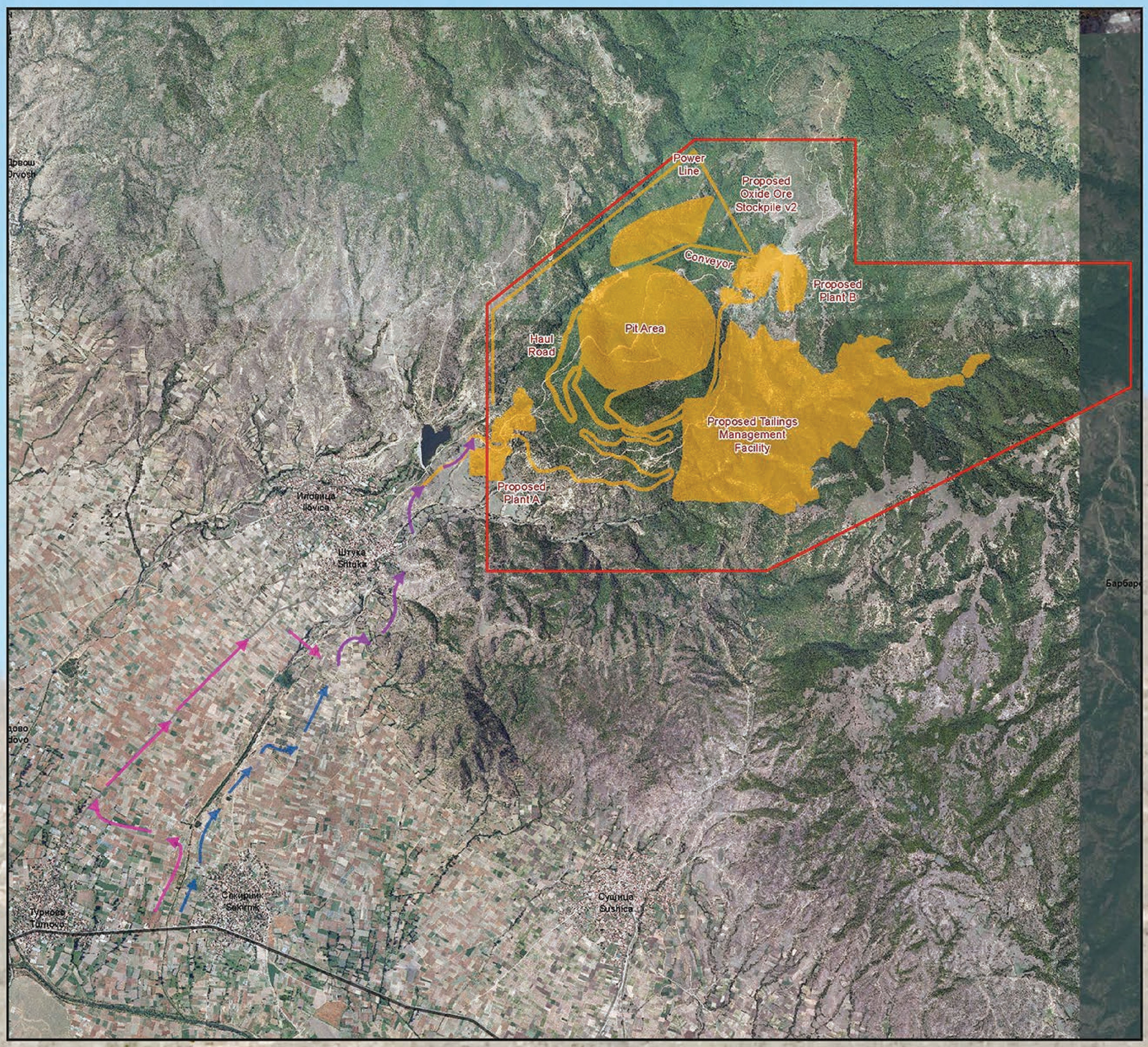
Ilovica Gold-Copper Project

The Project

The project is planned to be an open pit copper and gold mine with associated infrastructure, including:

- A process plant
- Access roads
- Ore stockpile
- A tailings management facility
- Additional facilities to support mining operations (offices, warehouses, electrical and water infrastructure)

The copper concentrate would be transported from the site in trucks, probably to an existing smelter in Bulgaria. The gold leachate would be processed on-site to produce doré bars. The average annual production will be 95 Koz gold and 16 Kt copper.



Schedule

Construction of the mine is planned to begin in late 2016 or early 2017 and take around 18 months. Production is scheduled to commence in 2017/2018. The expected life span of the mine is 23 years, followed by the mine closure phase

During operations, the pit would be operational 24 hours per day. However, the use of explosives to blast the rock would be limited to daytime hours.

Employment

During the operational stage of the Project, it is expected that 400 to 500 direct jobs will be created. Employment requirements will be higher during the 18 month construction phase. Skills requirements and recruitment information for these positions will be further defined and publicised in the future.

Wherever possible, the Project will procure goods and services from local or national suppliers to contribute positively to the Macedonian economy.

Decommissioning

At the end of mining operations, Euromax would be responsible for decommissioning the site. This would include dismantling all facilities that are no longer required and making safe those that will remain.

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Environmental and Social Impact Assessment Process

An ESIA is an assessment of the potential social and environmental impacts of a project. The permit to construct and operate the mine and the funding of the project is dependent on the project design and the robustness of the ESIA and the environmental and social management measures described.

Large developments in Macedonia, including mines, are subject to an Environmental Impact Assessment under the Law on Environment. As well as complying with Macedonian legislation, Euromax has committed to complying with international best practice in mining and environmental assessment, which is also a prerequisite for financing.

Stages of the ESIA Process

- Establish the key environmental and social receptors
- Establish the existing ("baseline") environmental and social conditions
- Conduct ongoing stakeholder engagement
- Assess the impacts from the project on environmental and social receptors
- Add in mitigation measures if impacts are unacceptable
- Design a monitoring and management system for the lifetime of the project

Stakeholder Engagement

Stakeholder engagement is a two-way process which allows the dissemination of information about the project and how the ESIA will assess the project, while allowing stakeholders to ask questions, raise concerns and make comments about the project so concerns can be addressed within the ESIA. It is taking place at national level and in the local area.

The approvals process for a Macedonian EIA involves public consultation on the EIA, including a 30 day disclosure period followed by public hearings in Bosilovo and Novo Selo. Meetings and stakeholder engagement that Euromax hold before this disclosure period are in addition to Macedonian requirements.

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Meteorology

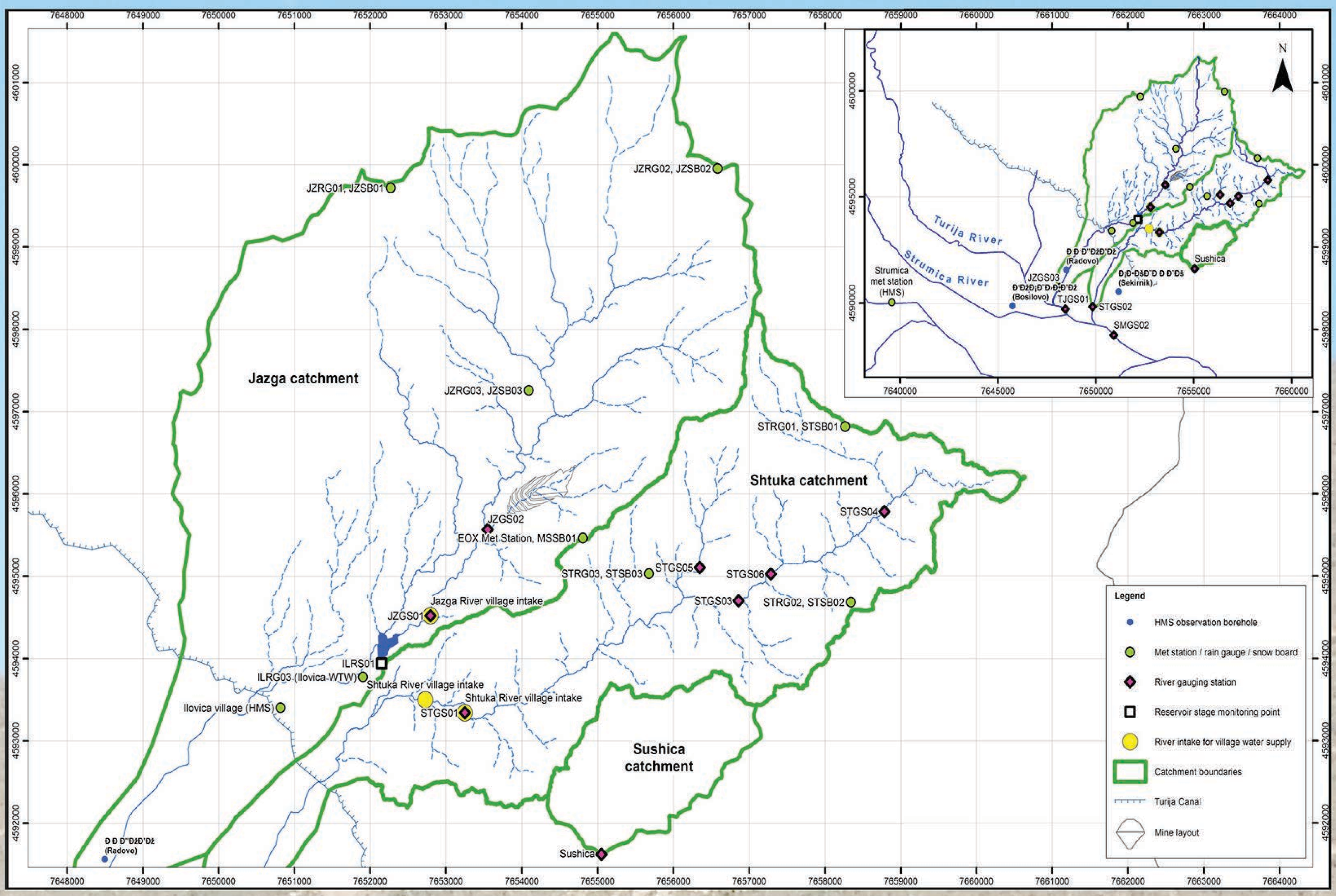
Meteorological conditions were measured between 2013 and 2015 at the on-site weather station installed by Euromax, supplemented by additional rain gauges and snow boards. Site weather conditions are generally reflective of regional trends, with some localised effects.

Measuring rainfall

Measuring temperature and humidity

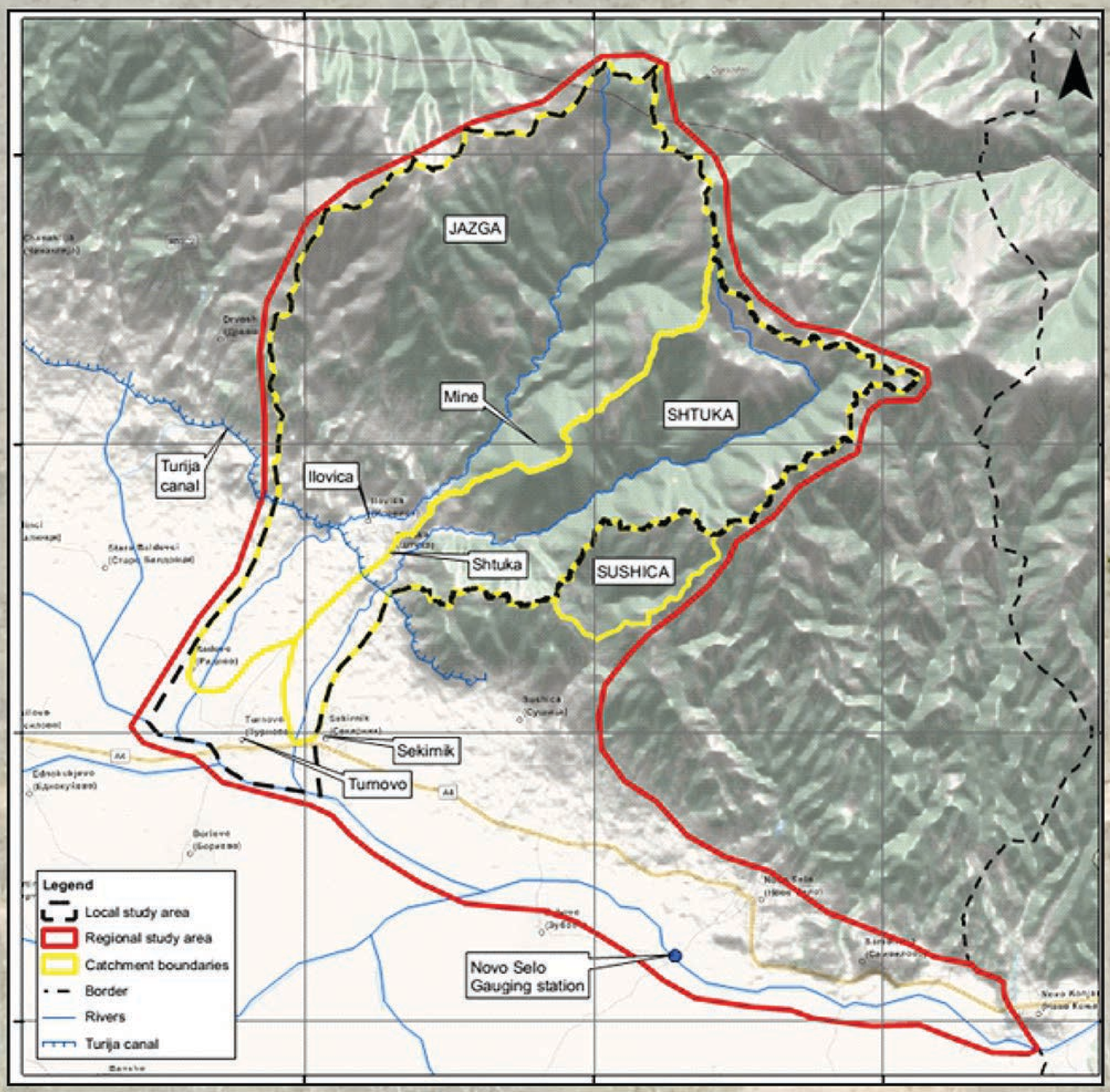
Measuring windspeed and direction

Meteorological monitoring station



Meteorology and river monitoring network

Surface Water



Local and regional study areas for water

Surface water flows were measured in the Jazga, Shtuka, Turija and Strumica Rivers between 2013 and 2015. These data are supported by long-term local rainfall datasets, which enable modelling of flow patterns.

Monitoring river flows in the Shtuka River

Measuring the flow in the Jazga River

Groundwater

Groundwater level data have been collected from a number of sources, including drill holes around the site, village wells, and irrigation boreholes. Flows have been measured from naturally occurring springs.

Installing piezometers for measuring groundwater levels

Measuring groundwater levels

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Water Quality

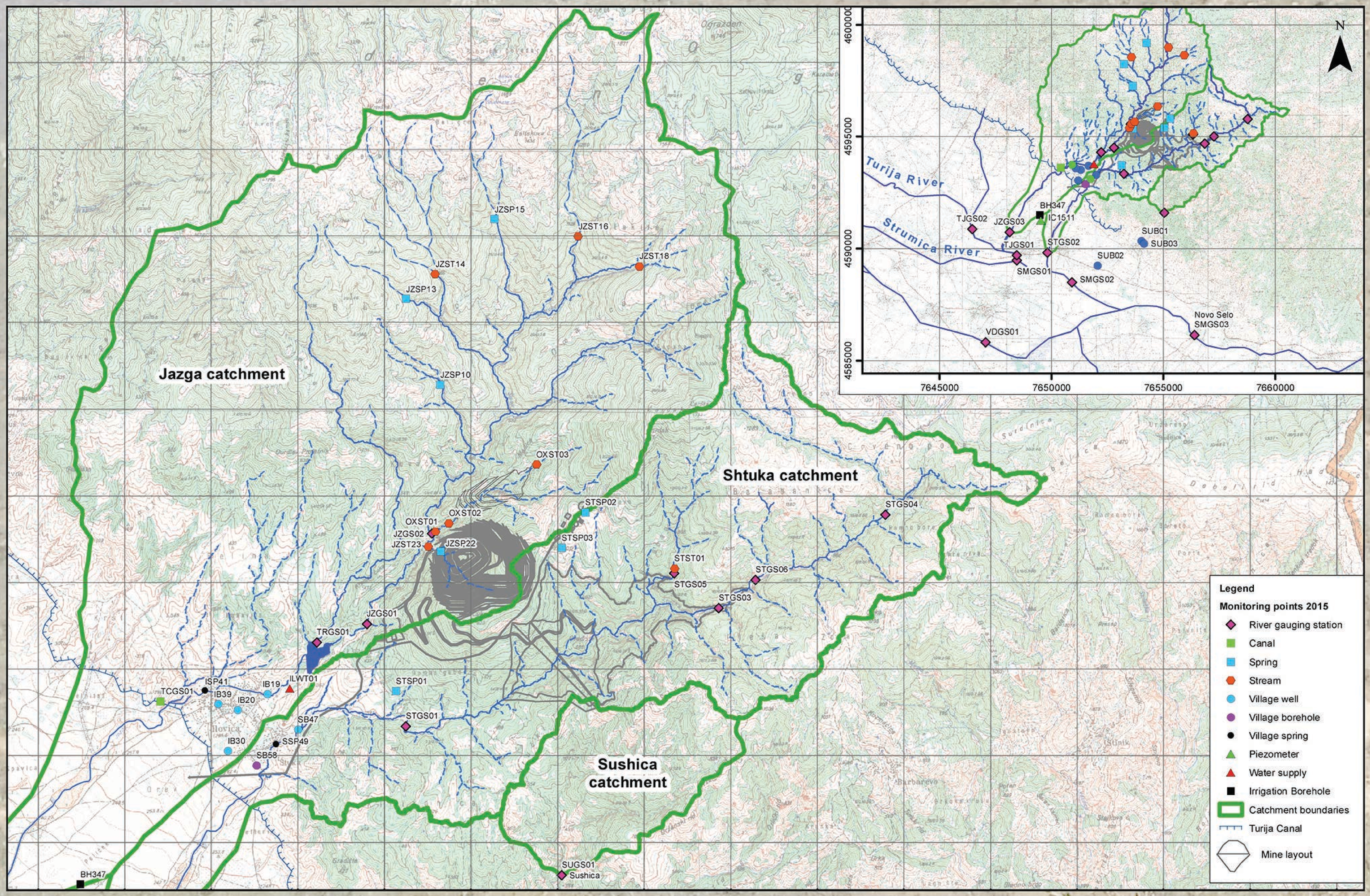
Water quality was monitored at numerous locations within the study area. Parameters monitored include pH, water temperature, dissolved oxygen, metals, nutrients, hydrocarbons, sediments and microbiology. Some tests are done in situ at the monitoring location and other samples are sent to a laboratory for testing. Monitoring points are generally visited four times a year. Some of the village locations are visited monthly.

For surface water (rivers and streams), monitoring was undertaken at 25 sites for up to 18 months. Data was collected across the Jazga, Shtuka, Strumica, Turija and Sushica catchments, including the Ilovica reservoir and Turija canal.

For groundwater resources, monitoring was undertaken at 19 sites for up to 18 months. Data was collected across the Jazga, Shtuka, Strumica and Sushica catchments, from various locations including springs, village supply wells and boreholes, and irrigation boreholes.

Euromax environmental technicians were trained by SWS on the procedures and equipment required for taking water quality samples.

Euromax environmental technicians used GPS to mark locations of monitoring points. The information was all recorded on paper and then input into a computer.



Water Quality Monitoring Locations

Microbial water quality in village wells and springs

A limited number of village wells and springs were sampled specifically to assess microbiological water quality, by the Macedonian Public Health Istitute (PHI), as instructed by Euromax. Generally bacteria were not detected in the samples. Low counts were found occasionally, which indicate that the water sources are at risk. Sources in the village areas are likely to be waste water discharges, outdoor toilets and animal waste.

Euromax are also looking at the material that will be mined. They have set up experiments to look at what the material does when it is exposed to the weather, including looking at water draining after rain. They will use this information to design the mine and help to prevent any deterioration of water quality.

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Air Quality and Noise

Baseline air quality monitoring was undertaken from December 2013 to July 2015. The primary objective was to monitor the existing conditions at sensitive receptors, so monitoring was centred around villages close to the proposed mine and transport route. Three methods were used to collect data:

Osiris particulate monitor
Monitored fine particulates (PM10, PM2.5)

Frisbee guage
Deposited dust

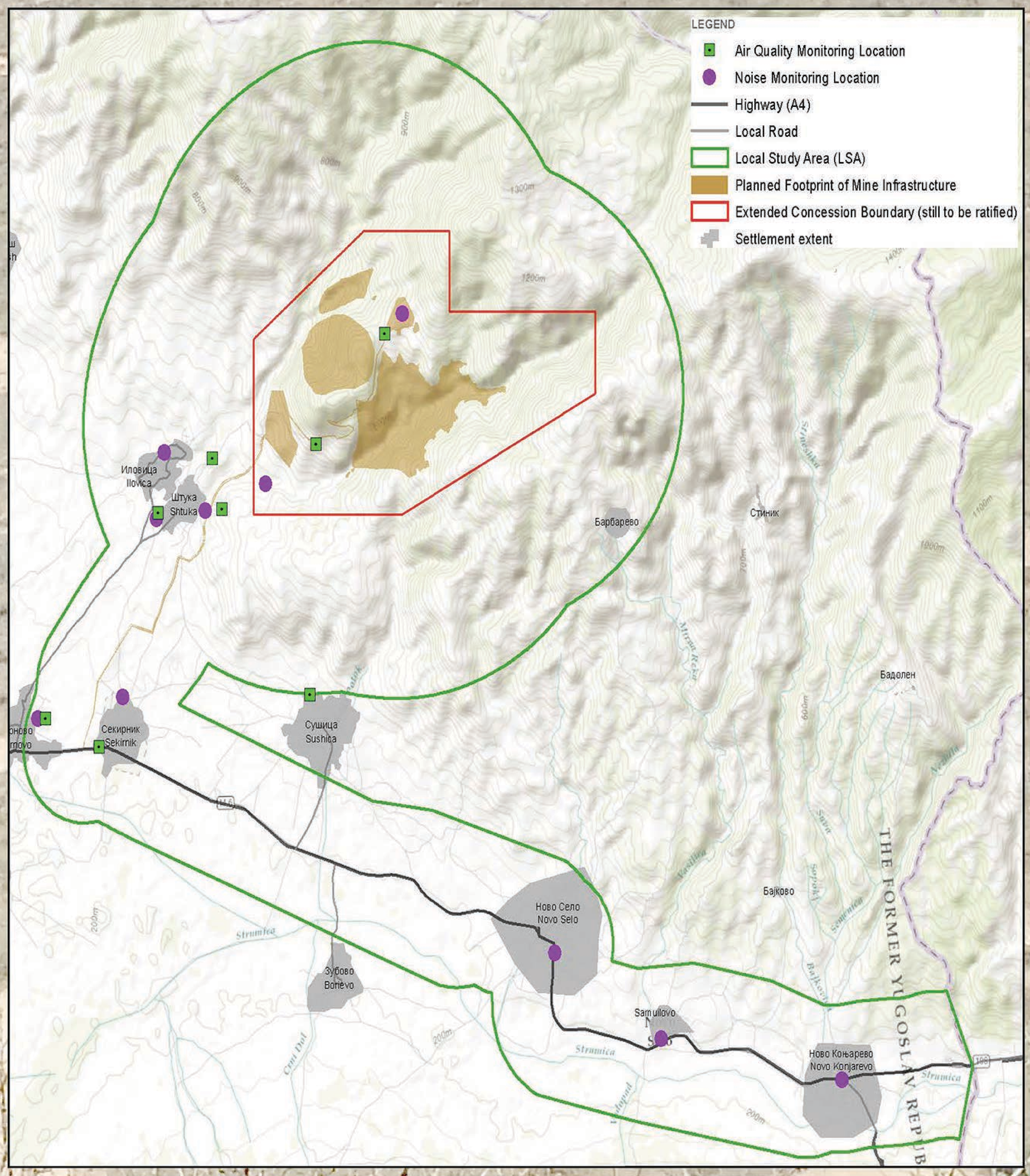
Diffusion tubes
NO, NO_2, SO_2 and O_3

Baseline monitoring confirmed that the air quality in the area is generally good and compliant with relevant Macedonian and international guidelines.

Baseline data gathering for noise focuses on possible noise impacts on noise-sensitive receptors (residential and other valued locations) near the proposed area of the mine and transport route. Typically, noise effects from mining activity will be inaudible beyond 2 to 3 kilometres from the noise source. As such, the noise assessment looked at receptors within a 3 km radius of mine pit and infrastructure. Road traffic is an existing noise source in the area, therefore noise measurements were taken at locations within 1 km of the access road and transport route.

Measured noise levels were found to be predominantly influenced by natural noise sources. This is consistent with the rural nature of the area, where there are few industrial and commercial mechanised noise sources.

The primary anthropogenic noise source in the study area is the A4 from Strumica to Bulgaria. Villages through which the A4 passes typically exhibited higher ambient noise levels. The highest ambient noise levels were recorded at monitoring locations in Novo Konjarevo, Samuilovo and Novo Selo.



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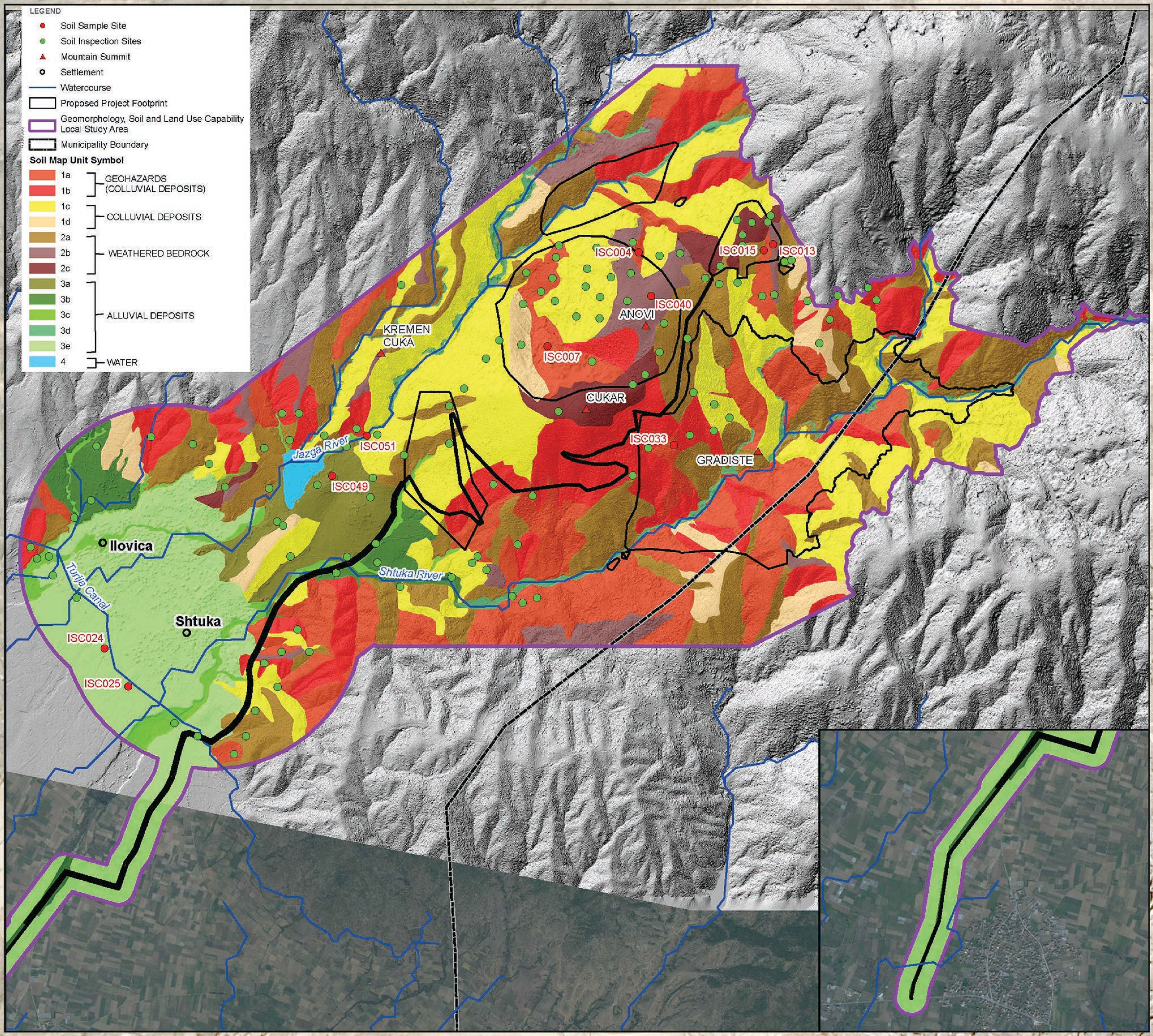
Soils

The geomorphology, soils and land use baseline analysed the following parameters:

- Geomorphology and terrain – looking at slope angle, slope complexity, slope length and elevation) and inferred origins. Terrain types are categorised into two zones: Highland and Lowland.
- Soil classification – soil analysis was undertaken during a site visit and lab testing. It identified different soil types based on a range of characteristics.
- Geohazards - a geohazard inventory was developed to identify hazards and slope processes/movements which could be problematic during mining operations.
- Erosion potential – analysed erosion risk for exposed soils (i.e., with no vegetative cover) for the different parts of the site.
- Land use capability – soil types were assessed for their capability to support different land uses, reflecting dominant land uses in the area.
- Soil reclamation suitability – an assessment was undertaken on the availability of soil to be used for reclamation (returning disturbed areas to a semi-natural state), based on soil quality and the feasibility of salvaging the soil (i.e. limited in some cases due to steep slopes).



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Ecology

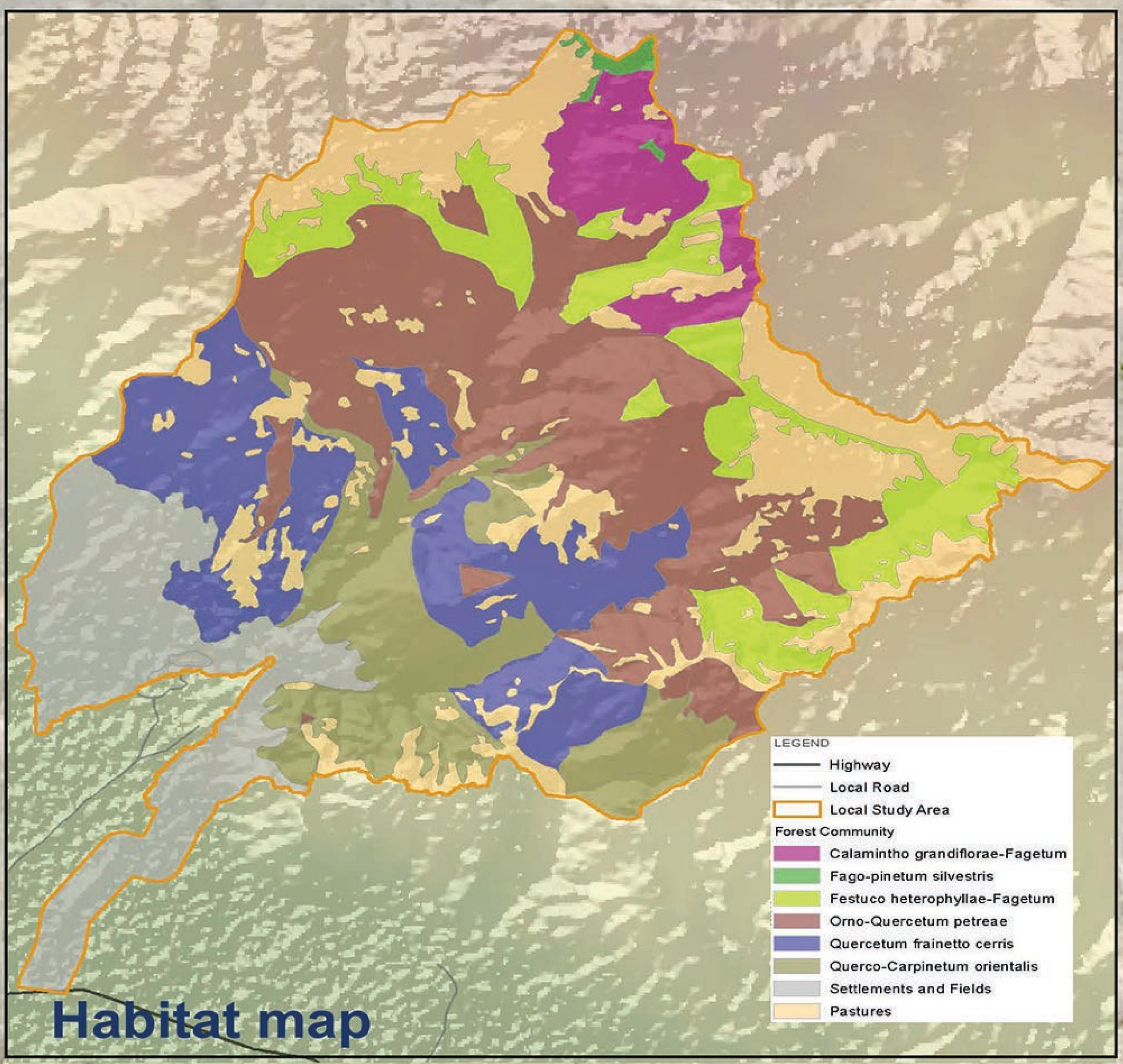
A wide range of ecology studies have been undertaken in partnership with Biomaster, a Macedonian consultancy. Survey techniques have included habitat mapping, transects, capture and release of bats and birds, fisheries surveys, and camera trapping (using a motion detection camera to collect photos of animals in various locations).

Some of the findings of the ecology & biodiversity study include:

Terrestrial Flora	271 species of vascular plant and 138 species of fungi and lichen were recorded within the study area.
Mammals	25 species of mammal and 12 species of bats were identified during surveys.
Birds	97 species of bird were recorded within the area.
Herpetofauna	25 species of herpetofauna (frogs, toads, snakes, lizards, tortoises) were recorded during surveys.
Terrestrial Invertebrates	High numbers of invertebrate species have been recorded and much of the study area is designated a 'Prime Butterfly Area' due to the presence of the Large Blue butterfly and the historic record of the Apollo butterfly.
Fisheries	8 species of fish were recorded during surveys, though only in the lower reaches of the Jazga and Shtuka rivers. Stone crayfish (*Austropotamobius torrentium*) were recorded at 22 sites in the study area. Freshwater crab (*Potamon fluviatile*) was recorded at only 1 sampling location on the Shtuka River.

Large Blue (*Phengaris (Maculinea) arion*)
Photo credit: Biomaster

European wildcat (*Felis silvestris*) captured on a camera trap



Habitat map

Habitat mapping

Plant community composition is reflective of topography, altitude, soil type (including saturation) and management regime. Habitats within the study area are dominated by sessile oak forest (*Orno-Quercetum petreae*), pasture and agricultural land.

Stone Crayfish(*Austropotamobius torrentium*) Photo credit: Biomaster

Critical habitat assessment

A critical habitat assessment will be undertaken in line with international guidelines (IFC Performance Standards). The purpose of defining critical habitat is to identify areas of a particularly sensitive nature for biodiversity value and conservation which may require particular mitigation measures.
Five species (Large Blue (*Phengaris arion*), Long-horn beetle (*Morimus funereus*), Rosalia alpina (*Rosalia longicorn*), Stone crayfish (*Austropotamobius torrentium*), and Common tortoise (*Testudo graeca*)) recorded during baseline surveys are considered to be species of conservation concern and will be subject to a critical habitat screening process.

Golden jackal (*Canis aureus*) captured on camera trap

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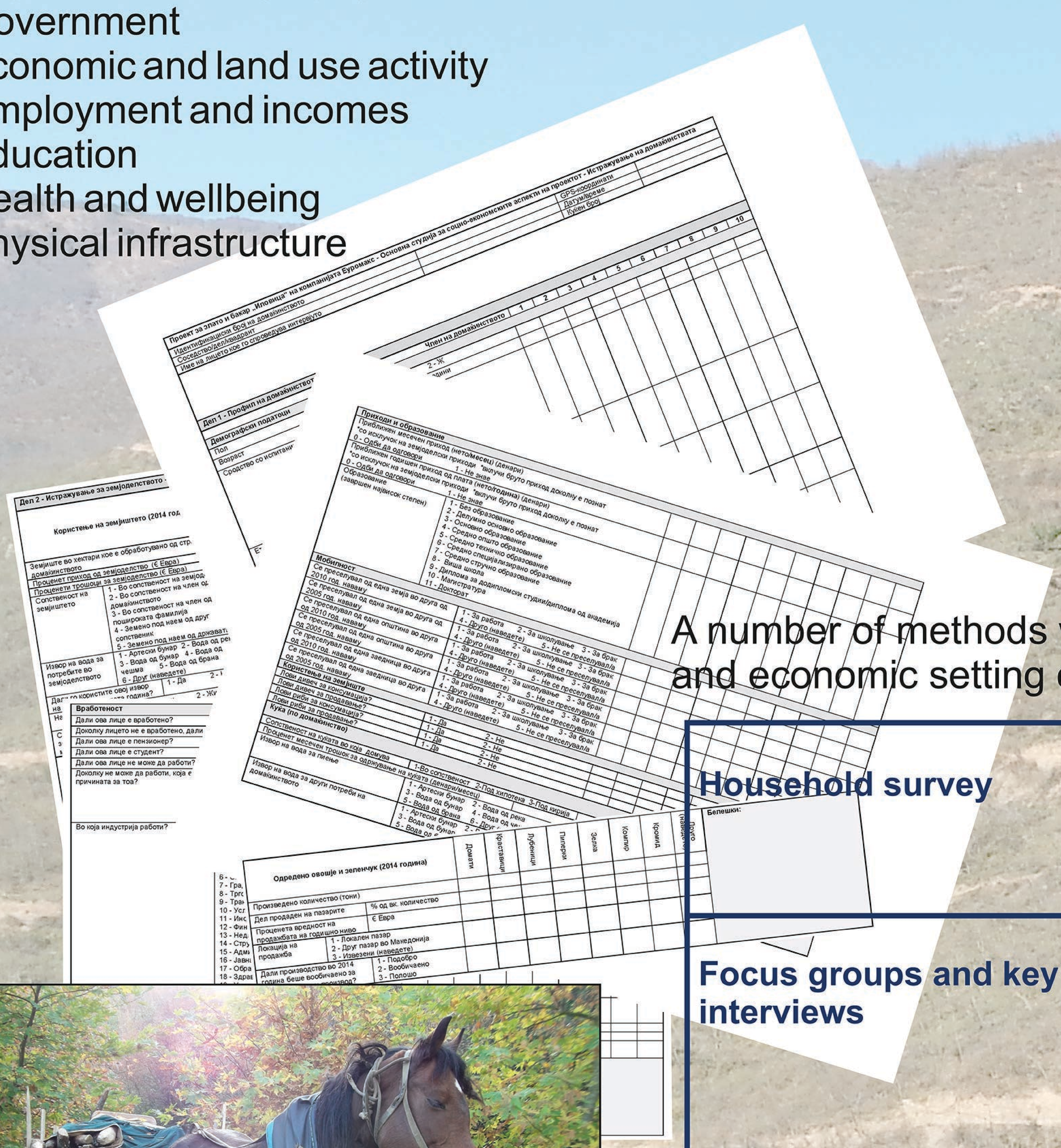
Socioeconomics, Agriculture and Traffic

The socioeconomic baseline study presents information about the social and economic setting of the Project, both at a national level and in more detail at the local/regional scale. Topics analysed include the national political, economic, and social environment, and the provision of infrastructure. At the regional and local level, the baseline study looks at:

- Population demography
- Government
- Economic and land use activity
- Employment and incomes
- Education
- Health and wellbeing
- Physical infrastructure



A number of methods were used to gather information regarding the social and economic setting of the area:

Household survey	• 23% of households in each community were surveyed (108 households in Ilovica and 48 households in Shtuka)
Focus groups and key informant interviews	• Municipal Government • Agriculture • Local Business • Emergency Services • Healthcare • Education • Hunting • Religious leaders
Traffic survey	Traffic counts are being conducted at four locations to gain an understanding of the number and types of vehicles using the roads in the region.
Reports and other available data	• Government reports • National census data • Local environment action plans (LEAP)

We will use the baseline data to predict and measure changes in the socio-economic environment (for example, employment, economy, demographics) that are brought about by the project. This helps Euromax to plan the project to maximise benefits and minimise effects on communities.

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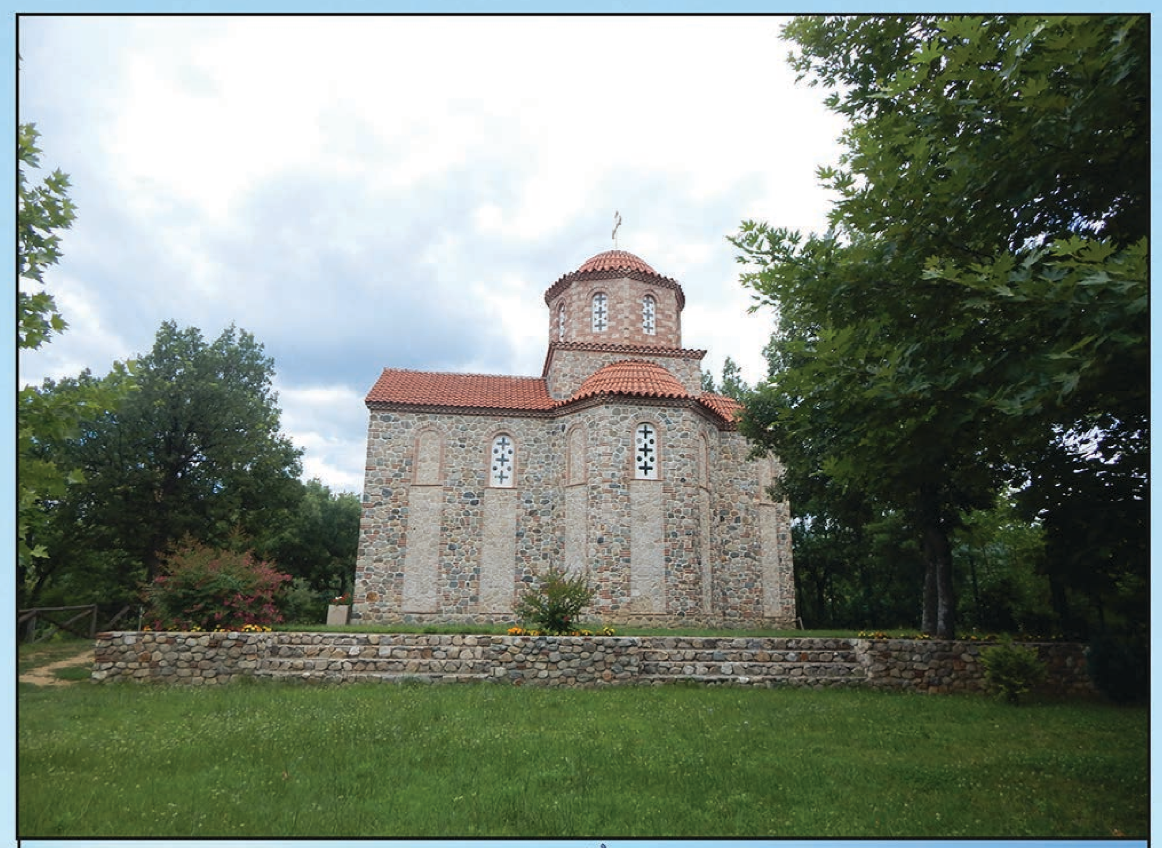
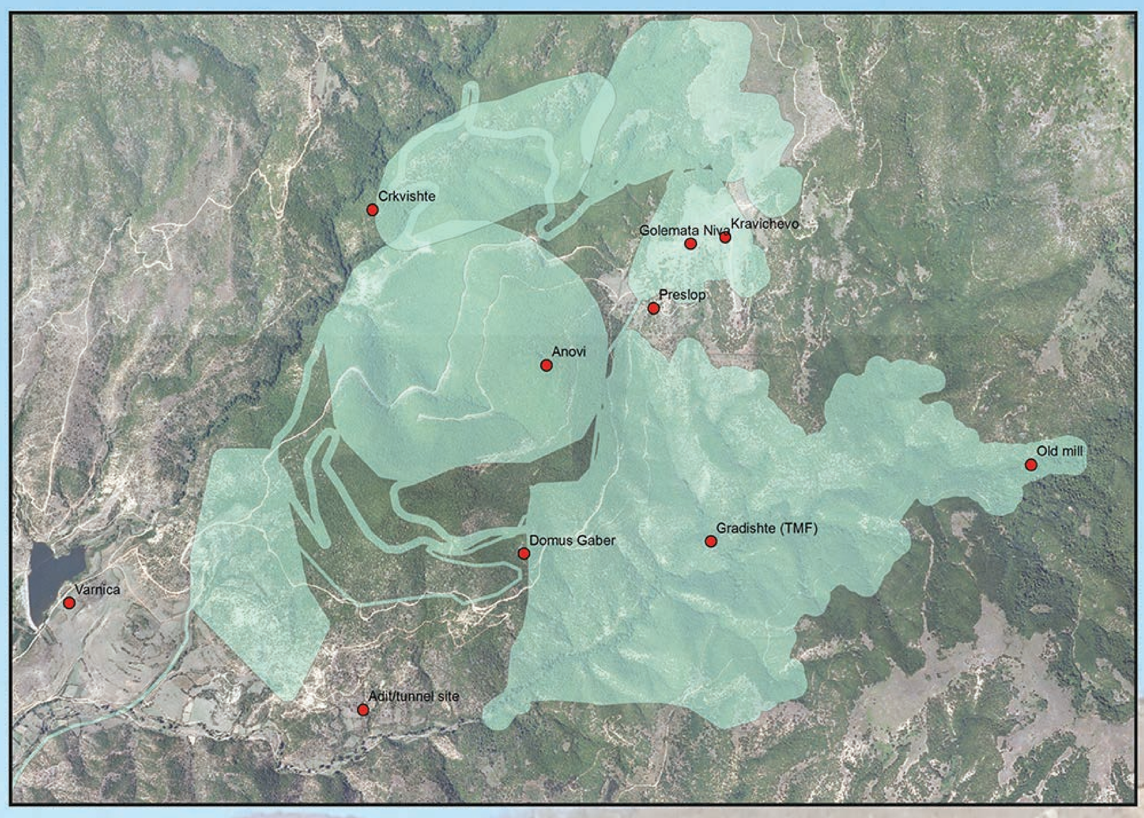
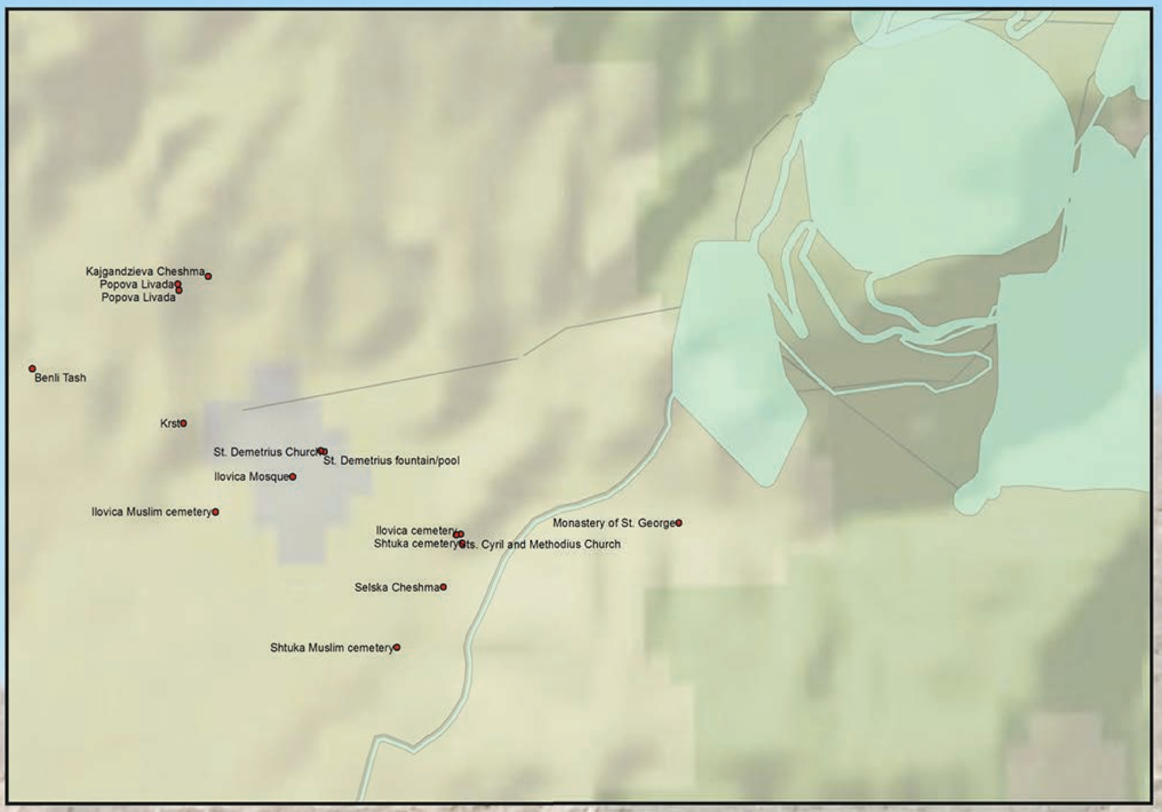
Cultural Heritage & Archaeology





Archaeological sites



Cultural heritage sites

Baseline cultural heritage information was collected to describe and map cultural heritage in the area surrounding the project.

A desk study provided an overview of the cultural heritage of the region. The desk study revealed a number of known archaeological sites in the region.

Meetings were held with members of the community in Ilovica, Shtuka, Sekirnik, Turnovo and Suchica. Participants explained their cultural heritage and what was important to them and their communities. They also provided descriptions of sites which are important and the locations of these sites. No key receptors were recorded within the mine footprint, so direct impacts on cultural heritage are extremely unlikely. Multiple sites were identified in the villages – including churches, cemeteries, and springs.

An archaeological survey was completed by archaeologists from Strumica Museum, which identified and recorded sites of archaeological interest within the mine footprint. A number of archaeological sites were identified within the mine footprint or in very close vicinity. We are working with the Museum to investigate these sites further and will implement appropriate mitigation measures to limit the Project's impact on archaeological sites.

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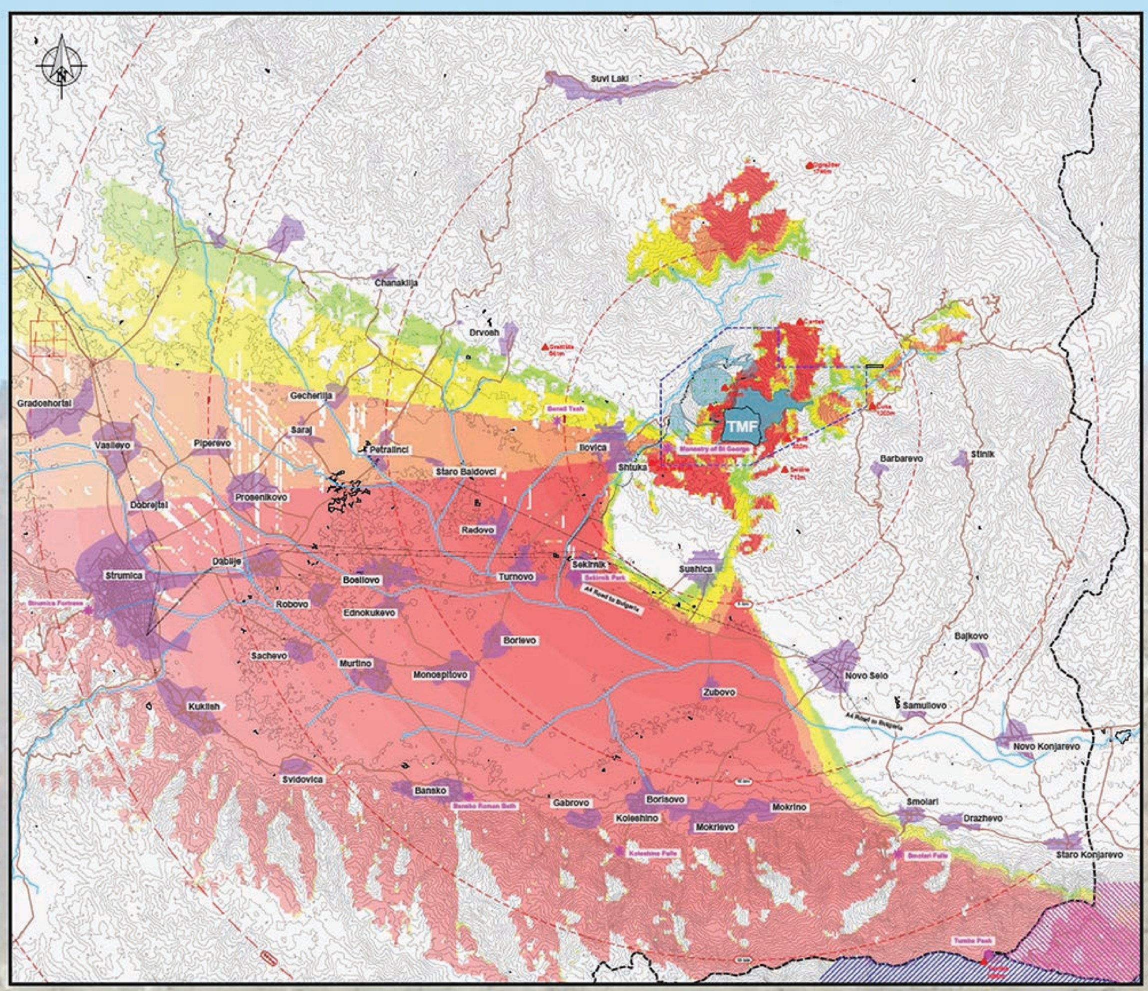
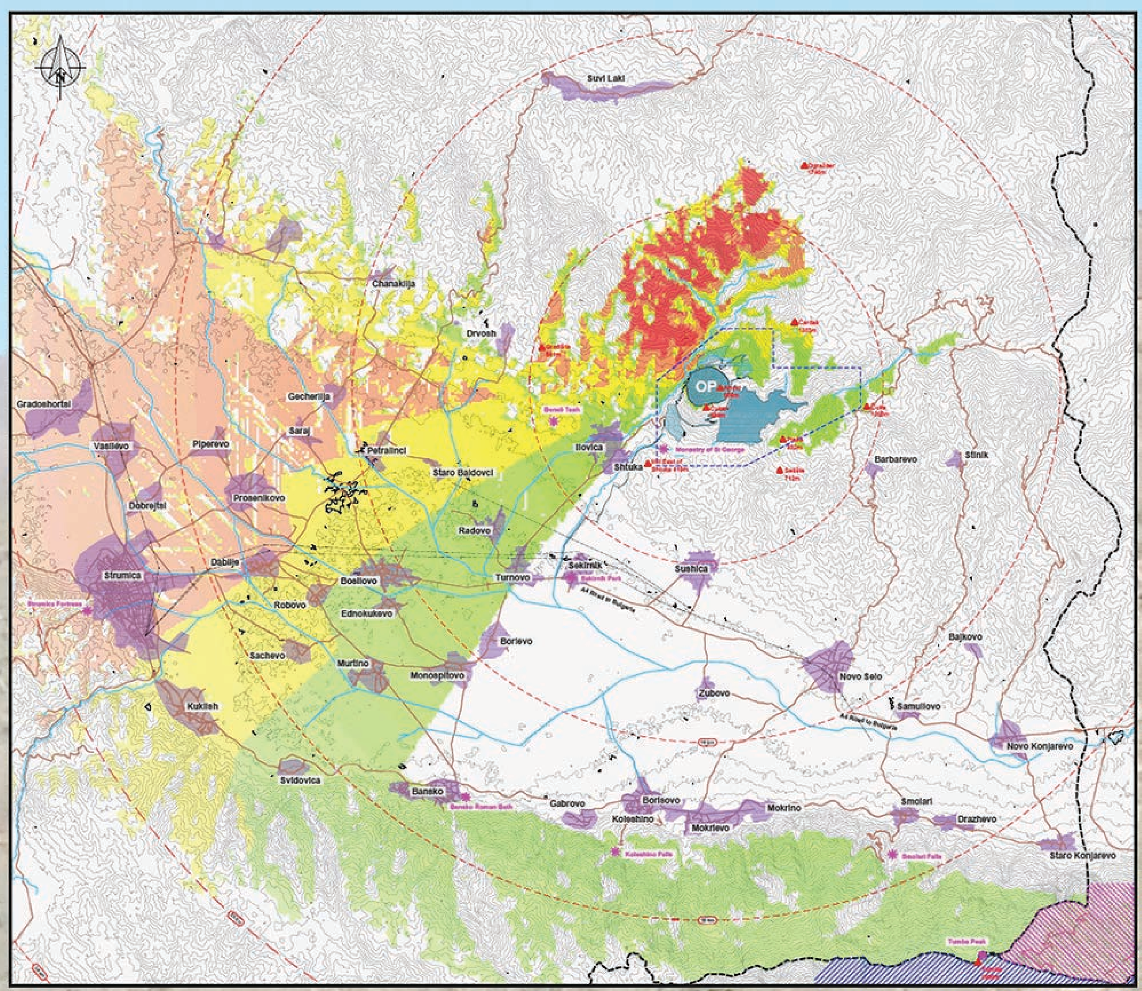
Landscape and Visual

The landscape and visual assessment considers the potential changes to the character of the landscape and to the views of the proposed mine from the Strumica Valley.

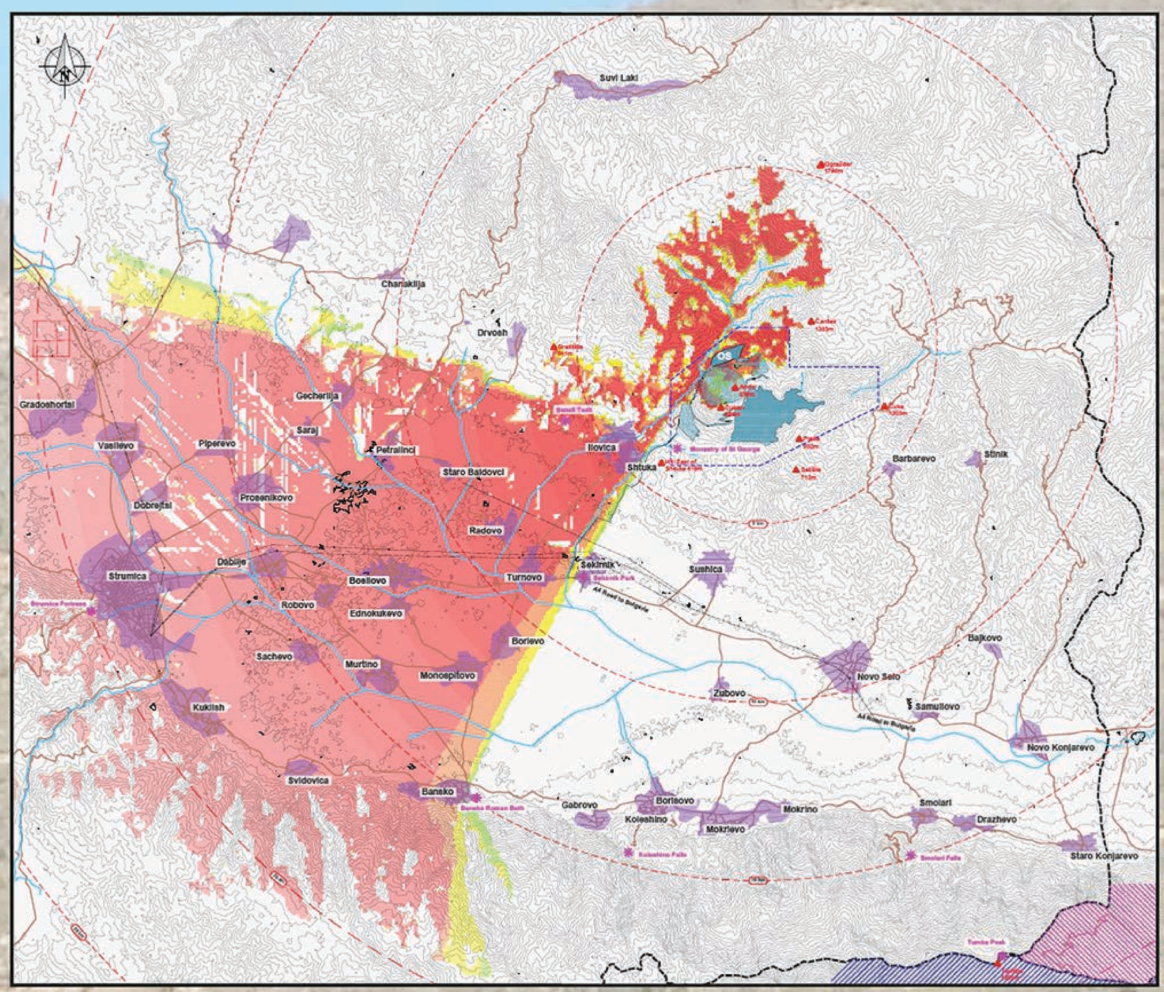
Based on preliminary project designs, a computer model was used to identify the areas from which the mine components would be visible ('zones of theoretical visibility'). This indicated that some of the mine components would be visible, or partially visible, from approximately 32 settlements.



TMF Zone of Theoretical Visiblity



Open Pit Zone of Theoretical Visiblity



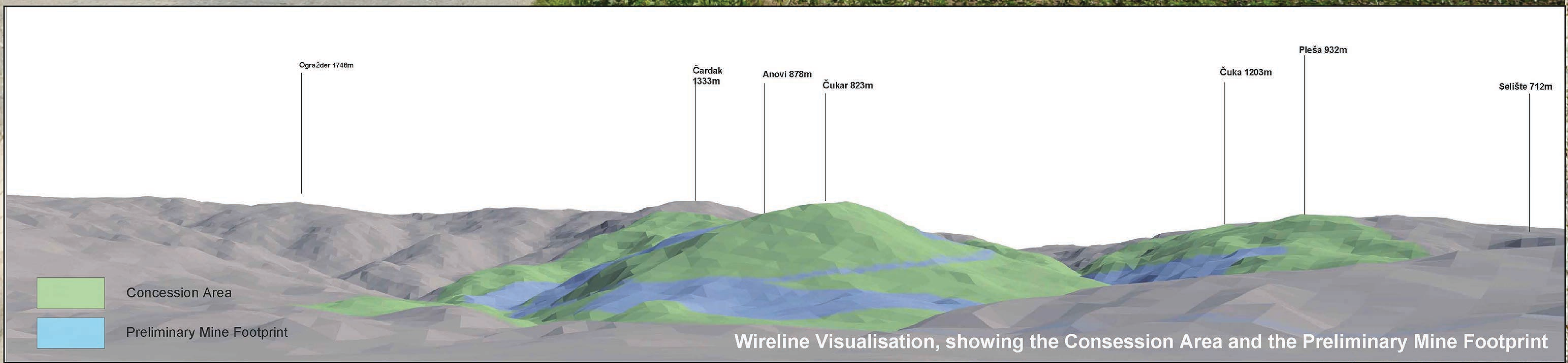
Oxide Ore Stockpile Zone of Theoretical Visiblity

An assessment of scenic quality was undertaken based on topography, landuse, vegetation cover, tranquillity, condition and scarcity. The mine would be located within the 'Mountain Forests', which is considered to be the most attractive part of the study area. However, the landscape is not protected and the landscape type is reasonably common within the region.

Information on visitor attractions/destinations within the Strumica Valley were obtained, although none were identified within close proximity to the mine.

Visualisations have been produced from 28 locations showing the existing topography, the concession area and the preliminary mine footprint. More detailed photomontages will be produced from the key viewpoints.

Existing View



Wireline Visualisation, showing the Consession Area and the Preliminary Mine Footprint

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