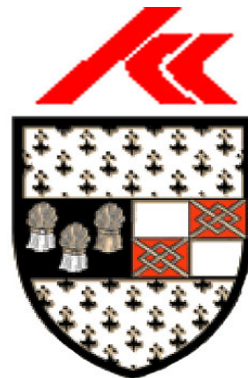


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# **Kilkenny County Council Water Conservation Project**

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# National Water Conservation Programme

- Stage 1: Implementation of Water Management Systems (March 2007 – Oct 2008) (Ryan Hanley Grontmij)
  - Asset data collection; mapping (GIS); modelling; bulk/district metering; telemetry; pressure control; use, update and maintain systems – **Kilkenny €1.98million – 87 DMAs**
- Stage 2 : Active Leakage Control (Oct 2008 - April 2010)
  - Leak detection and repair: **estimate €3.43million – 1,300 repairs**
- Stage 3 : Rehabilitation of Watermains (2010 onwards)
  - Replacement of old watermains with persistent high leakage: **estimate €30.4million – 80km of mains replacement**



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# Objectives of Water Conservation Project

- **Current water losses (UFW) = 19,700m<sup>3</sup>/day (60%)**  
= 4,334,000 gallons
- Reduce overall level of water losses (UFW)
- Maximize value of investment in existing infrastructure.
- Maximize cost effectiveness of proposed Capital Works.
- Lower operating costs.
- Improve operational and demand management.
- Improve level of service to consumers.
- Protect and improve management of water resources.
- Promote greater environmental awareness.

**Ongoing commitment** => on completion of Stages 1 & 2 – KCC will have to find and repair **400 leaks/year** to keep UFW at lower levels.

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# Current Levels of Leakage

Scheme	Population served	Water Produced (m <sup>3</sup> /day)	UFW (m <sup>3</sup> /day)	UFW (%)
Ballyragget	1,167	516	268	52
Bennettsbridge	4,998	3,200	2,222	69
Callan	2,898	1,561	980	66
Castlecomer Clogh	2,216	1,300	1,136	76
Gowran Goresbridge Paulstown	3,312	1,200	621	52
Graiguenamanagh	1,818	637	331	52
Inistioge	1,671	750	410	55
Mooncoin	11,190	3,500	1,552	44
PictownFiddown	3,237	1,400	848	61
Thomastown	2,646	1,610	856	44
Urlingford Johnstown	693	613	467	76
Kilkenny City	28,605	14,792	10,029	68
<b>TOTAL</b>	<b>64,451</b>	<b>31,079</b>	<b>19,721</b>	<b>60</b>

- 60% of water produced currently being wasted in County Kilkenny
- 20,000m<sup>3</sup>/day equates to 40,000 houses

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# Network Asset Management

- 1,033km of distribution mains
    - **Asset replacement value = €300million**
  - Sustainability
    - **Find and repair 400 leaks/year**
    - **Staff + funding**
  - Demand management
    - **> 50% of UFW on private side**
    - **Non domestic metering + waste notice**
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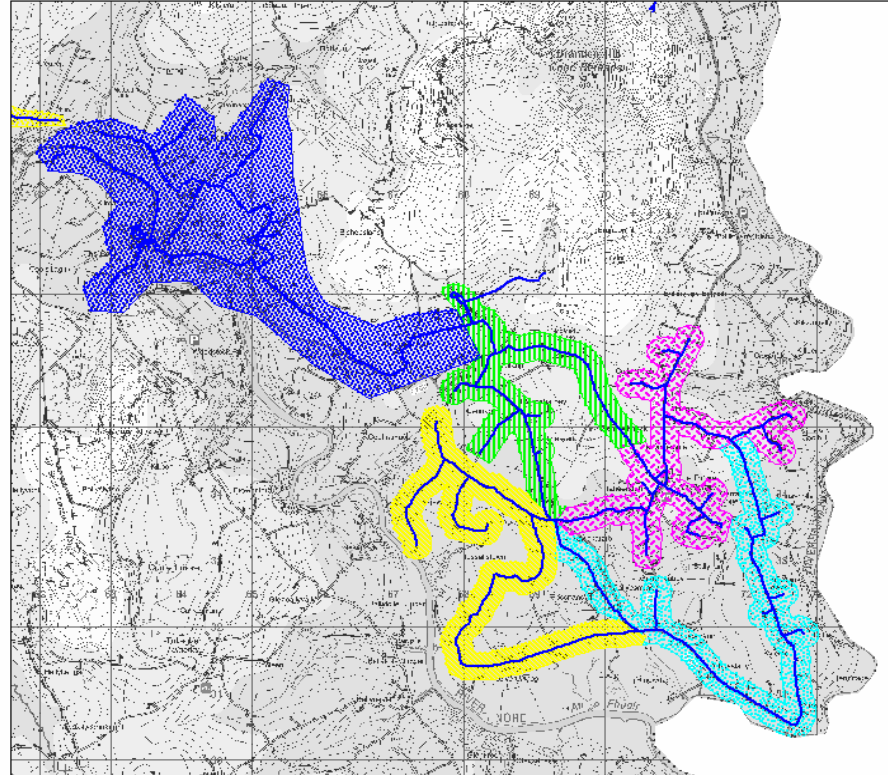
# Cost of Network Asset Management

- Active leakage control
    - Find and repair 400leaks/year every year
  - Telemetry System
    - Maintain 100 loggers with batteries and SIM cards
  - Meters
    - Maintain 100 meters mostly battery-powered
  - PRVs
    - 6-monthly check and bi-annual service
  - Mapping
    - Continuous updating of database as mains are added/replaced
  - Cost €600,000/year
-

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# Stage 1: DMA Design

- District Metered Areas
- Monitor flow into discrete areas to manage the network.



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# Stage 1: Works

- Civil Works:

- Installation of 62no. meters
- Installation of 11no. boundary valves
- 109no. pipe samples – [Rehabilitation Strategy](#)
- Works commenced in January 2008

- County-Wide Data Logging System

- Installation of 100no. data loggers
-

# Electromagnetic Meter Installation



# Thomastown Pilot Project

## ■ June 2007

- 2,098m<sup>3</sup>/day, 70% UFW
  - 461,560 gallons
- Source under Pressure

## ■ Feb 2008

- Daily production reduced to 1,337m<sup>3</sup>/day, 44% UFW
  - 294,140 gallons
- Saving = 682m<sup>3</sup>/day
  - 1,360 houses.

Leak Repair and Detection Pass Number	Public Side Leaks		Private Side Leaks		Total Leaks	
	No. Found	No. Repaired	No. Found	No. Repaired	No. Found	No. Repaired
First Pass	10	10	5	4	15	14
Second Pass	19	19	31	24	50	43
Third Pass	4	4	7	5	11	9
Fourth Pass	4	4	2	1	6	5
<b>TOTAL</b>	<b>37</b>	<b>37</b>	<b>45</b>	<b>34</b>	<b>82</b>	<b>71</b>

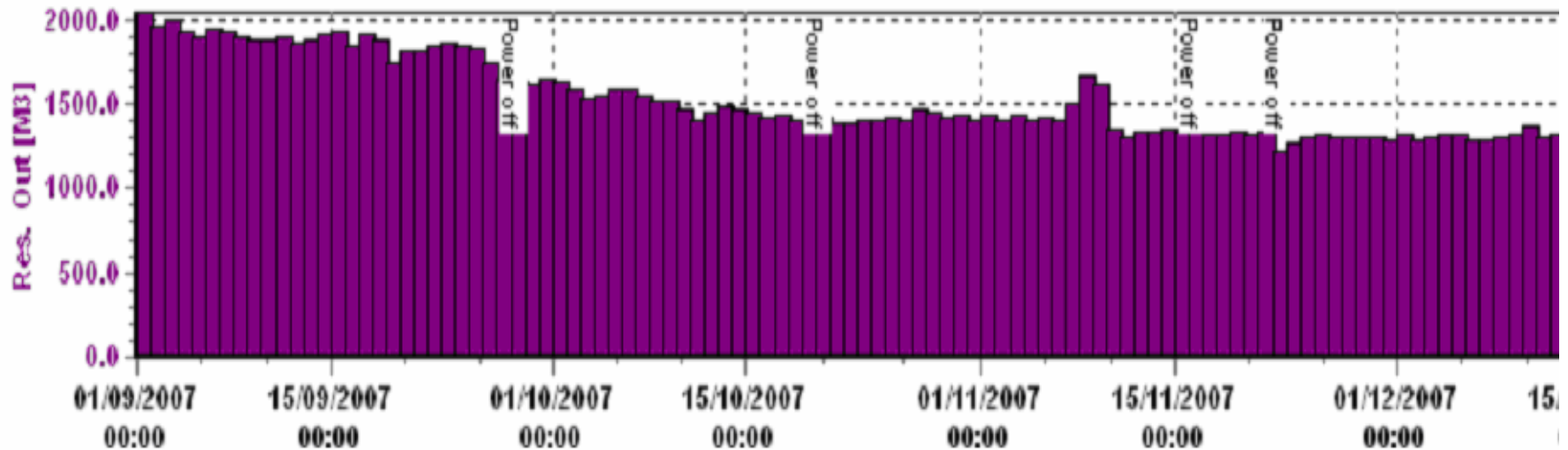
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# Thomastown Pilot Project

- **55% leaks on private side**
    - housing estates, non domestic supplies, private dwellings
  
  - **3 Stage Waste Water Notice Procedure**
    1. Notification of leak detected on consumer property. Requests leak be repaired within 7 days.
    2. Referencing consumer responsibilities under current legislation, warning issued detailing possible meter installation for billing purposes if leak not repaired within 7 days.
    3. Notification that meter has been installed, billing for excess water usage to commence in 14 days if leak is not repaired.
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# Thomastown Pilot Project

- Future Works
  - Active Leak Detection and Repair (5<sup>th</sup>, 6<sup>th</sup> pass)
  - Pressure Management (Installation of PRV's.)
  - Private Side Leak Repair (Waste Water Notice Procedure)
  - Demand Management (Non domestic metering + water saving devices)



Sept 07

Dec 07

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# Benefits of Water Conservation Project

- Up to date mapping system of infrastructure
  - Reduced level of UFW
  - Rehabilitation Strategy – mains network replacement
  - Trained staff with up to-date methods, equipment and software to find leaks
  - Manage the network versus fire fighting
  - Long term cost benefit to Local Authorities - **Reduction in Capital and Operating Costs**
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Questions?

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