

Appendix A

Nitrate Credit Calculations & Details

FBC Stock Water Efficiency Measures

The water efficiency stock upgrades will include:

- Toilet Upgrades
- Shower Installation over bath (where not already in situ)
- Basin tap replacements or restricted flow

Upgrade Method 1: Toilets

The litres per person per day saving (lpppd) that can be gained from an upgrade to the toilets in a property will vary depending on the age of the existing toilet/cistern.

Toilets represent 30% of a daily water consumption¹. With a Fareham average water use of 141.2 litres², toilet use (at 30%) would present 42.36 lpppd.

Typical Toilet flush (litres)		
Pre-1992 toilet	Post 1992 but not modern toilet	Modern toilet
13 litres per flush ³	8 litres per flush ⁴	6 litres per flush
Replacing a pre-1992 toilet with a modern 6 litre flush would represent a flush reduction in litres by 54% (13 vs. 6). This would then take typical water use from toilet flushing from 42.36 lpppd to 19.49 lpppd. A saving of 22.87 lpppd		
Replacing a post 1992 toilet with a modern 6 litre flush would represent a flush reduction of 25% (8 vs. 6). A saving of 10.59 lpppd		

Table A.1

Upgrade Method 2: Shower Installation (typically over-bath shower)

This upgrade will only be applicable where properties only have a bath. Water use between a bath and a shower is likely to offer a saving of 40 lpppd providing a low flow shower is installed.

Shower Installation	
A saving of 40 lpppd	
Per Property shower installation saving	
Sheltered Property (2 person)	80 lpd
General Purpose (2.4 person)	96 lpd ⁵

Table A.2

Upgrade Method 3: Basin tap replacement or restrictors

¹ www.hopespring.org.uk

² Portsmouth Water consumption figure average (2014-2018) of 145.4 lpd and Southern Water average of 137 lpd (based on a 2 person house average of 274 lpd).

³ <http://www.solutionelements.co.uk/Downloads%20copy/WCstate%20of%20the%20art.pdf>

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⁵ Continuity with Portsmouth City Council methodology (November 2019 PCC Cabinet report) with saving of 96 lpd for 2.4 person household. Translates to 40 lpppd saving

This upgrade will apply to bathroom basin and WC basin taps (i.e. hand washing/teeth brushing etc.). Not to be confused with bath or kitchen sink taps where occupants may want a quantity of water filled (so flow restriction will just extend time to fill bath/sink rather than save water use).

Normal basin taps could typically allow a flow of 10 l/m. New low flow taps give 5 l/m flow or restrictors (fitted behind taps so they can't be tampered with) give 6 l/m flow. A 5.5 l/m flow average is therefore appropriate.

Basin use (handwashing, teeth brushing, personal washing, shaving etc.) is expected to equate to 10 minutes of use pppd.

Basin Taps⁶
A standard basin tap could give 10 litres per minute flow (l/m). At 10 minutes use this would equate to 100 lpppd.
New or restricted basin taps would give approximately 5.5 l/m flow. At 10 minutes use this would equate to 55 lpppd.
A saving of 45 lpppd

Table A.3

It is estimated that the following quantum of upgrades can be made to FBC stock through the existing various stock management/upgrade processes per annum. This is based on past works to properties and what can be achieved through a more proactive approach to water efficiency (i.e. instead of fixing an old style leaking basin tap, replace all basin taps in property).

	Responsive Repairs	Planned Maintenance	Void Process	Total Installs
Toilet replacement/upgrades	15	50	25	90
Shower installations /replacements	30	60	25	115
Tap replacements	150	80	70	300

Table A.4

Potential Retrofit Savings (per annum)

	Lpppd saving	Responsive Repairs Works	Planned Works	Void Works	Total upgrades p/a	Lpppd saved
Toilet Upgrades*	10.59	15	50	25	90	953
Shower Installation	40	30	60	25	115	4,600
Basin Tap upgrades	45	150	80	70	300	13,500
Total						19,053

(*assumes cautious saving of 10.59 lpppd)

Table A.5

The Nitrate Credit Record

A 'Nitrate Credit Record' will be created to record the following: -

1. The specific address of the property
2. The upgrade measures made (in the form of a tick box)
 - Pre-1992 toilet replacement(s)
 - Post 1992 8 litre+ toilet replacement
 - Water Efficient shower fitted over bath
 - Basin taps (bathroom and WC) replaced
3. Any further credits achieved through the demolition of FBC homes
4. The upgrade measures as translated into water efficiency savings (lpppd)

The 'Nitrate Credit Record' will also record as and when credits are proposed to be used (both earmarked or committed through the planning process) and then when confirmed as being used on completion/occupation of the new homes. This will be based around: -

5. The proposed number of units/expected occupancy (2 person per specialist older person accommodation (reflecting maximum occupancy) and 2.4 per general purpose property (reflecting average Fareham occupancy))
6. The equivalent lpppd requirement for the development (on a 110 lpppd use) + a 20% buffer
7. The credit required to serve the development will be deducted from the 'credits' achieved/implemented through measures 1 to 4 above (and demonstrated prior to new development occupation)

The above points 1-4 will be recorded against all future works to FBC properties and retrospectively using the existing detailed records held for previous works to properties looking back until January 2019. It will only apply for qualifying works (i.e. where the appropriate low flow or other installations are made).