Aglomerarea	BARCANESTI
Numar actual de locuitori 2017	10000
Numar de locuitori maxim intre 2020 si 2045:	9500

BREVIAR DE CALCUL PENTRU DEBITELE CARACTERISTICE SI DE DIMENSIONARE ALE SISTEMELOR DE ALIMENTARE CU APA SI CANALIZARE PENTRU LOCALITATEA BARCANESTI

CALCULATION NOTES FOR CHARACTERISTIC AND DIMENSIONING FLOWS OF WATER SUPPLY AND SEWERAGE SYSTEMS FOR BARCANESTI LOCALITY

(in baza studiilor specifice / based on specific studies si /and conform / according to STAS 1343 - 1 / 2006 si / and NP 133 / 2011)

CALCULUL NECESARULUI DE APA PENTRU NEVOI GOSPODARESTI / HOUSEHOLD WATER DEMAND CALCULATION

Numar total de locuitori Total number of inhabitants		q specific / flow rate	Q zi med		Q or med		K zi	Q zi max		K or	Q or max	
an / year 2014	*max (2020-2045)*	*[l/om,zi]* *[l/inh,day]*	*[m^3/zi]* *[m^3/day]*	*[l/s]*	*[m^3/h]*	*[l/s]*	-	*[m^3/zi]* *[m^3/day]*	*[l/s]*	-	*[m^3/h]*	*[l/s]*
10000	**9500**	**100**	**950.00**	**11.00**	**39.58**	**11.00**	**1.30**	**1235.00**	**14.29**	**2.00**	**102.92**	**28.59**

Valorile debitelor specifice gospodaresti si ale coeficientului de variatie zilnica (Kzi) in functie de gradul de dotare cu instalatii de apa rece, calda si canalizare.
Hosehold flow rates and daily variation coefficient (Kday), depending of endowment with water supply, heating and sewerage.

Zone sau localitati diferentiate in functie de gradul de dotare cu instalatii de apa rece, calda si canalizare Areas and localities differentiated through endowment with water supply, heating and sewerage	Debite specifice Flow rates "q" [l/om,zi] \ [l/inh,day]	Kzi \ Kday zona cu clima continentala continental climate area		Kzi - ales \ Kday - selected
		temperata temperate	excesiva excessive	
Zone in care apa se distribuie prin cismele amplasate pe strazi, fara canalizare Areas with water supply through street drinking fountains, without sewerage	50	1.50	2.00	**1.5**
Zone in care apa se distribuie prin cismele amplasate in curti, fara canalizare Areas with water supply through courtyard drinking fountains, without sewerage	55	1.40	1.80	**1.4**
Zone cu gospodarii avand instalatii interioare de apa rece, calda si canalizare, cu prepararea individuala a apei calde / Areas with water supply, hot water and sewerage systems, with individual preparation of hot water	100	1.30	1.40	**1.3**
Zone cu gospodarii avand instalatii interioare de apa rece, calda si canalizare, cu prepararea centralizata a apei calde / Areas with water supply, hot water and sewerage systems, with centralized preparation of hot water	165	1.20	1.35	**1.2**
Valori justificate prin studii specifice (q*populatia - max. 2020-2045) Values justified by studies (q*inhs - max. 2020-2045)	**100**	-	-	**1.3**

Valorile coeficientului de variatie orara (Ko) in functie de numarul total de locuitori ai localitatii / zonei de presiune
Values of hourly variation coefficient (Ko) depending on the total number of inhabitants from the locality / pressure zone

Numar total de locuitori ai localitatii/zonei de presiune considerata Total number of inhabitants from the considered locality/pressure zone	Ko (consum casnic)
<10000	2.00 … 3.00
15000	1.30 … 2.00
25000	1.30 … 1.50
50000	1.25 … 1.40
100000	1.20 … 1.30
>200000	1.15 … 1.25

Interpolare pentru calculul Ko

1	10000	2.05
10001	15000	0.00
15001	25000	0.00
25001	50000	**1.40**
50001	100000	0.00
100001	200000	0.00
200000	100000	0.00

Pe baza tabelului de mai sus, pentru un numar maxim de 9500 locuitori pentru perioada 2020-2045, rezulta, un coeficient de variatie orara Ko = 2
Based on the above table, for a maximum value of 9500 inhabitants for 2020-2045 period, hourly coefficient resulted is Ko = 2

CONSUMUL DE APA PENTRU NEVOI NON-CASNICE / NON-DOMESTIC WATER CONSUMPTION

Consum non-casnic = **907,643** [mc/an] **(pe baza studiilor specifice-NRW)**
(based on the specific studies_NRW)

Categorie de consum Type of consumption	Unitate Unit	Debite / Flows	Q zi med		K zi	Q zi max		K or	Q or max	
		l/unitate,zi *l/unit,day*	*m^3/zi* *m^3/day*	*l/s*	-	*m^3/zi* *m^3/day*	*l/s*	-	*m^3/h*	*l/s*
Alte activitati 10% * consum non-casnic 5[luni/an] ; 5[mo/yr]	global	-	605.10	7.00	1.30	786.62	9.10	2.00	65.55	18.21
TOTAL	-	-	**605.10**	**7.00**	**-**	**786.62**	**9.10**		**65.55**	**18.21**

CALCULUL DEBITELOR CARACTERISTICE PENTRU ALIMENTARE CU APA SI PENTRU CANALIZARE
CALCULATION OF CHARACTERISTIC FLOWS FOR WATER SUPLY AND SEWERAGE

Ks - coeficient de servitute, care tine seama de nevoile proprii ale obiectelor sistemului de alimentare cu apa
- coefficient depending on the technological consumption of the water supply system

Ks=1.10 - pentru sisteme avand sursa de apa de suprafata
- for systems with surface source

Ks=1.05 -pentru sisteme avand sursa subterana
-for systems with underground source

Ks =	**1.05**	(pe baza studiilor specifice-**NRW**) (based on the specific studies_**NRW**)

Kp - coeficient care tine seama de pierderile retelei de distributie
- coefficient dependig on the losses of water from the distribution network

Kp = 1.10 - pentru retelele noi
- for new networks

Kp = 1.15 - pentru retelele existente de 1…5 ani
- for existing networks, 1…5 years old

Kp = 1.35 - pentru retelele existente la care se fac reabilitari
- for existing networks with rehabilitation works

Kp =	**1.10**	(pe baza studiilor specifice-**NRW**) (based on the specific studies-**NRW**)

Valorile coeficientului adimensional (p) in functie de numarul de locuitori Values for (p) coefficient, dependig of the number of inhabitants	
Localitati sub 1000 loc. Localities under 1000 inh.	0.05
Localitati avand 1001-10000 loc. Localities with 1001-10000 inh.	0.1
Localitati avand 10001-50000 loc. Localities with 10001-50000 inh.	0.25
Localitati avand 50001-100000 loc. Localities with 50001-100000 inh.	0.35
Localitati avand peste 100000 loc. Localities over 100000 inh.	0.4

TABEL CENTRALIZATOR AL CALCULULUI DEBITELOR CARACTERISTICE
Pentru alimentare cu apa si pentru canalizare
SUMMARY TABLE FOR CALCULATION OF CHARACTERISTIC FLOWS
For water supply and sewerage

Debite caracteristice Characteristic flows	**Unitatea de masura Measuring unit**	**Consum casnic Domestic demand**	**Consum non-casnic Non-domestic demand**	***) Stropit strazi, spatii verzi Streets and green areas sprinkling**	**TOTAL GENERAL / GRAND TOTAL**
Q zi med	m^3/zi	950.00	605.10	0.00	**1555.10**
	l/s	11.00	7.00	0.00	**18.00**
Q zi max	m^3/zi	1235.00	786.62	0.00	**2021.62**
	l/s	14.29	9.10	0.00	**23.40**
Q or max	m^3/h	102.92	65.55	0.00	**168.47**
	l/s	28.59	18.21	0.00	**46.80**
Kp x Ks	1.16	1.16	1.16	1.00	**-**
p	0.10	0.10	0.10	0.10	**-**
Q or min (p x Q zi max)	m^3/h	5.15	3.28	0.00	**8.42**
	l/s	1.43	0.91	0.00	**2.34**
Qs zi med	**m^3/zi**	**1097.25**	**698.89**	**0.00**	**1796.14**
	l/s	**12.70**	**8.09**	**0.00**	**20.79**
Qs zi max	**m^3/zi**	**1426.43**	**908.55**	**0.00**	**2334.98**
	l/s	**16.51**	**10.52**	**0.00**	**27.03**
Qs or max	**m^3/h**	**118.87**	**75.71**	**0.00**	**194.58**
	l/s	**33.02**	**21.03**	**0.00**	**54.05**
Qs or min (p x Qs zi max)	m^3/h	5.94	3.79	0.00	9.73
	l/s	1.65	1.05	0.00	2.70

*) inclus in consumul non-casnic
included in non-domestic consumption

CALCULUL DEBITELOR CARACTERISTICE PENTRU CANALIZARE
CALCULATION OF CHARACTERISTIC FLOWS FOR SEWERAGE

Ipoteze de dimensionare:
***Se va lua in considerare ipoteza ce calcul in care debitul de apa uzata ajunge in proportie de 100% in reteaua de canzaliare propusa.**
***In etapa finala – grada de conectare 100%**
Astfel ca rezulta:

Denumire localitat	**Debite de calcul alimentare cu apa**			**Debite de canalizare**		
				Debit de dimensionare canalizare	Debit de dimensionare canalizare	Debit de dimensionare canalizare
	Qzi med	Qzi max	Qor. max	Quz.zi.med	Quz.zi.max	Quz.or.max
	[mc/zi]	[mc/zi]	[mc/h]	[mc/zi]	[m^3/zi]	[m^3/h]
Aglomerarea Barcanesti	1555.10	2021.62	168.47	1555.10	2021.62	168.47
						46.80 **[l/s]**

***In etapa I – se va considera un grad de conectare de 75%:**

Denumire localitat				**Debite de canalizare**		
				Debit de dimensionare canalizare	Debit de dimensionare canalizare	Debit de dimensionare canalizare
				Quz.zi.med	Quz.zi.max	Quz.or.max
				[mc/zi]	[m^3/zi]	[m^3/h]
Aglomerarea Barcanesti				1166.32	1516.22	126.35
						36.00 **[l/s]**

Etapa I–se va considera un grad de conectare de 75%: **Q[75%]= 36 mc/h**

Rezulta urmatoarele de debite de dimensionare:
1_Qcalcul pentru Statie Vacuum SV1= 24 **mc/h**
2_Qcalcul pentru Statie Vacuum SV2 = 13 **mc/h**
3_Qcalcul pentru Statie Vacuum SV3= 10 **mc/h**

Rezulta urmatoarele de debite de dimensionare:
1_Qcalcul pentruSPAU 1 = 25.2 **mc/h**
2_Qcalcul pentru SPAU 2 = 36.0 **mc/h**