European Investment Bank

Luxembourg, 19 March 2007
PJ/INFRA/2007-225/PMJ/MT/cc

Projects Directorate
Infrastructure Department

Contact Person: Maj Theander
Team Member: Paulo Mendes-Jorge
ENVAG: Axel Hörhager

Operation nr. 2004-0117

Sector Code: 63211100
Eligibility Code: 030400010200 & 010001010000 & 030400020200

APPRAISAL REPORT

PLK FRAMEWORK LOAN – Sub-Project 4
Modernisation of the Poznan rail node

POLAND

cc: VP Mr. Pilip
DG PJ, PSD, Ops, CRD, JU, EV, RMC

Document name: 20040117 FSBREPPJ STAGE 2, subproject 4. Poznan rail node.doc

(4)

Attachment to letter of 16/10 2006

Modernisation of the Poznań rail node (E 20 railway) located in Poland No 2001/PL/16/P/PT/014

- Summary in non-specialist language

- Decision of Voivode of Wielkopolskie Voivodeship from 7 July 2006 on environmental conditions of the consent for execution of the undertaking consisting of modernisation of the Poznań rail node (E 20 railway)

Documentation title: ***Environmental impact assessment report – summary in plain language***

Investment project: ***Modernisation of the Poznań rail node (E 20 railway) located in Poland, from the Swarzędz station (km 290.200) right to the intersection with Grunwaldzka street (km 313.200)***

Stage: ***Application for decision on location of a public purpose investment project***

Investor: ***PKP PLK S.A. of Warsaw***

Contracting Authority: ***Biuro Projektów Kolejowych"***
61 – 891 Poznań, ul. Kościuszki 68

Report Prepared by
Jerzy Próchniewicz M. A.
Expert acting for the Wielkopolski Voivode
No. 0075

.....

Poznań, December 2005

1. Description of the Investment Project

The Poznań railway Junction is currently one of the most heavily used section of PKP's railway network in Poland. This section is a place of intersection of 17 railway lines. The upgrade is to include section no. 3, which is a part of the E-20 route from Warsaw to Kunowice. The length of the Poznań junction amounts to a total of 23.0 km.

A section of the junction partially runs through populated and developed areas of the city of Poznań. Ass far as the E-20 route is concerned, the junction is made up by the following stations and posts: Swarzędz, Poznań Antoninek, Poznań Wschód, Poznań Garbary, Poznań Główny, Poznań Górczyn, Poznań Junikowo.

Within the limits of the city of Poznań the upgraded section of the railway line runs parallel from the boundary of the city to the Poznań Garbary station, and turns south towards the Poznań Główny station and then further west towards the Poznań Górczyn station. There is only one section outside of the city limits – i.e. from the boundary of Poznań and Swarzędz to the Swarzędz station.

The roads intersecting the railway line are single and double level crossings, particularly on main arterial routes of the city. On single level crossings traffic is controlled with the use of barriers and traffic lights.

The upgrade is to include a section of the Poznań railway junction of the E-20 line – between the Swarzędz station and the new stop of Poznań Junikowo.

Design assumptions:

The existing main track surface can be divided into three groups:

- track surface built in 1987 i.e. the section from the beginning of the reconstruction of the entry bend into the Swarzędz station – right to the end of the platforms at the Poznań Wschód station, excluding the entry bend to the Poznań Wschód station. The track surface has been used for 16 years;
- track surface built in 1995 and 1996 – installed without reinforcement of the trackbed (section from the Poznań Wschód station to the area of ul. Hetmańska at the Poznań Główny station, excluding the section whose trackbed had been replaced (i.e. the section running along the platforms at the Poznań Główny station). The track surface is founded on wooden cross ties to km 304.7, and has been in use for 8 years.
- track surface built between 1996 and 1998 – i.e. from the viaduct in ul Hetmańska to km 313.200 – i.e. to the end of preparation of the trackbed reinforcement layer. The track surface has been in use for 7 years. Starting at the Poznań Górczyn station the tracks run basically in straight line.

Based on the above described parameters of the existing track system, it was assumed that the surface be replaced and the trackbed reinforced on the following line section: km 290.200 to km 306.100 excluding the fragment of tracks 1 and 2 running along the platforms at the Poznań Główny station. Beyond this section it is envisaged that the existing track surface be maintained.

The structure of the railway surface for the main tracks has been determined based on the assumptions for railway lines, covered by agreements on European standards.

As far as the station tracks are concerned, it is proposed to use the rails obtained from the disassembly of tracks 1 and 2, which comply with relevant technical conditions. All material used to build railway surface will certified as fit for operation and use, with certificates to this effect issued by the Urząd Transportu Kolejowego *(Railway Transport Authority).*

Detailed effects of the application of the above mentioned solutions are discussed in the chapters regarding the investment project's impact on individual elements of the environment.

These assumptions constitute an element of the upgrade design prepared with respect to the track system at railway traffic posts on the E- 20 line from Swarzędz to km. 313.200 on the Poznań Górczyn – Palędzie route. The Warsaw - Kunowice route is a part of international east – west transport corridor of European significance.

The track system has been optimised based on functional and economic assumptions included in the following study: "Requirements and Assumptions for the Detailed Concept of Upgrade of the Poznań Railway Junction on the E- 20 line".

Elements of the assumption aimed at improvement of the functionality and obtaining of economic effects generated by the reconstructed track systems include:

- increase in the flow capacity;
- minimisation of traction power losses used for start up of the trains;
- shortening of the travel time via the Poznań junction;
- shortening of the cargo transport time in transit traffic and operation of loading points;
- application of cargo transport connections with better quality turnouts;
- decrease in the number of turnouts and railway track crossings.

Based on these assumptions as well as technological and traffic guidelines, track geometries for individual traffic post were developed. The track system concepts specify the possibilities of optimum solutions, number of platform edges, ensuring that trains can enter and exit in any direction towards a track with platform edge, as well as ensuring the possibility of quick exit and entry onto the tracks of the E- 20 railway line from the adjacent directions. The

reconstructed and upgraded track systems will allow for management of train traffic based on the technology proposed for passenger and cargo trains.

The scope of the works includes the following:

- track surface,
- replacement of turnouts,
- trackbed,
- engineering facilities,
- platforms crossings,
- power supply,
- collisions of non railway infrastructure,
- sanitary and industrial facilities,
- environmental protection.

The entire section covered in this assessment report has been graphically divided into individual facilities located at particular kilometres of the route. This division can be presented in the following manner:

Facility Number	**Facility**	Kilometre
1A	Swarzędz station with the entry bend	290.200 – 292.950
2A	Swarzędz– Poznań Antonin track	292.950 – 293.680
3A	branch off post with passenger stop of Poznań Antoninek	293.680 – 295.220
4A	Antoninek– Poznań Wschód route	295.220 – 297.690
5A	Poznań Wschód station	297.690 – 300.280
6A	Poznań Wschód – Poznań Garbary route	300.280 – 301.370
7A	siding post with passenger stop of Poznań Garbary	301.370 – 301.900
8A	Poznań Garbary – Poznań Główny route	301.900 – 303.267
9A	Poznań Główny station	303.267 – 306.000
10A	Poznań Główny – Poznań Górczyn route	306.000 – 308.650
11A	Poznań Górczyn station	308.650 – 312.400

12A	Poznań Górczyn – Palędzie route with passenger stop of Poznań Junikowo	312.400 – 313.200

As far as the territorial system is concerned the assessment report covers the entire section from the Swarzędz to the passenger stop of Poznań Junikowo (at a new location).

2. Protection of underground waters

1. The upgraded railway line running from east to west is located within the area of the following physiographical units:

- Równina Wrzesińska *(Wrzesińska Plain)*
- Poznański Przełom Warty *(Poznań Gorge of the Warta River)*
- Pojezierze Poznańskie *(Lakeland of Poznań)*

In the hydrographical sense the concerned region is located in the reception basin of the Warta River as well as reception basins of the following rivers: Główna, Cybina, Bogdanka and Junikowski Creek.

2. The subgrade of the upgraded railway line included Quaternary and Tertiary formations, the presence of which suggests that there are also underground waters in the area.

The Tertiary Period is represented by clayey and muddy formations, locally separated by a layer of sandy soils muddy-clayey and clayey formations.

The appearance and development of Quaternary formations is associated with the activity of continental glaciers as well as the activity of glacier and river waters in the thawing periods. In the analysed are Quaternary formations include just about everything from oldest glaciation right to contemporary sediments. Their thickness depends on the land form of the under-quaternary ground and the contemporary surface of the land. The oldest Quaternary sediments from the Southern Polish glaciation period two layers of morainal clays with thickness of 40 to 50 m at places, which appear at lower ends of the under-quaternary grounds. The Central Polish glaciation is represented in the area of fossil valleys by water glaciation sediments and morainal clays with thickness of approximately 40 m, apart from these at places there are thin water glaciation sediments and morainal clays with thickness of approximately 20 m.

Baltic glaciation sediments include sands and gravels with thickness of up to 5 m, morainal clays with thickness of up to 15 m as well as glacial trough sediments in the shape of sands, mud and clays with thickness of up to 20 m (glacial troughs of Cybiny and Samicy Kierska).

During the last phase of the Baltic glaciation the Poznań section of the Warta River was shaped.

Identified and economically utilised waters in the analysed areas include Quaternary and Tertiary formation waters appearing at the depth of 150 to 200 m.

Usable Quaternary level appears at the following levels: ground water as well as upper and middle inter clay.

The ground water level appears in sandy and gravel formations of benches and river valleys in the area of the Kierskie Lake and the Junikowski Creek. Its thickness is variable and varies between several and 10 metres and more at certain places (up to 19 metres). The level of ground waters appears at the depth of 0.6 to 12.0 m. p.p.t. and is subject to seasonal variations of 0.5 – 1.5 m. Due to the pollution caused by human activity this level is currently hardy ever used as a source of water supply, at this level there are water intake basis for Poznań "Dębin".

The upper inter clay level appears in sand and gravel sediments, separating morainal clays of the Baltic glaciation from the Central Polish glaciation clays. This level appears on approximately 60% of the analysed area. Its spread is largest within the administrative limits of the city of Poznań – and this sis exactly where it is the main water bearing layer. The thickness of the upper inter-clay level ranges from 5 to 20 m. This level can be found mainly at the depth of approximately 5 to 15 m p.p.t.

The middle inter-clay level is formed by a sandy and gravel series filling here the southwards running fossil valley (Komorniki - Złotniki) which is 500 - 1000 m wide. The water bearing layer is made up by medium and thick grain and as well as gravels. The thickness of sandy and clay layers varies from 10 to 30 m, and up to 40 m at places.

The Tertiary level is the second basic usable level of the analysed area. The vicinity of this level includes Miocene and Oligocene water bearing levels.

The Miocene level is made up by sands at places separated by layers of mud and brown coals. This level appears at the depth of 50 up to approximately 150 m.

The Oligocene level is made up by one or two water bearing layers with thickness reaching 30 m at places. It is quite common for the Oligocene level to join with the Miocene level.

3. The envisaged investment project will be carried out outside of river flooding areas.

Along the modernised railway line storm water will be collected and drained away from the track. To protect the ground and water environment, it has been assumed that treatment and purification devices will be installed before water outlets discharging water into the environment (soil, drainage ditches, the Cybina River, the Plewianka ditch, the Junikowski Creek), as well as if justifies, at places where water is discharged into the municipal sewerage system.

Both the construction as well as operation of the analysed upgraded Poznań Railway Junction pose a threat of changing the environmental conditions in the Warta River basin as well as a threat that surface and underground waters may be polluted.

There are four types of deterioration in the quality of surface waters resulting from the upgrade and then operation of the concerned investment project:

- pollution related to the earthworks and the construction technology;
- permanent pollution related to the wear and tear of railway vehicles and the necessity to perform periodical works aimed at maintaining the usability of the rail road;
- pollution caused by accidents (railway accidents at cargo routes), which will depend on the type and size of the hazardous cargo transported as well as its degree of liquidity – spillage running off the track.

Threat to underground waters may result from any of the following events or situations:

- disruptions of the conditions of the existing flow of the underground waters at places such as embankments or places where deep drainage is applied (excavations) during the construction stage.
- pollution of underground waters by surface waters polluted soaking through.

Particular threat to surface and underground waters (i.e. soaking through the soil) is posed by the operation of rail track facilities, stations and stops and involves various oil derived substances (e.g. lubricants, oils, mainly including components such as: benzene, toluene and xylene), washed off the surface by precipitation. Even small loads of pollution can over time cumulate and become excessive, particularly at shallow underground and surface water circulation systems.

Particular care must be taken at the time of any excavations, as it involves removal of the soil layer, which acts as natural and protective complex for ground waters. Removal of surface formations, such as soil causes shortening of the route that pollutants need to travel to get to ground waters.

At the stage a serious threat of contamination of surface waters, soils ands in consequence the undergrounds waters, is posed by fuels and other liquid toxic media used in machinery and vehicles, as well as bitumen masses. When determining the extent of areas used as periodical material and equipment depots for the purpose of the concerned investment project, it is absolutely essential to rule out places where there are ground waters located in well permeable formations in the vicinity of waterways and melioration systems. Any places designated for storage of substances prone to water migration should be periodically (i.e. for the duration of the construction works) covered by insulation materials. The same conditions apply to vehicle and

machinery service station located within such depots. A depot organised for construction purposes with working and efficient water and sewer management devices. During the construction phase particular care must be taken to prevent spillage of any pollutants into the ground – provided that excavations are being made in highly permeable formations, as the lack of soil layer may result in low resistance of sandy ground to permeating of pollutants into the underground water.

4. The upgraded railway line runs in the vicinity of many company operated and municipal underground water intakes. Most of the intakes located in the area of the modernised railway line include underground water intakes. Their depth oscillates between 88 and 269 m. The covering of water bearing layer on these intakes is made up by Quaternary clays and a complex of Tertiary loams with good insulation properties. Bearing this in mind, the effect of the upgraded railway line on the quality of Tertiary water intakes can be regarded as ignorable.

In the area of Swarzędz as well as in the area of Junikowo, along the upgraded railway line there are some Quaternary formation water intakes, including the one at the Furniture Manufacturing Plant in Swarzędz. The technical solution used on the upgraded railway line in the area of Swarzędz, including storm water collection and treatment devoices, the natural ground and water conditions as well as the distance of the intake from the track (approximately 200 m) will ensure sufficient quality of water taken in.

In the area of Junikowo water intakes are filtrated in the sandy sediments located at the level of ground water. The water bearing level in this area has no insulation whatsoever or is insulated by a layer of dusts or dusty sands, which makes it hardly resistant to any pollutants related to the human activity. Therefore bearing this in mind, in this region, similarly as at the other sections of the upgraded E20 railway route, it has been designed to install systems collecting storm and thawing waters treated in oil derived separators and sediment tanks, so as to allow discharge of the water into surface waters. The collection of storm and thawing waters and the subsequent discharge thereof into the environment will not pose any threat whatsoever to the quality of the underground waters taken in through the nearby intakes.

3. Water and Sewerage Management

modernisation

At the moment the section of the E 20 railway line to be upgraded includes storm water sewerage systems (station areas), sanitary sewerage systems as well as open drainage ditches. At many places there are no track drainage facilities. The existing drainage facilities are in most

cases in a very poor technical condition. The collected storm and drained water is discharged into ditches and absorption wells and partially into the municipal sewerage system.

As it was mentioned before the analysed upgrade of the railway line is located in the area of the Warta River basin, as well as the receptions basic on the Głowna, Cybina, Bogdanka rivers and Junikowski Creek.

The concerned investment project will be carried out outside of the flooding areas of the rivers as well as outside of the areas covered by orientation range of the depression craters of underground water intakes.

Additionally the railway route belonging to the E-20 line is partially located on areas covered by a drainage system or in the vicinity of the system.

The water delivered to the railway facilities located within the upgraded areas runs through railway pipeline systems. Stations and passenger stops are equipped with sanitary sewerage systems collecting municipal sewer from individual facilities and discharging it to the municipal sewerage system located in the area. The upgrade and reconstruction of the railway facilities located on the upgraded section of the E-20 railway line will not include the sanitary sewerage.

Following completion of the upgrade, the system and sources of water intake will remain unchanged.

In the case of the envisaged upgrade and reconstruction of the Poznań Railway Junction sewer management will be limited to proper organisation of drainage of the track, trackbed, station and passenger facilities as well as protecting of the environment in emergency situations.

Strom water running off the Poznań Railway Junction will be collected by a system of drainages, collecting devices and collectors, side drainage ditches and storm water sewer. The collect ors will be equipped with sewer wells. This drainage system is used with respect to this type of facilities in Poland and all over the world. The collected storm water will be discharged into the watercourses, drainage ditches or municipal storm water sewers, depending on the local conditions. Such an organisation of drainage system will result in partial soaking of the drained water into the ground (i.e. along the drainage ditches), While the reminded thereof will be discharged into surface waters or municipal storm water sewers.

Prior to discharging of the water derived from the Poznań Railway Junction into any surface water, it must be purified to the extent specified in the Ordinance of the Minister of Environment dated 8th July 2004 on conditions to be complied with, when discharging sewerage into water or ground, as well as substances particularly harmful to the environment (Journal of laws No. 168, item 1763).

Storm water collected from the upgraded Poznań Railway Junction will be purified by the application of such purification equipment as: coalescent separator and mineral suspension sediments. All drainage and initial purification equipment must be periodically cleaned, maintained and cleared of any possible blockages.

Solutions to be applied:

1. Swarzędz station with the entry bend at 290.200 – 292.950.

Bearing in mind the hydro geological and hydrological conditions, it has been designed to install in depth drainage along the entire length of the reconstructed the trackbed. The drainages collecting the drained water will be connected into a system of collecting devices and will discharge the water into open ditches or collectors. The collectors will be connected to the municipal storm water sewer running in ul. Kościuszki. Before the inlet into this sewer system a separator of oil derived substances will be installed, preventing oil derived substances carried by storm water from getting into the storm water sewer system. Due to the height conditions, a pumping station will be built that will pump the collected storm water to the municipal storm water sewerage system. The Swarzędz station drainage system will collect storm water collected by drainage from the internal underground passage and the extension of the underground passage outside of the track and parts of ul. Łąkowa and Konoipnickiej. Additionally drainages of the platforms, shelters and the walkway to the platform will be built.

2. Swarzędz – Poznań Antoninek route at km 292.950 – 293.680.

This section will include drainage of the trackbed by drain and drainage collectors. Drained waters will be drained from the track to the collector, which will also be used to drain the drained water from the branch off post with passenger stop of Poznań Antoninek.

3. Branch off post with passenger stop of Poznań Antoninek at km 293.680 – 295.220.

Platform No. 1 will be drained into the drainage collector. The entire platform 2 will slope towards the concrete gutter located away from the platform. Water from the outlets will be drained into the drainage collector. On parts of platforms 1 and 2 new platform shelters are expected to be constructed, also including shelters at the bust stop near platform 1, from which storm water will be drained into the storm water sewer.

Due to the replacement of the trackbed, drainage will be constructed to drain the storm water. The drained water will be discharged to the Cybina River and the municipal sewer in ul. Miłowita.

Drained, storm and thawing water (from drainage of the platforms and platform shelters) will be collected by cumulative collectors. The collectors will discharge drained, storm and

thawing waters into two separate reception tanks: i.e. the Cybina River and the municipal sewer system in ul. Miłowita.

The reception tanks will be secured by construction of oil derived substances separators and a sand sediment tank (it is necessary as the Cybina River and the municipal storm water sewer system are discharged into Szklarka Creek).

4. Poznań Antoninek – Poznań Wschód route at km 295.220 – 297.690.

The trackbed will be drained by side ditches strengthened by concrete gutters. To perform in depth drainage of the trackbed a drain will be installed. The drained water as well as water from open ditches is expected to be discharged into the municipal sewer system in ul. Miłowita.

To prevent any mineral suspensions from getting into the sewer system, sand sediment tank will be constructed.

5. Poznań Wschód station at km 297.690 – 300.280.

It is expected that shelters will be constructed on the platforms, from which storm and thawing waters will be collected by discharge pipes and drained into the storm water sewer. Away from the shelters located on platforms 2 and 3, storm and thawing water from the platforms will be discharged into the storm water sewer system running on the platform. A drainage system runs a long the tracks running in the direction of Swarzędz as well as the tracks running towards Gniezno – i.e. in the direction of ul. Krańcowej. Water drained from this section will be discharged into the municipal storm water sewer located in ul. Krańcowa.

To lower the level of ground waters and to prevent the trackbed from soaking up of the storm water, it is envisaged that drainage of the station plane will be built, which will include a sewer system comprising of drainage devices, drainage collectors, collecting devices and collectors. The drainage system will be installed in the inter-track space of the track system. Water will be discharged from the drainage devices into the collecting devices. Storm and thawing water drained from the areas operated by PKP will be purified prior to being discharged into reception tanks, with the task of purification to be performed by separators and sand sediment tanks.

6. Poznań Wschód – Poznań Garbary route at km 300.280 – 301.370.

As it is impossible to construct side ditches at this section, an in depth drainage is envisaged to be installed. The in depth drainage will be effected by drainage devices and drainage collectors. The drained water will be discharged into the municipal sewer system and absorption wells.

7. Siding post with passenger stop of Poznań Garbary at km 301.370 – 301.900.

Due to the replacement of the trackbed, drainage will be constructed to drain the storm

water. The drainages will be connoted to the sewer wells constructed as fixtures of the collectors. Water drained from the trackbed as well as storm and thawing water drained from the platforms and platform shelters will be discharged into collectors running inside the platforms and connected to the existing sewer wells forming a part of the municipal storm water sewer located in ul. Armii Poznań.

8. Poznań Garbary – Poznań Główny route (km 301.900 – 303.267).

Drained water will be discharged via collector to the municipal collector located in ul. Armii Poznań.

9. Poznań Główny station at km 303.267 – 306.000.

The Poznań Gł. station is partially equipped with track system drainage – i.e. via the existing underground drainage devices. The drainage devices are in a very poor technical condition. Therefore it has been designed that storm and thawing water from the area of the upgraded railway junction of the Poznań Station will be collected and drained by an in depth drainage system. Storm, thawing and drains water from the upgraded trackbed water will flow via collectors into reservoir, and from the reservoir it will be discharged into the reception device – i.e. collector of the general sewerage system and the existing storm water collector.

10. Poznań Główny – Poznań Górczyn route at km 306.000 – 308.650.

No drainage works are expected to be performed.

11. Poznań Górczyn station at km 308.650 – 312.400.

Due to the replacement of the trackbed, drainage will be constructed to drain the storm water. Drained water will be collected and discharged by collecting devices to be installed. The transverse collecting device will be connected to a well, which is envisaged to be constructed on the collecting device at track no. 1, while the farther collecting device will be connected to the existing municipal well located on the drainage device.

12. Poznań Górczyn – Palędzie route with passenger stop of Poznań Junikowo at km 312.400 – 313.200.

Storm and thawing water will be drained into collectors envisaged to be constructed in the platforms. The platform ramps will be drained in the same manner as the platforms. In the area to be covered by the reconstruction there are open ditches located near track no. 1 and partially track no. 2. In the area of the crossing band type sewer system in the shape of drainage is installed. This sewer system is connected to the absorption wells. In ul. Grunwaldzka, at the level of the bus

terminus, the municipal storm water sewer begins its run. Due top the construction of the platforms on the existing open ditches, to drain water from the trackbed it will be necessary to construct in depth drainage system along the entire length of the platforms. Drained water as well as storm and thawing water will be discharged into collectors to be constructed and connected into the two existing open ditches.

4. Protection against Noise Pollution

Areas containing residential housing developments located in the vicinity of the upgraded section of the E-20 railway line can be found on the southern side of the Swarzędz station (single family housing developments in ul. Poniatowskiego, Łąkowa, Konopnickiej, Żymierskiego and Cegielskiego and Raczyńskiego residential hoisting estates) as well as on the northern side of the station (single family housing developments at ul. Kościuszki, Sienkiewicza, Dworcowa). Other residential areas can be found on the northern side at they level of Poznań Antoninek station, past ul. Warszawska (single family housing developments) and on the southern side (single family housing developments in the area of ul. Gorzysława). The section from Poznań Antoninek station to Poznań Wschód station includes green land areas and business activation areas located in close neighbourhood of the railway line. These areas require no protection against noise pollution. Other areas including residential housing development can be found at the place of intersection of the line with ul. Zawady (multi family housing developments on the southern and northern sides). Also a hospital is located on the northern side (in ul. Zawady). Further on, right to the station of Poznań Garbary, the areas adjacent to the railway line require no protection against noise pollution. Staring at the station of Poznań Garbary (on the eastern side of the station) there are areas including residential housing developments belonging to the centre of the (Al. Niepodległości, Nowowiejskiego, Libelta) as well as the following streets on the western side of the line (ul. Puławskiego, Al. Wielkopolska). At the level of the station of Poznań Główny residential areas can be found on the western side, between ul. Głogowska and PKP's area, right to ul. Hetmańska. Other areas requiring protection against noise pollution are located on the turnout bend of the E – 20 railway line in the direction of the Poznań Górczyn station (north and south of the railway line). The section from Poznań Górczyn station to the passenger stop of Poznań Junikowo includes single family housing developments that require protection against noise pollution (north and south of the railway line). Some of these areas are located near busy main arterial roads of the city, which are the main determinants of the acoustic conditions in this area.

Speeds to be reached by passenger trains on the upgraded section of the railway line are as follows:

- entry to the station of Swarzędz - 160 km/h
- station of Swarzędz – 140 km/h
- Swarzędz - Poznań Wschód route – 120 km/h
- station of Poznań Wschód – 100 km/h
- access route to the station of Poznań Główny – 90 km/h,
- station of Poznań Główny – 90, 60 i 80 km/h
- from the station of Poznań Główny to km 310.600 at the station of Poznań Górczyn – 80 km/h
- from km 310.600 at the station of Poznań Górczyn – Palędzie – 160 km/h

To determine the acoustic impact of the upgraded railway line, the following benchmark values were assumed 60 dB(A) for the 16 hours of daytime (6.00 AM – 10.00 PM) and 50 dB(A) for the 8 hours of nigh time (10.00 PM - 6.00 AM) for most of the areas requiring protection against traffic noise, as well as 65 dB(A) for the 16 hours of daytime (6.00 AM – 10.00 PM) and 55 dB(A) for the 8 hours of nigh time (10.00 PM - 6.00 AM) – for the areas included in the central part of the city. Based on these values the ranges of noise pollution during daytime and night time were calculated.

In the existing conditions the estimated ranges of noise generated by the upgraded section of the railway line will be as follows:

- section to the station of Swarzędz

  ~ 80 m during the day

  ~ 450 m at night

- section from the station of Swarzędz to the station of Poznań Wschód

  ~ 65 m during the day

  ~ 400 m at night

- section from the station of Poznań Wschód to the station of Poznań Garbary

  ~ 20 m during the day

  ~ 100 m at night

- section from the station of Poznań Garbary to the station of Poznań Głowny

  ~ 10 m during the day

  ~ 60 m at night

- section from the station of Poznań Główny to the station of Poznań Górczyn

  ~ 40 m during the day

~ 220 m at night

- section from the station of Poznań Górczyn to the station of Poznań Junikowo

~ 80 m during the day

~ 420 m at night

These estimated ranges were checked by acoustic measurements performed at selected measurement points on the borderline of the existing residential housing developments. The results of the measurements show that the applied calculation method is convergent with the measurement results.

Based on this analysis of the residential areas potentially exposed to excessive noise generated by the upgraded section of the E-20 railway line involving the Poznań Railway Junction were identified. In the case of areas, where the concerned railway line runs in the area of busy city streets, which are the main determinants of the acoustic conditions in the area of residential housing developments, it is suggested that the idea of building baffle boards be given up, as they are unlikely to bring about any significant improvement in the acoustic conditions. However we have indicated places, where it would be advisable to build baffle boards, as there are no other significant sources of noise pollution in the area. Detailed construction solutions regarding the baffle boards will be developed after suitable arrangements with the local administrative authorities have been made.

A specification of baffler boards' location is presented in the table below.

Facility number	**Facility**	Baffle board (km, length)
1A	Station of Swarzędz with entry bend	291.100 – 291.500 PN (400 m) 291.100 – 292.300 PD (1200 m)
10A	Poznań Główny – Poznań Górczyn route	307.800 – 307.975 PD (175 m)
11A	Station of Poznań Górczyn	310.670 – 311.100 PN (430 m) 311.938 – 312.430 PN (492 m) 311.700 – 311.991 PD (291 m)

5. Air Protection

Implementation of the investment project involving upgrade of the E-20 railway line's track at the section of the Poznań railway junction does not involve emission of any pollution into the atmosphere from fixed sources. The insignificant power sources appearing in traffic control facilities operating on the upgraded railway line, which will be either removed or upgraded, will have no significant bearing on the emission of pollutants into the air.

Railway transport in based on electrical traction, and therefore it does not constitute a direct threat to the quality of the air, as the major part of air pollution is caused by exhaust fumes. Railway transport is merely a source of insignificant dust emissions caused by the friction of the wheel rims on moving on the tracks, it may also cause negligibly small emission of ozone, generated during electrical discharges that occur at the contact point between the power line and the pantograph.

6. Protection of the environmental values and the cultural landscape

Adaptation of the E – 20 railway line to the new technical conditions resulting from the increase speeds and smoothness of the train traffic, will only involve upgrade of the existing railway line, without changing of the route.

In this situation upgrade of the Warsaw – Berlin railway line will not influence the environmental values.

Swarzędz

In Swarzędz, in the vicinity of the upgraded railway line the following green areas are located:

-) parklands surrounding the open air apiarian museum,

-) parkland s between the railway line and the Cegielskiego and Raczyńskiego housing estates,

-) gardens located in the in the fork of the E-20 line and the Swarzędz – Franowo railway siding,

-) forest areas between the above mentioned gardens and the administrative limits of the town of Swarzędz.

Poznań

Between the city limits of Poznań and the connection place with the Poznań – Gniezno railway line, the E – 20 line runs through areas of so called "landscape co-creating the green wedge" (as stated in the "Study on conditions and spatial development directions for the city of

Poznań). A vast part of this area is taken up by communal forests the belonging to the city of Poznań, as well as gardens located between the concerned railway line and the Poznań – Gniezno railway line.

In the valley of Cybina and Warta rivers the E – 20 railway line runs above grasslands and in the vicinity of a seminary.

Near the city centre area of the concerned railway line, between the Poznań Garbary stop and the Poznań – Szczecin railway line, there are some single items of steppe vegetation not covered by any legal forms of environmental protection.

Directly before the "passage" under Moste Teatralny *(Theatrical Bridge)* the E – 20 railway line borders with the Wieniawski Park.

In the area of Dębiec – Świerczewo, near the railway line there are some gardens and a saml area of grasslands.

Greater areas of grasslands can be found in the area of Junikowski Creek Valley as well as directly before the passenger stop of Poznań Junikowo.

On this route there are trees and shrubs growing on scarps and at the foot of railway embankments, which may collide with the planned works. Region 1 is located in the gmina of Swarzędz, while the remaining regions are located within the city limits of Poznań.

Along the concerned section, the most common neighbourhood of the railway line is made up by developed arise. Only at the Poznań – Antoninek – Poznań Wschód route the line runs through communal forests owned by the city of Poznań. Also in the area of the bridge on the Warta river there are some grasslands. At these places certain animals might appear (e.g. roes, hares, foxes). There re no particularly protected species in this area. The analysed section of the railway line is already operative. Therefore animals' migration routes have already been formed. Hence there is no need to build any new passages for the animals.

The Poznań Railway Junction runs in the vicinity of the PLH 300005 area – i.e. Fortifications in Poznań. In the case of "Natura 2000" areas PLH means special habitat protection areas. IXa Fort is located in close neighbourhood of the line.

The area, where the investment project is to be carried out, i.e. upgrade of the E-20 railway line along the section of the Poznań Railway Junction is fully transformed and covered with railway infrastructure. Pursuant to the upgrade assumptions implementation of this investment project will require taking over of new areas for location of railway infrastructure. However these areas will not include any land covered by any sort of environmental protection or otherwise any green areas. Apart from that there will be areas of land directly neighbouring with the railway areas.

The are in the neighbourhood of the planned upgrade is not covered by any form of environmental protection provided for in the act on protection of the natural environment.

6A. Cultural Landscape. Historic Monuments

Swarzędz

In Swarzędz, in close neighbourhood of the E-20 railway line the following protected cultural assets and facilities are located:

-) railway station,

-) palace and grange complex in the area of the open air apiarian museum,

-) single buildings in ul. Kórnicka, Kościuszki, Dworcowa and Nowowiejska.

The area subject to restorer's protection is located approximately 1 km north from the PKP Station of Swarzędz.

Poznań

Areas protected as cultural landscape

In the area of the E-20 line's Poznań Railway Junction, within the administrative city limits of Poznań, there are several types of areas subject to protection as national cultural heritage.

These include:

a) between the Cybina River and the end of the PKP Stations of na Poznań Garbary the railway line runs through are of strict restorer's protection, which extends further on to Most Dworcowy *(Railway Station Bridge),* thus bordering on with railway areas, without overlapping with them. This area includes Citadel, which is fragment of the so called "City's historical identity area";
b) the boundaries subject to restorer's protection in the area of the concerned railway line overlap with the areas of strict restorer's protection;
c) the area of the former village of Główna, which is subject to restorer's protection borders with the E-20 railway line in the area of the viaduct over ul. Zawady. This area is located only on the southern side of the railway line.

Another historic facility located within the same railway line is the viaduct over ul. Cicha, while the viaducts between Al. Niepodległości and ul. Libelta are subject to restorer's protection.

Apart from the areas subject to restorer's protection the most significant facility located in the area of the railway line is the Main Railway Station building (station of Poznań Główny).

The closest archaeological posts referred to in the "Study on conditions and spatial development directions for the city of Poznań" are located within the following distances:

- 70 m – in the area of ul. Górecka/Krauthofera,
- 100 m – in the area of the viaduct over ul. Zawady and in the area of the seminary in Ostrów Tumski,
- 200 m – in the area of the ice skating rink of Bogdanka.

The envisaged upgrade of the railway line is unlikely to have any influence whatsoever on any of the above described areas or facilities.

7. Waste Management

During the construction phase the most dominant types of waste will included that generated by the following construction works: earthworks building and construction works, installation works.

This waste will include:

- concrete waste and rubble produced as a result of demolition of railway passages and crossings,
- mixture of rubble and materials produced as a result of demolition or renovation of various engineering facilities
- contaminated soil obtained as a result of sieving of broken stone used to build the structural layer of the trackbed
- broken stone contaminated by dangerous substances
- technically used up wooden cross-ties
- iron and steel obtained as a result of replacement of traction network poles, turnouts and railway tracks
- electrical cables
- general sewer generated at the construction site
- brick rubble
- other ceramic waste
- waste generated as a result of reconstruction of internal roads
- wood
- glass
- wood impregnated with various preservation media

- waste roofing paper
- iron and steel
- cables from disassembled installations
- lead batteries
- Ni-MH batteries
- excavation soil
- insulation materials
- mixture of rubble and demolition materials
- insulation materials made of foamed plastics
- waste wooden cross-ties
- materials containing asbestos

At this stage of preparation for implementation of the convened investment project, it is impossible to estimate the quantity of waste that will be generated during the construction phase.

All waste generated during the course of upgrading of the railway line will removed form the site and provide to recyclers for further use or directly to a dumping site.

During the operation of the upgraded railway line, the only waste that will be generated will include that resulting from ongoing maintenance and repairs of station equipment and traction devices as well as general waste generated by the railway employees operating the facilities and the travellers. This waste will be gathered as especially designated places and utilised in accordance with relevant permits held.

Hazardous waste will be transported by vehicles operated by waste removal companies, in accordance with relevant regulations on transport of hazardous waste – as set out in the traffic regulations.

8. Protection against Radiation

All electrical operating electrical devices generate electrical field, however devices with voltage up to 110 kV generate negligibly small electrical fields with very small rages.

It is envisaged that a new traction substation will be built. As apart of the upgrade it is also envisaged that new building facilities will be constructed to house power engineering devices, including upgrade of the existing traction network and construction of 15 kV cable non traction reception network.

The electrical installations to be built and upgraded are unlikely to generate any

significant electromagnetic non ionising fields with intensity sufficient to pose a threat to the natural environment, and hence there is no necessity to designate any restricted use zones.

9. Serious Emergencies

Contamination of the natural environment of magnitude large enough to qualify it as a serious emergency, can happen as a result of any of the following:

- one off, large and uncontrolled dumping of substances dangerous for the environment, which might take place as a result of a railway accident. One or more components of the environment might become contaminated as a result leakage from a railway cistern or carriage transporting hazardous substances.

In cases of serious emergencies, rescuing activities will include neutralisation and removal of the source of threat, so as to minimise the losses that might be caused by the emergency. Any rescue activities will be aimed at limitation of the scale and extent of the threat. Any such rescue activities will be conducted by specialised units of eh Fire Department and other rescue services (medical services, the police force, and other – appointed by the rescue action staff)

Application of technologies, which for instance will allow predicting such possibilities as directing of a vast part of a hazardous spillage into a drainage ditch (e.g. in case of uncontrolled leakages at particularly troublesome areas that are subject to special protection), will help to limit the spreading of the pollutant as well as facilitate prompt and complete removal thereof.

10. Environmental Monitoring

The duty to perform periodical measurements of substance levels in the environment as well as levels of energy generated as a result of operation of railway lines is provided under article 175 of the act of Environmental Protection Law. Environmental monitoring should be carried out in accordance with the ordinance of the Minster of Environment dated 23rd January 2003 on requirements pertaining to measurement of substance levels or energy in the environment, performed by entities managing roads, railway lines, tramway lines, airports or ports (Journal of Laws No. 35, item 308) applicable as of 1st January 2004.

Monitoring measurements must be performed every 5 years during the period of general traffic measurement. The above mentioned ordinance sets out details on how to conduct

periodical measurements of noise pollution in the environment as well as measurements of general suspension and oil derived substances in thawing and storm waters.

11. Social Conflicts

Generally no social conflicts are expected to arise out of the planned upgrade. The E-20 railway line does already exist and operate along the analysed section, causing inconveniencies for residential areas located within the range pf noise pollution generated by the passing trains. The envisaged upgrade of the railway line will increase the degree of traffic safety as well as allow trains to travel with much higher speeds (i.e. up to 160 km/h). The increase in train speeds is likely to cause an increase in the level of noise. However application of contact-less rails and polished rails may decrease the level of noise pollution, which ultimately might result in lowering of the level of noise pollution. Also in the case of areas where the acoustic effects of the railway line's operation are of particular significance, baffle board will be installed to prevent the spreading of noise pollution towards residential areas.

12. Restricted Use Zones

Pursuant to article 135 clause 1 of the act on *Environmental Protection Law* restricted use zones are established, if despite the application of best available technical, technological and organisational solutions, environmental quality standards could not have been kept.

The range of noise pollution calculated based on traffic forecasts for 2020 shows a strip of land located on the both sides of the railway tracks, where the maximum noise level are exceeded within distances of 60 to approximately 450 m. In the affected residential areas baffle boards will be installed, as the railway line is the decisive noise generating factor there. At places where the acoustic conditions are shaped by other factors – e.g. road traffic, installation of baffle boards is unlikely to cause any noticeable reduction in the level of noise pollution. Therefore there is no justification to establish any restricted use zones.

Certified translation from the Polish language

Document executed on 8 pages stapled together.

Pages 1, 3, 5, 6 and 8 bear the oblong stamp at the top of the page:

FOR CONFORMITY WITH THE ORIGINAL	**PRESIDENT OF BOARD** **Mieczysław Szymański** *(-) illegible signature*

Pages 1 – 5 bear footnote with the address, telephone and fax numbers, website and e-mail address of Wielkopolskie Voivodeship Office.

Pages 6 and 8 bear the oblong stamp at the bottom:
Attachment to the decision
dated 7th July 2006
No. SR.II. – 3.66191-10/05

Poznań, 7th July 2006

VOIVODE OF WIELKOPOLSKIE VOIVODESHIP

SR.II-3.66191-10/05

Receipt to be acknowledged

DECISION
on environmental conditions of the consent for execution of the undertaking

Pursuant to art. 46 item 1, point 1 and art. 46a item 7, point 1, letter a, and art. 56 of the act dated 27th April 2001 – The law on environmental protection (Journal of Laws of 2001 no. 62, item 627 with amendments) and art. 104 and 108 item 1 of the act dated 14th June 1960 – The code of administrative proceedings (consolidated text Journal of Laws of 2000, no. 98, item 1071 with amendments), upon consideration of the application of:

Mr Wojciech Błasiński
Biuro Projektów Komunikacyjnych in Poznań
(Transportation Design Office)
61-891 Poznań, ul. Kościuszki 68

acting under the authority of:
PKP Polskie Linie Kolejowe S.A. in Warsaw
(PKP Polish Railway Lines joint stock company)

based on the report on environmental impact of the undertaking, executed in November 2005 by mgr *(Master)* Jerzy Próchniewicz, an appendix to the report of April 2006, and explanations submitted by Wojciech Błasiński of Biuro Projektów Komunikacyjnych in Poznań in the letters dated 24th February 2006, 27th March 2006, 25th April 2006 and 4th July 2006,

I set forth the environmental conditions of the consent for execution of the undertaking consisting of modernization of Poznań Railway Junction (E-20 railway line) on the section between Swarzędz station (km 290 200) and the intersection with Grunwaldzka street (km 313 200)

I. Type and place of undertaking

The planned undertaking is related to modernization of Poznań Railway Junction which is a part of the E-20 carriage line Warsaw – Kunowice. The modernized section is 23 km long and runs between Swarzędz station (km 290.200) and the intersection with Grunwaldzka street (km 313.200), past the following stations and railway posts: Swarzędz, Poznań Antoninek, Poznań Wschód, Poznań Garbary, Poznań Główny, Poznań Górczyn, Poznań Junikowo. The section of the junction partly crosses the built-up areas of Poznań city. Only Swarzędz station is located within the area of Swarzędz commune.
The objective of the undertaking is to bring the junction into line with standards required for a line of European importance. It shall among others enable trains to pass this section with velocity of 60, up to 160 km/h, will increase line capacity and enhance safety of railway traffic.
The investment comprises:

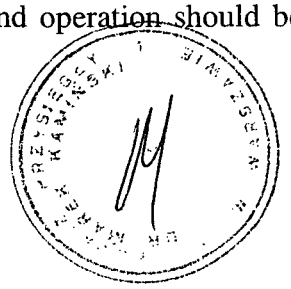
- modernization of the track system including dewatering,
- modernization of railway control system and securing traffic,
- reconstruction of the power generating system and contact system,
- elimination of all cable collisions of the energy, telecommunication network and of the railway control system,
- modernization and construction of new dewatering culverts under the track system,
- reconstruction or elimination of road passages,
- construction of new platforms.

II. Conditions for using the area in the execution and operation phases

In the course of modernization and operation of Poznań Railway Junction, the regulations on environment protection currently in effect and conditions specified in the environmental impact report, included in the application for issuing the decision on environmental conditions and in regulations of the relevant authorities, should be taken into account.

In particular one should:

- organize the construction site and its back-up facilities taking into account the principle of minimum area occupation and surface transformation, and upon completion of works, carry out recultivation,
- when marking out the area for a provisional materials and equipment base, avoid locating it in places of ground water occurrence in permeable formations (sand and gravel formations) and in proximity of watercourses and land improvement systems,
- secure soil-water environment from permeation of polluted precipitation runoffs, sanitary sewage and technological sewage off the construction site,
- construction works in proximity of areas protected against noise may be conducted during the day only (between 6 a.m. and 10 p.m.),
- waste generated during undertaking execution and operation should be registered and recycled if possible,



of modernizing Poznań Railway Junction (the E-20 railway line) on the section between Swarzędz station (km 290.200) and the intersection with Grunwaldzka street. The report on environmental impact of the undertaking and index maps, certified by relevant authorities, had been attached to the application. On account of lack of a local physical development plan in effect of the area where the investment is to be executed, no extract and outline from such a document has been presented.

In the course of proceedings, the Applicant has been obliged to present explanations to the report on environmental impact of the said undertaking. With respect to these letters dated 24th February 2006, 27th March 2006, 25th April 2006 and 4th July 2006 he has presented additional information on air protection, protection against noise, water and sewage management and on impact of the undertaking on areas Natura 2000.

The planned modernization of Poznań Railway Junction belongs to undertaking specified in § 2, item 1, point 27 of the Council of Ministers ordinance dated 9th November 2004 on determining undertaking types, which may significantly influence on environment, and detailed conditions related to qualification of undertakings for executing the environmental impact report (Journal of Laws of 2004 no. 257, item 2573 with amendments), for which it is obligatory to execute the environmental impact report. Pursuant to art. 46a item 7, point 1, letter a of the act – Environmental protection law, the appropriate authority to issue the decision on environmental conditions is a voivode.

Pursuant to art. 49 of the act – The code of administrative proceedings, and to art. 46a item 5 of the act – Environmental protection law, the parties have been notified of instituting of proceedings by a public notice.

Pursuant to art. 32 item 1, point 1 and art. 53 of the act dated 27th April 2001 – Environmental protection law, in order to provide possibility for the society to take part in the proceedings, between 21st February 2006 and 13th March 2006, information about listing, in a publicly accessible register, data on the application for issuing the decision on environmental conditions of the consent for execution of the said undertaking, was placed on a notice board and the website of the Wielkopolskie Provincial Office in Poznań and the notice board of the Poznań City Office, and the Swarzędz City and Commune Office. In the indicated period of 21 days of presenting the above information, the authority in charge of the proceedings have not received any comments nor applications.

Pursuant to art. 48 item 2, point 2 of the act – Environmental protection law, the Voivode of Wielkopolskie Voivodeship filed an application to the Minister of Environment and the State Provincial Sanitary Inspectorate in Poznań for agreeing upon the undertaking.

With the decision DOOŚ-6584/2006/kt dated 24th May 2006, the Minister of Environment agreed upon the undertaking and set forth conditions which have to be satisfied during execution phase of the investment:

- providing construction site and its back-up facilities with minimum area occupation and surface transformation, and upon completion of works, carrying out recultivation,
- protecting soil-water environment against permeation of polluted precipitation flows, sanitary sewage and technological sewage from the construction site,
- conducting construction works in the proximity of areas subject to protection against noise during the day only (between 6.00 a.m. and 10.00 p.m.)

and requirements necessary to include in the construction design:

- application of acoustic protective measures which ensure environment quality standards are satisfied on areas subject to protection against noise,
- application of measures for satisfaction of soil-water environment quality standards.

Furthermore he emphasized it is necessary to perform a post-completion analysis on protection against noise.

Also the State Provincial Sanitary Inspectorate in Poznań, with its decision NS-050-1-276/06 dated 25th April 2006, agreed the undertaking, indicating it is necessary to employ acoustic screens along residential area in order to limit the level of emitted noise and to ensure maximum surface and underground water protection during the phase of design solutions.
It follows from the presented documents, that the applicant considered only two options of the undertaking – option "zero", consisting of no investment execution, and option consisting of modernisation of Poznań Railway Junction on the section between Swarzędz and the intersection with Grunwaldzka street, using the existing track. Not executing the investment will preserve poor technical condition of this section line, and in this respect lower junction capacity, velocity limit for passing trains and worse traffic flow, and also higher noise emission, improper precipitation water drainage from the area of railway subgrade and station. On the other hand, executing the investment will result in better line functionality, increased safety and comfort of travelling, and upon satisfying conditions specified in the environmental impact report and this decision, it will also contribute to diminish negative environmental influence of the undertaking. Solutions specified in the report, consisting of building acoustic screens and application of contactless rails, polished and laid on sleepers of prepressed concrete, suitable for installing rails on sleepers, will lead to reduction of noise emission into environment. Executing the investment will also regulate water supply and sewage disposal and should provide better soil-water environment protection against risk related to serious emergencies on account of the planned application of modern railway control equipment which guarantee traffic safety.
In order to ensure that investment execution and operation will not violate requirements of environment protection, contained in law regulations, the decision imposed on the Applicant the obligation to properly organize the construction site and conduct construction works and to include in the construction design solutions which would ensure satisfaction of soil-water environment quality standards and quality standards with respect to protection against noise.
In order to assess effectiveness of the introduced solutions, the obligation was imposed to carry out a post-completion analysis. The results of the analysis will possibly be used to create an area of limited use around the said E-20 railway section.
Based on the presented documents, it was established that neither the existing line nor its modernisation does not significantly affect condition and functions of the Natura 2000 area "Fortyfikacje w Poznaniu" *("Fortifications in Poznań")* PLH300005. It will also not affect the facilities subject to restoration protection and archaeological sites.
Taking into account the above it was decided as in the sentence.
The application filed by the Applicant on 27th June 2006 was taken into consideration and bearing in mind important interests of the party, the decision was appended an order of immediate enforceability.

Pursuant to art. 46 item 4, letter b of the act – Environmental protection law, this decision is valid for **two years of the day when it becomes final**. Pursuant to art. 46 item 4, letter c of the aforementioned act, the above deadline may be extended by two years, if the investment is carried out in phases and conditions set forth in the decision do not change.

Pursuant to art. 76 item 4 of the act Environmental protection law, the investor is obliged to inform the provincial environment protection inspector on the planned deadline of handing over the facility for usage, 30 days before the actual deadline of handing over the facility for usage.

Instructions

Parties may appeal against this decision to the Minister of Environment through the Voivode of Wielkopolskie Voivodeship within 14 days of delivering it.

Round stamp with the national emblem of the Republic of Poland in the centre and the following circumscription: **VOIVODE OF WIELKOPOLSKIE VOIVODESHIP * 5 *.**

Oblong stamp:
authorised by the Voivode of Wielkopolskie Voivodeship
(illegible)
of the Management of Department
of Environment and Agriculture

(-) illegible signature

Copy to:
1. Mr Wojciech Błasiński
   Biuro Projektów Komunikacyjnych w Poznaniu
   61-891 Poznań, ul. Kościuszki 68

Appendix no. 1

Description of the undertaking

The planned undertaking is related to modernisation of Poznań Railway Junction which is a part of the E-20 carriage line Warszawa – Kunowice. The modernised section is 23 km long and runs between Swarzędz station (km 290.200) and the intersection with Grunwaldzka street (km 313.300) through the following stations and railway posts: Swarzędz, Poznań Antoninek, Poznań Wschód, Poznań Garbary, Poznań Główny, Poznań Górczyn, Poznań Junikowo. The section of the junction partly crosses the built-up areas of Poznań city. Only Swarzędz station is located within the area of Swarzędz commune.
The objective of the undertaking is to bring the junction into line with standards required for a line of European importance. It shall among others enable trains to pass this section with velocity of 60 up to 160 km/h, increase line capacity and enhance safety in railway traffic.
The investment comprises:
- modernization of the track system including dewatering,
- modernization of railway control system and securing traffic,
- reconstruction of the power generating system and contact system,
- elimination of all cable collisions of the energy, telecommunication network and of the railway control system,
- modernization and construction of new dewatering culverts under the track system,
- reconstruction or elimination of road passages,
- construction of new platforms.

Roads cross the railway line at one-level crossings and viaducts on main traffic arteries of the city. Traffic on one-level intersections is controlled with gate arms and light signalling.
Within the scope of line modernisation, it is planned to adjust its functions to changes resulting from, among others, reconstruction of the track geometry system and preparation of underground cable channels for target devices.

Multibranch reconstruction comprises only the section between Swarzędz station and Poznań Główny. On the section between Poznań Główny and p.o. Poznań Janikowo, the scope is minimum, it comprises laying cables, incorporation of a few turnouts, change in location of 2 platforms, construction of a screen.

The existing structure on main principal rails can be sorted into three categories:

- structure from the end of 1987, i.e. section between the beginning of reconstruction – the Swarzędz station entry curve – to the end of platforms at Poznań Wschód station excluding the Poznań Wschód station entry curve. The structure has been used for 16 years;
- structure from between 1995 – 1996 laid without substructure reinforcement on the section between the end of platforms at Poznań Wschód station to the area of Hetmańska street at Poznań Główny station excluding the section where rail substructure is replaced along platforms at Poznań Główny station. The structure has been used for 8 years on wooden sleepers until km 304.7. The line section with rails running in inverted arcs and small radii.
- structure built between 1996 – 1998 between the viaduct over Hetmańska street and km 313.200, i.e. the end of work with building up the substructure reinforcement layer. The structure has been used for 7 years. From Poznań Górczyn station rail go substantially in straight line.

Based on the above parameters of the existing system, structure replacement and substructure reinforcement was accepted, on the line section between km 290.200 and km 306.100 excluding the 1 and 2 rail fragment along platforms at Poznań Główny station. On the further section, between km 306.100 to the end of the reconstruction, that is km 313.200, it is planned to keep the existing rail structure.

Construction of railway structure for main essential track and main additional tracks was accepted based on assumptions for railway lines included in agreements on European standards. The track structure consists of:

- UIC60 type long rails (210 m or 60E1) welded into a contactless rail;
- sleepers of prepressed concrete, type PS-94/SB/1435/UIC60 and PS-83/SB/1435/UIC60 in main additional tracks;
- breakstone ballast minimum 35 cm thick below substructure;
- turnouts type UIC 60-1:18,5-1200, UIC 60-1:12-500, UIC 60-1:9-300 and UIC 60-1:9-190 and arc turnouts, welded type, with elastic fastening Skl-12 or classical;
- switch sleepers of prepressed concrete or hardwood.

In case of station tracks, it is planned to use rails from disassembly in 1 and 2 tracks, consistent with requirements posed by appropriate technical conditions. All documents on railway structure will be certificated for operation by the Office of Rail Transport.

Main structure renovation in Poznań junction, construction of drainage systems, modernisation of track and platform systems will be conducted simultaneously with reconstruction of the top part of track substructure. It is stipulated in environment protection conditions and achievement conditions of safe geotechnical substructure.

In order to reduce noise emission level, it is planned to employ acoustic screens located along the existing residential buildings. Such screens were considered mainly in the area of residential buildings, where the line exerts considerable influence on environment acoustic climate: in other cases they will not provide significant improvement for residents.

Modernisation includes reconstruction of the track system with adjustment train velocity up to 160 km/h. At such velocities, contactless rails are used, polished, laid on sleepers of prepressed concrete. Rails are fastened to sleepers with elastic clamps. Solutions of this type will reduce noise emission from 10 to 15 dB(A).

In the area of the intended modernisation, the drainage system of track facilities, substructures, railway stations, passenger stops, branched-off railway posts etc. will be reconstructed and expanded, which according to "Szczegółowa koncepcja modernizacji Poznańskiego Węzła Kolejowego na trasie E-20" *("Detailed conception of modernisation of Poznań Railway Junction on the E-20 route")* will be carried out so as to protect soil-water environment against excessive pollution.
The facilities specified in art. 6 item 1 of the act dated 16th April 2006 on environment protection do not hamper the planned works. In the area of modernisation there are over 1 100 trees and shrubs which cover the total area of several hundred square meters. With respect to the planned modernisation works it will be necessary to remove part of trees or shrubs.
During modernisation of the E-20 railway line on the section from Poznań junction, waste resulting from conducted construction works (earth work, brickwork and road work, construction works and installation and finishing works) will be generated. Quality and quantity of all waste, which is generated on the construction site and during route operation, should be registered. Waste which may prove risky for environment, until they are exported for recycling or neutralization, have to be selectively collected, in a separated place, in leak proof, closed and labelled containers. Transport of hazardous waste has to take place with waste recipients' vehicles – in accordance with regulations on transport of hazardous materials, and transport of other than hazardous waste – according to regulations on transport and road traffic. Pursuant to regulations in force, the responsibility for proper waste storage on the facility area rests upon the organizing entity that uses the facility. Places designated for all waste storage, intended for recycling or neutralization, have to be provided with special labelling. In order to minimize amount of dumped waste, recyclable waste should be selectively collected.

Oblong stamp:
authorised by the Voivode of Wielkopolskie Voivodeship
(illegible)
of the Management of Department
of Environment and Agriculture

(-) illegible signature

Rep. No. 167/I/2006

I, the undersigned dr. Marek Kamiński, sworn translator of the English language in Warsaw, hereby certify that the above text is a true and complete translation of the original Polish document.

Warsaw, September 29th, 2006

Marek Kamiński