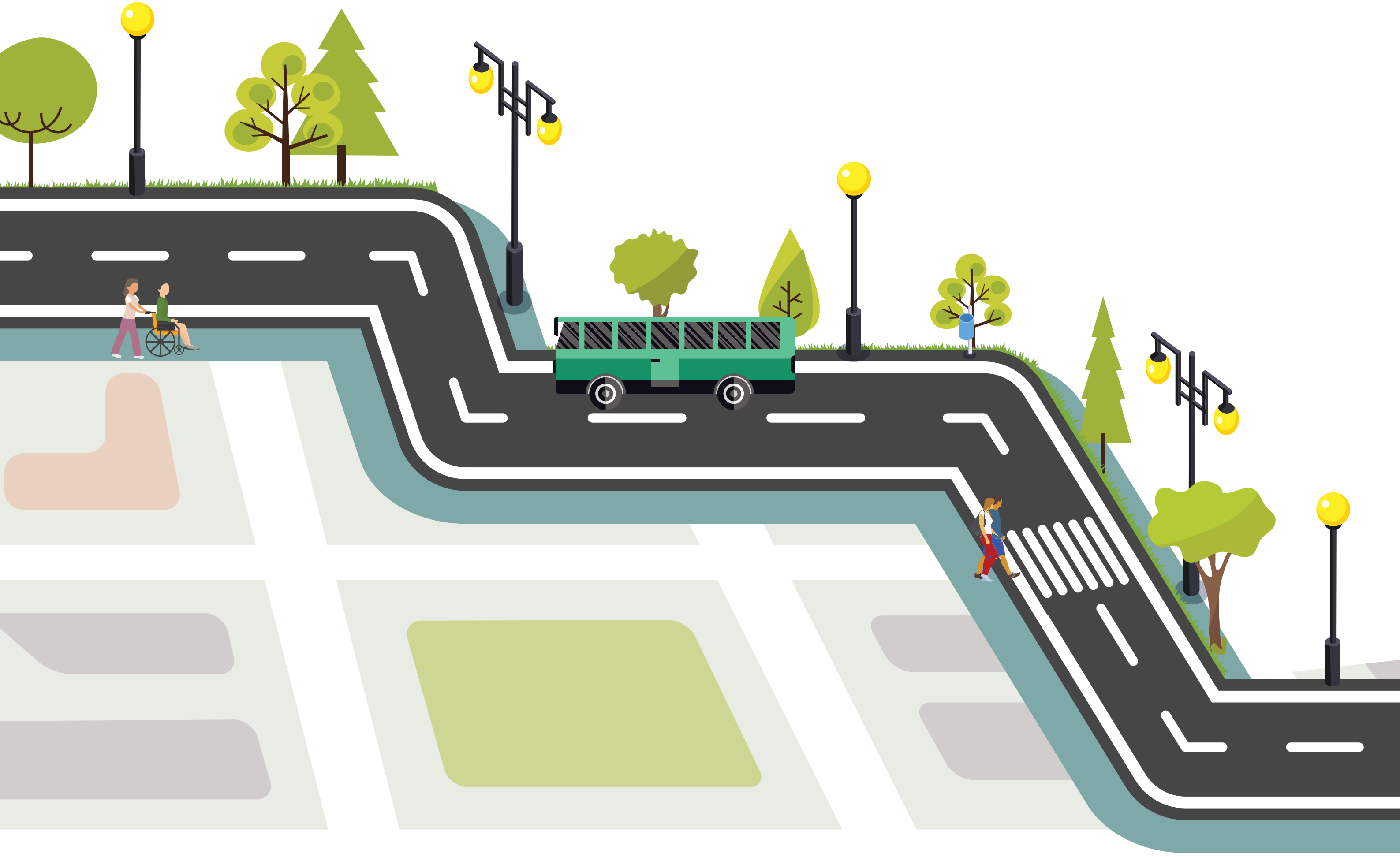
Republika e Kosovës
Republika Kosova - Republic of Kosova

Municipality of
Rahovec/Orahovac



# Urban Mobility Plan
## for the Municipality of Rahovec/Orahovac 2016-2020

# Urban Mobility Plan

# for the Municipality of Rahovec/Orahovac

# 2016-2020

May, 2016

# Acknowledgments

This plan was prepared by the working group of the municipality of Rahovec/Orahovac, headed by the Department for Public Services, supported and in close cooperation with the coordination group, professional consultants and officers of DEMOS project. Which is implemented by the organization Helvetas-Swiss Intercooperation and funded by the Swiss Cooperation Office (SCO).

The Working group and Coordination Group for drafting the mobility plan in the municipality of Rahovec/Orahovac have analysed the situation in the field and proposed the mobility plan for improving access and free movements for all traffic participants.

### *Working group:*

1. **Muhamet Behra,** Chairperson
2. **Masar Vuçitërna,** member
3. **Shpëtim Mustafa,** member
4. **Gjyle Gashi,** member
5. **Arben Sokoli,** member

### *Coordination group:*

1. **Xhemajli Haxhimustafa,** Chairperson – Deputy Mayor
2. **Nahit Elshani,** Chairperson of the Municipal Assembly
3. **Muhamet Behra,** Director of the Department for Public Services
4. **Fehmi Hoxha,** Director of the Department of Urbanism
5. **Lulzim Sylejmani,** Director of Department for Finance

### *DEMOS project support team*

1. **Korab Shehu,** Local expert for mobility, company “Ekoinvest”, contracted by DEMOS
2. **Gazmend Ahmeti,** Local financial expert, company “Recura” contracted by DEMOS
3. **Erëmira Salihu,** Project officer DEMOS/Helvetas-Swiss Intercooperation
4. **Majlinda Jupolli,** Project officer DEMOS/Helvetas-Swiss Intercooperation
5. **Dorentina Krasniqi,** Project intern DEMOS/Helvetas-Swiss Intercooperation

# *Acronyms*

| | |
|---|---|
| **UMP** | Urban Mobility Plan |
| **MDP** | Municipal Development Plan |
| **UDP** | Urban Development Plan |
| **URP** | Urban Regulatory Plan |
| **DEMOS** | Decentralisation and Municipal Support Project |
| **SCO** | Swiss Cooperation Office |
| **SEA** | Strategic Environmental Assessment |
| **MTEF** | Mid-Term Expenditure Framework |

# Table of contents

## List of tables

# List of figures

# 1. INTRODUCTION

## 1.1. Scope of the plan

Mobility plan is a strategic plan related to the field of traffic and aims at improving and harmonizing the needs for movement for all participants in traffic. Given the rapid increase of the motorization level, non-functional road infrastructure, insufficient security for non-motorized movements and environmental conditions, the development of a sustainable urban mobility plan may not be understood as a simple objective but as a priority.

Mobility plan is based on the current Municipal Development Plans; however, it is much more detailed and specific for the field of traffic and transport in general.

The purpose of the urban mobility plan is to create a sustainable system of transport system and other movements (motorized and non-motorized movements) for the purpose of:

- providing easier access for daily movements and other services;
- improving safety level;
- reducing environment pollution;
- enhancing efficiency and effectiveness during the transport of people and goods;
- increasing attractiveness and quality of the urban environment.

Involvement of citizens and other stakeholders in drafting the mobility plan is one of the basic principles. Their involvement and opinions are an important contribution because are related to the business needs, organization and dynamic of the city, and the quality of living.

By drafting the mobility plan, the Municipality of Rahovec/Orahovac tries to be a functional and integrated municipality, accommodating all traffic participants and creating conditions for motorized and non-motorized movements.

## 1.2. Municipal profile from the mobility perspective

### Population

Based on the population census of 2011, the total number of inhabitants in the Municipality of Rahovec/Orahovac is 56,208 inhabitants. In the city of Rahovac/Orahovac live around 15,892 inhabitants, meaning that around 28 % of the total population lives in the city, whereas around 40,316 inhabitants or around 72 % live in all other settlements.

## Geographical position

The territory of the Municipality of Rahovec/Orahovac covers an area of 275.5 km², which lies in the region of Gjakova/Djakovica and has a good geographical position. The Municipality of Rahovec/Orahovac in the north is bordered with the Municipality of Klina in a distance of around 45 km, in North-East with the Municipality of Malisheva/Malisevo, in a distance of around 16 km, in the South-East with the Municipality of Prizren in a distance of around 25 km, and in West with the Municipality of Gjakova/Djakovica in a distance of 28 km, and is around 60 km from the capital city of Kosovo (Prishtinë/Pristina). Municipalities have good communication connections, and the motorway Prizren – Pejë/Pec and the railway Prizren – Pejë/Pec passes in the east of the municipality.

The territory of the municipality lies on the hemisphere between 42º and 30' and 42º and 50' degree of the north geographical latitude and between 20º and 21' and 20º and 55' degree of the east geographical longitude. Settlements in the Municipality of Rahovec/Orahovac lay in the altitude of 310 m, Krushë e Madhe/Velika Krusa up to 920 m altitude.


*Figure 1. Geographical position of the Municipality of Rahovec/Orahovac*

With regard to the altitude, the settlements are divided into valleys - plains, hills and mountains.

## 1.3. Basic principles from the municipal plans and documents and overall objectives of the municipality

Municipality of Rahovec/Orahovac has adopted the Municipal Development Plan (MDP), and is in the process of drafting the Urban Regulatory Plan (URP) for "Old Town Center". This document tackled the traffic and mobility issues in general, also they provide for planning of roads, sidewalks and various types of transport. These plans also tackle the issue of bus stops and parking lots in various localities. Below are presented some of the municipal objectives provided for within these plans that address spatial issues in general:

**Infrastructure developing strategy according to MDP**

Objective 1. Asphalted high quality roads and access for all inhabitants:

- Asphalting the roads connecting settlements, and local roads;
- Maintenance of local roads;
- Completion of the Ring Road (Transit) in Rahovec/Orahovac;
- Regulation of roadside barriers;
- Regulation of signalling for pedestrian crossing in large and frequented settlements, especially in secondary centres;
- Regulation of sidewalks in settlements;
- Regulation of signalling for railway line in large and frequented settlements;
- Regulation and maintenance of public lighting in Rahovec/Orahovac and secondary centres.

## 1.4. Legal framework

Urban mobility plan for the Municipality of Rahovec/Orahovac is a document that should promote common interests of inhabitants of Rahovec/Orahovac with regard to free and safe movement for all traffic participants, improving the quality of life, creating a clean and healthy social environment.

Urban mobility plan for the Municipality of Rahovec/Orahovac is based on the legal framework applicable in Kosovo, as well as international principles and conventions that are related to the sustainable urban mobility, as:

- Law No.02/L-70 on Road Traffic Safety;
- Law no. 2004/1 and Law No. 04/L-179, 16 May 2013, on Road Transport;
- Law No. 2003/11 on Roads;
- Law No. 03/L-040 on Local Self-Government;
- Law No. 04/L-076 on Police, Kosovo Assembly (2012);
- Law No. 2012/04-L-174 on Spatial Planning;

- Law no. 03/l-160 on Air Protection from Pollution;
- Law no. 03/l-025 on Environmental Protection.

Traffic safety is governed by the Law No. 02/L-70 on Road Traffic Safety. The purpose of this law is to govern the rights and obligations in the road traffic system.

In addition to the Law on Road Traffic Safety, the Law on Police, approved in 2012, also regulates the issue of traffic safety. On the other hand, the Law on Local Self Government, Regulation on Municipal Services, as well as other bylaws of Kosovo municipalities govern the field of traffic safety, thus completing the legal basis in this field.

Purpose of the Law on Spatial Planning is to govern all issues related to the spatial and urban planning. According to this law, spatial planning should adhere to the principles of protecting Kosovo's natural sources and support the sustainable development, and also should support all-inclusive and participatory processes and include all stakeholders and communities.

The Law on Spatial Planning foresees the integration of professional expertise in the planning system by establishing the commission of planning experts (at local level). Kosovo has two levels of planning (national and local) and the types of plans are as follows: Kosovo's spatial plans, spatial plans for special areas, Municipal Development Plans (MDP), Urban Development Plans and Urban Regulatory Plans.

Law on Environmental Protection defines the rational use of natural recourses and limitation of environment pollution, prevention of damage, rehabilitation and improvement of defective environment; and improvement of environmental conditions related to life quality and protection of human health.

Law on Local Self Government defines the legal basis for a sustainable system of local self-government in the Republic of Kosovo, as well as defines the functions, competencies, its rights and obligations and those of relevant bodies.

Under the Law on Local Self Government have been assigned the rights at the local level, such as the right for:

- local economic development;
- urban and rural planning;
- land use and development;
- implementation of building regulations and standards for building controls; local environmental protection; own competencies, full and exclusive, concerning the local interest, by respecting standards determined in the applicable legislation, these competencies are determined in Article 17 of the Law on Local Self Government.

# 2. CURRENT SITUATION

The Municipality of Rahovec/Orahovac lies between motorways Gjakovë/Djakovica– Prishtinë/Pristina and Gjakovë/Djakovica–Prizren, as well as regional roads Malishevë/Malisevo–Gjakovë/Djakovica and Rahovec/Orahovac–Suharekë/Suvareka. Municipality has a relatively large territory, and has a road network of 297 km roads of all categories. Motorway and regional roads are asphalted and in good condition; however, there are also non-asphalted roads. The condition of traffic is relatively at a satisfactory level in the suburban roads of the municipality, whereas regarding those within the city, there is a little difficulty in normal development of vehicles circulation; this becomes even more difficult when taking into account the large presence of moto-cultivators. Configuration of the terrain is hilly, and characterized with a very high density of settlements in several neighbourhoods of the city, thereby resulting in very narrow streets used by all traffic participants. Most of these streets are asphalted, but there are no sidewalks for pedestrians. In terms of mobility, streets in these neighbourhoods may be considered dangerous as they do not provide sufficient safety for all traffic participants.

In addition to the road traffic, the municipality has also the rail traffic which connects Prishtina/Pristina – Shkup/Skopje; however, currently this line is not operational.

## 2.1. Traffic safety

Based on the mobility concept, safety in the municipality of Rahovec/Orahovac, namely in the urban area, may be considered at a low level. This is due to the fact that it has an adequate road infrastructure for vehicles, but not at the adequate level for the movement of non-motorized vehicles, both for pedestrians and cyclists. The urban area is characterized with a lack of sidewalks for pedestrians, because it did not have the opportunity to construct them. Streets in these neighbourhoods are very narrow, with two-way traffic in most of them, which makes pedestrians movement very difficult. These streets are used a lot, particularly by pupils to go to school because walking is the only way for these daily needs, as there is no urban transport organized within the city.

Another safety problem is related to the inadequate regulation of several junctions, especially those connected to the regional roads and motorways that cross the municipality of Rahovec/Orahovac. Based on police reports, the number of accidents is relatively high and most of them occur in these very junctions with the motorways and regional roads. Below, we have mentioned some of most dangerous points, which do not meet the technical geometric criteria for their function.

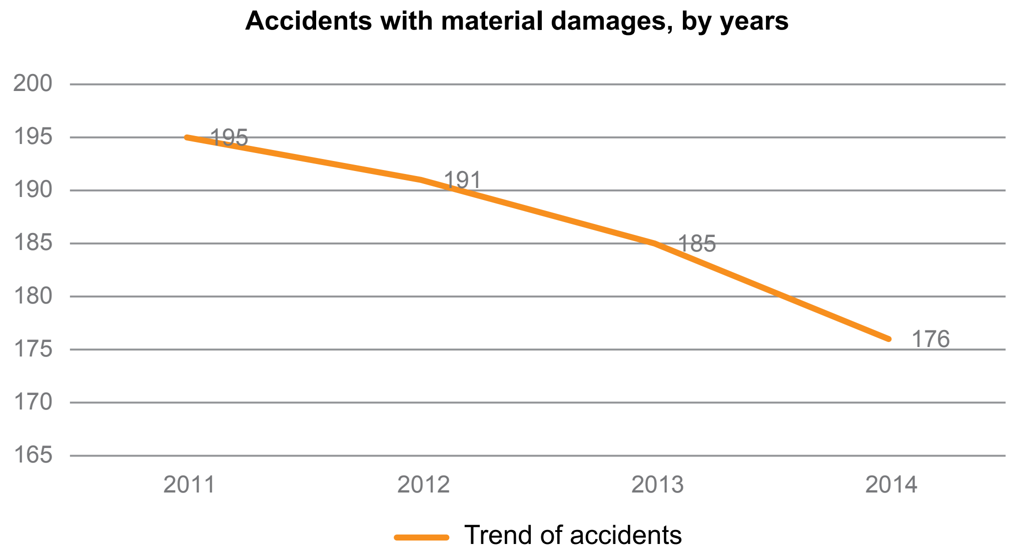



*Figure 2. Report on the number of accidents per years*


*Figure 3. Roundabout in the entry of the city, regional road Xërxe/Zerze – Malishevë/Malisevo*

The purpose of the roundabout's design is to oblige vehicles, at the entry of the crossroad, reduce the speed in order to increase safety; however, this is not the case in this crossroad with these geometric parameters because vehicles moving in the direction Malishevë/Malisevo – Xërxe/Zerze have the right of pass against those that should have had the right to pass, namely vehicles moving in the roundabout, and this is the reason of accidents in this roundabout, moreover, the connection with the city is not properly designed since there is no sufficient visibility.

*Figure 4. Junction in the motorway Prizren – Gjakovë/Djakovica, village of Xërxë/Zerze*

This is one of the most dangerous crossroads in the municipality of Rahovec/Orahovac because the railway passes at this junction as well. It is known that a large part of the village of Xërxes/Zerze lies at the bottom of the junction, whereas the primary school is located near it. During the school year these points become even more dangerous, because the need to cross from one side to the other is very high.

*Figure 5. Junction in the motorway Prizren – Gjakovë/Djakovica, village of Krushë e Madhe/Velika Krusa*


*Figure 6. Junction in the motorway Gjakovë/Djakovica – Prishtinë/Pristina*

*Figure 7. Junction in the motorway Gjakovë/Djakovica – Prishtinë/Pristina*

Some of the neighbourhood's streets, which are dangerous for vehicle and pedestrian traffic

*Figure 8. Examples of streets with low security for the movement of vehicles and pedestrians*

## 2.2. Horizontal and vertical signalling

All the above mentioned shortcomings with regard to safety are directly related to the lack of adequate signalling, where both vertical and horizontal signalling are not at proper levels, and the situation becomes even worse when taking into consideration that no company has been contracted in the last few years for its maintenance.

The urban area has adequate signalling, especially the part of the city in which new roads have been constructed, whereas the rural parts have no signalling at all. The rural areas have only vertical "STOP" signs that are placed in the main roads junctions, whereas there is no horizontal signalling. The horizontal signs have been placed only once when the road was constructed and then were not maintained, or not replaced when needed.

## 2.3. Pedestrian traffic

Pedestrian paths are the most important part of the infrastructure, particularly for the urban areas, considering that most of the daily movements are done by walking, but without forgetting the need for roads connecting the villages. Situation of the sidewalk in the municipality of Rahovec/Orahovac is not good, or better say walking in this city is not safe. The city has a hilly terrain, with a very high density of settlements that are characterized by narrow completely asphalted roads, whereas there are no sidewalks for the movement of pedestrians. Pedestrians' movement is very dangerous, particularly during winter, considering the slopes in these roads. Most of the neighbourhoods have no sidewalks, with the exception of several main roads in the centre of the city that have sidewalks. We should also mention the road which leads to the secondary school "Xhelal Hajda", which is highly frequented by pupils, and has no adequate infrastructure for the movement of pedestrians. In general, we may say that the situation of the sidewalks is not at the proper level, whether due to the lack of such infrastructure or its proper maintenance. MDP foresees the construction of several sidewalks, particularly in the roads connecting villages, because even those roads have no spaces for safe movement of pedestrians, and particularly regional roads, where it is known that vehicles may move at higher speeds in such roads.

Detailed data related to the length of sidewalks are contained in annex.

## 2.4. Cyclist traffic

So far, the city of Rahovec/Orahovac had no cycling paths, although the MDP mentions the need of such paths; however, considering the terrain and spaces available for such paths, it is very difficult to create them. In the future, if the city continues to increase in the plain part, it is good to foresee and incorporate this form of transport.

## 2.5. Parking

The city of Rahovec/Orahovac has very few public or private spaces that may be used for parking purposes. In the city centre area there is no possibility of creating parking lots, which is a concern also because there is a very small space at the roundabout in the centre, which is used by citizens for parking, but which hinders the traffic. There are several parking lots in the lower part of the city near the market which can be used, but is very rarely used other days, with the exception of the "market day".

*Figure 9. Existing parking lots in the city of Rahovec/Orahovac*

## 2.6. Collective transport (public - private)

Currently, urban traffic in the Municipality of Rahovec/Orahovac, namely in the urban area, is non-existent. The urban-peripheral and suburban traffic is organized. All itineraries are defined by a number of regulations issued by the municipal assembly, but these are very old since they have been issued in 2001, and are based on the old law on transport. This can be considered as a shortcoming and this regulation should be subject to a review in order to be adapted to the new law which is in force. Urban - peripheral transport is organized with bus by private companies, whereby the conditions of buses in some cases are not at the appropriate level, whereas the transport lines are mainly used for school transport.

Whereas with regard to suburban lines, there is good access and their frequency is at the appropriate level. The Municipality has a bus station, and according to the regulation is foreseen that all lines should start and end at the station. However, another concern is that the bus operators do not respect it, and stop in other parts of the city, either for dropping or picking up passengers. This particularly happens in the attractive areas in the centre of the city or near schools. Currently, there are no marked bus stops within the city, but further we have to analyse if it is necessary to establish and create an adequate infrastructure.

## 2.7. Traffic load

For practical needs, the nonlinearity characteristics for the circulation of vehicles in different time periods are of particular importance. Periods and duration of counting depends on the purposes and manner of planning. For the purposes of the plan, traffic flow measurements were conducted only for an hour in characteristic entrance points of the city.

In addition to motor vehicles, the number of pedestrians and bicycles circulating within the hour were also measured in order to determine the structure of the movement.

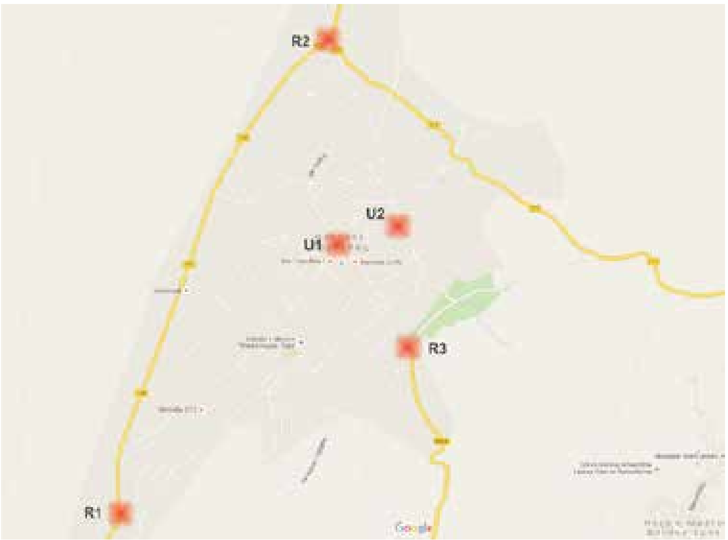
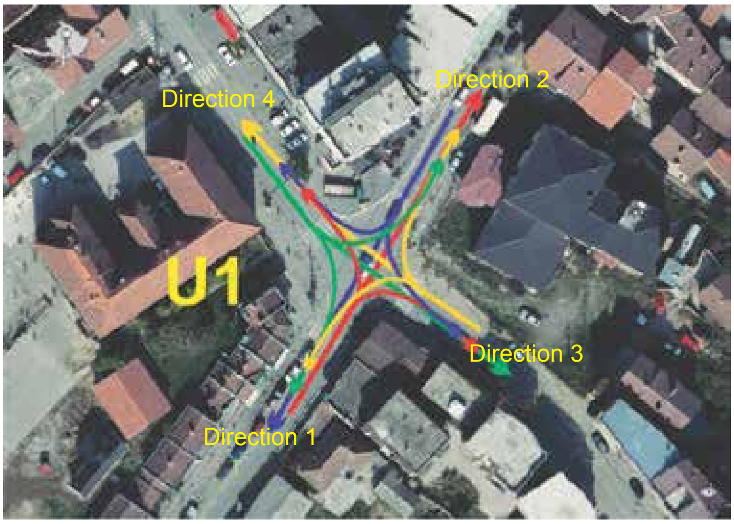
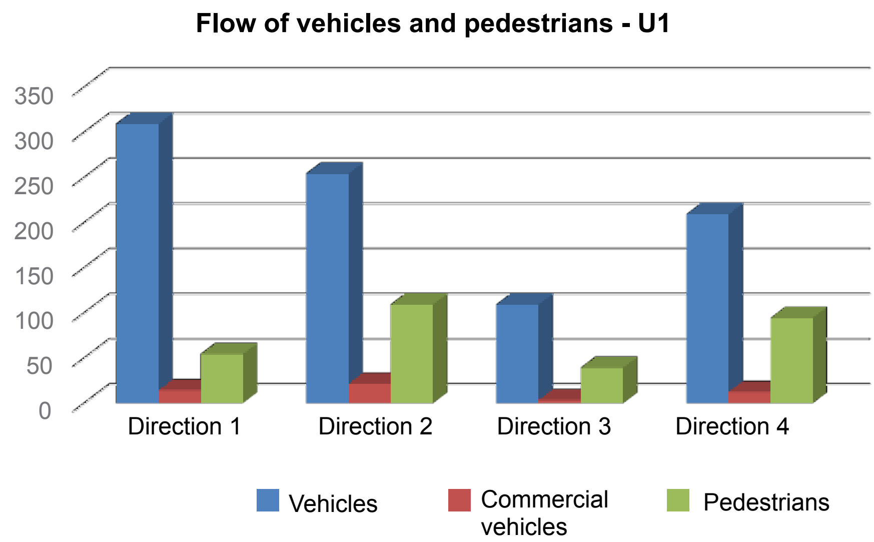



*Figure 10. The characteristic points in which the measurements of the movement were conducted*

Figure 11 provides data for vehicle movement and movement structure in the crossroad U1 at the Traffic Lights.



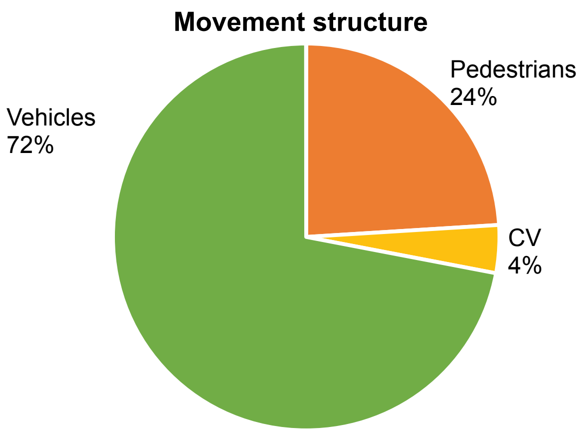




*Figure 11. Flow of vehicles and pedestrians and movement structure*

Based on the flow structure, it is noticed that in the time where the flow measurements were conducted, there is a domination of motor vehicles compared to pedestrians, from the number of users we may conclude that this crossroad has the reserve capacities to cope with large flow of vehicles and pedestrians.

## 2.8. Movement of persons with reduced mobility

Municipality of Rahovec/Orahovac, namely the urban area does not possess an adequate infrastructure which would enable people with reduced mobility an easy access and free movement. Roads are very narrow in some parts of the city and are unable to create the space for free movement of this category. However also parts of the city where there are sidewalks do not meet the criteria, namely they do not have adequate ramps to access them more easily.

# 3. VISION–STRATEGIC OBJECTIVES

The city of Rahovec/Orahovac is considered to have a high density at the city centre area, with a hilly terrain and with very narrow roads as a result of a chaotic plan of individual houses construction, resulting with the mobility in this city to be difficult and unsafe to everyone participating in the traffic.

During the analysis in the preceding chapter, it resulted that the safety of movement in the city is not at appropriate levels, particularly for walking, since there is two-way movement of vehicles in some very narrow streets, whereby the majority of them do not have sidewalks for a safe movement of pedestrians.

Currently, the traffic for motor vehicles is oriented in the main road of the city, because there is no alternative road which meets the criteria to be used as a transit road for heavy vehicles, and in this regard we remain handicapped in terms of providing a solution within the short-period, either in terms of safety or re-orientation of the flow, because large investments, both in terms of time and finances, are required.

According to Kosovo's Spatial Plan, Rahovec/Orahovac is located at the "yellow zone" of Kosovo with the following vision: A bridge for development of links between Kosovo and the region, with a developed fruit and grape sector. In order to justify this title, the key word is organization of traffic and transport both at municipal level as well as at the level of the city centre. While, referring to the MDP and regulatory plans we have the same vision, which states that:

> *"A Municipality with an advance administrative system, positive employment trends and reduction of poverty, advancing the educational and healthcare system, development of planned settlements, with sustainable environmental development, protecting the value of cultural heritage, with a stable economy, advancing viticulture and the production of vegetable and with a planned and modern infrastructure"*

To fulfil or to achieve these visions in terms of mobility we need to have a city:

- With free and safe access for all traffic participants,
- Adequate infrastructure for all forms of movement.

The vision of the city in terms of mobility is built on these four elements:

- Capacity,
- Accessibility,
- Attractiveness,
- Sustainability

| Capacity | Achievement (accessibility) |
|---|---|
| • Road network capacity<br>• Public transport capacity<br>• Cycling network<br>• Businesses | • Travel time<br>• Movement speed<br>• Parking lots<br>• Satisfaction of road network users |
| **Attractiveness** | **Sustainability** |
| • Walking<br>• Public space | • Road safety<br>• Road network sustainability<br>• Use of alternative means of movement |

Based on the analysis of the state of play and the vision for development of the city, we have divided objectives in two periods:

**1. Short-term objectives 0-1 year and**
**2. Medium-term objectives 0-5 years.**

**1. Short-term objectives 0-1 year:**

- Increase of safety for all participants,
- Access for people with special needs,
- Adaption of infrastructure for businesses,
- Regulation of bus stops,
- Establishment and maintenance of horizontal and vertical signalling,
- Construction of roads and sidewalks.

**2. Medium-term objectives 0-5 years:**

- Construction of transit roads,
- Increase safety in highway crossroads,
- Re-design and re-construction of dangerous crossroads,
- Re-orientation of traffic in the city.

**O 1.1. Increase of safety for all participants**

As we have mentioned before, the city of Rahovec/Orahovac does not have sidewalks that would allow the safe movement of pedestrians, appropriate measures to increase safety in the vicinity of schools have not been taken, and there are some crossroads that do not meet the criteria for a safe movement. For that purpose, in order to increase the safety level in some parts of the city, several scenarios have been proposed.

**O 1.2. Access for people with reduced mobility**

Some of the city roads have sidewalks for movement of non-motorized vehicles, but access of people with reduced mobility is impossible, because the technical criteria of building ramps (slopes) that would make access easier in those specific pedestrian crossings, have not been adhered. This objective is easily attainable and does not require large investments; therefore, it is believed that this will be completed within the first group of objectives.

**O 1.3. Adaptation of infrastructure for businesses**

The main road of the city is “Xhelal Hajda”, which is also the place where all businesses in the city of Rahovec/Orahovac are located. Currently, traffic in this road is conducted in two ways and the width of the road is 7m. In the sidewalks along the road have been placed anti-parking physical obstacles, but even the edges of the road are very high, so currently it is impossible for vehicles to stop and obtain services, or for the businesses to supply such services. Therefore, we have considered the possibility of establishing a legal space for stopping, which would not hinder the traffic flow. This space is planned to be established between the two decorative trees, where there is a space of 10m.

**O 1.4. Regulation of bus stops**

Within the city of Rahovec/Orahovac there is no legal bus stop, meaning that boarding and dropping of passengers should be carried out at the bus station, and although this issue is regulated under the Regulation on transport lines, the same is not respected and almost all transport operators’ pick-up and drop passengers in different parts of the city. Therefore, we have thought of creating some bus stops, in addition to the bus station, in order to legalize single destination point on this issue, and not use or misuse the road for stopping the buss, based on the passengers’ desire.

## Medium-term objectives 0-5 years

### O 2.1. Construction of transit roads

The main road of the city is also the road in which all vehicles necessarily pass, including the heavy vehicles, since there is no alternative road to redirect the traffic. In this medium-term period, we have planned to construct a transit road in the northern part of the city, which has already been laid down. With the construction of this road we will have the opportunity to restrict heavy vehicles movement in the centre of the city, and with this restriction we will automatically affect the increase of other participant safety within the area of the city, and at the same time we will have the opportunity conduct an internal reorganization of roads in the medium-term period.

### O 2.2. Increase safety in highway intersections

While analysing the current state of play, it was concluded that we have a considerable number of intersections that might be considered of high risk, because a considerable number of accidents have happened in such junctions. Herein are included some intersections to motorways such as the road to Xërxë village, Krushë village, the roundabout at the entrance of the city. All these points should be redesigned or measures should be employed and other means of trafficking should be used.

### O 2.3. Re-design and re-construction of dangerous intersections

### O 2.4. Re-orientation of traffic in city

Construction of these transit roads allows the internal regulation or reorientation of trafficking, and although currently the traffic demand is not very large and the road capacity is at a satisfactory level, in the medium-term period the demand may increase and the expansion of the road network in the city centre is impossible. Therefore, it is necessary to direct traffic through one way roads.

# 4. MOBILITY PLAN 2016-2020

## 4.1. Increased safety in roads within the city

Organization of one-way roads in some remote neighbourhoods of the city was done mainly for roads without sidewalks and in which is impossible to build sidewalks, but one-way roads enable the creation of a separate space for the movement of pedestrians.

The figure below provides an example of how to reserve a space designated for pedestrians within the shared movement space.

Most roads in the city are very narrow with traffic in both directions. Transforming them into one-way roads as the following figure shows creates a space that can be used for pedestrian movements. Thus, in a road of 4.5 m width, 3m can be used for vehicles moving in one direction and 1.5 m can be allocated to the movement of pedestrians.

*Figure 12. Proposal for transformation into a one-way street "Gëzim Hamza"*

*Figure 13. An example of how traffic will flow after transformation into a one-way street*

## 4.2. Traffic safety in the vicinity of schools

In order to increase traffic safety in the vicinity of schools, various traffic calming models or practices are proposed, such as:

- Road obstacles (placed in accordance with technical criteria and standards);
- Narrowing movement lanes in order to reduce speed;
- Placement of appropriate signalling in accordance with movement conditions near schools;
- Lighting of pedestrian crossings.

### 4.2.1. Proposed traffic control measures

Although sometimes they seem as separate unit, traffic calming and management represent different means and deal with different issues. Traffic management includes various measures to control the traffic in order to manage the movement and increase safety for pedestrians.

**Upon selecting the traffic calming measures, three basic criteria have been taken into account:**

- Road nature and function;
- Traffic conditions and
- Additional criteria (road location, traffic structure, etc)

Based on the analysis conducted in the road network of the Municipality of Rahovec/Orahovac, several dangerous spots have been identified in regional and local roads.

In addition to road nature, adequate measures have been found to improve the safety level, particularly in the roads near schools, so below are the proposed recommendations:

**For regional roads:**

- Traffic calming measures, the application of the divisional islands along the road on both sides of the pedestrian crossing;
- Placing of adequate horizontal and vertical signalling, to warn on the school zone.

**The technical solution is based on:**

- Construction of a central pedestrian island on the main road on both sides of the pedestrian crossing, each with a length of 10m - 15m and a width of 1.5 to 2.0m, while the height of the island edge h = 12 cm (Fig. 14 ). This solution is provided for roads where the speed limit is 40-50 km/h, which corresponds to the speed limit in residential areas.

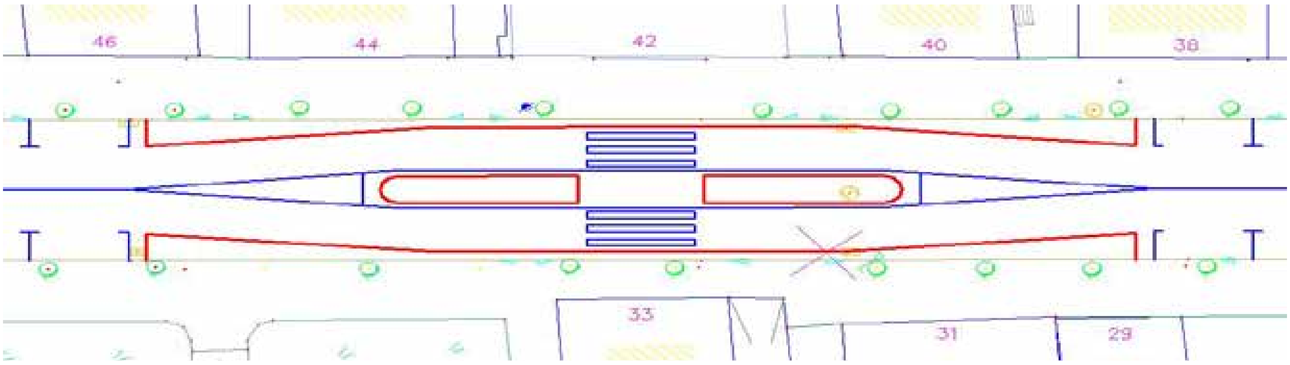



*Figure 14. Construction parameters for pedestrian isle*

Bumps or platforms placed in roads for traffic calming are not preferred for highways and regional roads. Therefore, upon application of traffic calming measures in the Municipality of Rahovec/Orahovac, must be assessed in which part of regional roads can be used the model with separation island in pedestrian's crossings.

The following is a conceptual solution for a school in the city centre by using separation islands, which is a standard method of traffic orientation in such cases. The road is planned to remain a one-way traffic, therefore narrowing or reducing the width of the pedestrian crossing, which will have a direct impact on increasing safety due to the fact that the distance and the crossing time will be shorter and drivers will have to reduce their speed near the crossing.

*Figure 15. Conceptual solution using separation islands*

*Figure 16. Proposed location for traffic calming with separation islands near a primary school*

## 4.3. Accessibility for people with reduced mobility

According to Law No. 04/L-110 on Construction (LC), municipalities are responsible for implementing laws and Administrative Instructions regarding infrastructure adjustments for people with reduced mobility. They are also responsible for development of NOP (National Operational Plan) for implementing NSRPD (National Strategy on the Rights of Persons with Disabilities), which will be approved by the Municipal Assembly.

According to the action plan for implementing national strategy for people with reduced mobility, municipalities should undertake certain activities related to the fifth objective of the strategy.

The city of Rahovec/Orahovac is characterized with deficient and narrow sidewalks, and even where there are sidewalks, they do not comply with accessibility criteria for people with reduced mobility. To achieve this, below have been provided the criteria for the implementation of ramps for accessing sidewalks.

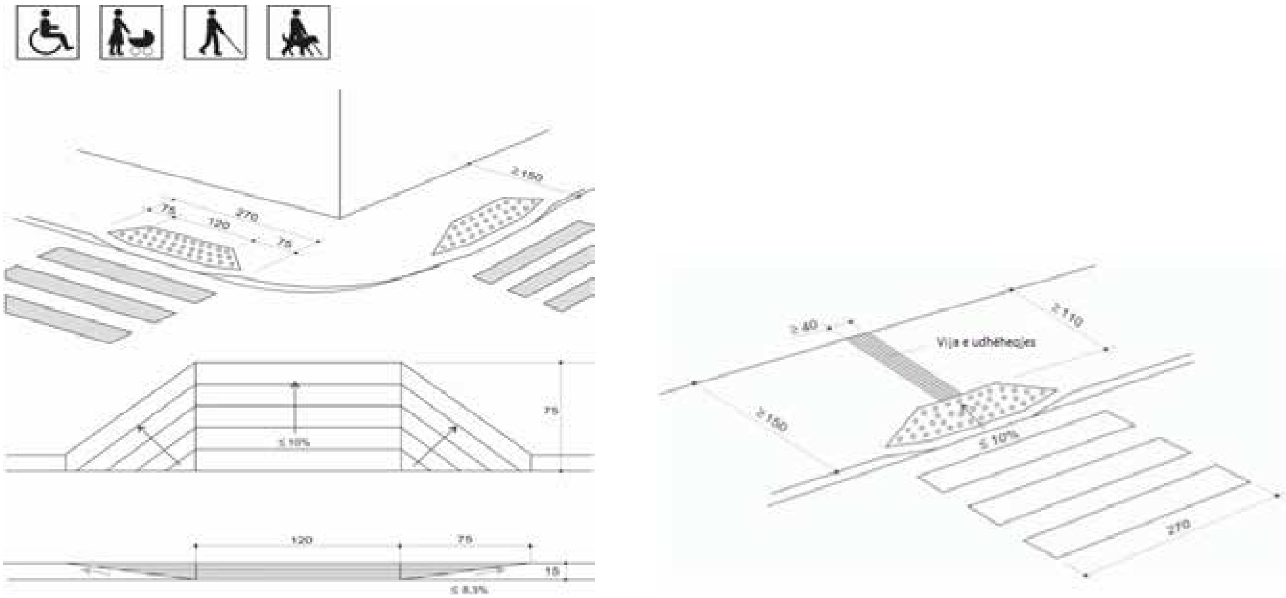


*Figure 17. Technical criteria for sidewalk accessibility for people with reduced mobility*

*Figure 18. A pedestrian crossing where access should be ensured*

There are sidewalks on both sides of the main road of the city, but they lack ramps to enable access to people with reduced mobility. Therefore, to ensure easy access, these ramps should be provided in all pedestrian crossings in accordance with standard technical criteria.

# 4.4. Adaptation of infrastructure for businesses

The main street of the city, Xhelal Hajda Street, is a two-lane street for movement in both directions. A few years ago, the street was a one-way street consisting of one driving and one parking lane, but after analysis municipal officials concluded that it had to be transformed into a two-way street. This was also requested by businesses located along the street, which needed daily supplies.

Since the road is 7m wide with 3.5m for each lane, it is sufficient for vehicle stopping if an additional 80cm space is taken from the space among the trees. The following figure shows the detailed the solution of vehicle stopping for a limited time for short services in the shops along the street.

*Figure 19. Vehicle stopping for a limited time on Str. Xhelal Hajda*

This way we would create a space for vehicle stopping without obstructing movement on the main road, by simply using the unused space between the trees. This intervention is considered necessary in order to create a better infrastructure for businesses, and not disrupt normal traffic.

## 4.5. Regulation of bus stops

All bus departures, both for urban and urban-suburban lines in the town of Rahovec/Orahovac, are done from the bus station. However, transport companies and travellers do not respect this and they stop or wait respectively, in different points of the city without adequate infrastructure for stopping or waiting. Taking account of the citizens' need, together with the working group we have come to the conclusion that some illegal bus stops, which hinder normal traffic, should be allowed in suitable points and a safe bus waiting infrastructure should be provided.

Although the travel time from the furthest points to the station is not very long and it is within walking distance, we have decided to provide more quality service to citizens regarding transport.

*Figure 20. Proposed bus stop in the city centre*

*Figure 21. Proposed bus stop at the exit of the city*

Moreover, we thought of creating two bus stops, one in the centre of the city, at the traffic lights as shown in Figure 20, and the other at the exit of the city on the regional road R204 as shown in Figure 21.

Taking into consideration that illegal stops are not suitable in terms of safety or functional aspects, which is the main reason for establishing adequate infrastructure with maximum safety for all participants.

## 4.6. Placement and maintenance of horizontal and vertical signalling

The state of play in terms of signalling in the city of Rahovec/Orahovac is not good, therefore signalling should be redone and placed where it is missing. Signs should be placed in accordance with the standards set out in the administrative instruction of Kosovo.

In this regard, traffic signalling (horizontal, vertical and complementary) should provide the required notification and have good legibility under all atmospheric and visibility conditions (day, night, humidity, drought, fog) and provide full information to drivers. Clear and effective signs are essential to the improvement of road safety.

Horizontal signalling, is scarce and many problems are identified with regard to its extent and maintenance. These problems are caused by poor durability of road pavement and the presence of dust caused by unpaved roads and sidewalks or poor road conditions.

Vertical signalling, should have a technical use time-limit of not less than seven years. Moreover, vertical signs should be homogenous and avoid the phenomenon of placing signs of different size without specific criteria, and often their height is not in accordance with placement rules, they are not placed in a sufficient quantity and often they are not in obvious locations.

## 4.7. Construction of transit roads

Currently in the town of Rahovec/Orahovac, the main road which crosses the city centre is the only road that meets the criteria for heavy vehicle traffic, which implies that there is no other alternative for the reorganization of traffic in the city. Movement of commercial vehicles in the centre directly affects the safety of pedestrians considering that the road in question does not have adequate sidewalks and they are partially interrupted, forcing pedestrians to walk in the shared space with other transport vehicles.

The development and regulatory plan has foreseen the construction of transit roads, whereby the one in the northern part has already been laid down and is under construction, and will link the regional roads R204, R110 and R117. This road segment will enable reorientation of commercial vehicles to avoid the city centre.

*Figure 22. Transit road in the northern part*

Construction of the transit road in the south-eastern part of the city would further facilitate movement, as it would complete the circle outside the city, enabling much faster and easier access to the town. A part of this road has been constructed and the other is under construction, and all is needed is investment to link them. Figure 23 below, shows the existing route marked in red, but some geometric parameters are not very favourable for the movement of commercial vehicles, therefore together with the working group we thought of taking into consideration the possibility of connecting the two points with a new route, which is appropriate and much more favourable for movement.

*Figure 23.Transit road on the south-eastern part of city*

## 4.8. Safety enhancement in intersections with motorway road

While analysing the current situation, it was concluded that there is a considerable number of intersections that could be considered as a high risk, due to the fact that there has been a significant number of accidents. Herein are included some intersections with the motorway road such as in villages of Xërxë and Krushë and the roundabout at the entrance of the city. All these points shall be redesigned or employ other measures and ways of movement.

*Figure 24. Some of the dangerous intersections with the motorway*

All above mentioned intersections, as well as some other parts, need a geometric and functional analysis in order to increase safety for all participants.

## 4.9. Re-orientation of movement in the city

Construction of these transit roads enables the adjustment or internal reorientation of roads. Currently, the demand for movement is not very high and the capacity of the roads is at a satisfactory level, however within a medium-term the demand for movement can increase, whereas the expansion of the road network in the city centre in impossible.

With regard to pedestrian’s safety, the municipality of Rahovec/Orahovac is characterized by very narrow roads and lack of sidewalks, and that is why we considered to orient movement in one-way roads in order to create a space for safe movement of pedestrians.

Below in fig. 25 are presented several possible scenarios for the orientation of one-way roads in the city.

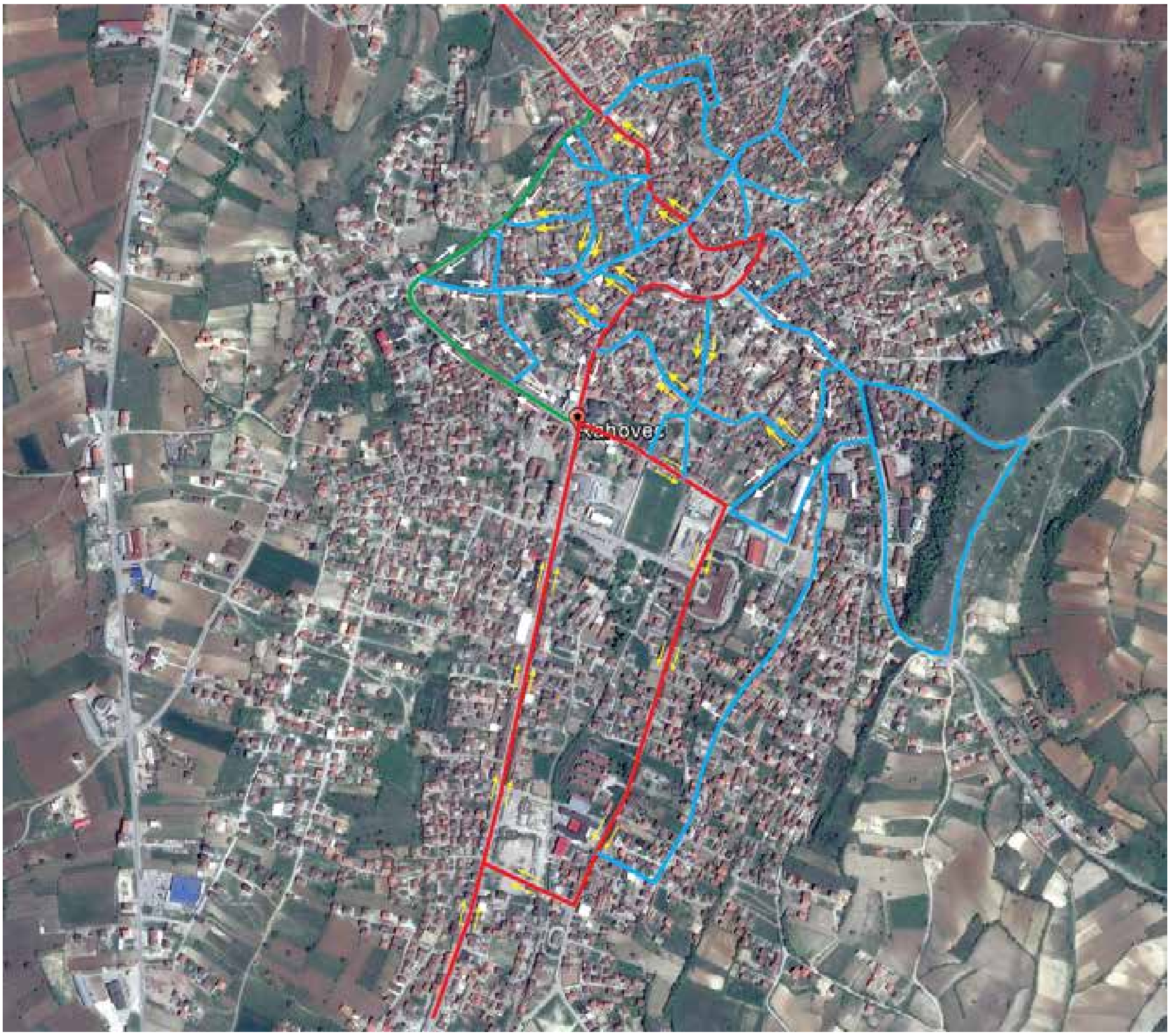



*Figure 25. One-way movement in the city main roads*

*Figure 26. Some possible scenarios for orientation of one-way movement in the city*

# 5. ACTION PLAN

If we are to analyse the key factors that led many European cities toward the drafting of urban mobility plans, we would understand that this alternative is of similar importance to the municipality of Rahovec/Orahovac. It is precisely the last 20-years trend in Kosovo of increased level of motorization, and the need of changing the approach for analysis of mobility in cities that makes it necessary. Taking note of this increased motorised vehicles trend, which necessarily have to be accommodated in the existing network that was not planned for this level of motorization. Now the main challenge for the engineers remains to preserve balance between motorised and un-motorized vehicles, accommodating them into the current infrastructure, but never compromising in terms of safety reduction.

The challenge is to find ways of promoting and preserving the culture of walking, cycling, free and safe access for all traffic participants and transferring of innovative practices suitable to the service of mobility in the municipality of Rahovec/Orahovac.

**Action 1: Appointment of an urban mobility officer**

It is necessary to appoint an urban mobility officer within the Directorate of Public Services, who shall be obliged to prepare a program for urban mobility management that includes more information, awareness campaigns, promotion, marketing, coordination and organization.

**Action 2: Increasing traffic safety - safety first**

Education on traffic rules, and safe participation in traffic. Department of Public Services, together with the Directorate of Education and the Police, shall prepare the necessary material and organize lectures on traffic education in the municipality of Rahovec. Lectures are held mainly by field professionals and are organized in primary and secondary schools.

**Action 3: Promotion of non-motorized movements**

Organize awareness campaigns and promotion of non-motorized movement. Media promotion at local level (local TV, electronic media, etc). Use certain events to promote non-motorized movement, such as European Mobility Week (16 to 22 September), a vehicle-free day, etc. In many countries during this week, thousands of activities will be held to promote non-motorized movement. It is necessary to establish partnerships between municipality and schools (possibly with involvement of any NGO) for drafting of appropriate policies and promoting of non-motorized movement.

**Action 4: Adaptation of infrastructure for persons with special needs**

Directorate of Public Services in cooperation with the Directorate of Urban Planning and in partnership with relevant organizations for persons with special needs have raised the issue of taking appropriate measures in accordance with technical requirements thus to enable persons with special needs access in all road crossings and pedestrian crossings.

| No. | Measures | Purpose | Indicators | Responsible | The importance of measures (1-3)[1] | Approximate cost | Deadlines |
|---|---|---|---|---|---|---|---|
| 1 | Construction of islands for enhancing safety near schools | Regulation of movement with the purpose of increasing safety | Traffic calming | Municipality of Rahovec/ Orahovac | 1 | 2000 /islands 2 x 2000 = 4000 € | 2016 + 2017 |
| 2 | Horizontal and vertical signalling | Establishment, improvement and maintenance of road signs | No. of signs set and length/ surface of the horizontal signalling | Municipality of Rahovec/ Orahovac | 1 | 16 000<br>20 000<br>20 000<br>20 000<br>20 000 | 2016<br>2017<br>2018<br>2019<br>2020 |
| 3 | Creation of spaces for safe pedestrian movement on existing roads | Their signalling and separation from movement tracks | Their length | Municipality of Rahovec/ Orahovac | 2 | 5000 | 2016 |
| 4 | Construction and maintenance of sidewalks | Creation of safe spaces for movement of pedestrians | Length of constructed sidewalks | Municipality of Rahovec/ Orahovac | 1 | 100 000<br>50 000<br>50 000<br>50 000<br>50 000 | 2016<br>2017<br>2018<br>2019<br>2020 |
| 5 | Road infrastructure for persons with special needs | Adaptation of road infrastructure for persons with special needs | The condition of infrastructure after the implementation | Municipality of Rahovec/ Orahovac | 1 | 3000<br>10 000 | 2016<br>2017-2020 |
| 6 | Re-orientation of movement | Traffic management | New established infrastructure | Municipality of Rahovec/ Orahovac | 2 | 4000 | 2017 |
| 7 | Construction of bus stations | Improvement of interurban and suburban traffic conditions | The number of constructed stations | Municipality of Rahovec/ Orahovac | 1 | 4500<br>2 vendndalje | 2016 |
| 8 | Creation of stops on Xhelal Hajda road | Adaptation of infrastructure for businesses | Number of stops | Municipality of Rahovec/ Orahovac | 1 | 300 €/stops<br>5000 for 15 stops | 2016 - 2017 |
| 9 | Construction of transit roads - northern part, Suharekë - Prishtinë | The creation of new roads with the purpose of removing commercial vehicles from the centre | Re-orientation of movement | Municipality of Rahovec/ Orahovac Ministry of Infrastructure | 2 | 500 000<br>100 000<br>200 000<br>200 000 | 2016 – 2018<br>2016<br>2017<br>2018 |

1 Importance of measures: 1- urgent, 2 – average, 3- low

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10 | Re-design of intersections with motorway road - with the purpose of increasing safety I. Xërxë I. Krushë | Safety enhancement on intersections | Innovative forms of regu-lation | Municipality of Rahovec/ Orahovac Ministry of Infrastructure | 1 | 150 000<br><br>150 000 | 2016 |
| 11 | Re-design of intersections with the motorway road with the pur-pose of increasing safety Intersec-tions in regional roads Prishtinë R 204 Suharekë R 117 Xërxë R 110 | Safety enhancement on intersections | Innovative forms of regu-lation | Municipality of Rahovec/ Orahovac Ministry of Infrastructure | 1 | - | 2016 - 2020 |

# 6. STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

The statement on justifying the reasons for opting not to prepare the report of Strategic Environment Assessment for the Mobility Plan (MP) of the Municipality of Rahovec/Orahovac.

## 6.1. Summary of MP

Thanks to the support of DEMOS, the municipality of Rahovec/Orahovac has prepared the Sustainable Mobility Plan (SMP). Initially was established the Working Group, composed of representatives from various interest parties, and representatives of relevant departments of the municipality of Rahovec/Orahovac.

The experts engaged by DEMOS have played an important role in the MP preparation process, whereby they worked closely with municipal experts in the identification and description of the current situation regarding road movement, financial analysis and financial economic opportunities for improving and enabling a sustainable mobility, defining the objectives and actions and activities to be undertaken in a comprehensive and sustainable mobility.

**The Mobility plan includes:**

- ensuring easier access to daily movements and other services;
- improving the safety level;
- reduction of environmental pollution;
- increasing efficiency and cost-effectiveness during the transport of people and goods;
- increasing the attractiveness and quality of urban environment.

**Mobility Plan does not include:**

- construction of new roads (except transit which will not be longer than 2 km);
- construction of accompanying infrastructure such as: roundabouts, road under-crossings and on above crossings;
- other projects, which according to the law would be required the Environmental Impact Assessment.

## 6.2. Legal reference consulted with regard to determination

**Law on Strategic Environmental Assessment, No. 03 / L-230,**

**Article 3**

1. SEA shall be carried out for certain plans or programs when exist possibility that realization is likely to have significant environmental effects.

2. Drafting of SEA report is obligatory for plans and programs from spatial planning and city planning field, on land use, agriculture, forestry, fisheries, hunting, energy, industry, mines, traffic, waste management, water management, telecommunication, tourism, which give a frame for future development projects, which undergoes environmental impact assessment according to the Environmental Impact Assessment Law, as well as, plans and programs which, taking into the consideration location in which they realize, can have an effect on nature protected zones, on nature habitats and in wild flora and fauna.

Opting not to prepare the SEA report for the Mobility Plan (MP) in the municipality of Rahovec/Orahovac is in accordance with the above mentioned article. Item 2 of this article states that **".... SEA report is obligatory for plans and programs from the field of ... traffic..."**; But, in the second part of this paragraph it is further stated that **" ... which give a frame for future development projects, which undergoes environmental impact assessment according to the Environmental Impact Assessment Law..."**

**Article 5 – Determination of need for SEA,**

1. The responsible authority shall determine, in a case-by-case examination, in accordance with the criteria in Annex I, whether the plans or programmes referred to in Article 3 paragraph 3 and 4 of this law that are likely to have significant environmental effects and therefore to require SEA.

The working group responsible for the preparation of the MP, referring to the afore-mentioned provision, has reviewed the MP by comparing it with the criteria of Annex 1 of the Law on SEA, from where it was concluded that the MP is not expected to have major impacts on the environment, and as such it is not subject to the SEA procedure.

## 6.3. Comparaive analysis pursuant to criteria outlined in annex 1 of the law no. 03/L-230 on sea, and MP activities from the municipality of Rahovec/Orahovac

| Evaluation criteria pursuant to Annex 1 of the Law on SEA | The effects of Mobility Plan (MP) in the Municipality of Rahovec/Orahovac) |
|---|---|
| **1. Characteristics of plans and programmes, having regard, in particular, to:** | |
| 1.1. the degree to which a plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources, | MP does not foresee the development of projects (for infrastructure, accompanying elements of traffic, etc.) that would be subject to proceedings under the law on SEA. However, the MP in one of the measures proposed (objective 2.1) foresees the construction of the northern transit route with a length of 2 km and as such is subject to law on municipal SEA. It is also expected to take place the redesign and reconstruction of the dangerous crossroads but as projects will be treated separately. Whereas the main objectives will be the facilitation of traffic by taking mitigating measures in order to provide safe movement to all traffic participants. |
| 1.2. the degree to which the plan or programme influences other plans and programmes, including those in a hierarchy, | This plan is consistent with the Municipal Development Plan, which was also subject to Strategic Environmental Assessment procedure by which it can be concluded that it does not affect other existing plans either municipal or national. |
| 1.3. the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development, | Generally, the plan is in line with the principles of sustainable development, by proposing mitigation measures for the promotion of non-motorized movements (e.g. cycling) in this municipality that would contribute to improving air quality by performing the recirculation through construction of the transit. |
| 1.4 environmental problems relevant to the plan or programme, | At the objectives foreseen within the Mobility Plan of the Municipality, there has not been encountered any environmental problem which might emerge as a result of the objectives accomplishment as mentioned above. However it must be said that it is foreseen the construction of the northern transit which will have a positive impact in improving air quality, since all transit vehicles will be oriented in that road by contributing positively to the improvement of air quality. The transit project will be subject to the municipal SEA procedure as a single project. |
| 1.5. the relevance of the plan or programme for the implementation of European Community legislation on the environment (e.g. plans and programmes linked to waste-management or water protection). | Must be said that the plan is not required under the environmental legislation or self-local government, but may be related to many laws that promote sustainable development, improve the quality of life, free and safe movement for all traffic participants etc. Also it can be said that the plan is carried out voluntarily by municipalities and taking into account the requirements arising from the Law on SEA for scanning any plan or program drafted by municipalities as in this case for the possible effects on the environment, it is considered reasonable to undergo this process.<br><br>Among others, it is worth mentioning that this plan and all the objectives contained in this plan are in harmony with the Municipal Development Plan. |

| 2. **Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:** | |
|---|---|
| 2.1. the probability, duration, frequency and reversibility of the effects, | MP covers a 5-year period (2015-2020). During these years, is expected to have increase of effects that will be positive. (See Item 1.3) |
| 2.2. the cumulative nature of the effects, | The plan does not foresee the effects which would result in the cumulative context with environmental consequences. Instead with the traffic re-direction and adding cycling tracks, the enhancement of road safety will have a positive effect on improving air in general and traffic safety for all participants in particular. |
| 2.3. the trans-boundary nature of the effects,<br><br>2.4. the risk to human health or the environment (e.g. due to accidents), | There will be no negative trans-boundary effects. Mobility Plan is of local character. Positive effects are expected, but would be indirect. This will result in the improvement of road traffic and traffic safety, enabling access for people with special needs in the network of road infrastructure, etc. |
| 2.5. the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected), | Positive environmental effects of the plan by the end of 2020 will affect 80% of the territory and citizens of the municipality of Rahovec/Orahovac |
| 2.6. the value and vulnerability of the area likely to be affected due to: | Is not relevant to the MP of Rahovec/Orahovac |
| 2.6.1. special natural characteristics or cultural heritage, | Given that MP does not provide physical interference (except transit construction), construction of buildings, infrastructure, forest cutting, occupation of land, excavations, etc., there will be no damage/degradation of natural or cultural heritage sites. |
| 2.6.2. exceeded environmental quality standards or limit values, | MP does not include projects that would result in emissions, either in the air nor in the water, which would be subject to review in the context of exceeding standards or limit values. |
| 2.6.3. intensive land-use. | MP does not provide occupancy or use of land; all operations will be performed according to the objectives in the existing situation, with the exception of the construction of the above mentioned bridge, but there will be no intensive land-use. |
| 2.7. the effects on areas or surfaces which have a recognised national, European Community or international protection status. | The municipality of Rahovec/Orahovac is located in the middle of the motorway Gjakova/Djakovica - Prishtina/Pristina and Gjakova/Djakovica - Prizren, as well as regional roads between Malisheve/Malishevo-Gjakova/Djakovica,and Rahovec/Orahovac - Suhareke/Suva Reka. Configuration of the terrain is hilly which is characterized by very high density of settlements in several neighbourhoods of the city, and as a result, there are very narrow roads to be used by all participants in traffic.<br><br>In the territory of municipality of Rahovec/Orahovac is located the canyon of Drini i Bardhë and Regional Park Mirusha which have a national recognized protection status, but considering that this plan foresees interventions/improvements only in the existing situation and from these areas, it can be said that it will not have any negative impact that would affect these two areas as a result of this MP.<br><br>On the other hand, also the objectives set in MP are of positive character. |

# 7. FINANCIAL PLAN

## 7.1. Introduction

This financial plan analyses 2016- 2020 budget capacities of the municipality of Rahovec/Orahovac, according to main short-term and medium-term municipal documents (municipal budget for 2016 and the Medium Term Budgetary Framework 2016-2018), as well as future municipal financial trends. Below are provided medium-term calculations of the aforementioned trends which may have impact on planned investments and maintenance required in the field of municipal mobility for the period 2016-2020.

Moreover, the projects identified in the field of mobility reflect the priorities of the municipality for the same period (2016-2020), taking into account the municipal budget capacity, economic trends, grant support from the central budget as well as municipality own source revenues. Also, as an additional source of funding are identified segments of donors, as well as the possibility of co-financing the identified projects.

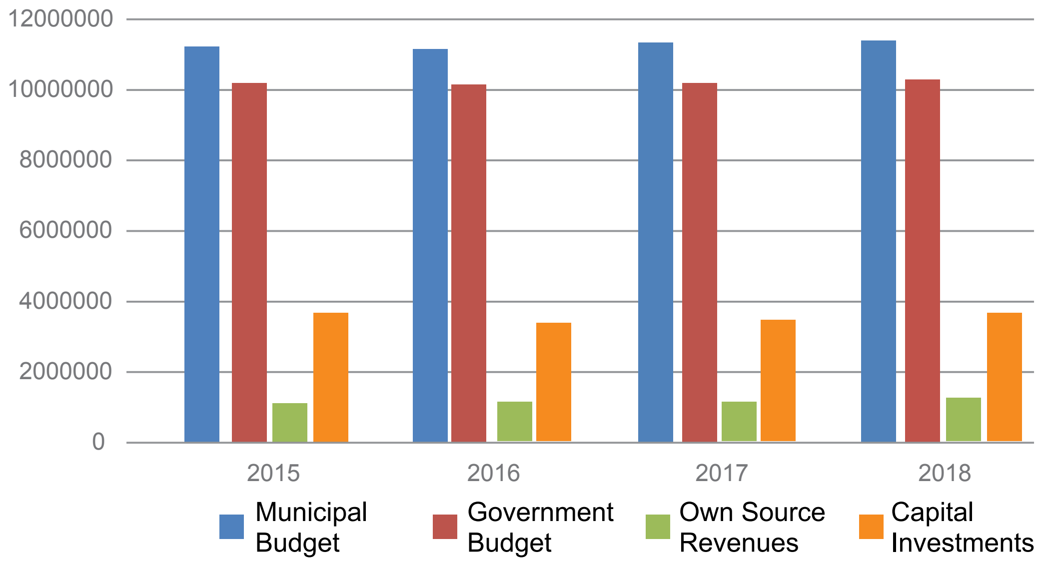
## 7.2. Municipal Budget Structure

As noted above, the budget of the Municipality of Rahovec/Orahovac is based on the Medium Term Expenditure Framework (MTEF 2015-2018), while the expenditures are as follows:

*Table 1: Municipal Budget Structure (2016-2018)*

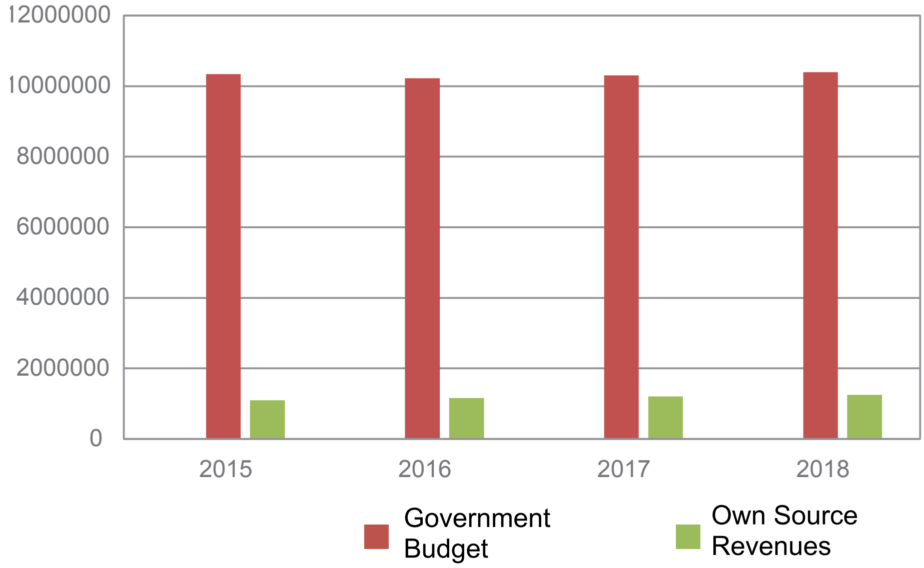
| Year | Municipal Budget | Governmental Budget | Own Source Revenues | Capital Investments |
|---|---|---|---|---|
| 2015 | 11,438,701 | 10,339,687 | 1,099,014 | 3,730,710 |
| 2016 | 11,384,997 | 10,226,983 | 1,158,014 | 3,408,652 |
| 2017 | 11,511,131 | 10,304,117 | 1,207,014 | 3,534,785 |
| 2018 | 11,651,400 | 10,395,900 | 1,255,500 | 3,675,054 |

Graph no. 1 indicates a significant discrepancy between municipal revenues which show the great shortcoming of the municipal budget in the medium term.




*Graph 1: Structure of municipal revenues*

If we compare own source revenues of the municipality and governmental grants, the graph 2 clearly indicates that the governmental grants constitute the majority of the budget, more than 85% of the budget revenues of the municipality of Rahovec/Orahovac.



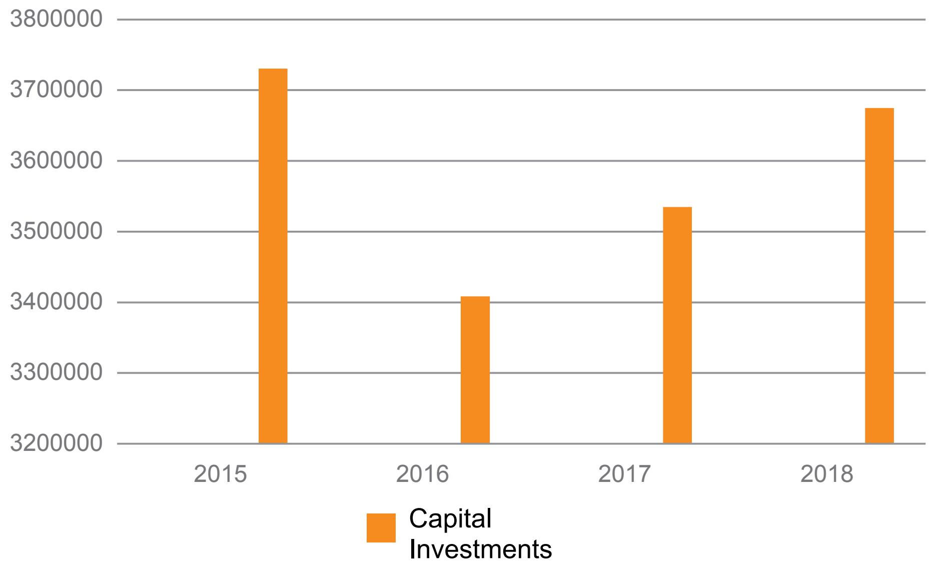

*Graph 2: Structure of municipal revenues*

In order to better see the structure of municipal expenditures, it is important to separate municipal investments, whereby a significant part is constituted by capital investments. Municipal planning for capital investments for 2016- 2018 are as follows:

*Table 2: Capital Investments (2016-2018)*

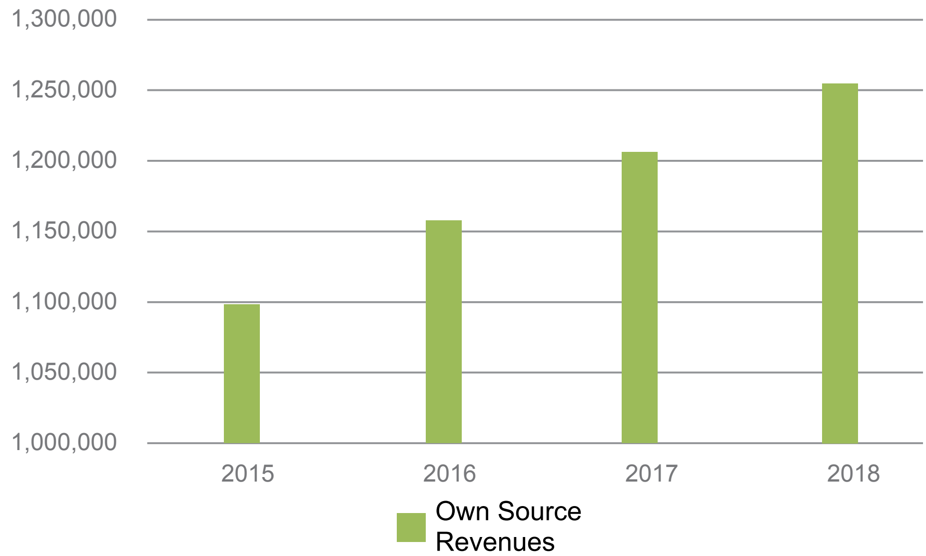
| Year | Municipal Budget | Capital Investments |
|---|---|---|
| 2015 | 11,438,701 | 3,730,710 |
| 2016 | 11,384,997 | 3,408,652 |
| 2017 | 11,511,131 | 3,534,785 |
| 2018 | 11,651,400 | 3,675,054 |

If we refer to the MTEF drafted by the Municipality of Rahovec/Orahovac, capital investments are planned to mark a slight increase, although until 2018 it is not planned to reach the level of 2015, when they were at the highest level for the municipality.




*Graph 3: Planned capital investments*

When it comes to Own Source Revenues, the Municipality's MTEF also shows a symbolic increase which is not of any serious movement in terms of independent funding of the municipality in the period 2016- 2018, as can be seen from the table and graph presented below.




*Graph 4: Trend of own source revenues*

## 7.3. Investment plan

Mobility planned investments are based on assessed needs for improving the current situation. The investment plan is based on sources of funding from financial assets applicable in the municipality.

Investment planning objectives in order to implement the plan are based on preconditions laid down

- Defining investment needs based on needs for mobility;
- The possibility of financing planned investments based on known funding sources;
- Division of projects according to priorities based on improving the situation in the field of mobility. Investment priorities are planned in three groups:
    - Urgent
    - Medium
    - Low
- Cash flow for the planned investment is based on the time of completing investments for contractual obligations with contracted economic operators;
- Investment funding sources are accessible and are known for fulfilment of the planned investment;
- The planned investments are calculated according to current prices by the planned investment categories.

## 7.4. Budget analysis of capital investment costs

Investments planned for the period 2016-2020 are estimated at 65.500 euro. The planned investments are based on 11 distributed projects in certain categories. Evaluation of projects and the possibility of realization of the investment plan for the period 2016-2020 plan projects are categorized in several main groups, depending on the nature. Investments are based on five (5) main categories of investments.

- Traffic safety;
- Regulating vehicle movement;
- Regulating the pedestrian movement;
- Signalling;
- Infrastructure for people with special needs.

Investment division enables easier monitoring of plan implementation and implementation impact of objectives set forth.

*Table 3: Summary table of investments for the period 2016-2020*

**Summary table of investments**

| | |
|---|---|
| Number of spaces | 11 |
| Total Investments | 1,531,000 |
| Average value for project | 139,182 |
| In % | |

| Investments 2016-2020 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Value of investments | 682,900 | 430,600 | 272,500 | 72,500 | 72,500 | 1,531,000 |
| *In %* | *44.6%* | *28.1%* | *17.8%* | *4.7%* | *4.7%* | *100.0%* |

Investments structure

| Category | Value of investments | Investments in % |
|---|---|---|
| Traffic safety | 604,000 | 39.5% |
| Regulating the vehicle movement | 513,000 | 33.5% |
| Regulating the pedestrian safety | 305,000 | 19.9% |
| Signalling | 96,000 | 6.3% |
| Infr. for people with special needs | 13,000 | 0.8% |
| **Total** | **1,531,000** | **100.0%** |

| Financing sources | Municipality of Rahovec | Ministry of infrastructure | Donors | Total |
|---|---|---|---|---|
| Value of investments | 431,000 | 1,100,000 | - | 1,531,000 |
| In % for 2016-2020 | 28.2% | 71.8% | - | 100.0% |

| Investments/Priority | High | Medium | Low | Total |
|---|---|---|---|---|
| Value of investments | 1,022,000 | 509,000 | - | 1,531,000 |
| *In %* | *66.8%* | *33.2%* | | *100.0%* |

| Category/Investments | High | Medium | Low | Total |
|---|---|---|---|---|
| Category/Investments | 23 | 5 | - | 28 |
| Average value for project | 44,435 | 101,800 | | 54,679 |

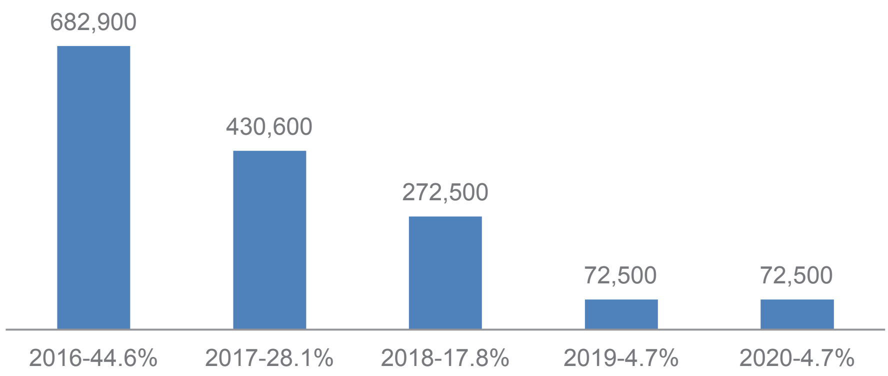
| Financing Sources /2016-2020 | 2016 | 2017 | 2018 | 2019 | 2020 | Total | In % |
|---|---|---|---|---|---|---|---|
| Municipality of Rahovec/Orahovac | 132,900 | 80,600 | 72,500 | 72,500 | 72,500 | 431,000 | 28% |
| Ministry of Infrastructure | 550,000 | 350,000 | 200,000 | | | 100,100,000 | 72% |
| **Total** | **682,900** | **430,600** | **272,500** | **72,500** | **72,500** | **1,531,000** | **100%** |
| *In %* | | | | | | | |

## 7.5. The need for new investments

The planned investments are based on stable funding sources that enable safety in realizing investments. Capital investments are planned based on the current budget. Investment value in the mobility field for the period 2016-2020 is estimated at 1.531 million EUR.

*Table 4: Planned investments in mobility for the period 2016-20120*

| Investments | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Investment value | 682,900 | 430,600 | 272,500 | 72,500 | 72,500 | 1,531,000 |
| *In %* | *44.6%* | *28.1%* | *17.8%* | *4.7%* | *4.7%* | *100.0%* |



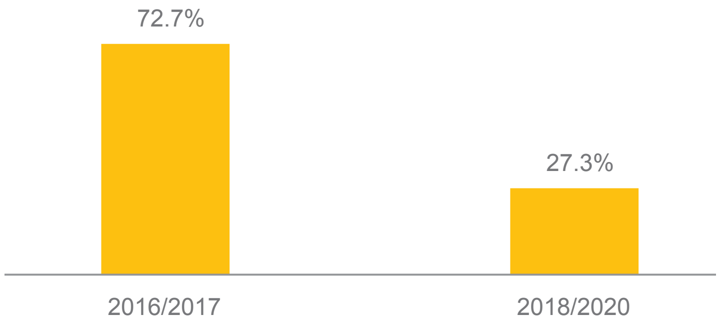

*Graph 5: Graphical presentation of the investment structure for the planning period 2016-2020*

Investments for the planning period are focused in the first two-years of the mobility plan (2016/2017) whereas in the period 2018-2020 are lower in participation.

- Planned investments for the period 2016/2017 amount to EUR 1,113,500 with a percentage of 72.7%.
- Planned investments for the period 2018/2020 amount to EUR 417.500 with a percentage of 27.3%.

*Table 5: Planned investments in mobility for the period 2016-20120*

| Investments | 2016/2017 | 2018/2020 | Total |
|---|---|---|---|
| Value of investments | 1,113,500 | 417,500 | 1,531,000 |
| *In %* | *72.7%* | *27.3%* | *100.0%* |




*Graph 6: Graphical presentation of the investment structure for the planning period 2016-2020*

Investments in mobility are affected by the allocation of municipal budgets, as well as from other sources of funding which according to experience are allocated in the third and fourth quarter of investment years.

*Table 6: Cash flow of investments planned for the period 2016-2020*

| Investments | Q1 | Q2 | Q3 | Q4 | Total | In % |
|---|---|---|---|---|---|---|
| 2016 | - | 18,000 | 108,000 | 556,900 | 682,900 | 44.6% |
| 2017 | - | 2,000 | 70,000 | 358,600 | 430,600 | 28.1% |
| 2018 | - | - | 70,000 | 202,500 | 272,500 | 17.8% |
| 2019 | - | - | 70,000 | 2,500 | 72,500 | 4.7% |
| 2020 | - | - | 70,000 | 2,500 | 72,500 | 4.7% |
| **Total** | | **20,000** | **388,000** | **1,123,000** | **1,531,000** | **100.0%** |

## 7.6. Evaluation of new investments in mobility

### 7.6.1. Investment structure for the period 2016-2020

The investment structure shows the prevalence of categories **traffic safety and traffic regulation,** whose participation is about 75% of the total value of planned investments, whereas other categories of investments have a significantly smaller participation.

*Table 7: The planned investments based on categories for the period 2016-2020*

| Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total | In % |
|---|---|---|---|---|---|---|---|
| Traffic safety | 452,000 | 152,000 | - | - | - | 604,000 | 39.5% |
| Traffic regulation for vehicles | 106,900 | 206,100 | 200,000 | - | - | 513,000 | 33.5% |
| Traffic regulation for pedestrians | 105,000 | 50,000 | 50,000 | 50,000 | 50,000 | 305,000 | 19.9% |
| Signalling | - | 20,000 | 20,000 | 20,000 | 20,000 | 80,000 | 5.2% |
| Lighting signals | 16,000 | - | - | - | - | 16,000 | 1.0% |
| Road infrastructure for persons with special needs | 3,000 | 2,500 | 2,500 | 2,500 | 2,500 | 13,000 | 0.8% |
| **Total** | **682,900** | **430,600** | **272,500** | **72,500** | **72,500** | **1,531,000** | **100.0%** |

### 7.6.2. Investments based on priorities for the period 2016-2020

**Category of High-priority investments:** participation of the category in the amount of EUR 1,022,000 expressed in percentage 66.8% of the total value of investments. The average amount of this group based on the project is 127 750, which is lower compared to the category of medium priority investments. Setting a high priority of this group means increased attention to the unconditional implementation of these investments for achieving the objectives set forth. The successful realization of this investment group has an impact on fulfilling the needs influential in mobility.

**Category of Medium - priority investments:** Projects under this category participate in the category in the amount of EUR 509,000 expressed in percentage 33.2% of the total value of the investment. The average value of this group based on the project is EUR 509,000, which is higher compared to the category of high priority investments.

**Category of Low – priority investments:** no investment has been estimated in this category for the planning period 2016-2020.

*Table 8: Investments planned based on the priorities of average value for the period 2016-2020*

| Category | High | Medium | Low | Total |
|---|---|---|---|---|
| Investment value | 1,022,000 | 509,000 | - | 1,531,000 |
| *In %* | *66.8%* | *33.2%* | *0.0%* | *100.0%* |
| Number of projects | 8 | 3 | 0 | 11 |
| Average for a project | 127,750 | 169,667 | | 139,182 |

Projects rated based on priorities are grounds for plan implementation monitoring as well as the effects of plan in defined objectives of the plan also for other non-financial factors.

*Table 9: Planned investments based on priorities for the period 2016-2020*

| Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|
| Immediate | 577,900 | 226,600 | 72,500 | 72,500 | 72,500 | 1,022,000 |
| Medium | 105,000 | 204,000 | 200,000 | - | - | 509,000 |
| Low | - | - | - | - | - | - |
| **Total** | **682,900** | **430,600** | **272,500** | **72,500** | **72,500** | **1,531,000** |

## 7.7. Cash flow planning for investments in mobility

**Investments are planned to be funded mainly from two resources:**

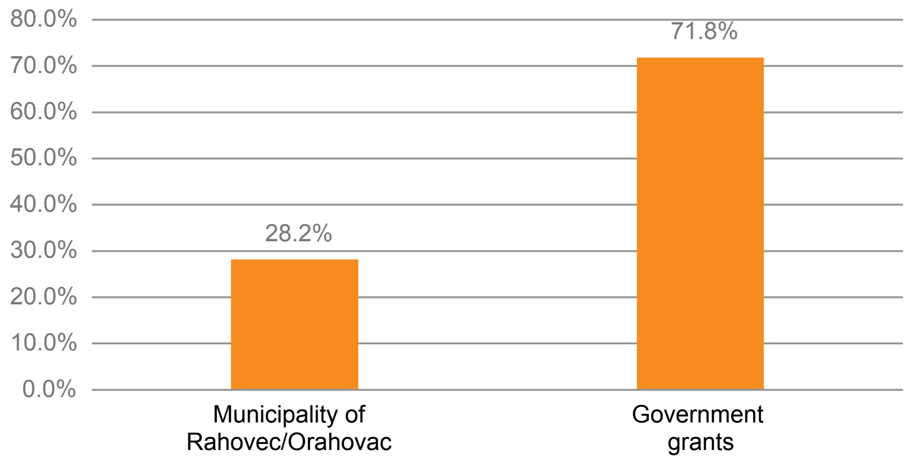
- Municipal budget;
- Government grants.

However, the working group did not rule-out the possibility of funding from donors. Therefore, the mobility plan has retained the options of some of the projects being funded by donors.

- Funding from budget resources of the municipality of ***Rahovec/Orahovac*** is in the amount of 431,000, or expressed as a percentage 28.2% of the municipal budget. Funds from the municipal budget are committed throughout the years of the plan (2016-2020);
- Funding from ***Government Grants*** resources are in the amount of EUR 1,100,000 expressed in percentage 28.2%. Funding of projects is planned for the period 2016-2017.

*Table 10: Funding resources for the investment period 2016-2020*

| Category | 2016 | 2017 | 2018 | 2019 | 2020 | Total | In % |
|---|---|---|---|---|---|---|---|
| Municipality of Rahovec/Orahovac | 132,900 | 80,600 | 72,500 | 72,500 | 72,500 | 431,000 | 28.2% |
| Government grants | 550,000 | 350,000 | 200,000 | - | - | 1,100,000 | 71.8% |
| Total | 682,900 | 430,600 | 272,500 | 72,500 | 72,500 | 1,531,000 | 100.0% |




*Graph 7: Graphical presentation of funding resources*

*Table 11: Summary table of planned projects for the planned period 2016-2020; cash flow*

| Nr. | Project | Category | Priority | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Construction of traffic islands for increasing safety near schools | Traffic safety | High | 2,000 | 2,000 | - | - | - | 4,000 |
| 2 | Horizontal and vertical signalling | Signalling | High | 16,000 | 20,000 | 20,000 | 20,000 | 20,000 | 96,000 |
| 3 | Creating spaces for safe pedes-trian movement on existing roads | Traffic regulation for pedestrians | Medium | 5,000 | - | - | - | - | 5,000 |
| 4 | Construction and maintenance of sidewalks | Traffic regulation for pedestrians | High | 100,000 | 50,000 | 50,000 | 50,000 | 50,000 | 300,000 |
| 5 | Road infrastructure for persons with special needs | Infrastructure for persons with special needs | High | 3,000 | 2,500 | 2,500 | 2,500 | 2,500 | 13,000 |
| 6 | Traffic redirection | Traffic regulation for vehicles | Medium | - | 4,000 | - | - | - | 4,000 |
| 7 | Construction of bus stations | Traffic regulation for vehicles | High | 4,500 | - | - | - | - | 4,500 |
| 8 | Creation of bus stops on Xhelal Hajda street | Traffic regulation for vehicles | High | 2,400 | 2,100 | - | - | - | 4,500 |
| 9 | Construction of transit roads - northern part, Suhareke/Suva Reka– Prishtina/Pristina | Traffic regulation for vehicles | Medium | 100,000 | 200,000 | 200,000 | - | - | 500,000 |
| 10 | Re-designing of crossroads with the highway - for improving safety | Traffic safety | High | 300,000 | - | - | - | - | 300,000 |
| 11 | Re-designing of crossroads with the highway - for improving safety-Xërxë | Traffic safety | High | 150,000 | 150,000 | - | - | - | 300,000 |
| | **Total** | | | **682,900** | **430,600** | **272,500** | **72,500** | **72,500** | **1,531,000** |

*Table 12: Summary table of planned projects for the planned period 2016-2020, cash flow*

| Measures | Purpose | Funding resources | Priority | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Construction of traffic islands for increased safety near schools** | | | | | | | | | |
| Construction of traffic islands for increasing safety near schools | Traffic calming | Municipality of Rahovec/ Orahovac | High | 2,000 | - | - | - | - | 2,000 |
| Construction of traffic islands for increasing safety near schools | Traffic calming | Municipality of Rahovec/ Orahovac | High | - | 2,000 | - | - | - | 2,000 |
| **Horizontal and vertical signalling** | | | | | | | | | |
| Horizontal and vertical signalling | Number of signs placed and the length/surface of horizontal signalling | Municipality of Rahovec/ Orahovac | High | 16,000 | - | - | - | - | 16,000 |
| Horizontal and vertical signalling | Number of signs placed and the length/surface of horizontal signalling | Municipality of Rahovec/ Orahovac | High | - | 20,000 | - | - | - | 20,000 |
| Horizontal and vertical signalling | Number of signs placed and the length/surface of horizontal signalling | Municipality of Rahovec/ Orahovac | High | - | - | 20,000 | - | - | 20,000 |
| Horizontal and vertical signalling | Number of signs placed and the length/surface of horizontal signalling | Municipality of Rahovec/ Orahovac | High | - | - | - | 20,000 | - | 20,000 |
| Horizontal and vertical signalling | Number of signs placed and the length/surface of horizontal signalling | Municipality of Rahovec/ Orahovac | High | - | - | - | - | 20,000 | 20,000 |

| Measures | Purpose | Funding resources | Priority | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Traffic redirection** | | | | | | | | | |
| Traffic redirection | New infrastructure created | Municipality of Rahovec/ Orahovac | Medium | - | 4,000 | - | - | - | 4,000 |
| **Construction of bus stations** | | | | | | | | | |
| Construction of bus stations | Number of constructed bus stations | Municipality of Rahovec/ Orahovac | High | 4,500 | - | - | - | - | 4,500 |
| **Creation of bus stops on Xhelal Hajda street** | | | | | | | | | |
| Creation of bus stops on Xhelal Hajda street | Number of bus stops | Municipality of Rahovec/ Orahovac | High | 2,400 | - | - | - | - | 2,400 |
| Creation of bus stops on Xhelal Hajda street | Number of bus stops | Municipality of Rahovec/ Orahovac | High | - | 2,100 | - | - | - | 2,100 |
| **Construction of transit roads - northern part, Suhareke/Suva Reka– Prishtina/Pristina** | | | | | | | | | |
| Construction of transit roads - northern part, Suharekë/Suva Reka– Prishtina/Pristina | Traffic redirection | Government grants | Medium | 100,000 | - | - | - | - | 100,000 |
| Construction of transit roads - northern part, Suharekë/Suva Reka– Prishtina/ Pristina | Traffic redirection | Government grants | Medium | - | 200,000 | - | - | - | 200,000 |
| Construction of transit roads - northern part, Suharekë/Suva Reka– Prishtina/Pristina | Traffic redirection | Government grants | Medium | - | - | 200,000 | - | - | 200,000 |

| Measures | Purpose | Funding resources | Priority | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|---|
| Re-designing of crossroads with the highway - for improving safety | | | | | | | | | |
| Re-designing of crossroads with the highway - with the purpose of improving safety | New forms of regulation | Government grants | High | 300,000 | - | - | - | - | 300,000 |
| Re-designing of crossroads with the highway – with the purpose of improving safety-Xërxë | New forms of regulation | Government grants | High | 150,000 | - | - | - | - | 150,000 |
| Re-designing of crossroads with the highway - with the purpose of improving safety -Krushë | New forms of regulation | Government grants | High | - | 150,000 | - | - | - | 150,000 |

# 8. MONITORING AND REVIEWING

## 8.1. Monitoring of the urban mobility plan for 2016

| | | | |
|---|---|---|---|
| | Measures | SAFETY IN TRAFFIC - Traffic calming measures | |
| | Location | Street____________________________________________ | |
| | Road type | national/regional road | local |
| 1 | Expected actions | - Islands on pedestrian crossings<br>- Other measures ____________<br>____________________ | - speed bumps<br>- rumble strips<br>- speed humps<br>- circular speed bumps<br>- only signalling |
| Implementation | YES | | |
| | NO | | |
| | PARTIALLY | | |
| Is it necessary to use additional traffic calming measures | | | |
| YES | | NO | |

**Additional notes:**

______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

**Rahovec/Orahovac, on____________________** **UMP monitoring responsible:**

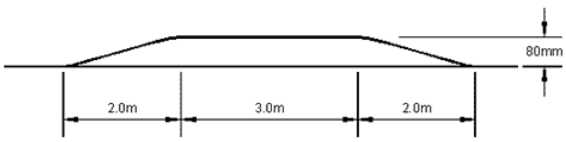
__________________________

# Annex I

Usually before the first speed bump of the series of speed bumps, there is a sign for slowing down or a street sign. According to the rules, these artificial elements are set throughout the half or entire stretch of the road track. If they are placed in a row, the distance between them can vary from 20 to 60 m, depending on the situation.

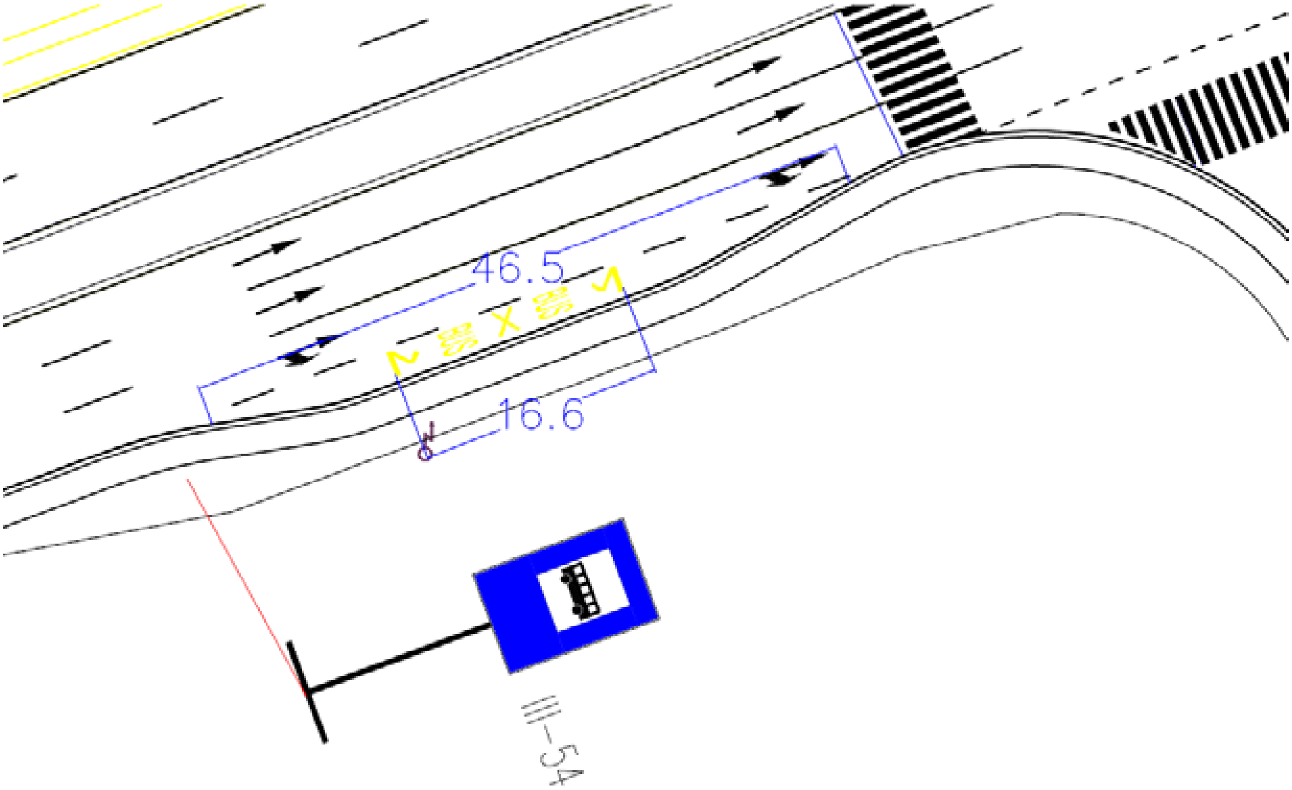
**Depending on the speed limit, the same are with dimensions as follows:**

- Up to 50 km/h, their width must not be less than 60 cm, whereas the height must not be more than 3 cm;
- Up to 40 km/h, their width must not be b less than 90 cm, whereas the height must not exceed to 5 cm and
- Up to 30 km/h, their width must not be less than 120 cm, whereas the height must not exceed 7 cm.

# Annex II

**Bus stop**



URBAN MOBILITY PLAN
FOR THE MUNICIPALITY OF RAHOVEC/ORAHOVAC
2016-2020

HELVETAS Swiss Intercooperation | KOSOVO

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

**Swiss Cooperation Office Kosovo**