

PROJECT APPRAISAL DOCUMENT – APPLICATION FOR GRANT



MUNICIPALITY OF TETOVO

**PROCUREMENT OF SPECIAL MUNICIPAL VEHICLES AND
CONTAINERS FOR THE NEEDS OF PCE**

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Prepared: Sector for Local Economic Development, Municipality of Tetovo

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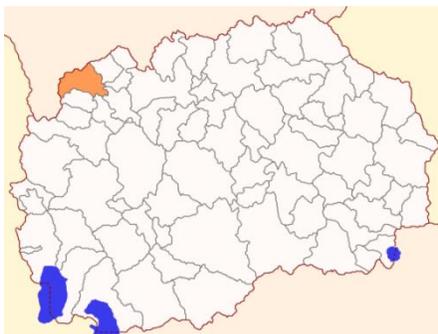
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1. PROJECT DESCRIPTION

A.BACKGROUND

Municipality of Tetovo is located in the Northwestern part of the Republic of North Macedonia, on the slopes of Sharr Mountain as well as in the lower parts of the Polog valley. The municipality extends from the northwest to the south-east. To the north, north-west and west it borders the municipalities of Dragash and Prizren in the Republic of Kosovo; to the east and south-east with the municipalities of Tearce, Jegunovce and Zhelino and to the south with the municipalities of Bogovinje and Brvenica(see Figure 1 and 2).

Figure 1. Municipality Tetovo on the map of the Republic of North Macedonia



The municipality covers an area of 261.89 km² and has a total of 86.580 inhabitants according to the 2002 census. The municipality consists of 20 settlements: 10 lowlands, 6 hillside and 4 mountainous.

Tetovo is located an average of 824 meters above sea level and has a moderate continental climate with an average annual temperature of 11.6°C. Of the total area, 47.262 ha is utilized agricultural land, 6.837 ha is covered with forests, 7.047 ha is arable land, 9.726 ha is pastures, 2.197 ha is meadows, 2 ha is vineyards, and 2.197 is orchards.

Table 1: Total population, households and dwellings in settlements in the municipality

No	Settlements in the municipality of Tetovo	Total population		Altitude, m.a.s.l.	Dwellings
		1994	2002		
1	Bozovce	1.086	924	1.300	230
2	Brodec	559	1.136	1.060	262
3	Vejce	381	1.127	1.200	163
4	Veshala	1.132	1.222	1.195	281
5	Gajre	843	1.020	950	250

6	Gjermo	962	960	1.100	167
7	GolemaRechica	3.841	3.997	508	790
8	Jedoarce	13	5	560	167
9	Lavce	277	298	780	128
10	Lisec	831	692	1.200	676
11	Mala Rechica	7.069	8.353	490	2.200
12	Otunje	-	18	985	50
13	Poroj	2.705	2.899	500	485
14	Sarakjino	944	1.087	415	257
15	Selce	2.119	2.538	800	452
16	Setole	7	2	985	40
17	Tetovo	50.376	52.915	505	14.459
18	Falisha	558	546	438	192
19	Dzephishte	3.964	4.051	480	
20	Shipkovica	2.581	2.826	1.030	721
Total		50.376	86.580	Average 824	21.970

Source: Census of population, households and dwellings in the Republic of Macedonia, 2002 - Book X

The moderate continental climate in combination with the hydrographic and spatial conditions are favorable for the development of agriculture and farming, i.e. through favorable temperatures, suitable soils with high value and the big quantity of water potential, the cultivation of crops, vegetables, orchards and some industrial crops is enabled. In terms of farming, these conditions correspond specifically with the development of cattle farming and highland pastures, as a precondition for the development of sheep farming.

Municipality of Tetovo is located 38 km away from the state capital Skopje. It is the branching point of the motorway E65 Skopje –Ohrid and the national road R1203 to Jazhince - on the border of Kosovo. Also, there is a road, R 1209, leading to the mountain Shara, PopovaShapka. Parallel to the E65, there is the Road 1206 from Tetovo to Gostivar.

The municipality is fully integrated into the national electricity power grid by two overhead 110kV high voltage lines with appropriate lines going to all settlements. Dominant sectors in the economic development of the municipality are wholesale and retail trade as well as manufacturing; it is then followed by agriculture, tourism and the service industry.

B. DEMOGRAPHIC PROFILE

According to the last revised Census of population and households (2005) in 2002, the total number of population in Municipality of Tetovo was 86,580. The total number of households was 20,094 i.e. 4.31 member per household. The Census data shows that there were total of 22,592 dwellings or 1.12 dwelling per household.

Table 2: Households and dwellings

Total population	Households	Dwellings	Average number of the household members
86.580	20.094	22.592	4.31

Source : State Statistical Office MAK Stat database 2019

The Municipality of Tetovo has 20 settlements. According to the last revised Census in 2002, the most populated settlement is the city of Tetovo (52,915 inhabitants), followed by Mala Rechica (9,353) and Golema Rechica (3,997). According to the data estimates in 2017 there was a positive growth in the number of residents with an increase of 4373 inhabitants (4.75%) since 2005. The average annual increase of population in the municipality is 0.99%.

The gender structure of population shows a constant trend in favor of male population. Of the total population 50.17% were male, while 49.83% were female, as of 2017 (State Statistical Office MAK Stat database, 2019).

C.PROJECT DESCRIPTION

The Municipality of Tetovo has signed two sub-loan agreements with the Ministry of Finance within the MSIP2 Project. The first sub-loan agreement was signed on 20.08.2019, archive number 09-7962/1, for a project named “Construction of part of the boulevard Vidoe Smilevski Bato” in Tetovo. Following the bidding procedure, the contract was concluded in the amount of 53,681,109 MKD, thus the municipality acquired the right to use social inclusion grant up to a maximum of 27% of the total contract amount or 14,494,110 MKD. The second sub-loan agreement was signed on 31.12.2019, archive number 09-12457/1, for a project named “Purchase of buses for public transportation of residents in the city of Tetovo”, with contract concluded in the amount of 44,267,000.00 MKD while acquiring as well social inclusion grant, 27% of the total contract amount or 11,952,279.00 MKD. The total amount of both social inclusion grants is equal to 26,446,389.00 MKD (430,022 EUR).

The Municipality of Tetova plans to invest these funds for the procurement of special communal vehicles: 1 small truck with upgrade and garbage collection machinery, 2 large trucks with upgrade and garbage collection machinery, 1 large truck with upgrade and garbage collection machinery, 1 special vehicle-road cleaning machine (sweeper) and 1 special road cleaning machine (on battery) which will benefit the Public Communal Enterprise - Tetova, and they will collect waste in the settlements of Vesala, Germa, Lisec, Bozovce, Gajre, Vejce and Brodec. This was decided on the Municipal Council Session with Decision No. 08-10188/18, dated 28.12.2020. It was approved by 25 votes in favor, with no votes against and no abstentions.

Also, considering this project of a great importance for the Municipality of Tetova, the council on the meeting held on 29.04.2020, no. 08-3436 /3 adopted a decision approving the urban audit of the municipality.

1.1 SIPU TABLE

A. CURRENT SITUATION

From the done analyzes, as the most endangered settlements, are Vesala, Germo, Lisec and Lavce, where the population of these areas lives in miserable conditions, without regular environmental services, with non-existent waste collection facilities, so illegal landfills often sprout. Also, their access to infrastructure is catastrophic. While in settlements such as Bozovce, Gajre, Vejce and Brodec their priority is to provide regular environmental services and increase the capacity for waste collection, so as not to create illegal landfills for ordinary waste but also for solid waste. Also, their infrastructure is in poor condition.

The problems in the municipality differ from one settlement to another; in fact the citizens of the mountainous areas are faced with the same problems. The situation is the same in the settlements that are annexed to the city but are officially registered as rural areas. The biggest weakness or necessity in the mountainous areas is the poor services for ecological-sanitary needs, but also the accessibility to the infrastructure. While the situation with education, health, sports and recreational activities are to some extent more satisfactory.

In the area of ecological sanitary services there is a marked difference between the villages in the lower parts of the municipality than the mountainous settlements where the representation of ecological sanitary services is at a lower level and average, the small average to access the ecological sanitary services in most settlements in the municipality are due to their great distance in the hilly mountainous area. In the area of access to infrastructure, it can be noticed that there is a difference between the settlements in the mountainous areas and in the lowlands. Most of the settlements in the mountainous areas are connected by local roads with the regional road R1209, but there are villages that are interconnected by secondary roads that are not well maintained. Also in the lowlands, there are neighborhood communities that are connected to the regional road R1206 and R1203, with streets that meet the standards and are maintained at an enviable level.

Furthermore, according to the 'List of infrastructure and programming services' done for the Urban Revision, the table below shows the Ranking of settlements by priority of the final results, with grades from 2.05 to 13 are given, where the grade 2.05 means the lowest value of

service, insufficient or low living conditions of the citizens, while 13 means the highest value of service, sufficient or normal living conditions of the citizens in the settlements.

Table 3. Ranking of settlements by priority from the final results of the table

	SETTLEMENTS	RESULT		SETTLEMENTS	RESULT
1	Veshala	1.05	11	GolemaRechica	3.7
2	Gjermo	1.1	12	Mala Rechica	3.8
3	Bozovce	1.1	13	Sarakjino	6.3
4	Lavce	1.1	14	Falishe	7.3
5	Lisec	2.5	15	Poroj	7.8
6	Gajre	2.5	16	Dzepchishte	8.9
7	Vejce	2.5	17	Tetovo	13
8	Brodec	2.6	18	Jedoarce	-
9	Shipkovica	3.4	19	Otunje	-
10	Selce	3.4	20	Setole	-

According to the results from the table, the most endangered settlements are Vesala, Germa, Lisec and Lavce, where the population of these areas lives in miserable conditions, without regular environmental services, with non-existent waste collection facilities, so illegal landfills often sprouts. Also, their access to infrastructure is catastrophic. While in settlements such as Bozovce, Gajre, Vejce and Brodec their priority is to provide regular environmental services and increase the capacity for waste collection, so as not to create illegal landfills for ordinary waste but also for solid waste. Also, their infrastructure is in poor condition, but the priority for the inhabitants of these villages is environmental and sanitary services and facilities. We will try to give a brief explanation for each lowest rated settlement:

Vesala: is a mountainous settlement at 1,195 meters above sea level, with 281 dwellings and a total population of 1,222 according to the 2002 census. To the north it stretches to the border with the Republic of Kosovo. Vesala is 20 km away from the city center of Tetovo, it is

connected to a road that stretches to the mountains and is in poor condition, even dangerous in several places where there are frequent landslides, while in winter it often happens to be blocked the access of the population to the city of Tetovo. Environmental and sanitary services are miserable, mostly due to the steepness of the settlement, but also the lack of the vehicle fleet of the public enterprise to serve them regularly. On the other hand, irresponsibility towards the collective interest and damage to the containers contributes to the emergence of illegal landfills and pollution of nature. This pollution also creates water pollution, groundwater that connects to the Pena River.

Gjermo: is a mountainous settlement at 1,100 meters above sea level, with 167 habitats and a total population of 960 according to the 2002 census. It is located north of the city of Tetovo, on the north it borders with the Municipality of Tearce. Gjermo is located 10.8 km away from the city center of Tetovo. It is also connected to a road that stretches to the mountains and is in poor condition, especially during the winter season. Environmental and sanitary services are miserable. This population also contributes to the pollution of groundwater that connects to the Pena River.

Bozovce: is a mountainous settlement at 1,300 meters above sea level, with 230 habitats and a total population of 924 according to the 2002 census. It is located in the western part of the Municipality of Tetova. Bozovce is 22 km away from the center of the city of Tetovo, it is connected with a road that stretches to the mountains and is in poor condition, often dangerous, especially in autumn and winter. The ecological and sanitary services are miserable, mostly due to the slope of the settlement, but also the lack of the vehicle fleet of the public enterprise to serve them regularly. Bozovce is also characterized by illegal landfills and huge environmental pollution.

Lavce: is a mountainous settlement at 780 meters above sea level, with 140 habitats and a total population of 298 according to the 2002 census. It is located 4.3 km away from the city center of Tetovo, it is connected with a road that stretches to the mountains. Their access to infrastructure is in a catastrophic state. The inhabitants of Lavce are often completely cut off from the city during the rainy seasons. They also do not receive any environmental and sanitary services from the municipal enterprise. In this village it is important to intervene in many aspects. The residents of Lavce mostly complain about the ecological and sanitary services, which are miserable for them. In this village, it is important to increase the capacity for collecting waste and solid waste, but also to prevent the appearance of illegal landfills that cause enormous damage to the environment.

Lisec: is a mountainous settlement at 1,200 meters above sea level, with 676 habitats and a total population of 692 according to the 2002 census. It is located in the southern part of the Municipality of Tetova. Lisec is located 12.1 km away from the city center of Tetovo, it is connected with a road that stretches to the mountains. Access to infrastructure is disastrous and environmental and sanitation services are miserable. Lisec is located completely on a mountain slope and that is why the public.

1.2 MECHANIZATION OF PCE TETOVO

The total mechanization available to PCE Tetovo is shown in the table below.

Table 4. List of mechanization and vehicles owned by PCE Tetovo, by sectors

Number	Year of production	Brand	Type of vehicles	Registration	Note
1	1977	Mercedes- coating	Coating	Te-9218- AD	Correct
2	2007	Zastava 49.10	Collection and transport of waste	Te-6949-AB	Correct
3	2007	Zastava 49.10	Collection and transport of waste	Te 6947-AB	Correct
4	1996	Otojol 85.12	Collection and transport of waste	Te-4274-AD	Correct
5	1977	Mercedes-coating	Collection and transport of waste	Te -9218-AD	Correct
6	1988	FAP 14.14	Kiper + designer	Te -5839-AB	Correct
7	2008	BMC628	Pressure plate	Te-8501-AC	Defective
8	2008	BMC 528	Pressure plate	Te-8502-AC	Defective
9	2007	MATHIEU YNO	Sweeping the streets	Te-0776-AE	Defective
10	1994	MAN 9-153	Sweeping the streets	TE-063-CS	Correct
11	1985	Mercedes 814 K\31	Sweeping the streets	TE-671-DE	Defective
12	2002	PEZO 607	Passenger car	TE-5766-AB	Defective
13	1998	EURO TECH MT	Collection and transport of waste	TE-6217-AC	Correct
14	1997	IVEKO CARGO 150 E	Collection and transport of waste	TE-6218-AC	Correct
15	1998	IVEKO CARGO 150	Collection and	TE-6219-AC	Correct

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		E	transport of waste		
16	1998	ICB-3 CX	Construction machine	\\\\\\	Correct
17	1981	IMT 539	Tractor	Te -074-AN	Correct
18	2008	FORD TACKLE	Collection and transport of waste	TE-5701-AC	Correct
19	1997	FAP 16.20	Collection and transport of waste	TE-586-BF	Correct
20	1986	ZASTAVA 80.10	Collection and transport wste	TE-486-AJ	Correct
21	2001	MERCEDES EKONIC	Collection and transport of waste	TE-268-DK	Defective
22	2001	MERCEDES ATECO	Collection and transport of waste	TE-9957-AC	Correct
23	1995	MERCEDES 18-24	Collection and transport of waste	TE-5618-AC	Correct
24	1998	ZASTAVA 79.12	Collection and transport of waste	TE-964-BH	Defective
25	1979	TAM 60\T5	Water supply and sewerage	Te 4237 AD	Correct
26	2007	VOLKSWAGEN	Water supply and sewerage	TE-6453-AD	Correct
27	1994	LADA NIVA	Passenger car	TE-4174-AB	Defective
28	2007	ICB-4 CX	Construction machine	\\	Correct
29	1980	FAP 13.14 TANK	Sweeping the streets	Te-305-AB	Defective
30	1966	FAP 13.14 TANK	Sweeping the streets	TE-245-AK	Correct
31	1987	FAP16.16 TANK	Sweeping the streets	TE-405-AK	Correct
32	1983	FAP FAMOS	Collection and transport of waste	TE-247-AK	Defective
33	2012	VOLKSWAGEN\PA SSAT	Passenger car	TE-1559-AE	Correct
34	2018/ MSIP IPA	RENAULT	Waste collector in 11 rural areas: Saraqino,Falishe, Mala Rechica,	TE-2812 AG	Correct

			Golema Rechica, Dzepchiste, Poroj, Shipkovica, Gajre, Lisec, Selce, Lavce.		
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2. SOCIAL IMPACT OF THE PROJECT

After the decentralization the municipal competencies in the field of local economic development became larger and became a priority. In accordance with the Strategic Plan of the Municipality of Tetova for local economic development municipal goals are:

1. Strengthening the capacities of Public Communal Enterprise “Tetovo”
2. Regular maintenance of public green areas, public buildings, public institutions and other infrastructural facilities.
3. Maintenance of sports fields, sports halls, asphalt surfaces, pedestrian paths etc
4. Expansion of the activity of PCE in all settlements for collection and transportation of waste and connection of new users.
5. Financial consolidation of PCE and increasing the possibility for efficient and timely execution of all activities related to maintaining cleanliness and communal order in the municipality and rural settlements.

In order to achieve the above strategic goals the Municipality has developed a Local Environmental Action Plan (LEAP), according to which during the assessment of the state of the environment for the thematic area WASTE, the following problems appeared that negatively affect the environment:

1. Lack of integrated waste management
2. Inadequate waste collection
3. Existence of several small and large waste dumps and illegal landfills around the city of Tetovo and in several locations in the municipality
4. Insufficient coverage of part of the settlements with the service for organized waste collection;
5. Disposal of waste from rural settlements in local rural landfills (illegal rural landfills);
6. Insufficient equipment of PCE “Tetovo”;
7. Lack of an organized system for separation, recycling and reuse of collected waste.

This project will enable regular waste collection in the identified poor settlements, which will reduce illegal landfills and will contribute to a healthy environment for the residents.

2.1 CITIZENS ENGAGEMENT

The need for the project "Procurement of special vehicles and containers" arose from the need of the PCE and the citizens of those poorest settlements.

The presidents of the local communities from the poorest settlements are in constant contact with representatives of the municipality where they declare their requests and the need for the Procurement of special vehicles came out of those continuous meetings. Due to the situation with the pandemic, the Municipality of Tetova was not able to hold public hearings due to the impossibility of gathering more people in one place. During the preparation of Urban revision from the settlements Vesala, Geramo, Bozovce, Lavce, Lisec, Gajre, Vejce and Brodec we received the information that the ecological and sanitary services are bad, mostly due to the slope of the settlement, but also the lack of vehicle fleet of the public enterprise to serve them regularly- (Urban revision p.340) Many of the citizens on the meetings that officials from the municipality have with them were complaining about dirty roads, unreachable locations all around the municipality, especially during wintertime, too much garbage in wild created dump sites and a lot of other problems with similar nature. This is where the idea of buying these machines came from.

The need to use this type of mechanization as well as placing containers was also emphasized at the public forums that the Municipality of Tetova has realized before. These forums were attended by 74 men and 86 women, of which 125 Albanians, 27 Macedonians, 4 Turks, 3 roma and 1 other.

Due to time limit and resources constraint, the research was reduced to relevant secondary data from the Municipality of Tetovo and expert interviews. In addition, it included face-to-face interviews with five top officials of the municipality (the Mayor, three advisors, and the director of the public enterprise)

The municipality has a well-established practice of citizen engagement activities in monitoring the project implementation process. This includes informing them through social media, Facebook, Instagram, municipal bulletin board, designated citizen's hours for meeting with the Mayor of the municipality, and also every citizen can get information about the implementation of the municipal projects every day by the municipality staff.

The project is expected to influence the overall wellbeing in the municipality, and it is expected the local citizens to give full support during the implementation of the project.

2.1 SOCIAL DIVERSITY AND GENDER

The municipality of Tetovo has multiethnic structure with Albanians 70.32%, then follow Macedonian 23.2%, Roma 2.7%, Turks 2.2%, Serbs 0.7%, others 0.7%, and Bosniacs 0.2%, insignificant representation of Vlach. According to gender structure, there is slight dominance of female population representing 50.17% of the total population (State Statistical Office MAK Stat database 2019).

2.2 INSTITUTIONS, RULES AND BEHAVIOR

According to respondents opinions the selected contractor must provide guarantees for the realization of the project. The municipality of Tetovo has 328 employees, out of which 237 are male (or 72.26%), while 91 are female (or 27.74%) who have the required capacity and proven experience to monitor the progress of the project.

The maintenance will be conducted through engagement of the Public Communal Enterprise “Tetovo”, they will be responsible for the waste collection. The Public Communal Enterprise has a capacity of 213 full time employees, of which 193 male and 20 female.

The mayor and the municipality administration strive to achieve protection and improvement of the quality environment.

2.3 STAKEHOLDERS

There are several important stakeholders identified in the project. The interviewees fully agree that most influential stakeholders, participants in the process of decisions making, at the municipal level, are the mayor and the municipal council. Residents, as an organized group of stakeholders, articulate their opinions directly to the council and the mayor, through consultative meetings and debates with local government representatives, through local communities present in the municipality and they can influence the decision-making process, as their opinions are always taken into consideration by the mayor and the council.

The project will be beneficial for the whole community. The members of the Municipal Council and the Mayor are in favor of the project. With the realization of the project for procurement of a special vehicle for waste collection equipment and containers the Municipality of Tetova will directly contribute to achieving the priorities and goals defined in its strategic documents.

Procurement of vehicles and containers will increase the efficiency in cleaning the waste from households primary schools, catering facilities, trade facilities factories and other legal entities. With efficient and timely waste collection and transportation will raise public awareness order and cleanliness of the entire territory of the Municipality of Tetova.

2.4 SOCIAL RISK

There are no threats and high social risks associated with this project, due to the simple reason that the project is supported by all stakeholders. There are no land acquisitions or resettlement issue for this project.

3. ENVIRONMENT

The project is about procurement of equipment aiming to improve the communal services of the Municipality of Tetovo and its public communal enterprise, as follows:

- 1 small truck with upgrade and garbage collection machinery (around 3 m3 waste reservoir capacity)
- 2 large trucks with upgrade and garbage collection machinery (around 4 m3 waste reservoir capacity)
- 1 large truck with upgrade and garbage collection machinery (around 7 m3 waste reservoir capacity)
- 1 special vehicle-road cleaning machine (electric sweeper)
- 1 special street cleaning machine (electric sweeper)

In order to prevent and reduce possible environmental and occupational safety risks, the purchase of the new vehicle for waste collection equipment and containers should be in accordance with the following requirements:

1. EU Directive 2000/14/EC (Noise Emission by Outdoor Equipment): To comply with this, the new vehicles shall emit noise in line with the national *Law on noise protection* (Official Gazette No. 79/2007 and 163/2013); thus, shall possess Statement of Conformity.
2. New vehicles (trucks) should fulfil the following emissions' standards defined in EU regulation for road vehicles in order to comply with the air pollution emission limits according the national level standards: Minimum EURO 5. The fuel type to be used by the engines is diesel.
3. The 2 street sweepers shall be electric vehicles, with maximum energy consumption of 20 kWh, thus maximum 19 g/h CO₂ emissions¹. Electric supply for both sweepers shall be provided at the parking slot of the PCE "Tetovo".
4. Also, in order to prevent possible injuries of people due to traffic accidents, the vehicles should contain safety belts and winter equipment (snow chains, etc.).

¹ Compared to a traditional engine powered sweeper, this almost zero-impact technology completely eliminates air pollution emissions: Achieved annual reduction of CO₂ is estimated to 84,333 kg (calculated on the basis of 2 sweepers with active 240 working days, 9h a day).

5. Training should be delivered to at least five drivers from the public enterprise to be familiar with handling of the new vehicles.

As mitigation measures for adverse environmental impacts (possible motor leakage) should be performed regular and proper maintenance of the vehicles (according to their technical characteristics) and procurement of spare parts. PCE "Tetovo" should nominate responsible person for evidention of fuel consumption of procured vehicles (this information will be registered in the vehicles service book).

The existing number of households that PCE - Tetovo provide service for collection, transportation and disposal of waste is 17,397 in the city and 3715 households in the villages, and the enterprises are a total of 3,453 in the city and villages. To ensure immediate putting into operation of the new vehicles, the PCE Tetova shall conduct a campaign for signing of Agreements with approximately 3000 new households in Vesala, Germa, Lisec, Bozovce, Gajre, Vejce and Brodec. These Agreements shall be signed within one year upon delivery of the new waste collection vehicles to the Tetova Municipality by the supplier. Regarding the amount of the fee for collection, transportation and disposal of household waste is 65.00 denars for one member of the household and for enterprises it depends on the activity and the size. The prices are determined in the Decision for publishing the decision for Determining the methodology for calculating prices for collection, transportation and disposal of waste no.08-2706/10 from 29.07.2014.

The small truck is intended for waste collection on narrow streets and settlements in mountainous areas, while large trucks are intended for wider streets where access is possible. The Municipality of Tetova dumps the waste in the Public Enterprise Drisla-Skopje landfill.

The project also estimates procurement of 154 metal containers for waste collection of size 1,1 m³. The containers shall be compatible with waste collection trucks, with anti-corrosion protection: hot-dip galvanizing in accordance with the standard MKC EN ISO 1461:2010 or equivalent. In the following Tables are given Environmental Mitigation Plan and Monitoring Plan with preventive measures for all project activities. The main responsibility lays to the Contractor to implement these measures and to PCE "Tetovo" to check the technical specifications during handover and further implement the measures during the operational phase.

A. ENVIRONMENTAL MITIGATION PLAN

Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Project activity: Procurement of special municipal vehicles and containers for the needs of PCE			
<p>Possible adverse health impacts on workers and inhabitants due to:</p> <ul style="list-style-type: none"> • Non-compliance with strict OH&S standards <p>No training delivered to the driver/s</p>	<p>Local/within the Municipality of Tetovo</p> <p>Long term /major</p>	<ul style="list-style-type: none"> ○ The preventive measures need to be implemented when the new vehicles are delivered: <ul style="list-style-type: none"> - Check all technical specifications of the delivered vehicles and compare with the technical requirements established before the tender procedure (at least EURO 5 engine specification and noise specifications as min. env. requirements) - Check the fuel quantity, lubrication oil quantity, braking, and steering system at the spot and lighting system as well ○ Review the producer manual and driving manual recommendations for smoothly running of the vehicles (nomination of the responsible person within the PCE "Tetovo") ○ Delivery of short running training to drivers of the vehicles for the most economically running ○ Delivery of training for regular maintenance of the vehicle as well ○ Implementation of the Occupational Health & Safety measures for prevention of COVID -19 for the workers and participating municipal staff, during the procurement process 	<ul style="list-style-type: none"> ○ Contractor –Bidder ○ Director of the PCE "Tetovo" ○ Municipal staff
Project activity: Put the vehicles into operation			
<p>Environmental and health impacts to workers and inhabitants due to:</p> <p>Improper putting into operation (running),</p> <p>The non compliance with noise requirements will cause noise disturbance to the workers and citizens of the Municipality of Tetovo.</p>	<p>Local/within the Municipality of Tetovo</p> <p>Long term /major</p>	<p>Perform the procedure of homologation of the vehicle at the Faculty of Mechanical Science</p> <ul style="list-style-type: none"> - The technical specifications provided by the vehicles supplier should be checked according to at least EURO 5 emission standards, general and specific safety requirements, and all fitted devices like rear protection devices, warning light, speed limitation device, braking, and anti-blocking system, electrical and hydraulic system, etc. - Noise emissions to be lower than 102 dB (A) measured according to the requirements of EU Directive 2000/14/EC; Check the Statement of conformity - Perform the annual approval test at the authorized compliance body issuing the registration card for the vehicles, trucks, and machines 	<ul style="list-style-type: none"> ○ Contractor –Bidder ○ Director of the PCE "Tetovo" ○ Municipal staff
Project activity: Regular operation of the vehicles			

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<p>Improper or lack of regular maintenance could increase the environmental and occupational safety risks and health risks to all citizens due to the following:</p> <p>a) low fuel efficiency, b) higher emissions of GHGs and other pollutants (CO, HC, PM, and NOx) c) increase in noise level d) water and soil pollution as a result of possible oil leakages</p>	<p>Local/within the Municipality of Tetovo</p> <p>Long term/ major</p>	<p>Regular maintenance and repair of the new vehicles, machines and trucks and delivery of the spare parts on time by the professional service company</p> <ul style="list-style-type: none"> - Implementation of the Occupational Health & Safety measures for prevention of COVID -19 for the PCE workers/ municipal staff and local population - Signing a contract with the service company for regular maintenance, replacement of spare parts, preventive lubricant oil changes, checks on electronic and hydraulic systems, etc. - Forbidden replacement of motor and hydraulic oil at the parking site to avoid the oil and pollution of waters and soil - Perform regular annual approval test during the annual registration of the vehicle - The PCE "Tetovo" - should prepare the fuel consumption and CO2 emissions data report on an annual base - The Report should contain at least the type and amount of diesel and gasoline fuel consumption, the CO2 emissions, the total length of the routes passed and working hours, the distance routes among the local settlements and all settlements covered with public hygiene activities - Signing of Agreements with approximately 3000 new households for delivery of their communal waste to the PCE "Tetova" and payment of a set monthly fee. These Agreements shall be signed within a one year period upon delivery of the new waste collection vehicles to Tetova Municipality by the supplier. 	<ul style="list-style-type: none"> o Contractor –Bidder o Director of the PCE "Tetovo" o Municipal staff
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B. ENVIRONMENTAL MONITORING PLAN

What Parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored (frequency of measurement)?	Why is the parameter to be monitored?	Responsibility	
					Delivery and put into operation of the vehicles	Operation of the vehicles
Project activity: Procurement of special municipal vehicles and containers for the needs of PCE						
The environmental and safety protection measures applied before put the vehicles into operation Prevention measures for COVID-19 are in place	On the parking site of the PCE "Tetovo" Availability of OH&S Plan including measures for COVID-19 prevention	Check the fuel quantity, lubrication oil quantity and breaking and steering system at the spot Test running successfully done Visual check of the implementation of prescribed COVID-19 prevention measures	Immediately after arriving of the vehicle in Tetovo	To prevent health and safety risks – mechanical broken and injuries	Director of the PCE "Tetovo"	
EURO 5 technical specifications Noise level specification of the vehicles Lights, electronic and hydraulic system, braking and anti-blocking system and tires	At the homologation site (Homologation attest) The approval test site at the authorized body for annual registration (Registration card of the vehicles)	Review the technical specifications of the vehicles Mechanical and electronic checks	At the beginning of the running phase Before put into operation (running)	To minimize the adverse environmental and health impacts	Supplier Director of the PCE "Tetovo"	
Standard technical operational parameters of this kind of vehicle (protective steering, brakes, fuel consumption)	Pre-registration inspection at the authorized body for annual registration	Monitoring of the technical specifications Approval test Report showing that the vehicles are in compliance with safety requirements, environmental requirements related to noise, exhaust emissions and fitted devices	Annually	To ensure safety running of the vehicles and minimization of the environmental and health impacts		Director of the PCE "Tetovo" with the technical team
Announcement of the frequency and start-up of vehicle's running and collection	Through the public announcement via social media and announcement table in the municipality building o Tetovo	Visual/audio check	Before start-up of running the vehicle's	To increase the public awareness about the new waste management practice and waste collection frequency		Director of the PCE "Tetovo" with technical team Municipal appointee
Signed Agreements with the	Administration of PCE "Tetova	Visual check of the	Before start-up of running	To introduce the regular waste		Director of the

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What Parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored (frequency of measurement)?	Why is the parameter to be monitored?	Responsibility	
					Delivery and put into operation of the vehicles	Operation of the vehicles
new 3000 household users Vesala, Germa, Lisec, Bozovce, Gajre, Vejce and Brodec.		documentation	the vehicle	management practice and waste collection frequency in the new settlements		PCE with technical team Municipal appointee
Project activity: Running of the vehicles						
Skill of driver/s on modern driving techniques and some improved performances of the new vehicle	At the Tetovo	Training records kept Review of the training records	Before official startup of running	To improve the driving techniques and to be familiar with vehicles characteristics and compression system		Director of the PCE "Tetovo" with technical team Municipal appointee
Good maintenance practice and repair performed by professional staff	At the service company	Review of reports from the service company	Periodically (six months min.)	To ensure minimization of the environmental and occupational safety risks through high fuel efficiency and decrease of emissions of GHGs and other pollutants (CO, HC, PM and NOx)		Director of the PCE "Tetovo" with technical team Municipal appointee
Trend of fuel consumption, annual amount of cleaned canals and roads	At PCE "Tetovo" site	Annual Report of the CSE	On annual basis reporting in front of the Management board and Municipality Council	To monitor the regular maintenance and to calculate the carbon footprint of the communal enterprise		Director of the PCE "Tetovo" with technical team Municipal appointee
Fulfilled Annual Report for CO2 emissions, containing milage and working hours data, as well as CO2 calculations	Local self-government administration	Review of documentation – Working hours evidence Lists	On annual basis reporting in front of the Management board and Municipality Council	To improve public cleanliness in accordance with national requirements		Director of the PCE "Tetovo" with technical team Municipal appointee

4. TECHNICAL SOLUTIONS

The project forecast procurement of communal vehicles and 154 containers for the needs of the local self-government and the Public Communal Enterprise –Tetovo for fulfilling the competencies assigned in accordance with the Law of Local Self-Government. The vehicle and the equipment will be procured by the Municipality and will be handed over for permanent use and maintenance to PCE Tetovo, Tetovo.

Additionally, the realization of the project will enable expansion of the scope of work of PCE in the settlements, such as in the villages of Gajre, Lisec, Brodec, Vesala, Bozofce, Lavce, Selce and Vejce.

- Technical solutions for vehicles

SMALL TRUCK WITH UPGRADE AND GARBAGE COLLECTION MACHINERY		
Quantity for purchase of a vehicle:		1
Vehicle features	Measure	Minimum criteria:
Wheelbase	mm	2700
Vehicle load capacity (front / rear axle)	kg	1700/2100
Workload	cm3	1890
Engine Cylinder Number	unit	4
Engine power	kw	80
Fuel	Diesel	
Co2 emissions	min. Euro 5	
Gearbox type	Manual	
Security system	ABS, ASR, ESC	
Equipment standard	Air conditioner	
	Rear parking sensors	
	Adjusted steering wheel to height	
	Electricity on windows	
	Electronic tachograph	
	Daytime running lights	
Upgrade equipment	Garbage storage upgrade	
	Hydraulic pressure plate	
	Monitoring system with minimum one rear camera	

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	Rotating light
	Capacity (m3) - min. 3 m3
	Waste capacity - min. 290 kg
	Device and mechanism for lifting on containers of min 100 l

LARGE TRUCK WITH UPGRADE AND GARBAGE COLLECTION MACHINERY		
Quantity for purchase of a vehicle:		2
Vehicle features	Measure	Minimum criteria:
Wheelbase	mm	3200
Gross payload	kg	7000
Workload	cm3	2600
Engine Cylinder Number	unit	4
Engine power	kw	100
Fuel	Diesel	
Co2 emissions	min. Euro 5	
Gearbox type	Manual	
Security system	ABS, ASR, ESC	
Number of seats in the cabin	min. 3 seats in the cabin	
Equipment standard	Air conditioner	
	Rear parking sensors	
	Adjusted steering wheel to height	
	Electricity on windows	
	Electronic tachograph	
	Daytime running lights	
Upgrade equipment	Garbage storage upgrade	
	Hydraulic pressure plate for loading and unloading of waste	
	Monitoring system with minimum one rear camera	
	2 Rotating lights	
	Capacity (m3) - min. 4 m3	

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	1 reflector mounted in the upgrade
	Waste capacity - min. 600 kg
	Two rear stairs for the crew according to European norms
	Device and mechanism for lifting containers of min. 100 l for baskets and min. 800l for containers

LARGE TRUCK WITH UPGRADE AND GARBAGE COLLECTION MACHINERY		
Quantity for purchase of a vehicle:		1
Vehicle features	Measure	Minimum criteria:
Wheelbase	mm	3200
Vehicle load capacity (front / rear axle)	kg	3500/7000
Workload	cm3	4500
Engine power	kw	140
Fuel	Diesel	
Co2 emissions	min. Euro 5	
Gearbox type	Manual	
Security system	ABS, ASR, ESC	
Number of seats in the cabin	min. 3 seats in the cabin	
Equipment standard	Air conditioner	
	Rear parking sensors	
	Adjusted steering wheel to height	
	Electricity on windows	
	Driver's seat with manual adjustment	
	Electronic tachograph	
	Daytime running lights	
Upgrade equipment	Garbage storage upgrade	
	Hydraulic pressure plate for loading and unloading of waste	
	Monitoring system with minimum one rear camera	
	2 Rotating lights	

Project for improving municipal services

	1 reflector mounted in the upgrade
	Capacity (m3) - min. 7 m3
	Waste capacity - min. 900 kg
	Two rear stairs for the crew according to European norms
	Device and mechanism for lifting containers of min. 100 l for baskets and min. 800l for containers

SPECIAL VEHICLE-ROAD CLEANING MACHINE (SWEEPER)		
Vehicle purchase quantity:		1
Vehicle features	Unit measure	Minimum criteria:
Length	mm	3200
Width	mm	900
Height	mm	1900
Weight GVW	kg	1500
Engine	Electric engine	
Power	20 kw	
Minimum working width	1200 mm	
Minimum container capacity	0,8 m3	
Minimum brushes	2	
Co2 emission:	0 emission	
Number of seats in the cabin	Minimum 1 seat in the cabin	
Additional equipment	Air conditioner	
	Height adjustable steering wheel	
	Daytime running lights	
	Upgrade garbage storage	
	Monitoring system with minimum one rear camera	
	1 rotating light	

Special road cleaning machine (on battery)

Vehicle purchase quantity:		1
Vehicle features	Unit measure	Minimum criteria:
Length	mm	1350
Width	mm	650
Height	mm	900
Engine	Electric engine	
Minimum container capacity	100 l	
Power	1700 w	
Co2 emission:	0 emission	
Front steering wheel	Yes	
Construction of the machine	Polyester plastic	
Additional equipment	1 rotating light	

- Technical specification for procurement of containers for waste

Minimum criteria	
Containers	
1.	Volume minimum 1,1 m3
2.	Decoded sheet metal thickness 1,5 mm, and in reinforced places at least 3 mm.
3.	Length: 1370 mm
4.	Height: min. 1200 mm
5.	Width: min.1030 mm
6.	Load capacity min.440 kg
7.	The container has two slopes on the sides for reliance when emptying the special vehicle
8.	Arched lid with at least one handle for opening the front, rubberized to prevent the spread of odor
9.	Built-in side plates on the side sheet cover, diameter of the limit minimum 15 mm
10.	Anti-corrosion protection: hot-dip galvanizing
11.	The container must have 4 wheels
12.	Wheel diameter minimum 200 mm
13.	Wheel angle 360 degrees
14.	Wheel load minimum 200 kg per wheel
15.	Nominal load 440 kg
16.	All metal parts within the wheel should be hot-dip galvanized
17.	Two front wheels should have a foot brake mechanism and two rear wheels without brakes
18.	Color unpainted (galvanized sheet metal)

6. FINANCIAL DATA

The Municipality of Tetovo has signed two sub-loan agreements with the Ministry of Finance within the MSIP2 Project. The first sub-loan agreement was signed on 20.08.2019, archive number 09-7962/1, for a project named “Construction of part of the boulevard Vidoe Smilevski Bato” in Tetovo. Following the bidding procedure, the contract was concluded in the amount of 53,681,888 MKD, thus the municipality acquired the right to use a Poverty social inclusion grant up to a maximum of 27% of the total contract amount or 14,494,110 MKD. The second sub-loan agreement was signed on 31.12.2019, archive number 09-12457/1, for a project named “Purchase of buses for public transportation of residents in the city of Tetovo”, with contract concluded in the amount of 44,267,700.00 MKD. Based on this agreement, the Municipality obtained the right to receive a poverty social inclusion grant in the amount of 11,952,279.00 MKD (27% of the total contract amount). Both sub-loan financed projects are in the advanced stage of implementation. The buses were purchased in mid-February 2021 while the deadline for completion of the road construction project is March 2021. **The total amount of both Poverty social inclusion grants is equal to 26,446,389.00 MKD (430,022 EUR).**

Under the guideline of the MSIP PMU the Municipality of Tetovo conducted an urban mapping of the poorest and marginalized settlements within the Municipality. The draft Urban Audit Report for the Municipality of Tetovo was presented on the MSIP Coordinative Committee meeting on February 10, 2020. After completion of the Urban Audit the Council of the Municipality of Tetovo adopted the Urban Audit Report with Decision, no.08-3436/3 dated 29.04.2020. Based on the available grant funds the Council with Decision no.08-3436/3 dated 29.04.2020 decided that purchasing of special municipal vehicles and waste containers for settlements: Vesalo, Gjermo, Bozovce, Llavce, Lisec, Gajre, Vejce and Brodec is priority for the Municipality and will be financed by the MSIP Poverty social inclusion grant.

The total estimated investment value of the project “Procurement of special municipal vehicles and containers for the needs of Public Communal Enterprise” is 29.091,028,00 MKD (EUR 473,025) including VAT. Since the project value exceeds the available grant funds, the Municipal Council brought a decision on 28.12.2020 (Decision Nr.08-10188/15) to co-finance the project with an amount of MKD 2,644,639.00 (EUR 43,002) in order to complete environmental necessities of the citizens living on the poorest and marginalized settlements. The grant funds represent 91% of the investment while the remaining 9% will be covered by municipal own funds.

Table 7. Total project costs and source of financing

Total project cost	Total (MKD)	Total (EUR)²	%
Procurement of special municipal vehicles and containers for the needs of Public Communal Enterprise	29.091,028,00	473,025	100
Source of financing			
Financing with MSIP 2 Grant	26,446,389.00	430,022	91%
Co-financing by the Municipality	2,644,639.00	43,002	9%
Total	29.091,028,00	473,025	100%

The project envisages procurement of communal machinery for maintaining the public hygiene, waste collecting, clean-up activities on streets, canals and purchasing of containers as well. According to the project “Procurement of special municipal vehicles and containers for the needs of Public Communal Enterprise”, it is planned that PCE will be supplied with: 1 small truck with upgrade and garbage collection machinery, 2 large truck with upgrade and garbage collection machinery, 1 large truck with upgrade and garbage collection machinery, 1 special vehicle-road cleaning machine (sweeper), 1 special road cleaning machine (on battery) and 154 new containers.

The breakdown of project costs, as well as total value of the investment are presented in the following table:

Table 5. Project cost

#	Item	Measure	Quantity	Net value	VAT	Total value
1	Small truck with upgrade and garbage collection machinery (3m ³)	unit	1	2,367,750.00	426,195.00	2,793,945.00
2	Large truck with upgrade and garbage collection machinery (4m ³)	unit	2	8,585,400.00	1,545,372.00	10,130,772.00
3	Large truck with upgrade and garbage collection machinery (7m ³)	unit	1	5,621,100.00	1,011,798.00	6,632,898.00
4	Special vehicle-road cleaning machine (sweeper)	unit	1	4,329,600.00	779,328.00	5,108,928.00

² Calculation is conducted on 61,5 MKD for 1 EUR

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5	Special road cleaning machine (on battery)	unit	1	1,568,250.00	282,285.00	1,850,535.00
6	Containers	unit	154	2,181,310.00	392,640.00	2,573,950.00
	Total Amount in MKD			24,653,410.00	4,437,618.00	29,091,028.00
	Amount in EUR²			400,869.00	72,156.00	473,025.00

Source: Project budget

It is assumed that all procedures for procurement and delivery of machinery and containers will be completed within this calendar year, which means that all the above investments will be made by the by the end of 2021.

By implementation of this project, the quality of life in the selected eight most deprived settlements (Vesalo, Gjermo, Bozovce, Llavce, Lisec, Gajre, Vejce and Brodec) will be significantly improved as a result of the regular and timely provided waste collection service by the communal enterprise. The above-mentioned settlements shall be served regularly 2 times a week with garbage collection and road maintenance as well. Currently, all 8 settlements are served only once per week during 10 months period within a calendar year. During the winter season, due to difficult weather conditions, the enterprise could not provide regular service because does not possess appropriate machinery to provide services during the frost period.

In relation to the road maintenance service, the Public enterprise at the beginning of each year announces a tender for outsourcing services for cleaning, regular and winter maintaining of the local streets and roads, due to the fact that it does not possess appropriate machinery to provide this communal service. So, the Municipality spends 50,000-60,000 euro's yearly from its own budget while the cleaning of roads is not realized with the desired quality and frequency. Furthermore, the road maintenance service is mainly provided in the bigger and more populated settlements while the poorest and less attractive settlements struggle for it.

Therefore, the Municipality intends, within this project, to procure the new communal machinery for road maintenance as well as machinery and equipment for waste collection which will be handed over to the Public Communal Enterprise "PCE - Tetovo" from Tetovo for further use and maintenance. The enterprise will maintain and operate with the machinery within its available technical, financial, and human capacities. The new machinery will not increase the operating costs of the Enterprise, on the contrary, it will reduce it.

On the other hand, the provision of good quality, timely and continuous communal services in the poor and marginalized settlements will improve the regularity of the payment of bills by the households, while the citizens that receive social assistance shall be treated according to the existing laws of the Republic of North Macedonia. In economic terms, implementation of this project will make the public enterprise sustainable and will improve the financial situation for a longer period.

8. CONCLUSIONS AND RECOMMENDATIONS

The project is derivative of the public debate and is considered to be a priority of the municipality and the majority of citizens. All interested parties were informed, motivated and agree that realization of this project is of huge public interest. The project supports less developed areas and does not discriminate any locations, ethnicities, gender groups, etc. because generally all the inhabitants are the beneficiaries. By this project, Public Communal Enterprise will improve services provided to the mountainous villages, which were underlined as poor and less developed. Additionally, it will contribute to the health of citizens by providing a clean living environment and will improve the general perception of the mountainous villages as a tourist destination. On the other hand, new vehicles won't pose a threat for human's lives or contribute to the spread of bad aroma and various infections among the PCE staff. Financial situation of the PCE and generally, municipality, shall improve.

The municipal and PCE staff have extensive experience in project management and procurement of these vehicles is within the capacity of this team. The project will definitely improve the efficiency of the PCE through optimization of spending: instead of growing outsourcing costs, the PCE will be able to provide the requested services with its own staff and mechanization. Manual work will be replaced with mechanical equipment. In addition to technical improvements and increased capacity for service delivery, waste collection will play a very important role in realizing the priority of this project. The municipality plans to procure these vehicles that are presently outsourced, with the only exception of a special vehicle for cleaning of streets – so far such services were provided manually.