/1 from 20 August to 30 September of the calendar year, on the other parcels at any time during the calendar year.
4. In the locality 'Meadow at Bažantula' in the area of. Studénka nad Odrou (parcel no. 2224/2). Construction of pools with diversified shorelines, different water surface heights and gently sloping banks. Duration of these measures: any time during the calendar year.



2 List of projects and their distribution among clusters and packages

The aim of this chapter is to determine the structure of transport infrastructure development projects and to establish development priorities. The chapter provides background information for establishing the development priorities, because with regard to the availability of funds, construction capacities and material resources and the preparation process, it is not possible to build all planned structures within the next 5 to 7 years. At the strategic level, it is not possible to assess the priorities for each project separately, as each project is part of a cluster (a functional unit), and the economic benefits will be fully achieved only after the completion of the entire cluster (functional unit) of which the project is a part. We use the term cluster because it has already been introduced in the Transport Sector Strategies, Phase 2. In addition, there are a number of specific or small projects that cannot be included in the clusters and are, therefore, grouped into project packages.

The definitions of the clusters must take into account priorities set in:

- the TEN-T policy, where it will be necessary to strictly meet the deadlines of 2030, 2040 and 2050, the European Commission will request a notification of the document based on the regulation,
- the objectives of the Regional Development Strategy, the ambition of which is to stop the widening of the gap in economic development of the regions, and to reduce the pressure on the central metropolis by decentralizing the functions to the other ITI regions. One of the conditions for solving regional disparities is, inter alia, the transport accessibility of the territory, not only by motorway and road infrastructure, but rail connections are also of similar importance. This is to be done in two phases – meeting basic needs by conventional railways, and meeting target needs by Rapid Links (high-speed lines or conventional lines with higher parameters). In some cases, the division into basic needs and target needs is also established for the road network or conventional railway.

Comparable accessibility by rail and road transport must be ensured for all ITI regions so that all these regions without exception can participate in the decentralization of functions. Regional Development Strategy 21+ defines structurally affected regions as those where the insufficient connection of the main centres is particularly urgent. In terms of the transport infrastructure, the connection is insufficient mainly in the Karlovy Vary and Most-Chomutov regions. In addition to these regions, RDS 21+ also lists municipalities with extended powers, the territories of which are identified as economically and socially vulnerable areas. Such areas are, with the exception of the Central Bohemian Region, identified in all regions of the Czech Republic, they include, for example, the territories of Teplá, Toužim, Žlutice, Hranice and Kraslice in the Karlovy Vary Region; Šluknov Spur and Podbořany in the Ústí nad Labem Region and Bruntál, Krnov and Jablunkov in the Moravian-Silesian Region. Their connection to regional centres has a regional character and is provided by class I and II roads and usually by railway lines outside the main railway routes. The quality of these connections of a regional nature also needs to be improved gradually by means of the Transport Sector Strategy packages defined for class I roads, class II and III roads (subsidy from the State Transport Infrastructure Fund (STIF) and grants from the Integrated Regional Operational Programme (IROP)) and a package for railway lines outside the defined clusters.

The consideration of these principles is described in Annex K6T4.

The individual clusters will be defined in the following steps:

- In the first step, multimodal corridors are determined and used to identify the most important long-distance routes of the network of national importance. The multimodal corridors are based on the multimodal corridors defined in the TEN-T and are extended with other corridors that connect them to the ITI agglomerations. They usually connect several important places (ITI agglomerations) and have



links to the international network. The multimodal corridors and their sub-sections (parts) are used to determine the CZ priority network and they will ensure the international linkage of the Czech Republic and the linkage among regions defined in the Regional Development Strategy and within the ITI regions. The multimodal corridors serve as a basis for deriving multimodal clusters and clusters of individual modes of transport, and the clusters are then prioritised. The multimodal corridors are specified in Annex K6T5.

- In the second step, the multimodal clusters are derived from the multimodal corridors and consist of simultaneous clusters for road, rail and water transport and provide multimodal connections between two neighbouring metropolises or agglomerations or ensure other important functions. Multimodal corridors consist of clusters of individual modes of transport, the linkage of these clusters into multimodal clusters is proposed for the reasons of assessing the accompanying measures within the individual clusters and for reasons of inter-sectoral multimodal interconnection of traffic. Clusters bring together named (specified) projects that are closely related and together contribute to building a continuous transport route with the required parameters. The definition of multimodal clusters and clusters is provided in Annex K6T6.
- Project packages consist of smaller projects of a similar focus or projects of a specific focus that are not included in clusters. Each project package has its own prioritisation of the projects contained in it, set out either in action plans of the Transport Sector Strategy or in a separate policy document. For each project package, a specific amount is allocated for each time period. The list of project packages is provided in Annex K6T6.
- Annexes K6T1-3 contain a list of projects under preparation as of 30.06.2023, which are assigned to specific clusters or project packages.

The clusters are defined based on their transport function, and not based on their implementation state-of-play. This means that they are defined even if they are already built or modernized, are in preparation, or exist only as a project idea. Therefore, clusters are divided into three groups according to their characteristics:

- Basic needs clusters are clusters of traditional infrastructure of such parameters that all ITI regions can fulfil their basic functions. They ensure a connection by conventional railway with competitive travel times and capacity, and a road connection of adequate capacity and routing outside the built-up areas of municipalities.
- Auxiliary needs clusters are clusters that further improve the condition in a partial way by removing bottlenecks impeding speed or capacity, or offer additional services in the already implemented basic needs clusters or ensure the interconnection in an alternative way.
- Target clusters are clusters providing further significant improvement in the quality of transport connections beyond the basic needs, which will increase the competitiveness of the respective region so that it can fulfil its "growth pole" function. This is, for example, the construction of high-speed railway lines or other roads enabling further expansion of the range of services.

Currently, approximately 900 transport infrastructure construction projects are being monitored in various stages of preparation. The projects were designed based on:

- legal obligations towards the European TEN-T policy,
- the need to ensure a balanced transport accessibility of regions,
- the needs of the individual regions,
- logistics needs of the national and European economy.



Figure 1 Trans-European Network for Transport

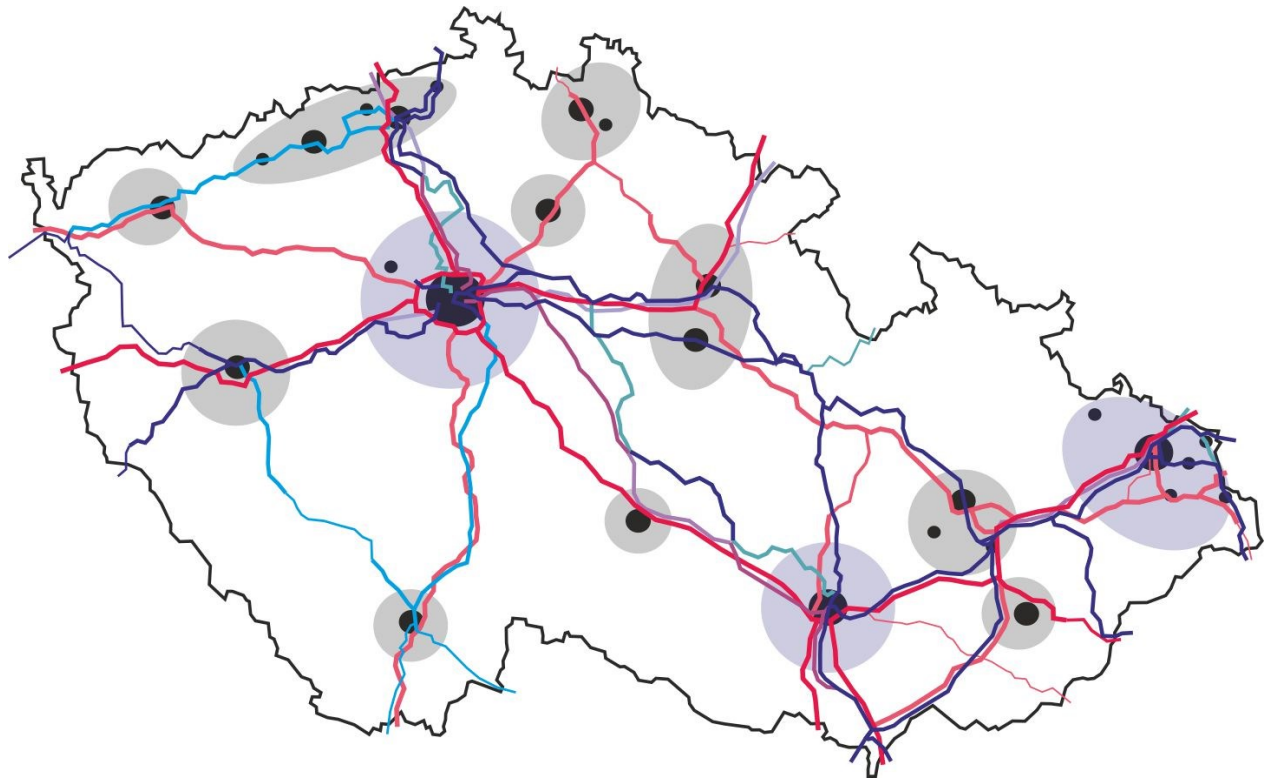


Figure 2 The railway network with inter-regional links

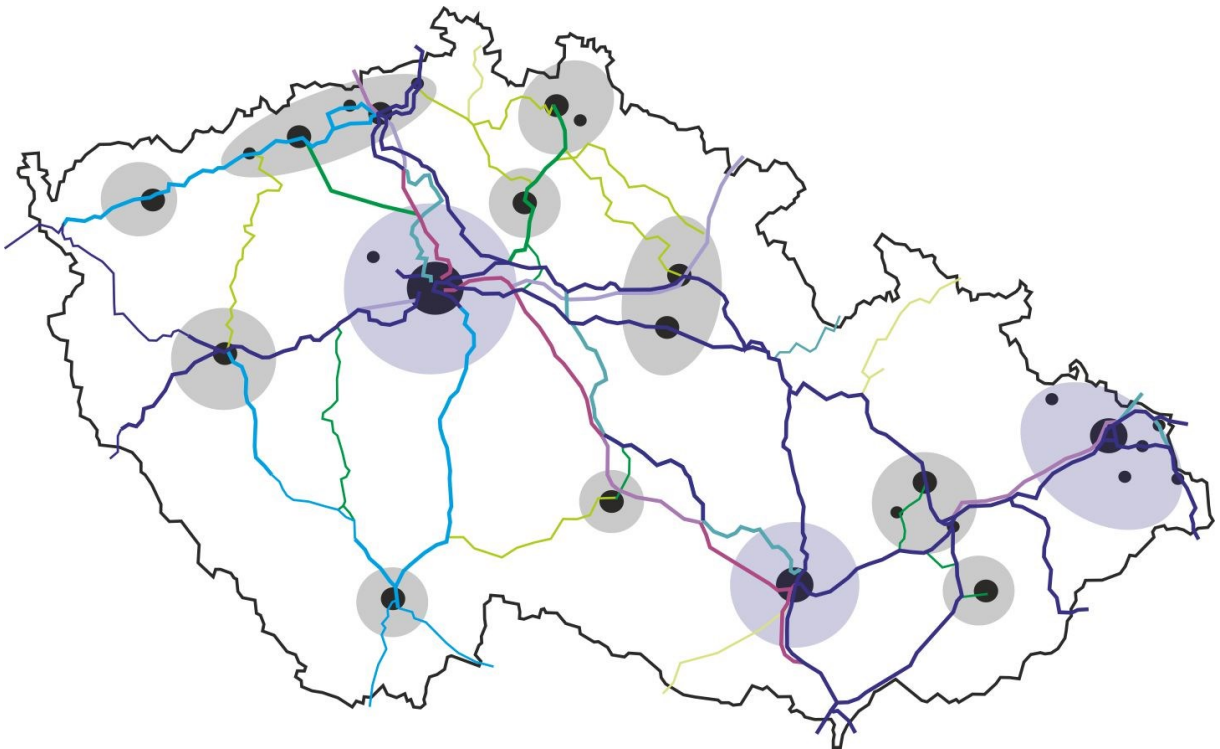
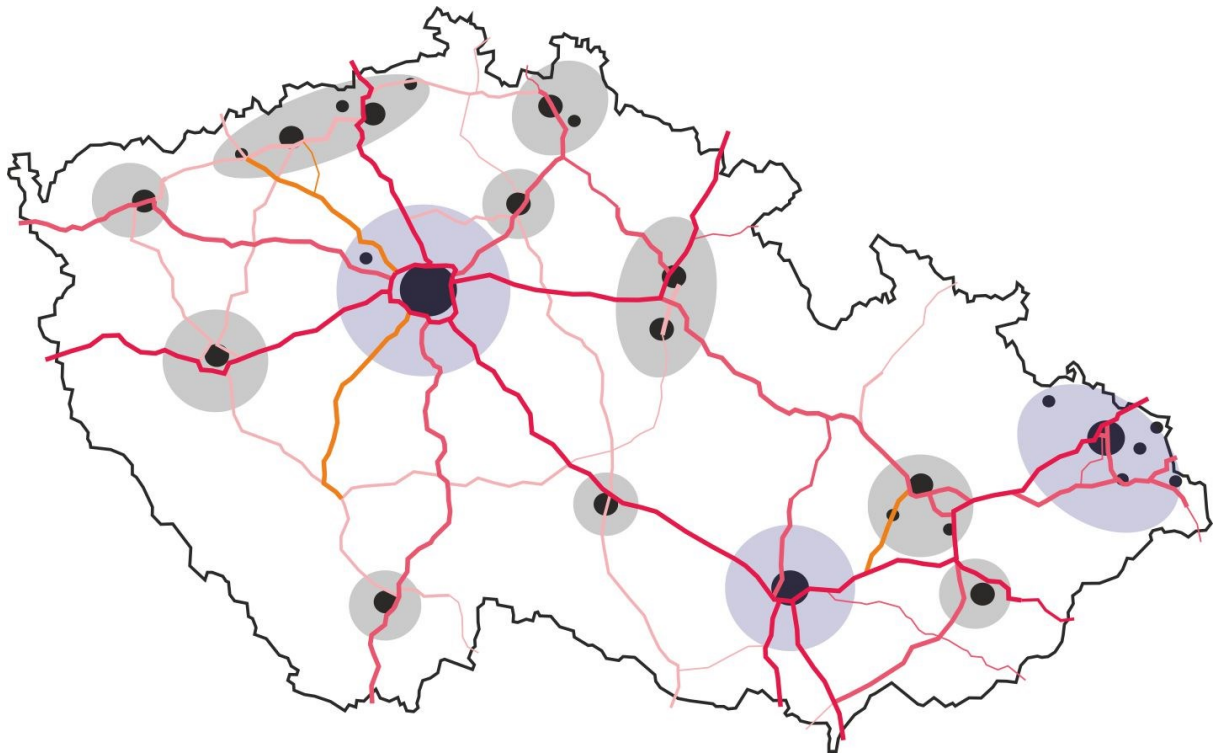




Figure 3 The road network with inter-regional links



At the strategic level, it is not possible to assess the priorities of each project separately. For that reason, the projects are divided into two basic groups:

- Projects that are part of an integrated transport route (cluster);
- Specific or small projects that cannot be included in the clusters and are, therefore, grouped into project packages.

Projects on class I roads are included in clusters or packages based on their classification described in Annex K6T7, which indicates that projects on class I roads in types A, B, C and D are monitored as a separate cluster and types E, F, G are monitored in a project package.

2.1 Clusters

Clusters bring together projects that are closely related and together contribute to building a continuous transport route or a functional transport unit. The economic benefits will be fully realized only after the completion of the entire cluster, not each individual project that is part of it.

Clusters are defined on the basis of their transport function, not on the basis of the current stage of implementation of the projects included in the cluster. This means that clusters are defined even in cases where some (or even all) structures from the defined cluster have already been built or modernized, or, on the contrary, are still being prepared, or exist so far only as a project idea. Examples of clusters are:

- motorway D3 Prague – České Budějovice (including rest areas)
- motorway D3 České Budějovice – Dolní Dvořiště st. border
- motorway D1 Prague – Brno
- Prague railway junction



A total of 161 clusters are defined in the road, rail and water transport modes. The method of determining the clusters is described in Annexes K6T5 and K6T6.

Clusters of different transport modes connecting the same areas are grouped into multimodal clusters. Multimodal clusters consist of simultaneous clusters for road, rail and possibly water transport and create conditions for the multimodal connection of two or more important areas. Multimodal clusters are not evaluated in the prioritization, we define them in order to monitor and propose accompanying measures so that, in accordance with the European and national transport policy, it is possible to create conditions for an appropriate modal split in favour of more environmentally friendly modes of transport. Multimodal corridors create conditions for inter-sectoral transport cooperation in the form of intermodal transport in freight transport and greater use of passenger rail transport, especially in the case of long-distance transport and backbone lines of regional, suburban and urban transport. The consistency of the development of the transport infrastructures for individual modes of transport is monitored in the cluster prioritization under one of the criteria.

The clusters are subsequently described in Chapter 3 in terms of their current state, i.e. it is indicated which parts of the cluster have already been built, modernized or optimized, which parts of the cluster are covered by proposed projects, and which parts of the cluster are not yet covered by any implementation plans. The clusters are assessed by the national Multimodal Transport Model¹ (the level of detail corresponds to the national model that cannot capture local relationships). This means modelling the situation in 2050 in a variant where all registered projects are theoretically put into operation, to identify the alignment of the parameters of individual clusters with the forecasted load. If misalignment is identified, the modelling serves as a basis for proposing a subsequent review of the parameters of the relevant cluster. As the total needs of the development of transport infrastructure exceed the investment funds considered for it so far, it is necessary to propose possible cost-saving measures. These measures for all types of transport infrastructure are proposed in this part of the document.

Clusters were prioritized using a multicriteria analysis (see Chapter 4 for details). The results of the prioritization are shown in Annex K8T3, where sheet *Clusters Ranking* provides a clear summary by priority band (each priority band contains clusters that have received the same score).

The first priority band covers cluster 305Z HSL Praha – Poříčany. The second priority band contains clusters 104S Completion of motorway D0, 302Z Conventional railway Velký Osek – Choceň – Ústí n/O, and 501Z Conventional railway Česká Kubice st. border – Plzeň – Prague. The third to fifth priority band covers the railway connections of the TEN-T core network, which are supposed to connect the Václav Havel Airport, to create a backbone Moravian route connecting Brno with Ostrava, Olomouc and Zlín, and to meet the prerequisite for the development of the entire network in the form of building the Brno node. The sixth and seventh bands include the interconnection of the Czech and Polish motorway networks on the Czech side (D11) and the capacity increase of the Prague railway junction, etc. All 161 clusters are divided into 50 priority bands based on a multi-criteria analysis.

2.1.1 List of clusters and their description

A complete list of projects assigned to individual clusters identified as of 30.06.2023 is provided in Annex K6T1 – 3, examples of the most important projects are given below.

1000 Multimodal cluster Prague node

101Z Capacity increase and modernization of the Prague railway junction

¹ The transport model is not included here due to its large size. The outputs are available in the Ministry of Transport.



Increasing the capacity of the Prague railway junction is a necessary condition for the implementation of the Rapid Links (RL) system, as there is not a sufficient operating and repair base available for the prospective number of trains of the new system. This represents a so-called basic, or necessary need. The second important priority is ensuring a higher capacity for suburban passenger transport, which must be built on suburban railway lines (local and semi-fast trains) from the point of view of sustainable urban mobility. The capital city does not have enough areas for parking, as well as high-capacity roads for daily commuters, not even in the P&R system at the end stations of the underground. Therefore, from the point of view of urban mobility, increasing the capacity of the railway hub and suburban lines is a top priority. In terms of capacity, it will gradually be necessary to introduce automatic train control technologies, as very precise train control is a prerequisite for capacity optimisation.

A feasibility study for the Prague railway junction is currently being prepared, the objectives of which are to:

- ensure capacity for prospective new trains of the RL system,
- ensure an interval of 10 minutes for local suburban trains and 30 minutes for semi-fast suburban trains,
- ensure sufficient capacity for freight transport (at least 2 pairs of 740 m long freight trains per hour on the TEN-T core network lines with exceptions during peak hours²).
- ensure capacity for new conventional long-distance connections.

The following projects are currently under preparation:

- Reconstruction of railway station Prague-Smíchov
- Double-tracking of the line Branický most - Prague Krč - Spořilov
- Expansion of parking capacities of the Prague railway junction (PRJ) - Malletova location
- Modernization of the line section Prague-Libeň - Prague-Malešice, construction I
- Transport complex Smíchov
- Reconstruction of the line Prague main station (excl.) - Vyšehrad (incl.)
- Reconstruction of railway bridges at Vyšehrad
- Modernization of railway station Prague-Krč
- Double-tracking of the branch line Spořilov – Prague–Zahradní Město
- Double-tracking of the line Hrdlořezy – Prague–Malešice – Prague–Hostivař
- Modernization of the line in section branch point Skály - Prague–Čakovice (excl.)
- Expansion of parking capacities of the PRJ - Malletova location
- Expansion of parking capacities of the PRJ - Trnkova/Slatiny location
- ETCS Prague-Uhřetěves - Prague main station (excl.)
- RL 1 HSL Prague-Zahradní město – Prague–Běchovice

The sufficiency of these measures will only be assessed on the basis of the completed Prague Railway Junction Feasibility Study. In any case, the time coordination of this project with the HSL Prague – Poříčany project is key.

²On double-track lines, freight trains of at least 740 m can be allocated at least one train path per two hours and direction, and at least 24 train paths on a daily basis, if requested by the railway undertaking.



The traffic model forecasts the transport of more than 250,000 persons per day for sections in the central part of the junction.

102Z Conventional railway Prague Masarykovo nádraží - Václav Havel Airport

The Václav Havel Airport rail link, which will enable the arrival of long-distance trains, is so specific that it is kept as a separate cluster, although it is part of the Prague railway junction. Due to the airport's significance, the TEN-T regulation requires connection to rail transport. This is a cluster of basic (necessary) needs.

The following projects are currently under preparation:

- Modernization of the line Prague-Bubny (including) – Prague-Výstaviště (including)
- Modernization and completion of the station Prague Masarykovo nádraží
- Modernization of the line Prague-Výstaviště (excl.) - Prague-Dejvice (incl.)
- Modernization of the line Prague-Dejvice (excl.) - Prague-Veleslavín (excl.)
- Modernization of the line Prague-Veleslavín (including) – Prague-Ruzyně (including)
- New construction of the line Prague-Ruzyně (excl.) – Prague-Václav Havel Airport (excl.)
- New construction of the station Prague-Václav Havel Airport
- Connecting the railway link to Václav Havel Airport as a loop line to the line Prague – V.H. Airport – Kladno

The project, in combination with the modernized connection to Kladno, will create another capacity direction for Prague suburban transport and will significantly improve the public transport service to Václav Havel Airport. The proposed measures fully cover the needs of this not yet existing cluster. The project proposals are balanced in terms of the required capacity and the investments made and, therefore, a review the parameters of the projects is not recommended.

The transport model forecasts over 50,000 passengers per day for this cluster, which is a sufficient daily volume for the new double track line from a strategic point of view.

103Z Conventional railway New Connection II

This is a cluster that also concerns the Prague railway junction, this time it does not address basic (necessary) needs, but seeks to further improve the functions of the railway junction, i.e. the so-called target needs. The cluster is also examined in the PRJ Feasibility Study and several variants are considered:

- long-distance transport conducted underground and suburban transport on the surface, with service to the airport as conventional railway
- long-distance transport conducted underground with the aim of bringing high-speed trains to Václav Havel Airport
- suburban transport conducted underground, which will allow suburban trains to reach key places in the capital centre (the squares Václavské náměstí, Karlovo náměstí).

Given the priorities of sustainable urban mobility, the suburban transport variant would be more beneficial, as it would increase the competitiveness of the railway in the daily commute from the suburban areas, and at the same time the project would relieve the overloaded metro system in the capital centre. The projects of this cluster have not yet been proposed in the TSS, their future will depend on the results of the ongoing feasibility study, in any case they are intended for a more distant future.



The national transport model for this cluster has not been developed, the project would take over not only suburban transport but also a significant part of urban transport, and modelling with the transport model of the City of Prague (a transport model by TSK) would be necessary.

104S Completion of the D0 motorway

The D0 motorway acts as the ring road of the capital and its importance is reinforced by the configuration of the motorway network in the Czech Republic, where nine radials come out of the capital (compared to other European capitals, this is one of the largest number of radials), on the other hand, there are no tangential directions of capacity roads. That is why strong suburban relations are combined with strong transit traffic in Central Bohemia. The D0 motorway is therefore very important, especially as a protection of the capital from heavy transit traffic. The completion of the section between the D1 and D11 motorways (structure No 511) will connect the capacity of all the motorways leading to the capital, and from an environmental point of view, it will alleviate the situation in the Spořilov housing estate, which is one of the places most affected by traffic impacts within the entire Czech Republic.

The following projects are being prepared within the cluster:

- Motorway D0 511 Běchovice – D1
- Motorway D0 518 Ruzyně – Suchdol
- Motorway D0 519 Suchdol – Březiněves
- Motorway D0 520 Březiněves – Satalice
- Motorway D0 510 capacity increase of the Běchovice – Satalice section
- Motorway D0 515 capacity increase of the Slivenec - Třebonice section
- D0 section covered by the Motorway Administration and Maintenance Centre (MAMC) based in Říčany
- D0 interchange Třebonice, stage 0

According to these projects, the entire motorway will be designed in a 3+3 lane arrangement, which is a justified parameter given the expected intensities.

The transport model forecasts 60-100 thousand light and heavy vehicles per day for this cluster, which from a strategic point of view is a sufficient daily volume for the six-lane arrangement of the D0 motorway in its entire length.

2000 Multimodal cluster State border with Germany – Ústí nad Labem – Prague / Kolín

201Z Conventional Railway Prague – Děčín state border

The railway line was modernized as part of the modernization of the transit railway corridors, with the exception of the Kralupy n/V railway junction and the connected Nelahozeves tunnels which do not meet the TEN-T conditions for the gauge. The modernization took place a quarter of a century ago, and so partial optimization measures and new technological equipment are required. The cluster is classified in the category of basic (necessary) needs. The following projects are being monitored:

- ETCS state border with Germany – Dolní Žleb – Kralupy n. Vlt.
- Optimization of the line section Prackovice nad Labem (excl.) – Ústí nad Labem (excl.)
- Optimization of the line section Lovosice (excl.) – Prackovice nad Labem (incl.)
- Rehabilitation of the Lovosice – Bohušovice substructure
- Modernization of railway station Kralupy nad Vltavou



- Reconstruction of the Nelahozeves tunnels

These investments are justified and balanced, they are not oversized or undersized, even with regard to the planned simultaneous construction of a high-speed line.

The transport model forecasts 7.5 thousand persons per day for this cluster after the high-speed line is put into operation (in suburban areas, the accuracy of the national model is limited) and 19,000 tonnes of cargo per day. From a strategic point of view, this is a sufficient daily volume for upgrading the limiting sections of the cluster, especially in the Nelahozeves tunnels.

202Z Conventional Railway Děčín Prostřední Žleb – Lysá n/L – Kolín

This is the so-called right-bank line that is primarily important for freight transport. The line requires modernisation which will include a change of the traction system to 25 kV. Technological equipment and enabling the operation of 740 m long trains are also important. The cluster is classified in the category of basic (necessary) needs.

The following projects are expected:

- Optimization of the line section Ústí nad Labem – Střekov (incl.) – Děčín východ (excl.)
- Optimization of the line section Litoměřice dolní nádraží (incl.) – Ústí nad Labem Střekov (excl.)
- Modernization of the line section Kolín (excl.) – Babín branch (excl.), incl. Libice interconnection
- Modernization of the track section Nymburk main station (incl.) – Lysá nad Labem (incl.)
- Optimization of the track section Lysá nad Labem (excl.) – Mělník (excl.)
- Optimization of the track section Mělník (incl.) – Litoměřice dolní nádraží (excl.)
- Optimization of the line section Litoměřice dolní nádraží (incl.) – Ústí nad Labem Střekov (excl.)
- Reconstruction of railway station Děčín východ dolní nádraží
- Reconstruction of the line incl. noise abatement measures in a part of the Litoměřice město – Velké Žernoseky section

Considering the importance of the line, the investments are within appropriate parameters, despite the fact that the new tunnels - Středohořský and Krušnohorský - are also being monitored in terms of use for freight transport.

The transport model forecasts 2-12,000 passengers and 130,000 tonnes of cargo per day for this cluster, which is a sufficient daily volume from a strategic point of view.

203Z HSL Prague – branch Nová Ves; 204Z HSL branch Nová Ves – Lovosice

These are part of the connection of the Czech Republic to the European network of high-speed lines, included in the TEN-T core network, and so both clusters are classified as basic (necessary) needs. The following project is being prepared within the clusters:

- RL 4 HSL Praha-Balabenka – Lovosice exit

The transport model forecasts 63,000 and 40,000 passengers per day respectively for these clusters, which is a sufficient daily volume for the new double track high-speed line from a strategic point of view.

205Z HSL Ústí n/L – st. border

This is part of the connection of the Czech Republic to the European network of high-speed lines, which will be newly included in the TEN-T. It ranks among the so-called basic needs, i.e. further important improvement of the transport infrastructure at a place representing a significant bottleneck in terms of the cross-border



connection capacity. The route will pass through the long Krušnohorský tunnel, requiring a long time to complete. Mixed operation of passenger and freight transport is expected, which will reduce noise in the Elbe valley. The greater part of the project will be implemented on the German side.

The following project is being prepared within the cluster:

- HSL Ústí n/L – st. border

The transport model forecasts 12,000 passengers and nearly 100,000 tonnes (149 freight trains) transported per day for this cluster, which is a sufficient daily volume for the new double track high-speed line from a strategic point of view.

206Z HSL Lovosice – Ústí n/L

This is part of the connection of the Czech Republic to the European network of high-speed lines, which is included in the global TEN-T. It is to meet the so-called target needs, i.e. further important improvement of the transport infrastructure. The route will pass through the long Středohořský tunnel, requiring a long time to complete. Mixed operation of passenger and freight transport is expected, which will reduce noise in the Elbe valley.

The following project is being prepared within the cluster:

- HSL Lovosice – Ústí n/L

The transport model forecasts 32,000 passengers and 120,000 tonnes transported per day for this cluster, which is a sufficient daily volume for the new double track high-speed line from a strategic point of view. If it were necessary to seek cost-saving measures (identified in Books 9 and 10 within the financial and development scenarios) due to limited financial resources, a postponement of the implementation and a temporary use of the capacity of both the left-bank and right-bank lines come into consideration.

207S D8 Prague – Petrovice st. border

The D8 motorway is included in the basic needs and it is completed and in full operation. Further capacity increase is expected on selected sections:

- D8 motorway, interchange Zdiby, phase II
- Interchange Zdiby, phase III
- D8 motorway – capacity increase near Zdiby – Nová Ves

In the first section, according to the transport model forecast, intensities of 50,000 cars and 7,000 trucks, i.e. 57,000 vehicles, per day are expected. A total of 40,000 vehicles are expected for the second section. Reconstruction of the Zdiby interchange is necessary. Intensities in the direction of Nová Ves justify the expansion of the motorway, however, this does not generally solve the problem of bringing a large number of cars to the capital, where there is a lack of space. The number of 40,000 cars in 2050 indicates that the necessity of capacity increase should be reassessed, also with regard to the government being able to secure funds for the implementation of all priority projects.

208V Elbe – Vltava waterway

Water transport is an integral part of the transport system of the Czech Republic, from the point of view of sustainable transport it is undoubtedly an asset, but the issue of the impact of the waterway on water ecosystems and water management functions is sensitive. It still has free capacity for carrying freight transport in particular. The forecast for the transport of goods through the cross-border section is up to approx. 4,100 tonnes (theoretical infrastructure capacity of up to 20,000 t) of transported goods per day. The reliability of the Elbe Waterway is impaired by the "Ústí nad Labem - state border with Germany" section where low water levels occur frequently and are a limiting factor for the implementation of transport. Therefore, it is necessary



to implement measures that will ensure stable navigation conditions all year round in the section mentioned. Insufficient navigational depth falling below the limits of technical and economic navigation in the free-flowing regulated section of the Elbe disrupts the transport chain and effective planning, and does not allow sufficient loading of freighters, and the regulated waterway means time losses due to freighters staying in lock chambers and the associated higher costs (depreciation and costs of freighter crews or goods).

The following projects are currently being prepared for the cluster:

- Lock Přelouč II
- Modernization of the Srnojedy lock
- Modernization of the roadsteads at the Dolní Beřkovice lock chamber
- Protective mooring on the Elbe waterway
- Development of river and information systems
- Hydraulic structure (HS) Kostomlátky, reconstruction of the dividing walls of the lock chamber
- HS Týnec n.L., modernization of the lock chamber plateau
- Elbe Waterway, modernization of dolphins on the middle Elbe River
- Preparation of transport infrastructure measures for the transport of extra large and heavy components for the new nuclear power sources at the Dukovany Nuclear Power Plant - Povodí Labe state enterprise
- Securing the vertical clearances (air drafts) on the Vltava waterway
- Increasing the operational draughts on the Vltava waterway
- Lock Chamber Prague - Staré Město
- Ensuring navigational depths downstream of HS Štěchovice and HS Vrané nad Vltavou
- Vltava Waterway, Modernization of the control system of HSs and lock chambers
- HS Zvíkov – modernization of operational facilities of the Vltava Waterway
- Lock chamber Roztoky - plateau modernization
- Lock chamber Dolánky - plateau modernization
- Lock chamber Modřany - plateau modernization
- Lock chamber Modřany - modernization of the upper roadstead
- Preparation of transport infrastructure measures for the transport of extra large and heavy components for the new nuclear power sources at the Temelín Nuclear Power Plant - Waterway Directorate of the Czech Republic
- Modernization / construction of second lock chambers on the Lower Vltava (Miřejovice, Dolanky, Roztoky)
- Modernization of operational facilities of the Vltava Waterway at Mlázice
- Preparation of transport infrastructure measures for the transport of extra large and heavy components for the new nuclear power sources at the Temelín Nuclear Power Plant - Povodí Vltavy state enterprise
- Small lock chamber Štvanice - modernization
- Lock chamber Smíchov - control room optimization
- HS Vrané – modernization of the gantry crane
- Securing the Vraňany - Hořín canal during floods



- City logistics by water transport in the Prague agglomeration
- The Vltava, hydraulic structure Miřejovice - modernization of the bridge

The missing Děčín lock is thus a critical place for further development of waterways. This is a project in a narrow valley, so its effect on the water balance in the landscape is negligible, as well as its effect on larger-area ecosystems that have a great influence on the ecological stability of the territory. The situation is different for lowland sections of rivers, especially the Elbe upstream of Mělník.

The waterway from Hřensko via Mělník to Prague's Radotín is very desirable from the point of view of freight transport, including Prague city logistics, and is also used for recreational boating. The use of the middle Elbe above Mělník must be assessed from all aspects – transport, water regime in the landscape (hydrogeological regime), agriculture and ecosystems. The project of the Děčín lock, due to its significant negative impact on the Natura 2000 system, is being addressed in a separate process as well as in the upcoming Water Transport Policy Concept. Its implementation within the Transport Sector Strategies is conditional on finding compensatory measures. If they are not found, the parameters of the waterway will remain in their current levels.

A cluster not yet specified in detail and therefore not monitored in this document in terms of its properties is the canalisation of the Odra River in the Kožle-Bohumín section. A necessary condition for this project is ensuring its economic efficiency and environmental acceptability. The issue will be addressed in the Water Transport Policy Concept. The Czech Republic will continue negotiations with Poland about the possibilities of navigability of the Odra up to the territory of the Czech Republic.

3000 Multimodal cluster Prague – Brno

301Z Conventional Railway Prague – Česká Třebová – Brno

The railway line was modernized as part of the modernization of transit railway corridors, with the exception of the Choceň - Ústí n/O section and the Pardubice (under construction) and Česká Třebová junctions. The modernization took place a quarter of a century ago, and so partial optimization measures (some being implemented on certain sections) and new technological equipment are required. The cluster is classified in the category of basic needs. The following projects are being monitored:

- Choceň – Uhersko, BC
- Modernization of the Česká Třebová railway junction
- Construction of the Brno-Černovice nodal substation
- CTC Brno – Skalice nad Svitavou (incl.)
- CTC Skalice nad Svitavou (excl.) – Česká Třebová
- Reconstruction of railway station Opatov
- Modernization of the line section Ústí nad Orlicí – Choceň
- Reconstruction of the line Uhersko – Pardubice to introduce a speed of 200 km/h
- ETCS Modřice – Adamov
- Infrastructure modification of TRC 1 for the exclusive operation of ETCS in the section Břeclav - Prague

The insufficient capacity of selected sections will be solved by projects on parallel sections (HSL Prague – Brno, Velký Osek – Choceň). The transport model assumes daily transportation of 20-35 thousand persons per day (in suburban areas, the accuracy of the national model is limited) and 40 – 55 thousand tonnes of cargo per day; in the Choceň – Česká Třebová sub-section, it expects 28 thousand passengers and 100 thousand tonnes of cargo per day.



302Z Conventional Railway Libice n/C / Velký Osek – Choceň – Ústí n/O

The line will be newly included in the TEN-T as a solution to the insufficient capacity of the current section Kolín - Česká Třebová, and therefore belongs to basic (necessary) needs. The cluster contains the following projects:

- Modernization of the line section Kanín branch – Chlumeck nad Cidlinou (incl.)
- Modernization of the line section Chlumeck nad Cidlinou (excl.) – Hradec Králové (excl.)
- Modernization of the line section Hradec Králové (excl.) - Týniště nad Orlicí (excl.)
- Modernization of the line section Týniště nad Orlicí (excl.) – Choceň

The Libice interconnection is part of the 202Z cluster.

According to the forecast, the new railway connection will enable the transportation of almost 60,000 tonnes (90 freight trains) per day, and so the investment is necessary in the proposed parameters.

303Z Brno railway junction

Similar to the Prague railway junction, the Brno junction is a prerequisite for the implementation of the Rapid Links network and for ensuring Brno's suburban transport (the reasons are described in cluster 101Z, although the requirements of Brno for suburban transport are adequately lower). This is a basic (necessary) need. The following projects are being prepared for the cluster:

- Brno railway junction
- Reconstruction of railway station Brno–Královo Pole
- Modernization of r. station Brno–Židenice and modifications in r. station Brno–Maloměřice
- Modernization of the line section Brno–Židenice (excl.) – Brno–Černovice branch

The cost of rebuilding the junction will be high, but necessary. The approval of its final form was preceded by a discussion that ran for many years. Up to 70,000 tonnes of cargo and 130,000 persons will pass through the junction per day (in suburban and especially urban areas, the accuracy of the national model is limited).

304Z Conventional railway Kolín – Havlíčkův Brod – Brno

This is a supplementary line to the line via Česká Třebová, as it has less favourable parameters for freight traffic (track gradients, limited clearances, the full P400 code is not observed and the maximum train length is 674m), for which state-funded pusher engines are used, and it shows longer travel times for passenger transport. Therefore, it is included in the category of auxiliary needs, despite the fact that selected sections in the central part will temporarily serve as the main connection for passenger transport between Prague and Brno in accordance with the phasing of the implementation of the new high-speed connection. With regard to the above, the following projects are being prepared:

- Reconstruction of the line section Vlkov u Tišnova (excl.) – Křižanov (excl.)
- Reconstruction of r. station Vlkov u Tišnova
- ETCS+CTC on section Brno – Havlíčkův Brod – Kolín
- Modernization of Kutná Hora main station
- Reconstruction of the line section Kuřim (excl.) – Tišnov (excl.)
- Reconstruction of railway station Tišnov
- Modernization of the passage through the Havlíčkův Brod junction
- Modernization of the line section Světlá nad Sázavou (excl.) – Leština u Světlé (excl.)



- Modernization of the line section Okrouhlice (incl.) - Světlá nad Sázavou (excl.)
- Modernization of the line section Sázava u Žďáru (incl.) - Přibyslav (excl.)
- Modernization of the line section Pohled (excl.) – Havlíčkův Brod (excl.)

The transport model assumes daily transportation of over 30,000 t of cargo and 5 – 15 thousand persons per day. All projects are justified in the proposed parameters.

305Z HSL Prague – Poříčany

The importance of this section lies not only in the fact that it is part of HSL Prague – Brno and possibly also HSL Prague – Hradec Králové, but also in the fact that it will allow conventional long-distance trains to be transferred from the current line, which will free up capacity for freight transport and shorten the interval of suburban transport on section Prague – Český Brod to 10 minutes. It will also free up the capacity of the Prague – Lysá n/L line by transferring long-distance trains to Hradec Králové, Nymburk and Poděbrady, which will enable the introduction of non-stop Prague – Mladá Boleslav trains every 30 minutes and semi-fast trains to Milovice also every 30 minutes. For these reasons, this is the most important project of Prague's suburban transport and is classified as a basic (necessary) need.

The cluster consists of the following project:

- HSL Prague – Poříčany.

In addition, it will be necessary to:

- extend the section Prague Libeň – Prague Běchovice to a four-track

The traffic model assumes more than 100,000 persons transported per day for this section, so the design parameters are justified. Moreover, the project will make it possible to free up capacity for suburban transport in the section Prague - Poříčany - Kolín and will enable the introduction of long-distance transport in the direction from Prague to Mladá Boleslav and Liberec.

306Z HSL Poříčany – Brno

The new high-speed connection Poříčany – Brno is on the borderline between basic and target needs, as the peripheral parts of the cluster will fall within the TEN-T core network with completion by 2030. In the least loaded section, the model expects 58,000 persons to be transported per day.

The cluster includes projects:

- RL 1 HSL Poříčany – Světlá nad Sázavou
- RL 1 HSL Světlá nad Sázavou – Velká Bíteš
- RL 1 HSL Velká Bíteš – Brno

307S Motorway D1 Prague – Brno

This is a recently modernized motorway, with the exception of the section serving as the Brno bypass, which is included in the 806S cluster. This is a completed cluster, gradually supplemented by smaller projects. The traffic model assumes a daily load of 35-70 thousand vehicles per day (after completion of the HSL Prague - Brno and the D35 motorway). The following projects remain:

- Motorway D1 Šmejka bridge
- Motorway D1 Modernization of MAMC Bernartice section

308S Class I roads I/43 / I/73 Brno – Moravská Třebová; Skalice n/S – Lačnov



The final solution of this cluster had a complex development resulting in a compromise, which is the construction of a new road (I/73) and the modernization of the existing road I/43, a part of which will be moved to a lower road class in the future. The following projects are envisaged:

- Class I road I/43 Hradec nad Svitavou – Lačnov
- Class I road I/43 Krhov – Voděradý
- Class I road I/43 Letovice – Rozhraní
- Class I road I/43 Závist, climbing lanes
- Class I road I/43 Lom Černá Hora
- Class I road I/43 Perná – Krhov, point defect
- Class I road I/43 interchange Lipůvka
- Class I road I/43 interchange Kuřim, east
- Class I road I/43 Podlesí, bypass
- Class I road I/43 Svitavka, turn lane
- Class I road I/43 construction of bypasses and alignments not implemented by 2030
- Class I road I/73 D1 – Bořitov
- Class I road I/73 Bořitov – Svitavka
- Class I road I/73 Svitavka – Staré Město

Both roads serve 20-30 thousand vehicles per day (more in the suburban area of Brno). The design parameters correspond to the expected traffic intensities.

4000 Multimodal cluster Brno – Břeclav st. border Slovakia / Austria

401Z Conventional railway Brno – Břeclav – Lanžhot st. border

The conventional railway has been modernized, in the suburban section to Rakvice its capacity will be strengthened by the construction of the parallel HSL. The rest of the line to Břeclav will be modernized to increase the speed to 200 km/h. This is a suitable solution that provides conditions for both suburban and high-speed transport. It is a basic (necessary) need. The following projects are under preparation:

- Completion of 1st railway corridor on the line section Lanžhot (CZ) – Kúty (SK)
- Modifications of the railway infrastructure to introduce a speed of 200 km/h on the section Rakvice – Břeclav
- Infrastructure modification of TRC 1 for the exclusive operation of ETCS in the section Břeclav - Kolín

The transportation of 20 thousand persons and 58 thousand tonnes of cargo per day is expected.

402Z HSL Brno – Rakvice

The new high-speed line will add capacity to the existing conventional railway in the busiest suburban section (see cluster 401Z). Considering the need to ensure sufficient capacity not only for long-distance but also suburban transport, this is a basic need. It is expected to transport 16 thousand persons per day (in suburban areas, the accuracy of the national model is limited). The following project is under preparation:

- RL 2 HSL Brno (Modřice) – Šakvice

403S Motorway D2 Brno – Břeclav st. border



The D2 motorway is one of the oldest motorways in the Czech Republic. In the suburban area of Brno, it is necessary to address the overload of the southern bypass of Brno as part of basic (necessary) needs by means of a tangent, interconnecting the D2 and D52. The following project is under preparation:

It is assumed that 30,000 vehicles will be carried daily, with around 50,000 on the common section of D2 and D52.

5000 Multimodal cluster Bavaria st. border - Plzeň - Prague

501Z Conventional Railway Česká Kubice st. border – Plzeň – Prague

Given that the Czech economy is strongly tied to the economies of Western European countries, especially Germany, the existence of only one high-capacity electrified railway border crossing is a major handicap of the Czech railway network. Therefore, it is very important to create a second border crossing in the direction of Bavaria as part of the basic needs, the most suitable solution is the connection via Česká Kubice.

In the section between Prague and Plzeň, the cluster has been mostly modernized as part of the 3rd transit railway corridor, with the exception of the section Prague - Beroun. The line between Plzeň and the state border requires significant capacity increase and electrification. The border crossing in Česká Kubice is to be used daily by 20 freight trains (14 thousand tonnes of cargo). Further use depends on the capacity of this connection on the German side.

The cluster contains the following projects under preparation:

- Optimization of the line Karlštejn (excl.) – Beroun (excl.)
- Optimization of the line Berounka branch (incl.) – Karlštejn (incl.)
- Optimization of the line Černošice (incl.) – Berounka branch (excl.)
- Plzeň junction, 4th construction – Doubravka marshalling yard
- Speed increase in the section Ejovice (excl.) – Plzeň (excl.)
- Modernization of the line Plzeň – Domažlice – Germany st. border, 1st construction, new line Plzeň (excl.) – Stod (incl.)
- Modernization of the line Plzeň – Domažlice – Germany st. border, 2nd construction, section Plzeň (excl.) – Nýřany - Chotěšov (excl.)
- Modernization of the line Plzeň – Domažlice – Germany st. border, 3rd construction, section Stod (excl.) - Domažlice (incl.)
- Modernization of the line Plzeň – Domažlice – Germany st. border, 4th construction, section Domažlice (excl.) - Germany st. border

502Z Beroun (Tachlovice) tunnel

As part of the target needs, a new tunnel railway connection between Prague and Beroun is being prepared, to relieve the Berounka River valley from freight traffic and to significantly speed up passenger transport to Beroun, Plzeň, and Germany, and to create a competitive connection between Prague and Příbram. The transportation of 33 thousand persons and 26 thousand tonnes of cargo per day is expected.

The cluster consists of one project:

- New construction of the Prague-Smíchov – Beroun line

503S Motorway D5 Rozvadov st. border – Plzeň – Prague



The D5 motorway is included in the basic (necessary) needs and it is completed and in full operation. Further capacity increase is expected on selected sections:

- D5 motorway – capacity increase on section Prague – Králův Dvůr

In the suburban section, according to the transport model forecast, intensities of 57,000 cars and 8,000 trucks, i.e. 65,000 vehicles, per day are expected. A total of 40,000 vehicles are expected for the section around Beroun. Intensities around and behind Beroun justify the expansion of the motorway, however, this does not solve the problem of bringing a large number of cars to the capital, where there is a lack of space. The number of 40,000 cars in 2050 shows that the project should be reassessed for the Rudná - Králův Dvůr section, taking into account the government's ability to provide funding for priority constructions, and also the challenging terrain in the area concerned.

504S Class I roads I/20, I/29, I/19, I/34 Plzeň – Písek – Tábor – Pelhřimov – Humpolec – Havlíčkův Brod

After modernization, the connection can reduce transit traffic in the suburban area of Prague in the transit between the D1 and D5 motorways. Its sub-parts also ensure the connection of České Budějovice with Brno (by connecting the D3 and D1 motorways) and České Budějovice with Plzeň. It is a basic (necessary) need.

The following projects are being prepared within the cluster:

- Class I road I/19 Starý Pelhřimov – bypass
- Class I road I/19 construction of bypasses and alignments not implemented by 2030
- Class I road I/19 Čížkov, bypass
- Class I road I/19 Drhovice - Tábor, relocation
- Class I road I/19 Obrataň, bypass
- Class I road I/20 Hněvkov – Sedlice
- Class I road I/20 Kasejovice, bypass
- Class I road I/20 Losiná, bypass
- Class I road I/20 Chválenice, relocation
- Class I road I/20 Vlčtejn, climbing lanes
- Class I road I/20 Životice, intersection with class II road II/188
- Class I road I/20 construction of bypasses and alignments not implemented by 2030
- Class I road I/34 Věž – Skála
- Class I road I/34 Havlíčkův Brod, south-west bypass
- Class I road I/29 construction of bypasses and alignments not implemented by 2030

6000 Multimodal cluster Prague – Ostrava (in addition to Prague – Brno and Brno – Ostrava)

601Z Conventional railway Česká Třebová – Přerov / Prosenice

This is a modernized line with the exception of the Česká Třebová and Přerov junctions that are included in clusters 301Z and 801Z. Only ETCS implementation projects are proposed:

- Modification of TRC 3 infrastructure for the exclusive operation of ETCS in the section Česká Třebová – Přerov

The transportation of 15 thousand persons and 55 thousand tonnes of cargo per day is expected.

602S Motorway D11 Prague – Opatovice n/L



The D11 motorway in section Prague - Hradec Králové is included in the basic needs and it is completed and in full operation. Further capacity increase is expected on selected sections:

- D11 motorway, capacity increase of section Prague – Jirny
- D11 motorway, capacity increase of section Jirny - Poděbrady

In the suburban section, according to the transport model forecast, intensities of 52,000 cars and 8,000 trucks, i.e. 60,000 vehicles, per day are expected. A total of 42,000 vehicles are expected for the section between Sadská and Poděbrady. Intensities behind Sadská justify the expansion of the motorway, however, this does not solve the problem of bringing a large number of cars to the capital, where there is a lack of space. The figure of 42,000 cars in 2050 shows that the project should possibly be reassessed in view of the revenue and expenditure scenarios of Books 9 and 10.

603S Motorway D35 Opatovice n/L – Olomouc – Lipník n/B

According to the transport model, the second, northern, Czech-Moravian motorway connection will carry a greater load than that calculated for the D1 motorway, which is due to the greater population and industrial density of the territory served. This is a basic need, the designed motorway parameters are balanced. Traffic of up to 25 - 35 thousand cars and 5 - 10 thousand trucks is expected. The cluster contains the following projects under preparation:

- Motorway D35 Ostrov – Vysoké Mýto
- Motorway D35 Vysoké Mýto – Džbánov
- Motorway D35 Džbánov – Litomyšl
- Motorway D35 Litomyšl – Janov
- Motorway D35 Janov – Opatovec
- Motorway D35 Opatovec - Staré Město
- Motorway D35 Staré Město - Mohelnice
- Motorway D35 Křelov – Slavonín, stage 2
- Motorway D35 MAMC Opatovec section
- Motorway D35 Mohelnice - Olomouc, modernization

7000 Multimodal cluster Ostrava – Slovakia st. border

701Z Conventional Railway Ostrava main station – Ostrava Kunčice – Havířov – Český Těšín – Mosty u J. st. border

Section Český Těšín – Mosty u Jablunkova st. border has been modernized, optimization of the section from Ostrava via Havířov to Český Těšín is necessary. The entire route must be equipped with European train control equipment:

- ETCS Mosty u Jablunkova – Dětmrovice
- Optimization of the line section Havířov (incl.) – Havířov střed stop (excl.)
- Optimization of the line section Český Těšín (excl.) – Albrechtice u Českého Těšína (incl.)
- Optimization of the line section Albrechtice u Českého Těšína (excl.) – Havířov (excl.)
- ETCS + CTC Ostrava – Havířov – Český Těšín

702Z Conventional railway Dětmrovice – Český Těšín

This is a modernized line, projects are not being prepared.



703S Class I road I/68, I/11 Třanovice – Mosty u J. st. border

The modernization of the road connection is underway and is gradually being completed as part of basic needs. The road is expected to carry 11,000 vehicles per day. The following section is under construction:

- Road I/68 Třanovice – Nebory
- Road I/11 Mosty u Jablunkova, wildlife crossing

704S Motorway D56, class I road I/56 Ostrava – Frýdek-Místek

It is part of the TEN-T, ensuring multimodal connection of the Paskov intermodal terminal. The road is expected to carry 26,000 vehicles per day. A larger part of the project has been completed, the last project is being prepared as part of the basic needs:

- Road I/56 Ostrava - extended Místecká 3rd construction

705S Class I road I/58 Příbor – Ostrava

It is part of the TEN-T, providing a multimodal connection to the international Leoš Janáček Ostrava Airport in Mošnov. This is a basic need, the project under implementation is:

- Road I/58 Mošnov – bypass

706Z Conventional Railway Paskov - Ostrava Kunčice - Ostrava Svinov / Polanka n/O

It is part of the TEN-T, ensuring multimodal connection of the Paskov intermodal terminal. As part of basic (necessary) needs, the projects under preparation are:

- Optimization of the line section Ostrava-Kunčice (excl.) - Ostrava-Svinov/Polanka nad Odrou
- Construction of the Ostrava-Zábřeh stop

8000 Multimodal cluster (Vienna) Austria st. border – Přerov – Ostrava – Poland st. border (in addition to Brno – Břeclav st. border)

801Z Conventional Railway Břeclav st. border – Otrokovice – Přerov – Ostrava – Bohumín – Petrovice u K. st. border

This is a modernized main line of the 2nd transit railway corridor, the projects being prepared as part of the basic needs are related to a renewal of the line, the modernization of the Přerov and Ostrava railway junctions is being completed and other partial modifications are being addressed.

The section Břeclav – Přerov is expected to carry 30 thousand tonnes of cargo and 10 thousand persons per day, the section Přerov – Ostrava 75 thousand tonnes of cargo and 8 thousand persons per day.

The following projects are under preparation:

- Reconstruction of railway station Přerov, 3rd construction
- Polom – Suchdol n.O., BC
- Increasing the availability of power from TPS Nedakonice in the AC 25 kV system
- Lipník n. B. – Drahotuše, BC
- Modernization of the Ostrava railway junction
- Speed increase in r. station Prosenice, 2nd construction
- Modification of TRC 2 infrastructure for the exclusive operation of ETCS in the section Břeclav – Petrovice u Karviné



802Z Conventional Railway Brno – Přeřov

The current, completely inadequate railway line will be substantially modernized as part of basic needs and will be included in the Rapid Links network. At present, due to capacity reasons, the line does not allow the introduction of suburban lines within the Brno agglomeration. A daily volume of 30,000 passengers and 12,000 tonnes of goods is forecast.

The following projects are being prepared within the cluster:

- Modernization of the line Brno - Přeřov, 1st construction Brno – Blařovice
- Modernization of the line Brno - Přeřov, 2nd construction Blařovice - Vyřkov
- Modernization of the line Brno - Přeřov, 3rd construction Vyřkov - Nezamyslice
- Modernization of the line Brno - Přeřov, 4th construction Nezamyslice - Kojetín
- Modernization of the line Brno - Přeřov, 5th construction Kojetín - Přeřov
- ETCS+CTC+GSM-R Brno – Blařovice

803Z HSL Brno – Přeřov – Ostrava

This is a cluster of basic needs, as the current section is a bottleneck. The Prosenice - Ostrava section is being prepared as part of separate HSL pilot projects and, in addition to speeding up transport, its main importance lies in generating new capacity, which will help address the insufficient capacity of the parallel conventional line. The Brno – Přeřov section will mean a further increase in parameters in this section, however, in terms of importance, it is a lower priority compared to the northern part of the cluster, and the plan will have to be assessed after the conventional line (cluster 802Z) is put into operation. The Přeřov - Ostrava section is expected to carry 24,000 persons per day.

The following projects are being prepared within the cluster:

- RL 1 HSL Prosenice – Hranice na Moravě (incl.)
- RL 1 HSL Hranice na Moravě (excl.) – Ostrava-Svinov
- RL 1 (M2) Brno – Přeřov

804Z new railway line Ostrava – Katowice (PL)

As part of the target needs, a new railway connection to Poland is being prepared to follow up the HSL Brno – Přeřov – Ostrava. The connection will ease the current overloaded railway border crossing in Petrovice u Karviné.

The following project is being prepared within the cluster:

- RL 1 HSL Ostrava hl. – Poland st. border

805S Motorway D52 Mikulov st. border – Brno

It is a modernized road routed outside the built-up areas of the municipalities. The section from Pohořelice to the state border has a two-lane arrangement. Due to the forecast intensities of 17,000 cars and 7,000 trucks per day beyond Pohořelice, it is necessary to complete the motorway with 2+2 lanes in the entire section as part of basic needs. The following projects are being prepared for the cluster:

- Motorway D52 Brno – southern tangent
- Motorway D52 Pohořelice – state border (without crossing the Nové Mlýny reservoir)



- Motorway D52 Crossing of the Nové Mlýny reservoir
- Motorway D2 – capacity increase near Brno (up to exit 5) - part of D52 Brno, southern tangent
- Motorway D52 MAMC Pohořelice section

806S Motorway D1 Brno – Přerov – Ostrava – Bohumín - st. border

The D1 motorway is not completed in the Říkovice – Přerov section, however, a Brno – Ostrava motorway connection exists (using the D46, D35). The missing section will bring an improvement rather in the Zlín - Ostrava relation. The motorway must be completed as a basic need, despite the fact that the motorway network in Central Moravia was designed as somewhat oversized from the beginning, the missing section is estimated to carry 40,000 vehicles per day (largely this is a transfer from the D46 and D35 motorways). The cluster also includes increasing the capacity of the southern bypass of Brno.

The following projects are being prepared within the cluster:

- Motorway D1 0136 Říkovice – Přerov
- Motorway D1 Modernization of MAMC Bernartice section
- Motorway D1 01191.C Brno center – Brno south
- Motorway D1 01191.A interchange Brno south
- Motorway D1 01313 Connection of the Černovická Terasa industrial park to D1
- Motorway D1 01171 interchange Kývalka – Brno west
- Motorway D1 01311 Brno south – Brno east
- Motorway D1 01191.B Brno west – Brno centre
- Motorway D1 MAMC Ostrava, extension of the administration building
- Motorway D1 01312 interchange Brno East - interchange Holubice

807S Motorway D48 Bělotín – Chotěbuz st. border

The D48 motorway is included in the auxiliary needs, because even before the modernization it was a four-lane road, but without a central reservation, which made it impossible to increase the permitted speed. The completion of the full motorway profile is primarily to increase traffic safety. Up to 25,000 vehicles are expected daily.

The cluster contains the following project:

- Motorway D48 Frýdek-Místek - bypass stage I
- Motorway D48 Frýdek-Místek - bypass stage I, D56 Frýdek-Místek - connection to D48
- Motorway D48 Frýdek-Místek - bypass stage II
- Motorway D48 interchange Bělotín - Rybí
- Motorway D48 interchange Bělotín - Rybí, stage II
- Motorway D48 interchange Nošovice
- Class I road I/35 MAMC Boruba
- Motorway D48 MAMC Frýdek Místek

808S Motorway D55 Břeclav (D2) – Hulín

The D55 motorway is included in auxiliary needs, because it does not in itself create a new connection between agglomerations (it shortens some links and relieves the motorways in the vicinity of Brno), on the other hand,



it passes through a relatively densely populated area, so the intensities reach 20 - 25 thousand vehicles per day according to the transport model. A four-lane arrangement is therefore justifiable.

The following projects are being prepared for the cluster:

- Motorway D55 Napajedla – Babice
- Motorway D55 Babice – Staré Město
- Motorway D55 Staré Město – Moravský Písek
- Motorway D55 Moravský Písek – Bzenec
- Motorway D55 Bzenec – Bzenec Přívoz
- Motorway D55 Bzenec Přívoz – Rohatec
- Motorway D55 Rohatec – Lužice
- Motorway D55 Lužice – Břeclav
- Motorway D55 Napajedla – Babice, bridge SO 201
- Motorway D55 MAMC Napajedla

809S Class I road I/55 Břeclav (D2) – Břeclav st. border

This is an auxiliary connection to the D52 motorway in the direction of Austria, it is mainly intended to divert transit traffic from the town of Břeclav.

- Class I road I/55 Břeclav, bypass

9000 Multimodal cluster (Prague) – Hradec Králové – Trutnovsko st. border

901Z Convention railway Poříčany (HSL) – Nymburk

The new HSL line Prague – Poříčany will also allow long-distance trains to be redirected towards Hradec Králové even before the implementation of the HSL Prague – Hradec Králové, it will enable semi-fast trains and fast trains to be redirected towards Nymburk, Poděbrady and Chlumec n/C, it will enable the introduction of a new connection Prague – Jičín and thus free the capacity of the line Prague – Lysá n/L for the direction of Mladá Boleslav. The precondition is to increase the capacity of the current single-track line in the Sadská - Nymburk section which is included in the project.

902Z HSL Poříčany – Hradec Králové / (Pardubice) – Poland st. border

The high-speed connection Prague - Wrocław will shorten the connection to Hradec Králové and Poland within the target needs. In the section north of Hradec Králové, the line will be intended for mixed traffic with a daily transport of up to 30,000 tonnes of goods (provided satisfactory track gradients are achieved) and 7,000 passengers per day. In the section to Hradec Králové, up to 27 thousand persons are expected to be transported daily.

The cluster includes projects:

- RL 5 Poříčany – Hradec Králové
- RL 5 Hradec Králové – st. border

The resulting parameters of this cluster will be designed based on a feasibility study that is currently being carried out. This concerns both the decision on whether a connection to Pardubice from the high-speed line Poříčany – Hradec Králové should be built, and the decision on the resulting parameters of the line from Hradec Králové in the northern direction. The feasibility study takes into account the fact that the freight transport to Poland in the western part of the common border can partly use the Prague – Liberec – Žhořelec railway



connection project with a link to the newly emerging railway hub at the Polish – German – Czech tri-border. The economy of running freight transport is significantly influenced by the gradient parameters of the relevant tracks.

903S Motorway D11 Opatovice n/L – Královec st. border

This is a motorway connection to Poland that belongs to the basic priorities. The current connection via Náchod and Kladsko is not satisfactory, the Polish side is already completing the capacity connection to Královec. In the section Trutnov - state border, the model assumes 5,000 cars and 7,000 trucks per day. Because of the high share of freight traffic, it is advisable to prepare a full motorway profile.

The cluster includes projects:

- Motorway D11 Jaroměř – Trutnov
- Motorway D11 Trutnov – state border
- Motorway D11 interchange Beranka
- Motorway D11 MAMC Střítež

10000 Multimodal cluster Central Moravia – Slovakia st. border

1001Z Conventional railway Hranice na Moravě – Horní Lideč st. border

The double-track electrified line has not been modernized in the style of transit railway corridors, therefore it requires revitalization of certain sections, and partial relocations of the line are envisaged. It must be equipped with the European train control system. In the cross-border section, 4,000 people and 6,000 tonnes of cargo are to be transported daily.

The following projects are monitored:

- GSM-R + ETCS Hranice na Moravě – Horní Lideč – Střelná
- Milotice nad Bečvou – Hranice na Moravě (excl.), line relocation
- Revitalization of the line section Vsetín (excl.) – Valašské Meziříčí (incl.)

1002S Motorway D49 / road I/49 Hulín – Horní Lideč st. border

In addition to the D2 motorway, this is the second motorway connection to Slovakia, not yet existing, in the basic need category. Considering that the models show lower traffic intensities in the cross-border section, the Vizovice - state border section is designed in a three-lane/two-lane layout with a climbing lane (12,000 vehicles per day).

The following projects are being monitored for the cluster, with design corresponding to the expected traffic intensities:

- Motorway D49 Hulín – Fryšták
- Motorway D49 Fryšták – Lípa stage 1
- Motorway D49 Fryšták – Lípa stage 2
- Motorway D49 Fryšták – Lípa stage 3
- Motorway D49 4903 Lípa - Pozděchov
- Motorway D49 4904 Pozděchov - Horní Lideč
- Motorway D49 4905 Horní Lideč - CZ/SK state border

11000 Multimodal cluster Brno – Olomouc



1101Z Conventional railway Nezamyslice – Olomouc

In connection with the modernization of the Brno – Přerov line, it is necessary to ensure sufficient parameters for the branching line connecting Prostějov and Olomouc as part of basic needs.

The following projects are under preparation:

- Modernization of the line Prostějov – Nezamyslice
- Modernization of the line Olomouc – Prostějov
- GSM-R Nezamyslice – Prostějov main station – Olomouc main station

1102S Motorway D46 Vyškov - Olomouc

It is an existing motorway for which modifications are being monitored.

- Motorway D46 interchange Držovice
- Motorway D46 set of buildings at km 0.000 - border of the region
- Motorway D46 Vyškov - Olomouc, lay-bys

Interchange including entrance/exit lanes/slip roads, as well as overall homogenization of the road width.

12000 Multimodal cluster Brno – Zlín

1201Z Conventional railway Kojetín – Hulín

In connection with the modernization of the Brno – Přerov line, it is necessary to ensure sufficient parameters for the branching line connecting Kroměříž and Zlín as part of basic needs.

The following project is under preparation:

- Modernization and electrification of the line Kojetín (excl.) – Hulín

1202Z Conventional railway Otrokovice – Zlín

The railway connection connects Zlín to the main railway corridor, and it carries freight transport to the intermodal terminal in Lípa.

The following project is under preparation:

- Modernization and electrification of the line Otrokovice - Vizovice

13000 Multimodal cluster Olomouc - Zlín

1301S Motorway D55 Olomouc – Přerov

In the motorway network solution for Central Moravia, the connection Olomouc – Přerov – Zlín did not become part of any of the long-distance routes, therefore a motorway link connecting Olomouc and Přerov with a daily load of 19 thousand vehicles is proposed.

The following projects are monitored:

- Motorway D55 Olomouc – Kokory
- Motorway D55 Kokory – Přerov

14000 Multimodal cluster Prague – České Budějovice

1401Z Conventional railway Prague – Tábor – České Budějovice



The 4th transit railway corridor is largely completed, the last of the projects, which is the most demanding in terms of investment costs and preparation, has not been started. Outside the Prague suburban area, it is expected to transport 11,000 people and 12,000 tonnes of cargo per day. In the suburban transport, it is 19,000 tonnes of cargo and 28,000 persons per day. The line must be completed to be functional, it is part of the basic needs.

The cluster contains the following projects:

- Modernization of the line Nemanice I – Ševětín
- R. station České Budějovice underpass
- Modernization of the České Budějovice junction

1402Z Conventional railway Beroun – Zdice – Písek

As part of the target needs, it is proposed to address a parallel route to the D4 motorway. Following the construction of the Beroun (Tachlovice) tunnel, it will be possible to significantly improve the railway connection between Prague and Příbram. For the entire line, it will be necessary to solve the issue of simple electrification for the introduction of electric vehicles. As the completion of the Beroun (Tachlovice) tunnel is not expected before 2035, no projects in this cluster have been prepared so far.

A new project is proposed:

- Optimization of the line Zdice – Příbram

1403Z Increasing the capacity of the Prague Hostivař – Benešov section (new line)

As part of the target needs, the capacity increase of the suburban section near Prague on the 4th transit railway corridor is being considered, taking into account its insufficient throughput, as this section has the highest daily volumes within the suburban transport, the transport model does not yet envisage it:

- Prague – Bystřice u Benešova

If cost-saving measures (identified in Books 9 and 10 within the financial and development scenarios) are required, it is possible to consider shortening the route to Strančice and thereby making the project cheaper. In Strančice, the suburban traffic is reduced as some connections end at this station.

1404S Motorway D4 Prague – Nová Hospoda

This is the first motorway connection to the south of Bohemia that will be completed, the construction of the motorway is currently underway, using PPP. After its completion, the 4-lane road will connect Prague with Písek. The connecting road I/20 is also part of the connection between České Budějovice and Plzeň, it has been partially modernized and further capacity increase is being prepared. At the same time, a capacity increase and modernization of the suburban section near Prague is being prepared. Due to the state of implementation, this cluster is included in basic needs:

- Motorway D4 – capacity increase near Prague and modernization of the section Prague ring road – Příbram
- Motorway D4 Háje – Mirovice (PPP)

An average daily intensity of 15,000 vehicles is expected on the completed section, which is at the lower limit for the existence of a full motorway profile, but after completion, in the interim period until the completion of the D3 motorway, the use will be higher.

1405S Motorway D3 Prague – Tábor – České Budějovice



The implementation of the Central Bohemian section of the D3 motorway has not yet been started, and with regard to the ongoing construction of the D4 motorway, it is included in the target needs. After its completion, a daily intensity of around 20,000 cars and 4,000 trucks per day is expected, as a part of the D4 intensity will be redirected to the D3 motorway.

The following projects are being prepared at present:

- Motorway D3 0301 Prague - Jílové
- Motorway D3 0302 Jílové - Hostěradice
- Motorway D3 0303 Hostěradice - Václavice
- Motorway D3 0304 Václavice - Voračice
- Motorway D3 0305/I Voračice - Nová Hospoda
- Motorway D3 0310/I Úsilné - Hodějovice

15000 Multimodal cluster České Budějovice - Dvořiště st. border

1501Z Conventional railway České Budějovice – Horní Dvořiště st. border

As part of the 4th transit railway corridor, the line has been optimized in the existing track and electrified. There are thoughts about a more significant increase in the parameters of the track, no specific project is being monitored within the TSS. A project is being prepared on installing a European control system:

- ETCS České Velenice - České Budějovice - Horní Dvořiště
- New line České Budějovice – Horní Dvořiště – st. border

Due to the need to increase the capacity and speed of the connection between České Budějovice and Linz, a new line for a speed of 200 km/h is currently being considered with the Austrian side. It will be possible to implement the project only after 2050.

1502S Motorway D3 České Budějovice – Dolní Dvořiště st. border

The transport model assumes 8,000 cars and 2,500 trucks per day in this section, which are values that would require a reassessment of the parameters from a strategic point of view. However, it is a cross-border section included in a homologated long-distance route, so projects in an advanced stage of preparation will not be reassessed. Under the basic need, there are projects:

- Motorway D3 0310/II Hodějovice – Třebonín
- Motorway D3 0311 Třebonice - Kaplice railway station
- Motorway D3 0312/I Kaplice r.station - Nažidla
- Motorway D3 0312/II Nažidla - Dolní Dvořiště st. border
- Motorway D3 MAMC Kaplice
- Motorway D3 MAMC borek

16000 Multimodal cluster Prague – Most – Karlovy Vary

1601Z Conventional railway Most – Karlovy Vary – Cheb – Cheb st. border

Conventional railway Most – Cheb st. border belongs to basic needs and fulfils several functions. This is a possible connection for freight transport that can avoid the congested Prague junction, the condition being an electrification of the line from Cheb at least to Hof. The line is included in this cluster because it provides a connection from Prague to the Karlovy Vary agglomeration, the importance of this connection will increase



after the completion of the HSL Prague - Most. The model assumes daily transportation of around 13 thousand t of cargo and 5 – 11 thousand persons.

The following projects are being prepared for the cluster:

- Reconstruction of the line in the section Kyjice - Chomutov
- Construction of traction substation Třebušice

Following the completion of the HSL Prague - Most, further modernization will be required:

- Optimization of the route Most - Karlovy Vary

1602Z HSL (Prague) – Nová Ves – Most

With regard to the basic connection of Prague to the Chomutov-Most and Karlovy Vary agglomerations, HSL Prague - Most is included in the basic needs. The line should be built for mixed transport, it is still to be decided how to connect this line in Podřipsko to the right-bank line so that the transit potential for freight traffic avoiding the Prague junction can be better utilized. The transport model does not yet include this interconnection. In passenger transport, the model assumes approx. 17 thousand persons per day. The proposed project is:

- HSL Branch Nová Ves – Most

As the line will also be used for freight transport, it is necessary to add the project:

- Interconnection Branch Nová Ves – Dřísy

1603S Motorway D7 Prague – Chomutov

The D7 motorway is one of the few that is not part of the TEN-T. It connects the Most-Chomutov agglomeration to Prague.

The cluster contains the following projects:

- Motorway D7 interchange Aviatická - interchange Ruzyně, stage 1
- Motorway D7 interchange Aviatická - interchange Ruzyně, stage 2
- Motorway D7 interchange Knovíz - interchange Slaný-west
- Motorway D7 interchange Slaný-west - Kutrovice
- Motorway D7 Kutrovice - Panenský Týnec
- Motorway D7 Chlumčany, capacity increase
- Motorway D7 Louny, capacity increase of the bypass
- Motorway D7 Postoloprty, capacity increase of the bypass
- Motorway D7 interchange Kněžves, auxiliary lanes
- Motorway D7 interchange Středokluky, auxiliary lanes
- Motorway D7 Prague - Makotřasy, modernization
- Motorway D7 MAMC Slaný

Between Louny and Chomutov, the transport model assumes a daily volume of approx. 13,000 cars and 2,000 trucks, which, from a conceptual point of view, is at the lower limit of daily volume for a 4-lane motorway, nevertheless, the project parameters will not be reassessed with regard to the state of preparation as well as the desired cohesion of regions, as it is a connection to a structurally affected region.



1604S Class I road I/28 Louny – Most

The road connects Most to the D7 motorway, it was modernized in the past. The project under preparation is:

- Road I/28 Dobroměřice, roundabout on class I road I/28 and class III road III/25013

The transport model assumes approx. 8,000 cars and 1,500 trucks per day, which is in line with the road parameters.

1605S Motorway D6 Prague – Karlovy Vary – Pomezí st. border

The motorway connects the Karlovy Vary region, the most structurally affected region of the Czech Republic. At the Doupovské hory range, the transport model assumes a daily volume of 13,000 cars and less than 3,000 trucks, which is conceptually at the lower limit of the daily volume for a 4-lane motorway, with respect to the state of the project preparation, the parameters will not be reassessed. This road also contributes to regional cohesion as it connects a structurally affected region.

The following projects are being prepared within the cluster:

- Motorway D6 Krupá, relocation
- Motorway D6 Hořesedly, relocation
- Motorway D6 Hořovičky, bypass
- Motorway D6 Petrohrad - Lubenec
- Motorway D6 Knínice - Bošov
- Motorway D6 Žalmanov - Knínice
- Motorway D6 Olšová Vrata - Žalmanov
- Motorway D6 Karlovy Vary - Olšová Vrata
- Motorway D6 MAMC Lubenec
- Motorway D6 MAMC Sokolov
- Motorway D6 MAMC Tichovice

17000 Multimodal cluster Prague – Liberec – Poland/Germany st. border

1701Z Conventional railway Prague – Lysá n/L – Čachovice – Mladá Boleslav – Liberec

The feasibility study for the Mladá Boleslav - Liberec section is currently being completed, the study for the Prague - Mladá Boleslav section has been completed. Moreover, negotiations are underway to include this railway connection in the TEN-T. The Liberec Region (Liberec agglomeration and the neighbouring Mladá Boleslav agglomeration) is characterized by the worst parameters of the railway infrastructure, despite the developed industry in the region and the high recreational potential of the wider region. The virtual non-existence of a competitive railway is reflected in the large increases in intensity on the D10 motorway. The transport model shows approx. 11,000 transported persons and 3,200 tonnes of goods per day before Liberec, and up to 25,000 persons are transported in the section before Mladá Boleslav per day, in the section Prague - Lysá n/L it is 35,000 persons per day.

The following projects are identified in the cluster:

- Optimization of the line section Čelákovice (excl.) - Mstětice (incl.)
- ETCS Milovice - Prague main station (excl.)
- Bezděčín interconnection and r. station Mladá Boleslav East



- Reconstruction of the line section Mladá Boleslav city (incl.) - Mladá Boleslav main station (incl.)
- Všejanya interconnection
- Modernization and electrification of the line Nymburk - Nepřevázka

Based on the results of the feasibility study, more projects will need to be added:

- Modernization of the line Mladá Boleslav - Liberec

1702Z Conventional railway Liberec – Hrádek n/N st. border

This is one of the possible continuations of the route from Liberec to Žhořelec, where an important TEN-T railway junction with links to Germany and Poland is being created. In the past, the substructure was built for a double-track line, and it would no longer meet today's width parameters. This connection is not to be included in the TEN-T, as there would be a reversal point in Zittau. The line provides a fast train connection between Liberec and Dresden, which is currently the best connection of Liberec to the TEN-T. The line has been optimized in recent years, the critical problem is the long-term poor technical condition of the two-kilometre section on Polish territory, as a result of which it is not yet possible to reach a tact nodal point in Zittau. The following projects are identified:

- Reconstruction of r. station Hrádek nad Nisou
- Reconstruction of r. station Chrastava

1703Z Conventional railway Liberec – Frýdlant – Zawidów st. border

The line is designed for the TEN-T network, based on a common approach of the Council. The line is still used in international freight transport, its technical condition on the Polish side is poor. Given that a 30-minute interval is introduced on the line between Liberec and Frýdlant, it will be necessary to increase the capacity by building or expanding passing loops (a feasibility study is being completed).

The line has been partially optimized, new projects are not currently being prepared. In the future, there could be a project:

- Increasing the throughput of the railway line Liberec – Frýdlant – Zawidów st. border

1704S Motorway D10 Prague – Ohrazenice

The motorway is in operation, capacity increase is being prepared in the suburban areas of Prague and Mladá Boleslav:

- Motorway D10 - capacity increase Prague - Mladá Boleslav
- Motorway D10 interchange Kosmonosy
- Motorway D10 - modernization Mladá Boleslav – Turnov
- Motorway D10 MAMC Brodce

In the vicinity of Benátky nad Jizerou, the model forecasts approx. 39,000 cars and 4,000 trucks per day. The extension to 6 lanes between Stará Boleslav and Bezděčín should be reassessed.

1705S Class I road I/35 Ohrazenice – Liberec – Bílý Kostel n/N

The road is a full-fledged 4-lane road with regulated entrances and exits and so is of a motorway type. After the completion of the interchange at Rádelský mlýn, the road has satisfactory parameters, the elevated road in the centre of Liberec needs to be restored. No new projects are submitted.

1706S Class I road I/35 Bílý Kostel n/N – Hrádek n/N st. border



The road is part of the TEN-T, it has been built in a new track. Currently, no new projects are being monitored, unless the obligation for a central reservation separating the directions, set out in the new proposal for a regulation on TEN-T, is approved.

21000 Multimodal cluster Plzeň – Karlovy Vary

2101Z Conventional railway Plzeň – Cheb

The line is part of the 3rd transit railway corridor, it has been modernized, most of the line is single-track, with the exception of the end sections. Daily transportation of 8,500 tonnes and 3-6 thousand people is expected. The following section Cheb – Karlovy Vary is part of cluster 1601Z. The Česká Kubice crossing should gradually take over the function of the main crossing to Bavaria, so no other projects have been identified.

2102S Class I road I/20 Plzeň – Karlovy Vary

The model assumes approx. 7,000 cars daily in this section, freight traffic should not be too significant. This is an interregional connection, it is important for some functions in terms of the accessibility of the Karlovy Vary Region (approx. 500 vehicles per day), moreover, a multimodal railway connection will not be available. It is, therefore, important to remove bottlenecks on the route and solve the eastern passage of Plzeň. The following projects are in preparation:

- Road I/20 Plzeň, streets Jasmínová - Jateční
- Road I/20 Plzeň, streets Jateční - Na Roudné
- Road I/20 Bečov, serpentine section
- Road I/20 Jenišov, modification of the intersection at the Globus store
- Road I/20 Toužim – Žalmanov

22000 Multimodal cluster Plzeň – České Budějovice

2201Z Conventional railway Plzeň – České Budějovice

It is a single-track line with double-track sections. These should be extended to the suburban areas of Plzeň due to a possible greater use for suburban transport. The transportation of 6,000 persons and 6,000 tonnes of cargo per day is expected. The following project is under preparation:

- Modernization of the line Horažďovice predměstí (excl.) – Plzeň Koterov (excl.)
- An update of the feasibility study including modernization for a speed of up to 200 km/h in certain sections was approved.
- Modernization of the line Nemanice – Protivín (incl.) – Písek město (incl.)
- Modernization of the line Protivín (excl.) – Horažďovice předm. (excl.)

2202Z Conventional railway Písek - Protivín

The section connects the town of Písek to the Plzeň – České Budějovice railway line in the direction of České Budějovice. It is an electrified single-track line, new projects will be monitored following the approval of the update to the feasibility study on section Plzeň-České Budějovice.

2203Z Conventional railway Putim – Ražice

The section connects the town of Písek to the Plzeň – České Budějovice railway line in the direction of Strakonice and Plzeň. It is an electrified single-track line, new projects will be monitored following the approval of the update to the feasibility study on section Plzeň-České Budějovice.

2204S Class I road I/20 Písek – České Budějovice



The road is part not only of the connection České Budějovice – Plzeň, but also of the connection České Budějovice – Prague (see cluster 1404S). The remaining section of road I/20 Nová Hospoda – Plzeň is addressed in cluster 504S. The road has been gradually modernized, the bypasses of two remaining municipalities are yet to be completed. The model predicts approx. 7,500 cars and 1,500 trucks per day. The load will temporarily be higher in the period between the completion of the D4 and the D3 motorways. A capacity increase would be useful for that period (alternating three-lane (2+1) arrangement). Projects under preparation are:

- Road I/20 Pištín - České Vrbné
- Road I/20 České Budějovice, northern interconnection
- Road I/20 Písek - Protivín
- Road I/20 Protivín - Vodňany
- Road I/20 Vodňany - Nová Hospoda
- Road I/20 Nová Hospoda - Pištín
- Road I/20 České Budějovice, Okružní street
- Road I/20 Protivín, bridge Ref. No 20-075

23000 Multimodal cluster České Budějovice - Austria st. border (Vitorazsko area)

2301Z Conventional railway České Budějovice – České Velenice st. border

It is part of the connection of southern and western Bohemia in the direction of Lower Austria, the railway is part of the TEN-T. It is an electrified single-track line. No significant load is expected, so no new projects have been identified.

2302S Class I road I/34, I/24 České Budějovice – Třeboň – Halámky st. border

It is part of the connection of southern and western Bohemia in the direction of Lower Austria. No significant traffic is expected, with the exception of the suburban section of České Budějovice (approx. 6,000 cars and 800 trucks per day). The connection of České Budějovice with the D1 motorway should gradually be taken over by the D3 motorway and the I/19 road. Nevertheless, projects on bypasses are being prepared:

- Road I/34 Lišov – Vranín
- Road I/34 Vranín – Třeboň

24000 Multimodal cluster Plzeň – Most

2401Z Conventional railway Plzeň – Žatec - Chomutov

The railway line is important for Plzeň suburban transport and for interconnecting the Plzeň and Most agglomerations. However, its use in the intermediate section Podbořany - Plasy is limited, so in this case it is expected that the electrification will be completed between Chomutov and Žatec. In the other sections, the use of battery or hydrogen vehicles is envisaged. Only the following project is considered:

- Electrification of section Březno u Chomutova – Chomutov

Other simple electrification projects will be addressed under a line electrification policy concept and a traction system change policy concept and are included in packages 121000 and 122000.

2402S Class I road I/27 Plzeň – Most

Also the road connection is used less in the intermediate section, around 5,000 vehicles. The projects are focused on the Plzeň through-traffic road, the straightening of dangerous places and on bypasses:

- Road I/27 Žiželice - bypass and bridging
- Road I/27 Plasy, bypass



- Road I/27 Kaznějov, bypass
- Road I/27 Plzeň, Sukova - Borská streets
- Road I/27 Havraň, bypass
- Road I/27 Plzeň, Přemyslova - Karlovarská streets
- Road I/27 Kaznějov - Třemošná
- Road I/27 construction of bypasses and alignments not implemented by 2030

25000 Multimodal cluster Karlovy Vary – Ústí nad Labem

2501 Conventional railway Most – Ústí n/L

Conventional railway Most – Cheb st. border belongs to basic needs and fulfils several functions. This is a possible connection for freight transport, which can avoid the congested Prague junction, in the section Bílina - Ústí n/L, the freight traffic is routed through Úpořiny, the main passenger transport flow is routed through Teplice. The condition is the electrification of the line from Cheb to at least Hof. The line is the backbone of the Ústí n/L -Most conurbation. The model assumes daily transportation of around 29,000 t of cargo and 15,000 persons.

The following project is being monitored and considered for the cluster:

- Platform construction at r. station Ústí nad Labem-západ

In connection with the construction of HSL Prague - Dresden and Prague - Most, it will also be necessary to prepare modernization projects for the line Ústí n/L - Most.

2502S Class I roads I/13 Karlovy Vary – Teplice; I/63 Teplice – Řehlovice

The sections Řehlovice - Chomutov and Karlovy Vary - Ostrov are, with few exceptions, four-lane roads with controlled access, so they are of a motorway type. It is a basic need for transport connection. The biggest problem is the through-traffic road in Bílina, which is inadequate. Up to 20,000 vehicles a day are expected in the busiest sections.

The following projects are under preparation:

- Road I/13 Kladruby interconnection
- Road I/13 Bílina, tunnel
- Road I/13 Klášterec nad Ohří, bypass
- Road I/13 Klášterec - Chomutov
- Road I/13 Ostrov - Smilov

26000 Multimodal cluster Ústí nad Labem - Liberec

2601Z Conventional railway Děčín - Česká Lípa – Liberec

The line Mladá Boleslav - Česká Lípa – Děčín (in the section Česká Lípa – Mladá Boleslav, see cluster 2701Z) has potential in freight transport for connecting the Škoda Auto company with the VW Group in the Federal Republic of Germany, the condition is partial capacity increase (especially in the section Benešov n/ P. – Děčín east) and electrification of the line. The section Česká Lípa - Liberec must be gradually electrified, in the meantime using battery technology. The cluster belongs to the basic needs, the following projects related to increasing the speed and throughput of the line are being prepared:

- Revitalization of section Liberec - Česká Lípa (excl.)
- ETCS on the line Liberec (excl.) - Česká Lípa (excl.)

Furthermore, it is necessary to assess the project:



- Revitalization of the line Česká Lípa – Děčín east

2602S Class I road I/13 motorway D8 – Děčín – Bílý Kostel n/N

There are two difficult sections on the route, the solution of which is not straightforward. The first of them is the section Děčín – Nový Bor, where a new alignment of the road towards Manušice (reaching the Česká Lípa bypass) is being considered. According to the transport model, a daily intensity of 7 thousand vehicles is expected here. It is a relatively significant intervention in the protected landscape area (PLA) České středohoří, therefore the EIA will be difficult to negotiate. On the current route, the most problematic place is the through-traffic road in Česká Kamenice. The second problematic section is the connection of Děčín to the D8 motorway, where the current route passes through the built-up areas of Děčín, Jílové and Libouchec, the new realignment would pass through the PLA České středohoří, some tunnel options are very costly. The route belongs to the basic needs. The following projects are being prepared on the current route:

- Road I/13 Rynoltice - Lvová road relocation
- Road I/13 Děčín - Ludvíkovice
- Road I/13 interchange Bor, auxiliary lanes
- Road I/13 Děčín, roundabout Benešovská
- Road I/13 construction of bypasses not implemented until 2030

The following sections are not included in the list of projects, as they will require further assessment because their variants are not clarified:

- Road I/13 Děčín – Manušice, new construction
- Road I/13 Děčín – motorway D8, new construction or modernization.

27000 Multimodal cluster Ústí nad Labem - Mladá Boleslav

2701Z Conventional railway Česká Lípa – Bakov nad Jizerou

The line Mladá Boleslav - Česká Lípa – Děčín (in the section Česká Lípa – Děčín, see cluster 2601Z) has potential in freight transport for connecting the Škoda Auto company with the VW Group in the Federal Republic of Germany, the condition is partial capacity increase and electrification of the line. The addressed section also has partial potential for a direct railway connection between Prague – Česká Lípa – Šluknov Spur (area). It belongs to the basic needs.

No project is being prepared at present. A supplement is proposed:

- Revitalization of the line Bakov n/J – Česká Lípa

2702S Class I road I/16 Nová Ves – Bezděčín

The I/16 road connects the Mladá Boleslav industrial area, the port with the trimodal intermodal terminal Mělník and the D8 motorway, as part of basic needs. The route is gradually being modernized. The following projects are under preparation:

- Road I/9, I/16 Mělník bypass, 2nd construction
- Road I/16 Jizerní Vtelno - relocation
- Road I/16 Mělnické Vtelno, bypass
- Road I/16 Vavříneč, bypass
- Road I/16 Byšice, bypass
- Road I/16 Bezno, bypass
- Road I/16 Nová Ves - Mělník, modernization



28000 Multimodal cluster Liberec – Mladá Boleslav – Hradec Králové

2801Z Conventional railway Čachovice – Nymburk

It is an important line within the basic needs, connecting to the route Prague - Mladá Boleslav. It connects the industrial areas of Mladá Boleslav and Liberec to the marshalling yard in Nymburk. At the same time, this section is part of the route that will provide the fastest connection between Liberec and Hradec Králové and Pardubice. The construction lengths of the Liberec – Stará Paka – Pardubice and Liberec – Mladá Boleslav – Kolín – Pardubice lines are approximately the same, journey times are shorter in the latter case even on the current infrastructure, the difference will increase significantly after modernization. Approximately 5,000 tonnes and 1,500 people are transported on the line daily. The line has been modernized.

The projects are included in cluster 1701Z (Nymburk – Nepřevázka).

For reasons of energy savings, it is necessary to assess possible partial double-tracking (introduction of dynamic passing loops).

2802Z Conventional railway Doubí u Turnova – Turnov – Jičín – Hradec Králové

This is a project within the auxiliary needs. In terms of construction, it is the shortest connecting line between Liberec and Hradec Králové and Pardubice. It will be necessary to consider an electrification of the line. Currently, no project is being prepared, with the exception of the connection of Turnov to the considered line Prague - Liberec.

2803Z Conventional railway Loukov – Turnov – Stará Paka – Jaroměř – Hradec Králové

This is a conventional connection Liberec - Pardubice; with regard to the planned modernization of the line via Mlada Boleslav, it is classified as an auxiliary need. This line does not offer a competitive connection of the two agglomerations either in terms of travel times or in terms of route length. Moreover, in the section between Košťálov and Dvůr Králové n/L, the line passes through a sparsely populated area. It will be necessary to consider an electrification of the line. The following project is being prepared at present:

- Improvement of operational parameters of the Jaroměř - Stará Paka line

2804S Class I road I/38 Bezděčín – Poděbrady (motorway D11)

It is an important link of the Mladá Boleslav industrial region to the D11 motorway and partially also to the D1 motorway, avoiding the congested Central Bohemian agglomeration. It is, therefore, a basic need.

The following projects are being prepared within the cluster:

- Road I/38 Luštěnice - Újezd
- Road I/38 Krchleby – Nymburk
- Road I/38 Vlkava bypass

2805S Class I road I/35, motorway D35 Turnov – Jičín – Hradec Králové

The cluster consists of two parts within the basic need. The busier section Hradec Králové – Jičín continues after Jičín in three major directions: along the road I/35 to Turnov, Liberec and to Germany or Poland, the second stream leads to Mladá Boleslav and the third to Horní Bousov, Kněžmost, Mimoň and on to the Rumburk border crossing. The first section is, therefore, planned in motorway parameters, the Jičín - Turnov section as an alternating three-lane (2+1) road. The first section will be used daily by approximately 20,000 cars and 2,500 trucks, so the motorway parameters are justified.

The following projects are defined in the cluster:



- Motorway D35 Úlibice - bypass
- Motorway D35 Úlibice - Hořice
- Motorway D35 Hořice - Sadová
- Motorway D35 Sadová - Plotičtš
- Road I/35 Turnov - Úlibice
- Road I/35 interchange on motorway D11 Plotičtš - roundabout Plotičtš
- Motorway D35 MAMC Chomutice

29000 Multimodal cluster České Budějovice - Jihlava

The road connection České Budějovice – Tábor (D3) – Pelhřimov (I/19) – Humpolec (I/34) – D1 is addressed in clusters 504S and 1405S. The railway part of the multimodal cluster remains.

2901Z Conventional railway Veselí nad Lužnicí – Jihlava

The single-track electrified line is characterized by a low line speed, so there are suggestions for more significant modernization. A certain problem is the low population density in the section Jindřichův Hradec – Horní Cerekev. The connection will become more important after the implementation of the HSL Prague - Brno, as it will significantly reduce the travel time between České Budějovice and Brno. In that configuration, a daily volume of approx. 3 thousand persons and 2,300 tonnes of cargo is expected. The line belongs to basic needs, the currently registered project is:

- Modernization of r. station Jihlava city
- The modernization of r. station Jindřichův Hradec and the successive sections will be verified.

30000 Multimodal cluster Jihlava – Pardubice – Hradec Králové

3001Z Conventional railway Jihlava – Havlíčkův Brod

The railway connection between the two agglomerations is more advantageous along the route Havlíčkův Brod – Kolín – Pardubice than along the route Havlíčkův Brod – Hlinsko – Chrudim – Pardubice. Therefore, only the Jihlava - Havlíčkův Brod line is part of this cluster, its continuation is contained in clusters 301Z and 304Z. It is a single-track electrified line in basic needs with a forecast daily volume of approximately 6,300 persons. No project is registered at the moment, the design of the crossing with HSL Praha – Brno will be technically developed.

3002Z Conventional railway Pardubice - Hradec Králové

This is also a connection of two immediately adjacent regional capitals, the line is gradually being doubled. It belongs to basic needs with a forecast daily volume of 15 thousand persons.

The following projects are registered:

- Modernization of the line Hradec Králové - Pardubice - Chrudim, 2nd construction, doubling of line Opatovice nad Labem - Hradec Králové, stage 1 r. station Hradec Králové
- Modernization of the line Hradec Králové - Pardubice - Chrudim, 2nd construction, doubling of line Opatovice nad Labem - Hradec Králové, stage 2 Opatovice nad Labem - Hradec Králové (excl.)

3003S Class I road I/38, I/34, I/37 Jihlava – Havlíčkův Brod – Ždírec nad Doubravou – Pardubice – Hradec Králové

It is a connection in basic needs, the transport model predicts approx. 5 - 8 thousand vehicles per day, which corresponds to a two-lane road. Unsatisfactory places must be addressed. The following projects are being prepared:



- Road I/34 Jitkov, horizontal and vertical alignment
- Road I/34 Krátká Ves, bypass
- Road I/37 construction of bypasses and alignments not implemented by 2030
- Road I/38 Havlíčkův Brod, southeast bypass
- Road I/34 Květinov, intersection with class III road III/3487
- Road I/37 interchange Medlešice
- Road I/38 Pávov, intersection with motorway D1
- Road I/38 Svatý Kříž, modification of intersection with road III/34813

31000 Multimodal cluster - additional cross-border connections and remote regions - Znojmo area

3101Z Conventional railway Šatov st. border – Znojmo – Brno, new line

The Znojmo area is poorly connected both in the direction to Brno and in the direction to Prague. In contrast to the road connection, the construction of a new railway line is considered only in the direction of Brno, in the context of HSL Modřice - Rakvice, as it will provide a competitive connection to Brno as well. This is a basic need as it provides train service to an economically weak region, but it is related to the construction of the HSL, so its implementation is planned for a distant future and it is not yet in the list of projects under preparation and is not even included in the National Transport Model.

- New railway connection Unkovice - Hrušovany u Brna - Znojmo

3102S Class I road I/38 Hatě st. border – Znojmo – Jihlava; Havlíčkův Brod – Poděbrady (motorway D11)

The roadway serves the remote Znojmo region in the direction of Prague, and at the same time enables the diversion of transit traffic in the direction of the industrial north of Bohemia avoiding the congested Central Bohemian agglomeration. It also serves another important border crossing. That is why it belongs to basic needs. The expected daily intensity is 3-5 thousand cars per day, in the Kolín agglomeration up to 10 thousand.

The cluster contains the following projects:

- Road I/38 Poděbrady (motorway D11) - Kolín, relocation
- Road I/38 Církvice bypass
- road I/38 Havlíčkův Brod, northeast bypass
- Road I/38 Malín - Kuchyňka, relocation
- Road I/38 Jihlava - Stonařov
- Road I/38 Znojmo - Hatě
- Road I/38 Jakubov - Litoňov, relocation
- Road I/38 Znojmo, bypass I
- Road I/38 Znojmo, bypass III
- Road I/38 Znojmo, bypass IV
- Road I/38 Želetava - Horky, relocation
- Road I/38 construction of bypasses and alignments not implemented by 2030

3103S Class I road I/53 Znojmo – Pohořelice

This is a modernized road. The transport model allows for up to 8,000 cars per day. Projects under preparation are:

- Road I/53 Lechovice - Pohořelice
- Road I/53 Znojmo - Lechovice



32000 Multimodal cluster - additional cross-border connections and remote regions - Šluknov Spur

3201Z Conventional railway Česká Lípa – Rumburk

It connects the economically weak region of the Šluknov Spur with 40,000 inhabitants as part of basic needs, if the line is electrified, it can also be used as another secondary border crossing to Germany, especially useable in periods of track possessions or emergencies on the main lines. The potential of this connection will increase after the completion of the line Prague / Nymburk - Mladá Boleslav.

No projects are currently under preparation. It is necessary to assess the possibility of electrification of the line and a partial increase of the line speed to achieve tact nodal points.

3202S Class I road I/38, I/9 Mladá Boleslav – Česká Lípa – Nový Bor – Rumburk st. border

It connects the economically weak region of the Šluknov Spur with 40,000 inhabitants to the border crossing to Germany as part of basic needs. The following projects are currently under preparation:

- Road I/38 Kosmonosy, modification of the intersection at the 13th gate
- Road I/9 Lesné, relocation
- Road I/38 Kosmonosy, intersection of streets Průmyslová and tř. Václava Klimenta
- Road I/38 Doksy - Obora
- Road I/9 Dubice - Dolní Libchava (Sosnová - road II/262)
- Road I/9 Jestřebí roundabout
- Road I/9 Nový Bor - Dolní Libchava
- Road I/9 Nový Bor - Svor, capacity increase
- Road I/9 Svor
- Road I/9 interchange Okrouhlá

33000 Multimodal cluster - additional cross-border connections and remote regions - Krušné hory range

3301S Class I road I/7 Chomutov – Hora sv. Šebestiána st. border

The road is a continuation of the D7 motorway and provides a connection to an important border crossing to Germany. About 7,000 cars and 1,500 trucks will use the road in the Krušné hory range (Ore Mountains) daily. The road has been modernized, new projects are not being prepared.

34000 Multimodal cluster - additional cross-border connections and remote regions - Jeseník area

3401Z Conventional railway Zábřeh n.M. – Šumperk / Jeseník – Glucholazy st. border

The Jeseník area is a remote region located behind the natural barrier of the Jeseníky range, the line belongs to basic needs. At the same time, the cluster connects the regional centre Šumperk to the main railway route; the border crossing to Poland also has some potential. The line is also important for recreational transport.

The following technological projects are included in the cluster:

- GSM-R Uničov - Šumperk
- ETCS Uničov - Šumperk - Zábřeh n. M.

3402S Class I road I/44 Mohelnice – Šumperk – Jeseník – Mikulovice st. border

The Jeseník area is a geographically remote region located behind the natural barrier of the Jeseníky range, the road belongs to basic needs. At the same time, the cluster connects the regional centre Šumperk to the



D35 motorway; the border crossing to Poland also has some potential. The route is gradually being modernized, a daily traffic intensity of 4,000 cars and 1,300 trucks is expected through the Jeseníky range. In the section to Šumperk, the load will be 13,000 vehicles, which does not correspond to a 4-lane road, but the projects are in an advanced stage of preparation or have already been implemented.

The following projects are being prepared within the cluster:

- Road I/44 Bludov - bypass
- Road I/44 Zábřeh, bypass
- Road I/44 Mohelnice - Vlachov
- Road I/44 construction of bypasses and alignments not implemented by 2030

41000 Multimodal cluster - suburban connections - City of Prague

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport in the capital city.

4101Z Conventional railway northern bypass for freight transport Dřísy – Neratovice – Kralupy n/V – Kladno Ostrovec

It is the northern bypass of Prague for freight transport. It connects the so-called left-bank line with the right-bank line and serves logistics centres in the northwestern outskirts of Prague. The route will significantly help to calm traffic in the built-up area of the capital, and at the same time will increase the potential of freight rail transport. The electrification of the lines is a must. The definitive solution will be implemented in connection with the HSL Nová Ves – Most (cluster 1602Z), however, a simple electrification project for freight transport is needed in an earlier time horizon. This connection was not examined by the transport model.

It will be necessary to reckon with the following projects:

- Capacity increase and electrification of the line Všetaty – Neratovice – Kralupy n/V – Kladno and Hostivice – Středokluky:
 - Capacity increase of the Neratovice - Všetaty section
 - Electrification of the line Dřísy – Neratovice – Kralupy n/V, ETCS, capacity increase
 - Electrification of the line Kralupy n/V – Kladno Ostrovec
 - Electrification of the line Hostivice – Středokluky

4102Z Conventional railway Prague Ruzyně – Kladno Ostrovec

This will create another high-capacity line for suburban transport, which will connect the largest town within the Prague suburban transport. The expected daily volume is up to 17,000 persons.

Projects under preparation are:

- Modernization of the line Kladno (incl.) - Kladno-Ostrovec (incl.)
- Modernization of the line Prague-Ruzyně (excl.) - Kladno (excl.)

4103Z Conventional railway Prague Vysočany – Neratovice

The current shortcoming of the line is the low throughput, as the main track is led directly in front of the station building at Praha-Satalice and Měšice stations (this means that fast trains crossing with local trains have to reduce the speed to 40 km/h). The line would be among the first to be electrified within the Prague junction, as it connects Prague to the right-bank line from the north. Electrification has not yet taken place because the line runs near the runway of the Prague-Kbely airport. The line has significant potential for suburban transport in the urbanized area north of Prague (Mělník, Neratovice and other municipalities with expanding



development – Hovorčovice, Měšice, Zlonín, Kojetice, Líbeznice, Mratín, Předboj and other. It would require a 15-minute tact for suburban trains and a 30-minute tact for semi-fast trains, similarly to other suburban routes.

The development of this line will be influenced by the HSL Prague – Dresden project, specific projects are gradually being launched within the entire arm:

- Optimization of the line Prague-Vysočany – Neratovice

4104Z Conventional railway Prague Smíchov – Rudná u Prahy – Beroun

The line is being assessed in a feasibility study. It passes through a densely populated suburban area of Prague (including the village of Chýně with 4,300 inhabitants), competing with the D5 motorway and to some extent the B line of the Prague underground. The advantage of the line is that it provides a direct connection to the centre of Prague, so its suburban transport potential must be exploited. The condition is electrification and enabling a 15-minute tact in the Prague - Rudná section.

As the feasibility study has not yet been approved, no specific projects have been registered so far. It will be necessary to reckon with the following preliminary projects:

- Revitalization and electrification of the line Prague Smíchov – Rudná u Prahy – Beroun
- Revitalization and electrification of the line Rudná u P. – Hostivice

4105Z Conventional railway Prague – Vrané n. V. – Davle

The Prague - Davle line also has suburban potential, the other sections to Dobříš and Týnec n/S have a rather recreational character. Projects are not being prepared here, it will be appropriate to assess the electrification of the line in the future.

4106S Class I road I/61 motorway D7 – Kladno – motorway D6

The road connects Kladno to the D6 and D7 motorways, especially the connection to the D6 is unsatisfactory as it passes through built-up areas. The project under preparation is:

- Road I/61 Kladno, bypass

4107S Class I road I/9 Zdiby – Mělník

This is part of the road route to the north of Bohemia to Mělník and Česká Lípa, in both cases there is a faster, albeit longer motorway alternative (D8 + I/16 or D10 + I/38). The daily intensity of approx. 11,000 cars requires modernization in the form of an alternating three-lane (2+1) road in the Zdiby - Neratovice section, while it will be needed to consider the use of the new lane for regular bus service. The registered project is:

- Road I/9 Zdiby – Líbeznice
- Road I/9 and I/16 Větrušice - Mělník (including bypass 3rd, 4th construction)
- Road I/9 Líbeznice - Větrušice

In the next stage, it will be necessary to consider the project:

- Road I/9 Líbeznice – Libiř

4108S Class I road I/12 Prague – Úvaly

The road is important only for suburban relationships, the connection of Prague with Kolín must prefer the route motorway D11 + road I/38. The capacity increase on the road will not be of greater importance for suburban transport, the main importance lies in diverting the traffic from Úvaly, Újezd nad Lesy and Běchovice.



A daily intensity of approx. 12,000 cars is assumed. A full-fledged four-lane road is expected to be built as part of the project:

- Road I/12 Běchovice – Úvaly

4109S Class I road I/2 Prague – Kostelec nad Černými lesy

It is a Class I road mainly serving suburban connections. The topic to be addressed is especially the through-traffic road in the town of Říčany, where an intensity of approx. 12,000 vehicles per day is expected. No project is currently identified.

42000 Multimodal cluster - suburban connections - Brno

4201Z Conventional railway Brno – Třebíč / Ivančice

There is an effort to electrify all Brno suburban lines and thus unify the traction of all vehicles in suburban transport. It is part of basic needs. The model assumes a daily intensity of over 8,000 persons. The following projects are being prepared and considered (following the Jihlava – Třebíč – Zastávka u Brna feasibility study):

- Electrification of the line Brno – Zastávka u Brna, stage 2
- Electrification of the line Zastávka u Brna - Třebíč

4202Z Conventional railway Brno – Kyjov – Moravský Písek

It is a double-track, but non-electrified line. The model assumes a daily intensity of over 6,000 persons. The following projects are identified:

- Reconstruction of r. station Kyjov, stage 1
- Reconstruction of r. station Kyjov, stage 2
- Reconstruction of the line section Nesovice (excl.) – Kyjov (excl.)
- Reconstruction of r. station Slavkov u Brna
- Reconstruction of the line section Blažovice (excl.) - Nesovice (incl.)
- Reconstruction of the line section Kyjov (excl.) - Veselí n. M. (excl.)

4203Z Conventional railway – Boskovice interconnection

The project will enable a better connection of the town of Boskovice to the lines of the Brno suburban area. It is part of basic needs. The project under preparation is:

- Boskovice interconnection

4204Z Conventional railway – Brno diameter

The railway tunnel connection under the city centre will bring suburban transport to the city centre without the need to use connecting urban transport, it will also be important as a city railway. The project is part of the target needs. The project is in the process of assessing the feasibility of variants: railway, tram, light metro or hybrid variants.

The project to be assessed in the future is:

- North-South railway diameter

4205S Class I road I/23 Brno – Náměšť n/O



The road connecting Brno with České Budějovice is not competitive with the motorway connection. It is relevant for the suburban area of Brno. The model assumes a daily intensity of approximately 6,000 vehicles. It is a basic need. There is no project in preparation.

4206S Class I road I/50 Holubice – Kožušice – Staré Město – Starý Hrozenkov st. border

The road will be newly part of the TEN-T network for the needs of military mobility, it is a basic need. Currently, it is an important route from Brno to central Slovakia, in the future, a part of the functions will be taken over by the D49, I/49 route. In the suburban area, the transport model reckons with 9,000 vehicles daily.

The following projects are being prepared within the cluster:

- Road I/50 Bučovice, bypass
- Road I/50 Křižanovice, intersection
- Road I/50 construction of bypasses and alignments not implemented by 2030

4207S Class I road I/42, I/41 Brno inner ring road and connecting sections

The route fulfils the function of a city inner ring road (IRR), it is not intended for transit traffic in most parts. It is a basic need. Projects under preparation are:

- Road I/42 Brno IRR Žabovřeská street I
- Road I/42 Brno IRR, Tomkovo náměstí
- Road I/42 Brno IRR, Rokytova
- Road I/42 Brno IRR, interchange Ostravská radial road
- Road I/42 Brno, Otakarova Ševčíkova bridge over Ostravská street
- Roads I/41 and I/42 Brno IRR Bratislava radial road
- Road I/42 Brno IRR Vinohrady
- Road I/42 Brno IRR Bauerova
- Road I/42 IRR South of Bratislava radial road - Heršpická
- Road I/42 IRR Prague radial road – Heršpická

43000 Multimodal cluster - suburban connections - Ostrava

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4301Z Conventional railway Ostrava Kunčice – Frýdek-Místek – Valašské Meziříčí

The line is double-track in the section Ostrava main station – Vratimov, i.e. the part belonging to the TEN-T and providing the connection of the Paskov intermodal terminal. The line to Frenštát p. R. is of great importance for suburban transport, so it requires electrification and optimization.

Projects under preparation are:

- Optimization and electrification of the line Ostrava-Kunčice - Frýdek-Místek
- Revitalization and electrification of line sections Frýdek Místek (excl.) - Frenštát pod Radhoštěm město/Ostravice

4302Z Conventional railway Ostrava Svinov – Opava – Krnov

It is an important line within the Ostrava agglomeration. The section Ostrava - Opava was optimized and electrified, the electrification to Krnov is being considered. There is no project in preparation.

4303Z Conventional railway Studénka – L. Janáček Airport Ostrava / Kopřivnice – Štramberk



It connects the Leoš Janáček Ostrava Airport and the Mošnov industrial zone to the railway network, this section will now be part of the TEN-T, it is a completed newly built structure. The other sections of the line are needed for suburban transport to serve Příbor, Kopřivnice and Štramberk. The project under preparation is:

- Connection of the Mošnov combined transport terminal
- Electrification of the line

4304Z Conventional railway Frýdlant n/O – Ostravice

It is a branch from the 4301Z cluster for suburban and recreational transport. The project is identified under the 4301Z cluster.

4305S Class I road I/11, I/57 Ostrava – Opava – Krnov

An important suburban transport route is gradually being modernized to a four-lane road between Ostrava and Opava. The model assumes approx. 20,000 vehicles daily between Ostrava and Opava, and 10,000 cars between Opava and Krnov.

Projects under preparation are:

- Road I/57 Skrochovice, bypass
- Road I/11 Opava, northern bypass - western part
- Road I/11 Opava Komárov, southern bypass
- Road I/11 Nové Sedlice - northern bypass

4306S Class I road I/11 Ostrava – Třanovice

It is a link between Ostrava and the TEN-T route to Slovakia, in the final section the model expects 11,000 cars per day. The project under preparation is:

- Road I/11 Havířov – Třanovice

44000 Multimodal cluster - suburban connections - Plzeň

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4401Z Conventional railway Plzeň – Klatovy

It is an electrified single-track line with an expected daily volume of 4,500 persons. Partial reconstructions of the line are envisaged.

4402Z Conventional railway Radnice – Ejpovice; Rokycany – Příkosice

These are local lines in a suburban area with potential for suburban transport. No project has been identified here, it will be necessary to assess the possibilities of increasing the competitiveness of these lines and to decide on the effectiveness of different ways of electrification of these lines (electrification or battery vehicles).

4403S Class I road I/27 Plzeň – Klatovy

The road is gradually being modernized, the suburban part is built in a four-lane arrangement, more than 16,000 cars are expected here per day, this volume gradually decreases to 4,000 vehicles. The following projects are under preparation:

- Road I/27 Šlovice - Přeštice, relocation
- Road I/27 Přeštice - bypass
- Road I/27 Klatovy relocation 1st construction



- Road I/27 Švihov - Klatovy
- Road I/27 Přeštice - Švihov

4404S Class I road I/26 Plzeň – Staňkov

The international function of this route has been largely taken over by the D5 motorway, its main purpose lies now in suburban transport and in transport to the border regions of Bavaria. The daily volume is expected to be around 8,000 cars. The following projects are expected:

- Road I/26 Motorway D5 - Stod
- Road I/26 Holýšov, bypass
- Road I/26 Plzeň, roundabout on streets Domažlická - Folmavská
- Road I/26 construction of bypasses and alignments not implemented by 2030

45000 Multimodal cluster - suburban connections - Liberec

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4501Z Conventional railway Liberec – Tanvald – Desná

The line has been modernized in recent years to allow for the 30-minute tact that is used. So no new projects are identified, unless new requirements arise from the Prague - Liberec railway connection project. It will be necessary to decide on a change in traction, partial light electrification in combination with battery vehicles or full battery operation come into consideration.

4502Z Conventional railway Liberec – Hodkovice n/M, current line

Access to this line depends on the results of the Feasibility Study of the railway connection Mladá Boleslav – Liberec – st. border. The current line Turnov - Liberec is proposed for closure, with its function to be taken over by a new line from the 1701Z cluster, with the exception of the section Hodkovice nad Mohelkou - Rychnov u Jablonce nad Nisou, which is preserved for freight service. The section Liberec - state border is proposed for electrification in the current track. The sections Raspenava - Bílý Potok pod Smrkem and Frýdlant v Čechách - Nové Město pod Smrkem are proposed for reconstruction and electrification in the current track.

4503Z Conventional railway Raspenava – Bílý Potok p.S.

The short railway line axially serves the populated valley, after the recent modernization of the r. station Raspenava, direct service to Liberec has been introduced. New projects are not identified, the Feasibility Study of the railway connection Mladá Boleslav – Liberec – st. border also considers a variant with electrification.

4504Z Conventional railway Frýdlant – Nové Město p.S.

The short railway line axially serves the populated valley, it is important for suburban transport only in the section Frýdlant - Nové Město p.S. New projects are not identified, the Feasibility Study of the railway connection Mladá Boleslav – Liberec – st. border also considers a variant with electrification.

4505S Class I road I/14 Liberec – Tanvald – Desná

The road in the Liberec – Jablonec n/N section has been relocated, the Liberec section is a four-lane design. The remaining part, including the through-traffic road in Jablonec n/N, passes through built-up areas. The project under preparation is:

- Road I/14 Jablonec nad Nisou, western tangent

4506S Class I road I/13 Stráž n/N – Frýdlant



The road is gradually being modernized, the Krásná Studánka bypass has been put into operation. It is one of two road connections connecting the Frýdlant Spur to the rest of the country. The project being prepared within the cluster is:

- Road I/13 Krásná Studánka – Dětřichov

4507S Class I road I/65 Rádelský mlýn – Jablonec n/N

Road I/65 connects Jablonec n/N to the Liberec – Prague motorway. The intersection with road I/35 at Rádelský mlýn, which originally did not meet safety requirements, has been reconstructed. The following projects are under preparation:

- Road I/65 Dobrá Voda
- Road I/65 Rádelský mlýn – Jablonec n/N, capacity increase

The road does not show a lack of capacity, so the need for the project needs to be reassessed.

46000 Multimodal cluster - suburban connections - Olomouc

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4601Z Conventional railway Olomouc - Uničov

The modernization and electrification of the line has been completed, new projects are not being monitored.

4602Z Conventional railway Olomouc - Hlubočky

This is a part of the Olomouc – Krnov – Ostrava line, which is important for suburban transport, however, its further continuation towards Bruntál passes through a sparsely populated area. It will have to be decided whether the electrification will be solved by partial electrification of the line, or by using battery or, possibly, hydrogen vehicles. No project is being prepared.

4603S Class I road I/46 Olomouc – Šternberk

This section carries concurrently the traffic of two class I roads, I/45 and I/46. The daily volume of cars is expected to be more than 12,000. The through-traffic road in Šternberk is particularly problematic. Projects under preparation are:

- Road I/46 Olomouc - eastern tangent
- Road I/46 Týneček - Šternberk
- Road I/46 Šternberk - bypass

47000 Multimodal cluster - suburban connections - České Budějovice

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4701Z Conventional railway České Budějovice – Český Krumlov

In addition to suburban relations, the line provides connection to the world-famous UNESCO heritage site with significant international tourist traffic. The line has been optimized, it will be necessary to decide on the effectiveness of electrification. No new projects are being prepared at present. The railway connection may be affected by a major upgrade - see cluster 1501Z.

4702S Class I road I/39 České Budějovice – Český Krumlov



In addition to suburban relations, the line provides connection to the world-famous UNESCO heritage site with significant international tourist traffic. In particular, it will be necessary to build a new feeder road to the planned D3 motorway. Projects under preparation are:

- Road I/39 Třebonín (interchange D3) – Rájov
- Road I/39 Přísečná
- Road I/39 climbing lane Rájov

48000 Multimodal cluster - suburban connections - Hradec Králové

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4801Z Conventional Railway Jaroměř – Náchod / Trutnov

The connection will be influenced by the design of the new HSL (cluster 902Z). The connection to Náchod could be improved by building an interconnection at Vysokov. The project is not registered among projects under preparation.

4802S Class I road I/33 Jaroměř – Náchod st. border

The road will now be part of the TEN-T for military mobility. Its current importance will be reduced by the completion of the D11 motorway. Nevertheless, it will be necessary to improve the fluency by bypasses. So the following projects are being prepared:

- Road I/33 Jaroměř - bypass
- Road I/33 Náchod – bypass

4803S Class I road I/11 Hradec Králové - Vamberk; I/14 Vamberk – Solnice

In addition to suburban transport, the road is important for freight transport, serving the industrial zone in Kvasiny. Projects under preparation are:

- Road I/11 Hradec Králové - northern tangent
- Road I/11 - I/37 southern interconnection Hradec Králové
- Road I/11 Doudleby nad Orlicí - bypass
- Road I/14 Rychnov nad Kněžnou, bypass
- Road I/14 Solnice, bypass
- Road I/31 Hradec Králové - Mileta intersection
- Road I/14 interchange Solnice
- Road I/11 Častolovice, bypass

4804Z Conventional railway Týniště n/O - Častolovice – Solnice

In addition to suburban transport, the line is important for freight transport, serving the industrial zone in Kvasiny. Projects under preparation are:

- Increasing the capacity of the line Týniště n.O. - Častolovice - Solnice, part 3
- Increasing the capacity of the line Týniště n.O. - Častolovice - Solnice, part 4
- Electrification of the line Týniště n.O. – Častolovice – Solnice

49000 Multimodal cluster - suburban connections - Pardubice

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

4901Z Conventional railway Pardubice - Skuteč



The most important connection in this part of the agglomeration is the connection between Pardubice and Chrudim. The problem to solve in this relationship is mainly the Pardubice junction. An economically efficient solution is being sought, a decision has not yet been made, therefore the project is not included in the preparation.

The following projects will have to be prepared:

- Connecting the Chrudim – Pardubice line to the Pardubice junction
- Electrification of the line Pardubice – Slatiňany

A feasibility study is assessing the project of optimising the line Pardubice – Havlíčkův Brod / Svitavy.

4902S Class I road I/2 Pardubice bypass, I/36 Pardubice - Časy motorway D35

As part of the cluster, the connection of Pardubice to motorway D35 under construction in the eastern direction will be resolved. The following projects are being prepared:

- Road I/2 Pardubice, southeast bypass
- Road I/2 Pardubice, southwest bypass
- Road I/2 Pardubice - Sezemice
- Road I/36 Pardubice-Dubina housing estate - Počapelské Chalupy
- Road I/36 Pardubice Trnová - Fáblovka – Dubina
- Road I/36 Pardubice, Globus store - Trnová
- Road I/36 Sezemice - bypass

50000 Multimodal cluster - suburban connections - Zlín

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

5001Z Conventional railway Zlín – Vizovice

In addition to the suburban and urban railway functions, the line also connects the intermodal terminal in Lípa. It is a continuation of the 1202Z cluster. Within this cluster, a project to modernize this section of the line is also being prepared.

5002S Class I road I/49 Otrokovice – Zlín – Vizovice

In addition to the suburban and urban functions, the road also connects the intermodal terminal in Lípa, transit traffic will be transferred to the D49 motorway. New projects are not being prepared.

51000 Multimodal cluster - suburban connections - Jihlava

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

5101Z Conventional railway Jihlava – Třebíč

The suburban relations of the Jihlava agglomeration are generally weaker due to the sparser population of the suburban area, the connections of Jihlava with other district centres of the region are significant. That is why a project is being prepared for the Jihlava – Třebíč connection:

- Revitalization of the Třebíč – Jihlava line

5102Z Conventional railway Kostelec u J. – Slavonice

This is the backbone line of the southern part of the Vysočina Region connecting the towns of Třešť, Telč, Dačice and Slavonice. Its competitiveness must be increased by the project:



- Revitalization of the Kostelec - Telč - Slavonice line

52000 Multimodal cluster - suburban connections - Mladá Boleslav

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

5201Z Conventional railway Mladá Boleslav – Sobotka – (Jičín)

The line serves the ever-growing population of the suburban area. Currently, it is a local line, its potential is given by the expanding suburbanization around Mladá Boleslav, which is manifested by the growing intensities on the parallel class I road I/16. One of the options to lighten the traffic is to increase the parameters of this line, which has relatively favourable directional and gradient conditions in the suburban section Mladá Boleslav - Sobotka. An increase in line speed could enable a direct link in the entire Mladá Boleslav – Jičín section, which would further increase the usability of the line. Also the possibilities of electrifying the line or the operation should be assessed. Projects to that end are not currently being prepared.

5202S Class I road I/16 Kosmonosy – Sobotka – Jičín

The road is used significantly not only for suburban transport, but also for freight transport service of the Škoda Auto plants (Mladá Boleslav – Vrchlabí / Kvasiny), the intensity of 9,000 vehicles per day is expected. Therefore, a new project is being prepared to connect the road to the D10 motorway in Kosmonosy:

- Road I/16 Mladá Boleslav - Martinovice
- Road I/16 Jičín, increasing the capacity of the bypass
- Road I/16 Martinovice - Jičín, modernization

53000 Multimodal cluster - suburban connections - Most

All projects belong to basic needs, they are necessary for the operation of urban and suburban transport.

5301Z Conventional railway Most – Postoloprty – Žatec / Louny

5302Z Conventional railway Most – Litvínov – Louka u L. – Hrob

It will be necessary to assess the potential of the suburban line to serve the towns of Lom, Osek and Hrob. The project under preparation is

- Revitalization of the line Osek město – Dubí – Moldava v Krušných Horách.

5303Z Conventional railway Oldřichov u D. – Litvínov

It is an important connection of Litvínov to the regional capital of Ústí n/L within the Ústí n/L-Most conurbation. The revitalization and electrification of the line has been completed, so no new project is in preparation.

5304Z Conventional railway Kadaň-Prunéřov – Kadaň

It is an important connection of Kadaň within the Ústí n/L - Most conurbation. The revitalization and electrification of the line has been completed, so no new project is in preparation.

5305S Class I road I/27 Most – Dubí

This is an intercity connection that is also important for the freight transport of the Chemopetrol factory complex. The project under preparation is:

- Road I/27 Most – Litvínov



2.2 Project packages

Project packages are focused on specific areas, usually consisting of smaller projects that are not monitored by name in the Transport Sector Strategies, and if they are, their list may not be exhaustive. As a rule, they consist of smaller projects with a specific focus, not included in clusters. List of project packages and their description

Bypasses and upgrades on class I roads, classified as E, F, G

A greater number of bypasses, through-traffic roads and partial modifications to road networks, classified as E, F and G, are planned in the time horizon until 2050 (the classification criteria are provided in Annex K6T7 – Class I road classification). The preparation of these projects will be proposed on the basis of the operational situation and will be specified in three-year action plans of the Transport Sector Strategies. Below are examples of such projects.

- Road I/2 construction of bypasses and alignments not implemented by 2030
- Road I/3 Červené Vršky - U Topolu, 2+1 arrangement
- Road I/14 construction of bypasses and alignments not implemented by 2030
- Road I/15 Želkovice, bypass
- Road I/15 Zahrádky, bypass
- Road I/15 Stvolínky, bypass
- Road I/15 construction of bypasses and alignments not implemented by 2030
- Road I/16 Nová Paka – bypass
- Road I/16 construction of bypasses and alignments not implemented by 2030
- Road I/17 construction of bypasses and alignments not implemented by 2030
- Road I/18 Příbram - Southeast bypass - part 1
- Road I/18 Příbram - Southeast bypass - part 2
- Road I/21 Planá - Trstěnice, relocation
- Road I/21 Horní Lomany, roundabout
- Road I/21 construction of bypasses and alignments not implemented by 2030
- Road I/22 Zavlekov, alignment
- Road I/22 Horažďovice, bypass
- Road I/22 Klatovy - Beňovy - Kal
- Road I/22 construction of bypasses and alignments not implemented by 2030
- Road I/23 Kardašova Řečice, bypass
- Road I/23 Třebíč - Vladislav
- Road I/23 Třebíč, bypass
- Road I/23 Vladislav, bypass
- Road I/23 Dobrá Voda, modification of intersection with road III/40615
- Road I/23 construction of bypasses and alignments not implemented by 2030
- Road I/24 Lomnice nad Lužnicí, bypass
- Road I/26 Babylon, bypass
- Road I/26 Horšovský Týn, bypass
- Road I/30 Chlumeč, intersection of roads I/30 x III/25357
- Road I/32 construction of bypasses and alignments not implemented by 2030
- Road I/33 Plotiště n.L. - removal of the railway crossing
- Road I/34 Stráž nad Nežárkou - Lásenice
- Road I/34 Pelhřimov western bypass



- Road I/34 construction of bypasses and alignments not implemented by 2030
- Road I/35 Lešná – Palačov
- Road I/35 intersection with road III/4868 at Střítež
- Road I/35 Zašová, intersection with road III/01876
- Road I/35 construction of bypasses and alignments not implemented by 2030
- Road I/36 Časy - Holice
- Road I/36 Holice - Čestlice
- Road I/37 Žďár nad Sázavou, Jihlavská - Brněnská streets
- Road I/39 Horní Planá
- Road I/39 construction of bypasses and alignments not implemented by 2030
- Road I/45 Bruntál-eastern bypass stage 1
- Road I/45 Nové Heřmínovy – Zátor, stage 1
- Road I/45 Krnov - border crossing
- Road I/45 Krnov - western bypass
- Road I/46 Opava, southern bypass Hradecká - Olomoucká streets
- Road I/46 construction of bypasses and alignments not implemented by 2030
- Road I/54, I/55 Veselí nad Moravou, intersection
- Road I/54 Nížkovice bridge Ref. No 54-003
- Road I/56 construction of bypasses and alignments not implemented by 2030
- Road I/57 Valašské Meziříčí - Jarcová, bypass
- Road I/57 Semetín – Bystřička 2nd construction
- Road I/57 Jarcová - Bystřička, south
- Road I/57 Opava, southern bypass, Olomoucká - Bruntálská streets
- Road I/57 Vrchy, bypass
- Road I/58 Frenštát pod Radhoštěm – Vlčovice
- Road I/62 Ústí nad Labem, Krásné Březno roundabout
- Road I/64 Skalka u Hazlova, horizontal alignment
- Road I/67 Karviná - bypass
- Road I/67 Bohumín – Karviná
- Road I/69 Vsetín, Mostecká street ramp

102000 Contribution for the renewal of class II and III roads

Measures to increase the safety or fluency of traffic on class II and III roads are financed from the STIF budget approved for the respective year. The financial package will be specified in the TSS action plans as decided by the government. The preparation of projects is the responsibility of regional authorities.

103000 Contribution to the modernization and development of urban public transport in electric traction

The co-financing of projects of municipal authorities on the development of their urban public transport networks in electric traction is governed by the conditions set out in the Transport Programme. The projects are submitted by the cities and financed from the Cohesion Fund.

104000 Support of private freight transport terminals

The financing of private freight transport terminals is governed by the conditions set out in the Transport Programme. The projects are submitted by the private entities and financed from the Cohesion Fund. An accompanying grant scheme under the Modernization Fund is being prepared as well.



105000 Development of state-owned freight transport terminals and marshalling yards

The supplementation of the freight transport terminal network owned by the state is governed by the Transport Programme conditions and by STIF rules. The modernization of multimodal terminals will be designed and financed on the basis of the Policy Concept of Loading Points.

- Modernization of the Nymburk marshalling yard
- Modernization of the hump equipment in the perimeter of hump control box No 2 at r. station Brno-Maloměřice
- Reconstruction of the hump equipment in r. station České Budějovice

106000 Support for the development of freight transport ports

The development of ports is governed by the conditions set out in the Transport Programme, based on projects submitted by private entities. In addition to these projects, if the waterway to Pardubice is completed, the following project will be prepared:

- public port of Pardubice

107000 Recreational boating - wharfs

Construction of a coherent network of public wharves for short-term or medium-term berthing of vessels, ensuring the accessibility of settlements along the waterway from passenger and recreational boats, is governed by the terms of *the Water Transport Policy Concept for the period 2016 – 2023*, which has been noted by the Government of the Czech Republic.

- Wharf Hřensko
- Supplementing the network of waterborne public transport wharves in the Ústí nad Labem Region
- Wharf Velké Březno
- Wharf Malé Žernoseky
- Wharf Neratovice
- Wharf Kostelec nad Labem
- Wharf Lysá nad Labem
- Recreational marina Na Vodrážce
- Wharf Oseček
- Wharf Kralupy nad Vltavou
- Wharf Klecánky
- Recreational marina Štěchovice
- Recreational marina Kamýk nad Vltavou
- Wharf on the Orlík reservoir
- Modernization of the Purkarec wharf
- Recreational marina Hodonín
- Recreational marina Napajedla - Pahrbek
- Recreational marina Veselí nad Moravou
- Recreational marina Kroměříž
- Increasing the berthing capacity of wharves on the Baťa Canal
- Recreational marina Slovácko

108000 Recreational boating - other projects



Other recreational boating projects focus mainly on the removal of problematic places for boating, the completion and improvement of infrastructure of waterways usable for water tourism, services for vessels, and continuously navigable waterways involved in attractive destinations.

- Boat ramps on the Elbe River
- Protective mooring of service vessels Brná
- Fuel filling station Roudnice nad Labem
- Lock waiting mooring for small vessels on the Vltava
- Boat ramps on the Vltava River
- Boat lift Slapy reservoir
- Boat lift Orlický reservoir
- Increasing the vertical bridge clearance in Týn nad Vltavou
- Extension of the Kamýk nad Vltavou lock
- Mooring on the Vltava waterway
- Protective mooring of service vessels Slapy reservoir
- Hydraulic structure at Hluboká nad Vltavou – reconstruction of the operational building with the construction of covered berths
- The Vltava, river km 236,380 – 239,158 (Česká Vrbná weir basin) – fortification of the fairway slopes
- Service vessels Prague, Slapy, Orlický
- Extension of navigability of waterway Otrokovice - Rohatec - lock Rohatec
- Lock Bělov
- Waterway loop Veselí nad Moravou - Vnorovy
- Modernization of the head regulator at Veselí n. M.
- Increasing the safety of two-way traffic on the Baťa canal

109000 Support for the development of cycling infrastructure

The construction or repair of bicycle paths or the setup of bicycle lanes will be financed by funds from the STIF budget, approved for the relevant year, and from the IROP. The preparation of projects is the responsibility of the regional and local authorities.

110000 Support for the development of barrier-free pedestrian routes

The measures to increase the safety or fluency of traffic or measures to make transportation accessible to persons with limited mobility or orientation will be financed by financial contributions from the STIF budget approved for the relevant year. The preparation of projects is the responsibility of the local authorities.

111000 ITS and C-ITS implementation support

ITS allow traffic flows to be optimized in such a way that vehicles travel smoothly without sudden stops and subsequent starts, thereby eliminating excessive energy consumption. It is necessary to invest in ITS systems for influencing and controlling urban motor vehicle traffic, urban public transport and city logistics.

C-ITS systems are based on secured communication (two-way data exchange) relating to the current road traffic, both between the vehicles themselves and between vehicles and equipment on the road infrastructure. C-ITS systems do not directly interfere with the vehicle's control systems, the appropriate response is decided on by the (pre-warned) driver. C-ITS systems provide secured warning information about dangerous and collision situations, not navigation instructions.

Support for the implementation of the ITS and C-ITS systems is governed by the conditions set out in the Transport Programme based on the ITS Development Strategy 2021 - 2027 with a 2050 perspective. Project submission is the responsibility of transport infrastructure managers.



112000 Support for the acquisition of airport security equipment for passenger check-in

The airport equipment with technical or similar means used to protect civil aviation from illegal acts is financed by financial contributions from the STIF budget approved for the relevant year. Projects are submitted by the civil airport operators.

113000 Railway infrastructure reconstruction projects included in the project category

The preparation of these projects will be proposed on the basis of the operational situation and will be specified in three-year action plans that will be part of the implementation stage of the Transport Sector Strategies. The project proponent is the Railway Administration (Správa železnic).

- Reconstruction of railway station Bystřice pod Hostýnem
- Reconstruction of the tracks in the Vinohrady tunnels
- Reconstruction of Prostějov main station
- Reconstruction of r. station Batelov including CTC at passing loop Spělov
- Reconstruction of r. station Malá Skála
- Reconstruction of r. station Pečky
- Reconstruction of the line section Chomutov (excl.) – Kadaň-Pruněšov (incl.)
- Reconstruction of the line section Přebyslav – Pohled
- Upgrade of line block (track-side signalling equipment) Přelouč – Prachovice
- Reconstruction of r. station Nový Bor
- Reconstruction of the elevated railway at km 0.439 of the line Ústí n.L. main station - Ústí n.L. west
- Reconstruction of r. station Turnov
- Reconstruction of the line section Tršnice (incl.) – Cheb (excl.)
- Reconstruction of the line section Kynšperk nad Ohří (incl.) – Tršnice (excl.)
- Reconstruction of r. station Rybník
- Reconstruction of the station head (track branching) at r. station Jihlava in the direction of Veselí n.Luž.
- Reconstruction of r. station Milevsko
- Reconstruction of the line section Žďár nad Sázavou (excl.) – Sázava u Žďáru (excl.)
- Reconstruction of the line section Kutná Hora (excl.) – Kolín (excl.)
- Reconstruction of the station head at r. station Bohumín Vrbice in the direction of Chalupki, and of the track on the line Bohumín Vrbice - Chalupki
- Rehabilitation of the substructure body on the line Hájek - Dalovice
- Reconstruction of the breast wall at km 270.375 - 270.751 on the line Česká Třebová - Prague
- Reconstruction of the Ještěd tunnel
- Reconstruction of the line section Rokytka branch - Prague-Holešovice (excl.)
- Reconstruction of the bridge at km 3.346 of the line Prague Libeň - Prague Holešovice
- Reconstruction of r. station Prague-Čakovice
- Reconstruction of TPS of Dobšice nad Cidlinou
- Reconstruction of TPS of Káranice
- Reconstruction of r. station Chabařovice
- Reconstruction of the bridge at km 18,582 of the Ústí nad Labem - Most line
- Reconstruction of the line section Bílina (incl.) – Most (excl.)
- Reconstruction of r. station Most
- Reconstruction of the line section Most (excl.) – Kyjice (incl.)
- Reconstruction of the bridge at km 32,588 of the Ústí nad Labem - Most line
- Reconstruction of r. station Chomutov



- Reconstruction of the line section Chomutov (excl.) – Kadaň-Prunéřov (incl.)
- Reconstruction of the line section Kadaň-Prunéřov (excl.) - Perštejn (excl.)
- Reconstruction of the line section Perštejn (incl.) – Stráž nad Ohří (incl.)
- Reconstruction of the line section Stráž nad Ohří (excl.) – Ostrov nad Ohří (excl.)
- Reconstruction of the line section Ostrov nad Ohří (incl.) – Hájek (incl.)
- Reconstruction of the line section Hájek (excl.) – Karlovy Vary (excl.)
- Reconstruction of the line section Karlovy Vary (excl.) – Nové Sedlo u Lokte (incl.)
- Reconstruction of the line section Nové Sedlo u Lokte (excl.) – Sokolov (excl.)
- Reconstruction of the line section Sokolov (excl.) - Kynšperk nad Ohří (excl.)
- Reconstruction of the line section Kynšperk nad Ohří (incl.) – Tršnice (excl.)
- Reconstruction of the Nelahozeves tunnels
- Reconstruction of the line section Čáslav (excl.) - Kutná Hora (excl.)
- Reconstruction of the bridge at km 287,291 of the Retz (ÖBB) – Kutná Hora line
- Increasing the stability of rock massifs on the Beroun - Rakovník line
- Reconstruction of the bridge at km 5,703 of the Čelákovice - Neratovice line
- Reconstruction of the bridge at km 48.289 of the Podlešín - Slaný line (Podlešín Viaduct)
- Increasing the stability of rock massifs on the lines Chotěšov - Mladá Boleslav and Mladá Boleslav město
- Reconstruction of the bridge at km 26,000 of the Kaštice - Kadaň line
- Reconstruction of the bridge at km 101.816 of the line Prague-Bubny - Chomutov
- Reconstruction of the bridge at km 3,040 of the line Ústí nad Labem - Střekov - Ústí nad Labem západ
- Reconstruction of bridges at km 5,104 - 5,457 on the line Libochovice - Vraňany
- Reconstruction of bridges at km 518,498 and 518,962 of line section Prague Masarykovo n. - Děčín hl. n.
- Rehabilitation of the substructure body on the line Varnsdorf – Seifhennersdorf (DB) at km 12.288 – 12.7
- Rehabilitation of the substructure body on the line Děčín - Jedlová at km 25,880 – 25,980
- Conversion of the culvert at km 159.434 of the Stará Paka - Liberec line into an underpass
- Reconstruction of the Dolnolučanský tunnel (near Dolní Lučany) on the Liberec - Harrachov line
- Increasing the stability of rock massifs on the line Železný Brod - Tanvald
- Reconstruction of the bridge at km 8,988 of the line Martinice v Krkonoších - Rokytnice nad Jizerou
- Reconstruction of r. station Železný Brod
- Reconstruction of r. station Nová Paka for CTC
- Reconstruction of the bridge at km 14,654 of the line Krásný Jez - Nové Sedlo u Lokte
- Reconstruction of bridges at km 35,826 and 37,480 of the Plzeň - Žatec line
- Reconstruction of bridges at km 72,637 and 72,721 of the Domažlice - Planá line
- Reconstruction of the contact lines on the Tábor - Bechyně line
- Reconstruction of the bridge at km 1,279 of the Tábor - Bechyně line
- Reconstruction of the bridge at km 21,510 of the Tábor - Písek line
- Reconstruction of the hump equipment in r. station České Budějovice
- Reconstruction of the line section Blažovice (excl.) - Nesovice (incl.)
- Reconstruction of the line section Kyjov (excl.) - Veselí n. M. (excl.)
- Reconstruction of r. station Dobrá u Frýdku Místku
- Reconstruction of r. station Prostějov místní nádraží
- Reconstruction of r. station Rožnov pod Radhoštěm
- Reconstruction of platforms in r. station Uherské Hradiště



- Reconstruction of platforms in r. station Valašské Meziříčí
- Rehabilitation of the unstable section Valašská Polanka – Horní Lideč at km 20,019 – 21,248
- Reconstruction of the bridge at km 155,900 of the Břeclav - Brno line
- Reconstruction of the road bridge at km 143,143 in Brno main station
- Reconstruction of the bridge at km 138,187 of line section 1201 on the Znojmo – Okříšky line
- Rehabilitation of the embankment earthwork Březová nad Svitavou - Svitavy 224,600 - 225,000
- Reconstruction of the bridge at km 42,794 of the Havlíčkův Brod - Pardubice line
- Reconstruction of the breast wall at km 270.375 - 270.751 on the line Česká Třebová - Prague
- Rehabilitation of the slope of the embankment body at km 92,100 of the line Chlumeck nad Cidlinou – Trutnov
- Reconstruction of r. station Golčův Jeníkov
- Reconstruction of r. station Ostrov nad Oslavou
- Optimization of the line section Lovosice (excl.) – Prackovice nad Labem (incl.)

114000 Grade-separated crossing with superior infrastructure

The construction, modernization, or repairs of local roads or publicly accessible purpose-built roads at points of crossing with superior transport infrastructure will be financed by contributions from the STIF budget, approved for the relevant year. The preparation of projects is the responsibility of the regional and local authorities.

115000 Equipping railway vehicles with ETCS units

The equipment of railway vehicles with on-board components of the control-command and signalling system according to the decision of the European Commission on the technical specifications for interoperability relating to the control-command and signalling subsystems of the trans-European rail system is financed by a financial contribution from the Cohesion Fund.

116000 Railway level crossings and their replacements

The preparation of these projects will be proposed on the basis of the operational situation and will be specified in three-year action plans that will be part of the implementation stage of the Transport Sector Strategies. The project proponent is the Railway Administration (Správa železnic). Support for the modernization of level crossings and their replacement is governed by the conditions set out in the Transport Programme based on the Policy Concept of Level Crossing Removal and Replacement.

- Replacement of level crossing P6501 at km 245.044 of the Přerov – Bohumín line
- Replacement of level crossing P5674 on the line Benešov u Prahy - Prague main station
- Replacement of level crossing P2405 at km 455.046 of the line Prague Masarykovo n. - Děčín main station
- Replacement of level crossing P284 at km 71.756 of the line Prague Smíchov - Plzeň main station
- Replacement of level crossing P6496 at km 231.244 of the line Polom – Suchdol nad Odrou
- Reconstruction of level crossing P4410 at km 1,458 of the line Třemešná ve Slezsku (excl.) – Osoblaha (incl.)
- Replacement of level crossing P6532 at km 204,392 of the Přerov – Olomouc line
- Replacement of level crossings P8166 at km 150,962, P8167 at km 151,352 and P8168 at km 151,931 of the Břeclav – Přerov line
- Replacement of level crossing P8155 at km 111,535 of the Břeclav – Přerov line
- Removal of level crossing P6801 at km 179.826 of the Brno – Č. Třebová line and construction of an underpass at the stop Blansko
- Replacement of level crossing P4897 at km 286.369 of the Česká Třebová – Prague line



- Replacement of level crossings P4893, P4894, P4895, P4898 and P4899 on the line Česká Třebová – Prague

117000 Station buildings and barrier-free access to railways, buildings of the Railway Administration

The real property in the locations of railway stations and stops is primarily intended for organizing, securing and managing rail transport, for meeting transportation needs and providing services connected with the transport of people and goods. The intention is to adapt the passenger stations to the requirements of current railway transport and its links to other modes of transport, thereby increasing the competitiveness of passenger railway transport and creating conditions for the development of tourism. The reconstruction and revitalization of station buildings, including barrier-free adaptations, is carried out on the basis of the Programme for the Reconstruction and Revitalization of Passenger Stations, which is included in the Policy Concept for Managing the Real Property of Passenger Stations. Projects are financed from the STIF budget for the respective year.

- Reconstruction of the station building at r. station Most
- Ensuring barrier-free access to the platforms at r. station Kolín
- Reconstruction of the station building at r. station Klatovy
- Reconstruction of the station building at r. station Cheb
- Reconstruction of the station building at Ostrava-Vítkovice
- Reconstruction of platforms and establishment of barrier-free access in r. station Lovosice
- Comprehensive reconstruction of the ceiling of the new check-in hall of Prague main station
- Reconstruction of the station building at r. station Teplice v Čechách
- České Velenice, station building
- Multifunctional hall for diagnostic vehicles at CTD Pardubice (Technology and Diagnostic Centre)
- Administrative building Eden of the Railway Administration
- Reconstruction of the station building of r. station Prague-Radotín
- Reconstruction of the station building at Mladá Boleslav main station
- Reconstruction of the station building at Nymburk main station
- Reconstruction of the station building at r. station Čáslav
- Reconstruction of the station building at r. station Tábor
- Reconstruction of the station building at r. station Aš
- Reconstruction of the station building at r. station Bečov nad Teplou
- Reconstruction of the station building at r. station Benešov nad Ploučnicí
- Reconstruction of the station building at r. station Bílina
- Reconstruction of the station building at r. station Františkovy Lázně
- Reconstruction of the station building at r. station Chodov
- Reconstruction of the station building at r. station Krásná Lípa
- Reconstruction of the station building at r. station Roudnice nad Labem
- Reconstruction of the station building at r. station Lovosice
- Reconstruction of the station building on the island platform in the r. station Liberec
- Reconstruction of the station building at r. station Chlumeck nad Cidlinou
- Reconstruction of the station building at r. station Nýřany
- Reconstruction of the station building of r. station Turnov, stage 3
- Reconstruction of the station building of r. station Plzeň-Jižní Předměstí
- Installation of a modular system in r. station Hrabačov
- Reconstruction of the station building at r. station Nepomuk



- Reconstruction of the station building at r. station Jindřichův Hradec
- Reconstruction of the station building at r. station Dolní Bousov
- Reconstruction of the station building at r. station Benešov u Prahy
- Nové Strašecí, station building
- Hluboká nad Vltavou, station building
- Hněvice, station building
- Vojtanov, station building
- Krupá, station building
- Construction of a footbridge in r. station Prague-Smíchov
- Relocation of the CLR hall and the establishment of an integrated CLR and Track Management centre within the Prague Regional Office
- Addition of training halls for TCC
- Premises of the Fire and Rescue Service Prague
- Modernization of the HV/EHV test room Plzeň-Koterov
- Relocation of the CLR hall and the establishment of an integrated operational centre of the Plzeň Regional Office
- Premises of the Fire and Rescue Service Plzeň
- Premises of the Fire and Rescue Service Nymburk
- Calibration Center
- Extension of the underpass in r. station Hořovice
- Construction of the mechanization centre in Beroun
- Construction of a CLR hall in r. station Kladno
- Premises of the Fire and Rescue Service Ústí nad Labem
- Reconstruction of platforms in r. station Semily
- Premises of the Fire and Rescue Service Cheb
- Construction of the mechanization centre in Český Těšín
- Construction of a hall for measuring vehicles of fixed traction devices - Bohumín
- Reconstruction of the Line District Office premises in Opava
- Reconstruction of platform 1 in r. station Třinec incl. completion of the station building
- Construction of the premises of the Fire and Rescue Service Přerov
- Reconstruction of the premises of the Fire and Rescue Service Česká Třebová
- Construction of an electrical control room of the Hradec Králové Regional Office
- Construction of the mechanization centre in Havlíčkův Brod
- Jihlava passenger station (PS) - reconstruction
- Hrušovany near Brno PS - reconstruction
- Svetlá nad Sázavou PS - reconstruction
- Reconstruction of the station building at r. station Velké Meziříčí
- Mikulov na Moravě PS - reconstruction of the station building
- Reconstruction of the station building at r. station Sokolnice Telnice
- Reconstruction of the station building at r. station Hodonín
- Znojmo PS - reconstruction
- Zaječí PS - reconstruction
- Horní Cerekev, station building
- Moravský Písek, station building
- Reconstruction of the station building at r. station Valšov
- Karviná PS - reconstruction of a part of the station building



- Lískovec u Frýdku PS - reconstruction of the station building
- Paskov PS – new construction of the station building
- Kopřivnice PS - reconstruction of the station building
- Petrovice u Karviné PS - optimization and reconstruction of the station building
- Kravaře PS - reconstruction of the station building
- Reconstruction of the station building in Jindřichov ve Slezsku
- Příbor, station building
- Město Albrechtice, station building
- Reconstruction of the station building at r. station Přerov - part 2
- Hulín, station building
- Újezdec u Luhačovic PS - reconstruction
- Třemešná ve Slezsku, station building
- Reconstruction of PS Prelouč
- Reconstruction of the station building at r. station Jaroměř
- Reconstruction of the station building at r. station Letohrad
- Reconstruction of the station building in Brandýs nad Orlicí
- Reconstruction of the station building in Stará Paka
- Reconstruction of the station building in Svitavy
- Reconstruction of the station building at r. station Chrast u Chrudimi
- Martinice v Krkonoších, station building
- Reconstruction of the station building in Hlinsko v Čechách
- Ostroměř, station building

118000 Waterways outside the TEN-T

The implementation of construction measures is financed through the STIF budget based on the Water Transport Policy Concept. The following projects are currently under preparation:

- Modernization of the head regulator at Veselí n. M
- Extension of navigability of waterway Otrokovice - Rohatec - lock Rohatec
- The Vltava, river km 236,380 – 239,158 (Česká Vrbná weir basin) – fortification of the fairway slopes
- Waterway loop Veselí nad Moravou - Vnorovy
- Extension of the Kamýk nad Vltavou lock
- Increasing the safety of two-way traffic on the Baťa canal
- Boat lift Slapy reservoir
- Lock Bělov
- Boat lift Orlík reservoir

119000 Modernization or optimization of the other conventional lines

The modernization or optimization of the other conventional lines is envisaged and is supported by feasibility studies approved or underway or other documentation enabling the preparation of buildings. The projects are prepared on the basis of proposals of the Railway Administration and suggestions of the regional ordering authorities (Transport Service Plans of the Regions), and will be specified in three-year action plans, which will be part of the implementation phase of the Transport Sector Strategies.

- Ensuring the operating parameters of the Řetenice – Lovosice line
- Modernization of r. station Rakovník
- Increasing the carrying capability in the line section Počeradý - Obrnice (excl.)
- Modernization of r. station Františkovy Lázně



- Optimization and electrification of the line České Velenice (excl.) - Veselí nad Lužnicí (excl.)
- Relocation of the railway line in the section Stochov - Nové Strašecí
- Relocation of the railway line in the section Stochov - Nové Strašecí
- Modernization and electrification of the line section Kutná Hora hl. n. - Kutná Hora město
- Relocation of the line Kralupy nad Vltavou předměstí - Velvary at km 4,000 - 5,500
- Revitalization of the line Osek město – Dubí – Moldava v Krušných Horách
- Revitalization and electrification of the line Nýřany - Heřmanova Huť
- Revitalization of the line Horažďovice předměstí (excl.) - Sušice (incl.)
- Revitalization of the line Chlumeck nad Cidlinou – Trutnov
- Establishment of r. station Česká Metuje

120000 Deployment of ETCS and GSM-R on lines outside the defined clusters, TCC, CTC

ETCS (European Train Control System) is a European train control system that has become the basic standard in the field of railway traffic management and control in European countries and is, together with the radio system GSM-R (Global System for Mobile Communication – Railways), part of the ERTMS project (European Rail Traffic Management System). In addition to achieving interoperability and a possible increase in capacity (especially in its second application level during infrastructure optimization), the key benefit of the introduction of ETCS is an increase in the level of railway traffic safety. The procedure for gradually equipping the entire network is determined by the Plan for the Modern Control of the Czech Railways with the aim of equipping and introducing exclusive operation of ETCS level 2 on the TEN-T network by 2030. The other lines will gradually be equipped with either ETCS level 2 or ETCS level 1 Limited Supervision or ETCS Stop level.

The preparation of these projects will be proposed on the basis of the Plan for the Modern Control as well as the National ERTMS Implementation Plan, and will be specified in three-year action plans that will be part of the implementation stage of the Transport Sector Strategies.

- Construction of GSM-R on Railway Administration lines
- Introduction of simplified control on the line Vsetín - Velké Karlovice, incl. reconstruction of r. station Hovězí (incl. ETCS)
- Reconstruction of r. station Malé Svatoňovice for CTC
- Reconstruction of r. station Česká Skalice for CTC
- GSM-R Prostějov hl. n. – Kostelec na Hané – Senice na Hané – Olomouc hl. n.
- Other projects determined by the National ERTMS Implementation Plan
- ETCS Pardubice (excl.) - Hradec Králové (excl.)

121000 Change of electric traction system, TPS performance

The transition to alternating current traction will make it possible to increase the performance of rail transport through a more efficient power supply, increased energy efficiency by reducing losses in the line, reduced cost of electrifying other lines, making the power supply of high-speed lines compatible with the conventional railway network, and making train haulage more efficient by better using the traction properties of modern tractive rolling stock. The fundamental economic benefit of AC traction is the reduction of operating costs (reduction of losses and higher use of energy recovery) as well as the elimination of damage from stray currents and the costs of their removal. The projects are financed from the STIF budget on the basis of the “Policy concept of transition to a unified power supply system on the Czech railway network” which coordinates the change of the traction system with other changes in technology, especially with the introduction of ERTMS, or with the introduction of exclusive operation under the supervision of ETCS due to a possible replacement of tractive rolling stock and the unification of tractive stock technology.



The parameters of the existing energy network will be increased on the basis of the operational situation and the increase will be specified in three-year action plans that will be part of the implementation stage of the Transport Sector Strategies.

- Change of the electric traction system in the section Prague Radotín (excl.) - Králův Dvůr (excl.)
- State border Slovak Republic (Strelná) – Vsetín (excl.) – conversion
- Conversion to 25kV, 50Hz in the section Říkovice - Hranice na Moravě (excl.)
- Increase in traction performance of TPS Břeclav

122000 Electrification of lines outside the defined clusters

In the financing and selection of lines for rapid electrification, the use of the 25 kV 50 Hz AC system is considered economically viable. Currently (also with regard to the introduction of exclusive ETCS operation on TRC I and II in 2025), with the exception of the eastern arm near Prague on lines with gradually reduced (until 2045) operation of series 471 units, railway freight and passenger carriers already have a sufficient number of dual- and multi-system tractive vehicles.

The selection and implementation of projects will be based on the Policy Concept of *Simple Electrification Projects for passenger long-distance and freight transport*, and the projects will be financed through the Modernization Fund, the STIF and the Cohesion Fund.

- Electrification of the line Staré Město u Uherského Hradiště – Veselí nad Moravou
- Electrification of the line Kunovice (excl.) – Luhačovice
- Electrification of the line Újezdec u Luhačovic (excl.) – Bojkovice město

123000 Public power supply and recharging stations for alternative drives

Support for building public infrastructure for alternative fuels with an emphasis on recharging stations and hydrogen filling stations will include a relatively broad portfolio of technologies, and the representation of the different types of recharging stations will evolve over time. The infrastructure of hydrogen refuelling stations can be developed either on the basis of non-public stations located, for example, in the depots of public transport companies, or in combination with the operation of hydrogen-powered private cars, as public infrastructure. As regards the support for non-public hydrogen filling stations, it is assumed that these stations will be used mainly by public transport companies, freight transport or large company fleets.

The financing of projects is governed by the conditions set out in the Transport Programme, CEF based on the National Clean Mobility Action Plan. Project proposals are submitted by private entities.

124000 Point defects on the road network and noise barriers on the existing road network

Solving point defects on motorways and class I roads that are characterized by a high accident rate or locally limited capacity. This also includes the completion of noise barriers to meet the noise limits of the existing road infrastructure. Priorities within this package will be determined by the Road and Motorway Directorate. A decisive part of the projects will be financed from the STIF budget.

125000 Modernization of the technical equipment

This package covers the equipment of the Railway Administration with technical means for the maintenance of the railway network.

126000 Information technology

The package contains projects focused on the digitization of processes related to the operation and maintenance of the railway network of the Railway Administration and to the construction of the National



Access Point, which will also include the Public Transport Information System, replacing the existing National Information System on Timetables.

- Extension of TCC Přeřov - new building
- Reconstruction and modification of the transmission network of the Railway Administration
- Implementation of the system of Single Recording Environment of the Railway Infrastructure
- Traffic segmentation in a technological data network
- Equipment for monitoring the pantographs (collectors) of electric tractive vehicles (units)
- Traffic control centre for the infrastructure of the Hradec Králové Regional Office
- Management of network status events

127000 Ensuring the operation of trains 740 m long

The feasibility study of this measure is underway, the railway stations and sections of railway lines to which the measure applies are, therefore, not listed by name, a financial package is proposed based on the current estimate. The operation of trains 740 m long must be ensured on the basis of the proposal for an EU Regulation on Trans-European Transport Networks.

128000 Ensuring sufficient capacities of motorway rest areas

The motorway network is struggling with an insufficient capacity of motorway rest areas, especially for long-distance freight transport, which has a negative impact on traffic safety, as truck drivers have to observe regular safety breaks and are currently forced to park their vehicles in unauthorized places. So drivers have to choose between two traffic offences. The package contains projects under preparation. This list may not be complete, it will be specified based on a policy concept of rest areas, developed by the Road and Motorway Directorate.



3 Prioritization of the clusters

In contrast to TSS 2, the prioritization is determined multimodally, and not for each type of transport infrastructure separately, because this way it is possible to assess synergies arising from interdisciplinary cooperation. The clusters are prioritised based on a multi-criteria analysis described below. The set of criteria and criteria weights were discussed by an external team of experts, the resulting score was determined on the basis of the average and median of the proposals made by each of the experts.

3.1 Description of criteria for multi-criteria analysis

As it is necessary to respect the principles of the European and national transport policy, the transport system must be viewed as a coherent multimodal system, and the principle of Do No Significant Harm must be considered. The cluster rating is set for all modes of transport together. The transport infrastructure must also be developed so as to meet the parameters of transport infrastructure that enable the defence and security of the state (military transport).

The transport infrastructure development projects are prioritised at the cluster level, as the completion of continuous transport routes is of decisive importance. Therefore, the evaluation is not made at the project level. The prioritization of clusters is the basis for planning the process of construction preparation, not just the construction itself. Appropriate funds will be allocated for projects included in project packages, according to the respective time horizons.

Projects that are currently at a high stage of preparation are proposed to be implemented by 2030 automatically, as significant financial resources have already been spent on their preparation. Projects included in the implementation plan are those that have a valid planning decision.

3.2 Sets of criteria

The project clusters are evaluated using scoring according to criteria that are grouped into the following sets of criteria:

- Territorial importance
- Cluster functionality
- Environment
- Time-based accessibility
- Capacity, expected intensity
- Improvement of conditions for multimodality
- Technology
- The balance of the multimodal cluster development

3.2.1 Set of criteria: Territorial importance

Criterion: TEN-T core network

A cluster is part of the TEN-T core network according to the proposal for an EU regulation on trans-European transport networks. The core network interconnects neighbouring European metropolises, i.e. capital cities of Member States and agglomerations with more than one million inhabitants.

If the cluster is part of the TEN-T core network, a rating of 30 points is proposed, because the deadline for putting the TEN-T core network into operation is already set as the end of 2030. Otherwise, the score is 0.

Criterion: Extended TEN-T core network



A cluster that is part of the extended TEN-T core network according to the proposal for an EU regulation on trans-European transport networks is subject to the same principles as a cluster in the TEN-T core network, with the difference that the deadline for its completion is set for 2040.

If the cluster is part of an extended TEN-T core network, it is evaluated with 20 points, because the deadline for putting the extended TEN-T core network into operation is set as the end of 2040. Otherwise, the score is 0.

Criterion: Comprehensive TEN-T network

The comprehensive TEN-T network connects all NUTS II regions to the TEN-T network and should connect all newly defined TEN-T urban nodes. Though there are exceptions among the urban nodes (in CZ, it is the Liberec agglomeration), the proposal for the Transport Sector Strategies includes the railway connection of Liberec in the direction of Prague in the comprehensive network.

The TEN-T comprehensive network is evaluated with 10 points, as the commissioning date set for it is only the end of 2050. Otherwise, the score is 0.

Criterion: Interconnection of metropolises – basic and auxiliary needs

The criterion is based on the requirements of the Regional Development Strategy 21+ with a focus on ensuring cohesion of the regions of the Czech Republic. The metropolises of the Czech Republic comprise the urbanized areas of Prague, Brno and Ostrava. They require a high-quality mutual connection and linkage to agglomerations of similar importance in neighbouring states. The linkage requires:

- connecting Prague to:
 - Brno
 - Ostrava
 - Dresden
 - München and Nürnberg
 - Wrocław
- connecting Ostrava to:
 - Prague
 - Brno
 - Katowice
 - Wrocław
- connecting Brno to:
 - Prague
 - Ostrava
 - Vienna
 - Bratislava

The criterion refers to basic and auxiliary needs, i.e. the provision of such an infrastructure that enables a high-quality connection by means of a single motorway route, or a conventional railway line.

The score for networks of basic needs is 50 points. The importance is given by the necessity to provide for these backbone relationships as the most important relationships on the Czech transport network. The importance is also strengthened where the score for this criterion is added up with the score for the TEN-T criterion. Auxiliary needs are evaluated with 15 points. If the cluster is not part of a metropolitan connection, the score is 0.

Criterion: Infrastructure for freight transport



The criterion is focused on the specifics of freight transport, where the main route does not have to lead directly to the metropolis or agglomeration and may bypass them. Strategically important industrial zones can be built anywhere in the territory and it is necessary to ensure their multimodal connection.

The criterion applies mainly to rail and water transport, with regard to European goals in the field of multimodality, energy savings and climate protection. Another reason is that the design of the railway network deals with passenger and freight transport separately. Priority is given to clusters that provide for:

- backbone routes for freight rail and water transport (50 points)
- routes connecting strategically important industrial zones outside the backbone main routes (20 points).
- In other cases, the score is 0.

Points for this criterion and the TEN-T criterion are added up. On the contrary, the points are not added to the points for connecting metropolises and agglomerations, as this criterion aims to add points for routes that are important for freight transport but are not directed to agglomerations (to support the effort to divert freight traffic from populated areas).

Criterion: Linking ITI agglomerations to the catchment metropolises - basic and auxiliary needs

Another key type of connection of national importance is the linkage of ITI agglomerations to their catchment metropolises. From the point of view of creating equal conditions for the development of all regions, this is the most important type of connection, which is why it gets a high score (40 points). Auxiliary needs are evaluated with 10 points. If the link is also a connection of neighbouring metropolises, the score for this criterion is 0 (it does not add up with the criterion Interconnection of metropolises). This concerns the following links:

- Prague - České Budějovice
- Prague - Karlovy Vary
- Prague – Most (the Ústí n.L.-Most conurbation must be served in both parts due to the size and number of equivalent centres)
- Prague - Mladá Boleslav - Liberec
- Prague - Jihlava (conventional railway only)
- Brno - Jihlava (conventional railway only)

The other links are given by the connecting lines between neighbouring metropolises, so the score for this criterion is not added in such cases.

Criterion: Suburban relations of metropolises

High capacity requirements are placed on suburban sections around metropolises, even though the sections are shorter. This category only covers routes that are not part of the routes under the above criteria. These are sections that are key to sustainable urban mobility of the metropolis, and the score is set at 30 points. Otherwise it is 0.

Criterion: Interconnection of metropolises - target needs

This concerns clusters in directions where basic needs are already met, but where it is possible to achieve new benefits by increasing the parameters of the transport infrastructure. Points for this criterion and the TEN-T criterion are added up. This criterion covers clusters of high-speed lines or other infrastructure serving other intermediate areas, the score is 15 points, otherwise 0 points.

Criterion: Linking ITI agglomerations to the catchment metropolises - target needs



This covers clusters where basic needs are assumed to be met and where additional benefits can be achieved. This part includes clusters of high-speed lines, or other infrastructure serving other intermediate areas (an example is the second motorway connection between Prague and South Bohemia). Points for this criterion and the TEN-T criterion are added up, while they are not added up if the cluster also links metropolises. The score is 10 points, otherwise 0 points.

Criterion: Interconnection of neighbouring ITI agglomerations

The cluster is another element of the basic national network, interconnecting neighbouring ITI agglomerations. Points for this criterion and the TEN-T criterion are added up, while they are not added up if the connection is also part of a link to the catchment metropolis. The score is 10 points, otherwise 0 points.

Criterion: Important international connections outside the TEN-T and linkage of geographically remote regions

This type of connection is a supplement to the basic network of national importance and includes the following types of connections beyond the scope of the TEN-T:

- routes important for transit traffic that help to relieve congested routes around metropolises (15 points)
- routes ensuring important international connections outside the TEN-T to more important centres abroad excluding the metropolises (10 points)
- routes ensuring linkage to other important cities that are not part of an ITI and that are not on the TEN-T (e.g. Znojmo, Česká Lípa), (10 points).
- routes connecting geographically remote regions located behind a significant geographical barrier (e.g. Jeseník area or Šluknov Spur), (5 points).
- in other cases 0 points

Criterion: Suburban relations in ITI agglomerations

Higher capacity requirements are placed on suburban sections around agglomeration centres, even though the sections are shorter. This category only covers lines that are not part of the routes under the above criteria. These are sections that are key for sustainable urban mobility in the centres of agglomerations (10 points). Otherwise it is 0.

3.2.2 Set of criteria: Cluster functionality

The evaluation of clusters in terms of territorial importance must be supplemented by an assessment of their current functionality. As a rule, the most significant clusters, but also some less significant ones, may already be built, or they show varying degrees of functionality which must be evaluated. The cluster functionality is assessed with regard to basic needs, auxiliary needs and target needs (see below).

Criterion: Basic needs

These are clusters of traditional infrastructure that ensures that all ITI regions can fulfil their basic functions. They ensure a connection by conventional railway with competitive travel times and capacity, and a road connection of adequate capacity and routing outside the built-up areas of municipalities. It is necessary to support the fulfilment of basic needs of the regions and thus contribute to the conditions for their balanced development. Functionality is evaluated as follows:

- the basic needs are fulfilled - the cluster is fully functional and completed.
- the cluster is in the implementation phase, it must be completed, the route is under construction and the remaining sections are in a high stage of preparation and implementation will begin within



a short time horizon, the functionality of the cluster will be achieved in the short term, and the prioritization should only be applied to any follow-up measures of the auxiliary character. (0 points)

- the cluster is currently non-functional (missing link) and project preparation has not been started (30 points)
- the cluster is currently non-functional (missing link) and its preparation for implementation is currently underway (feasibility study has been carried out and the EIA process has been initiated for at least some of the projects), it is necessary to complete the processes as quickly as possible, including implementation, so that the number of projects under construction does not increase (25 points)
- the cluster is currently partly functional and project preparation has not been started (10 points)
- the cluster is currently partially functional. It is in the implementation phase, has been completed or the preparation of projects has started (the feasibility study is done and the EIA process has been started for at least some of the projects) (0 points)
- the cluster is not among basic needs (0 points)

Criterion: Auxiliary needs

Clusters beyond basic needs that further improve the situation in a partial way by removing bottlenecks that reduce speed or capacity or by offering additional services.

- the auxiliary needs are met - the cluster is fully functional and completed.
- the cluster is in the implementation phase, it must be completed, it will be included in a separate evaluation of clusters under construction. (0 points)
- project preparation has not started (5 points)
- the preparation of projects has started (the feasibility study is done and the EIA process has been started for at least some of the projects) or it is not a cluster of auxiliary needs (0 points)

Criterion: Target needs

Clusters providing further significant improvement in the quality of transport connections beyond the basic needs, which will increase the competitiveness of the respective region so that it can fulfil its "growth pole" function. This is, for example, the construction of high-speed railway lines or other roads enabling further expansion of the range of services.

- the target needs are met - the cluster is fully functional and completed.
- the cluster is in the implementation phase, it must be completed, it will be included in a separate evaluation of clusters under construction. (0 points)
- the preparation of the target need cluster has started (the feasibility study is done and the EIA process has been started for at least some of the projects) (15 points)
- the preparation of the target need cluster has not been started (5 points)
- it is not a target need cluster (0 points)

3.2.3 Set of criteria: Environment

Criterion: Greenhouse gas emissions

The cluster has a highly beneficial, beneficial, neutral or negative effect on greenhouse gas emissions. If electricity is to be used, the energy mix expected in 2040 is considered. The considered composition of the vehicle fleet is also that envisaged for 2040. For this reason, the score is reduced, as emissions will gradually decrease.



- Highly beneficial projects include direct electrification and projects ensuring greater use of rail transport in electric traction and water transport with alternative propulsion (10 points).
- Beneficial projects include projects ensuring greater use of non-electrified rail transport and water transport. This also includes projects ensuring greater fluency of road traffic, as long as they do not induce road transport at the same time (5 points).
- Neutral projects will not bring about a change in greenhouse gas emissions (0 points).
- Projects inducing road transport or shifting transport from rail and water to road, or increasing energy consumption in road transport, are evaluated as negative (-5 points).

Criterion: Pollutant emissions in urbanized areas

The cluster has a highly beneficial, beneficial, neutral or negative effect on emissions of pollutants in a populated area. If electricity is to be used, the energy mix expected in 2040 is considered. The considered composition of the vehicle fleet is also that envisaged for 2040. For this reason, the score is reduced, as emissions will gradually decrease.

- The highly beneficial clusters include direct electrification and clusters ensuring greater use of rail transport in electric traction and water transport; in road transport there are projects reducing emissions in densely populated metropolitan areas (10 points).
- Beneficial clusters include clusters bringing about greater use of non-electrified rail transport and water transport. This also includes clusters ensuring greater fluency of road traffic, as long as they do not induce road transport at the same time (5 points).
- Neutral clusters will not bring about a change in pollutant emissions (0 points)
- Clusters inducing road transport and/or shifting transport from rail and water to road, or increasing energy consumption in road transport, are evaluated as negative (-5 points).

Criterion: Energy intensity of transport

The cluster has a highly beneficial, beneficial, neutral or negative effect on energy efficiency of the transport system. If electricity is to be used, the energy mix expected in 2040 is considered. The considered composition of the vehicle fleet is also that envisaged for 2040. Energy efficiency is considered in the entire cycle from the energy source (including any extraction of fossil resources and losses during the extraction) to the propulsion of the means of transport, in the case of renewable and nuclear sources, it is considered from the production of electricity (not the efficiency of wind, photovoltaic or nuclear power plants). The benefits are calculated from propulsion efficiency, rolling and environmental resistance, taking into account traffic fluency and transport speed. Since energy savings will always be very important, the score for this area is increased.

- Highly beneficial clusters include direct electrification and projects ensuring greater use of rail transport in electric traction and water transport (30 points).
- Beneficial clusters include projects ensuring greater use of non-electrified rail transport and water transport. This also includes clusters ensuring greater fluency of road traffic, as long as they do not induce road transport at the same time (15 points).
- Neutral clusters will not bring a change in energy intensity (0 points)
- Clusters inducing road transport and/or shifting transport from rail and water to road, or increasing energy consumption in road transport, are evaluated as negative (-15 points).

Criterion: Noise pollution

The cluster contributes to the removal of old noise pollution in urbanized areas either directly (diverting traffic, effective anti-noise measures), indirectly (shift to alternative modes of transport), or is neutral in terms of



noise. Clusters with a positive effect on reducing the noise level are given 10 points, neutral clusters are given 0 points.

Criterion: Accident rate

The cluster contributes or does not contribute to the elimination of accident-risk places on the existing infrastructure.

- Highly beneficial clusters include projects enabling a shift to modes of transport with a lower accident rate (15 points).
- The cluster removes black spots (risky places) on the infrastructure (10 points)
- Neutral cluster (0 points)

Criterion: Landscape fragmentation

Beneficial clusters are aimed at reducing the impact of the existing transport infrastructure on landscape fragmentation and at increasing the use of rainwater to improve the water regime in the landscape and strengthen biodiversity. The other clusters built on a greenfield land always have a negative fragmentation effect despite the implemented measures.

- Clusters focused on reducing landscape fragmentation are given 5 points.
- Neutral clusters have 0 points.
- Clusters that increase landscape fragmentation get -5 points.

Criterion: Land take

- During its modernization, the cluster is routed in the same footprint, and thus has a neutral effect on land take (5 points).
- The cluster has a small impact on new land take (high-speed lines, expansion of existing roads, 2+1 projects without an additional accompanying road) (0 points).
- 2+2 roads with an accompanying road have a great impact (-5 points).

3.2.4 Set of criteria: Time-based accessibility

A detailed analysis of benefits and costs, based on an applicable methodology, is part of the feasibility studies of every cluster. However, the assessed projects and clusters are at different stages of preparation, and results are not available for all projects or clusters, moreover, the assessments were carried out at different times. Therefore, a simplified "strategic" assessment of all clusters is carried out for the needs of the strategy.

Criterion: Average speed of reaching centres using great circle distance

Time-based accessibility of the centres that are connected by individual clusters is an important qualitative indicator. But the decisive factor is not the average actual speed, but the speed related to the great circle distance of the centres. More points will be given to those clusters that currently have the lowest values. Clusters will be evaluated separately for relations between metropolises or between agglomerations and metropolises (1st group of clusters), and for relations between agglomerations (2nd group of clusters). The current situation is evaluated.

- Speed below 40 km/h = 20 points for the 1st group of clusters (G1), 15 points for the second group (G2).
- 40 – 49 km/h = 15 points for G1 or 10 points for G2
- 50 – 69 km/h = 10 points for G1 or 5 points for G2
- 70 – 89 km/h = 5 points for G1 or 0 points for G2



- 90 km/h and more = 0 points.
- Not relevant = 0 points

3.2.5 Set of criteria: Capacity

Criterion: Removal of bottlenecks

The cluster contributes to the elimination of the bottlenecks defined in Book 6, the cluster removes the capacity bottlenecks defined by the transport model. This means the removal of the causes of capacity bottlenecks (defects on short sections, intersections, pedestrian crossings, level crossings, separation of non-motorized traffic, removal of drops in speed on the railway in order to reduce energy losses, load-bearing capacity of bridges, axle load, clearance gauge etc.). Clusters contributing to the elimination of capacity gaps are evaluated with 20 points.

Criterion: Capacity match

The conformity of the forecast traffic intensities with the design parameters is scored on the basis of the outputs of Book 7.

- Clusters that show agreement between the design parameters of the cluster and the forecast intensities are rated 0 points.
- Clusters with a slight excess of the design parameters over the forecast intensities will get -10 points. This is the construction of motorways with future intensities below 14,000 vehicles / 24h or modernization of railway lines without ensuring sufficient demand for passenger transport or without the existence of freight transport.
- Projects with a high excess of the design parameters over the forecast intensities will get -30 points. This is the construction of motorways with future intensities below 10,000 vehicles / 24h or increasing the number of tracks on lines with little traffic (according to calculations of practical throughput).

In such clusters, the deduction of points can be solved by reviewing the design parameters.

3.2.6 Set of criteria: Improvement of conditions for multimodality

Criterion: Multimodal freight transport

This is to evaluate the contribution of the transport infrastructure cluster to multimodal freight transport (road sections connected to multimodal transport terminals, projects enabling the operation of 740 m long trains, projects enabling the smooth and reliable operation of freight trains (reducing the risk of delays and irregularities)). The score is 25 points.

Criterion: Multimodal passenger transport

This is to evaluate the contribution of the transport infrastructure cluster for multimodal passenger transport (road sections connected to passenger transport terminals, shortening of journey times on the railway to reach nodes in Integral Cyclic Timetable, optimization of the location of stops, etc.). The score is 15 points.

3.2.7 Set of criteria: Technology

"Smart" technologies are an integral part of the transport infrastructure, as they help to achieve international interoperability, optimize capacity, increase safety and provide services, e.g. ensuring that carriers, transporters and passengers are informed not only about ordinary but also about extraordinary events or traffic situation in real time. It is necessary to support the gradual building, reconstruction and modernization of the "digital" layer of the transport infrastructure so that the infrastructure is ready for the introduction of



automation in the transport sector. The purpose of the introduction of ITS and C-ITS is also to increase the safety of traffic participants, especially vulnerable ones, and to create equal conditions for the accessibility of the transport system or public space for all groups of the population, including people with reduced mobility, orientation or communication, senior citizens - according to their specific needs.

- Clusters that contain digital projects contributing to international interoperability or contributing to the setup of a coordinated cross-border procedure of transport infrastructure operators for organizational measures in cases of extraordinary events having an impact on international transport are given 5 points.
- Clusters that contain digital projects with significant benefits in terms of infrastructure capacity optimization are given 20 points, with partial benefits 5 points.
- Clusters containing digital projects that contribute to a significant increase in traffic safety are given 20 points, partial safety increase 5 points.
- Clusters containing digital projects that support the creation of equal conditions for the accessibility of the transport system are given 5 points.
- Clusters containing projects that lead to further development of other digital services for users are given 5 points.

3.2.8 Set of criteria: The balance of the multimodal cluster development

Each mode of transport fulfils specific functions, and in the conditions of the Czech Republic, all the defined multimodal clusters should develop road and railway infrastructure evenly. This criterion favours multimodal clusters that contribute to this even development:

- The implementation of railway or road infrastructure projects ensures the functionality of the multimodal cluster (currently, there is a significant difference in quality between the road and rail infrastructure in the cluster, the implementation will level this difference) 20 points.
- The implementation of railway or road infrastructure projects increases the functionality of the multimodal cluster (currently, there is a smaller difference in quality between the road and rail infrastructure in the cluster, the implementation will level this difference) 5 points.
- The multimodal cluster is functional (both types of transport infrastructure are developing roughly equally) 0 points.

3.3 Evaluation of the cluster prioritization

The results are shown in Annex K8T3, a clear summary by priority band is given in the *Cluster Ranking List* sheet.

- The first priority band contains the 305Z High-speed line (HSL) Prague – Poříčany cluster, the importance of which lies in the multiple functions it enables to tackle. It is a part of the TEN-T core network and it provides the necessary capacity for long-distance railway transport from Prague to the east even without further continuation of the HSL towards Brno. Thanks to the terminal in Jirny (Prague-East), it will be possible to connect long-distance transport to the Prague suburban area, including linkage to private transport. This will release capacity for suburban transport on the lines Prague – Kolín and Prague – Lysá n/L. The same line will enable the introduction of fast trains in the direction of Mladá Boleslav and Liberec at the required intervals, thereby freeing up capacity for freight transport in the direction of Kolín. For Prague's urban mobility, it is a key element of the transport infrastructure that will address the high regular commute from the suburban area to the capital, as the capacity of the current system of suburban transport is exhausted. This manifests in a significantly deteriorating quality of services and encourages a higher use of automobile transport on the outer cordon, which absorbs a large part of the capacity on the road and motorway network around Prague.



- The second priority band contains clusters 104S Completion of motorway D0, 302Z Conventional railway Velký Osek – Choceň – Ústí n/O, and 501Z Conventional railway Česká Kubice st. border – Plzeň – Prague. The D0 motorway is a critical missing section on the TEN-T core network, which should serve as a bypass for the transit of the capital. The Velký Osek – Ústí n/O cluster solves the exhausted capacity of a core railway route, which is currently a major obstacle to the development of freight transport, and at the same time solves the connection of the Hradec Králové agglomeration to the metropolitan area of the capital. The railway connection Česká Kubice - Prague is crucial because it is necessary to provide a second high-capacity electrified connection of CZ to the west where the Czech economy is largely oriented. Currently, there is only one such connection in operation, suffering from exhausted capacity on the German side, and that poses a high risk for the economic development of CZ, and directly threatens selected sectors, e.g. the chemical industry.
- The third to sixth priority band covers the railway connections of the TEN-T core network, which are supposed to connect the Václav Havel Airport, to create a backbone Moravian route connecting Brno with Ostrava, Olomouc and Zlín, and to meet the prerequisite for the development of the entire network in the form of building the Brno node. Furthermore, these connections will ensure the functionality of the backbone freight route of European importance in the southeast-northwest direction (the so-called right-bank line including the Krušnohorský Tunnel), which will increase the capacity of the railway connection in the direction of Dresden, allowing CZ to be connected to the Western European HSL network, and also speeding up a significant part of freight transport and calming the Elbe valley. Furthermore, this will support the connection of industrial areas to the electrified railway network. This band also includes the connection of the Mladá Boleslav and Liberec agglomerations to the Prague metropolitan area, linked to the newly emerging railway junction on the border of Germany and Poland in the vicinity of Zhořelec (there is a strong imbalance between road and railway infrastructure within the multimodal cluster).
- The seventh and eighth bands include the interconnection of the Czech and Polish motorway networks on the Czech side (D11) and the capacity increase of the Prague railway junction. The railway connection will improve between the Karlovy Vary agglomeration and the eastern part of the Ústí nad Labem - Chomutov agglomeration in the direction of the Prague metropolitan area, not only for passenger but also for freight transport (there is a strong imbalance between road and rail infrastructure within the multimodal cluster). There is also the motorway and road interconnection of the Czech and Slovak network in the North Moravia region (D49 / I/49) and other modifications for suburban and freight transport and its separation from long-distance transport in the vicinity of the Prague and Brno metropolitan areas and also in the vicinity of the Hradec Králové - Pardubice agglomeration.
- The ninth and tenth bands contain the completion of the second motorway connection within the TEN-T comprehensive network between Bohemia and Moravia (D35).
- The eleventh band includes the Poříčany – Brno HSL, which will significantly help to release the capacity of both the conventional lines and a significant part of the motorway network.
- The twelfth to fourteenth bands include the completion of the motorway connection from Brno to Austria, the further continuation of the HSL between Prague and Dresden and the northern bypass of the capital for freight rail transport. This also includes the completion of the D3 motorway between Prague and České Budějovice.
- The fifteenth and sixteenth bands include the completion and capacity increase of the D1 motorway between Brno and Ostrava (there will be two parallel multi-lane motorway-type roads in operation



between Vyškov and the Polish state border). This band covers the last part of the HSL from Prague to Dresden, the completion of the 4th transit railway corridor and the Elbe-Vltava TEN-T waterway.

- The seventeenth and eighteenth bands include the capacity increase and upgrade of the new TEN-T road sections in the Ostrava metropolitan area, and the capacity increase of the D11 motorway from Prague to Hradec Králové. The capacity increase of the suburban railway connection from the capital to the south and the construction of the HSL in the direction from Prague to Wrocław will only take place if the route is designed in a way that it will benefit not only passenger but also cross-border freight transport (the feasibility study has not yet been approved).
- The nineteenth band covers further increase in the parameters of the D5 motorway. Moreover, the parameters of the railway line from Brno to the Slovak border will be increased. According to the results of the feasibility studies, which condition the inclusion in this band, it also includes an important project for Brno's urban mobility, Brno's North-South railway diameter and a solution for the regional relations, suburban transport and the connection of the remote region of Znojmo by means of a new railway line (there is a strong imbalance between road and railway infrastructure within the multimodal cluster).
- The twentieth to twenty-second bands cover the completion of the I/43 and I/73 roads from Brno to the north, the road connection from the D1 motorway via Písek to Plzeň, which will at least partially transfer the transit from the D1 motorway to the D5 motorway. This priority band also includes the completion of the D7 motorway (outside the TEN-T), the connection of the Solnice industrial area to the electrified railway network and the construction of a new railway connection for suburban transport in the centre of the capital city of Prague (this cluster is conditional on the successful completion of the feasibility study process, so it has not been specified yet on the project level) and other.
- The 23rd to 26th bands include further increase of the parameters of the current routes of both the road and railway networks.
- Clusters belonging to the 27th - 50th band cover further improvement of some parameters of existing routes, improvement of parameters between neighbouring agglomerations and improvement of parameters to more important regions outside the agglomerations, including cross-border connections.



4 Financial analysis

The aim of this part is to compare the possibilities of public budgets, including debt financing, with the needs of the transport infrastructure development, set out in Chapters 1 and 2. It is to identify the extent of the funding required to ensure that the needs of the development of transport infrastructure are met within the required time horizons, including the need to meet the European obligations to complete the TEN-T core network by 2030, to expand the TEN-T core network by 2040, and to implement other projects (the TEN-T comprehensive network and other national projects) by 2050. This financial balance is mainly intended to show the real connection between transport needs and possible financial resources so that it is possible to responsibly plan the preparation of transport infrastructure projects and their implementation in a long-term perspective.

Currently, approximately 900 transport infrastructure construction projects are being monitored in various stages of preparation. The projects were designed based on:

- legal obligations towards the European TEN-T policy,
- the need to ensure that transport accessibility of regions is balanced,
- the needs of the individual regions.

At the strategic level, it is not possible to assess the priorities of each project separately. For that reason, the projects are divided into two basic groups:

- Projects that are part of an integrated cluster (transport route);
- Specific or small projects that cannot be included in the clusters and are, therefore, grouped into project packages.

A total of 161 clusters and 28 financial packages of projects are defined in the road, rail and water transport modes. In order to implement all the clusters and packages described and to ensure the maintenance and repairs of the transport infrastructure, **a total of CZK 5.9 trillion must be secured in the period 2024-2050 in 2023 prices (CZK 3.2 trillion in 2023 prices for the period 2024 - 2033)**, i.e. **CZK 218 billion in the 2023 price level annually** must be secured on average for the STIF budget. Of which:

- CZK 2.8 trillion in 2023 prices is needed for the implementation of all clusters,
- CZK 2.0 trillion is needed for repair and maintenance,
- and CZK 1.1 trillion for the packages.

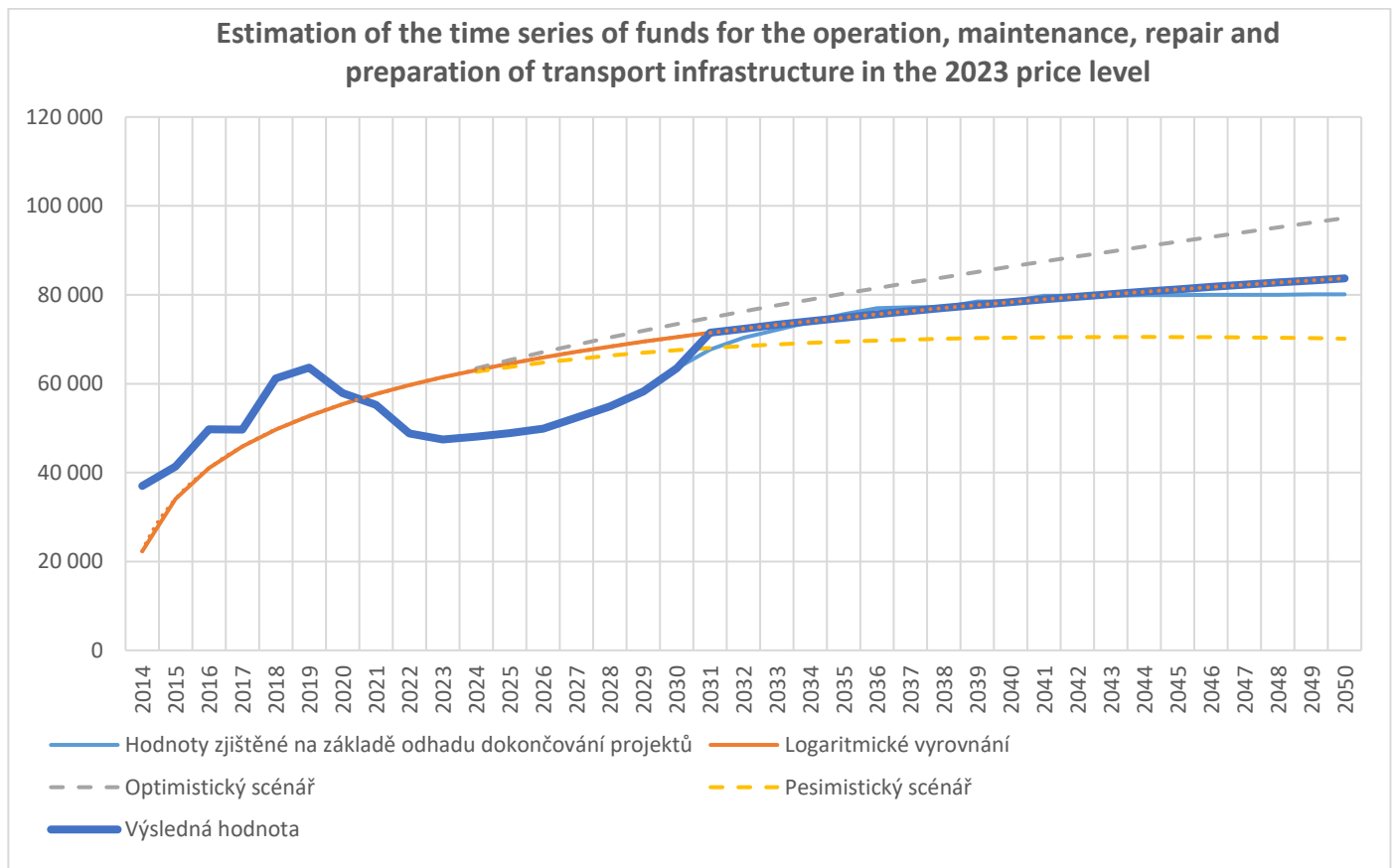
All scenarios presented below are modelled at the 2023 price level. The main reason is the need to compare expenses in individual years regardless of inflation. The same method is used to value the individual projects in feasibility studies and project outlines. For a better idea of the development of transport infrastructure expenditure, each scenario was supplemented with a conversion to nominal prices. The conversion uses inflation rate of 15.8% for 2023, inflation of 9.1% for 2024, 2.4% for 2025 and 2% from 2026 on, which is the official inflation target of the Czech National Bank.

The financial values of the clusters are determined as follows. The estimated total investment costs (TIN) of each project in the cluster are added up. The TIN of a project is determined according to its current state of preparation, from which the accuracy of the estimate is derived. The estimates are the least accurate for project ideas with a not yet completed feasibility study or other economic proof, where the estimates are based on unit prices. More detailed data are provided by feasibility studies presenting alternative route variants, or by the project outlines where the TIN is already partially specified. The final values are given by the result of the tendering procedure for the construction contract.



The financial values of repairs are determined based on the preparation of the Transport Sector Strategies, Phase 2 in 2011-2013. It has been found that insufficient funds were spent on repairs in that period. In that document, the Government approved the intention to gradually double the funds by 2025, which was carried out, even though the inflation rate reached in 2022 resulted in a reduction of the funds in real terms. It is necessary to follow up on this trend, taking into account the relatively large-scale development of the transport infrastructure, by further increasing this item with funds for the operation, maintenance and repair of the new projects that will be gradually completed. This item also includes non-investment funds for repairs and modernization of important bridges and tunnels. The calculation is made on the basis of values identified in projects being completed over time, taking into account whether the completed project replaces other existing transport infrastructure (e.g. by transferring the original road to the ownership of the region or municipality), or whether it is an upgraded or completely new infrastructure. It is evident that according to expenditure scenarios 1 and 2 the pace of opening new routes will be different, but despite this it is possible to estimate the needs shown in the following graph which also includes the smoothing of the time series with a logarithmic curve.

Figure 4 Funds for operation, repairs and maintenance

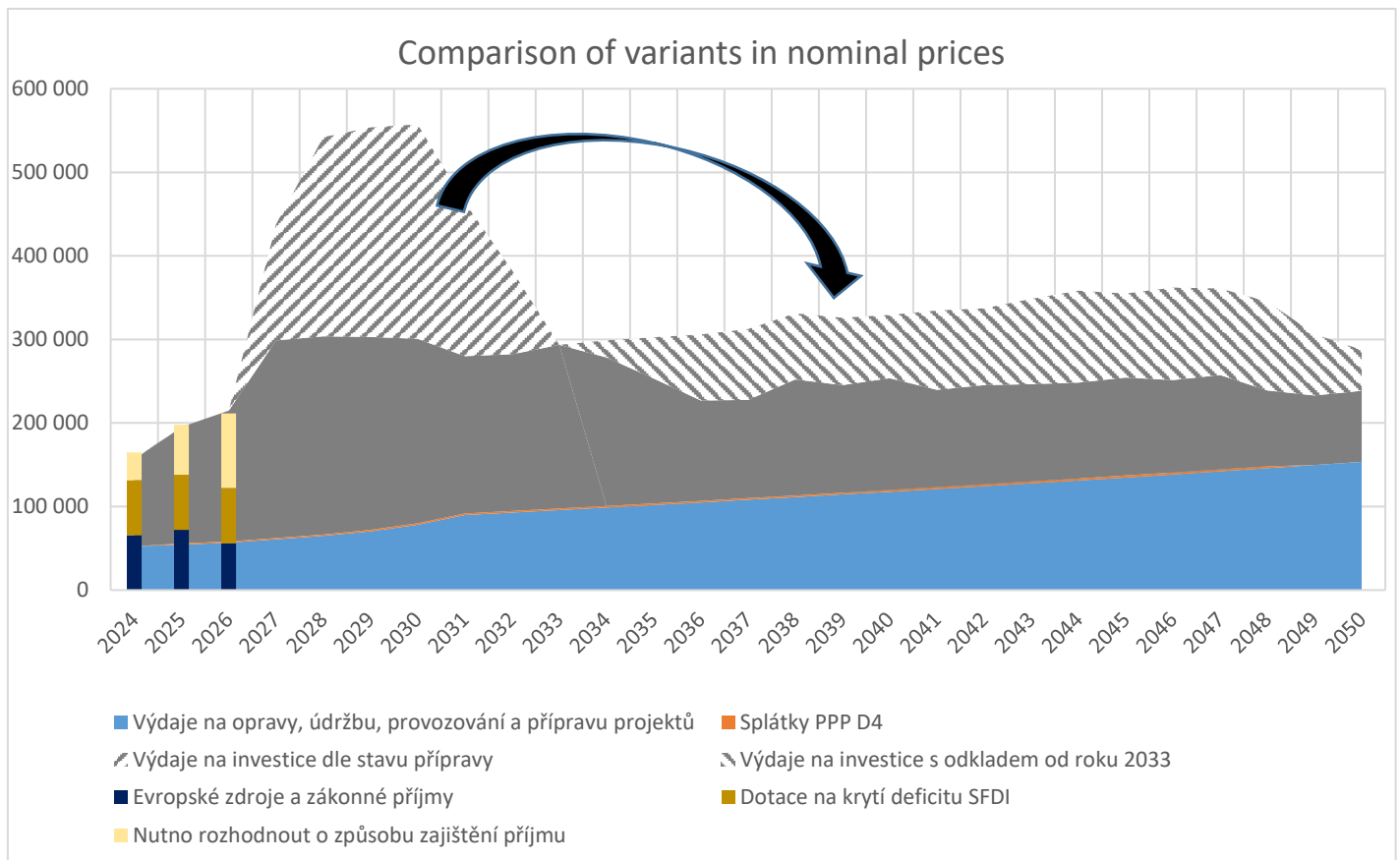
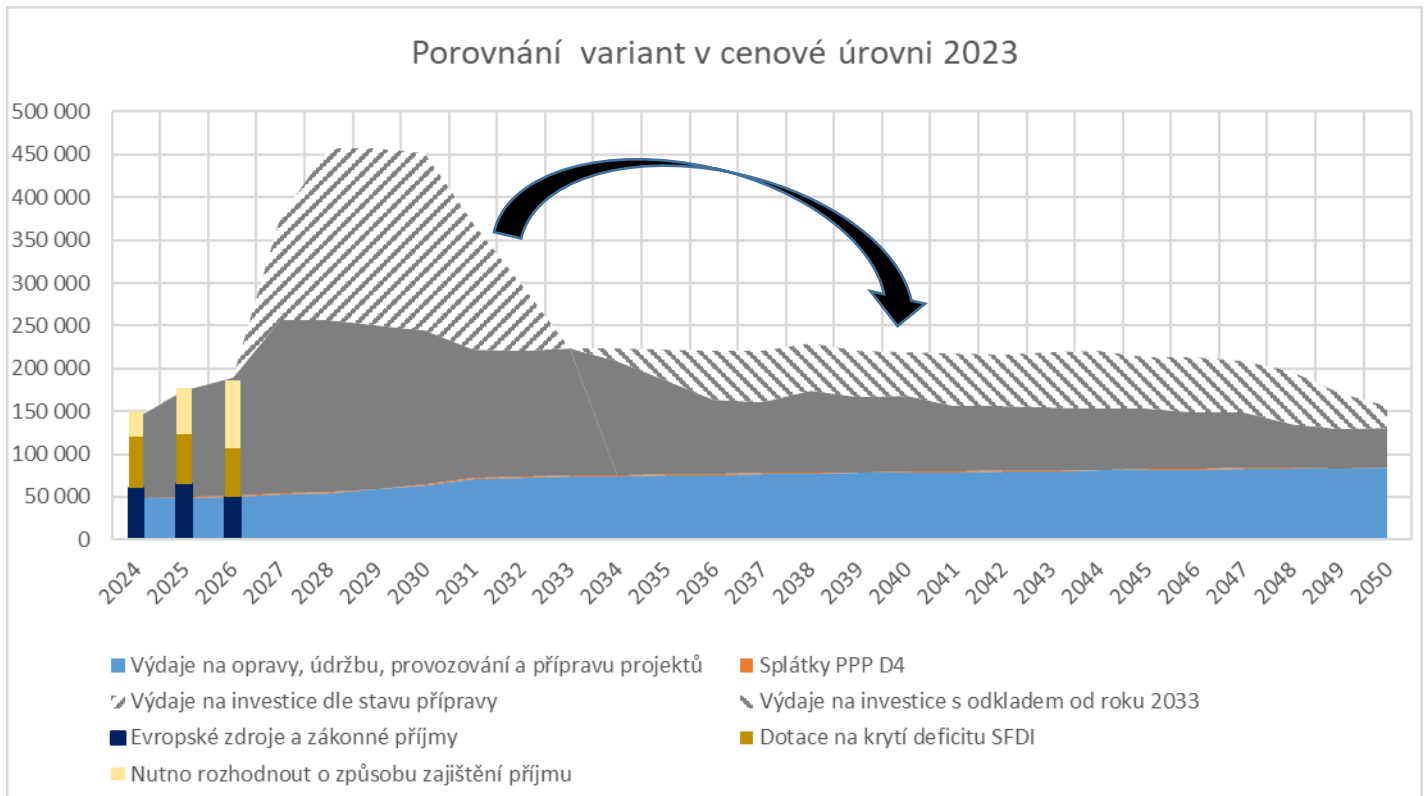


4.1 Expenditure plans

In recent years, great progress has been made in the preparation of transport infrastructure projects. It is a prerequisite for achieving the goals set out in the EU regulation on Trans-European Transport Networks (TEN-T), as well as for meeting the goals of completing the network of national importance which is intended to ensure the accessibility of all ITI agglomerations and other important regions and cross-border connections. The investment needs and spending possibilities are described in the following figure compiled in nominal prices for the period up to 2050, for which goals are set according to the TEN-T Regulation:



Figure 5 Investment expenditure analysis





The figure shows the financial coverage for investment and maintenance of transport infrastructure until 2026 (columns showing EU and statutory STIF revenues and subsidies to cover the STIF deficit). The light blue area indicates the financial needs for operability, operation, maintenance and repair of transport infrastructure and the preparation of new projects. The instalments of the PPP project of the D4 motorway are also shown (other instalments of potential PPP projects are not yet indicated).

The financial possibilities of the CZ public budgets are modelled at the level of CZK 300 billion per year, however, projects are prepared for the period up to 2033, from the point of view of simultaneous accumulation, in the value of up to CZK 550 billion per year (in the graph, the area *Expenditure on investments according to the state of preparation*, the left hatched area, for the period up to 2033, illustrates projects with a total value of CZK 1 trillion). If the transport sector's investment opportunities were at the level of approx. CZK 300 billion, it would be necessary to implement the selected prepared projects later, the selection would be made with regard to the fulfilment of the legal targets given by the TEN-T Regulation, and subsequently to the prioritization of the clusters.

The discrepancy between the pace of project preparation (fast) and the financial possibilities of the state (low) can be addressed through the involvement of a foreign or private capital of potential interested parties with the ambition to invest in transport infrastructure, and such expenses would be off-balance sheet in some cases. In such a case, it would be possible to financially saturate higher needs in the period from 2027 to 2033, and at the same time it would mean lower investment requirements after 2033 (see the graph area *Expenditure on investments, if these are not realized by 2033*, the right hatched area). However, it is also responsible to mention that even in that case, the state's expenditures will not actually decrease much in the period after 2033, because the public sector will pay approximately the same amount for projects from the period until 2033, which will have been financed by potential investors interested in such financing.

Overview of possible financial instruments

titul/finanční nástroj	Započítává se do deficitu státního rozpočtu	Započítává se do deficitu veřejných financí	Součást dládního dluhu/veřejného dluhu	Poznámka
Národní zdroj kryté dluhopisy emitované MF	Ano	Ano	Ano	
Modernizační fond	Ne	Ne	Ne	
Prostředky fondů EU (OP, CEF)	Ne	Ne	Ne	
Úvěry EIB poskytnuté z MF jako grant	Ano	Ano	Ano	
Úvěry EIB poskytnuté z MF jako úvěr SFDI	Ne	Ano	Ano	
PPP (mimobilační - greenfield projekty)	Ne	Ne	Ne	Pro mimobilačnost nutno přenést podstatná rizika zejména výstavby a dostupnosti. Přínos - větší efektivita výstavby
Model veřejného konsesionáře	Ne	Ano	Ano	Model například Rakousko (OBB), vede k lepšímu plánování výdajů, stabilitě trhu, vytváří "mandatorní" výdaj na dopravní infrastrukturu = chrání investice před projezením
Komerční úvěry pro SFDI/veřejného konsesionáře	Ne	Ano	Ano	
Dluhopisy SFDI	Ne	Ano	Ano	Ne
Nástroje pro snížení finančních nákladů				
Zelené dluhopisy emitované veřejným sektorem	Ano (MF), NE (ostatní)	Ano	Ano	V budoucnu předpokládána lepší cena než u standardních dluhopisů, nutná příprava projektů aby vyhověli kritériím
Záruky poskytnuté konsesionáři PPP	Ne	Ne	Ne	Jejich hlavním cílem je formou snížení rizikovitosti úvěru snížit finanční náklady pro konsesionáře a přenesené státu v platbě za dostupnost.

Ostatní možnosti

Provázání určených příjmů státu na výdaje projektů - například výnosy z povolenek



Currently, the construction of the D4 motorway is being successfully implemented through the public-private cooperation method. The government also approved the D35 construction project to be implemented through PPP, where the Ministry of Transport and the State Transport Infrastructure Fund are currently conducting a public call for tender to select a transaction consultant.

The Railway Administration, in cooperation with the Ministry of Transport and the State Transport Infrastructure Fund, also examined the possibility of implementing the construction of railway infrastructure, namely on the projects of the connection Prague - Václav Havel Airport - Kladno and construction of the 4th railway corridor in the Nemanice - Ševětín section. The Ministry of Transport wants to present the evaluation of these feasibility studies to the government for consideration and a decision on the next course of action in July this year.

At the same time, the Ministry of Transport wants to commission a feasibility study examining the suitability of parts of the Rapid Link 1/2 arm and a feasibility study examining the suitability of completing the missing sections of the D0 (structures 518, 519, 520), D3 (Central Bohemia part) and D55 motorways by means of PPP.

4.2 Determining the expenditure on project packages

Project packages are very diverse, some are binding based on European legislation. In development scenario No. 2, the package had to be reduced, in accordance with changing the time horizon of the implementation of named projects. The actual expenditure is shown in the tables under each of the financial scenarios.

101000 Bypasses and upgrades on class I roads classified as E, F, G

Bypasses on roads classified A - D are part of named projects, if they are known. For roads classified E – G, they are listed in this stand-alone financial package. Some of the bypasses in this package are listed by name, but some have not yet been decided on and some have not even been identified yet. It is a long-term task. The allocation of funds will be specified in cooperation with the Road and Motorway Directorate in a separate prioritization of bypasses on class I roads.

102000 Contribution for the renewal of class II and III roads

The responsibility for class II and III roads was handed over to the regional authorities in a situation where these roads were burdened with a large internal debt caused by long-term undermaintenance. To alleviate this situation, there is a programme to support regions in this area. The allocation of funds is set ad hoc every year within the individual STIF budgets, which is not entirely suitable for the regions and is an obstacle to planning the systematic maintenance and repairs of the roads. It is therefore important to establish predictable support for the medium-term horizon with a gradual reduction according to how the past debt will be gradually corrected, the amount of funds will depend on the chosen financial scenario. It is logical that the support should be gradually reduced in the medium term.

103000 Contribution to the modernization and development of urban public transport in electric traction

Urban public transport infrastructure in electric traction is key for sustainable urban mobility, the transport volumes in these systems are high. However, rail systems in particular are quite expensive for cities. It is necessary to support development projects from the national or European level based on the goals set in the sustainable urban mobility plans. Support for this area should be permanent, but only in those financial scenarios where it is possible.



104000 Support for private freight transport terminals, 105000 Development of state freight transport terminals and marshalling yards, 106000 Support for the development of private freight transport ports

Multimodal transport terminals are part of the transport infrastructure, including defined facilities within the TEN-T network. They are also part of urban logistics projects, for which cities included in TEN-T urban nodes will have the obligation to prepare plans for sustainable urban logistics. The Czech Republic will have the obligation to prepare a programme for the development of multimodal terminals in terms of territory coverage and capacity sufficiency. Therefore, a long-term programme to support this area will be necessary.

107000 Recreational boating - wharfs, 108000 Recreational boating - other projects

Recreational boating facilities are developed on the basis of a separate policy concept that will be used to determine the appropriate allocation with regard to the other transport infrastructure needs. This package will also have to be reduced in some scenarios, as the importance of these projects is lower compared to the other named projects and to the majority of projects included in financial packages.

109000 Support for the development of cycling infrastructure, 110000 Support for the development of barrier-free pedestrian routes

In terms of competences, cycle paths belong to the local government. However, municipalities are highly fragmented and economically weak, which is a significant obstacle to building a functional network of this infrastructure. In addition, the building of cycle paths started relatively late compared to Western countries, so support for these projects is necessary in the long term.

111000 ITS and C-ITS implementation support

ITS technologies are an essential part of newly built transport infrastructure. This package contains projects that will apply to the whole network (not related to a specific route) and are addressed in *the Strategy for the Development of Intelligent Transport Systems 2021 - 2027 with a 2050 perspective*.

112000 Support for the acquisition of airport security equipment for passenger check-in

Airports must meet security parameters of air traffic to ensure protection against illegal acts. This requires smaller but permanently provided amounts from the state.

113000 Railway infrastructure repair projects included in the project category, 119000 Modernization or optimization of other conventional lines

Railway infrastructure repair projects are non-investment projects, as they are primarily intended to ensure the operability of the existing infrastructure, the reason for their inclusion in the projects is the fact that the repairs improve the parameters of the line to a certain extent and so increase their competitiveness. So the projects are on the borderline between non-investment and investment (according to applicable legal provisions). By their nature, they are also very close to line optimization and modernization projects that are not included in defined clusters. These groups of projects will be financed on the basis of a separate policy concept for these projects, which will be prepared by the Railway Administration. Financial resources for this area will be determined with regard to the other priorities financed from the STIF. Many of projects concern the TEN-T network.

In terms of the other conventional lines not included in defined clusters, in some cases this concerns named projects, but the list is not definitive. The final prioritization of these projects and allocation of funds according



to the financial scenario will be carried out on the basis of a follow-up policy concept prepared by the Railway Administration.

114000 Grade-separated crossing with superior infrastructure

This is an item that will enable the repair of those facilities that were created as a result of the construction of new road and railway routes and were transferred to the ownership of self-government units or private entities (in the case of private roads). The new owners therefore incurred new costs that they could not influence. So it is necessary to monitor this item in the STIF budget in the long term.

115000 Equipping railway vehicles with ETCS units

This is to support carriers in connection with the introduction of ETCS. The support will only be provided until 2035.

116000 Railway level crossings and their replacements

There is still a high number of level crossings on the Czech railway network, the programme for their removal or safety increase will be determined by the Railway Administration.

117000 Station buildings and barrier-free access to railways, buildings of the Railway Administration

The Railway Administration has drawn up a schedule for the renovation of station buildings, including a solution to their energy intensity, the allocation of funds to the package will be made on the basis of this policy concept.

118000 Waterways outside the TEN-T

These are waterways used exclusively for recreational boating. It concerns the Baťa Canal and the Vltava river above the Slapy dam. The amount of funds will be determined on the basis of the projects being prepared, but with regard to the other priorities for the development of transport infrastructure.

120000 Implementation of ETCS and GMS-R on lines outside defined clusters, TCC, CTC, 121000 Change of the electric traction system, TPS performance, 122000 Electrification of lines outside defined clusters

Funds for these three areas must be determined together, as they are interconnected. Rail means of transport have a useful life comparable to the transport infrastructure and everything is linked to ten-year contracts for the operation of transport service lines. At the same time, it is an important part of electromobility, its implementation would make the railway a climate-neutral sector. A separate policy concept is developed for electrification (including so-called light electrification) and for the introduction of ETCS. These plans must be fulfilled. Electrification of lines included in project clusters is part of named projects. The implementation of these packages will be governed by a follow-up policy concept of simple electrification and by a separate plan for the conversion of the electric traction system, if they are not yet part of the named projects.

123000 Public power supply and recharging stations for alternative drives

It is one of the main priorities of the EU, the support is based on the National Clean Mobility Action Plan and the upcoming AFIR regulation, it is financed from European funds.

124000 Point defects on the road network and noise barriers on the existing road network



Point defects on the road network will be removed on the basis of a separate policy concept of the Road and Motorway Directorate.

125000 Railway Administration -Modernization of the technical equipment

The package covers investments defined by the Railway Administration.

126000 Railway Administration - Information technology

The package covers investments defined by the Railway Administration.

127000 Ensuring the operation of trains 740 m long

An estimate of the financial need to ensure the operation of trains with a length of 740 m is provided, until 2030 it is necessary to address mainly the railway stations on the TEN-T core network, any other measures to increase the capacity of selected line sections come into consideration after 2030.

128000 Ensuring sufficient capacities of motorway rest areas

The package includes investments defined by the Road and Motorway Directorate (RMD) on the basis of the follow-up Policy Concept of Rest Areas, the aim is to increase the number of rest areas and the number of parking spaces at rest areas. The relevant projects are monitored through the RMD.

4.3 Conclusions of the financial analysis

The expenditure scenarios show an imbalance between the funds needed for repairs, maintenance, operation, operability and design and property-law preparation for development projects on the one hand, and the expected development of the amount of total financial resources for transport infrastructure on the other. At the moment, in any case, it makes no sense to think about the implementation of other extensive sets of projects in the period up to 2050 beyond the scope of those already monitored. These other proposals for the development of motorway, railway and water networks are pointless from a financial point of view, as these projects would only come into consideration long after 2050, although from a transport engineering point of view, especially in the area of the motorway or an extended conventional railway network, they may appear beneficial. Such projects should be decided on by future generations who will take into account the developments of the entire transport sector as a coherent system. Arguments about securing at least a land reserve for these projects cannot be accepted, because according to the Building Act it is not possible to use a land reserve to block the territory for plans to be implemented in several decades.

The estimate of the total investment costs of the projects, as well as the estimate of the completion dates of individual phases of project preparation, is variable over time, moreover, in the long-term horizon, there is also a different degree of knowledge about the different projects. The expected implementation dates of the individual transport constructions listed in the document can be considered the best possible estimate reflecting the state of knowledge about their design and property-law preparation in the first half of 2023. Especially in a period longer than 3 years, the dates may shift, reflecting the real state of preparation of the constructions in terms of their discussion, permits, land acquisition or tenders for contractors or funding sources. For this reason, it is necessary to continuously update the dates of the possible start and end of construction. In the long-term model, we work with the state of knowledge about projects as of 30 June 2023, which is sufficient for long-term analysis.

The strategy's objectives will be gradually fulfilled by means of 3-5-year action plans that will be essentially developed on the basis of the STIF budget for the relevant year with a medium-term outlook, which also takes into account possible financial resources from European funds. In these action plans, the individual total investment costs and dates of the possible start of implementation will be specified according to the current



information. The selection of projects for the 3-5 year period will be based on the prioritization of clusters carried out in the proposal part, and it will be specified to the project level, as more detailed data on the state of construction preparation will be available for the short-term time horizon, and it will thus be possible in successive steps of the strategy implementation to make detailed links between the network development priorities and the real state of preparation of individual projects. The action plan will be prepared in broad cooperation with investors and professional unions, so that the needs of rail transport operators can also be taken into account, including the minimization of negative effects of construction on the service operation.

In railway transport, the mutual linkage between railroad parameters (line speed, linear electrification, tunnels, etc.) and railway vehicle parameters is fundamental. The conditions for vehicle access to the railroad are defined for individual lines in the Railroad Declaration (according to Section 33 of the Railroad Act, No 266/1994 Coll.). According to EU Regulation No 2016/2338, rail transport is undergoing a market opening process. The public transport ordering authorities (state, regional, municipal authorities) newly enter into contractual relationships with carriers, the subject of which is the use of newly purchased vehicles on a certain line for a period of up to 30 years. In order to protect state (Railway Administration) investments in the modernization of railway lines, to protect carriers' investments in the purchase of vehicles, as well as to minimize expenses from public budgets (state, regional, municipal) on public transport orders, it is necessary to ensure compliance between the parameters of lines and vehicles. The design of the action plans will take into account coordination of the technical parameters of lines and vehicles in order to make proper use of the railroad parameters by vehicles and to prevent damage due to the mutual incompatibility of vehicles and the railroad. In addition to the action plans, in accordance with the practice in a number of EU countries, the Railway Administration will also introduce for the railways in CZ an annually updated Railway Construction Plan with a perspective for the next 10 years, which will take into account, among other things, the proposal of priority constructions, discussed between the CZ Ministry of Transport, the Railway Administration, the Confederation of Industry and Transport of CZ and the professional associations ŽESNAD.CZ (Association of Rail Freight Carriers) and SVOD Bohemia (Association of Rail Passenger Carriers). These constructions will be financed preferentially through the STIF.

It is clear from the above that the Ministry of Transport together with its investors is preparing a high number of transport infrastructure projects that will significantly contribute to improving the mobility of people and the movement of goods within the Czech Republic, but they cannot be fully covered financially in the next 10 years from the state budget or from EU grants. Therefore, the Ministry of Transport is examining very carefully and responsibly the possibilities of alternative financial instruments that could be used. However, the possibilities of financing from European funds, as well as any loan (debt) financing of transport infrastructure projects, will be significantly affected by the taxonomy (the DNSH principle).

In addition to financial resources, also natural resources, especially building materials, must be secured for the implementation of transport constructions. The raw materials policy points out that this potential building material is gradually being depleted in CZ, and so it is necessary to strictly observe the DNSH principle in the area of the circular economy. The lack of building materials would lead to a sharp increase in prices, which would further deepen problems with financing of not only development projects of transport infrastructure, but would also increase the costs for repairs and maintenance of transport infrastructure.

The preparation of three-year action plans in the interim will take into account partial changes and necessary updates, e.g. in the area of project preparation, partial changes in priorities, etc. In case of complications in the preparation of any complex but very important transport infrastructure project, it is necessary to consider replacing it with another project, however, this does not mean giving up on the preparation of the original project.



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Action plans will be the starting point for the project preparation of investors. They are discussed with the Ministry of Transport, as a rule, 3 times a year. Moreover, the action plans are used to monitor the progress towards the goals of the entire policy concept.

4.4 Annexes to the financial analysis

Annex K10T2: Implementation scenarios of clusters



5 Terms and abbreviations

Adaptation	A measure of the ability of the transport infrastructure to face the manifestations of climate change
Agglomeration	A grouping of mutually close settlements where one dominates, i.e. a city with its surroundings (suburbs, satellite towns), or several comparably large cities merged into one continuous built-up area - conurbation
APA	Association of Private Agriculture
BC	Blending Call a combination of the Connecting Europe Facility (CEF) contribution and a loan from the European Investment Bank (EIB)
Bikesharing	Shared bikes
Point defect	A defect that can be localised at a specific location or a section of the road limited in length
Brownfield	Real estate (land, building, premises) that is underutilized, neglected and may even be contaminated. It is a relic of industrial, agricultural, residential, military or other activities
Carsharing	Shared cars
TCC	Central dispatch office
CEF	European programme for financing the construction and modernization of the trans-European transport network (TEN-T).
CEF2	European programme for financing the construction and modernization of the trans-European transport network (TEN-T) for the period 2021-2027
Central Commission	The Central Commission of the Ministry of Transport - a body with decision-making powers in matters related to the preparation of construction of transport (road, railway and water) structures
Target needs	Clusters providing further significant improvement in the quality of transport connections beyond the basic needs, which will increase the competitiveness of the respective region so that it can fulfil its "growth pole" function. This is, for example, the construction of high-speed railway lines.
C-ITS	Cooperative Intelligent Transport Systems
City logistics	All transport including flows of goods within a city, which serves the operation of sole traders, services and business activities. City logistics is defined as the legitimate setting of requirements in urban transport taking into account environmental requirements and economic framework conditions
CZ	Czech Republic
Dolphin	Equipment for mooring vessels or for navigation
TI	Transport infrastructure
DNSH	Do No Significant Harm, also translated into Czech as "do no significant harm to environmental goals" or "no significant harm principle"
Recharging points AC	The recharging point is designed for 11kW three-phase domestic charging.
Recharging points DC	Public fast charging stations up to 150 kW - direct current. These very fast charging stations provide direct current with an input of up to 150 kW.
Charging hub	A place with multiple fast charging points, able to charge 6 or more cars at a time



CTC	Centralised traffic control is a railway signalling system that remotely controls the interlocking plants in several railway stations simultaneously. These stations are usually located on one line or are part of one railway junction
voluntary associations of municipalities	voluntary inter-municipal cooperatives
TSS	Transport Sector Strategies
TSS2	Transport Sector Strategies - Phase 2
TSS3	Transport Sector Strategies - Phase 3
Dynamic charging	Based on a dynamic control system that intelligently distributes the available power between active charging points. It takes current consumption into account and checks that the reserved maximum is not exceeded. It also allows prioritizing the charging of a specific vehicle.
EGD	European Green Deal
EIA process	The assessment of the impacts of projects on the environment, regulated in CZ by the Act on Environmental Impact Assessment.
EC	European Commission
Electrification of the line	In this process, only the traction contact line will be installed without major modernization of the line. It will enable the operation of electric trains.
END	Environmental Noise Directive
ERTMS	European Rail Traffic Management System It is implemented by the countries of the European Union, together with Norway and Switzerland.
ESI funds	European structural and investment funds
ETCS	European Train Control System
NPP Temelín	Temelín nuclear power plant
FIDIC conditions	Contractual conditions for the construction of buildings and civil engineering works designed by the contracting authority
Fit for 55	The name is derived from the 55% target of reducing greenhouse gas emissions by 2030, as approved by the European Council in 2020.
GHz / Hz	Hertz (Hz; in full hertz, with lowercase h; pronunciation [herts]) is a unit of frequency in the SI system. It is a derived unit that expresses how many cyclic (regularly repeating) events take place in one second; the expression in basic units is therefore s ⁻¹
Gigaliner	A long truck carrying over dimensional cargo
GSM-R -	Global System for Mobile Communications – Railway, or GSM-Railway is an international wireless communication standard intended for railway applications. A sub-system of European Rail Traffic Management System (ERTMS), it is used for communication between train and railway regulation control centres The system is based on GSM and EIRENE – MORANE specifications which guarantee performance at speeds up to 500 km/h without any communication loss.
WTT diagram	Working timetable diagram (train traffic schedule diagram)
Hl.n.	Main station
Tractive unit (vehicle)	In railway terminology, the name for such a railway rolling stock vehicle that is capable of generating tractive power. The tractive power sets both this vehicle and any connected towed vehicles in motion.
Motorised private transport	Motorised private transport
ITS	Integrated Transport Systems
Intermodality/ intermodal transport	



Integration of public passenger transport systems both with private car transport (through parking lots "park and ride public transport") and with other types of transport (e.g. shared mobility such as car or bike sharing, active mobility, micromobility) with the aim of offering an alternative and minimize the use of private car transport. From the point of view of the operator of the road network, it is a suitable tool especially in cases where a solution to eliminating a traffic problem in the given territory cannot be found while maintaining the current shares of the modes of transport used. The societal benefit of intermodality lies in making transport more efficient – reducing costs and externalities while simultaneously maintaining or even improving travel times, the attractiveness of passenger comfort and other travel conditions, which, however, must offset the negative factor of changing the mode of transport.

Built-up area Summary designation for developed areas of settlements, or for built-up areas and areas intended for development. The undeveloped part of a settlement is referred to as rural zone.

Investment project

Focused mainly on the construction and purchase of real estate, the purchase of new machinery and technology, etc. It is an acquisition of tangible and intangible fixed assets.

IROP Integrated Regional Operational Programme

ITI Integrated Territorial Investments (ITI) are a regional policy tool, which in the 2021-2027 programming period contributes decisively to the implementation of the integrated territorial strategies of 13 agglomerations and metropolitan areas defined by the Ministry of Regional Development.

ITS Intelligent transport systems

Core city

The core of an agglomeration, from which the population and activities are deconcentrating (moving out) to the hinterland during the ongoing suburbanization process. The core city is the source of the suburbanization movements, the hinterland is their destination

Clusters They bring together named (specified) projects that are closely related and together contribute to building a continuous route with the required parameters.

Target clusters Clusters providing further significant improvement in the quality of transport connections beyond the basic needs, which will increase the competitiveness of the respective region so that it can fulfil its "growth pole" function. This is, for example, the construction of high-speed railway lines or other roads enabling further expansion of the range of services.

Clusters of auxiliary needs

Clusters that further improve the condition in a partial way by removing bottlenecks impeding speed or capacity, or offer additional services in the already implemented basic needs clusters or ensure the interconnection in an alternative way.

Clusters of basic needs

These are clusters of traditional infrastructure with parameters that enable all ITI regions to fulfil their basic functions. They ensure a connection by conventional railway with competitive travel times and capacity, and a road connection of adequate capacity and routing outside the built-up areas of municipalities.

Compensatory measures

For the purposes of TSS3, the measures are to create conditions for the preservation or improvement of objects of protection affected by the plan in the same location or to replace the location with another location in a similar scope and quality, and may include measures to compensate possible temporary losses caused to the object of protection.



Conventional railways

They have modernized conventional lines of higher parameters

Corridor / railway corridor

A main, modernized railway line usually with a speed of 160 km/h intended primarily for suburban, long-distance and transit passenger and freight transport

kV- kilovolt Multiplying prefix kilo- and the unit of electric potential and electric voltage, one thousand volts = 10^3 V = 1 kV

Mandatory expenses

Compulsory funds that the government must expend. They are mandatory because they are established by law or another legal norm, or result from other fixed contractual obligations of the state. Their amount cannot be changed in any way during budget planning.

MoT Ministry of Transport

Metropolis An important city that is the cultural, commercial or political centre of a certain area

UPT Urban public transport

Microregional centres/ Microregions

In the Czech Republic, associations of municipalities consist primarily of municipalities, secondarily of organizations.

Grade-separated crossing

An intersection where traffic streams cross at different heights[1] and the number of collision points is reduced. A grade-separated crossing allows straight-going vehicles, right-turning vehicles and left-turning vehicles to pass through the intersection without having to stop and give way to vehicles passing through the intersection in other directions

Missing link Missing connection

Local roads

Category of roads in the Czech Republic and Slovakia. In the Czech Republic, according to Section 6 of the Roads Act (No 13/1997 Coll.), local roads are a category of roads, in which the road administration authority includes publicly accessible roads that serve mainly local traffic in the territory of a municipality. According to the law, the owner is the municipality.

Mitigation Reduction of the harmful consequences of a phenomenon that can be long-term (e.g. mitigation of climate change)

MoRD Ministry of Regional Development

Modernising Generally bringing something up to date, e.g. by equipping it with the latest technology and introducing present-day production processes.

Small lock chamber Small lock chamber

MLSA Ministry of Labour and Social Affairs

Kindergarten Nursery school

MEYS Ministry of Education, Youth and Sports

Interchange Grade-separated intersection of roads

Multimodality/ multimodal transport

Public passenger transport provided jointly by one or more carriers in a specified territory within a so-called integrated transport system (ITS) on the basis of uniform transport, tariff, technical and technological conditions, including coordination of timetables, covering the types of public passenger transport in the given territory, such as metro (underground), trams, trolleybuses, buses, railways, urban and suburban bus services, cable cars and ferries.

Multimodal clusters



Multimodal clusters consist of simultaneous clusters for road, rail and possibly water transport and provide a multimodal connection of two or more important places. Multimodal clusters create multimodal corridors that are identical to the multimodal corridors established within the Trans-European transport network TEN-T and, based on the same principle, corresponding corridors of national importance are defined.

MoA Ministry of Agriculture of the Czech Republic

MoE Ministry of the Environment

Superior infrastructure

Transport infrastructure of higher importance at an intersection with local road and publicly accessible private road

NAP CM National Action Plan on clean mobility

Natura 2000 A system of protected areas consisting of two types of protected areas – Special Protection Areas and Special Areas of Conservation.

NCP Noise Control Programme

Non-investment project

A project related to so-called soft activities, such as education, retraining, provision of social services, organization of leisure activities, in this case it is a project for infrastructure renovation, etc.

New NPP Dukovany New nuclear power source at the Dukovany power plant

NCEP National climate and energy plan

SAO Supreme Audit Office

Extra large and heavy components Extra large and heavy component

Bypass/ Road bypass

A road that diverts traffic away from the residential area and speeds up the passage around it

Branch A place on a railway where a branch line is branching off the main line

Remote region

Also called a periphery, a term in geography that, within the polarization of space (that is, the division into the core and the periphery), refers to a territory that is distant in terms of location or importance, marginal or insufficiently integrated.

OPT II Operational Programme Transport II

MEP Municipality with extended powers

Regional office Regional directorate

pkm Passenger kilometre

UN United Nations

OTSKP Sectoral classification of structural members and works (issued annually with current prices)

CLR Contact line repair shop

RES Renewable energy sources

PaP Pre-arranged paths for rail freight transport

P&R Park and ride

Backbone network The main network to which access network is connected by means of a backbone connection

DD Design documentation

Noise barriers Noise abatement walls

Pillar of other needs



Focused on other projects of regional importance.

Pillar of regional needs

It ensures comparable transport infrastructure parameters for all regions, where the main factor should not be the size of the region or ITI territory but the current condition of the transport infrastructure

Pillar of obligations

The pillar ensuring the fulfilment of obligations towards the European TEN-T policy as of 2030, 2040 and 2050.

LC Lock chamber

Lock Lock

Growth pole A function within the framework of increasing the competitiveness of the respective region, such as the construction of high-speed railway lines or other roads enabling the further expansion of the range of services

PPP Public-private partnership

Project In this case, individual projects make up project clusters and project packages, see explanations below

Project package

Smaller projects of a similar focus that are not evaluated within clusters. Each project package has its own prioritisation of the projects contained in it, set out either in action plans of the Transport Sector Strategy or in a separate policy document. A certain amount will be set aside for each project package in each time period.

Project cluster

A comprehensive route, which consists of several consecutive named projects that are prepared separately.

Through-traffic road A traffic route passing through the centre of a village or town

ITI territory Metropolitan areas/ residential agglomerations with a concentration of more than 300,000 inhabitants, namely the metropolitan areas of Prague, Brno, Ostrava, Plzeň and residential agglomerations of the Ústí n/L-Chomutov, Olomouc and Hradec Králové-Pardubice, in accordance with the Regional Development Strategy of the Czech Republic 2014-2020.

Revitalization Restoration and renewal, rehabilitation of passenger stations and station buildings

RFC Rail freight corridors

RL Rapid Link

RMD Road and Motorway Directorate of the Czech Republic

WD Waterways Directorate

state enterprise state enterprise

SEC State Energy Concept

Marshalling yard

A station that is used for shunting cars or groups of cars between freight trains

STIF State Transport Infrastructure Fund

Smart Cities A concept of the operation of a city that uses digital, information and communications technologies in order to make more efficient use of the city's infrastructure and reduce energy consumption.

AC system Alternating current

BP Building permit

SEP State Environmental Policy of the Czech Republic



SK	Slovak Republic
Germany	the Federal Republic of Germany
MAMC	A Motorway Administration and Maintenance Centre that manages and maintains an entrusted section of a motorway and its components. The Road and Motorway Directorate maintains motorways through 18 MAMCs.
secondary school	Secondary school
St. border	State border
Feasibility study	It is the highest level of analysis of an investment plan or a business plan
Suburbanization	The growth of areas, so-called suburbia, on the outskirts of large cities. It is one of the many causes of urban growth. The city is expanding geographically, and suburban municipalities are becoming new geographical parts of the city. The beginning of a strong suburbanization phase dates back to the 1920s
Suburban area	Transformation of the social and physical environment from rural to (sub)urban Suburbanization can be viewed as a change in the distribution of the population and in the spatial structure of suburban areas, as well as a change in the way of life of "suburbanizing" residents
Suburb	Today, the suburb is part of a town or village and is located around its historical core.
SUMP	Sustainable Urban Mobility Plan - a strategic document designed to meet the mobility needs of people and companies in cities and their surroundings in order to improve the quality of life, which properly takes into account the principles of integration, participation and evaluation.
SEL	Socially excluded locality
SVOD Bohemia	Association of Rail Passenger Carriers
Railway Administration	Správa železnic, state organisation managing state-owned railways
t	Tonne
Route	Completed functional unit, of which the the project is a part
LTE Technology	Long Term Evolution, in telecommunications, is a technology for high-speed data transmission in mobile networks, the characteristics of which are close to the requirements for 4G networks
TEN-T	Trans-European Networks - Transport
Terminal / Transport terminal	Any place where cargo (goods) or people enter or leave the transport process or are otherwise transferred. The terminals represent the basic points through which the substrate passes during its own transportation. Terminals are mostly equipped with specific transport facilities.
Freight terminal	- see above
tkm	Tonne kilometres
TPS	Traction power supply system
Transit traffic	Traffic that passes through a territory that is not its origin nor destination
Trimodal	connecting road, rail and water transport
TRC	Transit railway corridor
Private road	



In the Czech Republic, according to Section 7 of the Roads Act (No 13/1997 Coll.), private road is a category of roads that connect properties for the needs of the owners of the properties, or connect the properties with other roads, or enable access to agricultural and forest land.

Planning decision	Planning decision
incl.	Including
VD	hydraulic structure
PT	Public transport
PLC (VLC)	Public Logistics Centres
HV/EHV	High voltage/extra high voltage
HSL	High-speed lines
VTP	Public terminals and ports
Vltava waterway	Vltava waterway
WiFi	Wireless networks that are commonly used for local networking of devices and for accessing the Internet, allowing nearby digital devices to exchange data via radio waves. These are the most widespread computer networks in the world, used worldwide in home and small office networks to interconnect desktop and laptop computers, tablets, smartphones, smart TVs, printers and smart speakers and connect them to the Internet using a wireless router, and in wireless access points in public places such as cafes, hotels, libraries and airports that provide visitors with Internet access for their mobile devices.
Basic needs	Completion of fundamental infrastructure that ensures that all ITI regions can fulfil their basic functions.
Station head	A part of the operating control area with track branching, in which the line track branches into other transport tracks (typically when entering a station)
Primary school	Primary school
ŽESNAD.CZ	Association of Rail Freight Carriers of the Czech Republic
r. station	Railway station