AMERICAN
Engineering

January 13, 2022

Debora P. Diaz, Town Manager
Benjamin A. Sproul, Mayor, and
Board of Commissioners
Town of Kill Devil Hills
P. O. Box 1719
Kill Devil Hills, NC 27948

Reference: 20021 "G"– **Water System Master Plan / System Development Fees**

Honorable Mayor, Commissioners and Manager:

American Engineering Associates (American), in consultation with and on behalf of your Finance and Public Services staffs, is pleased to offer this report of our analysis to assist the Town of Kill Devil Hills in updating the cost-based justification for Water System Development Fees which we established in March, 2018, as required under NCGS 162A, Article 8, the Public Water and Sewer System Development Fee Act, adopted by the General Assembly in its 2017 session (House Bill 436). We will refer to this as the "SDF Act" for short.

§162A-203(b) of the SDF Act states, "A system development fee adopted by a local governmental unit under any lawful authority other than this Article and in effect on October 1, 2017, shall be conformed to the requirements of this Article not later than July 1, 2018." We worked with your staff in 2018 to establish a basis for the Town to conform its SDF program to the requirements of the SDF Act; this is an update to that effort, performed in conjunction with our Water System Master Plan (WSMP) work.

This letter report to you, upon your acceptance and adoption, is intended to...

- Comprise the Supporting analysis required by the SDF Act.
- Recommend changes to the WATER RATES schedule.

The SDF Act requires that its supporting analysis "constitute or be included in a capital improvements plan." One of the primary deliverables of the WSMP effort is just such a capital improvements plan.

In the following portion of the report, we recite the detail requirements in the SDF Act for a "supporting analysis," with the *verbatim* text of the Act in blue type and our response in black type.

§162A-205 of the SDF Act, entitled **Supporting Analysis**, requires the following:

> A system development fee shall be calculated based on a written analysis, which may constitute or be included in a capital improvements plan, that:
>
> (1) Is prepared by a financial professional or a licensed professional engineer qualified by experience and training or education to employ generally accepted accounting, engineering, and planning methodologies to calculate system development fees for public water and sewer systems.

This Report, and our included Supporting Analysis, is prepared by American Engineering Associates, PA and signed by Walton P. Burkhimer, Jr., P. E., a professional engineer licensed in the State of North Carolina (PE #10786), in consultation with your Finance Director, Ms. Beverly Kissinger, your Director of Public Services, Mr. Stephen Albright, and your Assistant Director of Public Services, Mr. Derek Dail, also licensed as a professional engineer in North Carolina. Collectively, we will refer to ourselves as your SDF Analysis Team. Your Team's efforts build upon the MASTER PLAN mentioned above, which include a well-reasoned Capital Improvement Program and good guidance on Rates and Fees. Your SDF Analysis Team meets the qualifications requirements of the Act.

> (2) Documents in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.

The facts and data used by your SDF Analysis Team are cited specifically in the Analysis presented below.

> (3) Employs generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods for each service, setting forth appropriate analysis as to the consideration and selection of a method appropriate to the circumstances and adapted as necessary to satisfy all requirements of this Article.

The SDF Analysis Team cites its basis for selecting the "Buy-In" method and develops its reasoning to support the SDF based on sound engineering and financial practices. The methodology is similar to that used by Kill Devil Hills' water supplier, Dare County.

> (4) Documents and demonstrates the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.

The SDF Analysis Team, in the **Findings and Recommendations** below, describes specifically and in detail its reasoning, every step of the way. Supporting calculations are attached. As an example of the care used in this process, the calculation of the proposed SDF, before multiplied by a peaking factor, was first done using a flow-per-EMU basis, similar to Dare County's consultant, and then back-checked by pro-rating the total asset value among all Equivalent Meter Units, pro-rated by meter size/capacity (see Paragraph 9.A below).

(5) Identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of conclusions reached.

For the most part, the SDF Analysis Team was able to find and rely upon factual information, rather than having to make assumptions. An exception is noted in Paragraph 5.d of our **Findings and Recommendations** below. It is not feasible to identify all assets which were contributed by developers, as most of such was done 25 to 40 years ago and some records have been lost. We have backed out the value of all such contributed assets back about 20 years; beyond that time, we have left them in at their depreciated value. Any potential inequity regarding these older assets is "washed out" by the difference between our determined supportable SDF of $7,400 per EMU versus our recommendation to set the fee at $6,000.00.

(6) Calculates a final system development fee per service unit of new development and includes an equivalency or conversion table for use in determining the fees applicable for various categories of demand.

The information presented in Paragraphs 9 and 10 of the SDF Analysis Team's **Findings and Recommendations** below does exactly this.

(7) Covers a planning horizon of not less than 10 years nor more than 20 years.

The work of your SDF Analysis Team is based on the planning elements of your 2022 MASTER PLAN, whose planning year is 2032. This represented a 10-year horizon.

(8) Is adopted by resolution or ordinance of the local governmental unit in accordance with G.S. 162A-209.

For compliance with the SDF Act's requirements, the SDF Analysis needs to be updated at intervals not exceeding 5 years. We are essentially a full year ahead of that schedule, due to the timing of the WSMP effort.

* * * * * *

We have, as a member of KDH's team for this effort, reviewed the provisions of the SDF Act and actively participate in the Supporting Analysis. Our emphasis has been on the engineering cost analysis in support of the "buy-in" methodology.

Key to our part of this effort is review and updating of the costs and life of facilities tabulation included in the current WSMP. The overall goal is to determine the aggregate Replacement Cost (New) Less Depreciation (RCNLD) of the KDH Water System.

Our work will include assistance with preparation of a report to document the Supporting Analysis. It is expected that this report would be signed by us as the "licensed professional engineer," and you as "financial professional," as required by §162A-205(1).

Findings and Recommendations:

1. Your planning and zoning records, your current and previous WSMP's, and a review of subsequent data from through 2021, clearly establish that Kill Devil Hills is mostly developed out. Very few large tracts suitable for development remain. Your water demand has been growing, and is projected to continue to grow, at a very modest rate. Hydraulic analysis done as part of the Town-wide modeling done as part of the Old Town Hall Elevated Water Storage Tank replacement project, confirm that our treatment, storage, pumping and distribution system have adequate capacity at least through 2031. **Accordingly, we find that yours is a mature system, not expected to require significant capacity-driven capital expenditures in the foreseeable future**.

2. Based on 1 above, **we recommended in 2018, and continue to recommend, that your System Development Fee program be based upon the "Buy-In" method**, and find that your past such fees have, in fact, been implicitly based on the Buy-In method. The principle of the Buy-In method is that each new customer, in paying his SDF, "buys into" his proportional share of the overall cost of the system. These contributions then help to fund Capital Rehabilitation Projects, as defined in the SDF Act (§162A-201(2)) as "Any repair, maintenance, modernization, upgrade, update, replacement, or correction of deficiencies of a facility, including any expansion or other undertaking to increase the preexisting level of service for existing development." The other method, Incremental Cost or Marginal Cost, is based on the premise that each new customer is paying his proportional share of the increased capacity made necessary by new development. Thus, neither the Incremental Cost method, nor a combination of Buy-In and Incremental Cost, is the appropriate choice for Kill Devil Hills.

3. The next step in determining your SDF is to determine the total value of your water system. §162A-211(b)(first sentence) includes the following (**bold** emphasis added): "The basis for the **buy-in** calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or **replacement costs** of the capital improvement for which the buy-in fee is being collected less **depreciation**, debt credits, grants, and other generally accepted valuation adjustments." Your SDF Analysis Team has used the Replacement Cost (New), Less Depreciation, or RCNLD method to establish the total value of the system, as of early FY 2019-20. This includes in-place infrastructure, projects which have been completed and project currently under design and scheduled for completion. An Excel workbook entitled *KDH Water System Inventory – 12-10-21 for SDF.xlsx* (the Workbook, for short). As indicated in the Total System Valuation sheet of the Workbook, **we find the total value of Kill Devil Hills water treatment, storage and distribution infrastructure to be**

$37,000,000.00 (rounded to 3 significant figures). The Workbook is attached to and made a part of this report.

4. The SDF Act requires (§162A-211(b), second sentence) that (**bold** emphasis added) "The basis for the buy-in calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or replacement costs of the capital improvement for which the buy-in fee is being collected **less depreciation, debt credits, grants, and other** generally accepted valuation adjustments."

   a. The SDF Analysis Team **recommends** that **depreciation** be computed using a straight-line method over the life of the asset. This is the method used in the Workbook. 100 years is used as the life of PVC pipe, 75 years for DI pipe, 50 years for AC pipe, and 50 years used for most above-ground assets.

   b. The SDF Analysis Team **finds that there is minimal outstanding debt** on the Kill Devil Hills Water System; so there is only a single, small debt credit to deduct. As of this writing, the only debt remaining is **$22,504.00**, being the last 8 payments (at 0% interest) for water storage tank mixing equipment valued at $112,522 and funded through then-NCDENR. Of the original amount, half ($56,261) was immediately forgiven as a grant under the American Recovery and Reinvestment Act (ARRA) of 2009.

   c. The SDF Analysis Team **finds no record**, nor any recollection **of any funding of water assets from grants**, with the sole exception of the **$56,261.00** through the ARRA mentioned in the previous paragraph. That will be the only deduction for grant-funded improvements.

   d. The SDF Act seems unclear on the question of credits or deductions from the SDF in cases where the water distribution system serving the lot or parcel was installed by a developer and conveyed to the Town. Our approach to this matter is the same as in our original SDF establishment effort in 2018. It <u>is clear</u> that such a credit is in order when the developer installs oversize improvements greater than needed by his project. But where the lines and appurtenances are the minimum needed to serve just <u>his</u> development, we find no clear statement that a credit is required. In considering and discussing all of the above, the SDF Analysis Team has decided to recommend excluding, as best we can from incomplete records, the value of all water distribution mains installed as part of past development and conveyed to the Town.

   e. Given the absence of complete records of plans and other documentation of developments and their donated water distribution

assets, the SDF Analysis Team utilized a three-pronged approach to identifying such assets:

i. Public Services was able to locate plans from the 1960's and 1970's for the major, public-funded distribution infrastructure that was built in the same time frame as the treatment, pumping and storage assets.

ii. The Team also has recent knowledge of Town-funded distribution system replacements and upgrades over the last 15-20 years, and has ready access for plans for same.

iii. It is therefore assumed that all other distribution elements constructed within the last 20 years were assets donated in conjunction with development. The Team believe it has thus separated publicly-funded assets from developer-donated assets with an accuracy of about 95%.

f. **In summary, the SDF Analysis Team finds that the total value of Kill Devil Hills' Water System is $37.0 million, determined in a manner consistent with the SDF Act.**

5. Next, we determine the total capacity of the system. This is relatively simple. **Your SDF Analysis Team finds that the Capacity of the Kill Devil Hills Water System is 3.0 Million Gallons per Day (mgd).**

a. Our modeling as part of the OTH Tank Replacement project clearly indicates that the **distribution (piping) system** is adequate to handle flows even higher than the 3.0 mgd rate at which Dare County can supply.

b. Regarding **storage and pumping** capacity, the 400,000 gallon capacity of the new Old Town Hall Elevated Storage Tank and addition of a third pump in its pumping station, together with our other storage and pumping facilities, leave the Town's water system capacity not limited by our own pumping and storage capability.

c. Therefore, the capacity of the system is determined to be limited by the contractually-limited delivery rate from Dare County Water of 3 million gallons per day.

6. Having determined system-wide asset value and capacity, the SDF Analysis Team **finds the Cost per Unit of Capacity is $12.33 per gpd**. This is simply $37.0 million divided by 3.0 mgd.

7. The next step in establishing a base SDF is to determine the demand per unit of development. Our fundamental unit will be an Ordinary Single-Family Home. While actual uses are lower, it is important to note that these computations are based on system capacity, which recognizes

seasonal and daily peaks in use. Our methodology is the same as in the 2018 effort.

a. NC DEQ Rules for design of on-site sewage disposal systems (15A NCAC 02T, Waste not Discharged to Surface Waters) includes provisions for wastewater systems to be designed for 120 gpd (daily average flow) per bedroom, with a 2-bedroom minimum. Your SDF Analysis team recommends the use of 3-bedrooms at 120 gpd, or 360 gpd, as a typical average daily flow applicable to an Ordinary Single-Family home, and we recommend that rate be found typical of homes with 1, 2, 3 or 4 bedrooms for purposes of establishing a simple fee schedule. We feel this size home is representative of the "Equivalent Meter Unit" denoted on your Water Rates sheet and will refer to it as an EMU hereafter.

b. It may be appropriate, since the 120 gpd sewage design flow is an average, to apply a peaking factor to the 360 gpd daily flow. Dare County's consultant has recommended a peaking factor of 1.64, based upon its data for 2015-2017. This is also consistent with the range of "Multiplier Fire Flow" values in previous KDH master plans. Therefore, the **SDF Analysis Team recommends a peaking factor of 1.64, matching Dare County, be used**.

c. Applying the peaking factor of 1.64 to the average of 360 gpd per EMU, we **recommend a total peak flow for SDF purposes of 590 gpd**.

8. The approach your SDF Analysis Team has followed would result in an SDF for an EMU of $12.33 per gpd x 590 gpd per EMU, or $7,274.70, rounded to $7,300.00. Absent the peaking factor, the SDF would be $12.33 per gpd x 360 per EMU, or $4,440.00.

a. As a check on the foregoing methodology, we simply divide the $37,000,000.00 asset value among all of the EMU being served by the Town. This total number of EMU is 8,333, was computed by summing the number of all meters in each size, but weighting larger meters by their ratio (per AWWA M22) of capacity compared to a 5/8" meter (see the table in Paragraph 9.c below, second column). Dividing the total asset value of $37,000,000 by 8,333 would result in an SDF, with no peaking factor, of $4,440.17—remarkably close to the $4,440.00 above.

b. While we fully believe an SDF of $7,300.00—which <u>does</u> and <u>should</u> include a peaking factor—complies with the letter and intent of the SDF Act, **we recommend increasing the current $4,000 System Development Fee** of $**4,000.00 for an EMU to $6,000**. This increase, while significant, reflects current costs and values of

infrastructure work. $6,000.00, in our opinion, strikes a reasonable balance between the burden on the new customer and the burdens on the long-term ratepayers. It also leaves a generous "cushion" factor (as opposed to going up to $7,300) for the unavoidable uncertainties in our computational processes, given the incompleteness of system records beyond 20-25 years ago.

9. The SDF Analysis Team **recommends** that the provisions of the Water Rates sheet for SDF's be adjusted proportionally.

   a. The current table of SDF versus meter size is as follows:

Current	
Meter Size	IHF
5/8 inch	**$4,000**
1 inch	**$6,900**
1½ inch	**$10,500**
2 inch	**$13,900**
3 inch	**$20,300**
4 inch	**$27,600**
6 inch	**$41,800**

Recommended	
Meter Size	IHF
5/8 inch	**$6,000**
1 inch	**$10,400**
1½ inch	**$15,800**
2 inch	**$20,900**
3 inch	**$30,500**
4 inch	**$41,400**
6 inch	**$62,700**

10. **We continue to recommend that fire flows not be a factor in determining meter size, and thus SDF**. If a domestic service is upsized for fire flow, as opposed to having a separate fire service, SDF and other fees should be assessed on the lower meter size that would result if no fire flow was added.

Thank you for your time and consideration in reviewing this report. Please feel free to contact us with any questions or comments you may have.

Sincerely,

American Engineering Associates – Southeast, PA

Walton P. Burkhimer, Jr., P.E.
Senior Consultant

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TOWN OF KILL DEVIL HILLS
PUBLIC SERVICES

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January 26, 2022

Memorandum

To: Debora P. Diaz, Town Manager

From: Stephen F. Albright, Public Services Director SA

Subject: System Development Fees Review – Southern Sanitary District (Ocean Acres Wastewater System)

The Ocean Acres Wastewater System operates a collection system for wastewater within the Southern Sanitary District owned by the Town. Disposal from this collection system is through a purchased capacity from KDHWWTP, LLC, a private wastewater utility regulated by the North Carolina Utilities Commission.

In 2018, staff prepared a simple analysis from readily available data from the CAFR (wastewater assets), existing debt and purchased capacity from KDHWWTP, LLC. This analysis resulted in a system development fee reduction from $13.50 per gallon to $12.31 per gallon to comply with the requirements of HB 436. This rate is actually lower than the original KDHWWTP, LLC purchase cost of $12.98 per gallon.

Staff worked with American Engineering to provide the HB 436 required review at least every five years. American took a more detailed look at the system assets and their work is attached. This has resulted in a recommend SDF rate of $12.95 per gallon. Staff concurs with this recommendation and recommends the necessary 45 day review and public hearing is held in advance of the budget adoption so this revision can be considered with the 2022-2023 adopted budget including fee schedule.

AMERICAN Engineering

January 14, 2022

Debora P. Diaz, Town Manager
Benjamin A. Sproul, Mayor, and
Board of Commissioners
Town of Kill Devil Hills
P. O. Box 1719
Kill Devil Hills, NC 27948

Reference: 22002 "G"– **Southern Sanitary District / System Development Fees**

Honorable Mayor, Commissioners and Manager:

American Engineering Associates (American), in consultation with and on behalf of your Finance and Public Services staffs, is pleased to offer this report of our analysis to assist the Town of Kill Devil Hills in updating the cost-based justification for Water System Development Fees which your staff initially established in March, 2018, as required under NCGS 162A, Article 8, the Public Water and Sewer System Development Fee Act, adopted by the General Assembly in its 2017 session (House Bill 436). We will refer to this as the "SDF Act" for short.

§162A-203(b) of the SDF Act states, "A system development fee adopted by a local governmental unit under any lawful authority other than this Article and in effect on October 1, 2017, shall be conformed to the requirements of this Article not later than July 1, 2018." We worked with your staff in 2018 to establish a basis for the Town to conform its SDF program to the requirements of the SDF Act for your Water System; your own staff performed a simplified analysis for the much smaller sanitary sewer system which comprises the Southern Sanitary District. This effort will update staff's 2018 work and adjust its methodology to be similar that we employed for the Water System.

This letter report to you, upon your acceptance and adoption, is intended to...

- Comprise the Supporting analysis required by the SDF Act.
- Recommend changes to the WASTEWATER RATES schedule.

In the following portion of the report, we recite the detail requirements in the SDF Act for a "supporting analysis," with the *verbatim* text of the Act in blue type and our response in black type.

§162A-205 of the SDF Act, entitled **Supporting Analysis**, requires the following:

> A system development fee shall be calculated based on a written analysis, which may constitute or be included in a capital improvements plan, that:

(1) Is prepared by a financial professional or a licensed professional engineer qualified by experience and training or education to employ generally accepted accounting, engineering, and planning methodologies to calculate system development fees for public water and sewer systems.

This Report, and our included Supporting Analysis, is prepared by American Engineering Associates, PA and signed by Walton P. Burkhimer, Jr., P. E., a professional engineer licensed in the State of North Carolina (PE #10786), in consultation with your Finance Director, Ms. Beverly Kissinger, your Director of Public Services, Mr. Stephen Albright, and your Assistant Director of Public Services, Mr. Derek Dail, also licensed as a professional engineer in North Carolina. Your SDF Analysis Team meets the qualifications requirements of the Act.

(2) Documents in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.

The facts and data used by your SDF Analysis Team are cited specifically in the Analysis presented below.

(3) Employs generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods for each service, setting forth appropriate analysis as to the consideration and selection of a method appropriate to the circumstances and adapted as necessary to satisfy all requirements of this Article.

The SDF Analysis Team cites its basis for selecting the "Buy-In" method and develops its reasoning to support the SDF based on sound engineering and financial practices.

(4) Documents and demonstrates the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.

The SDF Analysis Team, in the **Findings and Recommendations** below, describes specifically and in detail its reasoning, every step of the way. Supporting calculations are attached.

(5) Identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of conclusions reached.

For the most part, the SDF Analysis Team was able to find and rely upon factual information, rather than having to make assumptions.

(6) Calculates a final system development fee per service unit of new development and includes an equivalency or conversion table for use in determining the fees applicable for various categories of demand.

The information presented in Paragraphs 6 and 7 of the SDF Analysis Team's **Findings and Recommendations** below does exactly this.

(7) Covers a planning horizon of not less than 10 years nor more than 20 years.

The work of your SDF Analysis Team considers recent-past capital improvements and capital improvements anticipated over the next 10 years.

> (8) Is adopted by resolution or ordinance of the local governmental unit in accordance with G.S. 162A-209.

For compliance with the SDF Act's requirements, the SDF Analysis needs to be updated at intervals not exceeding 5 years. We are essentially a full year ahead of that schedule, due to the timing of the WSMP effort.

* * * * * *

We have, as a member of KDH's team for this effort, reviewed the provisions of the SDF Act and actively participate in the Supporting Analysis. Our emphasis has been on the engineering cost analysis in support of the "buy-in" methodology.

Your staff has furnished us costs and dates associated with original installation and recent capital upgrades of the subject facilities. We have assisted with our own knowledge of some of those upgrades and of the costs of such facilities. The overall goal is to determine the aggregate Replacement Cost (New) Less Depreciation (RCNLD) of the KDH Southern Sanitary District System.

Our work includes assistance with preparation of this report to document the Supporting Analysis. This report would be signed by us as the "licensed professional engineer," and you as "financial professional," as required by §162A-205(1).

Findings and Recommendations:

1. The property which constitutes the customer base of the Southern Sanitary District is, essentially, the Ocean Acres Subdivision. Initially developed in the 1970's, Ocean Acres includes property east and west of S Croatan Highway. There have been some combinations and resubdivisions, and there are several commercial parcels.

2. Ocean Acres is essentially fully developed out; few, if any tracts remain which lend themselves to being subdivided. Less than 10% of the total 220± lots and tracts remain vacant at this time. **Accordingly, we find that this is a mature system, not expected to require significant capacity-driven capital expenditures in the foreseeable future.**

3. Based on 2 above, **we recommend that your System Development Fee program be based upon the "Buy-In" method**, and find that your past such fees have, in fact, been implicitly based on the Buy-In method. The principle of the Buy-In method is that each new customer, in paying his SDF, "buys into" his proportional share of the overall cost of the system. These contributions then help to fund Capital Rehabilitation

Projects, as defined in the SDF Act (§162A-201(2)) as "Any repair, maintenance, modernization, upgrade, update, replacement, or correction of deficiencies of a facility, including any expansion or other undertaking to increase the preexisting level of service for existing development." The other method, Incremental Cost or Marginal Cost, is based on the premise that each new customer is paying his proportional share of the increased capacity made necessary by new development. Thus, neither the Incremental Cost method, nor a combination of Buy-In and Incremental Cost, is the appropriate choice for Kill Devil Hills' Southern Sanitary District.

4. The next step in determining your SDF is to determine the total value of your wastewater system. §162A-211(b)(first sentence) includes the following (**bold** emphasis added): "The basis for the **buy-in** calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or **replacement costs** of the capital improvement for which the buy-in fee is being collected less **depreciation**, debt credits, grants, and other generally accepted valuation adjustments." Your SDF Analysis Team has used the Replacement Cost (New), Less Depreciation, or RCNLD method to establish the total value of the system, as of early 2022. This includes in-place infrastructure, projects which have been completed and projects identified by previous studies and scheduled for completion. An Excel workbook entitled *KDH Southern Sanitary District SDF Analysis 1-14-2022.xlsx* (the Workbook, for short). As indicated in the Total System Valuation sheet of the Workbook, **we find the total value of Kill Devil Hills wastewater collection and pumping infrastructure to be $913,000.00** (rounded to 3 significant figures). The Workbook is attached to and made a part of this report.

5. The SDF Act requires (§162A-211(b), second sentence) that (**bold** emphasis added) "The basis for the buy-in calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or replacement costs of the capital improvement for which the buy-in fee is being collected **less depreciation, debt credits, grants, and other** generally accepted valuation adjustments."

   a. The SDF Analysis Team **recommends** that **depreciation** be computed using a straight-line method over the life of the asset. This is the method used in the Workbook. 100 years is used as the life of land, buildings, manholes and PVC pipe, 50 years for pumping station wet wells, and 25 years pumps and generators.

   b. The SDF Analysis Team **finds that there is outstanding debt** on the Kill Devil Hills Water System; an ongoing load from the Town's Water Fund is the only debt credit to deduct.

c. The SDF Analysis Team notes that a single **grant was received** to help fund the major reworking of the system in 2005, to redirect flows from westward to the original wastewater treatment plan to eastward into the KDHWWTP, LLC system.

d. The SDF Act seems unclear on the question of credits or deductions from the SDF in cases where the wastewater system serving the lot or parcel was installed by a developer and conveyed to the Town. Our approach to this matter is the same as in our original SDF establishment effort in 2018. It is clear that such a credit is in order when the developer installs oversize improvements greater than needed by his project. But where the lines and appurtenances are the minimum needed to serve just his development, we find no clear statement that a credit is required. In considering and discussing all of the above, the SDF Analysis Team has decided to recommend excluding, as best we can from incomplete records, the value of all wastewater system installed as part of past development and conveyed to the Town.

e. The assets to be considered as developer-contributed are those installed by the original Ocean Acres developer, pursuant to plans prepared by Triangle Engineering in 1972. In cases where a certain original wastewater system component has been subsequently replaced, the value of the original component is not included.

f. **In summary, the SDF Analysis Team finds that the total value of Kill Devil Hills' Southern Sanitary District Wastewater System is $913,000, determined in a manner consistent with the SDF Act, subject to the additions and subtractions noted above.**

6. Next, we determine the total capacity of the system. This is relatively simple. **Your SDF Analysis Team finds that the Capacity of the Kill Devil Hills Water System is 70,480 Gallons per Day (gpd).** This is the total capacity allotted to the Southern Sanitary District by the treatment works owner/operator, Kill Devil Hills Wastewater Treatment Plant, LLC (KDHWWTP)

7. Having determined system-wide asset value and capacity, the SDF Analysis Team **finds the Cost per Unit of Capacity is $12.95 per gpd.** This is simply $913,000 divided by 70,480 gpd.

   a. It has been your custom to assess the SDF based on gallons per day (gpd) of sewage flow generation of the parcel, determined at the time of application for permits. For residential, this has been based on the 120 gpd per bedroom provision of NC DEQ Rules for design of on-site sewage disposal systems (15A NCAC 02T, Waste not Discharged to Surface Waters). Non-residential flows are similarly based on DEQ's

table of rates for various types of commercial flows. Your SDF Analysis team recommends no change in these practices.

b. The approach your SDF Analysis Team has followed would result in a wastewater SDF for a typical 3-bedroom home of $12.95 per gpd x 360 gpd per EMU, or $4,662.00. This is slightly higher than the present rate, $12.31 per gpd, which results in $4,431.60 for the same 3-bedrom home.

Thank you for your time and consideration in reviewing this report. Please feel free to contact us with any questions or comments you may have.

Sincerely,

American Engineering Associates – Southeast, PA

Walton P. Burkhimer, Jr., P.E.
Senior Consultant

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Southern Sanitary District Asset Registry

	qty			
Gravity Collection				
8" pvc truss pipe gravity collection	13,250 lf	$100.00	$1,325,000.00	
PVC laterals	220 ea	$500.00	$110,000.00	
Pump Station #1 Neptune Drive				
100 gpm Hydromatic above ground package lift station	1	$150,000.00	$150,000.00	
brick building	1	$50,000.00	$50,000.00	
4" pvc forcemain	1,500 lf			
wetwell epoxy lined rehab 2015 - condition good	1	$8,300.00	$8,300.00	
Pump Station #2 Ocean Acres Drive				
300 gpm Hydromatic above ground duplex package lift station	2	$15,000.00	$30,000.00	one pump about 2019 and other is 2021. condition good.
brick building houses generator	1	$25,000.00	$25,000.00	
4" pvc forcemain	0 lf		$0.00	Forcemain is KDHWWTP, llc
				$1,438,617 = total value of 2005 effort per 2-9-04 BOC minutes, less
wetwell and other improvements installed about 2005	1	$738,617.00	$738,617.00	$700,000 allotted for KDHWWTP charges
on site generator	1	$15,000.00	$15,000.00	propane fueled GM 6.0 skid mount unit. Condition good
fiberglass pump enclosure and other long duration items	1	$0.00	$0.00	2005 include in item 2 lines above
Pump Station #3 Ocean Acres Drive - gravel in woods				
90 gpm Hydromatic above ground package lift station	2	$15,000.00	$30,000.00	
fiberglass enclosure and other long duration items	1	$100,000.00	$100,000.00	
4" pvc forcemain	1,700 lf			
wetwell installed about 2005	1	$100,000.00	$100,000.00	
portable genrac generator	1	$2,500.00	$2,500.00	2005 portable unit. Condition fair
Manholes Ocean Acres Drive - 64 total				
2012 Rehabilitation	1	$89,984.00	$89,984.00	Barnhill project, including change order work+portion of design/oversight fee
precast gravity collection manholes	3	$5,000.00	$15,000.00	Less than ten years old. Condition excellent
1972 brick gravity collection manholes epoxy coated	15	$5,000.00	$75,000.00	Rehab in last five years. Condition good.
1972 brick gravity collection manholes	46	$5,000.00	$230,000.00	OE
Total Force Main	3,200 lf	$100.00	$320,000.00	
Treatment Capacity purchased from KDHWWTP, LLC	70,480 gpd	$12.98	$914,830.40	

Southern Sanitary District System Inventory Worksheet

Date Worksheet Updated: 1-15-2022

Asset	Year	Developer or Public	Expected Useful Life	Condition	Service History	Adjusted Useful Life Increment	Age	Remaining Useful Life	Notes	REPLACEMENT COST	ASSET VALUE RC*RUL/UL	ASSET VALUE (Developer Funded)
Pump Station #1, property, building and pump housing, Neptune Drive.	1972	D	500	Good		0	50	450		$200,000	$180,000	$180,000
Pump Station #1, wet well and longer-life equipment,	2015	P	50	Good		0	7	43	Major wet well rehabilitation in 2015	$10,208	$8,779	$0
Pump Station #1, impellers, motors and shorter-life equipment	2005	P	25	Good		25	17	33	included in package of work done in 2005 on PS #2	$0	$0	$0
Pump Station #2, property	1972	D	500	Good		0	50	450		$25,000	$22,500	$22,500
Pump Station #2, longer-life equipment; (ORIGINAL, Developer)	1972	D	50	N/A		0	50	0		$0	$0	$0
Pump Station #2, wet well and longer-life equipment	2005	P	50	Good		0	17	33	This package of work included	$1,438,752	$949,577	$0
Pump Station #2, pumps, motors and shorter-life equipment	2020	D	25	Good		0	2	23		$45,000	$41,400	$41,400
Pump Station #3, property and building	2005	P	500			0	17	483	Cost included in major package or work done in 2005; see PS #2	$0	$0	$0
Pump Station #3, wet well and longer-life equipment	2005	P	50			0	17	33	Cost included in major package or work done in 2005; see PS #3	$0		$0
Pump Station #3, pumps, motors and shorter-life equipment	2005	P	25	New		25	17	33	Cost included in major package or work done in 2005; see PS #4	$0	$0	$0
Gravity System Manholes	1972	D	100	New		0	50	50		$230,000	$115,000	$115,000
Gravity System 2012 Manhole Rehabilitation and Minor Extensions	2012	P	100			0	10	90		$266,420	$239,778	$0
Gravity System Mains	1972	D	100	Good		0	50	50		$1,325,000	$662,500	$662,500
Gravity System Laterals	1972	D	100	Good		0	50	50		$110,000	$55,000	$55,000
Force Mains	1972	D	100	Good		0	50	50	Cost included in major package or work done in 2005; see PS #2	$0	$0	$0
Capacity in Receiving KDHWWTP, LLC System	2005	P	500	Excellent		0	17	483		$914,830	$883,726	$0

Estimated System Value	RCN	ASSET VALUE (RCNLD)	ASSET VALUE (RCNLD) (Developer-Funded)
PS #1 (land & building) =	$200,000.00	$180,000.00	$180,000.00
PS #1 (wetwell/longer life) =	$10,207.95	$8,778.84	$0.00
PS #1 (pumps, motors, shorter life) =	$0.00	$0.00	$0.00
PS #2 (land & building) =	$25,000.00	$22,500.00	$22,500.00
PS #2 (wetwell/longer life)(DEVEL) =	$0.00	$0.00	$0.00
PS #2 (wetwell/longer life) (PUBLIC)=	$1,438,752.42	$949,576.60	$0.00
PS #2 (pumps, motors, shorter life) =	$45,000.00	$41,400.00	$41,400.00
PS #3 (land & building) =	$0.00	$0.00	$0.00
PS #3 (wetwell/longer life) =	$0.00	$0.00	$0.00
PS #3 (pumps, motors, shorter life) =	$0.00	$0.00	$0.00
Gravity System Manholes =	$230,000.00	$115,000.00	$115,000.00
Rehabbed Grav. MH's, Extensions, etc. =	$266,420.29	$239,778.26	$0.00
Programmed 2023-2032 Rehab, MHs & Gravity Mains =	$700,000.00	$700,000.00	$0.00
Gravity System Mains =	$1,325,000.00	$662,500.00	$662,500.00
Gravity System Laterals =	$110,000.00	$55,000.00	$55,000.00
Force Mains =	$0.00	$0.00	$0.00
KDHWWTP, LLC Treatment Capacity =	$914,830.40	$883,726.17	$0.00
Total Estimated System Value =	**$5,265,211.06**	**$3,858,259.86**	**$1,076,400.00**
	$5,265,000.00	$3,858,000.00	$1,076,000.00

Total infrastructure RCNLD	$3,858,259.86
Less Grants	$1,395,000.00
Less Loan Balance	$473,898.00
Less developer-contributed assets	$1,076,400.00
	$912,961.86

$913,000.00

70,480 gallons per day system capacity

$12.95 per gpd of capacity

TOWN OF KILL DEVIL HILLS

Land Where Flight Began

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that on April 11, 2022, at 6:00 p.m. in the Town Hall Meeting Room, 102 Town Hall Drive, the Kill Devil Hills Board of Commissioners will hold a public hearing to receive public comment, both written and oral, on the following proposed item:

System Development Fees Update

Information on this item may be viewed on Kill Devil Hills' website: https://www.kdhnc.com/975/April-11-2022-Board-of-Commissioners-Mee or on its News page at https://www.kdhnc.com/438/News, with copies available for personal inspection at KDH Town Hall, 102 Town Hall Drive; the Public Services Administration Building, 107 Town Hall Drive; or the Dare County Library – KDH Branch, 400 Mustian Street.

Written comments, which will be included with the record of the public hearing, may be submitted to the Town Clerk, P.O. Box 1719, Kill Devil Hills, NC 27948, or by e-mail to: info@kdhnc.com.

At this public hearing, the Board of Commissioners will be considering an update to its System Development Fees (SDFs), which replaced earlier "initial hook-up fees" or "impact fee" fee systems. SDFs are required to be reevaluated by municipalities at least every five years. The Board may take action on this item, with such action to include approval, disapproval, or tabling the item for further consideration.

Posted this 28th day of March 2022.

James Michael O'Dell
Town Clerk

Copies to: Mayor and Board of Commissioners, Town Manager; all department heads; all Town bulletin boards; KDH Sunshine List, including all local news media; KDH Electronic Distribution List; KDH social media; website; file

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(KDH Town Seal)
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Coastland Times: Please publish as a legal ad in the following editions –

03/30/2022
04/06/2022

TOWN OF KILL DEVIL HILLS

Land Where Flight Began

Public Comment Solicited for System Development Fees Update

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As a part of this 45-day public review process, the Town is soliciting public input on the proposed SDFs. Information on the proposed SDFs is available for review on the Town's website at https://www.kdhnc.com/438/News, with copies available for personal inspection at KDH Town Hall, 102 Town Hall Drive; the Public Services Administration Building, 107 Town Hall Drive; or the Dare County Library – KDH Branch, 400 Mustian Street.

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Coastland Times: Please publish as a small block ad in the following edition:

01/30/2022