TOWN OF KILL DEVIL HILLS

Land Where Flight Began

MEMORANDUM November 9, 2020

TO: Mayor and Board of Commissioners

FROM: Debora P. Diáz, Town Manager

REF: New Business

2. Street Improvement Recommendation for 2021-2022 Fiscal Year (Attached NB-2)

Planning Director Meredith Guns' attached memorandum highlights the recommended the streets and drainage improvements for the 2021-2022 fiscal year:

2021-2022 Fiscal Year Improvements Choices	
Option A: **Estimated Cost**: $1,156,000	• West Third St. (US 158 to Creek St.) • Seminole St. (southside) • US 158 Drainage (West Fourth St. to West Third St.)
$82,000	Estimated engineering costs for design and bidding phases
Option B: (Option B= A+B) **Estimated Cost**: $1,309,000	• West Third St. (US 158 to Creek St.) • Seminole St. (southside) • US 158 Drainage (West Fourth St. to West Third St.) • West Third St. (sidewalk extension to Bay Dr., but no roadway improvements and limited drainage)
$104,000	Estimated engineering costs for design and bidding phases
Option C: (Option C= A+B+C) **Estimated Cost**: $1,981,000	• West Third St. (US 158 to Creek) • Seminole St. (southside) • US 158 Drainage (West Fourth St. to West Third St.) • West Third St. (sidewalk extension to Bay Dr., INCLUDING replacement of asbestos water main, street overlay, and drainage improvements)
$150,000	Estimated engineering costs for design and bidding phases

At this time, Staff does not recommend Option C because of the high cost and current condition of that portion of West Third Street. The portion of West Third Street detailed under Option C is likely to be included on the list for drainage and roadway improvements in the next 10 years.

Staff recommends Option B as extension of the West Third Street sidewalk has been a priority due to the heavy vehicular and pedestrian traffic along this roadway. A complete sidewalk would connect the existing Bay Drive Multi-Use Path that extends from West Third Street to the northern Town line.

At its October 29, 2020, meeting, the Street Improvement and Special Project Committee (SISPC) recommended the BOC consider for the 2021-2022 fiscal year Option C, noting that if there were monetary restrictions or adverse impacts on future capital projects, it recommended Option B for the 2021-2022 fiscal year street project. The group also recommended the 2022-2023 fiscal year (Plan Year) project as presented. Staff recommends no action on the 2022-2023 FY improvements recommended by the SISPC at this time and proposes the Board discuss these improvements during the upcoming budget worksessions. Staff recommends authorizing the Town Manager to execute a contract with American Engineering Associates – Southeast PA, Inc. for the desired option for design, engineering, and bidding for the 2021-2022 street project and necessary budget amendments.

Director of
Planning and Inspections
MEREDITH GUNS

Building Inspector
MARTY SHAW
CHARLES THUMAN

Code Enforcement Officer
JORDAN BLYTHE

THE TOWN OF KILL DEVIL HILLS
NORTH CAROLINA

Assistant Director of
Planning and Inspections
CAMERON RAY

Senior Planner
RYAN LANG

Zoning Administrator
DONNA ELLIOTT

PLANNING DEPARTMENT

November 9, 2020

Memorandum

To: Debbie Diaz

From: Meredith Guns, Planning Director MBG

Subject: Street Improvement Recommendation 2021-2022 Fiscal Year (FY) and 2022-23 Plan Year

Attached is a memorandum and spreadsheet from Pete Burkhimer, P.E., Town Engineer dated October 23, 2020. The spreadsheet outlines street recommendations for 2021-2022 FY, 2022-2023 plan year and beyond. Additionally, the accompanying spreadsheet summarizes the past several years of projects and the remaining Fair 3 and Poor Streets.

The 2021-2022 recommendation is West Third Street from US 158 to Creek Street, Seminole Street (southside) and drainage along US158 from West Fourth Street to West Third Street. Currently West Third Street from US158 to Creek Street is in Poor condition as well as Seminole from West Third to Indian. The Drainage improvements will tie into the new drainage at the Dare Centre and fix under sized, failing drainage and improve upstream drainage to West Durham Street. The estimated cost for the West Third Street project is $1,156,000 ($749,000 from Street and Drainage Capital Reserve Fund, remainder from Water and sidewalk fund).

Above is the base recommendation (option A) for the 2021-22 FY. However, it has been a desire of the town to install sidewalks in key high traveled locations. West Third Street meets this criteria, therefore two alternatives (Option B and Option C) have been developed to include a complete sidewalk system for consideration. Each option builds on the other, therefore Option B is A+B and Option C is A+B+C. The alternatives are as follows (both include the base recommendation above):

1. Option B - Extend a sidewalk the remaining length of West Third to Bay Drive with no additional roadway improvements and limited drainage to accomplish the sidewalks. The total project cost for this alternative is $1,309,000 ($791,000 from Street and Drainage Capital Reserve Fund, remainder from Water and sidewalk fund; approximately $42,000 more from the Street and Drainage Capital Fund). Labeled OPTION A+B on the engineers table.

2. Option C - Extend a sidewalk the remaining length of West Third to Bay Drive including replacement of asbestos water main, street overlay and drainage improvements. The total project cost for this alternative is $1,981,000 ($1,127,000 from Street and Drainage Capital Reserve Fund, remainder from Water and sidewalk fund; approximately $379,000 more from the Street and Drainage Capital Fund). Labeled OPTION A+B+C on the engineers table.

At this time, staff would not recommend Option A+B+C because of the high cost and current condition of this portion of West Third Street. This portion of West Third Street will likely be on the list for drainage and roadway improvements in the next 10 years but it is not imperative at this time.

Staff would like to consider OPTION A+B because extending a sidewalk along West Third Street has been a priority due to the heavy vehicle and pedestrian traffic on this street. A complete sidewalk system would alleviate several safety concerns in this area and connect to the existing Bay Drive Multi-Use Path that extends from West First Street to Northern Town Line.

The 2022-23 plan year includes Wrightsville Boulevard from Goodard Street to Carolyn Drive (Ramada). The project proposed resurfacing of the roadway and establish a medium size storm drainage line as a major branch of the Memorial Blvd drainage system. This will dramatically improve the efficiency of the drainage system in this area.

On October 29, 2020 the Street Improvement/Special Project Subcommittee (SISPC) met to discuss the upcoming street recommendation and options. At the conclusion of the discussion the Subcommittee recommended the following for Board of Commissioners consideration:

> SISPC recommends the Board of Commissioners consider Option A+B+C as an ideal project. However, if there are monetary restrictions or adverse impacts on future capital projects, the subcommittee recommends completion of the sidewalk on West Third Street (option A+B) for the 2021-22FY street project. Additionally, the subcommittee recommends the Wrightsville Street project as outlined in the Town Engineers' memorandum for the 2022-23FY to be considered in the upcoming two-year budget planning.

Also attached to this memorandum are three options for design and bidding to correspond with the recommended options. The cost for each option is as follows:

- Option A - $82,000
- Option B – $104,000
- Option C – $150,400

Staff recommends authorizing the Town Manager to execute a contract with American Engineering Associates – Southeast PA, Inc. for the desired option for design, engineering and bidding of the 2021-22 Street Project and necessary budget amendments.

October 23, 2020

The Kill Devil Hills Street Improvement and Special Projects Committee,
c/o Ms. Meredith Guns, Planning Director
Ms. Debora P. Diaz, Town Manager
P. O. Box 1719
Kill Devil Hills, NC 27948

By **e-mail**

Subject: Project ID **V20200 "B" – 2021/22 Street/Drainage Projects Recommendations**

Dear Committee Members, Ms. Diaz and Ms. Guns:

This is our annual update on your capital projects program and our recommendation looking forward.

In the following points, we'll recap some recent accomplishments and note some other points that are influencing our thinking for the future:

What have we been doing since last meeting?

1. 2020 has been another productive year:
    a. 2019/20 Project—Hayman Boulevard / Town Hall Drive / Sixth Avenue: We briefed you on this project at our last meeting, February 6, 2020. The work was about 75% complete at that time, and it was successfully brought to completion last spring.
    b. 2020/21 Fall and Spring Bid Packages: The last SISPC meeting and subsequent BOC action were delayed so we could include newly-seated board members. This put us a little later than desirable in getting started on surveying and design for the approved work. We broke it up as listed below. Note that the terms "Fall" and "Spring" turn out not to be seasonally specific, as they are both bid in the fall and will finish in the spring.
        i. Fall Bid Package: Project 1 is First Flight Village, Section 3, consisting of Cedar Drive's loop west of West First Street, plus one more block of Cedar Drive ending slightly beyond its intersection with Dogwood Lane; Captains Lane is also included. Project 2 is Landings, Section 3, consisting of all of Teakwood Lane and all of Captains Circle. These two projects will address the poor condition of those streets and the historically poor drainage in those areas.

ii. Spring Bid Package: This package involves five streets "between the highways." Project 3 consists of Briggs Street from East Arch Street toward/to East Helga Street; East Helga Street from US 158 to NC 12, and the short block of East Fourth Street from NC 12 to its end as an improved Town road. Alternates are included that would (a) install a sidewalk along the north side of West Helga Street from US 158 to Susan Drive and (b) push Briggs Street southward from its present terminus through to intersect with East Helga Street. Project 4 costs of all of East Martin Street, from US 158 to NC 12 and the short block of East Dean Street from US 158 through Wrightsville Boulevard. Alternates in Project 4 include (c) optional sidewalk on the north side of East Martin in the western two blocks and (d) providing four parallel parking spaces on the south side of E Martin just west of NC 12. In general, the Spring Bid Package projects include rehabilitating the streets, providing improved drainage and, in the cases of East Helga, West Helga and East Martin, making needed pedestrian improvements.

iii. Bid Results: Through the design process, as often tends to occur, we discovered items which needed to be addressed and the scope of the work increased. Bids for these rather large Bid Packages were received on Thursday, October 22 and will be considered by the Board of Commissioners at their November 9, 2020 meeting. As the bids came in higher than our preliminary budgeting estimates, we will be recommending to the BOC a series of options up to and including awarding all four (4) projects with all alternates.

iv. This year, we have continued to work our well-established plan to work through our list of streets which have been ranked "Poor" during the Street Condition Evaluation survey, performed every 5 years by the Public Services Department, as discussed more in paragraph 5.b below.

c. Other projects not tracked through the SISPC Process: Although SISPC is not directly involved in these, it's worth mentioning that the large and complex Elevated Water Tank replacement project is nearly complete; the tank itself has been on line since June 25, and the old tank was successfully demolished. The last element of the work, installing a third pump in our pump station, is under way now. We are seeking grant funding to assist with restoring and enhancing Meekins Field, which had to be taken out of service for the Tank project. Also, funded in significant part by a grant, the Centennial Path was

extended from Mustian Street along Hillside Drive, Fox Street and Baum Street, up to the Veterans Drive intersection.

What are the goals and principles of our capital projects?

2. As we always note in these reports, our long-held goal of is to fix our Poor streets. Over the next 3-4 years, we expect to transition to more and more resurfacing of streets and less total reconstruction, as we bring the older streets up to a more durable standard of construction. After that, we will want to be resurfacing our streets right when they need it; in other words, there won't be any more Poor streets, or, they won't be on the Poor list very long.
3. Another goal, as noted before, is the gradual replacement of asbestos-cement (AC) water mains throughout town. Our current Water System Master Plan includes a multi-year recommended program in increments of about $1.5 million at intervals of 2 or 3 years. As we consider street or street and drainage projects, we are always looking for the opportunity to replace AC water mains at the same time, which is more cost effective and causes less overall disruption to our residents.
4. We have made great progress in improving storm drainage and stormwater management in a number of areas, there are still many areas with drainage challenges. The 2015 project was a giant step on our ongoing Memorial Boulevard Backbone effort, but we'll need to push southward in the future (see the Wrightsville Boulevard project, the next big part of that effort, now hopefully only two years out). Elsewhere, when we do a street project, we'll probably include drainage work, using our "sock drain" strategy in most cases. For example, the recently completed Whispering Pines project as well as Hayman Boulevard include continuous sock drain for most of their length, which will provide significantly improved drainage service to these lower-elevation areas. The Fall and Spring Bid Packages we have just bid also include extensive "sock drain."
5. Considering the goals noted above, we reiterate the following points made in last year's report, which lay out our strategic goals and factors summarize what drives our recommendations with respect to future street and drainage projects:
    a. Having completed the well-received Multi-Use Path program, our attention has returned to repairing poor streets as noted below, as well as smaller-scale pedestrian projects and stormwater/drainage work.
    b. Fixing our Poor streets before they deteriorate to where a moderately-expensive overlay becomes an expensive reconstruction is just good

stewardship. Your staff completed in 2017 a complete re-inspection of Town-maintained road and streets. These inspections occur about every 5 years, and the next one will be due in two years. The rating system is based on a point system, considering pavement condition and storm drainage service (or the lack of it). The rating categories are Excellent, Good, Fair1, Fair2, Fair3 and Poor. Before the 2017 rating, we only had about 2.6 miles of the Town's 63 miles of road in Poor Condition. Per the 2017 inspection, another 3.77 miles dropped to Poor, bringing the Poor total up to 6.4 miles. The work of the last several years, plus what we just bid, have whittled the Poor street total back down to 3.2 miles, which we expect to lower further in the coming years.

c. We have, as noted, been making great progress in renewing our Poor streets, and we still have done so in recent years. However, inflation has eroded our buying power somewhat over the last five years since the recession passed. The Board of Commissioners has recognized this and supported increased funding levels in recent years. This inflationary trend has not leveled off and isn't likely to.

d. Even though we need to press hard on the core mission of repairing Poor streets, while doing so we should continue bringing drainage relief to problem areas and to move toward the very successful program of sock drain and roadside swales.

e. Where feasible, we should combine road improvement, drainage improvement and water main replacement into one project. This "holistic" approach saves money and disturbs our citizens less.

f. To continue with the progress made during the last 15 years in renewing our streets and improving our drainage systems, we will need to sustain levels of street and drainage funding at $1 million to $1.3 million per year, at least until we have all of our streets brought up to sound structural condition and provided with a proper stormwater management system. These recommended funding levels are over and above water system funding and sidewalk funding which may be applicable. For comparison's sake, once all of our poor streets have been brought to modern standards, all water lines have been replaced with modern materials and all areas have effective drainage installed, street maintenance will become essentially milling and overlaying 2.5 to 3 miles of street every year, about $500,000 to $600,000 at current prices.

What is recommended for the next three years?

With those guiding principles established, we offer the following project-specific recommendations on the attached spreadsheet. Let's consider the various portions of this spreadsheet:

Page 1: This contains the most important information. (The projects being bid and potentially awarded this fall are shown on Page 3 under Completed Projects.)

FY 2021-22: The upcoming year's candidate project is shown with **salmon shading**. The eastern end of **West Third Street** has one of the lower street condition ratings of our more heavily-traveled roads. Three Options, A, B and C, are shown here, with A as the Base Option, B adding Sidewalk Only west of Creek Street to Bay Drive, and C adding water main replacement and street improvements as well. So the combinations are A, A+B AND A+B+C.

West Third Street, OPTION A: It includes using a portion of our established $100,000 annual allocation to sidewalks and pedestrian ways to fund repairing the existing sidewalk along the southern side of the right of way and extending it westward to the project limits at Creek Street. A trunk drainage system will be extended upstream (west) from the US 158 system.

Also included is Seminole Street, from West Third Street southward to Indian Street. Its "Poor" pavement will be overlayed and a roadside drainage system installed. For both West Third and Seminole, their asbestos-cement water mains will be replaced with modern PVC lines.

Also included with this package is an important drainage improvement, which builds on the pipe improvements in front of the Fire Station and the Dare Centre, noted above. This work will include replacement of under-sized, off-grade and, in some cases, failing culverts under West Third Street, four commercial entrances, West Fourth Street and West Fifth Street. This will project the drainage benefits all the way up to the eastern portion of West Durham Street, where we experience frequent, significant flooding. Culvert sizes are expected to be 30" at West Fifth, increasing to 36" downstream.

The estimated total cost of West Third Street, Option A is $1,156,000, of which about $**749,000** represents street and drainage funding and the remaining $409,000 is water and sidewalk funding.

West Third Street, OPTION A+B: This starts with all the work of Option A, then extends sidewalk along the south side of West Third Street from Creek Street West to Bay Drive. To plan for extending the sidewalk effectively, full topo surveying will be needed of the entire right of way, so that the sidewalk is placed with future street, drainage and water improvements in mind. Some drainage work will be needed; especially the western two blocks, but only as needed to support the sidewalk work.

The estimated total cost of West Third Street, Option A + Option B is $1,309,000, of which about **$791,000** represents street and drainage funding($42,000 more than Option A alone) and the remaining $518,000 is water and sidewalk funding.

West Third Street, OPTION A+B+C: This starts with all the work of Option A + Option B, but adds in completing the replacement of all the remaining asbestos-cement water main out to Bay Drive, as well as renewing the street surface and completing the drainage work.

The estimated total cost of West Third Street, Option A + Option B + Option C is $1,981,000, of which about **$1,127,000** represents street and drainage funding ($379,000 more than Option A + Option B) and the remaining $854,000 is water and sidewalk funding.

FY 2022-23: The area with **blue shading** is intended to show the next year out, FY 2022-23, in which we recommend the design and bidding of a major project on a one-mile section of **Wrightsville Boulevard**, from Goddard Street all the way south to Carolyn Drive. This project would renew the surface, which is in Poor condition, but also establish a medium-size storm drainage line as a major branch of the Memorial Boulevard storm drainage system. This will not only benefit Wrightsville Boulevard, but will take pressure off the parallel portion of Memorial Boulevard, by (a) intercepting more than half the flow that part of the Memorial System is trying to carry and (b) lowering the groundwater in the whole area through the "sock drain" effect discussed above.

Nearly half of the cost of this overall project is expected to be water distribution system improvements. Portions of the water lines in Wrightsville are undersized, or asbestos-cement lines, and/or may need adjustment to make room for the storm drains. Water line adjustments associated with a street and drainage project typically involve multiple water service shutoffs. Thus, we are proposing, while we are doing pipe work in the area, to replace old, existing asbestos-cement water mains in four streets running between US 158 and NC 12.

The total cost for this project is anticipated to be $1,515.000, of which $881,000 is street and drainage funding and the remaining $634,000 is water funding.

FY 2023 and beyond: Th area with **purple shading** maps out the remainder of a multi-year plan we set forth several years ago.

Notable are the remaining elements of the Memorial Boulevard Trunk Drainage system, as two separate projects. If completed, we would also have worked through almost all of the remaining Poor streets.

As noted, SISPC and BOC certainly may add to or subtract from, and/or may re-order, this list. But, it represents a useful point of beginning for longer term capital project planning. Speaking of which, we recommend to staff, SISPC and BOC that an effort be initiated to create true 10-year plans for street, drainage and sidewalk work for the period 2022-2032. Projects for these categories of infrastructure should be integrated, as discussed above. Also, in support, a significant effort is needed to upgrade our Town-wide mapping, especially for drainage and water distribution.

All of Pages 2 and 3: This is a recap of the accomplishments of the last 15 years' projects. It is provided to help the Committee and others see our recommendation in its historical context.

All of Page 4: This page accomplishes two things:

In the **Drainage Only** sections, we note past projects completed in the past 15 years.

In the block after that is a list of drainage projects still remaining from the Town's 2005 Multi-Year Drainage Plan. Especially notable among these, **Memorial Avenue Ditch**, is discussed above.

In the final block, **POOR Streets Remaining**, we note the streets with a condition rating of 50 or lower, making them "Poor." This is a relatively short list, which will no doubt increase a bit with the 2022 Street Inspection Report. Those which are recommended to be done in the 10-Year Street Capital Program are shaded with the color to match each year's recommendations

Thank you for your careful consideration of our recommendations. We'll see you Thursday afternoon, October 29, 2020.

Very truly yours,

AMERICAN ENGINEERING ASSOCIATES, P.A.

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

Cc: Mr. Steve Albright, Public Services Director
Ms. Meredith Guns, Planning Director

AMERICAN Engineering

October 22, 2020

Mr. Steve Albright, Director of Public Services
Town of Kill Devil Hills
P. O. Box 1719
Kill Devil Hills, NC 27948

By email to steve@kdhnc.com

V20065 – 2021/22 Project: West Third Street (Option A; Basic Project)

Dear Mr. Albright:

American Engineering Associates – Southeast, P. A., Inc (American) is pleased to offer this proposal for professional services in connection with this project pursuant to the recommendations of the Street Improvements and Special Projects Committee at its February 6, 2020 and October 29, 2020 meetings. This proposal represents the first of three (3) optional scopes of work. Our Design Phase work will consist of the following:

West Third Street-Option A, Basic Project

Preliminary Engineering and Design Phases

Name of Street or Project Segment (includes entire length of street unless otherwise noted)	**Description of Services**	**Length**
West Third Street, from US 158 west thru Creek Street Intersection Repair/replace as needed existing concrete curb & gutter, sidewalk; add sidewalk S side from Seminole to Creek. Replace ex. 8" AC WM with 8" PVC WM; Add/renew FH's as req'd. 18" or 24" HDPE sock drain trunk along S side, side & depth to drain back to Apache St±, stubs and cross drains to N side & side streets. Maintain 24' wide pavement, except 3 lanes Aztek to US 158. Overlay street (leveling course +2"; improve crown).	Provide property and topographic surveying on 50' sections, with supplementary shots. Analysis of topography may result in minor alterations to scope of improvements described at left. Provide complete design. Primary design format will be 1" = 20', 24" x 36" plan and profile sheets, supplemented with overall sheet, cover sheet, detail sheet(s) as required to describe the work fully. All supporting computations included. Plans and contract documents will be formatted to allow separate bids to be received on each component street/segment, to the extent feasible. Secure State Stormwater and E&S permits if required. Prepare contract documents (General Conditions, Technical Specifications, etc.) using most recent documents as bases.	**1,194'**
Seminole Street, from Third St to Indian St Overlay street (3" in 2 lifts; enhance crown). Install 12" sock drain southward; tie to existing system, Indian St intersection. Replace ex. 6" AC WM with 6" PVC WM; Add/renew FH's as req'd.		**930'**
US 158, West Side drainage, from W Third Street northward through W Fifth Street Replace existing undersized, poor-condition culverts at W third St (36"), Circle K (36"), car wash (36"), Enterprise (36") Speedway (36"), W Fourth St (36") & W Fifth St (30"). Project 0.05% invert slope upstream from ex. 2.25 @ N end Dare Centre; 3.0 @ WFifth. Possible continuous 36" for (3) commercial entrances. Regrade open ditch sections in between culverts to form continuous flowline grade. Consider "sonofaditch" treatment.		**1,600'**
		Street Total **2,124'**

For each of the component projects in the table on the preceding page, we will perform the services described for a lump sum fee as stated in **blue, boldface type** at the lower right-hand corner of the following tables:

West Third Street-Option A, Basic Project **Preliminary Engineering and Design Phases**			
Staff Classification	**Hours**	**Rate per Hour**	**Extension**
Senior Consultant (W. P. Burkhimer, Jr.)	96	$200.00	$19,200.00
Senior Engineer	40	$150.00	$6,000.00
Engineer	80	$110.00	$8,800.00
CADD Operator	240	$ 85.00	$20,400.00
Field Representative (Technician)	16	$ 50.00	$ 800.00
Survey Party	160	$115.00	$18,400.00
Duplication Costs , Expenses and Permitting Fees		Lump Sum:	$1,440.00
Subtotal, Estimated Fees by Staff Hours			$75,040.00
Lump Sum Fee:			**$75,000.00**

Our very rough, preliminary estimate of total project cost is $1,156,000 ($748,000 in street funding plus $398,000 in water funding plus $50,000 in sidewalk funding). The **Lump Sum Fee** for all the design services described above is: **$75,000.00** which is about 6.5% of the total anticipated project cost just noted. This is lower than typical, due to the efficiency of designing several types of high-value improvements in the same corridor. These fees represent our best estimate of where our actual costs of design will come in.

Our fee for the **Bidding Phase** work on the project shall be a lump sum of **$7,000.00**, based on our recent cost experience. If it is the pleasure of the Board of Commissioners to authorize the project to be bid when design is complete, this amount should be approved at this time. This includes preparation of contract documents, coordinating newspaper advertising, arranging and conducting pre-bid meeting(s), responding to Requests for Information, including preparation of addenda, conducting the bid opening, preparing and presenting the recommendation for award to the Board, and coordinating the execution of the contract agreement by the parties to the contract.

Upon completion of our work on these several projects, the Town of Kill Devil Hills will own and have the right to copy and re-use such drawings on future projects without separate compensation to AE, its subconsultant, or anyone else; provided, however, that the engineer designing and sealing any such plans for a future project would have to assume responsibility for the complete design of that future project, including any design elements re-used from this project, and—further—the Town agrees that neither we nor our subconsultant would have any professional responsibility for the design resulting from any such re-use. Accordingly, in any such future copying and re-use by others, the seals, signatures and title blocks of AE and/or its subconsultant must be removed. However, such removal shall not in any way negate AE's responsibility for the design of the original project.

For the **Construction Phase** work, we will quote specific fees for the project after our design work has been completed, bids received, and the Board of Commissioners has decided what construction work will be awarded. For advance estimating purposes, this will be about 5% of the total project cost, or around $58,000.00. This recognizes the relatively large project cost but its compact size.

Additional Services

Any work not covered within the scope outlined above shall be performed at our hourly rates noted below (through June 30, 2021). Our hourly rates for the term of this proposal, which will be the basis for calculating lump sum fees and the basis of billing hourly work, are set forth below:

Staff Categories	Hourly Rates
Principal Professional /Engineer	$180.00
Senior Consultant (W. P. Burkhimer, Jr.)	$200.00
Senior Professional Engineer or Surveyor	$150.00
Project Engineer or Surveyor	$110.00
Engineering or Surveying Technician	$ 85.00
4 Person Survey Party	$150.00
3 Person Survey Party	$135.00
2 Person Survey Party/Party Chief w/Robotic Instrument	$115.00
CADD Operator	$ 85.00
Other Project Representative	$ 50.00
Clerical	$ 50.00

Reimbursable Expenses

Reimbursable expenses are those which are associated with professional services performed on a time and materials basis and include out-of-pocket expenditures advanced in the interest of the project. Almost all printing and copying are done in-house and are invoiced at the unit rates specified, except they are included in lump-sum project fees. The reimbursable expenses we anticipate will be incurred on this project are:

Copies of maps, plats, deeds, plans, data, etc.	cost +10%
Long distance/Conference phone calls	cost +10%
Overnight delivery (UPS, FedEx)	cost +10%
Mileage	$0.575 / mile
Prints/Copies on:	
Bond	$0.20/square foot
Vellum	$1.50/square foot
Mylar	$3.00/square foot
Color Prints on Bond	
Letter	$1.00/copy
Legal	$2.00/copy
12" x 24"	$3.00/copy
Large Scale	$1.50/square foot
Specialty Printing/Plotting/Mounting	cost +10%
Printing/copying/mounting by others	cost +10%
Color Prints on Bond	
Letter	$1.00/copy

Legal	$2.00/copy
12" x 24"	$3.00/copy
Large Scale	$1.50/square foot
Specialty Printing/Plotting/Mounting	cost +10%
Printing/copying/mounting by others	cost +10%

Permit Fees

Fees for State Stormwater and Erosion/Sedimentation Control permits, as required, are included in the foregoing lump sum fee.

CLOSING

Thank you for your time and consideration in reviewing this proposal. Please note that our standard Terms and Conditions, included with our February 13, 2020 General Services proposal are an integral part of this proposal. American Engineering looks forward to working with you on this project. Please feel free to contact me with any questions or comments you may have.

Sincerely,

American Engineering Associates – Southeast, PA, Inc.

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

V:\2020\V20065 - KDH 21-22 Project - W Third St\Proposals\2021-22 Streets Project - W Third St Option A - October 22 2020.Docx

ACCEPTANCE

IN WITNESS WHEREOF, the parties have executed this Agreement by their authorized representatives to be effective as of the day and year first mentioned above.

American Engineering Associates – Southeast, PA, Inc.	Town of Kill Devil Hills, NC
By: _____	**By:** _____
Name: _____	**Name:** _____
Title: _____	**Title:** _____
Date: _____	**Date:** _____

STANDARD TERMS AND CONDITIONS

...shall be as set forth in our February, 2020 General Services proposal to you.

AMERICAN Engineering

October 22, 2020

Mr. Steve Albright, Director of Public Services
Town of Kill Devil Hills
P. O. Box 1719
Kill Devil Hills, NC 27948

By email to steve@kdhnc.com

V20065 – 2021/22 Project: West Third Street (Option B; Extend Sidewalk to Bay)

Dear Mr. Albright:

American Engineering Associates – Southeast, P. A., Inc (American) is pleased to offer this proposal for professional services in connection with this project pursuant to the recommendations of the Street Improvements and Special Projects Committee at its February 6, 2020 and October 29, 2020 meetings. This proposal is for the incremental, additional effort to Option B, required to extend just a 5' sidewalk and minimal supporting drainage work westward from Creek St to Bay Drive. Our Design Phase work will consist of the following:

West Third Street-Option B, Extend Sidewalk to Bay Drive

Preliminary Engineering and Design Phases

Name of Street or Project Segment (includes entire length of street unless otherwise noted)	**Description of Services**	**Length**
(additive to Option A) **West Third Street**, from Creek Street west to Bay Drive Intersection (Provide Topographic Surveying of entire cross-section of this portion of W Third St, to assure placement of sidewalk and supporting drainage takes into account future WM installation and remaining street improvements.) Extend 5' sidewalk westward from Creek St to Bay Drive, with curb rams and crosswalks at each intervening intersection. Where curb returns are missing, install them, set up for future street improvement. Install pipe in open-ditch sections (generally, Sunset to Bay) to facilitate sidewalk installation. Provide capped sleeves under SW for water services w/future WM project. Where patches are required, provide high quality patch, as no overlay may come for several years…unless Option C is also exercised at this time. No WM replacement with this option.	Provide property and topographic surveying on 50' sections, with supplementary shots. Analysis of topography may result in minor alterations to scope of improvements described at left. Provide complete design. Primary design format will be 1" = 20', 24" x 36" plan and profile sheets, supplemented with overall sheet, cover sheet, detail sheet(s) as required to describe the work fully. All supporting computations included. Plans and contract documents will be formatted to allow separate bids to be received on each component street/segment, to the extent feasible. Secure State Stormwater and E&S permits if required. Prepare contract documents (General Conditions, Technical Specifications, etc.) using most recent documents as bases.	**(Sidewalk Only) 2,587'**

For each of the component projects in the table on the preceding page, we will perform the services described for a lump sum fee as stated in **blue, boldface type** at the lower right-hand corner of the following tables:

West Third Street-Option B, Extend Sidewalk to Bay Drive **Preliminary Engineering and Design Phases**			
Staff Classification	**Hours**	**Rate per Hour**	**Extension**
Senior Consultant (W. P. Burkhimer, Jr.)	24	$200.00	$4,800.00
Senior Engineer	12	$150.00	$1,800.00
Engineer	16	$110.00	$1,760.00
CADD Operator	60	$ 85.00	$5,100.00
Field Representative (Technician)	4	$ 50.00	$ 200.00
Survey Party	60	$115.00	$6,900.00
Duplication Costs , Expenses and Permitting Fees		Lump Sum:	$1,440.00
Subtotal, Estimated Fees by Staff Hours			$22,000.00
		Lump Sum Fee:	**$22,000.00**

Our very rough, preliminary estimate of total project cost is $152,000 ($42,000 in street funding plus $10,000 in water funding plus $100,000 in sidewalk funding). The **Lump Sum Fee** for all the design services described above is: **$22,000.00** which is about 14.5% of the total anticipated project cost just noted. This is higher than typical, due to the relatively small cost of the project and the fact that includes topography supporting the later design of remaining, Option C phase(s) of West Third Street. These fees represent our best estimate of where our actual costs of design will come in.

Our fee for the **Bidding Phase** work on the project shall be a lump sum of $6,000.00, based on our recent cost experience. If it is the pleasure of the Board of Commissioners to authorize the project to be bid when design is complete, this amount should be approved at this time. This includes preparation of contract documents, coordinating newspaper advertising, arranging and conducting pre-bid meeting(s), responding to Requests for Information, including preparation of addenda, conducting the bid opening, preparing and presenting the recommendation for award to the Board, and coordinating the execution of the contract agreement by the parties to the contract. **If this Option B work is bid together with Option A, as would be expected, there would be zero additional Bidding costs.**

Upon completion of our work on these several projects, the Town of Kill Devil Hills will own and have the right to copy and re-use such drawings on future projects without separate compensation to AE, its subconsultant, or anyone else; provided, however, that the engineer designing and sealing any such plans for a future project would have to assume responsibility for the complete design of that future project, including any design elements re-used from this project, and—further—the Town agrees that neither we nor our subconsultant would have any professional responsibility for the design resulting from any such re-use. Accordingly, in any such future copying and re-use by others, the seals, signatures and title blocks of AE and/or its

subconsultant must be removed. However, such removal shall not in any way negate AE's responsibility for the design of the original project.

For the **Construction Phase** work, we will quote specific fees for the project after our design work has been completed, bids received, and the Board of Commissioners has decided what construction work will be awarded. For advance estimating purposes, this will be about 5% of the total project cost, or around $8,000.00. This is in addition to the Option A work, which would be constructed simultaneously.

Additional Services

Any work not covered within the scope outlined above shall be performed at our hourly rates noted below (through June 30, 2021). Our hourly rates for the term of this proposal, which will be the basis for calculating lump sum fees and the basis of billing hourly work, are set forth below:

Staff Categories	Hourly Rates
Principal Professional /Engineer	$180.00
Senior Consultant (W. P. Burkhimer, Jr.)	$200.00
Senior Professional Engineer or Surveyor	$150.00
Project Engineer or Surveyor	$110.00
Engineering or Surveying Technician	$ 85.00
4 Person Survey Party	$150.00
3 Person Survey Party	$135.00
2 Person Survey Party/Party Chief w/Robotic Instrument	$115.00
CADD Operator	$ 85.00
Other Project Representative	$ 50.00
Clerical	$ 50.00

Reimbursable Expenses

Reimbursable expenses are those which are associated with professional services performed on a time and materials basis and include out-of-pocket expenditures advanced in the interest of the project. Almost all printing and copying are done in-house and are invoiced at the unit rates specified, except they are included in lump-sum project fees. The reimbursable expenses we anticipate will be incurred on this project are:

Copies of maps, plats, deeds, plans, data, etc.	cost +10%
Long distance/Conference phone calls	cost +10%
Overnight delivery (UPS, FedEx)	cost +10%
Mileage	$0.575 / mile
Prints/Copies on:	
Bond	$0.20/square foot
Vellum	$1.50/square foot
Mylar	$3.00/square foot
Color Prints on Bond	
Letter	$1.00/copy
Legal	$2.00/copy
12" x 24"	$3.00/copy
Large Scale	$1.50/square foot

Specialty Printing/Plotting/Mounting	cost +10%
Printing/copying/mounting by others	cost +10%
Color Prints on Bond	
Letter	$1.00/copy
Legal	$2.00/copy
12" x 24"	$3.00/copy
Large Scale	$1.50/square foot
Specialty Printing/Plotting/Mounting	cost +10%
Printing/copying/mounting by others	cost +10%

Permit Fees

Fees for State Stormwater and Erosion/Sedimentation Control permits, as required, are included in the foregoing lump sum fee.

CLOSING

Thank you for your time and consideration in reviewing this proposal. Please note that our standard Terms and Conditions, included with our February 13, 2020 General Services proposal are an integral part of this proposal. American Engineering looks forward to working with you on this project. Please feel free to contact me with any questions or comments you may have.

Sincerely,

American Engineering Associates – Southeast, PA, Inc.

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

V:\2020\V20065 - KDH 21-22 Project - W Third St\Proposals\2021-22 Streets Project - W Third St Option B - October 22 2020.Docx

ACCEPTANCE

IN WITNESS WHEREOF, the parties have executed this Agreement by their authorized representatives to be effective as of the day and year first mentioned above.

American Engineering Associates – Southeast, PA, Inc.	Town of Kill Devil Hills, NC
By: _____	**By:** _____
Name: _____	**Name:** _____
Title: _____	**Title:** _____
Date: _____	**Date:** _____

STANDARD TERMS AND CONDITIONS

...shall be as set forth in our February, 2020 General Services proposal to you.

AMERICAN Engineering

October 22, 2020

Mr. Steve Albright, Director of Public Services
Town of Kill Devil Hills
P. O. Box 1719
Kill Devil Hills, NC 27948

By email to steve@kdhnc.com

V20065 – 2021/22 Project: West Third Street (Option C; Extend WM, Drainage, Overlay to Bay)

Dear Mr. Albright:

American Engineering Associates – Southeast, P. A., Inc (American) is pleased to offer this proposal for professional services in connection with this project pursuant to the recommendations of the Street Improvements and Special Projects Committee at its February 6, 2020 and October 29, 2020 meetings. This proposal is for the incremental, additional effort to Option B, required to extend just a 5' sidewalk and minimal supporting drainage work westward from Creek St to Bay Drive. Our Design Phase work will consist of the following:

West Third Street-Option C, Extend Street, Drainage & WM to Bay Drive

Preliminary Engineering and Design Phases

Name of Street or Project Segment (includes entire length of street unless otherwise noted)	**Description of Services**	**Length**
(further additive to Option A + Option B) **West Third Street**, from Creek Street west to Bay Drive Intersection (All required Topographic Surveying to support this Option C is included under Option B.) Install pipe in open-ditch sections (generally, Sunset to Bay) to facilitate sidewalk installation. Provide capped sleeves under SW for water services w/future WM project. Where patches are required, provide high quality patch, as no overlay may come for several years. Replace ex. 8" AC WM with 8" PVC WM; Add/renew FH's as req'd. 18" or 24" HDPE sock drain trunk along S side, side & depth to drain back to Apache St±, stubs and cross drains to N side & side streets. Maintain 24' wide pavement.	Provide property and topographic surveying on 50' sections, with supplementary shots. Analysis of topography may result in minor alterations to scope of improvements described at left. Provide complete design. Primary design format will be 1" = 20', 24" x 36" plan and profile sheets, supplemented with overall sheet, cover sheet, detail sheet(s) as required to describe the work fully. All supporting computations included. Plans and contract documents will be formatted to allow separate bids to be received on each component street/segment, to the extent feasible. Secure State Stormwater and E&S permits if required. Prepare contract documents (General Conditions, Technical Specifications, etc.) using most recent documents as bases.	**2,587'**

For each of the component projects in the table on the preceding page, we will perform the services described for a lump sum fee as stated in **blue, boldface type** at the lower right-hand corner of the following tables:

West Third Street-Option C, Extend Street, Drainage & WM to Bay Drive **Preliminary Engineering and Design Phases**			
Staff Classification	**Hours**	**Rate per Hour**	**Extension**
Senior Consultant (W. P. Burkhimer, Jr.)	80	$200.00	$16,000.00
Senior Engineer	40	$150.00	$6,000.00
Engineer	80	$110.00	$8,800.00
CADD Operator	160	$ 85.00	$13,600.00
Field Representative (Technician)	12	$ 50.00	$ 600.00
Survey Party	0	$115.00	$ 0.00
Duplication Costs , Expenses and Permitting Fees		Lump Sum:	$1,440.00
Subtotal, Estimated Fees by Staff Hours			$46,440.00
		Lump Sum Fee:	**$46,400.00**

Our very rough, preliminary estimate of total project cost is $673,000 ($337,000 in street funding plus $336,000 in water funding). The **Lump Sum Fee** for all the design services described above is: **$46,400.00** which is about 6.9% of the total anticipated project cost just noted. This is a bit lower than typical, since the work would be performed as an extension of the Option A + Option B work (resulting in design economies of scale) and since the cost of the topo for the water and street work is already covered in Option B. These fees represent our best estimate of where our actual costs of design will come in. It should be noted that this price would be at least $10,000 higher, plus the effects of inflation, if this design is done separately, years down the road.

Our fee for the **Bidding Phase** work on the project shall be a lump sum of $7,000.00, based on our recent cost experience. If it is the pleasure of the Board of Commissioners to authorize the project to be bid when design is complete, this amount should be approved at this time. This includes preparation of contract documents, coordinating newspaper advertising, arranging and conducting pre-bid meeting(s), responding to Requests for Information, including preparation of addenda, conducting the bid opening, preparing and presenting the recommendation for award to the Board, and coordinating the execution of the contract agreement by the parties to the contract. **If this Option C work is bid together with Options A and B, there would be zero additional Bidding costs.** If the bidding is done later, a full $7,000 bidding fee, possibly increased a little due to inflation, would be required.

Upon completion of our work on these several projects, the Town of Kill Devil Hills will own and have the right to copy and re-use such drawings on future projects without separate compensation to AE, its subconsultant, or anyone else; provided, however, that the engineer designing and sealing any such plans for a future project would have to assume responsibility for the complete design of that future project, including any design elements re-used from this

project, and—further—the Town agrees that neither we nor our subconsultant would have any professional responsibility for the design resulting from any such re-use. Accordingly, in any such future copying and re-use by others, the seals, signatures and title blocks of AE and/or its subconsultant must be removed. However, such removal shall not in any way negate AE's responsibility for the design of the original project.

For the **Construction Phase** work, we will quote specific fees for the project after our design work has been completed, bids received, and the Board of Commissioners has decided what construction work will be awarded. For advance estimating purposes, this will be about 5% of the total project cost, or around $34,000.00. This is in addition to the Option A + Option B work, which would be constructed simultaneously.

Additional Services

Any work not covered within the scope outlined above shall be performed at our hourly rates noted below (through June 30, 2021). Our hourly rates for the term of this proposal, which will be the basis for calculating lump sum fees and the basis of billing hourly work, are set forth below:

Staff Categories	Hourly Rates
Principal Professional /Engineer	$180.00
Senior Consultant (W. P. Burkhimer, Jr.)	$200.00
Senior Professional Engineer or Surveyor	$150.00
Project Engineer or Surveyor	$110.00
Engineering or Surveying Technician	$ 85.00
4 Person Survey Party	$150.00
3 Person Survey Party	$135.00
2 Person Survey Party/Party Chief w/Robotic Instrument	$115.00
CADD Operator	$ 85.00
Other Project Representative	$ 50.00
Clerical	$ 50.00

Reimbursable Expenses

Reimbursable expenses are those which are associated with professional services performed on a time and materials basis and include out-of-pocket expenditures advanced in the interest of the project. Almost all printing and copying are done in-house and are invoiced at the unit rates specified, except they are included in lump-sum project fees. The reimbursable expenses we anticipate will be incurred on this project are:

Copies of maps, plats, deeds, plans, data, etc.	cost +10%
Long distance/Conference phone calls	cost +10%
Overnight delivery (UPS, FedEx)	cost +10%
Mileage	$0.575 / mile
Prints/Copies on:	
Bond	$0.20/square foot
Vellum	$1.50/square foot
Mylar	$3.00/square foot
Color Prints on Bond	
Letter	$1.00/copy
Legal	$2.00/copy

12" x 24"	$3.00/copy
Large Scale	$1.50/square foot
Specialty Printing/Plotting/Mounting	cost +10%
Printing/copying/mounting by others	cost +10%
Color Prints on Bond	
Letter	$1.00/copy
Legal	$2.00/copy
12" x 24"	$3.00/copy
Large Scale	$1.50/square foot
Specialty Printing/Plotting/Mounting	cost +10%
Printing/copying/mounting by others	cost +10%

Permit Fees

Fees for State Stormwater and Erosion/Sedimentation Control permits, as required, are included in the foregoing lump sum fee.

CLOSING

Thank you for your time and consideration in reviewing this proposal. Please note that our standard Terms and Conditions, included with our February 13, 2020 General Services proposal are an integral part of this proposal. American Engineering looks forward to working with you on this project. Please feel free to contact me with any questions or comments you may have.

Sincerely,

American Engineering Associates – Southeast, PA, Inc.

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

V:\2020\V20065 - KDH 21-22 Project - W Third St\Proposals\2021-22 Streets Project - W Third St Option C - October 22 2020.Docx

ACCEPTANCE

IN WITNESS WHEREOF, the parties have executed this Agreement by their authorized representatives to be effective as of the day and year first mentioned above.

American Engineering Associates – Southeast, PA, Inc.	Town of Kill Devil Hills, NC
By: _____	**By:** _____
Name: _____	**Name:** _____
Title: _____	**Title:** _____
Date: _____	**Date:** _____

STANDARD TERMS AND CONDITIONS

...shall be as set forth in our February, 2020 General Services proposal to you.

KILL DEVIL HILLS -- Street and Drainage Improvements Recommendations

10/23/20

FY 2020-21

Preliminary Cost (Including design and construction administration. All costs in $000.)

FALL Bid Package	Condition	Rating	Length	Remarks	Street	Drainage	WM	Total
First Flight Village 3 / Landings 3	F3-Poor	48±	**3,460**		**$329**	**$208**	**$50**	**$586**
Cedar Dr, Captains Ln, Teakwood Ln, Captains Cir; ex WM is PVC; overlay & drainage								
SPRING Bid Package								
Between the Highways			**2,564**		**$261**	**$103**	**$100**	**$464**
Overlay E Helga, E Fourth w Drainage	Poor	41±	1,130		$107	$45	$25	
Build Briggs w Drainage	Poor	26	234		$40	$9	$25	
E Dean St, overlay	Poor	50	300		$29	$12	$25	
E Martin St, overlay	Poor	51	900		$86	$36	$25	
			6,024	*1.14 miles Poor*			**Total for FY 2020-21:**	**$1,050**
							(Actual PreBid Engineer's Estimate will be about 30% higher)	

FY 2021-22

Option A - Basic Design

Preliminary Cost (Including design and construction administration. All costs in $000.)

	Condition	Rating	Length	Remarks	Sidewalk Funding	Street	Drainage	WM	Total
W Third St (US 158 to Creek; extend drainage);					**$50**	**$288**	**$460**	**$358**	**$1,156**
W Third: drainage, overlay, WM, SW	Poor	43.3	1,194		$50	$93	$186	$155	
Seminole St (W Third-Indian) St, Dr, WM	Poor	46	930			$195	$74	$102	
US 158 Drainage (W Third to W Fifth)	replace 7 culverts w/36" & 30"						$200	$100	
			2,124	*0.40 miles Poor*					
				Street & Drainage Funding Required (Total above, minus WM & SW):					***$749***

FY 2021-22

Option B - Extend only Sidewalk to Bay

Preliminary Cost (Including design and construction administration. All costs in $000.)

	Condition	Rating	Length	Remarks	Sidewalk Funding	Street	Drainage	WM	Total
W Third St (Sidewalk Creek to Bay)					**$100**	**$0**	**$42**	**$10**	**$152**
Topo, 5' walk, drainage req'd for walk	Fair3	58.6	2,587		$100	$0	$42	$10	
(about 530' of drainage)			0	*0.00 miles Poor*					
							Total, Option A + Option B		**$1,309**
				Street & Drainage Funding Required (Total above, minus WM & SW):					***$791***

FY 2021-22

Option C - Ext. Street, WM & Drainage to Bay

Preliminary Cost (Including design and construction administration. All costs in $000.)

	Condition	Rating	Length	Remarks	Sidewalk Funding	Street	Drainage	WM	Total
W Third St (US 158 to Bay; WM, drainage & SW)					**$0**	**$181**	**$155**	**$336**	**$673**
Creek W: SW, WM, drainage, 1½" overla	Fair3	58.6	2,587		$0	$181	$155	$336	
			0	*0.00 miles Poor*					
							Total, Option A + Option B + Option C		**$1,981**
				Street & Drainage Funding Required (Total above, minus WM & SW):					***$1,127***

FY 2022-23

Preliminary Cost (Including design and construction administration. All costs in $000.)

	Condition	Rating	Length	Remarks	Street	Drainage	WM	Total
Wrightsville Blvd	**Poor**	46	5,340		**$507**	**$374**	**$634**	**$1,515**
Goddard to Carolyn; overlay, sock drain; upgrade 60% of WM					$507	$374	$288	
Neptune Drive, replace AC WM, 6"			940				$85	
Atlantic Street, replace AC WM, 8"			940				$103	
Clark Street, replace AC WM, 8"			950				$105	
Neptune Drive, replace AC WM, 6"			590				$53	
			5,340	*1.01 miles Poor*				
				Street & Drainage Funding Required (Total above, minus WM):				***$881***

FY 2023-24 and beyond

Preliminary Cost (Including design and construction administration. All costs in $000.)

(provided not as a formal recommendation, just to stimulate future thinking)

	Condition	Rating	Length	Remarks	Street	Drainage	WM	Total
Memorial Blvd Drainage Trunk, Phase 2			3,250		**$309**	**$445**	**$50**	**$804**
Carlton, Corrigan, Clark, DW's, "SOD"; overlay Mem.	F1, F2, P							
Memorial Blvd Drainage Trunk, Phase 3			3,300			**$330**	**$80**	**$410**
Martin thru Carolyn; parallel 30", WM adjustments								
W Sportsman & Dock			3,546		**$378**	**$172**	**$266**	**$816**
W Sportsman Dr	Poor	46	2,997		$285	$150	$240	
Dock Street	Poor	26.6	549		$93	$22	$26	
Ocean Acres WM Replacement	F3-Poor	55±	10,500		**$840**	**$50**	**$798**	**$1,688**
Replace All AC with PVC; overlay streets; drainage done urgently 2010-12. Pavement issue, Ocean Acres Dr from 2012								
				TOTAL OF 5 PROJECTS:	**$1,527**	**$997**	**$1,194**	**$3,717**
				AVERAGE SIZE:				**$743**

KILL DEVIL HILLS -- Street and Drainage Improvements Recommendations

10/23/20

Blocks Below Summarize Previous Years' Projects

Note: Older project printed small to save space; more recent ones larger on next page.

2005 Fall Project	(May 2003)			Poor Streets Fixed This Season: 400 ft	Cumulative Length, Poor Streets Fixed
Street	**Street Condition**		**Length**	**Status**	
Eighth Ave (Martin to Airstrip)	Semi-improved		450	Completed	
Ninth Ave (Martin to Airstrip)	**Poor**		**400**	Completed	400
Culvert repairs	Not applicable			Completed	

2006 Spring Project	(May 2003)			Poor Streets Fixed This Season: 380 ft	Cumulative Length, Poor Streets Fixed
Street	**Street Condition**		**Length**	**Comments**	
West Baum St	Unimproved		600	No Award Spring 05, Fall 05, Spring 06	
W. Fresh Pond/ W. Lake Drive Connector	**Poor**		**380**	Completed	780
Creek St (Third to Indian)	Drainage		600	Completed	
Cardinal St (800 Block)	Drainage		425	Completed	

2006 Fall Project	(May 2003)		3,650	Poor Streets Fixed This Season: 3,650 ft	Cumulative Length, Poor Streets Fixed
Street	**Street Condition**		**Length**	**Comments**	
Sir Walter Rd	**Poor**		**1,920**	Completed	2,700
Princess Anne Dr (Camellia to First)	**Poor**		**720**	Completed	3,420
Camellia Dr (Sir Walter to Princess Anne)	**Poor**		**350**	Completed	3,770
East Landing Dr (Cove to US 158)	**Poor**		**660**	Completed; overlay	4,430

2007 Spring Project	(2007 rating)		3,520	Poor Streets Fixed This Season: 3,520 ft	Cumulative Length, Poor Streets Fixed
Street	**Street Condition**		**Length**	**Comments**	
Seagate Ct	**Poor**		**100**	Completed	4,530
Sea Village La	**Poor**		**500**	Completed	5,030
Sea Wing Ct	**Poor**		**100**	Completed	5,130
Raymond Ave (Wilkinson to Arch)	**Poor**		**1,625**	Completed	6,755
Raymond Ave (Arch to Town Line)	Fair 3		600	No Award Spring 07, built 2013	
E. Chowan St (NC 12 to Raymond)	**Poor**		**595**	Completed	7,350
E. Sothel St (NC 12 to Raymond)	**Poor**		**600**	Completed	7,950

2007-08 Project	(2007 rating)		3,650	Poor Streets Fixed This Season: 2,350 ft	Cumulative Length, Poor Streets Fixed
Street	**Street Condition**		**Length**	**Comments**	
Bay Dr (Nixonton to Town Line)	**Poor**		**2,350**	Includes Multi-Purpose Trail	10,300
Bay Dr (Hayman to Nixonton)(Drainage)	Good		1,300	Drainage only; future trail	
Various Drainage Projects	(also listed Drainage Only below)				

2008-09 Project	(2007 rating)		6,482	Poor Streets Fixed This Season: 4,140 ft		Cumulative Length, Poor Streets Fixed
Street	**Street Condition**		**Length**	**Comments**		
St. Louis St (Susan to Bay)	**Poor**	41.4	**1,426**	Completed		11,726
Wallace St (Susan to Lee)	**Poor**	22.6	**717**	Completed		12,443
Truxton St (Lee to Bay)	**Poor**	43.8	**744**	Completed		13,187
Wilkinson St (Lee to Bay)	**Poor**	44.4	**1,253**	Completed	2.73	14,440
Lee Ave (Wilkinson to Cameron)	Fair3	54.0	2,342	Completed		
Palmetto St (Lee to Bath)	Poor	22.0	529	No Award Winter 08, built 2014		
E Avalon Drainage, Phase 3	(also listed Drainage Only below)			Complete; New Bern Street portion not awarded Winter 08		

2009-10 Project	(2007 rating)			Poor Streets Fixed This Season: 2,362 ft	Cumulative Length, Poor Streets Fixed
			4,126		
Street	**Street Condition**		**Length**	**Comments**	
W First St (Canal to Ketch)	**Poor**	50.6	**566**	w/MP Trail; Completed	15,006
W First St (Ketch to Landing)	**Excellent**	97.1	1,764	w/MP Trail; Completed	
W First St (Landing to south end)	**Poor**	46.1	**1,796**	w/MP Trail; Completed	16,802

2010-11 Project	(2007 rating)			Poor Streets Fixed This Season: 0 ft	Cumulative Length, Poor Streets Fixed
Phase 1A completed, stormwater only, on urgent basis			3,655		
Street	**Street Condition**		**Length**	**Comments**	
Ocean Acres Dr (158 to Copley W)	Fair3	59.0	2,800	Stormwater infiltration only	16,802
Harrington Lane (OA to Burns)	Good	89.0	250	Stormwater infiltration only	3.18 miles
Bell Avenue (OA to Burns)	Fair1	71.0	250	Stormwater infiltration only	
Gunas Dr (portion n of OA)	Fair1	75.0	135	Stormwater infiltration only	
Burns Dr (short portions)	Fair3	59.0	220	Stormwater infiltration only	

Fall FY 2011-2012 Project				Poor Streets Fixed This Season: 950 ft	Cumulative Length, Poor Streets Fixed
SW AREA (Ocean Acres) Stormwater, Phase 2	**Street Condition**		**Length**	**Comments**	
Ocean Acres Drive	Fair3	59.0	3,050	1.5" Overlay only	
Ocean Acres Drive	Poor	49.0	800	2" Overlay only	17,602
Burns Drive	Fair3	60.4	900	stormwater only	
Harrington Ave (Burns-Gunas)	Fair2	67.0	250	stormwater only	
Gunas Drive	Fair1	75.0	700	stormwater only	
Copley Drive	Fair1	77.0	400	stormwater only	
Jones Court	Poor	43.0	150	2" Overlay only	17,752
Adjust WM and remove 9 "jumpers"			6,250		3.36 miles

Spring FY 2011-12 Project	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
				Poor Streets Fixed This Season: 1,252 ft	
Pirates Loop	Poor	**47.0**	709	full reconstruction; grade change	18,461
Coral Drive	Poor	**48.4**	302	full reconstruction	18,763
Harpoon Drive	Poor	**48.4**	241	overlay	19,004
			1,252		3.6 miles

Fall FY 2012-13 Project	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
Parkwood Area (road reconstruction & drainage)				Poor Streets Fixed This Season: 1,579 ft	
Parkwood Dr	Poor	**50.4**	1,352	full reconstruction	20,356
Maple Ct	Fair 2	**70.0**	223	overlay	
Myrtle Ct	Poor	**48.4**	227	overlay	20,583
Elm Ct	Fair 3	**52.4**	245	overlay	3.9 miles
Telegraph Ct	Fair 3	**52.4**	400	overlay	
			4,951		

Spring FY 2012-13 Projects	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
Bay Drive Multi-Use Path, Phase 2				Poor Streets Fixed This Season: 0 ft	
Bay Drive (Avalon to Wilkinson)	Good	**86.2**	2,555	full reconst., first 2 blocks	
Bay Drive (Wilkinson to Nixonton)	Fair 2	**41.7**	415	overlay	20,583
					3.9 miles
Raymond Ave (Arch to Town Line)	Fair 3	**54.0**	600		
			3,570		

KILL DEVIL HILLS -- Street and Drainage Improvements Recommendations

10/23/20

Previous Years' Projects (continued from previous page)

FY 2013-14 Project: NW Area 2	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
Nixonton Street	Poor	42.0	1,039		
Bath Street	Poor	40.4	948		
Mary Hill Court	Poor	46.0	367		26,666
Columbia Avenue	Poor	37.4	777		5.05 miles
Jean Court	Poor	46.0	374		
Shiloh Street	Poor	42.0	1,159		
Truxton Street	Poor	50.0	890		
Wilkinson St (Columbia to 158)	Fair1	73.0	725		
Palmetto St (Lee to Bath)(Alternate?)	Poor	22.0	529		
			6,808	6,083 ft poor	

FY 2014-15 Project: N KHShores	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
Memorial Blvd. (Wright-Woodmere)	Poor	29.2	1,965		
Memorial Blvd. (48" pipe replacing ex. culverts)			*1,080*	1,080' is part of 1,965'	
Aviation Avenue	Excellent	95.6	550		28,631
Pinehurst Avenue	Fair1	73.6	550		5.42 miles
Sutton Avenue	Good	81.4	550		
Carlow Avenue	Good	90.8	550		
Raleigh Avenue	Fair2	68.4	945	158 to NC12	
Baker Avenue	Excellent	95.6	550		
Ferris Avenue	Fair1	71.2	550		
			2,910	1,965 ft poor	

FY 2015-16: Northwest Area, Phase 3, Wrightsville, Memorial, Sioux Drainage and E & W Eighth	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
Memorial Blvd. (Baum - halfway to Corrigan)	Poor	37.4	200	bid Sep 14; not awarded	
Wrightsville Blvd (Eighth to north end)	Poor	38.6	738	bid Sep 14; not awarded	32,596
Cameron Street	Poor	45.4	1,865		6.17 miles
Susan Drive	Poor	48.4	1,160		
E Eighth Street	Fair3	54.6	1,025	Nags Head 50% share: $0	
W Eighth St	Fair2	67.0	1,417	Nags Head 50% share: $100	
			6,405	3,965 ft poor	

FY 2016-17: Clark/Blue Jay St, Mustian St, Carlton Ave, Cooke Pl, Anchor Ct, Schooner Ct	Condition		Length	Remarks		Cumulative Length, Poor Streets Fixed
W Clark Street	Poor	48.0	1,396		begin Dec 16, complete Apr 17	
Blue Jay Street					begin Dec 16, complete Apr 17	36,561
Mustian Street	Poor	43.8	1,625		begin Dec 16, complete Apr 17	6.92 miles
W Carlton Ave	Poor	43.8	401			
Cooke Place	Poor	42.0	262		begin Dec 16, complete Apr 17	
Anchor Court	Poor	44.4	79		begin Dec 16, complete Apr 17	
Schooner Court	Fair2	56.4	200		begin Dec 16, complete Apr 17	
			3,963	3,965 ft poor		

FY 2017-18: Bay Drive Multi-Use Path, Phases 3 & 4	Condition		Length	Remarks	Cumulative Length, Poor Streets Fixed
Canal Dr, W First to Indian	Good	81.0	1,325		36,561
Bay, Indian to Avalon	Fair3	58.2	4,275		6.92 miles
			5,600	0 ft poor	

FY 2018-19: Whispering Pines	Condition	Ratinc	Length	Remarks	Cumulative Length, Poor Streets Fixed
Pine Gove Trail	Poor	46.3	2,170		42,721
Quail Lane	Poor	42.0	3,160		8.09 miles
Goldie Street	Fair3	56.4	150		
Harrington Lane (Burns to Pine Grove)	Poor	38.3	510		
Shay Street (Quail to Dean)	Poor	41.0	320		
Pine Cone Court	Fair3	54.0	180		
Pine Needle Court	Poor	42.3	180		
Heather Lane	Poor	46.0	320		
			6,990		
			6,160	1.17 miles Poor	

FY 2019-20: Hayman / Town Hall / Sixth	Condition	Rating	Length	Remarks	Cumulative Length, Poor Streets Fixed
Hayman Blvd & Plymouth Ave					48,531
Hayman Cir W to Bay; drainage; overlay	Poor	43.0	3,260		9.19 miles
Plymouth Ave, overlay	Poor	39.4	180		
Sixth Avenue &Town Hall Drive			2,370		
Town Hall Dr, overlay; drain	Poor	45.4	1,030		
Sixth Av (Airstrip to Baum), overlay & drain	Poor	46.6	1,340	overlay fabric	
			5,810		
			5,810	1.10 miles Poor	

FY 2020-21: Fall and Spring Bid Packages	Condition	Rating	Length	Remarks	Cumulative Length, Poor Streets Fixed
First Flight Village 3 / Landings 3					55,561
Cedar Dr, Captains La&Cir, Teakwood Ln	F3 - Poor	48.0	3,460		10.52 miles
Helga, Briggs, 4th, Martin, Dean			3,570		
Briggs St	Poor	47.8	1,030		
East Helga St	Poor	53	1,340	**narrow width after water project**	
East Fourth St	Fair1	74	200	bad drainage @ intersection	
East Martin St	Poor	50.1	900	22 w of Memorial	
East Dean St	Poor	50.0	300	0.06 miles Poor	
			7,030	1.33 miles Poor	

KILL DEVIL HILLS -- Street and Drainage Improvements Recommendations

10/23/20

Drainage Only Areas Completed

(per Albemarle & Associates 2005 Multiyear Drainage Plan)

Street or Area	Nature of Problem	Comments
06-07, East Avalon, Phase 1	Residential property Flooding	Avalon Street ONLY, not whole project; Completed Fall 04
07-08, Cardinal St	Residential property Flooding	Completed Spring 06
07-08, Creek St	Residential property Flooding	Completed Spring 06
07-08, Cedar Dr	Residential property Flooding	Completed Spring 06
06-07, East Avalon, Phase 2	Residential property Flooding	Completed Winter 07-08
Second St / Princess Anne Dr	Residential property Flooding	Completed Winter 07-08
Martin St / Blue Jay St	Commercial property flooding	Completed Winter 07-08
Baum St / Memorial Ave	Failing CMP, roadway damage	Completed Winter 07-08
East Fresh Pond Dr	Residential property Flooding	Completed Winter 07-08
East Holly St	Open ditch; safety issues	Completed Winter 07-08
08-09, East Avalon, Phase 3	Residential property Flooding	Completed Winter 08-09, except New Bern St
10-11, Southwest Area, Phase 1A	Residential property Flooding	Completed Summer 10
10-11, Southwest Area, Phase 2	Residential property Flooding	Completed Fall 11
14-15. NKHS, Memorial Ditch Phase 1	Failing CMP; develop backbone	Completed Spring 15
15-16, Sioux Street Drainage	Residential property Flooding	Completed Winter 15-16; owners provided easements
18-19, Quail La / Shay / Dean St	Residential property Flooding	Completed w/Whispering Pines Project, 2019

07-08, denotes Plan Year (FY) per Albemarle & Assoc. 2005 Multiyear Drainage Plan; ND = Not Determined

Drainage Only Areas Remaining

(per Albemarle & Associates 2005 Multiyear Drainage Plan)

Street or Area	Nature of Problem		Comments
Memorial Ave Ditch, Phases 2 & 3	Flooding; culvert failure		Continue 2-mile Master Plan; ocean outfall reliever. **Ph. 1 done 14-15.**
Third St		1200	Complete E portion with Street work.

07-08, denotes Plan Year (FY) per Albemarle & Assoc. 2005 Multiyear Drainage Plan; ND = Not Determined

POOR Streets Remaining

(after completion of 2019/20 projects; 2017 rating, **bold** dropped to **Poor** in 2017)

In "Poor Streets Remaining," streets highlighted with the following colors of shading are recommended on the first page for the following Fiscal Year:

FY 2022-2023 & beyond
FY 2021-2022

			Type (C ollector or L ocal A ccess)
RANDOM ST (Concrete)	Poor	512	LA
W. SPORTSMAN DR	Poor	2,997	LA
DOCK ST (Concrete)	Poor	549	LA
SEMINOLE ST (W Third to Indian)	**Poor**	930	LA
W. THIRD ST (US 158 to Creek)	Poor	1,194	LA
WRIGHTSVILLE BLVD (Goddard to Carolyn)	**Poor**	5,340	LA
MEMORIAL BLVD (1228 S to Martin)	**Poor**	1,540	C
BURNS DR	**Poor**	3,660	LA
POND ST	**Poor**	152	LA
Poor (2017) Streets After **20-21 Project**	**3.20 miles**	16,874 ft	