PROJECT APPRAISAL DOCUMENT

Procurement of special vehicles for collection of communal waste

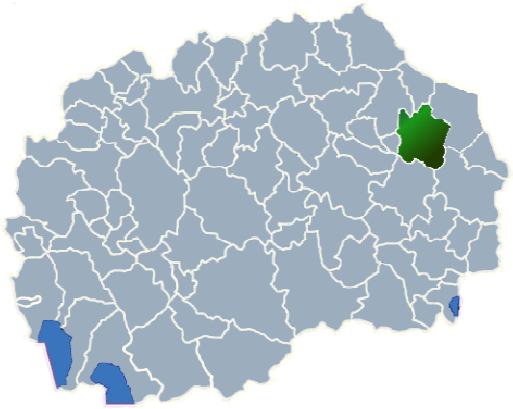
November 2012

VINICA MUNICIPALITY

I. PROJECT DESCRIPTION

A. GENERAL INFORMATION ON THE MUNICIPALITY

1. Location map



2. Information

Vinica municipality is located in Eastern Macedonia in the south-eastern part of Vinica-Kocani valley. Vinica is also a name of a town where the municipal seat is found. The average altitude is 390-450m and the terrain is mountainous (the mountain Plackovica is situated on the south and eastern part of the municipality with two peaks Lisec – 1754m and Golak 1000m) with moderate continental climate. The municipality belongs to the Eastern Planning Region together with ten other municipalities of Eastern Macedonia (including Pehchevo - municipality financing procurement of solid waste vehicle under MSIP project).

In 2003, due to changes in territorial division, the rural Blatec municipality was attached to Vinica municipality. As a result, the population increased to 19,938 inhabitants (about 11,000 live in Vinica city). Municipality comprises 16 populated settlements located on a territory of 443km^2. The population number increased by 4.6% in 1994-2002 and in the following years is stable, mostly due to emigration.

Table 1: Municipal population by Census data

	Population	
Census year	Vinica municipality	Blatec municipality
1994	17,058	2,005
2002	17,914	2,024

Source: Census data, State Statistical Office

Vinica is famous of its archeological discoveries. The fortress in Vinica city originates from early Bizantium period and is famous of terracotta icons found there (5th and 6th century).

Table 2: Main characteristics of settlements

	Settlement	Population	Households
1.	Vinica	10,863	3,416
2.	Jakimovo	1,101	346
3.	Istibanje	1,476	464
4.	Gradec	1,245	391
5.	Leski	579	182
6.	Lipec	430	135
7.	Blatec	1,594	501
8.	Trsino	730	229
9.	Dragobraste	392	123
10.	Grlani	206	65
11.	Kalimanci	239	75
12.	Vinicka Krsla	99	30
13.	Krusevo	131	38
14.	Pekljani	432	135
15.	Crn Kamen	107	33
16.	Laki	314	98
	Total:	19,938	6,261

Source: Vinica municipality, SSO 2002 Census – book XI

B. DEMOGRAPHIC AND ECONOMIC PROFILE

1. Gender and age repartition

The age structure shows that 10.3% of the total Vinica population is more than 65 years old, which is close to the average in Macedonia (11%). Male population is more numerous: 51% to 49% of female share.

Table 3: Age distribution

	Total	Structure
0-14	3986	20.0
15-64	13908	69.8
over 65	2044	10.3
Total	19938	100

Source: SSO, 2002 Census, book XI

2. Minorities repartition

According to the ethnic affiliation most of the population is Macedonian (91.6%), with smaller number of Romas (6.2%) and Turks (1.4%). Other ethnicities comprise less than 1% of municipal population.

Table 4: Population by ethnic groups

	Vinica	Blatec	Total
Macedonians	16245	2016	18261
Albanians			0
Turks	272		272
Romas	1230		1230
Vlachs	121		121
Serbs	24	8	32
Bosniacs			0
Other	22		22
Total:	17914	2024	19938

Source: Vinica municipality

3. Employment repartition

By 2002 Census data the unemployment rate in Macedonia was 38% and in Vinica municipality was 33%. Employment Agency data as of end July 2012 indicate there were 2436 unemployed persons in municipality (1279 in urban parts and 1157 in rural parts). According to the municipal estimations the current unemployment rate is about 46%.

Census data indicate that activity rate of female population is very low: only 29% of woman over 15 years old is employed.

Table 5: Main employment indicators

	Total			Male			Female		
	Vinica	Blatec	Total	Vinica	Blatec	Total	Vinica	Blatec	Total
Population over 15y	13819	1484	15303	6964	742	7706	6855	742	7597
Labor force (active population)	7361	691	8052	4339	407	4746	3022	284	3306
Employed	4930	432	5362	2871	253	3124	2059	179	2238
Unemployed	2431	259	2690	1468	154	1622	963	105	1068
Nonactive	6458	793	7251	2625	335	2960	3833	458	4291
Employment rate			35%			41%			29%
Unemployment rate			33%			34%			32%
Activity rate			53%			62%			44%

Source : SSO, 2002 Census, book VI and XII

4. Economy

Population is mostly occupied with agriculture. Half of municipal territory is covered with forest, 27% with pastures, 21.6% is arable land and only 0.68% is non-arable land.

Municipality is rich in geothermal mineral waters, although so far those capacities are not used.

Main industrial capacities are as follows:

- Tondah – construction materials;
- Triko, Vinka, Vinicanka – textile;
- Mebel-Vi, Mebel Trejd – furniture;
- Vincini – food.

In the end of 2011 there were 554 active business entities registered in Vinica municipality: 1 large, 4 medium, 199 small, and 350 micro. The sector distribution of legal

entities in Vinica is illustrated in the next table. As can be seen trade entities are largest in number.

Table 6: Legal entities by sectors

Sector	Legal entities by sector	Structure
Agriculture, forestry and fishing	42	7.6
Mining and quarrying	2	0.4
Manufacturing	97	17.5
Water supply, sewage, waste management	3	0.5
Construction	27	4.9
Trade	193	34.8
Transport and storage	49	8.8
Accommodation and food service	37	6.7
Total	554	100

Source: SSO, 2012 Statistical Yearbook

C. GENERAL DESCRIPTION OF THE PROJECT

The project assumes **procurement of two special vehicles for collection of communal waste with different capacities: 5m^3 and 8m^3**. Presently, the public utility company performs waste collection services with 3 trucks and 1 tractor that are completely amortized and impose high maintenance costs. The way of disposing waste is substandard. In order to overcome this situation the Council of Vinica municipality adopted a decision on borrowing funds for procurement of two solid waste collection vehicles. Loan with be financed from the municipal budget but vehicles will be transferred and maintained by the CSE.

The project responds to the strategic municipal goals defined in the "Strategy for Local Economic Development". The document is organized by the strategic area, goal, target and program. Strategy indicates waste management as instrument necessary for improved municipal infrastructure.

4. Area	Infrastructure
4.4. Goal	To improve urban infrastructure in the municipality
4.4.3 Target	To improve environment protection through improvement in urban infrastructure
Projects	Solid waste collection equipment, recycling of waste and planting trees

1. Current situation

CSE "Solidarnost" – Vinica, established in 1960 serves the citizens living in Vinica municipality with several communal services: drinking water supply, urban waste water collection and sewage system, collection, transportation and final disposal of municipal solid waste, greenery and park, green bazaar and cemetery maintenance. All households are connected to the water supply system. Total length of water supply line is 145km. Since 1980s households are connected to the sewage system, which networks is 54km long. About 80% of households are connected to the sewage system.

The public company employs 92 persons on full time contracts and 10 part time workers depending on the season and needs. 17 employees are directly dealing with collection, transportation and disposal of solid waste.

The financial results are variable: CSE realized profits in 2009 and 2011, but in 2010 registered loss. In 2010 and management board of CSE made a decision to write off outstanding receivables from physical persons and as a result the CSE had to pay corporate tax on this amount, which led to CSE loss.

Table 7: Financial results of the CSE Solidarnost (in MKD)

	2009	2010	2011
Financial result in the current year (profit/loss)	2,456,996	-563,396	1,830,507
Receivables	40,288,888	33,714,465	45,045,244
Liabilities	9,812,523	13,868,888	17,075,139
Net liabilities	30,476,365	19,845,577	27,970,105

Source: Financial reports of CSE for 2010 and 2011

In general, the public utility company provides communal services on 68.7% of the municipality territory. In next table the share of settlement territory receiving the communal services is presented.

Table 8: Coverage of solid waste collection service by settlement (status as September 2012)

	Settlement	Territory covered with communal services (%)			
		2009	2010	2011	Sep 2012
1.	Vinica	100	100	100	100
2.	Jakimovo	100	100	100	100
3.	Istibanja	100	100	100	100
4.	Gradec	30	30	30	100
5.	Leski	100	100	100	100
6.	Lipec	0	0	0	0
7.	Blatec	100	100	100	100
8.	Trsino	0	0	0	0
9.	Dragobraste	30	30	30	30
10.	Grljani	0	0	0	0
11.	Kalimanci	0	0	0	0
12.	Vinicka Krsla	0	0	0	0
13.	Krusevo	0	0	0	0
14.	Pekljani	0	100	0	0
15.	Crn Kamen	0	0	0	0
16.	Laki	0	0	0	0
No of households served		5063	5198	5063	5337

Source: CSE data

CSE has three communal trucks (small truck with capacity of 5m^3, and trucks with 8m^3 and 9m^3). Two trucks are more than 20 years old. Additionally, there is one tractor, which has been used to serve the industrial capacities and bulldozer used at the landfill.

Figure 1: Photo of vehicles in use

Each household has a bin for temporary waste disposal (500-700 plastic bins in total, the rest are some improvised containers) and there are metal containers positioned in front of administrative buildings (bank, hospital, school, post office, municipality building, etc.) in urban settlement – Vinica city. In total there are 70 metal containers distributed: 50 relatively new received in 2010 from the Ministry of Environment and Spatial Planning) and 20 old.

Waste collection service is provided in Vinica city and 6 rural settlements (Jakimovo, Gradec, Istibanje, Dragovraste, Blatec, Leski). The remaining 9 rural settlements are deprived the solid waste collection service. Their citizens regularly apply for such services but the CSE cannot meet this requests.

CSE has defined schedule of waste collection. The city is divided by the Vinicka river into two almost comparable parts. Right part of the city is served by one vehicle, which on Monday, Tuesday, Thursday and Friday serves different settlements, and on Wednesday this vehicle collects waste from Gradec. Left part of the city is served by second vehicle, which on Monday, Tuesday, Thursday and Friday serves different settlements, and on Wednesday the vehicle collects waste from Leski. There are 70 containers distributed in the Vinica city center and they are served by the smallest vehicle (Monday, Wednesday and Friday). This vehicle also serves small streets in the city, where both bigger vehicles cannot reach. This smallest vehicle also serves Roma settlement, Pekljani, Dragobraste, Jakimovo, industrial zone Gorica and weekend settlement Osojnica. The tractor collects communal waste from Roma settlement and from legal entities creating bigger amounts of waste – the frequency is defined in the contracts between CSE and company.

On annual basis the total quantity of collected solid waste is 3455.9t (2011), which gives 173kg of waste per capita and is much lower than country average (see table 10).

Table 9: Collected waste in Vinica municipality

	2009	2010	2011
Collected communal waste (total) in t	3594.50	2907.90	3455.90
Collected communal waste (households only) in t	1717.90	1817.44	1557.05
Share households' waste/ total in %	48	63	45

Source: Annual reports on communal waste submitted to the Statistical Office

Table 10: Municipal waste (kg per capita) in Macedonia

	2008	2009	2010	2011
Generated waste	349	354	351	357
Collected/ landfilled waste	260	270	266	264

Source: SSO, 2012 Statistical Yearbook

Municipal solid waste comprises classic municipal waste (PET bottles, paper and cardboard, glass, textile, food, waste from agriculture activity in the household yard, etc.). The composition varies according the season, in the spring and fall the content of waste from agriculture activities goes up. In Table 11 the composition of municipal solid waste is presented according the official data for the last three years.

Table 11: Composition of the collected solid waste

	2009		2010		2011	
	t	%	t	%	t	%
Paper	115.74	3.2	93.63	3.2	111.28	3.2
Glass	47.45	1.3	38.38	1.3	45.62	1.3
Plastic	262.76	7.3	212.57	7.3	252.63	7.3
Metal	94.54	2.6	76.48	2.6	90.89	2.6
Biodegradable waste	494.24	13.7	567.04	19.5	673.90	19.5
Textile	180.44	5.0	145.98	5.0	173.49	5.0
Mixed communal waste (households' waste)	2399.33	66.8	1773.82	61.0	2108.10	61.0
Total:	3594.50	100	2907.90	100	3455.91	100

Source: Annual reports on communal waste submitted to the Statistical Office

There are two landfills near Vinica city:

1) Municipal landfill for municipal solid waste located around 2-3 km from Vinica city at the location called Leski near Leski settlement,
2) Municipal landfill for inert waste at the location called Susica.

The disposal of the inert waste on the municipal inert waste landfill is free of charge and the persons dispose the inert waste themselves.

The total area of the municipal landfill for municipal solid waste is 7,320 m^2 and the whole area is active. In the end of 2011 the total landfill used area is 2,500 m^2. The expected live of the landfill is about 20-30 years, which means that much sooner solid waste collection will be resolved at regional level.

The landfill near Leski exists since 1973. There are two buildings: (1) office for the person who takes care about the landfill 24 hours a day noting the quantities (number of trucks and tractors) coming to the landfill and (2) garage for the bulldozer used to flatten the waste. There is a fence around the landfill. Several photos were taken during the site visit on May 8, 2012 and they are presented below. There are no illegal waste dumps near rivers or roads like in other municipalities.

Figure 2: Photos of the municipal landfill Leski

The CSE does not provide primary selection of waste; however the population is doing this on their own. Municipality is negotiating the agreement with Eco Pack company from Kocani dealing with collection of used packaging. It is expected the company will bring its own containers (about 10 at first stage) for PET and paper. CSE will collect and deliver these goods to the company and will be paid for this. As a result the number of recyclable waste stored at the landfill will decrease, and the CSE will generate additional revenues.

Solid waste fee

The previous tariff was adopted in 1994 and was in force since July 1995. The rates for solid waste collection were as follows:

- Households: 177 MKD per month;
- Legal entities, schools, hospitals and kindergartens: 1.38 MKD/m^2/month;
- Shops: 7.36 MKD/m^2;
- Separate shops: 294 MKD per month.

The binding tariff for communal service was approved on December 6, 2010 by the CSE management and adopted on January 31, 2011 by the municipal Council. The fee is calculated based on area possessed in the following way:

- Households: 2.8 MKD/m^2 of residential area with minimum limit of 60m^2 and maximum limit of 120m^2, for collective houses the fee based on apartment space is additionally increased by 10m^2 for commonly used space;
- Legal entities: 8MKD/m^2 of business area and 1.5MKD/m^2 of yard area with minimum limit for business area of 40m^2 and maximum limit of 3,000m^2 and maximum limit for yard area of 5,000m^2.

It is impossible to say what was the percentage increase in tariffs as the whole concept was changed from flat fee to the amount dependent on area with minimum and maximum limits applied.

CSE has signed agreement on solid waste collection with 3895 physical persons and 181 legal entities (2011). The collection rate for households in about 94% and for enterprises 89%, which is high in comparison with other public communal enterprises in Macedonia. Currently no further tariff increase is planned, but the CSE is working on improvement in database on real living space area.

Table 12: Billed and collected fees for solid waste (MKD)

		2009	2010	2011
Households	Billed	6,538,607	7,084,997	9,240,718
	Collected	6,015,518	6,730,747	8,686,274
	Collection rate (%)	92	95	94
Legal entities	Billed	2,189,210	2,558,144	7,538,661
	Collected	1,364,315	1,681,723	6,709,408
	Collection rate (%)	62	66	89

Source: CSE

In 2011 the CSE increased its efforts to collect outstanding debts. As a result, the amount collected from companies increased 4 times in comparison with the previous year.

Conclusions

Summarizing, the main waste management problems are:

- Two trucks with $8m^2$ and $9m^2$ are very old, they have problems with the hydraulic system, they cannot be driven on the small streets in Vinica city and they are not suitable for containers, only for waste bins;
- Some of the rural settlements are not covered by the existing service due to lack of vehicles;
- The CSE has no financial resources to purchase the waste collection vehicle/s providing better service to the population, more frequent waste collection and spread the collection territory to all villages around the Vinica city and settlements with summer houses;
- There is no systematic primary separation of recycling waste streams, although there were several eco-projects with main aim to collect recyclable materials;
- There is no waste recycling activities, although the CSE is very interested in procurement of the compactor machine for plastic bottles and paper.

2. Future situation

Solid waste collection services will be provided to all households and companies in 8 new rural entities – Lipec, Trsino, Dragobraste, Vinicka Krsla, Krusevo, Pekljani, Crn Kamen and Laki (in Dragobraste all households will be served instead only third of them as it is now). As a result, the solid waste collection service will be provided in total in 14 settlements. In two settlements (Grljani, Kalimanci) the service will be still missing. These 2 remaining settlements are located 25km from Vinica and are scattered: distances from house to house are about 2km or more. Population comprises mostly elderly people who generate very limited amount of waste, mostly biodegradable.

The new vehicles will replace 2 currently used solid waste collection vehicles, and the old vehicles will be withdrawn from the operation. Once the procurement of new vehicles is completed, the supervisory board of CSE will make a formal decision to announce auction and sell two old vehicles. If there is no interest vehicles will be transferred for recycling. No additional employment is planned.

Table 13: Results of project implementation

		Territory covered with solid waste collection services (%)	
	Settlement	Without the project (current situation)	With the project
1.	Vinica	100	100
2.	Jakimovo	100	100
3.	Istibanja	100	100
4.	Gradec	100	100
5.	Leski	100	100
6.	Lipec	0	**100**
7.	Blatec	100	100
8.	Trsino	0	**100**
9.	Dragobraste	30	**100**
10.	Grljani	0	0
11.	Kalimanci	0	0
12.	Vinicka Krsla	0	**100**
13.	Krusevo	0	**100**
14.	Pekljani	0	**100**
15.	Crn Kamen	0	**100**
16.	Laki	0	**100**

Source: CSE data

3. Goals of the project

The primary goal of the project is improvement in solid waste collection services in Vinica municipality. Procurement of new vehicles will enable reorganization of CSE operations in order to introduce regular solid waste collection services to most of the population. The area of service will be extended by 8 rural settlements.

The project will have positive impact on environment, health of residents, and hygiene level in the municipality. It will motivate CSE employees, providing them proper working conditions. Then, population will be additionally motivated with high quality services. Project implementation will foster tourism in the municipality.

II. SOCIAL IMPACT

A. SOCIAL STUDY

1. Methodology

This evaluation assumes a field research to obtain information on opinions and interests of citizens and stakeholders. The weakness of this approach lies in its indirectness. Specifically, the indirect way of obtaining information and possibility of subjective approaches reduces the level of accuracy of the public opinion in this regard.

2. Social Diversity and Gender

In Vinica municipality citizens are organized into different groups based on the social status that they are attributed by birth, according to their ethnicity, gender, location, language, etc. This study presents statistical data that are of special importance to this particular social assessment. The demographic tables above indicate the following:

- The age groups are almost evenly distributed, which means that any age group is dominant and the age structure of population is balanced;
- There is unequal representation of male and female in the total population: male population is more numerous (51% vs. 49%);
- In terms of ethnicity, predominant group in Vinica municipality are Macedonians. The second ethnic group by number are Romas, who are mostly located in one settlement even now served by CSE with solid waste collection service;
- Each of the above indicated ethnic groups speak their language in informal communication. Formal language used in Vinica is Macedonian.

3. Institutions, regulations, behavior

The project itself will improve the efficiency of the system in future, and might have substantial impact on current abuses and irresponsible behavior of a part of the population: depositing waste on random locations, unpaid bills etc. It will be necessary to correct this attitude, together with continuous improvement of the financial results of CSE.

When concerns responsibilities of the sub-national administration the following regulations are in force:

- Law on Local Self-Government (Official Gazette of the Republic of Macedonia 5/2002);
- Decision on the methods and procedures for public hygiene maintenance, collection and transportation of waste;
- The decision on communal order in the town of Vinica;
- Program for maintenance of communal hygiene in the town of Vinica.

4. Stakeholders

There are several important stakeholders in regard of the project.

Most influential participants in the decision making process at municipal level are: the Mayor and the political parties. The non-governmental organizations (NGOs) are influential to some degree, but not as much as in the past. The citizens, as an unorganized group of concerned parties, do not to articulate their opinion directly to the Council and the Mayor, but through representatives of political parties, who are very influential factor in the municipal decisions.

The project will be supported by all political parties in the Municipal Council since the political consensus is reached on this issue. In respect of the citizens, the opinion of most interviewees is that all citizens support or will support the project because it is in the general interest. It is believed that most citizens will support the project and the category of the poorly educated population would be indifferent to the project. It is also stated that opposition to the project is not expected.

Probably the most important factor is the Mayor. The success of this project in terms of general interest will enhance his reputation and authority among the prospective voters. The political parties are the second influential factor because their members are represented in the Council. But the political parties do not agree and have different and sometimes conflicting interests, that weakens their positions. In addition, as Counselors, they can have less active role in the political process at local level: they can control issues by making decisions, but the initiative and the execution of the project are not in their domain.

The NGOs have some impact, because since project promotes public hygiene and health, they should find the project beneficial.

The citizens or the population as a whole may be an influential factor. Most citizens will be beneficiaries of the project, therefore they should support it.

5. Participation

It has been decided that the loan will be repaid from municipal budget in the coming years. There is no need for any kind of voluntary participation or financial contribution by the citizens. The project does not require it, and should not require additional financial contribution by the citizens.

6. Social Risks

No high social risks for the implementation of this project are perceived. Specific obstacles and difficulties are not predicted or expected.

B. RESETTLEMENT ISSUES

This project is not subject to resettlement issues.

C. CONCLUSIONS ON THE PROJECT POTENTIAL SUCCESS AND RECOMMENDATIONS

The project should be socially successful for the following reasons:

- The project is beneficial as it is dedicated to improvement of waste collection, with a positive public health effect;
- The project is part of the priorities of the municipality and the majority of citizens;
- Most of the parties involved are motivated by this project;

- As far as the ethnic communities are concerned, none of the ethnic groups is concentrated on preventing the realization of the project, neither expressing eventual dissatisfaction;
- The project does not bear such a high financial burden compared with the budget, and the population is not put in a position to contribute financially, so there is no reason for conflict upon this issue.
- The project refers to almost all population of the municipality (14 out of 16 rural settlements). Only 2 villages will be deprived solid waste collection services, which is 140 out of 6261 households (2%). Majority of citizens will be beneficiaries of the project and will be provided high quality public service, thus it is difficult to expect the opposition to the project.

III. ENVIRONMENTAL IMPACT

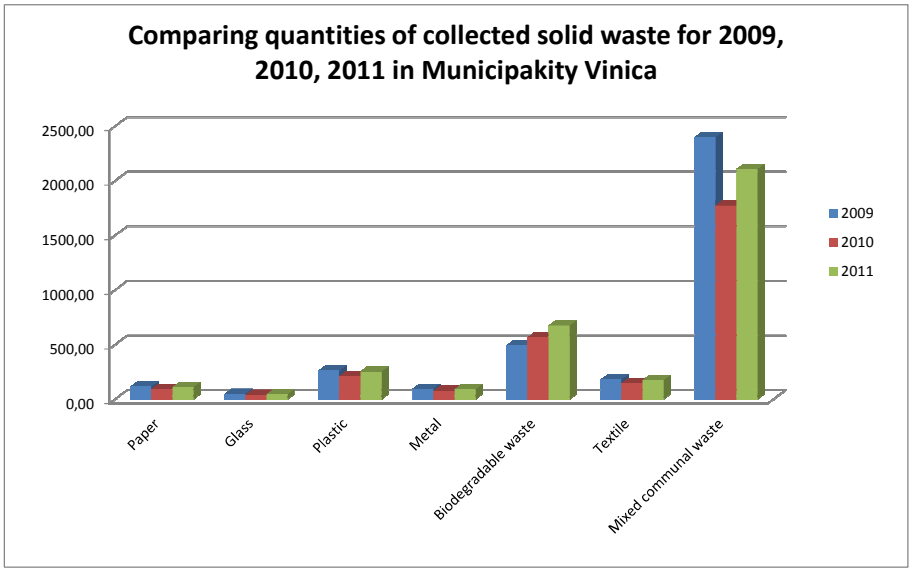
A. CURRENT WASTE MANAGEMENT PRACTICE

One of the "hot environmental issues" for the Municipality of Vinica is proper waste management, following waste hierarchy (primary selection, recycling, re-use, recovery of waste and final disposal). The Municipality of Vinica prepared the Local Environmental Action Plan in 2006 where the improvement of waste management system including the public awareness about waste selection, waste recycling, better waste collection and regional approach to the final disposal have been mentioned.

Currently the CSE "Solidarnost" (established by the Municipality of Vinica with main aim to provide communal services to the citizens) has three communal trucks (small truck with capacity of 5 m^3 from 1996, truck with 8 m^3 from 1985 and truck with 9 m^3 capacity of solid waste collected from 1986 and one tractor from 1995) providing communal services to 68.7% of the municipality territory. The oldest two trucks have problems with the hydraulic system, they cannot be driven on the small streets in Vinica and they are not suitable to collect waste from containers, only from waste bins. Due to old vehicles and limited number of workers, several villages are not covered with waste management system at all.

The waste management system has been established covering 100% of several settlements (town Vinica and villages Jakimovo, Gradec, Istibanja, Leski, Blatec) and Dragobraste (only 30%) and other villages are not covered with waste communal service.

The collection of the waste has been performed once a week and total 3594t (2009), 2908t (2010) and 3456t (2011) waste was collected and transported to the municipal landfill Leski. The composition of waste is presented on the following chart expressing that the largest part of waste is mixed communal waste, biodegradable waste and small quantities of glass, metal and plastic.



The all collected waste streams go to the municipal landfill for final disposal.

The location of the landfill is around 2 km far from the City of Vinica. It was established in 1973 and has total area of 7,320 m^2 of which total used landfill area is 2,500 m^2 (2011). Although there are fence, security staff, garage and bulldozer, the existing waste disposal practices do not comply with technical and environmental standards; landfill represent risks for the pollution of air, soil, surface water and groundwater, as well as potential risks for biodiversity, agricultural land and human health due to deposition of mixed hazardous and non-hazardous waste. An additional environmental problem is represented by the vicinity of settlement Leski and problems with smell during burning on open-air fires of municipal waste. Several photos of existing municipal landfill are shown below.

The positive aspect is that there are no illegal waste dumps near rivers or roads. There is no mixing among solid municipal waste and other waste streams like medical waste, hydraulic oils and waste of textile industry.

The medical waste has been collected separately in appropriate package with label “medical waste” and it has been transported to Skopje (in the incinerator at Drisla landfill).

The hydraulic oil from the communal truck vehicles has been collected in appropriate barrels and it is submitted to the licensed company in Stip.

The waste of textile industry has been collected and disposed on the separate location at the municipal landfill.

The annual quantities of waste collected, transported and disposed by the CSE “Solidarnost” has been reported to the Ministry of Environment and Physical Planning and to the Mayor of Municipality of Vinica.

Currently there are no measurements of the quality of ground waters near the landfill.

At the moment there is no primary selection of the various waste streams, but according the technical responsible persons from the CSE “Solidarnost” they plan to purchase bins for primary selection (bins in different size, color and bigger containers) with main aim to reduce the waste stream which will be disposed on landfill and to re-use recyclable waste.

The project assumes procurement of two waste collection vehicles with different capacities: 5m^3 and 8m^3.

The procurement of these new waste collection vehicles for the CSE “Solidarnost” has very positive impact on the existing waste management in Municipality of Vinica. The waste management system will be strengthened and spread across the Municipality of

Vinica in the villages which are not covered with the system now, the collection will be done more frequently at existing covered villages as well. The efficient collection of wastes reduces public health concerns related to uncollected waste in the street, polluting the soil and ground waters and causing the air pollution as well. The new vehicles will support the transportation of the waste to the planned new regional landfill for which the Municipality of Vinica is very active into the discussions and regional approach.

B. REGIONAL WASTE MANAGEMENT

The National Waste Management Plan introduces regionalization of municipal waste management systems and launches the concept of Regional Waste Management Enterprises (RWME). The aim of these regional waste management enterprises is to create a link between state and the municipalities and absorb the responsibility for the majority of waste management tasks at a regional level on behalf of the municipalities within the region. There will be 5-7 waste management regions across Macedonia. Two enterprises have already been established in the East and North-East planning regions.

On 30th December, 2009 the Regional Public Enterprise for waste management "Deponija Istok" (Landfill East) was established in Stip for the Eastern region (11 municipalities included).

The public enterprise has a legal status and it is established by the decision of the Councils of the involved municipalities within each region.

The main tasks of the RWME are:

a) Collection of hazardous waste;

b) Solid municipal waste management/Treatment and final disposal;

c) Hazardous waste management;

d) Recycling of the special waste streams;

e) Trade with waste and other.

But the priority task will be collection and treatment of solid municipal waste.

In 2012 the Agreement for cooperation and establishment of the Regional Waste Management Board was signed for both planning regions and the RWMBs were established as regional bodies that should be involved in the process of development and monitoring of the Regional Waste Management Plans.

Each RWMB adopted the Statute for its obligations that could be summarized:

a) Support the preparation of draft RWMP in accordance with the National Waste Management Plan;

b) Monitor and report the implementation of the RWMP;

c) Announce the public procurement procedure for construction works related to regional waste management;

d) Adopt the waste treatment fees for 1 ton waste in the regional system;

e) Adopt the investment program for the regional waste system and others.

The Mayor of the Municipality of Vinica is a member of the RWMB based on the Decision of the Council of Municipality of Vinica supporting the establishment of the RWMB.

Each RWMB has established a Technical Advisory Group with several high professional experts from urban planning, waste management and environmental departments from the municipalities. They will work on part-time exclusively on the RWM issues supporting the role of the RWM Board for smoothly implementation of regional waste management.

The EU funded Project with aim to strengthen the local capacities on waste management was implemented during last two years and the municipal staff from Municipality of Vinica participated very actively on the workshops and trainings. Some of the topics of these events are: a) The template of the Regional Waste Management Plan, b) Plan for development of the Regional Public Enterprise for Eastern Region, c) Systems for biological treatment of the waste, d) Closure of the illegal landfills/dumps, e) Environmental Impact Assessment for the landfills, and others.

The Municipality of Vinica is very active in the regional discussions and steps toward the regional approach of improved solid waste management in Macedonia.

The location for the regional landfill has been discussed and the location of the transfer stations as well. The optimistic scenario predicts that in 2015 the regional landfill would be constructed in the region and the municipal landfill would be used as transfer station. Till then, the CSE “Solidarnost” will manage the landfill Leski according the legal requirements, will cover the landfill with ground/soil and will take preventive measures to avoid combustion, fire, entrance into the landfill, etc. Also, the events about the primary selection will be launched.

The Project consists of procurement of two special vehicles for collection of communal waste and will strengthen the Municipality of Vinica with mechanization for waste collection, transport and disposal and will ensure proper and in time waste collection and transport. The environmental risks raised from the current situation will be minimized.

C. ENVIRONMENTAL IMPACT OF THE PROJECT

In general, the procurement of these two vehicles will generate very positive long term impact with regional scale, especially when the new regional landfill will be constructed.

The project activity (purchase, delivery and running of the waste collection vehicles) has very low limited adverse environmental impacts mainly possible to happen if the regular annual pre-registration test and regular maintenance and repair are missing and those impacts will be short term, with local significance, possible to occur and very low intensity.

Although the project includes purchase of two vehicles, the broader environmental impact assessment was done, the site visit was performed, the CSE “Solidarnost” was visited and the Municipality landfill Leska as well and the meetings with responsible persons were held. The main aim was to identify which environmental and social elements would be the most affected.

The measures have been proposed to avoid, prevent or mitigate the adverse impacts and to establish the good waste management practice using the waste collection vehicles in Municipality of Vinica. The Environmental Mitigation Plan is presented in the following table where the responsibility for implementation lays to the Contractor-Bidder, CSE “Solidarnost” (the Director and technical team) and Municipality of Vinica (Communal Inspector).

The potential impacts are mainly on air quality due to emissions of GHGs, and other pollutants (CO, HC, PM and NOx), soil/water pollution if any oil leakages occurs and noise disturbance if the technical specifications of the new vehicle is not in compliance with EU Directive 2000/14/EC (lower than 102 dB (A).

The driver/s involved in carrying out the waste management service should be trained on environmentally driving on a regular basis to increase fuel efficiency, to maintain the vehicle clean to avoid unpleasant odor and also to keep the vehicle in good running condition. The regular maintenance of vehicles is crucial for minimization of the environmental and occupational safety risks for workers and general public.

The Municipality staff and CSE “Solidarnost” are responsible for implementation of the mitigation measures during the operational phase (running of the vehicle) and they are responsible for monitoring as well.

The Mayor is fully responsible for reporting on the annual quantity and type of collected, transported and disposed waste to the municipal / regional landfill.

D. MITIGATION PLAN

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
Delivery and running the new waste collection vehicle				
• **Purchase and delivery of the new waste collection vehicle**	Positive environmental, social and health impact to the Municipality of Vinica due to the improved collection and transportation of solid waste in the settlements which are not covered with communal service now	**Local/within the Municipality of Vinica and on regional level** **Long term/major**	• The preventive measures could be implemented when the new vehicle is delivered including: ➢ Check all technical specifications of the delivered vehicle in compare with the technical requirements (EURO 4 engine specification and noise specifications as min. env. requirements) established prior the tender procedure ➢ Check the fuel quantity, lubrication oil quantity, breaking and steering system at the spot and lighting system as well ➢ The review of the producer manual and driving manual recommendations for smoothly running of the vehicle (nomination of the responsible person within the CSE ”Solidarnost”) ➢ Delivery of short running training to driver/drivers of the vehicle for the most economically running of the truck and training for communal workers operating with vehicle collection mechanism ➢ Delivery of training for regular maintenance of the vehicle as well	• **Contractor – Bidder** • **Director of the CSE “Solidarnost” and technical staff within the CSE**
• **Put the vehicle into operation**	Improper put into operation (running), or not prior check of the fuel quantity, lubrication oil quantity and breaking and steering system at the spot could cause adverse environmental and health impacts. The non-compliance of the	**Local** **Long term/major**	➢ Perform the procedure of homologation of the vehicle at the Faculty of Mechanical Science ➢ The technical specifications provided by the vehicle supplier should be checked according the EURO 4 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 for waste compression, etc. ➢ The noise specification should be checked as well ➢ Noise emissions to be lower than 102 dB (A) measured according the requirements of EU Directive 2000/14/EC ➢ Perform the annual approval test at the authorised compliance body issuing the registration card for the vehicle ➢ For traffic control and safety, the information about the project – new waste collection vehicles should be announced through the local radio/TV informing about the planned vehicle routes and frequency of waste collection (especially important for new settlements which will be covered with communal service)	• **Contractor – Bidder** • **Director of the CSE “Solidarnost” and technical staff within the CSE**

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
	EURO 4 engine standards on emissions limit values could cause more pressure to the air quality: a) High emission of GHGs and other pollutants (CO, HC, PM and NOx) b) More environmental pressure on the human life and plant life through formation of trophospheric ozine and climate change c) More indirectly health problems with human respiratory system The non compliance with noise requirements will cause noise disturbance		➢ The traffic flow through the Municipality of Vinica need to be coordinated with the responsible technical staff within the CSE "Solidarnost"	
• **Regular operation of the waste collection vehicle**	Improper or lack of regular maintenance could increase the environmental and occupational safety	**Local/Regional** **Long term/major**	➢ Regular maintenance and repair of the new vehicle and delivery of the spare parts on time by the professional service company ➢ Signing a contract with the service company for regular maintenance, replacement of spare parts, preventive lubricant oil changes, checks on electronic and hydraulic compression waste system, proper tire maintenance as one of the most important safety function, etc.	• **Director of the CSE "Solidarnost" and technical staff within CSE**

Project activity	Potential impact	Impact scale	Proposed mitigation measures	Responsibility
	risks and health risks to all citizens due to the following: a) low fuel efficiency, b) higher emissions of GHGs and other pollutants (CO, HC, PM and NOx) c) increase of noise level d) leakages of liquid waste from the truck e) not good fitting of the all vehicle components (compression system for example) and spoil of waste on the streets f) impropriate odour due to lack of truck washing practice g) water and soil pollution as a result of possible oil leakages		➢ Regular washing of the vehicle and keep the parking site clean ➢ 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 ➢ During the approval test the environmental and safety checks should be performed according the vehicle protocol (related to noise, exhaust emissions and fitted devices) ➢ The CSE "Solidarnost" should prepare the Fuel consumption and CO_2 emissions data Report on annual base ➢ The Report should contain at least the amount of diesel fuel consumption, type of diesel fuel used and the CO_2 emissions derived from the consumption, total length of the routes passed, the distance routes among the local settlements and all settlements covered with waste collection and distances to the municipal landfill Leski ➢ The CSE "Solidarnost" should prepare the Waste Collection Plan on monthly/annual base including all local settlements with frequency of collection and the most efficient traffic routes ➢ The CSE "Solidarnost" should perform regular measurements of the ground waters quality nearby the landfill Leski according the legal regulation during operation phase ➢ Primary selection of used paper and PET bottles as a recyclable waste in order to decrease the quantity and volume of waste collected (Placement of several collection bins for disposal of paper and PET bottles) ➢ Announcement of the possibility for primary selection of these two waste types to all citizens through already established communication channels (during the distribution of communal bills) ➢ Signing the Contract with authorised collectors for recyclable waste to collect, transport and recycle primary selected paper and PET bottles.	

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	**Delivery and put into operation of the waste collection vehicles**	**Operation of the waste collection vehicles**
Project stage: Delivery and running the new waste collection vehicle								
The environmental and safety protection measures applied before put the vehicle into operation	On the parking site of the CSE "Solidarnost"	Check the fuel quantity, lubrication oil quantity and breaking and steering system at the spot Test running successfully done	Immediately after arriving of the vehicles in the CSE "Solidarnost"	To prevent health and safety risks – mechanical broken and injuries			Contractor - Bidder Director of the CSE "Solidarnost" Municipality Inspector	
EURO 4 technical specifications Noise level specification of the vehicle Lights, electronic and hydraulic compression system, braking and antiblocking system and tires	At the homologation site – Faculty of Mechanical Science, Skopje (Homologation attest) The approval test site at the authorized body for annual registration (Registration card for 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			Contractor – Bidder Director of the CSE "Solidarnost" with technical team	

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	**Delivery and put into operation of the waste collection vehicles**	**Operation of the waste collection vehicles**
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 vehicle is in compliance with safety requirements, environmental requirements related to noise, exhaust emissions and fitted devices	On annual basis	To ensure safety running of the vehicles and minimization of the environmental and health impacts				Director of the CSE "Solidarnost" with technical team
Announcement of the frequency and start up of vehicles running and collection	Through the public announcement via local radio/newspaper /announcement table in the municipality building	Visual/audio check	Before start up of running the vehicles	To increase the public awareness about the new waste management practice and waste collection frequency				Director of the CSE "Solidarnost" with technical team Municipal inspector
Project stage: Running of the waste collection vehicles								
Skill of driver/s on modern driving	At the CSE "Solidarnost" site	Training records kept Review of the	Before official start up of running	To improve the driving techniques and to be familiar with vehicle				Director of the CSE "Solidarnost" with

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	**Delivery and put into operation of the waste collection vehicles**	**Operation of the waste collection vehicles**
techniques and some improved performances of the new vehicle		training records		characteristics and compression system				technical team
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 CSE "Solidarnost" with technical team
Fuel consumption trend, annual quantity of waste collected and disposed at municipal landfill	At CSE "Solidarnost" site	Annual Report of the CSE "Solidarnost"	On annual basis reporting in front of the Management board and Municipality of Vinica Council	To monitor the regular maintenance and to calculate the carbon footprint of the communal enterprise				Director of the CSE "Solidarnost" with technical team
Quantity of primary selected paper and PET bottles by the other solid waste	On several waste collection sites in the settlements across the Municipality of	Review the documentation – collection of recyclable waste by the authorized collector/s	On regular basis (monthly/annually)	To decrease the quantity of mixed solid waste transported and disposed on the municipal landfill and to use the recyclable				Director of the CSE "Solidarnost" with technical team

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	**Delivery and put into operation of the waste collection vehicles**	**Operation of the waste collection vehicles**
	Vinica			waste as raw material				
Fulfilled Annual Report for collection, 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 waste	To improve the waste management on local and national level To be in compliance with national legal requirements				Mayor of Municipality of Vinica/ Ministry of Environment and Physical Planning
Quality of ground waters near the municipal landfill (ammonia, chloride, pH, SO_4, metals, Hg, nitrates, phosphorus, coliform bact. and other defined in the Rulebook on landfill operation – Official Gazette of RM No. 156/07)	On the vicinity of the landfill (1 point at entrance zone and 2 points from exit zones of the ground waters near landfill	Taking samples of the ground waters and analysis according the ISO 5667-Part 11,1993)	Once per year	To minimize the risk of water pollution by the landfill especially the ground waters near by the municipality landfill Leski near Vinica To avoid the health problems caused by the polluted waters				Director of the CSE ”Solidarnost” with technical team