TOWN OF KILL DEVIL HILLS
PUBLIC SERVICES

Post Office Box 1719, 107 Town Hall Drive
Kill Devil Hills, NC 27948
Administration (252) 480-4080 Fax (252) 441-6136
Office Hours: 8:00 a.m. – 5:00 p.m. Mon. – Fri.
Water Plant (252) 480-4090
www.kdhnc.com

STEPHEN F. ALBRIGHT
Director

DEREK A. DAIL
Assistant Director

MARCIA OLLIS
Administrative Services

ALFRED W. BURTON
Water Plant

WILLIAM H. WATERFIELD
Water Systems

L. RANDOLPH TURNER
Streets

LYNN E. LINDSEY
Solid Waste

June 14, 2023

Memorandum

To: Debora P. Diaz, Town Manager

From: Derek A. Dail, Assistant Public Services Director

Subject: **Kill Devil Hills 2022 Local Water Supply Plan**

Public Services request to the Board of Commissioners to adopt the 2022 Kill Devil Hills Local Water Supply Plan (LWSP); NC Water System I.D. 04-28-015. The LWSP plan is updated annually by Water Plant Staff and reports on present and projected population, water use, and water supplies in the Town. The LWSP is attached and is also available at: www.ncwater.org/WUDC/app/LWSP/

The North Carolina Department of Environmental Quality Division of Water Resources (NCDEQ-DWR) reviews the annual LWSP updates. NCDEQ-DWR has reviewed the Kill Devil Hills 2022 LWSP and has issued the attached memorandum, *LWSP Meets Minimum Criteria.* The memorandum states that the NCDEQ-DWR review is complete and that the 2022 Kill Devil Hills LWSP meets the minimum criteria established in NCGS 143-355 (1).

The *LWSP Meets Minimum Criteria* memorandum also requires that the Kill Devil Hills 2022 LWSP be adopted by the governing board be considered compliant with be considered compliant with NCGS 143-355(1).

The following documents are attached for consideration

- 2022 Kill Devil Hills Local Water Supply Plan
- NCDEQ-DWR Memorandum – LWSP Meets Minimum Criteria, dated May 10, 2023
- Resolution

Public Services recommends adoption of the Local Water Supply Plan.

ATTACHMENT NB-1A

Kill Devil Hills

2022

The Division of Water Resources (DWR) provides the data contained within this Local Water Supply Plan (LWSP) as a courtesy and service to our customers. DWR staff does not field verify data. Neither DWR, nor any other party involved in the preparation of this LWSP attests that the data is completely free of errors and omissions. Furthermore, data users are cautioned that LWSPs labeled **PROVISIONAL** have yet to be reviewed by DWR staff. Subsequent review may result in significant revision. Questions regarding the accuracy or limitations of usage of this data should be directed to the water system and/or DWR.

1. System Information

Contact Information

Water System Name:	Kill Devil Hills	PWSID:	04-28-015
Mailing Address:	P.O. Box 1719 Kill Devil Hills, NC 27948	Ownership:	Municipality
Contact Person:	Alfred Burton	Title:	Water Plant Supervisor
Phone:	252-480-4088	Cell/Mobile:	252-216-7298

Complete

Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Asbestos Cement	2-10	20.70 %
Ductile Iron	4-16	1.95 %
Other	16	0.24 %
Polyvinyl Chloride	2-16	77.11 %

What are the estimated total miles of distribution system lines? 81 Miles
How many feet of distribution lines were replaced during 2022? 3,525 Feet
How many feet of new water mains were added during 2022? 1,731 Feet
How many meters were replaced in 2022? 65
How old are the oldest meters in this system? 10 Year(s)
How many meters for outdoor water use, such as irrigation, are not billed for sewer services? 51
What is this system's finished water storage capacity? 1.8500 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, Semi-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? Yes
Does this system have a leak detection program? Yes

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? Yes

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? 7,691

What was the seasonal population and months served in 2022? (if applicable) 40,000 (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	6,401	1.0214	0	0.0000
Commercial	395	0.0630	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.)? 0.0261 MGD

Water Sales

Purchaser	PWSID	Average Daily Sold (MGD)	Days Used	Contract MGD	Contract Expiration	Contract Recurring	Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
Dare County Regional	04-28-030	0.0000	0	0.0000	2036	Yes	Yes	10	Emergency
Nags Head	04-28-010	0.0000	0	0.0000	2036	No	Yes	8	Emergency

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	0.8384	0.9450	May	1.3901	1.8220	Sep	1.5531	1.9240
Feb	0.8636	0.9560	Jun	1.8594	1.9010	Oct	1.2261	1.4010
Mar	0.9509	1.0120	Jul	1.9814	2.1120	Nov	1.0580	1.1370
Apr	1.2356	1.3770	Aug	1.8476	2.0870	Dec	0.9582	1.2570

Water Purchases From Other Systems

Seller	PWSID	Average Daily Purchased (MGD)	Days Used	Contract MGD	Contract Expiration	Contract Recurring	Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
Dare County Regional	04-28-030	1.3160	365	3.0000	2036	Yes	Yes	12	Regular
Nags Head	04-28-010	0.0000	0	0.0000	2036	No	No	8	Emergency

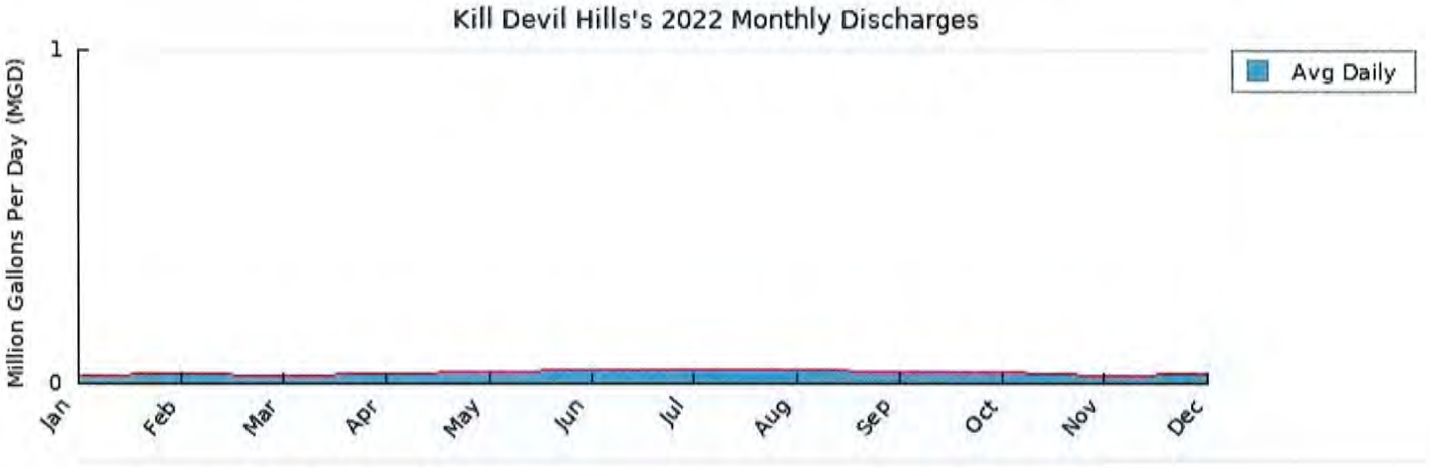
The contract with Dare County is much greater than the current demand. It is written in the contact that if the facility has exceeded 90% for two consecutive days and the towns have exceed their allocations they must pay to add additional treatment trains. Based on the Kill Devil Hills and Nags Head LWSPs, their demand will remain less than half of the contract amount through 2060.

4. Wastewater Information

Monthly Discharges

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)

Jan	0.0263	May	0.0324	Sep	0.0341
Feb	0.0289	Jun	0.0397	Oct	0.0333
Mar	0.0264	Jul	0.0439	Nov	0.0239
Apr	0.0311	Aug	0.0402	Dec	0.0318



How many sewer connections does this system have? 221

How many water service connections with septic systems does this system have? 6,368

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
NC0025313	CS	0.0700	0.0700	0.0330	0.0480	O.A. discharges to KDHWWTP	Albemarle Sound (12-1)

Ocean Acres discharges to KDHWWTP for treatment and disposal. KDHWWTP is privately owned.
NC0025313 is permit for collection system

5. Planning

Projections

	2022	2030	2040	2050	2060	2070
Year-Round Population	7,691	8,434	9,367	10,404	11,555	12,834
Seasonal Population	40,000	43,962	48,827	54,802	60,230	66,894
Residential	1.0214	1.1108	1.2337	1.3703	1.5219	1.6903
Commercial	0.0630	0.0685	0.0761	0.0846	0.0939	0.1043
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	0.0261	0.0284	0.0315	0.0350	0.0389	0.0432
Unaccounted-for	0.2055	0.2216	0.2436	0.2678	0.2943	0.3235

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Purchases	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Future Supplies		0.0000	0.0000	0.0000	0.0000	0.0000
Total Available Supply (MGD)	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000

Service Area Demand	1.3160	1.4293	1.5849	1.7577	1.9490	2.1613
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)	1.3160	1.4293	1.5849	1.7577	1.9490	2.1613
Demand as Percent of Supply	44%	48%	53%	59%	65%	72%

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 133 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? We are currently using increasing-block rate structure. We also use water auditing and meter replacement programs to help manage future water supply needs.

What supplies other than the ones listed in future supplies are being considered to meet your future supply needs? Additional information regarding water supply planning is available at www.kdhnc.com/water

How does the water system intend to implement the demand management and supply planning components above? Additional information regarding water supply planning is available at www.kdhnc.com/water

Additional Information

Has this system participated in regional water supply or water use planning? Yes, Yes, We participate with the Town of Nags Head and Dare County

What major water supply reports or studies were used for planning? We currently used our Town of Kill Devil Hills 2022 Water System Master Plan.

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:

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ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
RICHARD E. ROGERS, JR.
Director

NORTH CAROLINA
Environmental Quality

May 10, 2023

Alfred Burton, Water Plant Supervisor
Kill Devil Hills
P.O. Box 1719
Kill Devil Hills, NC 27948

Subject: LWSP Meets Minimum Criteria
Kill Devil Hills
PWSID#: 04-28-015
Dare County

Dear Alfred Burton,

This letter is to notify you that our staff has reviewed the information contained in the 2022 Local Water Supply Plan (LWSP) update submitted by your office. Since all the required information is complete, the LWSP for the 04-28-015 system hereby meets the minimum criteria established in North Carolina General Statute 143-355 (l).

Your water system's 2022 LWSP is now viewable online from the LWSP website found at: **http://www.ncwater.org/WUDC/app/LWSP/search.php**. The plan has been made available after our best efforts to screen any errors. As a final check, please review and report any mistakes or omissions to the review engineer. Unless notified otherwise, the Division of Water Resources considers your 2022 LWSP complete.

The 2022 LWSP must next be adopted by your water system's governing board; a model LWSP resolution is available online on the right side of the page in the Forms and Docs section at: **https://www.ncwater.org/Water_Supply_Planning/Local_Water_Supply_Plan/learn.php**. A copy of the signed resolution must be submitted to Linwood Peele, Water Supply Planning Section Supervisor, at the address printed at the bottom of this letter. The LWSP cannot be considered compliant with the requirements of NCGS 143-355(l) until an adopted resolution is received.

Thank you very much for your efforts to provide your customers with a safe and reliable supply of drinking water. We look forward to continuing to work with you in these efforts. Please contact Klaus Albertin at klaus.albertin@ncdenr.gov or 919-707-9035 or Linwood Peele at linwood.peele@ncdenr.gov or (919) 707-9024 if we can be of further assistance.

Sincerely,

Linwood E. Peele, Supervisor
Division of Water Resources, NCDEQ

TOWN OF KILL DEVIL HILLS

Land Where Flight Began

Resolution Adopting
Kill Devil Hills Local Water Supply Plan

WHEREAS, NCGS §143-355(l) requires that each unit of local government that provides public water service or that plans to provide public water service and each large community water system shall, either individually or together with other units of local government and large community water systems, prepare and submit a Local Water Supply Plan (LWSP); and

WHEREAS, as required by the statute and in the interests of sound local planning, a LWSP for the Town of Kill Devil Hills has been developed and submitted to the Board of Commissioners for approval; and

WHEREAS, the Board of Commissioners finds that the LWSP is in accordance with the provisions of NCGS §143-355(l) and that it will provide appropriate guidance for the future management of water supplies for the Town of Kill Devil Hills, as well as useful information to the NC Department of Environmental Quality, Division of Water Resources (Department), for the development of a state water supply plan as required by statute; now, therefore

BE IT RESOLVED by the Board of Commissioners that the 2022 Kill Devil Hills Local Water Supply Plan is hereby approved and shall be submitted to the NC Department of Environmental Quality, Division of Water Resources; and

BE IT FURTHER RESOLVED that the Board of Commissioners intends that this plan shall be revised to reflect changes in relevant data and projections at least once every five years or as otherwise requested by the Department, in accordance with the statute and sound planning practice.

This the 14th day of June, 2023.

SEAL

_____
Benjamin A. Sproul
Mayor

ATTEST:

_____
James Michael O'Dell
Town Clerk