



Baghdad Sewer

Service Delivery Improvement Plan (SDIP)

Prepared by

Baghdad Sewer Directorate

In cooperation with

GSP/Taqadum

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Baghdad - Iraq

Service Delivery Improvement Plan for Sewer Sector

1-Introduction:

This Service Delivery Improvement Plan (SDIP) is a comprehensive strategic work plan developed to address a variety of management issues. It is designed to improve Sewer service delivery in Baghdad Outskirts and enable the sewer Directorate to achieve its short-, medium- and long-term goals. The SDIP will enable the Directorate to develop a long-term vision to run itself and ensure that problems will be gradually under control.

This plan will ensure planned use of resources to achieve these goals. SDIP also helps the Directorate of Sewer in Baghdad to address issues related to its performance in delivering better services to citizens. The SDIP is based on results of the Sewer Directorate and consists of two stages:

- First stage is to identify status of Sewer networks and stations systems in all districts and sub-districts of Baghdad outskirts.
- Second stage is to develop the service delivery improvement plan to address issues related to the delivery of services and provide immediate and long-term solutions (if any).

The urban population of Baghdad outskirts in 2015 is about 813441 and there is no working treatment station.

2-Executive Summary

The current analysis mechanisms used in reviewing performance indicators of Baghdad Sewer Directorate in providing services, compared with national standards, to ensure quality and sustainable services and timely response to citizen complaints and requests, have resulted in a set of basic elements and a set of immediate and long-term solutions that will improve service delivery to citizens, as follows:

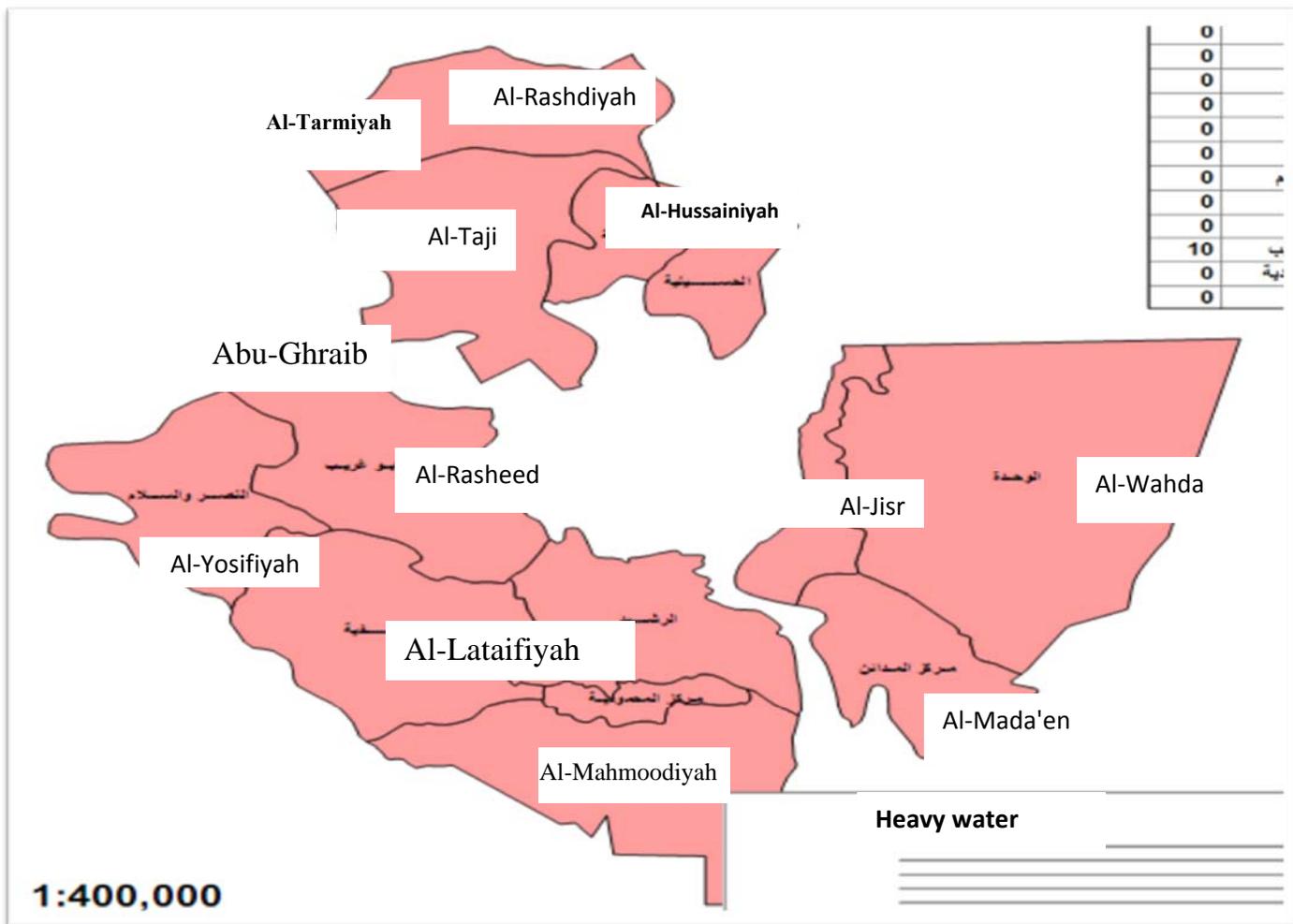
Management of Sewer Services: Management of municipal service delivery is an important and effective element in promoting healthy society by ensuring suitable environment which reflects positively on the growth of the economy and health of society. On the other hand, lack or bad municipal services would affect negatively on the society public health. Service management is based on vital elements which should be effectively and efficiently invested to provide integrated services with high quality to citizens.

Other important elements are financial resources (investment and operational budget and regional development budget.), human resources (the directorate management, and technical and engineering staff) and other resources such as equipment and vehicles. Financial resources are not the only element that governs and directs the delivery of services; rather, the management of these resources through organized processes and preplanning are also important. All these would achieve the goals of the Directorate and local government, as well as the national strategic goals.

It is worth noting that financial integration of the Directorate with other service sectors and the preparation of the operational budget in consistent with the investment budget have a positive impact on the efficiency and sustainability of services.

It is needed to develop feasibility studies to achieve right balance between costs of production and operation with fees collected from citizens for delivering these services.

Administrative boundaries of Baghdad outskirts:



Challenges and problems facing Baghdad Directorate of Sewerage:

✚ Financial

- 1- Lack of allocations in the operational and investment budgets
- 2- Lack of sewerage service charges and depend on water service charges pursuant to the board law of 1999.

✚ Infrastructure

- 1- Aging storm water executed networks
- 2- Lack of working sewer projects.
- 3- Delay in some projects (which are under construction).
- 4- Lack of specialized vehicles for maintenance and rehabilitation.
- 5- Illegal uses and unauthorized connection to storm water networks by citizens.
- 6- Lack of experienced technical and engineering staff.

Delayed projects in Baghdad sewerage directorate:

S. No.	Project name	Type	Planned completion %	Actual %	Notes
1	Al-Tarmiyah Sewerage	Heavy water	100	26	
2	Rehabilitate the residential complex in Al-Mahmoodiyah	Heavy water	100	12	
3	Pumping station R1 in Al-Hussainiyah	Storm water	100	98	Work was withdrawn
4	Al-Hussainiyah Sewerage	Heavy water	100	83	

Schedules and statistics

Sewer lifting and storm water stations

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s. No.	City center	Stations	Type (storm water of heavy water)	s. No.	City center	Type (storm water of heavy water)	Stations
1	Al-Mahmoodiyah	1- Al-Maktaba 2- Al-Albisah 3- Al-Jazaer 4- Al-Rubaiee 5- Al-Thawra	Storm water	2	Al-Mada'en	Storm water	1- Al-Maqbara 2- Al-Jamiyah
3	Abu-Ghraib	1-Al-Zaitoon 2-Al-Dor Al-Humor 3-Medium station 4-Main station 5-Al-Yarmook 6-Al-Zohoor	Heavy water Storm water Heavy water Storm water Storm water	4	Al-Hussainiyah	Storm water Storm water Storm water	1- R2 2- R3 3- Filter R1
5	Al-Jisr sub-district	1- Main station 2- Al-Itihad 3- St. No. 60 4- Filter station 1 5- Filter station 2 6- Bab Al-Sheikh 7- Al-Masraf 8- Al-	- storm water - storm water - storm water - storm water - storm water - storm water - storm water	6	Al-Yosifiyah	Strom water	1- Al-Yosifiyah

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7	Al-Wahda	1- Hay Al-Zahraa station	Storm water	8	Al-Lataifiyah	Storm water	1- Hay Al-Salam
9	Al-Rasheed sub-district	1- Al-Rasheed station	Storm water	10	Al-Nahrawan		N/A
11	Al-Tarmiyah	N/A		12	Al-Nasir Wa Al-Salam	Storm water	1- Al-Zuhoor 2- Abu Mnaiseer

Treatment stations

S. No.	Station name	Capacity M3/day	Status
1	Al-Mahmoodiyah	44000	Under construction
2	Al-Yosifiyah	12500	Under construction
3	Al-Lataifiyah	12500	Under construction
4	Al-Rasheed	6000	Under construction
5	Al-Hussainiyah	65000	Under construction
6	Diyala bridge	44000	Under construction
7	Al-Mada'en	20000	Under construction
8	Al-Tarmiyah	16800	Under construction

Information related to operation

Baghdad sewerage directorate

Number of centers: 12

Number of station: 30

Number of generators in the centers: 63 of different types and sizes

Number of plunger pumps in the centers: 143 of different types and sizes

Number of mobile pumps in the centers: 134 of different types and sizes

Number of manholes: 3868 (except filter stations)

Number of specialized vehicles in the centers:-

- Septic tankers: 43
- Multi-purpose vehicles (septic tanker + sewer vacuum truck): 2
- Sewer vacuum trucks: 27
- Workshop: 3
- Multi-purpose excavator: 3

Directorate Main-office

- Septic tankers 1
- Sewer vacuum truck 1
- Sewer suction truck (Freigh Liner) 2
- Workshops 2
- X-ray vehicles 2
- Multi-purpose excavator 1
- Plunger pumps of different sizes (new) 24
- Rehabilitation 15
- New electrical mobile pumps 7
- Rehabilitation 6
- Used Generator 30 KV 1
- Perkins generator 13 KV : 6
- New generator 10 KV: 1
- Lengths of storm water networks in all centers : 183828 M
- Lengths of sewer networks in Abu Ghraib center: 6813 M

Stages of work on the service delivery improvement plan:

Baghdad Sewer Directorate and in cooperation with USAID GSP/Taqadum program completed the gap analysis model developed by Taqadum program to actively contribute

to the gap analysis. The importance of gap analysis in the services provided to citizens is that:

1. Usage of the scientific method in the analysis of all elements that causes a gap in the services provided to citizens indicator compared with the standard criteria.
2. Determine the priority of the elements influencing the gap in services through the power of their influence.
3. Put the proposed immediate and long-term solutions to address the elements affecting the gap in order to minimize it.
4. The results of the analysis which represent proposed immediate and long-term solutions will be the input for the preparation of relevant service delivery improvement plan in the province.

The successful use of the model will lead to get accurate results that help determining the right and realistic and executable solutions in reducing the gap and improving the service.

Gradual approach

The (SDIP) includes the following questions:

1. Where are we now?
2. Where do we want to be?
3. How can we get there?
4. How can we ensure success?

❖ "Where are we now?"

To answer this question, it requires a comprehensive and objective review and a review of the current state of performance and practices of sewer departments in Baghdad and should be measured through key performance indicators. The data related to "Where are we now?" Can be obtained by using the relevant technologies,

First: ((SWOT analysis by diagnosing strengths -weakness, -opportunities-threats.

Second: Key Performance indicators analysis - these two techniques help to understand and summarize the environment and the performance of the Directorate.

The SWOT analysis helps to identify realistic short, medium and long-term goals in order to:

- Correct weaknesses
- Enhance strengths
- Prevent threats
- Seize opportunities
- Achieve vision

First SWOT Analysis to Baghdad Sewage

Strengths

- 1- Availability of projects in progress
- 2- The potentiality to list and award new designed projects.
- 3- Availability of engineering and technical staff.
- 4- Availability of equipment and sewage vehicles

Weaknesses

- 1- Lack of operating projects
- 2- Aged storm water systems.
- 3- Lack of staff and vehicles
- 4- Poor allocations
- 5- Lack of revenues
- 6- Delay in implementing projects in progress
- 7- Poor building capacity training courses to advance the staff efficiency.

Threats

- 1- Violations to storm water systems are not removed by the concerned departments.
- 2- Lack of an accurate study to price sewage services
- 3- Existence of illegal use of sewages
- 4- Disincline of private sector to invest in the service sector
- 5- Absence of awareness on the use of sewage services

Opportunities

- 1- Financial allocations by the Ministry
- 2- Availability of financial allocations by the governorate
- 3- Use of recent technologies in the treatment of sewages.

Second: Performance indicators

GSP/Taqadum always supports local governments to improve services oversight and monitoring, in order to advance the level of these services delivered to citizens, by adopting comparable and implementable standards similar to other civilized countries.

Services standards are based on 5 key bases to the sewage services ,since they are basic services , their quality and quantity are essentially required , through the below standards and indicators related to heavy sanitary wastewater :

- 1- Covering the service
- 2- Quantity of treated wastewater
- 3- The capability to sanitary wastewater

Baghdad sewage directorate has conducted work according to the standards and the indicators were provided at the level of districts and sub-districts in the edge of Baghdad cities. The performance indicators were revised in comparison with the standards, identify weakness points, gap value and provide recommendations contributing in advancing the performance of the service.

➤ **Indicator of waste water service coverage**

Standard and indicator information and calculation of gap between them			
S. No.	Standard	Indicator	Gap
1	Service coverage	0%	100%

It is clear that the size of the gap in the sewer networks indicator is very huge which reflects the need to carry out sewer projects. It is worth noting that there is no treatment unit in Baghdad outskirts although there are 8 projects of treatment stations and networks.

Elements causing gap and their impact:

- 1. **Human resources:** Lack of engineering staff to supervise projects in progress. The impact of this element on the gap is high.
- 2. **Financial Affairs:** There is a need for financial allocations to carry out sewer projects; especially the available allocations are insufficient to cover the gap. The impact of this element on the gap is high.

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3. **Infrastructure:** It has no impact on the gap.
4. **Supplies:** It has no impact on the gap.
5. **Capacity building:** There is a need to hold training courses specialized in projects management to build the capacity of the engineering staff and in maintenance to build the capacity of the technical staff. It has a medium impact on the gap.
6. **Technical obstacles:** It has no impact on the gap.
7. **Authorities:** It has no impact on the gap.
8. **Coordination** (horizontal and vertical coordination): There is a need to coordinate with PC and GO to follow up sewer projects and allocate funds in the regional development budget to cover the gap gradually. The impact of this element is medium on the gap.
9. **Political interventions:** They have negative impacts on the priorities to allocate funds for projects. The impact of this element on the gap is low.
10. **Misuse of resources:** It has no impact on the gap.
11. **Maintenance and Operation:** It has no impact on the gap.
12. **Security conditions:** Bad security situation in Baghdad outskirts leads to stop the projects, especially those projects located in the restive areas, and maintenance. It has a high impact on the gap.
13. **Logistic support:** It has no impact on the gap.

Based on the above explanation, the following elements have the highest impact on the gap: 1) Human resources (2) Financial resources (3) Security conditions.

S. No.	Standard	Arrangement of basic elements (which receives the figure 3 (high impact) that contribute to the reduction of the value of the gap, according to the priority	Immediate solutions	Long term solutions

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1	Extent of wastewater networks coverage	Financial resources (lack of the operational budget, investment budget, and regional development budget)	Urge the companies to accelerate carrying out the delayed networks-expansion projects as soon as possible and handover them on time.	Increase allocations of investment budget to establish sewer networks projects throughout the province.
		Human resources	N/A	Approach the Ministry to increase the number of technical and engineering staff to oversight networks projects
		Security conditions	N/A	Coordinate with security authorities to provide security to protect those who work in sewer expansion projects and maintenance and operation workers.

- The indicator of network efficiency to discharge wastewater: it can't be calculated because there is no treatment unit.
- The indicator of ability to treat wastewater: it can't be calculated because there is no treatment unit.
- The indicator of efficiency of wastewater treatment: it can't be calculated because there is no treatment unit.

Indicators of storm water:

➤ **Indicator of storm water service coverage**

Standard and indicator information and calculation of gap between them			
S. No.	Standard	Indicator	Gap
1	Service coverage	60%	40%

Elements causing gap and their impact:

1. **Human resources:** Lack of engineering staff to oversight and follow-up projects in progress, and lack of experience in maintenance and operation. The impact of this element on the gap is high.
2. **Financial Affairs** (lack of the operational budget, investment budget, and regional development budget): Lack of financial allocations (operational budget, investment budget, and regional development budget) to carry out storm water projects. They also have a negative impact on periodic maintenance and **emergency situations**. The impact of this element on the gap is high.
3. **Infrastructure:** There is a need to increase pumping stations and networks coverage. It has a low impact on the gap.
4. **Supplies:** there is a shortage in the equipment, supplies, generators, plunger pumps, vertical pumps, fuel, tools, sewer covers and protective clothing. The impact of this element is high on the gap.
5. **Capacity building:** There is a need to hold training courses to build the capacity of the technical staff. It has a medium impact on the gap.
6. **Technical obstacles:** The networks interfere with other services networks and there are no accurate layouts for executed services to avoid overlaps. It has a medium impact on the gap.
7. **Authorities:** It is needed to increase the financial authorities vested to the directorate manager such as the authority to spend amounts exceed 100 million

IQD, to conduct maintenance and treat fractures and generators failure without reference to the Directorate General (especially, on the time of crisis). It has a low impact on the gap.

8. **Coordination:** There is a need for further coordination with PC and G.O to increase the storm water projects and coordinate with other concerned departments (such as water directorate) to urge the companies to accelerate carrying out the delayed projects as soon as possible, overcome problems facing those projects, and handover them on time. The impact of this element is high on the gap.

9. **Political interventions:** They have negative impacts on the priorities to carry out projects in some areas at the expense of others. The impact of this element on the gap is low.

10. **Misuse of resources:** It has no impact on the gap.

11. **Maintenance and Operation:** It has no impact on the gap.

12. **Security conditions:** They affect the service coverage, especially in Baghdad outskirts. This element has a high impact on the gap.

13. **Logistic support:** It has no impact on the gap.

Based on the above explanation, the following elements have the highest impact on the gap: 1) Financial resources (2) Human resources (3) Coordination
4) Security conditions.

S. No.	Standard	Arrangement of basic elements (which receives the figure 3 (high impact) that contribute to the reduction of the value of the gap, according to the priority	Immediate solutions	Long term solutions

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1	Extent of networks coverage to discharge storm water	Financial resources	Provide financial resources within the operational budget and within the authorities vested to the manager to make connections between main lines.	Develop a five-year plan for the directorate to expand networks, provided that the gap is covered within five years.
		Human resources	N/A	Approach the Ministry to increase the number of technical and engineering staff to oversight networks projects
		Coordination	Set a committee from the directorate, G.O (technical deputy or technical assistant), security bodies, and other service departments to solve the problems facing the companies (related to materials provision)	
		Security conditions	Provide security to protect the directorate staff responsible for supervising the networks execution	

- The indicator of the stations ability to discharge storm water:

Standard and indicator information and calculation of gap between them			
S. No.	Standard	Indicator	Gap
1	Stations ability to discharge storm water.	80%	20%

Elements causing gap and their impact:

1. **Human resources:** It has no impact on the gap.
2. **Financial Affairs:** Lack of financial allocations (operational budget, investment budget, and regional development budget) to carry out storm water discharge stations. The impact of this element on the gap is high.
3. **Infrastructure:** Inefficiency of the existing storm water stations and increasing population lead to expand the existing stations or establish new ones. It has a medium impact on the gap.
4. **Supplies:** there is a shortage in the equipment and supplies such as Gauges and valves and some electrical tools. The impact of this element is high on the gap.
5. **Capacity building:** It has no impact on the gap
6. **Technical obstacles:** There are no accurate layouts for executed services. It has a medium impact on the gap.
7. **Authorities:** It is needed to increase the financial authorities vested to managers of departments to purchase necessary vehicles and equipment for projects. It has a medium impact on the gap.
8. **Coordination:** The impact of this element is low on the gap.

9. **Security conditions:** Bad security situation and military operations in Baghdad outskirts leads to stop the execution of projects, especially those projects located in the restive areas. It has a low impact on the gap

10. **Logistic support:** It has a low impact on the gap.

11. **Misuse of resources:** Uses and connections to storm water networks by citizens increase the amount of water reaching to discharge stations and which inconsistent with the design capacity. Moreover, heavy water causes damages to pumping stations because they are for storm water not heavy water. It has a high impact on the gap.

12. **Maintenance and Operation:** Poor periodic maintenance leads to inefficiency and failure of some stations. It has a high impact on the gap.

13. **Political interventions:** This element has a low impact on the gap.

Based on the above explanation, the following elements have the highest impact on the gap: 1) Misuse of resources (2) Financial Affairs (3) Maintenance and Operation 4) Supplies.

S. No.	Arrangement of basic elements that contribute to the reduction of the value of the gap, according to the priority	Immediate solutions	Long term solutions
1	Misuse of resources	Accelerate completing heavy water projects to remove illegal uses and unauthorized connection to storm water networks by citizens through	Complete the heavy water projects

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		activating effective laws and imposing fines against them.	
2	Financial resources	Allocate financial allocations for projects in progress to finish them.	Increase the yearly allocations needed to carry out projects.
3	Maintenance and Operation	Conduct periodic maintenance for the existing storm water stations	Rehabilitate and expand stations in the light on increasing population of districts and sub-districts and replace the aging equipment.
4	Supplies	Provide electrical equipment and tools related to control stations and other tools necessary for operation.	Allocate funds to purchase new efficient equipment.

➤ **The indicator of dealing with citizens' complaints:**

Standard and indicator information and calculation of gap between them			
S. No.	Standard	Indicator	Gap
1	Stations ability to discharge storm water.	100%	0%

We notice that there is no gap because the directorate responds quickly to citizens' complaints.

❖ **“Where do we want to be?”**

Based on the information collected in as-in status report, it is possible to develop and illustrate goals and objectives of the directorate that can be inferred from mission and

vision of the directorate. It is obligatory to set performance standards and objectives according to SMART Standard (specific, measurable, assignable, realistic or time-related).

Vision of the Directorate:

Carry out sewer projects and expand networks.

Mission of the Directorate:

Cover the gap in services delivery.

Directorate objectives

- 1- Increase the number of citizens served by storm water networks to minimize the gap, by implementing new networks in the uncovered districts. Furthermore, it is necessary to establish sewer networks in the districts and sub-districts and complete the eight stations in progress.
- 2- Remove violations to storm water systems , the illegal use of storm water systems is rated on 60% , in other areas, such as Al-Hussainiyah area, the illegal use is rated at 100% , accordingly there is a dire need to apply the law to remove these violations or establish regular storm water and sewage systems to remove these violations.
- 3- Impose fines on violators, who are illegally use storm water sewages or use municipal wastewater systems to dispose of industrial wastewater. The head of administrative unit in the district has the authority to impose a fine amounting at 250000 Iraqi dinars to the violators, while the directorate has no such authority.
- 4- Treat industrial wastewater of hospitals, through special treatment stations.
- 5- Develop a specific and accurate study to sewage tariff.
- 6- Increase the number of engineering, technical and supervisor staff, operating labors to the completed projects. Currently, eight treatment station projects will be completed soon, there is no staff to manage and run these stations; the manager of the department is trying his best to afford staff to manage and run these stations.

❖ **How can we reach there?**

Directorate of Sewerage in Baghdad and in cooperation with USAID-funded GSP/Taqadum Project filled out gap analysis form as developed by GSP/Taqadum Project in order to contribute to gap analysis. The importance of the form for service delivery gap analysis comes from:

1. It uses scientific method to analyze all the effective elements which lead to a gap in service delivery indicator in comparison with standard.
2. It prioritizes the effective elements that lead to gap in service delivery by size of impact.
3. It proposes immediate and long term solutions to address the effective elements with the aim to reduce them.
4. Results of analysis, i.e. the proposed immediate and long-term solutions shall form inputs for preparation of service delivery improvement plan of the province.

❖ **How can we ensure success?**

To ensure the success of SDIP, it is important to conduct continuous monitoring of progress assessment standards and indicators in order to improve the performance and external factors at all levels, and record findings and reactions using proper mechanisms for report writing. It is required to establish a unit within the directorate to coordinate activities and assess the performance on a monthly basis in line with objectives approved. The unit shall report to DG of sewerage and prepare quarterly and annual progress and performance reports. A body shall be assigned to monitor the implementation of SDIP.

Conclusion

Through what has been outlined in the SDIP report to Baghdad sewage directorate and the identification of the existing indicators and gaps to each indicator , It is important that the Directorate of Sewage to manage its works in an effective and efficient way in order to obtain necessary financial resources to establish storm water and wastewater systems ,study immediate solutions that may assist in reducing the gaps standards, according to the resources and potentialities available to deliver better services to citizens .Furthermore, the Directorate should develop a realistic strategic plan and feasibility studies for projects to be implemented . The Directorate of Sewage should be enabled to find financial resources to support its operational budget and assist it in enforcing applicable laws to prevent illegal violations against the sewage systems.

Attachments:-

Annex No.1 includes standards of sewer networks service delivery.

Annex No.2 includes standards of storm water service delivery.