Initial Environmental Examination

Project Number: 49042-005 (DRAFT)
January 2018

TAJ: CAREC Corridors 2, 5, and 6 (Dushanbe–Kurgonteppa) Road Project–Additional Financing (Annexes)

Prepared by the KOCKS Consult GmbH for the Asian Development Bank and the Ministry of Transport of Tajikistan.

Annex 1
Minutes of the Public Consultations

Consultations with Communities

Khurason Rayon, Obikiik Jamoat,
Village: I. Somoni

Date: 07.03.2017
Time: 10:00 - 12:00
Participants: **47 (33 men and 14 women)** from Obikiik and the residents of the Jamoat
Handouts: Project brochure, GRM information, Entitlement Matrix, Government Decree on Cut-off-Date, and Order for the Establishment of GRGs in Jamoats

Consultations conducted by:
Safarmat Ermadov, PIURR representative
Dragica Veselinovic, Kocks International Resettlement Specialist
Jurgen Meyer, Kocks International Environmental Specialist
Abdulloeva Mahbuba, National Consultant, Institute of State Unitary Enterprise "NIIP"

Consultations were conducted at the premises of the Department of Education. The local authorities indicated that 64 households have assets in the 20m road corridor. All 64 heads of households, as well as anyone else who wished to participate, were invited. Out of these, 47 people participated in the consultations, which were dynamic. Participants had many questions and expressed support for the Project and their appreciation for the consultations and information shared.

The main information shared with the participants:

- Information about Phase II of the Project and related activities;
- Information on the Cut-off Date;
- Process of preparation and implementation of the Land Acquisition and Resettlement Plan;
- ADB SPS 2009 and Tajik law compensation requirements;
- Entitlements for land, buildings, structures; business owners and renters, and workers;
- Allowances for severely affected and vulnerable groups;
- GRM mechanism;
- Environmental issues.

The main questions and suggestions at these consultations were as follows:

No	Questions	Answers
1	Where we can find you if we need additional information?	Design Institute, room No 13, Ayni ave 14, Dushanbe.
2	Will you make a bypass here in Obikiik?	Both options - the road passing through the center of the city and a bypass, will be examined. The more viable option will be adopted.
3	Will you rehabilitate culverts, tubes and bridges?	The road structures will be rehabilitated where needed.
4	Where will you place underground passes?	We currently do not know if there will be underpasses and where they will be, as the final design has not been completed. When the design is completed, we will give you full information.
5	Will you consider road safety	Yes, proper road safety signalization will be installed.

	signalization for children crossing the road while going to and from school?	
6	When and where will the works start?	We are now preparing a draft LARP which is expected to be ready at the beginning of June. The approval of the LARP by the Government of Tajikistan and ADB will take a month or two. After that, if necessary, an update of the LARP based on the final design will follow. When the final LARP is prepared, commented on and approved, then the implementation may start. After the implementation, the physical works may start. This is a process which will take some time, so we cannot say with precision when exactly the road rehabilitation will start.
7	I have a business premises, but someone else works there. Who will receive compensation if my business building becomes permanently affected?	Both you and the renter will be compensated for your losses. You will lose the land, building and rental income, so you will be entitled to compensation for those losses. Other social safeguard allowances will be added, such as an allowance for serious impact. The renter will lose his/her business. The renter will be entitled to compensation for loss of business for the period needed to re-establish the business, and will receive assistance for the transport of goods.
8	I have a petrol station which is not working. If completely affected, how will you compensate?	You will lose the building and the right to use the land it is on. The building will be compensated at replacement cost and the land as per the agreed methodology for commercial plots. In addition, transport and severe impact allowances will be granted.
9	I have two homes on one land parcel. If only one is affected, what will happen to the other? Will you demolish the other house as well?	It depends on the size of the remaining land. If the remaining land is sufficient for you to remain there and you prefer to stay there, it will not be acquired. If the remaining land plot is not sufficient for residential living, then both houses and the remaining land, will be acquired.
10	If I lose my home, I want land but not far from the current location.	The Jamoat's president is here and if land is available and suitable for you, they will give you a land plot.
11	Many of us do not have all the necessary documents for houses. Will you compensate us at all?	Yes, you will receive compensation at replacement cost for your buildings. A Jamoat representative can also give you a document certifying that the house is yours and the length of time you have been residing there.
12	My husband works in Russia. Our home is very close to the road. I am scared that if I lose my home, you will not pay me compensation as all the documents are on his name.	You need to ask your husband to write and certify authorization in your name which gives you the right to receive compensation on his behalf.
13	If you take a part of the land, what will happen to the remaining land?	It depends how big the remaining part. is. If it is sufficient for you to continue to use the land for the same purposes as before the project, then you will keep it. If it is not sufficient for any meaningful use, then that remaining land will be acquired.
14	We have four multistory buildings close to the road. These are collective living buildings where a few families live in one apartment, with one family per room and a shared kitchen and bathroom. If buildings are affected, the money you pay for one room to one family, will not be enough to build	If these buildings are affected, your Hukumats, Jamoats and other related authorities will need to explore and find a viable solution for affected people. DPs will be consulted and solutions will be discussed with DPs.

	a home. How will you take care of this?	
15	We have a small house and 3 families living under the same roof. If our house is affected, will you give us compensation for three land plots and for three houses?	You will be compensated for your material losses at replacement cost regardless of the number of people. Some other project allowances may apply to such cases.
16	I am very scared of losing my house. Can you do anything to spare it?	We will do everything we can to minimize negative impact on people and their assets. When the design is ready and when we start the DMS, we will see if it is possible to avoid acquisition of your and anyone else's home. We will work together with the design engineers and alter the Project design if possible, so to avoid demolishing of residential and other buildings.
17	Thank you for providing very comprehensive information. When you do the measurement, will you be here too?	Yes, all of us here will be on site every day during the DMS. Every DP will need to be there too to measure together with us, each of the affected assets. At the end, the DP, local authority representative and the Consultant's representative will sign the detailed measurement list.

Annex: 1

Annex: 1

Consultations with Communities

Galaobod Jamoat,
Village: Chashmasor

Date: 09.03.2017
Time: 10:00 - 12:00
Participants: **9 men**
Handouts: Project brochure, GRM information, Entitlement Matrix, Government Decree on Cut-off Date, and Order for the Establishment of GRGs in Jamoats

Consultations conducted by:
Safarmat Ermadov, PIURR representative
Dragica Veselinovic, Kocks International Resettlement Specialist

Consultations were held at the petrol station in Chashmasor village. The local authorities indicated that only 6 households have assets i within 20 m of either side of the road corridor. All 6 heads of households, as well as anyone else who wished to participate, were invited. Participants had few questions and expressed support for the Project as well as their appreciation for the consultations and information shared.

The main information shared with the participants:

- Information about Phase II of the Project and related activities;
- Information on the Cut-off Date;
- Process of preparation and implementation of the Land Acquisition and Resettlement Plan;
- ADB SPS 2009 and Tajik law compensation requirements;
- Entitlements for land, buildings, structures; business owners and renters, and workers;
- Allowances for severely affected and vulnerable groups;
- GRM mechanism;
- Environmental issues.

The main questions and suggestions at these consultations were as follows:

No	Questions	Answers
1	What percentage of the assets' value you will pay?	All assets acquired will be compensated at replacement cost. Depreciation will not be calculated.
2	If there are two families under one roof, will you give compensation to purchase two homes?	You will be compensated for your material losses at replacement cost regardless of the number of people affected. Some other project allowances may apply to such cases.
3	I have 20-year-old fruit trees. Will you pay me for 20 years of fruit loss?	You will be paid the net market value of one year's income multiplied by the number of years needed to grow a tree to similar productivity, plus the cost of purchasing seedlings.
4	Can I get the land instead of money?	If the Jamoat has free land, they will consider giving land for land.
5	We do not have all the documents for our homes. Will you pay us anything?	You will receive compensation at replacement cost for your buildings. A Jamoat representative can also give you a document certifying that the house is yours and the length of time you have been residing there.
8	I have a petrol station here. How will you compensate?	You will lose the building and the right to use the land it is on. The building will be compensated at replacement cost and the land as per the agreed methodology for commercial plots. For loss of the business, you will receive

		compensation equal to one year's net income plus the cost of lost certificates/ licenses.

Consultations with Communities

Hiloli Jamoat,
Village: Mehnat

Date: 10.03.2017
Time: 10:00 - 12:00
Participants: **14 (13 men and 1 woman)**
Handouts: Project brochure, GRM information, Entitlement Matrix, Government Decree on Cut-off Date, and Order for the Establishment of GRGs in Jamoats

Consultations conducted by:
Safarmat Ermadov, PIURR representative
Dragica Veselinovic, Kocks International Resettlement Specialist
Igor Ziderer, Kocks Local Environmental Specialist

Consultations were conducted at the Mehnat village Jamoat. The local authorities indicated that only six households have assets within 20 m of either side of the road. All six heads of the potentially affected households, as well as anyone else who wished to participate, were invited. There were 14 participants at the consultations. Participants expressed support for the Project and their appreciation for the consultations and information shared. The main questions were to do with the technical characteristics of the road, partial acquisition of land, compensation of businesses and the possibility of avoiding acquisition.

The main information shared with the participants included:

- Information about Phase II of the Project and related activities;
- Information on the Cut-off Date;
- Process of preparation and implementation of the Land Acquisition and Resettlement Plan;
- ADB SPS 2009 and Tajik law compensation requirements;
- Entitlements for land, buildings, structures; and business owners, renters and workers;
- Allowances for severely affected and vulnerable groups;
- GRM mechanism;
- Information about Environmental Impact Assessment of the project and planned measures to avoid/or mitigate anticipated Environmental issues.

The main questions and suggestions at these consultations were as follows:

No	Questions	Answers
1	What percentage of the value of assets will you pay for?	All assets acquired will be compensated at replacement cost. No depreciation will be calculated.
2	I have a petrol station and there is a pond there. Years ago, I told the contractor to fix this as it is bad for the road. They told me that I was late with my request. So, now, I would like to be on time to request that you drain that pond.	The engineering surveys are almost complete. We will check with the engineers if there is any intervention planned at that location and we will inform you.
3	You should construct an underground passage, so children and people can cross the road safely.	We currently do not know if there will be underpasses and where they will be, as the final design has not been completed. When the design is completed, we will give you full information. Road safety standards will be implemented and proper signalization and other features will be considered.

4	Do you plan passes for animals?	Yes, engineers are designing passes for animals.
5	What is the planned width of the road?	It will be a four-lane road with a green median. The total width of the road will be 32 m.
6	We do not have all the documents for homes. What percentage of the value of homes will you pay?	The owners of affected legally and illegally built buildings will receive compensation at replacement cost. A Jamoat representative can also give you a document certifying that the house is yours and the length of time you have been residing there.
7	I have an 800m2 land plot and I would like to build a house this summer. I do not know if my land plot will be affected. Please tell me what should I do.	In a couple of weeks, engineers will finalize the design and we will start the detailed measurement survey, then we will know exactly if your land is affected and how much would be acquired.
8	I have a petrol station, some land next to the station and fruit trees. I worry about having to move somewhere else and I would be very happy if you could avoid the acquisition of my petrol station.	When the design is finalized, we will see how much of your land and business is affected. If there is the technical possibility to alter the road design and avoid acquisition of your petrol station, we will certainly try to avoid it.
9	We are happy to get a new modern road and you will not have any problems here. But if we need additional information, where we can find you?	There are contact details in the brochure you received and a grievance redress committee will be established in your Hukumat.

Annex: 1

Annex: 1

Consultations with Communities

Ayni Jamoat,
Village: Chorbog/Khurason

Date: 13.03.2017
Time: 10:00 - 12:00
Participants: **65 (52 men and 13 women)**
Handouts: Project brochure, GRM information, Entitlement Matrix, Government Decree on Cut-off Date, and Order for the Establishment of GRGs in Jamoats

Consultations conducted by:
Safarmat Ermadov, PIURR representative
Dragica Veselinovic, Kocks International Resettlement Specialist
Abdulloeva Mahbuba, National Consultant, Institute of State Unitary Enterprise "NIIP"

Consultations were conducted at Khurason village in Ayni Jamoat. The local authorities indicated that 123 households have assets within 20 m of either side of the road. All heads of potentially affected households, as well as members of the wider community were invited to participate. There were 65 participants at the consultations. Participants expressed support for the Project and their appreciation for the consultations and information shared, as well as their concerns related to the loss of homes and businesses. The main questions were to do with compensation of buildings, land and businesses, the technical characteristics of the road, partial acquisition of land, and the possibility of avoiding acquisition.

The main information shared with the participants included:

- Information about Phase II of the Project and related activities;
- Information on the Cut-off Date;
- Process of preparation and implementation of the Land Acquisition and Resettlement Plan;
- ADB SPS 2009 and Tajik law compensation requirements;
- Entitlements for land, buildings, structures; and business owners, renters and workers;
- Allowances for severely affected and vulnerable groups;
- GRM mechanism.

The main questions and suggestions at these consultations were as follows:

No	Questions	Answers
1	If my home is partially affected, how will you proceed with acquisition and how will you pay the compensation?	In the case of partially affected buildings, the entire building will be acquired.
2	After the completion of the road construction, what will be the RoW?	Under Tajik law, this road category will have a 50 m corridor from the centerline for homes and businesses and an 80-100m corridor for petrol stations.
3	We have a business and we paid a lot of money for it. Will you repay us the amount of money we paid when we purchased the business?	If the business is going to be relocated, compensation will be paid for loss of the building at replacement cost and for loss of business based on the official tax declaration for the period needed to re-establish the business. This period may vary from 2 weeks for light, movable structures to one year for larger businesses such as petrol stations.
4	Our homes are 25 m away from the road. Will you demolish them all?	No. We will acquire only those which are affected by the road. We will know exactly when the design is completed.
5	What is the planned width of the road?	It will be a four-lane road with a green median. The total width of the road will be 32 m.

6	If my petrol station is partially affected, what will you acquire? I also have at the back of the station irrigated agricultural land. Can I move my petrol station back if it is affected?	Depends on how much of the station is affected. If you can perform your business activities as before or you can easily restore the affected part, then you may stay at the location. If the petrol station is affected to the extent that you need to re-build the building, the whole building will be acquired. We cannot change the land category from agricultural to commercial. You should get information from your Hukumat on this process.
7	If my home is affected, where will I live until I build my home? Will you give us a place to live?	You will receive rental assistance for 3 months, so you can rent a place to stay until you build your home.
8	Many people work in Russia and the land and home documents are in their names. To whom will you pay compensation?	You need to ask them to write and certify authorization in your name which gives you the right to receive compensation on their behalf.
9	If a home is close to the footpath, will you acquire the home?	No, the home will be acquired only if it is affected.
10	Is there compensation for shade trees?	No, you will cut the tree and keep the timber.
11	Will you pay for the land?	Compensation for the loss of rights to use land will be paid. We explained the methodology of calculating the price for the right to use land.
12	Who pays for the demolition of houses?	If you want to take all salvageable material, you can take it. Otherwise, the contractor will demolish it when construction starts.
13	My husband died and all documents are in his name. Who will get compensation?	The compensation will be paid according to Tajik law to his descendants. Everyone who has the right to the inheritance should come with their valid documents.
14	Will the width of the road be the same in villages and cities?	Yes, the road will be 32 m wide.
15	Will you make a U-turn in front of my petrol station?	When we finish the design, we will be able to give you more details. We cannot say with certainty that a U-Turn will be constructed in front of each petrol station.
16	The documents of the petrol station are not in my name and I do not have the purchase agreement or contract. How can I get compensation?	Compensation will be paid to the person that the asset/property is registered to. It would be the best if you register the station in your name.
17	Will the road be a toll road?	Based on current information, the road will not be a toll-paying road.

Consultations with Communities

Kizil-Kala Jamoat,
Village: Bandar

Date: 14.03.2017
Time: 10:00 - 13:00
Participants: **59 (59 men)**
Handouts: Project brochure, GRM information, Entitlement Matrix, Government Decree on Cut-off Date, and Order for the Establishment of GRGs in Jamoats

Consultations conducted by:
Safarmat Ermadov, PIURR representative
Dragica Veselinovic, Kocks International Resettlement Specialist
Abdulloeva Mahbuba, National Consultant, Institute of State Unitary Enterprise "NIIP"
Faizullo Kudratov, National Resettlement Consultant, RETA 7433 – REG, Tajikistan Resident Mission

Consultations were conducted at Bandar village in Kizil-Kala Jamoat. The local authorities indicated that 107 households have assets within 20 m of either side of the road. All heads of potentially affected households, as well as members of the wider community were invited to participate. There were 59 participants at the consultations. Participants expressed their concerns related to the loss of homes and businesses. The main questions were to do with the compensation of buildings, land and businesses, partial acquisition of land, land for land compensation and the possibility of avoiding acquisition.

The main information shared with the participants included:

- Information about Phase II of the Project and related activities;
- Information on the Cut-off Date;
- Process of preparation and implementation of the Land Acquisition and Resettlement Plan;
- ADB SPS 2009 and Tajik law compensation requirements;
- Entitlements for land, buildings, structures; and business owners, renters and workers;
- Allowances for severely affected and vulnerable groups;
- GRM mechanism.

The main questions and suggestions at these consultations were as follows:

No	Questions	Answers
1	When will you acquire our assets?	This is the process which will take a few months to complete. We are preparing the LARP and it will take 4-5 months to prepare, address the comments and receive approval from the relevant Tajik authorities and ADB. After that, we may need to update the LARP if there will be some changes based on the final design. The LARP implementation may start at the end of this year or at the beginning of next year. Please continue with your businesses, agricultural and other activities until we prepare a final LARP and start the LARP implementation.
2	We do not have all the documents for our homes. Will you pay us anything?	You will receive compensation at replacement cost for your buildings. A Jamoat representative can also give you a document certifying that the house is yours and the length of time you have been residing there.
3	When you take my home and my land, you should give me land for land. Why are you talking about	When we conduct the Detailed Measurement Survey (DMS) and Census, we will give to the Hukumats and Jamoats the details of all DPs who need to relocate and ask them to

	land price? Where can I purchase the land I need?	provide sites for the relocation. Those who will need to relocate will be informed and consulted about various solutions.
4	When construction starts, we need you to take people from our Jamoat to work on the road. We need jobs.	According to Tajikistan's labor law, 70% of the labor must be from Tajikistan. We will pass your requests to the PIURR and request to have some related provisions in the agreement with the contractor.
5	We have three families living under one roof; will you give compensation to purchase three homes?	You will be compensated for your material losses at replacement cost regardless of the number of people affected. Some other project allowances may apply to such cases.
6	We have animal husbandry buildings but we do not have documents. Will you compensate these buildings?	You will receive compensation at replacement cost for your ancillary buildings regardless of the documents.
7	Where will I live for the period of construction of the new home?	You will receive rent assistance for three months, so you will be able to rent a home until you complete the construction of your new home.
8	I think that three months will not be enough for the house constructions.	The PIURR agreed to pay accommodation for three months. The decision on the entitlement was based on information from a few villages from Phase 1 of this project. DPs stated that if they receive compensation which includes the cost of the labour for the construction of a house, then they would be able to have a new house in two months.
9	I paid a lot of money for my business. Will you pay us the amount of money we paid when we purchased the business?	If the business is going to be relocated, compensation will be paid for loss of the building at replacement cost and for loss of business, based on the official tax declaration, for the period needed to re-establish the business. This period may vary from two weeks for light, movable structures to one year for larger businesses such as petrol stations. The amount you spent for purchasing the business will not influence the replacement cost of the business.
10	Will you enlarge the road on both sides? We have 50 homes on the right-hand side.	We will know that when the design is completed. Whenever possible, we will work with engineers and alter the design to avoid relocation of homes and businesses.
11	How will you compensate petrol stations?	Compensation will be based on the replacement cost principle plus compensation for business losses for one year based on your tax declaration.
12	If my home is partially affected, how will you proceed with acquisition and how will you pay the compensation? If my land plot is partially affected, how will you compensate?	In the case of partially affected buildings, the entire building will be acquired. In the case of partially affected land plots, we will, together with you, assess the possibility of remaining on the residual land plot. If you can continue to use the residual land and you prefer not to relocate, you may stay there. The acquired land will be compensated as per the adopted entitlements.
13	Will you construct an intersection at the Kurganteppa- Shartusi road?	Yes, there will be an intersection at this location.
14	Can we now cut our fruit trees?	No, do not do that. As explained, until you receive the full compensation, you should not cut any tree, demolish any ancillary building, close any business or do major renovations. You should wait for the DMS and census to be completed, and the final LARP approved and implemented.
15	When you do the DMS, you said that we should be there. Will you	Yes. We will inform a Jamoat official about our schedule and they will inform each DP to be present when the DMS is

	inform us in advance when you will do it?	conducted.
16	Will you construct an underground passage and animal passes?	We cannot say at the moment if there will be underground, pedestrian bridges or traffic light-regulated pedestrian crossings. When the design is finalized, we will inform you. There will be just animal passes and passes for animals and agricultural machinery. The later will be 4m x 6m in size.

Consultations with Communities

Bohtar Hukumat
Bohtariyon Jamoat,
Village Chahiho

Date: 15.03.2017
Time: 10:00 - 12:00
Participants: **17 (16 men and 1 woman)**
Handouts: Project brochure, GRM information, Entitlement Matrix, Government Decree on Cut-off Date, and Order for the Establishment of GRGs in Jamoats

Consultations conducted by:
Safarmat Ermadov, PIURR representative
Dragica Veselinovic, Kocks International Resettlement Specialist
Fozil Fozilov, National Consultant, Institute of State Unitary Enterprise "NIIP"
Igor Ziderer, Kocks Local Environmental Specialist

Consultations were conducted at Chahiho village in Bohtaryon Jamoat. The local authorities indicated that 34 households have assets within 20 m of either side of the road. All heads of potentially affected households, as well as members of the wider community, were invited to participate. There were 17 participants at the consultations. Participants expressed their support for the Project. The main questions were related to the compensation of businesses and buildings, land for land compensation and compensation in the event that people do not have complete documentation.

The main information shared with the participants included:

- Information about Phase II of the Project and related activities;
- Information on the Cut-off Date;
- Process of preparation and implementation of the Land Acquisition and Resettlement Plan;
- ADB SPS 2009 and Tajik law compensation requirements;
- Entitlements for land, buildings, structures; and business owners, renters and workers;
- Allowances for severely affected and vulnerable groups;
- GRM mechanism;
- Information about the Project Environmental Impact Assessment and planned measures to avoid/or mitigate anticipated environmental issues.

The main questions and suggestions at these consultations were as follows:

No	Questions	Answers
1	We do not have all the documents for our homes. Will you pay us anything?	You will receive compensation at replacement cost for your buildings. A Jamoat representative can also give you a document certifying that the house is yours and the length of time you have been residing there.
2	If we try to get all the documents for the buildings now, we will need money for that and if you acquire our homes, we will need to pay for documents again.	You can go to the Jamoat and get a certificate stating that the house/ancillary buildings are your assets, so the compensation can be paid in your name.
3	Can we request land for land compensation?	Yes. This is a preferred solution. If your Hukumat has free land in your village or close to the village and you agree with the offer, you will receive it. If we acquire a small strip of land and it is impracticable to compensate on a land for land basis, then you will receive compensation for loss of right to use

		land.
4	If we have a business and it is not operating at present, how will you compensate?	You will be compensated for your losses: right to use land, replacement cost for the business premises, if permanently affected, and all attachments to the land including fruit trees. You will not be compensated for loss of business because your business is not operating.
5	What is the planned width of the road?	It will be a four-lane road with a green median. The total width of the road will be 32 m.
6	I have a saray (ancillary building) and I do not have documents. If it is affected, will you pay anything?	You will receive compensation at replacement cost for your ancillary buildings regardless of the documents.
7	If my land plot is partially affected, how will you compensate?	In the case of partially affected land plots, we will, together with you, assess the possibility of remaining on the residual land plot. If you can continue to use the residual land and you prefer not to relocate, you may stay there. The acquired land will be compensated as per the adopted entitlements.
8	During and after the construction, the noise level will be much higher than now. Will you consider installing noise barriers like in other countries?	We cannot answer your question now. However, we will record your request and discuss the matter with the design and road safety engineers to see if it is possible to install noise barriers at places where homes are close to the road.
9	If the contractor needs our private land for his needs, how can we approach such requests?	You may contact the PIURR and they will help you deal with this. In any case, take a photograph of the land before leasing it to the contractor, get the contractor to agree that the photograph represents the baseline situation, sign a land lease contract and make sure that there is a clause to restore the land to its original condition when the land is returned to you.
10	Will you construct an underground passage or install traffic lights or other road safety systems?	We cannot say at present if there will be an underground passage, pedestrian bridges or traffic light-regulated pedestrian crossings. When the design is finalized, we will inform you. In any case, the safety of pedestrians will be seriously considered and the appropriate regulations for this road category will be applied.

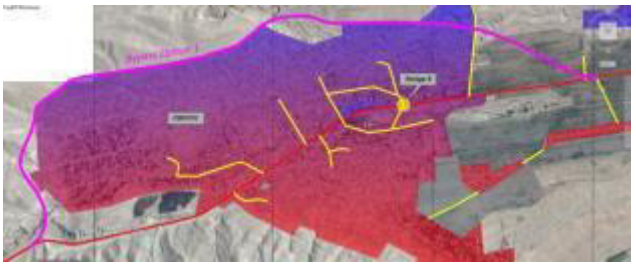
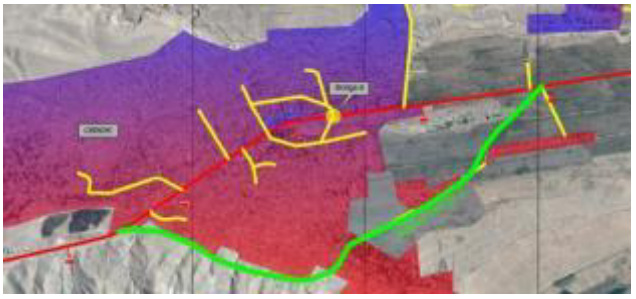
Annex 2 ALIGNMENT SHEETS

1. The following alignment sheets provide an overview of environmentally hotspots and sensitive receptors alongside the Phase 2 of the Project road with reference to the Project chainage. The alignment sheets serve as a base for the following impact analysis.

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
Section 2 of Project road				
12	Begin of Phase 2.	33+475	Begin of Phase 2 	
13	Dahanakiik River	35+960 to 36+160	Increased river bank erosion and mudflow activity due to meandering of Dahanikiik River between km 35+960 and 36+160. 	For reduction of erosion rate and avoidance of crossing the river two times between km 35+960 and 36+160 a new river bed will be profiled parallel to the Project road on this section.
14	Dahanakiik River	36+600	Bridge crossing Dahanikiik River. Construction works should be conducted during summer – autumn when water level is low.	Water quality measurement 100 m upstream and

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
				100 m downstream the existing bridge for purpose of baseline establishment. Than regular monitoring during constriction stage. Parameters as indicated above for River Kofarnigon.
15	Dahanikiik River and adjacent slopes		It may be required to use an additional source for material extraction due to long distance haulage from Kofarnigon and Vakhsh river respectively. Boulders and bedrock slopes at Dahnikiik river are considered to be a suitable source. These are limestone and dolomite rock exposures which can be mined for obtaining aggregates and crushed-stone sand for concrete. 	In case it is required to use this additional aggregate source all required licences and approvals need to be obtained. Approval from CEP required.
16	Obikiik		Project road is traversing Obikiik town. Current cross section is too narrow for 4 lanes. If standard cross section is implemented than there is encroachment in structures and private and social property assets (trees, electricity line, private yards, building structures, pipeline).	Mitigation and compensation measures required. Tree losses need to be compensated by

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
				new plantings. Private assets will be compensated according to LARP.

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
17	Obikiik		Within Obikiik potential impacts due to noise and air emissions during construction and operational stage. Potential vibration impacts on nearby building structures during construction stage. Sensitive receptors such as school and bazar are abutting the Project road. Safe road crossing facilities required within Obiquiik. 	Baseline measurement nearby sensitive receptors for air emissions, noise and vibrations before construction start. Than regular measurement during construction. Private assets will be compensated according to LARP. In addition two bypass options are considered for Obikiik as shown below.
18	Bypass Options		Bypass options. Option 1 Violet Line, Option 2 Green Line. Two bypass options are proposed for Obikiik and need to be investigated. Following the results of the Rapid Environmental Assessment none of the two bypass options results in upgrading the Project to Category A.  	Reasons for categorization as B are: Alignment of bypass is located close to the urban perimeter of Obikiik, land use is mainly seasonal pasture and there is no physical encroachment into ecologically valuable habitats.

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
19	Eastern Bypass Alternative for Obikiik (Option 1)		Begin of proposed Eastern Bypass (Option 1). 	
20	Eastern Baypass Alternative for Obikiik (Option 1)		Difficult terrain topography at begin of Eastern Bypass 	Although environmentally still category B there are significant obstacles within the bypass alignment due to difficult topography.

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
21	South of Obikiik		There are cemeteries located along the Project road within Khurason District. Following initial consultations in Obikiik people are concerned about potential encroachment of the project road. Therefore as a mitigation measure any road widening is shall be carried out towards the opposite side of the cemeteries. The design needs to consider this in order to avoid any impact on the cemeteries as far as it is technically feasible. 	Any encroachment into cemetery area must be avoided.
22	South of Obikiik over a stretch of approximate 4 km	Km 41+900 – km 45+800	Traverse of extensive orchards south of Obikiik. 	Considering the higher traffic volumes in the future it is proposed as a mitigation measure to plant roadside trees and shrubs. Besides its aesthetical value these plantations will reduce emission of pollutants on land for food production.

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
23	River. Approximate 2.5 km before traversing alongside the village Mekhnat (Bridge Number 9)	44+400	Crossing of river. Construction works should be conducted during summer – autumn when water level is low. 	Water quality monitoring during construction phase. Parameters pH, dissolved oxygen, sulfate (mg/l), NH4-N (mg/l) and oil products.
24	North of Mehknat village	Km 44+500	Cattle, crossing the Project road. 	Pasture land is stretching alongside the whole phase 2 section. Therefore animal and agricultural machinery crossings need to be installed. Locations need to be fixed in corporation with administration and farmers.
25	Entrance to Uyali town	Km 58+000	Irrigation channel. Water quality monitoring is proposed during construction stage.	Water quality monitoring during

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
				construction phase. Parameters pH, dissolved oxygen, sulfate (mg/l), NH4-N (mg/l) and oil products.

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
26	Uyali Town		Sensitive hotspot. Within Uyali town centre. Bazar and shopping area adjacent to Project road. 	Encroachment into public and private assets. LARP need to be prepared. Baseline measurement and Monitoring of Noise, Air Pollutants and Vibration required during construction phase.
27	South of Uyali		Planted tree row (Pines) along both sides of the Project road south of Uyali. Due to the widening of the cross section tree cuts cannot be prevented. 	Tree losses need to be compensated by new plantings.
28	Kyzylkala village		Crossing of Kyzylkala village before entering bridge over River Vakhsh.	Encroachment into public and

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
				private assets. LARP need to be prepared.
29	Vaksh River		Fish selling near Vaksh River 	For protection of water quality baseline monitoring as indicated below.
30	Vakhsh River		Crossing of Vakhsh River and its associated floodplain.	Baseline measurement for water quality

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
				500m up- and downstream the new bridge during construction phase. Parameter as for River Kofarnigon.
31	Vakhsh River		Material extraction from Vakhsh river floodplain. Borrow area is already in operation. Borrow areas upstream the new Vakhsh bridge shall give priority to borrow areas downstream. This is for reason of protection of bridge foundation.	Prior to start extraction activities approved licence required from CEP. Monitoring during construction phase..

No.	Location	KM	Issue / Picture	baseline parameters / additional remarks
32	Vakhsh River valley		Facilities for aggregate crushing nearby extraction site in Vakhsh river floodplain. It is recommended to try to use these facilities. 	Part of phase 2 of Project.
33	Kurgonteppa		End of Project road in Kurgonteppa. Sensitive hotspot. 	Baseline measurement and monitoring of noise, air pollution and vibration during construction phase. Part of Phase 2 of Project.

Annex 3 Complete List of Sensitive Receptors

Annex 3

Sensitive receptors concerning noise emissions are schools, hospitals mosques or other social infrastructure facilities. They are located within the settlements alongside the Project road. The information about sensitive points near the road alignment was collected during public consultations and specially organized visits to the Project road area. Although only the sensitive receptors located in distance of 200m or less to the Project road were targeted some of them located at the larger distance were also included into the list as the measurement of the accurate distances on the spot was complicated. The distances were clarified with the use of maps and google images.

Left and right hand sides are defined as located on the left or right during movement from Dushanbe to Kurganteppa. Very few of identified receptors are located really close and exposed to be directly affected by construction works. The legend used for depiction of receptors as follows:

Legend for identification of sensitive receptors

	School or any other educational establishment
	Hospital or health center
	Kindergarten
	Mosque
	Stadium or other sport facility
	Large market or trade center
	Project road

Description of sensitive receptors

No	Description	Locations & images of sensitive points
	The location of sensitive points within Obikiik village, the center of Huroson district	
1	Central Huroson Hospital. The distance from the project road is 200m	The Hospital is located from the left side of the road, The area is separated from the designed road by residential houses and irregularities of landscape and not seen from the road.
2	School-lyseum at the north part of village near the central street at the left hand side. The distance from the edge of road no more than 30m Very close	

3	The general school is located 150m from the left edge of road and partially adjoins the school lyseum	
4	Health Center in the central part of village from the right side from the road in about 40 m from the edge of the road	

5	Kindergarten in Obikiik on the right hand side of road in 90m. The facility is separated from the road by market buildings.	
6	Mosque in Obikiik from the right side of the left-hand The distance from the current alignment of project road is 170m	
7	Stadium in Obikiik. The distance from the current alignment is about 30 meters on the right hand side of the road	

8	The center for professional education from the right hand side of the road in 140m.	
9	School No 2 at the south part of Obikiik on the left hand side. The distance from the road is about 20m. Very close	
	The location of Mosque near entry to Jamoat Mehnat on the left-hand side	

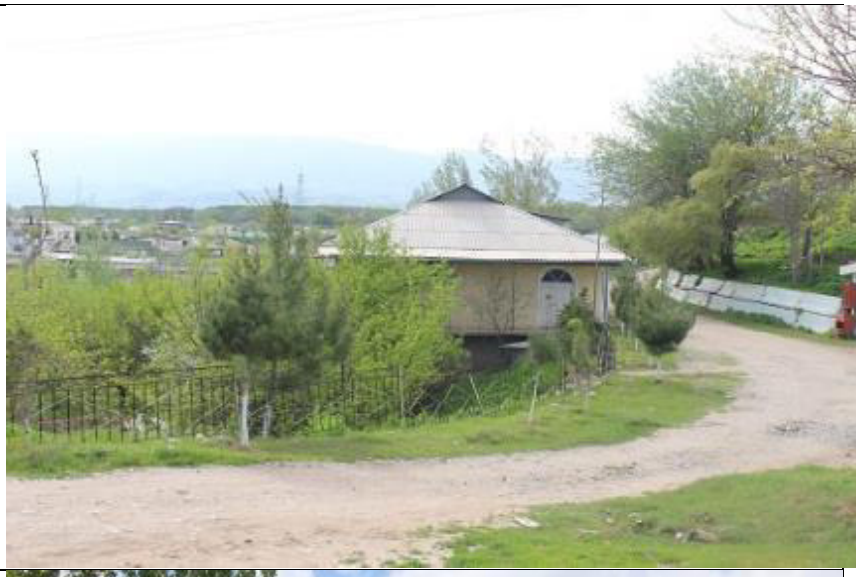
10	The mosque is located on the left-hand side of the road. The mosque was obviously built for the serving of travelers.	
	The location of sensitive within Yali(Aini) village of Huroson district	
11	Large Sunday market before the entrance to Yali on the right side of the road. The market works only on Sundays	

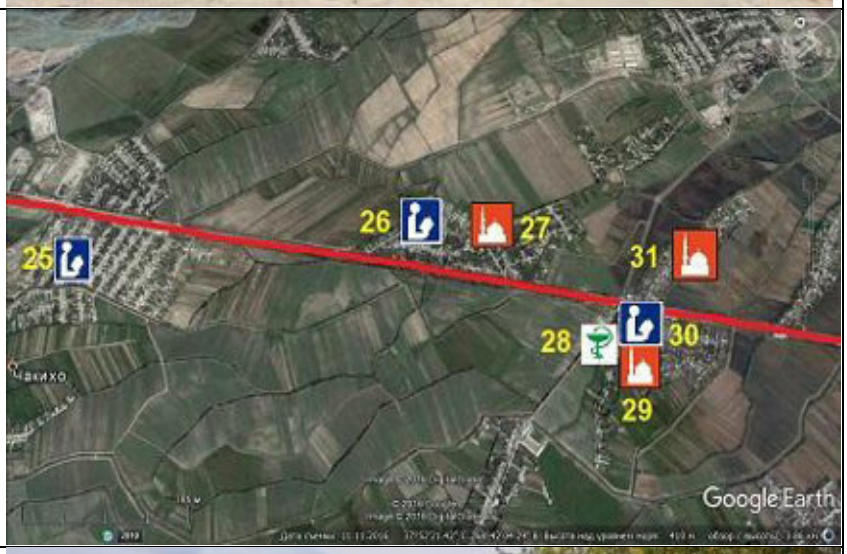
12	Hospital in Uyali, located in approximately 320 m from the project road on the right hand side and unlikely to be directly affected by noise and vibration of future road	
13	Kindergarten " Sitora" on the right side of the road. Located in about 50m from the current edge of the project road. Separated from the project road the private houses Very Close	
14	The mosque in the central part of Uyali on the right hand side of the Project road in approximately 180 m from the project road.	

15	The large mosque on the left hand side of the Project road. The distance from the left side of the road in about of 30 m from the edge of the road. The main building is still under construction.	
16	Stadium in Uyali in about 200m	The stadium is not seen from the road and located behind the mosque
	Location of sensitive points within Chorbog village, Aini Jamoat	

17	Health Center in Chorbog village is about 50 from the road on the left hand side.	
18	School in the Chorbog village from the left side of the road, in about 200m from the edge of the road	

	Location of sensitive points within Kisilkala Jamoat, Huroson District	
19	School in the northern part of Kizilkala jamoat – on the left hand side of the project road. Distance to the school from the edge of current alignment is about 200m	
20	The mosque on right hand side of the Project road near the entrance to central part of Kizilkala in about 30 meters from the road	

21	The mosque on the right hand side of the road in the central part of Kizilkala in about 50 meters of road	
22	Kindergarten on the right side of the road in about 150m of the project road	
23	Medical Center and Hospital in the center Of Kizilkala, on the right hand side in 20m from the road Very close	

24	The school in central part of Kizilkala village in about 110 m on the right hand side of the Project road	
	Location of the sensitive points within Jamoat of Bohtaryon (villages Navobad, Orto, Chahiho and Bibi-Huram	
25	School in Novobad village, on the right side of the road. The distance from the current alignment is about 350m	

26	School in village of Orto, Bohtryen Jamoat, in about of 100m from the project road on the left hand side	
27	Mosque in village of Orto Bohtaryen jamoat, left hand of the road .Distance to project road is about 200m.	
28	Health Center in Chahiho village, from right hand side of the road in about 200m.	

29	Mosque in the Chahiho village in about 150m to the Project Road.	
30	School in Chahiho village from the right side road roughly in 150 m of the road.	
31	The mosque in village Bibuhuram (Bahtoryen jamoat) on the left side in about of 200m from the project road.	

	Schematic location of sensitive points within Oryen jamoat(Bohtar district and Kurgan-Teppa city district	
32	The mosque in village of Malik Gayoev of Oryen Jamoat in about 350m from the Project road, on the right side	
33	The Health Center in village of Kahramon, Oryen Jamoat, located left of the project road. Distance to the current project road is about 210m	

34	The mosque in Ok-oltun village, Oryen Jamoat, about 260 m from the project road, on the left side	
35	The Health center in Village Haeti Nav. Kurgan-Teppa area on the right side. Distance to the road is about 230m	
36	The mosque in the village Haeti Nav, Kurgan-Teppa area on the right side. The distance to the Project road is about 250m.	

Annex 4 NOISE MODELLING MAPS

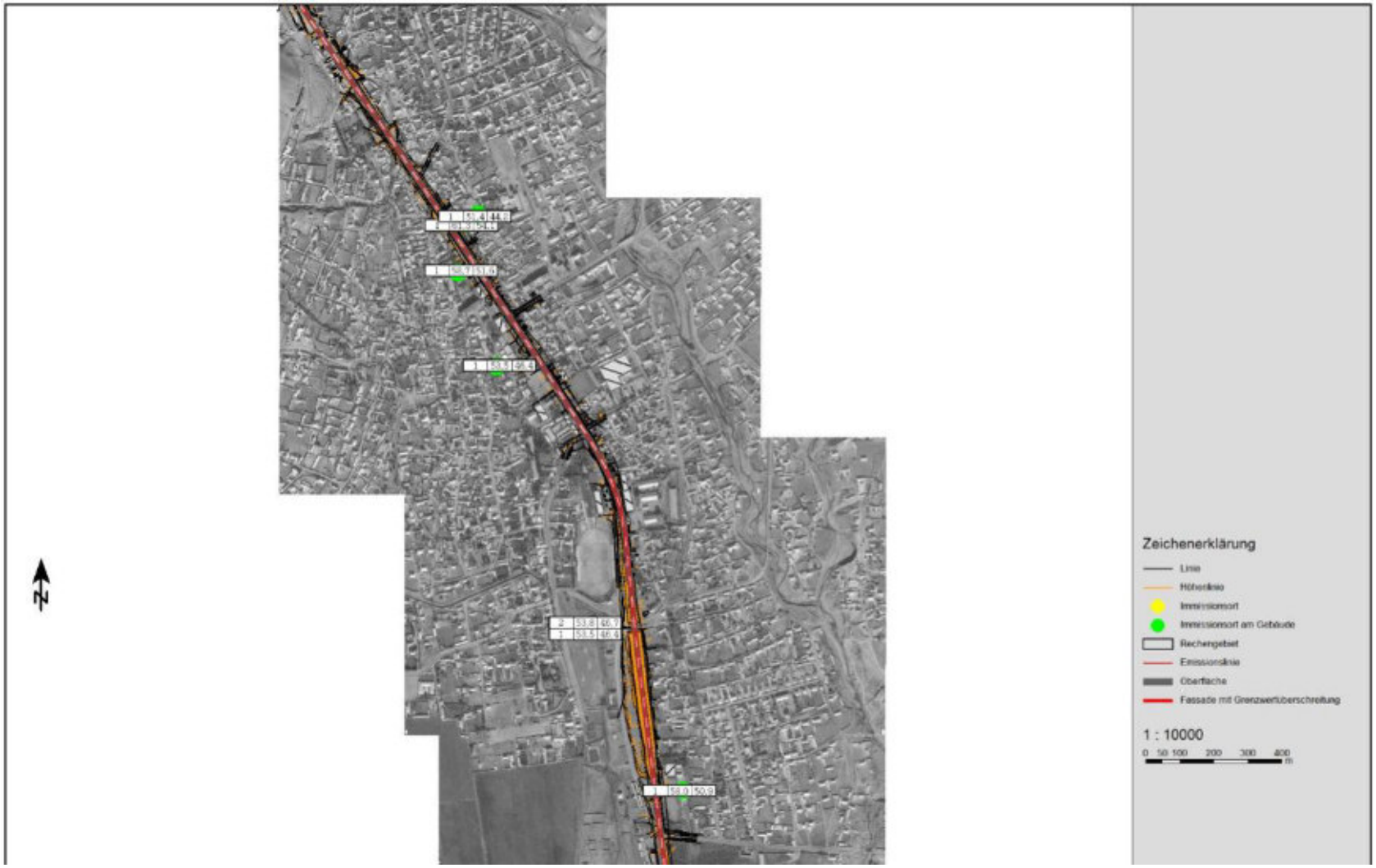


Fig. 40: Map showing sensitive receptors of public interest Obikiik

The above map is intended to only show the location of the identified sensitive receptors. The calculated noise levels for each location (day and night time for the years 2021 and 2031) are shown in the tables 46 to 49.

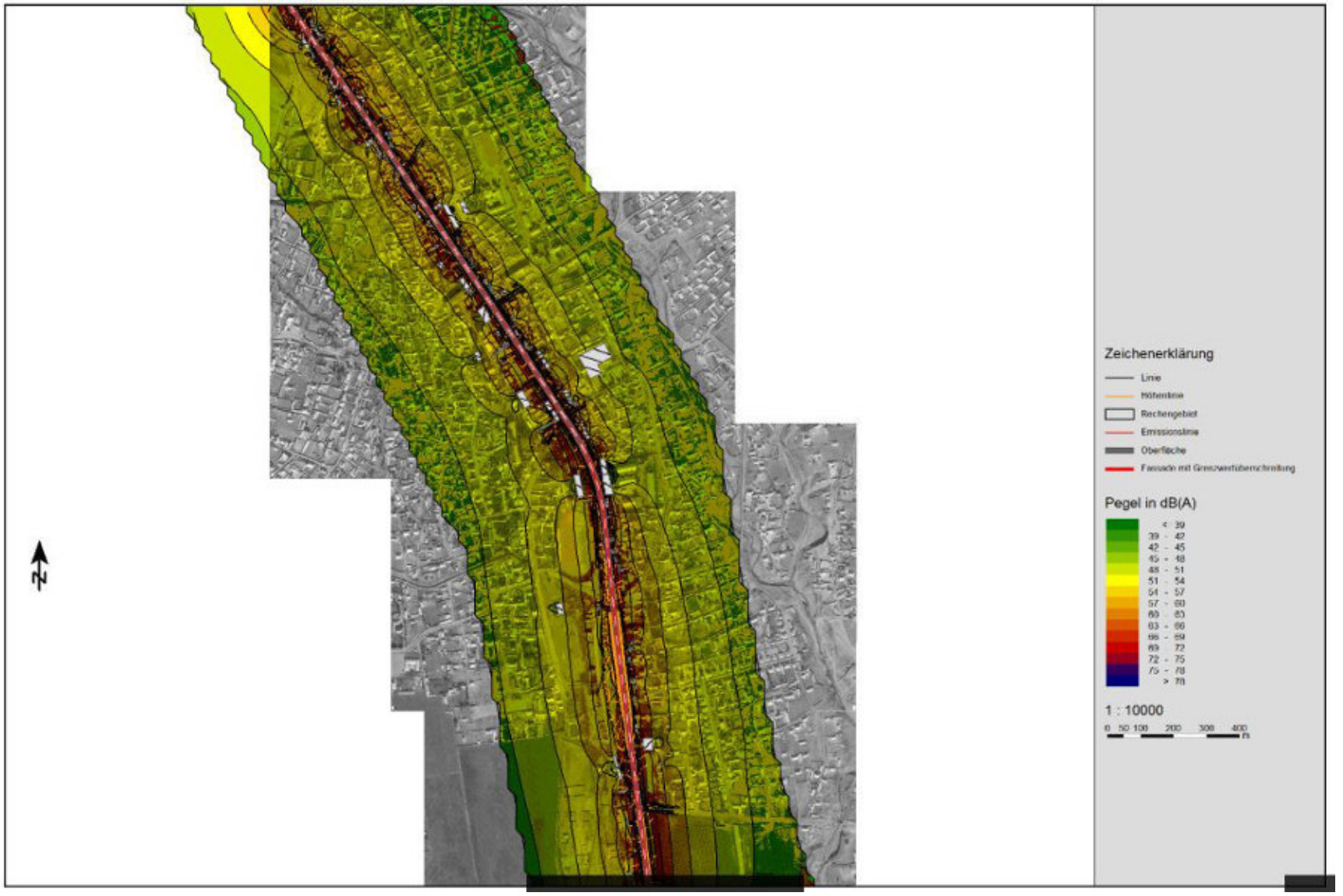


Fig. 41: Day time noise levels in Obikiik for the year 2021

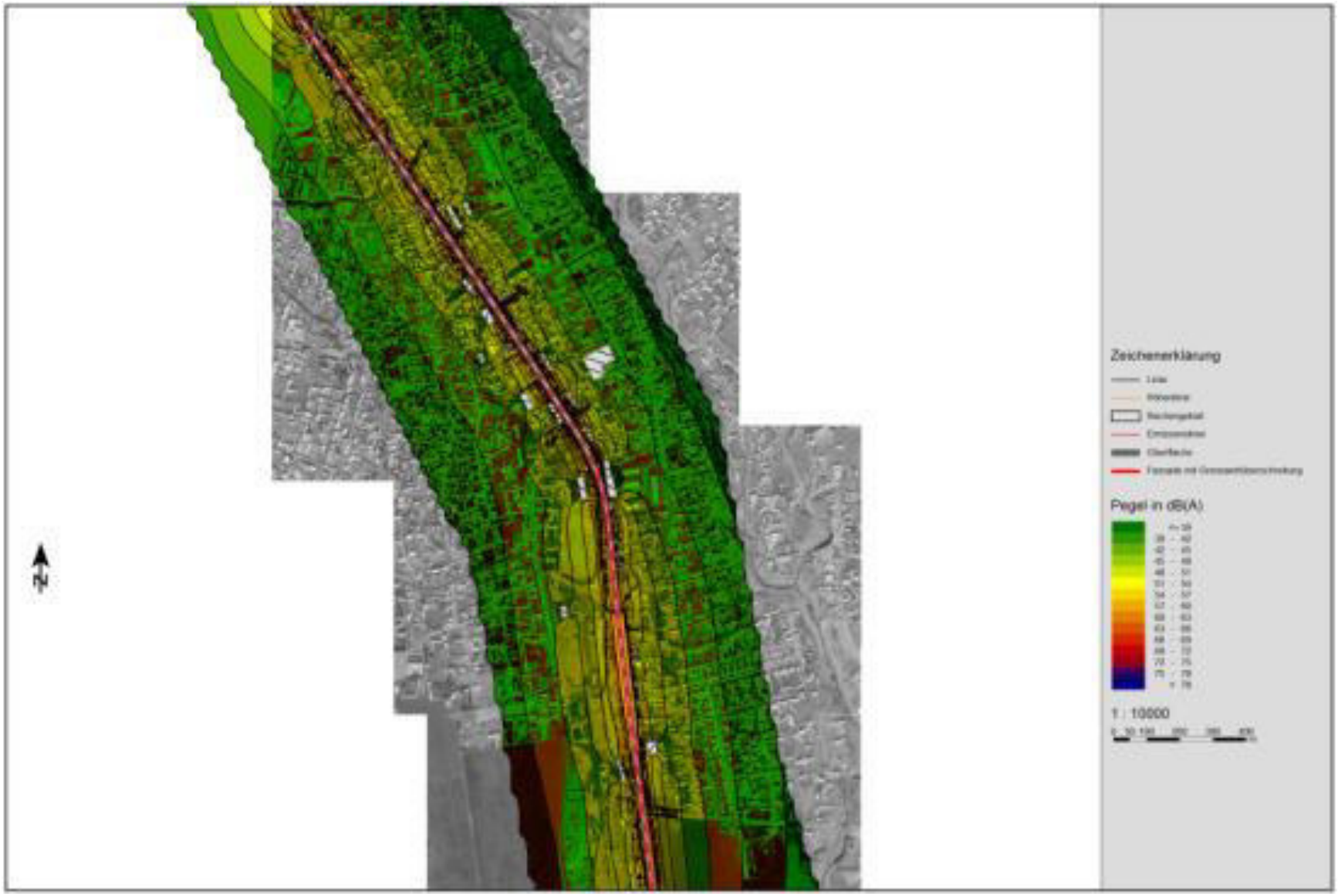


Fig. 42: Night time noise levels for Obikiik for the year 2021

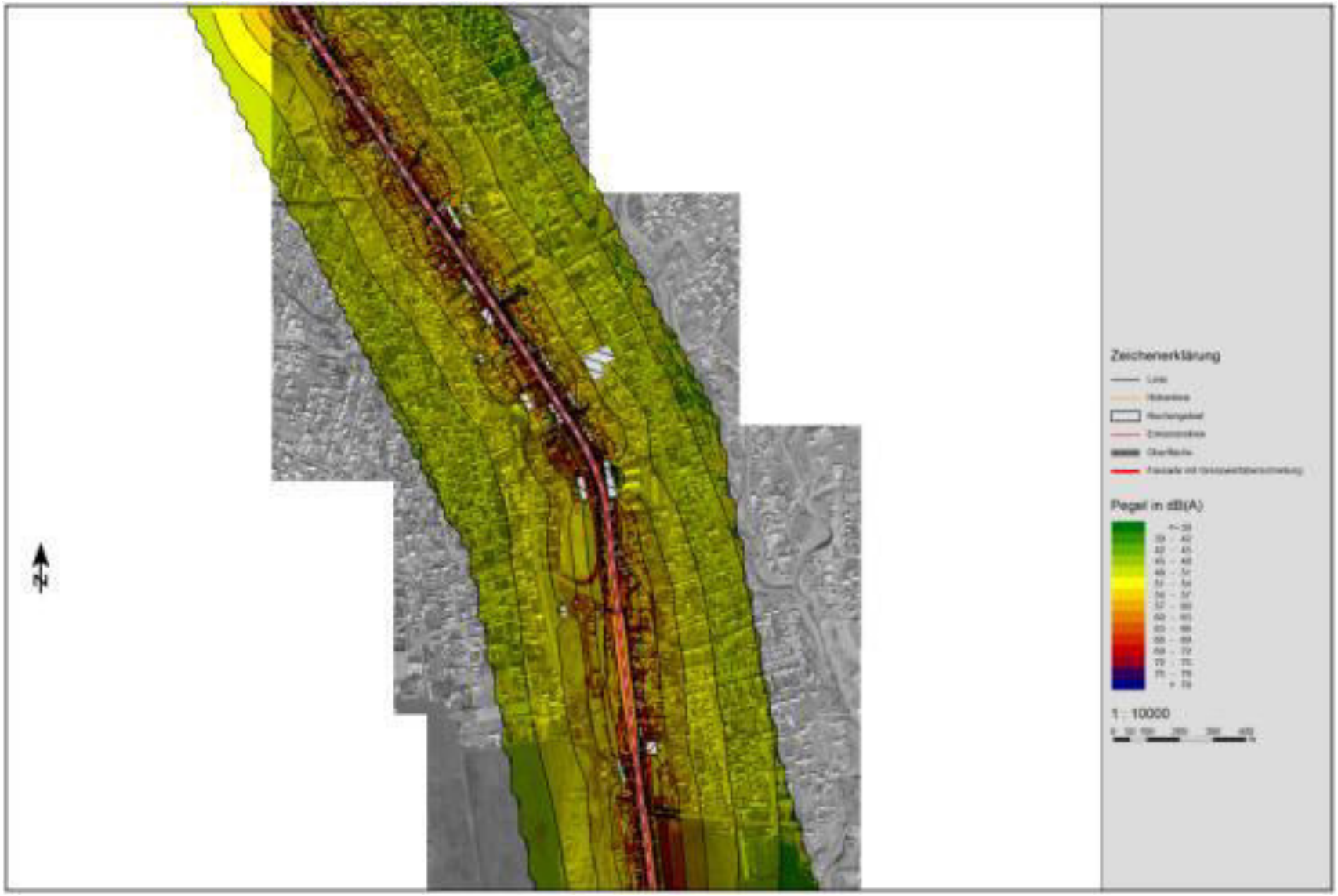


Fig. 43: Day time noise levels for Obikiik for the year 2031

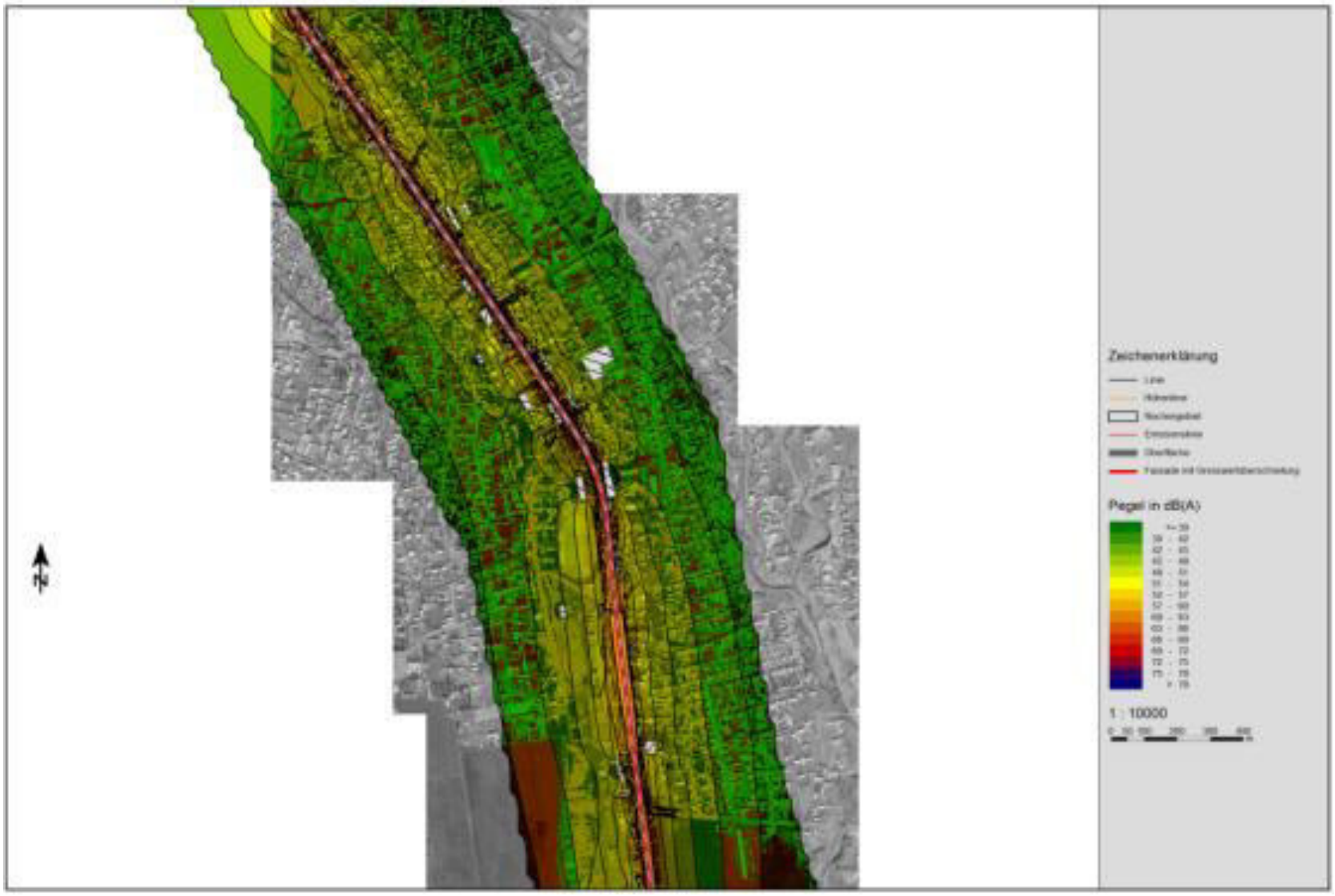


Fig. 44: Night time noise levels for Obikiik for the year 2031

Fig. 45: Map showing location of sensitive receptors in Uyali

The above map is intended to only show the location of the identified sensitive receptors. The calculated noise levels for each location (day and night time for the years 2021 and 2031) are shown in the tables 46 to 49.

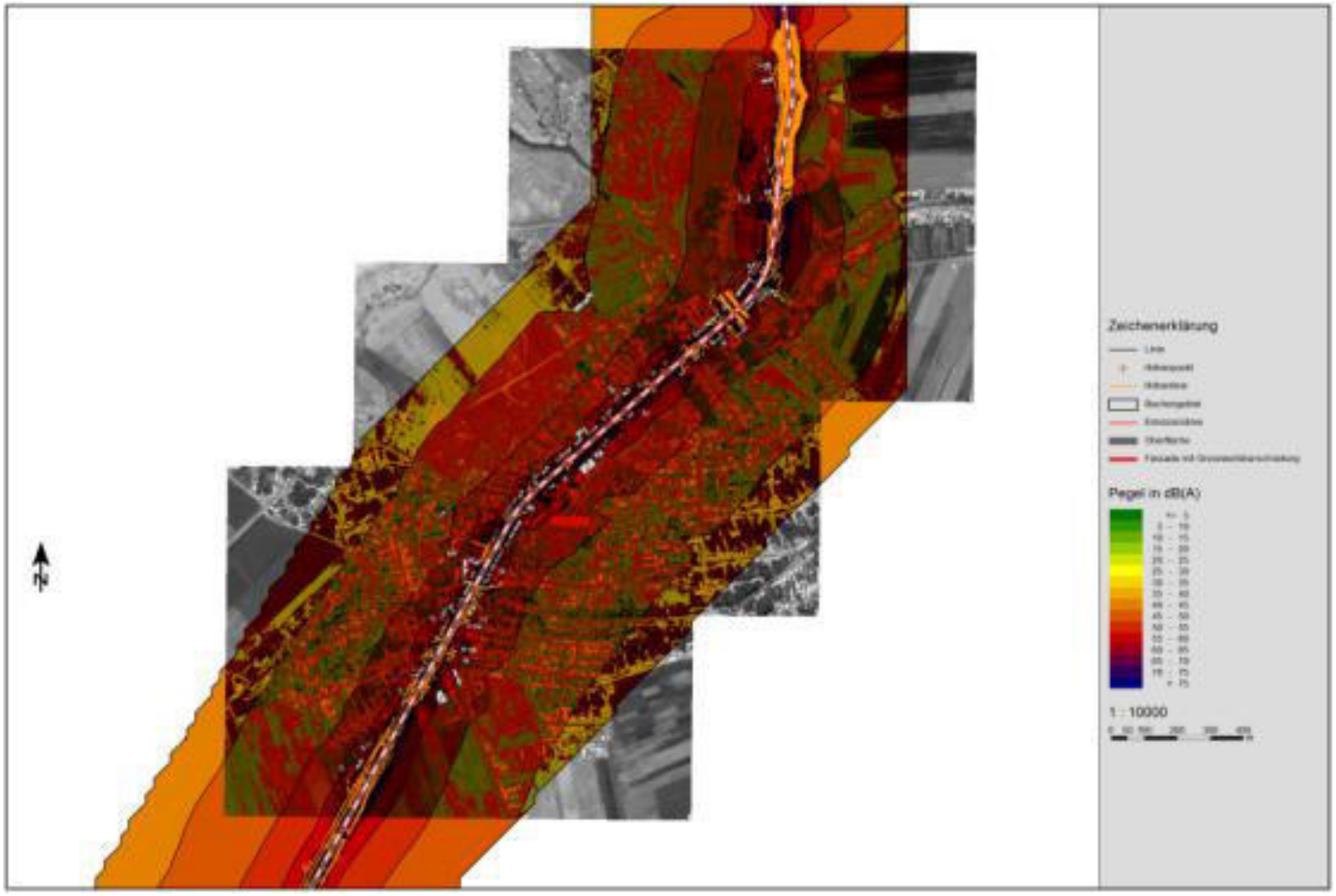


Fig. 46: Day time noise levels for Uyali for the year 2021

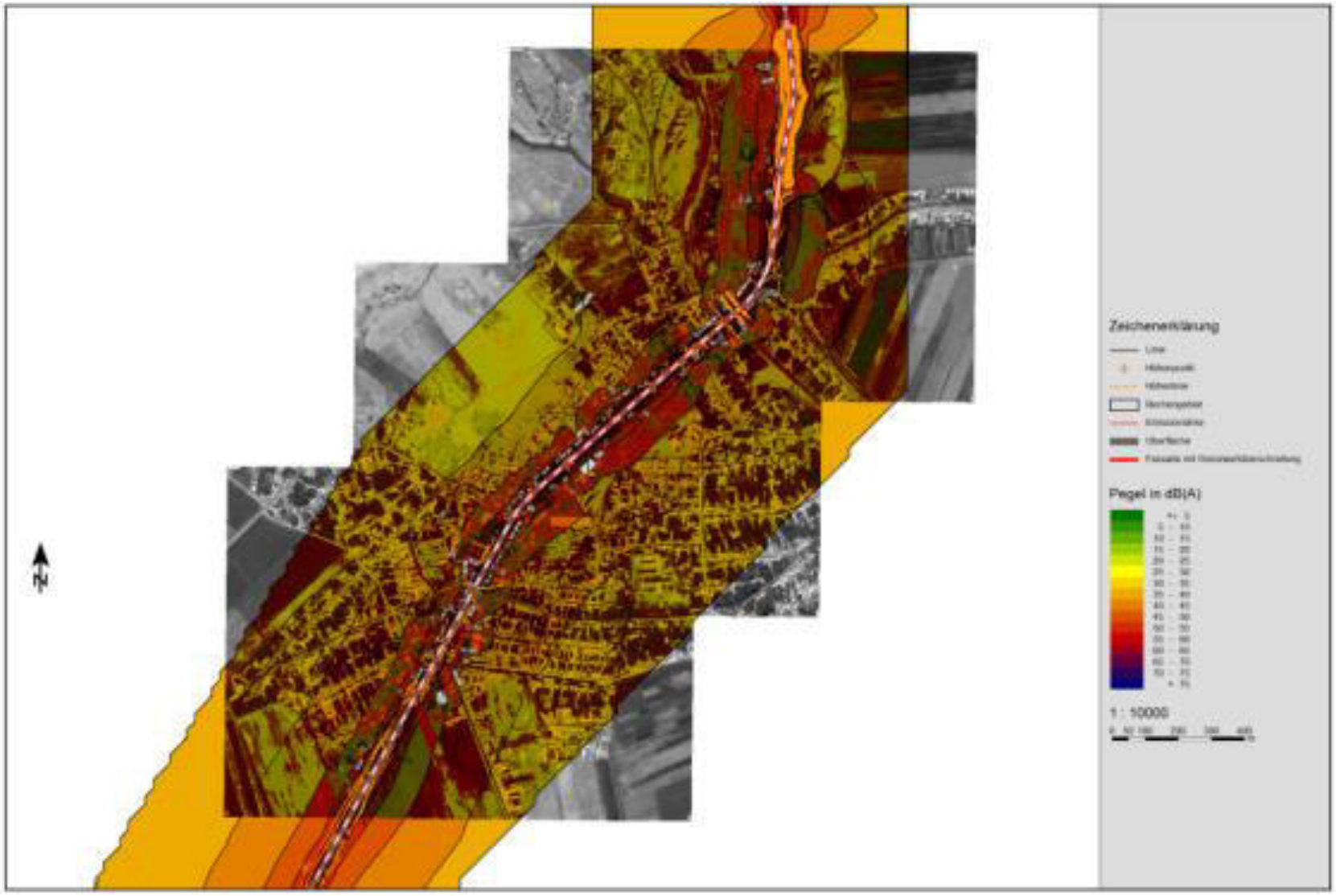


Fig. 47: Night time noise levels for Uyali for the year 2021

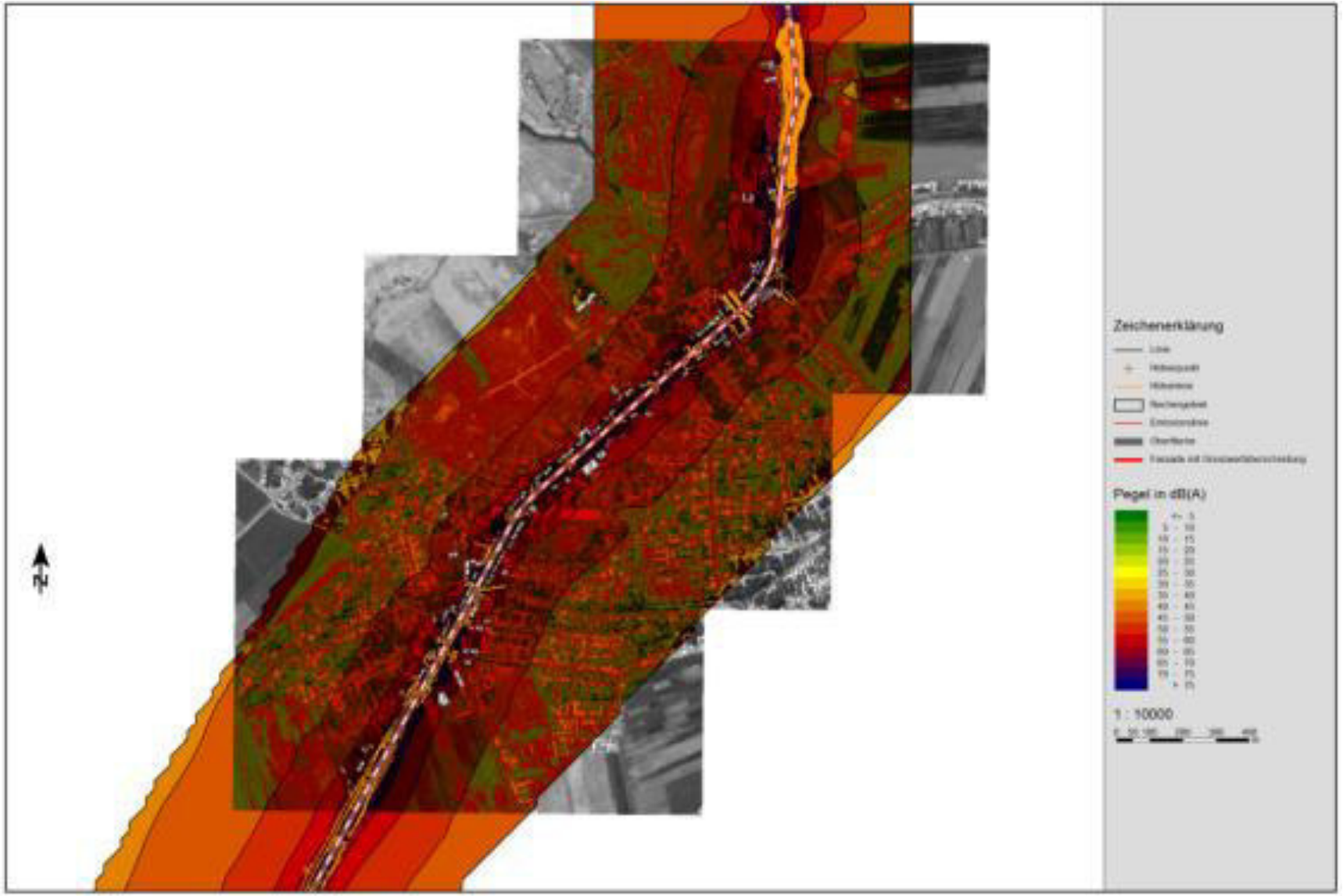


Fig. 48: Day time noise level for Uyali for the year 2031

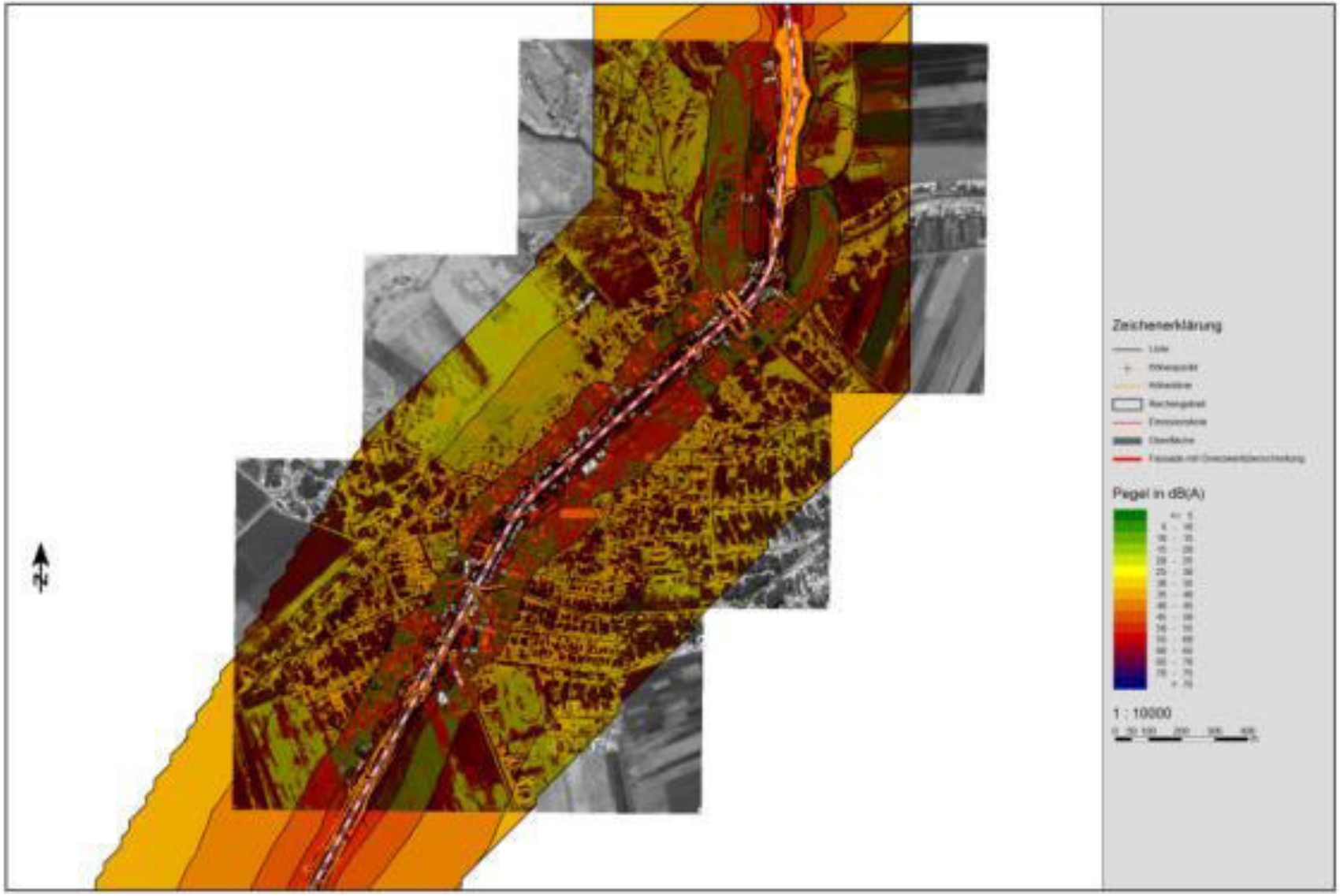


Fig. 49: Night time noise level for Uyali for the year 2031

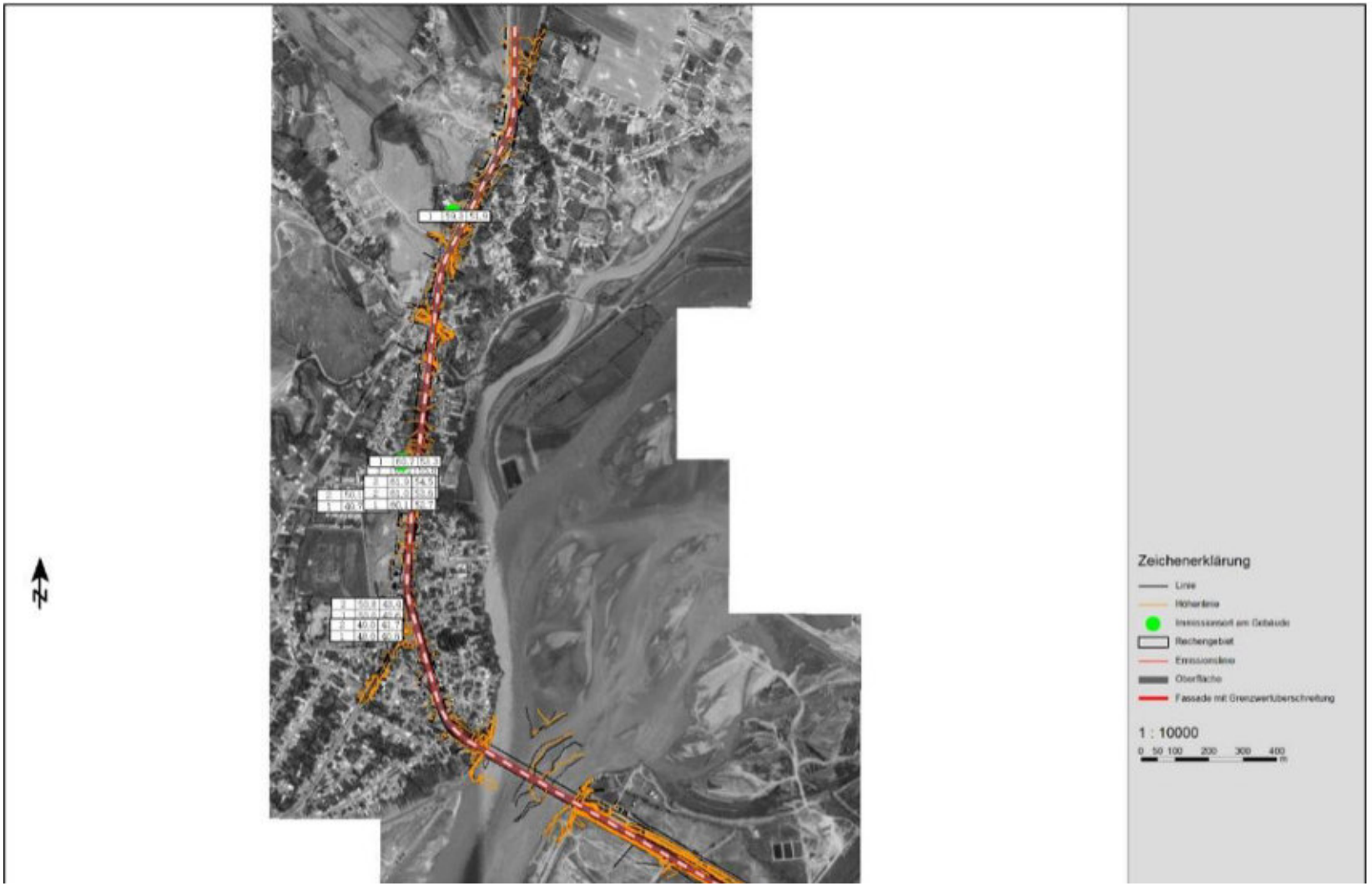


Fig. 50: Map showing the location of sensitive receptors in Kyzylkala

The above map is intended to only show the location of the identified sensitive receptors. The calculated noise levels for each location (day and night time for the years 2021 and 2031) are shown in the tables 46 to 49.

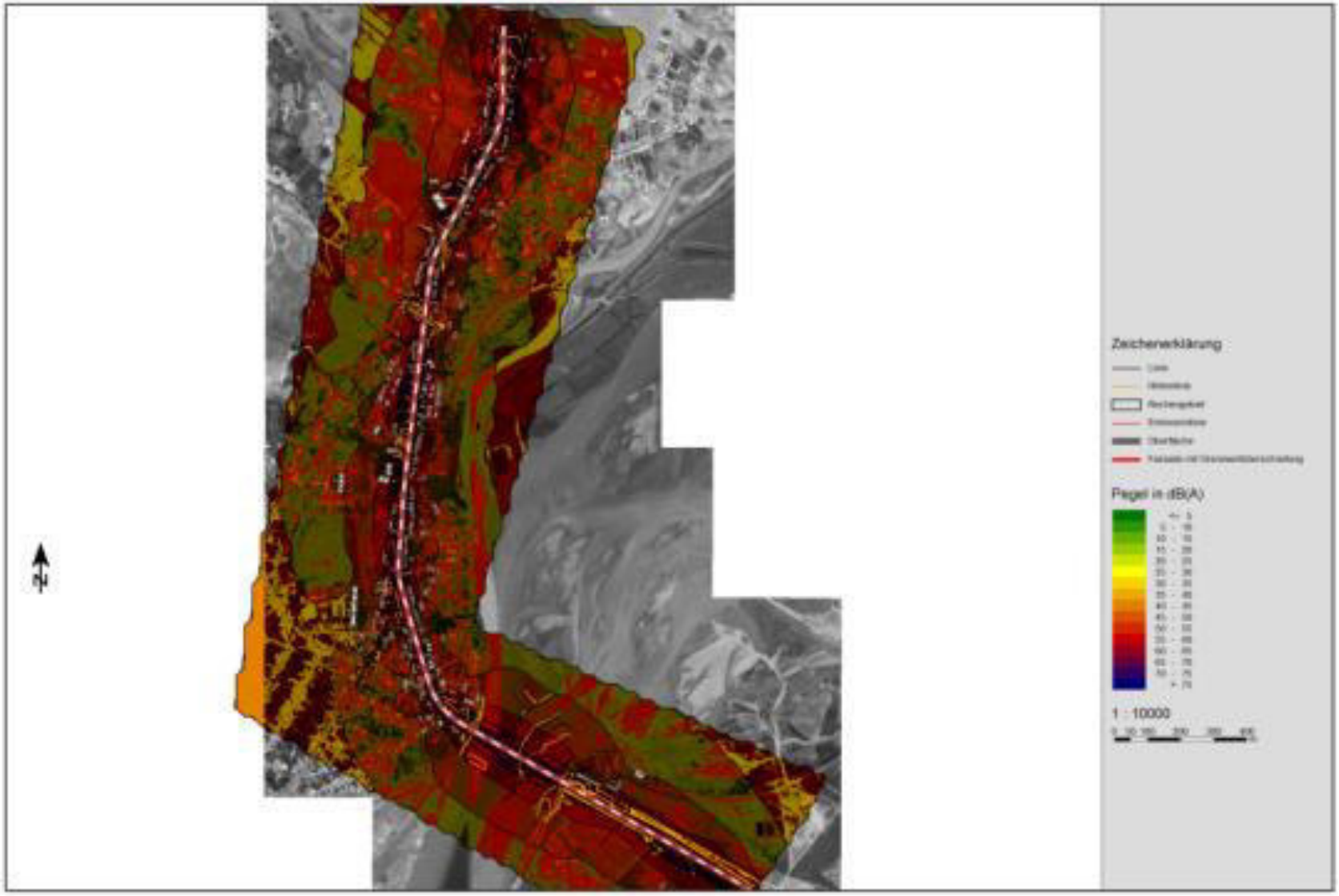


Fig. 51: Day time noise levels in Kyzylkala for the year 2021

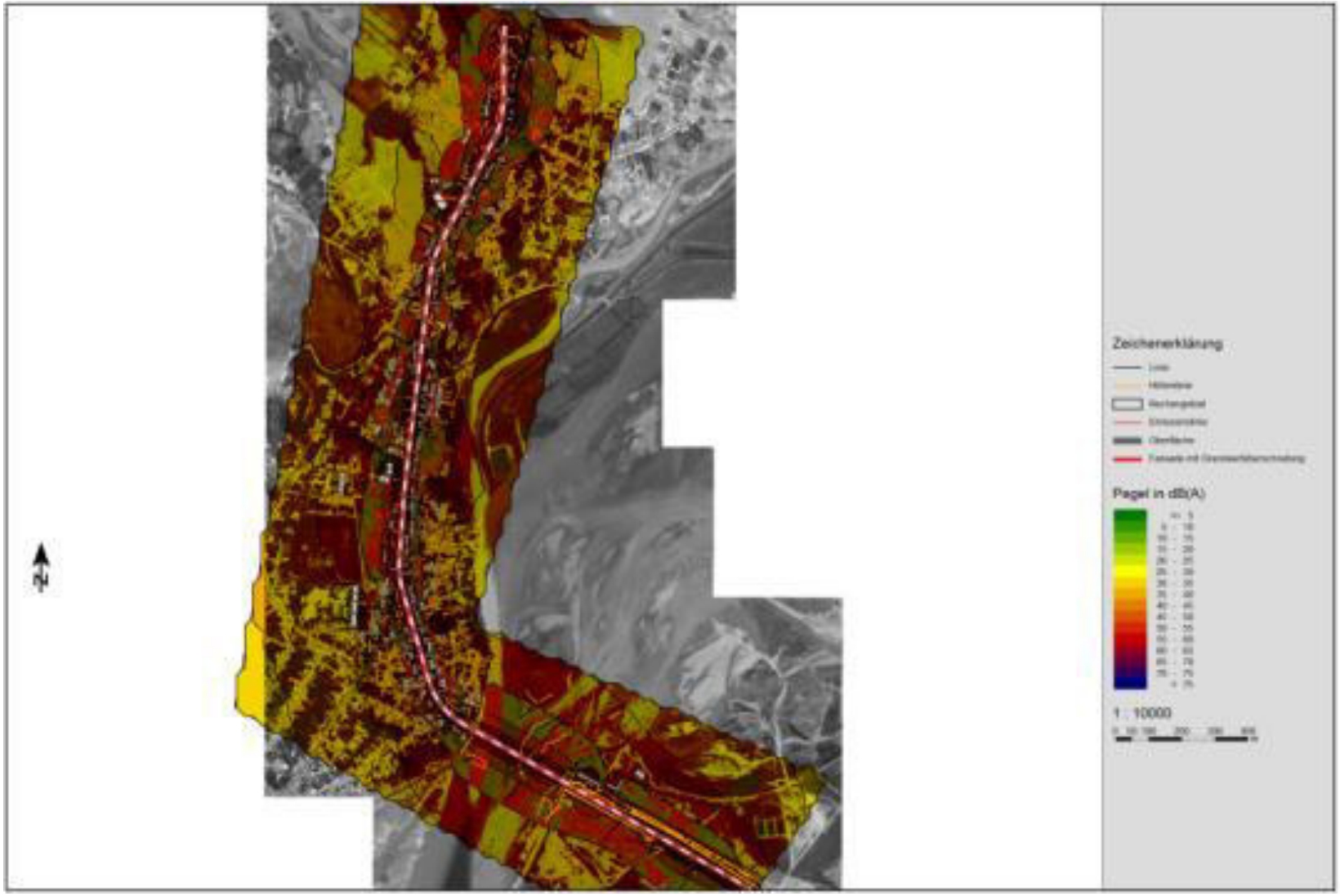


Fig. 52: Night time noise levels in Kyzylkala for the year 2021

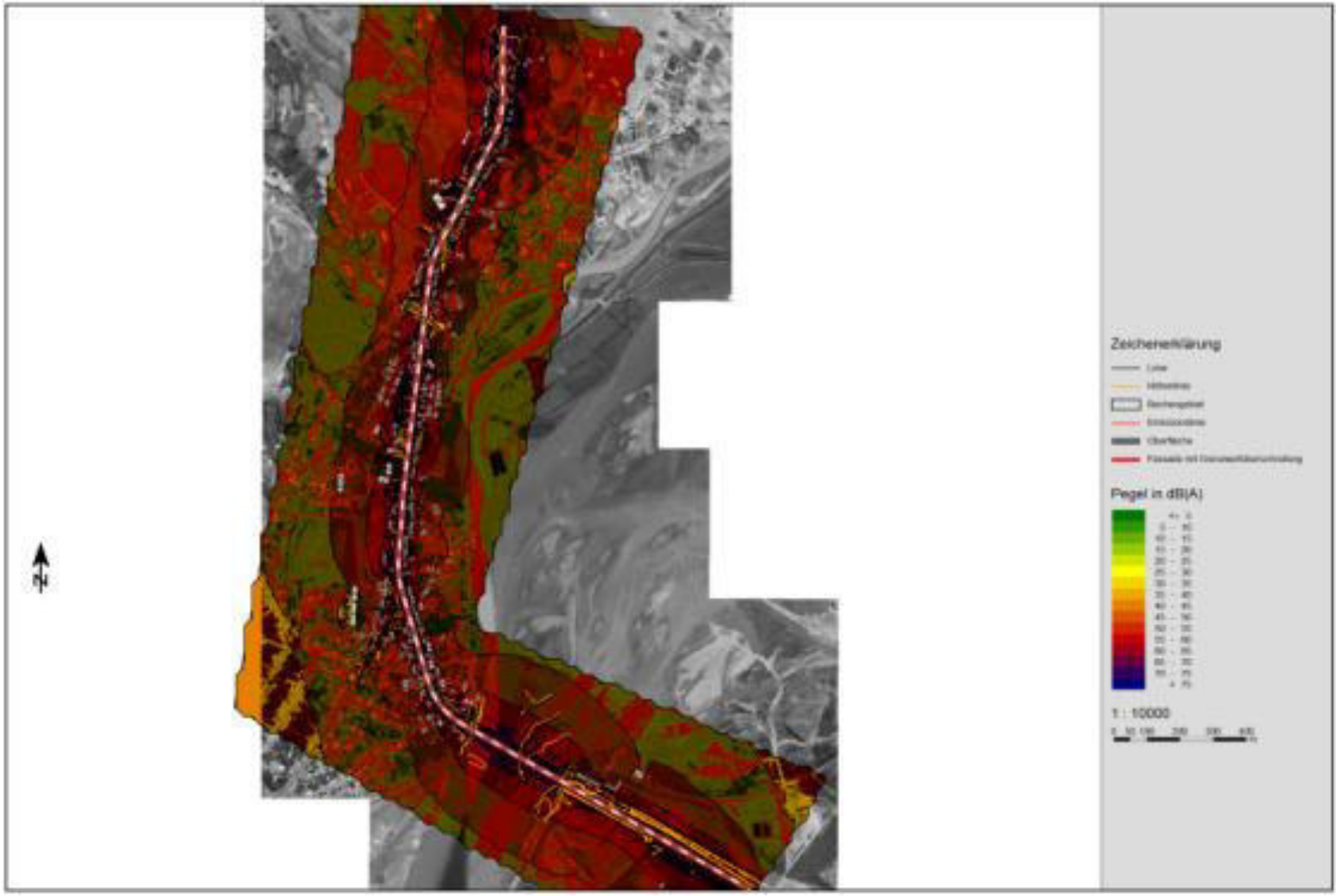


Fig. 53: Day time noise levels for Kyzylkala for the year 2031

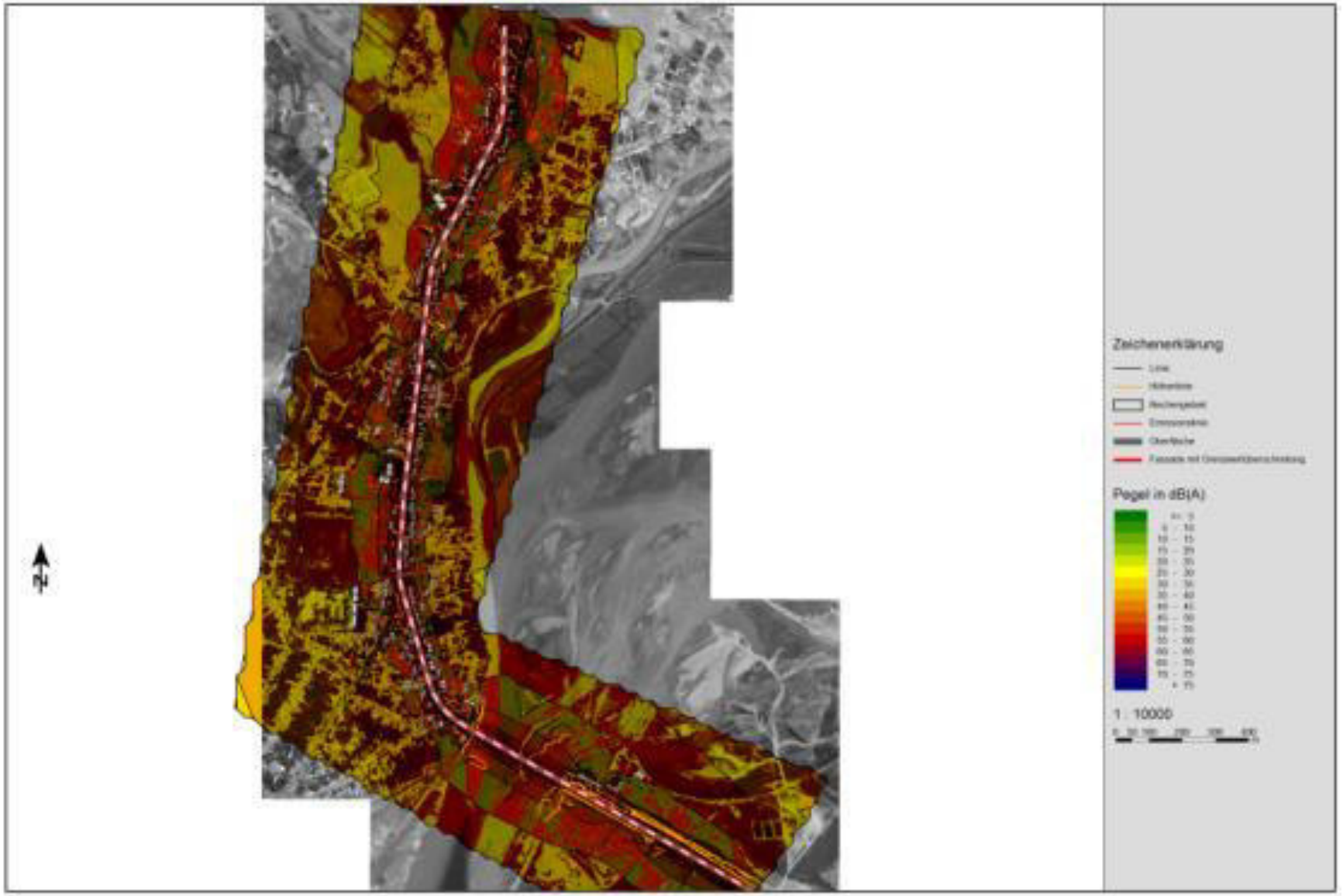


Fig. 54: Night time noise levels for Kyzylkala for the year 2031

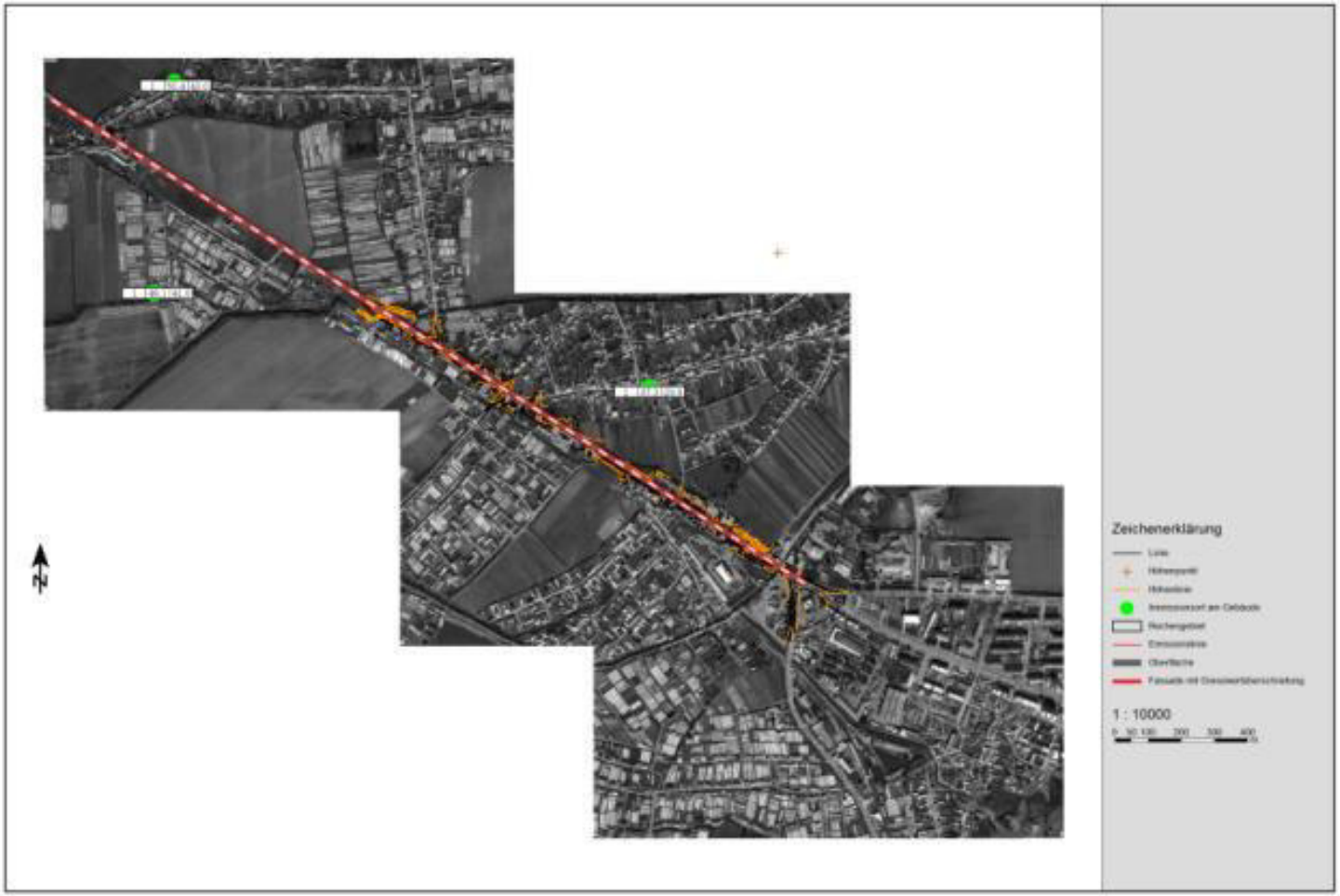


Fig. 55: Map showing the sensitive receptors in Kurgonteppa

The above map is intended to only show the location of the identified sensitive receptors. The calculated noise levels for each location (day and night time for the years 2021 and 2031) are shown in the tables 46 to 49.

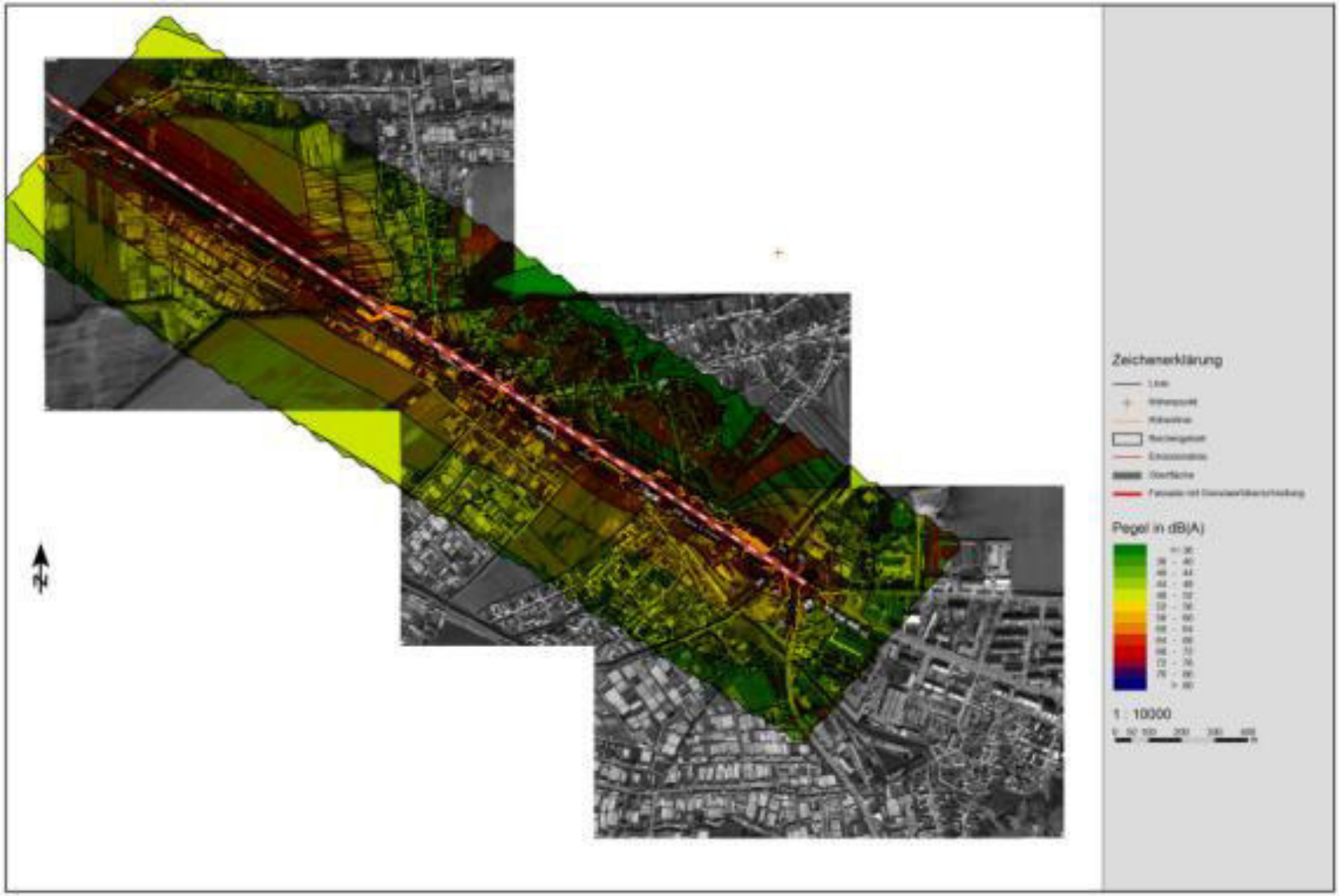


Fig. 56: Day time noise levels in Kurgonteppa for the year 2021

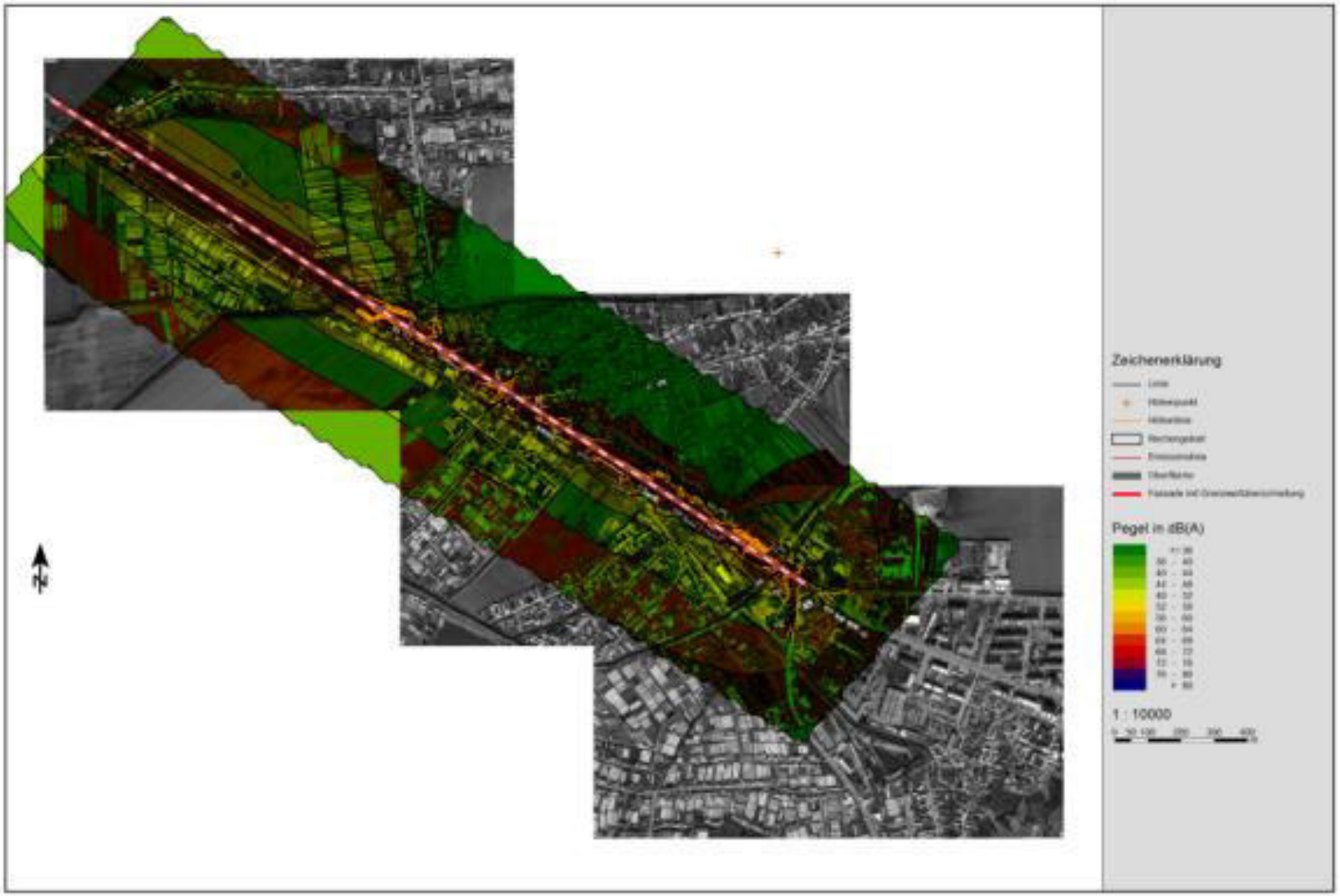


Fig. 57: Night time noise levels in Kurgonteppa for the year 2021

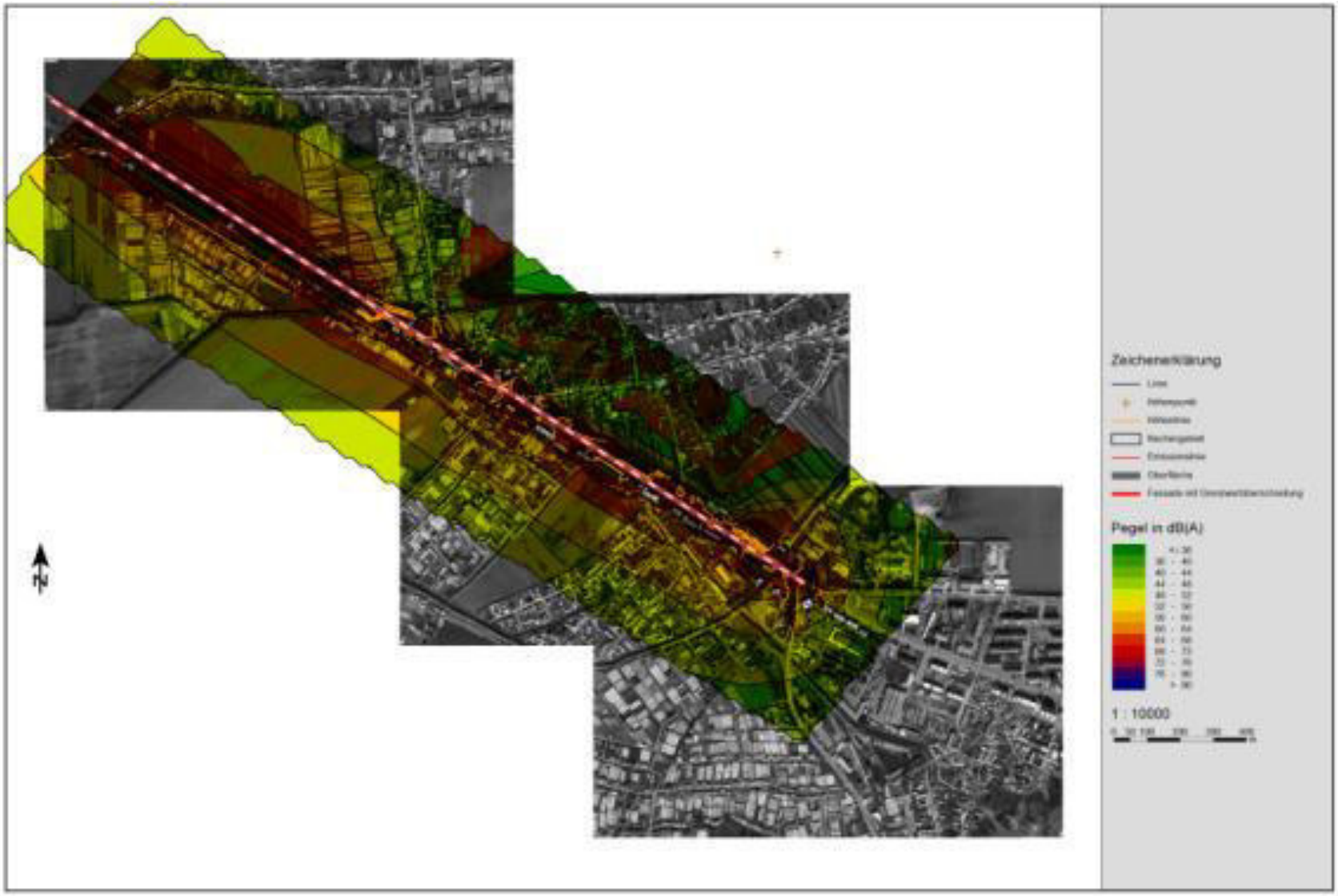


Fig. 58: Day time noise levels for Kurgonteppa for the year 2031

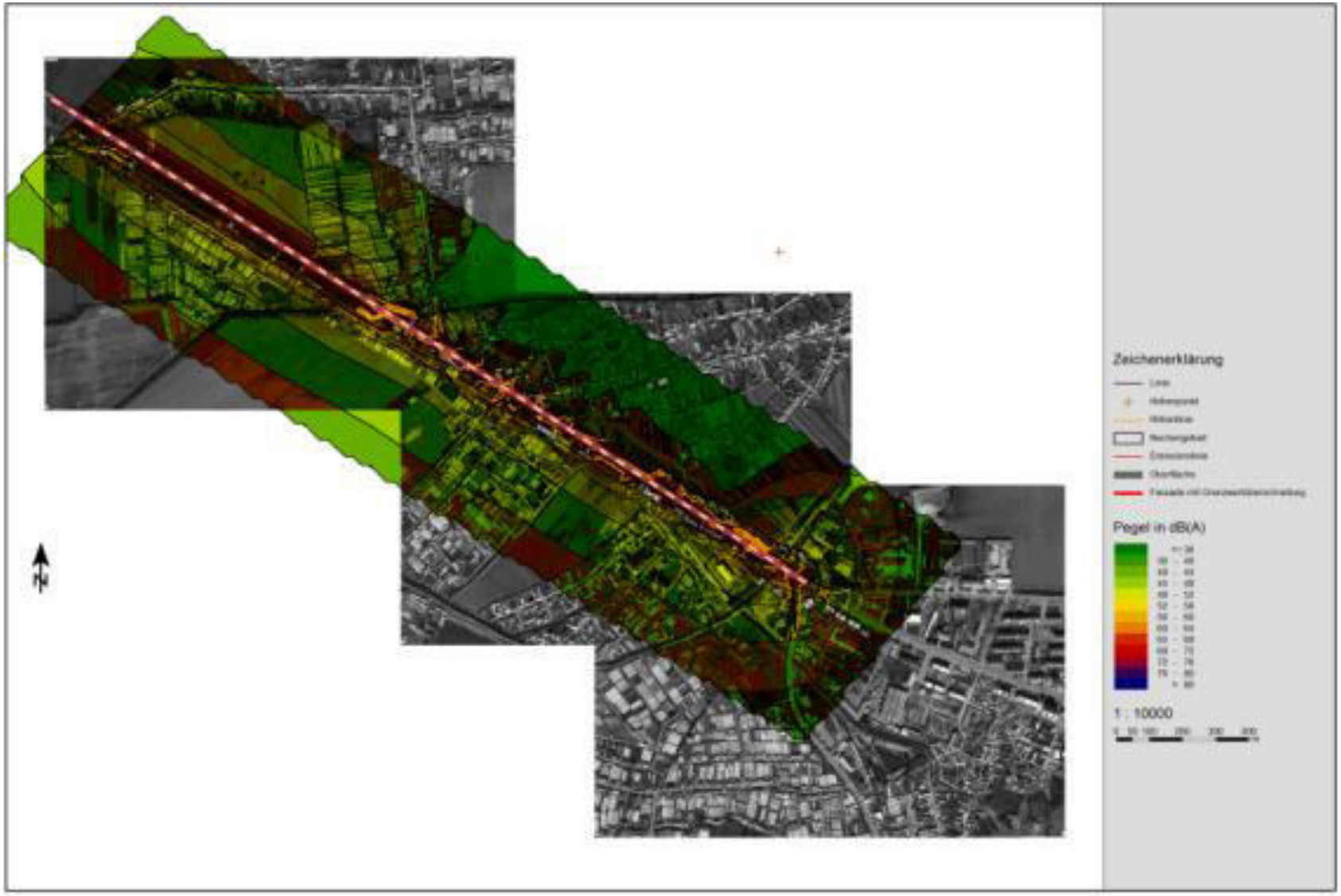


Fig. 59: Night time levels for Kurgonteppa for the year 2031

Annex 5 Laboratory Report on Baseline Measurement Results

INITIAL ENVIRONMENTAL MONITORING REPORT OF ROAD FROM OBI-KIIK VILLAGE TO KYZYL-KALA BRIDGE.

DUSHANBE – 2017.

CONTENT

1. Introduction……4

2. Monitoring purpose …….....4

3. Water Quality Monitoring …...……..4

4. Air Quality Monitoring ……..…….8

5. Noise testing and vibration …….……..23

6. Recommendation…….27

7. Conclusion……..…….27

8. Literature …….28

9. Appendix: Details of Initial Environmental Monitoring…… …….29

10. Used Equipment ……....30

List of Abbreviations

CEP under RT – Committee for Environmental Protection under the Government of the Republic of Tajikistan

IEM– Initial Environmental Monitoring

EMP – Environmental Monitoring Plan

MAC – Maximum Allowable Concentration

F – Fisheries

BOD_5 – Biological Oxygen Demand

CO – Carbon Oxide

NOx – Nitrogen Oxide

TSS – Total Suspended Solids

ACC– Analytical Control Center

1. Introduction.

This Report covers Initial Environmental Monitoring (IEM) element and detailed Environmental Monitoring Plan (EMP) of 40 km of Road from Obi-Kiik village to bridge of Kyzyl-Kala village of Khuroson District of Dushanbe-Kurgonteppa Road.

2. Monitoring purpose is:

- Water Quality Monitoring;
- Air Quality Monitoring;
- Noise Level and Vibration Monitoring;
- Assessment and results documentation of Initial Survey of Environmental Condition in Impact Zone;
- Detailed Environmental Impact Monitoring Plan.
- The Law of the Republic of Tajikistan "On Environmental Protection" establishes legal basis for environmental protection in affected Projects areas as per procedures, established by the Government of the Republic of Tajikistan.

Based on this law, water samples were taken for chemical analysis of water quality, instrumental measurements and chemical analysis of air quality, noise testing and vibration, the following work was carried out on 13 - 14 09. 2017.

3. Water Quality Monitoring

Initial Water Quality Monitoring.

The main water bodies in Project Impact Zone at section from Obi-Kiik village to Kyzyl-Kala Jamoat are Vakhsh River and Channel in Uyali village.

Sampling and water quality analysis were carried out at the following locations:

1. Channel in Uyali village center;
2. Vakhsh River at the right bank (merging with Aksu River);
3. Vakhsh River (after merging with Aksu River);
4. Vakhsh River Center;
5. Vakhsh River at left bank.

Water Quality analyses' results are presented in Table 1.

Table No1

No	Ingredients Item	Maximum Allowable Concentrations (MAC) of Fishery Norms	Sampling Points				
			1	2	3	4	5
1	pH	6,5-8,5	9,2	8,2	7,4	7,3	7,6
2	Suspended solids mg / l	75	620	416	43,5	33,4	57,6
3	BOD5 mg O/l	3,0	2,9	2,0	1,2	0,9	1,8
4	Dissolved oxygen O/mg /l	Not less than 4	4,4	6,2	12,4	13,6	9,8
5	Salinity level mg/l	1000	1780	600	340	320	370
6	Oil products mg/l	0,05	0,01	0,01	отст	отст	0,01
7	Electrical conductivity ohm/cm	-	0,242	0,970	0,770	0,600	0,610

Based on chemical analysis` results of primary water sampling in Project Impact Zone, we can conclude:

High concentration of suspended solids and salinity level is baseline (points 1 and 2).

Pic 1. Water Sampling at left bank of Vakhsh River of Kyzyl-Kala Bridge.

Pic 2. Water Sampling in Kyzyl –Kala Bridge Center.

Pic 3. Conductivity meter for determination of salinity level and water electrical conductivity in Vakhsh River at Kyzyl-Kala Bridge

3.1. List of Maximum Permissible Concentrations (MPC)` source materials:

1. Summarized list of maximum permissible concentrations (MPCs) and approximately safe level of impacts (ASLI) of hazardous substances for water of fishery basins.

Moscow 1990, Ministry of Fisheries of the USSR.

2. Sanitary Regulations and Norms for Protection of Surface Water against Pollution

Moscow 1988, Ministry of Health of the USSR.

3. Regulations of Surface Waters Protection.

Moscow 1991.

4. Air Quality Monitoring

Noise and vibration instrumental measurements and chemical analysis of air were carried out for 30-40 minutes (average value) in eighteen points of 40 km of Dushanbe – Kurgonteppa Road. From Obi-Kiik village to Kyzyl-Kala Jamoat.

1. Central Hospital of Khuroson. Distance from Project Road is 200m.

Table No2.

No	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter	13 – 14. 09. 2017		
1	TSP	0,150	0,0002	-
2	CO	3,00	0,34	-
3	NO_x	0,085	0,00	-
4	SO2	0,050	0,001	-

2. School - Lyceum in left side of the road in a distance of no more than 30m.

Table No 3.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter	13 – 14. 09. 2017		
1	TSP	0,150	0,10	-
2	CO	3,00	1,03	-
3	NO_x	0,085	0,002	-
4	SO2	0,050	0,01	-

3. School is located in 150m from left side of the road.

Table No4.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
		13 – 14. 09. 2017		
1	TSP	0,150	0,001	-
2	CO	3,00	0,51	-
3	NO_x	0,085	0,0002	-
4	SO2	0,050	0,002	-

4. Health center on right side of the road is about 40m.

Table No5.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
		13 – 14. 09. 2017		
1	TSP	0,150	0,09	-
2	CO	3,00	1,0	-
3	NO_x	0,085	0,001	-
4	SO2	0,050	0,01	-

5. Kindergarten in Obi-Kiik village on right side of the road in 90m.

Table No6.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
		13 – 14. 09. 2017		
1	TSP	0,150	0,008	-
2	CO	3,00	0,7	-
3	NO_x	0,085	0,000	-
4	SO2	0,050	0,0004	-

6. Stadium in Obi-Kiik village. Distance from current direction of road is about 30m from right side of the road.

Table No7.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
		13 – 14. 09. 2017		
1	TSP	0,150	0,09	-
2	CO	3,00	2.02	-
3.	NO_x	0,085	0,003	-
4	SO2	0,050	0,006	-

7. Professional Education Center on right side of the road in 140m.

Table No8.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter		13 – 14. 09. 2017	
1	TSP	0,150	0,09	-
2	CO	3,00	2.02	-
3	NO_x	0,085	0,003	-
4	SO2	0,050	0,006	-

8. School No2 in southern part of Obi-Kiik village from left side. Distance from road is about 20 m.

Table No 9.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter		13 – 14. 09. 2017	-
1	TSP	0,150	0,09	-
2	CO	3,00	2.2	-
3.	NO_x	0,085	0,004	-
4	SO2	0,050	0,007	-

9. Mosque is located on left side of the road.

Table No10.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
			13 – 14. 09. 2017	-
1	TSP	0,150	0,08	-
2	CO	3,00	2.04	-
3.	NO_x	0,085	0,002	-
4	SO2	0,050	0,005	-

10. Hospital in Uyali, is located about 320 m from Project Road

Table No11.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
			13 – 14. 09. 2017	-
1	TSP	0,150	0,05	-
2	CO	3,00	1.74	-
3.	NO_x	0,085	0,000	-
4	SO2	0,050	0,0008	-

11. Kindergarten "Sitora" on right side of the road - 50 m

Table No12.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter		13 – 14. 09. 2017	-
1	TSP	0,150	0,08	-
2	CO	3,00	2.30	-
3.	NO_x	0,085	0,001	-
4	SO2	0,050	0,001	-

12. Big mosque on left side of the road. Distance from the road is 30m.

Table No13.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter		13 – 14. 09. 2017	-
1	TSP	0,150	0,10	-
2	CO	3,00	2.65	-
3.	NO_x	0,085	0,004	-
4	SO2	0,050	0,009	-

13. Health center in Chorbog village is located about 50m from the road to the left.

Table No14.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter		13 – 14. 09. 2017	-
1	TSP	0,150	0,08	-
2	CO	3,00	2.02	-
3.	NO_x	0,085	0,001	-
4	SO2	0,050	0,03	-

14. School No58 in Chorbog village on left side of the road, about 200 m from the road.

Table No15.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
	Parameter		13 – 14. 09. 2017	-
1	TSP	0,150	0,07	-
2	CO	3,00	1,39	-
3.	NO_x	0,085	0,000	-
4	SO2	0,050	0,0001	-

15. Mosque on right side of the Project road in Kyzyl-Kala center is about 30m away.

Table No16.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
			13 – 14. 09. 2017	-
1	TSP	0,150	0,09	-
2	CO	3,00	2,50	-
3.	NO_x	0,085	0,003	-
4	SO2	0,050	0,008	-

16. Kindergarten on right side of the road about 150m from Project road

Table No17.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
			13 – 14. 09. 2017	-
1	TSP	0,150	0,005	-
2	CO	3,00	1,23	-
3.	NO_x	0,085	0,000	-
4	SO2	0,050	0,0006	-

17. Medical center and hospital in Kyzyl-Kala center, on right side in 20m from the road.

Table No18.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
			13 – 14. 09. 2017	-
1	TSP	0,150	0,11	-
2	CO	3,00	2,93	-
3.	NO_x	0,085	0,003	-
4	SO2	0,050	0,008	-

18. School in central part of Kyzyl-Kala village, about 110m on right side of the Project road.

Table No19.

№	Month / Parameter	Standard of RT (MAC) mg / m^3	Baseline indicators, mg/m^3	Next Monitoring Indicators
			13 – 14. 09. 2017	-
1	TSP	0,150	0,09	-
2	CO	3,00	2,76	-
3.	NO_x	0,085	0,0003	-
4	SO2	0,050	0,004	-

5. RESULTS OF NOISE MEASUREMENT ON 13 - 14 09. 2017

Baseline measurements for noise were conducted in during September 13th to 14th, 2017 and then again during October 15th to 16th.. The first measurement campaign in September resulted in unrealistically low noise values (e.g. 32 dB at the hospital in Kyzylkala at about 20 m from the Project road). These low values were due to mal calibration of the instrument used. Therefore a second noise measurement campaign with a different instrument was conducted on October 15th and 16th. The instrument used was the noise level meter “TESTO-815”. The standards used are Tajikistan Standards (Sanitary Norms SN 2.2.4/2.1.8.562-96 – provided by Sanitary Epidemiological Surveillance Service of the Ministry of Health of the Republic of Tajikistan).

The measurements were taken outside the respective buildings. The exposure time during each individual measurement was between 15 and 20 minutes. As baseline index the average value was then taken. For measuring the noise meter was put on a stable and even surface. The methodology deployed is according to the SNIP CH 2.2.4/2.1.8.592-96, which is provided by the Ministry of Health of Tajikistan.

Noise baseline maeasurement results are shown in the main text of the IEE in chapter VII Baseline Measurements, C Noise Measurements.

5.1. RESULTS OF MEASUREMENT OF GENERAL VIBRATION FOR 13 - 14. 09. 2017.

Table No21.

№	Measurement Location	Maximum level of vibration-acceleration, dB	Permissible values of vibration acceleration dB	
			Z_0	$X_0 Y_0$
1	Central Hospital of Khuroson. Distance from Project Road is 200m.	20,4	107	116
2	School - Lyceum from left side of the road in a distance of no more than 30m.	87,2	107	116
3	School is located in 150m from left side of the road.	23,7	107	116
4	Health center from right side of the road is about 40m.	84,1	107	116
5	Kindergarten in Obi-Kiik village on right side of the road in 90m.	67,9	107	116
6	Stadium in Obi-Kiik village. Distance from current direction of road is about 30m from right side of the road.	85,8	107	116
7	Professional Education Center on right side of the road in 140m.	22,8	107	116
8	School No2 in southern part of Obi-Kiik village from left side. Distance from road is about 20 m.	93,6	107	116
9	Mosque is located on left side of the road.	87.9	107	116
10	Hospital in Uyali, is located about 320 m from Project Road	10,5	107	116
11	Kindergarten "Sitora" on right side of the road - 50 m	78,6	107	116

Annex: 5

№	Measurement Location	Maximum level of vibration-acceleration, dB	Permissible values of vibration acceleration dB	
			Z_0	$X_0 Y_0$
12	Big mosque on left side of the road. Distance from the road is 30m.	86,9	107	116
13	Health center in Chorbog village is located about 50m from the road to the left.	79,3	107	116
14	School No58 in Chorbog village on left side of the road, about 200 m from the road.	15,2	107	116
15	Mosque on right side of the Project road in Kyzyl-Kala center is about 30m away.	90,0	107	116
16	Kindergarten on right side of the road about 150m from Project road	20,5	107	116
17	Medical center and hospital in Kyzyl-Kala center, on right side in 20m from the road.	98,7	107	116
18	School in central part of Kyzyl-Kala village, about 110m on right side of the Project road.	24,9	107	116

Pic 22. Vibration-Measuring Instrument/Vibrometer

6. Conclusion

Based on instrumental measurements` results and chemical analysis of air, water and noise and vibration samples 1 in Project Impact Zone, authors of Environmental Project Impact Monitoring concluded:

1. When performing primary instrumental monitoring of open air, noise and vibration exceeding of statutory limits of MAC were not observed.
   This Report is an Environmental Monitoring of ecological environment before the beginning of construction phase and road rehabilitation.
2. During monitoring, no significant anthropogenic impacts have been recorded in Project Impact Zone.
3. In reconstruction process, extreme environmental impact is expected.

7. Recommendations

During rehabilitation works of Dushanbe-Kurgonteppa Road, it is necessary to organize monthly observance (monitoring) of suspended solids, BOD_5, salinity level, oil products in Project Impact Zone, and count them as an "Indicators" of trouble.

In ambient air of Project Impact Zone, the content of inorganic dust, nitrogen dioxide, nitric oxide, sulfur dioxide and carbon monoxide should be monitored monthly, as well as to control noise and vibration levels, vehicle emissions, both carburetor and diesel.

8. List of References and Regulatory Documents:

1. The Law of the Republic of Tajikistan "On Environmental Protection"

2. The Law of the Republic of Tajikistan "On Protection of Atmospheric Air"

3. Water Code of the Republic of Tajikistan.

4. Maximum Allowable Concentration (MAC) of pollutants in the atmosphere of populated areas (list 3086-84).

5. Maximum Allowable Concentration (MAC) of pollutants in the air of working area.

6. Sanitary Standards for Designing Industrial Enterprises SS 245-71

7. Uniform Methods of Water Quality Testing. P.1, v.1, Methods of Chemical Analysis of Waters. M, 1987.

8. Unified Methods of Water Quality Testing. Part 1, item 2; Methods of Chemical Analysis of Waters. M, 1983.

9. A.S. Labinskaya Microbiology. M; "Medicine", 1972.

10. Guidelines for Chemical Analysis of Surface Waters of Land. Ed. A.D. Semenov. L.: Gidrometeoizdat, 1977.

11. Guidance Document. Nature Protection. Atmosphere. Accuracy Requirements of Industrial Emissions Control. Guidelines. RD 52704.59-85. M., 1986.

9. Appendix: Details of Initial Environmental Monitoring.

Monitoring Methodology.

Water samples selected in approved locations were delivered to Dushanbe City in the laboratory of Analytical Control Center of the Committee for Environmental Protection under the Government of the Republic of Tajikistan for analysis.

Samples were analyzed by standardized chemical and physicochemical methods:

Drinking water. GOST-2874-82.

Water for domestic and drinking purposes, field methods of analysis.

GOST-1030-81.

Unified Methods of Water Quality Testing, Part 2 Methods of Chemical Water Analysis, Volume 2, M-1983.

Test Items.

pH

Suspended Solids.

Dissolved Oxygen.

BOD 5

Oil Products

Salinity Level

Electrical Conductivity

Equipment and Calibration Data.

PH-potentiometric methods at pH meter Level-l.

Suspended solids, dry residue, oil products by weight (gravimetric) method: on analytical scales of Japanese production (Shimadzu).

BOD5-by tetra metric method.

Conductivity on a conductivity meter manufactured in India.

Salinity level and electrical conductivity –by conductivity meter brand NASN DREL-2000

Bathometer for Water Intake - 2 liters.

Air Quality Monitoring.

Collection of methods for determination of contaminant concentrations at industrial emissions. L .: Gidrometeoizdat, 1987

Test Items:

1.	Dust (particulate pollutants)
2.	Total Nitrogen oxides (NO + NO2)
3.	Carbon Oxide (CO)
4.	Sulphurous Oxide (SO2)

10. Equipment for Monitoring.

For aspiration of atmospheric air, the following were used:

Gas analyzer - GANG-4 A and 4 R.

Picture of electro-colorimeter, KFK-3 Brand.

Analytical scales, Shimadzu Brand.

Noise Monitoring.

Monitoring Methodology.

Noise level was measured by noise level meter of TESTO-815 Brand.

Test Items.

Vibration level was measured with vibrometer of OCTAVA-101 VM Brand.

All measuring devices pass an annual testing for compliance in Tajik Standard of the Republic of Tajikistan, for which there is corresponding certificate of the Agency for Standardization and Metrology of the Republic of Tajikistan.

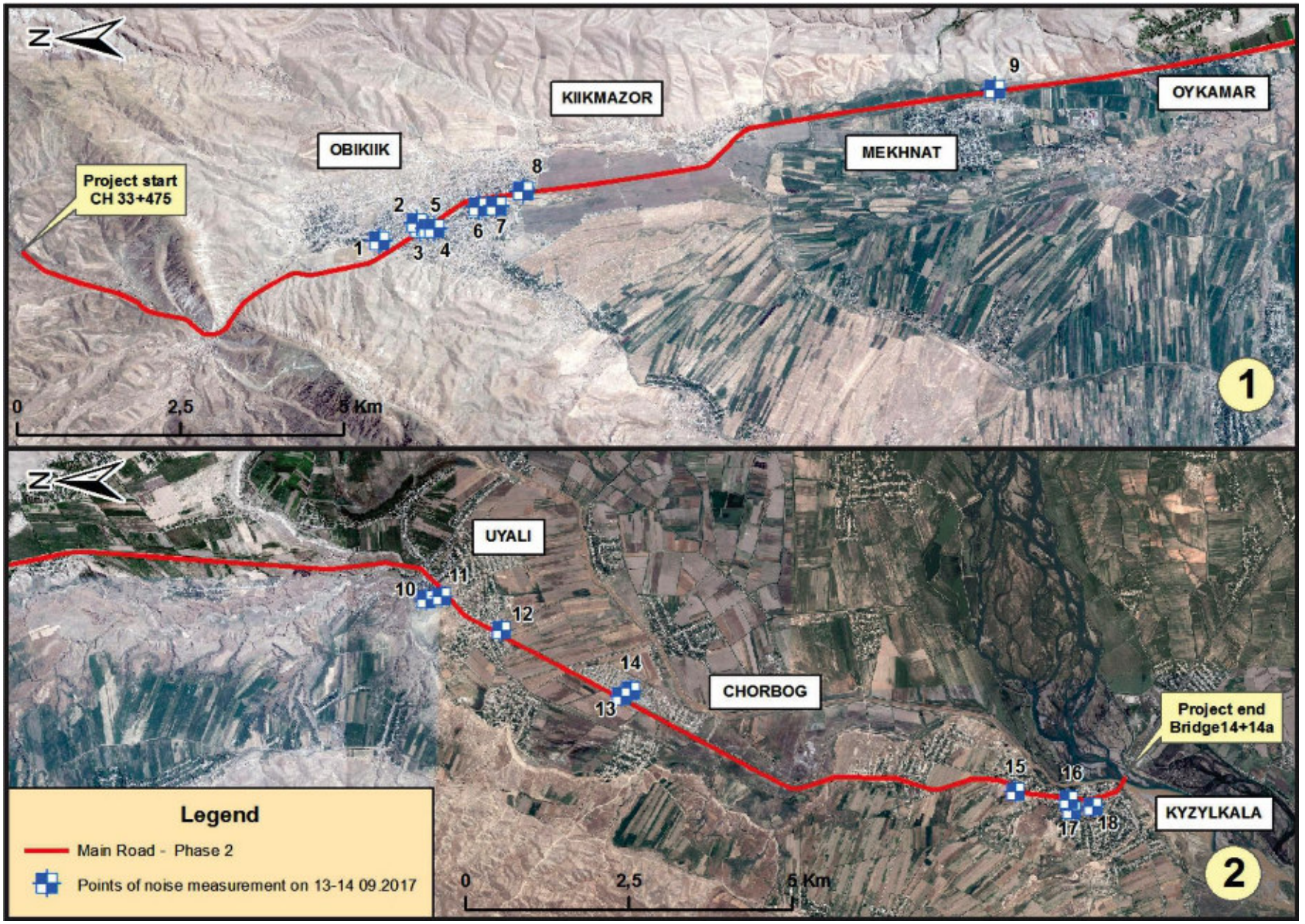
Pic. 23 Noise level meter

Pic. 24. Gas-analyzer

Head of ACC: **E. Rustamov**

Senior Specialist of ACC: **S.V. Stalinskaya**

Annex 6 Overview Map Showing Locations of Baseline Measurements


N
KIIKMAZOR
OBIKIIK
MEKHNAT
OYKAMAR
Project start
CH 33+475
1
2
3
4
5
6
7
8
9
0
2,5
5 Km
1
N
UYALI
CHORBOG
KYZYLKALA
Project end
Bridge14+14a
10
11
12
13
14
15
16
17
18
0
2,5
5 Km
2
Legend
Main Road - Phase 2
Points of noise measurement on 13-14 09.2017

Annex 7 Overview Table of Buildings within the Project Corridor

Buildings which need to be demolished are marked red.

Buildings which may be prone to vibration impacts are marked yellow.

LHS								RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS	Chainage Centerline	Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
1							33+340	4	11,00	14,78	35,32	24,32	20,54	1
2							33+480	4	11,00	15,52	18,71	7,71	3,19	2
3							33+910	4	11,00	15,99	38,10	27,10	22,11	3
4							34+110	4	11,00	13,33	24,88	13,88	11,55	4
5	22,46	24,78	35,78	13,32	11,00	4	34+180							5
6	20,78	23,33	34,33	13,55	11,00	4	34+260							6
7							34+380	4	11,00	15,52	26,32	15,32	10,80	7
8	45,20	47,65	58,65	13,45	11,00	4	35+560							8
9							36+520	4	11,00	18,31	21,21	10,21	2,90	9
10							36+540	4	11,00	16,66	31,07	20,07	14,41	10
11							38+880	4	11,00	16,28	23,01	12,01	6,73	11
12	12,08	15,27	26,27	14,19	11,00	4	39+480							12
13	14,13	18,62	29,62	15,49	11,00	4	39+540							13
14	6,29	9,98	20,98	14,69	11,00	4	39+640							14
15							39+650	4	11,00	16,73	20,62	9,62	3,89	15
16	1,23	5,72	16,72	15,49	11,00	4	39+660							16
17							39+670	4	11,00	16,83	20,48	9,48	3,65	17

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
18	3,33	8,23	19,23	15,90	11,00	4	39+680							18
19							39+710	4	11,00	16,86	23,95	12,95	7,09	19
20							39+780	2A	10,75	17,05	31,12	20,37	14,07	20
21							39+790	2A	10,75	17,05	27,17	16,42	10,12	21
22							39+810	2A	10,75	17,07	24,72	13,97	7,65	22
23							39+820	2A	10,75	16,83	24,95	14,20	8,12	23
24							39+870	2A	10,75	16,84	35,80	25,05	18,96	24
25							39+890	2A	10,75	17,69	35,09	24,34	17,40	25
26	2,28	5,60	18,95	16,67	13,35	2B	39+910							26
27							40+040	2A	10,75	16,23	22,87	12,12	6,64	27
28	1,27	5,77	19,12	17,85	13,35	2B	40+050							28
29	3,00	7,10	20,45	17,45	13,35	2B	40+060							29
30	-1,16	2,68	16,03	17,19	13,35	2B	40+080	2A	10,75	16,22	22,69	11,94	6,47	30
31							40+090	2A	10,75	16,22	24,21	13,46	7,99	31
32							40+100	2A	10,75	16,21	13,90	3,15	-2,31	32
33							40+110	2A	10,75	16,21	16,28	5,53	0,07	33
34	-6,79	-0,69	10,06	16,85	10,75	2A	40+120	2A	10,75	17,36	14,34	3,59	-3,02	34
35							40+150	2A	10,75	17,36	13,86	3,11	-3,50	35
36							40+160	2A	10,75	13,86	17,30	6,55	3,44	36
37							40+180	2A	10,75	13,86	17,09	6,34	3,23	37
38							40+190	2A	10,75	18,18	21,29	10,54	3,11	38
39							40+280	2B	13,35	13,20	23,67	10,32	10,47	39
40							40+300	2A	10,75	12,87	26,20	15,45	13,33	40

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
41	6,52	8,12	18,87	12,35	10,75	2A	40+310							41
42							40+320	2A	10,75	12,92	24,79	14,04	11,87	42
43							40+340	2A	10,75	12,41	16,21	5,46	3,80	43
44	31,55	33,03	43,78	12,23	10,75	2A	40+360							44
45							40+410	2A	10,75	12,27	33,63	22,88	21,36	45
46	11,35	12,59	23,34	11,99	10,75	2A	40+420							46
47	3,19	6,66	20,01	16,82	13,35	2B	40+440							47
48	2,89	6,50	19,85	16,96	13,35	2B	40+480							48
49	2,39	5,97	19,32	16,93	13,35	2B	40+500							49
50	0,83	5,00	18,35	17,52	13,35	2B	40+520							50
51							40+560	2A	10,75	16,60	24,13	13,38	7,53	51
52	3,07	7,12	20,47	17,40	13,35	2B	40+580	2A	10,75	16,67	24,13	13,38	7,46	52
53							40+590	2A	10,75	16,67	23,95	13,20	7,28	53
54	3,63	7,38	20,73	17,10	13,35	2B	40+600							54
55	3,48	7,36	20,71	17,23	13,35	2B	40+620							55
56	9,94	10,70	21,45	11,51	10,75	2A	40+640							56
57							40+660	2A	10,75	16,26	22,37	11,62	6,11	57
58	1,58	4,82	18,17	16,59	13,35	2B	40+700							58
59	11,59	14,97	28,32	16,73	13,35	2B	40+720							59
60							40+740	2B	13,35	16,60	26,11	12,76	9,51	60
61	1,92	7,65	18,40	16,48	10,75	2A	40+750							61
62	2,10	2,15	12,90	10,80	10,75	2A	40+760							62
63							40+780	2A	10,75	12,57	24,20	13,45	11,63	63

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
64	2,44	3,59	16,94	14,50	13,35	2B	40+800							64
65	2,64	3,59	16,94	14,30	13,35	2B	40+810							65
66	0,56	3,99	17,34	16,78	13,35	2B	40+820							66
67	9,02	12,18	25,53	16,51	13,35	2B	40+860							67
68	18,16	21,35	34,70	16,54	13,35	2B	40+890							68
69							40+940	2B	13,35	16,31	67,28	53,93	50,97	69
70	21,75	25,14	38,49	16,74	13,35	2B	40+990							70
71							41+000	2B	13,35	16,35	17,09	3,74	0,74	71
72	17,66	20,66	34,01	16,35	13,35	2B	41+020							72
73							41+030	2B	13,35	16,34	16,85	3,50	0,51	73
74	31,36	31,20	44,55	13,19	13,35	2B	41+040							74
75	11,83	14,30	25,05	13,22	10,75	2A	41+060							75
76	1,60	7,05	17,80	16,20	10,75	2A	41+080							76
77	12,61	18,17	28,92	16,31	10,75	2A	41+110							77
78							41+120	2A	10,75	17,90	11,35	0,60	-6,55	78
79	8,56	14,26	25,01	16,45	10,75	2A	41+130							79
80	2,91	4,26	15,01	12,10	10,75	2A	41+140							80
81	1,46	4,97	18,32	16,86	13,35	2B	41+190							81
82	13,59	14,62	27,97	14,38	13,35	2B	41+240							82
83							41+260	2A	10,75	12,38	43,89	33,14	31,51	83
84	2,55	8,11	18,86	16,31	10,75	2A	41+280							84
85							41+290	2A	10,75	12,77	47,93	37,18	35,16	85
86	-1,04	-1,02	10,68	11,72	11,70	1	41+350							86

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
87	-0,67	-0,65	11,05	11,72	11,70	1	41+380							87
88	0,14	0,16	11,86	11,72	11,70	1	41+450							88
89	-2,17	-2,15	9,55	11,72	11,70	1	41+460							89
90	0,31	0,34	12,04	11,73	11,70	1	41+480							90
91	6,38	6,41	18,11	11,73	11,70	1	41+510							91
92	8,71	8,74	20,44	11,73	11,70	1	41+520							92
93	13,29	13,32	25,02	11,73	11,70	1	41+530							93
94	18,24	18,28	29,98	11,74	11,70	1	41+540							94
95	17,56	17,60	29,30	11,74	11,70	1	41+620							95
96	28,22	28,25	39,95	11,73	11,70	1	41+770							96
97	20,87	20,90	32,60	11,73	11,70	1	41+780							97
98	14,33	14,36	26,06	11,73	11,70	1	41+820							98
99	12,42	12,45	24,15	11,73	11,70	1	41+890							99
100	24,33	24,35	36,05	11,72	11,70	1	41+910							100
101	12,54	12,56	24,26	11,72	11,70	1	41+940							101
102	12,27	12,29	23,99	11,72	11,70	1	41+950							102
103	9,19	11,38	23,08	13,89	11,70	1	41+990							103
104	8,01	11,50	23,20	15,19	11,70	1	42+000							104
105	5,42	7,21	21,91	16,49	14,70	1	42+030							105
106	14,66	19,18	33,88	19,22	14,70	1	42+080							106
107							42+180	1	14,70	21,47	39,19	24,49	17,72	107
108							42+220	1	14,70	21,20	28,44	13,74	7,24	108
109							42+320	1	14,70	21,14	36,64	21,94	15,50	109

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
110							42+460	1	11,70	14,88	39,18	27,48	24,30	110
111							42+480	1	11,70	14,85	31,15	19,45	16,30	111
112	13,70	14,44	26,14	12,44	11,70	1	44+580							112
113	30,36	36,24	47,94	17,58	11,70	1	44+660							113
114							45+640	1	13,70	16,01	55,53	41,83	39,52	114
115							45+760	1	11,70	12,53	25,54	13,84	13,01	115
116							46+720	1	11,70	15,81	18,68	6,98	2,87	116
117	25,30	29,62	41,32	16,02	11,70	1	46+880							117
118	24,50	29,17	40,87	16,37	11,70	1	46+920							118
119	-7,79	-3,27	11,43	19,22	14,70	1	48+480							119
120							48+640	1	14,70	19,50	9,65	-5,05	-9,85	120
121	-0,19	4,91	19,61	19,80	14,70	1	49+540							121
122	4,75	9,39	24,09	19,34	14,70	1	49+620							122
123							49+680	1	14,70	14,50	38,51	23,81	24,01	123
124							51+120	1	11,70	15,00	42,20	30,50	27,20	124
125							51+160	1	11,70	13,11	51,48	39,78	38,37	125
126							51+840	1	11,70	16,25	52,82	41,12	36,57	126
127							51+860	1	11,70	16,23	34,36	22,66	18,13	127
128							51+880	1	11,70	16,28	39,66	27,96	23,38	128
129							52+620	1	14,70	15,87	27,86	13,16	11,99	129
130	6,04	6,28	20,98	14,94	14,70	1	52+640							130
131							52+780	1	11,70	9,75	28,21	16,51	18,46	131
132	1,51	5,93	17,63	16,12	11,70	1	53+020	1	11,70	18,38	21,84	10,14	3,46	132

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
133	0,44	3,64	15,34	14,90	11,70	1	53+060							133
134							54+520	1	11,70	8,50	39,84	28,14	31,34	134
135							55+400	1	11,70	12,29	35,82	24,12	23,53	135
136							55+420	1	11,70	12,26	37,52	25,82	25,26	136
137							60+380	3A	11,00	19,81	32,56	21,56	12,75	137
138							60+390	3A	11,00	19,81	27,91	16,91	8,10	138
139							60+400	3A	11,00	17,52	22,85	11,85	5,33	139
140							60+410	3A	11,00	17,52	15,81	4,81	-1,71	140
141							60+660	2A	10,75	12,52	24,27	13,52	11,75	141
142	9,39	10,81	21,56	12,17	10,75	2A	60+690	2A	10,75	12,49	25,04	14,29	12,55	142
143	17,02	17,52	28,27	11,25	10,75	2A	60+710							143
144							60+720	2A	10,75	12,47	26,42	15,67	13,95	144
145							60+760	2A	10,75	12,73	30,33	19,58	17,60	145
146							60+780	2A	10,75	12,85	30,28	19,53	17,43	146
147	8,08	15,06	25,81	17,73	10,75	2A	60+860							147
148							60+880	2A	10,75	11,25	26,90	16,15	15,65	148
149	45,88	46,38	57,13	11,25	10,75	2A	60+890							149
150							60+900	2A	10,75	11,25	24,71	13,96	13,46	150
151							60+920	2B	13,35	13,09	23,75	10,40	10,66	151
152	-2,12	0,38	11,13	13,25	10,75	2A	60+950							152
153							60+960	2B	13,35	17,14	25,14	11,79	8,00	153
154	0,86	3,13	13,88	13,02	10,75	2A	60+970							154
155							60+980	2B	13,35	17,13	25,07	11,72	7,94	155

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
156							60+990	2B	13,35	17,13	22,79	9,44	5,66	156
157	3,34	6,13	16,88	13,54	10,75	2A	61+000							157
158							61+020	2A	10,75	12,73	22,13	11,38	9,40	158
159							61+100	2B	13,35	16,53	23,07	9,72	6,54	159
160							61+120	2B	13,35	16,23	22,00	8,65	5,77	160
161							61+150	2A	10,75	12,07	21,16	10,41	9,09	161
162							61+160	2A	10,75	12,07	20,79	10,04	8,72	162
163							61+180	2A	10,75	11,99	18,42	7,67	6,43	163
164							61+190	2A	10,75	11,99	18,44	7,69	6,45	164
165							61+210	2A	10,75	12,08	25,38	14,63	13,30	165
166							61+220	2A	10,75	12,02	24,87	14,12	12,85	166
167							61+230	2A	10,75	12,02	21,68	10,93	9,66	167
168	0,73	3,42	16,77	16,04	13,35	2B	61+240							168
169	0,71	3,45	16,80	16,09	13,35	2B	61+300							169
170	-0,05	2,74	16,09	16,14	13,35	2B	61+320							170
171							61+360	2A	10,75	16,06	22,13	11,38	6,07	171
172							61+370	2B	13,35	16,06	21,86	8,51	5,80	172
173							61+380	2B	13,35	16,06	18,43	5,08	2,37	173
174							61+410	2B	13,35	16,06	16,91	3,56	0,85	174
175							61+480	2A	13,75	16,34	19,44	5,69	3,10	175
176							61+510	2A	13,75	16,31	20,77	7,02	4,46	176
177							61+520	2A	13,75	16,44	20,47	6,72	4,03	177
178							61+540	2A	13,75	16,42	19,95	6,20	3,53	178

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
179							61+560	2A	13,75	16,55	19,59	5,84	3,04	179
180	2,22	4,80	18,55	16,33	13,75	2A	61+600	2A	13,75	16,04	22,89	9,14	6,85	180
181	2,01	7,59	18,34	16,33	10,75	2A	61+610	2A	13,75	16,04	20,43	6,68	4,39	181
182	2,85	8,32	19,07	16,22	10,75	2A	61+620	2A	10,75	16,07	27,77	17,02	11,70	182
183							61+640	2A	10,75	11,83	27,54	16,79	15,71	183
184							61+660	2A	10,75	11,83	11,68	0,93	-0,15	184
185							61+680	2A	10,75	12,52	16,62	5,87	4,10	185
186							61+690	2A	10,75	12,52	13,05	2,30	0,53	186
187							61+710	2A	10,75	12,36	17,27	6,52	4,91	187
188	-0,29	3,80	17,15	17,44	13,35	2B	61+720							188
189							61+730	2B	13,35	12,46	20,74	7,39	8,28	189
190	0,80	3,22	13,97	13,17	10,75	2A	61+740	2B	13,35	16,96	20,33	6,98	3,37	190
191							61+750	2B	13,35	16,96	21,12	7,77	4,16	191
192							61+760	2B	13,35	16,78	19,94	6,59	3,16	192
193	3,36	7,50	20,85	17,49	13,35	2B	61+780							193
194							61+800	2A	10,75	12,06	16,93	6,18	4,87	194
195	3,96	7,16	20,51	16,55	13,35	2B	61+820							195
196							61+840	2A	10,75	12,24	17,12	6,37	4,88	196
197	4,98	8,02	21,37	16,39	13,35	2B	61+850							197
198	4,97	7,88	21,23	16,26	13,35	2B	61+860							198
199							61+870	2A	10,75	11,79	15,08	4,33	3,29	199
200	4,79	6,38	17,13	12,34	10,75	2A	61+880							200
201	-2,61	-1,18	9,57	12,18	10,75	2A	61+920	2A	10,75	11,80	25,42	14,67	13,62	201

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
202	2,79	4,13	14,88	12,09	10,75	2A	61+940							202
203							61+950	2A	10,75	11,80	19,34	8,59	7,54	203
204	3,61	4,83	15,58	11,97	10,75	2A	61+960							204
205							61+970	2A	10,75	11,81	16,97	6,22	5,16	205
206	3,90	4,90	15,65	11,75	10,75	2A	61+980							206
207	4,54	5,54	16,29	11,75	10,75	2A	61+990	2A	10,75	11,79	16,60	5,85	4,81	207
208	16,86	18,91	29,66	12,80	10,75	2A	62+020							208
209	9,61	9,06	22,41	12,80	13,35	2B	62+030	2A	10,75	11,79	12,48	1,73	0,69	209
210	5,56	8,74	22,09	16,53	13,35	2B	62+040							210
211	5,58	8,76	22,11	16,53	13,35	2B	62+050							211
212							62+060	2A	10,75	11,84	12,66	1,91	0,82	212
213							62+070	2A	10,75	11,84	12,81	2,06	0,97	213
214	5,14	8,62	21,97	16,83	13,35	2B	62+080	2A	10,75	12,22	13,00	2,25	0,78	214
215							62+090	2A	10,75	12,22	13,04	2,29	0,82	215
216							62+100	2A	10,75	11,97	14,23	3,48	2,26	216
217	0,87	3,70	17,05	16,18	13,35	2B	62+140							217
218							62+180	2A	10,75	11,95	13,60	2,85	1,65	218
219							62+190	2A	10,75	11,95	13,60	2,85	1,65	219
220							62+200	2A	10,75	11,95	13,60	2,85	1,65	220
221							62+220	2A	10,75	12,27	20,96	10,21	8,69	221
222							62+250	2A	10,75	12,30	23,13	12,38	10,83	222
223							62+260	2A	10,75	11,87	28,02	17,27	16,15	223
224							62+280	2A	10,75	11,89	12,70	1,95	0,81	224

LHS							Chainage Centerline	RHS						
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225	1,25	2,30	16,05	14,80	13,75	2A	62+320							225
226							62+330	2A	10,75	11,81	17,86	7,11	6,05	226
227	11,74	16,55	28,25	16,51	11,70	1	63+020							227
228							63+480	1	15,70	18,62	30,99	15,29	12,37	228
229	17,72	23,66	38,36	20,64	14,70	1	63+560							229
230	13,62	20,87	35,57	21,95	14,70	1	63+580							230
231	1,22	9,69	24,39	23,17	14,70	1	63+600							231
232							66+880	1	11,70	13,27	31,68	19,98	18,41	232
233							66+960	1	11,70	13,20	27,77	16,07	14,57	233
234	14,38	16,08	27,78	13,40	11,70	1	68+380							234
235	12,58	14,30	26,00	13,42	11,70	1	68+400							235
236	15,51	17,09	28,79	13,28	11,70	1	68+450							236
237	15,88	17,67	29,37	13,49	11,70	1	68+480							237
238	16,47	18,31	30,01	13,54	11,70	1	68+500							238
239	13,17	15,01	26,71	13,54	11,70	1	68+510							239
240	12,88	14,82	26,52	13,64	11,70	1	68+530							240
241	10,03	12,22	23,92	13,89	11,70	1	68+540							241
242	14,27	14,80	26,50	12,23	11,70	1	68+720							242
243	11,19	11,65	23,35	12,16	11,70	1	68+750							243
244	17,60	17,67	29,37	11,77	11,70	1	68+780							244
245	4,07	7,11	18,81	14,74	11,70	1	68+840							245
246							68+890	1	11,70	12,70	4,97	-6,73	-7,73	246
247	7,40	10,48	22,18	14,78	11,70	1	69+070							247

LHS							Chainage Centerline	RHS						
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248	7,74	11,17	22,87	15,13	11,70	1	69+080							248
249	13,01	13,44	28,14	15,13	14,70	1	69+090							249
250							69+120	1	11,70	18,97	26,40	14,70	7,43	250
251							69+140	1	11,70	19,70	26,77	15,07	7,07	251
252	6,65	9,87	21,57	14,92	11,70	1	69+150	1	11,70	19,70	33,99	22,29	14,29	252
253	6,37	8,62	20,32	13,95	11,70	1	69+160							253
254	2,25	4,61	16,31	14,06	11,70	1	69+180							254
255	5,30	7,64	19,34	14,04	11,70	1	69+200							255
256	9,49	11,83	23,53	14,04	11,70	1	69+210							256
257	6,65	8,58	20,28	13,63	11,70	1	69+240							257
258	12,99	14,92	26,62	13,63	11,70	1	69+250							258
259	6,33	8,70	20,40	14,07	11,70	1	69+260							259
260	11,01	13,38	25,08	14,07	11,70	1	69+270							260
261	-0,12	2,55	14,25	14,37	11,70	1	69+280							261
262	5,22	7,89	19,59	14,37	11,70	1	69+290							262
263	9,11	10,38	22,08	12,97	11,70	1	69+300							263
264	12,44	13,69	25,39	12,95	11,70	1	69+320							264
265	5,23	7,43	19,13	13,90	11,70	1	69+340							265
266	12,97	15,17	26,87	13,90	11,70	1	69+350							266
267	5,29	7,22	18,92	13,63	11,70	1	69+360							267
268	5,07	7,00	18,70	13,63	11,70	1	69+370							268
269	11,34	13,36	25,06	13,72	11,70	1	69+380							269
270	17,83	19,85	31,55	13,72	11,70	1	69+390							270

LHS							Chainage Centerline	RHS						
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271	10,19	12,27	23,97	13,78	11,70	1	69+410							271
272	9,74	11,79	23,49	13,75	11,70	1	69+420							272
273	3,98	6,03	17,73	13,75	11,70	1	69+430							273
274	8,57	10,35	22,05	13,48	11,70	1	69+450							274
275	9,75	11,11	22,81	13,06	11,70	1	69+460							275
276							69+470	1	11,70	17,50	34,35	22,65	16,85	276
277	6,37	9,27	20,97	14,60	11,70	1	69+500							277
278							69+540	1	11,70	13,51	46,44	34,74	32,93	278
279							69+560	1	11,70	13,28	42,89	31,19	29,61	279
280							69+610	1	11,70	14,03	46,73	35,03	32,70	280
281							69+640	1	11,70	15,38	63,75	52,05	48,37	281
282							69+700	1	11,70	8,85	33,57	21,87	24,72	282
283							69+720	1	11,70	8,85	27,10	15,40	18,25	283
284							69+740	1	11,70	13,26	22,95	11,25	9,69	284
285							69+880	1	11,70	11,98	14,95	3,25	2,97	285
286							70+620	2A	13,75	19,26	36,68	22,93	17,42	286
287							70+640	2A	13,75	18,47	39,48	25,73	21,01	287
288	4,33	12,36	26,11	21,78	13,75	2A	70+650							288
289							70+660	2A	13,75	19,74	29,07	15,32	9,33	289
290	-0,04	8,63	22,38	22,42	13,75	2A	70+680							290
291							70+690	2A	13,75	26,01	42,19	28,44	16,18	291
292	-2,93	5,40	19,15	22,08	13,75	2A	70+710							292
293							70+720	2A	13,75	20,08	40,95	27,20	20,87	293

LHS							Chainage Centerline	RHS						
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294	0,71	7,38	21,13	20,42	13,75	2A	70+740	2A	13,75	18,78	38,41	24,66	19,63	294
295	11,11	16,70	30,45	19,34	13,75	2A	70+760	2A	13,75	17,61	44,07	30,32	26,46	295
296	13,46	19,05	32,80	19,34	13,75	2A	70+770							296
297	12,54	16,46	30,21	17,67	13,75	2A	70+780							297
298	25,82	27,57	38,32	12,50	10,75	2A	70+820							298
299	14,55	16,26	27,01	12,46	10,75	2A	70+850							299
300	12,21	14,40	25,15	12,94	10,75	2A	70+880							300
301							70+890	2A	10,75	12,03	30,83	20,08	18,80	301
302	10,43	12,37	23,12	12,69	10,75	2A	70+920							302
303	7,65	10,22	20,97	13,32	10,75	2A	70+940							303
304	4,45	8,05	18,80	14,35	10,75	2A	70+960							304
305	3,88	7,48	18,23	14,35	10,75	2A	70+970							305
306	2,91	6,88	17,63	14,72	10,75	2A	70+980							306
307	11,12	14,24	24,99	13,87	10,75	2A	71+010							307
308							71+020	2A	10,75	12,22	38,49	27,74	26,27	308
309	11,90	15,26	26,01	14,11	10,75	2A	71+030							309
310	1,02	4,93	15,68	14,66	10,75	2A	71+040							310
311	0,23	4,14	14,89	14,66	10,75	2A	71+050							311
312							71+080	2A	10,75	15,15	21,99	11,24	6,84	312
313	1,30	4,83	15,58	14,28	10,75	2A	71+090	2A	10,75	15,15	21,18	10,43	6,03	313
314							71+120	2A	10,75	11,28	19,66	8,91	8,38	314
315							71+130	2A	10,75	11,28	19,01	8,26	7,73	315
316							71+140	2A	10,75	13,03	18,80	8,05	5,77	316

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
317	-6,01	-0,10	10,65	16,66	10,75	2A	71+160	2A	10,75	13,63	18,90	8,15	5,27	317
318	1,04	6,95	17,70	16,66	10,75	2A	71+170							318
319							71+180	2A	10,75	13,90	20,79	10,04	6,89	319
320	-1,69	1,14	11,89	13,58	10,75	2A	71+220							320
321	3,34	6,91	17,66	14,32	10,75	2A	71+240	2A	10,75	12,20	30,98	20,23	18,78	321
322	4,62	5,86	16,61	11,99	10,75	2A	71+260							322
323	5,02	6,22	16,97	11,95	10,75	2A	71+280	2A	10,75	12,31	24,73	13,98	12,42	323
324							71+290	2A	10,75	12,31	45,23	34,48	32,92	324
325	10,25	11,36	22,11	11,86	10,75	2A	71+310							325
326	-0,08	1,20	11,95	12,03	10,75	2A	71+320							326
327	-1,13	0,15	10,90	12,03	10,75	2A	71+330	2A	10,75	11,85	20,98	10,23	9,13	327
328							71+370	2A	10,75	11,89	12,61	1,86	0,72	328
329	6,46	8,31	19,06	12,60	10,75	2A	71+390							329
330	4,10	5,10	15,85	11,75	10,75	2A	71+420	2A	10,75	11,76	15,88	5,13	4,12	330
331	4,87	5,87	16,62	11,75	10,75	2A	71+430							331
332							71+440	2A	10,75	12,67	21,11	10,36	8,44	332
333	4,78	5,87	16,62	11,84	10,75	2A	71+450	2A	10,75	12,67	23,34	12,59	10,67	333
334	-0,26	1,15	11,90	12,16	10,75	2A	71+460							334
335							71+470	2A	10,75	12,31	15,39	4,64	3,08	335
336	6,15	7,29	18,04	11,89	10,75	2A	71+480							336
337							71+510	2A	10,75	11,88	24,77	14,02	12,89	337
338							71+520	2A	10,75	11,83	15,11	4,36	3,28	338
339	14,29	15,59	26,34	12,05	10,75	2A	71+530							339

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
340	18,09	19,38	30,13	12,04	10,75	2A	71+540							340
341	11,70	12,99	23,74	12,04	10,75	2A	71+550							341
342	8,06	9,09	19,84	11,78	10,75	2A	71+560							342
343	6,32	7,35	18,10	11,78	10,75	2A	71+570							343
344	10,79	11,88	22,63	11,84	10,75	2A	71+610							344
345	8,77	9,93	20,68	11,91	10,75	2A	71+620							345
346	7,33	8,52	19,27	11,94	10,75	2A	71+660							346
347	6,72	8,44	19,19	12,47	10,75	2A	71+680							347
348	11,32	12,48	23,23	11,91	10,75	2A	71+720							348
349	8,31	9,47	20,22	11,91	10,75	2A	71+730							349
350							71+740	2A	10,75	15,06	18,89	8,14	3,83	350
351	8,00	9,04	19,79	11,79	10,75	2A	71+750							351
352	9,85	11,06	21,81	11,96	10,75	2A	71+760							352
353							71+770	2A	10,75	14,27	42,50	31,75	28,23	353
354	3,93	5,81	16,56	12,63	10,75	2A	71+780							354
355	13,27	15,15	25,90	12,63	10,75	2A	71+790							355
356							71+800	2A	10,75	18,59	19,97	9,22	1,38	356
357	2,11	9,02	19,77	17,66	10,75	2A	71+820	2A	10,75	16,72	21,17	10,42	4,45	357
358	0,90	7,81	18,56	17,66	10,75	2A	71+830							358
359							71+840	2A	10,75	15,79	20,34	9,59	4,55	359
360							71+850	2A	10,75	15,79	40,06	29,31	24,27	360
361							71+860	2A	10,75	15,09	22,07	11,32	6,98	361
362	9,18	11,19	21,94	12,76	10,75	2A	71+880							362

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
363	9,28	11,49	22,24	12,96	10,75	2A	71+900							363
364	4,05	9,11	22,46	18,41	13,35	2B	71+920	2A	10,75	13,07	29,17	18,42	16,10	364
365	0,74	5,80	19,15	18,41	13,35	2B	71+930							365
366	8,82	11,93	25,28	16,46	13,35	2B	71+940							366
367							71+950	2A	10,75	12,29	19,73	8,98	7,44	367
368	13,50	16,48	29,83	16,33	13,35	2B	71+960							368
369	12,58	15,41	28,76	16,18	13,35	2B	71+980							369
370							71+990	2A	10,75	12,21	29,15	18,40	16,94	370
371	11,16	14,82	28,17	17,01	13,35	2B	72+010							371
372							72+020	2B	13,35	14,75	18,66	5,31	3,91	372
373	-3,81	2,76	13,51	17,32	10,75	2A	72+030							373
374	2,42	6,42	17,17	14,75	10,75	2A	72+050							374
375	-1,50	1,87	12,62	14,12	10,75	2A	72+060							375
376	-2,24	1,13	11,88	14,12	10,75	2A	72+070							376
377							72+090	2B	13,35	14,75	42,29	28,94	27,54	377
378	-0,11	4,21	14,96	15,07	10,75	2A	72+120	2B	13,35	15,50	16,53	3,18	1,03	378
379	5,98	5,98	14,98	9,00	9,00	2A	72+130							379
380	8,30	8,30	15,56	7,26	7,26	2A	72+140							380
381	6,14	6,14	12,61	6,47	6,47	2A	72+150	2A	18,44	18,44	31,76	13,32	13,32	381
382							72+180	2A	25,04	25,04	45,19	20,15	20,15	382
383	11,06	11,06	19,51	8,45	8,45	2A	72+190	2A		12,77				383
384							72+200	2A	35,25	35,25	56,78	21,53	21,53	384
385	10,34	10,34	19,34	9,00	9,00	2A	72+220							385

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
386							72+230	2A	52,88	52,88	79,45	26,57	26,57	386
387	6,46	6,46	15,16	8,70	8,70	2A	72+240							387
388	8,99	8,99	17,99	9,00	9,00	2A	72+250	2A	70,77	70,77	79,92	9,15	9,15	388
389	8,99	8,99	17,99	9,00	9,00	2A	72+270							389
390	9,28	9,28	18,57	9,29	9,29	2A	72+290	2A	17,33	17,33	15,50	-1,83	-1,83	390
391	5,80	7,85	18,60	12,80	10,75	2A	72+310	2A	10,75	12,19	8,66	-2,09	-3,53	391
392							72+320	2A	10,75	11,84	12,57	1,82	0,73	392
393	5,51	7,86	18,61	13,10	10,75	2A	72+330	2A	10,75	11,84	9,26	-1,49	-2,58	393
394	6,45	8,43	19,18	12,73	10,75	2A	72+350	2A	10,75	11,89	12,58	1,83	0,69	394
395	4,99	6,73	17,48	12,49	10,75	2A	72+360	2A	10,75	12,14	19,87	9,12	7,73	395
396	4,55	6,29	17,04	12,49	10,75	2A	72+370							396
397	3,28	4,87	15,62	12,34	10,75	2A	72+380							397
398							72+390	2A	10,75	11,89	15,56	4,81	3,67	398
399	4,06	5,67	16,42	12,36	10,75	2A	72+400	2A	10,75	11,88	26,34	15,59	14,46	399
400	15,55	17,16	27,91	12,36	10,75	2A	72+410							400
401							72+420	2B	13,35	16,01	29,63	16,28	13,62	401
402	1,71	3,24	13,99	12,28	10,75	2A	72+430							402
403							72+450	2B	13,35	16,01	20,96	7,61	4,95	403
404	-3,77	-1,49	9,26	13,03	10,75	2A	72+460							404
405							72+470	2B	13,35	16,01	21,43	8,08	5,42	405
406	19,08	22,02	32,77	13,69	10,75	2A	72+490	2B	13,35	16,01	18,49	5,14	2,48	406
407							72+510	2A	10,75	16,78	25,13	14,38	8,35	407
408							72+530	2A	10,75	17,36	19,34	8,59	1,98	408

LHS							Chainage Centerline	RHS						
House No.	Distance Building to Edge of Embankment	Distance Building to road Edge	Distance from Center-line to Building	Distance from Centerline to Edge of Embankment	Distance from centerline to Road Edge	Type of CS		Type of CS	Distance from centerline to Road Edge	Distance from Centerline to Edge of Embankment	Distance from Center-line to Building	Distance Building to road Edge	Distance Building to Edge of Embankment	House No.
409							72+580	2A	10,75	11,75	30,22	19,47	18,47	409
410	20,84	24,06	34,81	13,97	10,75	2A	72+620							410
411							72+630	2A	10,75	13,27	21,19	10,44	7,92	411
412							72+650	2A	10,75	12,83	16,23	5,48	3,40	412
413	27,99	29,16	39,91	11,92	10,75	2A	72+660							413

Annex 8 Construction Noise Contour Maps

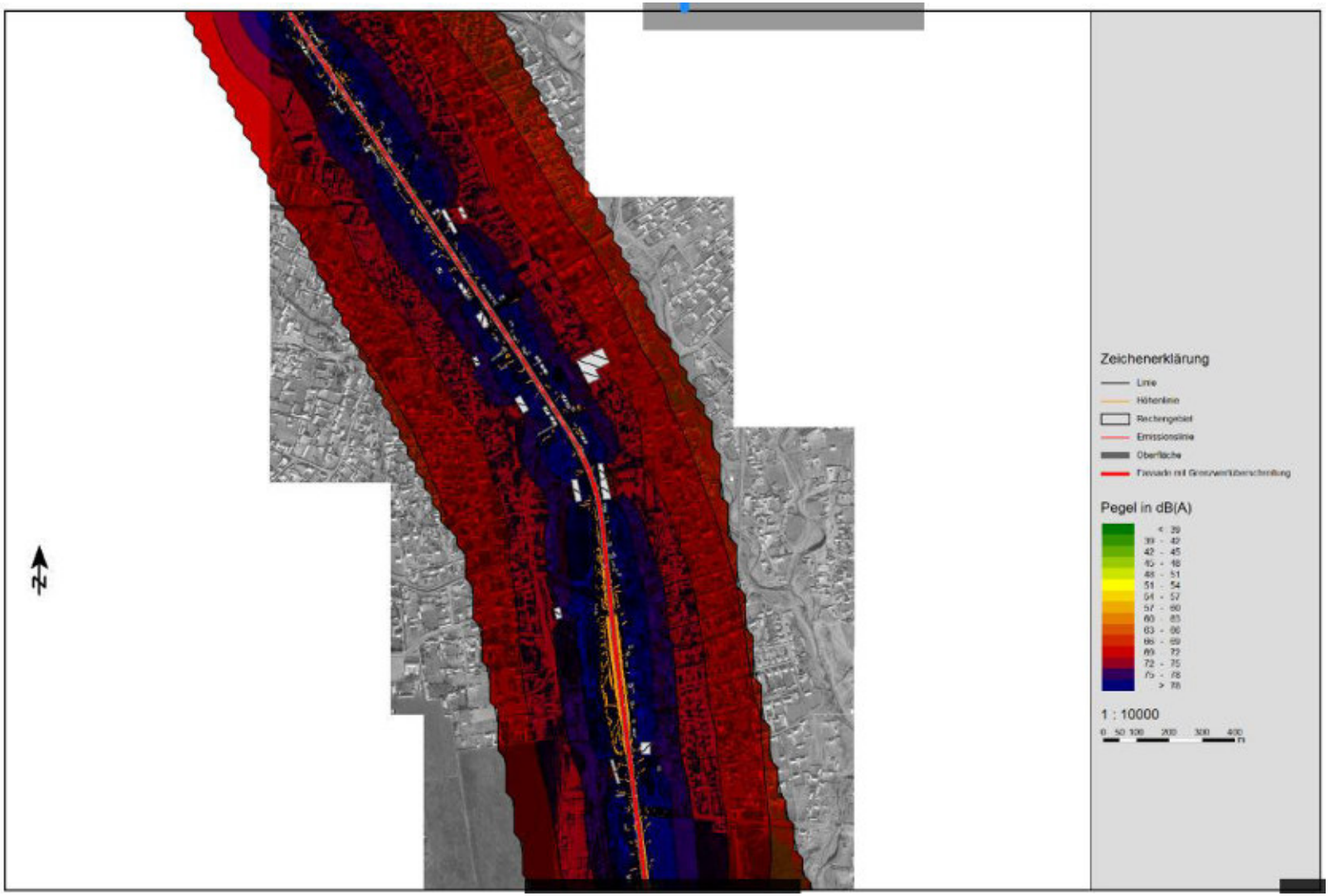

Fig. 60: Construction Noise Contour Map for Obikiik (day<time)

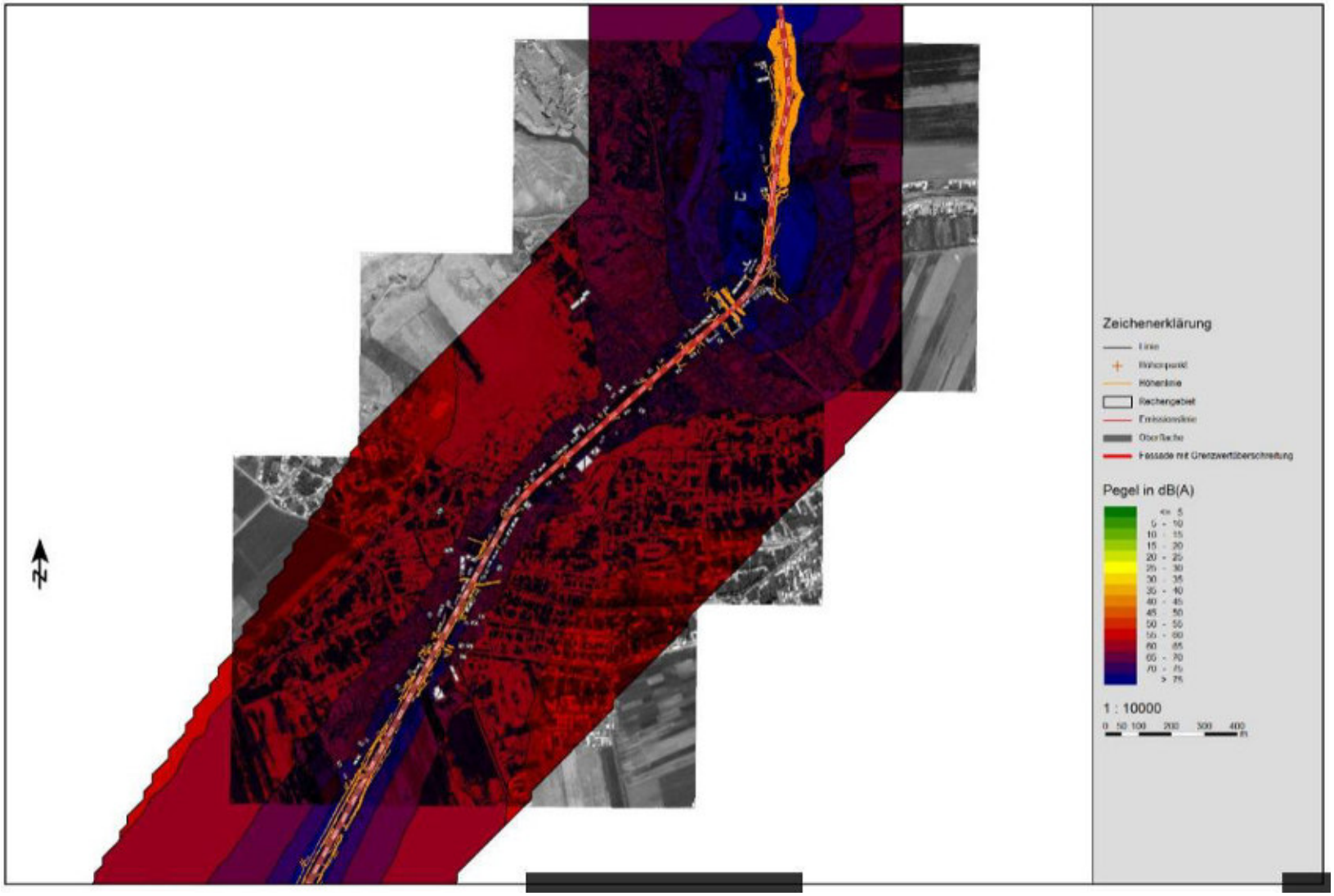

Fig. 61: Construction Noise Contour Map for Uyali (day<time)

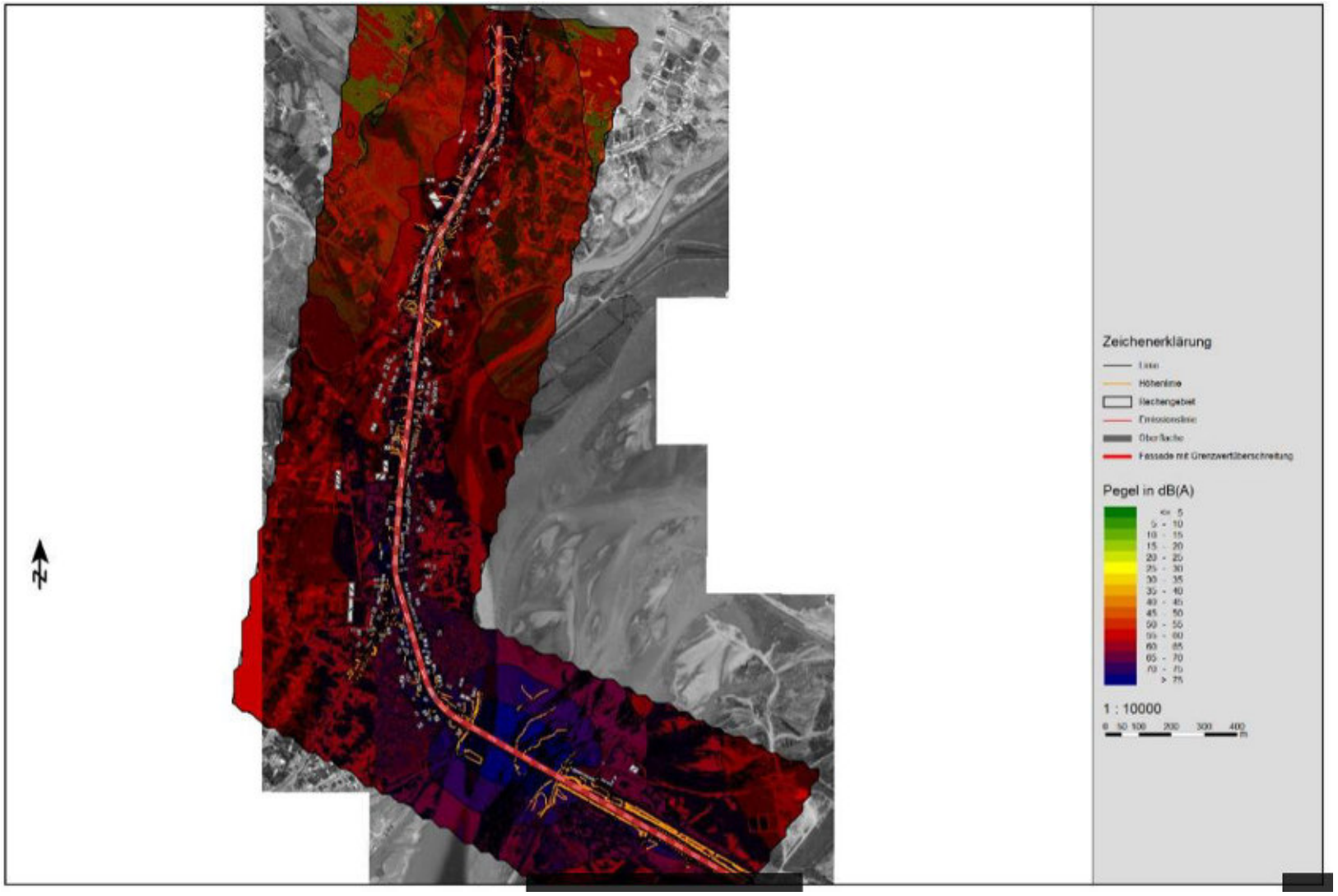

Fig. 62: Construction Noise Contour Map for Kyzylkala (day<time)