



INVESTMENT PROJECTS
RUSSIAN HIGHWAYS
STATE COMPANY

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CENTRAL RING ROAD OF MOSCOW REGION

A-113

I. DESCRIPTION OF THE "CENTRAL RING ROAD OF MOSCOW REGION A-113" (HEREINAFTER THE CRR) PROJECT

1. ROLE OF THE CRR IN THE LONG-DISTANCE TRANSPORT SYSTEM OF THE RUSSIAN FEDERATION AS WELL AS THE TRANSPORT AND LOGISTICS SYSTEM OF THE MOSCOW REGION

The Central Ring Road of the Moscow Region A-113 project was transferred by the Russian Federation to the trust management of Russian Highways State Company (hereinafter referred to as State Company) to fund its construction and effective toll operation on the principles of a public-private partnership (including with the use of extra-budgetary sources).

State support for the CRR project

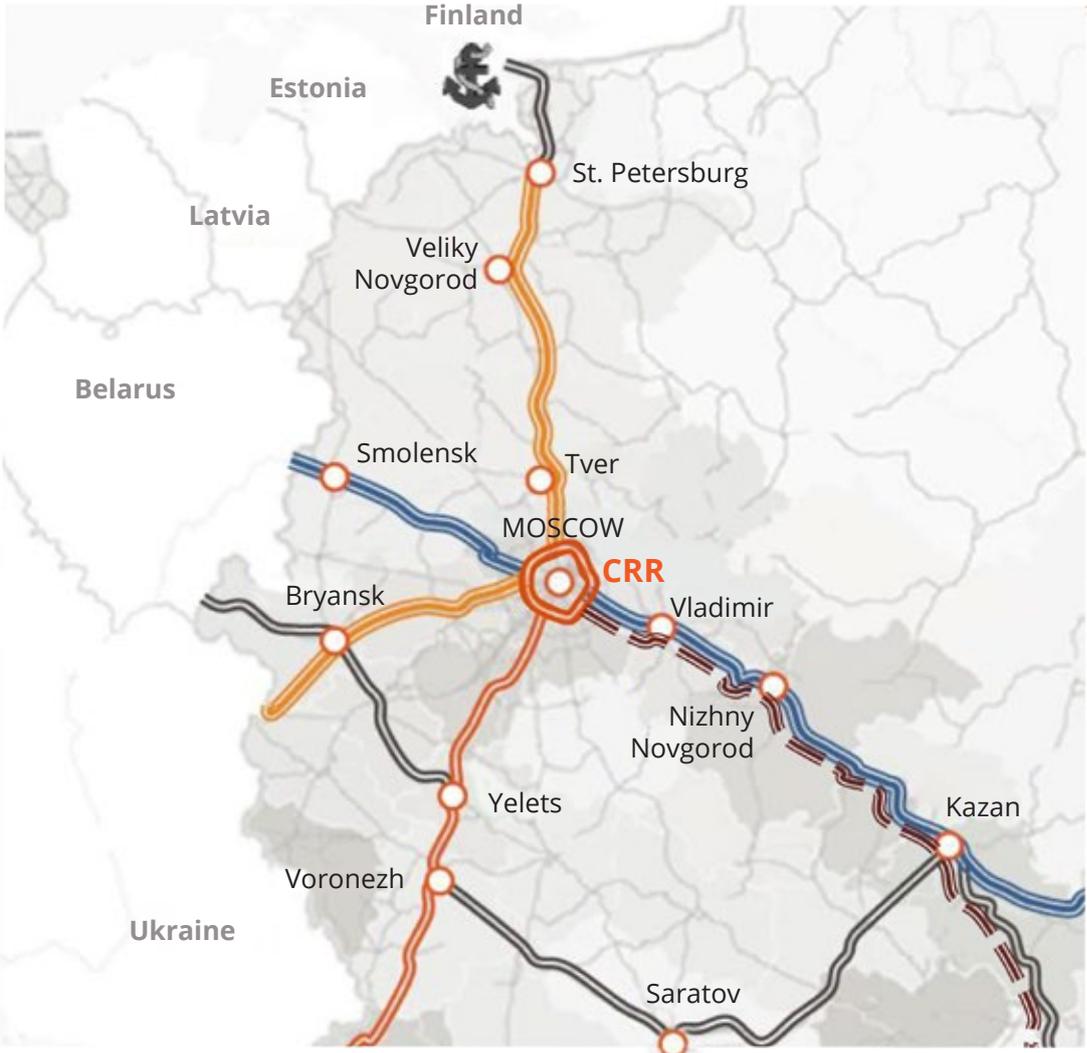
As part of the execution of Instructions No. Pr-1474 and No. 2028 of the President of the Russian Federation dated 5 July 2013 and 30 August 2013:

- *The CRR project was included in the list of self-sustained infrastructure projects implemented with the use of funds from the National Wealth Fund (NWF) and the volume of NWF funds for the project's funding was approved (Directive NO. 2044-r of the Government of the Russian Federation dated 5 November 2013).*
- *The maximum volume of funds attracted from the NWF is RUB 150 billion and the minimum return on investment of the NWF funds is CPI+1%.*
- *The network schedule of measures for the implementation of the CRR construction project was approved by the Chairman of the Government of the Russian Federation on 19 May 2017 with No. 3389p-P9.*

The CRR is a strategic road for the Russian Federation's road network. Today, the CRR is a key component in the establishment of the structure of the roads of the Moscow Transport Hub (MTH) and three publicly significant international transport corridors:

- Corridor 2: "East-West" London–Paris–Berlin–Warsaw–Minsk–Moscow Region (southern section of the CRR)–Nizhny Novgorod–Yekaterinburg.
- Corridor No. 9: "North-South" Helsinki–St. Petersburg–Moscow Region (western section of the CRR)–Southern Russia.
- "Europe–Western China" International Transport Corridor.

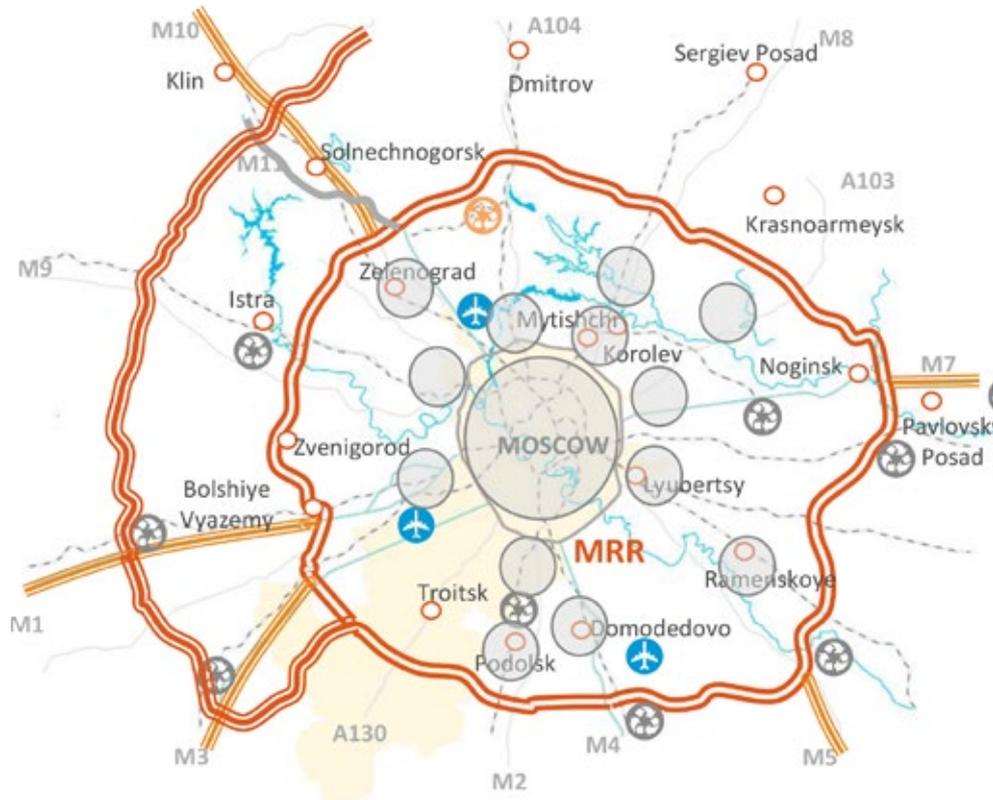
Current monitoring of traffic on the sections of these transport corridors within the MTH shows that traffic intensity exceeds the capacity by 1.5–3 times depending on the congestion of different sections.



LEGEND:

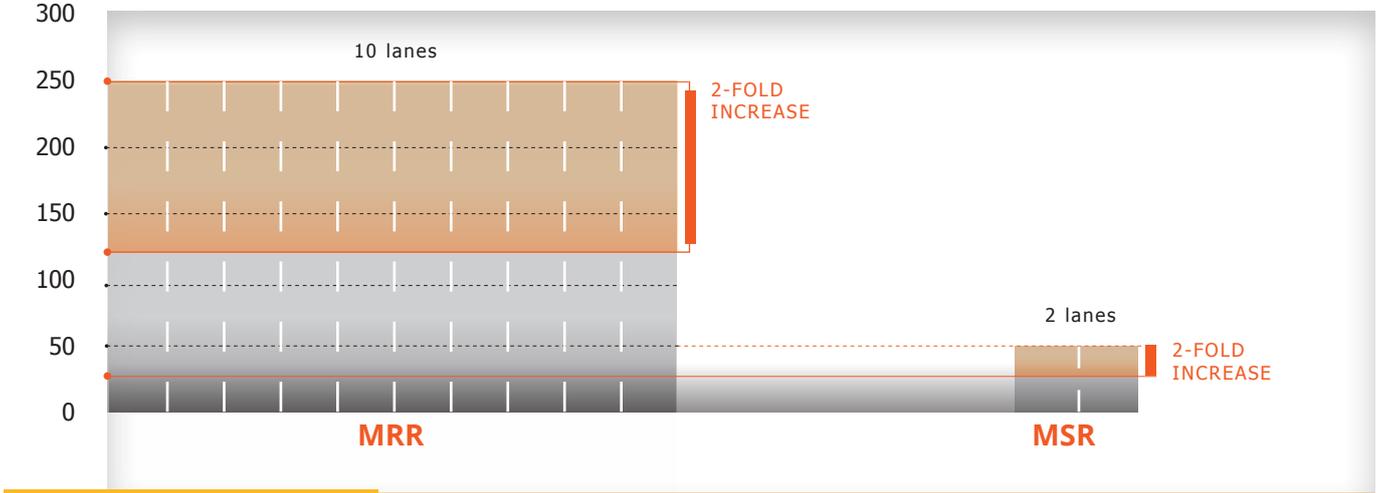
-  CRR
-  "East-West": London–Paris–Berlin–Warsaw–Minsk–Moscow–Nizhny Novgorod–Yekaterinburg (Pan-European Transport Corridor No. 2)
-  "North-South": Helsinki–St. Petersburg–Moscow–Kiev–Bucharest (Pan-European Transport Corridor No. 9)
-  Projected "Europe–Western China" ITC

Within the Moscow Region, the CRR is located between two road rings – the MRR (Moscow Ring Road) and MSR (A-107 Moscow Small Ring) whose capacity is also significantly lower than the actual traffic volume. Moreover, the MRR has imposed restrictions on the movement of heavy vehicles in the daytime.



- LEGEND:
-  CRR, full development
 -  ITC
 -  Railways
 -  Transport and logistics complexes
 -  Airports
 -  Main high population density areas

Traffic intensity on ring roads – MTH, '000 vehicles/day



LEGEND:
 - - - Maximum traffic capacity
 Traffic lane

The MRR, MSR, and MOR (A-108 Moscow Outer Ring) account for most of the traffic travelling on ring roads and cannot be effectively utilized as necessary due to their technical parameters (insufficient width of the road way, a large number of single-level intersections with roads and railways, and the considerable length of sections within populated areas). The traffic capacity of the MSR and MOR ring highways has been almost entirely exhausted, which leads to a decrease in traffic speed, congestion during peak hours, a high level of accidents and, as a result, the inefficient functioning of road transportation and environmental degradation.

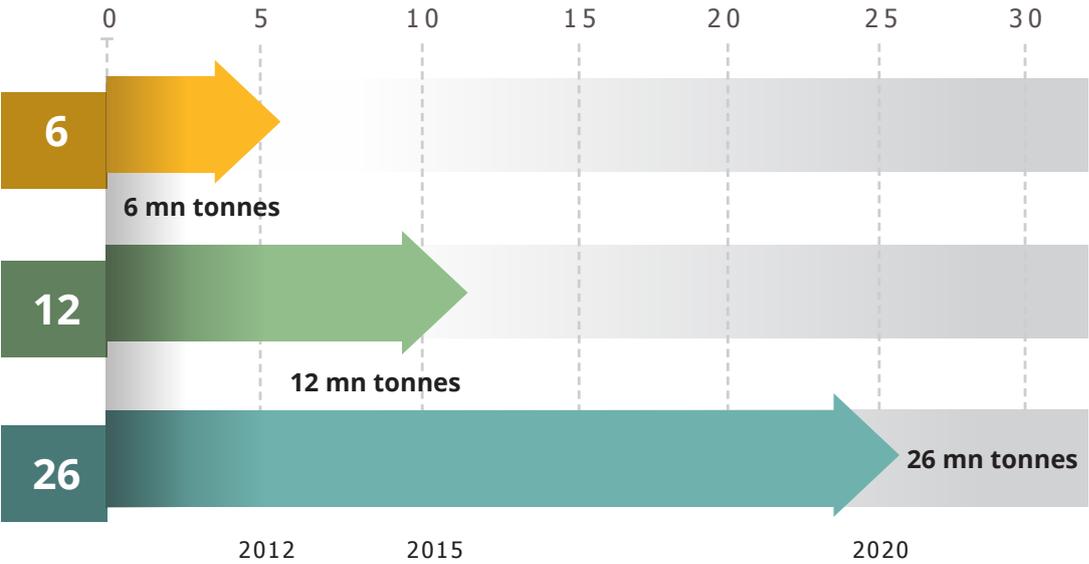
Meanwhile, existing forecasts say a significant increase in traffic intensity is expected on the road network in the Moscow Region.

THUS, IT GOES WITHOUT SAYING THAT A PORTION OF THE TRAFFIC FROM THE MRR AND MSR NEEDS TO BE REDISTRIBUTED TO THE CRR UNDER CONSTRUCTION, WHICH, IN TURN, WILL HELP TO SOLVE THE FOLLOWING IMPORTANT TRANSPORT, SOCIAL, AND ECONOMIC OBJECTIVES:

- to decrease the burden on radial exits from Moscow and the city's street network from heavy and transit transport traffic;
- to simplify the structure of cargo distribution, create infrastructure conditions to meet demand for the services of logistics complexes in the Moscow region by developing transverse ("direct main roads") transport links, and also "intercept" heavy trucks at distant approaches to Moscow with the subsequent re-sorting of goods and their shipment to other regions in small batches;
- to create conditions for the comprehensive development of the infrastructure and territories of Moscow and the Moscow Region as well as adjacent regions – Tver, Yaroslavl, Vladimir, Ryazan, Kaluga, Tula, and Smolensk based on the multiplier effect of the construction of the CRR;
- to intensify social, economic, interregional, and international links and increase the level of mobility of the population and market participants;
- to improve road safety and the quality of service for road users;
- to reduce the cost of transportation and the level of transportation costs for shippers;
- to mitigate the negative environmental impact by decreasing the burden on the advance sections of the Moscow Region's radial roads;
- to optimize budgetary expenditures during the construction phase by attracting extra-budgetary investments to the project as part of concession agreements;
- to optimize budgetary expenditures during the operational phase by attracting a contractor to spend funds on the highway's maintenance;
- to provide transport infrastructure for the implementation of comprehensive development programmes for part of the Moscow Region that are carried out without funding from the budget of the Russian Federation.

Thus, the Central Ring Road, by decreasing the burden on the transport arteries of the MTH, will ensure the public’s mobility in areas with increased density of the population and market entities within the perimeter of the CRR, ensure efficient transit cargo traffic through the territory of the Russian Federation, and become a key transport artery for ensuring the continuous movement of those involved in the transport and logistics process. Taking into account the redistribution of traffic flows within the perimeter of the CRR, the projected traffic intensity on the ring road sections is expected to reach more than 30 000 vehicles per day in the first years of the road’s operation. In addition, the projected traffic is expected to increase due to the development of adjacent territories around the CRR.

Growth in the volume of cargo handling at multimodal terminal and logistics centres of the Moscow region, mn tonnes



Major logistics centres on the most important rail and road routes are to be developed. In total, the Moscow Region has set aside 2500 hectares for the development of logistics centres and 4 200 hectares for the development of industrial and warehouse zones as well as the construction of technoparks and business centres. The integrated development of territories associated with the construction of industrial and warehouse facilities also envisages setting aside more than 4000 hectares of territory in the Moscow Region for multi-storey and low-rise housing construction.

Thus, the construction of the CRR will result in the formation in the Moscow Region's central zone of a new industrial and residential belt, which will lead to significant transformations in the resettlement network, the proportions of population distribution, and shuttle labour migration. Not only will there be a decrease in the flow of shuttle labour migration from the region to Moscow, but migration will also intensify between the settlements of the region (especially within the urban agglomerations of the second order). Thanks to the development of network components of transport infrastructure, a large proportion of labour migrants may be redirected to work in the settlements of the region as they do in modern developed agglomerations of the United States and Western Europe, i.e., the principle of organizing shuttle labour relations like a "suburban city" will be replaced by a "city area".

The macroeconomic effect (multiplicative effects) from the implementation of the CRR project, including in related and affected sectors of the economy that are connected to the implementation of the CRR project in one way or another, is estimated to increase to RUB 4-6 trillion (in real prices) in GDP/GRP growth.

2. IMPLEMENTATION OF THE CRR PROJECT

THE CRR PROJECT IS TO BE IMPLEMENTED IN TWO PHASES.

First construction phase.Period: 2014–2019

The implementation of the first phase of the CRR project involves the construction of Startup Complexes No. 1, No. 3, No. 4, and No. 5 of the CRR (hereinafter SC 1, SC3, SC4, and SC5 respectively) on the principles of a public–private partnership up to 2019, which consist of a road in the form of a closed ring passing through the territories of the Moscow Region and Moscow as regards the territories attached to Moscow in 2012.

Map of the first phase of the construction of the CRR



- LEGEND:
- CRR, first phase
 - ITC
 - Railways
 - Transport and logistics complexes
 - Airports

Key parameters of the first phase of the CRR

Length of road, km	339.1
Length of toll segments	4
Length of toll segments, km	251

In the first phase of the construction of the CRR, a 339.1-km four-lane high-speed road will be built with a design speed of 140 km/h. The road will be equipped with a modern automatic traffic control system, meteorological observation stations, helipads, emergency communication facilities, parking lots for drivers to rest, and road service areas.

The total cost of construction of the first stage of the CRR is RUB 313.3 billion. A uniform toll of RUB 3.36/km (in 2014 prices, excluding VAT) for road transport is to be introduced throughout the first phase of the road's construction.

Weighted average toll amount for all categories of transport

Vehicle 1	RUB 3.36/km
Vehicle 2	RUB 5.04/km
Vehicle 3	RUB 6.72/km
Vehicle 4	RUB 13.44/km

THE CRR PROJECT IS
TO BE IMPLEMENTED IN
TWO PHASES

**Second construction phase. Expected implementation period:
2023–2027**

The project to develop the startup complexes of the CRR (built as part of the first stage) is planned as part of the second phase of construction. The work includes plans to widen roadways and bridge structures in order to increase the number of lanes due to expected growth in the daily vehicular traffic in these areas as well as the construction of new and the reconstruction of existing interchanges that were built as part of the first phase.

In addition, the second phase includes the construction of the 121.6-km Start-up Facility No. 2 CRR, which passes through the territories of the Odintsovsky, Ruzsky, Istrinsky, Klinsky, and Dmitrovsky municipal districts.

The decision on the timeframe for commissioning of the second phase of construction will be taken after the first stage is commissioned on the basis of up-to-date data at that time on the volume of traffic and the observed increase in intensity. The procedure for the implementation of the second stage, including the structure of its funding, will be determined following approval of the relevant design documentation.

Key parameters of the second phase of the CRR

Length of road, km	530
Number of lanes	6–8

Map of the second phase of the construction of the CRR

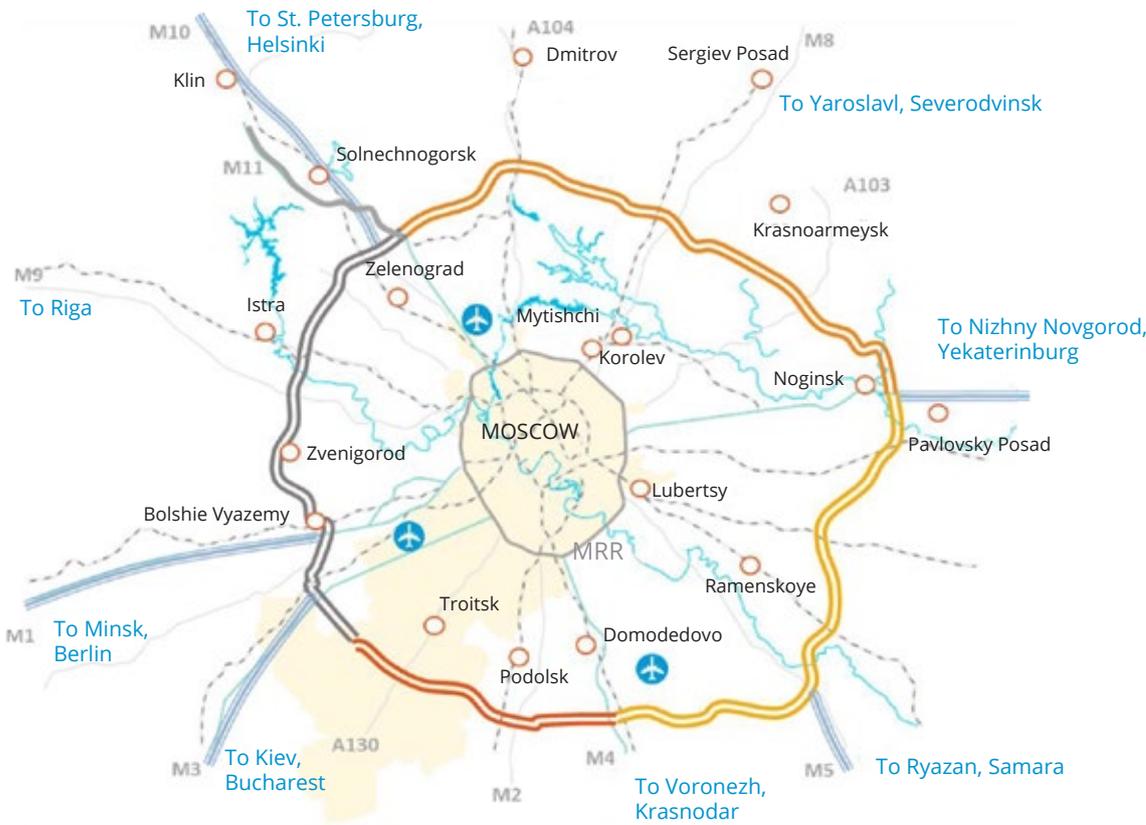


- LEGEND:
-  CRR, second phase
 -  ITC
 -  Railways
 -  Transport and logistics complexes
 -  Airports

Current status of the implementation of the CRR project

As part of the comprehensive implementation of the first phase of the construction of the CRR, several concession and investment agreements were concluded for the construction of the route sections, and an O&M contract is also being drafted that involves the use of a single operator for Startup Complexes 1, 3, 4, and 5 of the CRR.

Map of the startup complexes of the first phase of the construction of the CRR



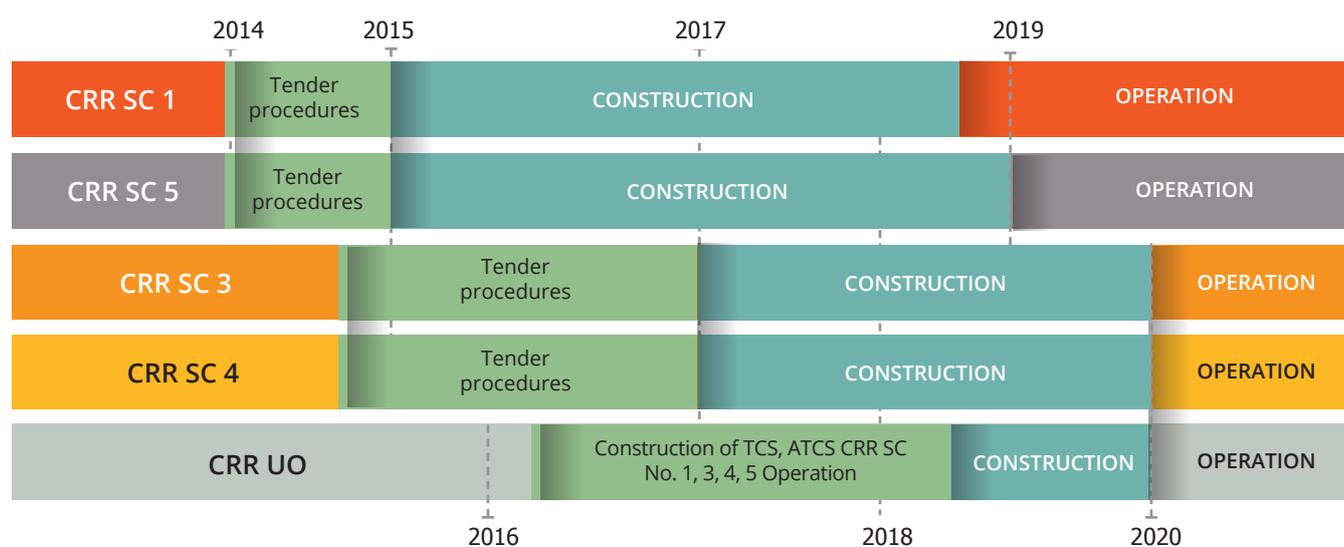
- LEGEND:
-  No. 1 (from M-4 Don to km 11 of A-107), 1st section
 -  No. 3 ((from M-11 Moscow–St. Petersburg to M-7 Volga)
 -  No. 4 (from M-7 Volga to M-4 Don)
 -  No. 5 (from km 11 of A-107to M-11 Moscow–St. Petersburg)

The main parameters of the startup complexes of the CRR are given in the table below

START-UP FACILITY	KM	RUB bn	CONTRACTUAL FORMAT	CONSTRUCTION PERIOD	STATUS
No. 1 (from M-4 Don to km 11 of A-107), 1st section	49.5	53.2	Long-term investment agreement	2014–2018	Implementation stage
No. 3 (from M-11 Moscow–St. Petersburg to M-7 Volga)	105.3	97.1	Concession contract	2016–2019	Implementation stage
No. 4 (from M-7 Volga to M-4 Don)	96.6	97.4	Concession contract	2017–2019	Financial closure
No. 5 (from km 11 of A-107 to M-11 Moscow–St. Petersburg)	76.4	47.9	Long-term investment agreement	2014–2018	Implementation stage
"Unified CRR Operation" project* and certain local measures as part of the CRR		17.7	O&M contract, construction contract	2016–2019	Project preparation

* Envisages the hiring of a Unified Operator during the operational stage of Startup Complexes No. 1, 3, 4, and 5 of the CRR.

Key development stages of the first phase of the construction of the CRR



- LEGEND:
- No. 1 (from M-4 Don to km 11 of A-107), 1st section
 - No. 3 (from M-11 Moscow–St. Petersburg to M-7 Volga)
 - No. 4 (from M-7 Volga to M-4 Don)
 - No. 5 (from km 11 of A-107 to M-11 Moscow–St. Petersburg)
 - Unified CRR Operation

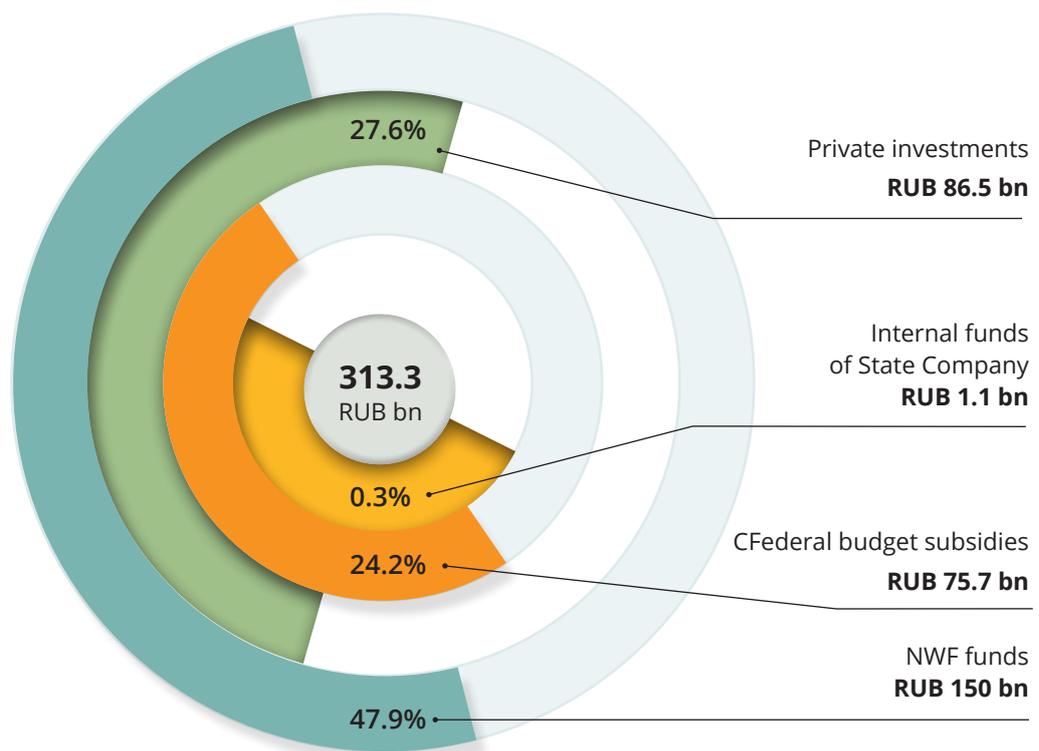
3. FINANCIAL STRUCTURE OF THE CRR PROJECT

THE FINANCIAL STRUCTURE OF THE CRR

PROJECT INCLUDES:

- federal budget allocations (federal budget subsidies) for the implementation of the investment project earmarked in an amount of up to 24.2% of the total volume of capital investments;
- loan financing up to 47.9% of the total volume of capital investments through the issuance of bonds of State Company purchased from the NWF;
- State Company own funds for the implementation of the investment project in an amount of up to 0.3% of the total volume of capital investments;
- funds from the participants in the investment project in an amount of up to 27.6% of the total volume of capital investments. The investment project envisages tenders to conclude concession agreements and long-term investment agreements. Winners of the competitions will attract their own and borrowed funds to co-finance the implementation of the investment project.

Financial structure of the CRR project



4. PROJECT RISKS

The project poses low risks, which ensures its attractiveness for private investors. The project envisages the optimal, balanced, and cost-effective allocation of risks due to its implementation among a private partner and the state.

LOW RISK

- The risks of the contractual system include the insufficient protection of the funds of investors and creditors, including the funds of the NWF, in the structure of the investment project's implementation under concession and long-term investment agreements. A factor mitigating this risk is the maximum protection of the funds of investors and creditors, including the funds of the NWF, which is guaranteed by payments by State Company from the tolls charged for travelling on the CRR. These payments will ensure the necessary return and the ability to service and repay the debt to the NWF, and concessionaires and contractors under long-term investment agreements will ensure the necessary return and the ability to service and repay the debt.

LOW RISK

- Technical risks associated with the implementation and subsequent operation of the investment project – risks of the inconsistency of the road's operational status with the required level, in particular, due to the significant costs of maintaining the functionality of the high-speed road. A factor mitigating this risk is the structure of the transaction, which ensures the risk is transferred to the operating company. Responsibility for the failure of the road's operational state to meet the required level is clearly defined in the concession and long-term investment agreements.

LOW RISK

- The legal structure of the investment project – the risk of the default of concessionaires and/or contractors under long-term investment agreements. A factor that mitigates this risk is the comprehensive verification of the creditworthiness of applicants during the tender stage as well as the fact that the activities of concessionaires and contractors under long-term investment agreements are ensured with guarantees from credit and insurance organizations.

MEDIUM RISK

- The competitiveness of the investment project and exposure to market risks – the risks of reducing traffic intensity significantly below the expected level are fraught with low income from the collection of tolls for the CRR. Factors that mitigate risk include measures such as the creation of provisions, an optimal tariff policy, and the use of mechanisms that encourage concessionaires and contractors to maintain high-quality services under long-term investment agreements.

LOW RISK

- Counter party risks of the initiator of the investment project – the risks of a lack of sufficient funding attracted by the concessionaires and/or contractors under long-term investment agreements. A factor that mitigates this risk is the fact that the most competitive possible tender is held and requirements are included in the tender documentation on the realistic nature of the financial proposal as well as requirements to provide sufficient guarantees for obtaining financing with conditions stipulated for its provision.

II. START-UP FACILITY NO. 1, SECTION NO. 1 (FIRST PHASE) OF THE CRR

1. LAYOUT OF THE SC 1 OF THE CRR

Start-up Facility No. 1 of the CRR involves the construction of a section of the CRR in the southeast of the Moscow Region from the intersection with the M-4 Don Highway to the intersection with the M-1 Belarus Highway.

The 49.5-km SC 1 of the CRR (96 km–146 km) passes through the territory of the Domodedovo urban district of the Moscow Region’s Podolsky District, the Troitsky Administrative District of Moscow, and the Naro-Fominsky District of the Moscow Region. The projected highway crosses the well-developed territory of the Moscow Region and passes in close proximity to the populated areas: Vakhromeyevo, Zinovkino, Dolmatovo, Turgenevo, Klimovsk, Luchinskoye, Dmitrovo, and Troitskoye.



- LEGEND:
-  Start-up Facility No. 1, first phase
 -  Start-up Facility No. 1, second phase
 -  Start-up Facility No. 5
 -  Start-up Facility No. 2
 -  Start-up Facility No. 4

2. MAIN SPECIFICATIONS OF SC 1 OF THE CRR

Main technical and economic parameters of the SC 1 of the CRR:

Road category	IA
Length, km	49.5
Design speed, km/h	140
Number of lanes	4
Width of the road way, m	2x7.5
Pavement	heavy-duty
Surface	asphalt concrete
Engineering structures	41
Including: – bridges	14
– overpasses	24
– flyovers	3
Multilevel interchanges	4



CRR
the bypass
Zvenigorod

Based on the volume of the projected traffic intensity for 2030, the CRR should have 6 traffic lanes on the section from Interchange No. 7 (M-4 Don to Interchange No. 26 (MSR) and 4 lanes on the section from Interchange No. 26 (MSR) to Interchange No. 10 (M-1 Belarus).

In order to conserve initial capital investments, Start-up Facility No. 1 of the CRR should be built in accordance with the regulations for IA category highways in two phases.

The first priority is to build four lanes with a dividing strip throughout the section, which will minimize the risk of demand for paid transportation services.

Upon completion of the full (projected) development of the road, the number of lanes is to be increased to six on the 49.5-km section from Interchange No. 7 at the intersection with the M-4 Don Highway to Interchange No. 26 at the turn-off to the A-107 MSR.

The decision on the timeframe for commissioning of the second phase of construction will be taken after the first stage is commissioned on the basis of up-to-date data at that time on the volume of traffic and the observed increase in intensity.

In order to restore existing links that will be disrupted during the construction of the CRR, the design documentation envisages the construction of overpasses over existing roads, the reconstruction of existing roads with the construction of overpasses with approaches to the intersecting roads, and the construction of local passages (parallel roads) with access to roads crossing the CRR at different levels. To ensure the possibility of access to the CRR from existing roads, the construction of multilevel interchanges is planned:

- Interchange No. 7 with the existing M-4 Don Highway on the SC 2421 + 16, which is located on the border of Start up Complexes No. 4 and No. 1. The structure of Start-up Facility No. 4 includes the construction of six exits and 8 exits in Start-up Facility No. 1;
- Interchange No. 8 with the M-2 Crimea Highway on the SC 2578 + 60.53 in full;
- Interchange No. 32 at the intersection with the A-101 Kaluzhskoye Highway on the SC 2807 + 22.90 in full;
- Interchange No. 26 with the A-107 MSR on the SC 2910 + 38.55 in full

The construction of Interchange No. 33 at km 125 at the intersection with the Podolsk–Kaluga Highway and its five exits is planned during the construction of the second phase of Start-up Facility No. 1 of the CRR.

During the first phase of construction, only an overpass over the Podolsk–Kaluga Highway within the body of the CRR is planned in conjunction with a bridge across Mocha River.

3. PROJECT FUNDING

Start-up Facility (construction phase) No. 1, the first construction section (first phase of construction) of the CRR, is the subject of the long-term investment agreement and includes the following envisaged by the design documentation:

- land plots within the easement area and structural components located on or under them (road way, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities);
- transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities).

Duration of the agreement: 23 years from the date of conclusion.

Project implementation stages: 2014–2037

- investment stage: 2014–2018;
- operational stage: 2019–2037

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

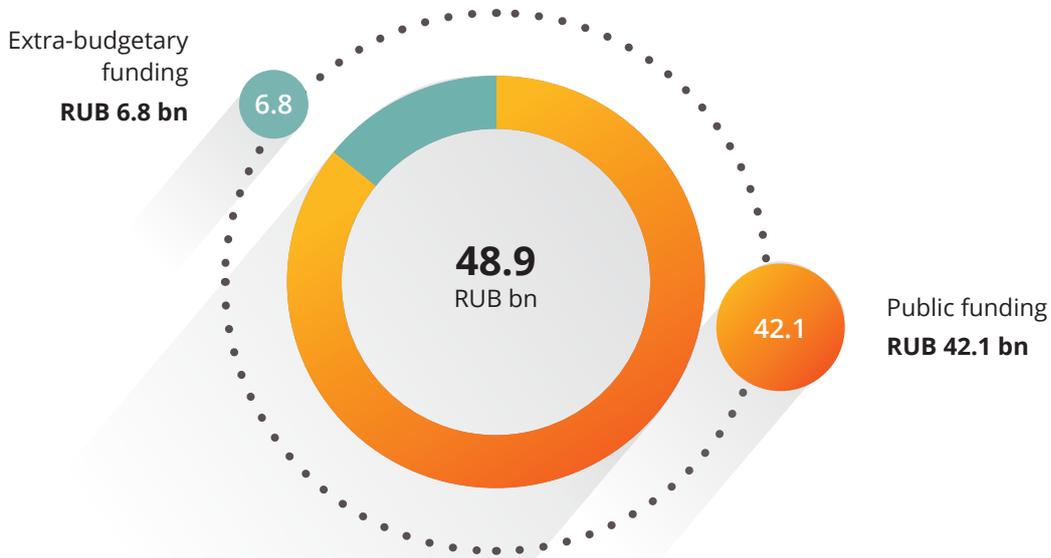
Winner of the tender: Stroygazconsulting LLC.

On 11 August 2015, an agreement was concluded on the transfer of rights and obligations under the agreement from Stroygazconsulting LLC to CROCUS INTERNATIONAL JSC.

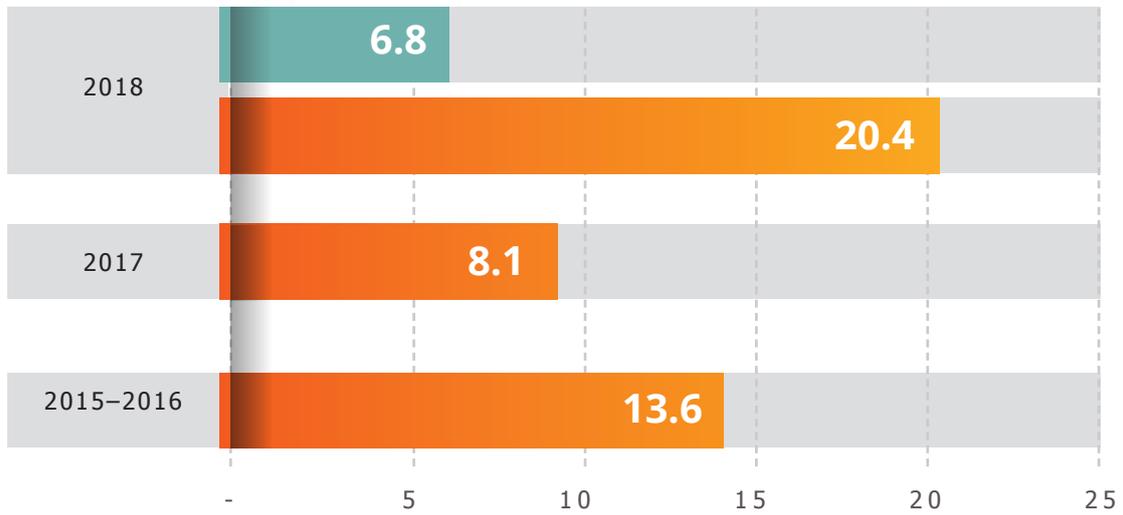
A long-term agreement was concluded with winner of the tender on the following terms:

- Cost of building the facility under the agreement – RUB 48.9 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by State Company – RUB 42.1 billion;
 - investment of the contractor – RUB 6.8 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual maintenance payment – RUB 5.8 billion excluding VAT in prices of the first quarter of 2013;
 - investment payments estimated taking into account the return on the contractor's investment, which includes the amount of the basic premium to inflation.

Funding structure of SC 1 of the CRR, RUB bn



Schedule of capital expenditure distribution by year, RUB bn



LEGEND:
■ Extra-budgetary funding
■ Public funding

Public co-financing for the construction of the highway is provided to the contractor based on the work performed by the contractor and accepted by State Company (work volume and cost bill).

Key financial parameters of SC 1 of the CRR

PARAMETER	VALUE
Cost of work under the agreement during the investment stage (RUB bn in prices of corresponding years including VAT):	48.9
– public funding	42.1
– contractor's investment	6.8
including:	
– borrowed funds	3.4
– internal funds	3.4
Deadline for the repayment of borrowed funds, years	14
Deadline for the repayment of internal funds, years	18
Average rate of return on contractor's investment, %	6.1
including:	
Floating rate of return on contractor's borrowed funds	1.5%+CPI
Floating rate of return on contractor's internal funds	5.25%+CPI

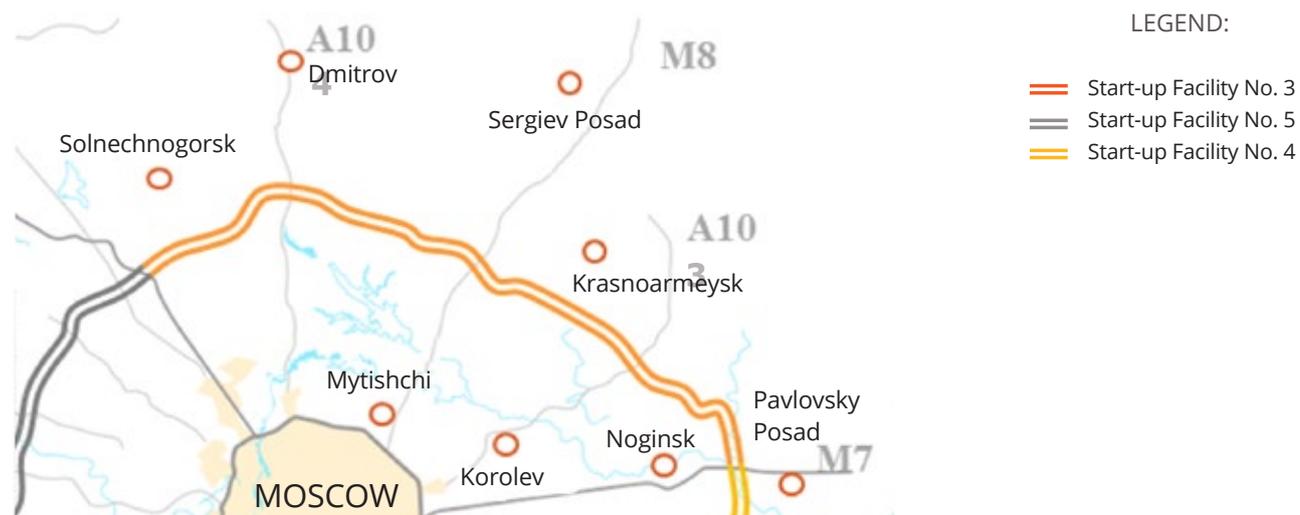
Payment under the long-term investment agreement during the operational stage is provided by State Company and covers the following expenditures of the contractor:

- the return and servicing of financing raised for the construction of the highway taking into account the return on internal and borrowed capital that has been invested;
- highway operating expenses.

III. START-UP FACILITY NO. 3 CRR

1. LAYOUT OF SC3 OF THE CRR

According to the design documentation, Start-up Facility No. 3 of the CRR is projected to start at the intersection of the CRR with the M-11 highway under construction and is 305 km long, while the end of SC 3 is at km 410 at the intersection with the M-7 Volga Highway (part of the interchange is included in Start-up Facility No. 3 and part of the interchange is included in Start-up Facility No. 4).



THE CRR ON THE SECTION OF START-UP FACILITY NO. 3 PASSES THROUGH THE TERRITORY OF 6 MUNICIPALITIES OF THE MOSCOW REGION:

- Solnechnogorsky Municipal District through which the CRR passes 5.82 km;
- Dmitrovsky Municipal District through which the CRR passes 30.41 km;
- Pushkinsky Municipal District through which the CRR passes 31.68 km;
- Shchelkovsky Municipal District through which the CRR passes 11.42 km;
- Chernogolovka Urban District whose boundaries the axis of the CRR does not cross;
- Noginsky Municipal District through which the CRR passes 26 km.

2. MAIN SPECIFICATIONS OF SC3 OF THE CRR

The future volume of traffic on the CRR is determined taking into account the significant average annual increase in traffic intensity on the Moscow Region's network of highways, the increase in the rolling stock fleet, the dynamics of population numbers and mobility, and the forecast for the socioeconomic development of the region taking into account the creation of conditions for the formation in the CRR zone of modern intermodal infrastructure integrated into the network of International Transport Corridors No. 2 and No. 9 that pass through the territory of the Moscow Region (construction of at least 3 million m² of new production and warehouse space and at least 10 million m² of space for infrastructure facilities).

In this regard, PC 3 of the CRR is to be built according to IA road standards in two phases:

- 1st phase – 4 lanes over the entire section;
- 2nd phase – increasing the number of lanes to 6 over the entire section.

The decision on the timeframe for commissioning of the second phase of construction will be taken after the first stage is commissioned on the basis of up-to-date data at that time on the volume of traffic and the observed increase in intensity.

Thus, the following geometric parameters were used within the first stage of construction:

Road category	IA
Length, km	105.3
Design speed, km/h	140
Number of lanes	4
Width of road way, m	2x7.5
Pavement type	heavy-duty
Surface type	stone mastic asphalt
Engineering structures, including:	72
– bridges	20
– overpasses	52
Multilevel interchanges	at least 4



Design documentation for PC 3 of the CRR envisages the construction of multilevel interchanges:

- Interchange No. 18 at the intersection of the M-11 Highway (km 46) with the CRR at km 305 in the Solnechnogorsky District. According to technical and economic parameters, the design used a half-cloverleaf interchange with one directional exit built during the second stage of construction;
- Interchange No. 19 is envisaged as a western exit to Dmitrovskoye Highway at the intersection of the Staro-Nikolskoye road of the A-107 MSR with the CRR at km 319 in the Dmitrovsky District. According to technical and economic parameters, the design used a half-cloverleaf interchange;
- Interchange No. 20 at the intersection of the A-107 MSR (eastern exit to Dmitrovskoye Highway) with the CRR at km 334 in the Dmitrovsky District. According to technical and economic parameters, the design used an interchange with 4 directional exits and the construction of 2 arrangement of 2 U-turn exits on the MSR;
- Interchange No. 21 at the intersection of the M-8 Kholmogory Highway with the CRR at km 359 km in the Pushkinsky District. Bi-level interchange in the form of a compressed half-cloverleaf and 2 exits connecting the CRR and MSR;
- Interchange No. 22 at the intersection of the Pushkino-Krasnoarmeysky Highway with the CRR at km 366 in the Pushkinsky District. According to technical and economic parameters, the design used a compressed half-cloverleaf interchange and the installation of traffic lights at the junction of the MSR and the Pushkino-Krasnoarmeysky Highway;
- Interchange No. 1 is located at the intersection of the M-7 Volga Highway with the CRR at km 410 in the Noginsky District. The intersection of the CRR with the existing M-7 Volga Highway envisages a half-cloverleaf interchange with traffic lights near the junction with the M-7 Volga Highway

3. PROJECT FUNDING

Start-up Facility No. 3 of the CRR of the Moscow Region is the subject of the concession agreement and includes the following envisaged by the design documentation.

Transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities, except for toll plazas).

Duration of the agreement: 30 years from the date of conclusion.

Project implementation stages: 2016–2046

- investment stage: 2016–2019;
- operational stage: 2020–2046

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

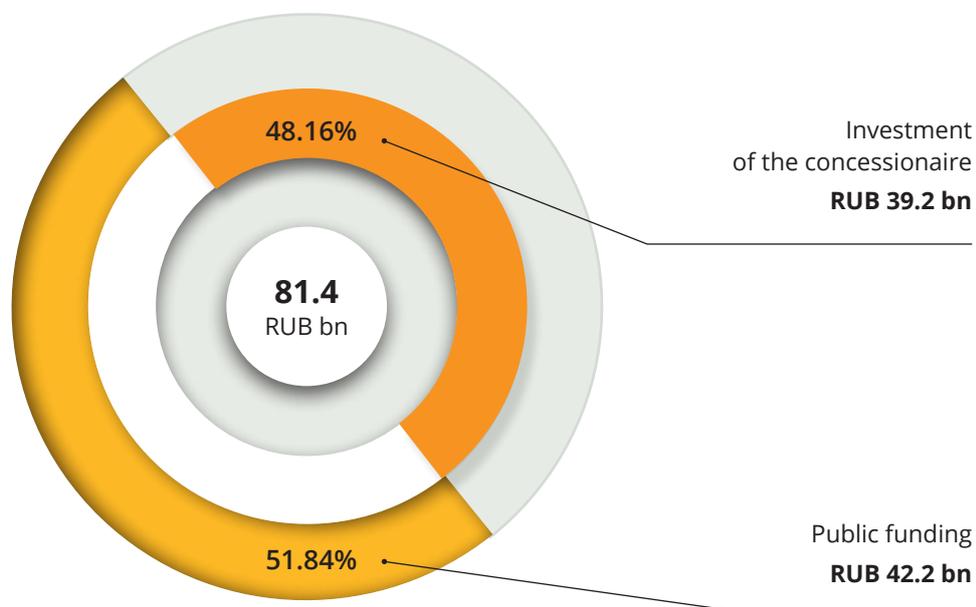
Winner of the tender: Highway Construction Corporation LLC.

A concession agreement was concluded on the following terms:

- Cost of building the facility under the agreement – RUB 81.4 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by State Company – RUB 42.2 billion;
 - investment of the concessionaire – RUB 39.2 billion.

- Public funding provided during the operational stage, including:
 - base amount of annual maintenance payment – RUB 22.5 billion excluding VAT in prices of the first quarter of 2014;
 - investment payments – RUB 67.6 billion in prices of the corresponding years, not subject to VAT.

Funding structure of SC 3 of the CRR, RUB bn



Public funding will be spent on the co-financing of the concessionaire's expenditures on construction and will be provided in accordance with the funding schedule using federal budget subsidies for the activities of State Company and funds from the NWF.

The concessionaire's internal funds will be attracted during the highway's construction period.

Key financial parameters of SC 3 of the CRR

PARAMETER	VALUE
Cost of work under the agreement during the investment stage (RUB bn in prices of corresponding years including VAT):	81.4
– public funding, RUB bn	42.2
– concessionaire's investment, RUB bn	39.2
Deadline for the repayment of borrowed funds, years	13
Deadline for the repayment of internal funds, years	27
Average rate of return on the concessionaire's investment, %	7.4
Including:	
Rate of return on concessionaire's borrowed funds	– during the construction stage: 12% p.a. (years 1–2), key rate of the CB RF +3.0% (year 3) – during the operational stage: inflation (CPI)+5.5%
Floating rate of return on concessionaire's internal funds	8.5%+CPI

Payment under the concession agreement during the operational stage is provided by the State Company and covers the following expenditures of the contractor:

- the return and servicing of financing raised for the construction of the highway taking into account the return on internal and borrowed capital that has been invested;
- highway operating expenses.

IV. START-UP FACILITY NO. 4 CRR

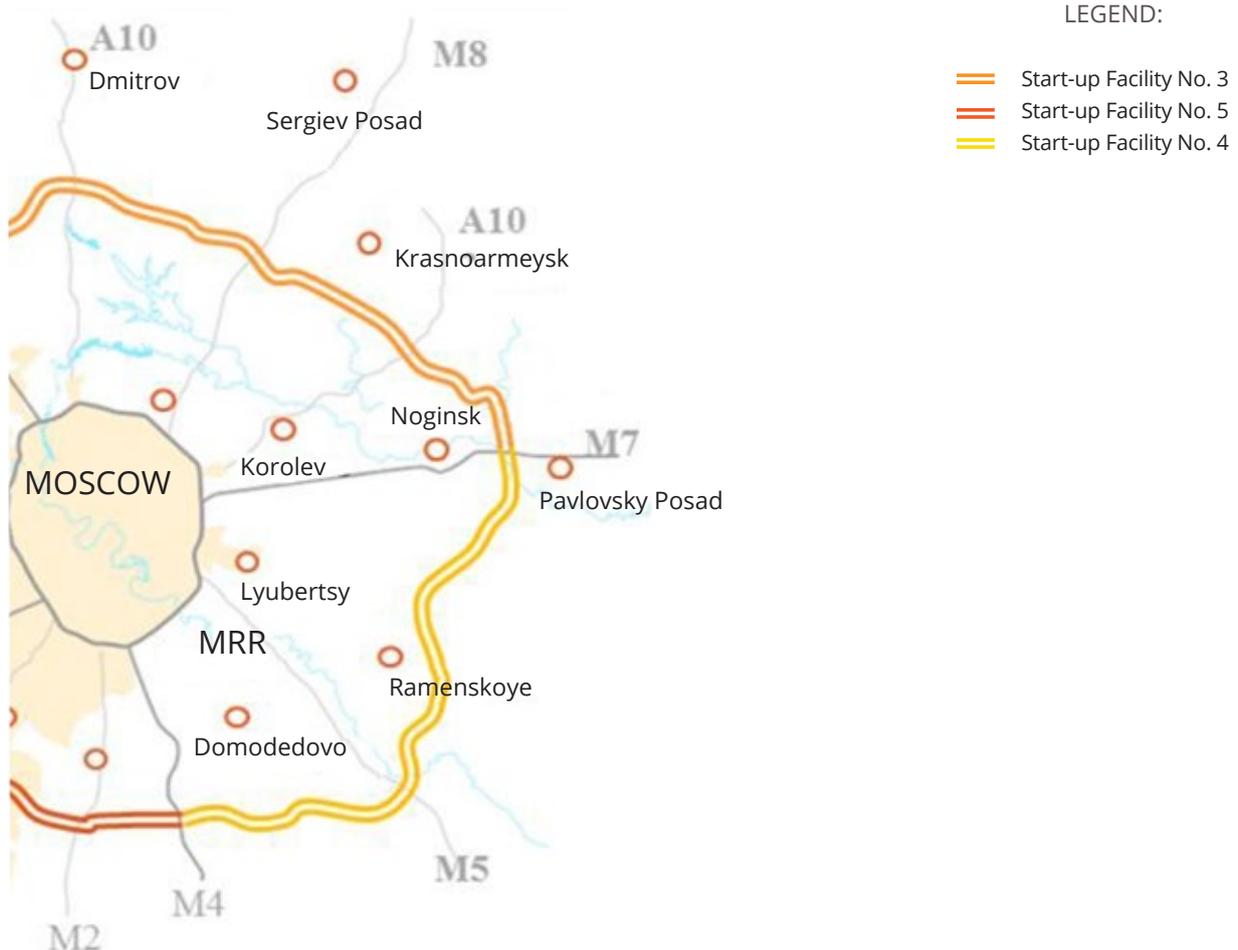
1. LAYOUT OF SC4 OF THE CRR

Start-up Facility No. 4 involves building a section of the CRR in the southeast part of the Moscow Region, which is located from the intersection with the M-7 Volga Federal Public Highway to the intersection with the M-4 Don Federal Public Highway.

The 96.6-km long section passes through the Chernogolovka Urban District, the Noginsky, Pavlo-Posadsky, Voskresensky, and Ramensky Districts of the Moscow Region as well as the cities of Elektrostal and Domodedovo.

According to the design documentation, the start of SC 4 of the CRR is envisaged at the intersection of the CRR with the M-7 Volga Highway at Interchange No. 1 and corresponds to km 0. Part of Interchange No. 1 is included in Start-up Facility No. 3 of the CRR, while the other part of the interchange is included in SC 4 of the CRR.

The end of SC 4 of the CRR is at the intersection with the M-4 Don Highway at Interchange No. 7 and corresponds to km 96. Part of Interchange No. 7 is included in Start-up Facility No. 1 of the CRR, while the other part of the interchange is included in SC 4 of the CRR.



2. MAIN SPECIFICATIONS OF SC 4 OF THE CRR

In order to conserve initial capital investments, the decision was made to build Start-up Facility No. 4 in two phases.

The first priority is to build four lanes, which will minimize the risk of demand for paid transportation services, i.e. a deviation from the projected traffic figures from the actual traffic intensity indicators following the commissioning of the highway.

As part of the second phase, the number of lanes will be increased to 6–8 in accordance with the design traffic intensity. The decision on the timeframe for commissioning of the second phase of construction will be taken after the first stage is commissioned on the basis of up-to-date data at that time on the volume of traffic and the observed increase in intensity.

Thus, the first stage of the construction of SC 4 of the CRR envisages:

Road category	IA
Length, km	96.6
Design speed, km/h	140
Design speed	4
Width of road way, m	2x7.5
Pavement	heavy-duty
Surface	stone mastic asphalt
Engineering structures, including:	66
– bridges and wildlife crossings,	17
– overpasses,	40
– flyovers	9
Multilevel interchanges	6

THE DESIGN DOCUMENTATION
FOR SC OF THE CRR ENVISAGES
THE CONSTRUCTION OF
MULTILEVEL INTERCHANGES:

- Interchange No. 1 at the intersection of the M-7 Volga Highway with the CRR at km 0 in the Noginsky District. According to technical and economic parameters, the design used the construction of a half-cloverleaf interchange with traffic light regulation near the junction with the M-7 Volga Highway;
- Interchanges No. 2 and No. 3 at the intersection of the CRR with the MSR at km 20 in the Noginsky District and Yegoryevsky Highway at km 30 in the Ramenskoye District are combined into one transport hub due to the relatively short distance (10 km) between interchanges;
- Interchange No. 4* at the intersection with the MSR–Chechevilovo–MOR Highway at km 49 on the border of the Voskresensky and Ramensky Districts. The option of a half-cloverleaf interchange is envisaged for implementation with one single-level junction, traffic light regulation, and a single-level circular junction;
- Interchange No. 5** at the intersection with the M-5 Ural Federal Highway at km 64 in the Ramensky District. The project envisages the construction of a tri-level interchange with directional exits in the most congested traffic directions;
- Interchange No. 6*** at the intersection with the MSR and the Vostryakovo-Obraztsovo Highway (approach road to Domodedovo Airport) at km 88 in the Domodedovsky Urban District. The project envisages the construction of two trumpet interchanges at the CRR and on the approach road to the airport;
- Interchange No. 7 at the intersection with the M-4 Don Federal Highway at km 95 in the Domodedovsky Urban District. The project envisages an interchange involving the construction of a 1.7-km flyover near the intersection with the highway. Directional elevated exit ramps that ensure exists in all directions are also to be built to provide a link with the M-4 Don Federal Highway.

* Construction of Interchange No. 4 is envisaged for the full (projected) development of the CRR.

** The first stage of the construction of Start-up Facility No. 4 envisages the construction of Interchange No. 5 as a half-cloverleaf with junctions and traffic light regulation on the existing road.

*** The partial implementation of Interchange No. 6 is envisaged during the first phase of the construction of Start-up Facility No. 4. The intersection of the roads in Obraztsovo and A-107 MSR has a “compressed” interchange that allows for the construction of an overpass through the CRR in the body of the road in Obraztsovo.

3. PROJECT FUNDING

Start-up Facility No. 4 of the CRR of the Moscow Region is the subject of the concession agreement and includes transport infrastructure engineering structures envisaged by the design documentation (road bed, bridges, overpasses, underpasses, and other road facilities, except for toll plazas).

Duration of the agreement: 30 years from the date of conclusion.

Project implementation period: 2017–2046:

- investment stage – 2017–2019;
- operational stage – 2020–2046

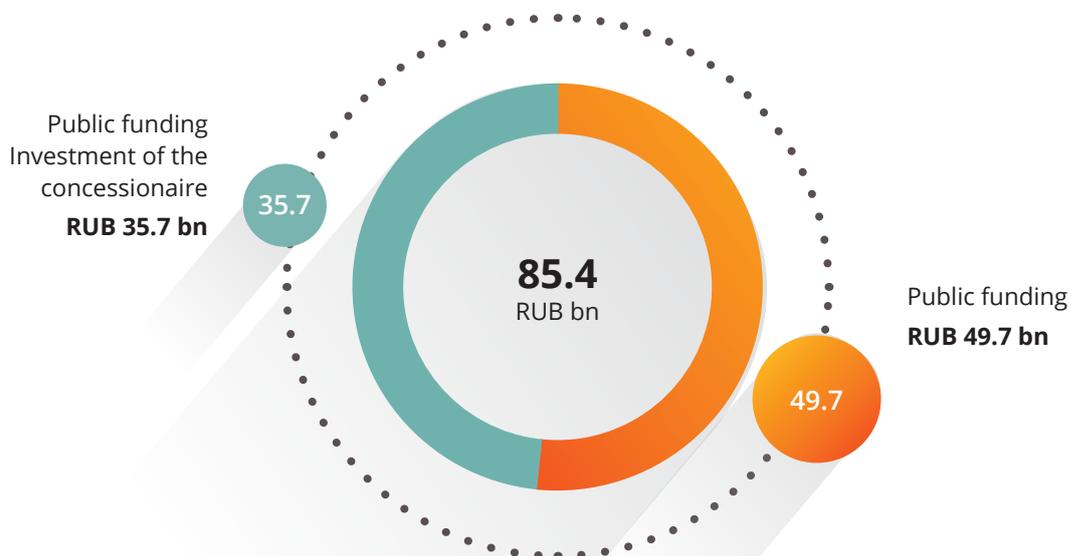
The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Winner of the tender: South-East Magistral LLC.

A concession agreement was concluded on the following terms:

- Cost of building the facility under the agreement – RUB 85.4 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by State Company – RUB 49.7 billion;
 - investment of the concessionaire – RUB 35.7 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual maintenance payment – RUB 20.7 billion excluding VAT in prices of the first quarter of 2014;
 - investment payments – RUB 58.6 billion in prices of the corresponding years, not subject to VAT.

Funding structure of SC 4 of the CRR, RUB bn



Public funding will be spent on the co-financing of the concessionaire's expenditures on construction and will be provided in accordance with the funding schedule using federal budget subsidies for the activities of State Company and funds from the NWF.

The concessionaire's internal funds will be attracted during the highway's construction period.

Key financial parameters of SC 4 of the CRR

PARAMETER	VALUE
Cost of work under the agreement during the investment stage (RUB bn in prices of corresponding years including VAT):	85.4
– public funding, RUB bn	49.7
– concessionaire's investment, RUB bn	35.7
Deadline for the repayment of borrowed funds, years	13
Deadline for the repayment of internal funds, years	27
Average rate of return on the concessionaire's investment, %	7.1
Including:	
rate of return on concessionaire's borrowed funds	– during the construction stage: key rate of the CB RF +3.5% – during the operational stage: inflation (CPI)+5.5%
floating rate of return on concessionaire's internal funds	8.5%+CPI

Payment under the concession agreement during the operational stage is provided by State Company and covers the following expenditures of the contractor:

- the return and servicing of financing raised for the construction of the highway taking into account the return on internal and borrowed capital that has been invested;
- highway operating expenses.

V. START-UP FACILITY NO. 5 CRR

1. LAYOUT OF SC5 OF THE CRR

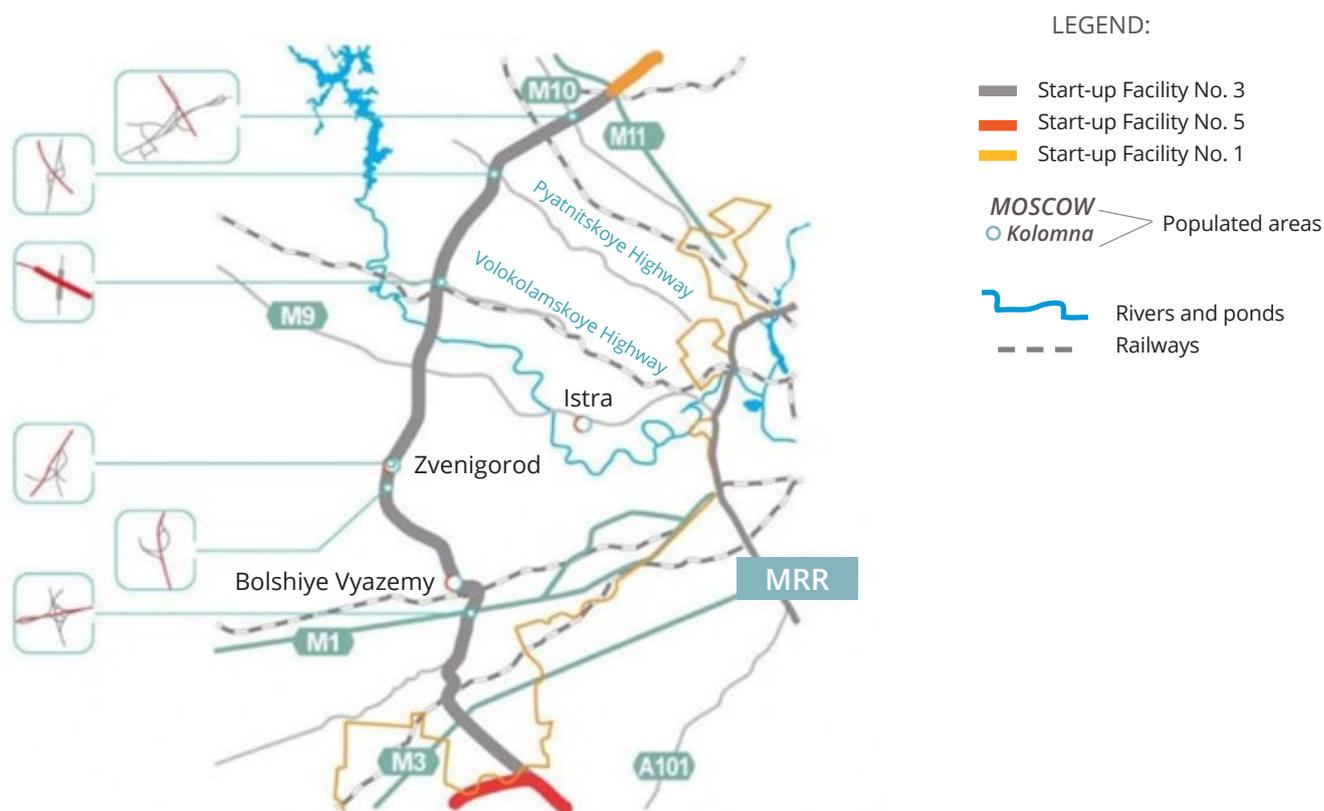
Start-up Facility No. 5 involves the construction of a section of the CRR in the west of the Moscow Region from the turn-off of the CRR bypassing Naro-Fominsk to the intersection with the M-11 Moscow-St. Petersburg Highway under construction.

The 76-4-km Section No. 5 (first phase of construction) originates from Interchange No. 26 at the intersection with the

The 76-4-km Section No. 5 (first phase of construction) originates from Interchange No. 26 at the intersection with the existing road A-107 MSR (the beginning of the Naro-Fominsk bypass) to Interchange No. 18 at the intersection of the CRR with the M-11 Highway.

- SC 5 OF THE CRR PASSES THROUGH THE TERRITORY OF 5 MUNICIPALITIES OF THE MOSCOW REGION:**
- Naro-Fominsky Municipal District through which the CRR passes 16.84 km;
 - Odintsovsky Municipal District through which the CRR passes 25.80 km;
 - Zvenigorodsky Urban District through which the CRR passes 8.03 km;
 - Istrinsky Municipal District through which the CRR passes 21.39 km;
 - Solnechnogorsky Municipal District through which the CRR passes 15.65 km.

Main specifications of SC 5 of the CRR



2. MAIN SPECIFICATIONS OF SC 5 OF THE CRR

Main specifications of SC 5 of the CRR

Road category	II
Design speed, km/h	80/70
Number of lanes	4
Width of the road way, m	2x7
Pavement	heavy-duty
Surface type	sphalt concrete
Bridge structures	26
Multilevel interchanges	6

Vehicles will travel along the section of Start-up Facility No. 5 of the CRR free of charge. The reconstruction of the existing road A-107 MSR is envisaged on this section with an increase in the parameters of the road's cross section to four lanes. Outside of populated areas, it is designed as a category II road, where intersections and junctions are permitted on a single level with traffic light regulation. In populated areas, it is designed an arterial street of regional importance with regulated traffic. On this section of the CRR, the route has a large number of junctions and intersections with roads of local and regional importance that provide access to numerous populated areas, horticultural facilities, and industrial areas located along the reconstructed section of the CRR.

THE SECTION OF START-UP FACILITY NO. 5 ENVISAGES THE CONSTRUCTION OF 6 MULTILEVEL INTERCHANGES:

- Interchange No. 28 with the M-1 Belarus Highway – the design envisages the reconstruction of this interchange. The interchange is a half-cloverleaf with a left turn (flyover over the M-1 Belarus Federal Highway) and ensures traffic in all directions;
- Interchange No. 34-1 with the MSR (bypassing Zvenigorod). The road that is intersected (exit from Zvenigorod) is a continuation of Ignatyevskaya Street, which is to be partially rebuilt within the boundaries of the construction work. An approach road is envisaged from the road that is intersected to an existing cemetery. The existing bridge is to be used as a component of the traffic intersection for the turn-off from Ignatyevskaya Street in the direction of the Zvenigorod railway station;
- Interchange No. 34-2 with the MSR (bypassing Zvenigorod). The interchange layout allows for exiting Parkovaya Street to the Zvenigorod Resort and exiting the resort to the A-107 road in the direction of the M-9 Baltiya Federal Highway. The intersection at the junction of Parkovaya Street and the existing A-107 Highway is being rebuilt with traffic signal regulation and the construction of public transport stops;
- Interchange No. 30 at the intersection with Volokolamskoye Highway. Interchange No. 30 is an urban type of interchange located in a densely built-up area. Moscow-Volokolamsk transit traffic is routed through the overpass over the Volokolamskoye Highway;
- Interchange No. 35 at the intersection with Pyatnitskoye Highway. The interchange supports all links and directions. The CRR directly crosses Pyatnitskoye Highway in two levels through the construction of an overpass over the Pyatnitskoye Highway. The project includes the construction of a half-cloverleaf along with left turns at traffic lights on Pyatnitskoye Highway. The land is allotted for the future with the ability to expand the interchange to a full cloverleaf as part of the project for the reconstruction of Pyatnitskoye Highway;
- Interchange No. 31 at the intersection with the M-10 Russia Federal Highway. The bi-level interchange with an overpass over the CRR at the intersection with the M-10 Russia Federal Highway and the construction of two directional exit ramps.



The construction of Start-up Facility No. 5 of the CRR is divided into two construction phases. The following work is planned as part of the first phase:

- the reconstruction of a section of the A-107 Highway (Zvenigorod section) as part of the CRR from the boundary of work at Interchange No. 26;
- the construction of the D-3 road and construction of Exits No. 7 and No. 8 as part of Interchange No. 34.2;
- the construction of Exits No. 1, No. 2, No. 11, and No. 12 as part of Interchange No. 31;
- The following work is planned as part of the second phase:
 - the construction of a section of the CRR from SC 841 to the boundary of work on Interchange No. 18;
 - the construction of flyover on the Volokolamskoye Highway and Exits No. 1, No. 2, No. 3, and No. 4 as part of Interchange No. 30;
 - the construction of Exits No. 3, No. 4, No. 5, No. 6, No. 7, No. 8, No. 9, and No. 10 as part of Interchange No. 31 and the construction of Exits No. 5 and No. 6 as part of Intersection No. 34.2.

3. PROJECT FUNDING

Start-up Facility No. 5 of the CRR of the Moscow Region is the subject of the long-term investment agreement and includes transport infrastructure engineering structures envisaged by the design documentation (road bed, bridges, overpasses, underpasses, and other road facilities, except for toll plazas)

Duration of the agreement: 24 years from the date of conclusion.

Project implementation stages: 2014–2038

- investment stage: 2014–2018;
- operational stage: 2019–2038

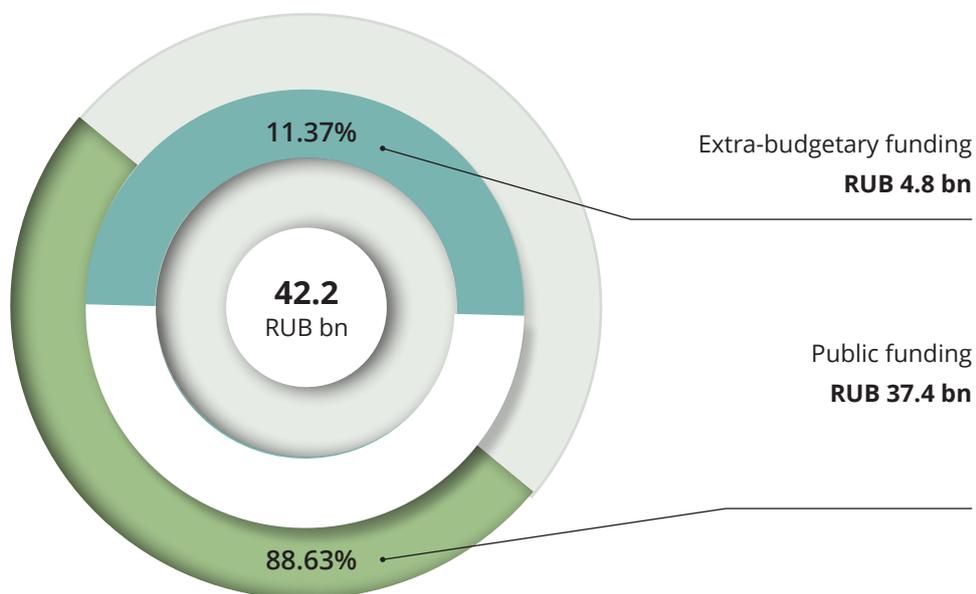
The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Winner of the tender: Ring Magistral LLC.

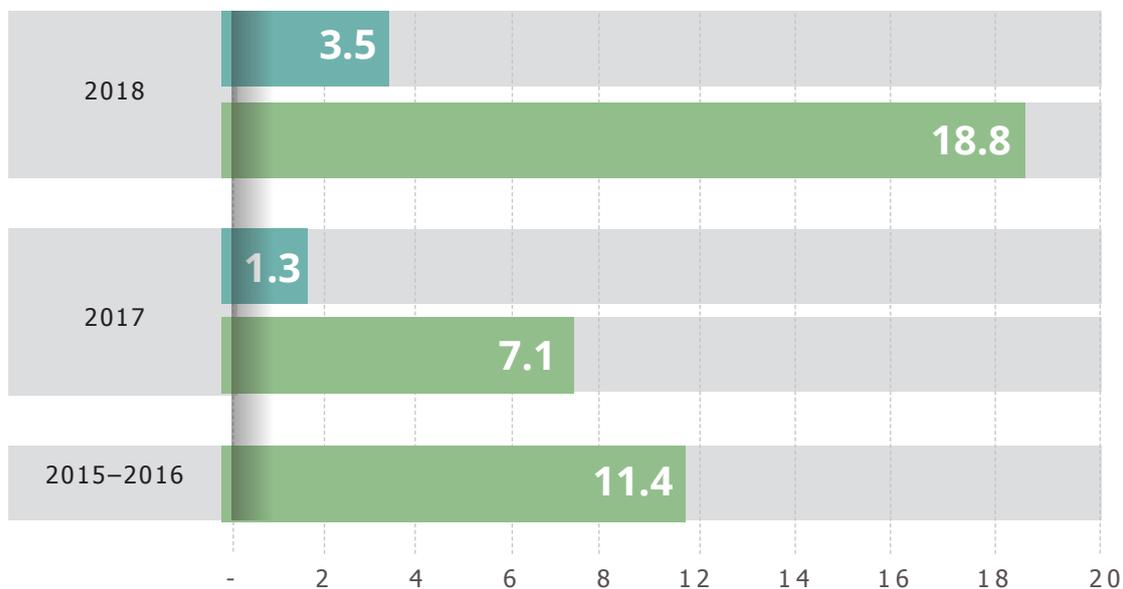
The long-term investment agreement was concluded on the following terms:

- Cost of building the facility under the agreement – RUB 42.2 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by State Company – RUB 37.4 billion;
 - investment of the contractor – RUB 4.8 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual maintenance payment – RUB 6.5 billion excluding VAT in prices of the first quarter of 2014;
 - investment payments estimated taking into account the return on the contractor’s investment, which includes the amount of the basic premium to inflation.

Funding structure of SC 5 of the CRR, RUB bn



Schedule of capital expenditure distribution by year, RUB bn



LEGEND:
■ Extra-budgetary funding
■ Public funding

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

Key parameters for the repayment of extra-budgetary funds of SC 5 of the CRR

PARAMETER	VALUE
Cost of work under the agreement during the investment stage (RUB mln in prices of corresponding years including VAT):	42.2
- public funding	37.4
- contractor's investment	4.8
Including:	
- borrowed funds	2.4
- internal funds	2.4
Deadline for the repayment of borrowed funds, years	13
Deadline for the repayment of internal funds, years	18
Average rate of return on the contractor's investment, %	8.9%
Including:	
Floating rate of return on contractor's borrowed funds	4.5%+CPI
Floating rate of return on contractor's borrowed funds	8.35%+CPI



Payment under the long-term investment agreement during the operational stage is provided by State Company and covers the following expenditures of the contractor:

- the return and servicing of financing raised for the construction of the highway taking into account the return on internal and borrowed capital that has been invested;
- highway operating expenses.

Given that motor transport will travel free of charge on the section of Start-up Facility No. 5 of the CRR, the payments to the contractor will be calculated based on the revenue from tolls for paid sections of the CRR collected in favour of State Company by the Unified Operator.

VI. UNIFIED OPERATOR OF THE CENTRAL RING ROAD

1. KEY INFORMATION ABOUT THE "CRR UNIFIED OPERATOR" PROJECT

The key objectives of the "CRR Unified Operator" project are:

- to provide high-quality infrastructure services to CRR users through the establishment and operation of an effective toll collection system (TCS), automated traffic control system (ATCS), and the collection of tolls for all paid sections of the CRR by a unified operator;
- to ensure the financial sustainability of the entire CRR project by maximizing revenue from toll collection from paid CRR sections. The introduction of tolls for the entire CRR project is necessary to meet financial obligations to the executors of investment and concession agreements at four startup complexes (Startup Complexes No. 1, 3, 4, and 5) and for the repayment of funds from the NWF.

THE TCS AND ATCS ARE EXPECTED TO BE BUILT SOLELY THROUGH EXTRA-BUDGETARY SOURCES.

The Free Flow system is to be used as the TCS for travel on the CRR. This system involves a user's non-stop travel on the toll road and does not envisage toll plazas operating with toll gates.

Vehicles are identified automatically in the Free Flow system through the recognition of state license plates and dimensions of the vehicle, while the toll may be paid both using automatic electronic payment technology (transponders, electronic tags, SIM cards, etc.) as well as the ability for subsequent payment by other means (Internet, terminal, etc.).

The experience of foreign countries shows that the Free Flow system can function with a very high level of collection (over 90%) with the proper organization of the system as well as its technological, organizational, and legal sufficiency.

The Free Flow toll collection system consists of frame structures that identify passing vehicles and photograph their license plate numbers in non-stop mode. In the Free Flow system, the entry and exit from the motorway is determined when the vehicle passes through the frame structures.

Payment is made automatically by debiting the funds from the user's account using a transponder or, in its absence, by sending an invoice to the vehicle owners through the identification of their state license plates. The toll is calculated for the distance actually travelled

2. MAIN SPECIFICATIONS OF THE "CRR UNIFIED OPERATOR" PROJECT

The CRR Unified Operator project is part of the CRR as a complex of road transport infrastructure and involves the establishment and operation of the TCS integrated into a unified complex, ATCS, and unified clearing and billing systems that serve the following CRR startup complexes (as part of the first construction phase):

- Start-up Facility No. 1 from the intersection with the M-4 Don Federal Public Highway to the start of the CRR bypass of Naro-Fominsk (first construction section);
- Start-up Facility No. 3 from the intersection with the M-11 Moscow-St. Petersburg Highway under construction to the intersection with the M-7 Volga Federal Highway;
- Start-up Facility No. 4 from the intersection with the M-7 Volga Federal Highway to the intersection with the M-4 Don Federal Highway;
- Start-up Facility No. 5 from the start of the CRR bypass of Naro-Fominsk to the intersection with the M-11 Moscow-St. Petersburg Highway

As part of the implementation of the CRR Unified Operator project (first phase of the CRR construction), frame structures are to be built on the main road and at CRR interchanges. The choice of the Free Flow system for the first stage of the CRR construction will not require the system to be further converted for the second stage of the CRR, which involves the use of the Free Flow system.

Frame structures are equipped with the following components:

- laser scanners for identifying and classifying vehicles; the laser classification system determines the maximum height of the vehicle and its dimensions;
- stereoscopic video cameras installed to more accurately calculate the number of axles and improve the performance of standard laser classification;
- front and rear license plate recognition video cameras (for vehicles without a trailer);
- DSRC transceivers to work with transponders.

The operation of the Free Flow TCS is supported by the activities of the control service and the collection service. In order to improve the identification of road users, various control services are used:

- stationary control services in which repair service teams are also based;
- manual recognition services;
- vehicle mobile control services;
- referenceservices that transmit information about unrecognized vehicles to the stationary and mobile control services.

In order to optimize the process of collecting debts from users of paid sections of the road as well as to partially ease the burden of the Federal Bailiff Service, a debt collection service (collection centre) is to be introduced.

The ATCS is a comprehensive system used to monitor and control road safety and includes The ATCS is a comprehensive system used to monitor and control road safety and includes:

- pavement and weather conditions monitoring stations;
- information equipment (information boards, traffic lights);
- video observation systems;
- communication equipment;
- software focuses on the active control of transport flows, integrated control of transport corridors, the construction of hierarchical systems, national traffic management, etc.;
- datamanagement and processing centre (a local computer network with dedicated servers and workstations with planned density of 1 per 900 square metres).

The ATCS performs the following main functions within the framework of the Unified Operator:

- video detection;
- informing drivers about the recommended traffic speed on the highway in accordance with the existing control plans;
- management of traffic signalling in accordance with the given control technology;
- monitoring of current weather conditions in different parts of the city;
- monitoring of the road surface in different sections;
- ensuring the ability of controlling reagent dispensers and the LED display;
- collection, processing, display, and archiving of information received and processed on the server;
- providing an interactive visual display of the current situation from the platforms on the display equipment at the operator's workplace;
- ensuring the ability to view archived data.

Taking into account the investment and concession agreements that have been concluded with respect to the construction of the aforementioned startup complexes of the CRR, the obligations for the construction and operation of the TCS and ATCS are divided between the Unified Operator and contractors and concessionaires of the startup complexes of the CRR.

3. ORGANIZATIONAL AND LEGAL STRUCTURE OF THE "CRR UNIFIED OPERATOR" PROJECT

A corporate public-private partnership mechanism has been adopted as the organizational and legal structure for the implementation of the CRR Unified Operator project. As part of this structure, as a result of the strategic investor partnership with State Company, a special project company is to be created with which State Company is to conclude an O&M contract.

TAKING INTO ACCOUNT THE ASSESSMENT OF PERFORMANCE INDICATORS, IMPLEMENTING THE PROJECT ACCORDING TO THIS ARRANGEMENT MAKES IT POSSIBLE TO OPTIMALLY DISTRIBUTE THE KEY RISKS BETWEEN STATE COMPANY AND THE PRIVATE PARTNER AS WELL AS TO ENSURE:

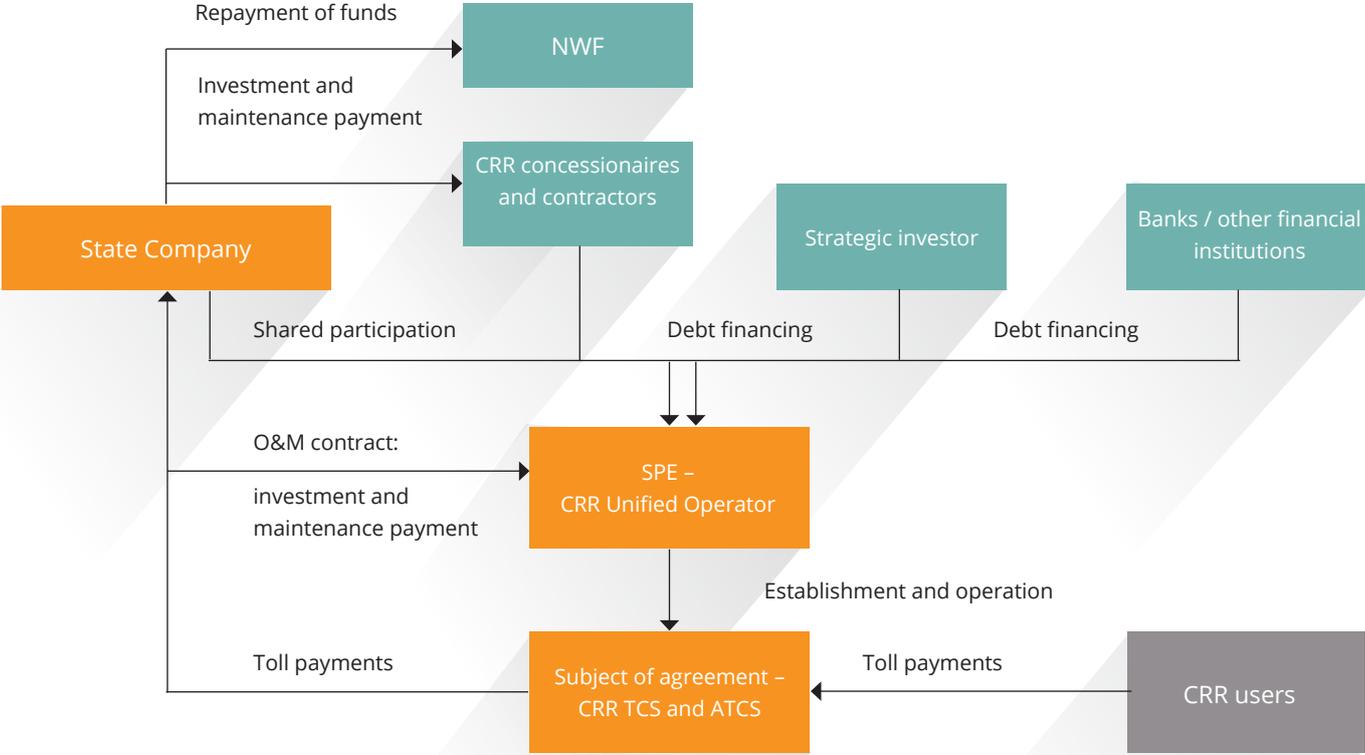
- the overall competitiveness of the procedure for selecting project investors;
- monitoring by State Company of the project's implementation through the mechanism of participation in the corporate structure while maintaining the operational and economic independence of the operator;
- utilizing the commercial and technical expertise of the market during the stage when the conditions of the project are formed;
- optimization of the project implementation deadlines and their compliance with the planned deadlines for the commissioning of the CRR in parallel with the formation of the regulatory legal framework for the introduction of the Free Flow system;
- minimizing the risk of the failure to attract an investor.

The optimal distribution of risks, compliance with deadlines, the competitiveness of procedures for selecting a private partner, and budgetary efficiency are achieved within the framework of the corporate PPP format if an O&M contract is concluded with a special project company that is a subsidiary established by State Company and a strategic investor as well as the subsequent sale of shares in this special project company to investors.

In this regard, an organizational and legal mechanism for the project's implementation should be considered, which provides for the direct participation of the executors of the concession and investment agreements under the CRR project in the management of the Unified Operator's activities jointly with State Company.

When preparing the O&M contract, effective methods for motivating the CRR Unified Operator will be envisaged in order to maximize project revenue, in particular: the payment to the Unified Operator of additional payments (excess income) in the event of an increase in the overall project revenue with respect to the projected indicators by implementing effective approaches to tariff management and other marketing policy activities.

Flow chart of the CRR Unified Operator project



4. SETTLEMENT MECHANISM FOR THE PARTIES TO THE PROJECT

Funding for the investment expenditures on commissioning the toll collection system and automated traffic control system is provided by the operator at the expense of its own internal and borrowed funds.

The project's extra-budgetary funding is 100% due to its relatively low capital intensity: funding is tentatively estimated at RUB 8.6 billion in the prices of the corresponding years, including VAT, for the first phase of the construction of the CRR.

The deadline for the reimbursement of internal and borrowed funds as part of the project will be determined by the O&M contract and synchronized with the deadlines for the implementation of concession agreements as part of Startup Complexes No. 3 and No. 4 of the CRR.

The deadline for the reimbursement of borrowed funds will tentatively be 10 years (15 years under favourable conditions for refinancing) and the reimbursement of internal funds will be tied to the date of execution of the concession agreements as part of the CRR project and will take place by 2046.

Revenue from the collection of tolls is fully transferred to State Company, which spends such revenue on financing:

- obligations to the operator;
- obligations to the concessionaires and contractors of the CRR and the NWF;
- investment expenditures on the second stage of the construction of the Startup Complexes of the CRR.

Investments and the operator's costs for its activities are repaid by the State Company: investment and maintenance payments are paid to the operator during the period of operation.

5. INVESTMENT STAGE

THE CRR UNIFIED OPERATOR PERFORMS THE FOLLOWING DURING THE CONSTRUCTION

STAGE:

- drafting and endorsement with State Company of working documentation for the TCS and ATCS of the CRR;
- interaction with the contractors and concessionaires of the CRR project as regards the design and construction of the TCS and ATCS of the CRR;
- selection as part of competitive tenders and the conclusion of a construction contract with the contractor in order to build the TCS and ATCS of the CRR;
- conducting construction in accordance with the requirements of the agreement and relevant regulatory documents as well as accepting and paying for the work of the construction contractor and the quality control of the work performed;
- extra-budgetary funding for the establishment of the TCS and ATCS of the CRR in accordance with the terms of the agreement;
- commissioning of the TCS and ATCS of the CRR

STATE COMPANY PERFORMS THE FOLLOWING DURING THE INVESTMENT STAGE:

- ensuring the interaction of the operator (contractor hired by the operator) with the contractors and concessionaires of the CRR project within the framework of cooperation agreements (regulations on cooperation);
- considering and coordinating the technical and organizational solutions offered by the operator as part of the construction and commissioning of the TCS and ATCS of the CRR.

Capital expenditures

The cost of the construction of the TCS and ATCS is estimated at RUB 8.6 billion in the prices of the corresponding years, including VAT. Work to install the TCS and ATCS is expected to be performed in the period 2018–2019, after which it is to be commercially operated on a toll basis.

Capital expenditures are allocated according to the following expense items:

EXPENSE ITEM	AMOUNT IN prices of the corresponding years, RUB bn
TCS	3.2
ATCS	2.3
Other capital expenditures*	3.1
TOTAL	8.6

* Including technical safety equipment, de-icing complexes, design work, 3% provisions for unforeseen expenses, and construction control.

6. OPERATIONAL STAGE

THE CRR UNIFIED OPERATOR PERFORMS THE FOLLOWING DURING THE OPERATIONAL STAGE:

- operational activities (including the collection of tolls and providing users with services granting the right to travel and organize traffic);
- operation of the TCS and ATCS;
- organization (coordination) of services by the Emergency Road Assistance Service and other services to users.

STATE COMPANY PERFORMS THE FOLLOWING DURING THE OPERATIONAL STAGE:

- ensuring the interaction of the operator with the contractors and concessionaires of the CRR project within the framework of cooperation agreements;
- acceptance of the operator's services and work during the operational stage;
- payment of the investment and maintenance payment to the operator.

The toll collection system and automated traffic control system will launch operations in 2019.

The revenue of State Company from the collection of tolls for travel on the CRR is estimated at RUB 930.7 billion for the period from 2019–2046. Revenue from the collection of tolls by the collection centre is estimated at RUB 21.2 billion.

Operating costs for the period from 2019–2046 are estimated at RUB 44.9 billion, including VAT, in the prices of the corresponding years. The bulk of operating costs, excluding the cost of collection expenses (RUB 6.4 billion), come from the operation of the TCS and measures to increase identification within them.

The investment payment, which is allocated to repay the body of the debt and interest on borrowed funds based on the repayment schedule as well as the return of the investor's internal funds and the payment of dividends with an established return of 20%, is estimated at RUB 34.2 billion. The payment period is 2019–2046.

Below are the total cash flows of the CRR project for the period 2018–2046

Establishment of the TCS and ATCS, RUB bn	(8.6)
Income of State Company from the project, RUB bn	951.9
Expenditures on fulfilling the obligations of the State Company, RUB bn	(328.7)
Repayment of funds received from the NWF, RUB bn	(311.1)
Payments to the CRR Unified Operator, RUB bn	(79.1)
<i>including investment payments</i>	<i>(34.2)</i>
<i>including maintenance payments</i>	<i>(44.9)</i>
Total free cash flows, RUB bn	232.9

* Maintenance and investment payments as part of the contracts concluded with concessionaires (SC No. 3 and No. 4 of the CRR) and executors of long-term investment agreements (SC No. 1 and No. 5 of the CRR).



7. RISK MATRIX OF THE CRR UNIFIED OPERATOR PROJECT

No	GROUP	DESCRIPTION OF RISK/DEGREE	DEGREE OF PROBABILITY OF OCCURRENCE	POSSIBLE LOSSES	RISK DISTRIBUTION
1	Commercial	Risk of failure to reach the planned traffic intensity	High	High	State Company
2	Commercial	Risk of failure to recognize license plates relative to the projected figure of 98%	Medium	Medium	Unified Operator
3	Commercial	Risk of evasion of payment for travel in Free Flow	High	High	State Company
4	Commercial	Risk of failure to pay fines	High	Medium	State Company
5	Organizational and technical	Risks related to capital investments by CRR concessionaires and investors	Low	Medium	State Company
6	Organizational and technical	Risks related to capital investments by the CRR Unified Operator	Low	Medium	Unified Operator
7	Organizational and technical	Facility maintenance risks	Medium	High	State Company
8	Financial	Non-fulfilment / incomplete / untimely fulfilment of financial obligations	Low	Low	Unified Operator
9	Financial	Failure to attract an investor	Low	Low	State Company
10	Financial	Risk of rejection of the conditions for the provision of debt financing versus the planned conditions	Low	Low	Unified Operator
11	Macroeconomic	Inflation risk	Low	Low	Unified Operator
12	Legal	Failure to introduce legislative responsibility for the failure to pay for toll road travel (federal law)	High	High	State Company
13	Legal	Charging of fines without the involvement of the required government agencies: the Ministry of Internal Affairs (as regards providing the Unified Operator with access to the database of vehicles and stopping vehicles), the Federal Bailiff Service of the Russian Federation (as regards collecting fines in the event of the failure to pay for travel), Russian Federal Border Services Agency (as regards collecting fines when crossing the border), Russian Federal Transportation Oversight Service (as regards collecting fines for the provision of information from the Unified Operator (in the event fines are collected for budgets through Administrative Code of Offences of the Russian Federation)	High	High	State Company
14	Legal	Insufficient interoperability of transponders between electronic payment means at the national and international level	High	High	State Company
15	Social	Increased negative sentiments among the public caused by the deterioration of the ecological and noise situation in the CRR zone	Low	Medium	State Company
16	Social	Insufficient awareness among CRR users about the charging of tolls, ways to pay for travel, and the features of the toll system's operation	High	Medium	State Company



THE HIGT SPEED
MOSCOW–ST. PETERSBURG HIGHWAY

M-11

I. DESCRIPTION OF THE M-11 MOSCOW–ST. PETERSBURG PROJECT

1. ROLE OF THE M-11 MOSCOW–ST. PETERSBURG PROJECT

The new high-speed M-11 Moscow–St. Petersburg Highway will connect the capital of the Russian Federation – Moscow – with the country’s second largest city and the largest transport hub in Russia’s north-west region – St. Petersburg.

The new road will extend from the Moscow Ring Road to the junction of the ring road around St. Petersburg. The highway will be 669 km long.

The high-speed road will pass through the Moscow, Tver, Novgorod, and Leningrad Regions of Russia’s Central and North-West Federal Districts, bypassing populated areas. The M-11 Moscow–St. Petersburg Highway will basically run parallel to the existing M-10 Russia Highway and will intersect with it at the 58,149,257,331 and 545 km marks with multilevel interchanges. This will make it possible for traffic to switch from the M-10 Russia Highway to the high-speed highway and vice versa.

THE NEW HIGH-SPEED M-11 MOSCOW–ST. PETERSBURG TOLL ROAD NEEDS TO BE BUILT DUE TO THE FOLLOWING FACTORS:

- The projected road will feature a high level of traffic intensity and serve to connect the central part of Russia with a major transport hub – St. Petersburg – as well as the seaports of Scandinavia;
- Large sections of the existing M-10 Russia Highway have an insufficient number of traffic lanes: on the approach to Moscow – 6 lanes, on the main section – 3–4 lanes, and in some areas – only 2 lanes. The M-10 Russia Highway’s approaches to Moscow and St. Petersburg have completely exhausted their capacity. This results in congestion and an unjustified increase in transportation costs and constrains the economic development of catchment areas;
- Traffic speeds decrease as the M-10 Russia Highway passes through populated areas, and this results in transportation and economic losses; exacerbates the ecological situation in these areas; and reduces road safety;
- The cost of building bypasses of populated areas due to the need to create a large number of traffic interchanges is comparable to the cost of building a new road;
- The M-10 Russia Highway does not meet the requirements of a Category I road in terms of its parameters, such as the horizontal curve radius, longitudinal slope, visibility distance, etc.;
- The need to maintain existing federal roads in an appropriate transport and operational condition throughout their service life in order to provide users with high-quality service infrastructure.

Location map of the M-11 Moscow-St. Petersburg



- LEGEND:
- == Section of the M-11 Moscow-St. Petersburg Highway in the design stage
 - === Section of the M-11 Moscow-St. Petersburg Highway ready for implementation
 - ==== Section of the M-11 Moscow-St. Petersburg Highway in the implementation stage
 - ===== Section of the M-11 Moscow-St. Petersburg Highway in the operational stage

Key parameters of the M-11 Moscow–St. Petersburg Highway

LOCATION	Moscow, Tver, and Leningrad Regions
Road category	1A
Total length, km	669
Design speed, km/h	150

The M-11 Moscow–St. Petersburg Highway plays an extremely important role in the development of Russia’s transport industry and economy both at the international and national level. In addition to domestic transportation, the highway will serve international transport links, primarily with Finland and the Baltic countries. The high proportion of international traffic underscores the international importance of this highway, which is part of the 9th Pan-European Transport Corridor (Helsinki–St. Petersburg–Moscow Region (western part of the Central Ring Road)–Southern Russia) and the network of international European and Asian highways. The projected highway should improve transport and economic ties between the Central and North-West Federal Districts and ensure access to Central, Western, and North-West Europe.

2. GOAL AND PURPOSE OF THE M-11 MOSCOW-ST. PETERSBURG HIGHWAY

The main goal of this project is to build a modern high-speed road as well as roadside infrastructure integrated into the North-South International Transport Corridor (hereinafter ITC) (the Finland – St. Petersburg – Moscow route). The highway will serve international, interregional, and intraregional passenger and freight traffic and help to meet the needs of foreign and domestic trade.

AS PART OF ACHIEVING THIS GOAL, THE FOLLOWING SETS OF TASKS ARE PLANNED:

1. Improving transport infrastructure:

- establishment of modern, developed, and efficient transport infrastructure on the Moscow–St. Petersburg route, ensuring the accelerated flow of passengers, trade turnover, and a reduction in transport costs in the economy;
- enhancing the competitiveness of Russia's transport system and the country's transit potential (the highway will be included in the international transport corridors: North-South and the 9th Pan-European Transport Corridor);
- improvement of the technical features and capacity of the existing North-South ITC.

2. Improvements in the investment and budget sphere:

- improvement of the investment climate in the transport sector (the project is being implemented with extra-budgetary investments, which facilitates the establishment of a market for transport infrastructure investment projects in Russia);
- attraction of additional investment resources to the infrastructure sector of the economy;
- implementation of a large-scale public-private partnership project in the road industry of the Russian Federation;
- optimization of budget expenditures by attracting extra-budgetary sources of funding for the construction and operation of the highway;
- optimization of budget expenditures during the operational phase of the highway by transferring all maintenance-related costs of the highway to the contractor;
- increased revenue for budgets of all levels due to additional tax revenue during the construction and operational stages of the highway.

3. Comprehensive development of catchment areas:

- redirecting transit traffic from the streets of Solnechnogorsk, Klin, Tver, Vyshny Volochyok, and other populated areas outside the cities;
- mitigating the negative environmental impact by reducing congestion on road sections passing through cities;
- creating conditions for the development in catchment areas of industrial, transport, recreational, and service facilities linked to the socioeconomic development programmes of the regions through which the highway runs.

4. Comprehensive objectives:

- intensification of social, economic, interregional, and international links and increasing the level of mobility of the population and market participants;
- enhancing the accessibility of transport services for the population (the population in the catchment areas of the highway exceeds 25 million people);
- improving the comprehensive safety of the transport system (the highway will ensure increased traffic safety levels);
- improving road safety on existing roads by reducing traffic intensity;
- reduction in the level of transportation costs for shippers and developing the export of motor transport services.

3. MAIN SPECIFICATIONS OF THE M-11 MOSCOW-ST. PETERSBURG HIGHWAY

The main catchment area of the Moscow-St. Petersburg High-Speed Highway is a 100-km corridor on both sides of the proposed road layout. These include the cities of Moscow and St. Petersburg as well as the Moscow, Tver, Novgorod, and Leningrad Regions.

The total length of federal highways passing through the catchment areas of the Moscow-St. Petersburg High-Speed Highway is 4 264 km. Most of these roads are located in the Moscow and Leningrad Regions (48% and 31%, respectively); the Tver and Novgorod Regions only contain 12% and 9% of the total length of federal roads in the catchment areas, respectively.

The construction of the M-11 Moscow-St. Petersburg High-Speed Highway envisages the erection of 852 artificial structures, including:

- 99 bridges;
- 12 flyovers;
- 51 overpasses at transport junctions;
- 132 overpasses for connecting isolated areas;
- 354 culverts;
- 204 culverts at transport junctions.

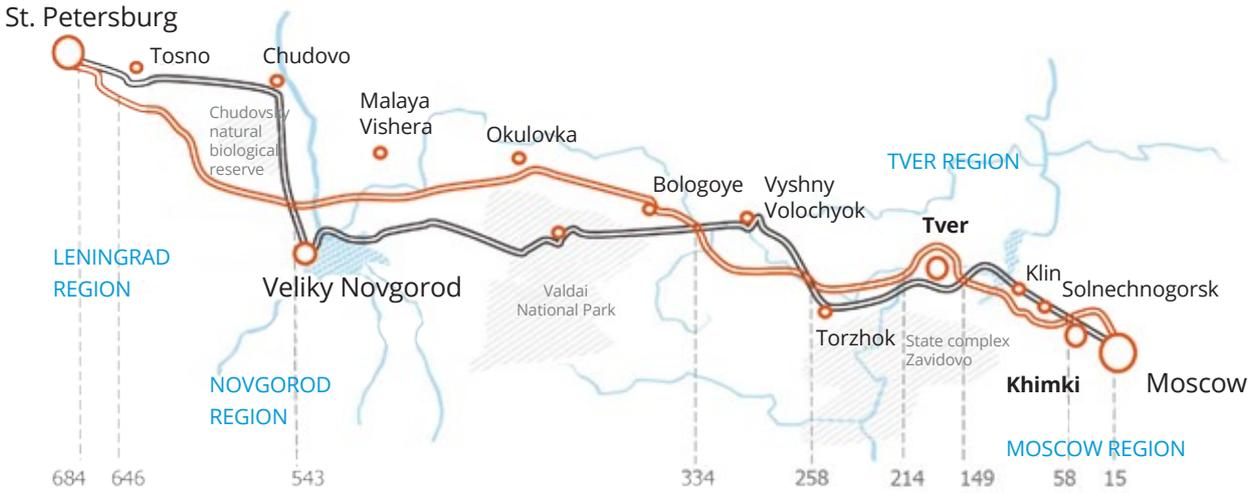
Main technical and economic parameters of the M-11 Moscow–St. Petersburg Highway

INDICATOR	VALUE
Type of work	Construction
Road category	IA
Number of traffic lanes	4-8 depending on the road section
Total length, km	669
Design speed, km/h	150
Width of the road bed, m	In accordance with the number of traffic lanes per road section (from 27 to 42)
Width of the road way, m	In accordance with the number of traffic lanes per road section (2x7.5. 2x11.5)
Width of the median, m	5.00/12.50
Type of road pavement and surface	heavy-duty asphalt concrete
Bridges and overpasses	282
Multilevel interchanges	28

4. CURRENT IMPLEMENTATION STATUS OF THE M-11 MOSCOW-ST. PETERSBURG PROJECT

The construction of the new M-11 Moscow-St. Petersburg High-Speed Highway began with the sites located in areas with the highest traffic congestion. To date, six concession and investment agreements have been concluded as part of the project for the construction of sections of the route.

Map of the M-11 Moscow-St. Petersburg Highway



- LEGEND:
- M-10 Highway
 - Sections of the M-11 Moscow-St. Petersburg Highway

Implementation of the M-11 Moscow–St. Petersburg Highway project by section

Stage No.	Section	Contract type	Use of toll system / automated traffic control system	Operation of toll system / automated traffic control system	Operator activities	Start of toll operation	End of operational stage
-	15-58	Direct toll concession contract	NWCC LLC	UTCS	UTCS	Q4 2015	31/07/2040
1-2	58-149	Long-term investment agreement	TSM LLC	TSM LLC	Operator hired by the State Company	Q4 2018	31/12/2038
3	149-208	-	-	-	-	-	-
4	208-258	Long-term investment agreement	Mostotrest OJSC	Mostotrest OJSC	Operator hired by the State Company	Q4 2017	31/12/2037
5	258-334	Long-term investment agreement	Mostotrest OJSC	UTCS	UTCS	Q3 2015	31/12/2033
6	334-543	Long-term investment agreement	Mostotrest OJSC	Mostotrest OJSC	Operator hired by the State Company	Q1 2018	31/12/2039
7-8	543-684	Concession contract with concession grantor payment	MDS LLC	MDS LLC or an operator hired by them	MDS LLC or an operator hired by them	Q2 2018	31/12/2041

5. TOLL OPERATION OF THE M-11 MOSCOW-ST. PETERSBURG HIGHWAY PROJECT

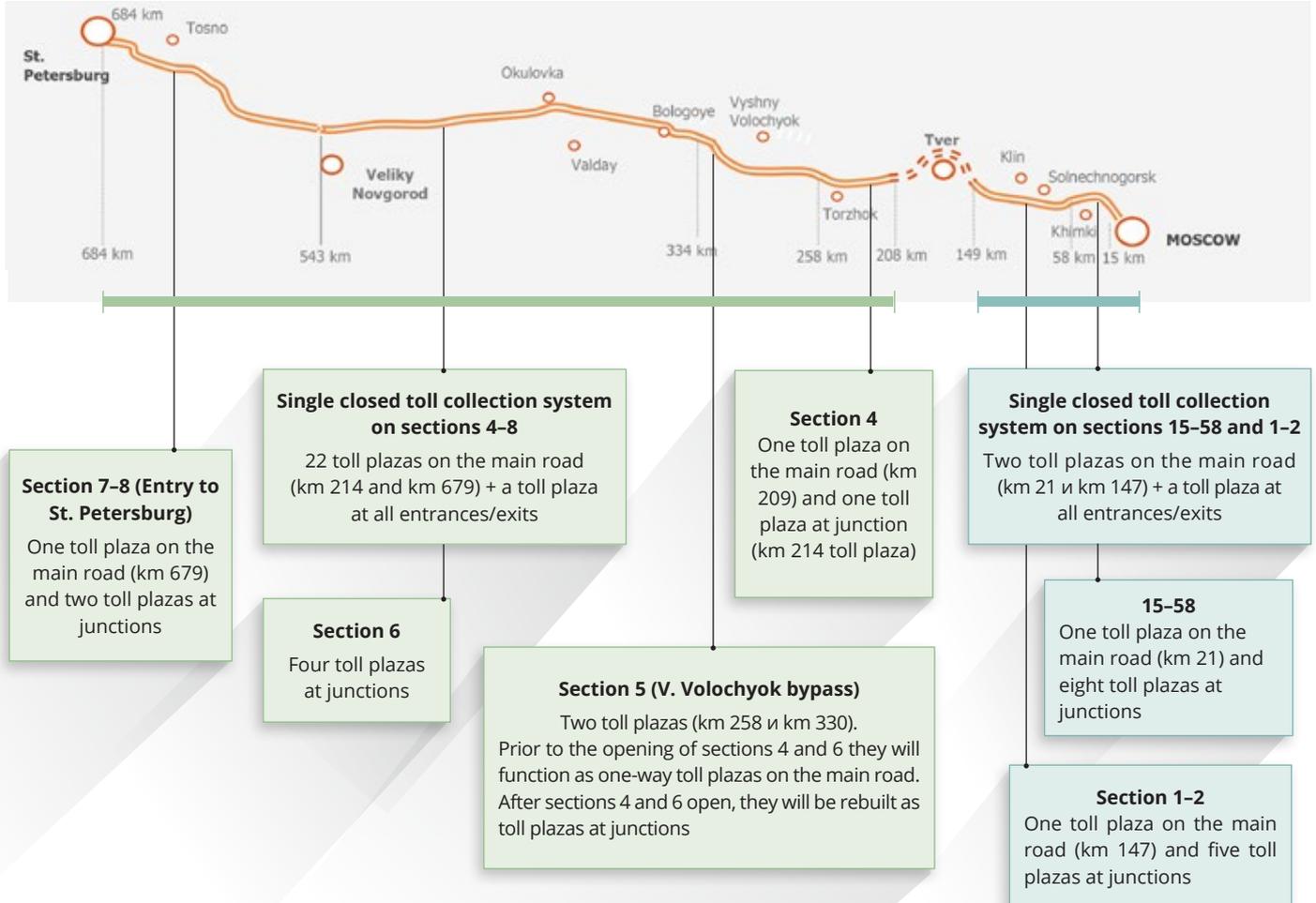
A closed modified toll system will be set up throughout the entire route of the M-11 Moscow-St. Petersburg Highway. All the toll entry points will issue tickets. Users will pay at the toll exit areas for the distance they actually travelled as determined based on the user's ticket. Data will be exchanged about transactions within the manual toll collection system between the operators of the ticket issuance booths and the toll collection booths and transmitted through the inter-operator information system for electronic toll collection (interoperability system). Operators collecting tolls for travel on sections of the M-11 Moscow-St. Petersburg Highway are required to ensure interaction with the toll collection interoperability system.

The concession and long-term investment agreement for the sections between km 15 – km 58, km 258 – km 334, and km 543–km 684 of the M-11 Moscow-St. Petersburg Highway envisages operator activities by the concessionaire / executor of the agreement or by an operator hired by them. An O&M contract that entails the hiring of a single operator is currently being drafted for the sections between km 58–km 149 (stages 1 and 2), km 208–km 258 (stage 4), and km 334–km 543 (stage 6).

Base tolls rates in the 2011 price level for Category I–RUB 1.50/km for the sections km 58–km 149 (stages 1 and 2), km 208–km 258 (stage 4), km 258–km 334 (stage 5), km 334–km 543 (stage 6)

TARIFF DIFFERENTIATION RATE FOR TRANSPORT GROUPS	
Category II	1.5
Category III	2.0
Category IV	4.0

Organization of the toll system on the M-11



II. USE OF A SINGLE OPERATOR FOR THE TOLL OPERATION OF SECTIONS 1, 2, 4, AND 6 OF THE M-11 MOSCOW-ST. PETERSBURG HIGHWAY

An O&M contract will be concluded to utilize a single operator for operator activities on sections 1, 2, 4, and 6 of the M-11 Moscow-St. Petersburg Highway, including the collection of tolls as well as the provision of accident manager services on these sections. The term of this O&M contract will be 10 years (until 2027).

Tolls for users of the M-11 Moscow-St. Petersburg Highway will be charged in accordance with the tariff plan approved by Russian Highways State Company. A tariff policy option has been chosen to calculate the amount of fare for vehicles on the roads of Russian Highways State Company that takes into account the need for an adaptation period (users should get used to being charged tolls on toll roads) and envisages the establishment of toll rates amounting to:

- RUB 1 per km for Category I motor vehicles on reconstructed highways;
- RUB 1.5 per km for Category I motor vehicles on constructed roads.

The programme of Russian Highways State Company envisages annual indexation of tolls for vehicles.

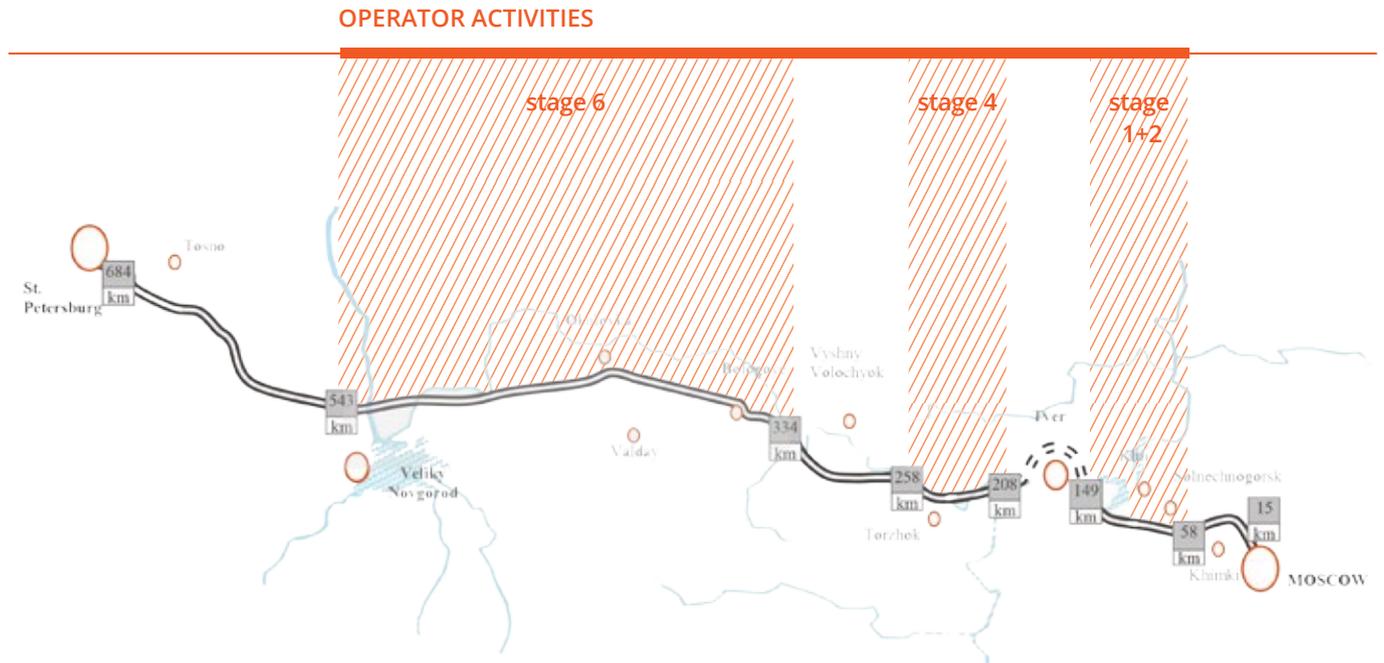
Project funding

Cost per year in 2017 prices: RUB 595.9 mn.

Total cost in 2017 prices excluding VAT: RUB 5958.9 mn (cost is approximate and may be adjusted taking into account the toll system's lane traffic).

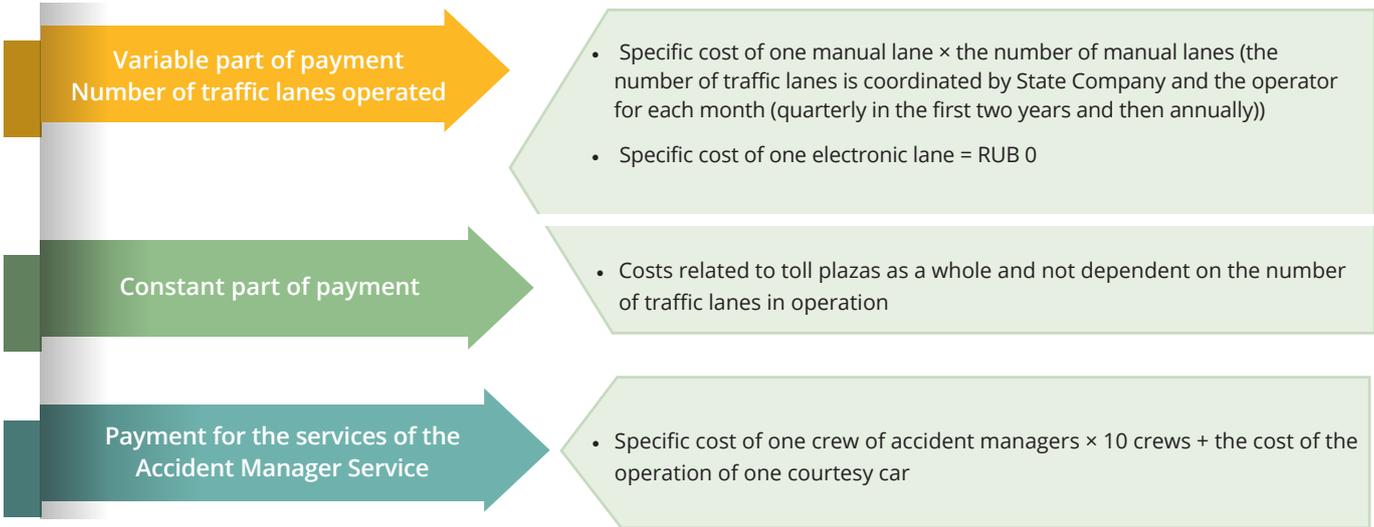
In order to calculate the payment for the operator, the parties are developing a schedule for lane operation that determines the number of functioning toll plazas operating based on non-stop electronic collection technology, stop-based electronic collection technology, and stop-based cash collection technology at all toll plazas.

Map of sections of the M-11 Moscow–St. Petersburg Highway that are included in the O&M contract



SERVICES OF THE ACCIDENT MANAGER SERVICE
(over sections covering a total of 610 km)

Structure of payments to the operator



An operator's violation of the obligations for operator activities and the provision of services by the Accident Manager Service as well as the failure to eliminate such violations by the approved deadline shall constitute grounds for charging the operator penalty points by calculating an amount to be withheld.

III. SECTION BETWEEN KM 15–KM 58 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

1. LAYOUT OF THE SECTION BETWEEN KM 15–KM 58 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

The main section of the M-11 Moscow–St. Petersburg High-Speed Highway between km 15–km 58 was one of the first Russian road infrastructure construction projects implemented within the framework of a public-private partnership using a concession. The project's concession partner is the Russian Highways State Company and the concessionaire is North-West Concession Company LLC, a company specially established in 2007 that solely handles the implementation of this project.

LEGEND:



THE SECTION THAT HAS BEEN BUILT IS OF THE HIGHEST IA CATEGORY AND IS A TOLL-BASED ALTERNATIVE TO THE EXISTING M-10 RUSSIA HIGHWAY ON THE BUSIEST SECTION FROM THE MOSCOW RING ROAD TO SOLNECHNOGORSK. ITS OPENING ON 24 DECEMBER 2014 SIGNIFICANTLY REDUCED TRAVEL TIME TO THE MOSCOW SUBURBS ZELENOGRAD, SKHODNYA, SOLNECHNOGORSK, DOLGOPRUDNY, AND SHEREMETYEVO AIRPORT.

The new road is distinguished by an unprecedentedly high level of attention to driver safety for the Russian road industry and the ecology of the project.

A solid-cast concrete barrier made according to European technology has been installed on the median along the entire length of the 43-km section with a reinforced structure for Russian operating conditions, and the edges of the road are fully equipped with metal road safety barriers.

The main section of the M-11 highway is the most advanced Russian road from an environmental standpoint as well – more than 23 km of noise barriers have been installed along the road, the edges of the highway are additionally protected by a 2-metre mesh fence, and 27 treatment facilities have been installed.

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 15–KM 58 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

The section between km 15 – km 58 of the M-11 Moscow–St. Petersburg Highway has the following intersections and junctions with the main highways that form the transport network of the Moscow Region:

km 16	- transport interchange at the intersection with Likhachevskoye Highway. Transport interchange with directional exits that provide access to the cities of Khimki, Dolgoprudny, and the Moscow Ring Road at the Korovinsky interchange. Exits S-9 and S-10 connect with the Korovinsky interchange and categorized within the second stage of construction;
km 17	- intersection with the passage to Sovkhoznyaya Street of the Khimki city district;
km 20	- transport interchange at the intersection with the Khimki-Starbeyevo road. At this intersection, the projected Khimki bypass connects the future highway with Khimki and then with the existing Leningrad Highway and the town of Starbeyevo. The interchange is designed as an incomplete cloverleaf, or in the future could have a complete cloverleaf design. This transport interchange is categorized within the second stage of construction;
km 22	- intersection with the Vashutino–Yakovlevo Highway;
km 24	- transport interchange at the intersection with Mezhdunarodnaya Highway (access to Sheremetyevo-2 Airport). At the intersection of Mezhdunarodnaya Highway with the entrance to Sheremetyevo-2 Airport and the projected Sheremetyevo-3 Airport. Individual type of transport interchange. Exits S-5, S-8, and S-10 connected to the approach to the planned Sheremetyevo-3 Airport; categorized within the second stage of construction;
km 27	- intersection with the Svistukha–Vashutino Highway;
km 28	- transport interchange at the intersection with Sheremetyevskoye Highway (access to Sheremetyevo-1 Airport). Transport interchange with a directional Sheremetyevo-1-Moscow exit;
km 31	- intersection with the M-10 Russia Highway;
km 32	- intersection with the M-10 Russia Highway – Pikino–Lunevo–Nosovo;
km 32	- interchange at the intersection with the road to Zelenograd;
km 39	- intersection with the road to the village of Klushino;
km 42	- intersection with the M-10 Russia Highway–Lunevo–Tsesarka–Klushino;
km 46	- intersection with the M-10 Russia Highway–Bukharovo–Kochugino;
km 48	- interchange with the intersection of the A-107 Moscow Small Ring Road;

km 51	- intersection with the road to Ovsyannikovo;
km 53	- intersection with the road to Terekhovo gardening establishment;
km 55	- intersection with the M-10 Russia Highway–Peshki–Gaydarovets Children’s Health Centre;
km 58	- interchange with the M-10 Russia Highway.

The number of traffic lanes on the highway section in question is:

- On the first 14 km of the road (before the turn to Sheremetyevo-1 Airport) – 5 lanes in each direction;
- On the next 7 km of the road (before the turn to Zelenograd) – 4 lanes in each direction (one lane is to be built on this section over the duration of the concession agreement);
- On the remaining 22-km section (from the turn to Zelenograd to the intersection with the existing M-10 highway), the road has 2 lanes in each direction (2 more lanes are to be built in each direction on this section over the duration of the concession agreement).

Main technical and economic parameters of the section between km 15–km 58

Construction period	2011–2014
Road category	IA
Length of section, km	43.1
Design speed, km/h	150
Number of traffic lanes	km 15–35 – 10 lanes; km 35–58 – 8 lanes
Width of road way (in each direction), m	km 15–35 – 2x18.75; km 35–58 – 2x15
Width of the median, m	3.7
Multilevel interchanges	7
Bridges and overpasses	39
Pedestrian overpasses	3
Noise screens, m	height of 6 m – 13,050; height of 4 m – 890

3. PROJECT FUNDING

THE SECTION OF THE M-11 MOSCOW–ST. PETERSBURG HIGH SPEED HIGHWAY BETWEEN KM 15–KM 58 IS THE SUBJECT OF A CONCESSION AGREEMENT AND INCLUDES THE FOLLOWING DESIGN DOCUMENTATION:

- land plots within the easement area and structural components located on or under them (road way, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities);
- transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities).

Duration of the agreement: 31 years.

Project implementation stages:

- investment stage: 2010–2015;
- operational stage: 2015–2040

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

The winner of the tender is North-West Concession Company (Vinci group, France).

IV. SECTION BETWEEN KM 58–KM 149 (STAGES 1 AND 2) OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

1. LAYOUT OF THE SECTION BETWEEN KM 58–KM 149 STAGES 1 AND 2) OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

The 89.01 km road will be part of the M-11 Moscow–St. Petersburg High-Speed Toll Highway, which is currently under construction and connects the country's two largest metropolitan areas. Stages 1 and 2 (km 58–km 149) of the highway pass through the administrative borders of the Moscow Region as well as the Konakovo District of the Tver Region.

Section km 58–km 149 of the M-11 Moscow–St. Petersburg Highway



LEGEND:		Section of the M-11 Moscow–St. Petersburg Highway ready for implementation
		Section of the M-11 Moscow–St. Petersburg Highway in the implementation stage
		M-10 Russia Highway
		Section of the M-11 Moscow–St. Petersburg Highway in the design stage

The design documentation establishes the start of the construction of the first section of the M-11 at km 58 and the end at km 97. The second section of the route corresponds to km 97– km 149 with:

- km 58–km 111.3 passing through the territory of the Solnechnogorsky and Klinsky Districts of the Moscow Region;
- km 111.3–km 149 passing through the territory of the Konakovsky District of the Tver Region.

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 58–KM 149 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

An analysis of the results of the projected traffic intensity and congestion levels shows that the section in question needs to be built in 2 stages

- Stage 1 – construction of an IA technical category highway with 4 lanes throughout the section between km 58–km 149;
- Stage 2 – increasing the number of traffic lanes to 8 throughout the section between km 58–km 149.

Four lanes were accepted in accordance with the construction design of the first stage of the Moscow–St. Petersburg Highway on the section between km 58–km 149.

The full (projected) development of the highway envisages increasing the road way to 8 lanes after monitoring the increase in traffic intensity and once the road with a four-lane roadway gets close to exhausting its capacity.

The first and second sections envisage the construction of 49 artificial structures (10 bridges, 17 overpasses within the body of the highway, 9 overpasses over the highway, 11 overpasses as part of interchanges, and 2 pedestrian overpasses).

Main technical and economic parameters of the section between km 58–km 149

PARAMETER	Section 1 km 58–km 97	Section 2 km 97–km 149	Road to Klin
Road category	IA	IA	IB
Length, km	38.1	50.9	5.6
Design speed, km/h	150	150	120
Number of traffic lanes	4		
Width of road way, m	7.5x2		
Width of median, m	6.0	6.0	5.0
Width of shoulder, m	3.75		
Pavement type	heavy-duty		
Surface type	stone mastic asphalt		
Bridges	4	5	1
Overpasses within the body of the road	8	8	1
Overpasses over the road	4	4	1
Interchange overpasses	6	4	1
Pedestrian overpasses	–	2	–
Multilevel interchanges	3	3	1
Toll plazas	3	2	1
Construction period	2016–2018		

THE DESIGN DOCUMENTATION
ENVISAGES TWO TYPES OF
TRAFFIC INTERCHANGES:
TRANSPORT INTERCHANGES
FOR ACCESS TO ROADS AND
LINKS TO THE LOCAL ROAD
NETWORK AS WELL AS TECHNICAL
INTERCHANGES (FOR U-TURNS):

- The interchange at km 58 is designed to link the projected Moscow-St. Petersburg High-Speed Highway with the existing M-10 Russia Highway. The interchange is being built with a toll plaza on the main road of the Moscow-St. Petersburg High-Speed Highway.
- The interchange at km 67 is located at the intersection of km 67 of the M-11 and Pyatniskoye Highway. The traffic junction is built with the following traffic design: junction No. 1 with a "tube" design running to the High Speed Toll Road with an additional left-hand ramp for cars to turn around and junction No. 2 with a "tube" design on the Moscow-St. Petersburg-Solnechnogorsk – Spass highway, which also has an additional left-hand ramp. The toll plaza is located on a section combining the two interchanges.
- The interchange at km 90 is located at the intersection of the Highway and the Klin-Nudol road (section A-108 of the Moscow Outer Ring Road). Central Control Point-1 is located combined with the toll plaza is located at the traffic intersection. The interchange is an incomplete cloverleaf type of junction on the A-108 road for cars heading in the direction of Klin-Nudol and on the exit from the Highway.
- The interchange at km 97 is located at the intersection of the High-Highway and the road to Klin (to the M-10 Russia Highway). There is a toll plaza at the interchange.
- The interchange at km 124 is located at the intersection of the M-11 with the M-10 – Kozlovo. This interchange is designed to link the Highway and the existing M-10 Russia Highway. A toll plaza is projected to be built at the interchange.
- The interchange is located at the intersection of the road to Klin and the M-10 Russia Highway. The interchange at the road to Klin was built as an incomplete cloverleaf on the M-10 Russia Highway for cars heading towards Moscow-St. Petersburg.
- The interchange at km 149 is located at the intersection of the Highway and the M-10 Russia Highway. The construction of the interchange is divided into 2 stages. A toll plaza is projected to be built at the interchange.

3. PROJECT FUNDING

Stages 1 and 2 of the M-11 Moscow–St. Petersburg High-Speed Highway (km 58–km 97, km 97–km 149) is the subject of a long-term investment agreement and includes the following design documentation:

Stages 1 and 2 of the M-11 Moscow–St. Petersburg High-Speed Highway (km 58–km 97, km 97–km 149) is the subject of a long-term investment agreement and includes the following design documentation:

- land plots within the easement area and structural components located on or under them (road way, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities);
- transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities).

Duration of the agreement: 23 years, but no later than 31 December 2038.

Project implementation stages:

- investment stage: 2016–October 2018;
- operational stage: November 2018–2038.

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Initial tender conditions:

- Cost of building the facility under the agreement – RUB 74.6 billion in the prices of the corresponding years inclusive of VAT, including:
 - ☑ funding by Russian Highways State Company – RUB 67.1 billion;
 - ☑ investment of the contractor – RUB 7.5 billion;
- Public funding provided during the operational stage, including:
 - ☑ base amount of annual operating payment – RUB 15.5 billion excluding VAT in prices of the first quarter of 2015;
 - ☑ investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.65%.

Tender participants: Transstroyemkhanizatsiya LLC and AVTOBAN Road Construction Company JSC.

Winner of the tender: Transstroyemkhanizatsiya LLC.

A long-term agreement was concluded with the winner of the tender on the following terms:

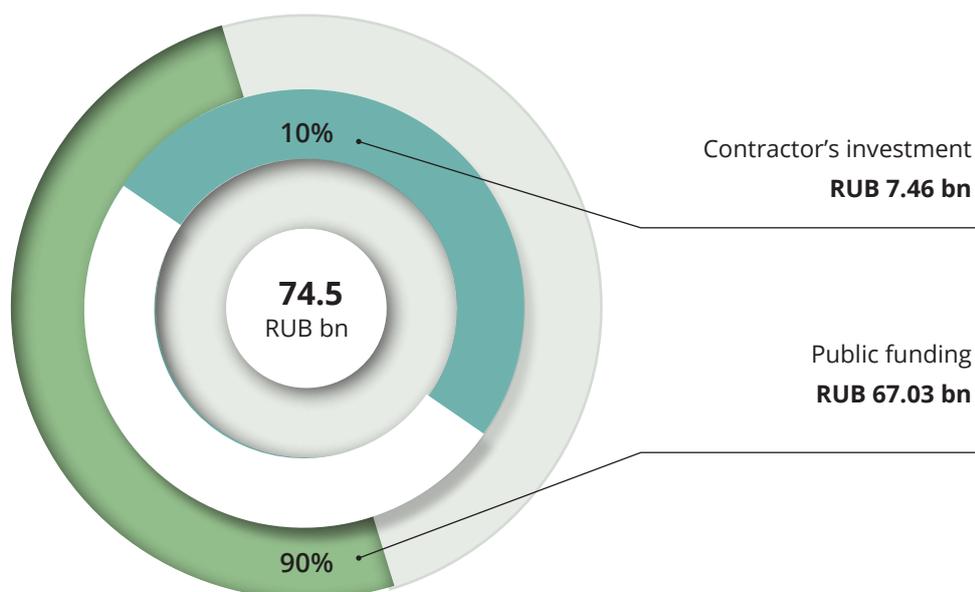
- cost of building the facility under the agreement – RUB 74.5 billion in the prices of the corresponding years inclusive of VAT, including:
 - ☑ funding by Russian Highways State Company – RUB 67 billion;
 - ☑ investment of the contractor – RUB 7.5 billion;
- public funding provided during the operational stage, including:
 - ☑ base amount of annual operating payment – RUB 15.4 billion excluding VAT in prices of the first quarter of 2015;
 - ☑ investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.65%.

3.1. COMMERCIAL STRUCTURE OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY PROJECT ON THE SECTION BETWEEN KM 58–KM 149

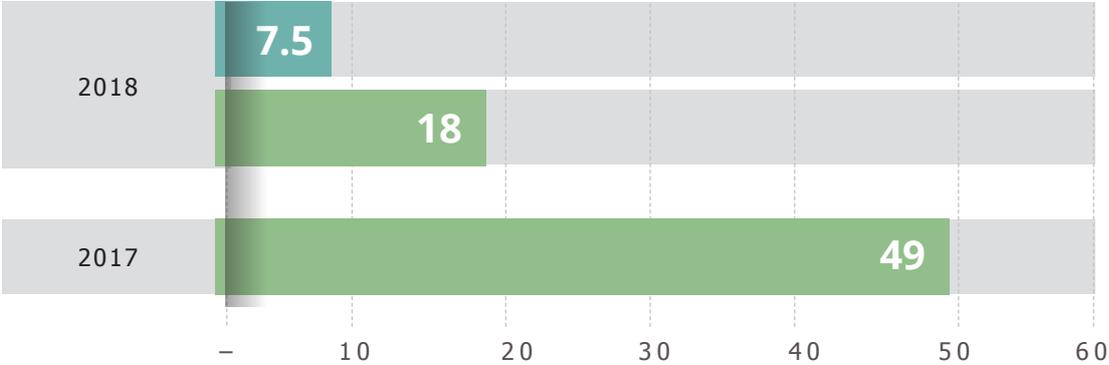
FUNDING OF THE PROJECT DURING THE INVESTMENT STAGE

The cost of work under the agreement during the investment stage is RUB 74.5 billion in the prices of corresponding years, including VAT. Avtodor and the contractor will provide funding for the construction of the highway in the following proportion, respectively: 90%/10%.

Funding structure of the M-11 Moscow–St. Petersburg Highway on the section between km 58–km 149



Schedule of capital expenditure distribution by year, RUB bn



LEGEND:
 ■ Extra-budgetary sources
 ■ Public funding

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

Key parameters for the repayment of extra-budgetary funds M-11 Moscow–St. Petersburg Highway on the section between km 58–km 149

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn (in the prices of corresponding years including VAT):	74.5
- federal budget subsidies	67
- contractor's investments	7.5
including:	
- borrowed funds	3.7
- internal funds	3.7
Deadline for the repayment of borrowed funds, years	11
Deadline for the repayment of internal funds, years	20
Average rate of return on contractor's investment	6.6%+CPI
including:	
floating rate of return on contractor's borrowed funds	4.65%+CPI
floating rate of return on contractor's internal funds	8.5%+CPI

4. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the long-term investment agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the contractor are assigned to Russian Highways State Company, which serves as a public partner in this project.

The implementation of the project based on the mechanism of a long-term investment agreement makes it possible to reduce the contractor's investments, which consequently reduces its financial risks.

Key risks of the project

RISK	DESCRIPTION OF RISK	PRIVATE PARTNER	State Company
Design risks	Likelihood of errors in design decisions and construction plans	●	●
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<ul style="list-style-type: none"> • damage to the environment as a result of the contractor's actions during the construction and operation of the facility; • environmental risks associated with the design documentation 	●	●
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work during the operational stage		●
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the contractor's obligations under the long-term investment agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process	Expansion of roads or interchanges or the modernization of equipment for the toll system or the traffic control system		●

V. SECTION BETWEEN KM 208–KM 258 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

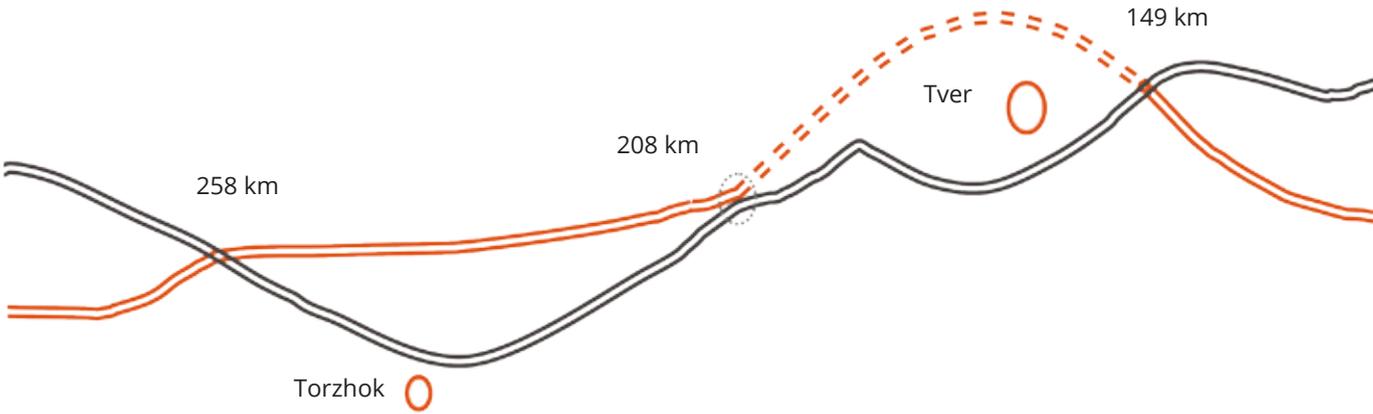
1. LAYOUT OF THE SECTION BETWEEN KM 208–KM 258 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

THE 47.91-KM ROAD WILL BE PART OF THE M-11 MOSCOW–ST. PETERSBURG HIGH-SPEED TOLL HIGHWAY CONNECTING THE COUNTRY'S TWO LARGEST METROPOLISES.

The 4th section (km 208 – km 258) of the highway passes through the administrative boundaries of the Kalininsky and Torzhoksky Districts of the Tver Region.

The design documentation establishes the start of the design section of stage 4 of the M-11 route at km 208. The end of stage 4 of the route corresponds to km 257.7, including the following sections:

- km 208.6–km 217.8 passes through the Kalininsky District of the Tver Region;
- km 217.8–km 257.7 passes through the Torzhoksky District of the Tver Region.



- LEGEND:
- Interchange
 - Sections of the M-11 Moscow–St. Petersburg Highway
 - M-10 Russia Highway
 - Sections of the M-11 Moscow–St. Petersburg Highway during the design stage

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 208–KM 258 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

Main technical and economic parameters of the section between km 208–km 258

Construction period	2014–2017
Road category	IA
Length, km	47.91
Design speed, km/h	150
Number of traffic lanes	4
Width of the road way, m	2x7.5
Width of the dividing strip	6.0
Width of the shoulder, m	3.75
Payment type	heavy-duty
Surface type	stone mastic asphalt
Bridges	4
Overpasses within the body of the road	16
Overpasses over the road	3
Interchange overpasses	2
Adjoining road overpasses	1
Multilevel interchanges	3
Projected intensively:	27,000 vehicles/day (over the first 5 years of operation)

An analysis of the projected traffic intensity and congestion levels shows that this section of the route must be built in accordance with IA road standards in two stages, which will make it possible to reduce one-time costs. Four lanes are projected in accordance with the design for the construction of the first stage of the Moscow-St. Petersburg Highway on the section between km 208–km 258. The comprehensive (projected) development of the highway envisages increasing the road way to six lanes after monitoring the increase in traffic intensity and once the road with a four-lane roadway gets close to exhausting its capacity.

The fourth section envisages the construction of 26 artificial structures (4 bridges, 16 overpasses within the body of the highway, 3 overpasses over the highway, 2 overpasses as part of interchanges, and 1 adjoining road overpass).

The design documentation envisages two types of traffic interchanges: transport interchanges for access to roads and links to the local road network as well as technical interchanges (for U-turns):

- The interchange at km 209.7 is intended to connect the existing M-10 Russia Highway, the Kulitskoye–Mednoye Highway the projected Moscow–St. Petersburg Highway. It is a standalone type of interchange type with a toll plaza located on the right-hand exit with a circular interchange at the junction with the existing road and the construction of two overpasses;
- Interchange at km 214.4. This intersection is located at km 214 of the projected section of the route and the Mednoye–Likhoslavl highway in the Kalininsky District of the Tver Region. This interchange is built in the form of a transport junction consisting of two interchanges. A “pipe” type of junction is envisaged at the intersection with the Highway, while a one-level interchange is to be built at the Likhoslavl intersection of the Moscow–St. Petersburg Highway. A toll booth is to be built between the two junctions;
- The interchange at km 257.5 is built to link the existing section of the M-11 route (Stage 5–km 258–km 334) with the projected section (Stage 4 – km 208–km 258). The second phase of construction of this interchange is envisaged as part of the fourth stage. The first phase has already been completed as part of the fifth stage of construction.

3. PROJECT FUNDING

THE FOURTH SECTION OF THE M-11 MOSCOW–ST. PETERSBURG HIGH-SPEED HIGHWAY (KM 208–KM 258) IS THE SUBJECT OF A LONG-TERM INVESTMENT AGREEMENT AND INCLUDES THE FOLLOWING DESIGN DOCUMENTATION:

- land plots within the easement area and structural components located on or under them (road way, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities);
- transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities).

Duration of the agreement: 23 years from the date of conclusion.

Project implementation stages:

- investment stage: 2015–2017;
- operational stage: 2018–2037.

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Initial tender conditions:

- cost of building the facility under the agreement – RUB 32.7 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 27.5 billion;
 - investment of the contractor – RUB 5.2 billion;
- public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 9.2 billion excluding VAT in prices of the first quarter of 2014;
 - investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.65%.

Tender participants: Mostotrest OJSC and AVTOBAN Road Construction Company JSC.

Winner of the tender: Mostotrest OJSC.

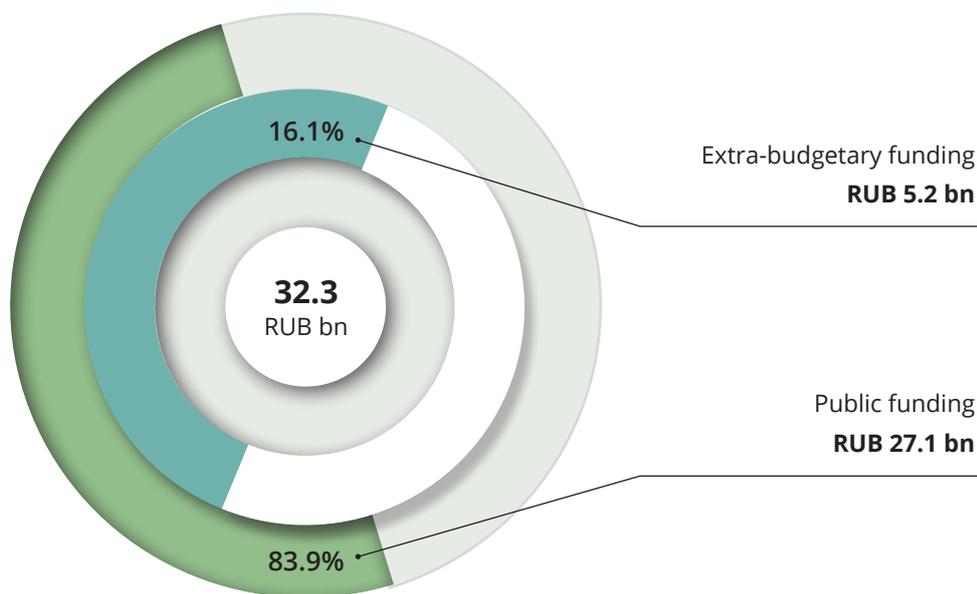
A long-term agreement was concluded with winner of the tender on the following terms:

- cost of building the facility under the agreement – RUB 32.3 billion in the prices of the corresponding years inclusive of VAT, including:
 - ☑ funding by Russian Highways State Company – RUB 27.1 billion;
 - ☑ investment of the contractor – RUB 5.2 billion;
- public funding provided during the operational stage, including:
 - ☑ base amount of annual operating payment – RUB 9.2 billion excluding VAT in prices of the first quarter of 2014;
 - ☑ investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.65%.

3.1. COMMERCIAL STRUCTURE OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY PROJECT ON THE SECTION BETWEEN KM 58–KM 149

The maximum cost of work under the agreement during the investment stage is RUB 32.3 billion in the prices of corresponding years, including VAT. State Company and the contractor will provide funding for the construction of the highway in the following amount: RUB 27.1 billion and RUB 5.2 billion, respectively

Funding structure of the M-11 Moscow–St. Petersburg Highway on the section between km 208–km 258



Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

Key parameters for the repayment of extra-budgetary funds M-11 Moscow–St. Petersburg Highway on the section between km 208–km 258

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn (in the prices of corresponding years including VAT):	32.3
- federal budget subsidies	27.1
- contractor's investments	5.2
including:	
- borrowed funds	2.6
- internal funds	2.6
Deadline for the repayment of borrowed funds, years	10
Deadline for the repayment of internal funds, years	20
Average rate of return on contractor's investment	6.6%+CPI
including:	
floating rate of return on contractor's borrowed funds	4.65%+CPI
floating rate of return on contractor's internal funds	8.5%+CPI

4. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the long-term investment agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the contractor are assigned to Russian Highways State Company, which serves as a public partner in this project.

The implementation of the project based on the mechanism of a long-term investment agreement makes it possible to reduce the contractor's investments, which consequently reduces its financial risks.

Key risks of the project

RISK	DESCRIPTION OF RISK	PRIVATE PARTNER	STATE COMPANY
Design risks	Likelihood of errors in design decisions and construction plans	●	●
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<ul style="list-style-type: none"> • damage to the environment as a result of the contractor's actions during the construction and operation of the facility; • environmental risks associated with the design documentation 	●	●
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work during the operational stage	●	●
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the contractor's obligations under the long-term investment agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process	Expansion of roads or interchanges or the modernization of equipment for the toll system or the traffic control system		●

VI. SECTION BETWEEN KM 258–KM 334 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

1. LAYOUT OF THE SECTION BETWEEN KM 258–KM 334 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

The 72-km section between km 258–km 334 of the M-11 Moscow–St. Petersburg passes through the Tver Region, bypassing the town of Vyshny Volochyok. The section traverses the territories of the Torzhoksky, Spirovsky, and Vyshnevolotsky Districts. It stretches from the south-east to the north-west from the Tver Region city of Torzhok to Kurskoye village on the border of Vyshnevolotsky and Bologovsky districts:

- The section between km 258–km 266 of the highway passes through the territory of the Torzhoksky District. The section starts after the axis of the planned route crosses the axis of the existing M-10 Russia Highway.
- The section between km 266–km 275 of the route passes through the territory of the Spirovsky District.
- The section from km 275 to the border of the design section of the route passes through the territory of the Vyshnevolotsky District.



LEGEND: *MOSCOW* Populated areas
Torzhok

— section of the M-11 Moscow–St. Petersburg Highway between km 258–km 334

— M-10 Russia Highway

- - - Railway

— Specially protected area

— Rivers and ponds

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 258–KM 334 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

**IN ORDER TO SAVE MONEY ON
PRIORITY CAPITAL INVESTMENTS,
THE DECISION WAS MADE TO
DIVIDE CONSTRUCTION INTO TWO
PHASES.**

Thus, 4 lanes with a 6-m wide median must be built as part of the first phase of Stage 5. The second phase of construction should provide for an increase in the number of traffic lanes to 6 throughout the section between km 258–km 334 in accordance with the estimated traffic intensity (by 2030).

The design documentation assumes the following parameters for Stage 1 of the construction of the route section:

INDICATOR	VALUE
Construction period	2011–2015
Road category	IA
Length, km	72
Number of main traffic lanes	4
Design speed, km/h	150
Width of road way, m	3.75x4
Width of the median, m	6
Pavement type	heavy-duty
Surface type	asphalt concrete
Artificial structures	54
– bridges	14
– overpasses within the body of the road	20
– overpasses over the road	18
– interchange overpasses	2
Multilevel interchanges	2
Projected traffic intensity, vehicles/day	12,000–15,000

**THE DESIGN DOCUMENTATION
ENVISAGES THE CONSTRUCTION
OF MULTILEVEL INTERCHANGES:**

- The interchange at km 257 is intended to connect the existing M-10 Russia Highway and the projected highway and marks the start of the bypass section of Vyshny Volochyok. The intersection in question is located at km 250 of the M-10 Russia Highway in the area near Budovo village.
- Interchange at km 329. The intersection in question is located at km 323 of the M-10 Russia Highway in the area near Kurskoye village. This interchange is intended to connect the existing M-10 Russia Highway and the projected highway and marks the end of the Vyshny Volochyok bypass section.

3. PROJECT FUNDING

Organizational and contractual form of the project: long-term investment agreement. The facility is the fifth section of the Moscow-St. Petersburg High-Speed Highway (km 258–km 334), which includes the project documentation:

- land plots within the easement area and structural components located on or under them;
- road structures that constitute a technological component of the road;
- transport infrastructure engineering structures.

Duration of the agreement: 23 years from the date of conclusion.

Project implementation stages:

investment stage – 2011–November 2015

operational stage – December 2015–2033

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Initial tender conditions:

- cost of building the facility under the agreement – RUB 49.7 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 44.5 billion;
 - investment of the contractor – RUB 5.2 billion.

Winner of the tender: Mostotrest OJSC.

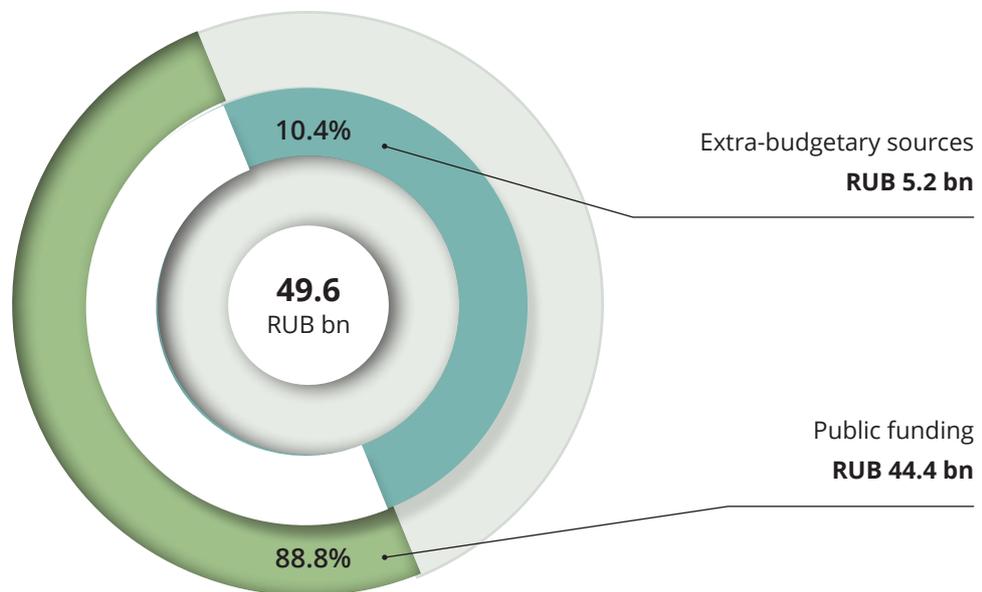
A long-term agreement was concluded with winner of the tender on the following terms:

- cost of building the facility under the agreement – RUB 49.6 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 44.4 billion;
 - investment of the contractor – RUB 5.2 billion.

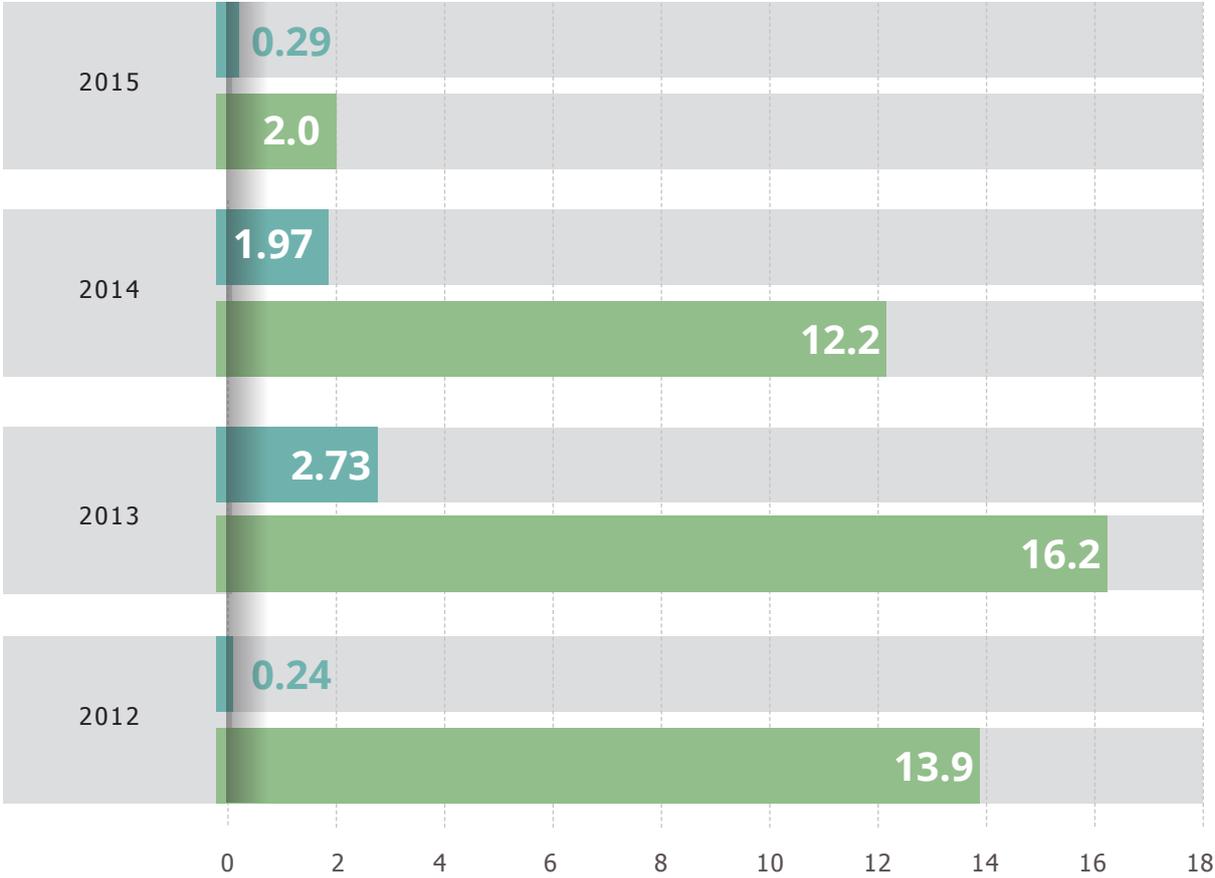
3.1. COMMERCIAL STRUCTURE OF THE PROJECT FINANCING OF THE PROJECT DURING THE INVESTMENT STAGE

The total cost of the facility's construction within the long-term investment agreement is RUB 49.6 billion in the prices of the corresponding years, including VAT. State Company and the contractor will provide funding for the construction of the highway in the following amount: RUB 44.4 billion and RUB 5.2 billion, respectively.

Funding structure of the M-11 Moscow–St. Petersburg Highway on the section between km 258–km 334



Schedule of capital expenditure distribution by year, RUB bn



LEGEND:
■ Extra-budgetary sources
■ Public funding

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

Key parameters for the repayment of extra-budgetary funds M-11 Moscow–St. Petersburg Highway on the section between km 258–km 334

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn (in the prices of corresponding years including VAT):	49.6
- federal budget subsidies	44.4
- contractor's investments	5.2
including:	
- borrowed funds	3.4
- internal funds	1.8
Deadline for the repayment of borrowed funds, years	15
Deadline for the repayment of internal funds, years	20
Average rate of return on contractor's investment	4.25% + key rate
including:	
floating rate of return on contractor's borrowed funds	$(4.25\% + \text{key rate}) * 0.896$
floating rate of return on contractor's internal funds	$(4.25\% + \text{key rate}) * 1.194$

VII. SECTION BETWEEN KM 334–KM 543 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

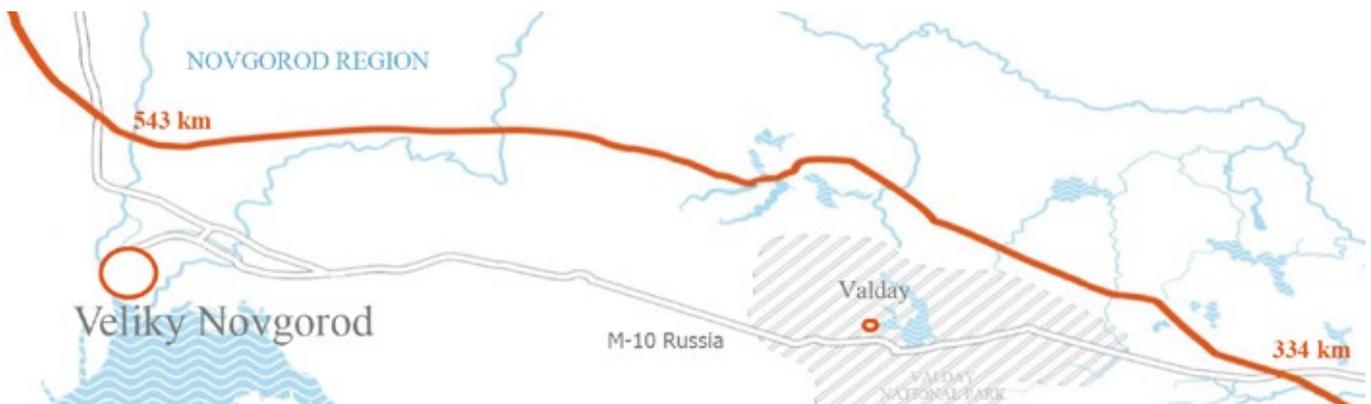
1. LAYOUT OF THE SECTION BETWEEN KM 334–KM 543 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

The 217.1-km section will be part of the M-11 Moscow–St. Petersburg Highway connecting the country's two largest metropolises.

The sixth section (km 334–km 543) of the highway passes through the territory of the Tver (Vyshnevolotsky and Bologovsky Districts) and Novgorod Regions (Okulovsky, Malovishersky and Novgorodsky Districts).

The design documentation established the start of Stage 6 of the M-11 highway at km 334. Stage 6 ends at km 543 and includes the following sections:

- km 334–km 388 passes through the territory of the Bologovsky District of the Tver Region;
- km 389–km 475 passes through the Okulovsky District of the Novgorod Region;
- km 475–km 514 passes through the Malovishersky District of the Novgorod Region;
- km 514–km 543 passes through the Podberezovsky rural settlement of the Novgorod Region.



2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 334–KM 543 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

Main technical and economic parameters of the section between km 334–km 543

INDICATOR	VALUE
Construction period	2013–2018
Road category	IA
Length, km	217.0
Number of main traffic lanes	4
Design speed, km/h	150
Width of road way, m	3.75x4
Width of the median, m	6
Pavement type	capital
Surface type	asphalt concrete
Artificial structures	107
– bridges	42
– overpasses within the body of the road	32
– overpasses over the road	22
– interchange overpasses	9
– widening of bridge structures	2
Multilevel interchanges	6
Projected traffic intensity over the first 3 years of toll operation, vehicles/day	15,000–17,000

THE DESIGN DOCUMENTATION
FOR THE SECTION BETWEEN
KM 334–KM 543 OF THE M-11
MOSCOW–ST. PETERSBURG
HIGHWAY ENVISAGES THE
CONSTRUCTION OF MULTILEVEL
INTERCHANGES:

- Interchange at km 348: individual type with a toll booth located on the right-hand exit with a roundabout arrangement at the junction to the existing road and the construction of two overpasses.
- Interchange at km 402: the Dolgiye Borody-Uglovka Highway on this section has two lanes with a periodic change in the number of lanes in each direction.
- Interchange at km 444. The intersection of the projected road with the Kresttsy–Okulovka–Borovichi Highway at km 444 envisages an individual interchange with the construction of toll booths.
- Interchange at km 524: an individually designed interchange combined with a roundabout is envisaged for the junction of the Novoselitsa–Paporotno Highway (Category IV) with the M-11 (Category I) along with the construction of a toll booth.

3. PROJECT FUNDING

Organizational and contractual form of the project's implementation: long-term investment agreement. The subject is the 6th section of the Moscow–St. Petersburg Highway (km 334–km 543), which envisages the following design documentation:

- land plots within the easement area and structural components located on or under them;
- road structures that constitute a technological component of the road;
- transport infrastructure engineering structures.

Duration of the agreement: 26 years from the date of conclusion.

Project implementation stages:

investment stage: December 2014–2018

operational stage: December 2018–2039.

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Initial tender conditions:

- Cost of building the facility under the agreement – RUB 149 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 133.1 billion;
 - investment of the contractor – RUB 15.9 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 29.8 billion excluding VAT in prices of the first quarter of 2013;
 - investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.55%.

Tender participants: Transstroyemekhanizatsiya LLC and AVTOBAN Road Construction Company JSC.

Winner of the tender: Transstroyemekhanizatsiya LLC.

A long-term agreement was concluded with winner of the tender on the following terms:

- Cost of building the facility under the agreement – RUB 144.6 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 128.6 billion;
 - investment of the contractor – RUB 16 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 27.4 billion excluding VAT in prices of the first quarter of 2013;
 - investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 2.0%.

3.1. COMMERCIAL STRUCTURE OF THE M-11 MOSCOW-ST. PETERSBURG HIGHWAY PROJECT ON THE SECTION BETWEEN KM 334-KM 543

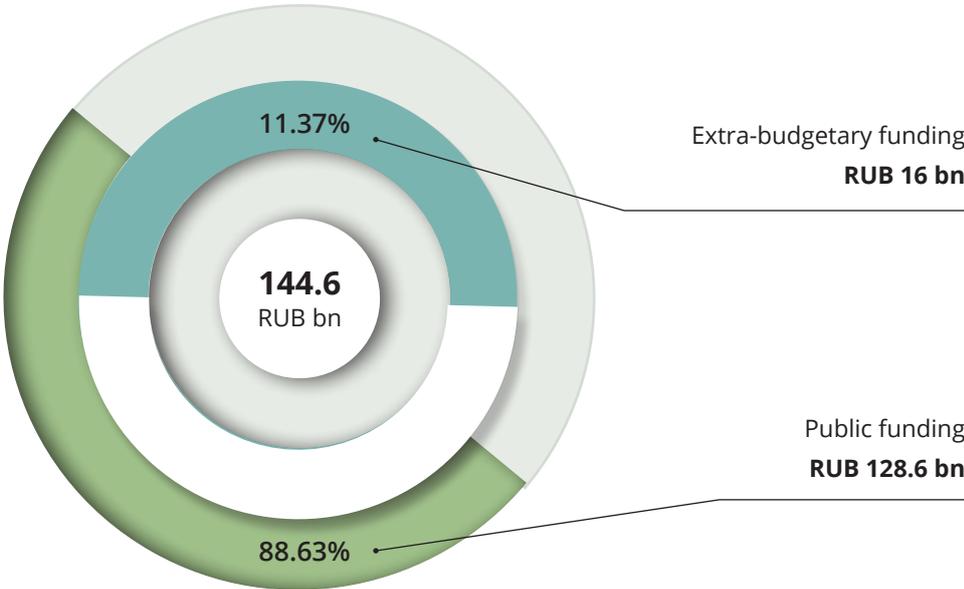
PROJECT FUNDING DURING THE INVESTMENT STAGE

The final parameters of capital expenditures under the agreement were determined as follows based on the results of the tender:

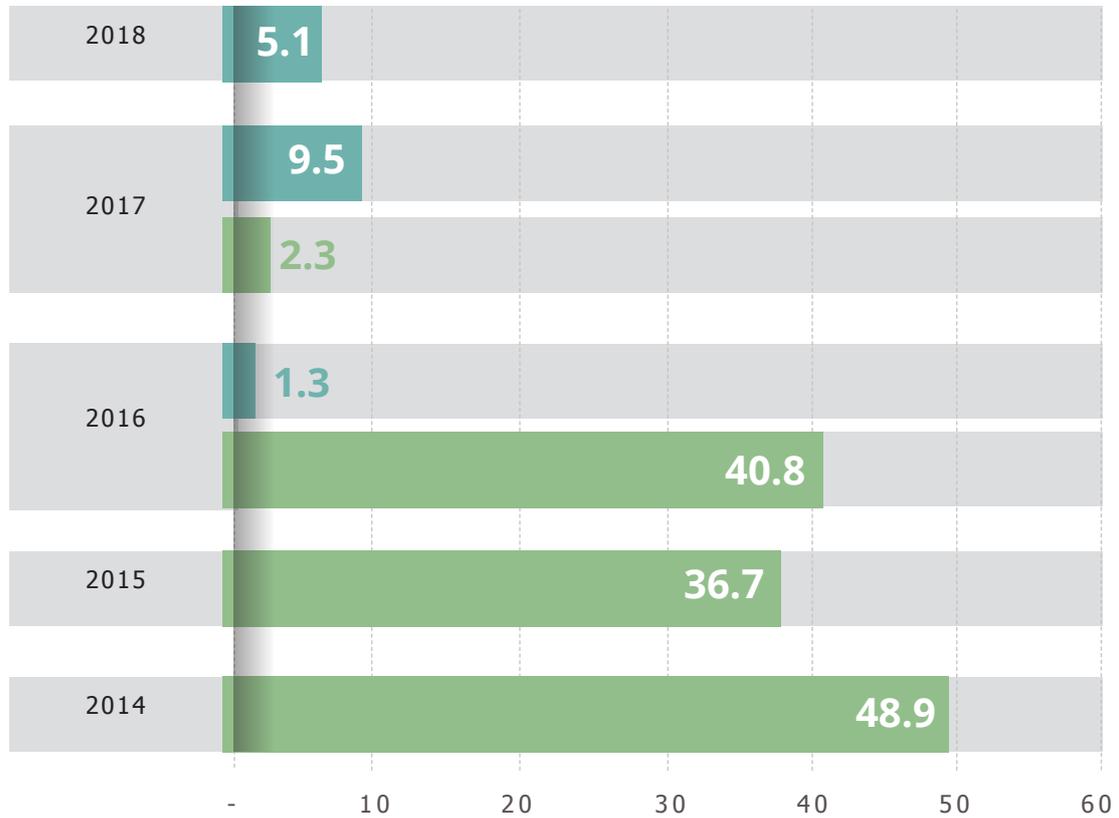
the total cost of the agreement at the investment stage will be RUB 144.6 billion in the prices of the corresponding years inclusive of VAT, including:

- public funding – RUB 128.6 billion in the prices of the corresponding years, including VAT;
- private funding remained unchanged, amounting to RUB 16 billion in the prices of the corresponding years, including VAT.

Funding structure of the project km 334-km 543 of the Moscow-St. Petersburg Highway



Schedule of capital expenditure distribution by year, RUB bn



LEGEND: ■ Extra-budgetary sources
■ Public funding

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

Key parameters for the repayment of extra-budgetary funds M-11 Moscow-St. Petersburg Highway on the section between km 334-km 543

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn (in the prices of corresponding years including VAT):	144.6
- federal budget subsidies	128.6
- contractor's investments	16
Including:	
- borrowed funds	7.9
- internal funds	7.9
Deadline for the repayment of borrowed funds, years	11
Deadline for the repayment of internal funds, years	22
Average rate of return on contractor's investment	3.9%+CPI
Including:	
Floating rate of return on contractor's borrowed funds	2%+CPI
Floating rate of return on contractor's internal funds	5.85%+CPI

4. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the long-term investment agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the contractor are assigned to Russian Highways State Company, which serves as a public partner in this project.

The implementation of the project based on the mechanism of a long-term investment agreement makes it possible to reduce the contractor's investments, which consequently reduces its financial risks.

RISK	DESCRIPTION OF RISK	CONTRACTOR	STATE COMPANY
Design risks	Likelihood of errors in design decisions and construction plans	●	●
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<ul style="list-style-type: none"> • damage to the environment as a result of the contractor's actions during the construction and operation of the facility; • environmental risks associated with the design documentation 	●	
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work during the operational stage		●
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the contractor's obligations under the long-term investment agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process	Expansion of roads or interchanges or the modernization of equipment for the toll system		●

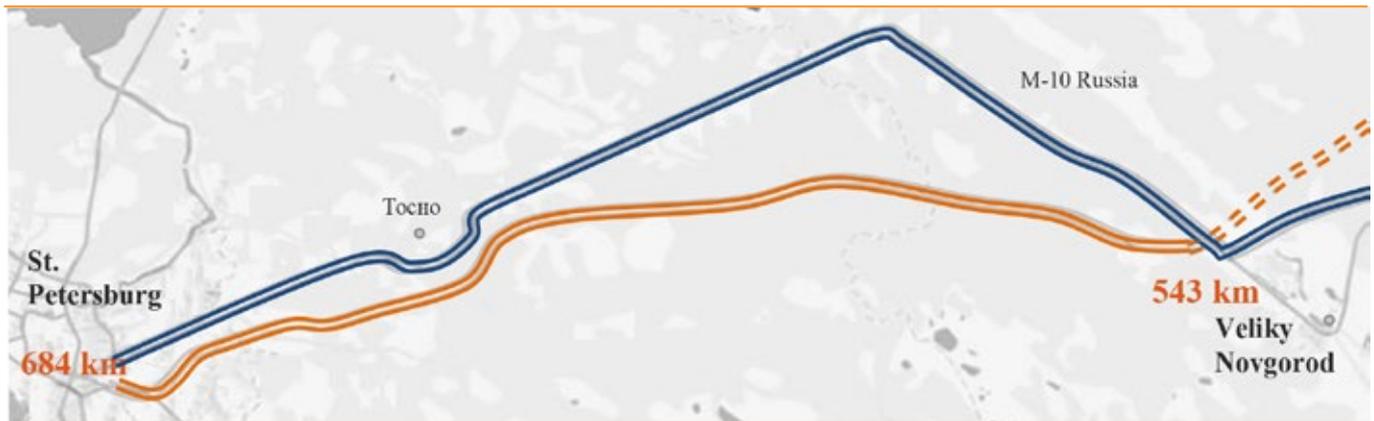
VIII. SECTION BETWEEN KM 54–KM 684 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

1. LAYOUT OF THE SECTION BETWEEN KM 543–KM 684 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

The 137.5-km section will be part of the Moscow–St. Petersburg Highway connecting the country’s two largest metropolises.

The highway section passes through the territory of St. Petersburg as well as the Leningrad and Novgorod Regions.

In the Leningrad Region, the section passes through the Tosnensky District and also near the populated areas of Annolovo, Pavlovsk, and Pushkin. Within St. Petersburg, the highway section passes through the Moskovsky and Pushkinsky Districts, while in the Novgorod Region it runs through the Novgorodsky and Chudovsky Districts.



Petersburg High Speed Highway on the section between km 543–km 684, the following number of traffic lanes is assumed taking into account the projected traffic intensity:

- km 543–km 646: 4 lanes;
- km 646–km 684: 6 lanes.

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 543–KM 684 OF THE M-11 MOSCOW–ST. PETERSBURG HIGHWAY

Main technical and economic parameters of the section between km 543–km 684

INDICATOR	km 543–km 646 (Stage 7)	km 646–km 684 (Stage 8)
Construction period	2014–2018	
Road category	IA	
Length, km	103.39	34.21
Number of main traffic lanes	4	6
Design speed, km/h	150	
Width of road way, m	3.75	3.75
Width of the median, m	6	6
Pavement type	heavy-duty	
Surface type	asphalt concrete	
- bridges and overpasses	38	4
- underpass		1
Multilevel interchanges		3
Projected traffic intensity over the first 3 years of toll operation, vehicles/day	23,000 – 26,000 on the section between km 543–km 646 18,000 – 21,000 on the section between km 646–km 684	

Base tariff rates in the 2013 price level, RUB/km

Category I	1.75
Category II	2.65
Category III	3.50
Category IV	7.00

THE DESIGN DOCUMENTATION
ON THE SECTION BETWEEN
KM 543–KM 684 OF THE M-11
MOSCOW–ST. PETERSBURG
HIGHWAY ENVISAGES THE
CONSTRUCTION OF THE HIGHWAY
IN TWO PHASES.

The first phase provides for the construction of 3 interchanges at the intersection with key public roads:

- interchange at km 545: Interchange at the intersection with the M-10 Russia Highway;
- the interchange at km 649 is located at the intersection of the Moscow–St. Petersburg Highway with the A-120 Magistralnaya Highway;
- the junction with the Ring Road is located in the Moskovsky District of St. Petersburg in close proximity to the Pulkovo interchange. It ensures connection through the Ring Road with all areas of the city and access to the Western High-Speed Diameter via exits 2 and 3.

3. PROJECT FUNDING

ORGANIZATIONAL AND CONTRACTUAL FORM OF THE PROJECT'S IMPLEMENTATION: CONCESSION AGREEMENT. THE SUBJECT IS THE 7TH AND 8TH SECTIONS OF THE MOSCOW-ST. PETERSBURG HIGH-SPEED HIGHWAY (KM 543-KM 684), WHICH ENVISAGES THE FOLLOWING DESIGN DOCUMENTATION:

- land plots within the easement area and structural components located on or under them;
- road structures that constitute a technological component of the road;
- transport infrastructure engineering structures.

Duration of the agreement: 27 years from the date of conclusion of the agreement.

Project implementation stages:

investment stage: 2014–2018;
operational stage: 2018–2041.

Initial tender conditions:

- Cost of building the facility under the agreement – RUB 82.6 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 61.9 billion;
 - investment of the contractor – RUB 20.7 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 39.363 billion including VAT in prices of the first quarter of 2012;
 - amount of investment payment – RUB 62.086 billion in prices of the corresponding years.

Participants of the tender: Road Construction Corporation LLC, Road of the Two Capitals LLC, and Stolichny Trakt OJSC.

Winner of the tender: Road of the Two Capitals LLC.

The concession agreement was concluded with the winner of the tender on the following terms:

- Capital grant provided – RUB 76.8 billion in prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 57.6 billion;
 - amount of concessionaire's investment – RUB 19.2 billion.
- Public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 33.429 billion including VAT in prices of the first quarter of 2012.
 - amount of investment payments – RUB 58.1 billion

3.1. COMMERCIAL STRUCTURE OF THE M-11 MOSCOW-ST. PETERSBURG HIGHWAY PROJECT ON THE SECTION BETWEEN KM 543-KM 684

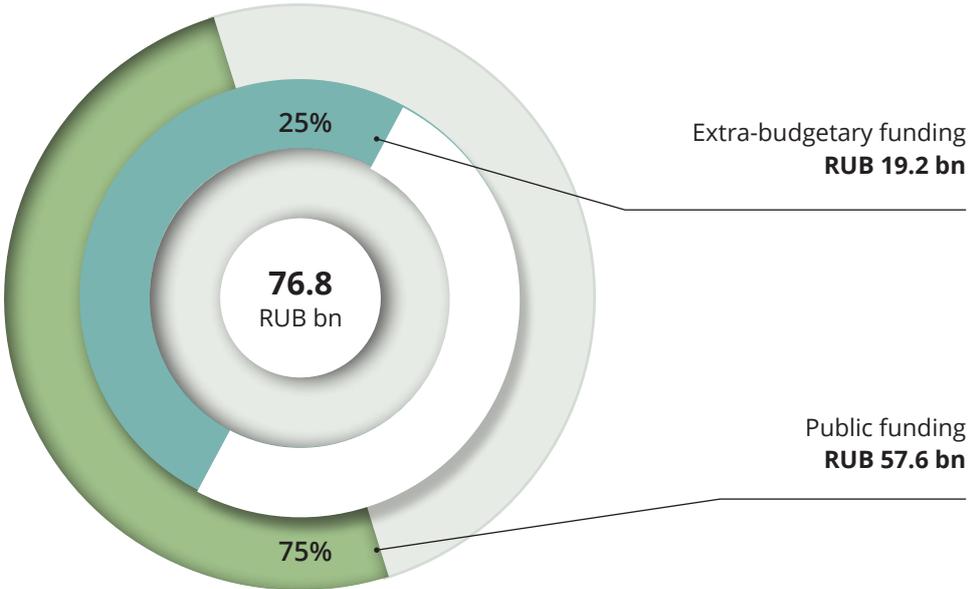
Project funding during the investment stage.

The final parameters of capital expenditures under the agreement were determined as follows based on the results of the tender:

the total cost of the agreement at the investment stage will be RUB 76.8 billion in the prices of the corresponding years inclusive of VAT, including:

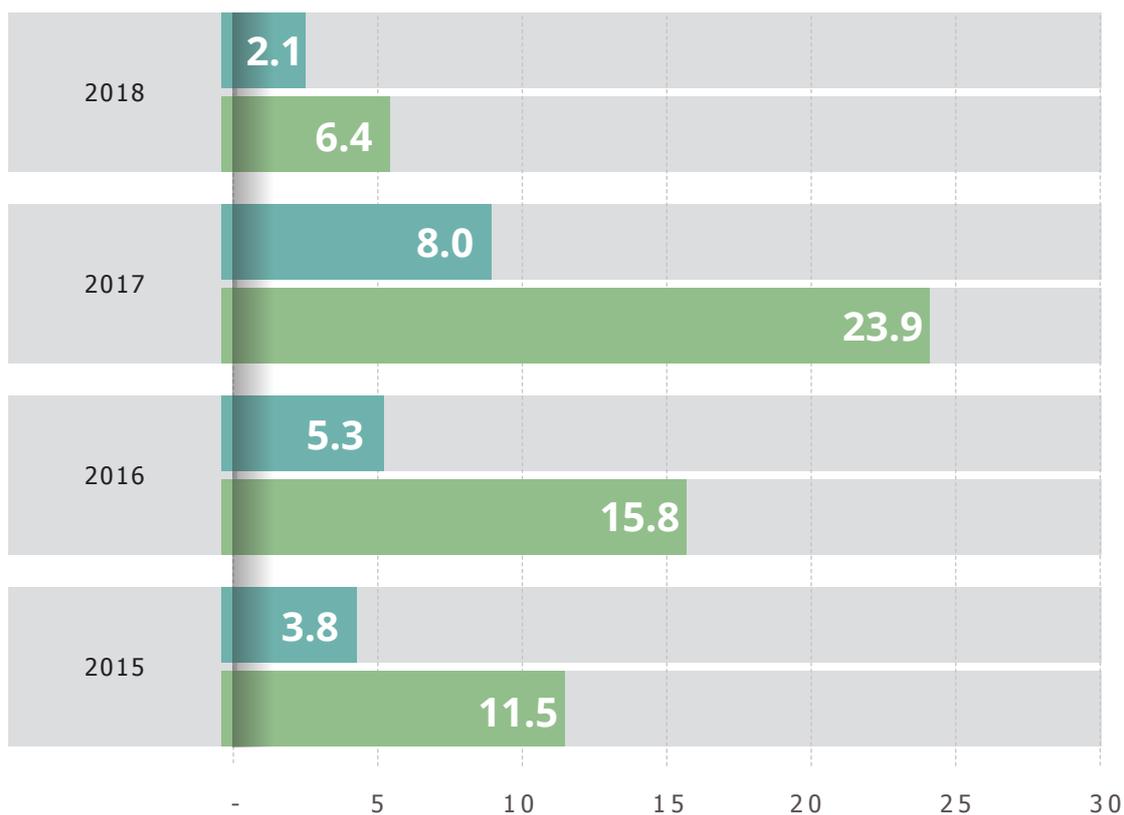
- public funding – RUB 57.6 billion in the prices of the corresponding years, including VAT;
- extra-budgetary funding – RUB 19.2 billion in the prices of the corresponding years, including VAT.

Funding structure of the project km 543-km 684 of the Moscow-St. Petersburg Highway



Public support provided for the construction of the highway will be paid to the concessionaire annually in instalments based on the successful completion of the stages according to the following scheme:

Schedule of capital expenditure distribution by year, RUB bn



LEGEND: ■ Extra-budgetary funding
■ Public funding

Key parameters for the repayment of extra-budgetary funds M-11 Moscow–St. Petersburg Highway on the section between km 208–km 258

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn:	76.8
- Public funding	57.6
- Investments of the concessionaire	19.2
Including:	
- borrowed funds	16
- internal funds	3.2
Deadline for the repayment of borrowed funds, years	22
Deadline for the repayment of internal funds, years	24
Average rate of return on the concessionaire's investment:	
floating rate of return on concessionaire's borrowed funds	3.41% + CPI
floating rate of return on concessionaire's internal funds	8.50% + CPI

4. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the concession agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the concessionaire are assigned to the state. All other risks are transferred to the concessionaire.

RISK	DESCRIPTION OF RISK	PRIVATE PARTNER	STATE
Risks of the late provision of land plots prepared for the construction of the highway	Change in the project implementation period due to delays in the performance of work to prepare the construction site and provide land		●
Design risks	<p>Errors in design solutions.</p> <p><u>Risks of the private partner:</u></p> <ul style="list-style-type: none"> - Due to the optimization of design solutions by the private investor. - From the time working documentation is drafted in full in the manner and on the terms stipulated by the concession agreement. <p><u>Risks of the state:</u></p> <p>Due to the discovery of significant errors in the design documentation at the stage of the drafting of working documentation by the private partner</p>	●	●
Risk of changes to legislation	Changes to legislation after the conclusion of the agreement, including changes in tax legislation, that significantly worsen the original conditions that the private partner was entitled to expect when signing the agreement		●
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<p>Damage to the environment during the construction and operation of the highway.</p> <p><u>Risks of the private partner:</u></p> <ul style="list-style-type: none"> - Environmental risks associated with the negative environmental impact from the violation of the norms and requirements of environmental legislation, legislation in general, and the provisions of the environmental impact assessment received by the State with respect to design solutions for the construction and operation of the highway. 	●	●

RISK	DESCRIPTION OF RISK	PRIVATE PARTNER	STATE
Environmental risks	<p><u>Risks of the state:</u></p> <p>- The risk of social protests due to negative environmental impact if such protests did not occur due to a violation by the private partner of the norms and requirements of environmental legislation, legislation in general, or the provisions of the environmental impact assessment received by the State with respect to design solutions for the construction and operation of the highway</p>	●	●
Risk of the destruction or loss of highway property	Full or partial destruction or loss of the highway property built during construction	●	
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work	●	
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of the insolvency of the concessionaire	Insolvency of the concessionaire	●	
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the concessionaire's obligations under the agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process	Expansion of roads or interchanges or the modernization of equipment for the toll system		●



FEDERAL HIGHWAY

M-4 DON

I. DESCRIPTION OF THE M-4 DON FEDERAL HIGHWAY PROJECT

1. ROLE OF THE M-4 DON HIGHWAY IN THE ROAD TRANSPORTATION SYSTEM OF THE RUSSIAN FEDERATION

THE M-4 DON FEDERAL HIGHWAY FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSSIYSK IS THE PRIMARY VERTICAL AXIS OF RUSSIA'S TRANSPORT SYSTEM.

The highway was included in the List of Federal Highways of Russia under Resolution No. 62 of the Government of the Russian Federation dated 24 December 1991. The M-4 Don Highway was transferred to the trust management of Russian Highways State Company in May 2010.

The M-4 Don Federal Highway is 1,517 km long and traverses the territory of seven constituent entities of the Russian Federation. This road links the Central and North-West Federal Districts and a significant portion of the Volga Federal District with southern Russia, the seaports of the Black and Azov Seas, and the largest resort areas. The highway is an essential component of one of Russia's primary road corridors: Murmansk – St. Petersburg – Moscow – Rostov-on-Don – Novorossiysk – Sochi. The road is part of the North-South International Transport Corridor, connecting the countries of Scandinavia and the Baltic with Transcaucasia as well as the Near and Middle East, and is one of the country's main highways that provides transportation from Russia's central regions to the Black Sea coast and the port of Novorossiysk.

The catchment area of the M-4 Don Highway is the Central and Southern Federal Districts of the Russian Federation. The road passes through the territory of the Central, Central Black Earth, and North Caucasus economic regions, which have enormous economic potential, supporting transport and economic ties both within administrative entities as well as long-distance transit traffic. The Moscow, Tula, Lipetsk, Voronezh, and Rostov Regions and the Krasnodar Territory are part of the catchment area.

The M-4 Don Highway is part of the European route E-115, which fully passes through the territory of the Russian Federation along the Yaroslavl–Moscow–Voronezh–Rostov-on-Don–Krasnodar–Novorossiysk route.

The section of the M-4 Don Highway from the junction with the M-19 Federal Highway to the junction with the M-29 Caucasus Federal Highway is part of one of the primary European latitudinal automobile routes E-50 Brest–Rennes–Le Mans–Paris–Reims–Metz–Saarbrücken–Mannheim–Heilbronn–Nuremberg–Rozvadov–Plzen–Prague–Jihlava–Brno–Trencin–Presov–Vysne Nemecke–Uzhgorod–Mukacheve–Stryy–Ternopil–Khmelnitsky–Vinnytsia–Uman–Kirovograd–Dnepropetrovsk–Donetsk–Rostov-on-Don–Armavir–Mineralnye Vody–Makhachkala.

The section of the M-4 Don Highway from Dzhubga to Novorossiysk is part of the European route E-97 Kherson–Dzhankoy–Novorossiysk–Sochi–Sukhumi–Poti.

The section of the M-4 Don Highway from Dzhubga to Krasnodar is part of the European route E-592 Krasnodar–Dzhubga–Sochi.

The M-4 Don Highway is mainly used for the transit of goods from the Southern Federal District to Europe as well as to and from the Central and North-West parts of the Russian Federation.

In the north, the main freight shipment destinations are:

- to Moscow directly via the M-4 Don Federal Highway;
- to St. Petersburg on the M-10 Russia Federal Highway and on to Finland via the M-10 Scandinavia Federal Highway and the Baltic states via the M-11 Narva Federal Highway;
- to the Baltic states and on to Eastern and Central Europe via the M-9 Baltia Highway;
- to the Republic of Belarus and on to Eastern and Central Europe via the M-1 Belarus Federal Highway;
- to Yaroslavl and on to Vologda and Arkhangelsk via the M-8 Kholmogory Federal Highway.

In its central section, the M-4 Don Federal Highway provides transport links with the following cities located along the route and at a relatively short distance from it:

- with Voronezh, Yefremov, and Yelets on the M-4 Don Federal Highway;
- with Lipetsk and onward with Tambov on the P-119 Yelets–Tambov Federal Highway;
- with Stary Oskol and onward with Kursk on the A-144 Kursk–Voronezh Federal Highway;
- with Tula in the west, Novomoskovsk, and Uzlovaya in the east via the P-140 Tula–Novomoskovsk Regional Highway. бильной дороге P-140 Тула–Новомосковск.

In the north, the main freight shipment destinations are:

- to Rostov-on-Don, Krasnodar, and Dzhubga directly via the M-4 Don Federal Highway;
- to Russia's main Black Sea port of Novorossiysk via the M-4 Don (via Dzhubga) and A-126 Krasnodar–Novorossiysk Federal Highways;
- to Volgograd via the M21 Volgograd – M-4 Federal Highway and onward to Astrakhan via the M-6 Caspian Federal Highway;
- to Ukraine and onward to Eastern and Central Europe via the M-19 Novoshakhtinsk–Border with Ukraine Federal Highway and onward via the M-03 Highway through the territory of Ukraine.
- to Elista and onward to Astrakhan via the A-154 Astrakhan–Stavropol Federal Highway (via the M-29 Caucasus Highway on the Stavropol–Pavlovskaya section);
- to Stavropol and onward to Makhachkala and Azerbaijan via the M-29 Caucasus Federal Highway;
- to the seaport of Tuapse and onward to Sochi and then Georgia (to the seaport of Poti and Tbilisi) and Turkey via the M-27 Dzhubga–Sochi Federal Highway.

Thus, most of the transportation of goods on the M-4 Don Federal Highway is in the north-south direction, however transportation in the east-west direction to CIS countries as well as Eastern and Central Europe is also very important.

2. MAIN SPECIFICATIONS OF THE M-4 DON FEDERAL HIGHWAY AND ITS CURRENT STATUS OF IMPLEMENTATION

In 2011, the M-4 Don was converted to a four-lane highway all the way from Moscow to Voronezh. In accordance with the Program of Activities of Russian Highways State Company, sections with a total length of 796.2 km will be built and rebuilt on the M-4 Don starting from km 1517 by 2019. This will result in the entire highway corresponding to the first technical category: it will become a four-lane highway with divided traffic flows and interchanges of different levels.



LEGEND:

- New construction
- M-4 Don Federal Highway
- M-4 Don Federal Highway (old direction)

At present, the M-4 Don Federal Highway operates 9 toll sections:

- km 21–km 93 in the Moscow Region;
- km 93–km 211 in the Moscow and Tula Regions;
- km 225–km 260 – Tula Region, Bogoroditsk Bypass;
- km 287–km 321 – Yefremov Bypass;
- km 330–km 414 – Lipetsk Region, Zadonsk and Khlevnovo Bypass;
- km 414–km 464 – Zadonsk and Khlevnovo Bypass;
- km 492–km 517 – Voronezh Bypass;
- km 517–km 544 – Novaya Usman and Rogachevka Bypass;
- km 544–km 633 – Voronezh Region.

Base tariffs on the toll sections of the M-4 Don Federal Highway in 2016 prices, RUB/km

Category I	1.54
Category II	1.50
Category III	2.00
Category IV	4.00

II. SECTION BETWEEN KM 21 – KM 225 OF THE M-4 DON FEDERAL HIGHWAY – FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSIYSK, MOSCOW AND TULA REGIONS

1. LAYOUT OF SECTION KM 21–KM 225 OF THE M-4 DON HIGHWAY FEDERAL

The section between km 21–km 225 of the M-4 Don Federal Highway from Moscow through Voronezh, Rostov-on-Don, and Krasnodar to Novorossiysk is a continuation of Lipetsk Street in Moscow, where it originates at the intersection with the Moscow Ring Road, and terminates the northern border of the Bogoroditsk Bypass. The section in question borders with Moscow and passes through the territory of the Moscow and Tula Regions. The highway section is located within the administrative boundaries of the Leninsky District, Domodedovo City District, and the Stupinsky and Kashirsky Districts of the Moscow Region as well as the Venevsky, Uzlovsky, Novomoskovsky, and Kireyevsky Districts of the Tula Region. The section in question runs to the south and is 190 km long.



LEGEND: **==** M-4 Don Federal Highway
 == M-4 Don Federal Highway (old direction)

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 21–KM 225 OF THE M-4 DON FEDERAL HIGHWAY

Main technical and economic parameters of the section between km 21–km 225 of the M-4 Don Federal Highway

Technical parameters	Section between km 21–km 225						
	21–26	26–71	71–93	93–103	103–122	122–211	211–225
Regions/districts	Moscow Region (Leninsky, Domodedovsky, Stupinsky, Kashirsky)						Tula region (Venevsky, Kireyevsky, Uzlovsky)
Category							
<i>reverse direction</i>	IA					IB	II
<i>forward direction</i>	IA					IB	IB
Construction length	4	45	22	10	19	89	14
Design speed, km/h	150					120	120/100
Number of traffic lanes	8	6	4	6	4	4	4
Projected traffic intensity by 2031, vehicles/day, base scenario	117,568	72,032	38,967	49,241	31,095	20,428	19,471
Pavement type	heavy-duty						
Surface type	asphalt concrete	c	asphalt concrete				
Number of intersections of different levels	29						
Number of pedestrian overpasses	10						

An open tolling system was determined to be preferable based on the results of work to forecast traffic intensity on the section between km 21–km 225 of the M-4 Don Federal Highway.

As part of the establishment of an open tolling system, a new toll plaza was built in accordance with the design documentation on the exits from the interchange at km 62 near the town of Barybino (with 2 booths on each of the two ramps) along with a toll plaza at km 133 (toll section between km 105–km 225) with 16 booths (8 booths for each direction of traffic) and the existing toll plaza at km 71 (km 21–km 105) was rebuilt and equipped with a two-way toll plaza with 29 booths, 7 of which are reversible lanes. The existing one-way toll plaza at km 51 is to be dismantled.

The location of the toll plaza makes it possible to travel to the district centre free of charge via the M-4 Don Federal Highway for residents of settlements located in close proximity to the facility being built.

Passenger cars dominate the projected traffic flow on the section between km 21–km 225 of the M-4 Don Federal Highway, varying from 80% at the start of the section to 65% at its end, which is associated with a decrease in the effect of the Moscow metropolitan area on the traffic flow. The share of heavy trucks in the traffic flow increases from 15% at the beginning of the section to more than 30% at its end.

3. PROJECT FUNDING

Organizational and contractual form of the project: O&M contract.

The subject of maintenance and repair: the section between km 21–km 225.6 of the M-4 Don Highway – from Moscow through Voronezh, Rostov-on-Don, and Krasnodar to Novorossiysk, Moscow and Tula Regions.

Facilities to be built: toll plaza, automated traffic control system, transport control centre, anti-ice complex, pedestrian overpasses, and other integrated road facilities in accordance with the design documentation.

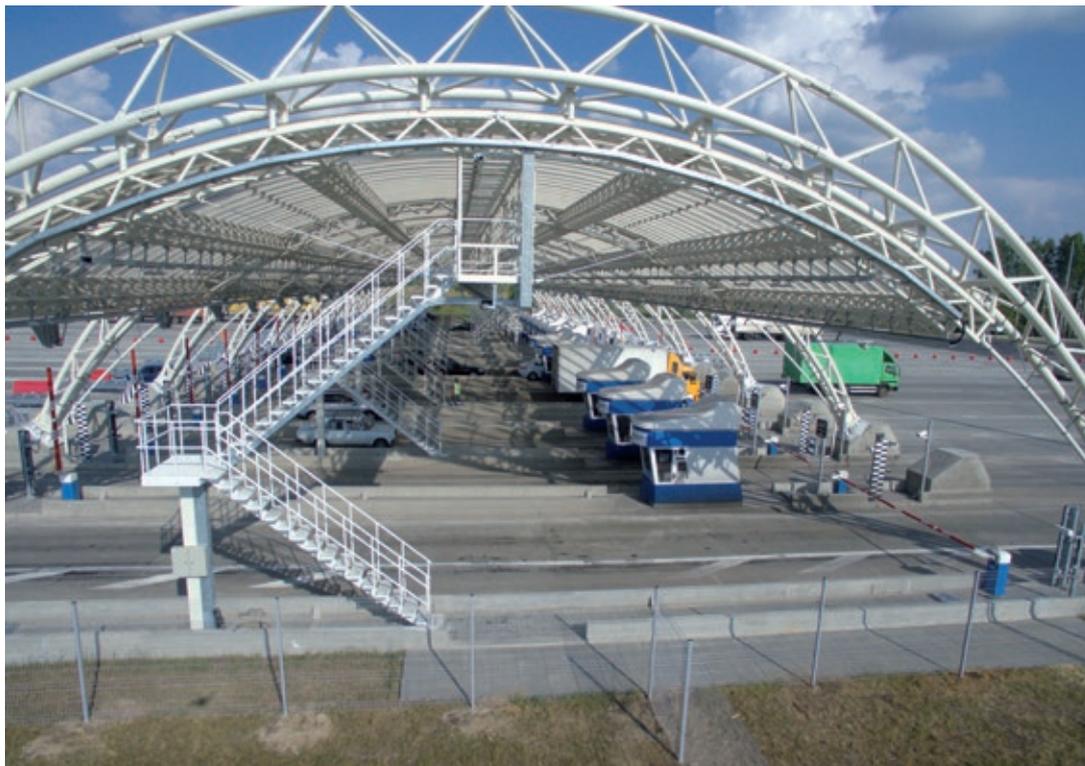
The schedule envisages the implementation of the project in the period from 2011 to 2042, including the investment stage: 2011–2015, and the operational stage: 2012–2042.

The total cost of the integrated development of the M-4 Don Federal Highway will amount to RUB 2.6 billion.

The estimated cost of integrated development includes expenditures on the preparation of the construction site, the construction of the toll plaza, the establishment of the automated traffic control system, the construction of pedestrian overpasses and bus stops, and other works on the section between km 21–km 225 of the M-4 Don Federal Highway.

The expected road maintenance costs are calculated taking into account the different number of lanes, the projected traffic intensity, the presence or absence of lighting in various sections of the highway as well as existing and projected warranty obligations.

The O&M contract for the provision of toll collection and toll plaza maintenance services on the section between km 21–km 225 of the M4 Don Federal Highway was concluded with Avtodor-Toll Roads LLC (a subsidiary of Russian Highways State Company).



M-4, toll plaza (133 km)

4. PROJECT RISKS

This section considers risks directly related to the toll operation of the highway:

Operational risks:

Risks of the government

The risk of accessibility is connected with the fact that the services rendered by the private operator may be provided in a smaller amount than what is required by the project agreement. The key question is who is responsible for the costs and the amount of penalties in the event that:

- the facility or part thereof is inaccessible for proper use due to the fault of the operator (including as a result of the failure to fulfil the required amount of work on the facility's maintenance) if the deadline for remedying the situation has already expired;
- the quality of services does not meet the standards and requirements set out in the contract.

Risks of toll-dodging

Users of the road facility can dodge payment in various ways by resorting to the use of counterfeit money and unauthorized travel through the toll plazas.

Risks of the operator:

Risks of growth in the operating costs of the toll facility

The costs of operating the toll road include the costs of maintaining, repairing, and overhauling the highway and its facilities as well as the cost of operating the toll collection system. Actual operating costs may exceed planned costs due to the need to use other materials or unforeseen changes in operating conditions (growth in traffic flows or changes to technical operating standards).

Risks of the toll system's operation (operational risks)

The operation of the toll collection systems involves the functioning of complex toll plaza equipment. In the process of the toll road's operation, mistakes and carelessness by personnel are possible as are errors and malfunctions in the operation of hardware and software as well as telecommunications systems, which may result in restricted access to the toll road, dissatisfaction among users, and a reduction in toll collection.

Risks of the emergence of alternative routes

The future socioeconomic development of a territory may entail an increase in the length of a road network of a catchment area and the emergence of new alternatives to the toll road. In addition, potential users may switch to the use of other modes of transport as alternative transport hubs emerge.

Hidden protectionism

Infrastructure projects tend to be implemented in economic areas traditionally involving the public sector, whose representatives tend to be sceptical about the private sector's participation in projects of this kind. This scepticism is reinforced if it is a foreign company that could potentially make a profit from the project. The risk of hidden protectionism usually rests with a private partner, but must be accompanied by substantial state support without fail.

III. SECTION BETWEEN KM 21–KM 225 OF THE M-4 DON FEDERAL HIGHWAY – FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSSIYSK, MOSCOW AND TULA REGIONS

1. LAYOUT AND SPECIFICATIONS OF THE SECTION BETWEEN KM 225.6–KM 633 OF THE M-4 DON HIGHWAY

The section between km 225.6–km 633 of the M-4 Don Federal Highway passes through the territory of the Tula and Voronezh Regions. The 408-km section of the highway has 4 lanes over its entire length. The road category is IB.

On 29 March 2012, the functions of the maintenance, repair, and collection of tolls from users for the section between km 225.6–km 633 of the M-4 Don Federal Highway were transferred to United Toll Collection Systems LLC in accordance with the conditions of the first O&M contract in Russia's history for maintenance, repair, and operation.

As part of the O&M contract on the integrated development of the section with subsequent operation on a toll basis concluded with United Toll Collection Systems LLC, the following sections are currently subject to tolls as part of the route section:

- km 225–km 260 – Bogoroditsk Bypass;
- km 287–km 321 – Yefremov Bypass;
- km 330–km 414 – Yelets and Yarkino Bypass;
- km 414–km 464 – Zadonsk and Khlevnovo Bypass;
- km 492–km 517 – Voronezh Bypass;
- km 517–km 544 – Novaya Usman and Rogachevka Bypass;
- km 544–km 633 – Voronezh Region.

On the section between km 225.6–km 633 of the M-4 Don Federal Highway, components of the automated traffic control system have been introduced, which ensure:

- the collection of information about the situation on the road in real time through a video surveillance system;
- the collection of information about weather conditions from automatic road weather stations;
- the collection of information about functioning of outdoor lighting and urgent operational information from emergency communication stations;
- online decision-making;
- the transmission of information to the appropriate road maintenance services and emergency services, if necessary;
- road users are informed about the speed limit and possible travel restrictions through information boards installed throughout the road.

Stationary telephone devices for the emergency notification of special services about an emergency are installed over the entire length of the toll sections of the highway.

Main technical and economic parameters of the section between km 225.6–km 633 of the M-4 Don Federal Highway

Location:	Tula and Voronezh Regions
Construction length of the section, km	408
Road category	IB
Number of traffic lanes	4
Organizational and contractual arrangement	O&M contract on integrated development with subsequent toll-based operation
Cost of work under the agreement (in the prices of corresponding years), RUB bn	5.0
Private investments, RUB bn	5.0
Duration of the agreement, years	10
Agreement signing date	December 2011

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 225.6–KM 633 OF THE M-4 DON FEDERAL HIGHWAY

km 225–km 260 of the Bogoroditsk Bypass

The section between km 225–km 260 of the M-4 Don Federal Highway is an IB category road. The design speed for this section is 120 km/h thanks to the divided flows of oncoming traffic, the absence of traffic lights, and the contiguity of secondary roads on a single level.

Length of the section, km	35.5
Commissioning	2009
Start of toll-based operation	September 2013

A toll plaza operates at km 228 of the M-4 Don Federal Highway. The facility provides an open toll collection system. The toll is paid once when passing through the toll plaza and is not charged to users who travel within the paid section without passing through the toll plaza.

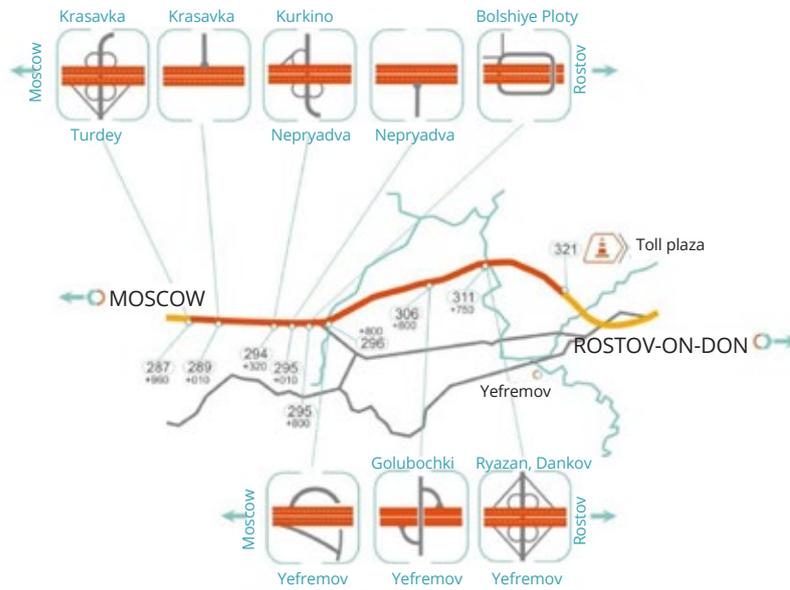
km 287–km 321 of the Yefremov Bypass

The section between km 287–km 321 of the M-4 Don Federal Highway is an IB category road. The design speed for this section is 120 km/h thanks to the divided flows of oncoming traffic, the absence of traffic lights, and the contiguity of secondary roads on a single level.

Length of the section, km	35.8
Commissioning	2010
Start of toll-based operation	September 2013

A toll plaza operates at km 322 of the M-4 Don Federal Highway. The facility provides an open toll collection system. The toll is paid once when passing through the toll plaza and is not charged to users who travel within the paid section without passing through the toll plaza.

M-4 DON FEDERAL HIGHWAY ON THE YEFREMOV BYPASS SECTION (KM 287.8-KM 321.3) IN THE TULA REGION



- LEGEND:
- free section of M4 Highway
 - toll section of M4 Highway
 - alternative route bypass of toll section
 - populated areas
 - 237
+300 existing distance in km
 - toll plazas
 - rivers

**Km 330–km 414
Yelets and Yarkino Bypass**

The section between km 330.8–km 414.7 of the M-4 Don Federal Highway is an IB category road. The design speed for this section is 120 km/h thanks to the divided flows of oncoming traffic, the absence of traffic lights, and the contiguity of secondary roads on a single level.

Length of the section, km	82
Commissioning	2011
Start of toll-based operation	December 2013

A single toll plaza operates at km 339 of the M-4 Don Federal Highway. The facility provides an open toll collection system. The toll is paid once when passing through the toll plaza and is not charged to users who travel within the paid section without passing through the toll plaza.

Russian Highways State Company also plans to set up toll plazas at the junctions to the toll section of the village of Yarkino and the town of Yelets: from Moscow at km 380 km and km 401 km, and towards Moscow at km 401 km, km 380, and km 355. Users will pay for travel on the section at the specified entry toll plazas and leave the toll section by presenting a receipt at km 416 and km 339.

**Km 414–km 464
Zadonsk and Khlevnovo Bypass**

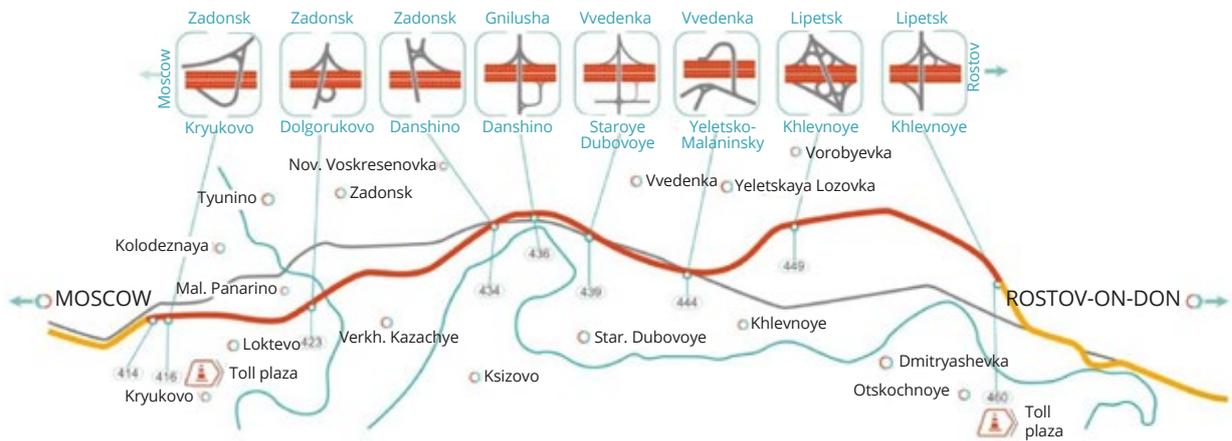
The first toll-based section on the M-4 Don Federal Highway was established based on a directive of the Government of the Russian Federation dated 4 October 1999.

During reconstruction, the road was expanded and levelled and the passing lanes on exits and rest areas were brought into compliance with regulations. Lighting was installed throughout the section and repairs were made to artificial structures. A multi-level interchange was built at km 461 of the M-4 Don Federal Highway, which is used as an exit for an alternative route.

Length of the section, km	46.9
Commissioning	June 2010
Start of toll-based operation	December 2010

The section features an open tolling system. The first toll plaza is located at km 416 and the second at km 460. Motorists living in the area between km 414–km 464 of the M-4 Don Federal Highway can travel within this area free of charge by entering the federal highway and exiting it only within the boundaries of the section. Seven major interchanges and separate exits to local populated areas were built. The important thing is to not cross the toll plazas, i.e. the starting and ending points of the toll section.

M-4 DON FEDERAL HIGHWAY FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSSIYSK ON THE SECTION FROM THE ZADONSK BYPASS TO THE END OF THE KHLEVNOYE BYPASS (KM 414.7–KM 464.3) IN THE LIPETSK REGION



- LEGEND:**
- alternative routes
 - M-4 Don Federal Highway
 - additional roads
 - populated areas
 - 237 existing distance in km
 - Toll plaza existing toll plazas, projected toll plazas
 - ~ rivers and reservoirs

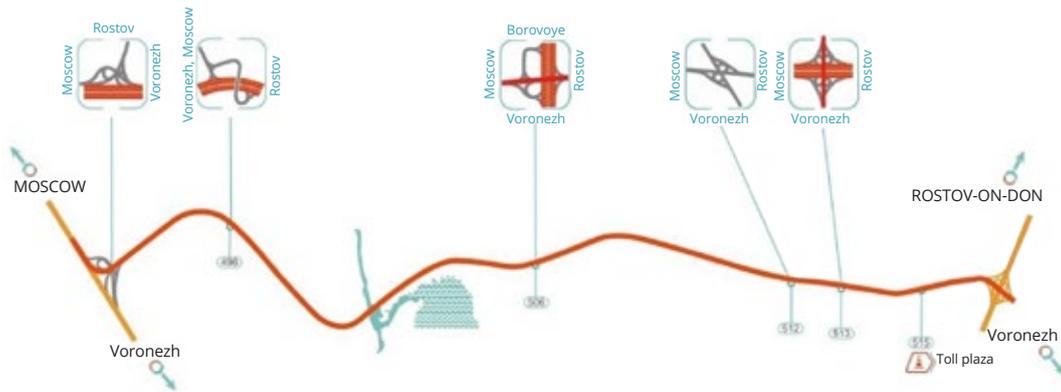
**Km 492–km 517
Voronezh Bypass**

The section of the M-4 Don Federal Highway on the Voronezh Bypass was commissioned following full-scale reconstruction on 15 November 2013. The road was brought into compliance with the IB category during reconstruction: the number of lanes was increased from two/three to six, the existing road bridge over the Voronezh River was rebuilt and replaced by a new, similar bridge, and six multilevel interchanges were constructed, including one three-level interchange

The toll is paid at km 515 of the highway. Motorists entering and exiting the road within the section between km 492–km 513 do not pay the toll. Vehicles may enter and exit the road without payment through interchanges at km 492 and km 506 (intersection with the Voronezh–Borovoye Highway), at km 511 (intersection with the Voronezh–Repnoye Highway), at km 513 (intersection with the Voronezh–Tambov Highway), and from Dimitrova Street heading towards Rostov-on-Don.

The section started being operated on a toll basis on 2 February 2015.

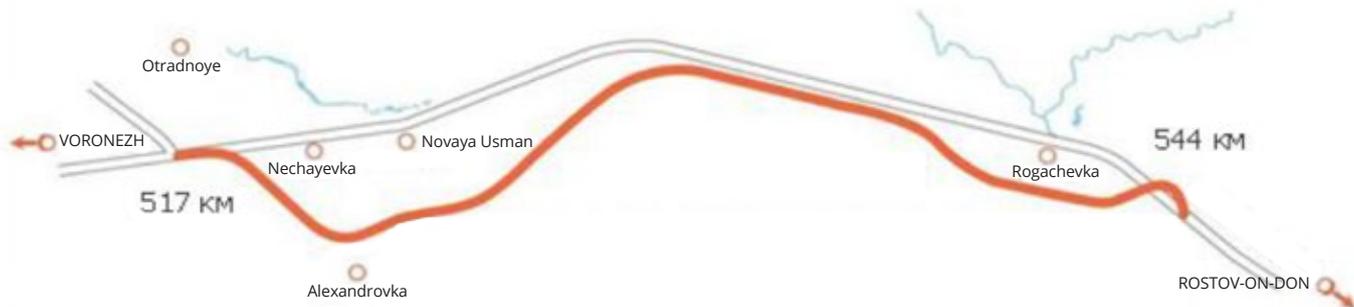
M-4 DON FEDERAL HIGHWAY FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSSIIYSK ON THE SECTION BETWEEN KM 492-KM 517, VORONEZH REGION



- LEGEND:
- free road sections
 - toll road sections
 - populated areas
 - 237 existing distance in km
 - ⏏ existing toll plazas
 - rivers and reservoirs

km 517–km 544
km 517–km 544 Novaya Usman and Rogachevka Bypass

The section between km 517–km 544 of the M-4 Don Federal Highway passes through the territory of Novousmansky District in the northern part of the Voronezh Region



- LEGEND:
- M-4 Don (old route)
 - New route (bypassing populated areas)
 - M-4 Don
 - populated areas
 - rivers and reservoirs
- MOSCOW
 Yeфremov

Four lanes are to be built on the section between km 517–km 544 of the M-4 Don Federal Highway taking into account the future traffic intensity. The road is of the IA technical category, and all junctions and intersections are multilevel. Two bi-level interchanges are to be built on the highway with two directional exits on the sections at the turn-offs and junctions of the existing M-4 Don Federal Highway.

Tolls for travelling via the section under construction are to be collected at the toll plaza at km 544.

**km 544–km 633
Voronezh Region**

The start of the section at km 544 of the M-4 Don Federal Highway is located in the Novousmansky District of the Voronezh Region. The end of the highway at km 633 of the M-4 Don Federal Highway is located in the Bobrovsky District of the Voronezh Region. The section between km 544–km 633 passes through 3 districts of the Voronezh Region – Kashirsky, Bobrovsky, and Liskinsky. The road includes 8 interchanges, 3 multilevel agricultural crossings, and 38 single-level junctions (including 25 exits). From km 552 to km 553, the highway runs along Svobody Street for 500 metres in the village of Kashirskoye.

The section of the M-4 Don Federal Highway between km 544 – km 633 was put into free trial operation after following integrated development on 20 October 2015. The road was brought into compliance with the IB category as part of the improvements and has two lanes in each direction.

The toll operation of the M-4 Don Federal Highway between km 544–km 633 started on 9 November 2015.

The toll is paid at the toll plazas located at km 545 and km 620 of the highway. The total length of the paid section is 89 km. When travelling in the direction of Rostov, the toll will be collected at the toll plaza at km 545 for 44.7 km of the road to the interchange for Liski; a toll will be charged for the remaining 44.3 km when exiting the toll section at the toll plaza at km 620. When travelling to Moscow, the toll will be charged according to the same principle: at the toll plaza at km 620–for 44.3 km to the interchange for Liski, and at the toll plaza at km 545 – for the remaining 44.7 km.

3. PROJECT FUNDING

Organizational and contractual form of the project: O&M contract.

The subject of maintenance and repair: the section between km 225.6–km 633 of the M-4 Don Federal Highway – from Moscow through Voronezh, Rostov-on-Don, and Krasnodar to Novorossiysk.

Facilities to be built: toll plaza, automated traffic control system, transport control centre, anti-ice complex, pedestrian overpasses, and other integrated road facilities in accordance with the design documentation.

The O&M contract was signed United Toll Collection Systems LLC.



M-4 Don
Federal Highway

3.1. COMMERCIAL STRUCTURE OF THE SECTION BETWEEN KM 225.6–KM 633 OF THE M-4 DON FEDERAL HIGHWAY

Project funding during the investment stage

The parameters of the capital expenditures under the agreement were determined in the following amounts: the total value of the agreement during the investment stage amounts to RUB 5 billion in the prices of the corresponding years, including VAT.

Private financing remained unchanged at RUB 5 billion in the prices of the corresponding years, including VAT.

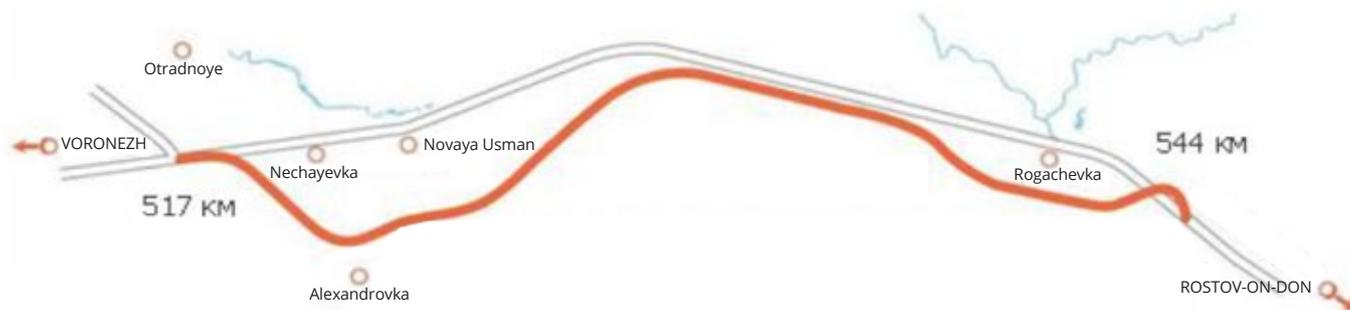
Key parameters of the repayment of extra-budgetary funds on the section between km 225.6–km 633 of the M-4 Don Federal Highway

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn	5.0
- contractor's investments	5.0
Deadline for the return of investments, years	10
Rate of return on the internal and borrowed capital invested by the operator, %	13

IV. SECTION BETWEEN KM 517–KM 544 OF THE M-4 DON FEDERAL HIGHWAY FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSSIYSK (WITH A BYPASS OF THE TOWNS OF NOVAYA USMAN AND ROGACHEVKA), VORONEZH REGION

1. LAYOUT OF THE SECTION BETWEEN KM 517–KM 544 OF THE M-4 DON FEDERAL HIGHWAY

The projected section of the M-4 Don Highway between km 517–km 544 passes through the territory of the Novousmanskyy District located in the northern part of the Voronezh Region with a population of 64,700 people.



- LEGEND:
-  M-4 Don (old route)
 -  New route (bypassing populated areas)
 -  M-4 Don
 -  *MOSCOW* Yefremov populated areas
 -  rivers and reservoirs

The Voronezh Region is an economically developed region of Russia. Located in the central part of the East European plain, the Voronezh Region covers an area of 52 200 square km and shares a border with the Belgorod, Kursk, Lipetsk, Tambov, Saratov, Volgograd, and Rostov Regions of the Russian Federation and Ukraine. The catchment area of the highway is home to 2.33 million people and a significant number of industrial enterprises. Motor transport accounts for 75% of cargo transportation volume and 73% of out-of-town passenger traffic.

The road network of the Voronezh Region features federal and regional roads. The density of public roads in the region is 178.7 km of roads per 1 000 square km of territory.

The following roads form the basis of the road network:

- M-4 Don Moscow–Voronezh–Rostov-on-Don–Novorossiysk;
- A-144 Kursk–Voronezh–Borisoglebsk to the Caspian Highway;
- M-6 Caspian approach road to Saratov;
- 1P 193 Voronezh–Tambov

The section between km 517–km 544 of the existing M-4 Don Federal Highway is located on the territory of the Novousmansky District of the Voronezh Region and passes through the following settlements in succession: Nechaevka – 0.5 km, Novaya Usman – 5.2 km, Podkletnoye – 1.1 km, and Rogachevka – 3.8 km.

Thus, the length of the existing section within the populated areas is 10.6 km, or 40% of the route with a speed limit of up to 60 km/h. In addition, these localities have public transport stops, single-level pedestrian crossings, numerous service facilities, gas stations, shops, warehouses, and wholesale depots. The construction site is closely located to the existing highway.

The need to widen the existing highway and build passages to provide local connections requires the demolition of 192 buildings, including residential houses with personal plots and service facilities. This entails significant costs for the purchase of land with compensation provided for the losses incurred.

The section of the highway in question with its lower speed limit dramatically reduces the road's capacity, speed, and traffic safety and remains a cause of traffic accidents due to its lack of compliance with regulatory and technical parameters.

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 517–KM 544 OF THE M-4 DON FEDERAL HIGHWAY

The new 29-km highway will be part of the M-4 Don Federal Highway that is being built and link the Russian regions with the ports and the resort zone of the Azov–Black Sea coast.

The highway section in question mainly passes through the territory of the Novousmansky District of the Voronezh Region, but the route originates in the municipality of Voronezh and the south-east suburb of Voronezh in a strip of the existing M-4 Don Federal Highway.

The section terminates at km 544, where the projected road joins with the existing M-4 Don Federal Highway at an interchange with directional exits that flow smoothly into the existing highway to its right and left.

Main technical and economic parameters of the section between km 517–km 544 of the M-4 Don Federal Highway

TYPE OF CONSTRUCTION	NEW CONSTRUCTION
Construction period	2013–2016
Road category	IA
Length, km	29.5
Number of lanes	4
Design speed, km/h	150
Width of the road way, m	2x7.5
Width of the median, m	6
Type of pavement	heavy-duty
Type of surface	asphalt concrete, stone mastic asphalt-20
Overpasses within the body of the highway	5
Overpasses over the highway	9
Pedestrian overpasses	2
Multilevel overpasses	2
Projected traffic intensity, vehicles/day	>20,000

The structure of the traffic flow on the section between km 517 – km 544 of the M-4 Don Highway is uniform: cars – 68-70%; trucks – 27-29%; buses – 3%.

In accordance with the project for the construction of the section between km 517–km 544 of the M-4 Don Federal Highway, four lanes are to be built taking into account the future traffic intensity. The road is of the IA technical category, and all junctions and intersections are multilevel. Two bi-level interchanges are to be built on the highway with two directional exits on the sections at the turn-offs and junctions of the existing M-4 Don Federal Highway:

- Interchange at km 544: individual type with directional exits that flow smoothly into the existing road to its right and left;
- Interchange at km 518: the route on the section in question, heading towards the south, originates from the interchange on a separate road bed (moving forward to the right along the existing highway, reverse direction by a flyover on the left side along the existing road until its intersection) over 700 m.

For links between isolated territories, multilevel crossings are to be built:

- M-4 Don Federal Highway–petroleum storage depot (Category IV);
- Nechayevka–asphalt concrete mixing plant (Category IV);
- Nechayevka–Alexandrovka (Category III);
- Novaya Usman–1st division of the Maslovsky temporary storage warehouse–Novovoronezh (Category II);
- Rogachevka–2nd division of the Maslovsky temporary storage warehouse–Novovoronezh (Category III).

3. TOLL COLLECTION SYSTEM ON THE SECTION BETWEEN KM 517–KM 544 OF THE M-4 DON FEDERAL HIGHWAY

An open tolling system is envisaged to establish the toll-based operation of the section between km 517–km 544 of the M-4 Don Federal Highway. The design documentation provides for the toll-based operation of this section in conjunction with the adjacent sections between km 492–km 517 and km 544–km 633 as part of the owner-operator contract for the section between km 225.6–km 633 of the M-4 Don Federal Highway.

Vehicles are registered only once to collect tolls in open systems. There is no need to monitor all entrances and exits. This saves money both on additional lane equipment and the salary of operators.

Tolls are paid at toll gates and or using open-road tolling with toll booths allocated exclusively for non-stop travel.

Tolls for travelling via the section to be built are to be collected at the toll plaza at km 544. The contractor's obligations include building the toll plaza, booths, and canopies as well as installing and setting up equipment.



M-4, Zadonsk and Khlevnovo Bypass

4. PROJECT FUNDING

ORGANIZATIONAL AND CONTRACTUAL FORM OF THE PROJECT: LONG-TERM INVESTMENT AGREEMENT.

The subject is the construction, maintenance, repair, and overhaul of the section between km 517–km 544 of the M-4 Don Highway – from Moscow through Voronezh, Rostov-on-Don, and Krasnodar to Novorossiysk (with a bypass of the populated areas Novaya Usman and Rogachevka) in the Voronezh Region, including the following envisaged by the design documentation:

- land plots within the easement area and structural components located on or under them (road way, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities);
- transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities).

Duration of the agreement: 24 years from the date of conclusion.

Project implementation stages:

- investment stage: 2013–2016;
- operational stage: 2017–2036.

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Initial tender conditions:

Cost of building the facility under the agreement – RUB 17.4 billion in the prices of the corresponding years inclusive of VAT, including:

- funding by Russian Highways State Company – RUB 15.5 billion;
- investment of the contractor – RUB 1.9 billion.

Public funding provided during the operational stage, including:

- base amount of annual operating payment – RUB – 2.9 billion in prices of the first quarter of 2013 excluding VAT;
- investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.55%.

Tender participants: Transstroyemkhanizatsiya LLC and AVTOBAN Road Construction Company JSC.

Winner of the tender: Transstroyemkhanizatsiya LLC.

A long-term agreement was concluded with winner of the tender on the following terms:

- Cost of building the facility under the agreement – RUB 17.3 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 15.4 bn;
 - investment of the contractor – RUB 1.9 bn

- Public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 2.9 billion excluding VAT in prices of the first quarter of 2013;
 - investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.50%.

4.1. COMMERCIAL STRUCTURE OF THE SECTION BETWEEN KM 517–KM 544 OF THE M-4 DON FEDERAL HIGHWAY

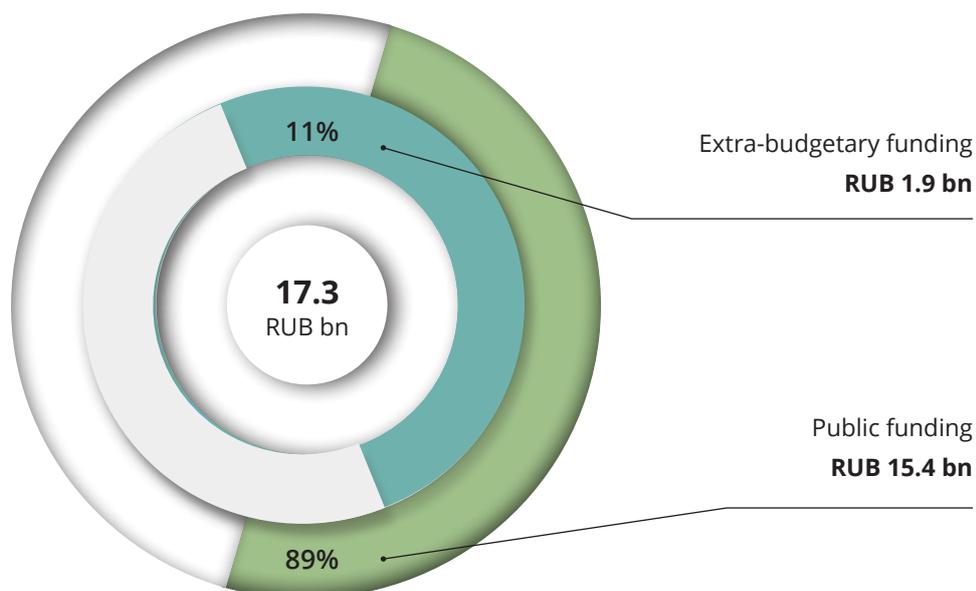
Project funding during the investment stage

The final parameters of capital expenditures under the agreement were determined as follows based on the results of the tender:

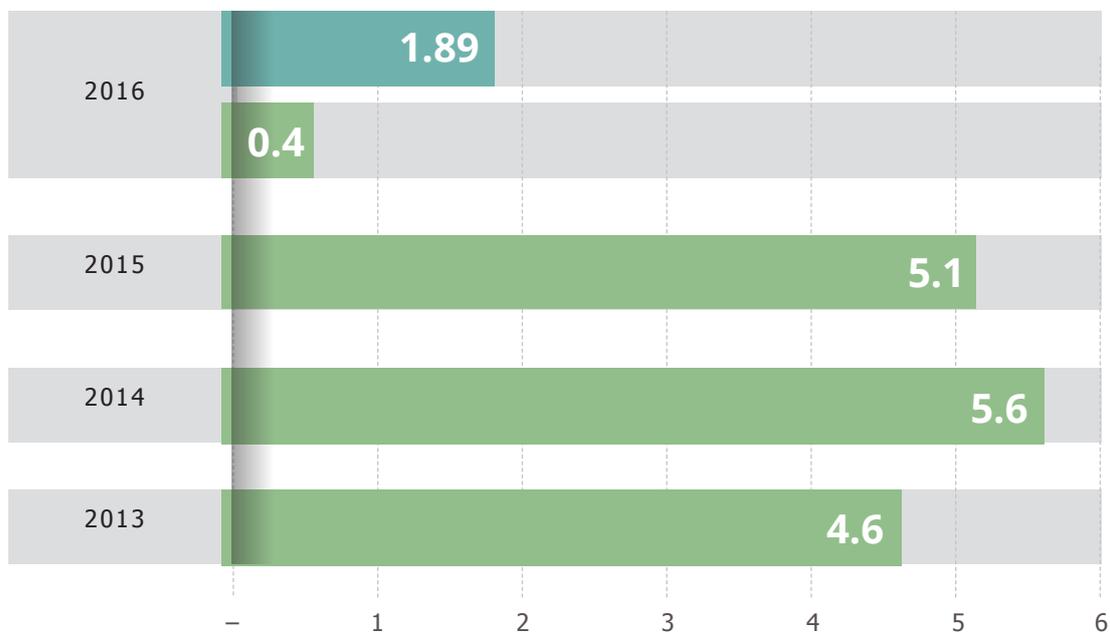
the total cost of the agreement at the investment stage will be RUB 17.3 billion in the prices of the corresponding years inclusive of VAT, including:

- public funding – RUB 15.4 billion in the prices of the corresponding years, including VAT;
- private funding remained unchanged, amounting to RUB 1.9 billion in the prices of the corresponding years, including VAT.

Funding structure of the project km 517–km 544 of the M-4 Don Federal Highway



Schedule of capital expenditure distribution by year, RUB bn



LEGEND: ■ Extra-budgetary funding
■ Public funding

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

**Key parameters for the repayment of extra-budgetary funds
of the section between km 517–km 544 of the M-4 Don Federal Highway**

PARAMETER	VALUE
Cost of work under the agreement during the investment stage, RUB bn	17.6
- Public funding	15.7
- contractor's investments	1.9
Including:	
- borrowed funds	0.95
- internal funds	0.95
Deadline for the repayment of borrowed funds, years	10
Deadline for the repayment of internal funds, years	10
Average rate of return on contractor's investment	6.4%+CPI
Including:	
Floating rate of return on contractor's borrowed funds	4.5%+CPI
Floating rate of return on contractor's internal funds	8.35%+CPI

5. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the long-term investment agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the contractor are assigned to Russian Highways State Company, which serves as a public partner in this project.

The implementation of the project based on the mechanism of a long-term investment agreement makes it possible to reduce the contractor's investments, which consequently reduces its financial risks.

RISK	DESCRIPTION OF RISK	CONTRACTOR	STATE COMPANY
Design risks	Likelihood of errors in design decisions and construction plans	●	●
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<ul style="list-style-type: none"> • damage to the environment as a result of the contractor's actions during the construction and operation of the facility; • environmental risks associated with the design documentation 		●
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work during the operational stage	●	
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the contractor's obligations under the long-term investment agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process	Expansion of roads or interchanges		●

V. SECTION BETWEEN KM 663–KM 715 OF THE M-4 DON FEDERAL HIGHWAY FROM MOSCOW THROUGH VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSIYSK (LOSEVO AND PAVLOVSK BYPASS), VORONEZH REGION

1. LAYOUT OF THE SECTION BETWEEN KM 663–KM 715 OF THE M-4 DON FEDERAL HIGHWAY

Siting of the existing section between km 663–km 715 of the M-4 Don Federal Highway

The existing M-4 Don Federal Highway from Moscow through Voronezh, Rostov-on-Don, and Krasnodar to Novorossiysk on the section between km 633–km 715 passes through the Pavlovsky, Bobrovsky, and Verkhne-Mamonsky Districts of the Voronezh Region.



The total length of the existing facility is approximately 85.2 km. The section between km 633–km 702 mostly corresponds to the III technical category of roads.

The highway on the section between km 702–km 715 (bypassing Verkhny Mamon) was built and commissioned in 2009 and corresponds to the IB technical category with four lanes. The transverse profile is no less than 27.5 m. The width of the road way in each direction is at least 7.5 m. The shoulder reinforcement is made of crushed stone and asphalt concrete and is no less than 2.5 m. There are three interchanges. The highway has heavy-duty pavement construction with a stone mastic asphalt concrete surface.

Importance of the construction of the new section between km 663–km 715 of the M-4 Don Federal Highway

The need to build the section between km 633–km 715 of the new M-4 Don Federal Highway is due to the discrepancy between technical parameters, the existing and projected traffic intensity as well as requirements for a transport artery serving international and interregional transportation.

The existing highway runs through residential areas, which increases the level of accidents and the concentration of vehicles and adversely affects the environment and human health.

Siting of the new section between km 663–km 715 of the M-4 Don Federal Highway

The projected section of the M-4 Don Federal Highway passes through the Bobrovsky, Pavlovsky, and Verkhne-Mamonsky Districts of the Voronezh Region.

The origin of the road corresponds to the existing km 633 of the M-4 Don Highway and the end to the existing km 715 of the M-4 Don Highway.

After the turn-off from the existing direction of the M-4 highway, the new route deviates to the east with the removal of up to 6 – 7 km, bypassing the Losevo residential area that stretches in the east-west direction. The western border of Losevo rests on the banks of Bityug River along the floodplain through which the existing M-4 Don Highway runs.

The projected section then has a number of intersections with existing roads: it crosses the local Buturlinovka–Losevo, Losevo–Yeryshovka, Berezki–Poddubny, and Alexandrovka–Donskaya–Kopanki roads.

The road then crosses Osered River and bypasses Pavlovsk, passing through the corridor between the town's eastern outskirts and the village of Gavrilskiye Sady. After km 675, the route changes direction towards the south-west and approaches the existing M-4 Don Federal Highway.

At km 673, the highway crosses the Pavlovsk–Kalach road before crossing the Shipov Les–Pavlovsk Voronezh railway and the access road to the village of Gavrilskiye Sady at km 674.

Starting from km 682, the new highway runs parallel to the existing M-4 Don Federal Highway and at km 702 the projected axis joins the axis of the existing road.

At the existing km 708, the M-4 highway splits into the old route, going through the village of Verkhny Mamon, and a new direction that was built in 2009, which bypasses this village.

The old route of the M-4 Don Federal Highway and the new version merge around km 716.

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 633–KM 715 OF THE M-4 DON FEDERAL HIGHWAY

IN ADDITION, THE DESIGN DOCUMENTATION INVOLVES THE DEVELOPMENT OF THE 15.73-KM SECTION BETWEEN KM 702–KM 718.2 (CORRESPONDS TO KM 715 OF THE M-4 DON FEDERAL HIGHWAY), WHICH INCLUDES:

In accordance with the design for the section between km 633–km 715 of the M-4 Don Highway, a new IB category route with length of 69.44 km is to be built, from km 633 to km 702, interchanges are to be constructed at km 634 and km 673, two toll plazas are to be set up at km 634 and km 673, and the road is to be rebuilt in conjunction with the existing M-4 Don Federal Highway.

- the strengthening of existing pavement to the regulatory parameters adopted for the new section to be built and the development of an asphalt concrete surface on the median based on the type of the new construction section;
- the replacement of superstructures on existing bridge structures under A14 and H14 load;
- the repair and replacement of existing components of the new facilities (signs, markings, barrier fences, noise shield devices).

The project also envisages the construction of an alternative 8.82-km category II road to provide an alternative route and the possibility of operating a section of the road on a toll basis.

Main technical and economic parameters of the section between km 633–km 715 of the M-4 Don Federal Highway

TYPE OF CONSTRUCTION	CONSTRUCTION/DEVELOPMENT
Road category	IB
Length, km	85.2
Design speed, km/h	120
Number of lanes	4
Width of the road way, m	2x7.5
Width of the median, m	5
Width of the road bed, m	27.5
Width of the traffic lane, m	3.75
Type of pavement	heavy-duty
Type of surface	stone mastic asphalt concrete
Bridges and overpasses, including:	35
- construction	28
- overhauls	7
Multilevel overpasses, including:	5
- projected	2
- existing	3
Projected traffic intensity over the first 3 years of toll-based operation, vehicles/day	9825–11,064

2.1. ALTERNATIVE TOLL-FREE ROUTE

To maintain the territories adjacent to the projected M-4 Don Federal Highway and ensure the ability for free passage in the direction of the M-4 Don Highway, the existing M-4 Don Federal Highway preserved in the form of a relief road is to be used all along the projected section between km 633–km 715, except for the 4-lane section from km 702 to the intersection with the Lozovoye-Verkhny Mamon Highway at km 707 included in the toll section of the M-4 Don Federal Highway. In order to ensure free passage along the relief road on the stretch from km 697 to the intersection with the Lozovoye-Verkhny Mamon Highway running parallel to the existing M-4 Don Federal Highway, a new Category II road is to be built as an alternative passage.

ROAD CATEGORY	II
Length, km	8.82
Design speed, km/h	120
Width of the road bed, m	15
Type of pavement	heavy-duty
Type of surface	stone mastic asphalt concrete
Bridges on alternative route	2

The check measurements of traffic intensity showed that traffic on the projected section between km 633–km 715 of the M-4 Don Federal Highway generally features a substantial share of freight transport (46–64%). At the start and at the end of the projected section, the intensity is 12,000–13,000 vehicles per day. In the area of Verkhny Mamon village, a portion of the traffic flow (1850 vehicles per day) is redistributed to the existing section of the M-4 Don Highway. There is a significant increase in traffic intensity (up to 20,130 vehicles per day) on the section of the M-4 Don Federal Highway passing through the city of Pavlovsk due to an increase in the proportion of urban car traffic on this section: the traffic intensity of passenger cars here was 11,780 vehicles per day. Transit is projected at roughly 12% of the overall flow of vehicles on the projected section.

An analysis of the prospects for road development in the Voronezh Region showed that the construction of the Rossosh-Pavlovsk connecting road and the reconstruction of the Voronezh-Lugansk Highway will create a full-fledged alternative to the M-4 Don Federal Highway on the section from Voronezh to the border with the Rostov Region and will divert up to 20% of transit traffic from the area in question if the project is implemented with subsequent free operation.

The construction of the Krasnodar–Abinsk–Kabardinka toll road will primarily impact the projected traffic intensity on the projected section of the M-4 Don Federal Highway with an increase in freight traffic due to a 60% increase in cargo turnover at the Novorossiysk sea port. The bulk of the port cargo transported will go to the central regions of Russia via the projected section of the M-4 Don Highway. Such growth in cargo turnover will lead to an increase in the cargo flow on the projected section of the M-4 Don Federal Highway by 2000–2100 heavy vehicles per day.

The future intensity of the section between km 633–km 715 of the M-4 Don Federal Highway route is projected based on an analysis of transit links between the areas through which the existing route passes, and also from an analysis of and the prospects for the development of the region's economic potential.

Based on these parameters, the projected traffic intensity on a toll basis will be 17,751 vehicles per day by 2038.

On the section between km 633 – km 715 of the M-4 Don Federal Highway, the following two multilevel interchanges are to be built:

- Interchange at km 634. A tube type interchange has been designed at the turn-off of the existing M-4 Don Federal Highway from the projected new section of the road. The existing highway corresponds to category II at the turn-off. The interchange layout ensures the best traffic conditions for the projected high-speed toll highway;
- Interchange at km 673. A trumpet interchange was projected at the turn-off of the existing M-4 Don Federal Highway from the planned new direction of the road. The existing highway corresponds to category II at the turn-off. The interchange layout ensures the best traffic conditions for the projected high-speed toll highway

3. TOLL SYSTEM ON THE SECTION BETWEEN KM 633–KM 715 OF THE M-4 DON FEDERAL HIGHWAY

Following the completion of construction, the design documentation for the section between km 633–km 715 of the M-4 Don Federal Highway envisages a closed toll collection system. The toll plazas are set up at km 636 as part of the interchange on the road to Rostov-on-Don and also at km 673 as part of the interchange at the intersection with the Pavlovsk–Gavrilsk road.

The closed system involves the establishment of toll plazas at the entrances to and exits from the toll road. Such entrances/exits are equipped with toll booths. The user pays the toll at the exit toll booth after presenting the travel card received at the entrance toll booth. The amount of the toll is determined based on the distance actually travelled.

The contractor's obligations include building the toll plaza, booths, and canopies as well as installing and setting up equipment

The toll plazas must offer the ability to pay for travel using different means: cash, bank cards, payment using electronic means (transponders, contactless smart cards, etc.). Tolls will be paid at toll gates and or using open-road tolling technologies with toll booths allocated exclusively for non-stop travel.

4. PROJECT FUNDING

ORGANIZATIONAL AND CONTRACTUAL FORM OF THE PROJECT: LONG-TERM INVESTMENT AGREEMENT.

The subject is the construction, reconstruction, maintenance, repair, overhaul, and toll-based operation of the section between km 633–km 715 of the M-4 Don Federal Highway – from Moscow through Voronezh, Rostov-on-Don, and Krasnodar to Novorossiysk (with a bypass of Losevo and Pavlovsk) in the Voronezh Region, including the following envisaged by the design documentation:

- land plots within the easement area and structural components located on or under them (road way, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities);
- transport infrastructure engineering structures (road bed, pavement, bridges, drainage structures, overpasses, flyovers, technical traffic organization equipment, and other road facilities).

Duration of the agreement: 24 years from the date of conclusion.

Project implementation stages:

- investment stage: 2017–2020;
- operational stage: 2021–2040.

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Initial tender conditions:

Cost of building the facility under the agreement – RUB 6.4 billion in the prices of the corresponding years inclusive of VAT, including:

- funding by Russian Highways State Company – RUB 56.1 billion;
- investment of the contractor – RUB 6.3 billion.

- Public funding provided during the operational stage, including:

- base amount of annual operating payment – RUB 17.9 billion in prices of the first quarter of 2016 excluding VAT;
- investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.65%.

Tender participants: Transstroy Mekhanizatsiya LLC and Donaerodorstroy JSC.
Winner of the tender: Transstroy Mekhanizatsiya LLC.

A long-term agreement was concluded with winner of the tender on the following terms:

- Cost of building the facility under the agreement – RUB 62.3 billion in the prices of the corresponding years inclusive of VAT, including:

- funding by Russian Highways State Company – RUB 56 billion;
- investment of the contractor – RUB 6.3 billion.

- Public funding provided during the operational stage, including:

- base amount of annual operating payment – RUB 17.9 billion excluding VAT in prices of the first quarter of 2016;
- investment payments estimated through the amount of the basic premium to inflation as the return on the contractor's investment – 4.65%.

4.1. COMMERCIAL STRUCTURE OF THE SECTION BETWEEN KM 633–KM 715 OF THE M-4 DON FEDERAL HIGHWAY

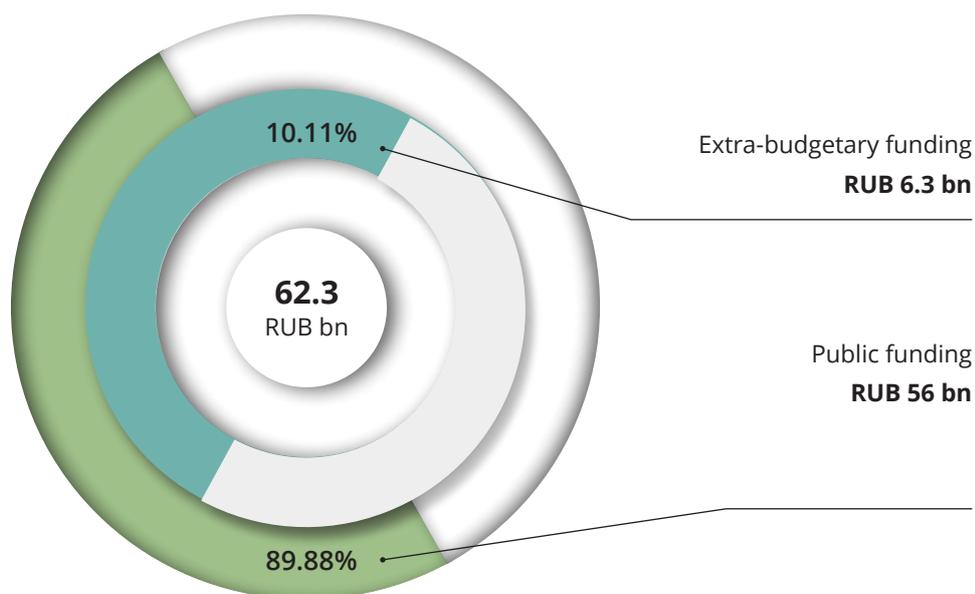
Project funding during the investment stage

The final parameters of capital expenditures under the agreement were determined as follows based on the results of the tender:

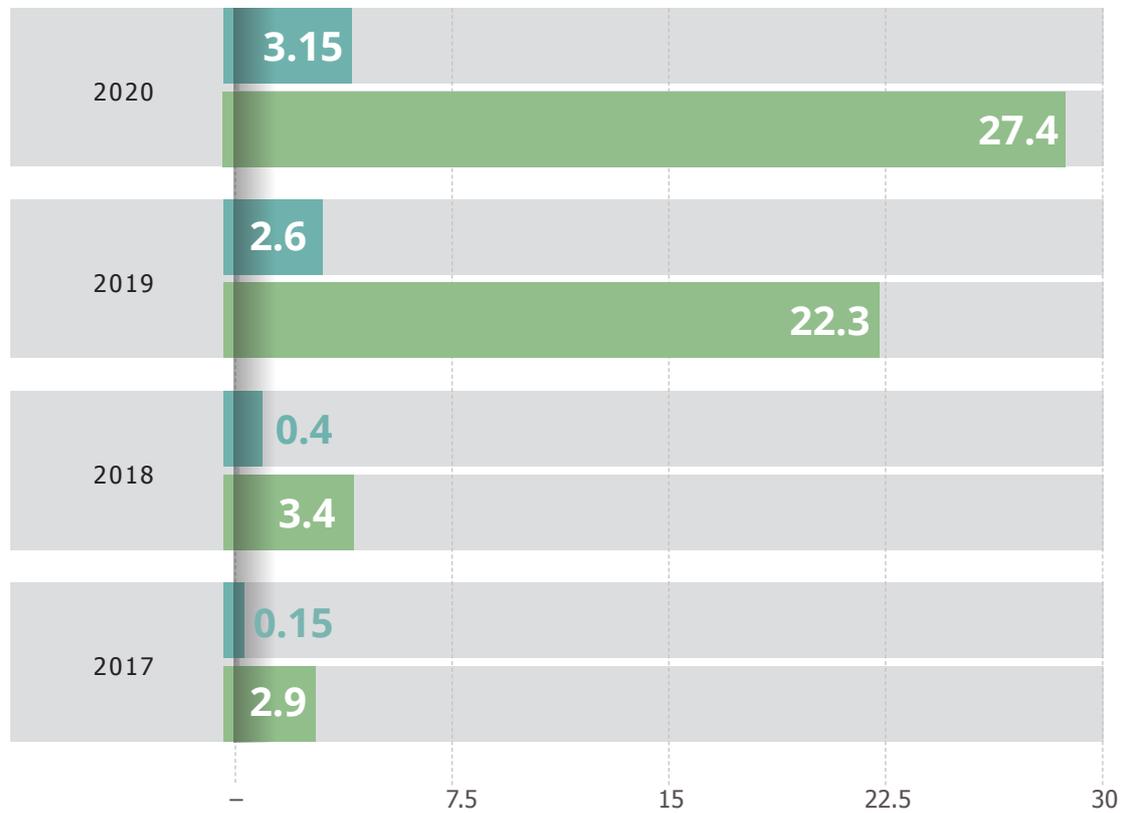
the total cost of the agreement at the investment stage will be RUB 62.3 billion in the prices of the corresponding years inclusive of VAT, including:

- public funding – RUB 56 billion in the prices of the corresponding years, including VAT;
- private funding remained unchanged, amounting to RUB 6.3 billion in the prices of the corresponding years, including VAT.

Funding structure of the project km 633–km 715 of the M-4 Don Federal Highway



Schedule of capital expenditure distribution by year, RUB bn



LEGEND: ■ Extra-budgetary funding
■ Public funding

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

**Key parameters for the repayment of extra-budgetary funds
of the section between km 633–km 715 of the M-4 Don Federal Highway**

PARAMETER	VALUE	COMMENTS
Cost of work under the agreement during the investment stage, RUB bn	62.3	
- public funding	56.0	
- contractor's investments	6.2	
Including:		
- borrowed funds	3.1	Basis for minimum investment payment
- internal funds	3.1	Basis for reduced investment payment
Deadline for the repayment of borrowed funds, years	13	
Deadline for the repayment of internal funds, years	7	
Average rate of return on contractor's investment	6.6% + CPI	The floating interest rate of return is determined taking into account the consumer price index for goods and services and a fixed premium of 6.6%
Including:		
Floating rate of return on contractor's borrowed funds	4.65% + CPI	The floating interest rate on the contractor's borrowed funds is determined taking into account the consumer price index for goods and services and a fixed premium of 4.65%
Floating rate of return on contractor's internal funds	8.5% + CPI	The floating interest rate on the contractor's internal funds is determined taking into account the consumer price index for goods and services and a fixed premium of 8.50%

5. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the long-term investment agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the contractor are assigned to Russian Highways State Company, which serves as a public partner in this project.

The implementation of the project based on the mechanism of a long-term investment agreement makes it possible to reduce the contractor's investments, which consequently reduces its financial risks.

RISK	DESCRIPTION OF RISK	CONTRACTOR	STATE COMPANY
Design risks	Likelihood of errors in design decisions and construction plans	●	●
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<ul style="list-style-type: none"> • damage to the environment as a result of the contractor's actions during the construction and operation of the facility; • environmental risks associated with the design documentation 		●
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work during the operational stage	●	
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the contractor's obligations under the long-term investment agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process	Expansion of roads or interchanges		●

VI. HIRING OF AN OPERATOR FOR THE TOLL-BASED OPERATION OF THE SECTION BETWEEN KM 1091–KM 1319 (SECTION 4) OF THE M-4 DON FEDERAL HIGHWAY FROM MOSCOW VIA VORONEZH, ROSTOV-ON-DON, AND KRASNODAR TO NOVOROSIYSK

1. LAYOUT OF THE SECTION BETWEEN KM 1091–KM 1319 (SECTION 4) OF THE M-4 DON FEDERAL HIGHWAY

The section between km 1091–km 1319 of the M-4 Don Federal Highway links the Central region with the Chernozem and North Caucasus regions as well as the Transcaucasian countries of the CIS, the Black Sea coast, and the port of Novorossiysk with access to Turkey and Iran.

The section between km 1091–km 1319 of the M-4 Don Highway passes through the territory of the Rostov Region and the Krasnodar Region and connects two administrative centres of the regions – Rostov-on-Don and Krasnodar.

This 228-km section has numerous single-level intersections and junctions with the local road network and passes through more than 20 populated areas with speed reduced to up to 60 km/h.



LEGEND: ▬ Reconstruction of the section with subsequent operation on a toll basis
▬ Existing M-4 Don Federal Highway

Location:	Rostov Region, Krasnodar Territory		
Length of toll section, km	207		
Projected intensity during first three years of toll operation, vehicles/day	>59,000		
Road category:	IB		
Number of traffic lanes	4/6		
Date of commissioning of sections:	km 1091–km 1119	km 1119–km 1195	km 1195–km 1319
	August 2017	December 2017	October 2017

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 1091–KM 1319 OF THE M-4 DON FEDERAL HIGHWAY

The section between km 1091–km 1319 of the M-4 Don Federal Highway consists of three sections:

- km 1091–km 1119.5 (Rostov Region): reconstruction with subsequent operation on a toll basis;
- km 1119.5–km 1195 (Krasnodar Territory): integrated development with subsequent operation on a toll basis;
- km 1195–km 1319 (Krasnodar Territory): integrated development with subsequent operation on a toll basis.

The project's implementation involves the allocation of two phases of work on the section between km 1091.6–km 1119.5, while work on the first phase (reconstruction without the construction of the toll system and the automated traffic control system) is performed by Russian Highways State Company outside the O&M contract.

Main technical and economic parameters of the section between km 1 091 – km 1 319 of the M-4 Don Highway

TECHNICAL PARAMETERS	SECTIONS		
	km 1091.6–km 1119.5	km 1119.5–km 1195	km 1195–km 1319
Category	IB	IB	IB
Design speed, km/h	120	120/100	120
Number of traffic lanes	4	4	4–6
Width of the road bed, m	25.11	26.5–27.5	27.5–35.0
Width of the road way, m	2x7.5	2x7.5	2x7.5–2x11.25
Width of the shoulder, m	3.75	3.75	3.75
Width of the median, m	2.61	4–5	4–5
Type of pavement	heavy-duty		
Type of surface	asphalt concrete		
Number of toll plazas, number of gates	1/18	2/36	2/30

3. PROJECT FUNDING

Russian Highways State Company and the Russian Direct Investment Fund jointly established the joint company Road Investment Company LLC as part of the implementation of the long-term O&M contract for the implementation of the M-4 Don project on the section between km 1091–km 1319.

The establishment of a joint company is a new mechanism in the PPP projects of Russian Highways State Company. An advantage of this interaction is an increase in the attractiveness of projects as well as business ties of the financial partner, which enhance the likelihood of attracting financing on favourable terms.

Thus, the participation of the RDIF in the project will bolster the opportunity to attract foreign direct investment for the project. To date, the RDIF has already formed investment partnerships with leading Asian and Arab sovereign funds and development institutions for a total of more than USD 25 billion (over RUB 1.5 trillion). Investment funds from China, the United Arab Emirates, Saudi Arabia, Qatar, and other countries have already confirmed their interest in road infrastructure development projects. Thus, interaction with the RDIF will make it possible to provide the road industry with investment resources.

Project funding during the investment stage

The total cost of the project is RUB 7 billion, including RUB 3.2 billion in extra-budgetary funds RUB 3.83 billion in budget funds

Under the RDIF proposal:

- The cost of funding is reduced by 1% compared with the basic parameters;
- The volume of state funding is reduced by RUB 365.8 million to RUB 3.904 billion.
- The volume of investments is increased to 3.194 billion.

The optimization by the RDIF makes it possible to reduce the amount of budget funding and increase budgetary efficiency while maintaining the project's investment appeal and effectiveness.

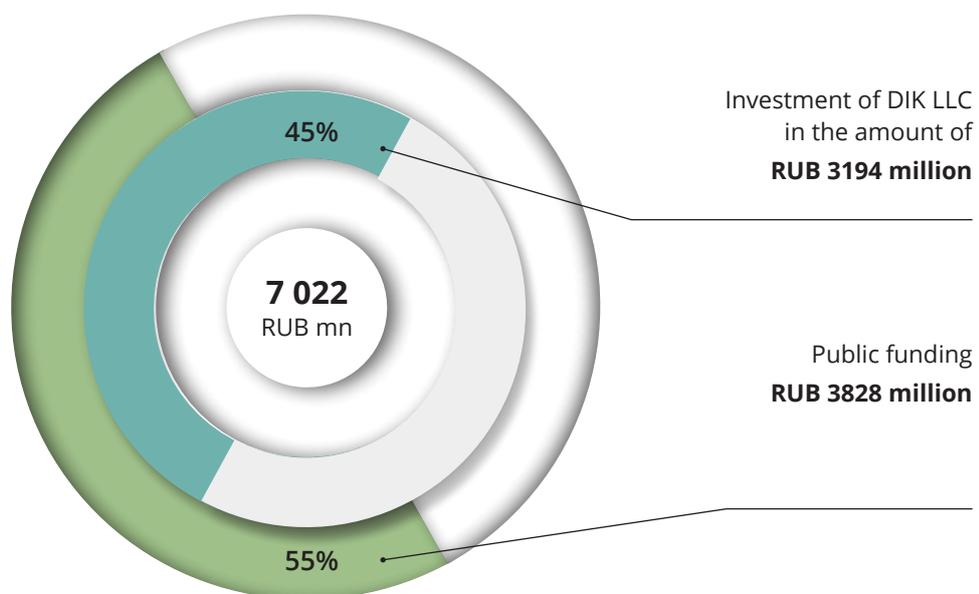
The O&M contract envisages the reconstruction and integrated development on the section between km 1091–km 1319 of the M-4 Don Highway of:

- land and cadastral work (km 1119–km 1319);
- preparation of the construction site (km 1119–km 1319);
- drafting of working documentation;
- reconstruction (2nd phase) of the section between km 1091–km 1119*;
- integrated development of the section between km 1119–km 1195*;
- integrated development of the section between km 1195–km 1319*;
- toll-based operation of the section between km 1091–km 1319.

The construction obligations starts will start being fulfilled from the date of the conclusion of the agreement and the implementation of this project is calculated for 15 years until December 2030.

* DIK LLC (investor) co-finances this work (at the expense of extra-budgetary funding).

Structure of the funding of capital expenditures



Cost parameters of the project

PARAMETER	VALUE
Cost of construction in prices of the corresponding years, RUB bn	7.0
Public funding in prices of the corresponding years, RUB bn	3.8
Investment of DIK LLC in prices of the corresponding years, RUB bn	3.2
Return on borrowed investment	CPI+4.50%
Return on internal investment	CPI+7.50%

The terms of the agreement envisage the return of internal and borrowed funding with a return as part of investment payments. These conditions were established taking into account the Russian Highways State Company's experience with implementing investment projects and the current macroeconomic situation.



FROM MOSCOW TO THE BORDER
WITH THE REPUBLIC OF BELARUS

M-1 BELARUS

I. DESCRIPTION OF THE M-1 BELARUS PROJECT FROM MOSCOW TO THE BORDER WITH THE REPUBLIC OF BELARUS

1. DESCRIPTION OF THE M-1 BELARUS FEDERAL HIGHWAY

The M-1 Belarus Highway from Moscow to the border with the Republic of Belarus (to Minsk and Brest) is a road of federal importance and passes through the central part of Russia from east to west across the territory of the Moscow and Smolensk Regions. The M-1 Belarus is a transport corridor that links two capitals – Moscow and Minsk—and is part of the Trans-Siberian International Transport Corridor, which is part of the 2nd Pan-European transport corridor Berlin–Warsaw–Minsk–Moscow–Nizhny Novgorod.



- LEGEND:
-  On-site construction
 -  Reconstruction with subsequent operation on a toll basis (for section km 84–km 132 with the drafting of design and estimate documentation)
 -  Sections in the operational stage (Odintsovo Bypass)

The total length of the M-1 Belarus Federal Highway (Moscow–Smolensk–state border with the Republic of Belarus) is 457.5 km (including the approach road to Smolensk) with 140.4 km passing through the territory of the Moscow Region and 317.1 km passing through the territory of the Smolensk Region. The M-1 Belarus Federal Highway corresponds to the parameters of the IC technical category within the boundaries of the Moscow Region and at the approach road to Smolensk and the parameters of the IB technical category in the Smolensk Region. The entire road has four lanes and an improved type of asphalt concrete surface.

2. GOALS AND PURPOSE OF THE M-1 BELARUS PROJECT

The main goal of the M-1 Belarus project is to build a modern high-speed road as well as roadside infrastructure integrated into the East West International Transport Corridor. The highway will serve international, interregional, and intraregional passenger and freight traffic and help to meet the needs of foreign and domestic trade.

The specific goals and purpose pursued by the project are as follows:

Improving transport infrastructure:

- establishment of modern, developed, and efficient transport infrastructure on the route from Moscow to the border with the Republic of Belarus;
- improvement of the highway's technical features and capacity;
- enhancing the competitiveness of Russia's transport system and the country's transit potential

Improvements in the investment and budget sphere:

- attraction of additional investment, organizational, and management resources from private business to the transport sector of the economy;
- optimization of budget expenditures by attracting extra-budgetary sources of funding for the design, reconstruction, and operation of the highway;
- improvement of the investment climate in the transport sector by establishing successful experience from the implementation of concession projects in Russia;
- increased revenue for budgets of all levels due to additional tax revenue during the construction and operational stages of the highway.

Environmental goals:

- mitigating the level of the negative environmental impact by providing a more favourable speed limit for vehicles, bypassing large populated areas, and implementing a set of environmental protection measures.

Comprehensive development of catchment areas:

- enhancing the transport accessibility and investment appeal of adjacent parts of the catchment area;
- creating conditions for the development in catchment areas of industrial, transport, recreational, and service facilities linked to the socioeconomic development programmes of the regions through which the highway runs

Comprehensive goals:

- intensification of social, economic, interregional, and international links and increasing the level of mobility of the population and market participants;
- enhancing the accessibility of transport services for the population (the population in the catchment areas of the highway is 19.5 million people, or 13.7% of the country's population);
- improving the comprehensive safety of the transport system;
- reduction in the level of transportation costs for shippers and developing the export of motor transport services.

Thus, the reconstruction of the M-1 Belarus Federal Highway meets the government's priorities, including those reflected in the Transport Strategy of the Russian Federation for the period until 2030, which was approved on 22 November 2008 by Order No. 1734-r of the Government of the Russian Federation.

The implementation of this large-scale project will directly contribute to the improvement of social, economic, and transport conditions in accordance with the main guidelines of state policy.

3. SPECIFICATIONS OF THE M-1 BELARUS FEDERAL HIGHWAY

The main technical parameters following the reconstruction of the M-1 Belarus Federal Highway are presented in the table:

INDICATOR	M-1 BELARUS FEDERAL HIGHWAY		
	km 33–km 45	km 45–km 84	km 84–km 456
Type of work	Reconstruction		
Number of traffic lanes	8	6	4
Construction length of the highway under reconstruction. km	425.8 including Yartsevo Bypass – 19.3		
Design speed. km/h	120		
Width of road bed. m	42.5	35	25.14
Width of road way. m	30	22.5	15
Median	over the entire route		
Lighting	over the entire route		
Pavement type	capital. asphalt concrete		
Design load	A-14, N-14		
Bridges and overpasses	150		
Multilevel interchanges	3		23
Link with isolated areas	3		40
Multilevel pedestrian crossings	67		
Multifunctional roadside service areas	15		
Driver rest areas	22		
Existence of automated traffic control system	over the entire route		
Toll section. km	349 (section km 33–km 380)		

4. TOLL OPERATION OF THE M-1 BELARUS FEDERAL HIGHWAY

4.1. INTRODUCTION OF TOLL-BASED TRAVEL

ADVANTAGES FOR USERS OF THE M-1 BELARUS TOLL HIGHWAY:

- relatively light traffic ensuring comfortable travel;
- high speed limit and no populated areas slowing down traffic;
- relatively low wear and tear by carriers' vehicles, thus ensuring the high quality of pavement;
- high level of traffic servicing infrastructure (multifunctional areas, rest areas, automated traffic control system).

According to Article 37 of Federal Law No. 257 "On Roads and Road Activities in the Russian Federation and on Amending Certain Legislative Acts of the Russian Federation", a decision on the toll-based operation of a road may be made given the existence of a free alternative and the length of the alternative route must not be more than three times the length of the toll section.

Given that the road section in question is used not only for transit, but also for local travel, the following groups of users have been identified:

- 1st group – travel from Moscow to the border with the Republic of Belarus (the starting point and final destination is outside the toll section).
- 2nd group – travel from Moscow to a populated area or travel from the border with the Republic of Belarus to a populated area (the starting point is outside the toll section, but the final destination is within the toll section or vice versa).
- 3rd group – travel from one populated area to another (the starting point and final destination are within the toll section).

Thus, the following alternative routes have been developed:

<p>Alternative routes for the 1st group of users</p>	<p>Travel via the A-101 from Moscow to Roslavl and then via the A-141 Orel–Bryansk–Smolensk–Rudnya with the option to take the Smolensk Bypass and travel on to the M-1 Belarus (km 415).</p>
<p>Alternative routes for the 2nd and 3rd groups of users</p>	<p>Travel on the section between km 33–km 84 on the local thoroughfares that run alongside the M-1, then via Mozhayskoye Highway through the towns of Uvarovka, Gagarin, Prechistoye, and Novodugino with access to R-134 and then via the towns of Torbeyevo, Novoye Selo, Vyazma, Dorogobuzh, and Solovyevo to Smolensk, and entering the M-1 Belarus Highway at km 382.</p>
<p>Travel for local residents</p>	<p>Free local roads and overpasses should be built for local travel and access to isolated areas.</p>

4.2. ORGANIZATION OF THE TOLL SYSTEM

The toll collection system requires the existence of special equipped booths on the road that include equipment, facilities, and platforms designed to collect tolls.

The project envisages the organization of a closed toll system on the sections between km 33–km 84 and km 84–km 132 and an open toll system on the section between km 132 – km 380. This decision was primarily based on the social orientation of the road. The M-1 Belarus Federal Highway passes through the land of 33 populated areas and there are 351 populated areas in close proximity, and leaving these populated areas is possible only via the M-1. Due to the lack of alternative routes, tolls are not planned on the section between km 380–km 456.

As part of the organization of the toll payment system on the M-1 Belarus Highway, 8 toll plazas are set up on the main road at: km 45, km 79, km 130, km 150, km 216, km 276, km 323, and km 375, and there are 5 toll plazas at the exits at: km 64, km 74, km 83, km 107, and km 113 as well as 4 control centres at: km 45, km 216, and km 374.



M-1 Belarus
Federal Highway

5. PROJECT RISKS

The key risks of the M-1 Belarus project are:

No.	DESCRIPTION	RISK IMPACT ON THE PROJECT	CONSEQUENCES
1	Risk of insufficient traffic intensity	High	Lack of the necessary economic and financial efficiency of the project's implementation
2	Risk of social discontent among the public	High	Delay/disruption of project implementation period Need to change design solutions
3	Reduction in the amount of Programme funding for the project (systemic risk)	High	Rejection of the project in its original form or termination of the concession agreement
4	Refusal of the expropriation of land plots by landowners and court rulings denying the expropriation of land plots	High	Revision of design solutions, disruption of the commissioning period, or shortfall in revenue from the project
5	Identification of unexpected (hidden) utilities	Medium	Suspension of reconstruction work or disruption of commissioning
6	Insufficient interest among market participants in participating in the project, including the refusal of credit institutions to provide resources for project financing (systemic risk)	High	Refusal to implement the project or holding another tender
7	Breach of concession terms for the construction of sections (systemic risk)	Medium	Disruption of the commissioning period or shortfall in income from the project
8	Risks arising during the operational stage	High	Delay / disruption of project implementation period. Increase in operation cost

II. SECTION OF THE NEW EXIT TO THE MOSCOW RING ROAD FROM THE M-1 BELARUS MOSCOW–MINSK FEDERAL HIGHWAY (Odintsovo Bypass)

The project "Construction of a new exit to the Moscow Ring Road from the M-1 Belarus Moscow–Minsk Federal Highway (Odintsovo Bypass)" is one of the first infrastructure projects at the federal level that is being implemented as part of a concession with the direct collection of tolls.

The concession agreement on the construction and subsequent operation of the 18.5-km toll road from the Moscow Ring Road near the Molodogvardeyskaya transport interchange to km 33 of the M-1 Belarus Federal Highway was concluded in July 2009 by the Russian Federation as represented by the Federal Road Agency of the Ministry of Transport of the Russian Federation (concession grantor) and Main Road JSC (concessionaire).

Russian Highways State Company has been performing the functions of the concession grantor since May 2010.



Main technical and economic parameters of the section

Length, km	18.5
Number of traffic lanes	8 on the first 5 km 6 on the next 9 km 4 on the final 4 km
Design speed, km/h	120
Authorized speed, km/h	90
Bridges and overpasses	14
Number of interchanges	6
Traffic capacity, vehicles/day	70,000–80,000
Number of toll plazas	3
Construction cost of the concession agreement highway, RUB bn	21.3
Public funding, RUB bn	11
Extra-budgetary funding, RUB bn	10.3
Duration of concession agreement	until 17 January 2041
Start of road construction	October 2010

After the completion of construction on the first stage, the highway (direct route) switched to toll operation mode starting from 1 January 2014.

Construction on the second stage was completed on 26 December 2014. The highway switched to full toll operation mode starting from 26 February 2015.

III. M-1 BELARUS FEDERAL HIGHWAY FROM MOSCOW TO THE BORDER WITH THE REPUBLIC OF BELARUS (TO MINSK AND BREST) ON SECTIONS BETWEEN KM 33–KM 84

1. LAYOUT OF THE SECTION BETWEEN KM 33–KM 84 OF THE M-1 BELARUS FEDERAL HIGHWAY

The section between km 33–km 84 is part of the M-1 Belarus Federal Highway, which traverses central Russia via the Moscow and Smolensk Regions, establishing a major transport corridor linking the two capitals – Moscow and Minsk, and is part of the 2nd Pan-European transport corridor Berlin–Warsaw–Minsk–Moscow–Nizhny Novgorod.



- LEGEND:
-  On-site construction
 -  Reconstruction with subsequent operation on a toll basis (for section km 84–km 132 with the drafting of design and estimate documentation)
 -  Sections in the operational

The section of the M-1 Belarus Federal Highway between km 33–km 84 is a logical continuation of the new exit to the Moscow Ring Road from the M-1 Belarus Moscow – Minsk Highway (Odintsovo Bypass) that was built and commissioned on a toll basis in late 2013 and implemented under a concession agreement with direct toll collection.

This toll road will be continued in Moscow with the Kutuzovsky Prospekt Northern Relief Road from the Molodogvardeyskaya interchange to the Moscow International Business Centre, whose construction is envisaged as part of the concession agreement concluded by Moscow in late 2014.

Thus, the project for the reconstruction of the M-1 Belarus Federal Highway between km 33–km 84 with subsequent toll will organically fit into the existing and future network of toll roads in this direction (to Minsk and Brest), which has a positive effect on the forecast assessment of the potential demand for the road among users and minimizes the risks of traffic.

The section of the reconstructed M-1 Belarus Highway in question is located in the Moscow Region's Odintsovsky District – from km 33 to km 83 – and Ruzsky District – from km 83 to km 84. The total length of the section to be rebuilt is 51 km.

The section originates near Lesnoy Gorodok village in the Odintsovsky District and terminates at the intersection with the A-108 Moscow Outer Ring road near Dorokhovo village in the Ruzsky District. There is a two-level interchange on km 64 of the existing M-1 Belarus Federal Highway.

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 33–KM 84 OF THE M-1 BELARUS FEDERAL HIGHWAY

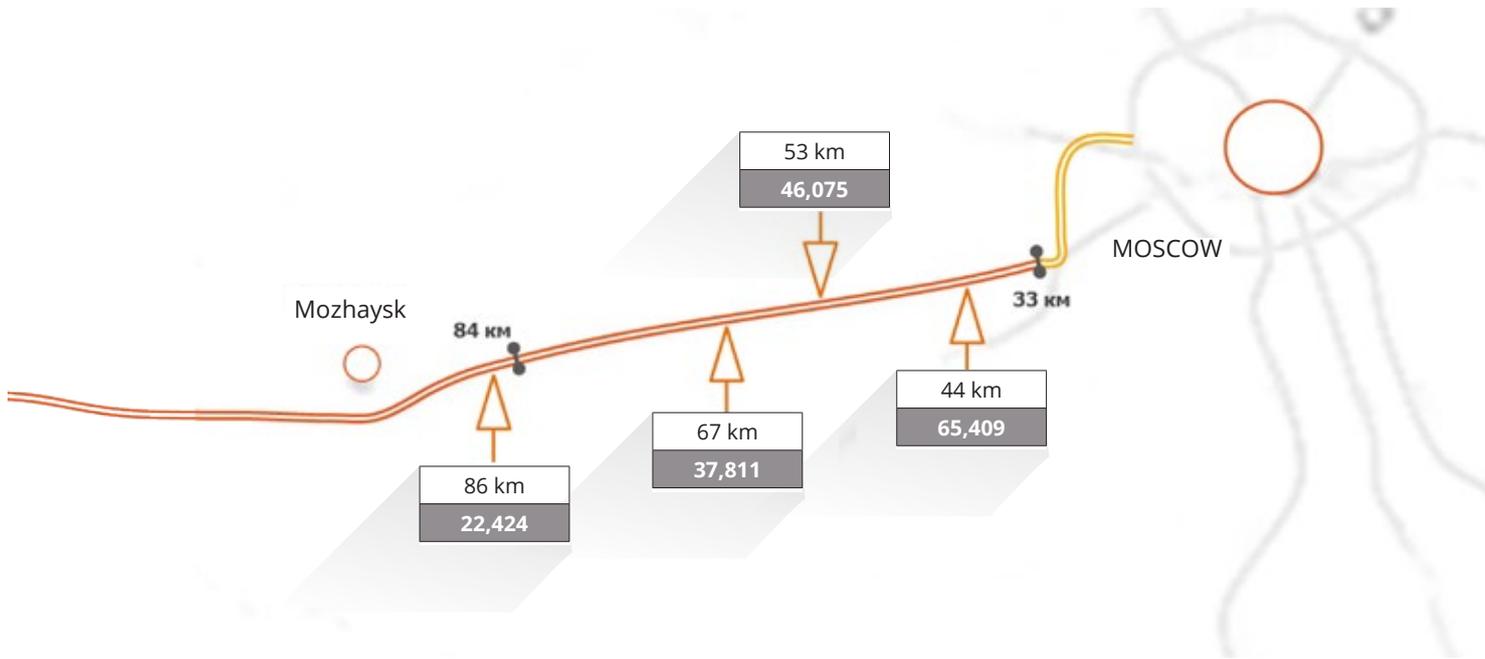
According to traffic data, the section in question between km 33–km 84 of the M-1 Belarus Federal Highway exhibits significant differences in the volume and nature of its traffic congestion at its initial and final segments and a gradual decrease in traffic intensity as it gets further away from Moscow.

The average traffic structure on the M-1 Belarus Highway by vehicle type features passenger transport, which accounts for up to 77% of the total flow, while the share of buses is insignificant at around 2%.

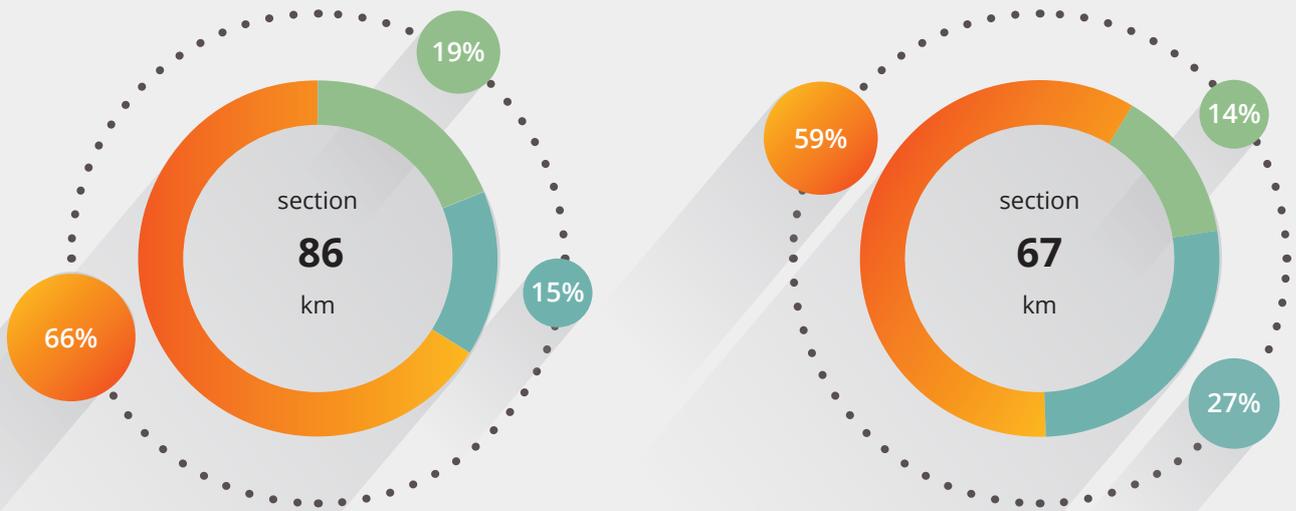
Planned vehicular traffic intensity on the section between km 33–km 84

CATEGORY	Traffic intensity as of 2027, thousand vehicles/day	Traffic intensity as of 2051, thousand vehicles/day
Category I	25.8	52.3
Category II	0.7	1.6
Category III	2.5	5.6
Category IV	2.3	4.6
TOTAL	31.2	64.1

Structure of the current M-1 transport flow



CATEGORY	VEHICLES/DAY			
	section 86 km	section 67 km	section 53 km	section 44 km
I	14,800	22,308	29,488	47,094
II	3364	10,209	12,440	11,774
III+IV	4261	5294	4147	6541
Total	22,424	37,811	46,075	65,409

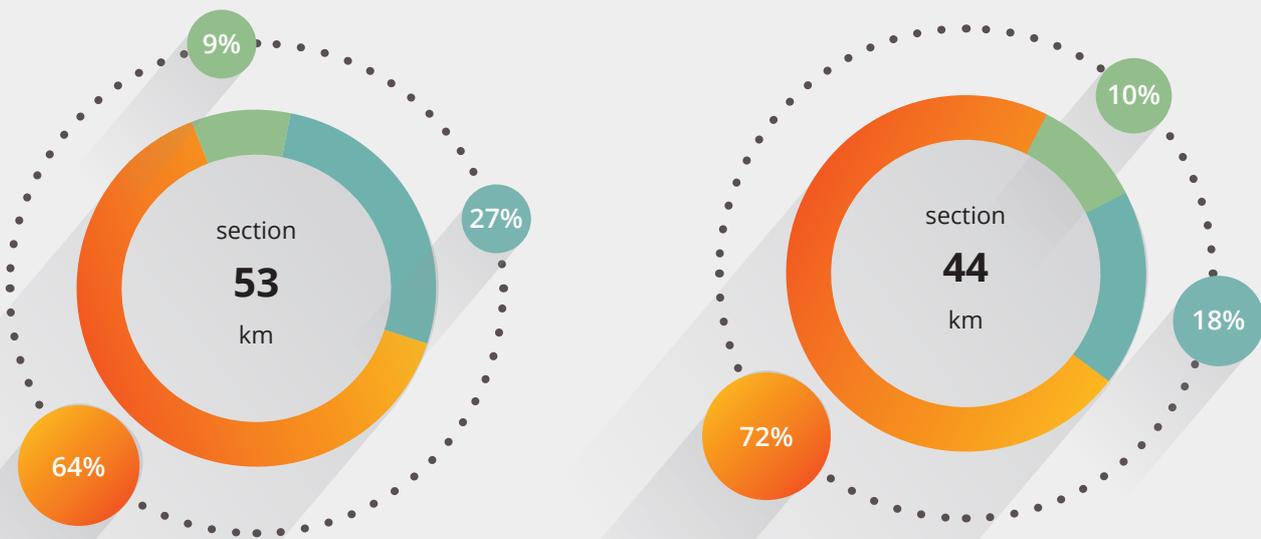


LEGEND: ■ Category I
■ Category II
■ Category III+IV

Based on the projected traffic intensity volume as of 2030, the section between km 32.5–km 45.1 of the M-1 Belarus Federal Highway in question is classified under the IB technical category taking into account two dedicated lanes for free travel in each direction:

- with eight traffic lanes on the section between km 33.65–km 44;
- with six traffic lanes on the sections between km 32.5–km 33.65 and km 44–km 45.1.

Based on the estimated traffic intensity as of 2030 over the sections, the toll-based section of the projected M-1 Belarus Federal Highway between km 45.1–km 83.8 is classified under the IB category with six traffic lanes



Local thoroughfares are available on the right and left sides of the toll road section to ensure free travel. Based on the estimated traffic intensity for the period until 2030 and the estimated traffic load on the section between km 45–km 84, the sections of the projected local thoroughfares are classified under Category II.

The design documentation envisages the reconstruction of the section between km 33–km 84 of the M-1 Belarus Federal Highway in the Moscow Region, including:

- on the section between km 33–km 45: comprehensive construction for the introduction of toll payments;
- on the section between km 45–km 84: the reconstruction of the main (toll) route (technical category – IB) and the construction of relief roads (II) running parallel to the main road.

Main technical and economic parameters of the section between km 33–km 84 of the M-1 Belarus Federal Highway

NAME	INDICATOR
Technical category	IB
Length of the toll section, km	51
Number of traffic lanes	km 33–km 44 – 8 km 45–km 84 – 6
including for toll traffic	km 33–km 45 – 4 km 45–km 84 – 6
Number of bridges and overpasses	16
Number of interchanges	3
Design speed, km/h	120
Projected intensity (as of 2027, vehicles/day.	>30,000

AT THE INTERSECTIONS AND
JUNCTIONS OF THE ROAD SECTION
IN QUESTION WITH OTHER ROADS
ON THE ADJACENT TERRITORIES
AND IN POPULATED AREAS, THREE
MULTILEVEL INTERCHANGES ARE
TO BE BUILT:

- Interchange at km 64. In order to provide a link between parts of the town of Kubinka, the section in question envisages an interchange of the "twin-pipe" design with the road being intersected passing over the main road;
- Interchange at km 74. In order to ensure an area for U-turns and link the toll and alternative traffic routes, an interchange of the "twin-pipe" design is envisaged between the M-1 Belarus Federal Highway and Mozhayskoye Highway;
- Interchange at km 83. In order to organize traffic flows between the Moscow Outer Ring road and the M-1 Belarus Federal Highway, a multilevel interchange is envisaged on the section in question with an individual design featuring an overpass through the toll section and two circular intersections at one level on the existing highway of the Moscow Outer Ring road and an alternative road located to the left of the toll section.

3. ORGANIZATION OF A TOLL COLLECTION SYSTEM ON THE SECTION BETWEEN KM 33–KM 84 OF THE M-1 BELARUS FEDERAL HIGHWAY

The section between km 33–km 84 of the M-1 Belarus Federal Highway envisages an open toll system that can be converted into a closed system taking into account the further development of the toll road. Toll plazas exist at km 46 and km 79 of the main road and the exits at the interchanges at km 64 and km 74. The toll section may only be accessed from the adjacent territory transport interchanges. Two lanes are provided in each direction on the section between km 33–km 45 for transport to avoid paying tolls, and local thoroughfares with two-way traffic are to be built on the section between km 45–km 84 alongside the projected highway. In order for vehicles to avoid unnecessary travel on the sections between the interchanges at km 45 and km 64, there is a U-turn area at km 52 with the construction of an overpass over the M-1 Belarus Federal Highway. In addition, new exits are to be built and certain sections of the Mozhayskoye Highway are to be rebuilt.

Section between km 33–km 45 with toll collection

INDICATOR	KM 33.65–KM 44	KM 32.5–KM 33.65 KM 44–KM 45.1
Road category		I B
Section length, km		12.6
Design speed, km/h		120
Number of traffic lanes	8	6
Including:		
- for toll travel	4	4
Width of road way, m	15x2	11.25x2
Heavy-duty pavement with asphalt concrete surface		

Toll road

NAME	INDICATOR
Road category	I B
Section length , km	38.8
Design speed, km/h	120
Number of traffic lanes	6
Width of road way, m	11.25x2
Bridge structures	12
Bi-level pedestrian crossings	13
Multilevel interchanges	3
Toll plazas	4
Heavy-duty pavement with asphalt concrete surface	

Toll-free local alternative thoroughfares

INDICATOR	Local right-side thoroughfare	Local left-side thoroughfare
Road category	II	
Section length, km	20.9	36.1
Design speed, km/h	100	
Number of traffic lanes	2	2
Width of road way, m	3.75x2	3.75x2
Bridge structures	2	2
Heavy-duty pavement with asphalt concrete surface		

Toll payments from users of the M-1 Belarus Federal Highway on the section between km 33–km 84 will be collected in accordance with the tariff plan approved by Russian Highways State Company. The amount of tolls charged for the road for various categories of vehicles is presented in the table below:

Base tariff amount at the 2015 price level, RUB/km

Category I	3.5
Category II	5.2
Category III	7.0
Category IV	14.0

4. PROJECT FUNDING

At present, the project is in the stage of preparation for a decision from the Government of the Russian Federation on the conclusion of a concession contract and the announcement of a concession tender. In addition, design and estimate documentation has been drafted with respect to the section between km 33–km 84 with a favourable conclusion from the State Expert Evaluation Department (No. 778-13/GGE-8424/10 dated 9 September 2013 for the estimate part and No. 763-13/GGE-8424/04 dated 6 September 2013 for the technical part).

Organizational and contractual form of the project: concession agreement with concession grantor payment. The subject of the agreement with the concessionaire will include the design, reconstruction, financing, and operation of the section between km 33–km 84 of the M-1 Belarus Federal Highway on a toll basis.

The concession agreement is to be concluded for a period of 33 years, including:

- duration of investment stage: 3 years;
- duration of operational stage: 30 years.

The concessionaire is determined based on the results of a public two-stage tender held in accordance with federal law.

Private investments are returned by collecting tolls for Russian Highways State Company. The risks of failure to reach the predicted level of traffic intensity rest with the concession grantor.

Capital expenditures on the project (in prices of corresponding years)

EXPENDITURES	TOTAL	2019	2020	2021
Investment of the concessionaire, RUB bn	15.6	-	-	15.6
Public funding, RUB bn	42.2	8.2	17.2	16.8
Total capital expenditures including VAT	57.8	8.2	17.2	32.4

Key parameters of extra-budgetary funding

BANK LOAN (80%)	CPI + 5.5%
Debt repayment period	2022–2036
Equity loan (20%)	CPI + 8.5%
Loan repayment period	2037–2051

5. ADVANTAGES AND RISKS OF THE PROJEC

ONE OF THE ADVANTAGES OF THE M-1 BELARUS PROJECT AT THE SECTION BETWEEN KM 33–KM 84 IS THE MINIMIZATION OF THE RISK OF TRAFFIC DUE TO THE FACT THAT THE AREA IN QUESTION SERVES AS A CONTINUATION OF EXISTING AND PLANNED TOLL ROADS IN THIS DIRECTION.

In addition, the plan proposed for implementing the project – a concession with the concession grantor’s payment – is more attractive to investors at the initial stage of the project since it alleviates the risk of a lack of traffic from the concessionaire, and allows the concession grantor to avoid social risks by regulating the tariff policy.

At present, the project has a relatively high degree of readiness/ elaboration:

- Design and estimate documentation has been drafted with respect to the section between km 33–km 84 with a favourable conclusion from the State Expert Evaluation Department (No. 778-13/GGE-8424/10 dated 9 September 2013 for the estimate part and No. 763-13/GGE-8424/04 dated 6 September 2013 for the technical part).
- The construction area is being prepared for the section between km 33–km 84.
- A public technical and price audit has been conducted for the project with respect to the section between km 33–km 132.

The key risk of the M-1 Belarus project in the section between km 33–km 84 is the risk of the lack of necessary funding by the concession grantor. This risk may lead to a disruption in the project’s implementation. At the same time, these funds cannot be replaced with the returnable direct borrowings of Russian Highways State Company and/or the concessionaire’s private investments due to the insufficient projected revenues from the collection of tolls for their repayment and maintenance.

IV. M-1 BELARUS FEDERAL HIGHWAY FROM MOSCOW TO THE BORDER WITH THE REPUBLIC OF BELARUS (TO MINSK AND BREST) ON THE SECTION BETWEEN KM 84–KM 132

1. LAYOUT OF THE SECTION BETWEEN KM 84–KM 132 OF THE M-1 BELARUS FEDERAL HIGHWAY

The reconstruction project with the subsequent toll-based operation of the public M-1 Belarus Federal Highway on the section between km 84–km 132 basis includes the reconstruction of the M-1 Belarus Federal Highway from Moscow to the border with the Republic of Belarus (to Minsk and Brest) on the section between km 84–km 132 with the construction of relief roads along the main section of the road which includes all public transport stops and local junctions to ensure the high-speed flow of traffic along the main part of the M-1.



- LEGEND:
-  On-site construction
 -  Reconstruction with subsequent operation on a toll basis (for section km 84–km 132 with the drafting of design and estimate documentation)
 -  Sections in the operational stage (Odintsovo Bypass)

2. NEED TO IMPLEMENT THE M-1 BELARUS PROJECT ON THE SECTION BETWEEN KM 84–KM 132

THE NEED TO IMPLEMENT THIS PROJECT IS DICTATED BY A NUMBER OF FACTORS:

- The high level of congestion (about 79% of the road length currently functions in congested conditions) significantly reduces the appeal of the road for users, leads to unnecessary operational costs, an increase in the number of accidents, and losses to the country's economy as a whole.
- Approximately 60% of the road's length has a poor surface: the existing pavement design does not meet the requirements for durability and major sections of the road have ruts, potholes, and cracks. In some areas, there are defects in the road bed in the form of subsidence or heaving; in some areas, shoulders and slopes are eroding.
- On the section between km 84–km 132, all intersections and junctions as well as pedestrian crossings are designed on a single level with unregulated traffic or traffic light organization, which reduces the average speed along the route and increases travel time.

Thus, the section of the highway in question does not meet the requirements for federal highways in this form.

The existing insufficient capacity, low speed, unsatisfactory transport and operational status, and low level of traffic safety result in:

- economic damage from traffic accidents;
- infrastructural restrictions for the development of international trade and the integration of the Russian Federation into the system of international transport corridors;
- increased cargo transportation costs due to unsatisfactory road conditions;
- increased time spent in transit for cargo and passengers;
- increased capital investments in road transport due to the increased time required for the transportation of goods and passengers;
- increased demand by enterprises and organizations for working capital; environmental damage from atmospheric emissions of vehicles due to an increase in vehicle acceleration and deceleration in congested conditions;
- other economic and social damage

These consequences cause economic losses for road users the country as a whole.

Thus, the reconstruction of the highway section in question is a necessity for the development of domestic and international economic relations.

3. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 84–KM 132 OF THE M-1 BELARUS FEDERAL HIGHWAY

Main technical and economic indicators of the section between km 84–km 132 of the M-1 Belarus Federal Highway

NAME	INDICATOR
Technical category	IB
Length, km	48
Number of traffic lanes	4
Number of bridges and overpasses	21
Number of interchanges	4
Design speed, km/h	120

According to traffic data, the section in question between km 84–km 132 of the M-1 Belarus Federal Highway exhibits significant differences in the volume and nature of its traffic congestion at its initial and final segments and a gradual decrease in traffic intensity as it gets further away from Moscow.

Planned vehicular traffic intensity on the section between km 84–km 132

CATEGORY	Traffic intensity as of 2027, thousand vehicles/day	Traffic intensity as of 2051, thousand vehicles/day
Category I	8.5	17.6
Category II	0.3	0.6
Category III	1.0	2.3
Category IV	1.1	2.6
ИТОГО	10.8	23.1

A feasibility study has been drafted with regard to the section between km 84–km 132 of the M-1 Belarus Federal Highway, and a range of work is under way to develop design estimate and technical documentation and to survey the territory for the preparation of the construction site.



Транспарк
сеть трассовых компаний

ДЕТИ

UKRAINE FEDERAL HIGHWAY MOSCOW–
KALUGA–BRYANSK–STATE BORDER
WITH UKRAINE

M-3

I. M-3 UKRAINE FEDERAL HIGHWAY FROM MOSCOW VIA KALUGA AND BRYANSK TO THE STATE BORDER WITH UKRAINE (TO KIEV)

1. DESCRIPTION OF THE M-3 UKRAINE FEDERAL HIGHWAY

THE M-3 UKRAINE MOSCOW–KALUGA–BRYANSK HIGHWAY IS 490 KM LONG. MOSCOW ALONG WITH THE MOSCOW, KALUGA, AND BRYANSK REGIONS ARE PART OF THE CENTRAL FEDERAL DISTRICT.

The Central Federal District has a favourable geographical location in the centre of the European part of Russia at the largest junction of transport routes and the crossroads of crucial economic ties between different regions of the country. The shortest automobile and railway lines connecting Western Europe with Central Russia, Russia's most important international transport corridors North–South and Trans-Siberian as well as Pan-European Transport Corridor No. 9, the major Yamal–Europe gas pipeline, and the Russia–Belarus–Western Europe high-voltage energy bridge all pass through the district. In addition, the district is bordered by Ukraine and Belarus, which has a significant impact on trade and economic relations between the border regions and the district as a whole.

The M-3 Ukraine Federal Highway runs south-west from Moscow through Kaluga and Bryansk to the border with Ukraine through the Moscow, Kaluga, Bryansk, and Kursk regions. These regions have a total area of 141,600 square km and a population of 18.7 million people including Moscow. Some 73% of the gross regional product of the Central Federal District is produced here.

There is a significant concentration of labour and production areas alongside the highway. As a result, the population of Moscow and the Moscow Region is heavily involved in shuttle labour migration. For the Kaluga Region, the M-3 highway is the backbone of the settlement system. This corridor has the largest population density, which increases the closer one gets to Moscow.

Thus, the development of the M-3 Ukraine Federal Highway is essential to intensifying socioeconomic, industrial, trade, and cultural ties between the dynamically developing regions of the Russian Federation – the city of Moscow (including the territory of New Moscow) and the Moscow and Kaluga Regions as well as between Russia and the countries of South-East Europe.

2. GOALS OF IMPLEMENTING THE M-3 UKRAINE PROJECT

The main goal of the M-3 Ukraine project is the establishment of a modern high-speed highway as well as roadside infrastructure. The high-speed road will serve international, interregional, and intraregional passenger and freight traffic and help to meet the needs of foreign and domestic trade.

The specific objectives of the project are as follows:

- ensuring high-speed automobile travel between the dynamically developing regions of the Russian Federation (the Kaluga and Moscow Regions, and Moscow, including the territory of New Moscow) and the countries of South-East Europe;
- improving the quality of transport services provided to road users;
- harmonizing the highway with modern international requirements for high-speed roads;
- mitigating the level of the negative environmental impact by providing a more favourable speed limit and implementing a set of environmental protection measures;
- improving the convenience and safety of traffic on federal highways;
- increasing the period between repairs due to the use of innovative technologies and materials in the highway's design and construction;
- enhancing the competitiveness of Russia's transport system as well as developing the transport accessibility and investment appeal of the adjacent territories of the catchment area;
- expanding the capacity of Pan-European Transport Corridor No. 9 (the border with Finland from Helsinki-St. Petersburg-Moscow-the border with Ukraine to Kiev) and international route E-101 (Moscow-Kaluga-Bryansk-Glukhov-Kiev);
- ensuring the operation of the highway on a toll basis, implementing new effective mechanisms of interaction between the government and the private sector, and attracting the organizational, managerial, and financial resources of the private sector

3. ROUTE AND SPECIFICATIONS OF THE M-3 UKRAINE FEDERAL HIGHWAY

THE M-3 UKRAINE FEDERAL HIGHWAY INTERSECTS WITH APPROACH ROADS TO THE CITIES OF NARO-FOMINSK, OBNINSK, KALUGA, SUKHINICHI, BELIYE BEREGA, BRYANSK, NAVLYA, LOKOT, AND SEVSK

The M-3 Ukraine Federal Highway originates at the intersection of Leninsky Prospekt and the Moscow Ring Road, then runs south-west through the Moscow Region just south of Moscow's Solntsevo District and Vnukovo Airport. Before the turn off to Vnukovo Airport, it is a modern highway with interchanges, pedestrian overpasses, a median, and 4-5 lanes on each side. Then it passes south of Naro-Fominsk.

The highway then runs through the Kaluga Region, intersecting with the A-101 Moscow-Maloyaroslavets-Roslavl Highway near the city of Obninsk, passes Kaluga at a distance of 20 km to the north-west of the city, then stretches on towards the south through the Bryansk Region at a distance of 10 km to the east of Bryansk, traverses several kilometres through the Kursk Region, turns south-west near the Orel-Kiev road junction, and terminates at the state border with Ukraine.



LEGEND:  M-3 Ukraine

In 1998, work was launched to expand the M-3 Ukraine road at the starting Moscow Ring Road-Vnukovo section to 8-10 lanes as well as the Vnukovo-Small Concrete Ring section to 6 lanes.

In 1999, major overhauls of the 67-km section of the highway up to the approach road to Kaluga were completed in accordance. I category standards: the width of the road bed was increased on the section between km 106-km 172 and the number of lanes of the road way was increased to four along with the installation of a dividing strip, the lengthening of culverts, and the overhaul of bridges and overpasses.

Major overhauls of the section between km 172+390 – 173+357 of the highway were completed in 2017 with the road being converted to category I.

The section between km 173-km 194 is a continuation of the M-3 Ukraine Federal Highway. This section is the most constrained in terms of traffic volume and traffic intensity. In addition, major repairs were carried out on the highway sections:

- km 507+200 – km 512+467 in 2007;
- km 512+467 – km 518+000 and km 518+000 – km 519+868 in 2008;
- km 253+000 – km 260+000 and km 350+000 – km 365+050 in 2009;
- km 343+159 – km 350+000 in 2010.

In October 2011, the M-3 Ukraine Federal Highway was transferred to the trust management of Russian Highways State Company.

II. M-3 UKRAINE FEDERAL HIGHWAY FROM MOSCOW VIA KALUGA AND BRYANSK TO THE STATE BORDER WITH UKRAINE (TO KIEV) ON THE SECTION BETWEEN KM 65–KM 124 OF THE MOSCOW REGION

1. LAYOUT OF THE SECTION BETWEEN KM 65–KM 124 OF THE M-3 UKRAINE FEDERAL HIGHWAY

Stage 2 of the reconstruction of the M-3 Ukraine Highway on the section between km 65–km 124 is located in the Naro-Fominsky District of the Moscow Region and in the Obninsky, Borovsky, Zhukovsky, Maloyaroslavetsky, and Dzerzhinsky Districts of the Kaluga Region.

The section originates at km 65 on the border of Moscow and the Moscow Region and terminates at km 123 at the intersection of the M-3 Ukraine Federal Highway and the Maloyaroslavets–Yerdenevo Highway. There are a significant number of populated areas and towns along the route, many of which can only be accessed from the M-3 Ukraine Federal Highway.

The highway section runs towards the southeast. The total length of the section is 59 km, including the subsections:

- Moskovsky, Troitsky, and Novomoskovsky Administrative Districts – km 65–km 66;
- Moscow Region, Naro-Fominsky Municipal District – km 65–km 85;
- Borovsky, Zhukovsky, and Maloyaroslavetsky Municipal Districts of the Kaluga Region and the Municipal District of the city of Obninsk – km 85–km 123.

The rebuilt section of the highway traverses three urban areas: Naro-Fominsk (km 71–km 75), Balabanovo (km 93–km 97), and Obninsk (km 101–km 106).

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 65 – KM 124 OF THE M-3 UKRAINE FEDERAL HIGHWAY

THE PROJECT ENVISAGES THE RECONSTRUCTION OF THE M-3 UKRAINE FEDERAL HIGHWAY BETWEEN THE SECTION KM 65–KM 124, ENHANCING THE ROAD PARAMETERS TO THE IB CATEGORY, THE ELIMINATION OF SINGLE-LEVEL INTERSECTIONS AS WELL AS THE INTRODUCTION OF TOLL PLAZAS AND AN AUTOMATED TRAFFIC CONTROL SYSTEM.

To eliminate single-level intersections and left turns, the construction of 8 interchanges and the reconstruction of interchange is planned:

- in the Moscow Region – construction at km 65, km 71, km 77, and km 84;
- in the Kaluga Region – construction at km 86, km 95, km 107, and km 111, and reconstruction at km 9.

Two existing interchanges at km 101 (Obninsk) and km 121 (exit to Maloyaroslavets) do not need to be rebuilt.

The interchange at km 65 (Bekasovo village) eliminates a traffic light and ensures nearby settlements have access to the M-3 Ukraine Federal Highway. It allows for the smooth flow of traffic in all directions along the main road.

The interchange at km 71 (Naro-Fominsk, Moskovskaya St.) eliminates a traffic light and left turns. It ensures entrance to and exit from the city of Naro-Fominsk on the M-3 Ukraine Federal Highway, frees up traffic in all directions along the main road, and allows for U-turns towards Moscow and Kaluga without using the congested local city street network.

The interchange at km 77 (Kotovo village) is designed as an unregulated junction that allows for making left turns. It links the towns of Kotovo, Shveynik, Druzhba, and Izolyator with the M-3 Ukraine Federal Highway and frees up traffic in all directions along the main road.

The interchange at km 84 (Nefedovo–Dedenevo) solves the problem of cars making U-turns towards Moscow for travel by residents from nearby settlements.

The interchange at km 86 (Vorsino village) eliminates a traffic light and serves as a turnaround point for residents of Dobrino, Ivakino, Aristovo, Shilovo, and Iklinskoye when travelling towards Kaluga.

The existing interchange at km 91 is being rebuilt with the addition of two turnaround ramps that allow for making U-turns towards Moscow and Kaluga.

The interchange at km 95 (Balabanovo) eliminates a traffic light and provides transport accessibility to the city of Balabanovo as well as the junction of the A-108 Moscow Outer Ring road to the M-3 Ukraine Federal Highway.

The interchange at km 107 (intersection with Kaluzhskoye Highway) is designed on the site of an existing roundabout. The interchange supports the transport accessibility of Obninsk for traffic in all directions and is a U-turn point.

The interchange at km 111 (Spas-Zagorye–Mitinka) provides a link between isolated areas and serves as a U-turn site.

Since the road is to be operated on a toll basis, Stage 2 of the design documentation provides for the construction of three toll plazas on the section – km 66, km 85, and km 116.

When calculating projected traffic intensity for the free alternative route, the future road network with planned toll sites that allow for avoiding the M-3 Ukraine Federal Highway was taken into account.

The average daily traffic intensity on the toll section from km 65 to km 70 of the M-3 Ukraine Federal Highway is projected at up to 45,700 vehicles per day. From km 70 to km 80 of the M-3 Ukraine Federal Highway, traffic is projected at up to 46,800 vehicles per day. From km 80 to km 90, traffic is projected at up to 45,700 vehicles per day. From km 90 to km 100, traffic is projected at up to 47,900 vehicles per day. From km 100 to km 110, traffic is projected at up to 36,100 vehicles per day. From km 120 to km 124, traffic is projected at up to 17,200 vehicles per day.

Based on the projected traffic intensity, the toll-based section of the M-3 Ukraine Highway between km 65–km 107 is classified under the IB technical category with six lanes, while the toll-based section between km 107–km 124 is under the IB technical category with four lanes.

In addition, taking into account the intensity in 2031, the following number of lanes is assumed in both directions at the toll collection points:

- km 66 – 24 lanes;
- km 85 – 22 lanes;
- km 116 – 12 lanes.

The design envisages the construction of rest areas at km 86 on the left and right side of the projected highway within the Vorsino interchange as well as multifunctional road service areas at km 66 and km 85 near the toll plazas on the left and right sides of the projected road.

**Main technical and economic indicators
of the section between km 65–km 124 of the M-3 Ukraine Federal Highway**

Construction type	Reconstruction	
Road category	IB	
Section length, km	59	
Design speed, km/h	120	
section:	km 65–km 107	km 107–km 124
Number of lanes	6	4
Width of road way, m	22.5	15
Width of the median, m	5	2.75
Multilevel interchanges	8	
Bridges and overpasses	reconstruction – 9 new construction – 3	
Pedestrian overpasses	13	
Toll plazas	3	

3. PROJECT FUNDING

The reconstruction, maintenance, repair, overhaul, and toll-based operation of the section between km 65–km 124 of the M-3 Ukraine Federal Highway is the subject of the long-term investment agreement.

Preliminary initial tender conditions:

Cost of the construction of the subject of the agreement – RUB 41,143.4* million in prices of corresponding years including VAT. The project will be funded by Russian Highways State Company and the contractor in the following proportion: 89 and 11%, respectively.

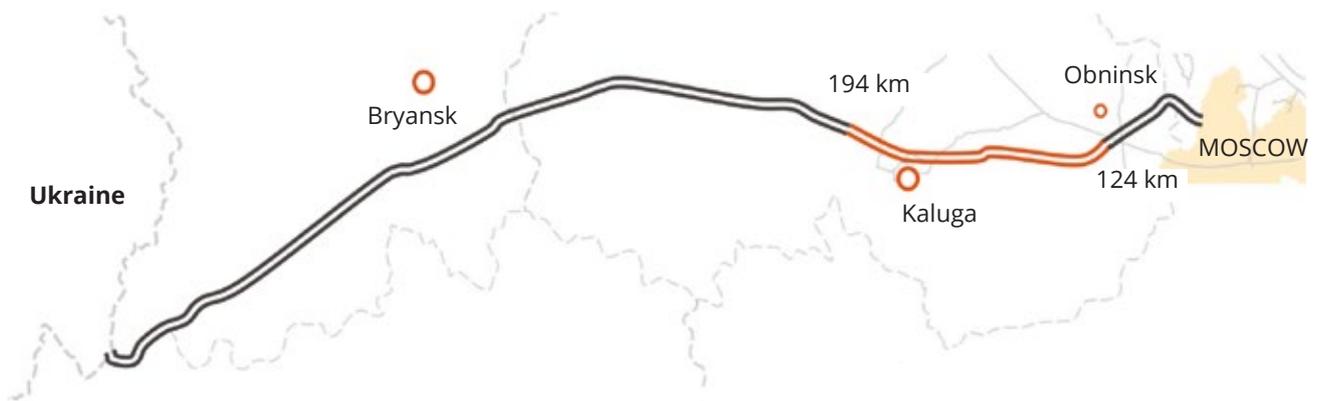
The contest is scheduled for the period from the fourth quarter of 2017 to the second quarter of 2018.

* Does not include the customer's expenses in the amount of RUB 3,989.7 million, which are not a subject of the tender and are funded by the State Company. The total cost of the project (including the customer's expenses) will amount to RUB 45,133.4 million.

III. M-3 UKRAINE FEDERAL HIGHWAY FROM MOSCOW THROUGH KALUGA AND BRYANSK TO THE STATE BORDER WITH UKRAINE (TO KIEV) ON THE SECTION BETWEEN KM 124–KM 194 OF THE MOSCOW REGION

1. LAYOUT OF THE SECTION BETWEEN KM 124–KM 194 OF THE M-3 UKRAINE HIGHWAY

The M-3 Ukraine Highway on the section between km 124–km 194 passes through the Maloyaroslavetsky and Dzerzhinsky Districts of the Kaluga Region and the Kaluga City District. The reconstructed section of the M-3 Ukraine Federal Highway is approximately 70 km long.



LEGEND:  Comprehensive development
 Reconstruction with subsequent toll-based operation

**Main technical and economic parameters
of the section between km 124–km 194 of the M-3 Ukraine Federal Highway**

NAME	INDICATOR	
	section km 124–km 173	section km 173–km 194
Place of work	Kaluga City District and Maloyaroslavetsky and Dzerzhinsky Districts of the Kaluga Region	
Type of construction	reconstruction	
Road category	IB	
Construction length, km	49	21
Design speed, km/h	120	120
Number of lanes	4	4
Total cost of work, RUB mln in the prices of corresponding years	17,101	
Including:		
– State funding	15,217	
– Contractor’s investment	1884	
Contract type	long-term investment agreement	
Validity of agreement, years	24	
Tender period	2014	
Reconstruction period	2014–2017	

2. MAIN SPECIFICATIONS OF THE SECTION BETWEEN KM 124 – KM 194 OF THE M-3 UKRAINE HIGHWAY

SECTION BETWEEN KM 124–KM 173 OF THE M-3 UKRAINE HIGHWAY

Soyuzdorproekt OJSC drafted design documentation for the section between km 124–km 173 of the M-3 Ukraine Federal Highway, and favourable conclusions were obtained as part of State Expert Evaluation No. 439-14/GGE-8792/04 dated 3 April 2014 for the design documentation and engineering survey results as well as State Expert Evaluation No. 457-14/GGE-8792/10 dated 4 April 2014 on the reliable determination of the estimated cost of the fixed asset under construction.

The highway is to be operated on a toll basis, and the design documentation envisages the construction of two toll plazas:

- km 136 – 8 gates;
- km 168 – 8 gates.

Main technical parameters of the section between km 124–km 173 of the M-3 Ukraine Federal Highway

Type of work	reconstruction
Road category	IB
Construction length, km	48,936
Design speed, km/h	120
Width of road way, m	2x7.5 (15.00)
Width of the road bed, m	25.25
Width of the shoulder, m	3.75
Number of traffic lanes, unit	4
Type of pavement and surface	heavy-duty, stone mastic asphalt
Bridges (repairs), unit/rm	6/328.81
Overpasses, unit/rm	6/475.74
Wildlife crossing, unit/rm	1/33.00
Pedestrian overpasses, unit/rm	2/120.02
Pedestrian underpass 1.9x2.3 m, unit	1
Multilevel interchanges, unit	3
Multilevel intersections for links to isolated areas, unit	3

Section between km 173–km 194 of the M-3 Ukraine Federal Highway

The project for the reconstruction of the M-3 Ukraine Federal Highway at km 173–km 194 in the Kaluga Region was completed by Voronezh Magistral Road and Bridge Design Centre. Favourable conclusions were obtained with respect to this section of the highway as part of State Expert Evaluation No. 376-10/GGE-4472/04 dated 27 April 2010 for the design documentation and No. 395-14/GGE-4472/10 dated 24 May 2010 on the reliable determination of the estimated cost of the fixed asset under construction.

Main technical parameters of the section between km 173–km 194 of the M-3 Ukraine Federal Highway

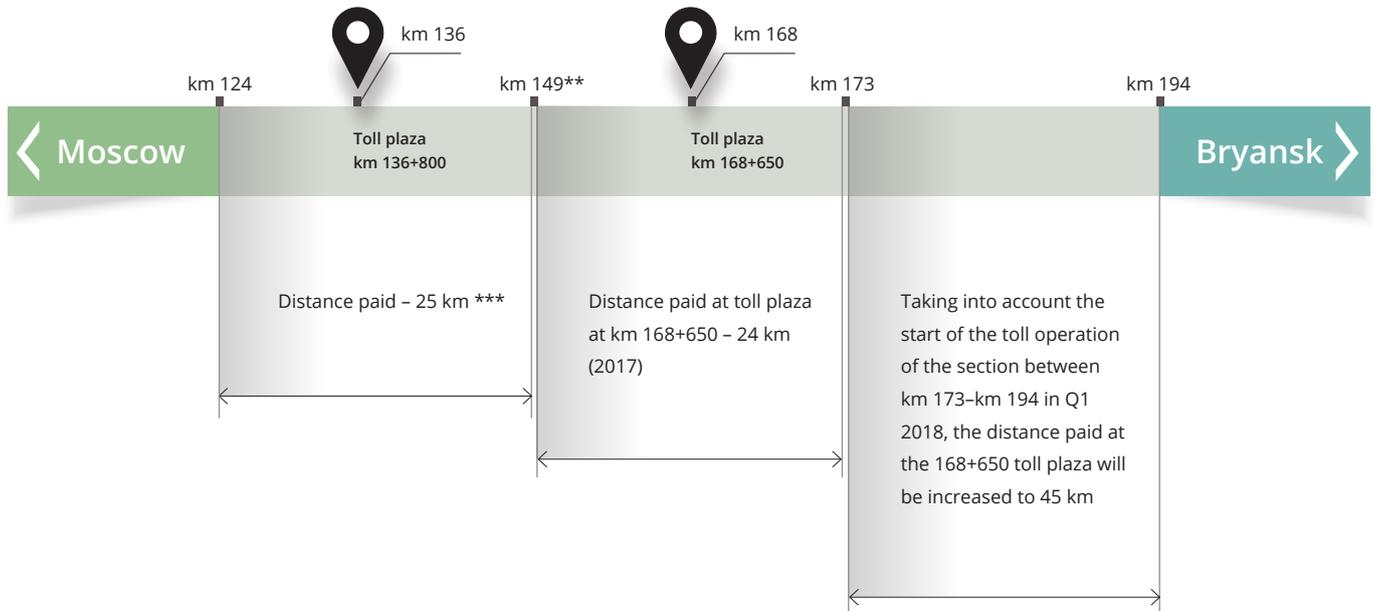
Type of work	reconstruction
Section category	IB
Construction length, km	22.14
Design speed, km/h	120
Width of the road way, m	2x7.5
Width of the road bed, m	25.25
Width of the shoulder, m	3.75
Type of pavement and surface	heavy-duty, stone mastic asphalt
Artificial structures, unit	5/487.53
including:	
- bridges, unit/m	1/260.70
- overpasses, unit/m	4/226.83
Multilevel interchanges, unit	3

The project envisages the organization of an open tolling system on the section between km 124–km 194. The open tolling system involves payment at the toll plaza at the entrance to the toll section of the highway. In accordance with the Programme of Activities of Russian Highways State Company, a tariff of RUB 1.2/km is set in 2014 prices for the first tariff group.

Weighted average toll payment for all categories of vehicles

Toll plaza	DISTANCE PAID, KM	AMOUNT OF FIXED PAYMENT BY TARIFF GROUP*, RUB IN 2012 PRICES			
		1	2	3	4
Toll plaza km 136+800	25***	30	45	60	120
Toll plaza km 168+650	45	54	81	108	216
Total for section	70	84	126	168	336

Organization of the toll collection system on the section between km 124–km 194 of the M-3 Ukraine Federal Highway



* Tariff ratios are established in accordance with the Order No. 205 of Russian Highways State Company dated 14 September 2012.

** The boundaries of the distance paid are determined taking into account the location of the toll plaza as well as the main junctures on the M-3 that redistribute the traffic flow due to a significant number of vehicles entering/exiting (km 149–junction to the M-3 Kaluga Bypass Road).

*** If a toll is introduced for the previous section between km 65–km 124 starting in 2021, it would be advisable to redistribute the distance paid to the toll plaza at km 136+800 for the more balanced collection of tolls at the toll plaza for the whole section between km 65–km 194 (toll plaza at km 66: 21 km; toll plaza at km 86: 21 km; toll plaza at km 116: 22 km; toll plaza at km 136+800: 20 km).

3. PROJECT FUNDING

The section between km 124–km 194 of the M-3 Ukraine Federal Highway from Moscow through Kaluga and Bryansk to the border with Ukraine is the subject of a long-term investment agreement and includes the following envisaged by the design documentation:

- land plots within the easement area and structural components located on or under them (road bed, road surface, and similar components);
- road structures that constitute a technological component of the road (protective road structures, artificial road structures, production facilities, and road facilities).

The goal of the agreement is to rebuild and maintain the proper operation of the highway throughout its life cycle in accordance with modern technical and operational parameters as well as environmental and road safety requirements.

Duration of the agreement: 24 years from the date of its conclusion.

Project implementation period: 2014–2037:

- investment stage – 2014–2017;
- operational stage – 2017–2037.

The duration of the operational stage of the agreement takes into account the cycle of repair work, when the contractor hands the highway over to Russian Highways State Company following major repairs.

Tender participants: Mostotrest OJSC and Avtoban Road Construction Company JSC.

Winner of the tender: Avtoban Road Construction Company JSC.

A long-term agreement was concluded with winner of the tender on the following terms:

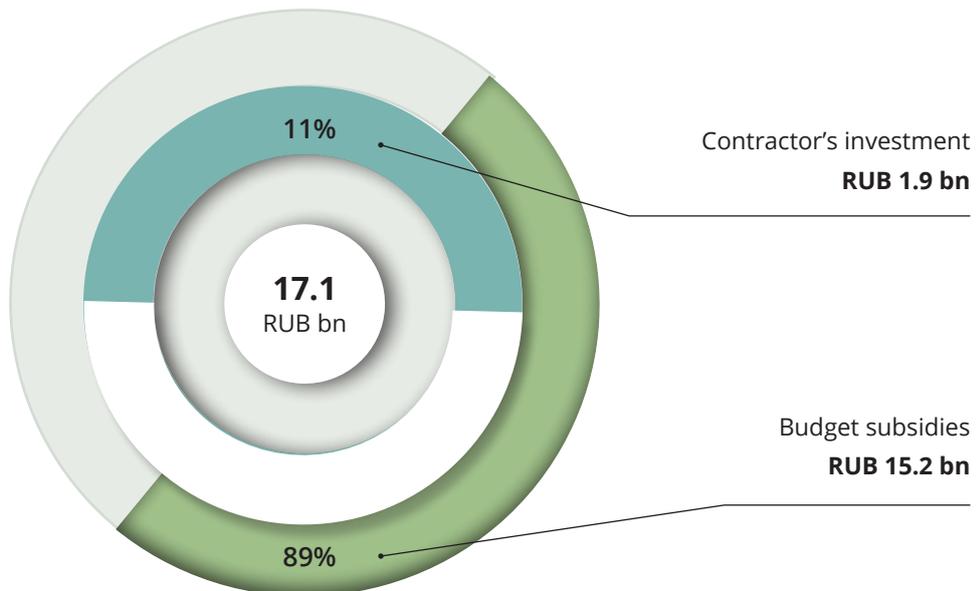
- cost of building the facility under the agreement – RUB 17 billion in the prices of the corresponding years inclusive of VAT, including:
 - funding by Russian Highways State Company – RUB 15.2 billion;
 - investment of the contractor – RUB 1.8 billion.
- public funding provided during the operational stage, including:
 - base amount of annual operating payment – RUB 12 billion in prices of the first quarter of 2014 excluding VAT.

3.1 COMMERCIAL STRUCTURE OF THE M-3 UKRAINE PROJECT ON THE SECTION BETWEEN KM 124–KM 194

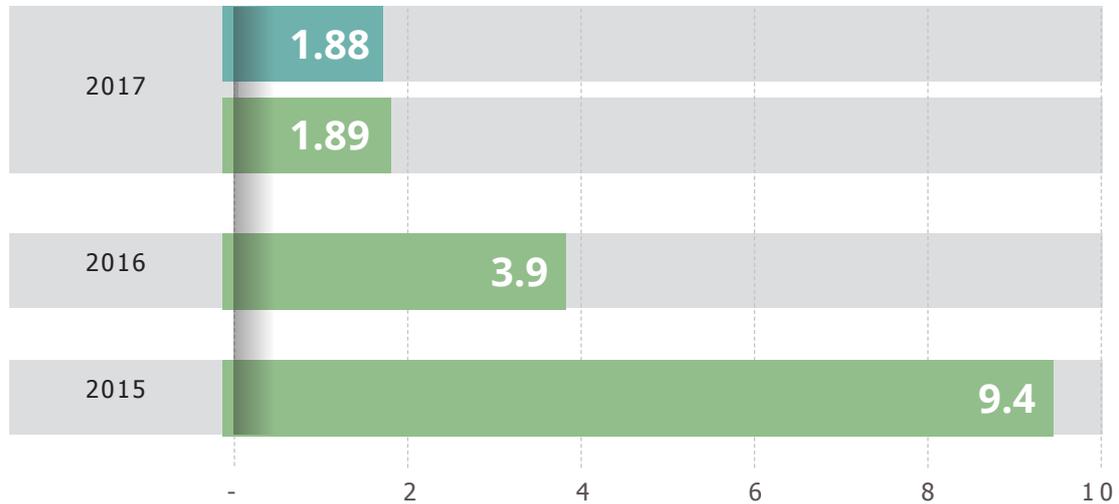
Funding of the project during the investment stage

The maximum cost of work under the long-term investment agreement during the investment stage is RUB 17 billion in the prices of corresponding years, including VAT. Avtodor and the contractor will provide funding for the construction of the highway in the following amount: RUB 15.2 billion and RUB 1.9 billion, respectively

Funding structure of the M-3 Ukraine Federal Highway on the section between km 124–km 194



Schedule of capital expenditure distribution by year



LEGEND: ■ Contractor's investment, RUB bn
■ Budget subsidies, RUB bn

Public support provided for the construction of the highway will be paid to the contractor on a monthly basis based on the work performed by the contractor and accepted by Russian Highways State Company (work volume and cost bill).

**Key parameters for the repayment of extra-budgetary funds
of the M-3 Ukraine project on the section between km 124–km 194**

PARAMETER	VALUE
Cost of work under the agreement during the investment stage in the prices of corresponding years including VAT, RUB bn	17.1
- public funding	15.2
- contractor's investments	1.9
Including:	
- borrowed funds	0.94
- internal funds	0.94
Deadline for the repayment of borrowed funds, years	12
Deadline for the repayment of internal funds, years	8
Average rate of return on contractor's investment, %	6.1
Including:	
Floating rate of return on contractor's borrowed funds	4.64%+CPI
Floating rate of return on contractor's internal funds	8.49%+CPI

4. PROJECT RISKS

One of the advantages of using the public-private partnership model for project implementation is the optimal, balanced, and cost-effective distribution of risks associated with the project's implementation between the parties to the long-term investment agreement.

Risks are optimally distributed based on the principle that risks that are beyond the control or competence of the contractor are assigned to Russian Highways State Company, which serves as a public partner in this project.

The implementation of the project based on the mechanism of a long-term investment agreement makes it possible to reduce the contractor's investments, which consequently reduces its financial risks.

Key project risks

RISK	DESCRIPTION OF RISK	CONTRACTOR	RUSSIAN HIGHWAYS STATE COMPANY
Design risks	Likelihood of errors in design decisions and construction plans		
Risk of the late completion of work	Increase in the construction period	●	
Risk of an increase in construction costs	Actual project costs exceeding estimated costs during the construction of the facility, including due to an increase in the price of construction materials and the unscrupulous actions of contractors	●	
Environmental risks	<ul style="list-style-type: none"> • Damage to the environment as a result of the contractor's actions during the construction and operation of the facility • Environmental risks associated with the design documentation 	●	
Highway maintenance risks	Increase in actual maintenance and repair costs of the route due to changes in the cost of materials and certain types of work during the operational stage	●	
Risks of changes in demand for the use of the highway	Decrease/increase in demand for the use of the highway compared with the forecast		●
Risk of bankruptcy or insolvency of a bank that has provided a guarantee to ensure the fulfilment of the contractor's obligations under the long-term investment agreement	Bankruptcy / full or partial insolvency of the bank that provided a bank security that occurred during construction and/or operation	●	
Risks of the need for changes to the technical parameters of the road in the operational process			●



NEW EXIT TO THE MOSCOW RING ROAD
ON THE SECTION MRR–KM 60 (BALASHIKHA
AND NOGINSK BYPASSES)

M-7 VOLGA

I. NEW EXIT TO THE MOSCOW RING ROAD FROM THE M-7 VOLGA FEDERAL HIGHWAY ON THE SECTION MRR–KM 60 (BALASHIKHA AND NOGINSK BYPASSES), MOSCOW REGION

1. CURRENT CONDITION OF THE M-7 VOLGA HIGHWAY

At present, the M-7 Volga Federal Highway is heavily congested at the approaches to Moscow due to a large number of intersections with traffic lights. The traffic speed almost all the way from the Moscow Ring Road (MRR) to the exit from Balashikha is 5–10 km/h. Due to the complexity of rebuilding the existing M-7 Volga Federal Highway, the construction of a new road is the best solution to the problem. The local road network consists of the following highways:

Radial highways	M-7 Volga, A-103 Shchelkovskoye Highway; Nosovikhinskoye Highway; and R-105 Yegoryevskoye Highway
Ring highways	MRR; A-107 Moscow Small Ring (MSR); A-108 Moscow Outer Ring (MOR); and Central Ring Road (CRR)
Main connecting local highways	R-109 Aniskino–Elektrougli; Elektrogorsk–Pavlovsky Posad; Elektrougli–Zhukovsky; Nosovikhinskoye Highway–R-105 Yegoryevskoye Highway.

The area surrounding the projected toll highway has a sufficiently developed road network, but this network has insufficient capacity due to the incompatibility of the parameters of the existing roads with actual traffic volume.

Thus, the project above all aims to increase the capacity of the area's road network without creating any new significant traffic since all the major populated areas in the region have the necessary links.

The project entails the construction of a new highway running through the Moscow Region that serves as a relief road for the M-7 Volga Federal Highway on the MRR section to the A-108 Moscow Outer Ring Highway. The project is also the start of a transit corridor linking the European part of Russia to Siberia and the Far East and part of the East-West High-Speed International Transport Corridor.

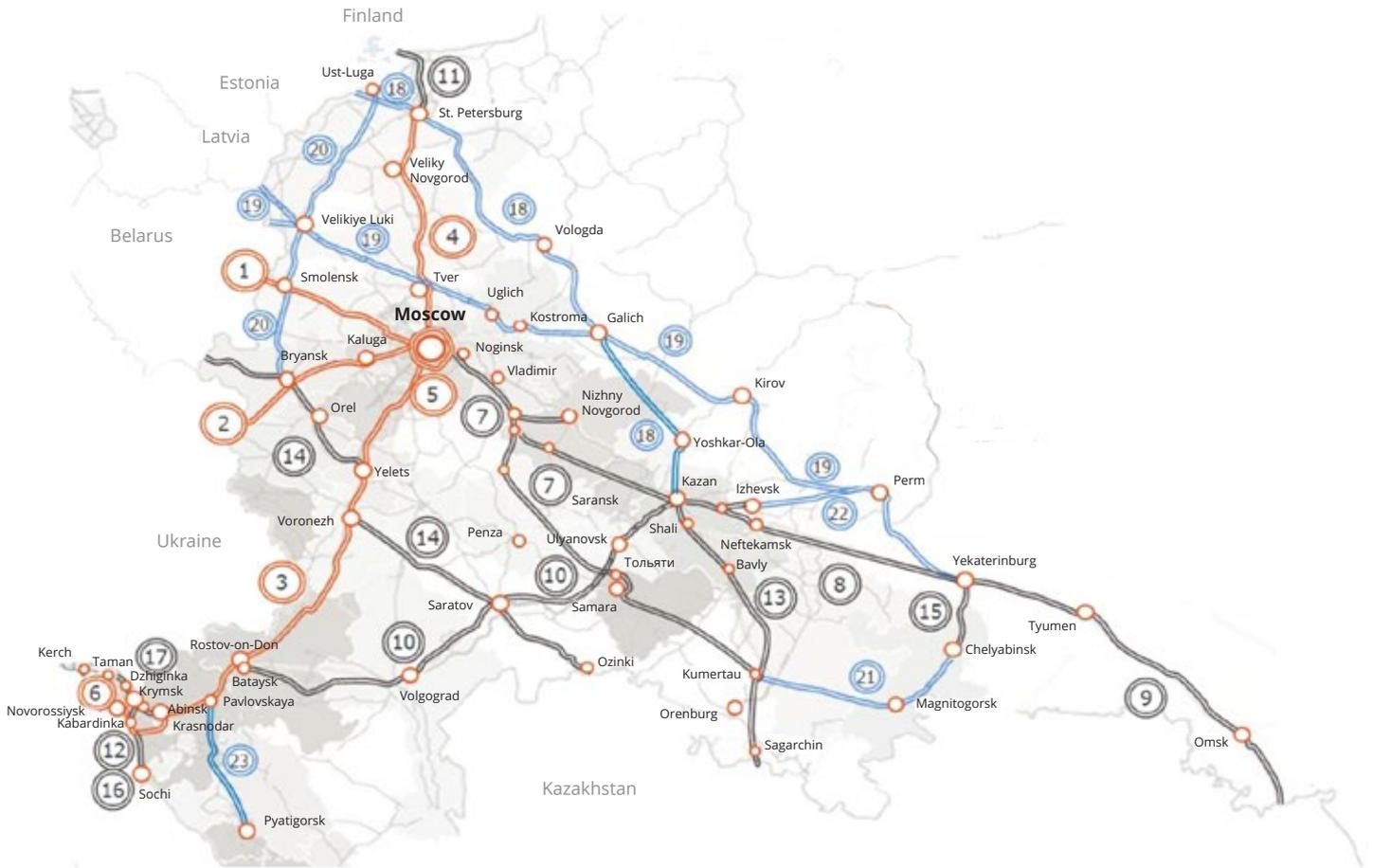
The specific objectives of the project are as follows:

- to redirect part of the traffic from the congested M-7 Volga Federal Highway and the adjacent road network by distributing the flow of local and transit traffic to bypass these roads;
- to build a continuation of the Moscow section of the North-East Direct Main Road towards the Moscow Region in the direction of Vladimir and Nizhny Novgorod;
- to promote the development of transport infrastructure in the eastern part of Moscow and the Moscow Region, the development of economic ties, and the increased mobility of the population and market participants;
- to provide interregional and intraregional transport links with high traffic speed and capacity

**THE IMPLEMENTATION OF
THE PROJECT WILL ALSO
CONTRIBUTE TO THE OVERALL
FOLLOWING STRATEGIC
OBJECTIVES:**

- the overall development of the transport infrastructure of the Russian Federation and a reduction in the number of bottlenecks in the transport network of Moscow and the Moscow Region;
- the creation of conditions to establish modern transport infrastructure integrated into the network of international transport corridors and to realize the transit potential of the Russian Federation;
- the development of a high-speed network;
- the creation of conditions to establish accelerated development hubs and support points for growth in the Moscow Region economy;
- the intensification of ties between Moscow and the nearest areas of the Moscow Region;
- the creation of an additional base of tax revenue to budgets of all levels through the expansion of economic and investment activities in related sectors of the economy.

Project in the system of international corridors



- LEGEND: == Highways and high-speed roads put under the trust management of Russian Highways State Company and those under construction that are to be commissioned prior to 2020
- ① M-1 Belarus
 - ② M-3 Ukraine
 - ③ M-4 Don
 - ④ M-11 Moscow–St. Petersburg
 - ⑤ Central Ring Road
 - ⑥ Novorossiysk Transport Hub

≡ Projected highways and high-speed roads by 2030

- ⑦ M7A Moscow–Nizhny Novgorod–Kazan
- ⑧ Kazan–Yekaterinburg
- ⑨ Yekaterinburg–Omsk–Border with Kazakhstan
- ⑩ Kazan–Ulyanovsk–Saratov–Volgograd–Bataysk
- ⑪ Scandinavia Highway
- ⑫ Krasnodar–Abinsk–Kabardinka
- ⑬ Kazan–Shali–Bavly–Sagarchin–Border with Kazakhstan
- ⑭ Border with Belarus–Bryansk–Orel–Yelets–Voronezh–Saratov –Ozinki
- ⑮ Chelyabinsk–Yekaterinburg
- ⑯ Sochi–Novorossiysk
- ⑰ Krymsk–Dzhiginka–Taman (for crossing via the Kerch Strait)

≡ Additional network of main highways to be built under the optimistic scenario

- ⑱ Border with Estonia–St. Petersburg–Vologda–Galich–Yoshkar-Ola–Kazan
- ⑲ Yekaterinburg–Kirov–Galich–Kostroma–Yaroslavl–Uglich–Torzhok–Velikiye Luki (branch to the border with Latvia and the border with Belarus)
- ⑳ Ust-Luga–Velikiye Luki–Smolensk–Bryansk
- ㉑ Kumertau–Magnitogorsk–Chelyabinsk
- ㉒ Izhevsk–Perm
- ㉓ M-29 Caucasus Krasnodar (from Pavlovsk)–Pyatigorsk

2. LAYOUT OF THE SECTION AND MAIN SPECIFICATIONS OF THE MRR–KM 60 OF THE M-7 VOLGA FEDERAL HIGHWAY

The territory through which the section passes is located in the eastern sector of the Moscow Region. The section is a continuation of Moscow's North-East Direct Main Road section towards the Moscow Region in the direction of Vladimir and Nizhny Novgorod.

Start of the route: the administrative boundary between Moscow and the Moscow Region starting from the bridge across Pekhorka River. End of the route: crossing with the A-108 MOR.



LEGEND:		Existing national M-7 Volga Highway
		Balashikha and Noginsk bypass
		Planned Central Ring Road
		Moscow-Noginsk highway (being implemented by the Moscow Government)

The section passes through four municipal entities of the Moscow Region: Lyubertsy District (urban settlement of Kraskovo); Noginsk District (urban settlement of Elektrougli; rural settlement of Akseno-Butyrki; urban settlement of Noginsk; rural settlement of Bunkovo); Pavlovo-Posadsky District (urban settlement of Bolshiye Dvory; rural settlement of Kuznetsovskoye); and Orekhovo-Zuevsky District (rural settlement of Malodubenskoye) as well as two city districts: Balashikha and Elektrostal.

A land use plan has been developed for the section and design documentation is currently being drafted to prepare the construction site.

The land use plan for the section was developed by Soyuzdorproekt JSC. A feasibility study of the section was carried out as part of the land use plan and the main design solutions were identified. The design solutions that were adopted take into account the requirements of the technical conditions for the operators of the intersecting roads and utilities. The option for siting the highway that was selected in accordance with the trade-off study is optimal in terms of the technical and economic parameters. This option was endorsed by Russian Highways State Company and also by the administrations of the relevant local government (settlements) authorities and municipalities of the Moscow Region.

The route of the section intersects with the Gorky, Yaroslavl, and Kursk railways and the railway to Elektrogorsk.

Overpasses are to be built over the following roads: Zheleznodorozhny–Novy Milet; Nosovikhinskoye Highway; R-109 Aniskino–Monino–Elektrougli–two overpasses; M-7 Volga–Noginsk–Ivashevo; A-107 MSR; Karl Marx Street in Elektrostal; Bolshiye Dvory–Kuznetsy.

Bridges are to be built over the rivers: Chernaya; Vyunka; Bizyaevka; Klyazma, and Vyrka.

Three interchanges are envisaged at the intersection of the highways: R-109 Ioninskoye Highway, Central Ring Road, and the Orekhovo-Zuevo Western Bypass.

The route has 23 intersections with power lines, one intersection with an oil pipeline, six intersections with gas pipelines of various diameters and pressure, and 10 intersections with water lines.

The projected road will be operated on a toll basis, which entails the existence of a toll collection system. The road is to be operated based on a closed toll collection system. Within such a system, a user enters a section of the toll road and may not leave it without payment, which is determined based on the distance travelled and the type of vehicle. This system determines where the user entered and exited the toll section, the type of vehicle, and the amount of the corresponding toll.

Toll plazas are built at interchanges to ensure the road has maximum capacity and non-stop traffic. Interchanges at intersections with highways have a clover leaf design, which makes it possible to site toll plazas between these interchanges and combine the location of the toll plaza at the entrance and exit. This arrangement of the toll plazas minimizes the number of toll plazas and their operational maintenance, the cost of construction and installation work, and also provides users with a high level of comfort on the main road and the required speed limit. At the same time, a toll plaza is to be built on the main road to block the entrance to the route on the initial (head) section since the projected route is a continuation of the free section of the North-East Direct Main Road passing through the territory of Moscow. Four toll plazas are to be built – at startup complex (SC) 20 and at three interchanges (SC 155+69, SC 434+12, and SC 637+66)



Information board

The toll plaza structure includes: server equipment; software; information display panel; uninterruptible power supplies; air conditioning and ventilation systems; and telecommunication equipment systems.

The toll plaza on the main road at the start of the route and at SC 20 and SC 25 includes the Central Dispatch Centre as well as the buildings of the traffic police and the Ministry of Emergency Situations.

The project envisages the construction of three multilevel interchanges: Intersection No. 1 at the intersection with the Nosovikhinskoye Highway and the R-109 Highway; Interchange No. 2 at the intersection with the Central Ring Road; and Interchange No. 3 at the intersection with the Orekhovo-Zuevo Western Bypass.

The section allocates two starting areas (construction stages) for subsequent implementation:

- Stage 1 – from the beginning of the route to the intersection with the Central Ring Road, length of 43.62 km (SC0+00 – SC436+20);
- Stage 2 – from the interchange with the Central Ring Road to the interchange with the Orekhovo-Zuevo Western Bypass, length of 21.77 km (SC436+20 – SC653+90).

Main technical and economic parameters of the section MRR-km 60 of the M-7 Volga Highway

Type of construction	new construction		
Road category	IA		
Construction length, km	65.39		
Including:	Section 1	Section 2	Section 3
	15.52	28.05	21.82
Design speed, km/h	150		
Number of traffic lanes	8	6	6
Width of the traffic lane, m	3.75		
Width of the road way, m	2x15.0	2x11.25	2x11.25
Width of the median, m	6		
Width of the shoulder, m	3.75		
Multilevel interchanges	3		
Bridge structures	32/2 043.47		
Pavement/surface	heavy-duty/ stone mastic asphalt		
Length in one-lane terms, km	516.86		
Toll plazas	4		
Projected traffic intensity, vehicles/day	>30,000 (as of 2027)		
Design and preparation of territory	2018–2021		
Preliminary construction period	2021–2023		

3. ORGANIZATIONAL, LEGAL, AND FINANCIAL STRUCTURE FOR THE M-7 VOLGA PROJECT ON THE SECTION MRR-KM 60 (BALASHIKHA AND NOGINSK BYPASSES), MOSCOW REGION

The project is to be implemented based on a concession agreement as part of which the investor will co-finance, design, build, and operate the section MRR-km 60 of the M-7 Volga on a toll basis.

The tender will be conducted in accordance with Federal Law No. 115-FZ "On Concession Agreements" and other regulatory and executive acts.

The funding structure for capital expenditures as well as the tariff policy of the project is currently being updated. The preliminary cost of the project is estimated at RUB 72.8 billion in the prices of the corresponding years, including VAT, while work to prepare the territory is being carried out by the concession grantor and will begin in advance before the concession agreement is concluded.

At present, work to prepare the construction site is already underway.

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Information as of 30 June 2017.



9, Strastnoy Boulevard, Moscow,
Russia, 127006



Phone: +7 (495) 727-11-95



E-mail: IR@russianhighways.ru
www.russianhighways.ru

