



Annual Report of 2017

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)

Prepared by the Council's TOU under the supervision of
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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
Mahmoud Abu Draz	Mayor of Municipality of Abasan Al kabira
Salman Al Imour	Mayor of Municipality of Al Fukhary
Mohammed Abuishkyan	Mayor of Municipality of Al Nusirat
Ayman Abu Swereh	Mayor of Municipality of Al Zawayda
Mahmoud Mohammad Issa	Mayor of Municipality of Al Buriij
Mohemmed Ashour	Mayor of Municipality of Al Nasr
Yasser abu Anza	Mayor of Municipality of Abasan Aljadida
Hamad Alraqab	Mayor of Municipality of Bani Suhaila
Mohammed Alnajjar	Mayor of Municipality of Al Maghazi
Ismael Al Astal	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 2017. 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. In order to ensure the Council's participation in all 2017 achievements, the present report is continued to the previous series of annual reports 2014, 2015, 2016.

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 2017 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 67,132.5 ton to 62,167.3 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 52,578.24 ton in 2016 to 69,818.77 ton in 2017. 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 19,866.48 ton in 2017. The following table illustrates a summary of council's operational costs in NIS according to data report in December 30th, 2017:

Table 1. Operational and Financial Data for the years 2015, 2016, 2017

Section	Currency	Year 2015	Year 2016	Year 207
Total Operating Costs of the Council (Collection Operations)	NIS	3,252,019.98	3,587,221.81	3,951,783.09
Total Operating Costs of the Council (Disposal Operations)	NIS	1,145,459.97	1,599,468.70	1,250,980.47
Contributions of member municipalities	NIS	3,707,332.39	3,617,737.09	3,535,356.22
Currency Differences	NIS	10,456.85	40,936.98	18,963.71
Revenues from non-members (UNRWA and Contractors)	NIS	325,802.47	492,167.42	329,367.64
Deficit of operation contributions	NIS	128,775.67	139,531.13	137,010.52
Actual cost of collection and disposal of a ton of waste	NIS/Ton	46.136	52.386	63.364
Board of Directors' decision on pricing	NIS/Ton	34	34	34
Actual cost of disposal of a ton of waste	NIS/Ton	7.874	10.421	7.994
Board of Directors' decision on pricing	NIS/Ton	10.80	10.8	10.8
Board of Directors' decision on pricing of the collecting and disposal	NIS/Ton	44.8	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 12,212,028.14 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 excavation works in the new landfill site according to the most appropriate engineering and environmental specifications.

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.

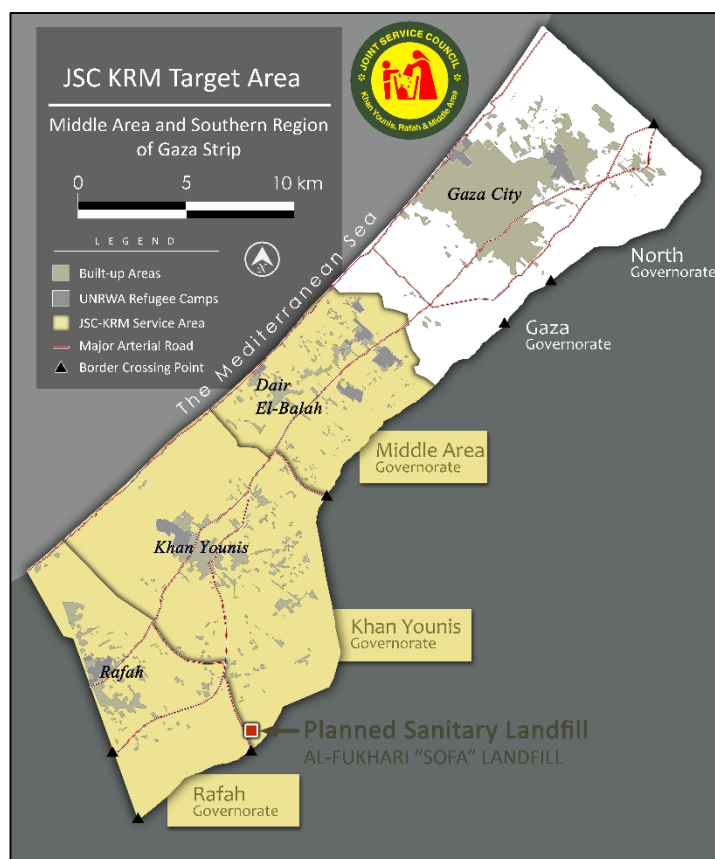


Figure 1. JSC KRM Service Area

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 20/08/2017 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 – Mahmoud Abu Draz	Municipality of Abasan Al Kabira	Member of the Board
5- Mohamed abu Ishkyan	Municipality of Al Nusirat	Member of the Board
6 – HamadAlraqab	Municipality of Bani Suhaila	Member of the Board
7 – Ayman Abu Swereh	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 was detailed on the main points of the Bylaws. Based on the decision of the Minister of Local Government No. (1) of 2016 concerning the Bylaws of the Joint Service Councils, the Council's Bylaw was prepared and approved by the General Assembly of the Council during the 12th session of the Council. It is now under accreditation from the Minister of Local Government.

Council's Performance for the year 2017

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.

A proposal has been prepared for the new structure of the Council in accordance with the new tasks assigned to it, in accordance with the decision of the Board of Directors at session No. 13/2017 on 30/12/2017 due to the lack of appropriate administrative structure, especially after the construction of the new landfill over an area of 235 donums and the operation of heavy equipment inside Landfill according to international standards.

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 2017, the outreach and awareness officer was recruited by annual contract through Solid Waste Management Project. It is worth mentioning, that the Council in the process of recruiting a head of the landfill section at the beginning of 2018 according to the decision of the Board of Directors at session No. 13/2017.

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.



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 12,212,028.14 NIS by the end of 2017. 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. Mentioning that, the municipalities have been obliged to pay the full monthly bill by 100% as of July 2017, according to the decision of the Board of Directors at the meeting No. 6/2017 on 08/07/2017, The following table (3) 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 2015, 2016 and 2017.

Table 3. Debts of the Council on member municipalities until the end of 2015, 2016 and 2017

The accumulated balance until the end 2015	The accumulated balance until the end 2015		Amount due for 2016		Amount due for 2017		The accumulated balance until the end of 2017	
	100%	70%	100%	70%	100%	70%	100%	70%
Khan Younis	4,364,316.90	3,055,473.29	-	920,480.24-	319,678.08	244,603.45	4,175,138.26	2,379,596.51
Bani Suhaila	1,574,240.55	1,229,563.49	130,487.82	23,783.28	169,007.37	147,413.90	1,873,735.74	1,400,760.67
Abasan Kabira	786,992.20	510,387.11	99,070.50	8,332.26	60,968.97	37,230.70	947,031.67	555,950.07
Khuza'a	233,546.09	146,788.94	41,403.11	12,340.58	31,115.85	24,907.94	306,065.05	184,037.46
Abasan Aljadida	23,441.49-	123,856.34-	31,087.79	1,723.70-	52,655.08	45,653.48	60,301.38	79,926.56-
Al Qarara	453,424.14	194,974.05	59,805.21-	139,829.49-	106,976.81	89,916.63	500,595.74	145,061.19
Deir Al Balah	2,726,569.02	1,950,527.70	158,903.31	82,800.91-	296,120.14	245,285.80	3,181,592.47	2,113,012.58
Al Nusirat	322,360.52	195,069.71	34,053.58-	63,307.61-	14,523.29	7,431.75	302,830.23	139,193.85
Al Burij	172,679.32	133,749.57	13,187.94	90.48-	17,647.21	14,693.60	203,514.47	148,352.69
Al Maghazi	22,514.11-	53,755.27-	40,498.95	28,201.07	31,064.77	28,873.70	49,049.61	3,319.49
Al Zawayda	425,122.66	321,575.42	10,760.41	8,059.37-	17,278.66-	21,930.29-	418,604.41	291,585.75
Wadi Al Salqa	137,585.32	92,810.47	22,665.63	8,392.94	30,111.52	26,805.45	190,362.47	128,008.86
Al Musadar	11,710.91	11,170.70	15300.49-	16156.633-	6796.22	6550.329	3,206.64	1,564.40
Total							12,212,028.14	7,410,516.96

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.



2.4. The Debt Accumulated on the Council

The accumulated debt of the Council reached 1,094,450 NIS according to financial reports at the end of 2017 as it is illustrated in Table (4).

Table 4. The debt accumulated on the Council until the end of 2015, 2016, 2017

Section	Accumulated amount until the end of 2015 (NIS)	Accumulated amount until the end of 2016 (NIS)	Accumulated amount until the end of 2017 (NIS)
Amounts for suppliers	550,343	567,841	706,822
Amounts for staff salaries	340,138	380,713	387,628
Total	890,481	948,554	1,094,450

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 (5) clarifies the revenues of member and non-member municipalities.

Table 5. Revenues of the Council in 2015, 2016 and 2017

Party	Revenues 2015	Revenues 2016	Revenues 2017
Member municipalities	3, 707,332.39	3,603,362.74	3,535,356.22
Nonmember municipalities	325,802.47	492,167.42	329,367.64
Total of revenues from member and nonmember municipalities (NIS)	4,033,134.86	4,095,530.16	3,864,723.86

2.6. Estimated Budget

The budget for the year 2017 was officially approved by the Ministry of Local Government and amounted to 10,201,200 NIS on 23/03/2017. The estimated budget for the year 2018 was officially approved by the Ministry of Local Government in the amount of 6,792,300 NIS on 15/03/2018.

2.7. Cost of Collection and Disposal

Table (6) illustrates the cost of collection and disposal in 2015, 2016 and 2017.

Table 6. The cost of collection and disposal in 2015, 2016 and 2017

Point	2015 (NIS/Ton)		2016 (NIS/Ton)		2017 (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	46.136	34	52.39	34	63.364	34
Disposal	7.874	10.8	10.42	10.8	7.994	10.8

2.8. Support and Assistance

A total of 166,200 liters of fuel were received from UNRWA as a grant of 833,278 NIS.

2.9. Decisions of the Board of Directors

Table (7) clarifies the decisions of the Board of Directors which consists of 17 member municipalities of the Council in the year 2017.

Table 7. Decisions of the Board of Directors, 2017

Record Number	Date	No. of Decisions
1/2017	2017/01/21	4
2/2017	05/03/2017	3
3/2017	20/03/2017	5
4/2017	29/04/2017	1
5/2017	01/06/2017	7
6/2017	08/07/2017	4
7/2017	20/08/2017	2
8/2017	24/08/2017	1
9/2017	26/08/2017	2
10/2017	21/10/2017	1
11/2017	27/11/2017	4
12/2017	18/12/2017	1
13/2017	30/12/2017	4

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.

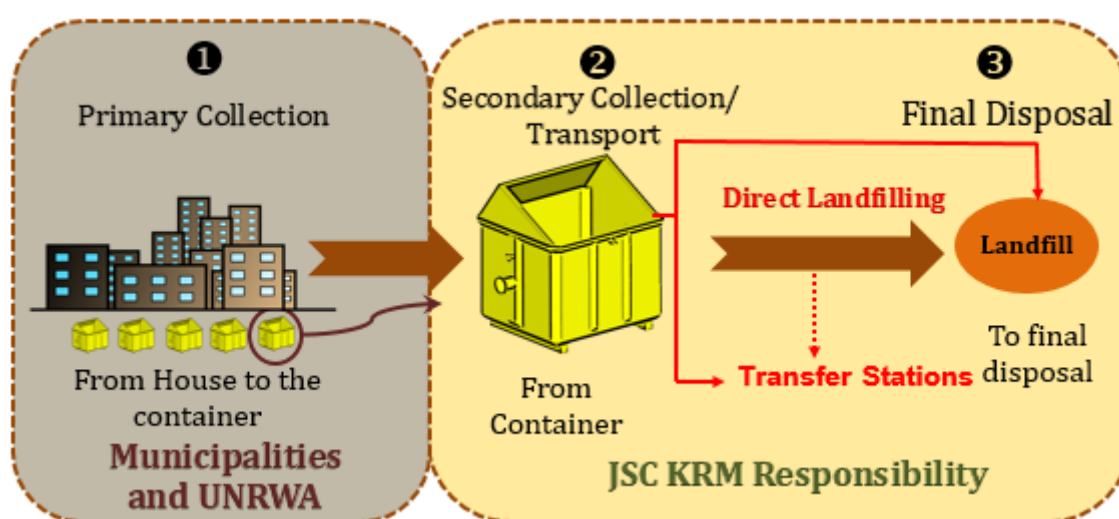


Figure 2. Role of the Council in Solid Waste Management



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 Buriy, 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 62,167.3 ton as of 2017. Table (8) illustrates the amount of waste collected by the Council's vehicles in 2015, 2016, 2017 according to the areas of service.

Table 8. Amount of waste disposed by the mechanisms of the Council according to area

#	Area	2015	2016	2017
1	Khan Younis	27,986.24	27,244.22	26,363.25
2	Bani Suhaila	6,440.95	5,939.94	5,635.07
3	Abasan Al kabira	6,814.71	6,504.96	3,159.18
4	Khuza'a	2,019.64	2,164.80	2,067.32
5	Abasan Aljadida	2,443.51	2,416.90	2,328.82
6	Qarara	5,988.26	5,876.70	5,032.64
7	Deir Al Balah	17,421.84	16,077.24	16,330.76
8	Nusirat	0.00	390.74	24.36
9	Maghazi	0.00	160.30	0.00
10	Zawayda	56.36	117.74	86.00
11	Wadi Salqa	1,098.73	1,061.96	1,139.9
Total		70,270.24	67,955.50	62,167.30

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 Council has also received 10 new vehicles (7 compactors, 3 roll on/off trucks), to improve the secondary collection service, and to operate the transfer stations, as well as JSC received two Mercedes medical waste vehicles. The following table (9) shows the general data of these vehicles.

Table 9. 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
Volvo - FM 6*4	Compactors	2016	Rafah, Khan Younis and Middle area	7	11
Volvo - FM 8*4	Roll on/ off trucks	2016	Rafah, Khan Younis and Middle area	3	20



Mercedes Van Sprinter	Vehicle	2011	Primary health care clinics of Rafah, Khan Younis, Middle area in addition to laboratory and kidney dialysis departments of Al Shifa Hospital	2	-
Total number of Council's vehicles				26	

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 (10) clarifies the data of the performance of Council's waste collection vehicles in the years 2015-2016- 2017.

Table 10. Performance of Council's vehicles in the years 2015- 2016- 2017

#	Clarification	2015	2016	2017
1	Total of vehicles	16	16	26
2	Stand by vehicles	0	0	0
3	Available vehicles for Work	16	16	24
5	Amount of transported Waste by the Council's vehicles (ton)	70270	67956	61147
6	Travelled Distance (Km)	Unavailable	Unavailable	Unavailable
7	Actual working hours for all vehicles	25732	25420	25439
8	Number of trips to landfill	9397	9579	9668

The new compactors are not operating yet for the secondary collection service during 2017, and the supply of the containers required for the operation of these vehicles is underway, as well as work plan for these vehicles in coordination with the concerned municipalities. In addition, the Council plans to operate the new roll on/off trucks until the full preparation of the transfer stations in terms of needed equipment and containers. Based on the above table, the average daily working hours of one vehicle for recent years is shown in the following table (11).

Table 11. Daily working hours for the collection vehicles in the years 2015- 2016- 2017

#	Item	Unit	2015	2016	2017	Clarification
1.	Total of vehicles available for collection	Number	16	16	14	Vehicles (73/25) are not working
2.	Actual working hours for all vehicles	hour	25732	25420	25439	
3.	Actual working hours for each vehicle	hour	1608	1589	1817	Number of hours / number of vehicles
4.	Working days	Number	340	340	340	
5.	The average daily working hours of each mechanism	Hour / day	5	5	5.34*	Number of working hours of each mechanism / number of working days

* We observe an increase in the daily rate of working hours for each vehicle due to the suspension of two vehicles in 2017 due to their mechanical outbreak, which led to increased pressure on the vehicles available for work this year.



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 2528 container in 2017 and the following table (12) clarifies the estimate number of available containers in service area relying for 2015, 2016 and 2017.

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

#	Municipality	2015	2016	2017
1	Khan Younis	894	870	850
2	Bani Suhaila	169	148	140
3	Abasan Al kabira	265	248	0
4	Khuza'a	162	97	90
5	Abasan Al kabira	120	130	110
Estimated Total of Khan Younis' Containers		1610	1493	1190
1	Al Nusirat	315	220	220
2	Deir Al Balah	395	488	485
3	Al Qarara	380	385	375
4	Al Zawayda	235	185	185
5	Wadi Salqa	65	78	73
Estimated Total of Middle Area's Containers		1390	1356	1338
General Estimated Total of containers in Council's area of service		3000	2849	2528

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 2017.

Table 13. Number of vehicles provided in 2017

#	Statement	Local authority	year	Municipality
1	37 containers/ 1 cubic meter capacity	Al Zawayda	2017	Al Zawayda municipality- Grant of Palestinian Red Crescent
2	70 containers/ 1 cubic meter capacity	Khan Younis	2017	Khan Younis municipality - Grant of Qatar National Committee - Hamad City

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.

- 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

- 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.
- Daily follow up of the system requires certain material and human potential.

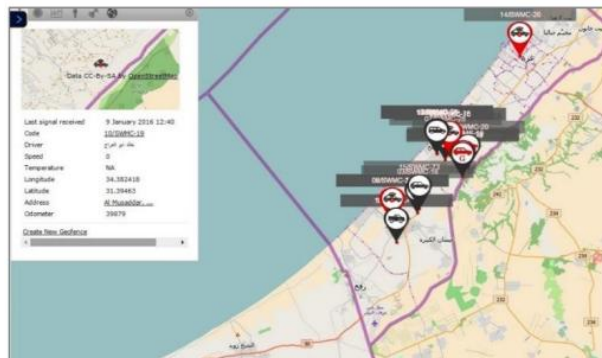


Figure 3. An image of Fleet management Service

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:

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

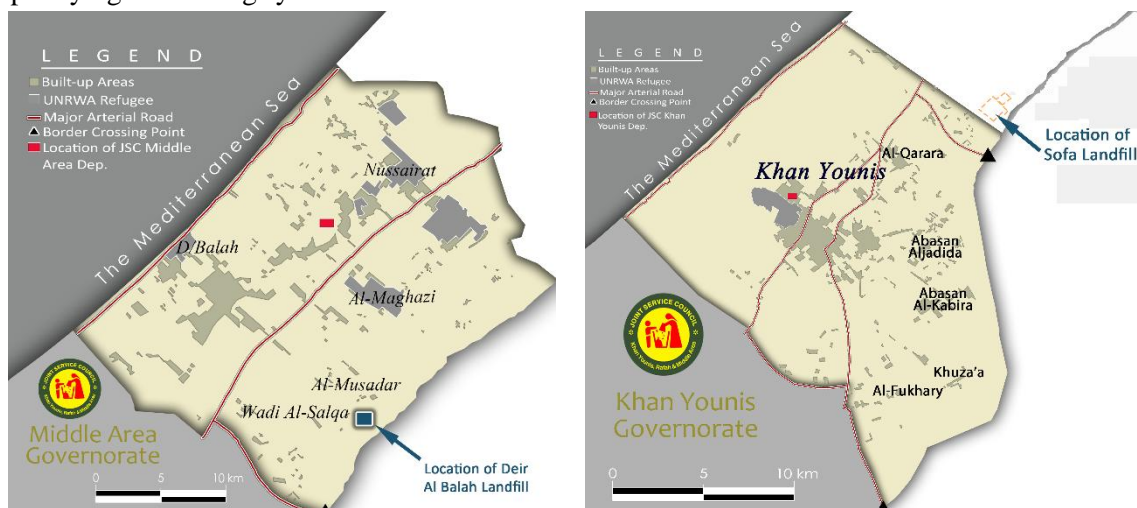


Figure 4. Location of the Council's departments in Middle Area and Khan Younis

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 2017
Middle Area Department					
Collection and disposal service	1	Deir Al Balah	75,132	15.300	1,352.40
	2	Al Qarara	29,004	11.777	419.39
	3	Wadi Salqa	6,715	3.980	94.99
	4	Al Zawayda: in case of municipality vehicle's breakdown	23,841	7.010	86 (only received in Dec.)
	5	Al Nusirat: in case of municipality vehicle's breakdown	54,851	9.755	24.36 (only received in Feb.)
Disposal for municipalities	1	Deir Al Balah	75,132	15.300	683.82
	2	Al Qarara (Jul.-Dec.)	29,004	11.777	195.56
	3	Al Nusirat	54,851	9.755	889.20
	4	Al Buriij	15,491	5.300	346.89
	5	Al Zawayda	23,841	7.010	474.81
	6	Al Maghazi	9,671	3.055	285.99
	7	Al Musadar	2,587	4.160	52.44
UNRWA Disposal Service for refugee camps	1	Deir Al Balah camp+ Al Maghazi Camp	25,142	0.405	577.44
Khan Younis Department					
Collection and disposal service	1	Khan Younis	205,125	57.764	2,173.60
	2	Bani Suhaila	4,1439	5.170	462.92
	3	Abasan Al Kabira	26,767	7.028	263.27
	4	Abasan Aljadida	9,290	3.328	194.07
	5	Khuza'a	11,388	2.527	172.28
Disposal for municipalities	1	Khan Younis			1,563.83
	2	Bani Suhaila			846.47
	3	Abasan Al Kabira			577
Disposal by member municipalities' vehicles	1	Dutch and Japanese neighborhoods			109.64
	2	Khan Younis camp			1,078.10

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 30 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 2017 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 2017

No. of fires in 2017	
February	1
April	1
May	1
August	1
September	1
November	1
December	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 155,698.49 tons in 2017, 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 2015, 2016, 2017

3.4.4. Clarifications regarding the amount of waste coming to the landfill from the service area in 2017

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 8%. 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 14% decline due to the existence of several random dump points (such as Matahen Area) to dump solid wastes by donkey carts and tractors until the transport to Deir Al Balah landfill by external contractor.
4. Deir Al Balah: There is a 2% increase of collection by the Council's vehicles due to the natural increase in the amount of waste generated each day as a result of the increase in population.



#	Service by	Region	2015 (ton)	2016 (ton)	2017 (ton)	Percent of change between 2016 & 2017
1	Joint Service Council for Solid Waste Management (Collection and Disposal)	Khan Younis	27,986.24	26,814.22	26,083.25	-3%
2		Bani Suhaila	6,440.95	5,799.94	5,555.07	-4%
3		Abasan Al Kabira	6,814.71	6,494.96	3,159.18	-51%
4		Khuza'a	2,019.64	2,154.80	2,067.32	-4%
5		Abasan Aljadida	2,443.51	2,406.90	2,328.82	-3%
6		Al Qarara	5,988.26	5,859.70	5,032.64	-14%
7		Deir Al Balah	17,421.84	15,877.24	16,228.76	2%
8		Al Nusirat	0.00	390.74	24.36	-94%
9		Al Maghazi	0	154.3	0	-100%
10		Al Zawayda	56.3	117.74	86.00	-27%
11		Wadi Al Salqa	1,098.73	1,061.96	1,139.90	7%
Total of Joint Service Council (ton)			70,270.24	67,132.50	61,705.30	-8%
1	Municipalities (disposal)Muni	Khan Younis	11,685.90	14,168.68	18,765.91	18%
2		Bani Suhaila	7,831.84	8,262.64	10,157.67	5%
3		Abasan Al Kabira	91.58	1032.1	6,923.98	91%
4		Abasan Al Aljadida	44.46	110.42		60%
5		Al Qarara	384.83	329.36	1,173.35	-17%
6		Deir Al Balah	6,739.41	8,447.47	8,205.88	20%
7		Al Nusirat	11,551.84	7,408.17	10,670.44	-56%
8		Al Burij	3,696.64	3,136.70	4,162.66	-18%
9		Al Maghazi	3,138.47	4,098.28	3,431.92	23%
10		Al Zawayda	5,399.76	5,320.18	5,697.68	-1%
11		Al Musadar	56.43	264.24	629.28	79%
Total of municipalities (ton)			50,621.16	52,578.24	69,818.77	33%
1	UNRWA	Khan Younis	10,032.72	13,114.23	14,252.87	9%
2		Deir Al Balah & Maghazi	5,905.37	7,140.94	6,929.23	-3%
3		Al Nusirat	-	58.08	-	-
4		Al Burij	-	103.1	-	-
5		Jabaliya	-	-	-	-
6		Beach camp	-	-	-	-
7		Rafah	-	-	-	-
Total of UNRWA			15,938.09	20,416.35	21,182.10	4%
1	Private Sector	Palestine Company	9,083.84	-	-	-
2		Al Rabee Co.	-	-	2,992.32	-
3		Qaoud co.	-	12,041.85	-	-
4		Abed Bashir transports	9,083.84	-	-	-
Total of Contractors (ton)			9,083.84	12,041.85	2,992.32	-75%
General total of disposal in landfill			145,913.33	152,168.94	155,698.49	2%

- 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 when necessary due to their vehicles' breakdown.
- Wadi Al Salqa Municipality: No change has been made on the municipality's service of collection by the Council with a difference of 7%.
- Abasan Al Kabira: 51% decrease of Council's collection due to the municipality contracting with an external contractor to discharge the solid waste of roll on/off containers, so that the expansion at the expense of the Council's tipper crane, resulting in a decrease of collected waste by the Council.



8. Municipalities of Abasan Al Jadida and Khuza'a: a decrease of 3% and 4% due to the fact that the municipalities of East Khan Younis are using some random collection points (such as the East Khuza'a area) to transfer waste using tractors and donkey carts.

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.

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 4%. 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 decreased with a rate of 75% less than the rate in 2016. For more information, please refer to annex (1) regarding the total 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 2017 has increased with an insignificant rate of 2% than it was in 2016. 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 2% is not that big and can be the result of some municipalities' disposing their waste in random sites.
2. Degradation of economic situation in Gaza and an increase of poverty and unemployment rates in 2017 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 Al Deek 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 2016. In 2017, the station was not operational until the completion of the entry arrangements for roll on/off containers.

4. Activities of Public Outreach and Awareness Unit

The environmental awareness and outreach activities in the community is complementary to the Council's mission in order to reach a better level of service in the Council's jurisdiction areas. The Public Outreach and Awareness Unit aims at activating the role of the local community and helping the residents of the council's area of understanding the problems related to solid waste sector in order to avoid the possible risks, and to encourage them to participate in finding appropriate solutions.

4.1. Unit's Objectives

The Public Outreach and Awareness Unit aims to:

1. Contribute to raising environmental and health awareness among the population of the Middle Area, Khan Younis and Rafah.
2. Contribute to the development of knowledge and skills in how to properly manage solid waste to preserve the surrounding environment.
3. To contribute to the modification of undesirable behavior in the disposal of solid waste among citizens in order to improve the level of cleanliness in the region.
4. Working side by side with the municipalities of Middle Area, Khan Younis and Rafah to improve health and environmental services.
5. Enhancing the relationship with civil society institutions and creating cadres from all segments of the society that contribute to spreading environmental awareness.

4.2. Main activities of the Council's Public Outreach and Awareness Unit in 2017

The Public Outreach and Awareness Unit implemented its programs and activities through a team of 7 mentors working in the Middle Area, Khan Younis governorates and two volunteers in Rafah Governorate. The Unit's programs and activities were distributed in 2017 to all segments of society according to the following table:

Table 17. Achieved home visits in 2017

Program	Target Group
Environmental awareness program in schools	School students, parents and teachers
Awareness Program in Neighborhoods: - Home visits - Awareness in mosques - Community meetings	Family members
Joint Cooperation Program with Municipalities	Residents of neighborhoods with problems in the primary collection
Networking with community organizations	Civil society organizations and their beneficiaries

4.2.1. Awareness Activities at Schools

The program aims at raising awareness among school students regarding the environmental, health and social problems resulting from solid waste and providing them with knowledge and behavioral skills to contribute to the preservation of the surrounding environment and to reduce the problems related to solid waste in the governorates of Khan Younis, Rafah and Middle Area.

Through this program, the Unit aims at students of different ages through direct coordination with the Ministry of Education and Higher Education as a key partner in the planning and implementation of the program within schools. In 2017, two phases of the program were implemented. The first phase was targeted at 26 schools and implemented in the second semester of 2016-2017, the first phase was evaluated. The second phase targeted 24 new schools during the first semester of 2017-2018.

Phase I (Second Semester 2016-2017):

Coordination with the General Administration of School Health in the Ministry of Education and the selection of 26 schools, distributed in the provinces of the Middle Area and Khan Younis, where benefited from the program 3,253 students according to the following table (18).

Table 18. Number of beneficiaries of the first phase of the program of public awareness and outreach in schools for 2017

Region	Number of Schools	Number of female students	Number of male students
Middle area Directorate	10	675	332
West Khan Younis Directorate	8	738	457
East Khan Younis Directorate	8	928	123
Total	26	2341	912



Photo1 . The conclusion of the first phase of school program in 2017



Photo2 . Outreach and Awareness program in schools for 2017

Phase II (First Semester 2017-2018):

The first phase was evaluated in August 2017 through holding of three focus groups. The recommendations of the evaluation stipulated that an awareness material approved by the Ministry of Education and Higher Education should be developed to deepen the concepts of integrated solid waste management. The awareness material should consist of a series of lectures), and that efforts must be consolidated with the municipalities to carry out awareness-raising activities within schools.



Photo3 . Evaluation session for the first phase of the extension program and education in schools in cooperation with the municipality of Khan Younis

The program was implemented in 24 public schools during the first semester of 2017-2018 (Photo 4), in a manner different from the first phase. One semester was targeted at each school for one month with an awareness lecture each week. Students then disseminated the knowledge they received in the program through school radio and exhibitions held inside each school at the end of the month.



Photo4 . Part of the activities at the opening of the second phase- Public Awareness and Outreach Program (First Semester 2017-2018)

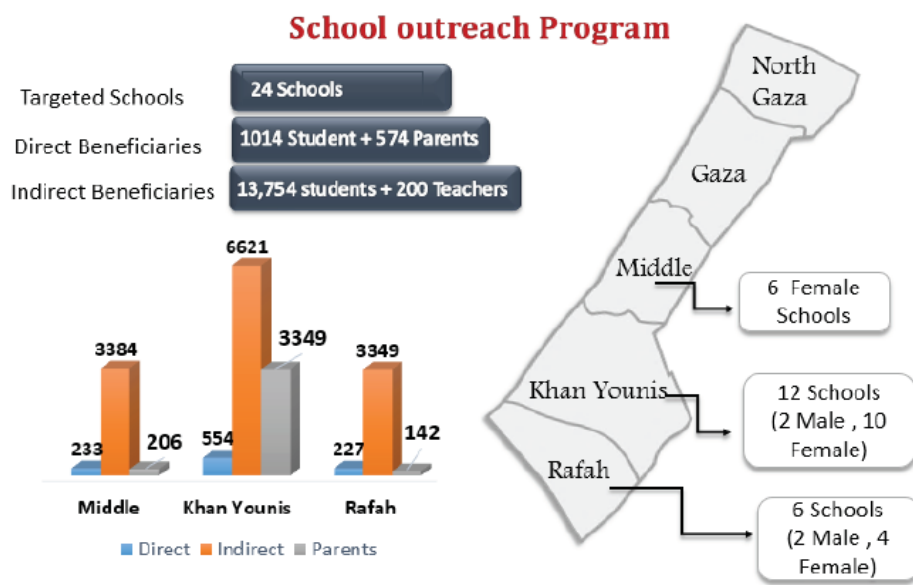


Figure 5. Number of beneficiaries of the second phase of the awareness program in schools- 2017

The activities of the program varied to 15,598 persons during the period between 22 October 2017 and 29 November 2017, according to the following table (19).

Table 19. Activities carried out during the second phase of the 2017 school awareness program

Activity	Beneficiary Category	The number of beneficiaries
Instructional and awareness lectures for students	Public school students from grades 6 through 10	1014 students (direct) 13,754 students (indirect)
Seminars	Teachers and Teachers	60 teachers (direct) 200 teachers (indirect)
Seminars	Parents of students	574 people



Photo5 . Environmental guidance and awareness classes for school students in the Outreach and Awareness Program

Activities and Outreach and Awareness Unit in the Environmental Awareness Program in Schools of 2017:

1. Preparation of an awareness materials in the field of integrated management of solid waste, compatible with the Palestinian curriculum and approved by the General Administration of School Health in the Ministry of Education and the Higher Education, and design the materials appropriately to suit all groups of students at different ages.
2. Joint cooperation with the municipalities of Khan Younis and Rafah to implement the activities of the program as a first step towards uniting efforts in environmental awareness within schools.
3. Implementing a practical competition between schools in the recycling of solid waste as one of the concrete outputs to motivate students to create innovative outputs from the environment after awareness of the importance of solid waste recycling.
4. Giving prizes to participating schools (cleaning tools) in the program to encourage them to maintain the cleanliness of school facilities.
5. To distribute certificates of appreciation to all participants in the preparation and implementation of the program during the closing ceremony held in the city of Rafah in December 2017.



Photo6 . Part of the closing ceremony of the second phase of the Environmental Outreach and Awareness Program (1st semester 2017-2018)

4.2.2. Awareness Program in Neighborhoods

This program is divided into several activities, including home-awareness campaigns through home visits, community meetings and outreach in mosques through educational seminars in the month of Ramadan.

Household visits during 2017:

The aim of these visits is to increase the knowledge of the population in the areas of the Council's influence on how to properly dispose of solid waste, modify some misconceptions of solid waste management practiced by the citizen and cause problems in residential neighborhoods, such as waste disposal in improper timing, burning of containers, and random dumps. Home visits are carried out through coordination with the health and environment departments of member municipalities in order to identify areas that need intervention. A monthly meeting is held with the municipal staff, and monthly plans for home visits are prepared.

The following table (20) shows the household visits carried out during 2017, while the following figures (6, 7) illustrate the participation rates of females and males in the home visits to the governorates of Middle Area and Khan Yunis.

Table 20. Number of beneficiaries through home visit during the year 2017

Region	Number of houses	Females	Males
Khan Younis Governorate: Areas of influence of Khan Younis municipality, areas of influence of the municipality of Bani Suhaila.	2047	2271	1429
Middle Area: Areas of influence Deir Al Balah, areas of influence of the municipality of Nusirat, areas of influence of the municipality of Buriij, areas of influence of the municipality of Zawayda, areas of influence of the municipality of Wadi Salqa.	1363	1521	767
Total	3410	3792	2196

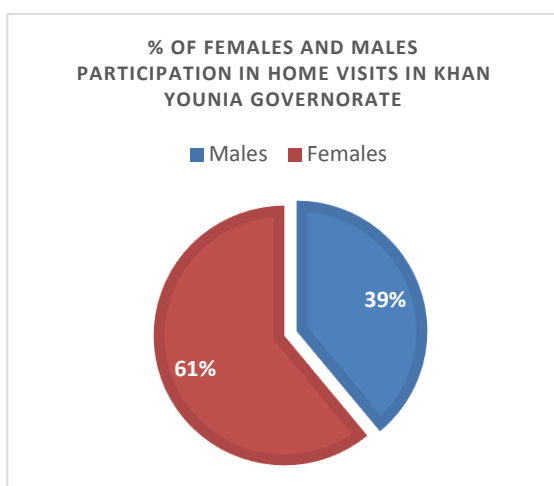


Figure 7. Percentage of females and males participation in home visits in the Khan Younis governorate

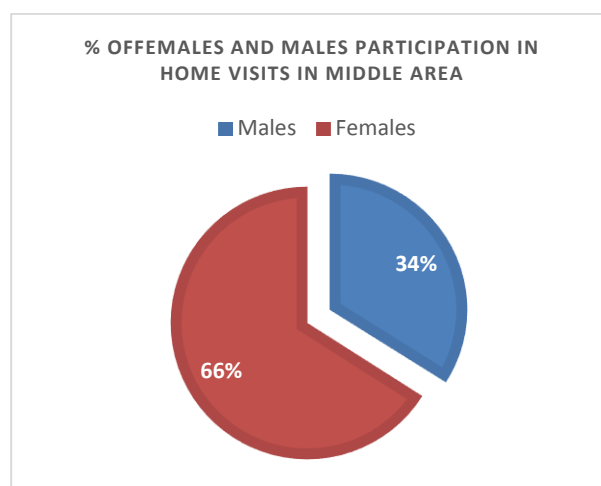


Figure 6. Percentage of females and males participation in home visits in the Middle Area

Community meetings in neighborhoods

In order to complement the role of the outreach and awareness unit in neighborhoods that have problems in primary collection and waste disposal, the unit's health educators implemented some community meetings in the same targeted neighborhoods or in the affected areas as a follow-up with the population to observe the extent of change and utilization of the awareness program. In addition, there are some areas in the governorates suffer from urgent problems in hygiene for specific reasons known as:

- lack of knowledge of the municipality's dates and times of waste collection
- and lack of knowledge on how to get rid of solid wastes according to the disposal mechanism in their area of service.

So these people are sensitized through community meetings and delivery of health messages with an explanation of the current project of Solid waste management and the development of sofa landfill. During 2017, 49 community meetings were held in the Middle area, 13 community meetings were held in Khan Younis Governorate. Table (21) shows the number of community meetings in the Khan Yunis and Middle Area. Figure (8, 9) shows the participation rates of females and males in these meetings.

Table 21. Number of beneficiaries through home visit during the year 2017

Activity	Number of meetings	The number of beneficiaries	Females	Males
Community meetings in Khan Younis	13	187	102	85
Community meetings in the Middle Area	29	606	450	156
Total	42	793	552	241

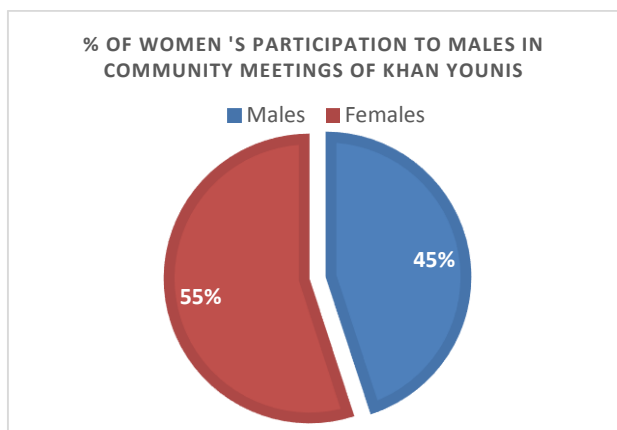


Figure 8. Percentage of females and males participation in community meetings of Khan Younis

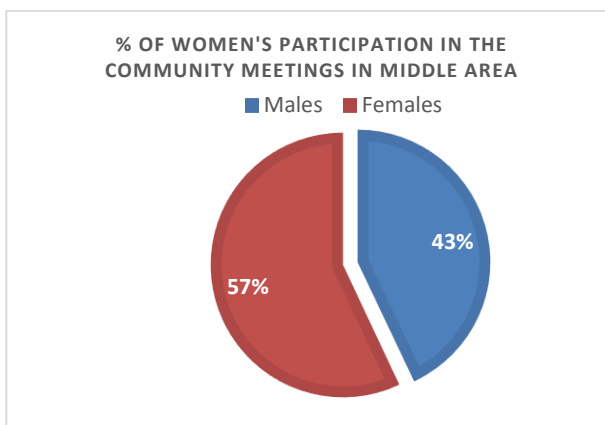


Figure 9. Percentage of females and males participation in community meetings of Middle Area

Awareness in mosques:

During 2017, a coordination with the Ministry of Endowments was arranged to work with the mosques in both the Middle Area and Khan Younis governorates, where coordination was carried out with all the regions. The activities were carried out through holding educational meetings in the holy month of Ramadan in 2017, targeting a wide range of women and communicating health messages related to the preservation of the environment and modifying misconceptions related to solid waste disposal. Twenty-eight mosques in the Middle Area region targeted 33 mosques in the Khan Younis area. Table (22) shows the number of mosques and the percentages of participation of women and children.

Table 22. Number of beneficiaries through awareness in mosques during the year 2017

Region	Number of mosques	Females	Children
Khan Yunis: Khan Younis, Bani Suhaila, Abasan al-Kabira, Qarara	33	1333	1082
Middle Area: Deir al-Balah, Nusirat, Burij and Zawayda	28	481	527
Total	61	1814	1609

4.2.3. Joint Cooperation Program with Member Municipalities

A series of awareness sessions were held for the workers and drivers of the cleaning department in the member municipalities in Middle Area during the first half of 2017. Ninety-nine workers from Nusirat, Burij, Maghazi, Deir Al Balah, Zawayda and Wadi Al Salqa participated. Within the framework of the joint cooperation between the Council and the member municipalities in order to enhance the primary and secondary collection services in the municipalities' areas of influence, a coordination with the public relations, health and environment departments in the municipalities of Rafah, Abasan al-kabira and Al-Zawayda during the second half of 2017 have been made. The sessions aimed to raise awareness of some housewives in the areas where the largest number of problems were identified in the primary and secondary collection, where 66 women and 34 men from the areas were targeted. Some other municipalities have been coordinated with a view to making the program more widely operational in the coming years.



4.2.4. Networking Program with Community Institutions

In light of the Council's keenness to reach all segments of society in all areas that fall under the influence of the member municipalities, especially the residents of the marginalized areas, the Council worked on networking with civil society organizations to implement a number of educational seminars in the field of health and the environment for a number of beneficiaries. Especially those beneficiaries who is difficult to reach their areas of residence. The beneficiaries during the year 2017 counted of 357 women and 167 young males from the program of networking with civil society organizations in the provinces of Middle Ares and Khan Yunis and the numbers distributed to the provinces according to the following table (23).

Table 23. Number of beneficiaries through community institutions during the year 2017

Region	Number of institutions	Females	Children
Khan Yunis: Khan Younis, Bani Suhaila, Abasan al-Kabira	18	196	104
Middle Area: Deir al-Balah, and Zawayda	15	161	63
Total	33	357	167

5. 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:

5.1. Challenges of the Secondary Collection

5.1.1. 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.

5.1.2. 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.

5.2. Challenges regarding the relation with member municipalities

5.2.1. 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.

5.3. Challenges of Administration and Staff

5.3.1. 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.

5.3.2. 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.

5.3.3. 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.

5.4. 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.

5.5. 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.

5.6. 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 2016 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 2017 to present all the updates of the project and a detailed presentation of the developments of all studies. The project development and safeguards unit (PDSU) of the Municipal Development and Lending Fund- MDLF (the executing agency) is in close and continuous cooperation with the Technical Operations Unit- ToU of the Joint Services Council to follow up all the 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

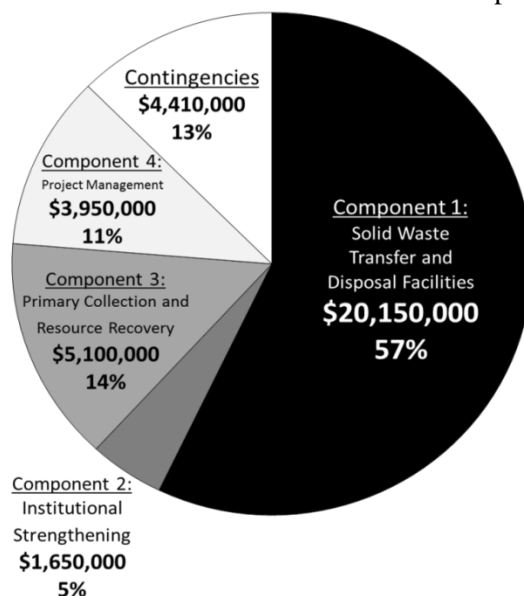


Figure10 . Project Components and Budget

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.

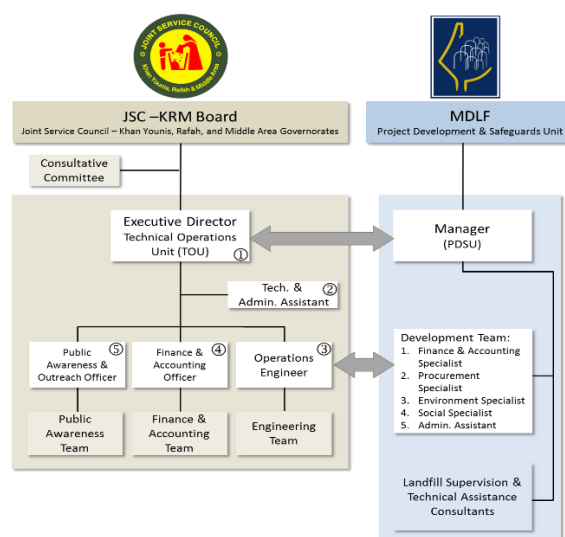


Figure 11 . Organizational Structure for Two Units of the Project

3. Summary of Accomplishments of 2017

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. The details of land acquisition was listed in the previous annual report of 2016.

3.1. First Component: Solid Waste Transfer and Disposal Facilities

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

Updates achieved

During 2017, the construction of the sanitary landfill continued with challenges arising from the unsafe conditions of the current site, which was expected to receive solid waste daily from Rafah during the construction of the new landfill. A short-term cell design was completed to reshape the existing landfill, remove the obstacles of the scattered waste present in the area of the new landfill cell's, and to ensure continuity of receiving daily incoming waste from Rafah Governorate throughout the construction period of the new landfill. In 2017, a new design targeting the rehabilitation of the existing dumpsite and the creation of short-term and extension cells performed to receive daily incoming waste, in addition to the removal of large quantities of scattered waste (approx. 250,000 cubic meters).

3.1.2. Construction of Two Solid Waste Transfer Stations

Based on the recommendations of the Feasibility Study for solid waste management in the Gaza Strip- 2012, three transfer stations were planned to be constructed in the Council's areas of influence in Khan Younis, Rafah and Middle Area. The construction of the Khan Younis station was completed by UNRWA, and the design of the Rafah transfer station was completed taking into account the station's compatibility with the existing sorting station, while the Middle Area transfer station is still at the initial design stage. Environmental and social impact assessment studies were conducted during 2017 according to Palestinian laws.



Photo 7. Photos of the excavation work in the new landfill in Al-Fukhary area during 2017

3.1.3. Rehabilitation of Sofa Landfill Access Road

The year of 2017 witnessed the signing of a contract for the design of the new Sofa road with a Palestinian/Jordanian Joint Venture company. The design work is expected to be completed in the first quarter of 2018.

3.1.4. Implementation of Abbreviated Resettlement Plan of Affected People

The abbreviated resettlement plan for people affected by the construction of the new sanitary landfill was prepared on the basis of the recommendations of the ESIA study for the project in 2012. The Plan was then updated to confirm the final list of affected 17 persons by the end of 2015 in cooperation with an individual consultant to identify alternative options for their income sources as one of the indicators of achieving the project's development objective (goal 4, item 2.12). After several focus meetings and interviews with the waste pickers, a proposal have been finalized identifying the most alternative livelihood options have been submitted to UNDP DEEP for funding in 2017.

In implementation of the re-development plan, the Council has provided temporary employment opportunities for workers in member municipalities since mid-March 2017 until their alternative projects are received by UNDP-DEEP in accordance with their Livelihood Improvement Program plan. Implementation of the Livelihood Improvement Program began at the beginning of December 2017, through the signing of a contract between UNDP-DEEP and the Association for Agricultural Development (PARC). The other activities of the project started at the end of December through conducting several field visits and training programs to ascertain their possibilities for developing their own small business management. The implementation of the program and handing over their business is planned to be conducted in April 2018.

At the end of 2017, the resettlement plan was updated for the last time with the aim of disclosure and publishing. The latest version was posted on the World Bank Group website and on the website of the MDLF, as well as the websites of Khan Younis and Rafah municipalities.



Photo 8. Field visits to waste pickers in their homes by the PARC, December 2017

Efforts of the Joint Services Council to implement the resettlement plan

1. Due to the delay in the implementation of the economic empowerment program for waste pickers in order to improve their livelihoods and provide an alternative source of livelihood, the Economic Empowerment Program for Deprived Families DEEP program was able to provide funding for only one project for one of the 17 beneficiaries at the end of May 2017. The Board of Directors decided to fill the gap in the income of the waste pickers and provide alternative employment opportunities according to the temporary operating system in the Council and discharge them to work in the member municipalities as cleaners in the Health and Environment Department. The first contract was signed with the waste pickers in March 2017 for 3 months, until mid-February 2018, the expected date of DEEP program intervention.

Table 24. Details of temporary employment contracts for waste pickers by member municipalities

Date of the Interim Contract	Duration of the contract	Contract Value	Number of Beneficiaries	Municipalities where workers were distributed
17 March 2017	3 months	1000 NIS/ person	16 people	Municipality of Bani Suhaila (4 workers), Municipality of Khuza'a (3 workers), Municipality of Abasan Al Kabira (3 workers), Municipality of Rafah (3 workers), And the Council - Khan Younis Section (3 workers)
18 June 2017	3 months	1000 NIS/ person	16 people	
18 August 2017	3 months	1000 NIS/ person	16 people	
18 November 2017	3 months	1000 NIS/ person	16 people	

2. The Council worked to provide preventive vaccinations for tetanus in coordination with the Palestinian Ministry of Health, in order to ensure the safety of these persons while working in the field of solid waste in January 2017.
3. The Council implemented a periodic follow-up plan for the waste pickers to follow up their work in the municipalities. Several meetings were held with them and their supervisors in the municipalities to identify their needs and to listen to their complaints if any, in implementation of their complaints mechanisms included in the resettlement plan.



Photo 9. Follow-up of waste pickers during their temporary work in member municipalities

3.2. Second Component: Institutional Strengthening

3.2.1 Activities of Community Awareness and Outreaching Unit

A number of community activities have been carried out to promote the project's components in the region, in order to raise awareness of the importance of the project and ensure their interaction and strengthen relations with the people around the landfill and the transfer stations. This aimed to ensure the continuity of the work, taking into account the needs of citizens, their health and social interests. .

Throughout the year, the Environmental Outreach and Awareness Unit, represented by its seven committees, distributed to the governorates of Middle Area and Khan Younis in order to promote the project's objectives and components. Several awareness sessions and seminars were carried out by the Unit in schools, NGOs or neighborhoods, in addition to the implementation of the community activities of the project only as follows:

1. Field visits to Al Fukhary landfill site and the new Khan Younis transfer station: Some field visits were organized to talk about the solid waste management project in the Gaza Strip and focus on the establishment of the new sanitary landfill and transfer stations. These visits aimed to raise the public awareness of this strategic project and how to manage it in the near future, and the efforts necessary to operate it, and visits were in accordance with the following table (25):

Table 25. Field visits to the new pottery plant project within the community activities in the project

Date of visit	Visiting Party	Number of Visitors	The purpose of the visit
25/7/2017	Participants in the environmental camp of the Islamic Relief	40 people	Identify the new landfill project
31/7/2017	Participants in the environmental camp of the University of Palestine	70 people	Identify the project of the new landfill and the Khan Younis transfer station
20/9/2017	Community Committee of the project	14 people	See the latest developments in the new landfill



Photo 11. Students of the University of Palestine visit to the new landfill site, August 2017



Photo 10. Visit of the Islamic Relief Foundation to the new landfill site, July 2017



Photo 12. Visit of the Community Committee for the new landfill site, September 2017

2. An educational seminar was held in cooperation with the Engineers Syndicate in Khan Younis (20 engineers) on August 19, 2017 at the Syndicate office introduce the project of the new landfill and its components.



Photo 13. Symposium on the project in the Engineers Syndicate - Khan Younis Branch, August 2017

3. Implementing an entertainment day for the children of Rafah City: In cooperation with the central committee of the project in Rafah in November 2017. The Council organized a day of entertainment for 200 children and 30 young people from Rafah, aiming at spreading awareness of some correct behaviors in solid waste disposal.



Photo 14. An entertaining day for the children of Rafah city among the activities of community participation in the project, November 2017

4. Holding a consultation session with the farmers surrounding the new landfill before preparing the environmental and social management plan for the temporary cell (short term cell) for safety reasons during the re-shaping activities.



Photo 15. Consultation session with the farmers surrounding Al-Fukhary landfill, September 2017

3.2.2 Develop Complaints Mechanism

In order to apply the principle of social accountability, a new complaints mechanism has been designed. This mechanism is based on the establishment of several channels for receiving complaints, namely, complaints boxes distributed in the various facilities of the Council, telephone calls, interviews, Facebook. The complaint mechanism is planned to be fully a computerized system during the year 2018.

3.3. Third Component: Primary Collection and Resource Recovery

3.3.1. Delivery of 10 Solid Waste Collection Vehicles

The year of 2017 witnessed the supply of 10 vehicles (7 compactors, 3 roll on/off trucks) for the benefit of the Joint Services Council.



Photo 16. Solid waste collection vehicles received

3.3.2. 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). The objective was met with carrying out detailed studies and designs following environmentally-and-socially-sound principles of primary collection networks for optimizing the quality of services in a cost-effective way, and with the participation of the beneficiary population. Accordingly, an assessment was made of solid waste collection services for all local authorities in the Gaza Strip, as well as the North and South Joint Service Councils. The list of the urgent need for equipment (with the procurement of tender documents in the short term) was delivered.

3.3.3. 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. Resource recovery has been assessed in Gaza. A number of proposals have been planned under this study to achieve better use of resources in the solid waste sector, either through recycling, composting or alternative energy options. Six waste recovery initiatives were proposed and three consultative meetings were held with stakeholders to select the best initiatives on the basis of consultation with all stakeholders.

3.4. Fourth component: Project Management

3.4.1. 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). During the last half of 2017, the first phase of the study was carried out through a consulting firm. This phase aims to measure the impact before implementing the entire project activities, targeting a segment of the population within the service of the Council through evaluation questionnaires and focus groups. As well as, several individual interviews were conducted with representatives of member municipalities to evaluate the services provided during the current period before starting the new operation of the new landfill. The study reflected the awareness of the population about the role of the council and municipalities as well as citizens' practices in the daily disposal of solid waste.



Annexes

Annex (1) Quantity of waste received at a landfill in 2015, 2016 and 2017

➤ 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



➤ 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 Burij	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



➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by member municipalities in 2017

Member Municipalities														
2017	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	31.91	281.00	354.08	119.94	492.82	3,725.20	1,167.46	991.10	186.20	232.10	536.40	2,080.28	1,023.80	11,222.29
Feb	47.03	258.64	309.26	99.44	434.74	3,279.62	1,063.12	827.36	165.30	181.52	465.12	1,850.32	890.42	9,871.89
Mar.	44.27	269.00	366.24	86.76	472.14	3,448.66	1,165.60	846.64	174.06	180.66	438.20	1,936.06	966.68	10,394.97
April	49.13	287.84	334.48	96.36	449.32	3,522.49	1,236.86	769.06	175.76	189.70	464.90	1,968.18	745.64	10,289.72
May	50.53	279.08	343.26	77.52	494.12	3,819.98	1,357.81	782.08	181.00	187.82	493.28	2,016.46	950.31	11,033.25
June	62.99	299.70	341.02	100.30	504.94	4,120.46	1,324.68	803.22	180.18	193.22	483.66	2,037.58	1,056.34	11,508.29
July	54.35	375.78	382.08	91.82	524.40	4,188.02	1,386.40	933.82	190.62	201.04	494.60	2,255.92	1,061.34	12,140.19
August	64.55	285.64	349.72	100.50	462.20	3,741.95	1,453.71	967.40	168.06	198.62	421.48	2,059.74	845.74	11,119.31
Sep.	52.63	245.12	370.62	86.44	485.60	3,898.81	1,348.04	897.64	160.38	195.16	616.19	1,951.74	764.94	11,073.31
Oct.	61.70	294.66	353.60	100.06	542.92	3,852.60	1,479.02	928.68	165.46	194.16	638.28	2,286.60	827.25	11,724.99
Nov.	51.87	276.92	317.86	95.44	460.52	3,623.91	1,450.30	632.80	163.12	182.16	575.96	2,020.62	740.46	10,591.94
Dec.	58.32	278.54	340.44	85.32	459.96	3,739.30	1,279.74	703.36	157.18	192.66	577.92	1,971.14	821.88	10,665.76
Total	629.28	3,431.92	4,162.66	1,139.90	5,783.68	44,961.00	15,712.74	10,083.16	2,067.32	2,328.82	6,205.99	24,434.64	10,694.80	131,635.91



➤ Quantity of Solid Waste Disposed in Deir Al Balah Landfill by UNRWA in 2017

UNRWA										
2017	Private sector	UNRWA Khan Younis Muni.	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			591.86					1,106.94	1,809.38	13,031.67
Feb			541.54					951.33	1,612.21	11,484.10
Mar.	2,992.32		590.46					1,059.20	4,740.16	15,135.13
April			588.98					1,108.22	1,792.84	12,082.56
May			610.30					1,162.54	1,880.70	12,913.95
June			495.20					1,104.02	1,599.22	13,107.51
July			643.62					1,160.34	1,939.98	14,080.17
August			587.56					1,105.50	1,774.88	12,894.19
Sep.			623.21					1,037.72	1,753.89	12,827.20
Oct.			589.04					1,114.80	1,812.56	13,537.55
Nov.			522.48					994.42	1,657.36	12,249.30
Dec.			544.98					1,032.22	1,689.40	12,355.16
Total	2,992.32		6,929.23					12,937.25	24,062.58	155,698.49

