EXECUTIVE SUMMARY

OF THE ENVIRONMENTAL IMPACT ASSESSMENT

PROJECT FOR CONSTRUCTION OF

THE ST. PETERSBURG BY-PASS SECTION

1 INTRODUCTION

1.1 GENERAL INFORMATION

This document covers a brief description of matters related to environmental protection (EP) during the planning, design and construction of the St.Petersburg By-Pass.

Ecological Impact Assessment Report sections (EIAR) were prepared during the stage of engineering design, which obtained all the necessary approvals.

1.2 THE NEED FOR THE INVESTMENT

To accelerate construction on the basis of the Program of development of the road network "Roads of Russia of XXI century", which was reviewed and approved at the session of the RF Government dated June 28, 2001, the Government of Russian Federation issued directions aimed at speeding up construction of this project.

The construction of the By-Pass will divert a considerable part of traffic beyond the borders of the built up areas and thus improve the environmental situation in St.Petersburg by decreasing the traffic volume and increasing the traffic speed.

1.3 BASIC LEGISLATIVE ACTS REGULATING THE USE AND PROTECTION OF CERTAIN KINDS OF RESOURCES

- The law of the RSFSR "Protection of environment" of December 19, 1991 (amended by Laws of the Russian Federation of 21 February 1992 No.2397-1, 2 June 1993 No.5076-1, 10 June 2001 No. 93-FZ, 27 December 2000 No. 150-FZ, 30 December 2001 No. 194-FZ, 30 December 2001 No. 196-FZ);

- Water Code of the Russian Federation of November 16, 1995. No.167-FZ (amended by Federal Law of 30 December 2001 No. 194-FZ);
- Land Code of the Russian Federation of 25 October, 2001;
- Forests Code of the Russian Federation of January 22, 1997 No. 22-FZ;
- The RF Law "Atmosphere protection" of 4 May 1999 No. 96-FZ;
- The RF Law "Mineral resources" (amended by RF Laws of 3 March 1999 No. 27-FZ, 10 February 1999 No. 32-FZ, 2 January 2000 No. 20-FZ, 14 May 2001 No. 52-FZ and 8 January 2001 No. 126-FZ);
- The RF Law "Industrial and consumption waste" of 24 June 1998 No.89-FZ (amended by the RF Law of 29 December 2000 No. 196-FZ;
- The RF Law "Fauna" of 24 April 95 No. 52-FZ;
- The RF Law "Sanitary and epidemiological safety of the population" of 30 March 1999 No. 52-FZ (amended by the RF Law of 30 December 2001 No. 196-FZ);
- The RF Law "Territories under special protection" of 14 March 1995 No. 33-FZ
- etc.

In order to estimate the amount of pollution, the following documents were used: normative and methodological documentation approved by the respective bodies of the State Hydrometeorological Service, the State Ecological Expertise of the Committee of Natural Resources of Russia, the Ministry of Public Health, as well as documents of various ministries and institutions.

In accordance with Clause 5.2 of the Regulations on environmental impact assessment in the Russian Federation, approved by the order of the Ministry for natural resources of the Russian Federation, “the sponsor together with the designer shall arrange public hearings or discussions of project and other proposals…” in mass media.

2 PROJECT DESCRIPTION

The By-Pass Project Component was developed as part of the construction of the 1st stage of the St.Petersburg By-Pass.

2.1 GENERAL INFORMATION

The construction of the By-Pass is a major investment project of St.Petersburg and the Leningrad region. It will meet the demands for the steady social-economic and transport development of the region.

Two variants of the road routing were analysed at the stage of the pre-project design feasibility study: the interior (along the city boundaries) and the exterior (in 4-7 km outside the city boundaries). Principal decisions on the road routing were developed within the General Plan of the City and Regional Development until the year 2005 and the Transport Scheme of the St Petersburg city. Further specifications of the selected alternative were developed within the project feasibility studies in 1995 by GiprodorNII, SPEA (Italy) and in 1997 by AOOT Dorproekt.

Whereas the location decision for the south-western and north- western road sections from the Vyborg highway intersection to the Tallinn highway intersection is influenced by location of the St Petersburg Flood Protection Barrier and by territorial structure of the northern and southern banks of the Finnish gulf, location of the south –eastern and north- eastern road sections is not determined by these factors and mainly related to the territorial developments of the city and of regional towns (Pushkin, Kolpino, Krasnoe Selo, Parglovo).

In the view of the above, the St Petersburg Committee on the Urban Construction and Architecture proposed to proceed with the interior scenario of the eastern part of the road from the intersection with the Tallinn highway to the intersection with the Priozerskoe highway. The selected alternative – the Eastern bypass- is adjacent to the uninhabited areas under development and some built-up areas within the city boundaries. Development of this scenario at further stages of project design was carried out on the basis of:

1. Act of Selection of the Ring Road route at the section Vyborg highway- Moscow highway from 27.02.01, approved by the governors of St Petersburg and the Leningrad region;
2. Feasibility Study by OAO Dorproekt in 1999-2000, approved by the Rosavtodor decree # 57 from 10.04.01.

Research shows that 30% of 70 main roads of the City do not meet current traffic demand. Practically all the bridges over the Neva River are overloaded. The construction of the By-Pass will enable a shift of considerable part of City transit traffic to it and thus redistribute this traffic onto the City-joining roads of general use.

The construction of the By-Pass is necessary to ensure full utilization of the 9th intermodal traffic corridor, to speed up the process of integration with the countries of Western Europe and Finland and to increase the attractiveness of the route for cargo carriers, including the option of transit for Russian and foreign goods through the territory of St.Petersburg and the Leningrad region. The By-Pass will link all major port, railway, air and transport terminals and it will facilitate the process of transforming St.Petersburg into one of the largest international centers of cargo handling and storage.

According to the estimates made, the total length of the road network with new traffic intensive speed following the By-Pass commissioning, will be approximately 464 km; the speed of the traffic in the streets and on the roads will increase by an average 22%; the average commuting time for the City main road users will decrease by 14%. Such changes of the traffic situation, especially in the City center, will reduce atmospheric pollution due to the optimization of traffic conditions.

The engineering design of the considered section of the By-Pass was elaborated by the ZAO Peterburg-Dorservis design organization. The design was approved by Rosavtodor and passed the State Ecological Review (Resolution of the RF Glavgosexpertiza No. 24-4-1/10-505 of 14 January 2002).

2.2 BASIC TECHNICAL PARAMETERS OF THE PROJECT

The By-Pass engineering design envisages the construction of junctions (intersections) with the following streets and roads: "Russia" Road, Sofiyskaya Street, Obukhovskaya Oborona Avenue, Oktyabrskaya Embankment, "Kola" Highway, Koltushskoye Road, Poperechnaya Street (Rzhevka), Shafirovsky Avenue, Toksovskoye Highway, Culture Avenue, and the Engels Avenue extension.

In addition, overpasses are planned over Ryabovskoye Highway, the extension of Piskarevskoye Avenue, over other streets and local roads as well as over numerous railways.

The most important design component of the By-Pass that links the southern districts of the city and the federal access to Moscow with the northern districts, federal roads "Kola" and "Scandinavia", is a bridge over the Neva River.

The project work planned to be financed by EBRD includes:

- The first construction stage of section PK512-PK523. Construction of road bed and road pavement including the construction of an overpass of the main section PK512-PK523 (Interchange with M10 highway) and intersection ramps No. 1, 2, 3, 4 on the Moscow – St. Petersburg highway;

- The first construction stage of section PK523-PK554. Construction of road bed and road pavement including construction of an overpass of the main section PK523-PK534;

- The first construction stage of section PK554-PK568. Construction of road bed and road pavement including construction of a steel and reinforced concrete overpass of the main section PK554-PK568.

The section of the By-Pass PK 512-PK 568 (the total length is 5.6 km) has been designed with the following technical parameters: the category of the considered Road – I-b, estimated speed – 120 km per hour, width of the right of way – 43. 0 meters, number of lanes – 8, width of the road – 8 lanes x 3.75 meters, width of the hard shoulder lane – 3.0 meters, width of the dividing strip – 5.0 meters, road coating of capital type – asphalt concrete.

The junctions and platforms for bridge superstructures will be made of monolith reinforced concrete and steel reinforced concrete.

3 CURRENT ENVIRONMENTAL CONDITIONS AND THE ASSESSMENT OF ENVIRONMENTAL IMPACT

The current environmental condition is provided on the basis of engineering and environmental research data.

3.1 NATURE AND CLIMATIC CONDITIONS

3.1.1 Climate

The road area is characterized by a warm summer, a long and rather warm winter with frequent thaws in December. According to the meteorological data the average temperature of the year is -3.6 ^{o}C.

Average temperature of the coldest month (January, February) – -9.1 ^{o}C. Average temperature of the warmest month (July) – +17 ^{o}C.

The transition of the temperature through the zero point takes place in spring – around April 4th, in autumn – around November 6th.

The absolute maximum of summer temperature recorded +33 ^{o}C, the minimum in winter is – 42 ^{o}C. The prevailing directions of wind are southwest and south, the average annual speed of wind is 3.0 meters per second, the highest (every 10 and 20 years) is 20 and 22 meters per second.

Due to the amount of rainfall, the area is considered to be an “overabundant humidity zone” - 725 mm of precipitation per year averaging 64% in summer.

3.1.2. Relief, geology

The relief is flat. It presents a problem for the drainage of water after rains and water from melted snow. According to Russian humidity conditions this part of the Road belongs to type I. From geomorphologic point of view the Road is within an “accumulative terraced glacial and lacustrine valley”.

The geological structure of the area comprises quaternary glacial and lacustrine sediments, represented by loamy soil, loam and fine-grained sands.

There is no significant soil contamination in the area, except for some small unauthorized dumps.

3.1.3 Quality of surface and ground waters. Assessment of impact on surface waters

There are no rivers or channels in the road section area. Therefore, estimation of the impact was not conducted.

3.1.4 Social, economic and cultural issues

An archeological study carried out during the planning of the By-Pass showed that the given territory is not of interest from the archeological point of view and there were no archeological monuments discovered in the construction zone. There are no state-protected natural parks in the area where the Road is to be constructed. The largest settlement will be in the road influence zone is the settlement of Shushary. Measurement of the air pollutants concentration in the settlement showed that their content does not exceed the accepted standards.

3.1.5 Noise Impact

Noise is one of the most important environmental impact factors. As outlined in the EIA, the noise levels within the immediate proximity of the road can reach 87dB (during the construction work). According to the noise proliferation analysis carried out within the EIA, the noise levels requiring provision of the alternative housing will be reached in the front row of the residential buildings adjacent to the road within the PK 585 part of the road, which is outside of the section planned to be financed by EBRD.

3.2 ENVIRONMENTAL MITIGATION MEASURES

3.2.1 General information

Measures to protect the environment and reduce the environmental impact will be carried out during each Project stage: design, construction and the road and engineering structures operation.

During the road planning stage the main climatic, landscape and social conditions were considered. The road is planned to avoid settlements, areas of natural animals habitats, water bodies and watershed protection areas.

3.2.2 Preservation of land and soils

All the works related to the By-pass and its facilities construction are done strictly in the right of way. At the preparatory period the topsoil will be removed. As it is valuable, slowly recovering natural resource, it will be protected from destruction until the end of the construction works and used for recultivation purposes. The topsoil will be stored in special places to avoid its deterioration.

To avoid soil pollution from oil products contractors will ensure that the vehicles and machinery function properly, and that re-fuelling and maintenance works will take place in specifically designated areas.

Following construction all temporarily used land areas will be recultivated in line with original conditions.

Soils preservation measures include:

- Removal and use of topsoil fertile for recultivating land, damaged by construction.
- Use of noise proof lines of plants, which in addition to their main functional purpose, contribute to combating soil pollution.
- Construction of drainage channels along the road in order to prevent the ground water pollution of run-off and storm water.
- Use of modern technologies to combat icy roads (wet salt, liquid salt solutions, proactive maintenance of the road bed according to specific weather forecasts), while minimizing chloride soil pollution.
- Minimizing use of temporary roads and access areas in general during the construction period.

3.2.3 Preservation of surface and ground water

To prevent surface water pollution, measures have been planned to capture and clean run-off during construction and operation of the By-Pass.

Measures have also been foreseen to eliminate emergency situations in case of oil and other dangerous substance spills.

The types of local waste water treatment facilities and their positioning on the By-Pass were defined considering local conditions, specificity and plan of the drainage system, productivity of refining facilities, possibility of draining of storm water into sewage system from bridges, overpasses, bypasses, other technical and economical figures.

Dry snow removal is an additional measure for protecting surface water from pollution. Melted snow water will be cleansed in sedimentation tanks, positioned on snow storage grounds.

3.2.4 Waste: storage and disposal

Construction of the By-Pass will inevitably result in generation of wastes. However, the amount of waste in normal situations is relatively small. The amount of waste created in constructing the By-pass may be greater than usual due to substandard subsoil materials, which will need to be replaced.

The Contractor will be required to control the construction site; keep it clean and provide appropriate facilities for the temporal storage of all waste until it is disposed. Construction waste will be stored in special waste storage areas. The same concerns waste resulting from earth-moving/excavation. The waste will be stored adequately to avoid pollution of water supplies and sources as well as to avoid dust formation during dry seasons. The construction waste areas will be defined before the construction gets under way. The Contractor will be responsible for the safe transportation and storage of all waste in order to prevent any kind of environmental pollution or harmful effect to people or animals.

Runoff from untreated drainage and wastewater into surface water bodies or on adjacent land is forbidden.

3.2.5 Noise and Atmospheric Pollution Protection

The noise protection measures have been envisaged to minimize noise to the possible minimal values.

The project provides for the following noise reduction measures:

- Installation of the acoustic screens
- Trees planting
- Installation of noise-proof protective windows in the buildings

On completing a whole complex of noise-protection measures the zone of above - standard noise influence will be reduced to 60-70 m measured from the axis of the outer driving lane. The noise levels to be within the standard levels which are 55 dB (daytime) and 45 dB (night).

The size of the sanitary protection zone has been established on the basis of the environmental impact parameters, including the projected noise levels. Within the sanitary protection zone of the PK 585 part of the road - which is outside of the

section planned to be financed by EBRD - the residents of the front row buildings adjacent to the road will have to be provided with the alternative housing by the Administration of St Petersburg.

Vibration and infra sound produced by traffic will not produce any noticeable influence within 30 m of the By-Pass. Electromagnetic radiation initiated by traffic is insignificant and does not demand specific evaluation.

Construction of the By-Pass will allow to reduce the level of air emissions in the city, and particularly in its center, therefore improving the overall environmental situation in St Petersburg.

3.2.6 Protection of the natural and social environment

The By-Pass does not run through specially preserved natural territories; nor will it negatively influence any wildlife or endangered species. There are no rare species of animals Red Book in the area. The Resolution of the Government of the Russian Federation allowing for withdrawal of the forests land for the purposes of the By-Pass construction has been obtained.

3.2.7 Recultivation Measures

In accordance with the Land Code and "General regulations on land recultivation", all temporarily withdrawn for construction purposes land will be recultivated in accordance with the land use conditions. Unproductive land will be fertilized. As soon as possible after work begins, vegetation will be planted on cleared grounds, especially on slopes. This is recommended to improve the general outlook of the road as well as to lessen soil erosion, extra surface drainage and surface soil layer leaching.

4 ORGANIZATION OF ENVIRONMENTAL MONITORING

The monitoring program will follow Environmental Protection norms and rules and drastically reduce environmental risk which might result from the construction and operation of the By-Pass. The tasks of environmental monitoring are defined as follows: controlling the completeness and quality of the project engineering tasks, defining the level of impact on the environment; controlling the project initial parameters' compliance with the actual situation; working out proposals to provide

“ecological safety” where discrepancies occur between the observed results and the predicted impacts. According to local environmental monitoring data, the Contractor will develop measures aimed at prevention or clean-up related to any polluting activity not foreseen in the project.

During the construction period the Contractor, or organizations recruited by the Contractor, will be responsible for monitoring. If necessary independent experts will be involved.

Monitoring will include:

- Controlling the completeness and accuracy of the design documentation of regulations approved on earlier stages of designing including measures aimed at excluding or minimizing impacts, compensation, environmental protection facilities and activities;
- providing the choice of a contractor, capable of providing good environment services and technologies;
- including measures into the project explaining to the Contractor’s workers environmental protection regulations and project solutions together with training of workers if necessary;
- supervision of compensation and their payments, provided in the project;
- supervision of environmental protection measures during construction and operation;
- monitoring of the Contractor’s observance of regulations, standard documents, technical conditions and project requirements;
- recultivation works performance control;
- examination of efficiency of the project-foreseen measures during construction and their updating, if necessary;
- post-construction supervision of the functioning of the drainage system, snow protection planting, erosion resistance and other environmental protection facilities

The road operator will be responsible for the post-construction monitoring.

5 PUBLIC CONSULTATION

Intensive discussions regarding the construction of the By-Pass started in the city's mass media in February-March 2001. Discussions of the By-Pass construction are still being held. On May 16, 2001 Professor of Ecology M.L. Rudakov and S.V. Lombas, director of the "Lengiproinjproekt" institute, the general designer of the By-Pass section running through St.Petersburg's Frunze municipal district, went on the cable TV air and answered questions of the district's residents, interested in the Project implementation. On May 31, 2001 there was a meeting between the management of the Directorate of St. Petersburg transport by-pass construction and the Nevsky district public. The By Pass project implementation was twice discussed at the Legislative Assembly of St.Petersburg: on May 8, 2001 – at the Permanent Committee for municipal economy, city planning and land issues; on June 7, 2001 – at the Legislative Assembly general meeting.

From June to August, 2001 the Directorate representatives discussed the construction issues with 10 out of 12 municipal districts which the By-Pass runs through. The results of hearings are quite positive. The discussions were not held in 2 municipal districts as there was no quorum at the meetings.

6 CONTACTS

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