



Diwaniyah Water
Service Delivery Improvement Plan
(SDIP)

Prepared by
Diwaniyah Water Directorate

In cooperation with
GSP/Taqadum

February 2015

Diwaniyah - Iraq

1-Introduction:

This Service Delivery Improvement Plan (SDIP) is a strategic work plan developed to address a variety of management issues. It is designed to improve Water service delivery in AL-Diwaniyah province and enable the Water 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 Water in Al-Diwaniyah to address issues related to its performance in delivering better services to citizens. The SDIP is based on results of the Water Directorate and consists of two stages:

- The first stage is to identify status and management of the Water services
- The 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.
- Second stage: Use the SDIP to address the issues related to the services delivery performance and the provision of immediate and long-term solutions to the needs, if existed.

Al-Diwaniyah province is located in the center of Iraq within longitude 48, 24 – 45, 48 and latitude 7.31 -24, 32. It borders Wasit to the north, and Babil; Al-Samawah to the south; Al-Najaf to the west and Wasit and Al-Nasiriya to the east .It has an area of 8507 Km², forming 1.9% of the total area of Iraq. It lies within the sedimentary valley area, and it is generally fertile with some desert areas to the southwest and marshes to the east.

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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 inconsistent with the investment budget have a positive effect on the efficiency and sustainability of services.

3- Challenges and problems facing Al-Diwaniyah Water Directorate that significantly contributing in providing poor quality of services to citizens

Classification by sectors (1- Financial- 2-Human resources -3- Authorities-4- Equipment)

➤ Financial

1. The total annual amount of the monthly grant of the budget (from the Ministry/ Directorate general of water) for 2013 , is **20,447,751,734** , Twenty billion, four hundred and forty-seven million, seven hundred and fifty-one thousand , seven hundred and thirty-four Iraqi dinars . The directorate annual revenues are amounting to **2,242,856,701** Iraqi dinars, thus the total annual amount is **22,690,608,435** Iraqi dinars. For 2014 the total annual amount of the monthly grant is amounting to 21,853,948,937, Iraqi dinar. The annual revenues are amounting to **2,793,198,654 / Two billion, seven hundred and ninety-three million** Iraqi dinars ,consequently, the grand total of the grant and the revenues are amounting to 24,647,147,591 Iraqi dinars , to the following expending items:-

- 1- Equipment and vehicles maintenance.
- 2- Fixed assets.
- 3- Building maintenance
- 4- Daily wages employees
- 5- Awards
- 6- Fuel
- 7- Overtime
- 8- Lease of buildings and vehicles
- 9- Spare parts ,stationeries, and other requirements
- 10- Prints ,publications , delegations and communications
- 11- Furniture

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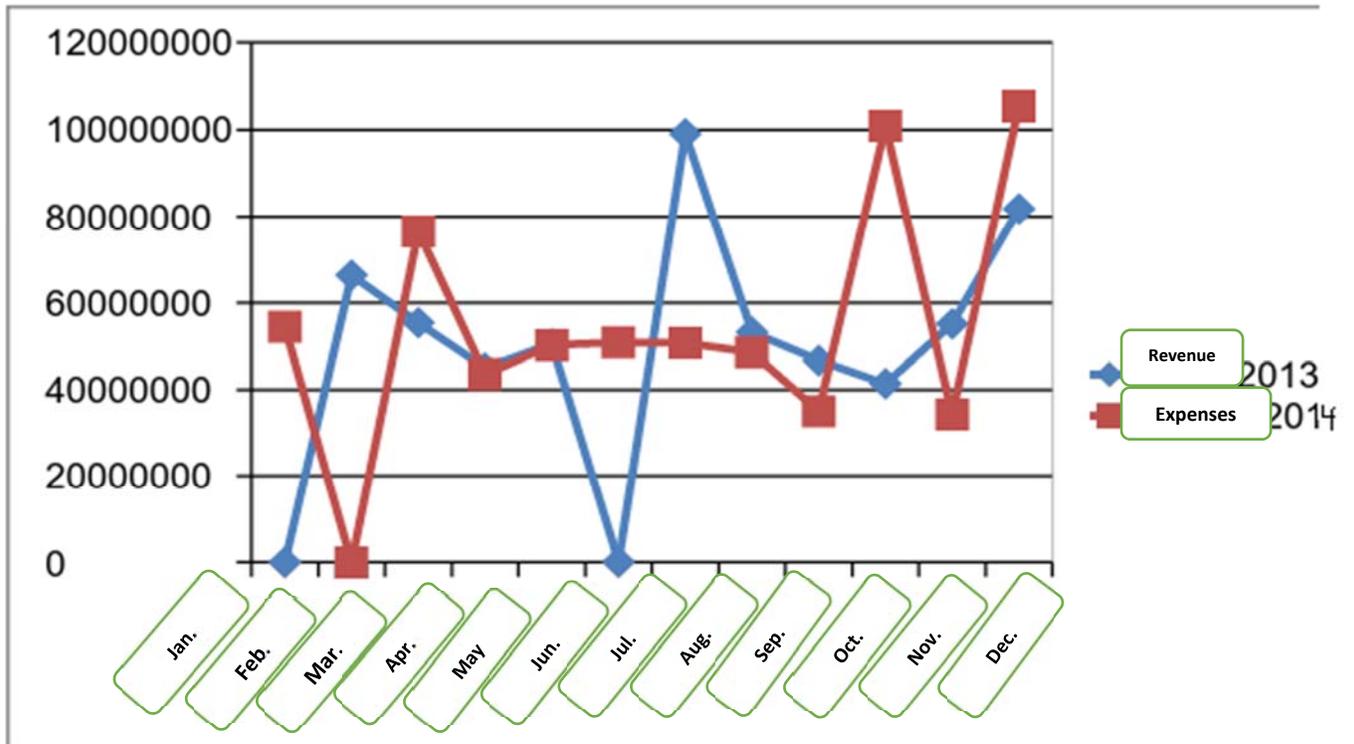


Figure No. (1-1) Revenues of 2013-2014

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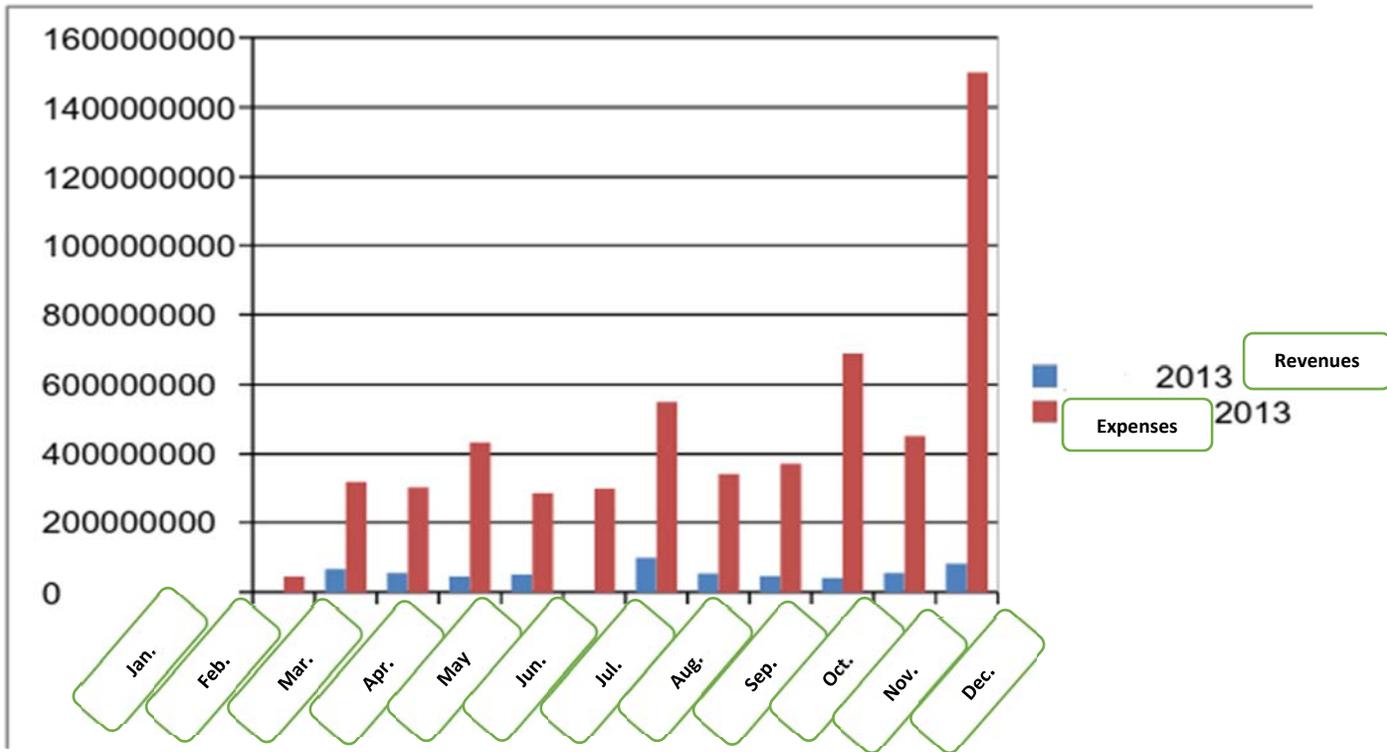
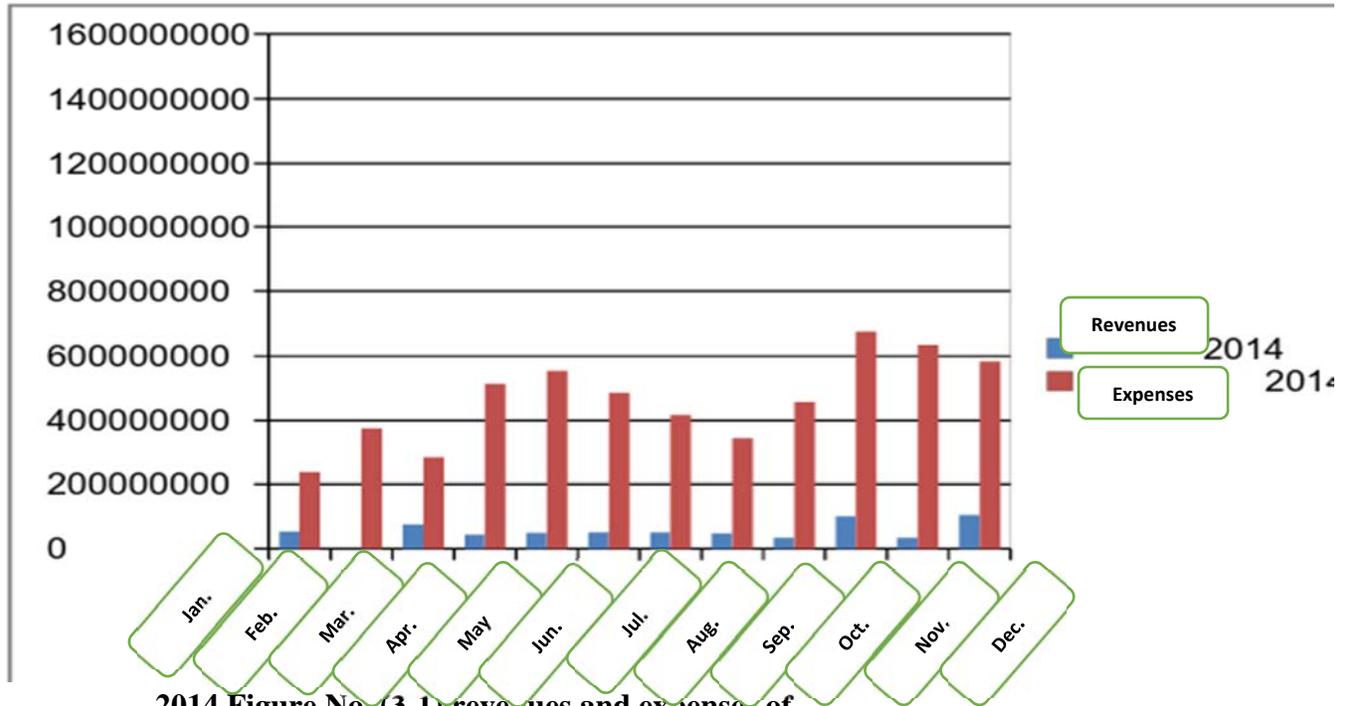


Figure No. (2-1) Revenues and expenses of 2013

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2014 Figure No. (3-1) revenues and expenses of

➤ **Infrastructure**

- Large number of broken pipes in the networks, and the presence of asbestos networks in many Neighborhoods with total length of 55 km and with different diameters (110-160-225-300-500) mm. in the following areas :-
 - 1-AL-Sadder third and fourth
 - 2- Imam Al-Sadder Neighborhood
 - 3- Al-Wihda Neighborhood
 - 4- Al-Jimhury Neighborhood
 - 5- Al-Uroba first Neighborhood
 - 6-Soub Al-Shamiyah
 - 7-The area opposite to the rail near the university of Al-Qadisiya
 - 8- Ramadan Neighborhood

There are no unfinished projects, except one project (Al-Shamiyah water project)

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S · N o	location	Project	awarding date and no	Awarding price	Actual commencement date	Actual percentage of completion	planned percentage of completion	Project expected completion date, after the additional periods	is there any unfinished works
1	Al-shamiyah district	Design and execute Al-Shamiyah new water project		38,394,100,000	22/5/2011	50,9%	52,8%	9/2/2016	Unfinished due to the company financial and administrative policies

➤ **Quality control**

- Lack of necessary equipment in the quality control division in Al-Diwaniyah directorate of water to make the necessary laboratory tests for each Compact unit. As well as lack of logistical support to the laboratory staff at the water Directorate, to help them to accomplish the tasks according to the monthly inspection schedule, such as:-
 - Potassium and Sodium testing apparatus.
 - Hood testing apparatus, which is used to conduct tests inside the lab to pull out poisonous and pollutants before their disposal
 - Testing device to measure remaining chlorine using DPD1 tablets.
- The staff in the laboratory of Al-Diwaniyah directorate of water need training courses on topics like chemical and biological tests to improve water quality
- The directorate of water is using a performance evaluation on a regular basis and the adoption of the principle of feedback from citizens through a survey conducted by Al-Diwaniyah directorate of water – Media division staff and Incorporation with other provincial directorates, such as health and inspection departments to improve the service.

➤ **Maintenance and operation**

- The lack of conducting periodic or preventive maintenance due to the lack of regular maintenance plan, whereby committees of preventive maintenance belonging to the Directorate centers were set up to develop a comprehensive periodic maintenance and operation plan pertaining to the central water treatment plants, compact water units and networks across the province for 2015 . The precautionary maintenance plans were

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completed and submitted to the governor's office by an official letter No. 615 dated on 22-01-2015.

- The existence of many aging water treatment plants and compact water projects (e.g. the old Al-Diwaniyah water treatment plant with the capacity of 15000 m³ / per day built in 1972; Ghammas old water treatment plant built in 1958, with the capacity of 2400 m³/ per day; Al-Dagharah old water treatment plant built in 1975, with the capacity of 5500 m³/ per day; Al-Shamiya water treatment plant built in 1973, with the capacity of 4800 m³/ per day; Al-Efag old water treatment plant built in 1972, with the capacity of 4300 m³/ per day; Al-Bidair old water treatment plant built in 1970, with the capacity of 3300 m³/ per day; Somar compact water unit built in 1981, with the capacity of 100 m³/ per hour; Al- Tasnee compact water unit in Al-Shamiya which was built in 1980, with the capacity of 100 m³/ per hour and Al- Sedair water compact unit which was built in 1975, with the capacity of 50 m³/ per hour.
- Continuous stoppages in pumping, due to aging water treatment plants and compact water units, lack of spare parts, pumps, and other necessary tools and equipment.
- The staff at compact water units especially in the sub-districts are usually inexperienced because they were imposed by the landowners. It is necessary to frequently include them in training courses in the training center at the directorate.
- Many of the daily wage employees have been appointed on a daily-wage basis or for long periods from 2003 until now and have not been transferred to be as permanent staff. If they leave work or move to another job, the water directorate will lose competent staff.
- The difficulty of obtaining and acquisition of land for the establishment of projects.
- Lack of awareness in the rationalization of drinking water consumption.
- Lack of specialized equipment in networks, in general, and in the maintenance of broken pipes in particular.
- Specialized trucks used in Al-Diwaniyah directorate of water
 1. 62 tank trucks
 2. 20 Excavators
 3. 4 vacuum trucks
 4. 4 trucks
 5. 3 fuel tanker
 6. 1 lorry

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➤ **Operational problems that are facing the Al-Diwaniyah Water Directorate, and the solutions that have been implemented by the directorate to address those problems**

Problem	Solution
<ul style="list-style-type: none"> Drop in the river’s water level in the summer time, which leads to the stoppage of some water compact units. 	<ul style="list-style-type: none"> Al –Diwaniyah directorate of water conducts some treatments to address this problem, by extending the inlet pipes inside the river to the water compact units. Coordinate with the directorate of water resources to dredge the river to increase the water level. Al –Diwaniyah directorate of water may coordinate with directorate of water resources to rise the Euphrates river level, but , for the province share of water is centrally determined by the Ministry.
<ul style="list-style-type: none"> low supplies of disinfection and filtration materials 	<ul style="list-style-type: none"> Centrally distribute disinfection and filtration materials by the directorate general of water. Sometimes, supplies can be low. In order to overcome this problem, the directorate uses some treatments such as:- Using small chlorine cylinders instead of large ones in the central water treatment projects. Using bleach powder in water compact units of the capacity of 200 m³/h instead of liquid to overcome the shortages in supply. Using bleach powder in the preliminary mixing stage in the central water treatment projects instead of large cylinders.
<ul style="list-style-type: none"> Recurrent and continuous power outage and not joining some of the central water treatment plants and water compact units of a capacity of 200m³/h, with the National emergency grid. 	<ul style="list-style-type: none"> Our directorate is using generators to address the constant power outage. The use of generators for operation in the case of power outages

4. Stages of work on the service delivery improvement plan:

Al-Diwaniyah Water Directorate and in cooperation with USAID GSP/Taqadam program completed the gap analysis model developed by GSP/Taqadam to actively contribute to the gap analysis. The importance of the gap analysis in the services provided to citizens is that:

1. The use of scientific method in the analysis of all elements that cause the gap in the indicators of the services provided to citizens compared with the value of the standard.
2. Determine the priority of the elements influencing the gap in services through the degree 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 the relevant service delivery improvement plan in the province.

Al-Diwaniyah Water Directorate has relied on the use of measurements rates that have been collected in the 15 administrative units with a focus on the most vulnerable units in order to develop effective solutions to reduce the gap and improve the services provided to citizens through the immediate and long-term solutions. The successful use of the model will lead to getting accurate results that help to determine the right and realistic and executable solutions in reducing the gap and improving the service.

Analysis of elements causing the gap in performing the service:

It Included analysis of (14) elements that are associated with one of the service standards listed previously and relating to the administrative, legal, financial, technical aspects where after completing the analysis, weaknesses or deficiencies were identified in each element and the proportion of its influence in the gap, and thus the most influential elements in causing the gap were chosen. Al-Diwaniyah water directorate identified these elements and developed immediate and long-term solutions that effectively contribute to the reduction of the value of the gap. In the next chapter, all performance indicators will be analyzed in comparison with standards via using gap analysis template in detail, and finally to develop solutions for the elements of the most influential in causing the gap. Annex No. 1 includes a guide to using gap analysis of the services provided to citizens which were used by Al-Diwaniyah Directorate of Water.

5. Gradual approach

The (SDIP) includes the following questions:

1. Where are we now?

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

"1-5 "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 water departments in Al-Diwaniyah and should be measured through key performance indicators. The data related to 'Where are we now?' "Can be obtained by using the relevant two 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 the opportunities
- Achieve vision

SWOT Analysis of Al-Diwaniyah water Directorate

Strengths

1. Partial completion of Al- Diwaniyah new water project of about 4000 m³/h out of the total capacity of 12000 m³/h.
2. There are 17 operational central water treatment plants in place;
3. There are 295 water compact units of different capacities;
4. There are three strategic projects which are in progress in different areas of the province, such as (Al-Shanfita water treatment plant with a capacity of 1000 m³ /h , Al-Shamiya water treatment plant with a capacity of 4000 m³ /h and Ghmmas new water treatment plant with a capacity of 1000m³/h).

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5. The province has started to lay down 100 Km of main water pipes of different diameters to connect two pumping units which belong to the Diwaniyah water treatment plant cited above under a contract No. 65/ 2014 of the Regional development funds
6. The Diwaniyah rivers flow throughout the city, dividing it into two parts;
7. The University of Al-Qadisiyah in the city of Diwaniyah is considered as a research center that helps in preparing related studies and researches;
8. There are in place qualified technical and engineering staff managing water treatment plants, compact units, and networks.
9. There is a section of planning and follow-up to conduct site visits for water treatment plants under construction and help develop short and long term directorate's plans.
10. Al-Diwaniyah directorate of water is about to complete a study to award a water project to an investment entity for operation and fees collection or to the private sector.

Weakness

1. Shortage and poor supplies of disinfection and filtration materials by the Ministry of Municipalities and public works.
2. Old water networks and main water lines.
3. The need for a comprehensive rehabilitation to old water treatment plants.
4. Poor budget allocation to the water sector, in the Regional development fund or the investment budget
5. There is a delay in executing the works of Al-Shamiya water treatment plant (capacity 4000 m³ /h), by the executed company, which is implemented within the works of the investment plan of the Ministry of Municipalities and public works.
6. Lack of specialized lab technicians, especially in the chemical and biological specialties.
7. Lack of specialized vehicles and trucks across the province.
8. Lack of laboratory devices and apparatuses to conduct all types of necessary tests.
9. Huge pollution in Al-Diwaniyah river
10. Not connecting some central water treatment plants and compact units of the capacity of 1 Million gallon with the emergency grid.

Opportunities

1. The existence of Investment commission in the province.
2. Donor countries are very interested in such projects.
3. There is positive coordination between the water directorate and the PC.
4. The use of GIS system to draw maps

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5. The existence of central water projects that are being built in the province within the Ministerial investment plan.
6. Existence of central water projects that are being built in the province, within the Regional development works
7. Main lines are executed in the province within the ARDP works.

Threats

- 1- Unauthorized tapping to the water networks and wastes. Wastes in production are amounting to 20% out of the total production.
- 2- National grid power outage results in some times in full stoppage of water compact units, due to the absence of generators and only three water compact units are connected to the National emergency grid.
- 3- Lack of stable or fixed financial allocation.
- 4- Continues use of old means for collecting water fees instead of using water meters, resulting in low revenues compared with the amount of the consumed water.
- 5- Drop in the river's water level and river branches during the summer season.
- 6- Lack of specialized staff and technicians in water compact units and new water treatment projects.
- 7- The widespread of the Illegal establishment of residential areas in agricultural lands and the establishment of slums areas, which negatively affects water service.

Second: Performance indicators:

GSP/Taqadum works on providing support for local government to improve the oversight process and monitoring the service delivery in order to raise the level of services provided to citizens through the adoption of standard measurable criteria, similar to the rest of the civilized world. Standards-based service delivery stands on 5 key bases in drinking water service as an essential service which should be accessed both quantitatively and qualitatively and through the following standards and indicators:

1. Service Coverage
2. The amount of water provided per capita
3. Continuity of service
4. Quality of supplied water
5. Dealing with citizens' complaints

Al-Diwaniyah Water Directorate has adopted work according to these standards and the indicators were provided for the provincial center, districts, and sub-districts. The performance indicators have been reviewed in comparison with the standards and analyzed the weaknesses and determine the value of the gap and make recommendations that contribute to improving the performance of service delivery across the province.

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➤ **Coverage indicator:**

The present coverage value of the water networks in districts of AL-Diwaniyah is 70 % and therefore the value of the gap is 30%. Water coverage throughout the province of Al-Diwaniyah varies from one administrative unit to another.

Criteria and indicator information and calculation of gap between them			
S.No	Criteria	Indicator	Gap
1	Coverage	70%	30%

Elements causing gap and their impact:

- 1) **Human resources:** Lack of engineers, technical staff, surveyors and networks labors. Most of the projects and works of the directorate of water are done by direct execution .i.e. by the directorate staff, for example ,during 2012 , Al-Diwaniya directorate of water laid down networks with a total length of 139 km , the network pipes were funded by the regional development funds , the lay down of the networks by the contractors was directly supervised by the the water treatment plants staff and water compact units staff. The lack of engineers and technical staff is considered as an obstacle to expand networks and lay down new networks ,expanding the networks connected to these water compact units and the directorate water treatment plants .The of The effect of this element on the gap is high.
- 2) **Financial Issues:** The operational budget is insufficient and the authorities given to the manager of the directorate are inconsistent with the nature and size of works of the directorate. The effect of this element on the gap is high.
- 3) **Infrastructure:** Shortage of conveyance pipes, aging of water networks and delay in the execution of water projects. The effect of this element on the gap is high.
- 4- **Equipment:** Lack of materials (pipes with accessories actual needs are 70,000 m) for the whole province for the maintenance of broken pipes. The actual required quantity was calculated in accordance with the number of broken pipes report and aging of existing network The effect of this element on the gap is high.
- 5- **Capacity building:** the effect of this element on the gap is medium.
- 6-**Technical obstacles:** Paths of the network and conveyance pipes overlap with other services. The effect of this element on the gap is medium.

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7-Authorities: Current authorities to appoint daily wages employees are exclusively limited to the Minister, the authority to supply disinfectant and filtration materials are only limited to the Minister. We propose to give authorities to the districts and sub-districts to open accounting unit and create staffing positions to manage those units. The effect of this element on the gap is medium.

8-Coordination: The effect of this element is low in the gap.

9-Political interventions: The effect of this element on the gap is low.

10-Misuse of resources: Illegal connection to networks by citizens without getting approvals and or making official petition and the Irrigation of crops and car washing units from water network. This misuse requires activation of instructions, legislation, and laws regarding the removal of illegal connections to the networks and imposing fines against violators. The effect of this element on the gap is high

11-Maintenance and Operation: Poor financial allocations, the absence of ongoing preventive maintenance. The effect of this element on the gap is medium

12-Security conditions: The effect of this element on the gap is Zero as the security situation in the province is stable.

13-Logistic support: Lack of modern devices and equipment in the GIS unit, There is no satellite map for Al-Diwaniyah province. The effect of this element on the gap is high.

Based on the above explanation, the following elements have the highest impact on the gap: (1) Financial resources (2) Human resources (3) Equipment (4) Infrastructure (5) Authorities (6) Maintenance and operation (7) Logistic support

S.No	Criteria	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
1	The current network proportion compared to the desired network	Financial resources	Increase the monthly grant within the directorate operational budget, to enable the directorate paying the cost of maintaining conveyance lines,	Increase the provincial financial allocation within the ARDP and the allocations within the Ministry investment plan.

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			<p>networks, fractures and leakage in water networks.</p> <p>Activate the process of collection of water consumption fees from citizens and public sector.</p>	
		Human resources	<p>Increase the number of daily wages employees to perform maintenance works</p> <p>Allocate financial resources to that in the operation budget</p>	<p>Increase the number of the following positions:</p> <ol style="list-style-type: none"> 1- Engineers with different specialties. 2- Technician with different specialties. 3- Surveyors 4- Networks workers 5- Drivers
		Authorities	<p>Vest the governor or the director of the directorate the authority to appoint daily wages employees to cover the shortage in the staff. Pay their wages from the operational budget</p> <p>Improve the quality and quantity of service delivered to citizens</p>	<p>1st – Vest the governor or the director of the directorate with the authority to appoint daily wages employees /workers to perform necessary works and pay their wages from the operational budget, to Improve the quality and quantity of service delivered to citizens.</p> <p>Vest the governor with the authority to supply the directorate with disinfection and infiltration materials,</p>
		Equipment	<p>1- Provide necessary materials and equipment for daily maintenance, such as pipes, joints, cocks; make those materials and equipment</p>	<p>1-Provide necessary materials and equipment for daily maintenance such as pipes, joints, cocks, make those materials and equipment always available in the directorate warehouse. Include the costs of those</p>

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			<p>always available in the directorate warehouse.</p> <p>2- Use the authorities to purchase specialized trucks and vehicles to cover any shortage in the directorate ,and ensure sustainability of works</p>	<p>material and equipment within the ARDP starting from 2015 and the following years.</p> <p>Provide specialized vehicles and trucks (tank trucks, Excavators Vacuum trucks and shovel loader to the province.</p>
		Maintenance and Operation	<p>1-Develop a comprehensive daily maintenance plan, follow up the plan by the operation division in the directorate</p> <p>2- Increase the quantity of disinfection and filtration materials</p>	<p>Provide infiltration and disinfection materials (chlorine and alum), according to the actual need of the directorate to operate water compact units</p> <p>Vest the governor with the authority to conclude agreements to supply those materials within the ARDP funds</p>
		Logistic support	<p>1-Advance and improve the efficiency of the GIS unit. Provide aerial satellite images for all pipelines, WTPs, water compact units to facilitate maintenance works.</p> <p>2-Provide financial supports to the maintenance staff.</p> <p>3-Conclude agreements with reliable companies to activate the work and performance of the GIS unit.</p>	<p>1-Change the category of the GIS unit to a division in the structure of the provincial water directorate from the unit.</p> <p>2-Supply the GIS unit with modern devices and equipment.</p> <p>3-Update satellite maps used in the directorate since 2007.</p>
		Infrastructure	<p>1-Award conveyance water lines of Al-Diwaniyah new water project to pumping</p>	<p>1-Approve strategic projects proposed by our directorate such as Al-Dagharah –Somar project 2000m³/h. Al-</p>

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			units within the ARDP works in the province	Shanfiya desalination project 1000m ³ /h. AL-Salahiya water project 1000 m ³ /h. Al-Ain water project 1000 m ³ /h. Not far water project 2000 m ³ /h, 2-Rehabilitate aging lines and networks. Rehabilitation works shall cover all areas in the province, with a length, not less than 100 km each year starting from 2015. 3-Complete the works related to the networks that are currently in progress and executed within the ARDP works
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The amount of water supplied per capita: Based on the Iraqi standards, the amount of water supplied per capita is determined per day to be 450 liters / day /person in Al-Diwaniyah center and 360 liters / day / person in the districts and sub-districts and 250 liters / day / person in the rural areas.

Criteria and indicator information and calculation of gap between them			
S.No	Criteria	Indicator	Gap
2	Amount of water supplied per capita is 450 liters / day in the Al-Diwaniyah center	77%	23%

Elements causing the gap and their impacts

- 1- **Human resources:** Permanent staff in the compact water units and WTP projects are 181 (operators and guards); (167) daily wages employees and temporary staff (operators and guards); (14) engineers –permanent staff and (7) daily wages employees and temporary engineers; (7) Technicians –permanent staff and (0) daily wages and temporary technicians. It is worth noting that there are (5) central WTP projects /capacity ranges from 1200 m³/h and as for water compact units there are (19) with different capacities. The effect of this element on the gap is medium.

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- 2- **Financial issues:** Poor operational budget. Current financial authorities vested to the director of water are inconsistent with the directorate work. The effect of this element on the gap is high.
- 3- **Infrastructure:** Aging water compact units and WTP projects, shortage of conveyance lines and networks, unfinished or delayed WTP projects, projects in progress. The effect of this element on the gap is high.
- 4- **Equipment:** Poor provision of equipment (pumps, generators, transformers) lack of specialized trucks (tank trucks to supply water) .The currently available number is 62. There is a need for more than (50), 25 are already awarded within the ARDP funds. The directorate needs (30) Excavators, 15 are already awarded within the ARDP works for 2014. The total number of existing excavators is 20 in the province. The effect of this element on the gap is high.
- 5- **Capacity building:** The effect of this element on the gap is low
- 6- **Technical constraints:** The effect of this element on the gap is medium.
- 7- **Authorities:** Current authorities to appoint daily wages employees are exclusively limited to the Minister, provision of disinfection and filtration materials are only limited to the Ministry. The effect of this element on the gap is high.
- 8- **Coordination:** fluctuate water levels in the rivers, unstable power supply.
- 9- **Political interventions :** N/A
- 10- **Misuse of resources :** The effect of this element on the gap is medium
- 11- **Maintenance and support:** Due to lack of financial allocations and depending on daily maintenance and absence of preventive maintenance. The effect of this element on the gap is high.
- 12- **Security situation:** There is no effect of this element on the gap.
- 13- **Logistic support:** The effect of this element on the gap is low.

Based on the above explanation, the following elements have the highest impact on the gap: 1) Financial resources (2) Equipment (3) Infrastructure (4) Maintenance and operation (5) Coordination

S.No	Criteria	Arrangement of basic elements (which receives the figure 3 (high impact) that may contribute to reducing the value of the gap, according to the priority	Immediate solutions	Long term solutions
2	The amount of water provided in liter per	Financial resources	Increase the monthly grant within the directorate	

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capita per/day is 450 in Al-Diwaniyah center; 360 in the districts and sub-districts and 250 in the rural areas.		operational budget, to enable the directorate to pay the cost of maintaining conveyance lines, networks, fractures and leakage in water networks. Activate the process of water fees collection to increase revenues to the directorate in return for this service. Conduct Campaigns to collect debts owed by citizens and government sectors	
	Equipment	Maintain and rehabilitate existed pumps and equipment to improve their performance, this process is linked to the established operational budget	Provision of pumps and equipment within the Regional Development Funds for 2015 and 2016, to improve the efficiency of water compact units and WTP projects
	Maintenance and operation	The province is divided into five sectors, each sector is managed by head of the technical section. The first sector involves the province center, districts and sub-districts that are associated to the	Provide the operational centers and maintenance sections with specialized machinery, trucks, and equipment that will bolster the efficiency of maintenance works and operation within the Regional Development Funds for 2015-2016

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			<p>directorate, which shall contribute in following up maintenance and operation of WTP projects and water compact units , purchasing pumps, equipment, disinfection materials from the domestic markets, within the operational budget</p>	
		Infrastructure	<p>Set up committees to activate completion of WTP projects and water compact units, in progress.</p>	<p>Complete central strategic projects that are currently in progress, within the investment plan, works and also complete the water compact units that are within the ARDP works</p>
		Coordination	<p>The Go must coordinate with the directorate of water resources in order to get its approval for the water ration of the proposed WTP projects and compact units.</p>	<p>The Ministry of municipalities, Ministry of water resources and the GO shall coordinate together to develop a formula pertaining to water ration to the WTP projects and water compact units, to reduce the constraints.</p>

➤ **Continuity of service** (20 h/day for the central WTP projects, 12 h/day for the compact units, as for the WTP projects is 18 h/day). The continuity of the service indicator is 88%. The gap value is 12%.

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Criteria and indicator information and calculation of the gap between them			
S.No	Criteria	Indicator	Gap
	Continuity of service 1- Central projects 20 h/day 2- Water compact units inside AL-Diwaniyah center 18 h/day. 3- Water compact in the districts and sub-districts 12 h/day	88%	12%

Analysis of influential elements on the gap:

- 1- **Human resources:** Lack of staff with different specialties in operating the current and new projects and water compact units. The effect of this element on the gap is high.
- 2- **Financial issues:** Poor operational budget. Current financial authorities vested to the director of water are inconsistent with the directorate works . When the director is vested with more authorities, the directorate can purchase sufficient equipment and materials to rehabilitate and maintain the projects and water compact unit's .The effect of this element on the gap is high.
- 3- **Infrastructure:** The effect of this element on the gap is medium
- 4- **Equipment:** Poor provision of equipment (pumps, generators, transformers). There is a need for 315 pumps of different capacities and for (12) one Mega generators and 12 generators of different capacities for the central projects and 25 generators of different capacities to the water compact units to ensure the continuity of work and efficiency of the projects and compact units. The effect of this element on the gap is high.
- 5- **Capacity building:** The effect of this element on the gap is low
- 6- **Technical constraints:** The effect of this element on the gap is medium.
- 7- **Authorities:** Current authorities to appoint daily wages employees are exclusively limited to the Minister, provision of disinfection and filtration materials are only limited to the Ministry. The effect of this element on the gap is high .
- 8- **Coordination:** Rivers water level fluctuates and instability in grid power supply. Coordination needed with Directorate of water resources and electrical distribution directorate. The effect of this element on the gap is high.
- 9- **Political interventions :** The effect of this element on the gap is low

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10- **Misuse of resources:** The effect of this element on the gap is low.

11- **Maintenance and operation:** Aging projects, water compact units, and filters. The effect of this element on the gap is medium.

12- **Security situation:** There is no effect of this element on the gap .The province is stable.

13- **Logistic support:** The effect of this element on the gap is low.

Based on the above explanation, the following elements have the highest impact on the gap: 1) Human resources (2) Financial issues (3) Equipment (4) authorities (5) Coordination

S.No	Criteria	Arrangement of basic elements (which receives the figure 3 (highest impact) that contribute to the reduction of the value of the gap, according to the priority	Immediate solutions	Long term solutions
3	<p>Continuity of services</p> <p>1- Central projects 20h/day</p> <p>2- Water compact units in the districts and sub-district 12h/day</p>	Human resources	<p>There is an acute shortage in the number of operators in the rural water compact units. We propose to appoint number operators on daily wages.</p> <p>Activate the process of collecting water fees as revenues to the directorate in return of this service. Conduct Campaigns to collect debts owed by citizens and government sectors.</p>	Create permanent grades "operators or guards" to fill in the shortage in the projects and water compact units.
		Coordination	1-Coordinate with Al-Diwaniyah directorate for distribution of electricity to insure a continuous	1-Develop technical list within the ARDP for 2016-2017, to link water projects and large water compact units with the National emergency grid

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			<p>supply of power to our WTP projects and water compact units.</p> <p>2- Coordinate with the directorate of water resources to stabilize water levels</p>	<p>in the districts and sub-districts.</p> <p>2-St up power transformer to make the voltage stable in the central water projects.</p> <p>3- Try to ensure stable water level in the river</p>
		Financial resources	<p>Increase the monthly grant within the directorate operational budget, to enable the directorate to cover the special expenses concerning the maintenance of projects and water compact units, to ensure continuity of the service.</p>	<p>Increase the allocations within the provincial ARDP fund and the Ministry investment plan.</p>
		equipment	<p>Purchase infiltration and disinfection materials (chlorine and alum), Within the provincial ARDP works, within six month period.</p>	<p>1-Supply (Generators , transformers and pumps) with the provincial ARDP works , as a fixed annual allotment, starting from 2016</p> <p>2-Supply lab devices and apparatuses and include them within the ARDP plan for 2015.</p>
		Authorities	<p>Vest the governor the authority to appoint daily wages employees in the</p>	

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			water compact units	
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➤ Quality of supplied water

The indicator of the quality of supplied water across AL-Diwaniya district is 78%, the gap was 22%

Criteria and indicator information and calculation of gap between them			
S.No	Criteria	Indicator	Gap
4	Quality of supplied water	78%	22%

Elements causing the gap and their impact:

- 1- **Human resources:** Lack of lab technicians with different specialties .The effect of this element on the gap is high.
- 2- **Financial issues:** Insufficient operational budget. Current authorities vested to the manager of the directorate water are inconsistent with the directorate works. The effect of this element on the gap is high.
- 3- **Infrastructure:** Lack of labs and the need to rehabilitate existed labs. The effect of this element on the gap is high.
- 4- **Equipment:** Poor provision of disinfection and filtration materials, and lab equipment. The effect of this element on the gap is high.
- 5- **Capacity building:** The effect of this element on the gap is low
- 6- **Technical constraints:** The effect of this element on the gap is low
- 7- **Authorities:** The effect of this element on the gap is medium.
- 8- **Coordination:** The effect of this element on the gap is low.
- 9- **Political interventions:** The effect of this element on the gap is zero

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- 10- **Misuse of resources:** The illegal tapping to the conveyance lines and water networks. The use of treated water for Irrigation of crops and car washing stations from the water networks .The effect of this element on the gap is high.
- 11- **Maintenance and operation:** Poor financial allocations, depending on daily maintenance and absence of preventive maintenance.
- 12- **Security situation:** There is no effect on this element. The province is stable.
- 13- **Logistic support:** The effect of this element on the gap is low.

Based on the above explanation, the following elements have the highest impact on the gap: 1) Human resources (2) financial issues (3) Equipment (4) misuse of resources (5) maintenance and operation (6) infrastructure

S.No	Criteria	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
4	Quality of supplied water	Human resources	<p>1-Increase the number of current staff with the following specialties (Chemist, Bacteriologist and samples collector), as daily wages employees or temporary contracts. There is only one laboratory in the province, with 5 permanent staff, One senior chief engineers, Three Chemists, and One biologist and 5 temporary staff, Five assistant biologist.</p> <p>The province is divided into Four sectors, First sector involves Al-Diwaniyah district with its affiliated sub-districts. The second sector involves Al-Shamiyah</p>	

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			district with its affiliated sub-districts. The third sector involves Efak district with its affiliated sub-districts. The fourth sector involves Al-Al-Hamzah district with its affiliated sub-districts. The work of those sectors is linked with quality control in the main office of the directorate	
		Financial issues	Increase the monthly grant within the directorate operational budget, to enable the directorate paying the cost of maintaining conveyance lines, networks, fractures and leakage in water networks.	Increase the allocations within the provincial ARDP and Ministry investment plan
		Equipment	1-Increase the directorate share of the disinfection and filtration materials, whereas the current monthly supplied share is insufficient to cover the directorate real need, due to new executed projects and water compact units, within the ARDP plan. 2-Supply the lab with vehicles to perform their works , due to the acute shortage of vehicles in the lab, as a temporary solution we propose to rent private vehicles to overcome this problem. 3- Purchase lab devices and apparatuses to the water	1-Vest the Go and the directorate with the authority to conclude an agreement to supply disinfection and filtration materials within the ARDP funds. 1- Purchase vehicles within the ARDP funds.

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			compact units, within the operational budget, such as vehicles and mobile labs	
		Misuse of resources	1-Coordinate with the official and concerned provincial agencies to activate misuse law for this problem that strongly contribute to the deterioration of this service. 2-Conduct intensive campaigns by the maintenance and revenues units to install water meters at citizen houses.	
		Maintenance and operation	1- Abide by the projects maintenance and program and follow up the application of maintenance programs. 2-Rehabilitate projects and water compact units producing bad quality of water ,within the operation budget	Full rehabilitation of the projects and water compact units, on stages starting from 2016, within the Regional development fund and the investment plan.
		infrastructure	Partial rehabilitation of the central laboratory as well as the labs in the water project, within the operation budget funds.	Complete the strategic central projects within the Ministry and ARDP works

- **Efficiency in responding to citizens' complaints:** The mechanism used by complaints is conducted through the following :-
1. Citizens can personally come to the directorate or the maintenance units or Citizens Services Desk in the PC or GO to forward complaints regarding water service, which respond to any complaints within 24 hours of reporting the complaints,
 2. Calling the in-charge official or maintenance in-charge.

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3. Direct receipt of citizens' complaints via the life radio program (White and black program) which is specified to citizens' complaints. This program is broadcast by Al-Diwaniya radio on daily basis.
4. Directorate of Water web-site, Facebook or any social media, where any complaint is handled within 24 hours.

The efficiency of responding to citizen complaints has reached 90% and the value of the gap is 10 %.

Criteria and indicator information and calculation of gap between them			
S.No	Criteria	Indicator	Gap
5	Efficiency of response to citizens' complaints	90 %	10%

Elements affecting on the gap:-

- 1- **Financial issues:** Insufficient operational budget. Current authorities vested to the manager of the directorate water are inconsistent with the directorate works. The effect of this element on the gap is high.
- 2- **Equipment:** Poor provision of vehicles, trucks, and equipment. The effect of this element on the gap is high.
- 3- **Coordination:** Lack of unified coordination among the Go, directorate and the Ministry for common media issues .The effect of this element on the gap is high.

Based on the above explanation, the following elements have the highest impact on the gap are the Equipment and coordination

S.No	Criteria	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
5	Response to citizens' complaints	Equipment	Create quick contact mechanism between the directorate and maintenance units (Motorola mobile) to communicate citizen's complaints.	Establish Citizens Services Desk, with easy access in the directorate of water or the Ministry of Municipalities

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			Using the one window system among the directorate, GO and PC to facilitate receiving complaints	
		Coordination	<ul style="list-style-type: none"> 1- Coordination between the Ministry and the province to issue publications 2- Educate citizens on the mechanism of submitting complaints, in order to reach right response. 3- Provide free hotlines inside the GO and maintenance units 	

➤ **Indicators of organizing contributions and maintenance of networks:**

1- Al-Diwaniyah Water Directorate has received 5000 water meters of ½ inch with accessories (spare tools) of the (EMU Group) Company according to the letter by the Directorate General of Water / Operating No. 15491 in 07.09.2014. It has not been so far installed across the province. Under the administrative decree No. 12025 dated on 28-12-2014, committee was set up to follow up this issue, within the directorate of water plan, these water meters were installed in Al-Uroba quarters first and second and Imam Al-Sadeq quarter, pending the implementation of the 2015 operational budget this plan will be executed. Note that the Ministry is planning to supply 91303 water meters to be distributed according to the diameters, 8200 water meters of ½ inch+ 7000 water meters of ¾ inch gauges +2000 water meters of one inch, 300 water meters of 1,5 inch, 3 water meters of 2 inch, under the letter 15491 dated on 07-09-2014, and will be provided gradually based on quantities arrived at Abo Grib warehouse, note that numbers of contributions in the center of Al-Diwaniyah for the 2015 (41397 residential +1691commercial + 475 government). The installation of gauges will be done after providing the directorate with the with instructions for pricing per cubic meter of water, where the currently applicable is the housing unit system according to the instructions.

2. 5. **"Where we want to be?"**

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Based on the information that has been collected in the analysis of the situation in 3.2.1 the goals and objectives of the Directorate can be developed and clarified, which are derived from the mission and vision of the water department. There should be an agreement on standards and performance goals, which fall under the name of the SMART (specific, measurable, achievable, realistic and time-bound).

Vision of Al-Diwaniyah Water Directorate:

Work on the implementation of projects and water compact units and extending water networks to deliver safe drinking water with world-class specifications for all the inhabitants of the province in the urban and rural areas.

Message of Al-Diwaniyah Water Directorate:

The elimination of the existing shortage in the service provided to citizens.

The goals of the Al-Diwaniyah Water Directorate:

1. Increasing served people by increasing the proportion of drinking water through the completion of the implementation of strategic projects (future energy at the completion of strategic projects up to 30,000 cubic meters / hour). (600,000 cubic meters per day, 20 hours / day) and that's total is for the end of 2015.
2. Reducing the proportion of waste in the water produced via rehabilitation of water projects, functioning water compact units and water networks. This first part of the goal related to rehabilitation projects is accomplished through increasing financial allocations / Regional development plan of the province of Al-Diwaniyah for example: supplying materials, equipment and pumps of different capacities and chlorine devices alum pumps within the regional development plan and was distributed and installed within the operational budget of the Al-Diwaniyah Directorate of Water. As for rehabilitation of projects and compact units, they are included annually and sequentially).
3. Quality control of inputs and outputs of the water production process and water monitoring at the final consumer so that it is in conformity with international standards and by supplying the districts with integrated labs and specialized lab technicians and transportation means
4. Supply newly established neighborhood with pure water networks and allocate funds to execute the works.
5. Reduce waste of pure water and increase the consumer awareness through rationalization via installing water gauges (meters) for houses

Strategy of the directorate of water to reach the goals

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In order to improve the efficiency of water service and provide pure water according to the required technical standards, the directorate should:-

- 1- Provide sufficient and persistent quantities of disinfection and filtration materials.
- 2- Persistent periodic maintenance of water projects, water compact units, and networks.
- 3- Rehabilitate and expand aging central water projects to elevate the production capacity.
- 4- Rehabilitate the conveyance lines, aging networks, installing the new network.
- 5- Establish new strategic water projects .
- 6- Establish water units with raw water networks to reduce consumption of pure water.
- 7- Installing water gauges
- 8- Supply specialized vehicles, trucks and lab equipment.
- 9- Provide necessary staff
- 10- Activate illegal use law and imposing fines against the violators.
- 11- Coordinate with the departments of environment and municipalities to hold joint workshops, researches, and studies on pollution of the water environment. Discharge of oils and chemical materials to the drains instead of the river.

3-5 "How can we get there?"

Al-Diwaniyah Water Directorate and in cooperation with USAID GSP/Taqadum project completed the gap analysis model developed by Taqadum 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 cause the 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 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.

Al-Diwaniyah Water Directorate has relied on the use of measurements average that has been collected in the 16 administrative units with a focus on the most vulnerable units in order to develop effective solutions to reduce the gap and improve the services provided to citizens through the immediate and long-term solutions. The successful use of the model will lead to getting accurate results that help determine the right and realistic solutions that are executable in reducing the gap and improving the service.

4-5. How can we ensure the success?"

In order to ensure the success of Services Delivery Improvement Plan (SDIP), it is important to continuously control the criteria and indicators of achieved progress evaluation to improve the performance and its external factors at all levels, and to provide data and reactions using the appropriate mechanisms in writing reports. This allows the management to determine the actual and potential success and failure in early enough time to facilitate timely adjustments. There should be a unit within the Directorate of Water in Al-Diwaniyah that will be responsible for coordinating the activities and performance evaluation in line with the agreed targets according to a monthly basis. This report will be submitted to the Director General of the Directorate of Water in Al-Diwaniyah, and the preparation of progress and performance quarterly and annual reports. The Director General of the Directorate of Water of Al-Diwaniyah should supervise the implementation of SDIP and report to the Provincial Planning and Development Council PPDC and the governor office as needed. They will provide strategic guidance on the effective implementation of the plan.

5.5) The recommendations proposed by Taqadum project for the immediate solutions:

1. Increase collection rates for water fees from citizens and make the contribution depends on the amount of consumption taken into account, poor families. The incremental value of consumption will significantly eliminate the misuse of water and rationalize consumption. Fees for water service in Iraq is very low compared to neighboring countries, European countries and America (Please note that the amounts of collection control must be coupled with the installation of counter meters (gauges) in homes, stores and governmental departments.
2. Conducting an integrated feasibility study with the departments of health, environment, and water to make use of ground water in the province to supply remote areas with pure water.
3. The need to hold surveys of water services provided to citizens to find out the reality of the situation from the view of the beneficiary and compare the results figures to Al-Diwaniyah Water Directorate figures to find out the shortcomings and correct them.
4. Link the largest number water compact units with the National emergency grid.
5. Study the possibility of connecting more than one area to one Compact water unit where many units now are small and close to each other.
6. The need to conduct maintenance for projects and compact units to reach the maximum capacity (available) and remove all obstacles that stand in the way of achieving this goal. Almost all projects and compact units are not working at maximum capacity (available). There is a need to find out the reasons and to develop immediate and practical solutions to reduce the scarcity of water.

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7. The need for preventive maintenance operations according to a specific timetable by water directorates in the districts and sub-districts. These works must be carried out by a specialized staff. The preventive maintenance will increase the actual age of the water projects and compact units, especially there is tarry in the establishment of the strategic projects.
8. Expand the financial authorities of the manager Al-Diwaniyah directorate of water for more than of 100 million Iraqi dinars per month, to enable him to perform the maintenance and operation works, fix the fractures, change old pipes and purchase required equipment and devices.
9. The ratio of fractures in networks are very high in some areas, and the reason is due to aging networks and illegal use of citizens, which led the citizens to unauthorized connection to the nearby networks through making holes in the pipes and they make the incorrect connection without permission of water departments in the province. This subject requires the application of the laws in force and facilitates licensing procedures and increase network coverage in areas that witness many cases of unauthorized connections. The fractures in the networks cost the maintenance teams in the province expensive amounts each month and cause a huge waste in the water.
- 10- The water department should put (GPS) in all working vehicles for the optimal use of time and resources.
- 11-There must be a collection of water service wages from the citizen to provide funds to support the operating budget of the directorate, which is reduced to a large margin from the previous year. Funds should be available for the ministry in 2015, will be few, limited and will be spent in specific sections, so the water department must find other sources of funding to provide permanent service.
- 12-Connect the largest number of compact units to the National emergency grid that is operating in the province.
- 13-Supplying sensors to scan networks and to draw the as-is coverage of the networks.
- 14-The need to set up a laboratory in each administrative unit, but there is a need to buy a mobile laboratory to ensure that the samples reach the laboratory in the province. There is a need to provide each project and compact unit with tools for taking samples and conducting tests on the ratio of chlorine and turbidity in the water (KIT). There is a need for training courses for personnel working in compact units and projects.

Conclusion:

The water department must manage its works efficiently and effectively in order to provide better services to citizens through the available resources. Also, it must develop a realistic

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strategy to spend resources such as network coverage, for example, through the development of real feasibility studies for projects to be implemented to reduce the gaps in service criteria and thus ensure the best services. Finally, we have to enable the water department in the province to find funding sources to supplement its operational budget and also help in the application of existing laws to protect the infrastructure from vandalism.

S.No	Generator site	Project capacity m ³ /d	No.of generators	Generator capacity Kva	Condition	Type	Supplied by	Operation rate
1	Al-Jazaer water compact unit	200	1	350	In work	Perkins	Polish army	100%
2	Al-Shaab pumping station	4700	2	1650	In work	Perkins	Council of Minister Al-Qadisiya and Dhee Qar construction committee	100%
				1250	In work	Perkins	DG of water .Memo of understanding	75%
3	Al-Diwaniya old water project	600	1	500	In work	Cummins	Development of regions funds	70%
4	Al-Diwaniya unified water treatment plant	4000	1	1650	In work	Perkins	Prime ministers grant	100%
5	Expansion of Al-Diwaniya unified water treatment plant	2000	1	1250	In work	Perkins	Memo of understanding	50%
6	Um Tabashi water compact unit	200	1	250	In work	Saqor	Development of regions funds	100%
7	Al-Diwaniya new water treatment plant	12000	3	1500	In work	Perkins	DG	100%
				1500	In work	Perkins	DG	100%
				1500	In work	Perkins	DG	100%
8	Al-Iskan Al-Sunapee water compact unit	32000	2	1000	In work	Perkins	Development of regions funds	100%
				500	In work	Perkins	Development of regions funds	50%
9	Al-Wihda water compact unit	4000	1	275	In work	Perkins	Development of regions funds	100%
10	Al-Masbaah water compact unit	8000	1	500	In work	Perkins	Development of regions funds	100%
11	Al-Akrad water compact	1000	1	100	In work	Perkins	Prime ministers grant	100%
12	Al-Afalija water compact unit	1000	1	130	In work	Perkins	Development of regions funds	100%
13	Al-Suqoor water compact unit	600	1	80	In work	Perkins	Development of regions funds	100%
14	Al-Sharmahi	180	----	-----	In work	Perkins	-----	----

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	water compact unit							
15	Al-Intisar water compact unit	180	----	-----	In work	Perkins	-----	----
16	Al-Manseer water compact unit	600	1	80	In work	Perkins	US army	100%
17	Al-Shabbanat water compact unit	600	1	80	In work	Perkins	Development of regions funds	100%
18	AL-Shuhada water compact unit	800	1	100	In work	Perkins	Prime ministers grant	100%
19	Raji Ghilab water compact unit	180	----	-----			-----	----

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Annex No. (1) A table showing the number of generators in the water projects and water compact units in the center of Al-Diwaniyah district

No.	Standard	Standard description	Standard unit	Data required for standard measurement	description	Measurement unit
1	People served through direct connection to the network	The total number of houses that have a direct connection to the network of drinking water out of the total number of total houses in the area.	%	A. Total number of houses in the area	Housing units registered in the Real Estate Registry Department that have building licenses	Number
				B. Total number of houses that have direct connection with the network	Housing units that have direct and systematic subscription with the network	Number
				Indicator calculation= $100 \times \frac{B}{A}$ (calculation is done quarterly)		%
2	The amount of water provided per person per day (450 liters in provincial centers, 360 liters in districts. 250 liters in sub-districts)	Total water provided per person per day, according to the Iraqi Specifications	Liter/day/person	A. Quantity of monthly supplied water	Measuring the daily product amount which is pumped to the network with consideration to measurements on a daily basis and find the total during the month, taking into account the non-calculation of the lost in the network, which can be estimated at a minimum of 15%.	Liter/month
				B. Number of people served in the area	Number of people who have a direct connection to the network within the service area	Person (number)
				C. Number of days monthly	Number of days per specific month	Day/month (number)
				Indicator calculation= $B / \frac{A}{c}$		Liter/day/person

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3	Measuring the extent of the amount of water for subscriptions	Total subscription supplied with gauge (meters) out of the whole total subscriptions	%	A. Total number of houses that are directly connected to the network	Housing units that have subscription in water department	Number
				B. Total number of houses that are supplied with consumption gauge	Housing units that are equipped with the gauges of consumption and are adopted in calculation of consumer water wage	Number
				Indicator calculation= $100 \times \frac{B}{A}$		%
4	Service continuity	Continuity of pumped water is measured in average hours of pumping water in the network during one day where the level of water height reaches in housing units, one floor at a minimum	Hour / day	1. Average of pumping hours per day	Daily pumping hours for a period of 7 days Is calculated and draw rate as a monthly average	Number
				Indicator calculation= number of hours in 7 days/7 (calculation is done quarterly)		%
5	Quality of water supplied to person	The quality of drinking water provided per person per day, which matches or exceeds the Iraqi standards specifications	%	A. Number of models drawn monthly related to water quality	The actual number of samples of water drawn for examination monthly. Models must be taken from the ends and exits and middle of network project.	Number/month
				B. Number of samples matching the specifications monthly	The total number of models that are drawn whose tests result in match or exceed the applicable standard specifications water	Number/month
				Indicator calculation= $100 \times \frac{B}{A}$		Liter/day/person
6	The efficiency of dealing with citizens' complaints	The total number of complaints about water service,	%	A. The total number of all complaints received from citizens during the month	Complaints registered with complaints office in registry and follow-up system should be effective	Number/month

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		which is dealt with within 24 hours from the moment of receipt of the complaint		B. the total number of complaints that have been directed and handled during the month	The number of complaints that have been handled correctly and satisfactorily within 24 hours or the next working day from the moment of registration of the complaint	Number/month
				Indicator calculation= $100 \times \frac{B}{A}$		%

Annex No 2) Standard criteria adopted by the DG of water in the province