



Water Resource Management Plan Annual Report 2020-21

JUNE 2021



Contents

1.0	Executive Summary	5
2.0	Introduction	9
2.1	Independent Water Network Limited (IWNL)	9
2.2	IWNL Water Resource Zones	9
2.3	New Sites	11
3.0	Supply	14
3.1	Bulk Supply Agreements	14
3.2	Weather Events.	16
3.3	Supply Forecast	16
3.4	Levels of Service	16
4.0	Demand	18
4.1	Consumption	18
4.2	Weather Events	20
4.3	COVID 19	20
4.4	Per Capita Consumption (PCC)	21
4.5	Demand Forecast	24
4.6	Leakage	25
5.0	Headroom	33
5.1	Target Headroom	33
6.0	Customers	36
6.1	Properties	36
6.2	Occupancy Rates and Population	37
6.3	Metering	39
7.0	Forward Look	41
8.0	Glossary of Terms and Abbreviations	43



List of Tables

Table 1 Supply-demand balance (ML/d) by WRZ 2020-2021.	5
Table 2 IWNL WRZ 2020-2021.	11
Table 3 Agreed Limits to the bulk supply by WRZ and volume imported.	14
Table 4 Measured household and non-household consumption (ML/d) by WRZ 2020-21.	18
Table 5 Average water consumption using daily usage meter reads.	21
Table 6 Average per capita consumption (l/h/d) by WRZ 2020-21.	22
Table 7 Total leakage and target leakage by WRZ 2020-21.	25
Table 8 Leakage by WRZ 2020-21.	26
Table 9 Target headroom (ML/d) by WRZ using data from 2019 WRMP and WRAR 2020-21.	33
Table 10 Measured household properties by WRZ 2020-21.	36
Table 11 Measured household population by WRZ 2020-21.	37

List of Figures

Figure 1 A map of the UK illustrating the locations of IWNL's WRZ.	9
Figure 2 A map of IWNL's WRZs in the Northern region.	10
Figure 3 A map of IWNL's WRZ for Southern regions.	11
Figure 4 A map of IWNL's WRZ in the Central and South West region.	12
Figure 5 Long Croft Road (Little Stanion) water consumption comparison, UK March 2020	20
Figure 6 Long Croft Road (Little Stanion) water consumption comparison, UK lockdown announcement.	21
Figure 7 Graph illustrating the average per capita consumption (l/pp/d) by WRZ, using data from 2017-18, 2018-19, 2019-20 and 2020-21.	24
Figure 8 A graph of the distribution losses and total leakage by WZR using data from WRAR AR 2019-20 and 202-21.	29
Figure 9 A graph of the leakage (l/prop/day) by WRZ using figures from WRAR 2018-19 and 2019-20.	30



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section One:

Executive summary





1. Executive Summary; Supply-Demand Balance

Independent Water Networks' Water Resource Annual Review (WRAR) 2020-21 uses data obtained from bulk supply and customer meters to calculate the supply and demand in our Water Resource Zones (WRZ). Table 1 shows the supply-demand balance for each WRZ in 2020-2021 compared to the supply-demand balance in our 2019 Water Resource Management Plan (WRMP) submission.

For all zones, the supply-demand balance is in surplus.

TABLE 1 SUPPLY-DEMAND BALANCE (ML/d) BY WRZ 2020-2021.

IWNL WATER RESOURCE ZONE	INCUMBENT WATER RESOURCE ZONE	SUPPLY-DEMAND BALANCE (ML/D)		
		ESTIMATE	ACTUAL	DIFFERENCE
Oakwood Park	Affinity Water, Brett	NAV Licence not awarded in 2019 WRMP	0.23	NAV Licence not awarded in 2019 WRMP
Martello Lakes	Affinity Water, Dour	0.46	0.47	0.01
Bidwell West	Affinity Water, Lee	1.09	0.04	-1.05
Nestles Avenue	Affinity Water, Pinn	NAV Licence not awarded in 2019 WRMP	1.44	NAV Licence not awarded in 2019 WRMP
Bishop's Stortford	Affinity Water, Stort	0.87	0.96	0.09
Greetwell Fields	Anglian Water, Central Lincolnshire	NAV Licence not awarded in 2019 WRMP	0.51	NAV Licence not awarded in 2019 WRMP



6 IWNL Water Resource Management Plan, Annual Report 2020 - 2021

Prebend Lane	Anglian Water, Central Lincolnshire	NAV Licence not awarded in 2019 WRMP	0.31	NAV Licence not awarded in 2019 WRMP
Brooklands + Broughton Grounds Lane	Anglian Water, Ruthamford Central	0.75	0.85	0.10
Great Billing	Anglian Water, Ruthamford Central	0	0.02	0.02
Long Croft Road (Little Stanion)	Anglian Water, Ruthamford North	0.24	0.21	-0.03
Priors Hall	Anglian Water, Ruthamford North	2.36	2.43	0.07
Clipstone Park	Anglian Water, Ruthamford South	2.78	2.49	-0.29
Cowdray Centre	Anglian Water, South Essex	NAV Licence not awarded in 2019 WRMP	0.28	NAV Licence not awarded in 2019 WRMP
Parklands	Bristol Water, WRZ	NAV Licence not awarded in 2019 WRMP	0.69	NAV Licence not awarded in 2019 WRMP
Newmarket Road	Cambridge Water, Cambridge	NAV Licence not awarded in 2019 WRMP	1.59	NAV Licence not awarded in 2019 WRMP
Limebrook Way	Essex and Suffolk Water, Essex	NAV Licence not awarded in 2019 WRMP	0.30	NAV Licence not awarded in 2019 WRMP
Malyons Lane	Essex and Suffolk Water, Essex	NAV Licence not awarded in 2019 WRMP	0.61	NAV Licence not awarded in 2019 WRMP
Lambton Park	Northumbrian Water, Kielder	NAV Licence not awarded in 2019 WRMP	0.15	NAV Licence not awarded in 2019 WRMP
Throckley	Northumbrian Water, Kielder	NAV Licence not awarded in 2019 WRMP	0.28	NAV Licence not awarded in 2019 WRMP
Blythe Valley	Severn Trent Water, Strategic Grid	NAV Licence not awarded in 2019 WRMP	0.23	NAV Licence not awarded in 2019 WRMP
Europa Way	Severn Trent Water, Strategic Grid	NAV Licence not awarded in 2019 WRMP	0.25	NAV Licence not awarded in 2019 WRMP
Oakham North*	Severn Trent, Rutland	0.04	0.20	0.16
Chilmington Green	South East Water, Ashford	2.39	2.74	0.35



Cockering Road	South East Water, WRZ8	NAV Licence not awarded in 2019 WRMP	0.44	NAV Licence not awarded in 2019 WRMP
North Whiteley	Southern Water, Southampton East, Hampshire	NAV Licence not awarded in 2019 WRMP	0.56	NAV Licence not awarded in 2019 WRMP
NES Crawley	Southern Water, Sussex North	0.45	0.04	-0.41
Ebbsfleet, Castlehill	Thames Water, London	0.34	0.33	0.01
GMV	Thames Water, London	0.4	0.43	0.03
Kings Cross	Thames Water, London	1.51	2.74	1.23
The Bridge	Thames Water, London	0.04	0.01	0.03
Berryfields	Thames Water, Slough, Wycombe and Aylesbury	0.53	0.72	0.19
Breary Lane	Yorkshire Water, Grid Surface Water Zone	NAV Licence not awarded in 2019 WRMP	0.32	NAV Licence not awarded in 2019 WRMP
Brough	Yorkshire Water, Grid Surface Water Zone	NAV Licence not awarded in 2019 WRMP	0.18	NAV Licence not awarded in 2019 WRMP
City Fields	Yorkshire Water, Grid Surface Water Zone	NAV Licence not awarded in 2019 WRMP	0.74	NAV Licence not awarded in 2019 WRMP
Heathlands	Yorkshire Water, Grid Surface Water Zone	NAV Licence not awarded in 2019 WRMP	0.51	NAV Licence not awarded in 2019 WRMP
Manse Farm	Yorkshire Water, Grid Surface Water Zone	NAV Licence not awarded in 2019 WRMP	0.12	NAV Licence not awarded in 2019 WRMP
Minster Way	Yorkshire Water, Grid Surface Water Zone	NAV Licence not awarded in 2019 WRMP	0.91	NAV Licence not awarded in 2019 WRMP
Pitty Close Farm	Yorkshire Water, Grid Surface Water Zone	0.22	0.21	-0.01

*IWNL's BSA is with Severn Trent Water, however it is through a bulk supply agreement they have with Anglian Water which is within Anglian Water's Ruthamford North water resource zone.



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section Two:

Introduction



2.0 Introduction

2.1 Independent Water Networks

Independent Water Networks (IWNL) is a subsidiary company within the BUUK Infrastructure group of companies. We refer to these companies in the document as the "Group".

The Group is involved in project acquisition, management, design, construction, ownership, operation, and maintenance of utility networks and associated site infrastructure, serving new developments throughout the UK mainland.

The Group focuses primarily on the new build market and is the leading independent utility and infrastructure provider in the UK.

The Group has broadly divided its activities between the regulated ownership of utility network assets and the unregulated provision of utility infrastructure and asset management services. The Group owns assets at over 7,000 sites across England, Scotland and Wales which include gas, electric, water, wastewater, district heating and fibre networks. IWNL only forms a small part of the Group, with 56 sites currently live. The water resource zones of the live sites are highlighted in Figure 1 below.

2.2 IWNL Water Resource Zones

A Water Resource Zone (WRZ) is defined as the largest area in which all water resources can be shared and has the same supply risk and levels of service for the customers within it. Due to the nature of IWNL, we have 56 WRZs which are shown in the figure below relative to the incumbent resource they sit in.



FIGURE 1 A MAP OF THE UK ILLUSTRATING THE LOCATIONS OF IWNL'S WRZS.





FIGURE 2 A MAP OF IWNL'S WRZS IN THE NORTHERN REGION.



FIGURE 3 A MAP OF IWNL'S WRZS FOR SOUTHERN REGIONS.



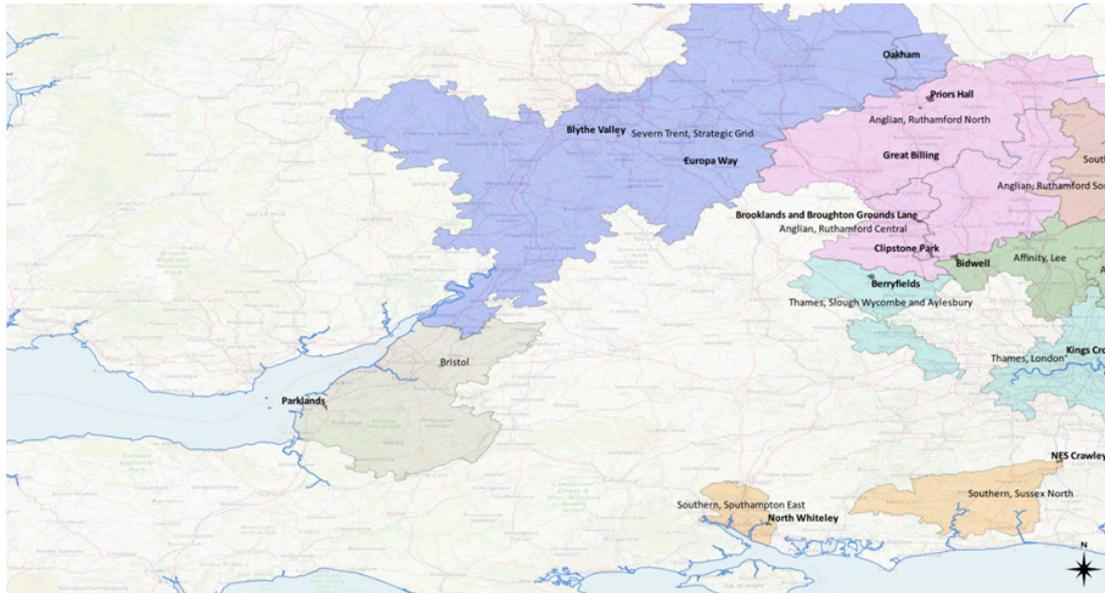


FIGURE 4 A MAP OF IWNL'S WRZS IN THE CENTRAL AND SOUTH WEST REGION.

2.3 New Sites

In 2020-2021 31 new IWNL WRZs went live. Details of the sites are shown in Table 2. There are currently no customers residing in the following new sites: Factory Lane, Naisberry Farm, Colney Lane, Manor Road, St Giles Park, Shopwhykes Lakes, Nightingale Quarter, Watery Lane, Sutton Road, Deer Park, Church Lane, Cookridge

Drive, Market Place, Stumpcross Lane and Wheatley Hall Road. Sites without customers are not included in this report as there will be no data on household consumption.

No changes have been made to our WRZs' boundaries.

TABLE 2 IWNL WRZ 2020-2021.

IWNL WATER RESOURCE ZONE	DATE AWARDED	DATE COMMENCED	CONTRACT DATE
Oakwood Park	26/02/2020	14/09/2020	Indefinite
Martello Lakes	11/09/2015	23/10/2015	Indefinite
Bidwell West	19/01/2018	06/06/2019	Indefinite
Nestle's Avenue	02/05/2020	08/06/2020	Indefinite
Bishop's Stortford	26/04/2018	20/05/2019	Indefinite
Greetwell Fields	08/11/2020	08/11/2020	March 2042 with option to extend
Prebend Lane	09/02/2019	06/09/2020	March 2042 with option to extend
Brooklands	21/12/2009	17/12/2009	Indefinite
Great Billing Way	10/03/2008	04/09/2008	22 Years with option to extend



Long Croft Rd (Little Stanion)	23/10/2007	30/06/1905	23 years with option to extend
Priors Hall	10/12/2007	04/02/2008	22 years with option to extend
Clipstone Park	24/04/2019	27/06/2019	March 2042 with option to extend
Cowdray Centre	20/09/2019	24/07/2020	March 2042 with option to extend
Parklands	25/07/2020	02/06/2020	Indefinite
Newmarket Road	19/11/2019	22/04/2020	25 years with option to extend
Limebrook Way	29/03/2019	09/07/2019	31/03/2023 and can extend
Malyons Lane	23/09/2019	11/09/2019	Indefinite
Lambton Park	27/11/2019	25/10/2019	Indefinite
Throckley	13/07/2018	26/06/2019	Indefinite
Blythe Valley	07/12/2018	07/05/2019	23 Years and can extend
Europa Way	26/07/2018	07/04/2018	23 Years and can extend
Oakham North	13/08/2012	14/08/2012	23 years with option to extend
Chilmington Green	27/03/2018	20/03/2018	Only discharge agreement available
Cockering Road	17/09/2018	27/06/2019	20 Years and can extend
North Whiteley	11/07/2019	12/06/2019	Indefinite
NES Crawley	21/08/2015	20/04/2017	Indefinite
Ebbsfleet, Castle Hill	08/04/2016	15/02/2021	Indefinite
GMV	13/11/2013	02/01/2015	Indefinite
King's Cross Central	25/06/2010	25/06/2010	Indefinite
The Bridge	24/02/2010	25/02/2010	Indefinite
Berryfields	07/09/2010	22/06/2010	Indefinite
Breary Lane	12/09/2019	03/12/2020	23 Years and can extend
Brough	10/08/2018	27/03/2019	23 Years and can extend
City Fields	16/10/2020	31/07/2020	Indefinite
Heathlands	12/12/2019	05/01/2020	Indefinite
Manse Farm	07/10/2019	18/03/2020	23 Years and can extend
Minster Way	27/08/2019	18/08/2020	Indefinite
Pitty Close Farm	15/08/2019	14/11/2019	23 Years and can extend



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section Three:

Supply



3.0 Supply

3.1 Bulk Supply Agreements

IWNL does not own or operate water supply sources of its own. All supplies are bulk transfers from the incumbent water companies. There are no exports out of IWNL supply areas.

The quantity of water to be made available in each WRZ has been negotiated with the incumbent water company such that no supply-demand deficit is envisaged within the 25-year planning horizon. Quantities are based on estimates of the total water requirement (baseline demand and operating losses) in

each inset area at projected final development, i.e. after all the currently proposed development is complete. Quantities are defined in terms of an annual maximum volume in m³/year, a maximum daily volume in m³/day and a maximum instantaneous flow in l/s. Values are set out in separate bulk supply agreements between IWNL and incumbent water companies. The agreed and actual import values are shown in Table 3.

TABLE 3 AGREED LIMITS TO THE BULK SUPPLY BY WRZ AND VOLUME IMPORTED.

IWNL WRZ	MAXIMUM DAILY VOLUME (ML/d)	ESTIMATE VOLUME IMPORTED (ML/D)	ACTUAL VOLUME IMPORTED (ML/D)	DIFFERENCE (ML/D)
Oakwood Park	0.24	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Martello Lakes	0.53	0.07	0.06	-0.01
Bidwell West	0.09	0.03	0.05	0.02
Nestles Avenue	0.37	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP
Bishop's Stortford	1.11	0.23	0.15	-0.08
Greetwell Fields	0.51	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Prebend Lane	0.23	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Brooklands + Broughton Grounds Lane	1.52	0.72	0.75	0.03
Great Billing	0.08	0.05	0.06	0.01
Long Croft Road (Little Stanion)	0.51	0.34	0.30	-0.04
Priors Hall	2.98	0.58	0.55	-0.03
Clipstone Park	2.57	0.09	0.10	0.01



Cowdray Centre	0.28	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Parklands	0.70	0.03	0.01	0.02
Newmarket Road	0.05	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP
Limebrook Way	0.33	0.09	0.03	-0.06
Malyons Lane	0.19	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP
Lambton Park	0.15	0.01	0.00	-0.01
Throckley	0.30	0.06	0.02	-0.04
Blythe Valley	0.28	0.08	0.05	-0.03
Europa Way	0.28	0.08	0.03	-0.05
Oakham North	0.44	0.37	0.25	-0.12
Chilmington Green	2.77	0.36	0.04	-0.32
Cockering Road	0.45	0.08	0.01	-0.07
North Whiteley	0.57	0.03	0.01	-0.02
NES Crawley	0.37	0.23	0.33	0.10
Ebbsfleet, Castlehill	0.64	0.25	0.30	0.05
GMV	0.68	0.27	0.26	-0.01
Kings Cross	3.56	1.92	0.82	-1.10
The Bridge	0.37	0.31	0.36	0.05
Berryfields	1.80	1.19	1.09	-0.10
Breary Lane	0.12	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Brough	0.28	0.03	0.02	-0.01
City Fields	0.28	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Heathlands	0.13	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Manse Farm	0.23	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Minster Way	0.23	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Pitty Close Farm	0.23	0.01	0.02	0.01

The imported volume is below the maximum daily volume for all sites.

The imported volume will increase proportionally each year until the WRZ reaches 100% developed.



3.2 Weather Events

No impact on IWNL's imports was observed due to weather events in 2020-2021 (see 4.2 for demand weather events commentary).

3.3 Supply Forecast

There are no changes to our supply forecast.

3.4 Levels of Service

A water company's target level of service is the standard of service (effectively the reliability of supply) that a customer can expect to receive. It is a form of contract between a water company and its customers. IWNL's level of service are aligned to those of the incumbent water companies.

The quantity of water to be supplied under the bulk supply agreements allow for unconstrained demand in each WRZ to be supplied both now and in the future. However, the agreements also allow for reductions in the bulk supply to be applied during drought.

IWNL's level of service is therefore effectively aligned to those of the incumbent water companies and the annual risk is unchanged throughout the planning period. We liaise with the incumbent companies and monitor risks associated with our levels of service. See Appendix A for the incumbents' and IWNL's level of service.



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section Four:

Demand



4.0 Demand

4.1 Consumption

Consumption data has been obtained from customer meters; all IWNL's properties are metered. Table 4 shows the household and non-household consumption by WRZ during 2020-2021, compared to the demand figures used in our 2019 WRMP.

TABLE 4 MEASURED HOUSEHOLD AND NON-HOUSEHOLD CONSUMPTION (ML/D) BY WRZ 2020-21.

IWNL WRZ	HOUSEHOLD CONSUMPTION 2020 - 21			NON-HOUSEHOLD CONSUMPTION 2020 - 21		
	ESTIMATE	ACTUAL	DIFFERENCE	ESTIMATE	ACTUAL	DIFFERENCE
Oakwood Park	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Martello Lakes	0.06	0.05	-0.01	0.00	0.00	0.00
Bidwell West	0.03	0.05	0.02	0.00	0.00	0.00
Nestles Avenue	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Bishop's Stortford	0.16	0.16	0.00	0.05	0.00	-0.05
Greetwell Fields	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Prebend Lane	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Brooklands + Broughton Grounds Lane	0.67	0.63	-0.04	0.02	0.03	0.01
Great Billing	0.05	0.06	0.01	0.00	0.00	0.00
Long Croft Road (Little Stanion)	0.31	0.28	-0.03	0.01	0.01	0.00
Priors Hall	0.49	0.45	-0.04	0.05	0.02	-0.03
Clipstone Park	0.09	0.10	-0.01	0.00	0.00	0.00



Cowdray Centre	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Parklands	0.03	0.01	-0.02	0.00	0.00	0.00
Newmarket Road	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP
Limebrook Way	0.09	0.03	-0.06	0.00	0.00	0.00
Malyons Lane	NAV Licence not awarded in 2019 WRMP	0.01	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.03	NAV Licence not awarded in 2019 WRMP
Lambton Park	0.01	0.00	-0.01	0.00	0.00	0.00
Throckley	0.06	0.02	-0.04	0.00	0.00	0.00
Blythe Valley	0.07	0.04	-0.03	0.00	0.01	0.00
Europa Way	0.07	0.03	-0.04	0.00	0.00	0.00
Oakham North	0.35	0.24	-0.11	0.01	0.00	-0.01
Chilmington Green	0.25	0.02	-0.23	0.08	0.00	-0.08
Cockering Road	0.07	0.00	-0.07	0.00	0.00	0.00
North Whiteley	0.03	0.01	-0.02	0.00	0.00	0.00
NES Crawley	0.22	0.31	0.09	0.00	0.01	0.01
Ebbsfleet, Castlehill	0.23	0.27	0.04	0.00	0.03	0.03
GMV	0.25	0.20	-0.05	0.00	0.02	0.02
Kings Cross	0.40	0.23	-0.17	1.43	0.53	-0.90
The Bridge	0.30	0.34	0.04	0.00	0.00	0.00
Berryfields	1.09	1.02	-0.07	0.02	0.07	0.05
Breary Lane	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Brough	0.02	0.02	0.00	0.00	0.00	0.00
City Fields	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP



Heathlands	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Manse Farm	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Minster Way	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP
Pitty Close Farm	0.01	0.01	0.00	0.00	0.00	0.00

It is expected that the consumption volume will increase until the WRZ development reaches 100%.

4.2 Weather Events

There was a heat wave in August 2020 in Southern England, where water usage did not increase. We continue to work closely with our incumbent suppliers to monitor any impact on IWNL networks.

4.3 Covid 19

The coronavirus lockdown in 2020-21 led to changes in water consumption such as water consumption moved from public spaces (gyms, offices) to domestic settings and peak demand shifted.

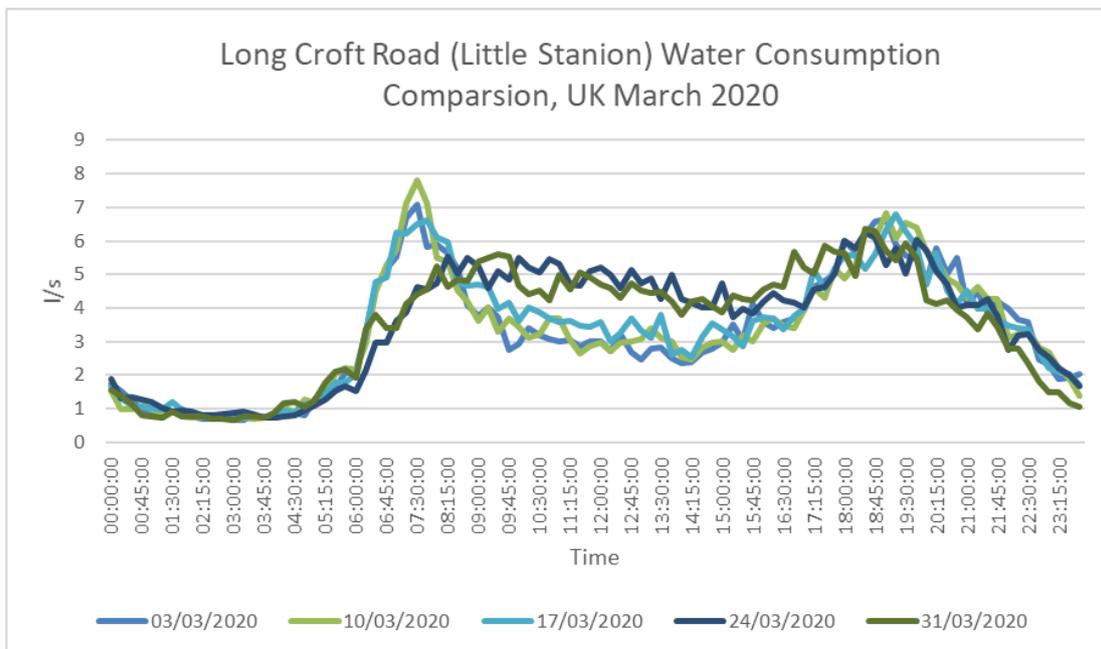


FIGURE 5 LONG CROFT ROAD (LITTLE STANION) WATER CONSUMPTION COMPARISON, UK MARCH 2020



On the evening of the 23rd March 2020, the Prime Minister announced the first lockdown in the UK, ordering people to stay at home. Following this announcement, both the time and length of peak morning demand changed; this change is illustrated in figure 5. This graph used water consumption data for each Wednesday in March 2020 from IWNL’s inset, Long Croft Road (Little Stanion). The below graph (figure 6) further highlights the change of water demand in IWNL’s inset, Long Croft Road (Little Stanion), for the days leading up to and after the nationwide lockdown announcement.

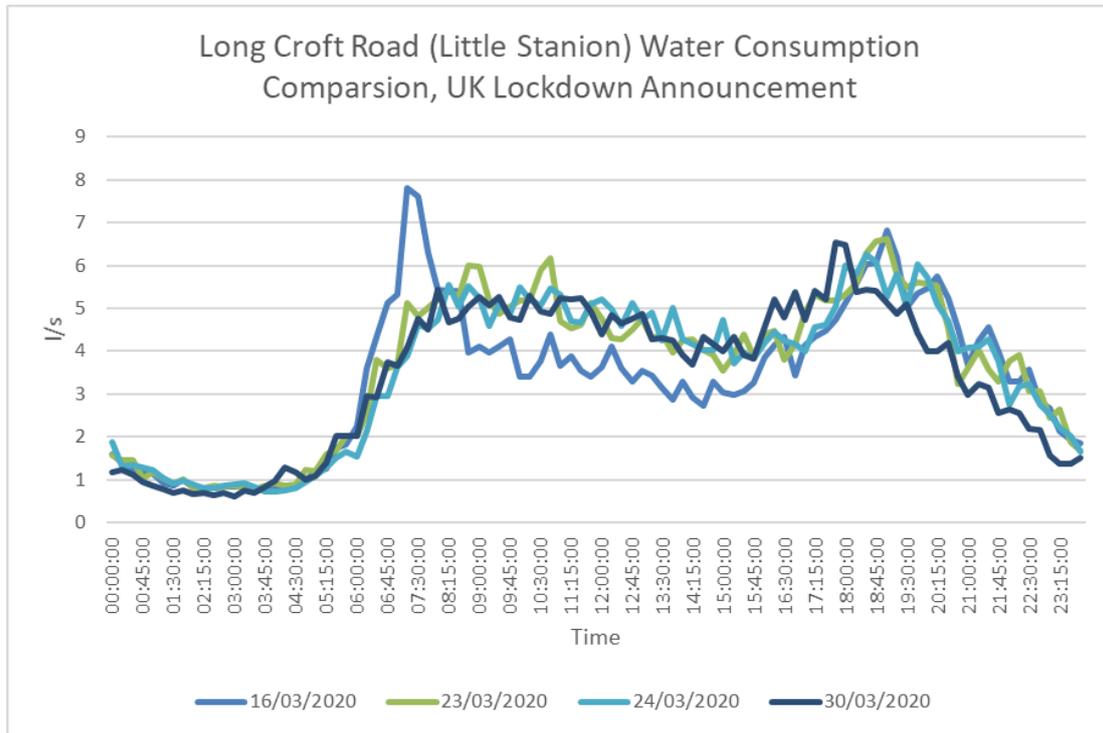


FIGURE 6 LONG CROFT ROAD (LITTLE STANION) WATER CONSUMPTION COMPARISON, UK LOCKDOWN ANNOUNCEMENT.

UK lockdown changed behaviours and routines, which led to an increase of water consumption; this can be viewed in IWNL’s insets. Table 5 shows IWNL’s average water consumption for 2019 and 2020. There was an 8.84% increase in water usage for 2020 when compared to the previous year.

TABLE 5 AVERAGE WATER CONSUMPTION USING DAILY USAGE METER READS.

YEAR	AVERAGE PROPERTY DAILY USAGE FROM METER READS, M ³ /D ¹
2019	0.286
2020	0.312

4.4 Per Capita Consumption (PCC)

Domestic demand is estimated as:

$$\text{Domestic Demand} = \text{No. of Properties} \times \text{Occupancy} \times \text{Per Capita Consumption (l/person/d)}$$

Table 5 shows the average per capita consumption (litres/per head/day) by WRZ for the 2020-21, it is compared to the PCC figures used in our 2019 WRMP.

¹ Daily usage data excluded any meters where the usage shown for the period was negative, zero, or if there was no data for 2019.

PCC calculations are based on measured data and have not changed after implementing the guidelines published by OFWAT in March 2018.

TABLE 6 AVERAGE PER CAPITA CONSUMPTION (L/H/D) BY WRZ 2020-21.

IWNL WRZ	ESTIMATE	ACTUAL	DIFFERENCE
Oakwood Park	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Martello Lakes	142.40	125.00	-17.40
Bidwell West	125.00	125.00	0.00
Nestles Avenue	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Bishop's Stortford	118.10	125.00	6.90
Greetwell Fields	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Prebend Lane	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Brooklands + Broughton Grounds Lane	140.80	122.20	-18.60
Great Billing	124.40	130.01	5.61
Long Croft Road (Little Stanion)	140.40	137.06	-3.34
Priors Hall	139.40	125.00	-14.40
Clipstone Park	125.00	125.00	0.00
Cowdray Centre	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Parklands	125.00	125.00	0.00
Newmarket Road	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Limebrook Way	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Malyons Lane	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Lambton Park	125.00	125.00	0.00
Throckley	125.00	125.00	0.00
Blythe Valley	125.00	125.00	0.00
Europa Way	125.00	125.00	0.00
Oakham North	143.40	132.92	-10.48
Chilmington Green	119.00	125.00	6.00



Cockering Road	125.00	125.00	0.00
North Whiteley	125.00	125.00	0.00
NES Crawley	140.40	125.00	-15.40
Ebbsfleet, Castlehill	141.50	125.00	-16.50
GMV	140.50	125.00	-15.50
Kings Cross	146.90	125.00	-21.90
The Bridge	144.90	159.26	14.36
Berryfields	140.40	133.32	-7.08
Breary Lane	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Brough	125.00	125.00	0.00
City Fields	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Heathlands	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Manse Farm	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Minster Way	NAV Licence not awarded in 2019 WRMP	125.00	NAV Licence not awarded in 2019 WRMP
Pitty Close Farm	125.00	125.00	0.00

The PCC is higher than expected for some of the sites, such as The Bridge. COVID-19 had an impact on water usage in domestic settings, which affected the PCC values. Figure 7 (below) illustrates the increased PCC values are partly attributed to COVID-19. Please see section 4.3 above for further details.

IWNL currently advise all customers of their water consumption on their water bills and distribute a waterwise message to our customers in a summer and winter newsletter. Additionally, we contact customers who report internal leaks to see if they have been resolved. IWNL have plans to target The Bridge and Great Billing with waterwise messages. These measures

will contribute to a reduction of consumption, and we will continue to monitor the PCC for this and all our WRZs.

Sites which are less than 70% developed have a low PCC; this is an artefact of the calculation for sites where occupancy increases throughout the year. Due to this, 125 l/h/d is used in lieu of the calculated value, unless the site is in a water stressed area where 110 l/h/d is used.

Figure 7 displays the average yearly comparison of PCC by WRZs for sites which are 70% and above developed. Rates of occupation can be viewed in Section 5.



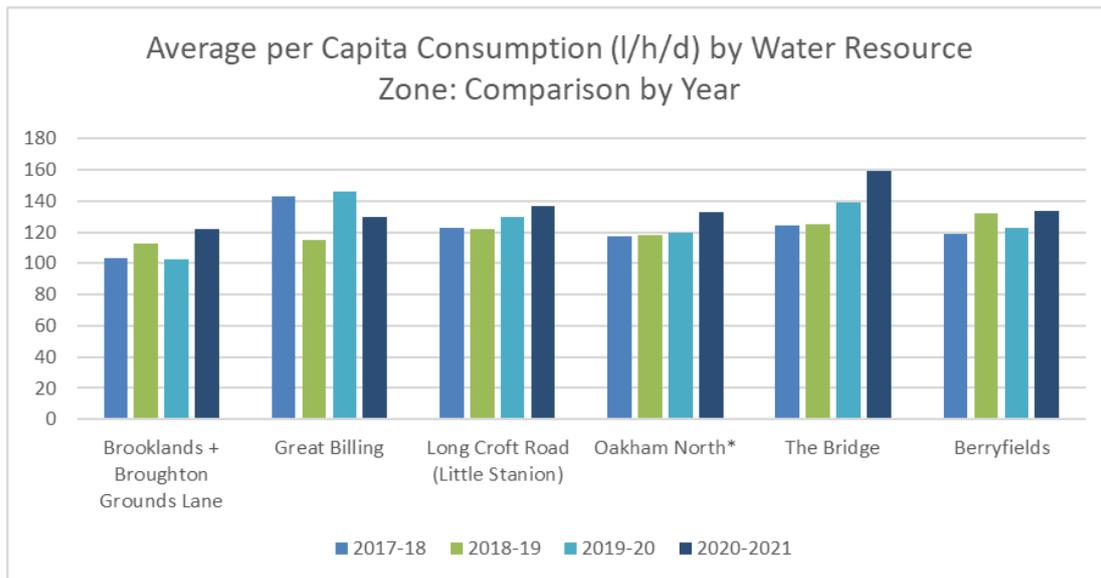


FIGURE 7 GRAPH ILLUSTRATING THE AVERAGE PER CAPITA CONSUMPTION (L/PP/D) BY WRZ, USING DATA FROM 2017-18, 2018-19, 2019-20 AND 2020-21.

IWNL promote water efficiency to our customers and are aiming to reduce PCC from the industry average to the new Government standard of 125 l/h/d for new homes. IWNL are considering environmental solutions and water recycling strategies to meet the specific water demand requirements for each inset licence appointment.

4.5 Demand Forecast

There are no changes to our demand forecast. Table 11 includes a population forecast which is based on current occupation rates and the number of properties within a WRZ, this was not included in the 2019 WRMP; this table does not change the forecast demand levels.

4.6 Leakage

Some degree of leakage from the distribution network is unavoidable. It may occur from storage facilities, transmission mains and distribution mains (often called 'distribution' or 'company-side' losses) or from service connections up to the customers' meter (sometimes called USPL or 'Underground Supply Pipe Leakage'). Leakage is normally the largest component of losses from a water supply system, but it is not the only component. Illegal connections may constitute real losses from the system, while meter inaccuracies may give rise to 'apparent'

losses as well as unrecorded meters. Together with leakage, these 'real' and 'apparent' losses make up the 'unaccounted-for water' component (UFW).

In our inset application IWNL has agreed target rates for UFW of 5% of distribution input. Most of this will be leakage and the terms 'leakage' and 'unaccounted-for water' are taken as synonymous in the context of our supply-demand balance.

Table 7 depicts the estimated of total leakage by WRZ based on registered incidents during 2020-21 and distribution losses and compares them to our WRMP19 UFW target of 5% of distribution input.



TABLE 7 TOTAL LEAKAGE AND TARGET LEAKAGE BY WRZ 2020-21.

IWNL WRZ	LEAKAGE (ML/D)	TARGET UFW (ML/D)	DIFFERENCE (ML/D)
Oakwood Park	0.00	0.00	0.00
Martello Lakes	0.00	0.00	0.00
Bidwell West	0.00	0.00	0.00
Nestles Avenue	0.00	0.00	0.00
Bishop's Stortford	0.00	0.01	-0.01
Greetwell Fields	0.00	0.00	0.00
Prebend Lane	0.00	0.00	0.00
Brooklands + Broughton Grounds Lane	0.09	0.00	0.08
Great Billing	0.00	0.00	0.00
Long Croft Road (Little Stanion)	0.02	0.02	0.00
Priors Hall	0.08	0.03	0.05
Clipstone Park	0.00	0.00	0.00
Cowdray Centre	0.00	0.00	0.00
Parklands	0.00	0.00	0.00
Newmarket Road	0.00	0.00	0.00
Limebrook Way	0.00	0.00	0.00
Malyons Lane	0.00	0.00	0.00
Lambton Park	0.00	0.00	0.00
Throckley	0.00	0.00	0.00
Blythe Valley	0.00	0.00	0.00
Europa Way	0.00	0.00	0.00
Oakham North	0.00	0.01	-0.01
Chilmington Green	0.01	0.00	0.01
Cockering Road	0.00	0.00	0.00
North Whiteley	0.00	0.00	0.00
NES Crawley	0.01	0.02	-0.01
Ebbsfleet, Castlehill	0.01	0.02	-0.01



GMV	0.04	0.01	0.02
Kings Cross	0.07	0.04	0.03
The Bridge	0.02	0.02	0.00
Berryfields	0.00	0.05	-0.05
Breary Lane	0.00	0.00	0.00
Brough	0.00	0.00	0.00
City Fields	0.00	0.00	0.00
Heathlands	0.00	0.00	0.00
Manse Farm	0.00	0.00	0.00
Minster Way	0.00	0.00	0.00
Pitty Close Farm	0.01	0.00	0.01

This table shows that there are WRZs above our UFW target. The steps we are taking to improve this are discussed below.

Table 8 sets out the estimation of measured USPL based on registered leak incidents during 2020-2021. Table 9 also illustrates the distribution losses by WRZ based on the difference between bulk supply and customer meters between 2020-21, compared to the figures used in our 2019 WRMP.

TABLE 8 LEAKAGE BY WRZ 2020-21.

IWNL WRZ	DISTRIBUTION LOSSES (ML/D)			TOTAL LEAKAGE (ML/D)			LEAKAGE (L/PROP/DAY)
	ESTIMATE	ACTUAL	DIFFERENCE	ESTIMATE	ACTUAL	DIFFERENCE	
Oakwood Park	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Martello Lakes	0.00	0.00	0.00	0.00	0.00	0.00	17.65
Bidwell West	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nestles Avenue	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	0.00
Bishop's Stortford	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greetwell Fields	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	0.94



Prebend Lane	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Brooklands + Broughton Grounds Lane	0.03	0.07	0.04	0.03	0.09	0.06	99.99
Great Billing	0.00	0.00	0.00	0.00	0.00	0.00	3.35
Long Croft Road (Little Stanion)	0.01	0.01	0.00	0.01	0.02	0.01	19.28
Priors Hall	0.02	0.07	0.05	0.03	0.08	0.05	51.91
Clipstone Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cowdray Centre	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Parklands	0.00	0.00	0.00	0.00	0.00	0.00	35.20
Newmarket Road	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Limebrook Way	0.00	0.00	0.00	0.00	0.00	0.00	18.51
Malyons Lane	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Lambton Park	0.00	0.00	0.00	0.00	0.00	0.00	Not reported, insufficient connections to establish valid data
Throckley	0.00	0.00	0.00	0.00	0.00	0.00	50.57
Blythe Valley	0.00	0.00	0.00	0.00	0.00	0.00	19.45
Europa Way	0.00	0.00	0.00	0.00	0.00	0.00	5.26
Oakham North	0.01	0.00	-0.01	0.02	0.00	-0.02	0.00
Chilmington Green	0.00	0.01	0.01	0.01	0.01	0.00	139.58



Cockering Road	0.00	0.00	0.00	0.00	0.00	0.00	Not reported, insufficient connections to establish valid data
North Whiteley	0.00	0.00	0.00	0.00	0.00	0.00	107.76
NES Crawley	0.01	0.00	-0.01	0.01	0.01	0.00	10.81
Ebbsfleet, Castlehill	0.01	0.00	-0.01	0.01	0.01	0.00	7.75
GMV	0.01	0.03	0.02	0.01	0.04	0.03	47.72
Kings Cross	0.08	0.07	-0.01	0.09	0.07	-0.02	65.78
The Bridge	0.01	0.02	0.01	0.01	0.02	0.01	23.86
Berryfields	0.05	0.00	-0.05	0.06	0.00	-0.06	0.00
Breary Lane	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	0.00
Brough	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City Fields	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	0.00
Heathlands	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	0.00
Manse Farm	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Minster Way	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	NAV Licence not awarded in 2019 WRMP	0.00	NAV Licence not awarded in 2019 WRMP	Not reported, insufficient connections to establish valid data
Pitty Close Farm	0.00	0.01	0.01	0.00	0.01	0.01	Not reported, insufficient connections to establish valid data



In 2021, IWNL are required to complete an Annual Performance Report for Ofwat. Annual leakage volumes are provided in Pro forma S2: Small Company Return – Non-financial information for the 12 months to 31 March 2019. Annual Leakage is included in this return. There is no difference in the value in this report and what has been reported to Ofwat.

Bar Chilmington Green, the sites which have sufficient data for establishing leakage per property are lower than the average value reported by Discover Water for 2019-20 of 112 (l/prop/day). Across all IWNL sites the weighted average of leakage per property per day is 23.56.

Chilmington Green’s leakage values are discussed further below.

We are currently in the process of installing data loggers on all incumbents’ bulk meters that serve our sites. This will allow us to real-time monitor the water usage and trends on site, as well as enable us to respond quicker to unaccounted losses. We continue to monitor the nightline flow on each of our sites to calculate a distribution loss figure. Depending on the results from this analysis, we will deploy Gutermann Leakage equipment to identify areas of concern.

Figure 8 illustrates the data for the distribution losses and total leakage by WRZ using figures from WRMP AR 2019-20 and 2020-2021. WRZs which had a value of 0 for both distribution losses and total leakage were omitted. Distribution losses are influenced by construction activities.

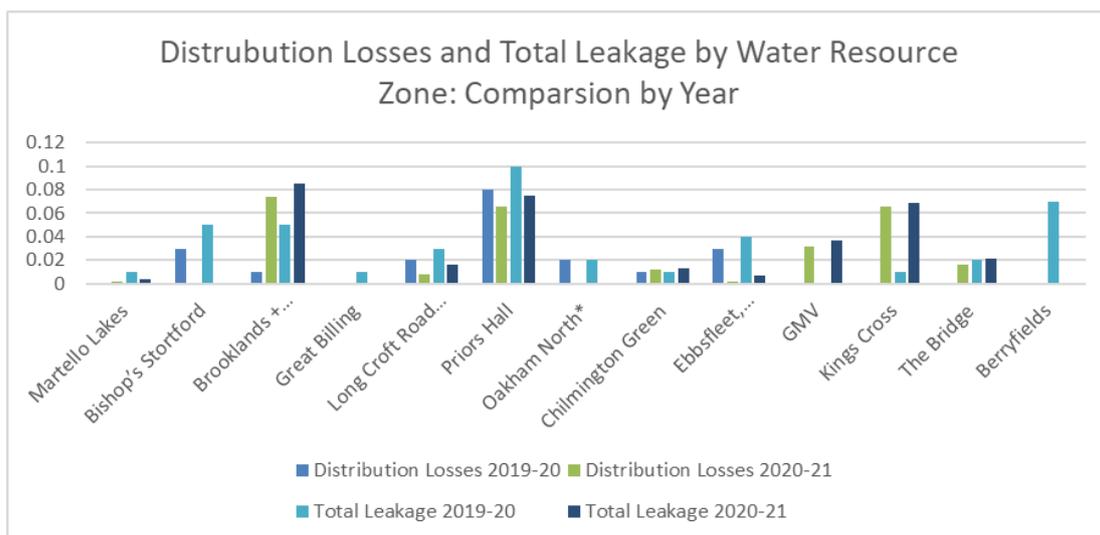


FIGURE 8 A GRAPH OF THE DISTRIBUTION LOSSES AND TOTAL LEAKAGE BY WZR USING DATA FROM WRAR AR 2019-20 AND 202-21.

Figure 9 illustrates the changes in leakage (l/prop/day) from 2018-19, 2019-20 and 2020-21 for sites which have two years’ worth of data. Total leakage includes distribution losses which are influenced by construction activities.

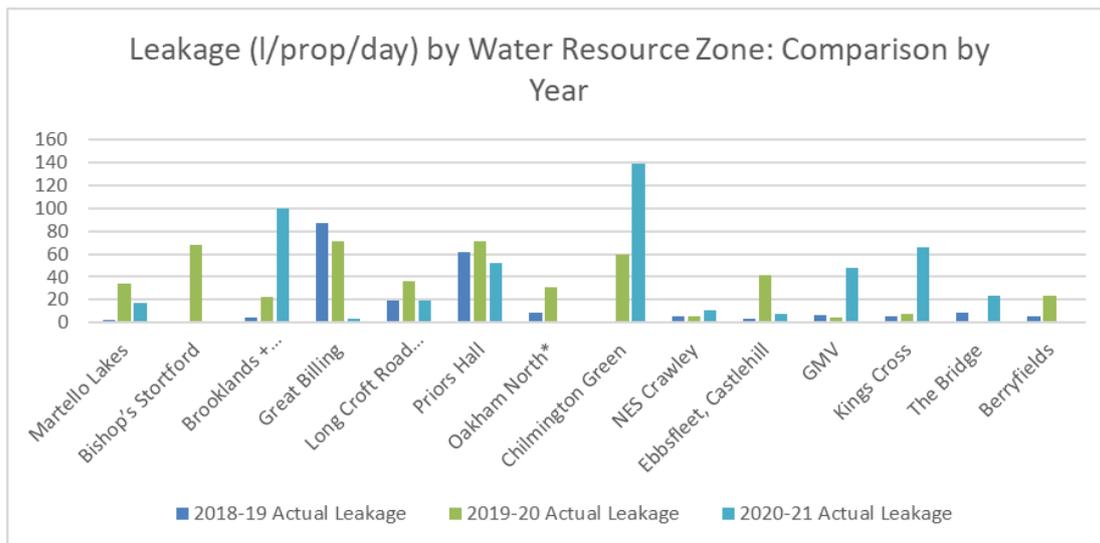


FIGURE 9 A GRAPH OF THE LEAKAGE (L/PROP/DAY) BY WRZ USING FIGURES FROM WRAR 2018-19 AND 2019-20.

Six sites have been identified with leakage values greater than the 5% target: Brooklands, The Bridge, Priors Hall, GMV, King’s Cross and Chilmington Green. The reasons for the higher-than-expected volumes vary, but it is believed that estimations used for billing purposes are the primary cause. Some degree of estimation was required for both bulk input volumes and customer consumption volumes.

Due to technical issues on the bulk meter at Priors Hall, the bulk input volume has been estimated since 2020. This estimation volume formed the basis for the distribution input and leakage calculations.

The Bridge has a higher volume of leakage than expected. The bulk meter data provided from Thames Water is used to monitor nightline flows to estimate distribution losses. The primary point of connection bulk meter has provided an estimated loss of 0% since recording started in October 2020. The secondary point of connection bulk meter has had an estimated loss of 16.76% since recording started in October 2020. This method of measuring distribution losses is hoped to be utilised next year as the data set will be complete for the year.

IWNL have identified a leak at The Bridge; this leak was confirmed by full site reads. We are in the process of using acoustic noise loggers to determine and rectify the root cause of the leak. The full site reads discovered an additional leak on the inlet of a customer’s boundary box; once the inlet was fixed, a small reduction in average monthly losses was noted. It is suspected that there is a leak on the bulk meter which is currently being

investigated.

Brooklands has a higher volume of leakage than expected. The bulk meter data is used to monitor nightline flows to estimate distribution losses. Since September 2020, estimated losses are 2.00%. This equates to 0.02 MI/day which is significantly lower than the 0.09 MI/day shown in the table above. This method of measuring distribution losses is hoped to be utilised next year as the data set will be complete for the year.

King’s Cross has a higher volume of leakage than expected. The bulk meter data is used to monitor nightline flows to estimate distribution losses. Although there have been periods of no data, the losses have been estimated to be 0% between April 2020 to July 2020, and 0% for October 2020 to February 2021. This method of measuring distribution losses is hoped to be utilised next year as the data set will be complete for the year.

The distribution input volume for King’s Cross which is used for billing, is believed to be over-estimated during this period. King’s Cross has a large proportion of non-domestic properties which would have consumed less water throughout the Covid-19 pandemic lockdown.

For GMV and Chilmington Green, IWNL will be investigating these figures further by collecting bulk and customer meter reads to calculate the loss. Both sites, particularly Chilmington Green, are infant sites and it is therefore possible that there are unrecorded meters on site which would contribute to the leakage total.

IWNL have made progress with installing data loggers on the incumbents' bulk meters. Real time access to flow data allows us to monitor nightline flows and estimate leakage volumes across our sites. The difference between minimum nightline flow and assumed nightline consumption will give an estimated value of distribution losses. Using the bulk meter data to monitor nightline flows across the sites where the loggers are installed, it has been estimated that the overall losses are 2.0% using our most recent monthly analysis of distribution input. This method of measuring distribution losses is hoped to

be utilised next year as there will be sites which will have complete 12-month data sets.

IWNL continue to improve our analysis and monitoring of leakage.



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section Five:

Headroom



5.0 Headroom

5.1 Target Headroom

There are no changes to our forecast target headroom. Table 9 shows the target headroom by WRZ.

TABLE 9 TARGET HEADROOM (ML/D) BY WRZ USING DATA FROM 2019 WRMP AND WRAR 2020-21.

IWNL WRZ	AVAILABLE HEADROOM (ML/D)		
	ESTIMATION	ACTUAL	DIFFERENCE
Oakwood Park	NAV Licence not awarded in 2019 WRMP	0.23	NAV Licence not awarded in 2019 WRMP
Martello Lakes	0.46	0.47	0.01
Bidwell West	1.10	0.04	0.04
Nestles Avenue	NAV Licence not awarded in 2019 WRMP	0.36	NAV Licence not awarded in 2019 WRMP
Bishop's Stortford	0.88	0.96	0.08
Greetwell Fields	NAV Licence not awarded in 2019 WRMP	0.50	NAV Licence not awarded in 2019 WRMP
Prebend Lane	NAV Licence not awarded in 2019 WRMP	0.23	NAV Licence not awarded in 2019 WRMP
Brooklands + Broughton Grounds Lane	0.80	0.77	-0.03
Great Billing	0.01	0.02	0.01
Long Croft Road (Little Stanion)	0.26	0.21	-0.05
Priors Hall	2.40	2.43	0.03
Clipstone Park	2.79	2.47	0.32
Cowdray Centre	NAV Licence not awarded in 2019 WRMP	0.27	NAV Licence not awarded in 2019 WRMP
Parklands	0.67	0.69	0.02
Newmarket Road	NAV Licence not awarded in 2019 WRMP	0.04	NAV Licence not awarded in 2019 WRMP
Limebrook Way	1.08	0.30	-0.78



Malyons Lane	NAV Licence not awarded in 2019 WRMP	0.18	NAV Licence not awarded in 2019 WRMP
Lambton Park	0.14	0.15	0.01
Throckley	0.24	0.28	0.04
Blythe Valley	0.61	0.23	-0.38
Europa Way	1.04	0.25	-0.79
Oakham North	0.07	0.19	0.12
Chilmington Green	2.41	2.73	0.32
Cockering Road	1.50	0.44	-1.06
North Whiteley	1.51	0.56	-0.95
NES Crawley	0.46	0.04	-0.42
Ebbsfleet, Castlehill	0.39	0.34	-0.05
GMV	0.41	0.42	0.01
Kings Cross	1.64	2.74	1.10
The Bridge	0.06	0.01	-0.05
Berryfields	0.61	0.71	0.10
Breary Lane	NAV Licence not awarded in 2019 WRMP	0.12	NAV Licence not awarded in 2019 WRMP
Brough	0.25	0.18	-0.07
City Fields	NAV Licence not awarded in 2019 WRMP	0.27	NAV Licence not awarded in 2019 WRMP
Heathlands	NAV Licence not awarded in 2019 WRMP	0.13	NAV Licence not awarded in 2019 WRMP
Manse Farm	NAV Licence not awarded in 2019 WRMP	0.22	NAV Licence not awarded in 2019 WRMP
Minster Way	NAV Licence not awarded in 2019 WRMP	0.22	NAV Licence not awarded in 2019 WRMP
Pitty Close Farm	0.22	0.21	-0.01

The data used to forecast target headroom for the 2019 WRMP has been applied to the new WRZs for WRAR 2020-21.



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section Six:

Customers



6.0 Customers

6.1 Properties

Table 10 details the completed household and non-household plots alongside the number of connections there will be at full development in each inset area.

TABLE 10 MEASURED HOUSEHOLD PROPERTIES BY WRZ 2020-21.

IWNL WRZ	HOUSEHOLD AND NON-HOUSEHOLD CONNECTIONS		
	2020-21	FINAL	CURRENT DEVELOPMENT (%)
Oakwood Park	40	301	13.29%
Martello Lakes	201	1050	19.14%
Bidwell West	364	1904	19.12%
Nestles Avenue	361	1389	25.99%
Bishop's Stortford	682	2450	27.84%
Greetwell Fields	50	500	10.00%
Prebend Lane	35	278	12.59%
Brooklands + Broughton Grounds Lane	2002	2611	76.68%
Great Billing	162	166	97.59%
Long Croft Road (Little Stanion)	874	988	88.46%
Priors Hall	1481	5152	28.75%
Clipstone Park	405	1210	33.47%
Cowdray Centre	14	262	5.34%
Parklands	67	1600	4.19%
Newmarket Road	49	1312	3.73%
Limebrook Way	177	1000	17.70%
Malyons Lane	43	500	8.60%
Lambton Park	24	400	6.00%
Throckley	90	580	15.52%
Blythe Valley	270	750	36.00%
Europa Way	167	735	22.72%



Oakham North	779	1100	70.82%
Chilmington Green	144	5750	2.50%
Cockering Road	30	750	4.00%
North Whiteley	100	1562	6.40%
NES Crawley	1075	1836	58.55%
Ebbsfleet, Castlehill	925	1352	68.42%
GMV	791	1752	45.15%
Kings Cross	1069	2667	40.08%
The Bridge	892	946	94.29%
Berryfields	3007	3642	82.56%
Breary Lane	55	319	17.24%
Brough	72	750	9.60%
City Fields	103	735	14.01%
Heathlands	54	324	16.67%
Manse Farm	39	601	6.49%
Minster Way	24	900	2.67%
Pitty Close Farm	38	250	15.20%

6.2 Occupancy Rates and Population

Table 11 shows the measured household population by heads per property (h/pr) in each WRZ. Population is estimated as the product of the number of properties multiplied by their occupancy. Occupancy has been evaluated from information held on IWNL's billing system rather than taking a uniform occupancy across all zones.

TABLE 11 MEASURED HOUSEHOLD POPULATION BY WRZ 2020-21.

IWNL WRZ	OCCUPANCY RATE (H/PR)	CURRENT POPULATION	FORECAST POPULATION AT 100% DEVELOPMENT
Oakwood Park	2.83	17.00	852.83
Martello Lakes	2.47	480.72	2588.50
Bidwell West	2.62	689.45	4991.33
Nestles Avenue	2.00	80.00	2778.00
Bishop's Stortford	2.52	1469.33	6185.32
Greetwell Fields	2.52	53.00	1261.90
Prebend Lane	2.39	55.00	664.78

Brooklands + Broughton Grounds Lane	2.54	4923.03	6620.54
Great Billing	2.40	388.07	397.66
Long Croft Road (Little Stanion)	2.39	2002.49	2360.94
Priors Hall	2.46	3562.70	12667.37
Clipstone Park	2.44	809.23	2958.21
Cowdray Centre	2.00	4.00	524.00
Parklands	2.45	83.45	3927.27
Newmarket Road	2.28	47.83	2988.44
Limebrook Way	2.40	309.16	2396.55
Malyons Lane	2.79	53.00	1394.74
Lambton Park	2.25	27.00	900.00
Throckley	2.29	185.63	1329.17
Blythe Valley	2.29	467.86	1719.44
Europa Way	2.31	272.80	1699.19
Nightingale Quarter	2.40	0.00	1886.40
Oakham North	2.31	1781.56	2541.79
Chilmington Green	2.56	243.65	14747.06
Cockering Road	1.86	46.43	1392.86
North Whiteley	2.33	63.00	3644.67
NES Crawley	2.57	2486.96	4712.13
Ebbsfleet, Castlehill	2.32	1986.69	3137.85
GMV	2.00	1543.08	3506.44
Kings Cross	1.86	1931.95	4954.34
The Bridge	2.35	2090.12	2224.13
Berryfields	2.54	7538.15	9234.42
Breary Lane	2.38	62.00	760.69
Brough	2.51	155.54	1881.58
City Fields	2.09	79.30	1533.91
Heathlands	2.04	59.12	660.46
Manse Farm	2.00	8.00	1202.00



The forecast population is based on the current occupancy rate and the number of properties in a WRZ once fully developed. This does not consider other factors such as changes to occupancy rate.

6.3 Metering

In line with Government policy, all new properties are metered using the latest AMR metering technology for domestic and commercial supplies. As a result, the total Household and Non-household Metering penetration is 100%.



WATER RESOURCE MANAGEMENT PLAN, ANNUAL REPORT 2020 - 2021

Section Seven:

Forward Look



7.0 Forward Look

IWNL have maintained a good supply-demand balance for our customers in our WRZs.

We are in the process of installing data loggers on 100% of our sites; it is hoped that the next annual review will use the data collected from these meters. The data will enable us to monitor water usage and leakage in greater detail, assist with targeted water-efficiency messages to our customers in specific zones.

We are also currently exploring more intelligent metering

solutions and the concept of "Smart Meters", this in conjunction with our data logger programme, will allow us to further refine our future analysis and aid us in our journey towards a "Smart Network". This may aid in the reduction of PCC across our network.

These activities will aid the progress of our 2019 Water Resource Management Plan.



Section eight:

Glossary of Terms and Abbreviations



8.0 Glossary of Terms and Abbreviations

AMR - Automatic Meter Reading

The technology of automatically collecting consumption and diagnostic data from water or energy meters and transferring it to a central database for billing, troubleshooting and analysis.

h/pr - Heads per property

A unit used to quantify occupancy rates.

IWNL - Independent Water Network Limited

Owned by parent company Brookfield Utilities UK.

l/h/d - Litres per head per day

A unit used to quantify per capita consumption of water; usually domestic consumption. The same as l/pp/d.

l/prop/d - Litres per property per day

A unit of demand or consumption which is often used to describe rates of leakage from the distribution network; not to be confused with l/pp/d.

l/s - Litres per second

A rate of flow.

ML/d - Megalitres per day

A rate of flow

PCC - per capita consumption

The rate of water consumption expressed as an average per head of population.

USPL - Underground Supply Pipe Leakage

Leakage occurring from the supply pipe that connects a customer's property to the water company's main.

WRMP - Water Resource Management Plan

Every five years, this statutory report is submitted which details the water company's water resource plans for the next 25 years.

WRZ - Water Resource Zone

A discrete area in which resources can be shared so that all customers experience the same risk of supply failure from a resource.

