

RECONSTRUCTION OF THE ZHYTOMYR BYPASS

Ukraine

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

Non Technical Summary



Ecoline Environmental Assessment Centre

Moscow 2011



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Prepared for:
The European Bank for Reconstruction and Development (EBRD)
UKRAVTODOR

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Moscow 2011

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LIST OF ABBREVIATIONS

EBRD	European Bank for Reconstruction and Development
EHS	Environmental protection, occupational Health and Safety
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment (according to EBRD requirements)
ESP	Environmental and Social Policy (EBRD's)
OVNS	Ukrainian-style EIA (Otsinka Vplyvu na Navkolyshne Seredovysce)
PR	Performance Requirement
SEP	Stakeholder Engagement Plan

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SHORT SUMMARY

Project Summary

The 22km long Zhytomyr Bypass is part of the international M06 Motorway Kyiv-Chop (section km 129.6 - km 151.73). Its reconstruction includes the upgrade of the highway, widening of the roadway from 1x2 lanes to 2x2 lanes, strengthening of roadsides and improving/constructing of the associated engineering structures and ancillary facilities. As a result of the overhaul, the Bypass will be upgraded from a road of Category II to a road of Category Ia (international highway). The estimate duration of the reconstruction is 24 months (2011-2013). Its estimated cost is 760 million Ukrainian Hrivna (about 67 million Euros).

Key issues

The prior environmental and social issues to be managed during construction and operations are as follows:

- Land acquisition (including compensation and potential impacts to cultural heritage sites);
- Air emissions and noise that may affect intersected communities;
- Storm water discharges: water treatment is necessary;
- Erosion: the restoration of affected areas after construction and monitoring during operation are needed.



INTRODUCTION

The Zhytomyr Bypass Reconstruction Project aims at upgrading the Zhytomyr section of the M6 Motorway Kyiv – Chop (km 129.6-151.73). It will be carried out according to the Law of Ukraine “On the comprehensive programme for establishing Ukraine as a transit country in 2002-2010” (№ 3022-III as of 02.07.2002).

The European Bank for Reconstruction and Development (EBRD or the Bank) considers providing a loan for the reconstruction of the Zhytomyr Bypass, as part of a broader programme of rehabilitating and upgrading of road approaches to Kyiv.

According to the EBRD’s 2008 Environmental and Social Policy (ESP), the upgrading of the Zhytomyr Bypass is categorised as “A”. This implies that the Project needs to undergo a full-scale and participatory Environmental and Social Impact Assessment (ESIA).

This document is a non technical summary of the ESIA report.

1. LEGAL AND REGULATORY FRAMEWORK

1.1. Ukrainian Requirements pertaining to Environmental Assessment

The development of an Environmental Impact Assessment (EIA, OVNS in Ukrainian) for major development projects in Ukraine is required by the National Law “On Ecological Review” (1995), the national standard “State Construction Rules” (DBN in Ukrainian) A.2.2-1-2003, and other national and international obligations.

1.2. EBRD Requirements

The EBRD’s ESP (2008) requires the Bank’s clients to meet specific environmental and social performance standards and achieve sustainable outcomes as specified in this Policy and its specific Performance Requirements (PRs). The following PRs are applicable to this project:

- PR1. Environmental and Social Appraisal and Management
- PR2. Labour and Working Conditions
- PR3. Pollution Prevention and Abatement
- PR4. Community Health, Safety and Security
- PR5. Land Acquisition, Involuntary Resettlement and Economic Displacement
- PR6. Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PR8. Cultural Heritage
- PR10. Information Disclosure and Stakeholder Engagement.

2. BACKGROUND INFORMATION

2.1. Existing condition of the Zhytomyr Bypass

The Zhytomyr Bypass is part of the international M06 Motorway Kyiv – Chop (Figure 1), which is one of the most important elements of the Ukrainian road network as it coincides with several international transport corridors (Pan-European Corridors No 3 & 5, Transport Corridor ‘Europe-Asia’, European Routes E40, E50, and E573).



The Bypass is characterised by a poor condition of the pavement, lack of essential traffic intersections and bypasses, low traffic capacity (according to available estimates, the traffic intensity would double by 2030), and other limitations typical of a category II road. The current state of the road is considered to be inadequate for ensuring its environmentally friendly operations, safety and security of the local community, and the socio-economic development of the region.

2.2. Reconstruction project

This Project will upgrade about 22 km of the existing highway, including the widening of the roadway from 1x2 lanes to 2x2 lanes, widening and strengthening of roadsides and improving of the associated engineering structures (such as bridges, overpasses, culverts and drainage pipes) and ancillary facilities (water treatment facilities, snow screens, planting, barrier, metal fences, drainage systems, etc.). The Project also includes the construction of two new road junctions in two levels at the intersections with the Smokivka - Veresy and Zhytomyr-Kamenka motorways, an overpass for agricultural machinery and two ground crossings.

As a result of the reconstruction, the highway will be upgraded to a Category I motorway with 4 lanes (3.75m each), a median (6.0m), and strengthened shoulders (3.75m each). The roadside will be equipped with fencing facilities, road signs, markings, etc. The estimate duration of the reconstruction is 24 months (2011-2013) and its estimated cost is 760 million Ukrainian Hrivna (about 67 million Euros)

3. POTENTIAL ALTERNATIVES

Potential alternatives to the proposed reconstruction Project include a completely new Bypass highway in a different location or doing nothing ('zero' alternative). The assessment has shown that either options are less economically and politically desirable than the preferred one, and might lead to more adverse environmental and social impacts.

4. ENVIRONMENTAL AND SOCIAL BASELINE

4.1.1. Project location

The Zhytomyr Bypass is located in Zhytomyr raion of the Zhyromyr Oblast, in the northern part of Ukraine. The administrative center of the Oblast is Zhytomyr.

4.2. Environmental baseline

4.2.1. Local Physical Geography

The Project area lies in the northern part of the Zhytomyr Oblast and belongs to the physiographic region of the Zhytomyr Polissya, falling within the mixed forests zone of the East European Plain. Of all the woodlands regions, the Zhytomyr Polissya is the least waterlogged: the total area of wetlands is only 2.9% of its territory. The largest swamp areas are scattered only in the north-west and north of the region. The vegetation cover varies from 15-30% in the northwest to 50% in the eastern and central part of the Zhytomyr Polissya. The Zhytomyr Bypass runs over the right Dnieper River bank, in the area intersected by river valleys (20 – 40 m deep), ravines, and gullies. The elevation is 160 – 250m a.s.l. with a general inclination to south and south-east towards the valley of the Dnieper River. The highest point is the Slovechansk-Ovruch Ridge (316 m a.s.l.).



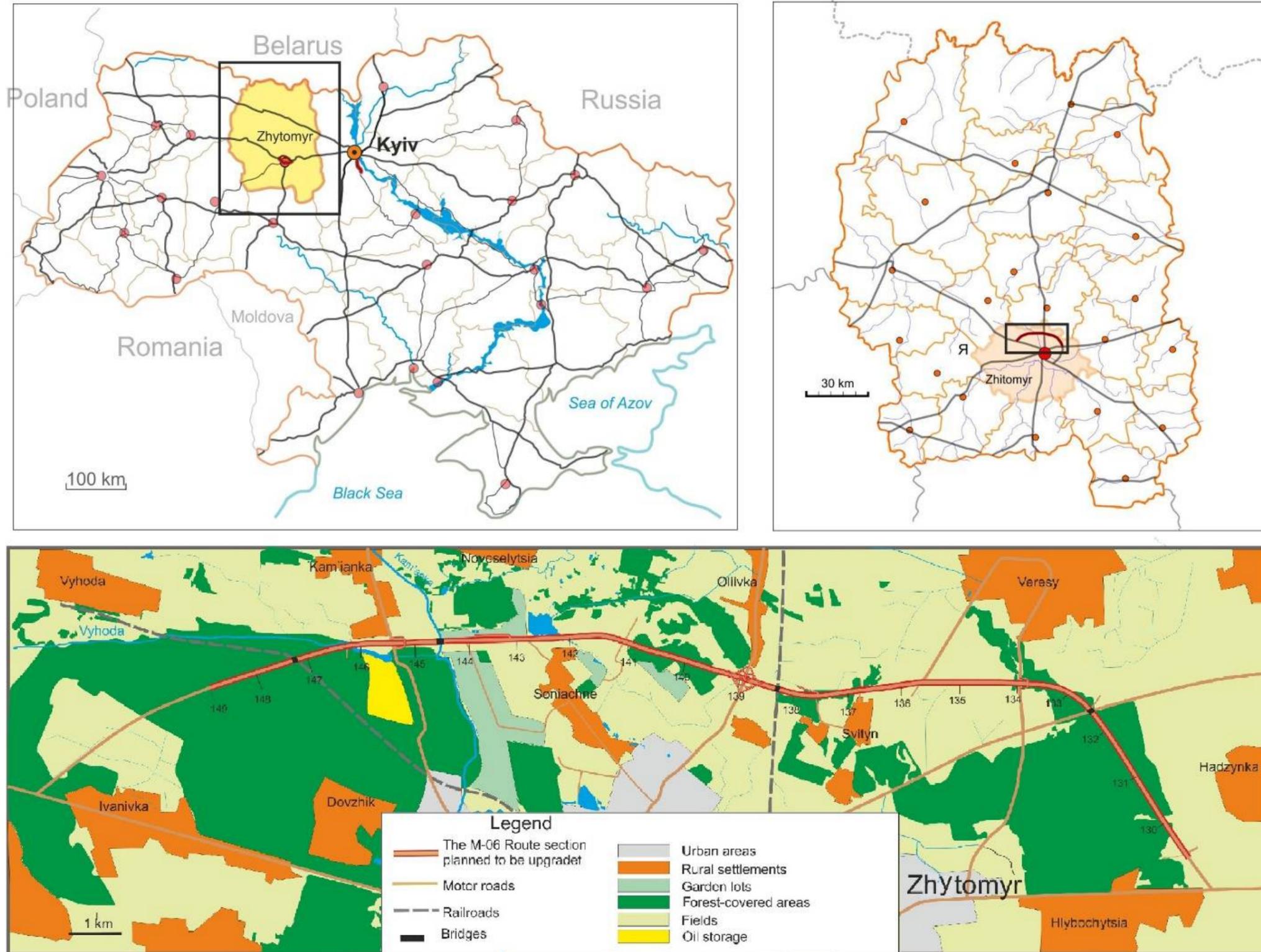


Figure 1 Location of the Zhytomyr Bypass, Ukraine

4.2.2. Climate and metrological conditions

The climate is temperate continental with warm and mild winters. The duration of the warm period is usually 150-170 days. Number of days with snow cover is 90-100 days per year. Snow cover can be up to 12-30 cm thick. The average annual level of precipitation is 753 mm. Squally winds with the speed of 20 to 30 thirty m/sec can occur throughout the area; separate wind flaws can reach 40 m/sec.

4.2.3. Geological setting and underground water

The area of the Bypass is tectonically stable. However, erosion is considered to be a significant risk in this area due to the characteristics of soils, but in the case of the Zhytomyr bypass this risk is considered low as the topography is flat. The water table can rise seasonally which causes localised flooding (waterlogging). A system of drainage channels has been installed in many locations. However, it is not always in a proper functioning state.

4.2.4. Surface water bodies

The Zhytomyr Bypass crosses, and is mostly within the catchment area (351.34 km²) of, the Kam'ianka River. It also crosses a small stream of the Kamenka River - Vyhoda, which is not classified as even a small river.

4.2.5. Soils

Chemical analyses of topsoils on the highway roadsides at the exit from and entrance to Zhytomyr did not show any exceedance of permissible concentration levels of heavy metals during 2006 – 2009. However, the analyzed samples demonstrate a clear trend of increasing content of lead, cadmium and zinc in the points located at a distance of 5m and 10m from the roadway as compared with the sample taken from more remote points.

4.2.6. Ambient Air

The nearest air quality monitoring points in the road surroundings are located in Zhytomyr. There is no measuring air quality data available in the direct surroundings of the Bypass. A projection of future air quality is available (Ukrainian standard). However, the results (1000-10000 less then existing standards) (appear debatable. This gap will be addressed within the monitoring program.

4.2.7. Noise

The Zhytomyr Bypass is one of the main sources of noise pollution in the area. The first row of residential buildings of most of the settlements along the highway is located ca. 20-30 m from the traffic lane. The buildings are not protected by any acoustic screens, vegetation or other objects.

Recent direct measurements of noise at the Bypass are not available. However, noise measurements performed in 2005 at the nearby road section - km 121,000 of the M06 are available. According to these, at a distance of 12 m from the road lane, the maximum noise level is 80 dBA and the equivalent noise level is 75 dBA. These values are higher than those specified in the Sanitary Norms 3077-84, i.e., equivalent level 55 dBA for day and 45 dBA for night.

4.2.8. Protected areas

There are no protected areas in the vicinity of the Project.



4.2.9. Biodiversity

Towards its western end the Zytomyr bypass crosses about 3.8 km of forest, and another 2.5 km towards its eastern end. The rest of the section is across mainly agricultural or uncultivated land. The two forest patches crossed by the bypass are generally degraded, and their biodiversity sensitivity is assessed as low. However, a detailed biodiversity assessment remains to be done. Such assessment is included in the measures to be taken by the borrower as part of the Environmental and Social Action Plan. One of the outcomes of this assessment will be the planning of animal crossings, if needed.

4.3. Social baseline

4.3.1. Settlements and local population

The population of the Oblast is 1279 thousand people and that of Zhytomyr district is 66,992 people.

The Bypass crosses and passes close to several settlements, which are described below (Figure 2).

Ivanivka village (Ivanivskiy village council) is the administrative center of the village council and the most populated the village council (1637 people). This is caused by its geographic location on the way to the city of Zhytomyr. A warehouse with chemical fertilizers is located along the motorway.

Vyhoda (Sadkivskiy village council) is small settlement (431000 square meters and population of 289. State-owned agricultural areas around the village are in the close proximity to the motorway. Effluents from the motorway can cause a direct impact on surrounding areas.

Kam'ianka (Kamyanskiy village council) is the administrative center of the village council, is a smallest village (1303000 square meters). The motorway passes through a bridge over the river of Kam'ianka, along restaurant "Dubky" and a petrol station, alongside a small pond at the territory of the village, and goes through the gardeners' partnership "Kam'ianka". As the garden plots are located on the both sides of the motorway, an increased traffic should lead to improved pedestrian and automotive road safety measures.

Zhytomyr hosts 36.1% of the Oblast's business entities and its business activity continues growing. These enterprises are considered as stakeholders to the Project (see Section 7).

Sonyachne village (Kamyanskiy village council) is the biggest settlement of the village council by its area of 71800 thousand square meters. Population of the village equals 541 people, with a prevalence of female over male population. The motorway passes by the pond "Melkom" and garden plots within the settlement.

Oliivka village (Oliivskiy village council) is the administrative center and the biggest settlement within the village council. It covers area of 43111 thousands square meters, and has population of 665 people (326 males and 339 females) Village is located in the close proximity to the interchange of roads P28 and M06.

Svityn village (Oliivskiy village council) covers a territory of 1187 thousands square meters, and has population of 397 people. It is located in the south from the future Zhytomyr Bypass. Garden plots are located along the motorway.

Veresy village (Veresivskiy village council) with territory of 694 thousand square meters and population of 1536 people is located 12 kilometers from the north-



eastern part of Zhytomyr. The motorway passes through the track “Vatskivska Dacha” which is situated between Veresivskiy and Hlybochytskiy village councils. The tract is a potentially attractive destination for green tourism and for travelling cyclists from Zhytomyr and all over Ukraine.

Hlybochytsia village (Hlybochytskiy village council) is an administrative center of the village council, and covers a territory of 3185 thousands square meters with population of 2726 people. This is the biggest settlement located along the future Zhytomyr Bypass. The road interchanges for motorway to the city of Zhytomyr and the future Zhytomyr Bypass from Kyiv are located in the village.

4.3.2. Land use

The adjacent lands are of two categories – agricultural lands and forestry lands. The agricultural lands are mostly in private use. These land plots were acquired by local residents as shares in the nineties. The average value of agricultural land in 2011 in the Zhytomyr raion is 3,50 to 4,50 USD/are. However, the value of plots facing the motorway M06 has recently increased to 30-50 USD/m² due to possibility of use for the commercial purposes.

4.3.3. Demography and income

As of 1 January 2010, population of the Zhytomyr raion was 1279 thousand people, out of which 270,498 lived in the city of Zhytomyr and 55,044 in other settlements. 12,973 people live on the territory of village councils crossed by the Bypass.

Average monthly salary for the Oblast was 2036 UAH (May 2011), which is below the average indicator for Ukraine (2573 UAH). The average salary for the Zhytomyr district is lower (1970 UAH), while the average salary in the city of Zhytomyr is slightly higher (2236 UAH).

5. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

This chapter considers key environmental and social impacts/risks of the reconstruction and operation stages.

5.1. Impact zones and affected communities

The following local environmental and social sensitivities related to the Project are present in the area:

- Water bodies: the Kam'yanka River (small watercourse) and its tributary Vyhoda; the Melcom Pond;
- Adjacent communities: Kam'ianka, Garden lots; Oliivka, Soniachne, Svityn;
- Local businesses in the affected area; and
- Two cultural heritage sites near to the road.

Ukrainian regulations suggest classifying the road developments projects into 3 Environmental Classes. This Project involves the upgrading of a Category II road (the Zhytomyr Bypass) to a higher Category (Ia) and is classified as Environmental Class 2. Legally, any road has 3 zones of impact on the environment, depending on the environmental class of a development (VBN B.2.3-218-007-98):

- Technology Reserve Strip (Zone A, Резервно-технологічна смуга) is the territory adjacent to the road, in which the sanitary standards for air, soil and water, etc. are likely to be permanently exceeded. Landscape is transformed. This area is unsuitable for agricultural use and long term staying of people.



For the Environmental Class II roads, this zone is 12 m in width from the outermost point of the highway on both sides.

- Protective Strip (Zone B, Захисна смуга) is the territory adjacent to the right-of-way where the concentrations of air pollutants during the operation period (if a worst-case combination of factors occurs) may exceed the maximum permissible concentration limits. Significant changes may occur to natural systems that can not be reversed by mitigation measures. For the Environmental Class II roads, the protective strip zone is 90-150 m in width from the outermost point of the highway on both sides.
- Zone of influence (Zone C, Зона впливу) – the territory where the apparent direct or indirect influence of repair and maintenance works result in changes to natural systems. Traffic-related impact levels for the current period (20 years) exceed average background levels but remain below limits set by health authorities (apart from acoustic pollution levels). For the environmental class II works the zone of influence is 1000-2000 m.

For purpose of this ESIA, the following impact zones were identified (Figure 2):

1. Affected area: estimated size is about 90-150 m from the road boundary along the both sides of the road and 500-600 m from a discharge point (downstream). The road operation and reconstruction is contributing to the air and water quality/noise level, biota and communities can be affected by the existing road/project development; local business can be affected. This zone also includes territories of temporary construction sites.
2. Zone of environmental influence: estimated size is about 1000 m: small environmental effects can take place; no actual changes to the communities/biota exist.
3. Zone of socio-economic influence: in so far as the Zhytomyr Bypass is not a new development, the influence of this road has existed since the road was initially built. It is expected that the zone of both positive and adverse socio-economic influence could include the city of Zhytomyr and nearby economic and social facilities.

3.1. Reconstruction Stage

Key project aspects giving rise to potential environmental and social impacts and risks are: Land acquisition; Cultural heritage; Air emissions; Waste management; Storm water discharges; Pedestrian safety, Erosion and reinstatement; and Contractor management.

3.1.1. Land Acquisition

Two types of land acquisition take place in the project: Land acquisition for road expansion purposes and Temporary land allocation for construction purposes. About 95 ha of municipal land are mentioned in the Resolution of the Zhytomyr Raion Administration #18-3/1152 of 08/09/2010 regarding the land acquisition and temporary allocation. The magnitude of land acquisition is limited, and so are related impacts; namely, (i) no houses are in the allocated area; accordingly, no physical displacement will take place, (ii) no significant changes are anticipated in land use structure; compensations are paid as per the law and EBRD applicable policy, (iii) small businesses currently located along the roadside could be affected. The impact on the land use pattern is considered to be positive and/or neutral, of local scale and moderate intensity.



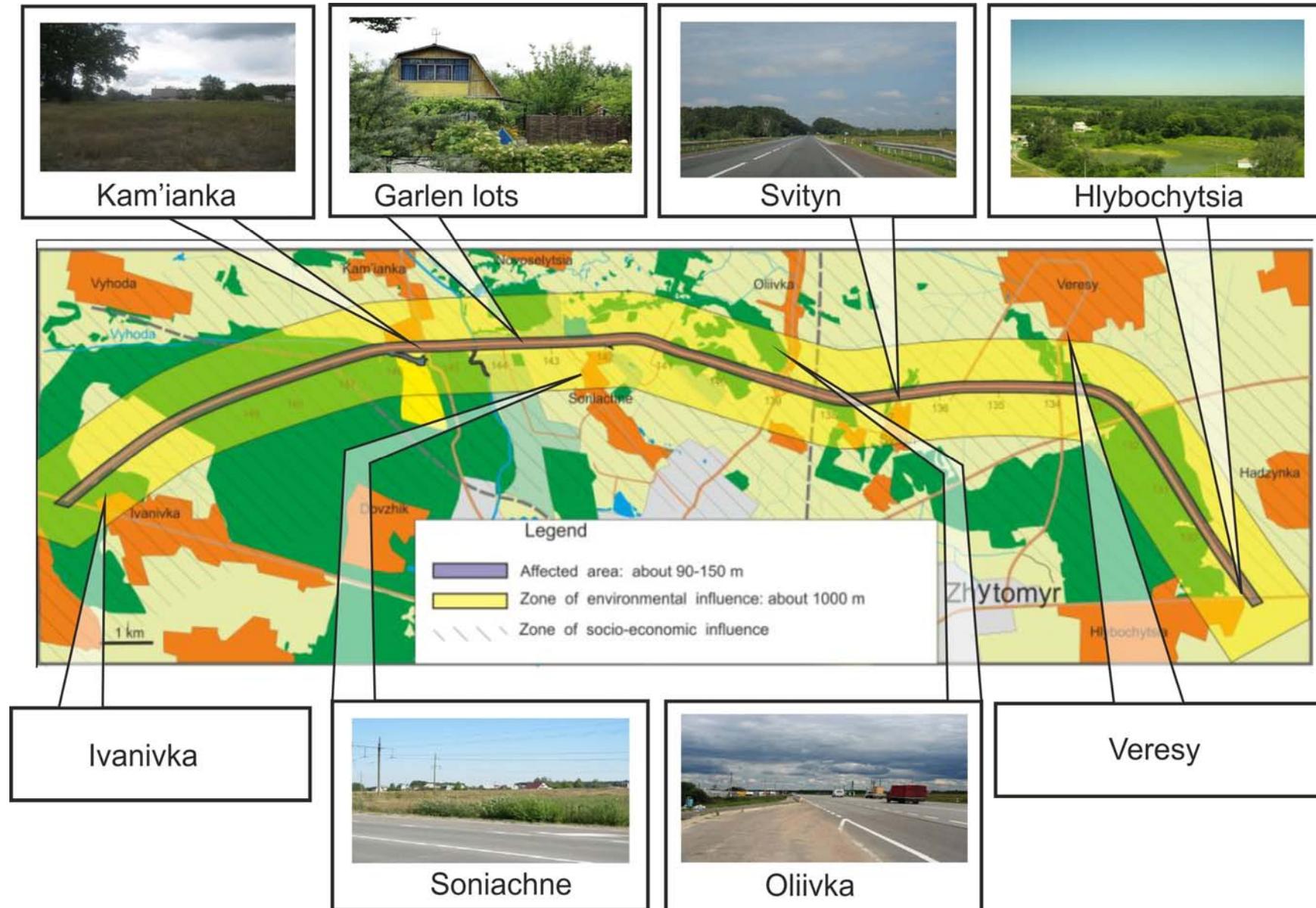


Figure 2. Intersected and close settlements and zones of influence



5.1.1. Cultural Heritage

According to the results of archaeological surveys carried out within the Project design preparation framework, no archeologically significant objects, cultural heritage assets or monuments are located directly within the right-of-way area along the road. However, four archaeological sites have been identified close to the Bypass. Two of these sites are located at a distance of 20 m from the road. The protection perimeter of these two sites (50m) will extend into the right-of-way of the Zhytomyr Bypass. No approval or work permitting acts from the relevant cultural heritage management authority were provided at this point. The route will be slightly changed at the level of these two sites if this is technically and economically feasible. If such rerouting appears not to be feasible, a special archaeological investigation and rescue programme as required by the Ukrainian regulations and EBRD's PR8 will need to be developed for the two sites. A chance finds procedure will be developed and incorporated in Contractor's obligations.

5.1.2. Air Emissions

At the reconstruction stage, air emissions will be associated with the construction traffic and mechanisms, dusting, fugitive emissions of road laying process. All these impacts are local in scale and could be intensive. The affected group is the population of the nearest houses (20-50 m from the road). This group mainly includes Dacha residents (Garden Lots). In the windless periods (unfavourable weather conditions) the impacts could be stronger.

Mitigation measures are as follows:

- Strict compliance with the design provisions pertaining to the organization of reconstruction works;
- Dust suppression measures;
- Limiting/suspending construction works under unfavorable weather conditions.

5.1.3. Waste Management

The road construction technology proposed in the Project design suggests a number of measures to minimize waste generation during the construction stage. For instance, the removed top layer of existing pavement will be recycled and re-used for the foundation of the new road. Domestic waste will be generated at the construction sites and in worker's camp. Temporary facilities for the collection and disposal of waste (including bio-toilets) will be provided. The collection, temporary storage and transportation of waste to disposal sites are a responsibility of the construction contractor. Contractors will follow technical regulations and procedures to minimize waste (e.g., the use of mobile containers for metal waste, oily rags, oil products).

5.1.4. Storm Water Discharges

The storm water/melt water is the main source of impact on water bodies, both at the construction and operation stages. Main receiving water bodies are the Kam'ianka River; the Vyhoda stream and the Melcom Pond. According to the Water Code of Ukraine (1995), the coastal protection strip of smaller rivers and stavs is 25 m. It is prohibited to construct *inter alia* cottage houses, garages or parking within the strip.



During the construction stage, no water treatment facilities are planned to be established and this increases the risk of pollution for local water bodies. The following measures will be implemented:

- Proper surface drainage should be provided to collect and divert storm water;
- Storage areas for waste and hazardous materials should be organised outside the boundaries of water protection zones;
- Waste management procedure has to be developed and maintained;
- Washing areas for construction vehicles should be established outside the boundaries of water protection zones.
- Relevant procedures for managing hazardous materials should be adopted and maintained.

5.1.5. Pedestrian Safety

Local traffic pattern will change during the construction stage. The movement of large trucks and construction mechanisms could complicate the traffic and create risks for local public. The temporary access roads are foreseen to mitigate this impact. Also, strict compliance with the safety and contractor management procedures is considered as an essential element of mitigation strategy.

5.1.6. Erosion and Reinstatement

The design includes provisions regarding the re-establishment of vegetation to be cleared prior to the commencement of repair and construction works. Trees, shrubs, wind/snow shields and other forms of vegetation will be planted upon the completion of reconstruction in, at least, the same quantity as the existing vegetation.

Erosion and waterlogging (localised flooding due to shallow groundwater conditions) may take place in the Project area

To keep the intensity of these processes at a minimum, the following mitigation measures are to be implemented at the construction stage:

- Minimising disturbance to the natural topsoil layer and vegetation cover;
- Organising the separate storage of stripped top-soil;
- Collecting/diverting surface runoff via flow diversion system;
- Reinstating timely all roadside areas disturbed by construction.

5.1.7. Contractor Management

Existing contractor management arrangements were examined and reviewed through field observations and interviews with Ukravtodor and Zhytomyrdiprodor. While no systematic procedure for managing EHS performance of contractors is currently in place, some provisions have been incorporated into the contracts. The performance of contractors at current construction sites is satisfactory. An EHS management system will progressively be put in place at the level of Ukravtodor, including a EHS management procedure for contractors.

5.2. Operation Stage

The main environmental and social aspects associated with the operation of the road are Air emissions; Noise; Storm water discharges; Waste management; Pedestrian safety; and Dangerous geological processes and rehabilitation;



5.2.1. Noise

Noise is one of the most likely impacts of road operation. Noise level estimates were produced as part of the OVNS. The predicted dynamics of noise levels (for the 'with reconstruction' and 'without reconstruction' scenarios) are shown Figure 3.

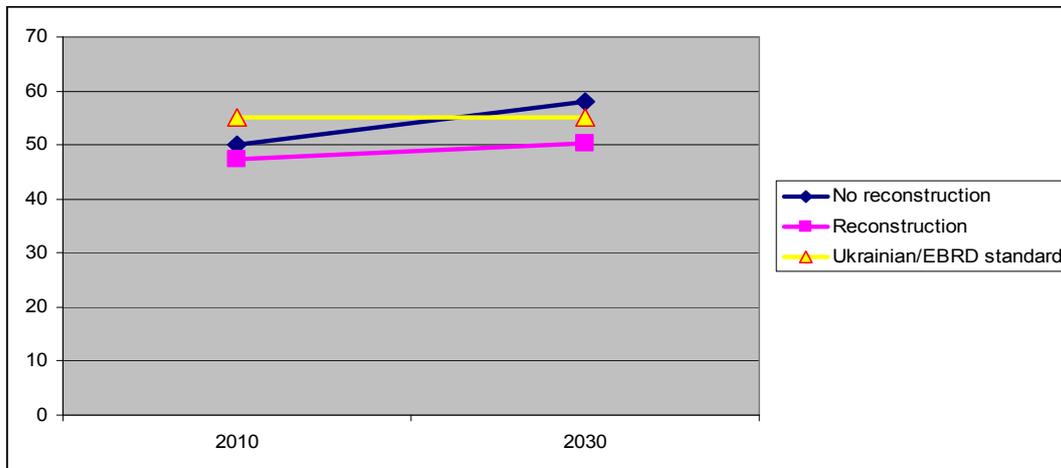


Figure 3 Dynamics of noise levels (day time)

The level of noise under the 'no reconstruction' scenario will exceed existing guidelines by 2030. The design includes the provision regarding the establishment of noise protection screens (Figure 5). Mitigation measures (road reconstruction to better standards and noise screens) will ensure compliance with national and EBRD standards. The screens will also mitigate visual impacts.

5.2.2. Air Emissions

At the operational stage, traffic-related emissions will contribute to local air pollution. The OVNS estimates suggest that the level of these emissions will be very low; the CO concentrations in the residential areas will be within 10%-30% of the MAC Limits. The modelled concentrations of other pollutants show negligible values. The available data is not sufficient for providing a more accurate and reliable assessment of modelling results.

The road reconstruction will increase the road capacity which, in turn, will increase a specific number of vehicles per hour. This may result in higher emission levels. At the same time, the reconstruction will reduce traffic jams. Based on expert judgement, one can conclude that the situation will improve in the nearest year. Still, the lack of actual data undermines the reliability of forecasts. Environmental monitoring as described in the ESAP will be put in place to identify any potential non-compliances with standards.

5.2.3. Storm Water Discharges

The proposed design promotes the construction of local water treatment facilities on the Kam'ianka River and Melcom Pond (Figure 5). The proposed arrangement is expected to improve existing situation. A treatment facility will be installed in addition to protect the Vyhoda River.

5.2.4. Waste Management

During the operation of the Zhytomyr Bypass, the generated waste may include wastewater, domestic type waste thrown out of the passing vehicles and at bus stops, and other garbage. The collection of this predominantly domestic solid waste



will be contracted under the supervision of the Zhytomyr Oblast State Road Administration.

5.2.5. Pedestrian Safety

According to the traffic accident statistics for the existing Bypass, 6.8% of the registered accidents involve pedestrians and 13.3% of fatal accidents involve pedestrians. The Project design therefore includes various measures designed to improve pedestrian safety. These include establishing 2 ground-level pedestrian crossings (Figure 6), installing traffic signs, road making, establishing safe and improved sidewalks for pedestrians, and improving lighting in the settlements located along the Bypass route to make the road safer during evenings/nights.

Overall, the impact of the Project on pedestrian safety is positive and moderate. It is imperative, however, to ensure that the design provisions are strictly adhered to by construction contractors. Additionally, it is recommended to organise traffic safety trainings in schools and preschool establishments in the intersected villages.



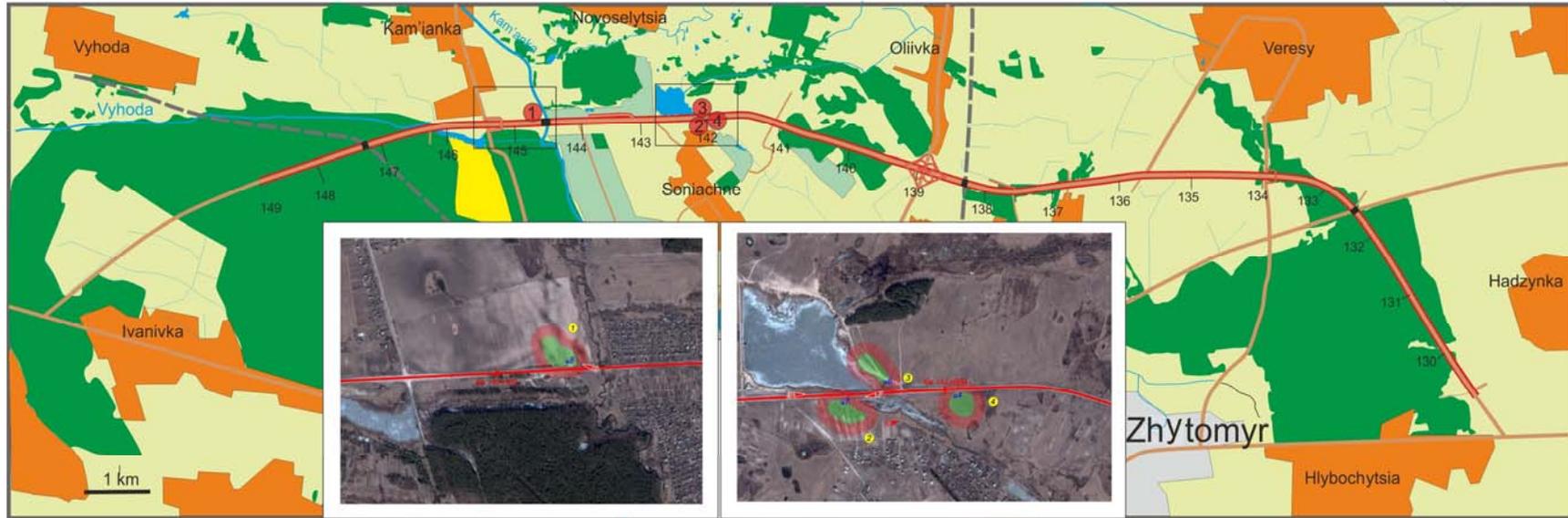


Figure 4. Heritage sites

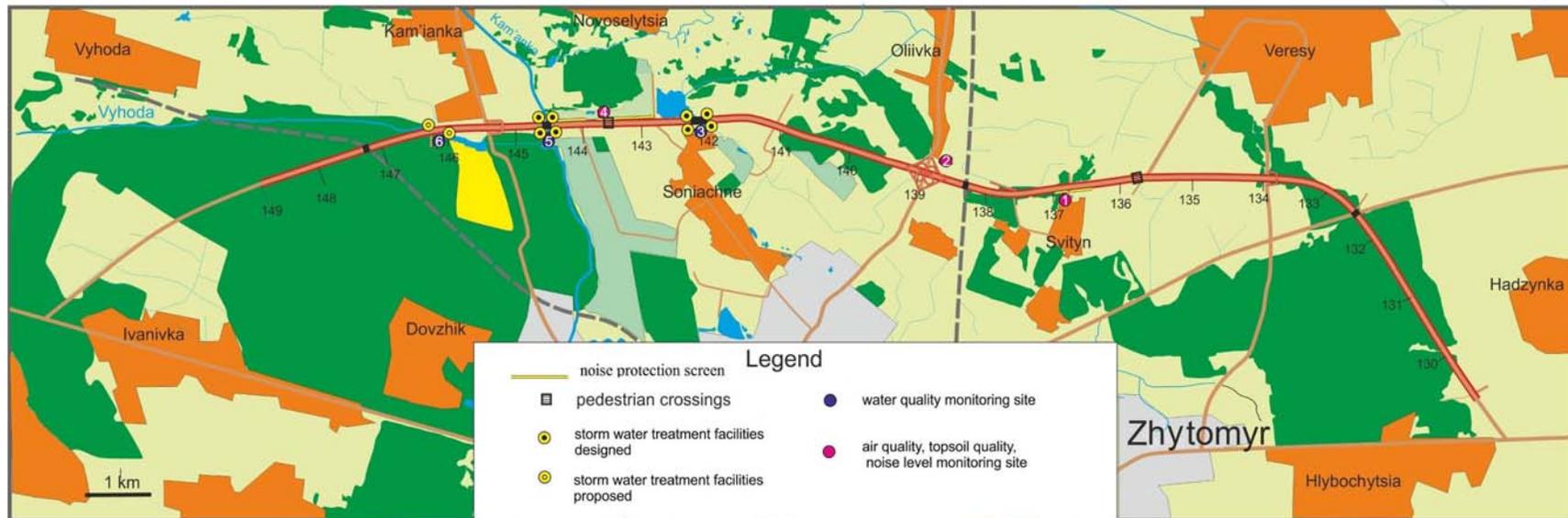


Figure 5 Proposed water treatment facilities and monitoring sites



6. SUMMARY OF ENVIRONMENTAL, OCCUPATIONAL HEALTH AND SAFETY, AND SOCIAL ACTION PLAN

No	Issue	Action
1. Environmental and social management		
1.1	Environmental and Social Management System is not implemented	1.1.1. Consider the opportunities of introducing EHS management system 1.1.2. As the prior step, develop the contractor selection/management procedure
1.2.	There are no original environmental data/monitoring in the areas extending along the Bypass Road;	1.2.1. Carry out a survey to assess the levels of pollution in various components of the environment including: - Air quality (1-2 sampling locations); - Water quality on the crossings of existing road at all river; - Contamination level of bottom sediments in small rivers; - Soil contamination levels; - Noise impact levels.
1.3.	Lack of original data on flora and fauna, including migration routes and animal-related traffic accidents	1.3.1. Carry out survey to gather information on existing migration routes and animal-related traffic accidents. 1.3.2. Establish warning signs in the areas of potential animals walk.
1.5.	Stakeholder engagement	Develop, adopt and maintain the Stakeholder Engagement Plan. As a prior step, conduct public consultations within ESIA/OVNS process
2. Reconstruction Stage		
2.1	Land acquisition	2.1.1. Within ESIA/OVNS consultation process, provide broader consultations on land acquisition issues 2.1.2. Conduct individual consultations with land owners
2.2	Land uses and impacts on landscapes and soil	2.2.1. Ensure strict compliance with boundaries specified in the land use permit, including boundaries of temporary sites allocated for construction and material storage purposes 2.2.2. Carry out the rehabilitation of temporary sites upon the completion of construction works 2.2.3. Provide the proper stripping and storage of topsoil layer, to be used during restoration 2.2.4. Where forested areas need to be cleared: provide sideways and tree-cutting sites within the area allocated for the construction of road interchange
2.3	Soil and surface water contamination	2.3.1. Organize catering and rest areas as specified in the working documentation; 2.3.2. Provide bio-toilets and ensure that they are maintained properly and removed timely 2.3.3. Arrange wastewater collection at the construction site in order to prevent direct effluent discharges to the Kam'ianka River basin 2.3.4. Ensure the collection and temporary storage of hazardous substances (including fuels and lubricants), construction materials and waste outside the boundaries of water protection zones, and collect/dispose of waste at a landfill in a timely manner.



No	Issue	Action
2.4	Air pollution (dust, exhaust emissions from construction machinery, coating/paving process emissions)	2.4.1. Dust suppression measures (in the dry season), to include wetting the surface of sand/gravel stockpiles
		2.4.2. Use covering on the vehicles transporting dust-generating materials
		2.4.3. Attestation of vehicles
2.5	Erosion control	2.5.1. Timely restoration of affected areas
		2.5.2. Riverbank strengthening (bridge crossing)
		2.5.3. Install culverts as specified in the design to pass river flow at the river crossings
2.6	Waste management	2.6.1. Timely collection and delivery of construction waste to a landfill
		2.6.2. Disposal of cutting residues in the approved locations
2.7	Enhanced traffic safety	2.7.1. Construct fences and medians as specified in the design
		2.7.2. Establish safe pedestrian areas along the motorway
2.8	Cultural heritage: - no approval by competent authorities has been received	2.8.1. Obtain the approval of the Cultural Heritage Department
	- two heritage sites are placed in the affected zone	2.8.2. Consider rerouting and if proved impossible develop a Cultural Heritage Management Plan and submit to the competent regulating authority and to the Bank
3. Operation Stage		
3.1	Erosion and underflooding potential	3.1.1. Monitoring erosion and underflooding processes, and taking prompt action if and where required
3.2	Surface water protection	3.2.3. Ensuring compliance with the management regime established for water protection zones, to include a ban on the use of herbicides, pesticides and de-icing agents in these zones
3.3	Waste management	3.3.1. Ensuring the development of waste disposal limits
		3.3.2. Ensuring that waste is disposed in line with approved limits
3.4	Noise and visual impact	3.4.1. Establishing noise barriers in the populated areas (Figure 5) ¹ , to make sure that they are visually attractive
		3.4.2. Monitoring noise levels
3.5	Changes in existing pedestrian safety regime and arrangements (including existing pedestrian crossings)	3.5.1. Establishing pedestrian crossings in the immediate proximity to the populated areas
		3.5.2. Organising traffic safety lessons at the local schools

¹ Properly designed noise barriers will also help minimize adverse visual impact



7. STAKEHOLDER ENGAGEMENT

As legally required, to inform the public about the proposed development the “Statement of Intention” and the “Statement of Environmental Consequences” were prepared and posted on the Ukravtodor site and distributed in the local village councils (Radas). The OVNS and the design documents were also made available for people in the Zhytomyr Branch of Ukravtodor.

Stakeholders for this project can be identified in three main categories:

- Group A - people and social groups who will be directly or indirectly influenced by the Project or otherwise interested in the Project. These are directly affected communities along the Zhytomyr Bypass, namely, the residents of 3 villages: Hlybotchitsia (3951 residents), Svityn (397 residents), and Kamyanka (1809 residents), including garden lots owners, users of the road, and small businesses.
- Group B - people and social groups who participate in the implementation of the Project. These are the employees of Ukravtodor and its Zhytomyr Branch, including employees involved in the road service and maintenance works, workers commissioned to do the reconstruction works, subcontractors, raw materials producers and suppliers.
- Group C - people and social groups who have a possibility to influence and make decisions on implementation of the Project (such as the National Government (e.g., Ministry of Environment of Ukraine), State Administrations of the Zhytomyr Oblast and Zhytomyr raion, State Construction Inspectorate of industry safety and labor protection in construction in the Zhytomyr Oblast .

The Stakeholder Engagement Plan is presented in Chapter 8.

To ensure responses to any concerns or complaints from affected communities and other stakeholders, Ukravtodor will implement a dedicated grievance mechanism for this project. Details are provided in the Stakeholder Engagement Plan.



8. STAKEHOLDER ENGAGEMENT PLAN

Stakeholders	Consultation method and objective	Proposed milestones	Responsibility
1. Directly or indirectly influenced by the Project			
1.1. Affected communities: residents of oblast, raion, town, settlement, village along the Roads	Ukravtodor webpage, information brochure on local administration facility, and site of modernization, local media (newspaper, radio, TV), Additional meetings at the request of interested parties, To improve safety issues during the construction works and at the normal roads operation stage, company Ukravtodor develops the safety awareness campaigns, focusing on schools and children.	Before the commencement of modernization works and during the whole Project	Chief PR Specialist and Project Coordinator
1.2. Directly affected stakeholders: ▪ Dachas owners in the affected zones; ▪ Land users in the land acquisition area;	In addition to the item 1.1 provisions, direct meetings should be organized; Agreements with land owners have to be concluded on the individual basis.		
1.3. Infrastructure owners and operators along the roads; other small business base on the wayside	Direct meeting and consultations, The Project technical documentation exchange Additional meetings at the request of interested parties.	Before the commencement of modernization works and during the whole Project.	Project Coordinator
1.4. Enterprises including small-business located along the roads and their employee	Ukravtodor webpage, information brochure on local administration facility, and site of modernization, local media (newspaper, radio, TV),	Before the commencement of modernization works and during the whole Project	Chief PR Specialist and Project Coordinator
1.5. Population (drivers, passengers of local transport) constantly uses the roads and Population of irregular roads uses (transit passengers, population from other inhabitant locations)	Ukravtodor webpage, local media (newspaper, radio, TV), information brochure in transportation companies, To improve safety issues during the construction works and at the normal roads operation stage, company Ukravtodor develops the safety awareness campaigns, focusing on schools and children.	Before the commencement of modernization works and during the whole Project	Chief PR Specialist and Project Coordinator
2. Interested parties			
2.1. National and local NGO's	Ukravtodor. webpage, information meetings, and answers to direct questions, complaints or protests – in accordance with the existing external communication procedure in place at Ukravtodor.	Before the commencement of modernization works and during the whole Project	Chief PR Specialist and Project Coordinator
2.2. National and regional media	Ukravtodor. webpage, press-conference, information brochure	Before the commencement of modernization works and during the whole Project	Chief PR Specialist and Project Coordinator
2.3. Academic Institutions	Ukravtodor. webpage, direct contacts	During the whole project	Project Coordinator
3. Participation in the implementation of the Project			
3.1. Employee Ukravtodor and related entities, including group of employee of "Automobile Roads of Ukraine"	In accordance with existing internal communication procedures of Ukravtodor, periodic meetings, notices, information letters and notices posted on boards, training, via intranet.	During the whole project	Project Coordinator



Stakeholders	Consultation method and objective	Proposed milestones	Responsibility
3.2. Workers commissioned to do the reconstruction and modernization works of the roads hired by the constructions companies and subcontractors	In accordance with the agreements between Ukravtodor and construction companies and subcontractors – regular meetings, reports, documentation exchange.	During the whole project	Project Coordinator
3.3. Raw materials producers and suppliers	In accordance with the agreements between Ukravtodor and producers of raw materials and equipment suppliers – only necessary meetings,	During the whole project	Project Coordinator
4. Possibility to influence the realization of the Project and making decisions			
4.1. National Ministers State Administration	Formal letters, meetings	In accordance with the requirements of administrative procedures	President of Ukravtodor and Presidents Deputy's, including Project Coordinator
4.2. Regional and District level authorities	Consultation meetings – information, exchange of documentation and correspondence regarding the projects.	Continuous process - in accordance with the requirements of administrative procedures	Ukravtodor Presidents Deputy's, Project Coordinator
4.3. Expertise organizations	Consultation meetings – information, exchange of documentation and correspondence regarding the projects.	Continuous process - in accordance with the requirements of administrative procedures	Project Coordinator
4.4. Inspectorate organizations	Consultation meetings – information, exchange of documentation and correspondence regarding the projects.	Continuous process - in accordance with the requirements of administrative procedures	Project Coordinator

