



DESIGN OF TRANSPORT  
INFRASTRUCTURE

2021

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ABOUT THE COMPANY

## COMPANY PROFILE

Joint-Stock Company Lengiprotrans is one of the largest design organizations in Russia, which has more than 85 years of experience in the field of site surveys and **comprehensive design of transport infrastructure**.

The main business of the company is a full range of design and survey services for construction, reconstruction and overhaul of railways, roads and transport infrastructure.

The company has a unique experience in designing of the roadbed and buildings in the permafrost zone, as well as in a variety of climatic and geotechnical conditions including areas of high seismic activity.

85

years of experience

>900

employees

25 000

km of railways  
designed

15 000

km of railways  
electrified

>100

railway stations

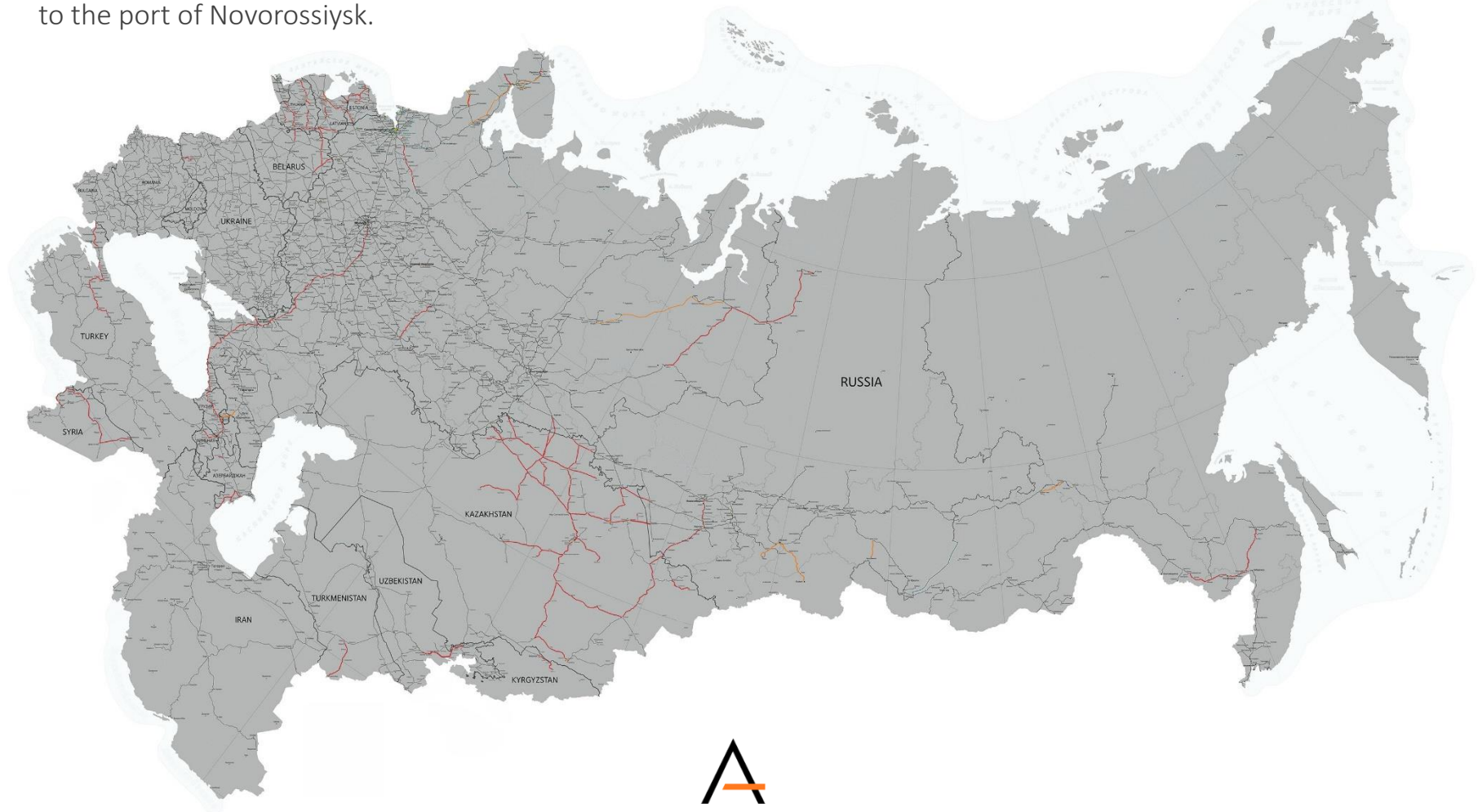
>1000

bridge structures  
and viaducts



## ■ BUSINESS GEOGRAPHY

In total, upon the projects of Lengiprotrans, there were built more than 25 000 km of railways, more than 2 000 km of roads, electrified more than 15 000 km of railways, thousands of bridges and overpasses, facilities of the locomotive and rolling stocks. Moreover, Lengiprotrans designed more than 100 stations, approach lines to the major metallurgical, coal, oil and gas fields, equipped railroad approaches to 5 seaports on the Gulf of Finland and to the port of Novorossiysk.



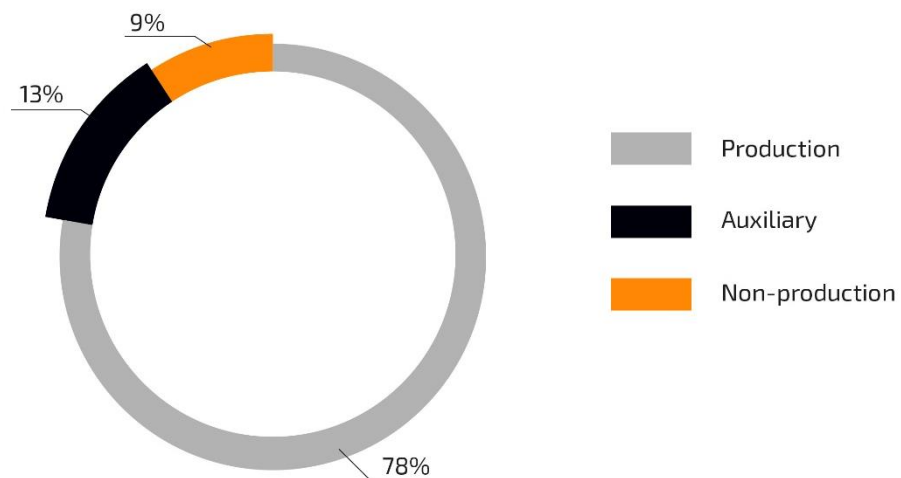


HUMAN RESOURCES

## STAFF COMPOSITION AND STRUCTURE

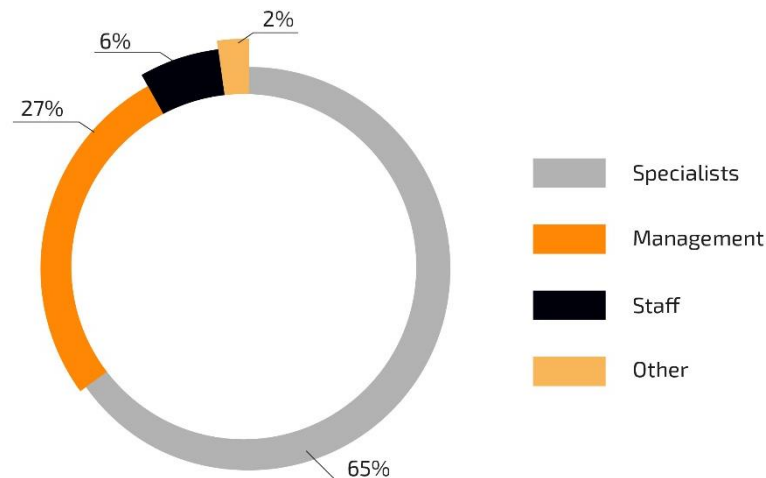
Lengiprotrans considers the human resources to be its most important asset and a major competitive advantage. Company is an attractive employer in the field of engineering. Company is actively accepting senior students of Emperor Alexander I St. Petersburg State Transport University for practical training. Many engineers and technical workers, starting their career in the company right after graduating from the university, remain faithful to Lengiprotrans and then retire with honor.

### Staff Composition, %



More than 900 specialists in over 30 areas of expertise provide comprehensive engineering of transport facilities.

### Staff Structure, %



A large share in the employee structure accounts for the specialists, that makes the balanced system of management and distribution of works.



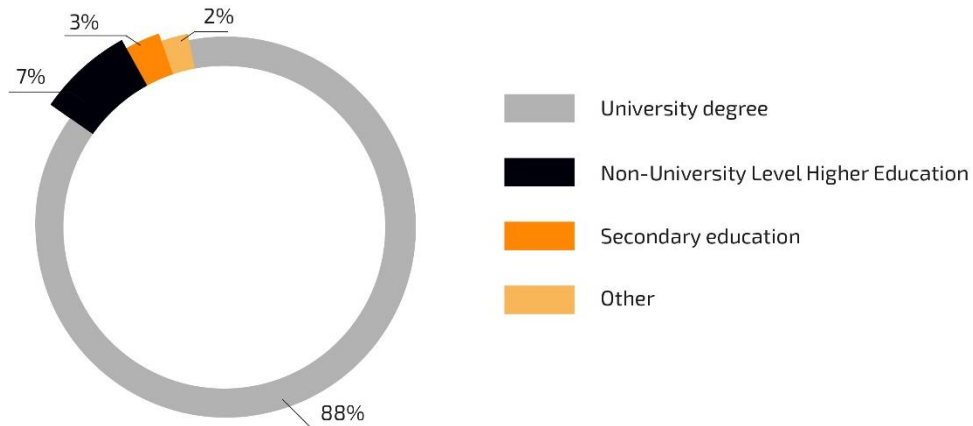


## EXPERTISE

The social policy of Lengiprotrans includes:

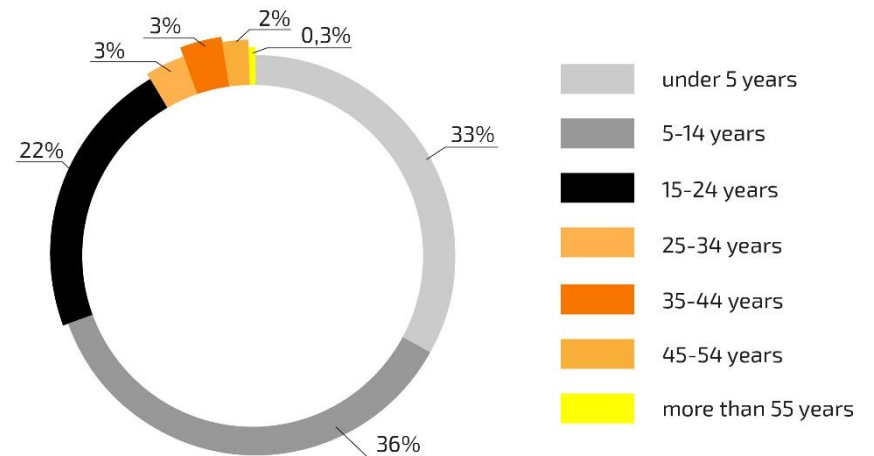
- development of effective HR pool;
- continuous professional development of staff (training, advanced training, retraining);
- effective youth policy;
- strengthening of the corporate culture;
- effective human resource management and social protection.

### Education Level



Many employees have been working in the company for decades. They are experienced mentors for the younger generation of engineers.

### Years with the Company



To ensure the continuity of generations, transfer experience, enrich professionalism and make people more familiar with the work of related industrial specialties, Lengiprotrans pays attention to technical training in production departments.





SERVICES

## SERVICES

Lengiprotrans is operating in all the Russian regions and has experience with foreign projects: Lengiprotrans designed various facilities for the Baltic States, Kazakhstan, Turkey, Syria and Libya.

Company performs full range of design and survey works for the objects of transport infrastructure — from development of transport master plans to preparation of working documentation for construction and reconstruction of transport infrastructure, such as:

- railways and roads;
- railway hubs and railway stations;
- external railway approaches and service railway links to plants, mineral deposits and seaports;
- bridges, viaducts, transport interchanges;
- maintenance and repair facilities for locomotives and rail cars;
- industrial buildings and structures;
- electrification for railroads;
- power supply systems, signaling, centralization and blocking systems;
- water supply, sewerage and heating.



# SELF-REGULATORY ORGANIZATIONS (SRO)



SRO NP "Site Survey Organizations  
of the North-West"



SRO NP "Inter-regional association of  
architectural and building design"



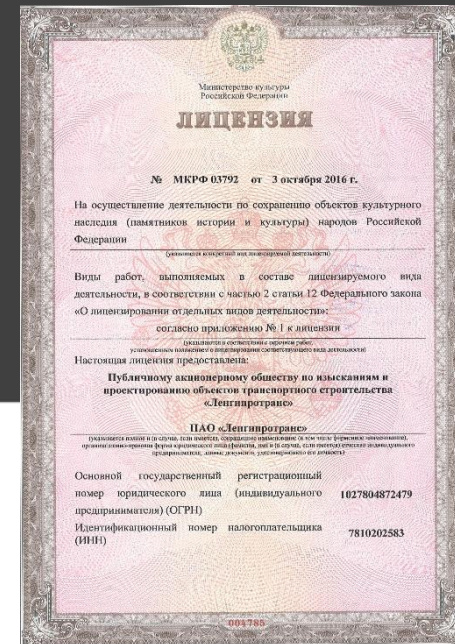
# LICENSES



License from the Ministry of Economic Development of the Russian Federation for geodesic and cartographic activities



License from the Federal Security Service of the Russian Federation for the city of St. Petersburg and the Leningrad region carrying out works related to the use of information that constitutes a state secret



License from the Russian Ministry of Culture for preservation of cultural legacy (historical and cultural monuments) of the peoples of the Russian Federation



# QUALITY STANDARDS



Quality Management System in compliance with ISO 9001



Environmental Management System in compliance with ISO 14001



Occupational Health and Safety Management System in compliance with OHSAS 18001

Experience and tradition, using of multi-variant design and modern research methods, proficiency of engineering and technical personnel, provide high quality projects.

The high quality of the design products has been confirmed by the favorable technical and economic assessment reports from Russian and foreign design assessment agencies, as well as by the operational integrity of projects built.



# LABORATORY ACCREDITATION



Certificate of accreditation from the Federal Accreditation Service for the Soil Chemistry Laboratory



Certificate of accreditation from the Federal Accreditation Service for the Physical Impact Factors Research Laboratory





PROJECTS



# RENOVATION OF MGA — GATCHINA — VEIMARN — IVANGOROD SECTION AND RAILWAY APPROACHES TO UST-LUGA PORT

Start of the project:

2005

End of project implementation:

2021

Section length:

197.7 km

Geography:

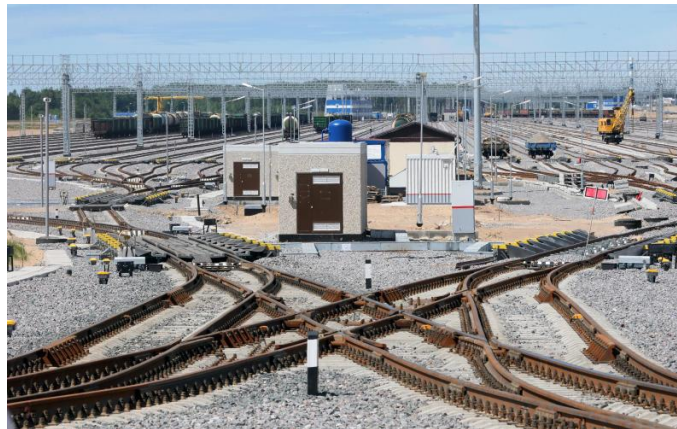
Leningrad region

The Mga — Gatchina — Veimarn — Ivangorod section is one of the most important railway transport facilities in Leningrad Region. The renovation project is aimed at ensuring railway delivery of cargoes to the Ust-Luga commercial seaport on the southern shore of the Gulf of Finland in Luga Bay. From 2006 till 2019 the volumes of railway transportation on the line to the Ust-Luga port increased from 4.1 mln tons to 76 mln tons a year.

The total cargo transshipment volume in 2020 was 102.6 mln tons.

JSC Lengiprotrans carried out engineering surveys and design work of all stages for infrastructure development of the Mga – Gatchina – Veimarn – Ivangorod line and the Ust-Luga railway hub.

During the development of the general layout for Ust-Luga railway hub, the institute provided measures to ensure the growth of port cargo turnover through to 90.8 million tons by 2020, and to 139.6 million tons by 2030.



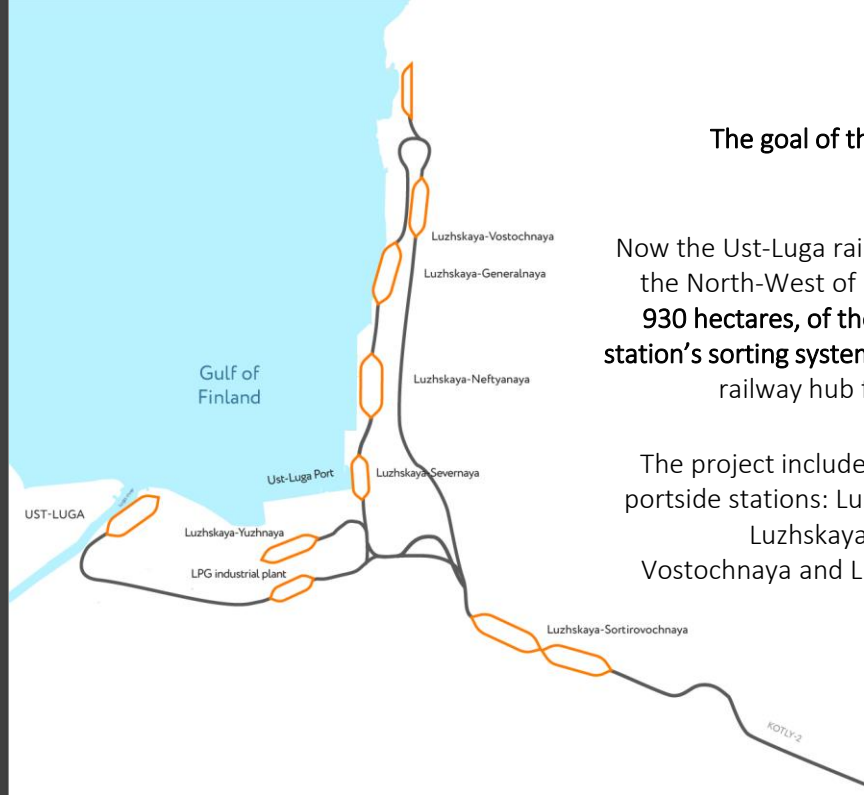
# DEVELOPMENT OF THE UST-LUGA RAILWAY HUB

Start of the project:

2002

Geography:

Leningrad region



The goal of this project is to ensure cargo delivery by railway to the Ust-Luga commercial seaport.

Now the Ust-Luga railway hub is one of the largest transport hubs in the North-West of Russia. The total construction area of the hub is 930 hectares, of them 300 hectares are occupied by the Luzhskaya station's sorting system. The total length of the tracks of the Ust-Luga railway hub for full development will be more than 300 km.

The project includes construction of one marshalling yard and five portside stations: Luzhskaya-Sortirovochnaya, Luzhskaya-Yuzhnaya, Luzhskaya-Severnaya, Luzhskaya-Neftyanaya, Luzhskaya-Vostochnaya and Luzhskaya-Generalnaya. Connecting main tracks are provided to tie all stations together.

The Luzhskaya-Sortirovochnaya station, the main station of the railway hub, was put into operation in 2015. The station consists of a receiving yard, departure yard and a fully automated gravity hump with a sorting yard.

The hump automatic switching post is designed as a “smart building” with automated climate, lighting and access control systems.

Construction of connecting tracks Luzhskaya-Sortirovochnaya — Luzhskaya-Vostochnaya — Luzhskaya-Generalnaya, which will be completed in 2021, facilitates an increased amount of train traffic in the Ust-Luga railway hub, which correspond to its cargo turnover for the full development. The hub will be looped thanks to the construction of the given line, thus ensuring manoeuvrability and streamlining in organization of train traffic.



# MGA — SONKOVO — DMITROV, CONSTRUCTION OF SECOND TRACKS TO INCREASE THROUGHPUT CAPACITY OF THE SECTION

Start of the project:

2015

Section length:

650 km

Geography:

Leningrad Region Novgorod Region

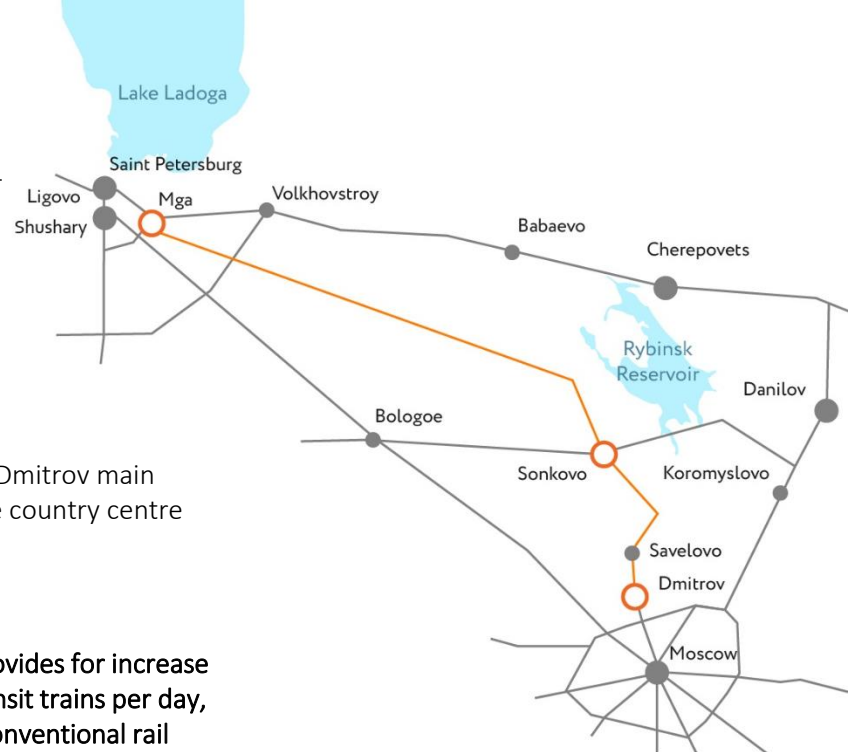
Tver Region

The project will allow for switching the excess train traffic from the Babayevo — Volkhovstroy — Mga line towards the ports of the Gulf of Finland over to the Mga — Sonkovo — Dmitrov line and for ensuring the required throughput capacity of these lines, and it can become a “backup” for this line if necessary.

For JSC Russian Railways, the Mga — Sonkovo — Dmitrov main line is one of the essential projects which links the country centre with the North-Western Region.

The project is divided in III stages. The first one provides for increase of the line’s throughput capacity to 14 pairs of transit trains per day, the second one — increase of train length to 71 conventional rail cars with throughput capacity increase to 23 pairs, the third one — construction of a continuous second track.

JSC Lengiprotrans carried out design works for development stage I and obtained positive conclusions of 19 facilities, the construction of which has already been completed. Main design solutions for development stage II were completed. At present, as part of development stage II, the institute is developing design documentation for renovation of major stations such as Savelovo, Budogoshch, Khvoynaya (stage 2), construction of second main tracks at Kirishi — Pchevzha, Vodogon — Nebolchi, Ovinische-1 — Krasny Kholm hauls and renovation of eight artificial structures.



# DEVELOPMENT OF RAILWAY APPROACHES TO MURMANSK TRANSPORT HUB ON THE MURMANSK — PETROZAVODSK LINE

Start of the project:

2018

End of project implementation:

2024

Section length:

1046 km

Geography:

Leningrad Region

Republic of Karelia

Murmansk Region

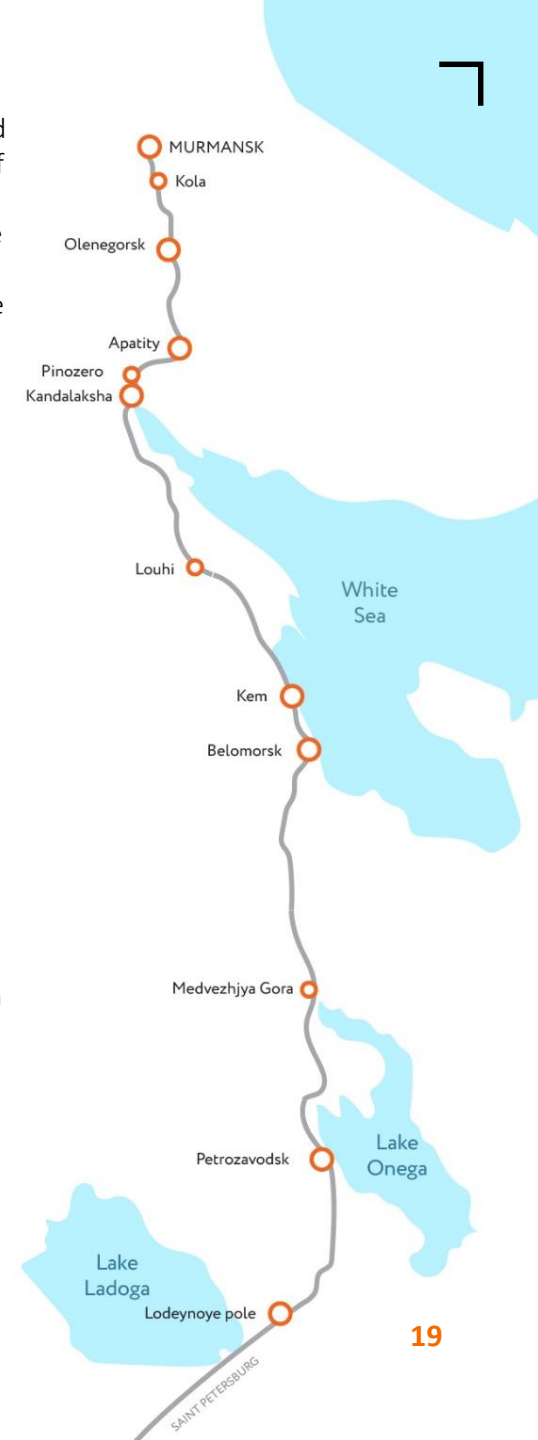
The investment project “Murmansk — Petrozavodsk, construction of second public railway tracks” is being implemented in compliance with the orders of the Government of Russian on railway infrastructure developed at approaches to the ports in the North-West of Russia and construction of the Lavna Commercial Seaport to ensure the passing of additional freight traffic (18 mln t) to the operating and constructed ports in the northern part of the Kola Peninsula.

The works performed by JSC Lengiprotrans are mainly related to liquidation of single-track lines and elongation of receiving and departure tracks to the useful length of 1050 m.

**The project includes 29 facilities:  
19 stations and 10 hauls.**

In 2020, positive conclusions of Federal Autonomous Institution Glavgosexpertiza were obtained for 10 facilities.

In 2021 it is planned to finish the development of the design documentation for the other facilities of the investment project, to pass State Ecological Expert Review for the facilities situated in the Arctic zone, to obtain conclusions of FAI Glavgosexpertiza.



# RAILWAY BRIDGE ACROSS THE KOLA RIVER IN MURMANSK REGION

## Start of the project:

June 1, 2020

## End of project implementation:

December 1, 2020

## Total bridge length:

158.2 m

## Geography:

Murmansk Region



Design and survey works for construction of a new railway bridge commenced right after collapse of the span of the old structure under the impact of abundant flood water of the Kola River on June 1, 2020.

The surveys and design works were completed within a short time, allowing for restoring the connection of Murmansk and the country centre within record-breaking 105 days. Train started running on the new railway bridge on September 28, 2020.



**The project includes activities for dismantling of the collapsed bridge structures, withdrawal of utility networks from the construction zone and rearrangement of approaches to the new bridge taking into account the prospective construction of a second track at the Vykhodnoy — Kola haul. Traffic during construction of the new bridge was arranged on a temporary detour via the post 9 km.**

# DEVELOPMENT OF PRE-DESIGN DOCUMENTATION FOR A NEW SORTING STATION OF THE MURMANSK RAILWAY HUB

Start of the project:

2020

Geography:

Murmansk Region

**In December 2020 JSC Lengiprotrans finished development of the pre-design documentation for facility “Shonguy Sorting Station”.**

The basis for commencement of design works was the order of Chief Executive Officer – Chairman of the Executive Board of JSC Russian Railways O.V. Belozerov on preparation of suggestions on development of railway infrastructure at approaches to the Murmansk transport hub. The future sorting station must ensure staged increase of railway transportation volumes on the line to the ports of the Kola Bay to 100 mln tons a year, including: the Murmansk port — to 27 mln tons a year, new ports on the Western shore of the bay — to 73 mln tons a year.



**From the eight possible places for construction of a new sorting station presented by the institute, the variant of sorting station placement near the existing Shonguy Station was chosen; it is located 53 km from the Lavna Station and 25 km from the Murmansk Station, and for construction of this station the front-end engineering design, approved by JSC Russian Railways, was fulfilled.**

The prospective sorting station will carry out reception of freight trains for breaking-up, formation of new trains and handling of transit freight trains.

The station will be equipped with modern Russian control and monitoring systems.

**Estimated handling capacity of the high-capacity gravity hump yard will be up to 5700 rail cars per day, rail car turnover of the station for the full development is 11 000 rail cars per day.**

# DEVELOPMENT OF SAINT PETERSBURG RAILWAY HUB

Start of the project:

2019

End of project implementation:

2030

Geography:

Saint Petersburg

Leningrad Region

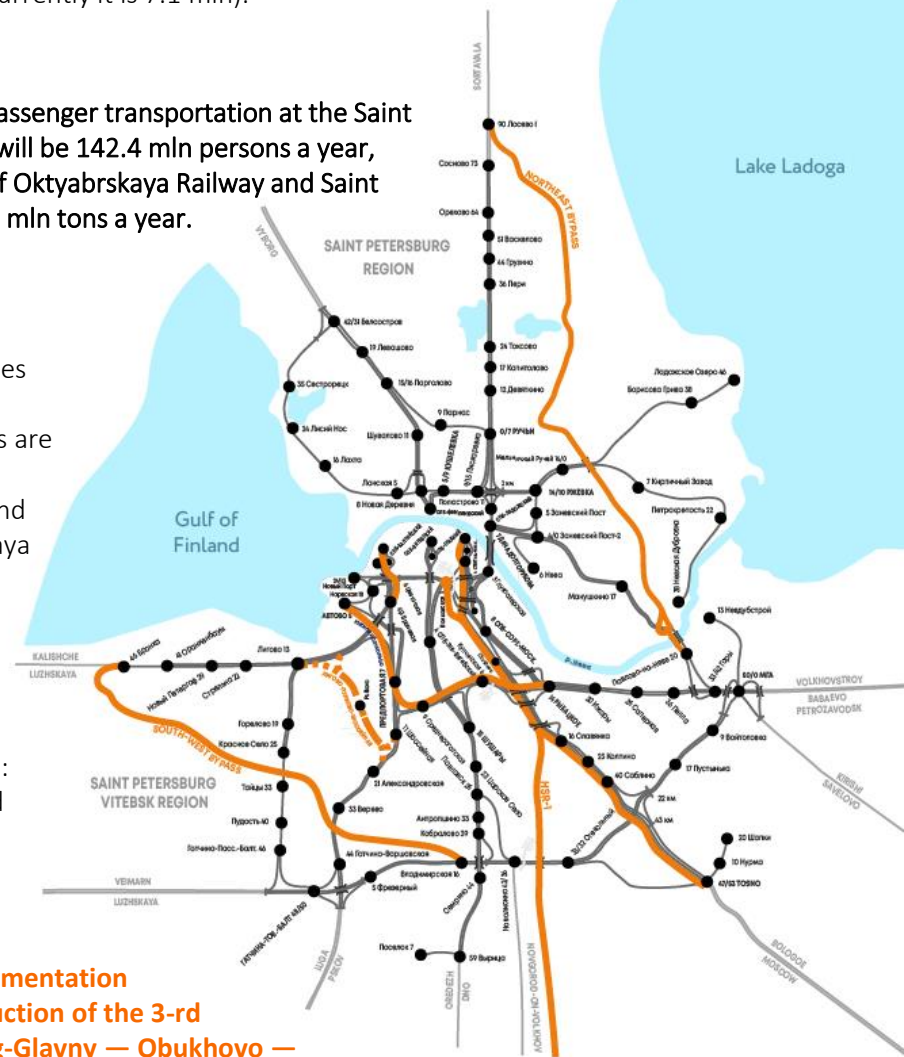
According to the forecasts of IERT JSC, the population of Saint Petersburg and Leningrad Region by 2030 will exceed 8.5 mln people (currently it is 7.1 mln).

As compared to 2018, volumes of suburban passenger transportation at the Saint Petersburg hub will increase in 1.8 times and will be 142.4 mln persons a year, while the cargo volume to the sea terminals of Oktyabrskaya Railway and Saint Petersburg will increase in 1.4 times — to 261 mln tons a year.

The railway hub development concept provides for withdrawal of cargo transit traffic outside Saint Petersburg, for which two cargo detours are planned: two-track North-Eastern bypass (Pavlovo-na-Neve — Sosnovo) 112 km long and one-track South-Western bypass (Vladimirskaya — Bronka) 70 km long.

The second part of the concept provides for opening of two new passenger railway routes: Oranienbaum — Beloostrov (via Pulkovo) and Toksovo — Gatchina-Varshavskaya.

JSC Lengiprotrans is developing design documentation for the most relevant titles — this is construction of the 3-rd and 4-th main tracks at the Saint Petersburg-Glavny — Obukhovo — Tosno line, Saint Petersburg-Baltiysky — Bronevaya, new line Shosseynaya — Pulkovo airport — Ligovo, Obukhovo — Volkovskaya and North-Eastern bypass.



# HIGH-SPEED RAIL LINE MOSCOW — SAINT PETERSBURG (HSR-1)

Start of the project:

2010

End of project implementation:

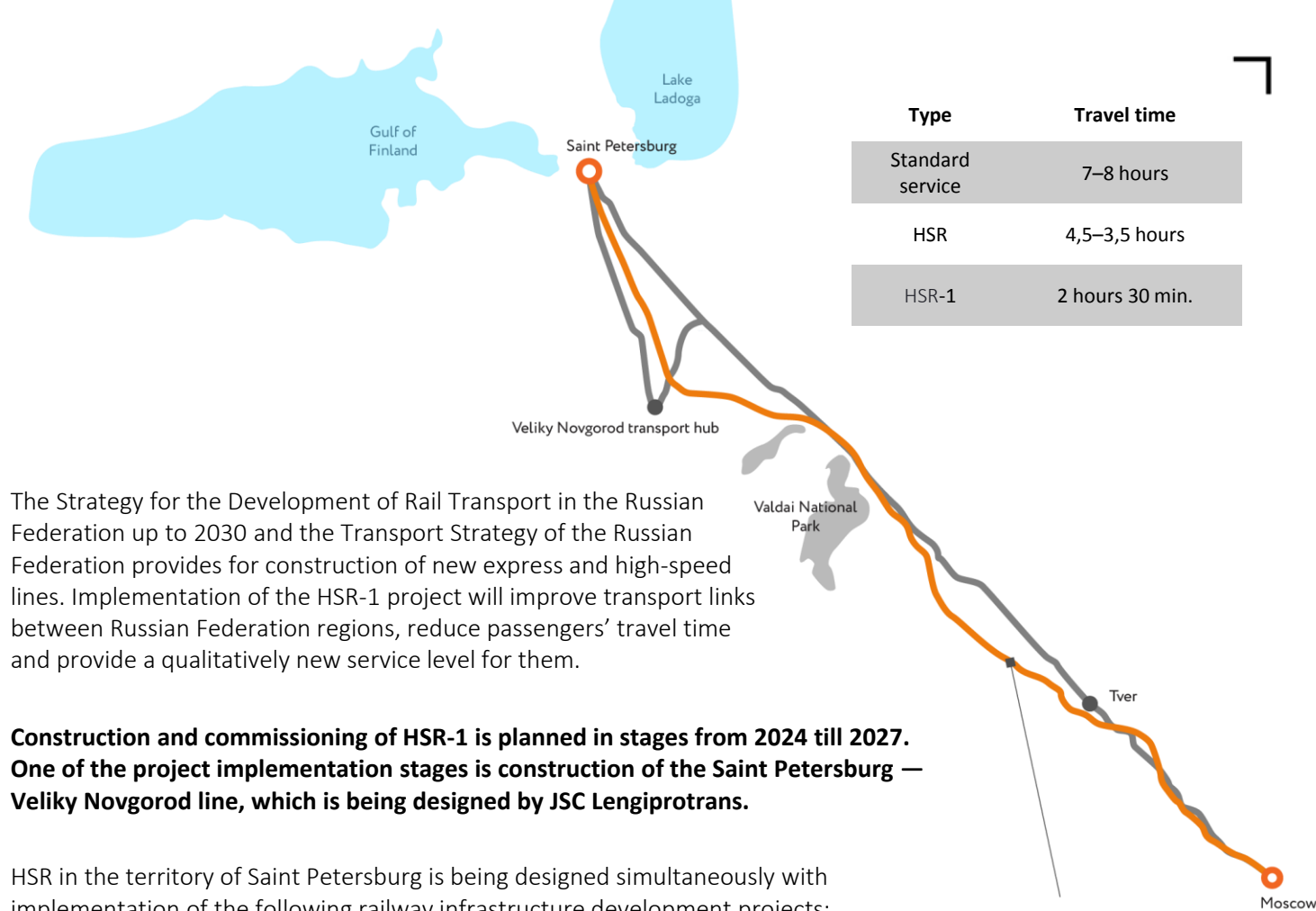
2027

Geography:

Leningrad Region

Novgorod Region

Tver Region



The Strategy for the Development of Rail Transport in the Russian Federation up to 2030 and the Transport Strategy of the Russian Federation provides for construction of new express and high-speed lines. Implementation of the HSR-1 project will improve transport links between Russian Federation regions, reduce passengers' travel time and provide a qualitatively new service level for them.

**Construction and commissioning of HSR-1 is planned in stages from 2024 till 2027. One of the project implementation stages is construction of the Saint Petersburg — Veliky Novgorod line, which is being designed by JSC Lengiprotrans.**

HSR in the territory of Saint Petersburg is being designed simultaneously with implementation of the following railway infrastructure development projects: construction and renovation of the main tracks at the Saint Petersburg-Glavny — Obukhovo line, Volkovskaya — Obukhovo, renovation of the Tsimbalinsky flyover.

In 2020, the variant of HSR train terminal placement in Saint Petersburg on the site of the “former warehouses of Kokorevs merchants”, to the west of the Moscow Railway Station platform yard, was approved for further study.

**In the beginning of December 2020, the Scientific and Technical Council of JSC Russian Railways chose the “Novgorod” variant of line routing.**





# CONTACT INFORMATION

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of transport infrastructure facilities Lengiprotrans

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