



National Solid Waste Management Program

PROGRAMME IMPLEMENTATION (LOT A)

QENA & ASSIUT GOVERNORATES

Environmental and Social Impact Assessment (ESIA) Dayrout Transfer Station Assiut Governorate

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AHT GROUP AG
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Consulting Engineers
Salzgitter GmbH

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Abbreviations

CAA	Competent Administrative Authority
C&D	Construction & Demolition
EEAA	Egyptian Environmental Affairs Agency
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment (similar process as for an EIA, but with added emphasis on the Social aspects of the project)
ESMP	Environmental and Social Management Plan
ESMMP	an Environmental and Social Management and Monitoring Plan
EU	European Union
GHG	Green House Gases
HSE	Health and Safety Executive
IFC	International Finance Corporation
ISWM	Integrated Solid Waste Management
MSA	The Ministry of State for Antiquities

MSW	Municipal Solid Waste
NSWMP	National Solid Waste Management Program
OECD	Organisation of Economic Co-operation and Development
PPE	Personal Protective Equipment
SWM	Solid Waste Management
SWMU	Solid Waste Management Unit in each Governorate
ToR	Terms of Reference
WMRA	Waste Management Regulatory Authority

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1 Executive Summary

1.1 Introduction

As part of the National Solid Waste Management Program (NSWMP) in Egypt, it is planned to construct and operate a municipal solid waste Transfer Station (TS) in Dayrout District, Assiut Governorate. The location of the Dayrout TS was selected and made available by the regional District Solid Waste Management Unit (SWMU) in Assiut. The waste collected in the District by smaller collection vehicles will be transferred to larger volume trucks to be ultimately sent to the Al Qosyiah final disposal facility.

According to Law 4/1994 modified by Laws 9/2009 and 105/2015, new projects or project modification require an environmental approval from the Egyptian Environment Affairs Agency (EEAA) and NSWMP. The proposed project needs to be compliant with Egyptian Laws and residual environmental and social impacts should not be significant.

This Environmental and Social Impact Assessment (ESIA) report was prepared to identify, assess and mitigate environmental and social impacts related to the construction and operation of the Dayrout municipal solid waste transfer station in Assiut Governorate.

A site visit was conducted by the project's international ESIA expert on February 5, 2020. Potential environmental and social impacts were identified, assessed, and mitigation measures were proposed to ensure that project's impacts remain in line with requirements of the Egyptian environmental legislation as well as international standards, where applicable. The NSWMP ESIA Guidelines for MSW Management Projects were used as a basis for the development of this ESIA. It is to be noted that the project is classified under list B projects according to the Egyptian legislation, meaning the project is expected to have limited environmental impacts. Accordingly EEEA requires an EIA Form (B) to be filled and submitted for environmental approval as part of the project's local environmental permitting process.

As a loan from the KfW is considered by NSWMP in order to finance the project, the ESIA should comply with the KfW requirements. In general, KfW bases the project assessment on the regulations of the country in which the project is to be implemented. However, these regulations must be consistent with the international standards set by the European Union (EU), the leading OECD countries, as well as the IFC Performance Standards and EHS Guidelines, and the environmental and social standards of the World Bank (WB). In this respect, EEAA's Category (B) projects correspond to the WB Category "B" projects.

1.2 Project Objectives

The main objectives of the project are to:

1. Contribute to the implementation of the NSWMP outputs of Assiut Governorate, which aims to enhancing the infrastructure required for sustainable solid waste management.
2. Construct and operate a transfer station in Dayrout to facilitate transfer of MSW to the final disposal site.

1.3 The ESIA Methodology

The ESIA is based on the review of the project components and activities, assessment of site-specific conditions and presence of sensitive receptors, followed by the identification of possible environmental and social impacts, assessment of their significance, and development of mitigation and monitoring measures to ensure impacts significance remain as low as reasonably practicable. The assessment was conducted for both the construction and operation phases. The mitigation measures were developed and included in an Environmental and Social Management Plan (ESMP). Additionally, the monitoring plan was developed to monitor implementation of the ESMP. EIA study form (B) for the TS will be submitted for EEAA with details about the project included baseline identification and assessment for the TS (in line with the outcomes of this ESIA). Last but not least, a Grievance Mechanism was also developed and included in the ESIA in line with international standards.

Establishment of baseline conditions was largely based on the review of secondary data, site visits and inputs from stakeholders.

1.4 Brief Project Description

1.4.1 Project General Information

Project	Dayrout transfer station , Assiut Governorate
Project relationship with higher-level tiers	Within the infrastructure development projects for the transport, recycling, treatment and disposal of solid waste as part of the NSWMP
Project type	Construction of transfer station to receive municipal solid waste from Dayrout District and its villages
Project location	The project is located on state property land in Dayrout District
Project owner	Initially the NSWMP/MoE and then will be transferred to Assiut Governorate for operation
TS area	8400 m ²
Buildings area inside TS	5000 m ² (including buildings, internal paths, and green areas)
The licensing authority	Assiut Governorate
Site allocation decree	Currently being issued
Project current status	Not yet constructed; permitting stage
Environmental approvals	Not obtained yet
Responsibility	SWMU, Assiut

1.4.2 Project Site Description

The site is located in the desert area and near the highway (Cairo to Assiut, west side of the Nile). There are no residential areas within a radius of 5 km from the proposed site. The land of the proposed TS is not currently in use and the agriculture fields are at distance of at least 300 m from the site. There is a 40-m buffer distance from the highway to the site and access from road to site is through an existing gravel road (length 50 m).

1.4.3 Transfer Station Components

The plot of the proposed transfer station has an area of 5000 m². According to the design report, the facility will be on a surface of 100m x 50m as shown in Figure 4-8. The following components will be included:

- Entrance/Exit gate
- Weighbridge for determining the delivered and the transferred waste quantities
- Ramp that leads to Reception area, where waste shall be discharged before being removed through the hopper into the large containers, where it will be compacted
- Administration building
- Workshop (for small repair)
- Parking area for cars
- Internal roads

1.4.4 Construction Phase

Construction activities will include the following:

- Site clearance and preparation activities
- Erection of reception area, 2.25 meters high, with an area of 180 m²
- Construction of slopes to facilitate loading and unloading operations
- Asphaltting internal corridors for vehicle traffic
- Erection of site service buildings (an administrative building - guard room - truck scale control room - bathrooms - maintenance workshop)
- Fencing and planting of green belt with trees surrounding the site
- Other construction works such as equipment, electrical and civil works, and sanitation equipment

1.4.5 Operational Phase

Operation of the facility will consist of the following main activities:

- Collection trucks enter the Transfer Station and are weighted and registered (including time, truck number, etc.).
- The truck moves to the reception area over a ramp and unloads the waste using the skip device directly into the large container.
- After unloading the waste, the collection truck leaves the reception area over the ramp to the exit gate.
- As soon as the large self-compaction container is loaded, it will be transported to the treatment facility for further process.

1.5 Summary of Impacts, Mitigation Measures and Residual Impacts

The potential negative environmental and social impacts of the project, mitigation measures and residual impacts after mitigation are summarized in Table 1(1-1 and Table 1-2.

Table 1(1-1): Impact assessment and mitigation measures summary during construction phase

Impact	Source	Mitigation	Impact level Before Mitigation	Residual Impact
Air pollution	<ul style="list-style-type: none"> Dust from movement of construction equipment, transport trucks and excavation equipment, as well as gaseous emissions from vehicle on site 	<ul style="list-style-type: none"> Dust suppression using water Enforcing a slow driving speed of transportation vehicles Providing workers with awareness on maintaining good practice driving and machinery usage Maintaining machinery and vehicles in good working conditions Avoid construction during unfavorable climate conditions Specification of combustion equipment should include emission limits to be complied with where applicable 	MINOR	NEGLIGIBLE
GHG Emissions	<ul style="list-style-type: none"> Emissions of vehicles and machinery used during construction phase 	<ul style="list-style-type: none"> Ensure that technologies and equipment used in the project are new. If possible, ensure that equipment and material used in the construction phase are obtained from a nearby area to minimize transport emissions. Provide workers with awareness on maintaining good practice for machinery usage. Maintain machinery and vehicles in good working conditions. 	MINOR	NEGLIGIBLE
Increase in Noise Levels	<ul style="list-style-type: none"> Operation of heavy equipment and movement of vehicles 	<ul style="list-style-type: none"> Maintain machinery and vehicles in good working conditions Maintain site roads in good condition Select equipment that has low noise emission levels Use containment measures to reduce noise from inherently noisy plant equipment Follow the manufacturers' recommended maintenance schedule for engine and mechanical parts Allow work hours only during daytime except in case of emergency reasons 	MINOR	NEGLIGIBLE

Impact	Source	Mitigation	Impact level Before Mitigation	Residual Impact
Soil and Groundwater pollution	<ul style="list-style-type: none"> Mismanagement of wastewater resulting from the facility Accidental spills from machinery such as oils, grease, etc. Mismanagement of daily waste resulting from the site workers activity 	<ul style="list-style-type: none"> Implement site management procedures and good housekeeping activities Ensure proper waste management measures and storage Implement measures for spill prevention Ensure periodic inspection of equipment and machinery Ensure waste collection by a licensed contractor for treatment and final disposal Sewage storage tank should be properly insulated for leak prevention. Contents should be emptied regularly for disposal at the nearest wastewater treatment plant Ensure the proper management of hazardous waste, treatment and disposal by an accredited contractor 	MINOR	NEGLIGIBLE
Impact on Biological environment	<ul style="list-style-type: none"> Emissions, noise, vibrations and human presence that could affect local wildlife Increased traffic may increase the chances of animals being killed accidentally Poor management of solid waste and wastewater 	<ul style="list-style-type: none"> Same mitigation measures aiming at reducing air emissions noise, solid waste and wastewater Provide awareness to the workers on the negative impacts of disturbing any wild fauna Avoid working at night and avoid high intensity light that may disturb fauna; and Ensure speed control and the prohibition of off-track driving 	MINOR	NEGLIGIBLE
<ul style="list-style-type: none"> Socio-economic impacts 				
Impact on Public health and amenity	<ul style="list-style-type: none"> Emissions, noise Traffic accidents 	<ul style="list-style-type: none"> Choose routes for construction trucks that avoid passing by the local communities Monitor air pollution regularly to take corrective actions timely, if needed Engage effectively with local residents and farmers who live or make their living in the close vicinity of the project site Include a clear community grievance mechanism Enforce traffic and road safety measures Prepare non-technical information to be disclosed and disseminated to the public to explain the Project with its impacts 	MODERATE	MINOR

Impact	Source	Mitigation	Impact level Before Mitigation	Residual Impact
Traffic and road safety	<ul style="list-style-type: none"> Increased traffic during the construction phase. Traffic accidents 	<ul style="list-style-type: none"> Develop a traffic management plan Include conditions in contractors' contracts that require them to periodically inspect the safety and efficiency of vehicles and trucks Require contractors to comply with traffic rules Drivers and staff shall maintain a good driving conduct Add signs, signals, and pavement markings Require adequate queuing distance Require an onsite traffic pattern design Schedule operating hours and delivery 	MODERATE	MINOR
Workplace health and safety	<ul style="list-style-type: none"> Dust and air emissions, Increased noise levels of machines and vehicles Worker injuries 	<ul style="list-style-type: none"> Continuous supervision of construction workers Ensuring that workers are always wearing PPEs while working or onsite Equipment periodic maintenance according to manufacturers' schedule Ensure that workers obtain a proper first aid training Ensure the availability of first aid kits Provide and install fire extinguishers and fire kit and ensure that workers are trained to use them Implement good housekeeping practice and ensure that proper hygiene measures Ensure the availability of a well-equipped ambulance car within the site Restrict vehicles speed so that they do not exceed the safety limit (15-20 km/h) Ensure storage of flammable materials in an isolated and shaded area Provide periodic training of the construction personnel on the safe use of equipment Select security personnel based on performance-based screening process Comply with all the executive regulations of Labor Law 12/2003 and specifically the ones related to operation of equipment and machinery 	MODERATE	MINOR

Impact	Source	Mitigation	Impact level Before Mitigation	Residual Impact
Impacts on archeology	There are no visible archaeological features within or near the site. However, archaeological remains (if any) may be affected by vibrations, trucks movement, and earthmoving and excavation machinery.	<ul style="list-style-type: none"> In case of any unearthed antiquities, activities during construction will be stopped in the area. The Ministry of State for Antiquities (MSA) will be notified for investigation and the chance find procedure mentioned in Chapter 7 will be applied. Chance find procedure will be communicated to the contractors. 	MINOR	NEGLIGIBLE
Social and Economic impact on local community	Positive impacts from job generation	<ul style="list-style-type: none"> Prioritize hiring of locals for the operation of the station 	MODERATE (Positive impact)	-

Table 1-2: Impact assessment and mitigation measures summary during operation phase

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
Project on the environment				
Air pollution	<ul style="list-style-type: none"> Dust resulting from waste unloading and loading activities Exhaust from trucks and loaders Dust resulting from cleaning the site, etc. 	<ul style="list-style-type: none"> Consider building orientation based on predominant wind direction Implement good housekeeping procedures Sweep waste management areas regularly Provide workers with guidelines for driving and machinery usage Ensure regular inspection and maintenance of machinery and vehicles to keep them in good working conditions Avoid idling of equipment Clean and wash vehicles routinely Ensure equipment specifications refer to maximum allowable emissions where applicable Carry out monitoring tests for the generator and ensure their compliance with the national laws 	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
GHGs Emissions	<ul style="list-style-type: none"> Exhaust from trucks and loaders Methane emissions from microbial biodegradation of wastes Accidental self-waste combustion. 	<ul style="list-style-type: none"> Waste should not be left to accumulate and should be sent to final disposal within 24 hours from receipt to the TS Ensure that technologies and equipment used in the project are new Avoid idling of equipment Maintain machinery and vehicles in good working conditions Provide workers with awareness on procedures to be followed to maintain machinery and vehicles in good working conditions 	MODERATE	MINOR
Odor	<ul style="list-style-type: none"> Accumulation MSW for long time Microbial activity and the decomposition of MSW organic matter. 	<ul style="list-style-type: none"> Implement a just-in-time operational procedure for the facility to avoid waste accumulation; Avoid delaying the transfer of newly delivered and rapidly decomposable wastes to the final disposal facility; all wastes should be transferred to the final disposal facility within 24 hours of receipt at the TS (this will avoid generation of odors) Workers will be required to wear protective equipment such as masks Ensure regular cleaning of the site 	MODERATE	MINOR
Increase in noise Levels	<ul style="list-style-type: none"> Daily work activities and movement of trucks inside the site 	<ul style="list-style-type: none"> Machines and equipment should meet noise statutory regulations Acoustic enclosures are installed for noise generating equipment, wherever possible Ensure regular inspection and maintenance of equipment Ensure the facility is operated during daytime to avoid public nuisance 	MODERATE	MINOR

<p>Soil and Groundwater pollution</p>	<ul style="list-style-type: none"> • Poor waste management within the TS • Leaking of petroleum products from trucks • Leakage of MSW Leachate (if any) into the soil. • Accidental leaks and spills of vehicles if the transported waste is wet. 	<ul style="list-style-type: none"> • Ensure trucks specifications include drainage and storage of leachate so it does not drain on the streets • Use impermeable materials for roads, waste handling areas, and vehicle washing areas • Collect runoffs from areas used for waste handling, and treat runoff to meet applicable environmental standards before discharge to surface water or the municipal sewage system • Discharge of runoff to the municipal sewage system is preferred versus discharge to local surface waters • Waste will not be left to accumulate for a long time (will be transferred to final disposal site within 24 hours from receipt in the TS) • Implement site management procedures and good housekeeping procedures • Implement spill prevention measures • Ensure periodic inspection of equipment and machinery • Sewage storage tank should be properly insulated for leak prevention. Contents should be emptied regularly for disposal at the nearest wastewater treatment plant at adequate intervals through a licensed contractor. • Ensure the proper management of hazardous waste, treatment and disposal by an accredited contractor; in case small quantities are generated, they will be collected and disposed of by safe methods and delivered to an approved contractor from the EEAA • In case large quantities of hazardous wastes are found in incoming trucks, they will not be received and the relevant authorities will be informed 	<p>MODERATE</p>	<p>MINOR</p>
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Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> • Hazardous wastes/liquid wastes generated from maintenance works will be collected in special containers and delivered to an approved authority for safe disposal • Trucks or vehicles will not be supplied with fuel inside the station • Covered and closed trucks will used though MSW transporting, unloading and loading processes • Station will be provided with suitable drainage channels • Water collected from the drainage channels will be collected in an isolated septic tank that will be regularly emptied by an approved party from EEAA 		

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
Impact on the Biological environment	<ul style="list-style-type: none"> • Dust emissions from daily operating activities • Littering of solid wastes during transport and unloading that could directly affect sheep or grazing animals (if any) • The possibility of disease and rodent vectors that may affect animals and nearby crops 	<ul style="list-style-type: none"> • Commit to highest standards of solid waste management within the TS • Implement the mitigation measures to minimize impacts on soil and groundwater • Implement the mitigation measures to minimize air pollution and noise • Transfer all waste from the facility daily to the final disposal site • Check the facility routinely to ensure that vectors do not settle in any part of the facility • Erect a green belt around the facility to minimize occurrence of windblown waste • Ensure trucks are properly covered to avoid windblown wastes during transport • Avoid working at night and avoid high intensity light that may disturb fauna. • Ensure speed control and the prohibition of off-track driving. 	MINOR	NEGLIGIBLE

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
Attraction of pests	<ul style="list-style-type: none"> • Poor waste management inside the TS • If TS is not maintained, animals, insects and disease vectors may prevail within the site, which may lead to disease transmission to workers and local population • This effect may indirectly affect agricultural activity (crops), as the spread of such pests and rodents may cause damage to some crops, and may also harm animals, such as grazing animals. 	<ul style="list-style-type: none"> • Fence the site to limit undesired faunal access • Avoid delaying the transfer of newly delivered and rapidly decomposable wastes to the final disposal facility; all wastes should be transferred to the final disposal facility within 24 hours of receipt at the TS • If necessary, use environmentally safe biocides to control mosquitoes and flies; and • Inspect site for growth of marginal vegetation and regularly remove it, should it develop • Preventing and removing any plants or weeds inside the station. • Clean the facility floor daily. • Use covered and closed equipment, containers and vehicles. • Check the facility routinely to ensure that such vectors do not settle in any part of the facility. • Seek support of specialists in pest and rodent control, if necessary. 	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
Socio-economic impacts				
Public health and amenity	<ul style="list-style-type: none"> Emissions, noise and odors Traffic accidents 	<ul style="list-style-type: none"> Choose routes for waste transfer trucks that avoid passing by the local communities, if possible Ensure proper maintenance of the trucks and that the solid waste is properly covered during transportation Build a high fence of 3 meters around the site to isolate it completely from residential areas and erect a green belt around the site Monitor air pollution regularly to take corrective actions timely Implement a community grievance mechanism Traffic and road safety mitigation measures shall be followed Avoid delaying the transfer of newly delivered and rapidly decomposable wastes to the final disposal facility; all wastes should be transferred to the final disposal facility within 24 hours of receipt at the TS (this will avoid generation of odors) Manage the facility based on a just-in-time operational approach 	MODERATE	MINOR
Traffic and road safety	<ul style="list-style-type: none"> Increased traffic caused by solid waste transport vehicles Possible traffic accidents during transportation 	<ul style="list-style-type: none"> Same as construction phase 	MODERATE	MINOR

<p>Workplace health and safety</p>	<ul style="list-style-type: none"> • Gas and dust emissions • Noise • Traffic inside TS • Work accidents like falling from high places • Daily handling of solid waste 	<ul style="list-style-type: none"> • Enforce Local and IFC performance standard of labor and working conditions • Use fire resistant /retardant material in building construction • A list of emergency hospitals shall be available for quick contact in emergency cases. • Implement the rules and procedures of the Occupational Safety and Health Plan. • Comply with the instructions of the Civil Defence Authority. • Ensure continuous supervision of construction workers. • Ensure that workers are always wearing PPEs while working or onsite. • Ensure periodic maintenance of equipment according to manufacturers' schedule. • Ensure that workers obtain a proper first aid training. • Ensure the availability of first aid kits. • Provide and install fire extinguishers and fire kit and ensure that workers are trained to use them. • Implement good housekeeping practices and ensure that proper hygiene measures are taken. • Restrict vehicles speed so that they do not exceed the safety limit (15-20 km/h). • Store flammable materials in an isolated and shaded area. • Provide regular training of the operational procedures to workers. 	<p>MODERATE</p>	<p>MINOR</p>
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Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> Comply with all the executive regulations of Labor Law 12/2003 and specifically the ones related to operation of equipment and machinery. 		
Social and Economic impact on local community	<ul style="list-style-type: none"> Positive impacts from job generation and cleaner environment 	<ul style="list-style-type: none"> Prioritize hiring of locals for the operation of the station 	MODERATE (Positive impact)	-

1.6 Conclusions

The Dayrout Transfer station will receive municipal solid waste from Dayrout District and its villages and secure their timely transfer in larger containers to their final disposal site. This will ensure a more cost-effective and environmentally friendly transportation of wastes in the District. The negative impacts that may be caused at the time of TS operation are limited and can be mitigated by following the environmental management plan as well as the methods of control and mitigation mentioned in the ESIA study (Environmental management plan chapter).

The project has several positive environmental and social impacts as follows:

- Improvement of health conditions in Assiut Governorate.
- Creation of job opportunities for local population during construction and operation of the project.
- Enhancing landscape quality and reduction in visual impacts attributed to enhanced waste collection and transportation.
- Mitigation of greenhouse gases through more efficient transportation of municipal solid wastes.

No high significance residual impacts are expected to prevail should the EMP be effectively implemented. The site is far from human receptors and is unlikely to cause any nuisance when properly operated.

2 Introduction

The National Solid Waste Management Programme (NSWMP), in collaboration with international partners, aims to contribute to the protection of the environment and climate, the conservation of resources, and the reduction of health risks to the population of Egypt through the establishment of an environmental and climate friendly Solid Waste Management system. The program shall be implemented according to national laws and regulations as well as applicable international standards and improve the institutional capacities, technical and administrative skills at national, governorate, and local levels to ensure the sustainability of the waste management investments.

As part of the NSWMP, Transfer stations (TS) for transporting municipal solid waste (MSW) will be built and operated in Assiut Governorate. This Environmental and Social Impact Assessment (ESIA) report covers the Dayrout Transfer Station. The site was chosen and made available by the Solid Waste Management Unit (SWMU) in Assiut.

MSW will be collected from the District villages and sent to the transfer station site and will then be transported by large trucks to the treatment and landfill facility located the El Qosyiah District. This will reduce waste transportation costs and ensure a more sustainable waste management system with less emissions and less hazards related to waste transport (such as road accidents and possibilities of spills and waste littering).

The purpose of ESIA is to ensure the protection of the environment and natural resources, including aspects related to human health, through a systematic identification and assessment of impacts followed by the identification of mitigation and monitoring measures to effectively reduce these impacts to acceptable residual levels.

According to Law 4/1994 modified by Laws 9/2009 and 105/2015, any new project or modification will require an environmental approval from the Egyptian Environment Affairs Authority (EEAA). On the other hand, Transfer Station facilities are included in the project categorization list of Category B projects, which does not require the preparation of ESIA study and does not require organizing a public consultation meeting. Instead, a Form B should be prepared and submitted to EEAA for review and environmental approval. Nevertheless, and as part of the financing agreements between KfW and NSWMP, an ESIA should also be prepared for transfer stations and should comply with KfW requirements and international standards. In general, KfW bases the project impact assessment on the regulations of the host country. However, these regulations must be consistent with the international standards set by the European Union (EU), the leading OECD countries, as well as IFC Performance Standards and World Bank's EHS Guidelines, and the Environmental and Social Standards

of the World Bank (WB). In this respect, EAAA's Category B projects correspond to WB Category "B" projects.

2.1 ESIA objectives

The main objectives of this ESIA Study are to systematically identify and examine potential environmental and social impacts associated with the construction and operation of the proposed Dayrout transfer station, to recommend appropriate environmental and social mitigation and management measures for the proposed project and to identify those responsible for implementing these measures. A core outcome of the study is an Environmental and Social Management and Monitoring Plan (ESMMP) for the project. The ESIA also emphasizes the advantages and positive impacts of the project to the local communities and underlines the potential contribution of the project to the community development. The ESIA study is intended to fulfil the environmental legal requirements of the Egyptian Environmental Law 4/1994, updated by Law 9/2009 and Law 105/2015, and its executive regulations, as well as the requirements of the Waste Management Regulatory Authority (WMRA) and KfW. In this respect, the ESIA follows the latest version of the ESIA Guidelines for Municipal Solid Waste Management Projects developed for NSWMP in 2019.

2.2 The importance of Solid Waste Transfer Stations

A transfer station is a transit point in the movement of MSW to a solid waste processing plant, a landfill site or final disposal facility. As such, it is generally considered as being a complementary activity as part of integrated solid waste management (ISWM) activities. A transfer station also:

- Reduces the cost of transporting waste to treatment/disposal facilities. Consolidating smaller loads from collection vehicles into larger transfer vehicles reduces hauling costs by enabling collection crews to spend less time travelling to and from distant disposal sites, and more time collecting waste.
- Reduces fuel consumption and collection vehicle maintenance costs, and produces less overall traffic, air emissions, and road wear.
- Provides opportunity to screen waste prior to disposal.
- Provides flexibility in selecting waste disposal options.

2.3 The Project Objectives

The objectives of the Dayrout transfer station are to:

- Contribute to the implementation of the NSWMP outputs in Assiut Governorate
- Ensure the optimal use of state-owned land to implement NSWMP projects

- Contribute to environmental protection and improvement of public health
- Create jobs in the waste management value chain
- Reduce greenhouse gas emissions

2.4 The ESIA Methodology

The ESIA is based on the review of the project components and activities, assessment of site-specific conditions and presence of sensitive receptors, followed by the identification of possible environmental and social impacts, assessment of their significance, and development of mitigation and monitoring measures to ensure impacts significance remain as low as reasonably practicable. The assessment was conducted for both the construction and operation phases. The mitigation measures were developed and included in an Environmental and Social Management Plan (ESMP). Additionally, the monitoring plan was developed to monitor implementation of the ESMP. EIA study form (B) for the TS will be submitted for EEAA with details about the project included baseline identification and assessment for the TS (in line with the outcomes of this ESIA). Last but not least, a Grievance Mechanism was also developed and included in the ESIA in line with international standards. Establishment of baseline conditions was largely based on the review of secondary data, site visits and inputs from stakeholders.

2.5 ESIA Report Structure

This ESIA report includes the following chapters:

1. Executive summary
2. Introduction
3. Legal and institutional framework
4. Project description
5. Environmental and Social Baseline
6. Project alternatives
7. Environmental and social impact assessment and mitigation
8. Environmental and Social Management Plan
9. Stakeholder Engagement, Community Consultation and Grievance Mechanism
10. References

3 Legal and Institutional Framework

This section summarizes the relevant national and international environmental and social legislation that the project should comply with in addition to the institutional framework. Relevant legislation was identified according to the proposed project type, geographic location and expected impacts. Since the project is implemented under the NSWMP and co-funded by KfW, the project must not only meet all relevant Egyptian requirements but must also follow the international standards of the funding institutions as reflected in the ESIA guidelines approved by KfW.

3.1 The Administrative Framework and National Authorities

Environmental legislation in Egypt was first established through Law No. 4 /1994 and its executive regulations issued by decree No. 338 /1995, amended by decree No. 1741/2005. Law No. 9 /2009 further amended Law No. 4/1994 for the protection of the environment and Law 105/2015 assigned the Egyptian Environmental Affairs Agency (EEAA) as the authority to set and monitor the environmental standards of projects and to take legal action against violators.

According to Law 4/1994, the project proponent must prepare an Environmental Impact Assessment (EIA) for the approval of the EEAA and the Waste Management Regulatory Authority (WMRA). Accordingly, the environmental requirements are integrated into the existing licensing system. Projects were classified by EEAA according to the severity of potential impacts into 4 categories. The proposed project (TS in Dayrout) is classified under the existing List B.

The overall procedures for submittal and approval of ESIA studies are shown in detail in the EIA Guidelines of 2010. With respect to MSW projects, the procedures will differ slightly if the projects are implemented within the National Solid Waste Management Program (NSWMP) or outside of the NSWMP - essentially meaning with or without international funding.

MSW Projects under the NSWMP

The following presents the detailed description of the steps of the ESIA process for MSW projects:

Step 1: SWMU issues TOR to bidding Contractors for design of new SWM facility

Sept 2: Selected Contractor prepares Project Design

Sept 3: CPI prepares ESIA package based on Project Design, submit to CAA

Step 4: CAA forwards ESIA to EEAA

Step 5: Initial review of ESIA and forward to WMRA for opinion

Step 6: Technical review of ESIA by WMRA, and PMU reviews conformance to KfW/International Standards

Step 7: WMRA sends ESIA comments to EEAA

Step 8: Final review and decision

Step 9: EEAA informs CAA of decision

Step 10: CAA informs SWMU of decision on ESIA

The figure below depicts a simplified view of the ESIA process for MSW projects implemented under the NSWMP and for which the Solid Waste Management Unit (SWMU) has the role of Project Proponent and the ESIA must consider the international lender requirements.

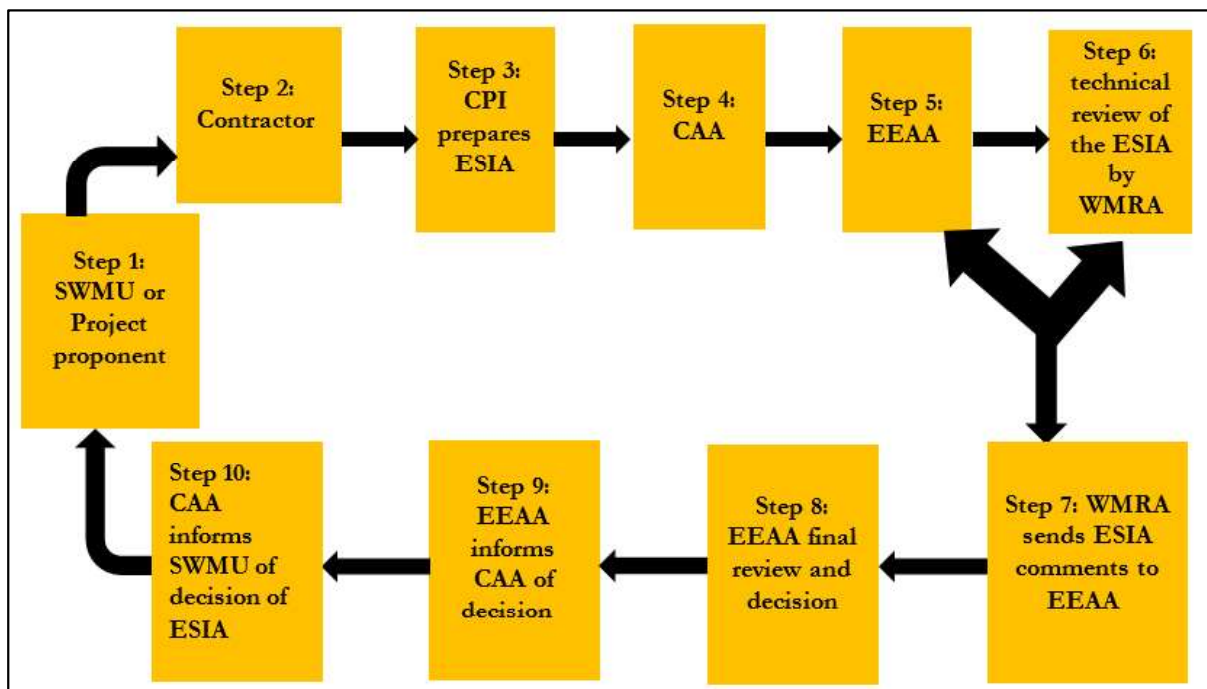


Figure (3-1): Flowchart for NSWMP Program

MSW Projects Outside of the NSWMP

The figure below shows the ESIA process for MSW projects outside of the NSWMP. In this case, the SWMU might be the project proponent – or a private investor. In either case, the proponent will usually need to issue tenders not only for the project design, but also for the certified ESIA expert/firm to perform the ESIA (STEP 2). The ESIA is then submitted in STEP 3 via the proponent to the CAA and the remaining review process is similar to that of projects within the NSWMP described above, except that approval by an international lender will not be required as per STEP 6 in Figure (3-1).

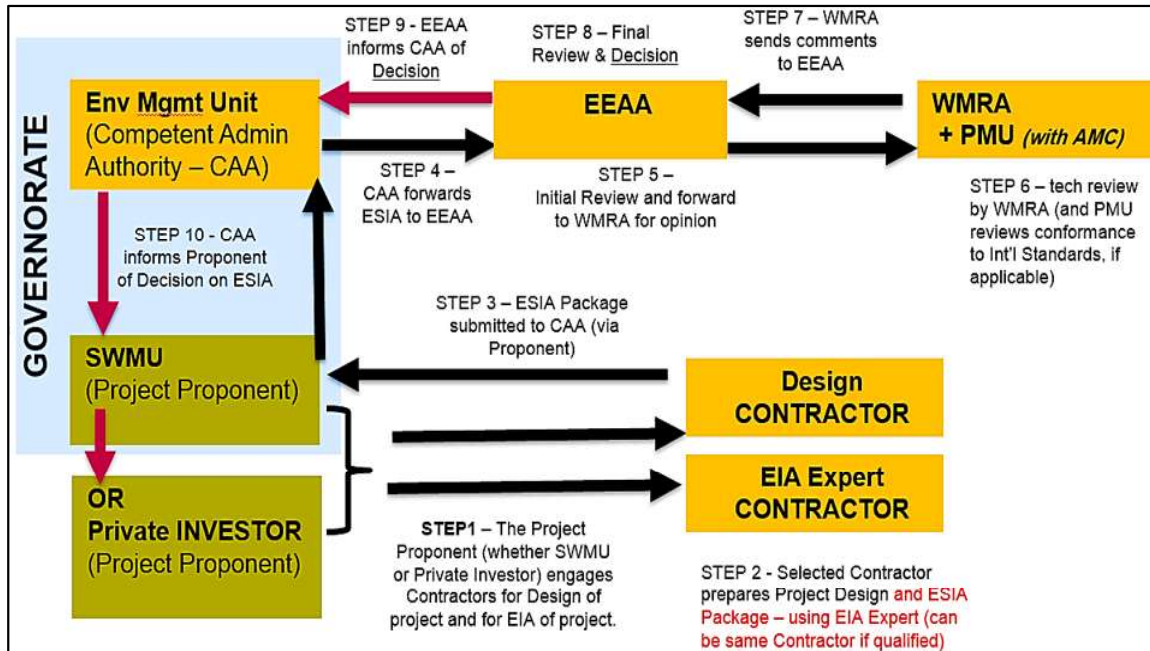


Figure (3-2): Flowchart for NSWMP outside the program

After submitting the EIA/ESIA reports, the EEA reviews the reports within 30 days, before issuing approval of the report. In the event that the EEA rejects the project, the project administration has the right to file a grievance within 30 days of receiving the EEA decision.

It is worth noting that once the EIA/ESIA study is approved, the environmental and social management plan (ESMP) concedes as an integral part of the project and the project management is legally responsible for implementing this plan in the construction or operation process.

3.2 National Laws and Regulations

Solid waste management is regulated by several national environmental laws and ministerial decrees, including the following:

1. Law No. 38 of 1967 concerning cleanliness and its Executive Regulation issued by the Minister of Housing, Utilities and Urban Communities' Decree No.134 of 1968.
2. Law No. 43 of 1979 (Local Administration Law) concerning responsibilities related to infrastructure to City Councils.
3. Law No. 137, 1981 concerning occupational safety.
4. Law No. 4 of 1994 promulgating the Law concerning the Environment and its Executive Regulation issued by Prime Minister's Decree No. 338 of 1995.
5. Law No. 9 of 2009 amends Law No. 4/1994 for the protection of the environment, in addition to law 105/2015.

6. Law No. 10 of 2005 amending certain Provisions of Law No. 38 of 1967 concerning the Public Cleanliness.

3.2.1 ESIA procedure articles in accordance with the Egyptian Environmental Law No. 4 of 1994 and its subsequent amendments (Law No. 9 of 2009 and 105/2015).

Article 19 :

Every natural or legal person, public or private, shall be committed to presenting a study of Environmental Impact Assessment of the establishment or the project to the competent administrative body or the licensing authority before starting implementation thereof. The study shall be carried out in accordance with the elements, designs, specifications, bases and pollutants loads determined by Egyptian Environmental Affairs Agency EEAA in coordination with the competent administrative bodies. The competent administrative bodies should provide maps of industrial areas clarifying types of the industries allowed depending on environmental loads.

Article 20 :

The competent administrative authority or the licensing body shall forward the abovementioned Environmental Impact Assessment studies to the Egyptian Environmental Affairs Agency EEAA for consideration. The EEAA may give the body preparing the study suggestions concerning preparations and systems necessary to treat the negative environmental effects and demand implementation thereof. The EEAA may also ask the body to provide all the data, designs or clarifications necessary for consideration of the study. The Egyptian Environmental Affairs Agency EEAA shall have to inform the competent administrative authority or the licensing authority with its consideration within a maximum of 30 days from the date of the receipt or completion of the study or execution of the proposals; otherwise, failing to reply shall mean that study is accepted by the Egyptian Environmental Affairs Agency EEAA. The project shall have to start operation within the period granted by the license; otherwise, the environmental approval shall be considered null and void.

Article 21:

The competent administrative authority shall notify the owner of the establishment of the result of the assessment by a registered letter with return receipt requested. The owner of the establishment may object to the result in writing within thirty days of notification before a committee to be formed by a decree of the Minister in charge of Environmental Affairs. The EEAA, the competent administrative authority or the licensing authority and the owner of the establishment shall be

represented on the committee. The executive regulations shall determine the functions of the committee as well as its operating and complaint procedures.

Article 22 :

The official responsible for managing the establishment, according to provisions of this law, shall keep a written record of the impact of his establishment on the environment (Environmental Record). The Executive Regulation shall include a template of the required record and timetable to be kept by the establishments and the data to be entered therein. The EEAA shall follow up these records to ensure their genuineness, take necessary samples and conduct appropriate tests to determine the impact of the establishment activities on the environment and the extent of its compliance with environmental protection standards or the pollutants loads.

If it is transpired that the establishment is not keeping an environmental record, not updating data regularly or is not genuine, or that the establishment is not complying with the aforementioned standards or loads or violating any provision of this Article, the EEAA shall notify the competent administrative authority to demand the establishment's proprietor to rectify such violation promptly. If he fails to comply within 60 days from the date of his tasking, The Egyptian Environmental Affairs Agency EEAA shall be entitled after notifying the competent administrative authority to taking any of the following measures:

1. Granting the establishment fixed additional grace period to rectify violations; otherwise, the EEAA shall have the right to proceed with rectification at the expense of the violating establishment.
2. Halting the violating activity, till the removal of violation traces, without detriment to its workers' wages. In case of grave environmental hazard, the sources of the hazard should be stopped by all necessary means and measures

3.2.2 The Egyptian Environmental Impact Assessment Guidelines

The EEAA issued EIA guideline in 2010 that describes the contents of "C" Categories EIAs. Furthermore, NSWMP developed specific guideline for ESIA of municipal solid waste management projects. The guideline developed by NSWMP focuses more on the social aspects from the guideline developed by EEAA. The contents of the ESIA are the following:

- Non-technical summary.
- Introduction and background of the project.
- Outline of important characteristics of the proposed project.
- Description of the proposed project:

- Objective;
 - Location;
 - Description of surrounding activities, near ecological hotspots, and land use plan;
 - Project layout including associated facilities;
 - Construction phase activities including construction activities, resources expected to be consumed, pollutants expected to be emitted, etc.;
 - Operation and maintenance phase including equipment description resources expected to be consumed, pollutants expected to be emitted, pollution control; and
 - Description of planned closure activities including equipment description and expected activities.
- Applicable legislative framework and the regional and international conventions;
 - Baseline Environmental Conditions
 - Physical (Climate, Hydrology, Geology);
 - Ecology and Biological Description (habitats, fauna and flora);
 - Land Use;
 - Air Quality;
 - Water Quality;
 - Noise;
 - Socioeconomic Issues; and
 - Traffic.
 - Project alternatives taken into consideration including the no-project alternative, location alternative, technical alternatives, etc.;
 - Prediction and evaluation of Impacts and mitigation measures
 - Waste water management and quality.
 - Air emissions and noise.
 - Solid Waste
 - Hazardous Materials
 - Socioeconomic
 - Environmental and Social Management Plan (ESMP)
 - Monitoring plan
 - Description of consultation activities undertaken with local public/stakeholders

3.2.3 Regulatory Framework for Municipal Waste Management

The conditions that must be observed when allocating and constructing Transfer stations are included in Article 17 of the Executive Regulations of Law 38/1967 regarding public cleanliness and in Article 38 of the Executive Regulations of Law 4 of 1994 regarding the protection of the environment while respecting the requirements determined by the local units and EEAA. The following requirements and conditions must be met:

1. Conducting an integrated topographical study of the proposed project region and preparing regional waste characterization study.
2. The project site should be away from the residential, industrial, agricultural, and waterway areas, so that it is at least 1,500 meters from the nearest residential or industrial area.
3. The project site should be against the prevailing winds from residential and industrial areas.
4. The project capacity must be suitable for the works size and transported MSW.
5. The site should be surrounded by a suitable fence, with a height not less than 1.80 m.
6. The site fence should be equipped with entrances and exits suitable for the size of trucks.
7. The site should be equipped with water sources and means of fire fighting
8. The site should have a sufficient number of bathrooms and showers.
9. An ESIA study should be prepared in accordance with the previously mentioned guidelines.
10. The project management authority shall be comply with the air pollutants limits allowed by the related laws, such as Appendix No. 6 of the executive regulations of Law No. 9/2009 related to any change in the characteristics of natural air as it entails a risk to human health and the environment. Emissions should also be in accordance with Articles 35 and 36 of Law 4 of 1994 and in accordance with the executive regulations.

3.2.4 Regulatory Framework for Emissions to Air

Article 35 of Law 4 of 1994 and Article 35 of Annex 5 of the Executive regulations (710/2012) define the maximum allowable limits of ambient air pollutants (Table 3-1).

According to the IFC guidelines, projects with significant sources of air emissions and potential for significant impacts to the ambient air quality should strive to prevent/ minimize their impacts by ensuring that emissions do not result in pollutant concentrations that reach or exceed ambient quality standards stated by the national standards, prevailing WHO Air Quality Guidelines, or other internationally recognized sources. The following emissions levels are normally acceptable to the World Bank Group in making decisions regarding provision of World Bank Group assistance. The emissions levels given here can be consistently achieved by well-designed, well-operated, and well-maintained pollution control systems.

Table 3(3-1): Maximum Limits of Ambient Air Pollutants

Pollutant	Area	Maximum Allowable Limits			
		1 hr	8 hrs	24 hrs	1 year
Sulfur Dioxide ($\mu\text{g}/\text{m}^3$)	Urban Areas	300	-	125	50
	Industrial Areas	350	-	150	60
<i>International guidelines (IFC)</i>		-	-	20	-
Carbon Monoxide (mg/m^3)	Urban Areas	30	10	-	-
	Industrial Areas	30	10	-	-
<i>International guidelines (IFC)</i>		-	-	-	-
Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$)	Urban Areas	300	-	150	60
	Industrial Areas	300	-	150	80
<i>International guidelines (IFC)</i>		400	-	150	-
Total Suspended Particles ($\mu\text{g}/\text{m}^3$)	Urban Areas	-	-	230	125
	Industrial Areas	-	-	230	125
<i>International guidelines (IFC)</i>		-	-	-	-
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	Urban Areas	-	-	150	70
	Industrial Areas	-	-	150	70
<i>International guidelines (IFC)</i>		-	-	150	70

Article 36 of the same law, and article 37 and Annex 6 of the ER (Executive Regulatory) provides the maximum allowable limits of vehicles exhaust gas emissions. Table (3-2 and Table 3(3-3 show the limits for different types of vehicles.

Table (3-2): Maximum Emission Limits in Vehicles using Gasoline Fuel

Annex 6 (Table 23) Executive Regulations of Law 4, 1994 (as amended by Decree No. 710 of 2012) regarding Vehicles using Gasoline Fuel (Measured at Idle speed 900 cycle/minute)						
	Before 2003		From 2003 – 2009		From 2010 till present	
Pollutants	HC ppm	%CO	HC ppm	%CO	HC ppm	%CO
Maximum limits	600	4	300	1.5	200	1.2

Table 3(3-3): Maximum Emission Limits in Vehicles using Diesel Fuel

Annex 6 (Table 24) Executive Regulations of Law 4, 1994 (as amended by Decree No. 710 of 2012) regarding Vehicles using Diesel Fuel (Measurements are done according to International Standard Specifications (ISO – 11614))		
Year of manufacture (Model)	Before 2003	From 2003 till present
Smoke density Coefficient K (m ⁻¹)	2.8	2.65

3.2.5 Regulatory Framework for Noise Nuisance

Article 42 of Law 4/1994 and article 44 of its modified ER (710/2012) present the maximum allowable limits for sound intensity. Table (3-4) presents the maximum limits of ambient noise levels in different areas.

Table (3-4): Maximum Limit Permissible for Noise Level in the Different Zones According to Annex 7 of the Modified ERs of Law 4/1994

Type of zone	Permissible limit for noise level, dB (A)	
	Day time	Night
	7 am – 10 pm	10 pm – 7 am
Areas on roads whose width is 12 m or more, or industrial areas which comprise light industries and other activities	70	60
<i>International guidelines</i>	<i>70</i>	<i>70</i>

3.2.6 Regulatory Framework for Wastewater Disposal to Sewers

The waste is not expected to be accumulated at the TS for a long time. Therefore, practically no leachate is expected to be generated at the TS provided that the waste is not very humid. The wastewater expected to be generated from the TS is the municipal wastewater, and wastewater generated from the truck cleaning station. Decree 44/2000 of the Ministry of Housing modifying the executive regulations of Law 93/1962 addresses the conditions and maximum allowable limits for discharge of wastewater to the public sewer network. Article 14 of the Decree sets the specifications for the quality of wastewater to be drained in public sewerage networks, which are illustrated in the following Table 3-5.

Table (3-5): Standards and specifications of wastewater to be discharged to sewer systems

Parameter	Maximum allowable limits (mg/l unless otherwise noted)
pH	5-6.9
BOD	600 ppm
COD (Dichromate)	1100 ppm
Temperature (°C)	43 °C
Total Suspended Solids (TSS)	800 ppm
Settled Solids (after 10 and 15 min)	8 cm ³ /15 cm ³
Oil & Grease	100 ppm
Total Nitrogen	100 ppm
Total Phosphorus	25 ppm
Phenol	0.05 ppm
Sulphide	10 ppm
Ammonium	100
Cyanide	0.2 ppm
The total of the following heavy metals shall not exceed 5mg/l	
Arsenic	2
Boron	1
Cadmium	0.2
Copper	1.5
Chromium 6	0.5
Lead	1
Mercury	0.2
Nickel	1
Silver	0.5
Tin	2

3.2.7 Regulatory Framework for Potable Water Quality

The Decree of the Minister of Health 458/2007 provides the acceptable specifications of potable water. The parameters are categorized under five categories as follows:

1. Physical parameters: such as color, odor, turbidity and pH.
2. Inorganic parameters: such as hardness, dissolved salts, sulphates and chlorides and metallic
3. Heavy metals and organic pesticides
4. Microbiological parameter
5. Radioactive substances

Table 3-6 below presents example parameters relevant to potable water quality for drinking and domestic purposes according to national law.

Table 3(3-6): Parameters Relevant for Potable Water Quality

Parameter	Maximum allowable limits (mg/l)
Physical Parameters	
Dissolved salts at 120°C	1000
Total hardness (as CaCO ₃)	500
Sulphates (SO ₄)	250
Chlorides (Cl)	250
Iron (Fe)	0.3
Manganese (Mn)	0.4
Copper (Cu)	2
Zinc (Zn)	3
Sodium (Na)	200
Aluminum (Al)	0.2
Microbiology parameters	
Total bacteria count	- Not exceeding 50cell/cm ³ at 37°C for 24 hours - Not exceeding 50cell/cm ³ at 22°C for 48 hours
Total coliform	- 95% of the samples up to 100 cm ³ examined a year should be totally free of coliforms - No sample should exceed 2 cell/100 cm ³ provided that this limit does not occur in two successive samples form one sampling source.
Streptococcus pyogenes	- None
Algae	- Microcystins should not exceed 1µg/l in case of blue green algal bloom
Microscopic examination	- Totally free of living protozoa and pathogenic organisms

3.3 Regulatory Framework for Social and Labour Aspects

1) Grievance

Law 4/1994

Every citizen and organization concerned with the protection of the environment shall have the right to report any violation of the provisions of this Law.

Article 85 of the Constitution

Everyone has the right to address public authorities in writing and signed, but should not address it on behalf of groups, only as juridical persons.

2) Inclusivity/vulnerable groups

Article 9 of the Egyptian Constitution

The state is committed to achieving equality of opportunity for all citizens, without discrimination.

Article 11 of the Egyptian Constitution

The State guarantees equality between women and men in all civil, political, economic, social and cultural rights in accordance with the provisions of the Constitution. The State shall endeavor to take measures to ensure appropriate representation of women represented in parliaments, as prescribed by law, and guarantee women the right to hold public office and functions of senior management in the state and the appointment of competent judicial bodies, without discrimination against them. The state is committed to protecting women against all forms of violence, and to ensure the empowerment of women to reconcile their family duties and work requirements. It is also committed to providing care and protection of motherhood and childhood and women breadwinners and elderly and women most in need.

3) Governance and Human Rights

Law no. 94/2003 on establishing the National Council for Human Rights (NCHR)

It aims to promote, ensure respect, set values, raise awareness and ensure observance of human rights. At the forefront of these rights and freedoms are the right to life and security of individuals, freedom of belief and expression, the right to private property, the right to resort to courts of law, and the right to fair investigation and trial when charged with an offence.

4) Labour working conditions

The Egyptian Labour Law number 12/2003 defines working conditions and management of worker relationship in chapters one to four of Book 5 of the Labour Law. The national labour law in its different articles; addresses the following aspects:

- The individual labour contracts,
- Terms of employment,
- Wages and leaves,
- Collective negotiations and collective labour agreements and litigations, and
- Vocational training

5) Child Labour

Article 64 of the Child Law 12/1996 states that “children shall not be employed for work before reaching the age of fifteen (15) calendar years”.

Articles from 98 to 103 of the Labour Law 12/2003 (amended by law 90/2005) address working conditions for children and obligations on the owner who has child labour working in their project. Minister of Labour decree 118/2003 concerning child labour describes terms and conditions for recruiting a child such as providing periodical medical examinations, first aid, good working environment, PPEs and a list includes names, age date of recruitment for each child and post it clearly at the site as well as providing healthy meals.

The below articles of the ministerial labour decree 118/ 2003 concerning child labour indicate the following:

- Article 1 indicates a list of jobs where it is prohibited to employ a child under 18 years old.
- Article 2 indicates a list of jobs where it is prohibited to employ a child under 16 years old. It includes jobs which require a lot of physical and mental work. It also includes jobs that put them at physical chemical or biological risks.
- Articles 3 to 8 describe terms and conditions for recruiting a child such as providing periodical medical examinations, first aid, good working environment, PPEs and a list includes names, age date of recruitment for each child and post it clearly at the site as well as providing healthy meals.

3.4 Legislation applicable to Cultural Heritage

Law No. 117 of 1983 promulgating the Antiquities’ Protection Law, as amended by Law No. 3 of 2010, deals with the protection of antiquities. It is the main law in Egypt regarding the protection of archaeological and historical sites. The Ministry of State for Antiquities (MSA) is the authority concerned with the supervision of all archaeological affairs and sites in the country (Article 5).

3.5 International Requirements

International funding agencies, such as the KFW and the World Bank require that the projects they finance to be in compliance with both the country's national standards as well as their own environmental and social policies. Therefore, in addition to the national regulations, the project aims at complying with the international safeguard policies and guidelines. The policies help to ensure the environmental and social soundness and sustainability of investment projects. They also support integration of environmental and social aspects of projects into the decision making process. In addition, the policies promote environmentally sustainable development by supporting the protection, conservation, maintenance, and rehabilitation of natural habitats. The TS project in Dayrout is classified as category B project by EEAA, which requires mandatory Environmental Impact Assessment as it may have moderate impacts on the environment. The project is classified as Category B according to the KFW and WB classification criteria.

The World Bank Environmental and Social Framework (ESF) enables the World Bank and the Borrowers to have a better management of environmental and social risks of projects, to decrease the negative impacts of these projects, and to improve development outcomes. It was launched on October 1, 2018. The ESF covers the environmental and social risks broadly and systematically. The ESF covers areas as transparency, non-discrimination, public participation, and accountability. The ESF consists of 10 Environmental and Social Standards (ESS) which set out the requirements applied to borrowers.

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

It sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each phase of any project funded by the Bank, in order to reach environmental and social performance consistent with the Environmental and Social Standards (ESSs).

ESS2 Labour and Working Conditions

It recognizes the importance of creation of job opportunities, economic growth, and income generation. It states the requirements for safe and healthy working conditions, and labour protection.

ESS3 Resource Efficiency and Pollution Prevention and Management

It recognizes that economic activities may lead to pollution of the environment, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life-cycle.

ESS4 Community Health and Safety

It addresses the health, safety, and security risks and impacts on project-affected communities, and the responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to vulnerable groups.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

It addresses the appropriate measures to mitigate adverse impacts on displaced persons and host communities receiving displaced persons due to involuntary resettlement.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

It recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project.

ESS7 Indigenous Peoples

It means to avoid adverse impacts of projects on Indigenous Peoples (Historically Underserved Traditional Local Communities), or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.

ESS8 Cultural Heritage

It sets out measures designed to protect cultural heritage throughout the project life cycle.

ESS9 Financial Intermediaries (FIs)

It recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction.

ESS10 Stakeholder Engagement and Information Disclosure

It recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

3.6 International Conventions and Agreements

Egypt has signed and ratified a number of international conventions that commit the country to conservation of environmental resources. The following is a list of the key conventions:

- 1) International Plant Protection Convention (Rome 1911)
- 2) African convention on the conservation of nature and natural resources (Algeria 1922)
- 3) UNESCO Convention for the protection of the world cultural and natural heritage (Paris, 1978)
- 4) United Nations Climate Change Convention (New York 1998). The agreement covers greenhouse gas emissions control measures from various sources, including transportation.
- 5) United Nations Climate Change Convention and Kyoto Protocol 1997
- 6) The Convention on Biological Diversity (Rio de Janeiro 1992) covering habitats, plant and animal species
- 7) Ozone Layer Convention Vienna 1921.
- 8) Convention on the Protection of Workers from Occupational Hazards in the Work Environment resulting from Air Pollution and Noise in the Work Environment Geneva 1977.

4 Project Description

4.1 Introduction

This chapter presents a description of the key features of the construction and operation of the proposed transfer station facility located in Dayrout, Assiut Governorate.

The Dayrout TS is part of an integrated waste management system for Assiut Governorate. The transfer station facility will receive MSW daily and transfer from collection trucks (small volume) to larger trucks. The local unit will operate the TS. The collected MSW from Dayrout District and its villages will be sent to the TS, then to Quoseya facility, as long as the new MBT Plant is not constructed in Assiut. The proposed Dayrout TS shall:

1. Provide flexibility in MSW handling and transportation.
2. Extend the life of waste transport trucks.
3. Reduce fuel consumption and collection vehicle maintenance costs.
4. Generate less overall traffic, air emissions, and road wear.
5. Provide Opportunity to screen waste prior to disposal, flexibility in selecting waste disposal options.
6. Reduce environmental pollution, especially visual pollution.

The Dayrout TS operating mechanism will be as follows: collection trucks enter the transfer station in Dayrout TS; at the gate, waste is weighted and registered (including time, truck number etc.); the truck is directed to the reception area. Over a ramp, collection truck reaches the reception area, where waste is unloaded. After unloading waste, collection truck leaves the reception area over the ramp at the entrance/exit gate and goes to the final disposal sites (Al Qosyiah facilities). As soon as the large self-compaction container is loaded, it will be trailed (using the truck head), weighted at the weighbridge and registered, then transported to Quoseya facility, where waste will be treated.

4.2 Main Project Characteristics

The project is located in state lands, in the border area of the western mountain in Bawet village, near to El reyad village, Dashlout's local unit, Dayrout District, Assiut Governorate. The total TS area is 8400 m². The site is located in the desert area near the highway (Cairo to Assiut, west side of the Nile) and there are no residential areas within a range of 5 km.

A 40-m buffer distance exists between the highway and the site and access from road to site is through an existing gravel road (length 50 m). The Distance from TS Dayrout to the Dashlout village is 6 Km, while distance to Dayrout District is about 15 Km.

The land in the proposed plot is currently not in use and the agriculture fields are located at a distance of 300 m. The following pictures provide an overall illustration of the site.



Figure (4-1): Northern side of the TS site .



Figure (4-2): Southern side of the TS.



Figure (4-3): Western side of the TS



Figure (4-4): Eastern side of the project

4.3 Project Location

4.3.1 Project Area and Location

The proposed TS in Dayrout District is a facility with a designated receiving area where MSW collection vehicles discharge their loads. The MSW is then loaded into larger vehicles for long-haul shipment to a final disposal site (El Qosyiah sites). While the total TS area is 8400 m², the total workplace area with dimensions 50 m x 100 m (5000 m) including the total buildings area, internal paths, and green areas.

The proposed project belongs administratively to Dayrout District, Assiut Governorate. The coordinates of the site are shown in the table below:

Table (4-1) Coordinates of the site

Point	Coordinates	
P1	27° 30' 54.31''	30° 39' 54.31''
P2	27° 31' 01.98''	30° 40' 04.43''
P3	27° 31' 03.78''	30° 39' 57.74''
P4	27° 30' 57.76''	30° 39' 51.81''

4.3.2 Site boundaries:

- **the East side:** state property lands, then the western mountain, Dairout District
- **The western side:** state property lands
- **The northern side:** state property lands
- **The southern side:** state property lands

4.3.3 Available Infrastructure

The village infrastructure includes electricity network. There is also a drinking water network while the sanitation service is not yet operational (there is no infrastructure within the project site).

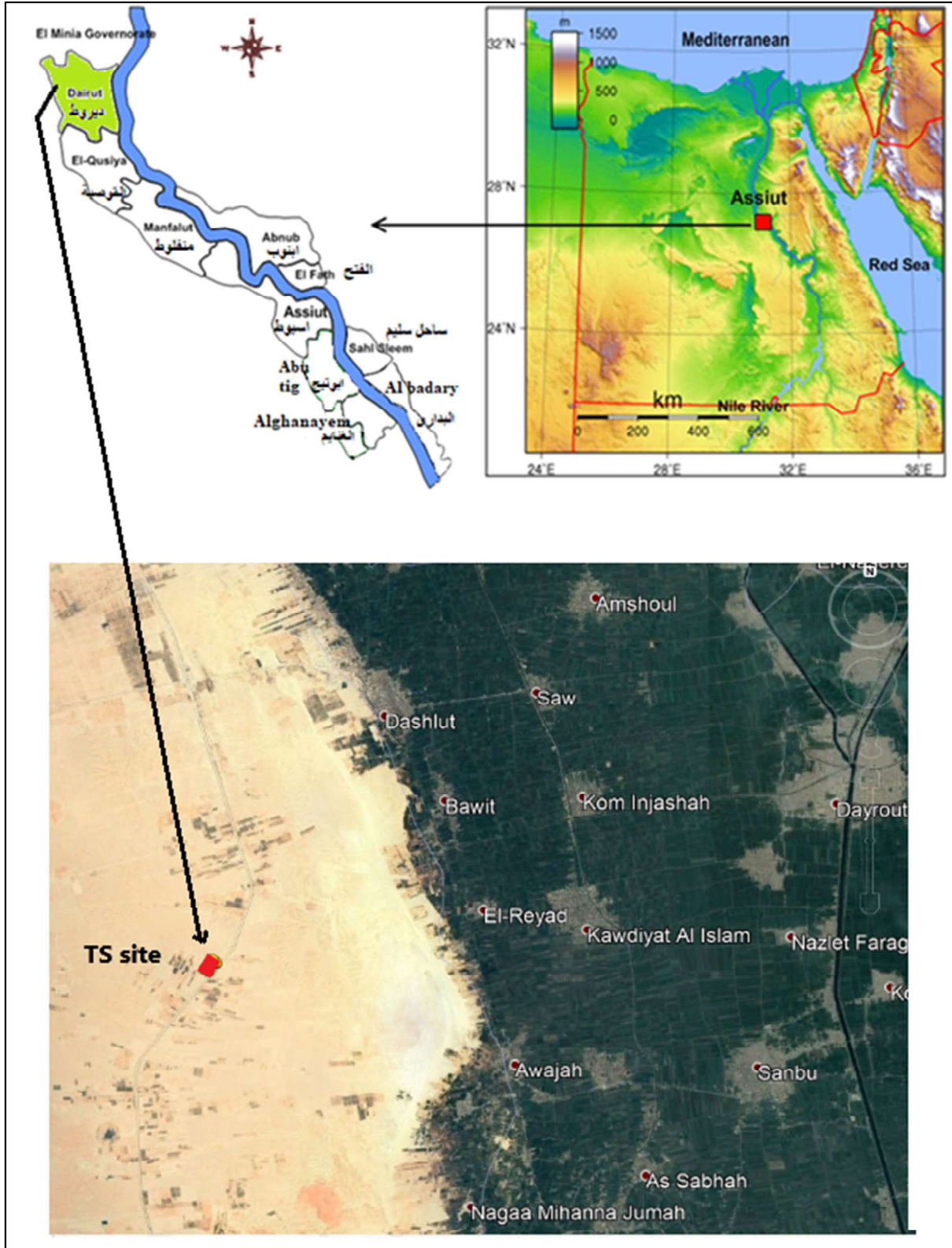


Figure (4-5): The proposed TS location

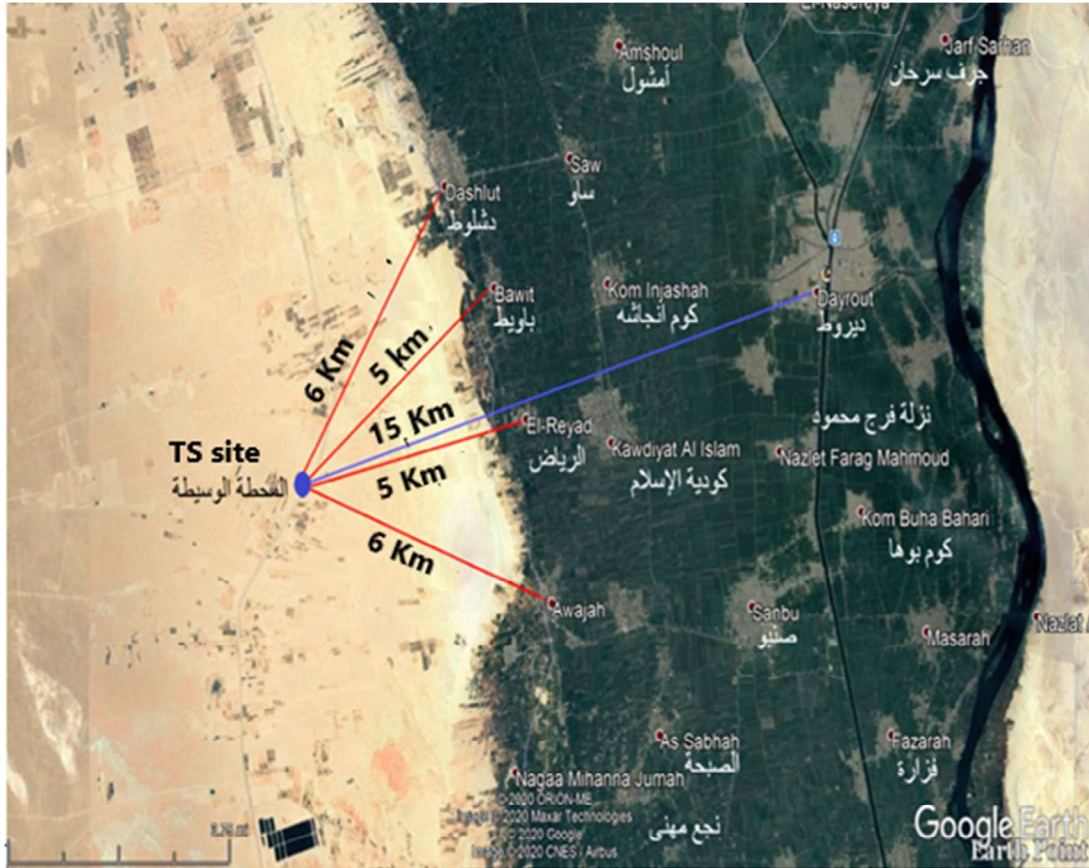


Figure (4-6): Distances between TS and the neighbouring villages

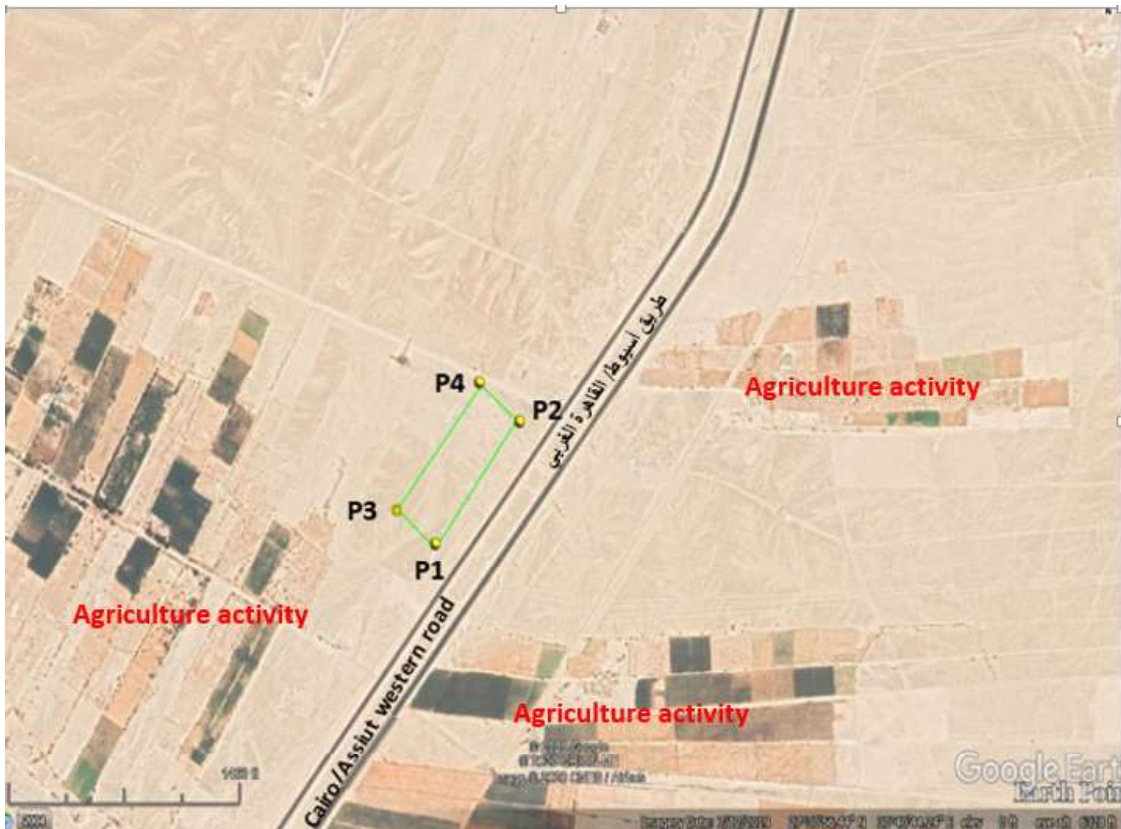


Figure (4-7): The neighbouring activities around TS (Nearest agriculture area about 300 m away)

4.4 Project Components

The Dayrout transfer station consists of the following:

- Entrance gate
- The weighting bridge associated with a balance room
- A loading area with an area of 180 m². The loading area will have concrete slabs to provide different elevations for small trucks to unload (+2.50 m) and large trucks to be loaded (-0.50 m)
- A manoeuvre area for the movement of trucks. The manoeuvre area will also have concrete slabs to avoid leachate infiltration into the soil. This zone will include required hopper to assist the loading process
- Administration building
- Workshop (for small repair)
- Parking area for cars
- Internal roads

The following figure shows the Dayrout transfer station layout.