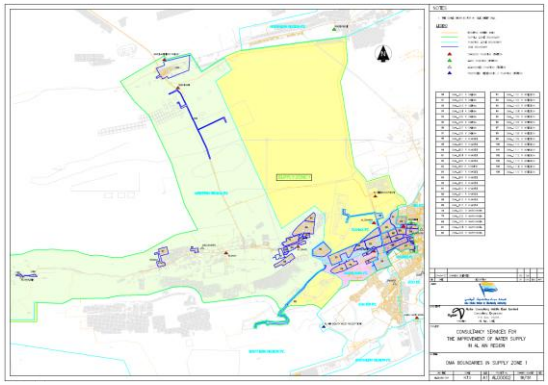
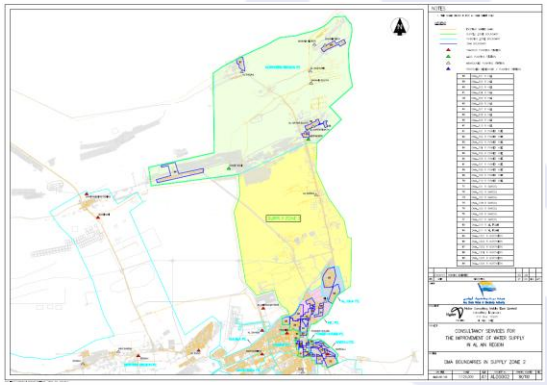
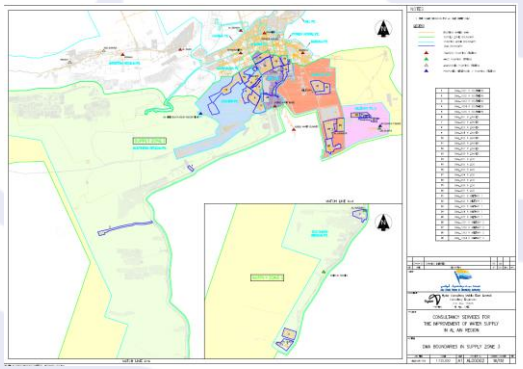
شركة العين للتوزيع
Al Ain Distribution Company

AADC Water Network Management and Leakage Control Synopsis

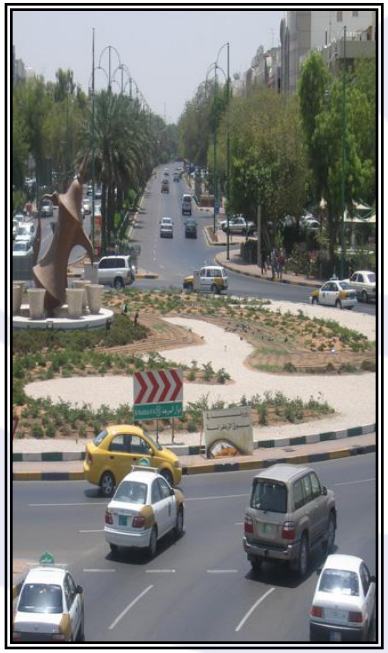






Al Ain Distribution Company.

- Formed (from the Water and Electricity Department) in 1999 as a wholly owned subsidiary of the Abu Dhabi Water and Electricity Authority (ADWEA).
- Responsible for the distribution of water and electricity in the city of Al Ain and the Eastern Region of Abu Dhabi Emirate.
- We serve a population of just below 500,000.
- Demand growth rate 5 to 8% per year. Forecast likely to rise over future years.
- Al Ain can be characterised as:
  - Low rise,
  - Wide area,
  - High percentage residential,
  - Small percentage rural and industrial.



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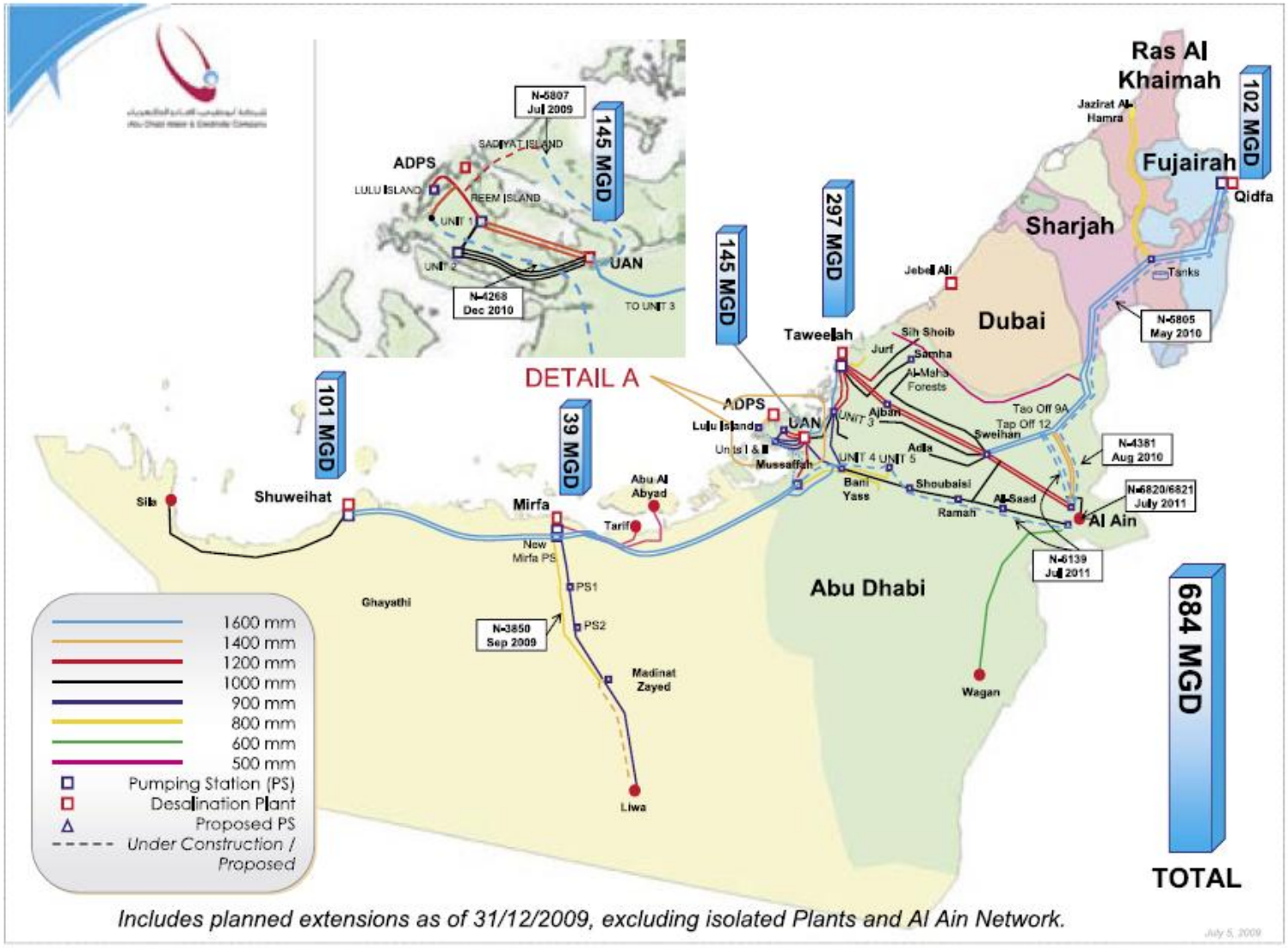
Al Ain Distribution Company

Al Ain Distribution Company - Location



Includes planned extensions as of 31/12/2009, excluding isolated Plants and Al Ain Network.

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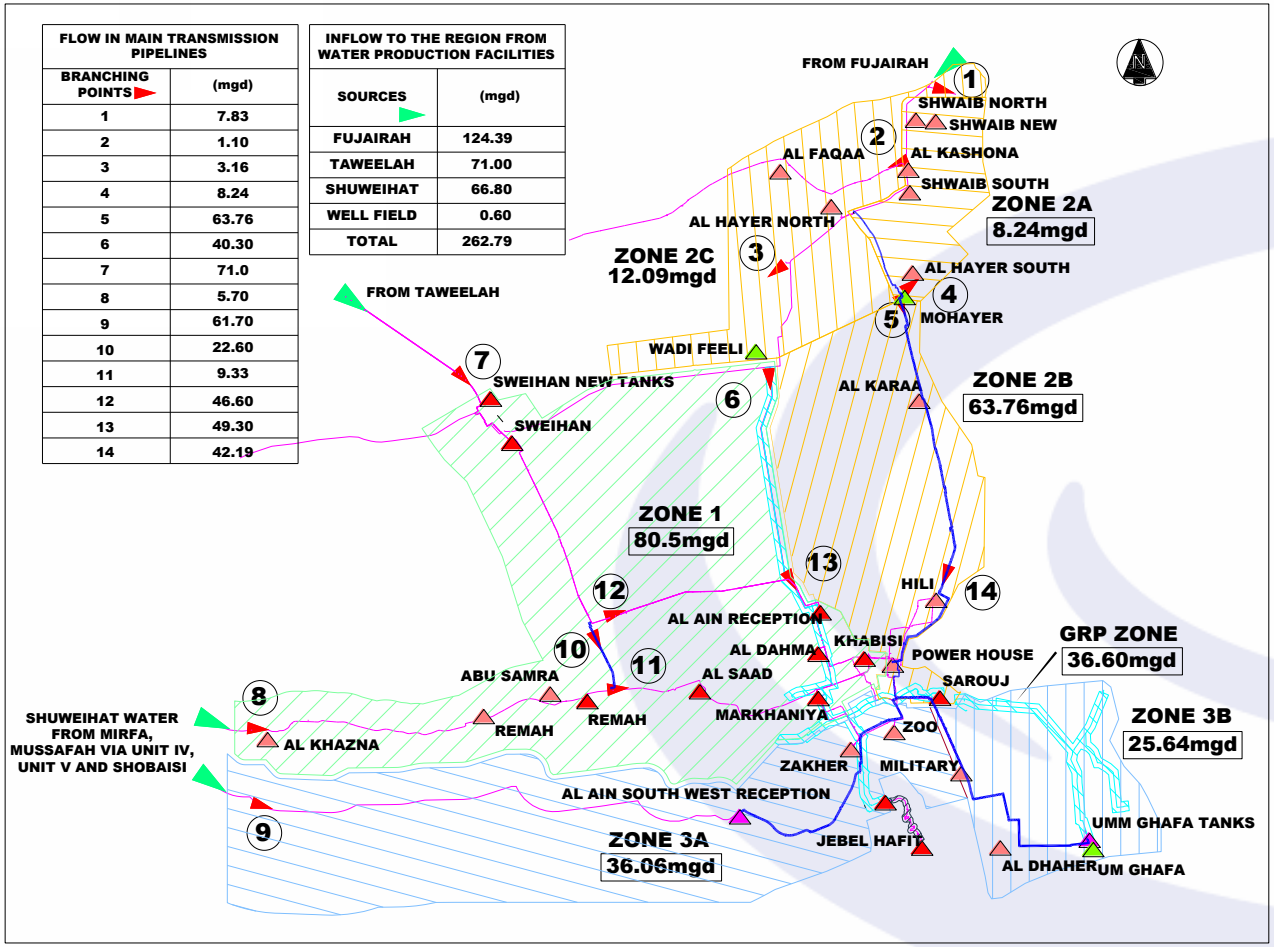
Al Ain Distribution Company

Zones

FLOW IN MAIN TRANSMISSION PIPELINES	
BRANCHING POINTS	(mgd)
1	7.83
2	1.10
3	3.16
4	8.24
5	63.76
6	40.30
7	71.0
8	5.70
9	61.70
10	22.60
11	9.33
12	46.60
13	49.30
14	42.19

INFLOW TO THE REGION FROM WATER PRODUCTION FACILITIES	
SOURCES	(mgd)
FUJAIRAH	124.39
TAWEELAH	71.00
SHUWEIHAT	66.80
WELL FIELD	0.60
TOTAL	262.79



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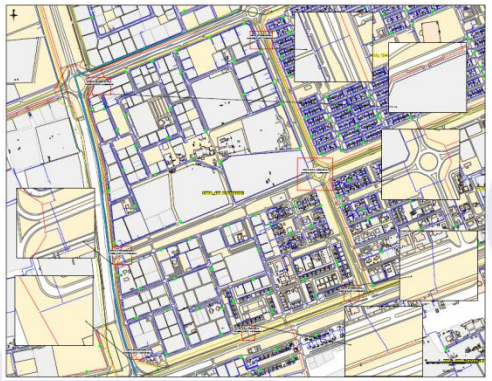
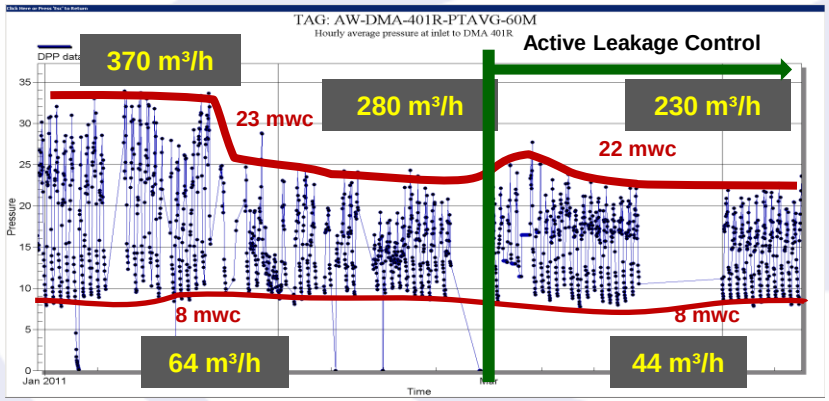
Al Ain Distribution Company

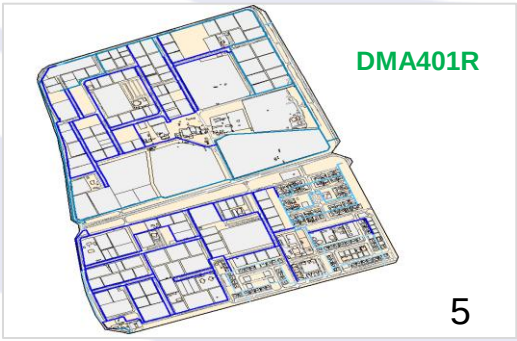
AADC Asset Information

- Total Number of water Customers — 68,947 Nos.
- Customers Supplied by Tanker — 1219 Nos.
- Customers Metered — 55182 Nos.
- Customers un-metered — 11899 Nos. (Update is awaited yet)
- Bulk Consumers metered — 330 Nos.
- Bulk Consumers Un-metered — 35 Nos.
- Number of pumping Zones — 12 Nos
- Total Number of Zones — 3 Nos
- Number of DMA ‘s Under Construction — 107 Nos.
- Number of fixed water sampling points — 164 Nos.
- Total length of the Network in Al Ain is about — 3,871 Km.
- Total Number of Valves (Ref. MAXIMO Tag vs. GIS ID) — 15418 Nos.
- Total No. of Fire Hydrants — 4964 Nos.
- Total Number of Interface points with Transco — 60 Nos. (44 already installed)

(Data Source : AMD & CSD)







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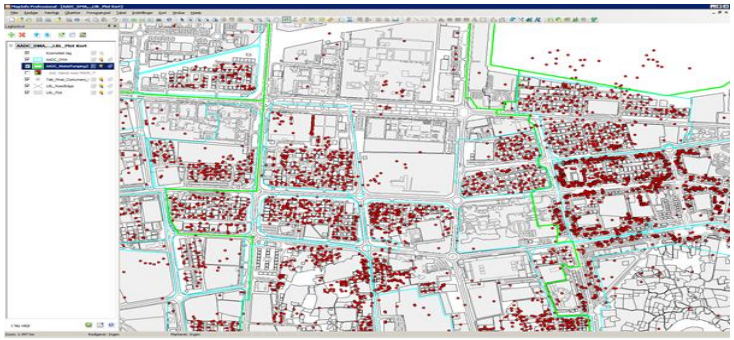
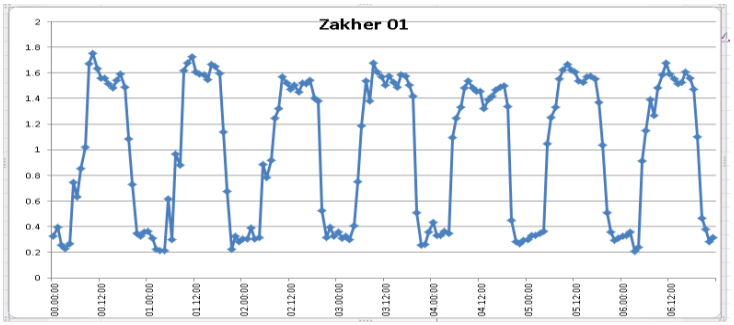
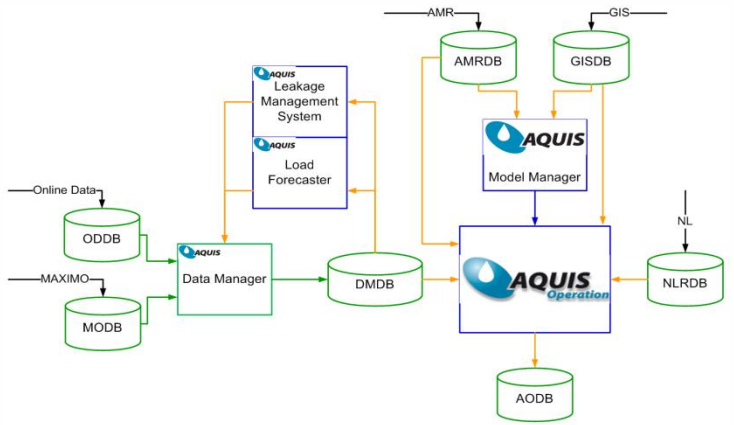
AADC Leakage Management and Control







- Zoning of the Region (The region is made into 3 Supply Zones)
- Construction of District Metering Areas (All three zones are divided into 107 DMA's)
- Implementation of Hydraulic Modeling and Holistic Management of the Network
- Implementation of Customer Survey Walkover survey
- Installation of Noise loggers and Develop Noise logger Data Base (NLDB)
- Centralised Process Control Centre
- Condition Monitoring of the Network
- Online Water Quality Monitoring (Proposed)
- Geo-Coding of the Customer in Billing System
- Demand Management
- Pressure Management
- Enhancing Response Time for Repairs
- Automatic Meter Reading
- Night Line Measurement (NLM)

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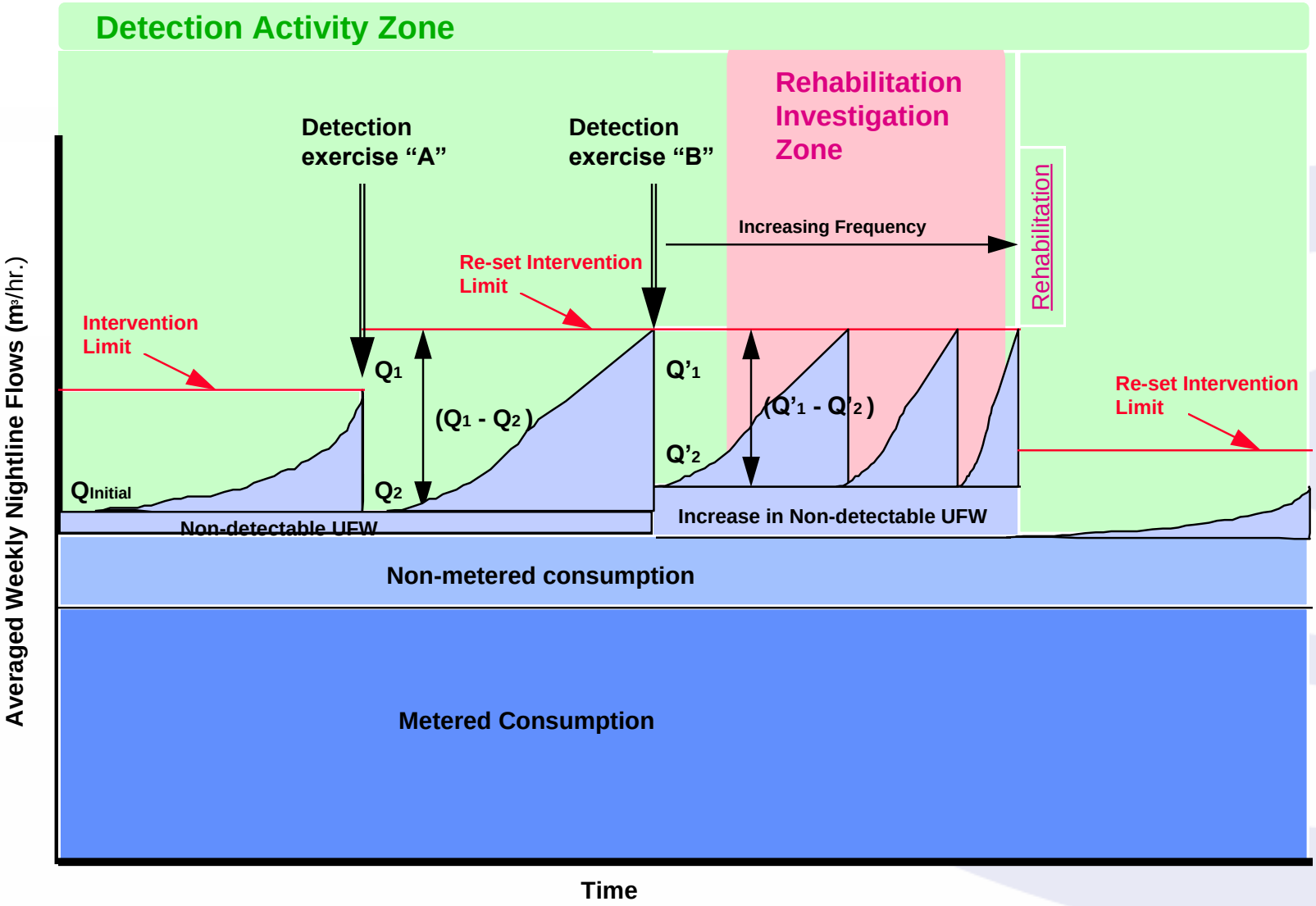
Al Ain Distribution Company

Intervention.



Central Process Control Centre – Concept & Functionality

We will build a centrally controlled network management system that will allow:

- Monitoring of each Litre of water received at our network.
- Monitoring of pressure and quality delivered.
- Allow us to quickly identify where any losses are occurring.
- Provide accurate, historical data on demand and consumption.
- Facilitate the planning of network expansion and modification.
- Permit accurate demand projections
- Provide a basis for asset maintenance and replacement planning.

شركة العين للتوزيع
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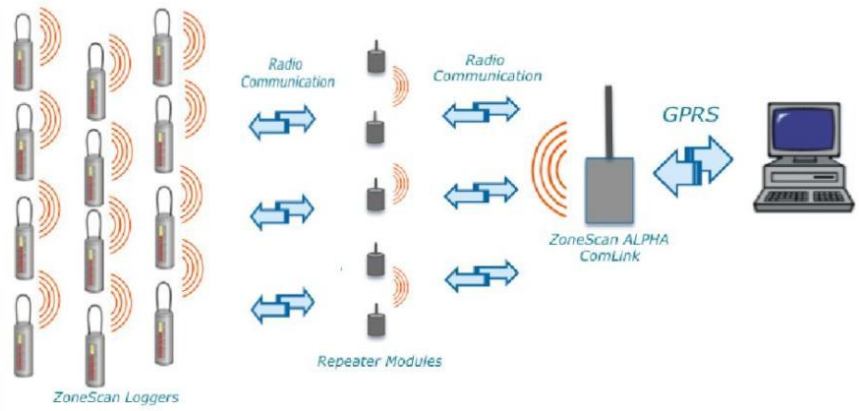
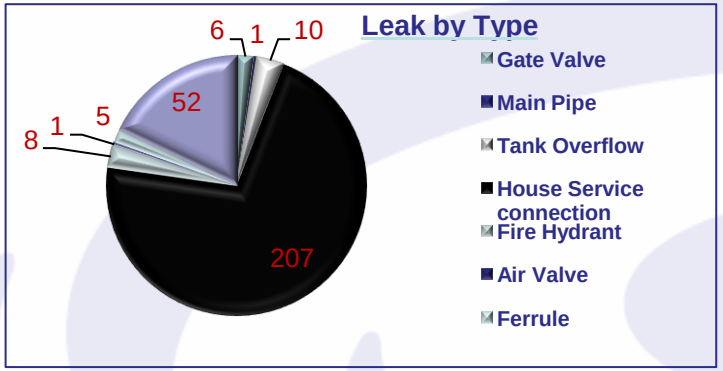
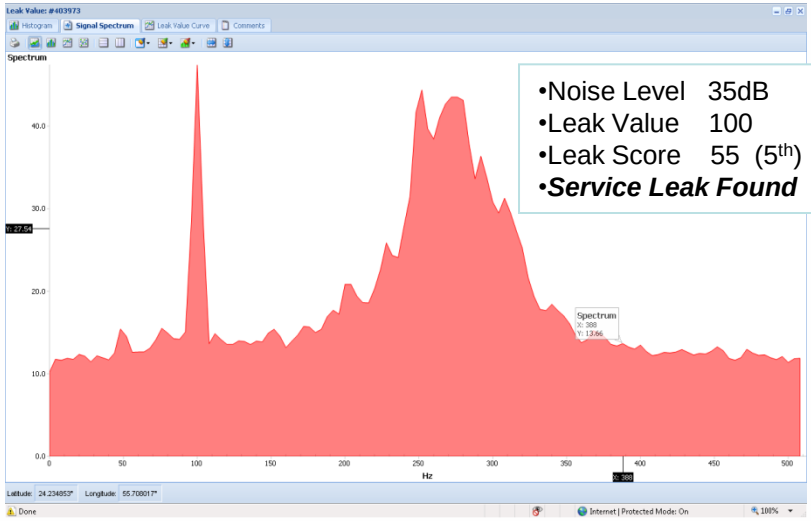
Noise Logger Data Base system and operation

- **Noise Logger Data Base System Architecture**







- Noise Level 35dB
- Leak Value 100
- Leak Score 55 (5th)
- ***Service Leak Found***

- **Leak Logged Data by Correlation**

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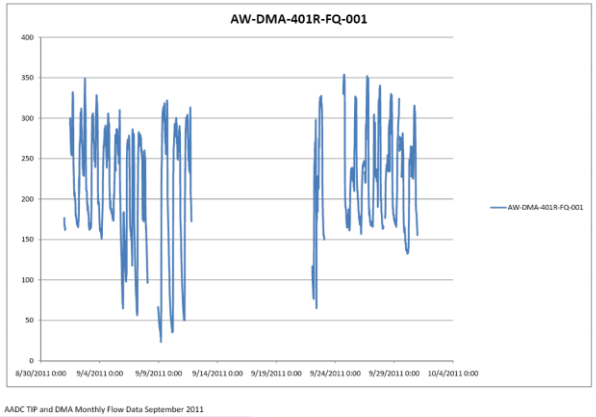
What is Next



AADC TIP and DMA Monthly Flow Data September 2011

Tasks Ahead

- Improve Customer metering.
- Better assessment of Customer Night Consumption (NLM).
- Establish relation between average DMA pressure and leakage flow.
- Optimize for pressure management using hydraulic modeling.
- Integration of all Stand alone system like GIS, Maximo etc.,with Holistic Management system
- Implementation of Security of Supply and Risk Assessment
- Construction of Centralised Process Control Centre and its implementation.