Project appraisal document

GAZI BABA
Construction of elementary school Grigor Prlicev – municipality Gazi Baba

December 2012

Prepared by: Center for Economic Analyses: www.cea.org.mk

Center for Economic Analyses

Excerpts of the Project Appraisal Document approved by the World Bank on January 16, 2013 - market sensitive information is omitted

1. PROJECT DESCRIPTION

1.1. GENERAL INFORMATION ON GAZI BABA

1.1.1. Location map

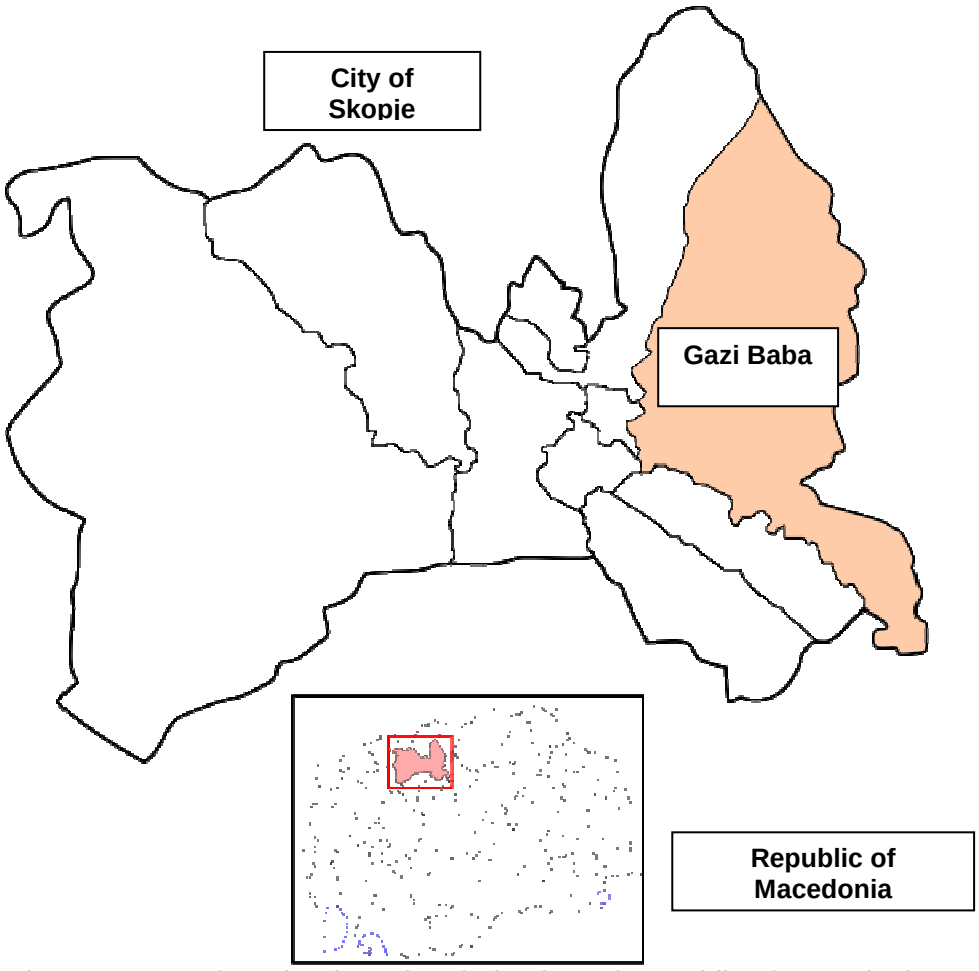


Figure 1. Map of Gazi Baba, City of Skopje and Republic of Macedonia

1.1.2. Information[1]

Municipality Gazi Baba-MGB has been established 3rd of November 1976. MGB is placed in the northern part of Republic of Macedonia and is part of the eastern side of the Skopje valley and the eastern part of the City of Skopje. From the total area 65% (central, south-western and southern part of municipality) is agriculture land with few hills and the rest of the area is the park-forest Gazi Baba (northern part of the municipality), locality Kamnik (central part of the municipality) and the mountainous part of the Skopska Crna Gora (eastern part of the municipality).

[1] Excerpts from the Feasibility study for PPP municipal house in Gazi Baba prepared by Center for economic analyses-CEA Skopje.

MGB is neighbouring other Skopje municipalities: north with Butel and Cair, west with Centar and Aerodrom, south with Ilinden and Petrovec and east with Aracinovo and Lipkovo. The territory's east-west perimeter is 10 km and the north-south perimeter is 15 km. MGB have a territory area of 92 km^2 and most of that area is rural with 65% agriculture land. The average ambient temperature is +12.2°C. The minimum absolute annual temperature is -22.2°C and the maximal absolute annual temperature is +40°C.

According the 2002 census the municipality has 72,617 inhabitants and it is one of the largest within the City of Skopje and within the Republic of Macedonia. Demographic structure of MGB by ethnicity is: Macedonians 73.5%, Albanians 17.3%, Serbs 2.9%, Roma 2.9%, Turks 0.8%, Vlachs 0.3%, Bosnians 1.0% and other 1.3%. Average population age is 35.4 years, up to 20 years are 27.4 % of total population of MGB, up to 40 years are 58.6% of total population of MGB, more than 60 years are 14.4% of total population of MGB.

Municipality Gazi Baba is industrial, educational and communicational center of the City of Skopje. MGB welcomes four faculties from the University of "St. Cyril and Methodius" and one private University – "FON", 11 elementary schools, one school for children with special needs, five public secondary schools and one private secondary school – "Yahya Kemal", one dormitory for secondary school pupils, one student dormitory, one private hospital, two polyclinics, number of primary health care organizations, pharmacy and bank branches and post office.

1.2. DEMOGRAPHIC AND ECONOMIC PROFILE

1.2.1. Demographic table

Table 1. Basic demographic and economic data about Gazi Baba

Demography			**Quality of life**	
Number of settlements	15		Infant mortality Gazi Baba 2011	4
Area in km2	92		Number of births Gazi Baba 2011	864
Population census 2002	72,617		Age dependency Gazi Baba 2011	0.41
Population density Gazi Baba	789		Infant mortality Macedonia 2011	172
Population density Macedonia	82		Number of births Macedonia 2011	22,972
Number of dwellings	22,815		Age dependency Macedonia 2011	0.46
Number of households	20,336		**Economy**	
Average number per household	3.57		GDP per capita in US $ Gazi Baba 2002	9,145
Infrastructure			Unemployment Gazi Baba 2002	32.6
Total length of roads (of which asphalt) in km for 2010	58 (35)		GDP PPP growth Gazi Baba 2002/1998	6.6
			GDP per capita in US $ Macedonia 2002	6,850
			Unemployment Macedonia 2002	38.1
			GDP PPP growth Macedonia 2002/1998	5.2

Source: State statistical office-SSO and expert estimation

What we can see from the table above is that the infant mortality in Gazi Baba (4.6 promille) is lower than the Macedonian average (7.5 promille) for 2011 and that the population density is almost 10 times higher than the average population density for Macedonia for 2002 when the last census was conducted. MGB have had higher GDP per capita compared to Macedonia in 2002 as well as lower unemployment rate in the same year. GDP growth in 2002/1998 is also higher in MGB than the proper GDP growth for Macedonia.

1.2.2. Gender and age repartition

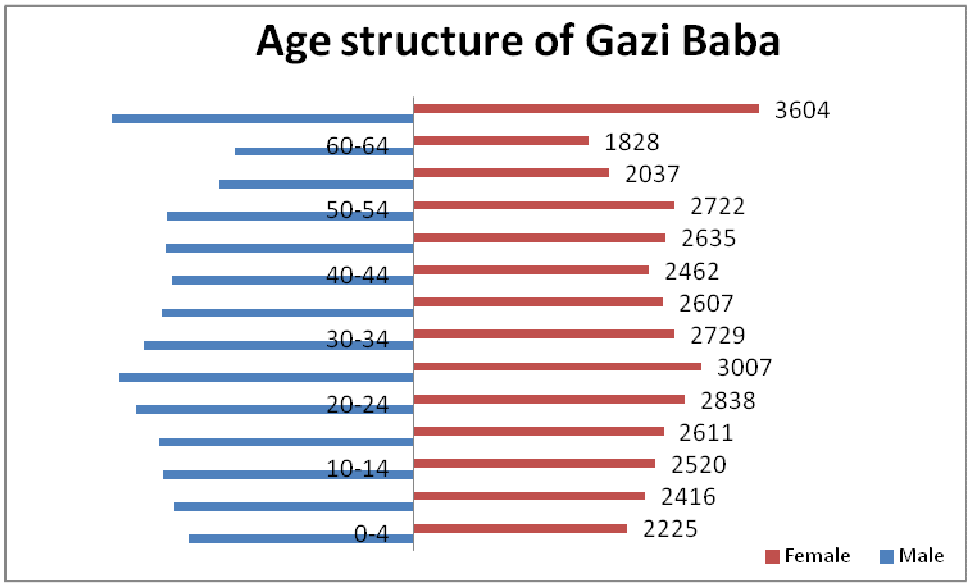


Figure 2. Age structure of Gazi Baba population; Source SSO census

From the figure we can conclude that 9.3% of the population in MGB is older than 65. This is less than 10.63% which is the average of Macedonia. On average the population in MGB is younger than the average for Macedonia. In the next table we can see the age distribution by gender in MGB.

Table 2. Age distribution by gender in MGB

	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-
Total	72,617	4,582	4,913	5,141	5,280	5,742	6,090	5,560	5,240	4,989	5,226	5,300	4,077	3,707	6,770
Male	36,376	2,357	2,497	2,621	2,669	2,904	3,083	2,831	2,633	2,527	2,591	2,578	2,040	1,879	3,166
Female	36,241	2,225	2,416	2,520	2,611	2,838	3,007	2,729	2,607	2,462	2,635	2,722	2,037	1,828	3,604

Source: SSO census

1.2.3. Urban-rural repartition

Table 3. Population structure and area depending on the urban/rural character

	Urban	Rural
Population	57%	43%
Area	35%	65%

Source: SSO census and MGB

1.2.4. Ethnic structure

Table 4. Ethnic structure in MGB

	Macedonians	Albanians	Turks	Roma	Vlachs	Serbs	Bosnians	Other
%	73.5	17.3	0.8	2.9	0.3	2.9	1.0	1.3

Source: http://www.gazibaba.gov.mk/profil-na-opstinata.html

1.2.5. Employment repartition

In MGB 57,260 or 78.9% from the population is at age 15-79[2]. In 2002 total unemployment in Macedonia was 38% while in MGB it as 32.6%.

Table 5. Unemployment by age and by gender in the City of Skopje and in Macedonia on 31st of August 2012

City of Skopje	Total	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	More than 60
Total	53,463	9.0	11.0	10.3	11.3	11.3	11.1	10.8	13.2	10.6	9.0
Female	24,017	10.0	13.2	11.7	12.1	11.3	10.9	10.2	13.5	5.6	10.0
Macedonia	**Total**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**50-54**	**55-59**	**More than 60**
Total	251,817	10.7	12.4	11.0	10.7	10.7	11.1	11.2	12.1	8.7	10.7
Female	108,709	11.5	14.2	12.2	11.6	11.0	11.2	10.7	11.7	4.3	11.5

Source: Employment agency of Macedonia:
http://www.avrm.gov.mk/WBStorage/Files/p2vozras082012.pdf

In accordance with the Employment agency's of Macedonia[3] data presented in the table above we can see that on the territory of the City of Skopje (no separate data for MGB available) compared to Macedonia there is less youth unemployment for age class 15-24 (12.2% in Macedonia and 10.4% in the City of Skopje). Also, we can see among age classes that the female unemployment, compared with the total unemployment, is higher in the City of Skopje except for the classes: 40-44; 45-49 and 55-59. In Macedonia, on the other side, female unemployment compared to the total unemployment is lower for the age higher than 45 years old.

In the next table the employment in MGB is illustrated by economic sectors from the census 2002 data.

Table 6. Employment by economic sectors

	Employed	Agriculture (as % from work force)	Industry (as % from total)	Services (as % from total)	Unknown (as % from total)
MGB	19,626	2%	37%	60%	1%

Source: SSO census 2002

[2] Working age population is between 15 and 79. See: http://www.stat.gov.mk/Publikacii/2.4.11.09.pdf.
[3] http://www.avrm.gov.mk/WBStorage/Files/p2vozras082012.pdf.

1.2.6. Economy

Most important sectors in MGB are metallurgy, iron and steel, pharmaceutical, food, and beverages. Today MGB is biggest industrial zone of the City of Skopje and Macedonia as well. One third of the GDP of Macedonia is generated in MGB[4].

On the territory of MGB there are 5,066 business legal entities registered in accordance with the Central registry of Macedonia[5]. MGB is the communication and transport gate of the City of Skopje. MGB is also, the communication center of the international corridors 8 and 10 which is excellent base for dynamic local and regional economic development. Through the MGB territory crosses significant length (10km) of the City of Skopje's ring road. In the vicinity of MGB (15 km) is also the airport "Alexander the Great".

From the next table we can see that in MGB there are 2,986 active business legal entities which are 4.1% of the total active business legal entities in Macedonia. It is obvious the domination of the micro businesses share of 63% in Macedonia and 57% in MGB. Micro and small business legal entities in Macedonia are 99% of the total active business legal entities or 97% of the total active business legal entities in MGB.

Table 7. Active business legal entities in MGB and Macedonia

2011	Total	Micro	Small	Medium	Large
Macedonia	73,118	46,322	25,984	607	205
MGB	2,986	1,693	1,216	58	19

Source: SSO
http://makstat.stat.gov.mk/pxweb2007bazi/Database/Статистика%20по%20области/Деловни%20субјекти/Активни%20деловни%20субјекти/Активни%20деловни%20субјекти.asp

In the next table we can see that most of the business legal entities in MGB and in Macedonia are in the sector of trade wholesale and retail and repairing of motor vehicles and motorbikes (each 38%). Next sector is the manufacturing (11% in Macedonia and 13% in MGB). Transport and warehousing share is 14% in MGB and 9% in Macedonia. Construction share is 6% each in MGB and in Macedonia.

Table 8. Structure of active business legal entities in MGB and Macedonia by sectors

	Macedonia	MGB
Total	100.0	100.0
Agriculture, forestry and fishery	4.1	1.6
Mining and quarrying	0.2	0.1
Manufacturing	11.2	12.7
Electricity, gas and steam supply	0.1	0.3
Water supply; sewage, waste management, environment rehabilitation	0.4	0.6
Construction	6.0	6.3
Wholesale, retail, motor vehicles and motorbikes repair	37.6	38.4

[4] See more: http://www.gazibaba.gov.mk/profil-na-opstinata.html as well as: http://www.gazibaba.gov.mk/profil-na-opstinata/gb-niz-brojki.html.
[5] For more info ask sector LED in MGB: contact@gazibaba.gov.mk.

Transport and warehousing	8.7	13.9
Accommodation and beverages services	5.9	3.9
ICT	1.9	2.3
Finance and insurance	0.6	0.4
Immovable property	0.6	1.0
Consulting, scientific and technical services	7.3	5.7
Administrative and support services	1.8	2.3
Public sector and defense; mandatory social insurance	0.3	0.1
Education	1.3	1.1
Health and social protection	4.4	2.7
Art, entertainment and recreation	1.7	1.5
Other services	5.8	5.2

Source: SSO
http://makstat.stat.gov.mk/pxweb2007bazi/Database/Статистика%20по%20области/Деловни%20субјекти/Активни%20деловни%20субјекти/Активни%20деловни%20субјекти.asp

1.2.7. Relevant extracts from the municipality's documents about the project

This project is identified in the LED Strategy of MGB for the period 2009-2012 from 2009[6]. The strategy identifies MGB vision as: „*MGB is part of the capital city of the Republic of Macedonia with quality urban services and efficient urban management, competitive economy and sustainable economic growth, high quality of life and healthy living environment which is attractive for businesses, housing and tourists*". The Strategy identifies the following strategic and operational goals:

Table 9. Strategic and operational goals of the LED Strategy of MGB

Strategic goal 1	**Strategic goal 2**	**Strategic goal 3**
To improve living conditions in MGB	To expand and diversify MGB economic base through increasing investment level	To create integrative local community
Operational goals	**Operational goals**	**Operational goals**
• **Improving physical infrastructure of elementary schools in MGB** • Improving physical infrastructure of kindergartens in MGB • Promotion of cultural identity and performance of MGB • Expanding and improving school sport base and recreational	• Promotion of potentials of the local economy • Creation of conditions for business development and investment attraction	• Improving the local roads network to promote overall MGB development • Upgrading of water system and communal vehicles procurement • Development of physical infrastructure of sewage to achieve national standards by 2012. • Promotion of energy

[6] See more in: http://www.gazibaba.gov.mk/media/PDF/strategii/profil_na_ogb/strategija_za_ler_na_ogb.pdf.

sport • Providing spatial preconditions for the civil society sector		efficiency in all MGB activities • Development of eco and recreational parks and physical reconstruction of riverbed

Source: MGB

This project is about replacing the old school and replacing it with/construction of the elementary school Grigor Prlicev and belongs to the program education with **operational goal to improve physical infrastructure of elementary schools in MGB.** The strategic goal of the project in accordance with the LED Strategy is to improve living conditions in MGB.

The MGB Council on its 49th council meeting from 28th of September 2012 adopted a plan to amend the plan of development programs to build the new elementary school Grigor Prlicev to replace the old elementary school-building Grigor Prlicev.

O 31st of October 2012 at the 50th Session of the MGB's Council, with 20 votes yes and not one against the Council **adopted the Decision No. 07-3219/17 for MGB to take a loan and to realize this project.**

1.3. PROJECT DESCRIPTION

1.3.1. General project description

This project is about replacing the old elementary school Grigor Prlicev and construction of a new elementary school Grigor Prlicev. The new school is planned to be built on a plot where the old school is. Elementary school Grigor Prlicev is educational institution under competency of MGB. Competency of the City of Skopje is the secondary schools. Construction of the new school is in accordance with the excerpt from the Urban plan No. 1140/2011, Decision No: 07-3980/11 from 26th of October 2011, detailed urban plan for community of "Zelezara" and construction purpose: "Б1-elementary school"[7].

In accordance with the norms and the regulations the space is planned for elementary education with plot No. 6.28 with construction surface of 14,096m^2 and the building itself have surface of 1,500m^2 with basement, ground and one floor. The school's capacity is 400 pupils.

With the project, a care should be taken so that in the future it can be retrofitted or upgraded depending on the population growth in the community. Within the location it is also envisaged school yard with parking space, pedestrians path and green belt between the streets of „Gemidziska" and the street „818a", as well as activities for sport and recreation.

NOTES:
New elementary school will be constructed to replace the old school and this project is not about new educational organization. Because of that, the water demand and demand for

[7] See more the project task for the elementary school Grigor Prlicev, community of "Zelezara" in MGB.

electricity, heat and work force will not increase. On contrary, when talking about water, electricity and heat as well as when talking about operation and maintenance we are expecting significant savings from this project. This is because this project is actually about demolition of the old building and building a new building for the same educational organization. There will be no break in the education process because the existing school has three tracts; while one tract is demolished and the new building is constructed, the education will be carried on in the other two tracts.

1.3.2. Location of the project

The school is located in accordance with the detailed urban plan for the community "Zelezara", on the Б-locality, block 6 with cadastral plot КП 458/11459 КО Gazi Baba, in the southeastern part of the City of Skopje on the Gemidziska street No. 57. Location is pointing north-south and the building face is oriented toward the southern side. The traffic connection with the city is through the Gemidziska Street that is about 20m distance from the school yard.

Figure 3. Location of the elementary school Grigor Prlicev (source: Google earth)

1.3.3. Current situation

In the elementary school Grigor Prlicev there are 33 employees and 5 staff to maintain the building. The school works now only one shift. In accordance with the MGB data we can illustrate the number of pupils for the period 2002-2011 as in the next table.

Table 10. Number of pupils in elementary school Grigor Prlicev for the period 2002-2011

2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
359	335	361	354	338	333	354	354	337	339

Source: MGB

The school now is placed on surface of 3,200 m^2 and with a volume of 10,812 m^3 [8] built in 1964 as a temporary construction with a donation from the French government. In time, the construction receives title of permanent construction. In the school there are 30 classrooms,

[8] See more in the energy monitoring report with technical number No. 14EK12, prepared by MACEF in March 2012.

administrative offices, toilets and gymnasium. The heating system is central and is connected to the supply from the branch of the electricity generation company ELEM-Energetika. Part of the heating system is out of order because of broken valves or because of presence of air in the system[9]. The school requires heating even in the weekends and non-working days in order to keep the heat within the school and because the thermal transmittance through old windows is high. The windows are old with wooden frame and single window glass (see figure below). The side walls are with hard material while the other walls are of light material. The roof is wooden covered with asbestos cement sheets. School works in one shift and fulltime teaching and the working hours are from 6:30h to 17:30h.

Figure 4. Elementary school Grigor Prlicev; current situation

In the current situation the elementary school Grigor Prlicev spends 576,204 kWh per annum heat energy and 33,606 kWh per annum electricity which is 190.6 kWh/m^2 of specific consumption per annum (see technical number 14EK12 prepared by MACEF).

In accordance with the energy monitoring report with technical number 14EK12 prepared by MACEF in March 2012 it is assessed that the energy saving is possible in a scale of 31%. If the recommended measures, as per the report, are implemented possible CO_2 emission savings can go 46.69 tCO_2 per annum. Therefore, even though marginally, this project contributes to achieve the goals of the Kyoto protocol that Macedonia ratified it 18th of November 2004 and it is on power since 16th of February 2005. Namely, in the article 2 of the protocol it is emphasized enhancement of the energy efficiency in the relevant sectors of the national economy, something which this project for the new building of the elementary school in MGB also have as a goal.

EU Directive on energy end-use efficiency and energy services in EU is adopted to stimulate energy efficiency. With this directive beneficial investments in energy efficiency will be stimulated and supported as well as in the public lightning. The articles 5, 6 and 7 from the directive are encouraging the public sector to allocate their proper budgets with improving in energy efficiency. In the annex 3 of this directive (in the list with examples of activities) energy efficiency in schools are mentioned explicitly[10]. In that way, MGB with this project is also achieving EU directive's goals within its territory as well as within Macedonia.

[9] Ibid.
[10] In the annex 5 of the directive there is also an indicative list with a benchmarking system for energy conversion in public institutions: schools/public administration, hospitals, swimming pools, public lightning.

1.3.4. Goals of the project

The project has the following goals[11]:

- To improve physical infrastructure in the elementary schools in MGB
- To integrate the local community
- To follow the principles for environment protection
- To improve the quality of life of citizens in MGB

1.4. EDUCATION IN GAZI BABA AND NEEDS

In this document for the project appraisal of the education facility there are also some other project related requirements that should be answered and addressed:

- Assessment of the existing school infrastructure and system in place
- Assessment of local and regional needs for primary education
- Population and demographic growth by area and growth projections
- Assessment of alternatives
- Assessment of other funding sources
- Detailed cost calculations

Further in the text we will address these requirements.

1.4.1. Assessment of the existing school infrastructure and system in place

In accordance with the law on local self government in Macedonia (Official Gazette 05/02) elementary and secondary education is a competency of the local government. Additionally, with the law on the City of Skopje (Official Gazette 55/04) elementary education is competency of the municipalities within the territory of the capital City of Skopje and the secondary education is competency of the City of Skopje. Financing the competencies is regulated with the law on financing the local self government (Official Gazette 61/04).

In MGB there are 11 elementary schools[12] and on the territory of the City of Skopje there are 21 secondary schools[13] (five of which are on the territory of the MGB plus one private secondary school).

Table 11. Number of elementary and secondary schools in accordance with the local government competency

	Elementary schools	Secondary schools
MGB	11	
City of Skopje		21
Macedonia	990	114

Source: SSO, MGB and City of Skopje

[11] In accordance with the LED Strategy
[12] See: http://www.gazibaba.gov.mk/obrazovanie.html.
[13] See: http://www.skopje.gov.mk/DesktopDefault.aspx?tabindex=0&tabid=32.

In the next table we can see the elementary schools within the territory of MGB with number of pupils, number of shifts and year of construction of the school.

Table 12. Elementary schools within the territory of MGB – basic characteristics

School	Settlement	No. of pupils	No. of teachers	No. of classes	No. of shifts	Pupils/ class	Pupils/ teacher	Year of construction
Dane Krapchev	Madzari 2	915	51	37	2	25	18	1978
Njegosh	Colony-Idrizovo	611	35	27	1.5	23	17	1952/53 and new tract in 1973
Krum Toshev	Trubarevo	317	25	18	2	18	13	1959 as regional 1986 stand alone
25 May	Chento	1448	85	62	2	23	17	1964
Naum Naumovski Borche	Madzari	607	36	25	2	24	17	1961
Krste Misirkov	Madzari 2	784	47	34	2	23	17	1963
Vera Jocik	Hipodrom	519	40	18	1	29	13	1976
Cyril and Methodius	Stajkovci	506	40	18	2	28	13	1985
Naum Ohridski	Bulachani	297	26	8	2	37	11	1963
Grigor Prlicev	Zelezara	304	23	16	1	19	13	1963
Stiv Naumov	Avtokomanda	901	56	33	1.5	27	16	1948,1958 and 1964
Total		**7209**	**464**	**296**		**24**	**16**	

Source: MGB

This project refers to the elementary school Grigor Prlicev located in the Zelezara community with 6,500 inhabitants according MGB. The age structure of the population in Zelezara in the class from 5-15 years of age (that is proper age for elementary education) is 304 or 4.7% of the total Zelezara population. According to MGB information about 15% of the pupils are going in other elementary schools. With the demolishing of the old building of elementary school Grigor Prlicev and building of the new one, it is highly expected that all children in the proper age from Zelezara will be enrolled to the new school.

MGB as a part of the City of Skopje with five universities on its territory (one state and one private), the 49 faculties and 9 research institutes makes MGB a unique science and research part of the City of Skopje.

1.4.2. Assessment of local and regional needs for primary education

It is proper to illustrate for this project the school age structure of MGB population and to compare it with the same school age structure in the City of Skopje and Macedonia. This is illustrated in the next table.

Table 13. School and pre-school age structure in MGB, City of Skopje and Macedonia for 2002[14]

Category	Percent of total population-MGB	Percent of total population –City of Skopje	Percent of total population - Macedonia
Kindergartens (0-4)	6.3	5.9	6.1
Elementary (5-14)	13.8	13.6	15.0
Secondary (15-19)	7.3	7.5	8.2
Total (0-19)	27.4	27.0	29.3

Source: SSO-census

From the table we can see that in MGB the pre-school population percent is higher than the Macedonian average. Therefore, we can expect that school and pre-school capacity demand in MGB would be higher than the average Macedonian demand.

Compared with the City of Skopje, MGB have potential for higher demand as well than the City of Skopje. On the other side, the potential for secondary school demand is higher within the territory of the City of Skopje than within the MGB, which is very convenient given that the City of Skopje have competency to provide service for secondary schooling and the MGB have the competency to provide child care in kindergartens and elementary schooling competency just as the law on local self government prescribes.

1.4.3. Population and demographic growth by area and growth projections

Current situation

First, we will illustrate the historical data about the number of pupils and number of teachers in the elementary and secondary schools in MGB and Macedonia. Then we will illustrate data about demographic dynamics of population and will make some assumptions that are relevant for the future period.

In the next tables we can see the number of pupils in the elementary and secondary schools in MGB and Macedonia for the period 2001-2012.

Table 14. Number of pupils in the elementary schools in MGB and Macedonia for the period 2001-2012

School year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12
Macedonia	249,375	244,740	237,581	231,868	227,254	235,691	231,497	222,359	216,180	210,381	204,439	198,856
MGB	7,719	7,934	7,581	7,498	7,398	7,882	7,904	7,823	7,745	7,580	7,443	7,300

Source: SSO
http://makstat.stat.gov.mk/pxweb2007bazi/Database/Статистика%20по%20области/Образование%20и%20наука/Основно%20образование/Основно%20образование.asp

[14] The age structure is in accordance with the available data from the census. Note that in Macedonia the mandatory elementary school starts with for children that are 6 years old.

Table 15. Number of pupils in the secondary schools in MGB and Macedonia for the period 2001-2012

School year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12
Macedonia	93,161	92,554	95,352	95,842	95,268	95,867	95,366	94,545	93,843	95,343	94,155	93,064
MGB	5,074	4,876	4,613	4,636	4,362	4,191	3,818	3,500	3,277	3,292	3,239	3,126

Source: SSO
http://makstat.stat.gov.mk/pxweb2007bazi/Database/Статистика%20по%20области/Образование%20и%20наука/Основно%20образование/Основно%20образование.asp

What we can conclude is that the number of pupils in elementary schools in Macedonia and MGB is declining for the period 2001-2012. The growth of pupils in the secondary schools in 2008/09 is because of the policy change with the introduction by the government of the mandatory secondary education. We can also note that number of pupils in elementary schools in MGB increased in 2006.

Number of pupils in the municipality is declining (despite growing population), which is a country trend of lower number of children in the families. This issue is addressed in the government programs on increasing the fertility and population growth. The rate of fall in the number of pupils in Gazi Baba is much lower than on country level.

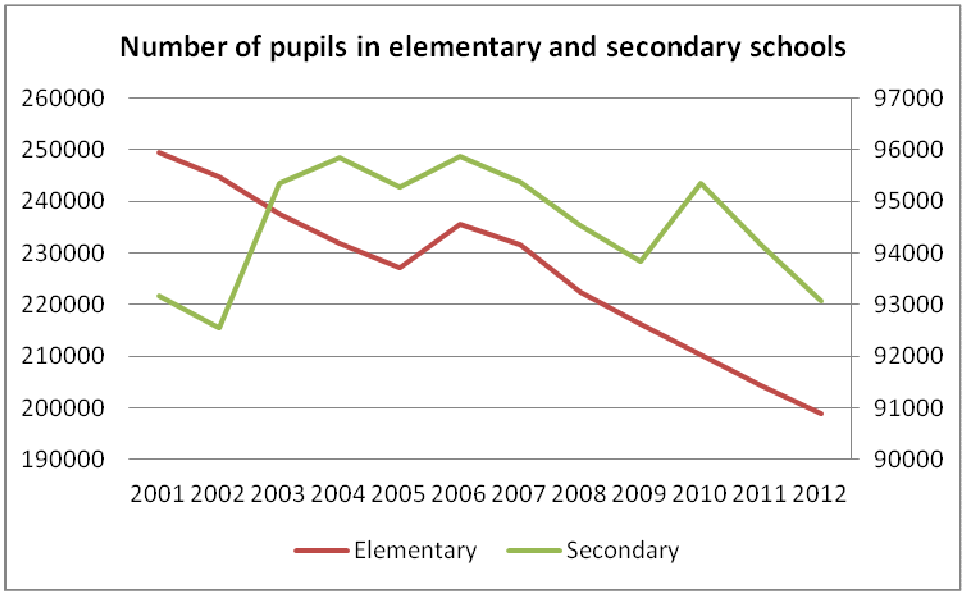


Figure 5. Number of pupils in elementary and secondary schools in Macedonia

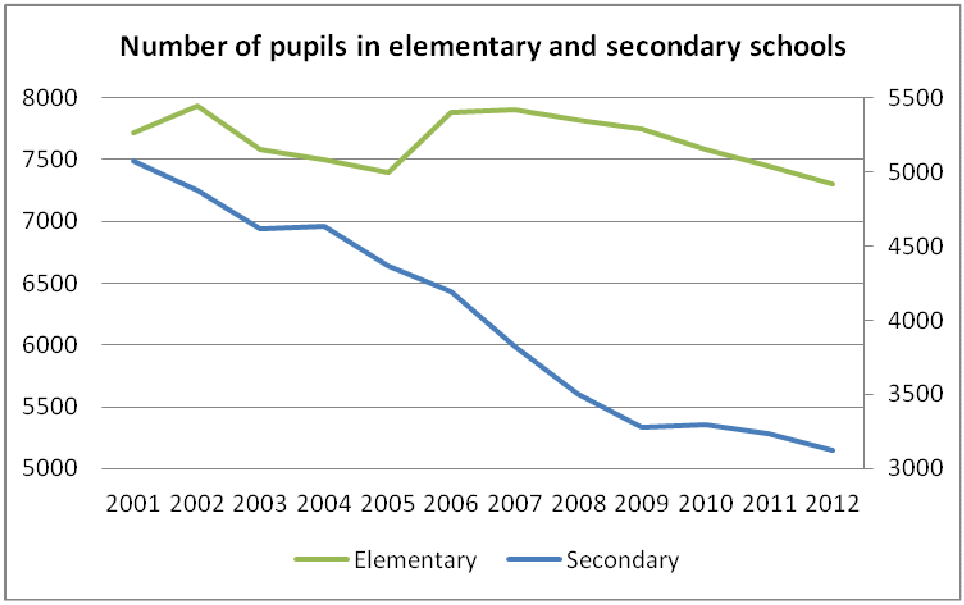


Figure 6. Number of pupils in elementary and secondary schools in MGB

The number of teachers in elementary schools in MGB and Macedonia is increasing according data in the next table.

Table 16. Teachers in elementary schools in MGB for the period 2001-2012

School year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12
Macedonia	13,315	13,356	13,590	13,733	13,972	14,817	15,098	15,330	15,930	16,144	16,703	17,129
MGB number of teachers	386	408	410	399	400	407	414	417	447	458	473	475
Female teachers in MGB as % from total number of teachers	77	77	76	78	79	78	80	80	80	80	80	80

Source: SSO
http://makstat.stat.gov.mk/pxweb2007bazi/Database/Статистика%20по%20области/Образование%20и%20наука/Основно%20образование/Основно%20образование.asp

Number of teachers in the secondary schools in Macedonia is increasing and in MGB is around constant level (note that this is for the four secondary schools on the MGB territory but the competency is on the City of Skopje).

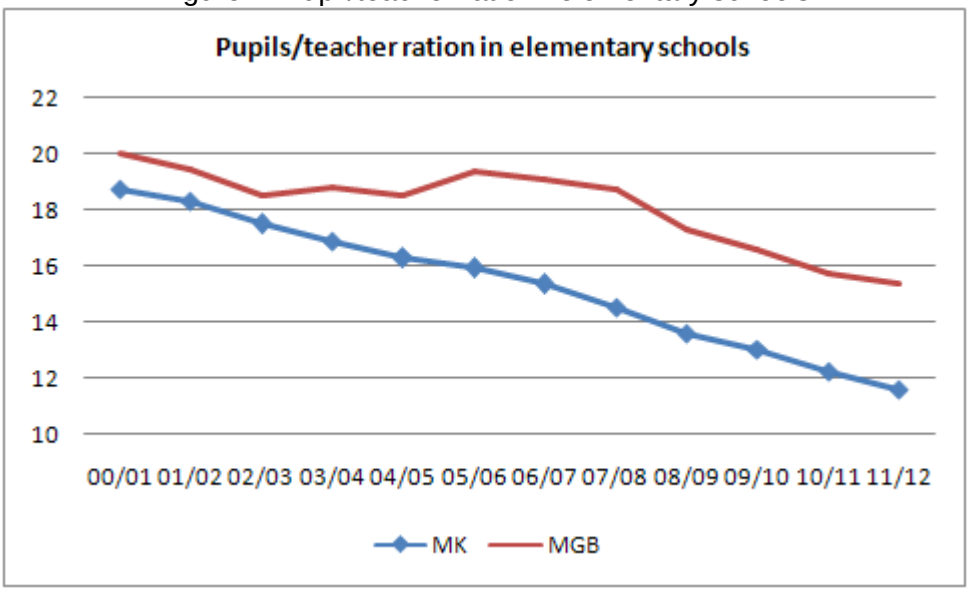
Table 17. Teachers in secondary schools in MGB for the period 2001-2012

School year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12
Macedonia	5,501	5,575	5,772	5,837	5,876	5,937	6,247	6,445	6,599	6,880	7,088	7,265
MGB number of teachers	316	309	303	292	307	305	303	306	291	336	303	307
Female teachers in MGB as % from total number of teachers	46	49	49	50	51	49	47	48	49	51	52	52

Source: SSO

The next figure presents comparison of pupils per teacher ratio between Macedonia and Gazi Baba municipality for last decade.

Figure 7. Pupil/teacher ratio in elementary schools



The number of pupils per teacher is falling in Macedonia and in the Gazi Baba municipality. This is the result of falling number of pupils and growing number of teachers. The fall in MGB is much lower than country average.

Number of teachers in the municipality and in Macedonia is growing, which is expected in transition period of transferring competences to the local level. The core reasons behind this growth are: introduction of new teaching subjects, increase in the number of teaching hours, introducing the whole day education and the daily stay education. As a result, the growth in teacher number is mainly caused by changes in the state law.

More precisely at MGB:

- In the last few years the new teaching subject religion/ethic is introduced – engaged 3 additional teachers teaching in Macedonian language and one teaching in Albanian language,
- For the teaching subject classic culture one teachers additional was engaged with half fund of teaching hours,
- For the teaching subject ICT the number of teachers increased to additional 7 teachers,
- For the physical education the fund of teaching hours increased from 2 to 3 hours weekly so the number of teachers increased for additional 3 teachers,
- For the English language the number of teaching hours increased from 2 to 3 hours. Previously the English language was teaching only in 5-8 grades and now it starts from the 1st grade. That is why the number of teachers increased for additional 6 teachers,
- Finally, because of the whole day education and the daily stay education in the elementary education at MGB the number of teachers increased for additional 5 teachers simply because the number of pupils because of this policy introduction increased.

These policy measures directly resulted in increased number of teachers by 26.

Projections for the next period

If we look at the population growth in absolute numbers for the period 2002-2006 we can see that it is between 1% and 2%. While in Macedonia and MGB it is around 1% in the City of Skopje it is around 2%. On the other side the population growth is mostly concentrated in the settlements that gravitate in the urban center's borders[15].

Table 18. Population estimation by age groups for MGB and Macedonia

2008	**0**	**1-2**	**3-4**	**5-6**	**7-9**	**10-14**	**15-19**	**Total**
Macedonia	22,590	44,545	45,690	46,660	74,542	139,813	157,897	2,046,898
MGB	816	1,662	1,771	1,822	2,803	4,862	5,153	75,260
2009	**0**	**1-2**	**3-4**	**5-6**	**7-9**	**10-14**	**15-19**	**Total**
Macedonia	23,061	44,896	44,714	46,179	73,289	134,704	155,316	2,050,671
MGB	847	1,637	1,718	1,789	2,833	4,735	5,137	75,490
2010	**0**	**1-2**	**3-4**	**5-6**	**7-9**	**10-14**	**15-19**	**Total**
Macedonia	23,778	45,583	44,505	45,659	71,497	130,214	152,879	2,055,004
MGB	869	1,667	1,657	1,774	2,795	4,664	5,094	75,701
2011	**0**	**1-2**	**3-4**	**5-6**	**7-9**	**10-14**	**15-19**	**Total**
Macedonia	23,369	46,766	44,859	44,704	69,703	126,947	149,167	2,058,539
MGB	867	1,711	1,637	1,716	2,717	4,669	5,022	75,893

Source: SSO
http://makstat.stat.gov.mk/pxweb2007bazi/Database/Статистика%20по%20области/Население/Процени%20на%20население/Процени%20на%20население.asp

From the table we can see that the population in MGB and Macedonia is growing. But the share of the pre-school and school age group within the total number of population is decreasing year by years. However, the share of small children up to 2 years old is growing (Table 19), which means that demographic trends confirm future growing demand for primary education.

Table 19. Share of the pre-school and school age group within the total number of estimated population for MGB and Macedonia

	SHARE OF AGE GROUPS IN TOTAL POPULATION (%)			
	0-2	**0-7**	**7-14**	**15-19**
	MACEDONIA			
2008	3.3	7.79	10.47	7.71
2009	3.3	7.75	10.14	7.57
2010	3.4	7.76	9.82	7.44
2011	3.4	7.76	9.55	7.25
	GAZI BABA			
2008	3.3	8.07	10.18	6.85
2009	3.3	7.94	10.03	6.80
2010	3.4	7.88	9.85	6.73
2011	3.4	7.81	9.73	6.62

[15] Excerpt from the LED Strategy

Source: SSO

- **The strategic approach of MGB to elementary schools' infrastructure**

Municipal strategic documents address issues of elementary education. Specifically, the LED Strategy for 2009-2012 identified 3 schools envisaged for construction/ reconstruction: Grigor Prlicev, Vera Jocik and Krste Misirkov. The strategy concludes:

- All 3 elementary schools are in a buildings of temporary character;
- Out of 3 schools identified in the Strategy the Grigor Prlicev School was in a worst physical conditions asking for immediate action. For more than 15 years the citizens of Zelezara settlements addressed the municipal administration with the request to provide necessary investments and give the priority to this project. At some point this conditions influenced some younger couples with school age children to leave the Zelezara settlement;
- The second school identified in the Strategy - Vera Jocik elementary school will be constructed as a new object because a fire destroyed one wing of the building. The government of China provided sponsorship and will construct the new school (start February 2013[16]);
- The third school identified in the Strategy - Krste Misirkov elementary school in 2012 was sponsored by the USAID's PEP project with a grant of 1.6 million denars (more than 30,000 $US) with a co-financing of the MGB of 300,000 denars (more than 6,000 $US). Thus, MGB decided that the USAID's PEP grant is enough to solve problems of this school and to postpone construction of brand new school. However, the strategic approach of MGB is to construct new school in 2017.

The construction of new Grigor Prlicev school is part of the education programs of the municipality and refers to the operational goal to improve physical infrastructure of elementary schools. The strategic goal of the project in accordance with the LED Strategy is to improve living conditions in MGB.

On 28 September 2012, the municipal Council amended the plan of development programs and included construction of new elementary school Grigor Prlicev. Then, on 31 October 2012 the Council adopted a decision on borrowing from MSIP funds for the project implementation.

[16] In 2011 Government of Macedonia decided to allocate 500,000 denars (more than 10,000 $US) for construction of new school building for Vera Jocik and additional 500,000 denars for reconstructing the heating pipelines in the 25 May school (Official Gazette 164/11 Program for amending the Program for construction and reconstruction of elementary schools in 2011).

1.4.4. Assessment of alternatives

Taking into account that the elementary school Grigor Prlicev has been built as temporary building and the heating bodies are out of order because of broken valves or because of presence of air in the system and taking into account that the school is heated during weekends and non-working days just to keep it warm because windows are in bad conditions, obsolete and depreciated[17] it is obvious that the existing school building will probably cost more in long run to operate and maintain than to build new school. However, we develop four alternatives in this document:

1. **Zero alternative -** this is "do nothing" solution to the existing situation. This alternative will just be used as a reference base line to the other alternatives. It is necessary to state that this is non-sustainable solution, as at some point the O&M expenditures will start to grow rapidly.
2. **Reconstruction of the school** - this alternative will follow the findings of the energy monitoring report with technical (No. 14ЕК12), prepared by MACEF in March 2012. The following urgent reconstruction needs were identified for the Grigor Prlicev elementary school: ceiling thermal isolation, outer walls thermal isolation and replacing old windows and doors with new ones. This reconstruction is envisaged to introduce cost savings through energy savings.
3. **Demolishing the existing and construction of new school –** this is a long run solution. The new school will be build at the same site where the existing school is. This alternative will provide a school built according to up to date standards and matching the requirements for elementary education in MGB.
4. **Transport of pupils to the other elementary schools in MGB and/or other municipalities –** this solution assumes closing the school and transport of pupils to other facilities. This alternative is not considered feasible or realistic due to the fact that none of other elementary school in the municipality has space to accept additional pupils. As it was presented above (Table 12) almost all schools work in 2 shifts. Hence, this solution would require complex logistic planning and operational costs for daily transportation of pupils, there will be opportunity time costs for pupils instead of studying to travel and these pupils will be disadvantaged compared to other pupils in MGB. Such solution would not be supported by the parents, as it was expressed in public hearing organized by the MGB administration on 12 October 2012. Therefore, this alternative will not be taken into consideration in further analysis.

Evaluation and comparison of alternatives is presented in detail in Chapter 5: financial analysis.

1.4.5. Assessment of other funding sources

For construction of the new school the following potential financing sources were identified:
(1) financing from the municipal budget,
(2) financing from the state budget,
(3) donor financing,
(4) commercial borrowing,
(5) concessionary borrowing.

[17] See more in the energy monitoring report with technical number No. 14ЕК12, prepared by MACEF in March 2012.

As presented above the municipality has 3 schools located in temporary objects and the solution applied refers to investment needs in 3 objects. The selected approach was as follows: (1) school Vera Jocik will be financed with donor funds (China government) and with the state budget, (2) school Krste Misirkov will be reconstructed with donor grants (USAID), (3) school Grigor Prlicev will be constructed with concessionary borrowing from MSIP funds. The municipal financial capacity does not allow considering construction of new school with own municipal funds. State budget financing is limited and the priority was given to the most destroyed school, where one wing of the building was destroyed by the fire. Donor financing is limited, but still the funds from China and USAID were used for other schools. As concerns commercial borrowing there are a few limitations. First, the municipality has not credit rating. Second, the market interest rates are relatively high (9.8% in 2009, 9.3% in 2010 and 7.8% in 2011[18]) and the municipalities have problems to provide collateral that could be approved by commercial banks. With these options the municipality considers the MSIP borrowing at concessionary terms very attractive and appropriate for financing this project.

1.4.6. Detailed cost calculations

The costs for this project will be illustrated in the section project costs in the financial analysis (chapter 5).

1.4.7. Conclusions

The main findings concerning the education system in the municipality are as follows:

- Technical condition of the Grigor Prlicev school is miserable,
- Pre-school population percent in the municipality is higher than the Macedonian average, which means that education demand is higher than on country level,
- Demographic forecasts indicate that population number in the municipality will grow. Presently, new residential buildings are under construction, thus population inflow could be expected. Even now the number of population in the municipality is growing,
- The share (and the number) of small children up to 2 years old in MGB is growing, which means that demographic trends confirm future growing demand for primary education,
- By municipal estimations about 15% of pupils from Zelezara settlement (6,500 inhabitants) where our school is located are going to other elementary schools. Once the new building is constructed those children will be back to our school,
- Number of pupils in the municipality is declining (despite growing population), which is a country trend of lower number of children in the families. The issue is addressed in the government programs on increasing the fertility and population growth. The rate of fall in the number of pupils in MGB is much lower than on country level,
- Number of teachers in the municipality is growing because new courses are introduced year by year, so the teachers growth is caused by changes in state law,
- The number of pupils per teacher is falling in Macedonia and in MGB. This is the result of falling number of pupils and growing number of teachers. The fall in MGB is much lower than country average,

[18] See: http://www.nbrm.mk/?ItemID=8942BE0290A72F40AE290F9C0ADCDBE0. These interest rates are for long-term loans to Nonfinancial Corporations (public and other).

- On the country level the optimization of number of schools is taking place. The number of elementary schools in Macedonia is decreasing from 1045 in 1996 to 990 in 2010 mainly due to closing schools in rural settlements, which loose the population. Optimization is done at the municipal level, as children from school being closed are moved to another school at the same municipality. Municipality Gazi Baba does not consider the option of closing of any elementary school,
- The school proposed for this sub-project is the only school in this settlement. There are no physical conditions in other schools to accept new pupils: education in other schools in taking place in 2 shifts (the exception is only Vera Jocik school, which was on fire last year and should be reconstructed too in the nearest future),
- The project is based on municipal strategic investment plans. Strategy on local economic development of 2009 indicated necessary investments in education. The MGB has 25 settlements and 11 primary schools. Out of those 11 schools 3 are wood barracks. The strategy assumed replacement of those 3 barracks with 3 new solid constructions. Financing has been provided from different sources (state budget, donors). Our sub-project assumes construction of one of those schools with concessional borrowing.
- The project meets the MSIP objective: decrease in expenditures.

2. SOCIAL IMPACT OF THE PROJECT

2.1. SOCIOLOGICAL STUDY

2.1.6. Methodology

The Sociological study follows the methodology concept of the World Bank that focuses on the five components:

- Social diversity and gender
- Institutions, rules and behavior
- Stakeholders
- Participation
- Social risk

2.1.7. Socio diversity and gender

Here we will present the main findings from the statistical information we illustrated above. From the demography we can see that:

- Population density is higher in MGB than population density in Macedonia
- MGB is complex municipality with more rural area but more urban population and the value added generation is higher in the urban part
- Infant mortality is lower in MGB than the Macedonian average infant mortality
- The age class share of population over 65 is 9.3% in the total population of MGB and is lower than the proper share in Macedonia (10.6%)
- The male and female share are almost equal in MGB
- From ethnic structure point of view Macedonians are dominating with 73.3% from the total population
- Unemployment is lower in MGB compared with the Macedonian unemployment rate
- The number of female teachers in the elementary education in MGB is 77% from the total number of teachers in the elementary education in 2001 and it is 80% in 2012
- The number of female teachers in the secondary education in MGB is 46% from the total number of teachers in the secondary education in 2001 and it is 52% in 2012
- The age dependency rate (population over 65 over population of 15-64) in MGB is 13% and in Macedonia it is 16%

Direct beneficiaries from this project are the citizens at school age. It is estimated that the project capacity is 400 pupils in two shifts. In that age class in 2011 it is estimated by the SSO that in MGB there are 7,386 children. That means that this project will have direct impact on 5.4% of the children in that proper age in MGB.

2.1.8. Institutions, rules and behavior

The sentiment and behavior about this project is reflected in the LED Strategy from 2009 when this project is clearly prioritized with a clear goal. The LED Strategy itself and the proper projects are visible for the MGB's population and the citizens are fully informed about it. On 12th of October MGB organized a public hearing about this project. On that public hearing No. 03-3203/1 all present gave support for this project to proceed and for the MGB to borrow in order to finance the project.

Strong political support is also, demonstrated in the MGB's Council when all councillors voted to amend the proper development plan to give priority to this project.

2.1.9. Stakeholders

Stakeholders comprise citizens of MGB, Mayor, MGB's Council and political parties within the Council. Detractors are not expected for this project more because this project is not about new educational facility but replacing old building with a new one. In that sense it is also not expected to increase or to make worse any existing inequalities among MGB's population.

2.1.10. Participation

MSIP will cover all the finances for this project and the MGB will payout the loan. This project doesn't cause any additional financial burden or claims to the MGB citizens.

2.1.11. Social risk

High socials risks for carrying out of this project cannot be perceived and is highly unlike. This project is about replacing old building with a new one that will improve the education environment for the pupils and the working conditions for the teachers and all together will improve the quality of life of MGB citizens. More, this project will provide high level of energy savings and will marginally contribute to the environment protection.

2.2. RESETTLEMENT ISSUES

This project is not subject to resettlement issues and/or population migration in MGB. Namely, with the demolition of the old one and building of the new building of the school there will be no significant pupil's migration from one school to another or from one municipality to another. Also, there will be no migration of existing pupils during building and demolition and construction works because while working on one tract of the school the other two tracts will be operational at any time for education and daily school tasks.

2.3. CONCLUSIONS ON THE PROJECTS POTENTIAL SUCCESS AND RECOMMENDATIONS

- This project is beneficial because it replaces the obsolete and depreciated assets of the old school with a new school
- This project introduces energy efficiency school

- This project will improve the performance of the educational competency of MGB for the children with the proper age in MGB
- This project is not subject to resettlement issues and/or population migration in MGB even in the construction stage because the existing school have three tracts and during the construction in one of the tracts, the education will go on in the other two tracts
- This project provides better working conditions for the teachers
- This project provides better quality of life for the MGB's citizens
- This project marginally protects the environment
- There is stakeholder's consensus within MGB about this project
- With this project the cohesion among citizens, administration, Mayor and Council of MGB is strong

3. ENVIRONMENTAL IMPACT OF THE PROJECT

One of the main strategic goals of the Municipality Gazi Baba defined within the Local Economic Development Strategy (2009-2012) is to improve living conditions including the improving physical infrastructure of elementary schools located within the municipality borders.

The project goal is to construct the new elementary school "Grigor Prlicev" replacing the existing old one in the settlement "Zelezara" in the Municipality Gazi Baba. The number of pupils is proposed to be 400 distributed in 1-9 class.

The location of the new school is envisaged to be at the same cadastre parcel where the old school (three prefabricated sheds for temporary use from 1964) is located. The planned construction surface of the new school is 14,096m^2, the building itself have surface of 1,500m^2 with basement, ground and one floor. The pedestrian walk area, access streets, parking space and green belt near the local street have been proposed as well. The drinking water supply, sewage, electrical and telephone and heat networks have been envisaged as well.

Currently, the old school has not functional central heating system (part of the heating system is out of order because of broken valves or because of presence of air in the system, high energy losses through old windows) causing high energy consumption and CO_2 emissions.

The wall panels of the prefabricated sheds contain asbestos-cement material that could be one of the most significant environmental adverse impacts during the demolish activities of the old school in case of non-observance of the measures prescribed in the Environmental Mitigation Plan. The removal of the asbestos-cement roof sheets needs implementation of the precautionary measures:

- Health and safety measures for the workers who will handle/remove the wall panels (personal protective equipment and personal hygiene);
- Proper packaging and labelling the removed wall panels containing asbestos waste which belongs to the group of hazardous waste (according the List of waste – Official Gazette of RM No. 100/05) with waste code 17 06 05 – construction material containing asbestos;
- Safety transport of the removed asbestos containing wall panels from the old primary school to the landfill "Drisla" which is authorized to accept and finally dispose the asbestos containing construction waste. The Public Communal Enterprise Utility "Landfill Drisla" has a License for acceptance and final disposal of the construction material containing asbestos waste issued by the Ministry of Environment and Physical Planning. The landfill will accept the roof sheets containing asbestos if it is proper packaged, labelled and transported according the Rulebook on the handling the asbestos waste and waste materials containing asbestos (Official Gazette of RM No. 89/06 from 11.8.2006).

Refer to the information gathered by the school officials, underground the III pavilion there is a heating oil tank/reservoir that was used when the heating oil was used for heating of the school. The proper handling of the left heating oil within the tank and boilers will be also important due to potential risk for pollution on the soil and underground waters.

During the decommissioning and construction phases the air emissions are expected and noise disturbance as a result of transportation activities and work of the construction machinery.

The demolition of the old prefabricated sheds will cause a great amount of waste that should be treated very seriously taking into account the waste hierarchy (primary selection at the spot, recycle of the useful materials and final disposal of the rest according the waste characteristics).The largest amount of waste is expected to be inert waste with no hazardous characteristics. The preparation of Waste Management Plan before the works start is essential for proper waste classification, primary selection, collection, transportation and finally disposal of all waste streams.

The safety measures for students are crucial due to the fact that the school will work and the pupils will go around the school yard passing near the demolition/ construction area. The Dynamic Plan for re-schedule of the occupied school rooms should be done in accordance of demolition/construction work progress.
During the operational phase the most important is to prepare Fire Protection Plan and Plan for regular and preventive maintenance of the school (sewer and water supply systems, heating devices, equipment) keeping also technical documentation for school.

In order to avoid, prevent or mitigate the potential occupational and community health and safety risks, potential environmental impacts on air quality, underground waters, noise disturbance, waste generation and management, the good demolition/construction practice implementing several mitigation measures is proposed within the following Environmental Mitigation Plan (Table A). The main responsibility lays on the Sub-contractor who need to take into account and applied on everyday basis all proposed preventive and mitigation measures. The Supervisor needs to perform the supervision on the practical implementation of the mitigation measures by the Sub-contractor.

The main inspection responsibility is given to the municipal staff (Environmental Inspector and Communal Inspector) that needs to monitor the implementation of the mitigation measures and proposed Monitoring Plan (Table B). The special attention should be placed on the proper removal and handling the asbestos containing wall panels and personal hygiene for the workers.

The municipal staff (Project Manager) also needs to coordinate the working plan and proposed measures with the school officials (Director, Housekeeper) and Sub-Contractor for smoothly project implementation and minimization of environmental, health and safety risks.

For this type of projects (construction of primary schools) the Investor is not obliged to prepare the EIA Report according the national legislation.

According the WB Environmental Assessment Operational Policy 4.0.1 the EIA Study was prepared identifying in more details the baseline data, potential impacts and sensitive receptors, mitigation measures and parameters need to be monitored, responsible

institutions and relevant national environmental legislation and WB, EU standards need to be followed by Sub-Contractor, Supervisor and Municipal staff.

A. ENVIRONMENTAL MITIGATION PLAN

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Demolition of the old school and construction of the new primary school "Grigor Prlicev"	***a) OH&S issues*** Possible adverse health impacts to the workers, facility users and general population in the community due to: - Location of school in the urban area – near street Gemidziska - Possible injury to people and school users due to ongoing works - Non - compliance with national health and safety at work procedures - Non - compliance with local community safety regulations	Local/ short term/certain to be happened /high significance	➢ Adequate warning tapes and information signs around the old school during the demolition activities and around the new construction need to be provided and maintained during the civil works ➢ For the workers - the legally prescribed health and safety measures should be applied, like: a) use of proper protective clothing and equipment by employees, especially masks against dust and small wooden parts and fibres, and safety harnesses for work at heights; b) Maintain a good level of personal hygiene; c) Health protection-fist aid kits and medical service on sites need to be provided during the works; ➢ The surrounding area (school yard) should be kept clean, without waste disposed there. The waste need to be collected and immediately removed from the yard as it could be a cause of injury. ➢ The old windows and doors should be temporary put on safe place which is designed to prevent access of unauthorized persons ➢ The demolition related activities should be conducted outside of normal school hours to the extent most feasible ➢ Separation of the work areas from demolition and occupied areas of the buildings as much as possible using physical barriers ➢ Limit the foot traffic between work areas and occupied areas of the buildings ➢ The project site should be lighted during the nights ➢ Following safety guidelines for the storage, transport, and distribution of hazardous materials to minimize the potential for misuse, spills, and accidental human exposure ➢ The eventually broken windows glass (in the class, corridors or	• Contractor – Bidder • Supervisor

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
			outside) should be clean immediately ➢ Regular maintenance of vehicles to minimize potentially serious accidents caused by equipment malfunction or premature failure. ➢ Using labeling and placarding (external signs on transport vehicles)	
			➢ The cleaning schedule of the buildings should be increased to address the extra dust and dirt created by the demolition work ➢ Information that the demolition is ongoing should be posted on the entrance doors of the other prefabricated sheds ➢ The work during the breaks between class lessons should be prohibited ➢ The Dynamic Plan for re-schedule of the occupied school rooms should be done in accordance of demolition/construction work progress ➢ If possible begin and end demolition activities during the summer months or while staff and kids are not in school	• Municipal staff (Communal Inspector/Environmental Inspector) • School officials
	b**) Waste management** Possible adverse environmental impact and health effects could occur due to inappropriate waste management with various waste streams	Local/ short term/certain to be happened with high significance	➢ Preparation of the Waste Management Plan for the expected waste streams during the decommissioning and construction phases of the project ➢ Identify the hazardous and non-hazardous waste and separate them at the demolition/construction site; ➢ The majority of waste (not in a high quantity) would be classified under the Waste Chapter 17 “Construction and demolition wastes” with the waste code 17 01 – Waste from concrete, bricks, 17 09 04 – Mixed waste from construction site including glass from old windows and manage in accordance with national waste legislation for inert waste (separation at the spot, collection and temporary storage, re-use if it is possible, transport to the final destination – Landfill Drisla). The proposed list of expected waste streams is attached in EIA	• Contractor – Bidder • Supervisor

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
			Study ➢ Very small quantities of glue, paint, packaging waste from paints and glue, aluminum profiles, screws and other construction material could be found after the finalization of the project and manage in accordance with national HW legislation (collection of hazardous materials, label as hazardous waste and give to the authorized company) ➢ The contract with the company for waste collection and transportation should be signed for collection and transport of waste including old windows and doors; ➢ The materials should be covered during the transportation to avoid waste dispersion; ➢ Burning of construction waste is prohibited;	
			➢ The old windows and doors should be stored temporary in separate room in the school or if it is not possible outside in the yard covered and labeled “not to open/uncover” until final disposal – collection and transportation by the JKP “Komunalna Higiena” and final transportation to Landfill Drisla	• School officials
	c) Water quality a) Possible environmental impact on the underground water could occur due to ground contamination from the spillage of materials such as vehicle fuel, motor oils, lubricants b) potential impact on the underground waters could occur from the improper dismantling of the equipment (boilers	Local/Short term/probable Low	➢ Transportation vehicles should be enclosed to avoid potential leakage; ➢ Possible hazardous waste (motor oils, vehicle fuels, lubricants) should be collected separately and authorized company should be sub-contracted to transport and finally dispose the hazardous waste ➢ Dismantling of the equipment should be done by a trained persons in order to avoid the potential effects of oil spills on soil, which would contaminate the underground water	Contractor – Bidder Supervisor

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
	and fuel reservoirs)			
	d) Noise a) The construction activities and traffic will cause noise and vibration due to the machinery and vehicles used for transport of construction materials, transport of workers, and transport of waste produce in decommissioning and constructive phase. The potentially affected will be students from the elementary school and nearby residents.	Local/Short term/Medium significance/ Certain to be happened	➢ The equipment should be fitted with appropriate noise devices that will reduce sound level ➢ The level of noise should not exceed more than 55 dB during the day and evening and 45 dB during the night ➢ The construction work should be not permitted during the nights, the operations on site shall be restricted to the hours 7.00 -19.00 ➢ The vehicles that are excessively noisy shall not be operated until corrective measures have been taken (the area is residential and students might attend classes during the construction phase in other pavilions (I and II))	Contractor – Bidder Supervisor Communal Inspector/Environmental Inspector
	e) Air quality The decommissioning and construction activities will initiate emissions from the mobile sources (vehicles and construction machinery) of CO2, NOx, PAH, SO2 and suspended particulates (PM10, PM 2.5). The airborne dust will be caused by dismantling of the equipment, excavation, vehicle	Local/Short term/Low significance/ Certain to be happened	➢ Usage of protective masks for the workers; ➢ Vehicles and construction machinery will be required to be properly maintained and to comply with relevant emission standards; ➢ Conduction of regular maintenance of the vehicles and construction machinery in order to reduce the leakages of motor oils, emissions and dispersion of pollution; ➢ Vehicle loads have to be covered to prevent emission of dust; ➢ Construction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days, especially due to students and residential areas neighborhood; ➢ Construction materials should be stored in appropriate covered places to minimize dust; ➢ Open burning of debris will not be permitted	Contractor – Bidder Supervisor Communal Inspector/Environmental

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
	movement and handling with materials, particularly around the construction site		➢ Restriction of the vehicle speed within the construction location	Inspector
Removal of the asbestos containing wall panels - ACM (removal of the existing asbestos sheets, temporary disposal until final transportation and disposal of the asbestos sheets at landfill "Drisla")	**a) OH&S issues** Possible adverse health impacts to the workers, facility users, children and general public as a result of emissions of asbestos fibers and dust during the removal of asbestos sheets , their transport and final disposal	Local/ short term/major at the location of primary school "Grigor Prlicev"	➢ Post signs indicating" ASBESTOS REMOVAL – NO ADMITTANCE" on the workplace in the school yard; ➢ Restrict access to the removal area to those people directly involved in the asbestos removal and site supervisor and municipal inspectors; ➢ The roof should be demolish during nonworking days to decrease the health risks to puples; ➢ Install barriers tape and warning signs in proximity to the school; ➢ For the workers - the personal protective equipment must be provided to all workers (full body covering including the head, water proof foot and hand protection and eye protection, dust mask with special HEPA filter ; ➢ Maintain a good level of personal hygiene (facility for washing hands and face should be made available and need to be used by each employee when leaving the work area, all protective clothing and equipment shall work in the work area, footwear is to retain in the work area until work is completed, ➢ Health protection-fist aid kits and medical service on sites need to be provided during the works; ➢ No smoking, drinking, eating or chewing is allowed inside the working area ; ➢ The surrounding area (school yard, halls and corridors) should be kept clean, without ACM waste disposed there. The ACM waste (roof sheets) need to be collected, packaged and immediately removed from the school yard	Contractor – Bidder Supervisor
			➢ If possible begin and end demolition activities during the summer months or while staff and students are not in school	School and kindergarten officials

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
	b**) ACM Waste management** Possible adverse environmental impact and health effects could occur due to inappropriate handling with waste containing asbestos	Local/ short term/major	➢ The personal in charge for removal of ACM roof sheets should be trained on proper safety dismantling of the roof sheets minimizing the health risks; ➢ The identification of the asbestos containing material – waste as a hazardous waste should be done ; ➢ The ACM waste need to be classified as a hazardous waste under the Waste Chapter 17 "Construction and demolition wastes" with the waste code 17 06 05* – Construction material containing asbestos in accordance with List of waste (Official Gazette of RM NO. 89/06); ➢ The demolition and remove of the ACM roof sheets should be done very quickly by trained personal; ➢ The ACM waste should be placed in polyethylene bags or other containers of at least 0.15 mm thickness. ➢ Printed asbestos warning labels must appear on the outer surface of the container/bag; ➢ The break of the ACM roof sheets into smaller pieces to fit into container/bag is forbidden ; ➢ The roof sheets should be handled very carefully and to be remove sheet by sheet in one piece , not to be broken because during the break the asbestos fibers and dust appear and pose a heath risks; ➢ It is better to avoid the temporary storage of roof sheets within the school yard, but if is necessary to be done for one/two days, the precautionary measures should applied – the ACM waste should be stored in a designated area with posted signage and/or caution tape to eliminate any damage; ➢ The temporary stored bags/containers containing asbestos waste need to be labeled "Asbestos waste" ➢ The contract with the company for Asbestos containing waste collection and transportation should be signed for collection and transport of asbestos waste/roof sheets; ➢ After the removal of the asbestos waste all surfaces in the school	Contractor – Bidder Supervisor •Municipal staff (Communal

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
			yard need to be dusted with a damp cloth or vacuumed with a HEPA filter; ➢ The workers who perform clean up should wear protective clothes as those who perform dismantling of the roof sheets; ➢ The contract with the Public Communal Enterprise Utility "Landfill Drisla" should be signed for final disposal of asbestos containing roof sheets ➢ On the landfill the asbestos containing waste should be disposed on the special area for disposal of that type of waste	Inspector/Environmental Inspector/ Mayor
Operational phase	No environmental risks are expected. Positive impact (more space for students, new sport facilities, energy efficiency and energy savings, reduction of GHGs emissions) is expected with construction of the new school replacing the old one. The Fire prevention Plan should be prepared addressing the identification of fire risks and ignition sources, as well as measures needed to limit fast fire and smoke development. The Plan for regular and preventive maintenance should be prepared to ensure proper operation of all infrastructure components of the school (sewer system, storm-water system, water supply system, heating devices, etc) and to ensure keep records on all technical documentation for the new school.			

B. 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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
Project stage: Start up of the demolition / construction activities								
The community safety regulation and protection measures applied	Around the project sites (primary school "Grigor Prlicev")	Visual checks	At the beginning of the reconstruction work (first day) Every working day during the project activities	To ensure minimization of health and safety risks – mechanical injuries to the members of the local community – especially from broken glass, wooden windows and doors and spikes. Special attention should be put during the removal of the asbestos containing roof sheets			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/ School officials	
The OH& S protection measures applied for the workers at the sites	On the project sites	Visual checks	Every working day during the project activities	To minimize the risks on occupational health and safety of the workers especially protective equipment and clothes for workers who will remove asbestos containing wall panels			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/ School officials	
Avoid and minimize safety and health risks for the students and school employees	In the building and in school yard	Visual checks	At the beginning the demolition work and continuously every working day	To avoid injuries of the students or school staff from falling pieces of windows, doors, broken glass and inhalation of the asbestos fibers or dust			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/	

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
							School officials	
Time for beginning and end of construction work and especially time for removal of existing wall panels and sewer pipes containing asbestos	On the project site	Visual checks and documents (time schedule) review	Every day	To avoid the environmental, health and safety risks			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/ School officials	
Waste Management Plan for waste management with all generated waste streams	On the project site	Review the document – Waste Management Plan	Before the demolition activities start	To ensure proper waste management of all waste streams (keeping records on waste amounts, type of waste, disposal location) to avoid potential risks to human health and environment			Contractor - Bidder /Supervisor/	
Existence of the broken glass, dust generated during the demolition Generation of different types of waste	In the school yard	Visual checks	For broken glass immediately/For dust generation every day after completition of work For inert waste on 2-3 days	To avoid and minimize injuries and dust inhalation			Contractor - Bidder /Supervisor/ Municipal staff (Communal and Environmental Inspector)/	

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
							School officials	
Level of dust – fine particulate matters	At the construction site	Visual monitoring and measurement devices	On the sunny, dry days only (once a week at the peak working hour)	To avoid and minimize the dust concentration into the air and to minimize the health risks for the students, workers and residents in the neighborhood.			Contractor – Bidder and authorized company for dust measurements	
Collection and transport as well storage of hazardous waste (if any occur).	On safety temporary storage	Review the transportation list and conditions at the storage facility	Before the transportation of the hazardous waste (if there is any)	To improve the waste management practice on municipality and national level.			Authorized Contractor for collection and transportation of hazardous waste (if there is any occur) subcontracted by the Contractor-Bidder Environmental inspector	
Noise level	On the site	Monitoring of the noise levels dB (A) with appropriate monitoring devices	On regularly basis during the work, in accordance with the national legislation	To monitor if the noise level is above/or below the acceptance noise level for that type of area - II exposure area for noise protection as residential district (55 dB (A) during the day time			Contractor – Bidder Authorized Company for performing noise levels measurements sub-contracted	

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
							by the Contractor – Bidder Environmental Inspector to collect the noise level measurements	
Exposure of loud noise from vehicle machine, mechanization and equipment	On the construction site	Review the noise level technical specifications of the used vehicle, mechanization and equipment for their usage outside	Before the beginning of the work (first day) for all vehicles and equipment	To protect the workers against exposure to loud noise taking into account the technical specifications of the equipment and time duration of the work outside			Contractor - Bidder Supervisor Environmental Inspector /Inspector for communal work	
Project stage: Demolition of roof sheets containing asbestos								
Primary selection of the waste streams at the project sites	On the project sites	Review the documentation – identification of the waste type	At the beginning of work	To separate hazardous (packaging waste from glue, paints, insulation material) from the non-hazardous waste as well as inert from biodegradable waste			Contractor – Bidder Supervisor/ Municipal staff (Communal and	

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
		according the List of waste					Environmental Inspector)	
Identification of the asbestos containing waste, proper packaging, labeling as a hazardous waste	On the project sites	Review the documentation – identification of the asbestos containing waste according the List of waste	At the beginning of work	The asbestos containing (ACM) waste is a hazardous waste with adverse environmental and health impacts			Contractor – Bidder Supervisor/ Municipal staff (Communal and Environmental Inspector)	
Temporary storage of the old windows and doors with proper label and coverage Temporary storage of the removed asbestos containing roof sheets proper packaged and labelled	At separate room/basement of the buildings or in the yard	Visual checks	On daily basis	To minimize injuries			Contractor – Bidder School officials	

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
Collection transportation and final disposal of the wooden windows and doors	On the sites and around the sites	Visual monitoring and reviewing the transportation	After the collection and transportation of the waste from old wooden windows and doors by the JKP "Komunalna Higiena"	Not to leave the waste on the spot to avoid the environmental and health impacts to the children			Contractor – Bidder who need to sign the contract with licensed company for collection, transportation and disposal of the waste from replacement	
The contract with the authorized transporter of the asbestos containing waste should be signed The contract with the Landfill Drisla should be signed as well for acceptance and final disposal of the waste	Before the removal/dismantle works start	Review the contracts	During the collection and transportation of the removed roof sheets Before the final disposal of removed sheets	To be sure that the asbestos containing waste will be treated according the national legislation, international conventions, good practice			Contractor – Bidder who needs to sign the contract with licensed company for acceptance and final disposal of the asbestos containing waste. The Landfill Drisla has a License for acceptance and final disposal of asbestos waste issued by the Ministry of Environment and	

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
							Physical Planning	
Fulfilled Annual Report for transportation and disposal of waste	Local self-government administration	Review of documentation – Identification waste List	After the accomplishment the task of collection, transportation, temporary disposal and final disposal of different type of waste including asbestos containing waste	To improve the waste management and hazardous waste management on local and national level			Mayor of Municipality Gazi Baba	
Project stage: Operational phase of the School								
Drinking water quality	Before the distribution through the new water supply system, the water sample should be analyzed by the Authorized laboratories – Public Health institute Skopje/Accredit	Laboratory equipment for physical-chemical and microbiological water quality analysis	Before the start with school operation	To ensure the distribution of high quality drinking water to the students minimizing the health risks of waterborne diseases				Municipal staff School officials Public Enterprise Vodovod i kanalizacija - Skopje

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?	Cost		Responsibility	
					Construction	Operations	Demolition of old school and construction the new one	Operations of the new school
	ed laboratories							
Fire Protection Plan	Before the start of school operation	Review of the Plan	At the beginning of school work	To ensure that all fire protection measures are implemented				Municipal staff (Communal and Environmental Inspector) School staff
Plan for regular and preventive maintenance of the school	Before the start of school operation	Review of the Plan	At the beginning of school work	To provide regular working conditions for teachers and learning conditions for students through proper preventive and regular maintenance of the school (adequate heating, drinking water supply, proper lighting, procurement of spare parts for equipment, etc)				Municipal staff (Communal and Environmental Inspector) School staff