



DOCUMENT FOR PROJECT ASSESMENT

Reconstruction of the street Boris Kidrikj in Kichevo

September2020

Municipality of Kichevo



I. PROJECT DESCRIPTION

A. GENERAL

The Municipality of Kichevo is located in the western part of the Republic of Macedonia and belongs to the southwestern planning region. Something characteristic for this municipality is that in 2013, with the new territorial organization, there was a merger of five municipalities: Kichevo, Drugovo, Vraneshtica, Zajas and Oslomej, which are now part of the Municipality of Kichevo, whose administrative center is located in the city of Kichevo. The municipality borders with several municipalities: MakedonskiBrod, Plasnica, Krushevo, DemirHisar, Debarca, Debar, Rostusha-Mavrovo, CentarZhupa and Gostivar.

When you add up the number of residents from the previous five separate municipalities, according to the data from the last census conducted in 2002, the total number of residents in the Municipality of Kichevo is 56,739 (Table 1).

Table 1: Number of residents according to the data from the 2002 Census:

Kichevo	30138
Drugovo	3249
Vraneshtica	1322
Zajas	11605
Oslomej	10425
Total	56739

The Municipality of Kichevo covers an area of 837 km² and there are 79 settlements on its territory. The city of Kichevo is 110 km away from the capital Skopje. Due to the specificity of the area where the municipality is located, and where there is a pronounced transition from high mountain to low valley part, two tectonic units can be distinguished in the relief structure, namely mountain part and hilly-valley part. The Kichevo valley is a clearly formed natural unit, surrounded on all sides by high mountains. It belongs to the upper catchment area of the river Treska. On the north side it reaches the Strazha pass and the mountains Bukovich and Dobra Voda, on the west side the mountain Bistra rises, on the south side the mountains Baba Sach and Musica extend, and on the east side the valley reaches the northern part of Poreche. With its 51,346 hectares of forest area, the Kichevo region is the richest in the Republic of Macedonia. About 3,000 hectares of them are privately owned, and the remaining 48,451 hectares are owned by PE "Macedonian Forests". The most representative species are oak and beech. The Kichevo valley has 12,251 hectares of arable land (arable lands and gardens, orchards, vineyards and meadows) and 15,151 hectares of pastures.

The municipality of Kichevo is rich in water. Several river watercourses are registered here. In the village of Izvor, which is located in the micro-region of Drugovo, we can find the springs of the river Treska, one of the largest river watercourses in the country, which is the largest right tributary of the river Vardar. In the region there are several rivers, watercourses and streams that flow into the river Treska and across the river Vardar in the Aegean Sea: Belichka river, Ehloechka, Cerska, Rabetinska, Tuinska, Tajmishka, Bachishka and Greshnicka river. The springs of the river Studenchica can be found in the



village of Dobrenoec. The river's spring is captured and provides drinking water for several settlements, through the regional water supply system. Apart from the population in the Municipality of Kichevo, the municipalities of Makedonski Brod, Krushevo and Prilep are also supplied with drinking water from this water supply system.

The city of Kichevo is an urban and administrative center, towards which the surrounding settlements gravitate. It is located in an altitude of 620-650 meters. The city of Kichevo is the most densely populated place in the municipality where 52% of the total population in the municipality lives. The population density is 615 inhabitants per 1 km². Regarding the age structure of the population in the city, the average age of the inhabitants is 33.9 years. 61% of the population is younger than 40 years, young people up to 20 years are represented by 30%, and the age category over 60 years is represented by 12% of the population in Kichevo. These data and indicators for the municipality are very similar to the average values in the Republic of Macedonia.

The road connection of the municipality with other regions of the country is good despite the mountainous environment of the region. With the capital Skopje, the region is connected with the regional road Kichevo - Gostivar - Tetovo - Skopje. On the south side of Kichevo there is a road junction that leads to three directions. One direction leads to the Ohrid-Struga tourist region, the other direction through Sopotnica and DemirHisar leads to Bitola, and the third through MakedonskiBrod and the Poreche region leads to Prilep. Apart from the regional roads, Kicevo has a developed railway infrastructure, i.e railway traffic that takes place through the railway line Kichevo - Gostivar - Tetovo - Skopje. According to the State Statistical Office, as of December 31, 2013, there are 292 km of local roads in the municipality, of which 192 km are asphalted, 21 km are macadam, 31 km are dirt roads and 50 km are non-average roads.

The length of the main sewerage network in the city of Kichevo is 4,150 m. The central network is connected to 2,560m of household networks, 800m of commercial buildings and 300m of industrial sewerage networks. Regarding the rural areas in the Municipality of Kichevo, the primary sewerage network is installed only in three settlements, while in the other villages, the residents build septic tanks near their homes.

The supply of the municipality with the necessary drinking water is mainly done through the water supply system "Studenchica". 360l / sec are provided by this system. The Public Enterprise "Komunalec" - Kichevo is the responsible entity for collection, purification and distribution of drinking water and food water, as well as for the installation of water supply and sewerage networks. In the context of water supply, the data shows that the city is completely covered by a water supply network, as well as most of the rural settlements that have a water supply network which is more than 90% developed. The length of the main water supply system in the city of Kichevo is 3,800 meters, while the distribution (secondary) network is branched out to a length of 13,250 meters. The city has 10000 connections, 50 street hydrants and 6 public fountains. The length of the main pipelines in the system of the surrounding rural settlements in the municipality of Kichevo is 71,075 meters, and the distribution network for rural settlements is 144,297 meters.

PROJECT DESCRIPTION

This project includes the reconstruction of the street Boris Kidrikj in the municipality of Kichevo, the installation of new asphalt and construction of a drainage system. The street in question is composed of two axes, one of which is for the street and has a total length of 832,895 m, and the second axis is the axis of the roundabout with a length of 49,955 m. The existing street, which is the street subjected for work, initially fits with an asphalt

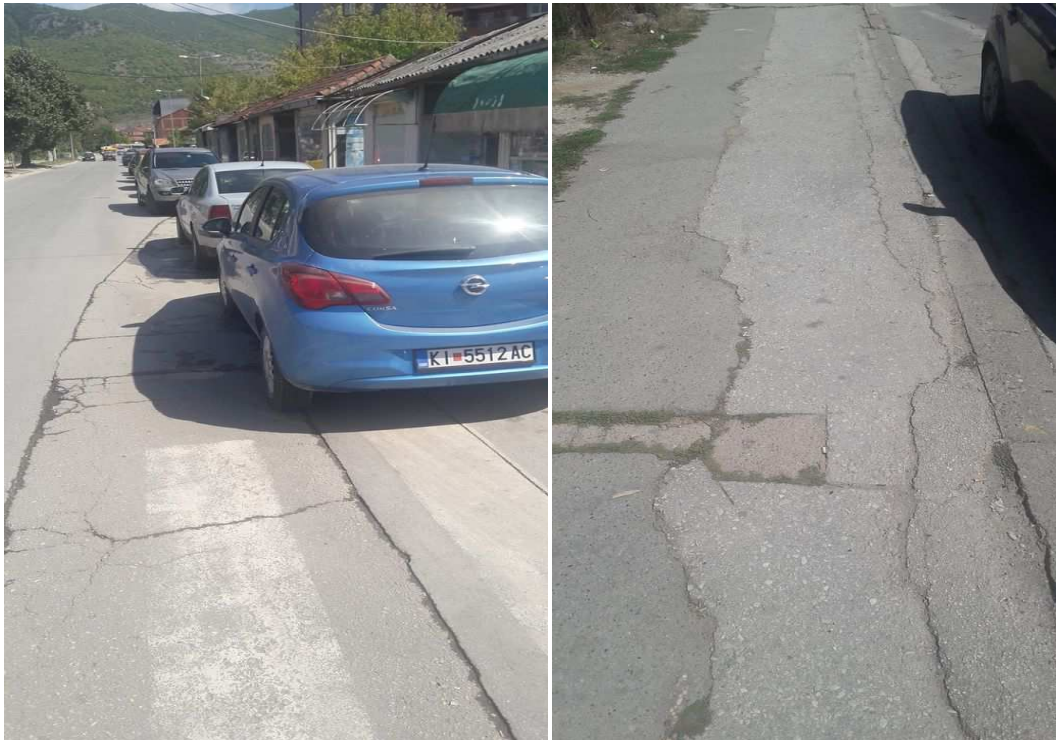


street. The entire length of the street is asphalted with a width of 8.5 m, on the left and right side there are existing sidewalks.

The Municipality of Kichevo has prepared complete technical documentation for the reconstruction of the street.

Current situation

According to the information available to the municipality, the last reconstruction of the asphalt was done 10 years ago when the fecal sewerage was installed. Due to the large number of repairs, due to the weather conditions that destroy the asphalt, today it is in a very bad condition, while the sidewalk is in an extremely bad condition and in some parts it is poses a problem for smooth movement. (shown in the photos below).



Local street Boris Kidric in Kichevo - current situation



Future condition

The main goal of the proposed technical solution is to ensure the longevity of the street by maximizing the technical life of the surface to meet the existing standards of local streets and thus meet the needs of the local community.

The goals of the technical solution of the project are the following:

- To provide safety and comfort in traffic, proper placement and safety for pedestrians through reconstruction of the damaged sidewalk as well as the accompanying features;
- To influence the facilitation of traffic on the street and improve the safety and security of both drivers and pedestrians;

The expected benefits from the implementation of the project are related to raising traffic safety and comfort, increasing capacity and traffic signals, providing a sense of safety for pedestrians, encouraging commercial activities, as well as modernization of the space and its urban arrangement. This will improve the quality of life in the community. It will also lead to reduction of municipal costs for permanent repairs of local roads, caused by weather conditions, as well as reduction of funds in the budget provided for winter maintenance and rehabilitation.

The street Boris Kidrikj is one of the four busiest streets in the city and connects the primary schools, the municipality as an institution, the entrance and exit to the city, the general hospital and the health center, etc., which can be seen in the photo below.

The expected results of the project are:

- Improving traffic safety and comfort
- Improving pedestrian safety
- Modernization and urbanization of the city
- Reduction of depreciation costs for passenger vehicles,
- Improve vehicle flow rate, save fuel, reduce noise and pollution.

Target groups:

The population in the city of Kichevo with direct access to the street:

- All residents of the municipality of Kichevo

Project beneficiaries:

Direct beneficiaries after the implementation of this project are the residents of the city of Kichevo, taking into account that due to the nature of the street, it is used by a large



number of residents who live there, as well as others who for various reasons move along it.

50 percent of the residents of the municipality use it daily, while the rest, or about 20,000 residents, use it as needed.

II. TECHNICAL DESCRIPTION

Upon the request from the Investor (as the client) the MINISTRY OF FINANCE of the Republic of North Macedonia Dame Gruev street no. 12, 1000 Skopje, Project for Improving the Municipal Services MSIP, PRIMA ENGINEERING DOO-SKOPJE made a basic traffic project (construction part) for reconstruction of the Boris Kidrikj street CM (cadastral municipality) Kichevo 4, Municipality of Kichevo.

The street in question is made of two axes, out of which one axis is for the street and its total length is 832,895m, and the second axis is an axis for the roundabout with the length of 49,955m. The existing street which is the street subjected for work, is integrated with an asphalted street at the beginning. At its whole length, the street is asphalted with a width of 8,5m, and on the left and on the right side there are already existing sidewalks.

I. SUBJECT AND AIM OF THE TASK

The subject of the task is a construction of a project documentation in the phase of a basic construction project (civil engineering construction) for reconstruction of the Boris Kidrikj street which includes installation of new asphalt and construction of a drainage system, The aim of the task is to get enough input and to define the program conditions and parameters for creating the Basic Project and improving the safety of the participants in the traffic.

II. GEODESY

A geodetic base was used for the creation of the Basic Project – an updated picture of the existing condition made on the basis of recording, recorded cross-cut profiles with detailed positional and height points. The terrain data have been recorded with a distomat with automatic software registration and the data have been processed with the software package PLATEA. The projected elements, whose data are in the project, are going to be used as a basis for marking out the center line of the access road.



III. BASES FOR PROJECTING AND PROJECT CONDITIONS

All of the available bases, from which the necessary data and information about the current area have been collected, have been used as bases for projecting:

Project task of the Investor

Geodetic base – updated picture

Reconnoiter of the terrain

Valid legal and technical regulation

Bylaws (rulebooks, standards and normatives) which regulate the material included in this project task

IV. HORIZONTAL SOLUTION

The recorded geodetic situation – an updated base of the existing terrain is used as a basis for creating the horizontal solution. The axis is projected on the existing street in order to preserve the spatial limitations and in accordance to that, 5 horizontal curves for projected speed $V_p=30\text{km/h}$ and level of service (D Horizontal axis for the Boris Kidrikj street is made of 11 elements, 6 directions and 5 round curves) have been projected. The horizontal radius is $R_{\min}=50.0\text{m}$, and $R_{\max}=10000.0\text{m}$. In order to preserve the already existing width of the street, the width of the lanes of the Boris Kidrikj street is projected to be 8,5m, and for the safety of the pedestrians in the traffic, sidewalks on the left and right side of the lanes with changeable width have been projected. The axis of the circle is projected according to the existing round intersection in order to preserve the spatial limitations and, in accordance with that, a round intersection with the radius $R=8\text{m}$ has been projected. The width of the lanes of the round intersection on the Boris Kidrikjstreet is projected to be 6.5m in order to preserve the existing width of the round intersection.

V. VERTICAL SOLUTION

The finished level of the Boris Kidrikjstreet is projected to be approximate to the existing condition in order to preserve the spatial limitations. At the beginning and at the end of the street, the finished level is integrated in the existing condition of the intersection with the asphalted street. In order to have efficient lane drainage, minimal inclination of the finished level $i=0,3\%$ and maximal $i=3.5218\%$ are projected. On the Boris Kidrikj street, 11 (eleven) refractions and vertical curves within the limits: $R_{\min}=200.0\text{m}$, $R_{\max}=12000.0\text{m}$ are projected. The cross-cut inclination on the Boris Kidrikj street is changeable (one-sided and two-sided depending on the conditions of the terrain), $i=2.00\%$.



VI. LANE CONSTRUCTION

The lane constitution of the local road has been acquired from previous experiences and the following lane construction is suggested:

For the street:

- AB 11S d= 5 cm
- BNS 22SA d= 7 cm
- Road base made out of crushed stone as a settlement layer d=30 cm

VIII. DRAINAGE

The drainage of the surface water of the Boris Kidrikj street is enabled by the longitudinal and cross-cut inclinations on the street which drain the surface water into existing gutters which are located on the lowest points of the street, and leveling of the existing gutters is also projected.

IX. BILL OF QUANTITIES

Based on the cross-cut profiles and situations, all of the necessary individual bills of quantities have been made, and based on them, a bill of quantities with a calculation for the works and execution of the street has also been made where the projected prices are given.

III. TECHNICAL SOLUTION

The technical solution predicts a reconstruction of the Boris Kidrikjstreet in Kichevo. The project is in accordance with the positive regulation, that is the relevant laws, secondary regulation and standards for construction and urban planning in the area of the reconstruction of the street. The reconstruction of the Boris Kidrikjstreet in Kichevo projects removal of all of the significant elements and their replacement with new ones. This includes sidewalks, where the terrain permits, the actual lanes, granular bedding and accompanying elements. The complete length of the street that needs to be reconstructed



is 832,895m on the first axis, and the second axis is the axis of the roundabout with the length of 49,955m. The complete length of the street is asphalted with the width of 8,5m, and on the left and right side there are existing sidewalks which are in a very bad condition.

The technical solution for reconstruction of the street projects execution of the following activities:

- ***Marking and securing of route***
- ***Excavation of soil with bulk excavation of the route***
- ***Creation of a roadbed***
- ***Creation of bed***
- ***Creation of a blinding layer of crushed stone***
- ***Creation of embankments***
- ***Drainage and outfall of the body of the road***
- ***Creation of a bituminous roadbase BNS***
- ***Creation of a wearing course AB***
- ***Creation of prefabricated concrete curbs***
- ***Creation of prefabricated concrete behaton plates***

III. INFLUENCE ON THE ENVIRONMENT

During the reconstruction of the street, all of the projected activities that will be executed on the street will have a very limited influence on the environment.

The expected possibly negative influences on the environment during the construction works are the following: increased level of noise (as a result of the work with construction machines and equipment), in accordance with the national lawful demands for health and security during work (OH & S), possible water pollution, air pollution and production of different types of waste. All of these influences are expected to be generated in the construction phase in



accordance with the projected activities, and in accordance with the plan for alleviation under the surveillance of the municipality and the project supervisors.

IV. FINANCIAL DATA

The estimated value of the project is **28,531,351.33** MKD without VAT.

Item	Price without VAT in MKD	The total amount without VAT in MKD
Reconstruction of the Boris Kidrikj street in Kichevo according to the Bill of Quantities	28,531,351.33	28,531,351.33

V. FINAL PROVISIONS

The basic project with tech. number 0308-47-491/3/2019 made by Prima Engineering DOO Skopje is in accordance with the positive regulation, that is the relevant laws, secondary legislation and standards for construction and urban planning in the street area. The Municipality of Kichevo proposes the reconstruction of this street as a high priority defined on the basis of the public opinion, especially after the reconstruction of the streets Marshal Tito, Boulevard Osloboduvanje, 11ti Septemvri, as one of the four biggest and most important streets in the city.
