Management Contract and NWC Achievements in Jeddah Kingdom of Saudi Arabia

NWC PPP Roadmap

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Reforming the Saudi Water Sector Strategic Transformation Plan

Identify Opportunities for Improvement

- ✓ Operational Audits
- ✓ Diagnostics
- ✓ Benchmarking
- ✓ Action plan

Management Contracts (6-7 years transition)

- ✓Establish NWC
- ✓Sign 6-7 years Performance Based management Contracts
- ✓Boost sector performance
- ✓Make water sector attractive

LT partnerships PPP

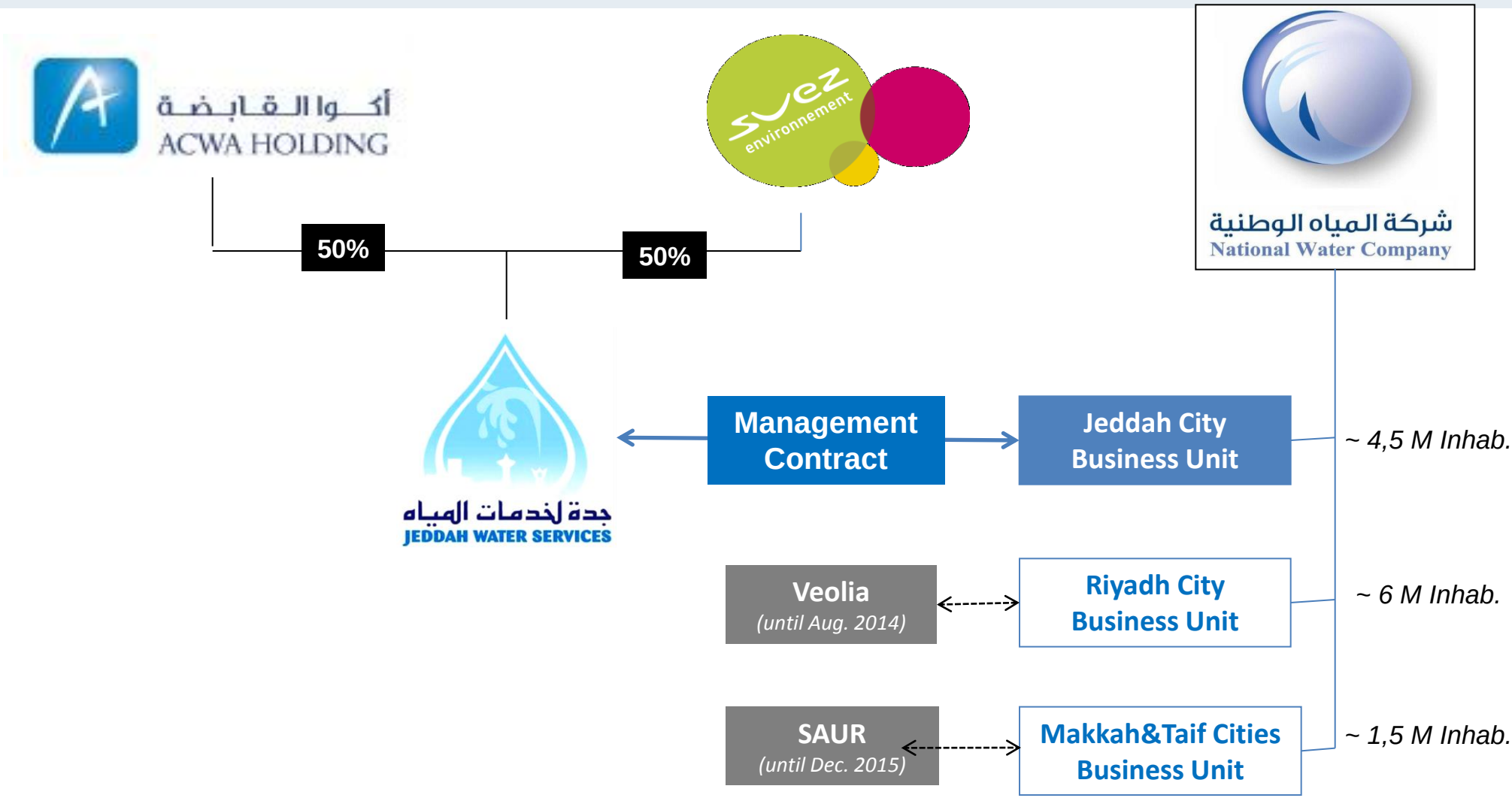
- ✓ Early PPP success paving the way for complex contract
- ✓ Move to LT PPP

Historical Situation & Key Challenges:

- Low Efficiency and Weak Performance
- Growing population & rapid economic development
- Substantial increase in demand for water and wastewater services
- Lack of natural resources and high water production cost
- Lack of HR capabilities and know-how

NWC Strategic Initiatives

Overview of Management Contracts in KSA



Performance Based Contract for Jeddah

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KPI	Name
1.1	Revenue metering Coverage
1.2	Collection Ratio
1.3	Collection Period
1.4	Metered Water Usage
1.5	Volume of Metered Water Sold
2.1	Service Continuity
2.2	Water Quality (sampling)
2.3	Water Quality (testing)
2.4	Leak Run Time
2.5	Sewer Flooding Incidents
2.7	Customer Service (complaints)
2.8	New connection time (water)
2.9	New connection time (wastewater)
2.11 A	Tankered Water Service (Walk-in)
2.11 B	Tankered Water Service (post-paid)
2.16	Customer Service (Tel. response)
3.1	*Self sufficiency*
4.1	Power Consumption
8.1	Wastewater treatment efficiency
8.2	SW Network Preventive Cleaning
8.3	Availability of Wastewater Pumps

7 years Management Contract signed in May 2008
Overall value: 73 MUSD

Initial focus of the Management Contract was on operational performance.

Operator's performance evaluation :

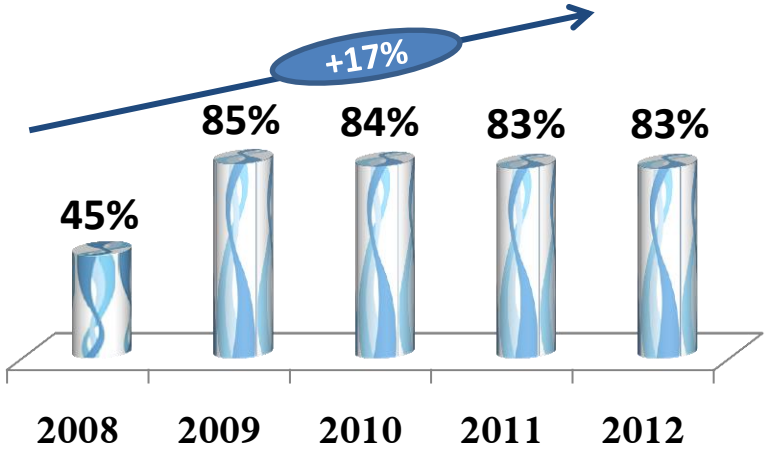
-A well balance performance regiem with KPIs achievement with penalty/incentive mechanism.

- Enabling projects (Principal Plan Outputs)
  - Deliverables (SCADA, laboratory, training center, customer services center, etc…)

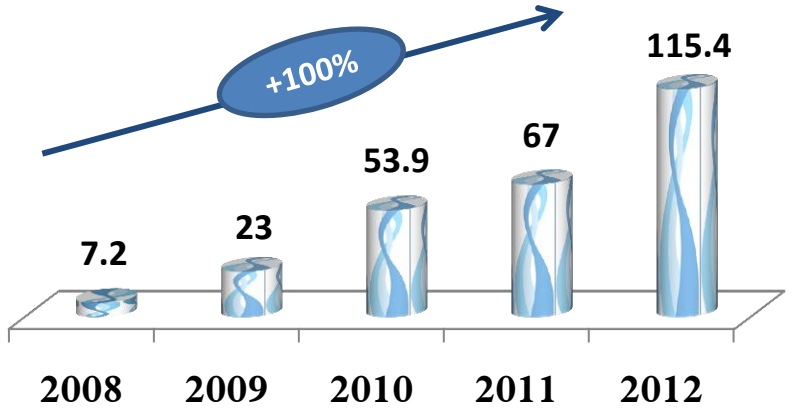
Operational Achievements in a nutshell

General indicators on the performance of the company during the period (2008 - 2012)

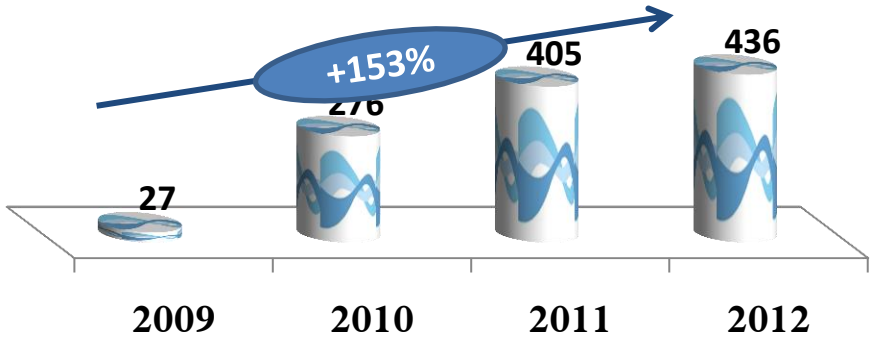
The customer satisfaction Index



The amount of savings as a result of the water leak detection (million m3)

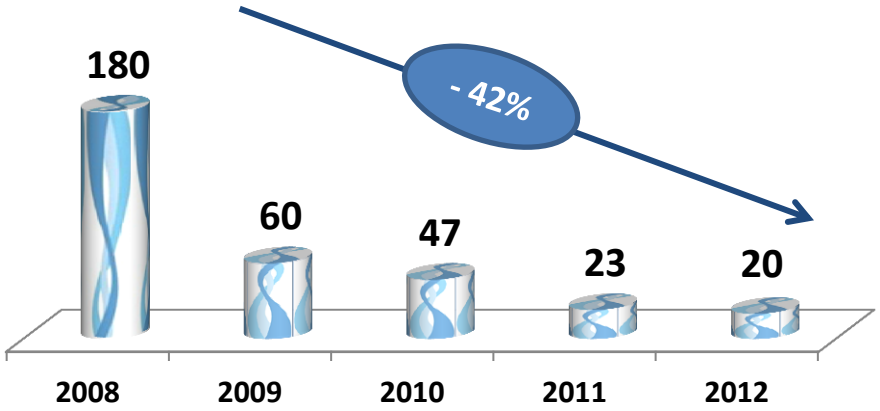


Agreements TSE through the contracts (1000 m 3 / day)

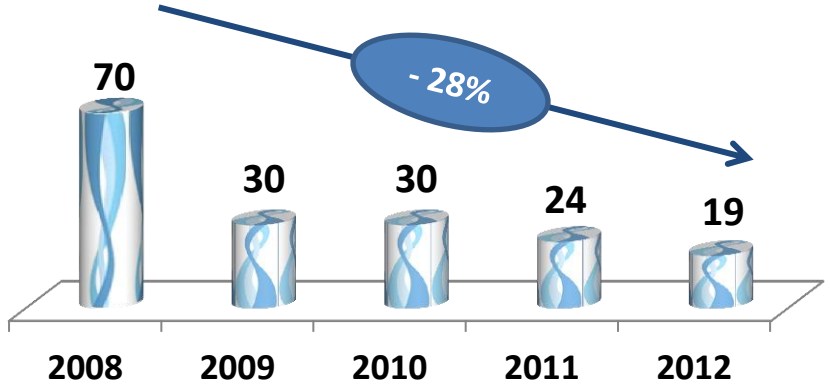


General indicators on the performance of the company during the period (2008 - 2012)

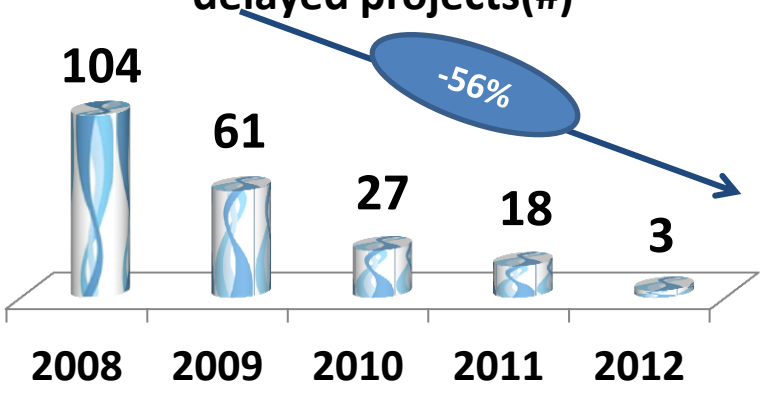
Avg. time to install WW house connection (day)



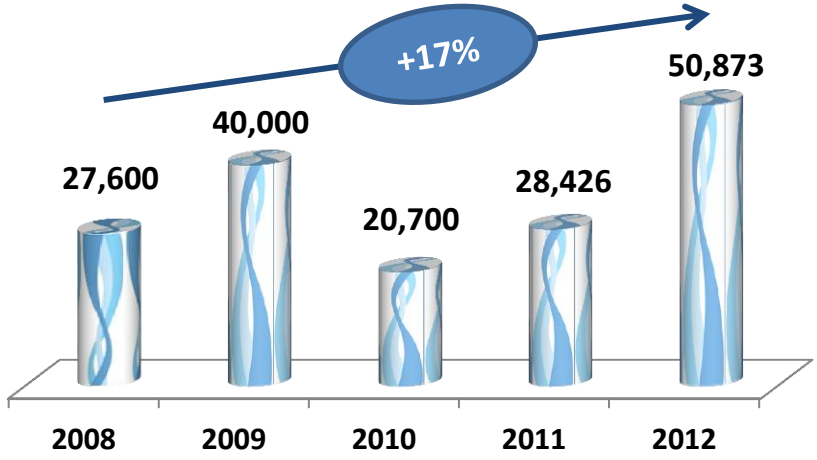
Avg. time to install water house connection (Day



Decrease in the number of severely delayed projects(#)



No. of the New WW house connection



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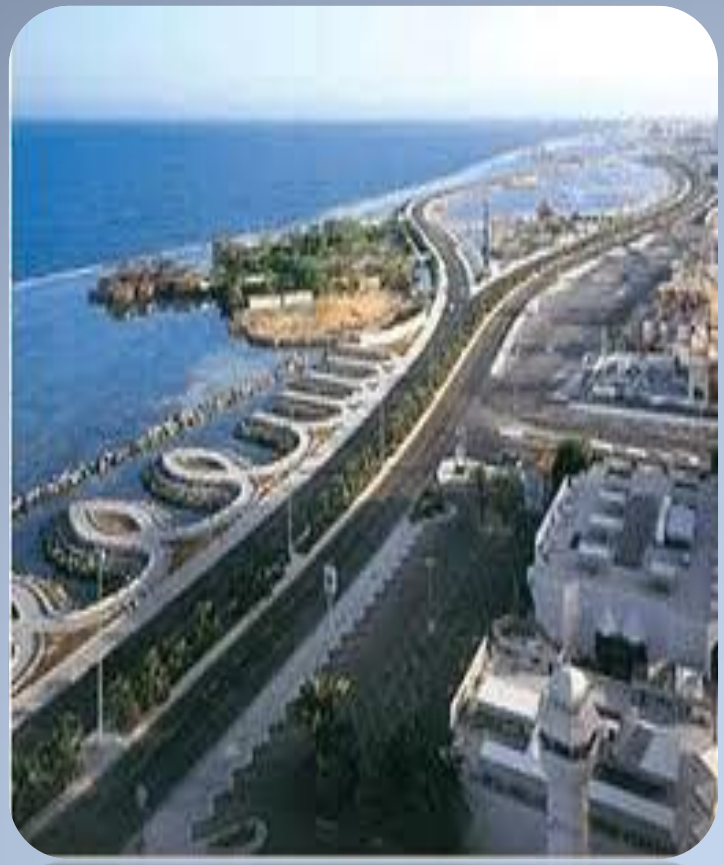
NWC effort in the City of Jeddah

Contents

- Environmental Services Projects
- Improved water supply and the implementation of strategic storage
- The company's efforts in the reduction of the high level water table

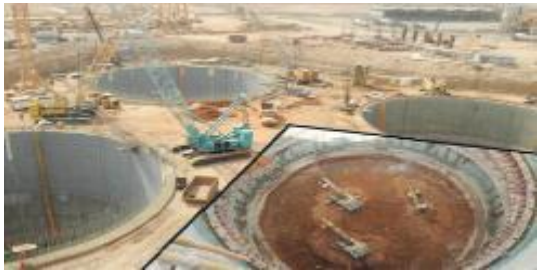


Environmental Services Projects

Launching the first phase of the sewage projects and start the implementation of the house connections

- Accelerate the implementation of projects from 5 to 3 years.
- More than (2.5) million linear meters of networks were completed.
- construction of new treatment plants and the development of the existing stations to reach a capacity of more than a million m3 / day.
- Execution of the fourth-largest pumping station in the world with a pumping capacity of one million m 3 / day.
- The completion of more than 25 thousand household connections to sanitation.

North lift station



Tunnels

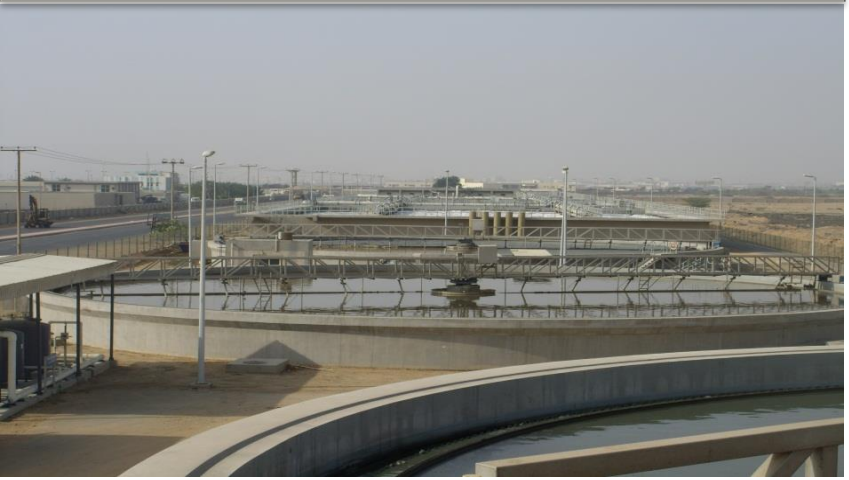
AL Khomrah station

Treatment Plants

House Connections –

South Treatment plants

AlKhumra industrial station with a capacity of processing (50,000) m3/day



AL Khomarah STP 4 with a capacity of processing 250,000 m3/day

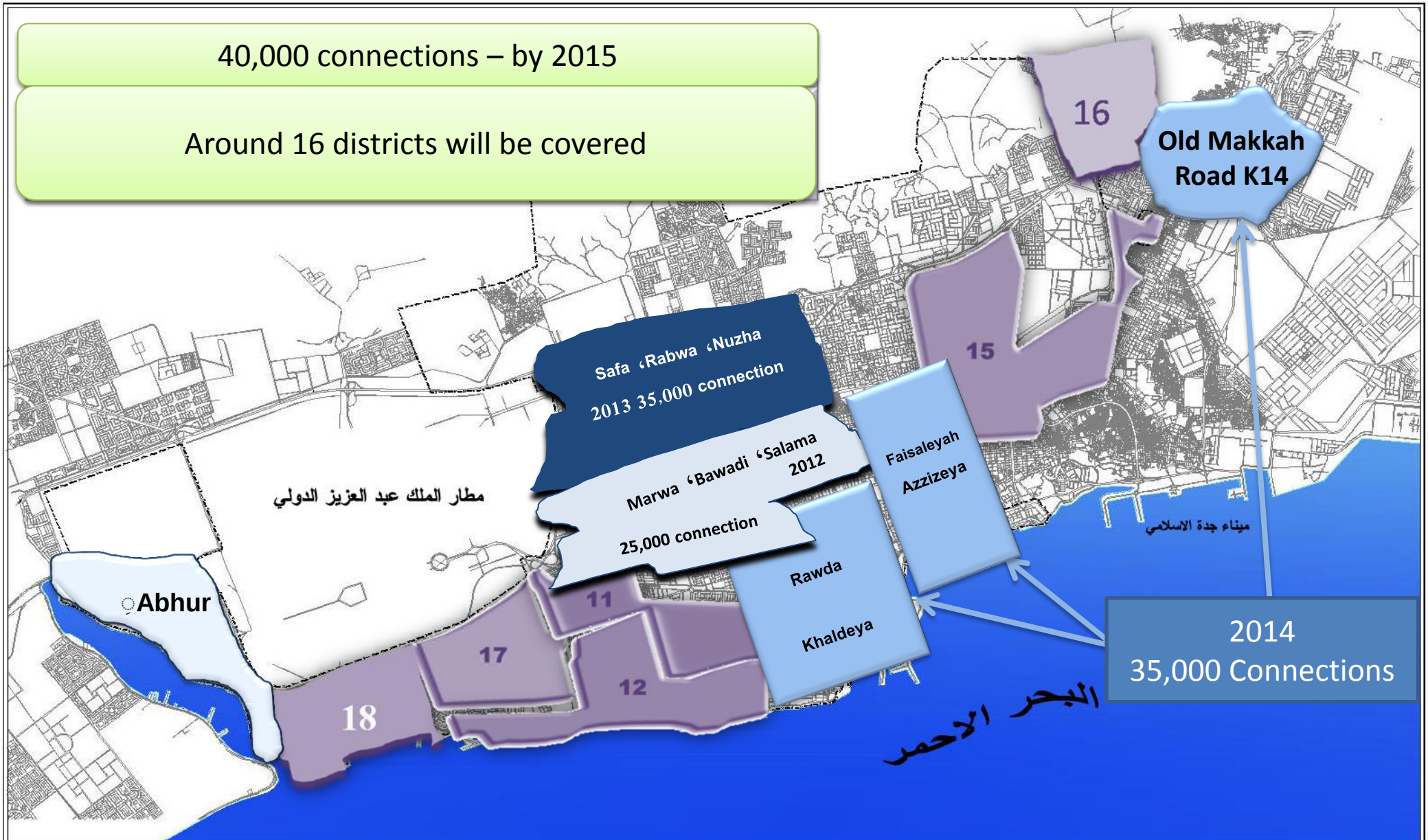
Phasing out AlKhomarah 1,2,3 treatment plants

Diverting the treatments on the stations 1,2,3 to station 4 with biological treatment

Wastewater House Connections

40,000 connections – by 2015

Around 16 districts will be covered



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MUSK LAKE PROJECT

Saudi Gazette

SUNDAY 16.05.10 JAMAD AL-THANI 02 1431

SEWAGE LAKE'S LEVEL DROPS TO NEW LOW

The water level at the sewage lake dropped to 8.7 meters Saturday, compared to the 14-meter high recorded after last year's floods in Jeddah. The lake now holds about six million cubic meters of sewage water, 15 million cubic meters less than its actual capacity. The sewage water is now being pumped out of the lake daily through a wastewater treatment plant. The plant is soon expected to treat about 60,000 cubic meters of sewage water from the lake for irrigation of the 10 million square meter eastern forest. According to the Jeddah Mayoralty, sewage tankers now unload about 15,000 to 20,000 cubic meters of sewage water into the treatment plant without having to dump the water into the lake. The Ministry of Water and Electricity will take over the lake within a few days, according to Jeddah Mayor Adel Fakeih. The lake is expected to be fully drained within a year. – Okaz photo

- Until mid-2010, Musk was a sewage lake of 9 Mm3 with 2.5 Mm2 area used by trucks to discharge septic tanks wastewater
- Major issues were affecting the Jeddawis: flooding and dam rupture risk, environmental contamination, etc..
- A Royal Decree issued by Custodian of the Two Holy Mosques King Abdullah in May 2010 urged the emptying of the Musk Lake within one year
- The process of transferring responsibility for Jeddah's Musk sewage lake from the Mayor's Office to the Ministry of Water and Electricity (MOWE) was completed within three weeks
- MOWE delegated the project execution to NWC

The Musk Lake in Briman

THE MUSK LAKE ENVIRONMENTAL PROJECT SUCCESS STORY

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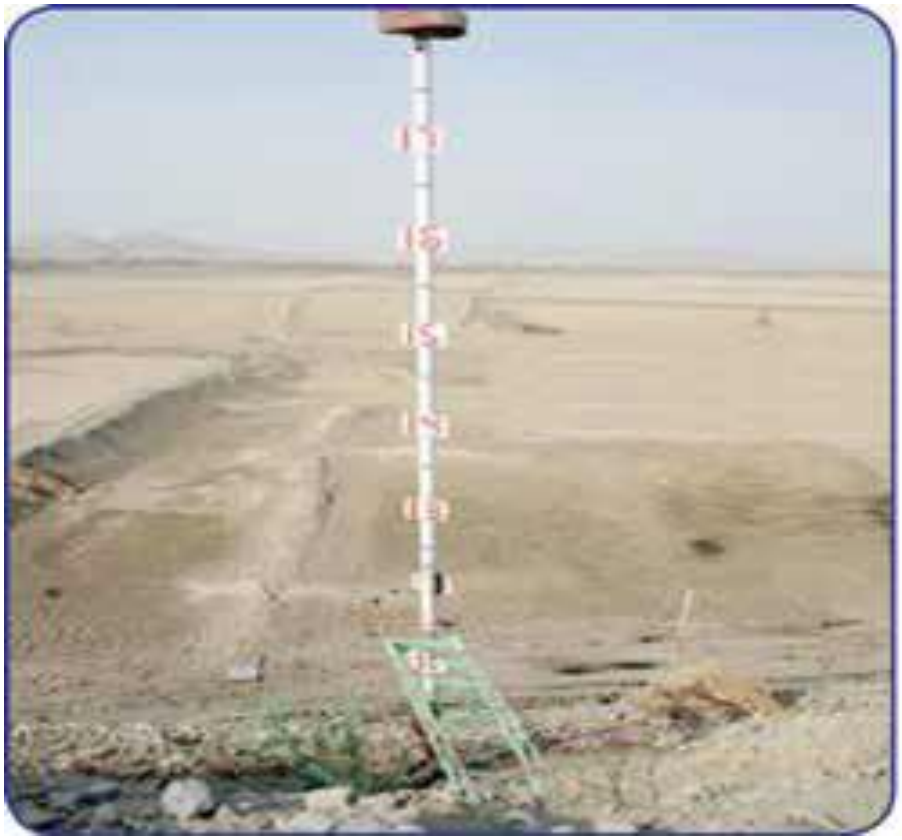
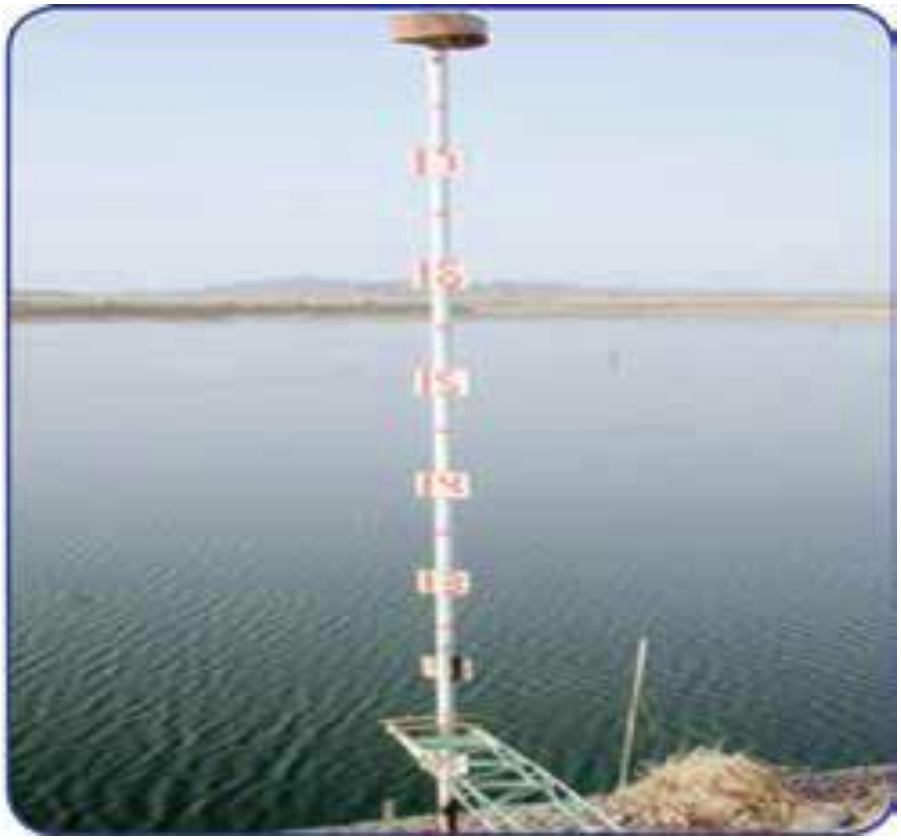
After



Before



Tasks undertaken by NWC with the support of the operator:

1. Drying up the lake
2. Sludge disposal and site recovery
3. Transfer of the septic tankers wastewater to new WWTP (60.000 m3/d)
4. Transfer pipeline to North-Jeddah
5. Dam and catchment management (ex: structural, level monitoring, …)
6. Re-use issues and future developments linked to Municipality plans related to Al Adha recreational valley located downstream the WWTP
7. Storm management

THE MUSK LAKE ENVIRONMENTAL PROJECT SUCCESS STORY

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NWC with its operator have set out the technical and practical solutions in a completely integrated manner

The sewage lake was dried up and the lake bottom sludge were treated within 3 months mid year 2010 which was 9 months shorter that the initial deadline

Project overall cost was 25 MUSD and operator appointed dedicated experts for developing the project

In 2011, the Jeddah Musk Lake Project was attributed the Best Global Wastewater Reuse Project Award given to NWC by the Former Secretary General of the United Nation, Mr Kofi Annan in Berlin, Germany

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Improved water supply in Jeddah city and the implementation of strategic reservoir

Improving Water Distribution through best in class Water Management Practices (Jeddah)

Robust water network management have yielded operational improvements and increase in continuous supply.

Continuously pumping
2 to 5 days
6 to 11 days
12 to 17
28 to 23 days
24 to 29 days
More than 30 days
Without networks

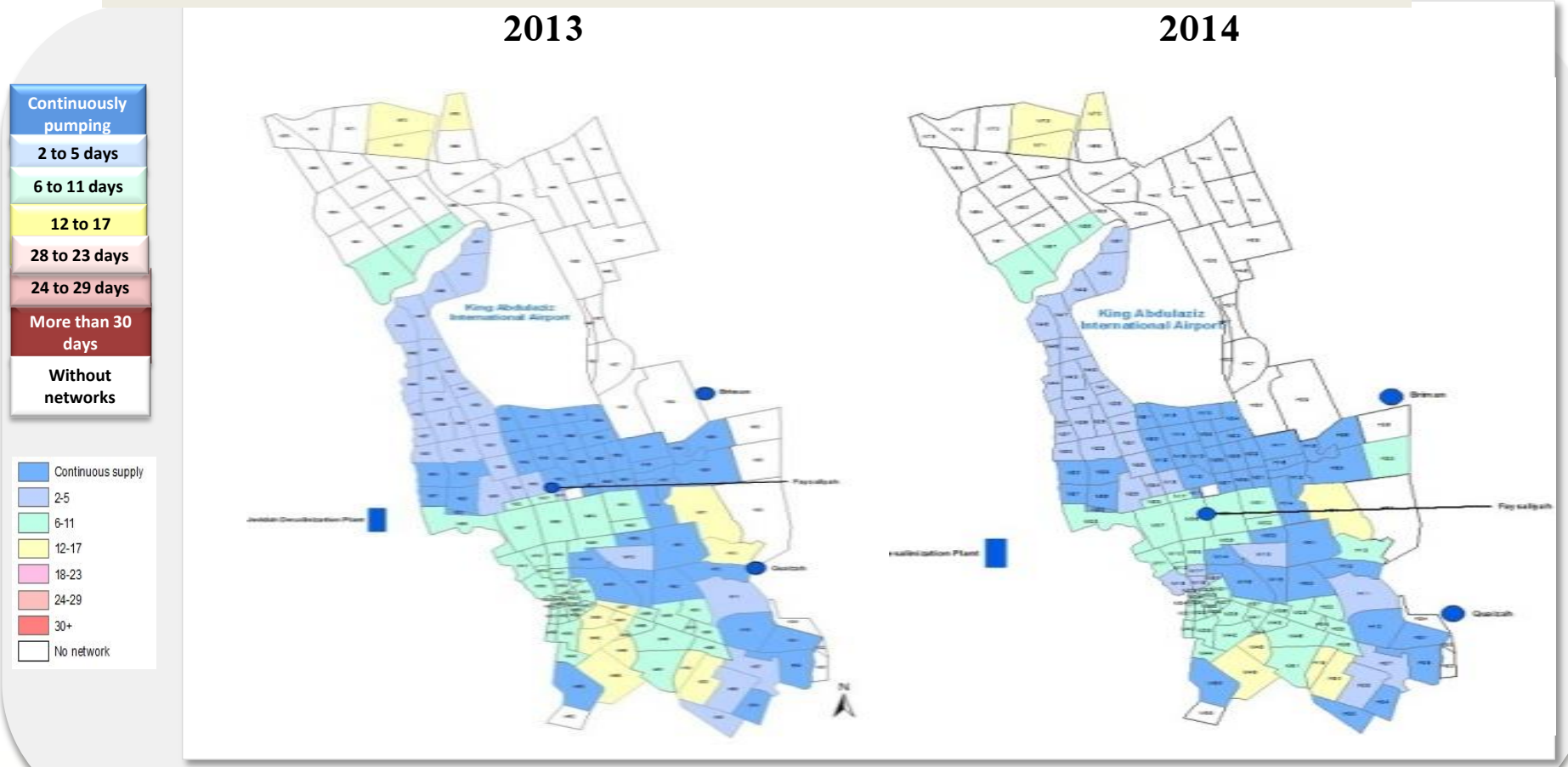
- Continuous supply
- 2-5
- 6-11
- 12-17
- 18-23
- 24-29
- 30+
- No network

2008

2011

Improving Water Distribution through best in class Water Management Practices (Jeddah)

Robust water network management have yielded operational improvements and increase in continuous supply.



Increasing the rate of continuous supply from(4%) in 2008 to (40%) in 2014

Improving Water Distribution through best in class Water Management Practices (Jeddah)

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Filling Stations Improvements in Jeddah

Before

After

Leak Detection & Repair Activity

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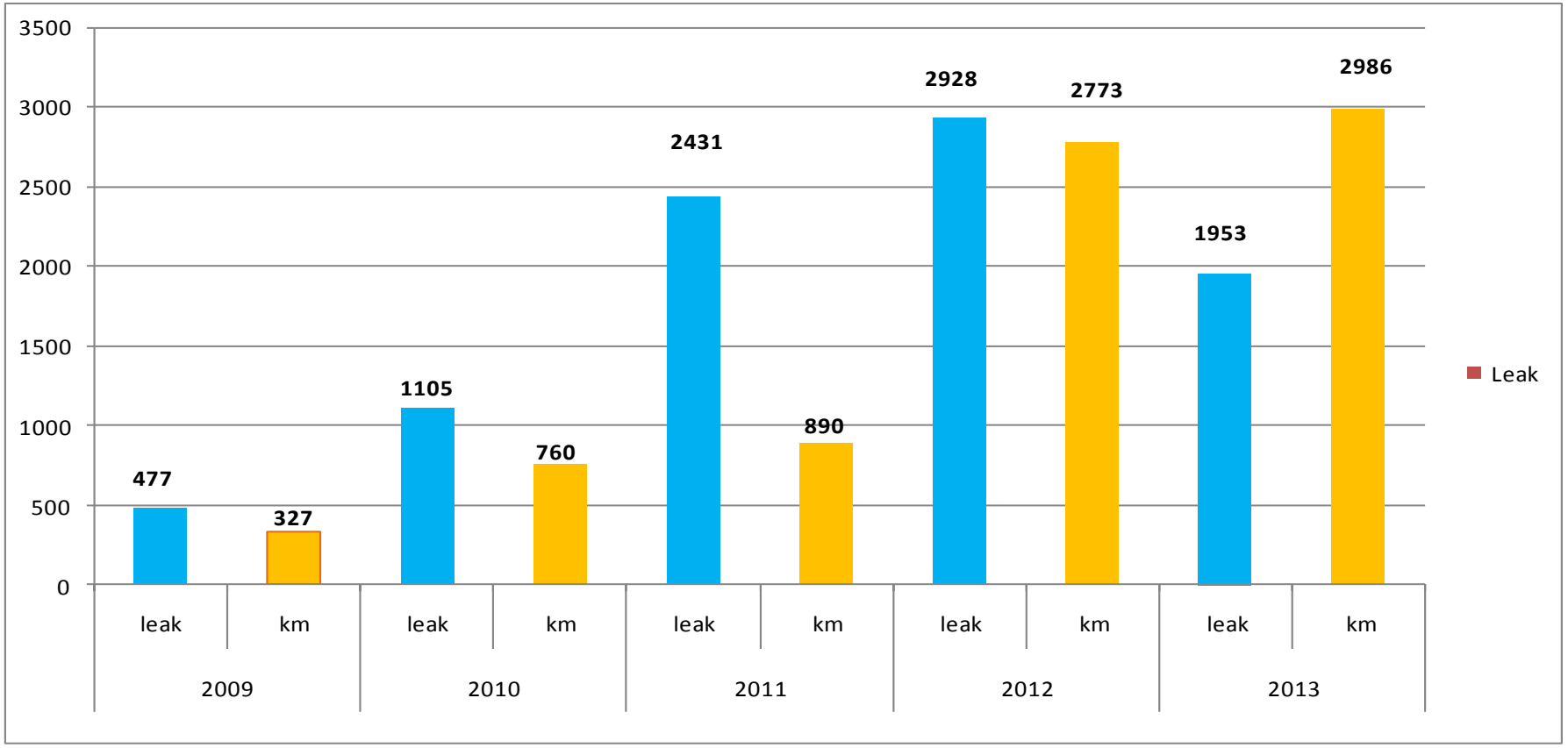
- Leak Detection achievements

- Implementation of SE Helium technology for invisible leaks detection
- 4 vans fully equipped
- Detection and repair of more than 8,800 invisible leaks with 7,800 km surveyed since 2009 till Dec. 2013.
- Water losses reduced by 30% (NRW <20%)

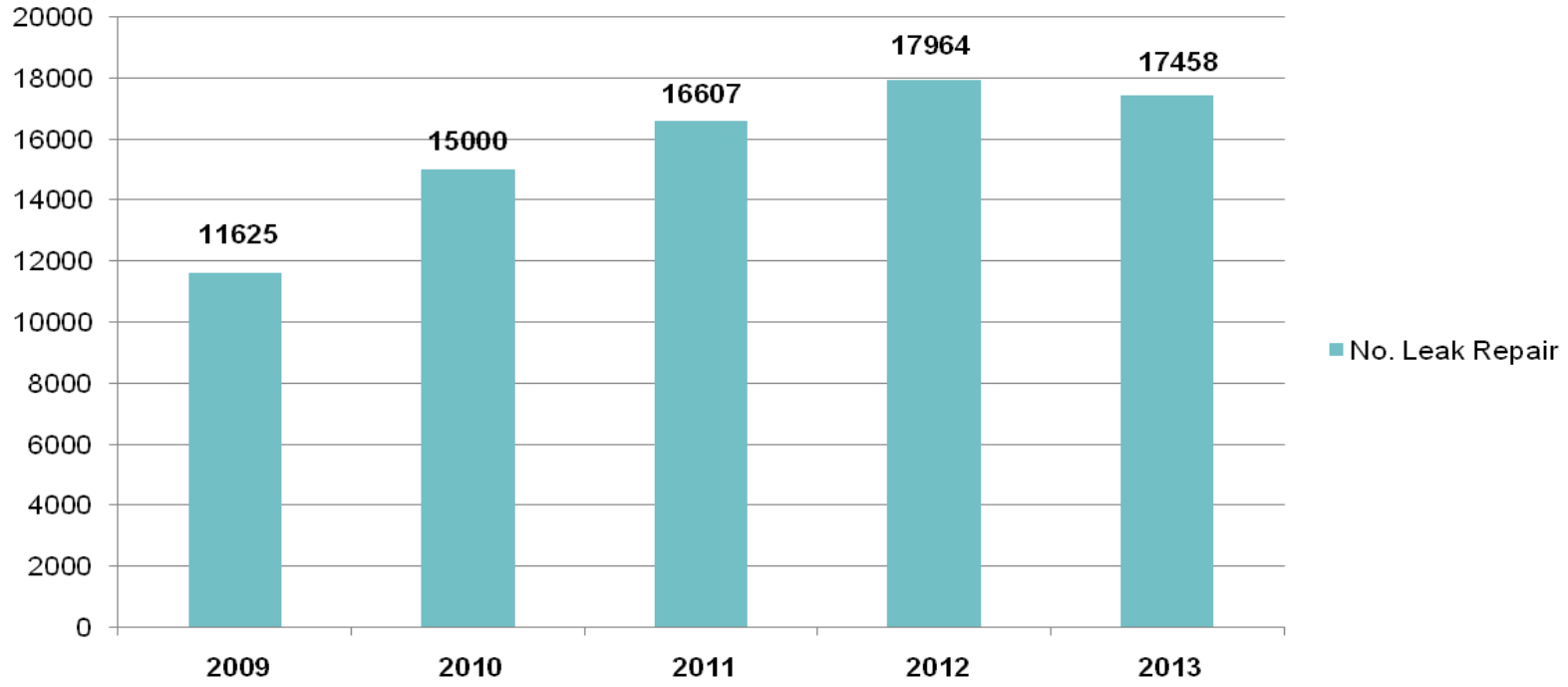
- Leak repair achievements

- 44 teams to repair all leaks in Jeddah working 24hrs/7 days
- 1,455 leaks repaired monthly in 2013/2104
- Coordination with Jeddah municipality to secure the permits
- Leak run time (average time to repair the leaks): from 59 hours in 2008 to 24 hours maximum in 2014

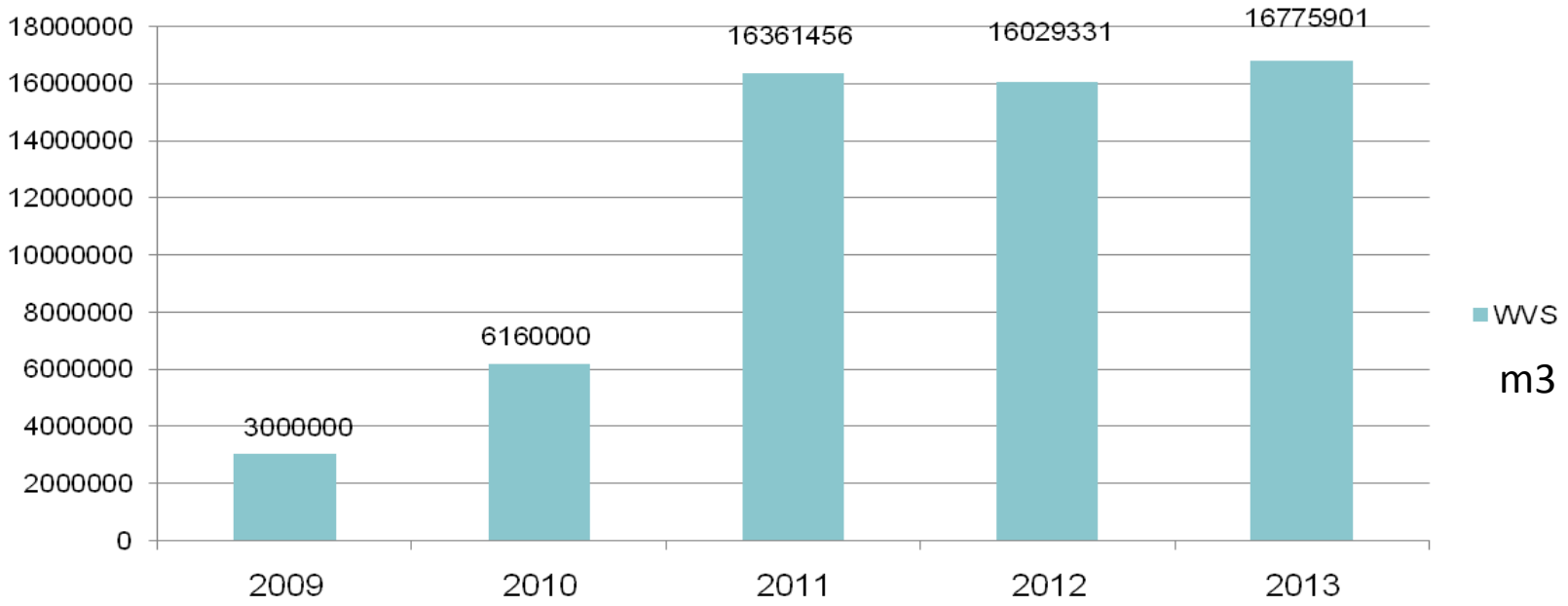
Leak Detection Achievements



No. of leaks repaired over the last 5years



Water savings related to leak detection & repair



ENHANCEMENT OF WATER SUPPLY SECURITY

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The target storage (6) million cubic meters of water through the year (2019) in 4 stages:

3 reservoirs with total capacity 545,000 m3 has delivered mid-year 2014 and have been utilized to supply the districts during Ramadan to cover a few emergency or shortage from source .

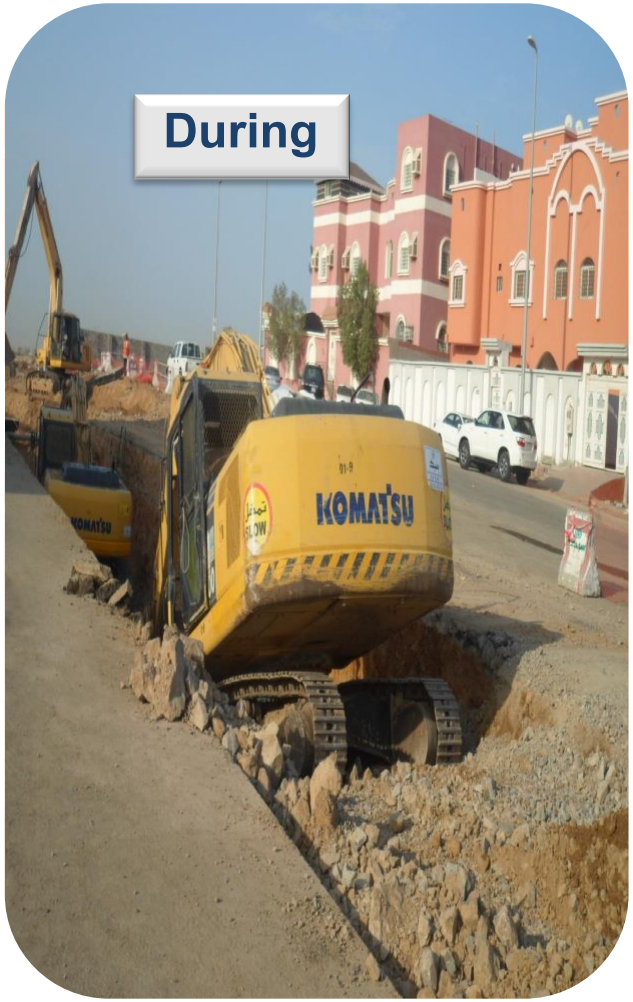
1. **SOP integrated existing operation reservoirs old and strategic reservoirs have been prepared.**
2. **JCBU Stations operators under contractors on site 24/7 for follow up and training .**
3. **Supply the network from Service Reservoirs has been tested**

The company's efforts to reduce the water table

The work of the implementation of the project districts affected by the rising water surface (Quiza District)

The work of the implementation of the project districts affected by the rising water surface (K14 District)

The work of the implementation of the project districts affected by the rising water surface (Matbuly District)



The work of the implementation of the project districts affected by the rising water surface (Buriman District)

Challenges to come

Challenges to come

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Keep improving the economic performance of NWC while improving cost recovery for OPEX

- Revenue enhancement
- Cost reduction
- Improve efficiency

Continue infrastructure expansion program

- Sewerage system in Jeddah (40% coverage today)
- Strategic reservoirs
- Distribution network development

Finalise LT partnership framework and launch concession JVs for the major cities with international operators by 2016

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نسأل الله التوفيق والسداد