



Annual Report of 2016

Joint Service Council for Solid Waste Management in the Local Government Units
in the Governorates of Khan Younis, Rafah and the Middle Area (JSC-KRM)

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The Vision of the Council

Achieving environmental and financial sustainability for solid waste management in the jurisdiction area of the Council which serves 17 local authorities in the southern and Middle Area of the Gaza Strip.

The Mission of the Council

Improve the effectiveness of solid waste management according to the Palestinian National Strategy for Solid Waste Management of 2010 – 2014 and its appendices.

Objective of the Council

Respected members of the council of local authorities, the Council promises to provide you with the services of secondary collection and final disposal of solid waste in accordance with appropriate environmental, social and operational bases and management. All in order to provide services of the best quality to a more aware and active society.

Members of the General Assembly:

Yehya Mohyi Aldin Alastal	Mayor of Municipality of Khan Younis
Said Nassar	Mayor of Municipality of Deir Al Balah
Mostafa Alshawwaf	Mayor of Municipality of Abasan Al kabira
Ahmed Alfarra	Mayor of Municipality of Al Fukhary
Mohammed Abuishkyan	Mayor of Municipality of Al Nusirat
Hasan Mazeed	Mayor of Municipality of Al Zawayda
Mahmoud Mohammad Issa	Mayor of Municipality of Al Buriij
Mohemmed Ashour	Mayor of Municipality of Al Nasr
Abd Elrauf Asfur	Mayor of Municipality of Abasan Aljadida
Hamad Alraqab	Mayor of Municipality of Bani Suhaila
Mohammed Alnajjar	Mayor of Municipality of Al Maghazi
Abd Elrahim Alabadla	Mayor of Municipality of Al Qarara
Sobhi Abu Rudwan	Mayor of Municipality of Rafah
Mansour Brek	Mayor of Municipality of Al Shuka
Shehda Abu Ruk	Mayor of Municipality of Khuza'a
Alaa' Abu Mghasib	Mayor of Municipality of Wadi Salqa
Abd Elhakim Almosaddar	Mayor of Municipality of Al Musadar
Ali Shehda Barhoum	Executive Director of the Council

Message from the Chairman of the Board of Directors

Respected/ members of the General Assembly;
Respected/ Members of the Board of Directors;

I greet you with peace, blessings and mercy of God,

I am honored to present to you, on behalf of myself and my colleague members of the General Assembly and the Board of Directors, the annual report of the joint services council for solid waste management in Khan Younis, Rafah and Middle Area for the year 2016. The report includes the most important accomplishments of the Council throughout this year and the aspirations of the Council to continue their contribution to the realization of the listed priorities according to the approved bylaws of the Council. The Council for Solid Waste Management was established in 1995 and included the governorates of the Middle Area and Khan Younis. In 2012, a decision of expansion was approved to cover the municipalities of Rafah Governorate. Thus, the number of member municipalities became 17 local authority out of 25 in the Gaza Strip, all united under the new name: "Joint Services Council for Solid Waste Management for Local Authorities in Khan Younis, Rafah and Middle Area"

This year witnessed enormous efforts in improving the mechanisms of work in harmony with Council's aspirations of establishing correct environmental foundations within the framework of solid waste management. This report of 2016 illustrates the accomplishments throughout the year, which, generally, came to match the strategic priorities of the Council. It also shows the future challenges and the role that the Council is demanded to play while facing them.

Regarding the quantity of the waste taken to the landfill in Deir Al Balah, we can see a decrease in the amount of solid waste from 70,270.24 ton to 67,132.5 ton by the Council's vehicles. This year also witnessed an increase in the amount of the transported waste through the vehicles of the member municipalities from 50,621.16 ton in 2015 to 52,578.24 ton in 2016. Regarding the refugee camps in the jurisdiction area of the Council, United Nations Relief and Work Agency collected and disposed solid waste to Deir Al Balah landfill. The amount of disposed wastes reached 20,416.35 ton in 2016. The following table illustrates a summary of council's operational costs in NIS according to data report in December 30th, 2016:

Table 1. Operational and Financial Data for the years 2014, 2015, 2016

Section	Currency	Year 2014	Year 2015	Year 2016
Total Operating Costs of the Council (Collection Operations)	NIS	2,577,301.18	3,252,019.98	3,587,221.81
Total Operating Costs of the Council (Disposal Operations)	NIS	572,821.12	1,145,459.97	1,599,468.70
Contributions of member municipalities	NIS	2,977,249.75	3,707,332.39	3,617,737.09
Currency Differences	NIS	18,019.81	10,456.85	40,936.98
Revenues from non-members (UNRWA and Contractors)	NIS	544,980.57	325,802.47	492,167.42
Deficit of operation contributions	NIS	384,345.22	128,775.67	139,531.13
Actual cost of collection and disposal of a ton of waste	NIS/Ton	36.002	46.136	52.386
Board of Directors' decision on pricing	NIS/Ton	25.2	34	34
Actual cost of disposal of a ton of waste	NIS/Ton	3.918	7.874	10.421
Board of Directors' decision on pricing	NIS/Ton	10.8	10.80	10.8
Board of Directors' decision on pricing of the collecting and disposal	NIS/Ton	36	44.8	44.8

Based on the mentioned, the debt owed by the Council on member municipalities and the beneficiaries from the service of solid waste management in 2016 reached approximately 11,092,641.49 NIS.

One of the most important projects that the Council is currently implementing is Gaza Solid Waste Management Project (GSWM) in the Southern Areas, in cooperation with Municipal Development and Lending Fund (MDLF). Through the project, a sanitary landfill will be established in the southern Governorate

of Gaza Strip with the capacity to serve the governorates in the Middle and Southern areas until the year of 2025 and to serve the entire Gaza Strip until the year 2040.

The construction effort will be implemented in phases on an overall area of 47.2 hectares. The first phase is funded by World Bank Group (WBG) and French Development Agency (AFD) and the European Union (EU). This year witnessed the completion of acquisition of a land specified for the project. The landowners were compensated for 235.638 acres of owned land. The works of excavation started on site on 11/12/2016 using the most appropriate engineering and environmental standards.

I would like to express my thanks and gratitude to all Council's staff. And to the great support provided by the Board for their continuous effort in drawing new strategies and policies aims to make the Council one of the main tools of leadership and excellence. The Council's Board is the core stone partner in the improvement of the environmental situation in southern area. I wish all members of the Council the progress and success and ask God to help us in serving our precious country.

Engineer/ Yehya Mohyi Al Din Al Astal
Chairman of the Board of Directors
The Joint Services Council for the Solid Waste Management
in Khan Younis, Rafah and Middle Area



Council's Background

The Joint Service Council for Solid Waste Management for the local authorities in Khan Younis, Rafah and Middle Area was established in 1995 with the support of German Technical Cooperation Agency (GTZ) with 13 member municipalities located in the Middle Area and Khan Younis Governorate, under the name of "Joint Service Council for Solid Waste Management in the Governorates of Khan Younis and Deir Al Balah". The aim behind establishing the Council was to create an authority capable of managing the solid waste generated in Khan Younis and Deir Al Balah. Council's mandate included the provision of secondary waste collection (collection from landfill) in addition to waste disposal through operating Deir Al Balah Central Landfill which was built by the support of the Federal Republic of Germany. The Palestinian National Strategy of Solid Waste Management 2010- 2014 reflects the foundation of Council's work which aims at setting the bases capable of improving the quality of service within the framework of preparing a healthy environment.

Council's Duties

The Council seeks the best ways of disposing solid waste resulted from local authorities in its jurisdiction area (secondary collection). It also hopes to benefit from it as much as possible in accordance to the available capabilities and environmental/ health determiners.

The Council aims at spreading the culture of preserving the environment through the interaction with the community. According to Council's Bylaw, the Council is responsible for the following:

1. Plan and supervise the solid waste collection, transport and disposal systems.
2. Communal work to construct a sanitary landfill providing environmentally and health sound solid waste disposal schemes.
3. Collecting solid waste from containers in appropriate ways.
4. Provide and maintain the containers for the member municipalities.
5. Spread awareness of preserving the environment.
6. Organize cleanliness campaigns from time to time within the jurisdiction area of the Council.
7. Support and advice the member municipalities of the Council regarding all aspects of Solid Waste Management including legal, technical, public health, social and environmental issues.
8. Represent the member communities of the Council regarding all aspects involved in Solid Waste Management towards other responsible parties.
9. Providing a comprehensive plan for solid waste disposal with scientific behaviors to protect the environment.
10. In addition to adapting the means that serve this purpose and implementing the concepts of prevention, recycling and manufacturing.

Expansion and Influence

The Board of Directors made a decision on 29/07/2013 to expand the service area of the Council so that it can include the municipalities of the Rafah as well as the municipalities of Khan Younis and the Middle Area to cover 17 local authorities out of 25 in Gaza Strip, under the name of " *The Joint Service Council for Solid Waste Management in the Local Government Units in the Governorates of Khan Younis, Rafah and the Middle Area (JSC-KRM)*". The Council has a legal and an independent entity with its own statutes adopted by the Ministry of Local Government.

Council services comprise approximately 60% of Gaza Strip's total geographic area (the area of which is about 230 square kilometers) that inhabited by 46% of the total Gaza Strip's population.

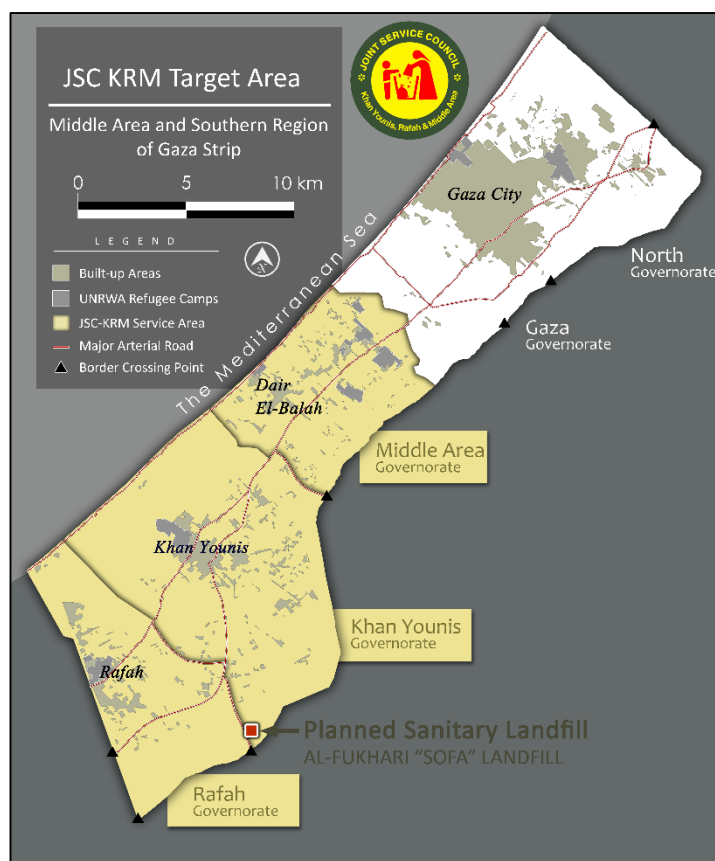


Figure 1. JSC KRM Service Area

General Assembly and the Board of Directors

General Assembly of the Council consists of the heads of local authorities of 17 member municipalities: Khan Younis, Rafah, Deir Al Balah, Al Nusirat, Al Maghazi, Al Burij, Al Zawayda, Al Qarara, and Abasan Al kabira, Bani Suhaila, Abasan Aljadida, Khuza'a, Al Musadar, Al Shuka, Al Nasr, Al Fukhary and Wadi Al Salqa. The Board of Directors consists of heads of seven municipalities which are assigned through election. According to the approved Bylaws of the Council, the election of Board of Directors is carried out every two years. The last election was held on 16/06/2015 and consisted of 7 representatives of the General Assembly as illustrated in table (2). The Council met eight times throughout the year 2016 to discuss periodical and urgent affairs, and follow up the progress. A further description of the main decisions of the Board of Directors for this year will follow.

Table 2. The members of the Board of Directors

Name	Representing the municipality of:	Title
1 – Yehya Mohyi Al Din Al Astal	Municipality of Khan Younis	Chairman of the Board of Directors
2 – Sobhi Abu Radwan	Municipality of Rafah	Vice - Chairman
3 – Said Nassar	Municipality of Der Al Balah	Member of the Board
4 – Mostafa Al Shawwaf	Municipality of Abasan Al Kabira	Member of the Board
5 – Mohammed Bu Eshkian	Municipality of Al Nusirat	Member of the Board
6 – HamadAlRaqab	Municipality of Bani Suhaila	Member of the Board
7 – Hasan Abu Mazeed	Municipality of Zawayda	Member of the Board



Council's Bylaws

The Council's bylaws approved by the General Assembly through its 2014/5 meeting. The Bylaws were officially adopted by the Ministry of Local Government on 30/04/2014 and were in force ever since. The previous annual report detailed the contents of the Bylaws.

Council's Performance for the year 2016

1. Administrative Performance

1.1. Administrative Structure

The organizational structure of the Council was established in 7/5/2014 with the approval by the members of the General Assembly considering the future expansion of the Council which will expand to cover the governorate of Rafah and the new sanitary landfill that will be constructed in Al Fukhary area within the framework of the current project of GSWMP as shall be detailed later. The Bylaws was adopted by the Ministry of Local Government in 24/6/2014. As it was mentioned in the previous annual report of the Council for the years 2014-2015, the organizational structure for the Council includes three managerial levels:

1. Higher Management represented in the Board of Directors;
2. Middle Management represented in the Executive Management;
3. Lower Management represented in Departments Management;

1.2. Council's Staff Recruitment and Polarization

1.2.1. Polarization

The process of recruitment and polarization of the Council is done in accordance with official and legal procedures approved by the Ministry of Local Government and Palestinian Employment Law number 7 of year 2000. It starts with a job declaration and ends with a contract with an employee all in relation to the Council's needs. Throughout year 2016, large numbers of employees from the categories of engineers, administrators and drivers were polarized. It is worth mentioning, that the Council in the process of recruiting a new administrative assistant in the beginning of 2017.

Table 3. Jobs that were occupied throughout year 2016

Title of the Occupation	Number	Notes
Environmental Engineer	1	Annual contract within GSWMP
Driver	5	Annual contract with the Council
Legal Assistant	1	Part time job from the municipality of Khan Younis

1.3. Evaluation of Staff Performance

The Council continuously seeks to monitor employee performance in order to identify the points of weakness and enhance and maintain strength points. This reflects positively on the performance of the employees and the Council in general. To achieve that purpose, the Council conducts an annual evaluation of each employee individually through an evaluation form used in the local authorities, as a way of effective follow up. Each employee is evaluated by his direct manager using official Council forms which are divided to level and categories to help the evaluation of productivity, development, communication skills, networking skills, self-management, responsibility and initiative. It is worth mentioning that a new model of evaluation shall be made serving the goals of the Council. It will be approved and used from the beginning of 2017.

2. Financial Performance

2.1. Financial System for Salaries

In order to achieve the professional satisfaction of all employees working in the Council, the Council, in collaboration with the Ministry of Local Government, has prepared a financial system for the salaries and



entitlements of employees according to the existing regulations of the Ministry of Labor to suit the nature of the work, the scientific qualifications and the risk. This in turn makes the salaries and financial entitlements of employees clear to all.

The financial system for salaries was officially approved by the Ministry of Local Government on 15/12/2015. The system defines the basic salary of each employee according to the salary scale relating the category, grade and seniority according to the entitlement note. The note includes (basic salary, role premium, nature of work, allowance, travel allowance, additional allowance), as well as withholding, which includes (health insurance, income tax or any other deductions required by law). Work on this system began on 1/1/2016.

2.2. Debts of the Council on Member Municipalities

Municipal fees for collection and disposal services provided by the Council for these municipalities amounted to NIS 11,092,641.49 NIS by the end of 2016. It is therefore clear that from 1/7/2012, the percentage of monthly collection from the municipalities has been reduced to 70%, taking into account the conditions that the municipalities are going through to the total entitlements, based on the meeting of the Board of Directors dated 5/8/2012.

The following table (4) shows the value of the financial dues on municipalities benefiting from the services of the Council as per the percentage of 70% and 100% allocated at the end of 2014, 2015 and 2016.

Table 4. Debts of the Council on member municipalities until the end of 2014, 2015 and 2016

Name of municipality	Amount due for 2014		Amount due for 2015		The accumulated balance until the end 2015		The accumulated balance until the end of 2016	
	100%	70%	100%	70%	100%	70%	100%	70%
Khan Younis	149,353.63	- 189,188.06	660,452.55	228,399.70	-508,856.72	-920,480.24	3,855,460.18	2,134,993.05
Bani Suhaila	156,717.25	68,460.42	232,810.90	120,525.37	130,487.82	23,783.28	1,704,728.37	1,253,346.77
Abasan Kabira	90,232.03	17,992.07	78,567.15	-13,825.02	99,070.50	8,332.26	886,062.70	518,719.37
Khuza'a	32,638.01	11,367.21	-68,116.89	-95,260.86	41,403.11	12,340.58	274,949.20	159,129.52
Abasan Aljadida	9,565.28	-15,881.90	-72,596.51	- 105,656.94	31,087.79	-1,723.70	7,646.30	-125,580.04
Al Qarara	- 3,522.70	-65,414.18	50,776.35	-31,020.74	-59,805.21	-139,829.49	393,618.93	55,144.56
Deir Al Balah	124,526.22	-69,259.51	346,877.27	90,105.78	158,903.31	-82,800.91	2,885,472.33	1,867,726.79
Al Nusirat	- 55,457.30	17,603.01	-15,715.74	53,143.71	-34,053.58	-63,307.61	288,306.94	131,762.10
Al Buriij	31,731.11	21,311.78	20,854.59	8,877.48	13,187.94	-90.48	185,867.26	133,659.09
Al Maghazi	-110,625.85	-117,441.05	1,757.34	-8,411.32	40,498.95	28,201.07	17,984.84	-25,554.21
Al Zawayda	62,966.57	38,179.35	50,062.31	31,809.62	10,760.41	-8,059.37	435,883.07	313,516.05
Wadi Al Salqa	32,763.27	21,062.29	43,616.72	28,849.78	28,849.78	22,665.63	160,250.95	101,203.41
Al Musadar	547.46	383.22	609.42	426.59	-15300.49	-16156.633	-3,589.58	-4,985.93
Total							6,513,080.53	11,092,641.49

2.3. Purchasing System

For the sake of developing a comprehensive and organized purchasing system for the Council, a new purchasing system was prepared in cooperation between the sections and the finance department. It was approved by the board and circulated to the sections along with its mechanisms and forms on 15/12/2015 as it has been clarified in the previous annual report for 2014-2015.

2.4. The Debt Accumulated on the Council

The accumulated debt of the Council reached 948,554 NIS according to financial reports at the end of 2016 as it is illustrated in Table (5).



Table 5. The debt accumulated on the Council until the end of 2014, 2015, 2016

Section	Accumulated amount until the end of 2014 (NIS)	Accumulated amount until the end of 2015 (NIS)	Accumulated amount until the end of 2016 (NIS)
Amounts for suppliers	261,392	550,343	567,841
Amounts for staff salaries	342,869	340,138	380,713
Total	604,261	890,481	948,554

2.5. Sources of Income for the Council

In its income, the Council depends mainly on the revenues from the collection and disposal. Some parties pay the Council for the services of collection and disposal, these parties are the municipalities of: Khan Younis, Bani Suhaila, and Abasan Al kabira, Khuza'a, Abasan Aljadida, Al Qarara, Wadi Al Salqa and Deir Al Balah). Other parties pay the Council for the service of disposal into landfill, these municipalities include (Khan Younis, Bani Suhaila, Deir Al Balah and Al Nusirat) as well as UNRWA and the companies of private sector. Table (6) clarifies the revenues of member and non-member municipalities.

Table 6. Revenues of the Council in 2014, 2015 and 2016

Party	Revenues of 2014	Revenues 2015	Revenues 2016
Member municipalities	2,977,294.75	3, 707,332.39	3,603,362.74
Nonmember municipalities	544,980.57	325,802.47	492,167.42
Total of revenues from member and nonmember municipalities (NIS)	3,522,230.32	4,033,134.86	4,095,530.16

2.6. Estimated Budget

Estimated budget of 3,898,500 NIS of 2016 was officially adopted by the Ministry of Local Government on 2/5/2016. Preparation of the budget of 2017 is in the process. In addition, the estimated budget of 2017 was prepared and it reached up to 10,201,200 NIS. This budget was sent to the Ministry of Local Government to be discussed and approved.

2.7. Cost of Collection and Disposal

Table (7) illustrates the cost of collection and disposal in 2014, 2015 and 2016.

Table 7. The cost of collection and disposal in 2014, 2015 and 2016

Point	2014 (NIS/Ton)		2015 (NIS/Ton)		2016 (NIS/Ton)	
	Cost	Board of Directors' decision for pricing	Cost	Board of Directors' decision for pricing	Cost	Board of Directors' decision for pricing
Collection and Transport	36.002	25.2	46.136	34	52.39	34
Disposal	3.918	10.8	7.874	10.8	10.42	10.8

2.8. Support and Assistance

The following is a summary of all support received by the Council throughout 2016:

1. Receiving 156,900 liters of fuel as a grant from UNRWA with the amount of 798,185 NIS.
2. The contribution of the member municipalities with the amount of 252,111 NIS in the expenses of establishing the landfill of Sofa at Al Fukhary.
3. Commitment of the Islamic Development Bank with an amount of (IDB) \$ 100,000 for spare parts grants (under implementation)



4. The contribution of the member municipalities to compensate the General Administration of Liberated Lands for the evacuation of Sofa farm in Al Fukhary through the Ministry of Finance with an amount of 280,500 NIS (under implementation)

2.9. Decisions of the Board of Directors

Table (8) clarifies the decisions of the Board of Directors which consists of 17 member municipalities of the Council in the year 2016.

Table 8. Decisions of the Board of Directors, 2016

Record Number	Date	No. of Decisions
6	02/18	3
7	03/26	4
8	04/4	1
9	05/18	4
10	07/18	2
11	08/17	1
12	10/11	2
13	11/24	3

3. Technical Performance

3.1. Secondary Collection

Ever since the establishment of the Joint Service Council in Southern Areas of Gaza Strip in 1955, the Council mainly implements a secondary collection of solid waste in the areas it serves. Solid waste is transported by the Council's vehicles from the containers to landfill located in east of Deir Al Balah for final disposal. While, member municipalities implement primary collection of solid waste (from houses to containers) and the Council conducts the secondary collection of waste (from containers to landfills) as it is illustrated in Figure (2). The Council implements the collection of waste from the areas of member municipalities within schedules and an organized follow-up from the administrative unit of the Council. The containers from highly density areas are emptied daily, while containers from areas with low population density are emptied once every three days throughout the years taking into account holidays and events. It is worth mentioning that there is a continuous coordination with the Health and Environment Departments in member municipalities regarding the periodic collection and disposal of solid waste in areas under service.

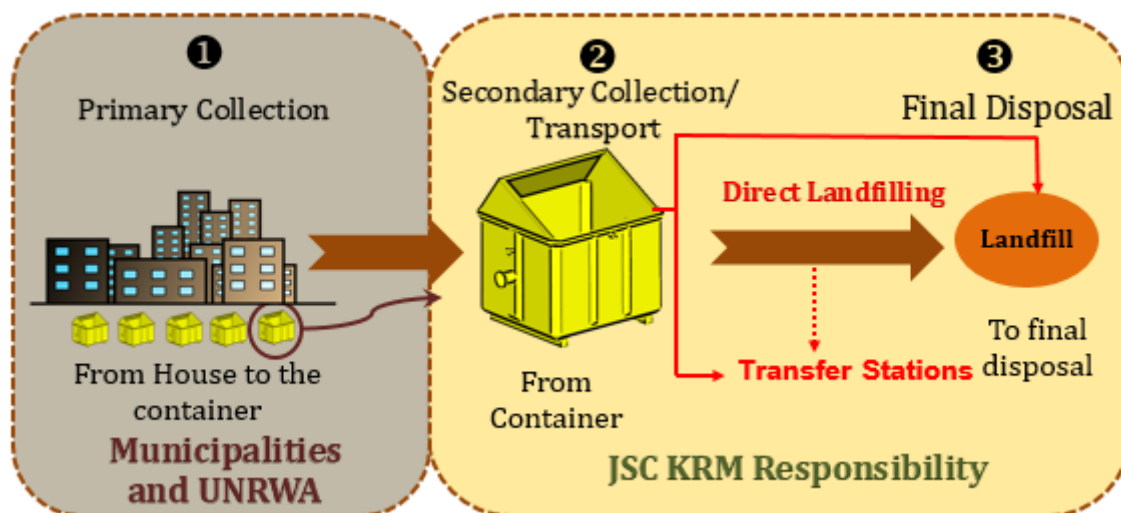


Figure 2. Role of the Council in Solid Waste Management

3.1.1. Service Area: Secondary Collection

The Council is currently collecting and disposing solid waste from the containers of some local authorities in the Middle Area and Khan Younis Governorate of 9 municipalities (Khan Younis, Bani Suhaila, Abasan Al kabira, Khuza'a, Abasan Aljadida, Al Qarara, Deir Al Balah, and Wadi Al Salqa). Whereas, all of the municipalities of Al Burij, Al Maghazi, Al Musadar, Al Nusirat and Al Zawayda collect their solid waste by themselves or by UNRWA in coordination with the Council, UNRWA, and these municipalities.

3.1.2. Amount of Waste Transported by the Council's Vehicles

The amount of waste transported by the Council's vehicles from the member municipalities reached to 67,955.5 ton as of 2016. Table (9) illustrates the amount of waste collected by the Council's vehicles in 2014, 2015, 2016 according to the areas of service.

Table 9. Amount of waste disposed by the mechanisms of the Council according to area

#	Area	2014	2015	2016
1	Khan Younis	24,828.26	27,986.24	27,244.22
2	Bani Suhaila	6,052.68	6,440.95	5,939.94
3	Abasan Al kabira	6,082.50	6,814.71	6,504.96
4	Khuza'a	1,834.87	2,019.64	2,164.80
5	Abasan Aljadida	2,181.36	2,443.51	2,416.90
6	Qarara	5,970.25	5,988.26	5,876.70
7	Deir Al Balah	14,650.20	17,421.84	16,077.24
8	Nusirat	0.00	0.00	390.74
9	Maghazi	0.00	0.00	160.30
10	Zawayda	833.64	56.36	117.74
11	Wadi Salqa	982.88	1,098.73	1,061.96
Total		63,416.64	70,270.24	67,955.50

3.1.3. Mechanisms of Waste Collection and Disposal

The Council owns 16 vehicles for the secondary collection of waste from the areas of service in order to dispose the collected waste Deir Al Balah landfill. The vehicles are divided to serve Middle Area and Khan Younis Governorate. The following table (10) shows the general data of these vehicles.



Table 10. General data regarding the Council's Vehicles

Vehicle Name	Statement	Year of Production	Area of Service	Number	Design load (Ton)
Volvo - FL 614	Crane and Tipper	1995	Middle Area Governorate	4	5.5
Volvo - FL 619	Crane and Tipper	1995	Middle Area Governorate	1	8.2
Volvo - FL 619	Crane and Tipper	1995	Transferred to Khan Younis	1	8.2
Renault - Dx1280	Crane and Tipper	2008	Middle Area Governorate	1	9
Renault - Dx1280	Crane and Tipper	2008	Khan Younis Governorate	2	9
Volvo - FL 619	Crane and Tipper	1995	Khan Younis Governorate	5	9
Volvo - FL 619	Crane and Tipper	1997	Khan Younis Governorate	2	9
Total number of Council's vehicles				16	

3.1.4. General Performance of the Vehicles for Collection and Disposal of Waste

Vehicles are followed up daily by the technical and administrative staff relying on the incoming information from the weighbridges of the landfill and inserting it into a database which will clarify the status of each vehicle as number of trips, working hours/ days and the uploaded amount of waste, etc. In addition to, Fleet Management Program installed for instant management and follow up for vehicle's path as will be discussed later. Table (11) clarifies the data of the performance of Council's waste collection vehicles in the years 2014- 2015- 2016.

Table 11. Performance of Council's vehicles in the years 2014- 2015- 2016

#	Clarification	2014	2015	2016
1	Total of vehicles	16	16	16
2	Stand by vehicles	0	0	0
3	Available vehicles for Work	16	16	16
5	Amount of transported Waste by the Council's vehicles (ton)	63417	70270	67956
6	Travelled Distance (Km)	Unavailable	Unavailable	Unavailable
7	Actual working hours	22258	25732	25420
8	Number of trips to landfill	8192	9397	9579

It is noticed that the efficiency of transporting a ton per working hour in 2016 has decreased due to the following reasons:

1. The performance of Khan Younis Department during 2015 does not take into account the design weights. There was an overload of the vehicle, resulting in lowering the time of travel distance at the expense of vehicle safety.
2. Since 2016, Khan Younis started to take into consideration the design weight for each vehicle so as not to increase 9 ton of load for each trip.
3. In 2016, the municipality of Khan Younis adopted three empty points for the containers of roll on/ roll off trucks instead of the Council in the complexes of Al Amal district, Ahmed bin AbdElaziz district and Ma'an.
4. The failures of the vehicles have increased in 2016 in the departments of Khan Younis and Deir Al Balah which led to stop the service of several vehicles for a long time for repairing and maintenance like the vehicles of 30-650-55, 30-656-55, 30-625-55, 30-658-55, and 31-887-50.
5. Some citizens dump the waste near the containers, whether because it is damaged or for other reasons. This causes the intervention of municipality vehicles like Bobcat, tractor or tipper.



3.1.5. Containers' of Waste Collection

The Council provides 1 cubic meter containers for member municipalities and in an easy access by citizens and vehicles for collection. Every once in a while, the Council redistributes the containers according to the needs of member municipalities in coordination with the Health and Environment Departments. The Council obtains the approximate total of 2894 container in 2016 and the following table (12) clarifies the estimate number of available containers in service area relying for 2014, 2015 and 2016.

The previous annual report for the Council of 2014-2015, more details showed regarding the overall design of the container (capacity 1 cubic meter).

Table 12. Number of Containers in the Jurisdiction Area of JSC KRM

#	Municipality	2014	2015	2016
1	Khan Younis	839	894	870
2	Bani Suhaila	159	169	148
3	Abasan Al kabira	265	265	248
4	Khuza'a	62	162	97
5	Abasan Al kabira	107	120	130
Estimated Total of Khan Younis' Containers		1432	1610	1493
1	Al Nusirat	315	315	220
2	Deir Al Balah	372	395	488
3	Al Qarara	350	380	385
4	Al Zawayda	215	235	185
5	Wadi Salqa	66	65	78
Estimated Total of Middle Area's Containers		1388	1390	1356
General Estimated Total of containers in Council's area of service		2750	3000	2849

3.1.6. Support Fund for the Council's Containers

Pursuing to provide the appropriate number of containers as according to the waste generated, some donors provide the Council with provisions for the containers from time to time. The following table (13) illustrates the support provided for the containers in 2016.

Table 13. Number of vehicles provided in 2016

#	Statement	Local authority	year	Municipality
1	62 containers/ 1 cubic meter capacity	Deir Al Balah	2016	Deir Al Balah municipality- Grant of Municipality Development and Lending Fund
2	70 containers/ 1 cubic meter capacity	Khan Younis	2016	Khan Younis municipality - Grant of Municipality Development and Lending Fund
3	3 containers / 23 cubic meter capacity	Khan Younis	2016	Khan Younis municipality - Grant of Municipality Development and Lending Fund
4	43 containers / 1 cubic meter capacity	Al Qarara	2016	Al Qarara municipality - Grant of Municipality Development and Lending Fund
5	2 containers/ 1 cubic meter capacity	Al Maghazi	2016	Al Maghazi municipality – Japanese grant - GVC
6	8 containers/ 1 cubic meter capacity	Wadi Salqa	2016	Wadi Salqa municipality – Japanese grant - GVC
7	6 containers' 1 cubic meter capacity	Al Qarara	2016	Al Qarara municipality – Japanese grant - GVC
8	1 container/ 1 cubic meter capacity	Bani Suhaila	2016	Bani Suhaila municipality – Japanese grant - GVC
9	37 containers/ 1 cubic meter capacity	Al Zawayda	2016	Al Zawayda municipality – Grant of Municipality Development and Lending Fund - MDLF

3.2. Fleet Management

In order to monitor and control the movement of the Council's vehicles, the Council contracted with one of the companies that provide fleet management on 1/4/2015. GPS devices were installed on all vehicles of the Council allowing the administrative staff to follow up the movement of all vehicles through an electronic gate of the Council's account on internet. This technique came beneficial when confirming the movement of the

vehicle on track and the performance of collection operation of the required number of containers in the collection point all through knowing the time of stoppage. In addition to knowing the drivers available to work and complaints. Currently, the Council is looking forward to:

1. Development of the report system coming from the program in cooperation with the company providing the service, in accordance with the need of the Council. This will benefit in providing and recording an effective and summarized information of the movement of the vehicles and excesses.
2. Through the company that provides this service, the council aspires to connect the GPS system with the track system of the vehicles, which was newly done by the Council, and the modernized database for the locations of containers. This will be of great benefit for the tracking process.

Barriers and Problems of the System

1. The biggest problem that the system faced was the continuous failure of the devices and the company's lack of commitment in periodically replacing them. The company explained this by saying that the alternative devices cannot enter Gaza through the crossing.
2. Daily follow up of the system requires certain material and human potential.

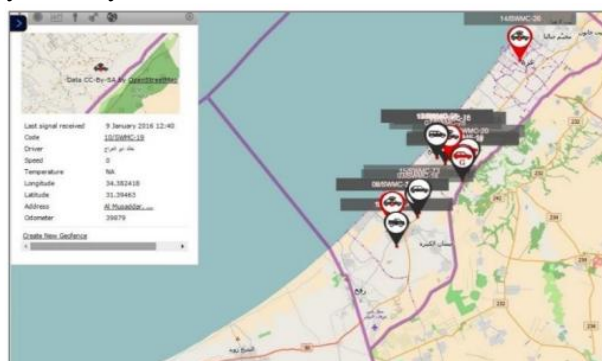


Figure 3. An image of Fleet management Service

3.3. Technical Assessment of the Council's Vehicles

Current routing system of the 16 vehicles in the departments of the Council in Middle Area and Khan Younis has been assessed as it is illustrated in the following figure (4).

This assessment is aimed at improving the current situation, because it is necessarily important to realize that the routing system is a continuous process, as its efficiency and effectiveness are shown in meeting the needs of member municipalities and addressing the challenges of the day. Proper planning will maintain the satisfaction of service on collecting solid waste to maintain public and clean streets. The following information has been collected and summarized in order to track the deficiencies and needs of the departments in Middle Area and Khan Younis governorates:

1. Vehicles, maintenance equipment, employers and technicians of the two departments.
2. Areas of service for the Council's vehicles.
3. Technical assessment of the Council's vehicles.
4. Specifying the routing system of the Council's vehicles.

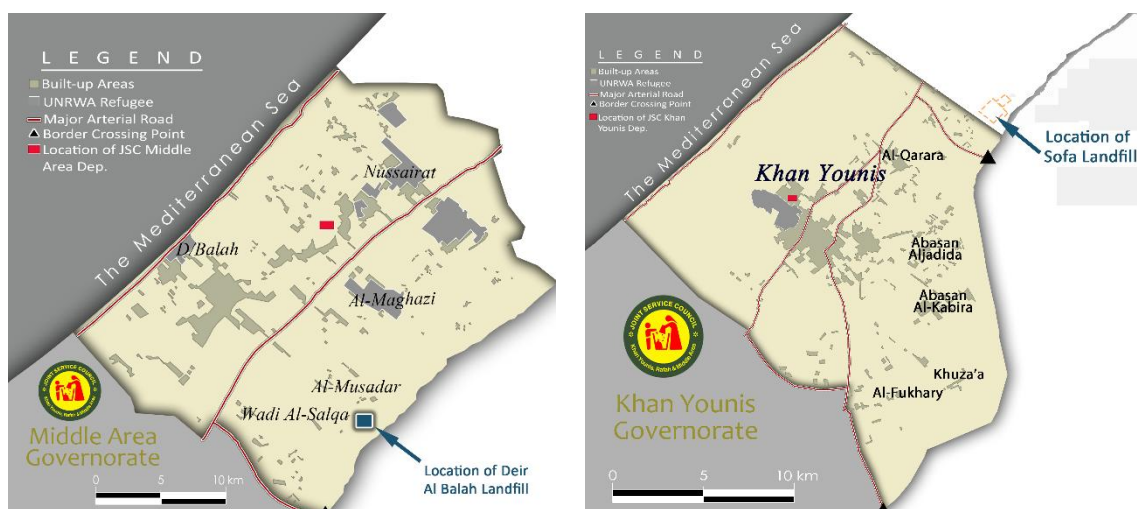


Figure 4. Location of the Council's departments in Middle Area and Khan Younis

The following table (14) illustrates information regarding the type of service, number of population, and the service area provided by the Council in Middle Area and Khan Younis governorates.

Table 14. Type of service, number of population, service area provided by the Council in Middle Area and Khan Younis governorates

Type of Service		Municipality Name	Population (people)	Service Area (km ²)	Amount of waste Generated in January – July 2016
Middle Area Department					
Collection and disposal service	1	Deir Al Balah	80,972	15.300	1314.18
	2	Al Qarara	25,675	11.777	485.9
	3	Wadi Salqa	6,145	3.980	87.07
	4	Al Nusirat	48,769	9.755	287.97 (only in Oct., Nov. Dec.)
	5	Al Zawayda: in case of municipality vehicle's breakdown	22,530	7.010	23.55 (only in May, Aug. Sep., Nov., Dec.)
	6	Al Maghazi: in case of municipality vehicle's breakdown	8,696	3.055	154.3 (only in April)
Disposal for municipalities	1	Deir Al Balah	80,972	15.300	703.96
	2	Al Qarara	25,675	11.777	109.79 (only in Sep., Oct., Nov.)
	3	Al Nusirat	48,769	9.755	577.92
	4	Al Burij	13,099	5.300	341.52
	5	Al Zawayda	22,530	7.010	443.35
	6	Al Maghazi	8,696	3.055	261.39
	7	Al Musadar – January - May	2,491	4.160	26.42
UNRWA Disposal Service for refugee camps	1	Deir Al Balah camp- Al Maghazi Camp	30,286	405	595.08
	2	Al Nusirat camp	37,366	640	19.36 (only in January & February, Oct.)
	3	Al Burij camp	31,932	410	51.55 (only in January & February)
Khan Younis Department					
	1	Khan Younis	185,250	57.764	2234.52



Collection and disposal service	2	Bani Suhaila	41,174	5.170	483.33
	3	Abasan Al Kabira	23,914	7.028	541.25
	4	Abasan Aljadida	7,878	3.328	200.58
	5	Khuza'a	11,880	2.527	179.57
Disposal for municipalities	1	Khan Younis			1180.72
	2	Bani Suhaila			688.55
	3	Abasan Al Kabira			172.02 (only in Feb., Apr., May, Jun., Jul., Aug.)
	4	Abasan Aljadida			55.21
Disposal by member municipalities' vehicles	1	Dutch and Japanese neighborhoods			110.91
	2	Khan Younis camp			1092.85

3.3.1. Description of Routing System in Middle Area and Khan Younis Governorates

A description of all Council's vehicles routing system on maps was drawn up. In order to archive the location of the containers and their status for follow-up and periodic inspections, each container was given a code.

3.4. The Disposal of Waste

The Council is currently providing the service of waste disposal for member municipalities within the governorates of Khan Younis and Middle Area with the population of about 500,000 and an area of 166 square kilometers. In which the Council's vehicles, UNRWA and member municipalities collect, transport and dispose the solid waste from its sources to the Deir Al Balah landfill. The landfill is located in the east of Deir Al Balah city under the supervision of the Council according to the vehicles and possibilities available. The municipalities of Rafah will join the service upon completion of construction the main landfill in Al Fukhary area.

3.4.1. Central Landfill

Council's main landfill was established with the support of German Cooperation Agency in 1995. It is located in the east of Deir Al Balah and has the area of 88 acres. It is the first landfill in Palestine for the purpose of solid waste disposal using healthy and environmentally friendly standards. The previous annual report of the Council outlined the general layout of the landfill describing its entrance details, weighbridge, and leachate collection ponds in addition to the operational mechanism of the landfill.

3.4.2. Incidents of the Landfill

The life time of Deir Al Balah landfill reached with 22 meters height that made the landfill vulnerable to several challenges and incidents. The most risky incidents is the occurring of fires that happen periodically due to absence of gas collection system, specifically the production of methane gas. The year 2016 witnessed fires that covered large areas. The following details the dates of fire accidents:

Table 15. Number of fires at Deir Al Balah Landfill in 2016

No. of fires in 2016	
March	3
April	2
June	2
July	1
September	1



3.4.3. Amount of Waste Inflow to the Landfill

The amount of waste coming to the Council's main landfill in the east of Deir Al Balah reached 150,437.23 tons in 2016, according to weighbridge records in the landfill. Table (16) demonstrates the amount of waste that has been disposed in the landfill in accordance with the side that required disposal and the area of collection. For more details, please refer to annex (1).

Table 16. Incoming Solid Waste to the Landfill in the Years 2014, 2015, 2016

***Note: The amount of waste coming to the landfill in 2014 is modified in this annual report for 2016.**

3.4.4. Clarifications regarding the amount of waste coming to the landfill from the service area in 2016

The amount of waste collected by the Council's vehicles

A decrease can be noticed in the amount of waste collected by the Council with the rate of 5%. The decrease is due to following reasons:

1. Khan Younis: The municipality of Khan Younis contracted with an external contractor to collect the wastes from roll on/off containers in some areas of Khan Younis such as Ma'an and Berkat Al Mashru'. Therefore, the amount of waste collected and disposed by the Council's vehicles reduced.
2. Bani Suhaila: The municipality of Bani Suhaila expanded the area of their own compactor vehicle on the expense of Council's tipper crane.
3. Al Qarara: A 2% decline due to a transportation of 500 tons by a private contractor called Al Qaoud through UNRWA project. In addition, there are several random dumpsites by donkey carts.
4. Deir Al Balah: There is a 10% decline in Council's collection of waste. This is due to the existence of random sites that the municipality used to dispose their wastes as evidenced by the increased volume of disposal by the municipality with a rate of 20%. Also, a part of waste is being disposed within the service of UNRWA.
5. Municipalities of Al Nusirat, Al Maghazi and Al Zawayda: they collect the wastes by their own vehicles with a rate of 100%. However, the Council serves these municipalities due to their vehicles' breakdown.
6. Wadi Al Salqa Municipality: No change has been made on the municipality's service of collection by the Council. The difference of 3% which equals 37 tons is insignificant and unexplainable.

Amount of waste collected by the vehicles of member municipalities

An increase can be noticed in the amount of waste coming to the landfill by the municipality vehicles with the rate of 4%. The increase is due to following reasons:

1. Bani Suhaila: the municipality of Bani Sheila collected and disposed waste in random collection points to be transferred later to a landfill through a grant from UNRWA.
2. Abasan Al kabira: the municipality of Abasan Al kabira disposed waste to a random collection point due to a great increase in the amount of resulted waste. The possibilities of the Council to absorb such waste with their vehicles are low due to the increase of pressure in service areas.
3. Abasan Aljadida: the municipality of Abasan Aljadida disposed waste in random collection points.
4. Deir Al Balah: there were campaigns for the random points to be collected by the municipality in specific times of the year which led to an increase in the amount of disposal.
5. Al Musadar: It used and still uses a random disposal area (random landfill) however, due to weather circumstances some loads were disposed in the landfill of Deir Al Balah.



#	Service by	Region	2014 (ton)	2015 (ton)	2016 (ton)	Percent of change between 2016 & 2015
1	Joint Service Council for Solid Waste Management (Collection and Disposal)	Khan Younis	24,828.26	27,986.24	26,814.22	-4%
2		Bani Suhaila	6,052.68	6,440.95	5,799.94	-11%
3		Abasan Al Kabira	6,082.50	6,814.71	6,494.96	-5%
4		Khuza'a	1,834.87	2,019.64	2,154.80	6%
5		Abasan Aljadida	2,181.36	2,443.51	2,406.90	-2%
6		Al Qarara	5,441.12	5,988.26	5,859.70	-2%
7		Deir Al Balah	14,650.20	17,421.84	15,877.24	-10%
8		Al Nusirat	0.00	0.00	390.74	
9		Al Maghazi	0.00	0	154.3	
10		Al Zawayda	833.64	56.3	117.74	52%
11		Wadi Al Salqa	1066.88	1,098.73	1,061.96	-3%
Total of Joint Service Council (ton)			62,971.51	70,270.24	67,132.50	-5%
1	Municipalities (disposal)Muni	Khan Younis	8,928.22	11,685.90	14,168.68	18%
2		Bani Suhaila	4,767.68	7,831.84	8,262.64	5%
3		Abasan Al Kabira	-	91.58	1032.1	91%
4		Abasan Al Aljadida	37.30	44.46	110.42	60%
5		Al Qarara	-	384.83	329.36	-17%
6		Deir Al Balah	6,616.06	6,739.41	8,447.47	20%
7		Al Nusirat	11,683.42	11,551.84	7,408.17	-56%
8		Al Buriij	3,215.84	3,696.64	3,136.70	-18%
9		Al Maghazi	2,103.46	3,138.47	4,098.28	23%
10		Al Zawayda	3,849.58	5,399.76	5,320.18	-1%
11		Al Musadar	50.69	56.43	264.24	79%
Total of municipalities (ton)			41,252.25	50,621.16	52,578.24	4%
1	UNRWA	Khan Younis	10,231.93	10,032.72	13,114.23	23%
2		Deir Al Balah & Maghazi	5,455.1	5,905.37	7,140.94	17%
3		Al Nusirat	7,816.97	-	58.08	
4		Al Buriij	3,800.48	-	103.1	
5		Jabaliya	19.00	-	-	
6		Beach camp	21.28	-	-	
7		Rafah	29.76	-	-	
Total of UNRWA			27,374.52	15,938.09	20,416.35	22%
1	Private Sector	Palestine Company	-	9,083.84	-	
2		Hajjaj co.	-	-	-	
3		Qaoud co.	13,622.58	-	12,041.85	
4		Abed Bashir transports	-	9,083.84	-	
Total of Contractors (ton)			13,622.58	9,083.84	12,041.85	25%
General total of disposal in landfill			145,220.8	145,913.33	152,168.94	4%

Amount of waste collected by the vehicles of UNRWA

An increase can be noticed in the amount of waste transported to the landfill by the UNRWA vehicles with the rate of 22%. The increase is due to an increase of the population which is proportional to an increase of construction in the targeted camps.



Amount of waste collected by the private sector (contractors' vehicles)

The amount of waste disposed in the main landfill of Deir Al Balah through the private sector has increased with a rate of 25% more than the rate in 2015. For more information, please refer to annex (1) regarding the amount of waste coming to the main landfill from the areas of member municipalities and UNRWA in 2016. Overall, we notice that the amount of waste coming to the main landfill of the Council (landfill of Deir Al Balah) in 2016 has increased with an insignificant rate of 4% than it was in 2015. The increase happened despite constructive expansion and a risen number of population due to the following reasons:

1. Although the rate of natural growth of population in Gaza is between 3% and 4%, the change constructive and economic activities also affects the amount of the created waste. Therefore an increase of 4% is not that big and can be the result of some municipalities' disposing their waste in random sites (examples: municipalities of Al Musadar and Al Nusirat. The rate of disposal of the main landfill in Deir Al Balah decreases by 67%)
2. Degradation of economic situation in Gaza and an increase of poverty and unemployment rates in 2016 affected directly or indirectly the amount of resulted waste.

3.4.5. Khan Younis Solid Waste Transfer Station

Background and Objective

The Khan Younis transfer station for solid waste comes as one of the activities of Gaza Solid Waste Management Project and the Project's feasibility study in 2012. The study was conducted by United Nations Development Program (UNDP) with the participation of all related Palestinian agencies as well as international donors. The study came with several recommendations, one of them is to expand the landfill of Johr AlDeek in the Governorate of Gaza, in addition to construct a new landfill near the landfill of Al Fukhary (Sofa) which is located currently in the south of Gaza Strip. Finally, the study also recommended to construct five more transfer stations for the disposal of solid waste, each in one of the five Governorates of Gaza. The UNRWA used the financial support from the Islamic Development Bank to construct Khan Younis transfer station. The actual construction started in 2016 after obtaining the land by the municipality of Khan Younis. The Council did not play a part in choosing the location of the station, which was chosen by the Palestinian Land Authority with the permission from Environmental Quality Authority. The station has been delivered to the municipality of Khan Younis at the end of 2016. This transfer station is located in the southern part of the Governorate surrounded by Street Number 30 with the width of 18 meters on the coordinates of 31 ° 19'17.52 north, and 34 ° 16'18.24 east (annex 2). This came detailed in the previous annual report of the Council.

Project's progress

UNRWA construct Khan Younis transfer station with an area of 3,000 m² of a total 10,000 m² site for any future planned expansion. This stage is almost complete and to be delivered to the municipality of Khan Younis in the end of 2016. Based on this, the second stage shall be implemented. The stage is represented in equipment preparation for operation through Gaza Solid Waste Management Project in the coming year of 2017. It is worth mentioning, that all correct environmental standards were considered during the designing and implementation phases. The processes include a separate collection of the leachate in isolated underground tank, a fence that separates the station from the surrounding environment and a steel ceiling to cover the area of disposal. In order to ensure environmental and social standards, the Council prepared a study of Environmental and Social Management Plan for the management of the station under appropriate environmental and social conditions. This was done through Municipal Development and Lending Fund to limit possible future negative impacts. The previous annual report of the Council gave detailed on the location of the station.



4. International Participation on the Council's Experience

In order to ensure the participation of the Council's experience internationally and locally, and to explore the ongoing cooperation between the Councils of Hebron-Bethlehem and Jenin, the Council presented a joint research paper with the Councils of Hebron-Bethlehem and the Jenin. The research came regarding the policy of the three councils in solid waste management as a sustainable approach under economic and social challenges in West Bank and Gaza Strip. The paper was presented to the 32nd International Conference on Solid Waste Management, to be held in the United States of America in March 2017, and it was accepted to present this unique experience of the three councils to researchers and international experts. In addition, the Joint Services Council, in collaboration with the Municipal Development and Lending Fund, has presented a paper on CO₂ emissions from the Council's vehicles since 1995. The paper was accepted at the First International Conference on Climate Change, to be held in Palestine in May 2017.

5. Academic Cooperation between the Leading Institutions in the Sector and the Council

During 2016, the Council received undergraduate and master students from the departments of Geographical Information Systems, Geography, Civil Engineering and Environmental Engineering from academic institutions in the Gaza Strip, such as the University of Palestine, the Islamic University, and others. The Council provided all information for research purposes in order to develop the way of cooperation between the Council and academic institutions. The Council also trained a number of environmental engineering students from the Islamic University in cooperation with the Engineers Syndicate of Gaza. The Council also received a delegation of GIS students from the Islamic University in the facilities of the Council such as the Deir Al-Balah landfill, Sofa landfill, and held a presentation of a seminar on the services of the member municipalities and the new project of Sofa sanitary landfill. The Board expects an increase in the number of educational delegations for 2017 due to the characteristics of the strategic waste management project in the Gaza Strip.

6. Activities of Public Outreach and Awareness Unit

Waste management Sector in the Gaza Strip related to a number of environmental, health and social problems, which have been identified within the framework of the National Waste Management Strategy in Palestine 2010-2014. The strategy identified a number of technical, institutional and financial constraints.

Within the framework of the Council's responsibility towards the local community, a specialized Unit established for public awareness and outreach. The Unit ensures a conscious public-oriented society and people who are educated about how to deal with waste from source. The Unit includes a group of staff members distributed over the three governorates of Khan Younis, Rafah and Middle Area, with full coordination of the main activities led by the Public Awareness and Outreach Officer. It is worth mentioning that there is a continuous and mutual cooperation with Health and Environment Units of member municipalities regarding public-awareness activities. In 2016, the staff number of the awareness team increased through:

1. Volunteers joined the Council's awareness team following the Council's system and procedures.
2. Cooperation with other institutions and polarization of health educators to work with the Council's awareness unit. Job Creation Program in collaboration with Islamic Relief responded to needs of solid waste sector. A number of 6 health educators were assigned to work for three months in public awareness activities for the Council (particularly in the Middle Area, Khan Younis and Rafah Governorates).
3. Coordination with the Temporary Employment Program through the Ministry of Work to polarize 12 health educators to work in the public awareness team of the Council (particularly in the Middle Area, Khan Younis and Rafah Governorates).



6.1. Council's Strategy for the Coming Stage

1. Capacity building of member municipalities and strengthening the relationship with the CBOs.
2. Improve the percentage of the Council's revenues from member municipalities.
3. Promote community involvement and guidance through a partnership with local non-governmental organizations in the fields of awareness, outreach and promotion the CBOs involvement.
4. Capacity building programs and developing the administrative and technical skills of the Council's staff.
5. Improve the work environment and provide logistical requirements that improve performance.

6.2. Overall Goal

Raising environmental awareness among all local community within the service area of the Council and involving them in developing solutions to environmental problems. This is related to the promotion of health education, sound practices towards solid waste through the implementation of awareness campaigns and the promotion of the participation of citizens, school students and universities.

6.3. Objectives

1. Improving the health and environmental condition of the Council's service area.
2. Participate in the development of plans and related waste management programs.
3. Activate the role of governmental and non-governmental institutions operating in the field of environment.
4. Work with member municipalities in awareness programs for the management of solid waste and programs that reduce environmental pollution.
5. Promote participation with local community through the implementation of public awareness programs.
6. Encourage cleaning campaigns from time to time to promote participation with member municipalities.
7. Design and develop of educational materials in the field of solid waste management, reuse, recycling, proper disposal and minimization of waste.
8. Activate the media role in the awareness through social networks.

6.4. Main activities of the Council's Public Outreach and Awareness Unit

1. Home visits to disseminate environmental public awareness of solid waste.
2. Field visits to verify the current status of containers in the Council's jurisdiction area.
3. Community meetings and health sessions in coordination with local organizations.
4. Visit the mayors to inform them of the annual plan in cooperation with the heads of Health and Environment Departments.
5. Conducting regular coordination meetings with the directors of Health and Environment and Heads of Cleaning Departments in the member municipalities. The meeting helps formulate the monthly plan based on the need of municipalities for the awareness program.
6. School health program.
7. Awareness program targeting mosques.
8. Coordination and networking with non-governmental organizations.
9. Meetings held periodically by the awareness unit in the jurisdiction area of the Council in order to follow up the council's work.

6.5. Health Messages

The following health messages were included:

1. Definition of the Joint Services Council and type of service.



2. Solid waste safe handling by placing it in a sealed nylon bags and putting them in the container.
3. Application of sorting and recycling activities within schools and promote a final exhibition of products.
4. Do not send waste with children.
5. Compelling the residents to remove the waste from the house before the worker and the vehicle pass by.
6. Communicating health and awareness messages through the school health programs.
7. Reduce the practices of burning the wastes in the containers.

6.6. Activities of the Public Outreach and Awareness Unit during 2016

6.6.1. Home visits

Several home visits carried out in the jurisdiction area of the Council. They helped to identify the most important problems facing the primary collection. Table (17) shows home visits implemented through 2016. The following figures (5,6) demonstrate the rates of women's and men's participation in the home visits in Middle Area and Khan Younis Governorates.

Table 17. Achieved home visits in 2016

Region	No. of visits	Men	Women	Health Messages
Home Visits Khan Younis Governorate : municipalities of Khan Younis, Bani Suhaila, Abasan Al Kabira, Abasan Aljadida, Khuza'a, Qarara	3052	2100	6720	Introduce to the Joint Service Council & its services in solid waste field. The primary collection is a responsibility of municipality, while secondary collection (from containers to landfill) is responsibility of the Council. In addition to delivering health messages concerning proper waste disposal, save waste in plastic bags, prohibiting burning wastes in containers to enhance public health and reduce the spread of diseases
Middle Area Governorate : Deir Al Balah, Al Nusirat, Al Buriij, Al Zawayda, Al Maghazi	1746	1827	4196	
Rafah Governorate : municipalities of: Rafah, Al Fukhary, Al Nasr & Al Shuka	1082	2100	5100	Introduction of the Gaza Solid Waste Management Project, construction of the new sanitary landfill in Al Fukhary (Sofa), Transfer stations in three Governorates and final disposal.
Total	5880	6027	16016	

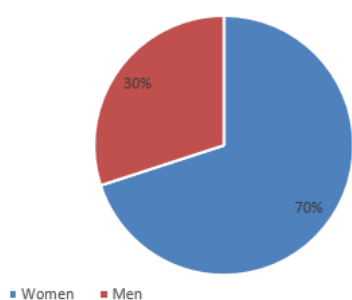


Figure5 . Participation rates of women and youth in field visits in Middle Area

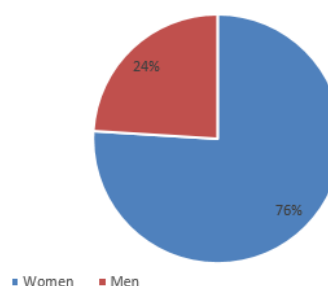


Figure6 . Participation rates of women and youth in field visits in Khan Younis

6.6.2. Community Meetings and Health Sessions

This activity is implemented after conducting home visits in the regions. The activity is considered a type of following up with the population of the area to note the degree of change and benefit from the program. 33 institutions have been visited in the Middle Area Governorate, whereas in the Governorate of Khan Younis 34



meetings have been held to coordinate the establishment of workshops for women and youth and enhance the role of institutions whether they work in environmental field or not. In addition, to make a change and enhance positive attitude based on the health messages that are being transported to all categories of local society. Table (18) demonstrates the number of community meetings in Middle Area and Khan Younis Governorates, whereas the figure (7,8) show the rates of participation of women and men in these meetings.

Table 18. Community meetings in and Khan Younis, Rafah & Middle Area Governorates

Activity	No. of meetings	No. of beneficiaries	Women	Men	Clarification
Areas of influence in Middle Area Governorate: Deir Al Balah, Al Nusirat, Al Buriij, Al Zawayda, Al Maghazi	23 meetings	830	745	17	Deliver health messages concerning proper waste disposal and saving waste in plastic bags to encourage the ending of container burning, Deliver health messages on general health and healthy conduct to reduce the spread of diseases. Explain the idea of solid waste management project and develop new Sofa landfill
Khan Younis region: Bani Suhaila, Abasan Al Kabira, Abasan Aljadida, Khuza'a , Al Qarara	34 meetings	1100	980	120	
Rafah Governorate : Areas of influence of municipalities of: Rafah, Al Fukhary, Al Nasr & Al Shuka	50	950	600	350	
Total	107	2880	1525	487	

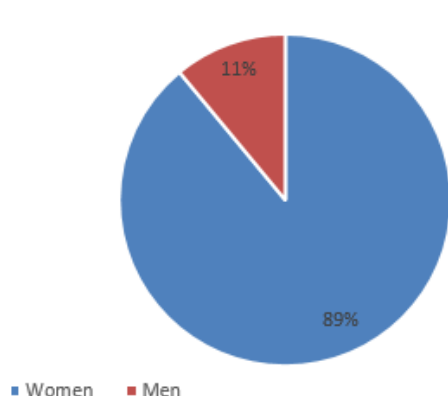


Figure7 . Participation rates of women and youth in community meetings in Middle Area

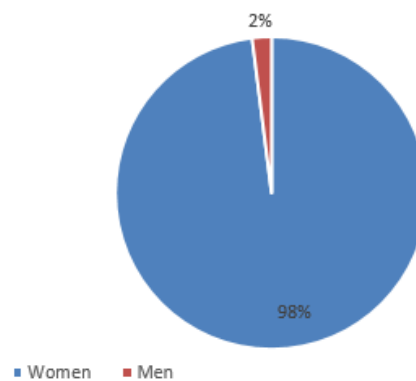


Figure8 . Participation rates of women and youth in community meetings in Khan Younis

6.6.3. Coordinated Periodic Meetings of Health and Environment Directors with the Heads of Cleanliness Departments in member municipalities

This meeting is held in the last week of every month with the environmental awareness team and to help draw a monthly plan based on the needs of partner municipalities. These needs will be included within the work plan of awareness team in the Council. The meeting is held systematically in the Council or Municipalities. In 2016, 20 meetings were held.

6.6.4. Activities Presented at Schools

Through school activities, the Council is introduced and mechanisms of service providing in the field of solid waste management, particularly the primary collection because it is part of municipality's tasks, are explained. The mandates of the Council are represented in the secondary collection service, which means the disposal of waste from containers to the landfill. Through the communicative meetings between the students and the awareness team, the environment and the means of preserving it from pollution are introduced. The focus is made on solid waste in the region, cleanliness of classes, cleanliness of school yard and the outside

surroundings of school and house. Discussions are also made regarding the definition of waste, its components as well as the correct and safe ways of its disposal through the participation of local community. Table (19) illustrates the targeted schools in 2016 in the Middle area and Khan Younis governorate. The following is the summary of messages discussed during visits (figure 9):

1. The obligation to remove waste according to the time of waste transport vehicle. Commit to this schedule and not remove the waste at night - the action which may pollute the area.
2. Emphasize the reduction of generated waste from the source and the possibility of its recycle.
3. Necessity to use nylon bags (black) for waste disposal to avoid the spread of bad odors and not use these for food preserving.
4. Respect the cleaners.
5. Do not burn waste inside of containers.
6. Do not send waste with children but with adults.
7. Encourage the citizens to pay municipality bills to provide better service.
8. Put construction wastes and debris in the designed placed and not in the container



Figure9 . Photos of schools activities

Table 19. Targeted schools in Khan Younis, Rafah & Middle Area Governorates

Region	No. of schools	No. of female students	No. of male students	No. of classes
Western Khan Younis Directorate	8 schools	1569 student	student 786	class 62
Eastern Khan Younis Directorate	8 schools	student 1447	Student 650	class 53
Middle Area region directorate	8 schools	student 2743	--	64class
Rafah Governorate Directorate	10 schools	1200	800	57
Environment clubs		161	student 75	--
Total	34 schools	student 7120	student 2311	class 254

6.6.5. Program of Work with Mosques

In 2016, a work has been coordinated with the mosques of Deir Al Balah, Khan Younis and Rafah Governorates. A coordination has been reached with all regions and the names of mosques which the work shall be done were listed. The activity has been implemented during the holy month of Ramadan in 2016. It targeted a wide category of women and delivered health messages regarding the program which covered 36 mosques in Middle Area and 41 mosques in Khan Younis Governorate. The following table (20) shows the number of mosques and the rates Of participation of women and children in the program.



Table 20. Mosques that have been worked in during 2016 (Khan Younis & Middle Area Governorate)

Place	No. of mosques	No. of women	No. of men	Clarification
Khan Younis Governorate	41	1478	1127	Holding seminars in mosques after coordination with the Department of Religious Affairs for the category of women and children
Middle Area Governorate	36	2000	591	
Total	77	3478	1718	

6.6.6. Coordination with Non-Governmental and Governmental Organizations

1. A decision has been reached with the Ministry of Labor to employ a number of beneficiaries from the temporary employment program, which includes 12 employers to work in the Council for the whole period of delegation. That will be done within the community awareness team of the council which shall be spread on offices of Council's in three Governorate s of Khan Younis, Rafah and the Middle area. This step reached acceptance through submission of a draft from the Council which clarifies the importance of the project and the need of its implementation in reality. The sides are being connected to carry out this mission.
2. Coordination and communication with Islamic Relief has been made to look for the means of cooperation and in the implementation of awareness projects. The first step of this cooperation has been made by training the community awareness team for the job creation project. The training was done by the community awareness specialist in the council through the program of Islamic Relief to be distributed in southern regions. The council enrolled this team within the Council's work team in regions due to the joint purpose of this project with the goals of the Council in the cases of awareness and provision of facilitations.

7. Challenges

The Council continuously faces many challenges which represent a clear obstacle in front of Council's ability to satisfy the needs of work. These obstacles can be listed according to areas of work as follows:

7.1. Challenges of the Secondary Collection

7.1.1. Mechanisms of Collection and Disposal

The Council's mechanisms of collection and disposal have been working daily since 1995 in the area of service without replacing any vehicle in the last twenty years. This fact caused many problems to the vehicles including:

1. End of operation life.
2. Increased operational and maintenance costs.
3. Closure of crossings.
4. Inadequacy of current vehicle systems with the architectural and demographic developments of member municipalities in the Council.
5. The number of existing vehicles is not enough and does not satisfy the current or the future work requirements.

7.1.2. Containers

1. The number of containers is not enough due to the expansion of geographic area.
2. The need to replace many of the existing containers.
3. Use of several containers for unassigned purposes.
4. Misuse due to sale as metal.



5. Inadequacy of containers system in collection operations due to cultural, architectural and demographic changes.

7.2. Challenges regarding the relation with member municipalities

7.2.1. Challenges on the financial performance of the Council

1. Irregularity of municipalities' payment for the service, the fact which weakens Council's ability of financial commitment regarding the operational costs of collection and disposal.
2. Scarcity of grants and funds presented to the Council in general.

7.3. Challenges of Administration and Staff

7.3.1. Movement Cars

1. Cars available for the administration (4) are old due to its constant use since 1995. Their failures became frequent and expensive, and their ability of commitment to work requirements is weak, which constraints the management of work by the administrative staff.

7.3.2. Training and Capacity Building

1. Need to enrich the administrative and technical skills of the Council's staff regarding the principles of solid waste management and professional health and security to be able to deal with daily work circumstances.
2. Urbanization and population increase caused an increase in the amount of solid waste which led to the necessity of staff increase, particularly workers and drivers.

7.3.3. Work Environment

The Council now has three offices (Middle Area, Khan Younis Governorate, and a temporary main office). It is worth mentioning that the offices of Khan Younis and Middle area are old, joint with the municipality and were constructed 20 years ago. The Council needs to establish a new main, independent administrative building to exercise daily work activities. A building which will be enough for all Council's employers providing them with an appropriate work environment.

7.4. Challenges on Council's Awareness Unit

1. Unavailability of an independent transport vehicles for the awareness unit to move between institutions, schools, houses etc. This problem causes a waste of time and an increased cost of transportation on public transportations.
2. Lack of adequate logistics available at the workplace (computers, air conditioning, etc.). This requires an improvement of work conditions to be reflected on performance.
3. Shortage in the number of employers in the work team.
4. There is a weakness in the technical and administrative abilities of the work team due to the nonexistence of sponsors for the project. They need programs of capacity building and skills improvement which will reflect positively on the performance.

7.5. Challenges on Waste Disposal

1. End of designing lifetime of the landfill since 2008. This fact led to an arrival of waste exceeding the landfill capacity which threatens an environmental catastrophe if not solved or replaced.
2. Not sorting the waste from the source before they arrive at the landfill increases the speed of landfill closure which in its turn reduces its designed age.



3. Nearness of the landfill's location to the borders with Israel makes the work in the area difficult and causes an obstruction of bulldozer works as well as the leachate system.
4. Inefficient leachate collection system inside the landfill.
5. The borderline position of the landfill endangers the lives of the staff particularly during evening.
6. Unavailability of communication network and internet on location causes inability to follow up electronically the device and workers' fingerprints.
7. Damage of Council's bulldozer and the inability to fix it. This caused a contract with a local contractor to do the necessary work in the landfill which in its turn increased the operational costs of the Council.
8. The road to the landfill is old and not appropriate for the vehicles. It requires reconstruction so that the vehicles would cross to the place of discharge.

7.6. Future goals and objectives

The main future plans and challenges that the Council faces can be summarized in the following:

1. Improvement of collection and disposal vehicles performance by providing new vehicles which will cover the current incompetence in the number of vehicles. On the level of urgent solutions, a tender is under processing to procure 10 collection and disposal vehicles under GSWMP which will be detailed later.
2. Replace old containers with new ones again and develop the collection system according to the urban and demographic development of the member municipalities.
3. Improve the follow up on the operation of collection from containers through electronic control. In addition to using GIS (Geographic Information System) in this field.
4. Develop the movement of Council's vehicles through Fleet Management of navigation systems, repair the damaged one and install it to other vehicles.
5. Include the Governorate of Rafah to the Council's provision, the fact which requires a lot of administrative and technical procedures like provision of work place, vehicles, staff, etc.
6. Closure of Deir Al Balah landfill and go towards the new Al Fukhary landfill.
7. Operate the transfer stations of Rafah and Khan Younis for the final disposal at Al Fukhary landfill.
8. Evaluate the performance of Council and member municipalities on the current levels of primary and second collection and benefit from previous experiences. A study has been tendered to improve the primary collection within GSWMP.
9. Improve the fee collection ratio from the member municipalities
10. Enhance Council's awareness unit through establishing a partnership relation with the CBOs in awareness fields as well as enhancing the voluntary work spirit
11. Implementing capacity building programs and improvement of administrative and technical skills for the Council's staff on all levels.
12. Improve work environment and provide logistic requirements to develop performance.



Gaza Solid Waste Management Project in Southern Gaza Strip (GSWMP)

1. Background

Completing what has been mentioned in the previous annual report of the Council for 2014-2015 on the GSWMP in southern and Middle Area Governorates and the displayed challenges and delays during implementation of the project, comes the annual report of this year 2016 to show all updates of the project. The developments regard acquired land for the construction of the landfill, solution of all legal issues concerning the process of land acquisition and a detailed preview of developments of all studies of the project. Project Development and Safeguards Unit (PDSU) of Municipal Development and Lending Fund (MDLF) with the cooperation of Technical Operation Unit (TOU) of the Council assigned to follow up all daily activities of the project.

2. Implementation of the Project

2.1. Brief Summary of the Project

Through the GSWMP, a sanitary landfill will be constructed in the southern region of Gaza Strip with capacity to serve the 3 governorates until year 2025, and to serve the entire Gaza Strip until the year 2040. The project is implemented through stages which require a total of 472 acres whereas the first stage of the project is funded by a cooperation with PDSU-MDLF through World Bank Group, French Development Agency and European Union. The first stage of the project includes the building of two cells of the landfill, infrastructure, systems of leachate collection, administrative buildings and maintenance workshops according to high engineering and environmental standards.

2.1.1. Developing purpose of the project

The objective of the project is to improve solid waste management services in the Gaza Strip. This objective would be met through the provision of more efficient, environmentally and socially sound waste disposal systems.

2.1.2. Project Development Objective (PDO) Level Results Indicators

1. Percentage of solid waste collected from the targeted population, disposed in a new sanitary landfill developed under the project.
2. Percentage of increase in fees collected annually within the member municipalities forwards cost recovery.
3. Number of people in urban areas with access to regular solid waste collection under the project.
4. Number of waste pickers whose lives depend on the existing solid waste context and who are integrated into livelihood and social inclusion programs under the project.
5. Contaminated land or dump-sites closed and rehabilitated under the project (in hectares (ha)).
6. Direct project beneficiaries (number) of which females (percentage).



2.1.3. Components of the Project

The project contains four main components illustrated as follows:

1. Component 1: Solid Waste Transfer and Disposal Facilities
2. Component 2: Institutional Strengthening
3. Component 3: Primary Collection and Resource Recovery
4. Component 4: Project Management

The following figure (10) represents amount of investment for each component

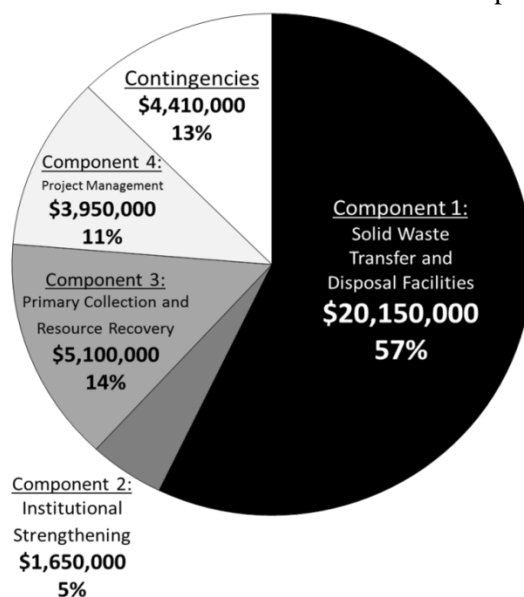


Figure10 . Project Components and Budget

2.2. Follow up of the Projects' Activities

According to the document of the project, the PDSU is responsible for guaranteeing the accomplishment of project goals, therefore Council's TOU will be the executive arm during the implementation and play a supporting role for the project. Based on the mentioned, PDSU has been established at the end of 2012. In addition, TOU was created. Executive Director of the Board, Engineer of Operations, Financial Director, Head of public information, environmental specialist were all employed as demonstrated in figure (11). Now, the Council is in process of employing a new administrative assistant.

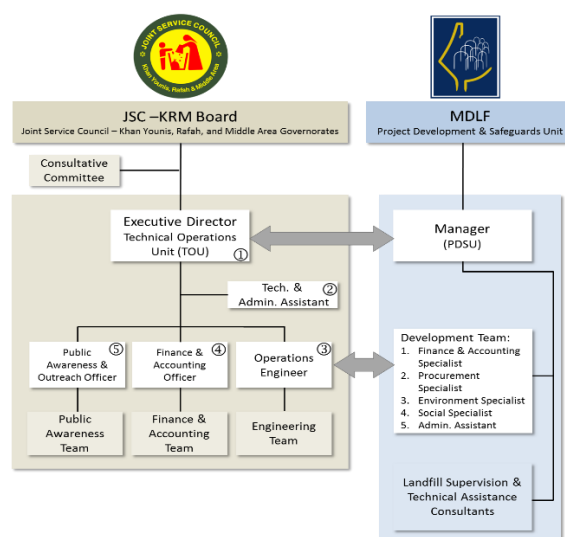


Figure 11 . Organizational Structure for Two Units of the Project

3. Summary of Accomplishments of 2016

The GSWMP went into effect on 9 July 2014. All required preparations for the project have been finished particularly the settlement of legal cases regarding the land acquisition with full compensation for all land owners. According to what came in the feasibility study and the evaluation of environmental and social effects of project, the study recommended the expansion of landfills area to 472 acres. Despite the fact that total required area is 472 acres in Al Fukhary, the acquisition of lands for the first stage of implementation needed the existence of only 215 acres. Based on this, the following issued:

1. Change of land use of 440 acres from agricultural to solid waste landfill in Al Fukhary area for the Council's benefit. This issued according to decision (34) session (9) on 5/8/2012 by the Central Committee for buildings and Organization of Cities in Governorates of Gaza.
2. Issuance of presidential decree 25/12/2012 for acquisition of required land for the construction of Al Fukhary landfill according to expropriation law in Gaza under land ordinance number 24 for 1941 for acquisition for general purposes.
3. Determination of expropriation decision in 215 acres which will be used for the expansion of landfill. Landowners, who own the required documents from Property Tax Department, shall be identified. Land plots of the owners were detailed the Council's previous annual report for 2014-2015. Despite restriction of acquisition decision to an area of 215 acres, *the first stage of project implementation requires a space of 235.638 acres based on the recommendations of International Consultancy Company which revised all designs of new landfill. Therefore, landowners were compensated with an area of 235.638 acres instead of 215 acres as stated in the acquisition decision.*

Landowners' compensation processes faced many challenges including constant negotiations and cases of grievance in courts since 2012 to 2016. The year of 2016 witnessed the end of complete compensation to the main five landowners. Based on this, all legal transactions of landowners were provided to a legal consultant from World Bank for revision. The following is a detailed account for all activities of the four main components of the project:

3.1. First Component: Solid Waste Transfer and Disposal Facilities

3.1.1. Construction of a New Sanitary Landfill in Al Fukhary Area

Offering the tender

The tender was issued from 12/4/2016 to 21/6/2016. Five contracting companies local and international were offering, the period of tender evaluation lasted from 22/6/2016 to 22/7/2016.

Tender award and contract signature

The tender was awarded on the joint venture of two companies Palestinian and Greek (Masoud and Ali Palestinian Contracting Company and Mesogeos Greek Company for Contracting and Real Estate The agreement was officially signed on 10/10/2016 in the presence of Minister of Local Government, Chairman of MDLF, General Director of MDLF, staff of PDSU and TOU.

Updates achieved

Meetings have been held periodically with supervisors and contracting company in the presence of project manager to establish the needed basics for the start of the project. Also, to submit required forms like the schedule of excavation works, environmental and social management plan, list of employees, CVs, conditions and procedures. Excavation work on location started on 11/12/2016 (figure 12). The Council provides a daily follow up of the construction site.



Figure12 . Photos of the excavation work in the new landfill in Al-Fukhary area

3.1.2. Construction of Two Solid Waste Transfer Stations

In 2016 did not witness the construction of waste transfer stations in Rafah and Middle Area funded by the project, thus a contract with a consultant company has been signed to work on designing a transfer station in Rafah. Also, provide professional counsel and experience to suggest a location for transfer station in the Middle Area. For more details, please refer to following section 3.4.4

3.1.3. Supply of Operational Equipment for the Landfill and Transfer Stations

Offering a tender

The tender was issued from 1/12/2015 to 25/2/2016. Two suppliers were offering and the period of tender evaluation finished on 25/4/2016.

Tender award and contract signature

Tender was awarded on AlAsbah Company for Heavy Equipment. The contract was signed on 22/5/2016.

Offering Developments

Joint services Council identified the required qualities of importing 10 heavy equipment (3 roll on/off trucks, 7 compactors) in a cooperation with JSC Hebron and Jenin as well as MDLF to benefit from their technical experience by holding several meetings and visits to the West Bank. The level of equipment manufacturing is almost over. Some of the equipment was shipped to Ashdod Port to enter Gaza Strip in the beginning of 2017.

3.1.4. Rehabilitation Works and Closure of Deir Al Balah Landfill

Invitations to price offers have been sent on compaction works and cleaning leachate ponds at Deir Al Balah landfill from 4/12/2016 to 18/12/2016. Five companies made a field visit to the site on 12/12/2016. The evaluation process is still undergoing and is expected to reach the end on 30/12/2016.

3.1.5. Implementation of Abbreviated Resettlement Plan of Affected People

The study aims at finding alternative sources of income for waste pickers affected by the construction of new landfill in Al Fukhary area. A contract has been made with an individual consultant for an update and implementation of alternative livelihood sources for the affected waste pickers as an indicator of accomplishment of project's developing purpose (purpose 4, section 2.1.2). In cooperation with the staff of units of TOU and PDSU, several meetings have been held with all 17 waste pickers (figure 13) with the aim of defining the alternative scenarios to the waste pickers which must be considered when thinking about alternatives and different choices. Also, introducing directions, different thinking types of alternatives, explaining expectations of the future steps and the necessity of commitment to them.

Several individual meetings have been held with experts related to solid waste management sector in Gaza Strip, its challenges, the effects that ensue from strategies of its treatment and people that live on the work in its field. All this with the purpose of gaining the required data to supervise the most appropriate social and economic interventions for the workers who work on the collection of waste and its recycling according to available possibilities in the project (financial, and technical). Also, for their experiences, possibilities based on needed standards to guarantee the sustainability of these interventions in providing alternative livelihood sources for waste pickers. Suggestions on alternative options for waste pickers have been submitted to UNDP DEEP for funding.



Figure13 . Individual meetings with waste pickers from Al Fukhary area



3.1.6. Acquisition of Lands for the implementation of the first stage of construction in Al Fukhary Landfill and Transfer Stations

Land of the Landfill:

A presidential decree was issued on 25/12/2012 regarding the acquisition of the land for general benefit for the purposes of constructing a landfill for solid waste in the area of 215 acres. As mentioned previously, first stage of project implementation requires an area of 235.638 acres according to recommendations of International Consultant Company, which revised all designs of a new landfill, instead of 215 acres as stated in acquisition decision.

Table 21. Names of five landowners of acquitted lands for the purpose of construction a new landfill in Al Fukhary and the state of compensation

Name of Owner	Area of acquitted land	Date of compensation	Amount of compensation (Jordanian Dinar)
Salah Shbeir	19.8	31/03/2016	109,120
Radi Abu Rayda	90	01/10/2016	Replace the land with governmental land of 72 acres
Ziyad Alshaer (heirs of Abed Mohammed Alshaer)	57.478	09/02/2017	459,824
Monir Alshaer (Heirs of Abdullah Alshaer)	57	23/02/2016	456,000
Sa'd Aldin Abu Sunaima (heirs Ismail Abu Suneima)	11.360	18/02/2016	78,160
Total	235.638		1,103,104

*Each square meter of governmental land equals 1.25 square meter of Radi Abu Rayda's land

Therefore, an evaluation committee was formed to evaluate the land price in Al Fukhary area by the Palestinian Land Authority on 19/2/2012. After that, a committee was formed to evaluate the price of landfill land located in the south of the current landfill in Al Fukhary area (in the north of Sofa road) on 15/9/2012 based on the decision of Minister of Local Government to negotiate the acquisition of owned lands. Following the report of evaluation committee, the land with an area of 235.638 acres was divided into five plots (A, B, C, D, E) according to their location from the main street, the green line and the existing landfill. Based on the mentioned, the plots were estimated as follows:

1. Plot A: located to the west of the landfill and north of Sofa road with a price of 7 Jordanian Dinar for one square meter.
2. Plot B: located north of plot A and borders the landfill from south, with a price of 4.5 Jordanian Dinar for one square meter.
3. Plot C: located east of plot A on the Sofa road, with a price of 5 Jordanian Dinars for one square meter.
4. Plot D: locates to the east of plot C and B with a price of 3.5 Jordanian Dinar for one square meter.
5. Plot E: located directly in the west of the landfill, and north of plot B, with a price of 3.5 Jordanian Dinar for one square meter.

After the evaluation committee decided on the estimation of prices of the owned lands, some owners challenged the value and went to Courts. Another owner asked the compensation in a form of replacing his land with a governmental one. In 2016 witnessed complete and fair the end of compensation for all landowners of acquired land. Figure (14) demonstrates sufficient information on the status and amount of compensation.



Figure14 .Positions of acquitted plots of land

Lands of solid waste transfer stations:

Based on the recommendation of feasibility study and the evaluation of environmental and social impact assessment of GSWMP, three solid waste transfer stations were recommended in the southern Governorates of Gaza Strip. Transfer station in Khan Younis was built by UNRWA with a fund from Islamic Development Bank. The transfer station is almost complete with an area of 3 acres and a total area of 10 acres for any further expansions. However, the waste transfer stations of Rafah and Middle Area will be funded within the GSWMP. The latest developments on the location of two stations in Rafah and Khan Younis will be detailed later in section 3.4.4.

3.2. Second Component: Institutional Strengthening

3.2.1. Enhanced Capabilities of the Council and Member Municipalities

The TOU was established under this component to facilitate the communication with the PDSU. For that reason, the PDSU and the TOU were housed in the same office premises near the landfill site. Working team of the TOU consisted of Executive Director, Financial Director, Head of Community Awareness and Outreach Unit in 2014 -2015. An environmental specialist was employed in the beginning of the second quarter of 2016, and the polarization of an administrative assistant of the Council is in process which is expected to be hired on at the end of the first quarter of 2017.

3.2.2. Activities of Community Awareness and Outreaching Unit

3.2.2.1 Community Committees Supporting the GSWMP

The main activities held with the community committees in 2016 are detailed as follows:

The first induction meeting of community committees

In the beginning of 2016 community work team conducted the first introduction meeting for all members of committees under the service of the Council aiming to involve them into the project (15). During the meeting, the assigned role of the committees became clarified in the following points:

1. Follow up society's feedback on the project
2. Connection with the local community and acknowledge the citizens with the time of projects implementation
3. Establish and enable a system of complaints to guarantee instant and fair treatment of citizen's complaints
4. Prohibit any individual, except the construction workers, from reaching construction sites.



Figure15 . Photos of the first introductory meeting of community committees

Activities of the Central Committee in 2016:

1. Firstly the First Official Coordination Meeting of the Central Committee on 17/3/2016.
2. Secondly: Activities during the Day of Land: The central committee in Rafah in cooperation with the Council, Rafah municipality, Palestinian Environmental Friends Association and several NGO's celebrated the Day of the Land on 30 March of each year. A number of seedlings have been planted around the waste transfer station in Tal AlSultan area.
3. Thirdly: The members of the central committee in Khan Younis visited the transfer station in Khan Younis on 31/3/2016 to inform them of the latest updates regarding the transfer station and its future mechanisms.

3.2.2.2 School Health Program

An introductory workshop of the school health project has been held on 24/03/2016. The workshop aimed at discussing the coordination with the Ministry of Education and UNRWA to work in a large scale health awareness program targeting school students and school health committees. That is done to enhance the efforts with Council and all related members in the field of public outreach, urge the community to employ environmentally friendly means, particularly students. The workshop included a summarized review of GSWMP and a more detailed review of school health project of the Ministry of Education showing its goals, divisions, activities, challenges and accomplishments. Finally it demonstrated the practice of UNRWA and its constant coordination with the Ministry of Education, local authorities and the Council (figure 16).



Figure16. Introductory workshop on School Health Program

During the workshop, working groups were divided to discuss suggested activities and prepare health and environment awareness program in the field of solid waste (figure 17) by focusing on the following points:

1. The mechanisms of selecting schools and according to which standards.
2. Activities that shall be presented at schools.

All suggestions were discussed and on the part of the Council, the workshop concluded with the formulation of these suggestions in a document to identify the proposed vision and cooperate with the health and environment awareness units in the Council and school health project in Ministry of Education and UNRWA. All this within the methodology followed by the Ministry of Education. Based on the mentioned, a series of coordinated and preparatory meetings were held to formulate the work plan in the school health project as follows:



Figure17 . Work groups during introductory workshop on School Health Project

1. Firstly: The first meeting on 27/4/2016. The meeting aimed to formulate the school plan of 2016-2017 and to arrange the activities for the World Environment Day (figure 18).



Figure18 . First coordinated meeting with Ministry of Education

2. Secondly: The second meeting on 5/10/2016 to identify the mechanism of school selection which will be targeted within the awareness program. An agreement of the selection process has been reached based on the age category from fourth grade to eleventh, environmental situation surrounding the participant school, and fair participation between the male and female schools.



Figure19 . Second meeting with Ministry of Education

Introductory Workshop for the coordinators of the school health program in the Rafah

An introductory workshop for the coordinators of the school health program has been held on 11/10/2016 (figure 20) to achieve the following goals:

1. Introduce the Council and the GSWMP in southern Gaza.
2. Present the activities of Council's awareness unit as well as the most important activities of the school health program.
3. Approve the working program to enhance general awareness messages which contributes in the adjustment of practices toward solid waste issues.



Figure20 .Introductory workshop for School Health program coordinators in Rafah Governorate

The workshop targeted the main problems of solid waste issues, emphasis on the necessity of enhancing the efforts of all related parties. In addition an emphasis on the importance of coordination and cooperation between school health projects and community awareness projects in the Council to adjust wrong behaviors toward the environment in general and solid waste in particular

An introductory workshop for school health program coordinators in Khan Younis and Middle Area

A second workshop was held targeting the coordinators of school health program in Khan Younis and Middle Area on 13/10/2016. The workshop aimed at introducing the Council in the three Governorates (Khan Younis, Rafah and Middle Area) and the GSWMP (figure 21). At the end of the workshop, the attendance was split into groups according to regions with the presence of health coordinator and the public outreach team that works in this area, to agree on a project to work in schools.



Figure21 . Introductory workshop for School Health program coordinators in Khan Younis and Middle Area

3.2.2.3 Activities on the World Environment Day

Joint Services Council together with Municipality Development and Lending Fund and partner organizations celebrated the World Environment Day on 1/6/2016. This annual celebration comes every year to shed light on international environmental issues. Topic of this year discussed the illegal sale of wildlife areas with the attendance of Democratic Republic of Congo. In order to participate in this activity, the Council communicated with UNEP to adopt this celebration in Palestine generally and in the Gaza Strip particularly. The celebration aims mainly on discussing issues of solid waste and the challenges it faces in Gaza. The day included many

presentation, most prominent of which are the scientific lecture regarding solid waste in Gaza Strip and a play that illustrates society's bad attitude toward cleaners. In addition, two films on the performance of the Council have been displayed, while the other film talked about social awareness regarding solid waste issues. Finally, an art exhibition created from recycled solid waste with the participation of the Ministry of Education and partner organizations. The Council succeeded in receiving an appreciation letter from UNEP for their participation in the event. More than 200 people attended the activity from all local organization in the areas of project implementation based on the Ministry of Education's school health program, UNRWA and central committee supporting the project.



Figure22 .Celebration of World Environment Day, 2016

3.2.2.4 Networking with Governmental Parties and Partner Municipalities

A number of introductory workshops regarding the GSWMP have been prepared in 2016. The workshops aim to introduce the member municipalities about the national strategy of solid waste management. It targets the heads of municipalities and general managers in municipalities in addition to public relations employers, managers of health and environment departments, heads of cleanliness department and representatives of CBOs. In 2016 the following activities were implemented:

The first introductory workshop on the national strategy of solid waste management in the Governorate of Rafah

The Council in cooperation with the MDLF held an introductory workshop on the national strategy of solid waste management in the Governorate of Rafah on 7/9/2016 (figure 23). The workshop aimed to confirm the necessity of enhancing efforts among all related parties to put plans and treat this issue. Several detailed presentations has been made on the national strategy of solid waste management in Palestine and the strategy of solid waste management unit in the Governorate of Rafah. Furthermore, the workshop presented the latest activities of the project and main accomplishments of each component. The workshop also presented a summarized preview about the Council's awareness unit.



Figure23 .The first introductory workshop on the national strategy of solid waste management in the Governorate of Rafah

Second introductory workshop on the national strategy of solid waste management in Palestine and the two experiences of solid waste management in the municipalities of Khan Younis and Rafah

The Council in cooperation with the MDLF held an introductory workshop on the national strategy of solid waste management in Palestine and a presentation of two experiences in the Governorates of Rafah and Khan Younis on 26/9/2016. The workshop included several presentations on national strategy of solid waste management in Palestine, a short presentation of latest updates on GSWMP, a presentation of the Council's public outreach program, and finally presentations of two experiences of municipalities of Khan Younis and Rafah in the management of solid waste and main challenges that they face (figure 24).



Figure24 . Second introductory workshop on the national strategy of solid waste management in Palestine and the two experiences of solid waste management in the municipalities of Khan Younis and Rafah

Consultation workshop on environmental and social management plan in cooperation with awareness unit

A consultation workshop on the implementation of environmental and social management plan has been held for the transfer station in Rafah on 17/11/2016 as a component of solid waste management project in the southern and Middle Area. The workshop was conducted by a consultant assigned for this study with coordination with Council's awareness unit. The workshop aimed at emphasizing the need of including local community in all stages of transfer station construction with the involvement of Head and representatives of Rafah municipality, representatives of CBOs, and members of the central committee in Rafah, several partner organizations in Rafah, Environment Quality Authority and staff of two implementing units of projects (figure 25). The workshop included a short presentation on latest activities of GSWMP and a detailed presentation of basic design elements of transfer station in Rafah. The presentation was done by a consultant assigned to design transfer station of Rafah as a part of the GSWMP confirming that the suggested engineering design meets proper engineering and environment standards. Finally, framework of environmental and social management plan has been shown. It illustrated the importance of raising all social concerns at this point to consider them in the final designs, construction and operation stages of the station. The attendance was divided into work groups that discussed five main subjects which are: public health, water, soil, air, noise and transportation to highlight the main environmental and social effects, their reflection on society and undergo the necessary procedures.

3.2.2.5 Develop Complaints Mechanism

In order to ensure that the Council receives all complaints about the project by the local community surrounding the construction location in Al Fukhary area, the Council installed a board at the site showing all means of communication with the Council, including: telephone number, fax, Council's Facebook page, website of the Council's residents, details on the owner, financier and sponsors (figure 26). The Council received several complaints regarding stray dogs, spread of mosquitoes in the area and a refusal of construction a new landfill. The Council took the necessary action to spread the awareness about the new landfill which will be built according to the highest environmental and engineering standards. In accordance with the



Figure25 . Consultation workshop on environmental and social management plan accompanied by coordination with guidance unit

Council's attention in following up complaints and quick response to them, the Council is in the process of establishing a new mechanism for receiving complaints and depending on it in 2017 with the participation of member municipalities and enabling the role of partner institutions.



Figure26 . Board on the site of the project with all contact information (telephone, fax, Facebook page, Council's website, details)

3.2.2.6 Develop Series of Outreach Materials

Firstly: Develop the brochure (figure 27)

The brochure contains the following information:

1. A brief profile of the Council.
2. National Strategy of Solid Waste Management in Palestine and its purposes.
3. Introduction on GSWMP.
4. A brief on the GSWMP activities and the construction of the new landfill.

3500 copies were printed (2500 in Arabic and 1000 in English) of the brochure regarding the solid waste management project to be distributed on the local and international related institutions.



Gaza Solid Waste Management Project – Southern Governorates

The Solid Waste Management Council (SWMC) was originally established in 1995 to serve the governorates of Khan Younis and Deir El-Balah (Middle Area). The Council's mandate included the provision of secondary waste collection (collection from the containers) in addition to waste disposal through operating Deir El-Balah Central Landfill, which was built in 1995 and extended in 2002 by the support of the Federal Republic of Germany.

The Council was expanded in 2012 to include the local government units (LGUs) in the Governorate of Rafah, increasing the total number of LGUs served by the Council to 17 under the name:

The Joint Service Council for Solid Waste Management in the Local Government Units in the Governorates of Khan Younis, Rafah, and the Middle Area
 (JSC- KRM)

The Joint Service Council is an independent entity governed by Statutes approved by the Palestinian Ministry of Local Government. The operating expenses of the Council are primarily covered by the contributions of member LGUs.

The National Strategy for Solid Waste Management (NSSWM) 2010-2014

The NSSWM was adopted by the Palestinian Government to address the main issues in the SWM sector and to improve the effectiveness of Solid Waste Management. The Strategy also provides a vision for the future of the SWM sector.

- Goal 1** Effective legal, organizational, and institutional framework for Solid Waste Management
- Goal 2** Strong and capable institutions and service providers
- Goal 3** Effective and environmentally safe management of Solid Waste
- Goal 4** Financial efficiency and sustainability of solid waste management services.
- Goal 5** Appropriate guidelines and mechanism to handle hazardous, medical and special wastes
- Goal 6** Enhancing the participation of the private sector
- Goal 7** A more educated and participating society
- Goal 8** Efficient systems for information and monitoring

Al-Fukhari (Sofa) Landfill

Through the Gaza Solid Waste Management Project (GSWMP), a sanitary landfill will be constructed in the southern region of Gaza Strip near the existing landfill in Al-Fukhari area with capacity to serve 3 governorates until year 2025 and the entire Gaza Strip onward until the year 2040. The landfill will be constructed in phases on an overall area of 472 dunoms, with the first phase financed by the GSWMP following best engineering and environmental standards. The existing landfill in Al-Fukhari will be rehabilitated and random dumpsites will be closed as part of the GSWMP.

Project Components

- Acquiring the land necessary for the first phase of the new landfill
- Construction of new landfill and transfer stations
- Provision of equipment for the new landfill the transfer stations
- Access roads to the landfill and transfer stations
- Implementation of the abbreviated resettlement action plans (ARAP) for Project Affected People (PAPs)
- Implementation management, EMP monitoring and beneficiary assessments
- Construction supervision costs
- Landfill and transfer station operation management

Component 1: Infrastructure Development

- Capacity Development of the Joint Service Council and member LGUs
- Public awareness campaigns, and
- Enhance citizens' participation

Component 2: Institutional Strengthening

Component 3: Waste Collection & Resource Recovery

- Supply of solid waste collection Equipment
- Studies for optimization of waste collection
- Studies for waste recovery
- Pilot project, recycling and composting

Component 4: Project Management

Al-Fukhari (Sofa) landfill before rehabilitation

Gaza Solid Waste Management Project

1

Figure27 . Brochure for the introduction of GSWMP

Secondly: Print of a T-shirt and a Jacket

950 T-shirts were printed with the name of the project (figure 28). The t-shirts and logos will be used in cleaning campaigns, students' activities and official occasions like World Environment Day. In addition, 25 jackets have been printed with the logos of Council and Fund as well as 200 hats.

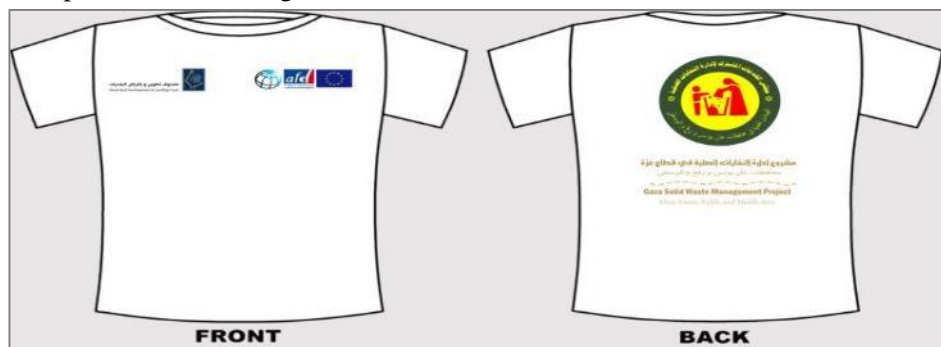


Figure28 . Project's T-shirt design

3.3. Third Component: Primary Collection and Resource Recovery

3.3.1. Primary Collection

The study aims at establishing a system of primary collection of solid waste for more effective and sustainable environmentally and financially with the participation of related partners as an indicator of the accomplishment (purposes 1,2,3 section 2.1.2).

Offering Consultancy Services

Consultancy services were offered regarding the assessment of primary collection status in all Gaza Strip on 15/9/2015 until 10/11/2015. Five local and international companies submitted and the consultancy services were evaluated on 17/12/2015 to 10/2/2016.

Consultancy Offering Award and Contract Signature

Consultancy offering was awarded on the joint venture of two companies: Egyptian EcoConServ and local consultancy Ma'alem firm. The contract was officially signed on 30/3/2016.

Updates on the study:

Egyptian Consultant team held a workshop with the attendance of all heads of Gaza Strip municipalities as well as Environment Quality Authority on 5/6/2016 to kick off the beginning of study activities (figure 29). According to this, several field and social visits were made with the Council's cooperation to provide all necessary information on council's employment, possibilities, mechanisms, maintenance workshops and the service presented to 13 municipalities. The engineers of the Council held intensive meetings with the Egyptian Consultancy Team, investigate and assess all the vehicles of the 17 member municipalities. The consultant presented a detailed evaluation study of the current primary collection systems in all Governorates of Gaza Strip including policies, institutional abilities, and technical requirements, performance of the collection service, operational aspects, financial aspects, economic aspects, social issues, environmental issues, monitoring and evaluation. The study is still in process to execute the following until the second quarter of the coming year 2017:

1. Design an urgent investment program on the basic level of primary collection.
2. Design economic systems of primary collection with perfect quality for the service areas.
3. Design and implement guidance programs in the field of primary collection of solid waste in selected service areas.
4. Prepare an evaluation for environmental and social impact assessments and a plan for environmental management of the approved primary collection systems.
5. Prepare a work plan for the resettlement of the affected, if case be, from the approved primary collection systems.



Figure29 . Kick off meeting between consultant's team and heads of municipalities of Gaza

3.3.2. Waste Recovery

The study aims at improving the waste recovery from solid waste. In addition, evaluation of current status of waste separation and reuse in the Gaza Strip for the sake of providing suggestions for project implementation.

Offering consultancy service

Consultancy service was offered on 6/6/2016 until 12/7/2016. Five consulting companies submitted and consultancy service was evaluated from 13/7/2016 to 5/10/2016.

Consultancy services award and contract signature

Consultancy service was awarded on Enfra Consultants Company. The contract was officially signed on 20/10/2016.

Developments of the study:

The consultant made several field visits to projects and activities of waste recovery in Gaza Strip to survey any governmental and nongovernmental projects.

3.4. Fourth component: Project Management

Part of the main activities of the project, MDLF contracted with a joint venture of international companies (Antea Group, EngiCon, EMCC) to revise and evaluate all original engineering designs of the new Al Fukhary landfill and provide of tenders documents. The study was concluded by an expert in the following two points:

1. After a visit to the landfill, the original border of the landfill was changed.
2. Necessity of conduction a test of soil to ensure the stability of cells and soil qualities. All required documents were submitted in the beginning of 2016.

3.4.1. Implementation of Environmental and Social Management Plan of all Three Transfer Stations

The study aims at evaluation of environmental and social impacts of three waste transfer stations in addition to the short term in Al Fukhary landfill (Sofa) and suggest mitigation measures to mitigate the environmental and social impacts of the four locations mentioned above.

Offering consultancy service:

Consultancy service was offered on 29/3/2016 to 20/7/2016. Several individual consultants submitted and the evaluation process started 26/7/2016 to 24/8/2016. The winner consultant presented technical and financial suggestions in addition to the negotiation stage with the project management unit on 26/7/2016 until 24/8/2016.

Offering Consultancy Award and Contract Signature

The contract was awarded on 9/9/2016.

Updates on the study:

The consultant, together with staff of project's implementing units, held field visits to three locations that are being studied. Consultancy workshop was held with the local society surrounding the station and related parties to prepare an environmental and social management plan for the waste transfer station in Rafah on 17/11/2016 (figure 30). The consultant proposed an environmental and social management plan for the transfer station in Khan Younis and the short term cell Al Fukhary landfill at the end of November 2016.



Figure30 . Consultant workshop concerning waste transfer station in Rafah

3.4.2. Beneficiaries Impact Assessment

The study aims at evaluation the impacts of GSWMP on the beneficiaries in southern governorates and Middle Area prior the project implementation to evaluate the value added on local community during the



implementation of the project and the satisfaction of beneficiaries as a main indicator of project development (number 6, section 2.1.2)

Offering Consultancy Service:

Consultancy service was offered on 3/1/2016 to 1/2/2016. Four consulting companies submitted and the consulting services evaluation period lasted from 27/4/2016 to 19/5/2016.

Consultant Service Award and Contract Signature:

Consultant services was awarded on Ryiada Consulting Company. The contract was officially signed on 1/6/2016.

Updates on the Study:

The study is still in process to make a main evaluation and assessment before starting the project. It will be continuous during and after finishing the implementation of the project to evaluate the satisfaction of beneficiaries.

3.4.3. Supervision on Construction Works at the Landfill

A contract has been reached with the same consulting companies that revised and evaluated all original designs for the new Al Fukhary landfill (Antea Group, EngiCon, and EMCC) to supervise the construction of the new Al Fukhary landfill.

3.4.4. Management of Transfer Stations

Offering Consultant Services:

Consultant service on the design of Rafah transfer station and selection of location of Middle Area transfer station was offered on 28/3/2016 to 25/4/2016. Four consultant companies submitted and the consultant services evaluation process lasted 26/4/2016 to 25/7/2016.

Offering consultant service award and contract signature:

Consulting services offering was awarded on joint venture of RAI Consultancy Company and EMCC. The contract was officially signed on 7/8/2016.

Updates:

Several field visits were made to the location of Rafah transfer station near the existing sorting facility. Based on this, future waste transfer station was designed to be in an integrated manner with the existing sorting station (annex 3). Therefore, several official meetings were held with related partners in Rafah municipality to reach a final agreement on design components, which include: solid waste transfer station, sorting station, maintenance workshop, administrative building for cleanliness from municipality of Rafah and Council's awareness unit. Finally, it included any further expansion of waste recovery workshops of plastic, steel, glass and cardboard. It is worth mentioning, that the environmental and social standards were highly considered during the design of the station especially for leachate collection, sewage and rain water.

With regard to the selection of Middle Area transfer station, a number of intensive meetings were held with the heads of Middle Area municipalities to suggest locations for the construction of the station. The consultant studied and analyzed the suggested locations. The study recommended the following points:

1. Al Sikka Street in the area between Al Musadar and Al Maghazi.
2. Lands to the east of Al Musadar can be bought or rented from citizens.
3. Existing landfill of Deir Al Balah
4. Piece of land near Salah Aldin/ entrance to Deir Al Balah from south eastern side (entrance to liberated land of Kafardrom)
5. Liberated lands near the mills and opposite the entrance to the liberated land of Hittin.



After initial research and a revision of Palestinian Lands Authority it became clear that Al Sikka Street cannot be specified for the construction of permanent facilities. The municipalities have no wish to rent lands. Financial, acquisition of lands is difficult at the moment, especially because most of the lands are within the framework of urban expansion for municipalities, are unacceptable environmentally or the suggested locations are located near borders which endangers work particularly in urgent cases. Based on this, the options of establishing transfer station on Al Sikka Street or rented lands were eliminated. A systematic, practical and objective evaluation was conducted for the remained three locations to study the possibility of establishing a transfer station.

Based on the analysis data of localities, waste sector and its quantity in seven municipalities, in addition to proximity and dimension analysis of urban communities, future expansion, water tracks and valleys, the results of the analysis came as follows. The results were shared with all heads of municipalities in Middle Area:

1. Existing site of Deir Al Balah landfill: location is too far from the Middle Area waste collection regions, its roads are in bad condition and require high reconstruction costs, long access time, and dangerous location near to boarder, limited location area and near Wadi Al Salqa. Therefore, consultant's team recommended the elimination of this location.
2. Piece of land near Salah Aldin/ entrance to Deir Al Balah from south eastern side is located within the future urban expansion of Deir Al Balah. Its location is very close to Salah Aldin Street near a school, it exists within the buffer zone of the Wadi Al Salqa which is adjacent to a school and a group of centers including a land specified for engineers syndicate.
3. Regarding the location of liberated lands near the mills and opposite the entrance to the liberated land of Hittin, the consultant analyzed this as the best available option for its social and environmental aspects, distance from urban expansion in Middle Area Governorate and its nonexistence within water tracks and valleys.

After the analysis of results, Heads of Middle Area municipalities agreed that the suggested location for selection will be at the liberated lands because its location is the most appropriate in terms of environmental, social and economic aspects. The Joint Service Council contacted with Palestinian Land Authority, Middle Area Committee for the Organization of Roads and Buildings for rent/acquisition a piece of land liberated area near the mills for establishment of a waste transfer station. The Land Authority provided a piece of land with an area of 2900 square meters located within piece 89 plot no. (1) in the western side of Hittin liberated land. An agreement with Alsalah Islamic Charity Organization has been reached to establish solid waste transfer station, in return of providing the organization with humus in exchange for using the piece of land as a transfer station without objection. Agreement has been reached on 3/12/2016 to include the location within the study of consultant. For more details on the suggested station location refer to annex (4).



Annexes

Annex (1) Quantity of waste received at a landfill in 2014, 2015 and 2016

➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by member municipalities in 2014

Member municipalities, 2014														
2014	Al Musadar	Wadi Al Salqa	Al Zawayda ¹	Al Maghazi	Al Burij	Al Nusirat	Deir Al Balah	Al Qarara	Abasan Aljadida	Khuza'a	Abasan Al Kabira	Bani Suhaila	Khan Younis	Amount of Waste
Jan	3.19	99.44	404.94	336.10	293.92	1,077.74	1,871.02	479.54	269.38	170.30	599.44	1,119.76	3,289.32	10,014.09
Feb	11.87	78.38	387.52	269.92	252.60	1,087.38	1,715.84	474.82	176.40	135.48	498.78	943.56	2,890.20	8,922.75
Mar.	6.50	93.24	393.62	211.48	296.18	1,204.60	1,983.24	551.10	230.94	186.34	579.86	1,010.94	3,265.96	10,014.00
April	9.42	96.16	403.28	188.02	290.68	1,215.64	1,871.42	492.34	206.38	176.24	564.56	946.00	3,041.98	9,502.12
May	0.00	95.38	407.78	217.42	325.84	1,103.18	2,075.80	518.58	203.00	157.19	575.02	1,026.98	3,337.94	10,044.11
June	0.00	106.80	422.98	51.72	369.96	1,482.68	2,063.00	565.30	227.36	211.60	595.80	1,059.40	3,492.98	10,649.58
July	0.00	34.86	226.14	0.00	86.82	353.52	984.78	270.10	65.88	88.82	190.98	436.38	1,178.10	3,916.38
Aug.	0.00	112.32	189.68	21.66	38.68	0.00	625.68	144.86	37.86	32.66	110.96	145.04	611.96	2,071.36
Sep.	0.00	97.54	445.20	167.80	254.62	1,134.50	1,965.08	425.54	186.18	156.72	518.64	728.26	3,036.98	9,117.06
Oct.	0.00	95.86	458.42	191.18	266.40	962.96	2,252.04	482.14	212.78	165.10	597.28	1,159.88	3,066.98	9,911.02
Nov.	13.41	89.22	472.64	220.32	243.26	864.26	1,955.04	539.46	191.12	147.22	634.74	1,076.66	3,344.62	9,791.97
Dec.	6.30	67.68	471.02	227.84	496.88	1,196.96	1,903.32	497.34	211.38	207.20	616.44	1,167.50	3,199.46	10,269.32
Total	50.69	1,066.88	4,683.22	2,103.46	3,215.84	11,683.42	21,266.26	5,441.12	2,218.66	1,834.87	6,082.50	10,820.36	33,756.48	104,223.76

*Important note: accreditation of waste quantities received at a landfill from Wadi Salqa, Al Burij and Al Maghazi in 2014 for this annual report of 2016 not from the previous report of 2015



➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by UNRWA in 2014

UNRWA										
2014	Private Sector	Rafah Camp	Deir Al Balah & Al Maghazi Camps	Beach Camp	Jabaly a Camp	Al Buriij Camp	Al Nusirat Camp	Khan Younis Camp	Total of waste UNRWA	Total of waste
Jan			505.04	21.28	19.00	522.42	821.80	959.20	2,848.74	12,862.83
Feb			440.36			463.28	696.10	865.26	2,465.00	11,387.75
Mar.		29.76	532.46			385.56	554.16	910.56	2,412.50	12,426.50
April			486.10			42.50	0.00	885.36	1,413.96	10,916.08
May			579.60			172.82	267.13	982.69	2,002.24	12,046.35
June			540.76			379.80	535.52	987.64	2,443.72	13,093.30
July			151.44			163.80	203.18	273.68	792.10	4,708.48
August			60.72			20.02	0.00	69.22	149.96	2,221.32
Sep.	10,866.24		463.28			114.88	178.24	998.18	12,620.82	21,737.88
Oct.	2,756.34		545.26			10.76	2,826.68	1,141.46	7,280.50	17,191.52
Nov.			526.94			1,524.64	0.00	1,109.02	3,160.60	12,952.57
Dec.			623.14			0.00	1,734.16	1,049.66	3,406.96	13,676.28
Total	13,622.58	29.76	5,455.10	21.28	19.00	3,800.48	7,816.97	10,231.93	40,997.10	145,220.86



➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by member municipalities in 2015

Member municipalities, 2015														
2015	Al Musadar	Wadi Al Salqa	Al Zawayda	Al Maghazi	Al Burij	Al Nusirat	Deir Al Balah	Qarara	Abasan Aljadida	Khuza'a	Abasan Al Kabira	Bani Suhaila	Khan Younis	Total Of waste
Jan	21.09	108.20	488.34	269.22	359.38	1,525.30	2,045.48	525.72	226.56	164.42	557.18	879.66	3,233.30	10,403.85
Feb	2.73	82.15	400.34	209.97	233.36	1,210.02	1,753.38	454.66	165.09	133.50	536.03	916.14	2,981.50	9,078.87
Mar.		109.06	462.68	227.28	314.72	1,424.44	1,980.78	872.30	217.12	132.58	589.66	1,174.76	3,254.98	10,760.36
April	5.15	81.40	425.76	243.96	248.86	1,378.84	2,070.18	478.40	232.68	178.72	522.16	1,181.46	3,152.50	10,200.07
May		89.30	486.52	287.82	315.60	1,221.86	2,235.52	557.54	209.46	146.44	615.96	1,268.34	3,684.84	11,119.20
June		84.82	547.84	255.78	344.72	879.88	2,275.38	559.76	206.96	177.32	636.74	1,514.96	3,948.30	11,432.46
July		92.06	487.08	276.32	346.62	406.16	2,183.54	548.68	201.10	154.94	586.30	1,326.48	3,640.54	10,249.82
August		95.94	445.14	295.98	315.98	182.66	1,842.64	474.30	190.90	155.10	565.58	1,289.24	3,270.56	9,124.02
Sep.		82.84	444.08	258.60	285.54	192.28	1,996.49	474.78	200.80	165.26	512.94	1,245.63	3,002.44	8,861.68
Oct.	3.41	91.94	455.16	288.02	313.20	701.18	2,130.52	508.88	216.02	198.32	564.98	1,316.90	3,480.68	10,269.21
Nov.	4.99	86.24	415.56	262.08	303.04	1,159.86	1,904.44	434.88	213.78	210.70	660.92	1,127.78	3,119.44	9,903.71
Dec.	19.06	94.78	397.62	263.44	315.62	1,269.36	1,742.90	483.19	207.50	202.34	557.84	1,031.44	2,903.06	9,488.15
Total	56.43	1,098.73	5,456.12	3,138.47	3,696.64	11,551.84	24,161.25	6,373.09	2,487.97	2,019.64	6,906.29	14,272.79	39,672.14	120,891.40

*Important note: accreditation of waste quantities received at a landfill from Wadi Salqa, Al Burij and Al Maghazi in 2015 for this annual report of 2016



➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by UNRWA in 2015

2015	UNRWA									Total of waste
	Private Sector	Rafah Camp	Deir Al Balah & Al Maghazi Camp	Beach camp	Jabaliya Camp	Al Burij Camp	Al Nusirat Camp	Khan Younis Camp	Total of waste UNRWA	
Jan			549.54					1,022.32	1,571.86	11,975.71
Feb			491.71					801.92	1,293.63	10,372.50
Mar.			574.68					939.48	1,514.16	12,274.52
April			561.32					1,959.90	2,521.22	12,721.29
May			633.28					1,083.34	1,716.62	12,835.82
June	9,083.84		641.28					1,135.98	10,861.10	22,293.56
July			645.90					1,070.26	1,716.16	11,965.98
August			29.12					245.08	274.20	9,398.22
Sep.			117.02					7.20	124.22	8,985.90
Oct.			570.74						570.74	10,839.95
Nov.			548.96					802.64	1,351.60	11,255.31
Dec.			541.82					964.60	1,506.42	10,994.57
Total	9,083.84	0	5,905.37	0	0	0	0	10,032.72	25,021.93	145,913.33



➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by member municipalities in 2016

Member Municipalities														
2016	Al Musadar	Al Maghazi	Al Buriij	Wadi Al Salqa	Al Zawayda	Al Nusirat	Deir Al Balah	Al Qarara	Abasan Aljadida	Khuza'a	Abasan Al Kabira	Bani Suhaila	Khan Younis	Total of waste
Jan	46.03	287.76	336.78	89.06	417.64	1,172.62	1,745.98	476.60	199.24	196.92	543.56	1,030.06	11975.71	9,741.67
Feb	24.25	280.62	346.68	86.88	413.28	1,114.58	1,748.28	453.12	185.54	180.68	847.44	1,156.06	10,372.50	10,259.17
Mar.	25.55	269.17	339.74	87.98	412.22	900.40	1,804.94	491.74	198.24	193.42	534.92	1,010.52	12,274.52	9,442.50
April	31.46	239.53	380.92	78.70	417.50	704.10	1,885.08	432.50	185.68	147.26	686.96	969.30	12,721.29	9,203.81
May	34.17	281.80	366.24	89.22	451.74	638.90	1,927.41	489.58	190.12	179.58	534.98	1,268.66	12,835.82	9,767.56
June	0.00	238.74	341.30	81.58	487.12	368.66	2,159.26	513.66	278.02	167.10	683.30	1,184.48	22,293.56	9,945.38
July	0.00	295.78	374.04	96.12	519.18	237.46	2,182.13	544.18	251.90	176.50	811.06	1,436.72	11,965.98	10,833.33
August	47.32	268.72	342.84	90.72	445.20	257.52	2,453.18	532.02	206.82	176.90	654.36	1,320.44	9,398.22	10,145.58
Sep.	11.26	242.60	288.30	81.62	465.52	57.26	1,839.14	625.42	181.26	163.26	571.14	1,280.60	8,985.90	9,351.88
Oct.	25.83	292.42	322.96	89.34	498.50	398.96	2,539.35	593.44	232.78	201.10	602.04	1,092.90	10,839.95	10,554.30
Nov.	11.93	260.92	305.10	88.84	453.40	741.04	2,098.72	546.74	205.52	198.22	523.30	1,096.38	11,255.31	9,845.37
Dec.	6.44	332.94	353.38	101.90	456.62	1,207.41	1,941.24	490.06	202.20	173.86	534.00	1,216.46	10,994.57	10,620.19
Total	264. 24	3, 291.00	4, 098.28	1, 061.96	5, 437.92	7, 798.91	24, 324.71	6,189.06	2,517.32	2,154.80	7,527.06	14,062.58	145,913.33	119,710.74



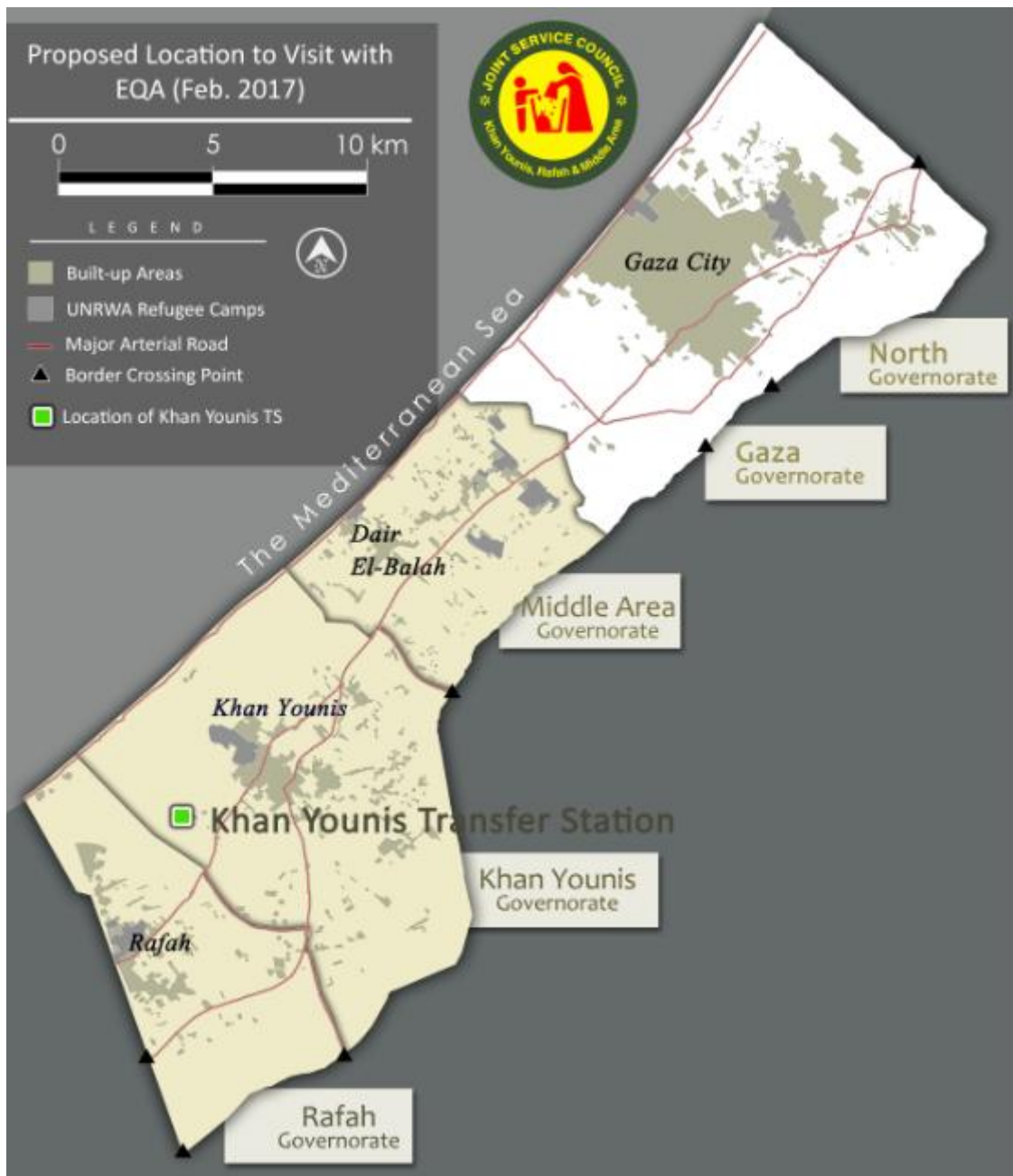
➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by UNRWA in 2016

UNRWA										
2016	Private sector	Rafah camp	Deir Al Balah & Al Maghazi camp	Beach camp	Jabalya camp	Al Burij Camp	Al Nusirat Camp	Khan Younis Camp	Total waste UNRWA	Total waste
Jan			585.70			93.98	46.34	1,021.78	1,747.80	11,489.47
Feb			557.54			9.12	7.46	1,070.94	1,645.06	11,904.23
Mar.			578.58					1,019.68	1,598.26	11,040.76
April			560.22					1,040.04	1,600.26	10,804.07
May			595.00					1,094.80	1,689.80	11,457.36
June			636.42					1,121.76	1,758.18	11,703.56
July			653.82					1,200.17	1,853.99	12,687.32
August	8,572.84		598.56					1,101.66	1,700.22	11,845.80
Sep.	3,469.01		544.12					1,058.06	10,175.02	19,526.90
Oct.			628.62				4.28	1,179.78	5,281.69	15,835.99
Nov.			596.32					1,080.12	1,676.44	11,521.81
Dec.	12,041.85		606.04					1,125.44	1,731.48	12,351.67
Total			7,140.94			103.10	58.08	13,114.23	32,458.20	152,168.94



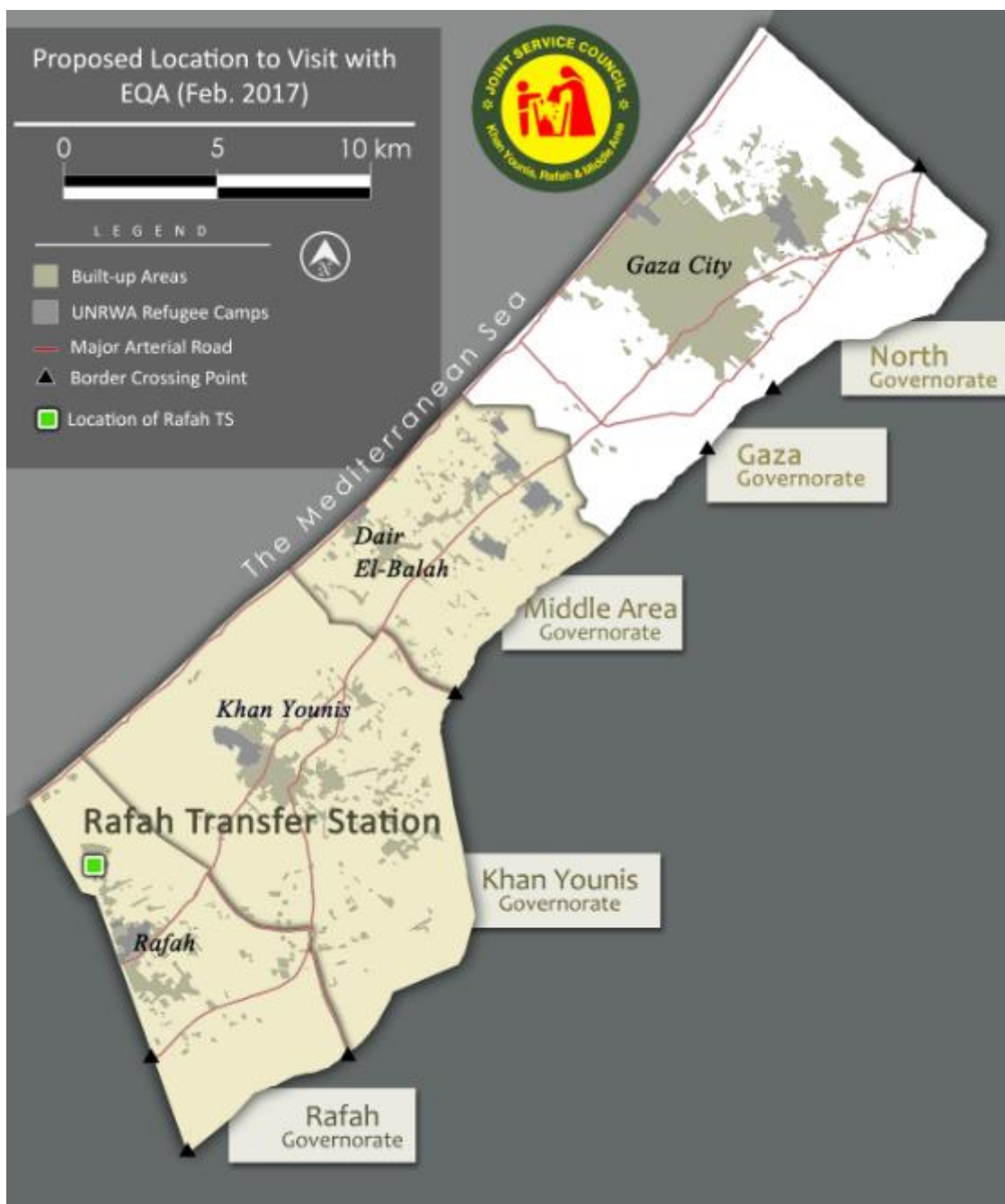


Annex (2) Location of Khan Younis Transfer Station





Annex (3) Location of Rafah Transfer Station



Annex (4) Suggested Location for Middle Area Transfer Station

Suggested site at Hamad city

Air distances:

From Al Nusirat and Burij to site of Middle Area transfer station: 10 km

From Deir Al Balah to site of Middle Area transfer station: 4 km

From the station to new Sofa landfill: 12 km

From the station to Salah Aldin street: 2 km

