

## Workshop 2d:

### Affordable water for affordable housing

Speaker: Paul Ciniglio & Neil Sephton, First Wessex  
 Chaired by: Alex Dixon  
 Room: Charlecote Room



National Housing Maintenance Forum



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## Affordable Water for Affordable Housing

NHMF conference – 21<sup>st</sup> January 2014  
**The First Wessex approach**  
 Paul Ciniglio & Neil Sephton








## Presentation will cover:

- About First Wessex
- The need for action (environmental, social & economic)
- Where water is used in the home (hot & cold supplies)
- Cost effective water saving measures
- Green Living Advisor service
- Harvesting rain water & recycling grey water
- Office water saving project




## About First Wessex

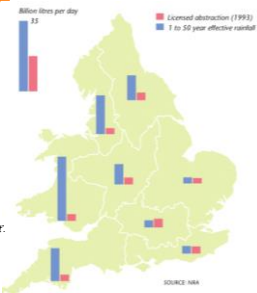


- Hampshire and Surrey based HA
- Formed 2007
- 20,000 existing housing assets
- Build around 500 new homes each year
- Part of Wayfarer consortium of HA's
- £35m pa RR&PM spend
- Sustainability
  - Our residents use approx 7,000,000 litres of potable water every day!

## The need for action - environmental

- Effective rainfall and licensed abstraction.
- Greatest use of water is in South East.
- SE is designated by Environment Agency as in 'serious water stress'.
- Development / population growth.
- Climate change adaptation

*Did you know?*  
 '10 of the hottest years on record have all occurred since 1998'.  
 'Areas of the Sudan receive more annual rainfall than the South East.'

## Don't throw it away!

WE EACH USE ON AVERAGE AROUND

# 150 LITRES

OF WATER A DAY FOR COOKING, CLEANING, WASHING AND DRINKING.






## The need for action - social

- Compulsory metering retrofits are here:
  - Southern Water (commenced 2010 = 40%, 487K meters by 2015 = 92%)
  - South East Water (commenced 2001; 200K meters by 2015 = 70%, 2020 = 90%)
  - Portsmouth Water (only under certain conditions)
- Meter installation reduces consumption 10%
- Financial squeeze on households over 2-3 persons

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## Typical water supply & sewage costs

Water Authority	Year	Pence / Cubic M			Year	Pence / Cubic M		
		Water	Sewage	Total		Water	Sewage	Total
South West	2013	195.84	330.74	526.58	2023	319.00	538.74	857.74
Wessex Water	2013	205.39	177.66	383.05	2023	334.56	289.39	623.95
Welsh Water	2013	130.32	160.86	291.18	2023	212.28	262.02	474.30
Anglian	2013	144.69	158.04	302.73	2023	235.68	257.43	493.12
Southern Water	2013	113.40	208.00	321.40	2023	184.72	338.81	523.53
United Utilities	2013	158.70	126.40	285.10	2023	258.51	205.89	464.40
Yorkshire	2013	118.00	141.90	259.90	2023	192.21	231.14	423.35
Severn Trent	2013	152.20	92.20	244.40	2023	247.92	150.18	398.10
Thames	2013	122.63	64.73	187.36	2023	199.75	105.44	305.19
<b>Average</b>	<b>2013</b>	<b>149.02</b>	<b>162.28</b>	<b>311.30</b>	<b>2023</b>	<b>242.74</b>	<b>264.34</b>	<b>507.07</b>

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## The need for action - economic

- Cost for supply and disposal of cubic metre
  - Currently on average £3.20/m3
  - Projected cost by 2030 £?/m3
- Average metered water supply utility bill cost per household £390/pa (across industry?)
- Presently based on a family of five using 504 l/p/d it could be £670 p.a., by 2030?
- Rateable to metered can often double water bill, impact of welfare reforms on benefits.

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## The target and the solution

- DEFRA's target is to reduce water use per capita to **130 l/p/d by 2030**.

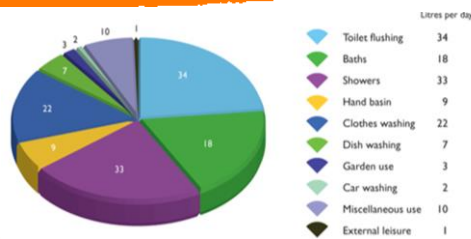
To achieve this

- **Water demand management**
- **Water use efficiency**

is required.

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## So where does it go?



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## Green living Advisor service

- General overview and how water fits in to service
  - Free visits to our residents
  - Water, energy & money saving advice
  - Build relationship and trust
  - Water debt:
    - WaterSure & support tariffs
    - Level of debt...
  - Behaviour change:
    - Baby steps better than no steps, 'drip' feed...



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## One-off measures to save water

- Cistern displacement devices
- Tap Aerators
- Flow reducing shower heads
- Dual flush cistern/toilet
- Water butts
- Water efficient appliances
- Rainwater harvesting & grey water recycling



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## Table of costs and savings

Water/energy saving shower head	£5-10		Mixer showers with flow over 8L/minute Family of 4 saves £160
Shower flow restrictor valve	£1		Works as shower head
Shower timer	£0.60		Help people manage length of shower: 5 minutes uses half water & energy of 10 minutes
Tap aerators	£2		save 7,000 litres per year and £20

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## Behaviour change advice

- What's installed **may** be relatively efficient
- But how you use it might not...

Savings location	Estimate of water used in litres per day		Total water related saving	
	Prior to visit	Post visit	Litres per day	£ per year
Turn the tap off when cleaning teeth	75	10	65	69
Reduce the number and length of showers	600	280	320	340

Savings location	Estimate of energy used in kWh per day		Total water-energy related saving	
	Prior to visit	Post visit	kWh per day	£ per year
Reduce the number and length of showers	22.5	9.83	12.67	632

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## Rain water harvesting

- Not normally viable for retrofit
- Code requirements
- Permits greater flow rates
- 40% more carbon intensive to install than mains water
- Typical costs £3,500-5,000 per home
- Hampshire case study reduced potable water use by approx. 35%
- Maintenance issues, communal system

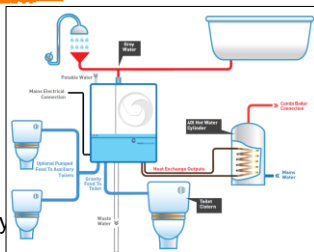


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## Grey water recycling



- Pilot of 10 systems.
- Coincide with bathroom replacements.
- Targets larger homes.
- Monitored over 2 yrs.
- Saving potential?
- Optional heat recovery



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## First Wessex-Southern Water Reaqua trial



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## And it's not all cold

- Heating water
  - Additional cost, energy & carbon implications
  - Typically 25% of a domestic energy bill is used for sanitary hot water (Energy Saving Trust).
    - Uninsulated dead legs, combi smart product.
  - Energy-water saving case study: Green Living visit 7th January 2014
    - Hampshire family save £1.90 & 385 litres per day through behavioural change

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## Office water saving pilot



- 1990's, 2 storey office, 115 staff
- Using 800m<sup>3</sup> water per annum
- Water audit undertaken with Southern Water
- Cost effective measures to be retrofitted
- Monitor savings and staff satisfaction
- Produce commercial water saving case study
- Encourage other businesses to replicate and save

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## And finally...

- Any questions?
- Contact details:
  - [paul.ciniglio@firstwessex.org](mailto:paul.ciniglio@firstwessex.org)
  - [neil.sephton@firstwessex.org](mailto:neil.sephton@firstwessex.org)
- Thank you for listening

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