Dare Co. Cape Hatteras

2022

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1. System Information

Contact Information

Water System Name:	Dare Co. Cape Hatteras	PWSID:	04-28-025
Mailing Address:	PO Box 578 Buxton, NC 27920	Ownership:	County
Contact Person:	Elliott Midgett	Title:	Plant Superintendent
Phone:	252-475-5770	Cell/Mobile:	252-423-0425
Secondary Contact:	Pat Irwin	Phone:	252-475-5603
Mailing Address:	600 Mustian Street Kill Devil Hills, NC 27948	Cell/Mobile:	252-423-0425

Complete

Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Asbestos Cement	6-8	30.00 %
Ductile Iron	16	2.00 %
Polyvinyl Chloride	2-12	68.00 %

What are the estimated total miles of distribution system lines? 81 Miles

How many feet of distribution lines were replaced during 2022? 0 Feet

How many feet of new water mains were added during 2022? 7,920 Feet

How many meters were replaced in 2022? 115

How old are the oldest meters in this system? 24 Year(s)

How many meters for outdoor water use, such as irrigation, are not billed for sewer services? 0

What is this system's finished water storage capacity? 4.2000 Million Gallons

Has water pressure been inadequate in any part of the system since last update? *Line breaks that were repaired quickly should not be included.* No

Programs

Does this system have a program to work or flush hydrants? Yes, Annually

Does this system have a valve exercise program? Yes, Annually

Does this system have a cross-connection program? Yes

Does this system have a program to replace meters? Yes

Does this system have a plumbing retrofit program? No

Does this system have an active water conservation public education program? No

Does this system have a leak detection program? No

Water Conservation

What type of rate structure is used? Increasing Block

How much reclaimed water does this system use? 0.0000 MGD For how many connections? 0

Does this system have an interconnection with another system capable of providing water in an emergency? No

2. Water Use Information

Service Area

Sub-Basin(s)	% of Service Population	County(s)	% of Service Population
Albemarle Sound (12-1)	100 %	Dare	100 %

What was the year-round population served in 2022? 5,486

What was the seasonal population and months served in 2022? (if applicable) 15,000 (Jun Jul Aug)

Has this system acquired another system since last report? No

Water Use by Type

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	5,329	0.6000	0	0.0000
Commercial	340	0.1500	0	0.0000
Industrial	0	0.0000	0	0.0000
Institutional	0	0.0000	0	0.0000

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? 0.5350 MGD

The .535MGD of process water is the amount of concentrate (reject) from our single pass brackish water RO plant. The plant operates at a recovery rate of 60%. The RO process does not require washing or rinsing so this amount is equal to that sent discharged from the treatment plant.

3. Water Supply Sources

Monthly Withdrawals & Purchases

	Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)
Jan	0.8670	1.0750	May	1.6940	2.0160	Sep	1.7140	2.0910
Feb	0.8210	1.4450	Jun	1.9360	2.2420	Oct	1.2650	2.0570
Mar	1.0600	1.9110	Jul	2.0730	2.2460	Nov	0.9550	1.3510
Apr	1.3900	2.1060	Aug	2.0150	2.2750	Dec	0.9160	2.2100

Ground Water Sources

Name or Number	Average Daily Withdrawal (MGD)		Max Day Withdrawal (MGD)	12-Hour Supply (MGD)	CUA Reduction	Year Offline	Use Type
	MGD	Days Used					
RO 1	0.0120	5	0.864	0.5760			Regular
RO 2	0.0000	0		0.6480			Regular
RO 3	0.6060	256	0.864	0.4320			Regular
RO 4	0.8620	359	0.864	0.4320			Regular
RO 5	0.0000	0	0.800	0.4000			Regular
RO 7	0.0000	0	0.331	0.1650			Regular
SW 10	0.0000	0		0.0400			Regular
SW 11	0.0420	154	0.101	0.0505			Regular
SW 12	0.0620	224	0.101	0.0505			Regular
SW 13	0.0670	243	0.101	0.0505			Regular
SW 14	0.0000	0	0	0.0400			Regular
SW 15	0.0000	0	0	0.0580			Regular
SW 16	0.0000	0	0	0.0580			Regular

SW 17	0.0270	99	0.101	0.0505	Regular
SW 19	0.0260	95	0.101	0.0505	Regular
SW 20	0.0000	0	0	0.0580	Regular
SW 21	0.0000	0	0	0.0460	Regular
SW 22	0.0000	0	0	0.0580	Regular
SW 3	0.0070	28	0.101	0.0505	Regular
SW 4	0.0000	0	0	0.0460	Regular
SW 5	0.0000	0	0	0.0460	Regular
SW 6	0.0000	0	0	0.0470	Regular
SW 7	0.0000	0	0	0.0500	Regular
SW 8	0.0000	0	0	0.0480	Regular
SW 9	0.0000	0	0	0.0430	Regular

Ground Water Sources (continued)

Name or Number	Well Depth (Feet)	Casing Depth (Feet)	Screen Depth (Feet)		Well Diameter (Inches)	Pump Intake Depth (Feet)	Metered?
			Top	Bottom			
RO 1	260	240	240	260	12	100	Yes
RO 2	276	248	248	268	10	100	Yes
RO 3	308	270	270	290	12	100	Yes
RO 4	308	245	245	265	12	100	Yes
RO 5	298	230	230	290	16	80	Yes
RO 7	205	160	160	198	12	140	Yes
SW 10	75	60	60	75	6	35	Yes
SW 11	90	70	70	90	6	60	Yes
SW 12	90	70	70	90	6	60	Yes
SW 13	90	70	70	90	6	60	Yes
SW 14	95	70	70	90	6	50	Yes
SW 15	95	70	70	90	6	50	Yes
SW 16	95	70	70	90	6	50	Yes
SW 17	95	70	70	90	6	50	Yes
SW 19	105	80	80	100	6	60	Yes
SW 20	75	65	65	75	6	35	Yes
SW 21	75	65	65	75	6	35	Yes
SW 22	90	70	70	90	6	50	Yes
SW 3	90	70	70	90	6	50	Yes
SW 4	75	60	60	75	6	35	Yes
SW 5	75	60	60	75	6	35	Yes
SW 6	75	63	63	75	6	35	Yes
SW 7	75	62	62	75	6	35	Yes
SW 8	75	62	62	72	6	35	Yes
SW 9	75	60	60	75	6	35	Yes

Are ground water levels monitored? Yes, As Needed

Does this system have a wellhead protection program? Yes

Water Treatment Plants

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Ouput Metered?	Source
Cape Hatteras Water	2.0000	Yes	Yes	Groundwater

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2022? No

If yes, was any water conservation implemented? No

Did average daily water production exceed 90% of approved plant capacity for five consecutive days during 2022? No

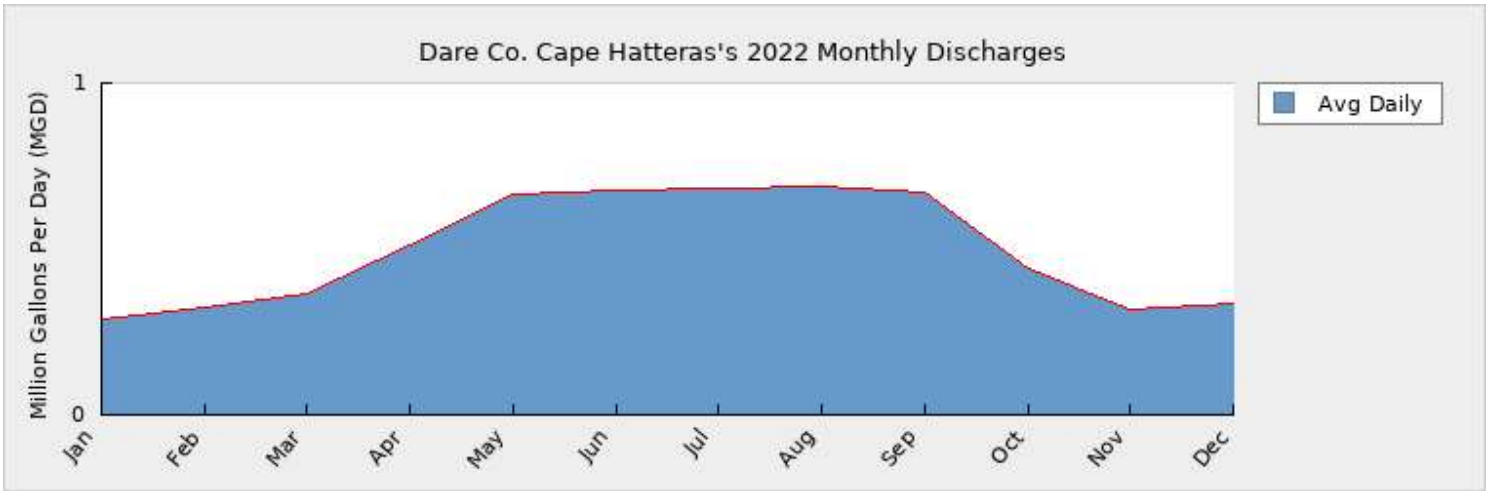
If yes, was any water conservation implemented? No

Are peak day demands expected to exceed the water treatment plant capacity in the next 10 years? No

4. Wastewater Information

Monthly Discharges

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)
Jan	0.2890	May	0.6670	Sep	0.6710
Feb	0.3250	Jun	0.6770	Oct	0.4440
Mar	0.3650	Jul	0.6850	Nov	0.3200
Apr	0.5130	Aug	0.6890	Dec	0.3340



How many sewer connections does this system have? 0

How many water service connections with septic systems does this system have? 5,669

Are there plans to build or expand wastewater treatment facilities in the next 10 years? No

Wastewater Permits

Permit Number	Type	Permitted Capacity (MGD)	Design Capacity (MGD)	Average Annual Daily Discharge (MGD)	Maximum Day Discharge (MGD)	Receiving Stream	Receiving Basin
NC0085707	WTP	2.0000	0.8570	0.5000	0.7000	Pamlico Sound	Albemarle Sound (12-1)

5. Planning

Projections

	2022	2030	2040	2050	2060	2070
Year-Round Population	5,486	6,048	6,772	7,111	7,466	7,842
Seasonal Population	15,000	16,097	16,901	17,746	18,633	19,572
Residential	0.6000	0.6320	0.6650	0.7000	0.7370	0.7750
Commercial	0.1500	0.1580	0.1660	0.1750	0.1840	0.1940
Industrial	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Institutional	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
System Process	0.5350	0.5350	0.5350	0.5350	0.5350	0.5350
Unaccounted-for	0.1030	0.1080	0.1140	0.1200	0.1260	0.1330

Future Supply Sources

Source Name	PWSID	Source Type	Additional Supply	Year Online	Year Offline	Type
Well	04-28-025	Ground	0.9500	2025		Regular

Demand v/s Percent of Supply

	2022	2030	2040	2050	2060	2070
Surface Water Supply	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ground Water Supply	3.5940	3.5940	3.5940	3.5940	3.5940	3.5940
Purchases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Future Supplies		0.9500	0.9500	0.9500	0.9500	0.9500
Total Available Supply (MGD)	3.5940	4.5440	4.5440	4.5440	4.5440	4.5440
Service Area Demand	1.3880	1.4330	1.4800	1.5300	1.5820	1.6370
Sales	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Future Sales		0.0000	0.0000	0.0000	0.0000	0.0000
Total Demand (MGD)	1.3880	1.4330	1.4800	1.5300	1.5820	1.6370
Demand as Percent of Supply	39%	32%	33%	34%	35%	36%

The purpose of the above chart is to show a general indication of how the long-term per capita water demand changes over time. The per capita water demand may actually be different than indicated due to seasonal populations and the accuracy of data submitted. Water systems that have calculated long-term per capita water demand based on a methodology that produces different results may submit their information in the notes field.

Your long-term water demand is 109 gallons per capita per day. What demand management practices do you plan to implement to reduce the per capita water demand (i.e. conduct regular water audits, implement a plumbing retrofit program, employ practices such as rainwater harvesting or reclaimed water)? If these practices are covered elsewhere in your plan, indicate where the practices are discussed here.

Are there other demand management practices you will implement to reduce your future supply needs?

What supplies other than the ones listed in future supplies are being considered to meet your future supply needs?

How does the water system intend to implement the demand management and supply planning components above?

Additional Information

Has this system participated in regional water supply or water use planning? No

What major water supply reports or studies were used for planning?

Please describe any other needs or issues regarding your water supply sources, any water system deficiencies or needed improvements (storage, treatment, etc.) or your ability to meet present and future water needs. Include both quantity and quality considerations, as well as financial, technical, managerial, permitting, and compliance issues: