Town of Southern Shores
Regular Council Meeting
July 5, 2016

The Town of Southern Shores Council met in the Pitts Center located at 5375 N. Virginia Dare Trail at 5:30 p.m. on Tuesday, July 5, 2016.

COUNCIL MEMBERS PRESENT: Mayor Bennett, Council Members Leo Holland, Chris Nason and Gary McDonald.

COUNCIL MEMBERS ABSENT: Mayor Pro Tem Fred Newberry

CALL TO ORDER / PLEDGE OF ALLEGIANCE / MOMENT OF SILENCE
Mayor Bennett called the meeting to order at 5:30 p.m., led the Pledge of Allegiance, and held a moment of silence.

AMENDMENTS / APPROVAL OF AGENDA
MOTION: Council Member Holland moved to approve the agenda as presented. The motion was seconded by Council Member McDonald. The motion passed unanimously (4-0).

CONSENT AGENDA
The consent agenda consisted of the following items:

- Approval of Minutes- June 7, 2016 Regular Meeting.
- Budget Amendment #1- (Re-budget of remaining obligation of Code Re-write contract)
- Resolution 2016-07-01 (surplus property disposal)
- Approval of FY16-17 Secondary Post Storm Debris Removal and Monitoring Contractors

MOTION: Council Member Holland moved to approve the consent agenda. The motion was seconded by Council Member Nason. The motion passed unanimously (4-0).

STAFF REPORTS
Town Planner:
The Town Clerk presented the Planning Department's monthly report containing the following:

- Permitting and Inspections June 2016

Southern Shores Police Department
Chief Kole presented the Police Department's monthly report for June.

Southern Shores Volunteer Fire Department: Fire Chief, Ed Limbacher presented the Fire Department's monthly report for June.

GENERAL PUBLIC COMMENT
Mayor Bennett called for public comment and the following citizens offered comment with topic(s) as indicated:

- Ann Laufner, 25 E. Dogwood Trail. Supports acquisition of nearby property for storm water management.
- Pat Ringwall, 75 Gravey Pond Lane. Stated property at #7 Skyline Rd. would be a lovely place for a park. The garden club could help with advice and perhaps volunteer. It could be a nice green space and would connect Chicahauk with the rest of Southern Shores.
- Bill Broaddus, 31 East Dogwood Trail. Supports the storm water project on the corner of NC12 and East Dogwood Trail. It is a serious safety issue.
- Ursula Bateman, 360 Sea Oats Trail. Would like to know why Bill Broaddus's letter was read aloud during public comment period at previous meeting, and what the policy is.
- Toni Radomski, 183 Duck Road. Does not understand the inconsistences of when the Mayor chooses to cancel, or does not cancel, Council meetings.
- Ann Sjoerdsma, 69 Hickory Trail. Thanked Council Member McDonald and Mayor Pro Tem Newberry for looking at Town employees' salaries and benefits, and taking a fiscal responsible approach. The lot listed for sale on East Dogwood Trail is overpriced. Would like to see a senior center in lieu of a park at the Town property at #7 Skyline Rd. A five-year plan is good business and should be done without delay.

[Clerk's Note: A copy of the public comment signup sheet is hereby attached].

BOARD AND COMMITTEE REPORTS
South and East Dogwood Trail Task Force preliminary recommendation to Council.
Chairperson Mike Fletcher reported the South and East Dogwood Task Force members had agreed a physical survey of South and East Dogwood should be undertaken as soon as practical given the results of the recent Task Force Survey showing clear support for an addition of a walking path along South and East Dogwood Trail. A survey would necessarily be completed prior to any such additional work commencing. He recommended, on behalf of the Task Force, the Council authorize such a survey as was already budgeted for the year.

The Town Manager explained that the Public Words Director and he would work with Task Force Chairperson Fletcher on developing a RFQ and entering into a subsequent contract for a survey project if Council approves the Task Force request. He stated the survey may have to be broken down into sections if the entire project can't all be completed at one time utilizing current appropriated funds. The budget line appropriated for this project and adopted by Council on June 7th is $100,000.

Council Member McDonald questioned if there is a projected cost for the actual path development project, and questioned if Council is serious about supporting a path project if funds are to be spent for surveying.

The Town Manager stated an actual path project has not yet been recommended.

MOTION: Council Member Nason moved to direct staff to contract for a survey of South and East Dogwood Trail. The motion was seconded by Council Member Holland. The motion passed unanimously (4-0).

PUBLIC HEARING-CONSIDERATION OF AN ORDINANCE ESTABLISHING A CAPITAL IMPROVEMENT PLAN WITH AUTHORITY TO IMPLEMENT FOR FY 2016-2017

Town Attorney Gallop opened the public hearing and called on the public for comment. The following offered comment:

- Ann Sjoerdsma, 69 Hickory Trail. Asked how is the prioritized list of streets compiled. She stated there is value in the survey for South and East Dogwood Trail and stated the survey project is money well spent.
- Lisa Horner, 149 Yaupon Trail. Does not disagree that Yaupon Trail needs repair but would like for Council to delay approval of the year's capital improvement plan as there is a large amount of private construction already going on adjacent to Yaupon Trail. She prefers a new street be one lane rather than two lanes.
- Toni Radomski, 183 Duck Road. Expressed sympathy for previous speaker from Yaupon Trail, after stating "Let's not make this Fairway Drive again".

Hearing no others, Town Attorney Gallop closed the public hearing and turned the meeting back to the Mayor for discussion.

Mayor Bennett stated Yaupon Trail will likely take over a year due to the replacement of bulk heading first, and due to the CAMA permits needing to be obtained.

Council Member Nason stated as far as public safety vehicles accessing Yaupon Trail, the minimum width needed will have to be determined.

MOTION: Council Member McDonald moved to adopt an ordinance for FY16/17 *Establishing a Capital Improvement Plan with Authority to Implement for FY2016-2017*. The motion was seconded by Council member Holland. The vote passed unanimously (4-0).

OLD BUSINESS

CONSIDERATION OF OPTION FOR MAINTENANCE OF TOWN REAL PROPERTY AT #7 SKYLINE ROAD

MOTION: After a brief discussion, Mayor Bennett moved to direct staff to dispose of the existing property at #7 Skyline Road, Option #3 as presented by staff, and authorize an $11,000 appropriation from the Capital Reserve Fund in order to accomplish the demolition. [Option #3 is demolish and dispose of the structure, including the small out building, remove and dispose of the underground septic system, rough-grade the site, and maintain the site in its natural condition combined with the existing Town hall complex. This option would allow the Town to maintain the real property in its natural state combined with the Town hall complex, until Council later considers and adopts a formal plan for specific governmental and institutional use.] The motion was seconded by Council Member Holland. The motion passed unanimously (4-0).

CONSIDERATION OF ENGINEER'S REPORT OF CONDITIONS IN AREA OF INTERSECTION OF EAST DOGWOOD/ NC 12

Andy Deel of Deel Engineering LLC presented a Power Point presentation of his drainage analysis at NC Highway 12 and East Dogwood Trail (attached). Mr. Deel explained a target volume of approximately 17,000cf of storm water needs to be absorbed. He proposed three options for Council consideration. Option one consisted of swales in the median of East Dogwood Trail which would capture 2,400 cf of storm water and would cost approximately $5,000. Option Two consisted of swales in the highway right-of-way capturing 2,000 cf at an estimated cost of $3,000. Option three consisted of creating a nearby storm water retention pond capturing roughly 15,000 cf of storm water and costing about $50,000.

Engineer Andy Deel recommended doing all three options that have been presented in order to address the total target of cubic feet storm water volume.

Jerry Jennings, PE Division One Engineer for the NCDOT stated that hydraulics experts from Raleigh have also looked at the flooding issue and have reviewed Mr. Deel's proposal and made some comments, which in turn Mr. Deel has incorporated into his proposal. Mr. Jennings also stated that the Department of Transportation has approved $150,000 towards the project.

MOTION: Mayor Bennett moved to authorize the Town Manager on behalf of the Town, to make an offer, to negotiate and acquire, at a price no greater than the current list price as of 7/15/16, the vacant real property at 29 East Dogwood Trail, using a portion of the funds Council has budgeted for the "NC12/East Dogwood Trail Storm water Flooding Project". The motion was seconded by Council Member Nason. The motion passed unanimously (4-0).

MOTION: Mayor Bennett moved to authorize staff to proceed with final design and construction, in partnership with the NCDOT, of this storm water remediation project as presented and recommended by Andy Deel. The motion was seconded by Council member Holland. The motion passed unanimously (4-0).

OTHER BUSINESS

Town Manager's report

The Town Manager addressed several matters:

- The budget history and projections Council directed staff to develop should be ready to send to Council mid-July. The historical data has always been available and the three years of projections are being worked on right now.

  Council Member Nason asked the Town Manager if Mayor Pro Tem Newberry had been in touch with him to go over the budget projections to which the Town Manager answered no. Council Member Nason asked the Town Manager to contact Mr. Newberry to remind him of his interest in this. The Town Manager stated once projections are sent to individual Council Members, he is always available to discuss or review.

- The preliminary flood maps were released on June 30, 2016. He stated the Town website has expansive information on that information.
- There will be an informational meeting by staff and some of the potential historic property owners in Southern Shores on July 26th at 1:00 p.m. and staff has invited the State Historic Property Office as well. There are currently about 14 property owners who have expressed an interest.
- CodeWright planning staff is due to come back to Council in September with its draft code assessment for modernization the Town's Code of Ordinances.

Council Member's Comment & Responses

Council Member Holland stated he wanted to thank staff for managing the development of the FY15-16 budget, and also for their work in developing the FY16-17 budget.

Council Member Nason thanked the staff as well for the budget development stating it is a balanced budget with no new taxes. Southern Shores has the lowest taxes on the beach, still providing great services and doing big projects. He also thanked Chief Limbacher for a tour of the Fire Department and operations. He encouraged Council Member McDonald and Mayor Pro Tem Newberry both to go visit the SSVFD as he previously under-appreciated all that the Department does and it is very impressive.

CLOSED SESSION: Mayor Bennett called for a motion to go into closed session. Council Member Holland moved to go into closed session-pursuant to NCGS 143-318.11(a) Section (1) to consider adoption and/or release of actual and/or draft closed session minutes which

are privileged or confidential; and Section (6) to consider a personnel matter regarding an individual public officer or employee. The motion was seconded by Council member McDonald. The motion passed unanimously (4-0).

ADJOURN

MOTION: Upon returning to open session Mayor Bennett moved to adjourn. The motion was seconded by Council Member Holland. The motion passed unanimously (4-0). The time was 8:35.

ATTEST:

Thomas G. Bennett, Mayor

TOWN OF SOUTHERN SHORES SEAL NC

Respectfully submitted,

Sheila Kane, Town Clerk

TOWN OF SOUTHERN SHORES - PLANNING DEPARTMENT - MONTHLY REPORT FOR JUNE 2016

ISSUED DATE	PERMIT #	OWNER NAME	ADDRESS	USE	TYPE OF CONSTRUCTION	EST COST	BUILDING PERMIT FEE	RES/ COMM	CONTRACTOR
BUILDING PERMITS									
6/1/2016	9421	MASON, MATTHEW	4 SEVENTH AVENUE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 4,950.00	$ 100.00	R	R A HOY HEATING & A/C, INC
6/3/2016	9409	LOVE, STEVEN	62 OCEAN BOULEVARD	SINGLE FAMILY DWELLING	NEW CONSTRUCTION OF SFD	$ 1,500,000.00	$ 4,242.30	R	HUTTON & COMPANY, INC
6/3/2016	9422	LOMBARDI, ANTHONY	141 POTESKEET LOOP	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 10,960.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/3/2016	9423	HUTTO, CHRISTINE	160 S. DOGWOOD TRAIL	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,900.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/3/2016	9424	HALEY, LARRY	38 JUNIPER TRAIL	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,100.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/3/2016	9425	GOULDIN, JAMES	50 E. DOGWOOD TRAIL	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 11,475.00	$ 100.00	R	NORRIS MECHANICAL, LLC
6/6/2016	9427	RACKENS, ROBERT	96 SPINDRIFT TRAIL	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 7,450.00	$ 100.00	R	R.S. ANDREWS OF TIDEWATER
6/8/2016	9426	HERRON, RONALD	218 WAX MYRTLE TRL	SINGLE FAMILY DWELLING	NEW CONSTRUCTION OF SFD	$ 337,000.00	$ 1,771.00	R	FORREST SEAL, LLC
6/8/2016	9428	PRINCE FAMILY, LLC	17 CIRCLE DRIVE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,200.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/8/2016	9429	MANCUSO, ELSIE	55 DUCK WOODS DRIVE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 4,150.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/8/2016	9430	DOYLE, WILLIAM	157 OCEAN BOULEVARD	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 5,820.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/8/2016	9431	NEEDHAM, DAVID	146 CROOKED BACK LOOP	SINGLE FAMILY DWELLING	OTHER - ELECTRICAL	$ 5,000.00	$ 100.00	R	BEAR ROCK ELECTRIC
6/9/2016	9432	ANDREOTTA, MARK	3 NINTH AVENUE	SINGLE FAMILY DWELLING	NEW CONSTRUCTION OF SFD	$ 1,200,000.00	$ 4,645.80	R	THE COASTAL COTTAGE COMPANY, LLC
6/14/2016	9434	PADILLA, GREG	16 FOXWOOD CIRCLE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,000.00	$ 100.00	R	MASTER HEATING & COOLING
6/14/2016	9433	BOONE, ALLISON	287 N. DOGWOOD TRAIL	SINGLE FAMILY DWELLING	OTHER - PIER/PLATFORM	$ 15,605.00	$ 100.00	R	LIGHTNING MARINE CONSTRUCTION
6/15/2016	9436	GIORDANO, JAMES	75 OCEAN BOULEVARD	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 5,370.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/15/2016	9435	PIPKIN, ASHMEAD	172 OCEAN BOULEVARD	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,400.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/15/2016	9437	HAMMETT, DONALD	27 JUNIPER TRAIL	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,500.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/17/2016	9440	MCGRAW, JOSEPH	91 HOLLOW BEECH COURT	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 3,650.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/17/2016	9441	DUNEHOUSE, LLC	2 TENTH AVENUE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 11,850.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/17/2016	9442	LONG, CHARLES	56 DUCK WOODS DRIVE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 15,930.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/20/2016	9443	LOOS, KARL	5 MOCKINGBIRD LANE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 7,180.00	$ 100.00	R	NORTH CAROLINA AIR CONDITIONING
6/22/2016	9446	KANE, BRIAN	35 OCEAN VIEW LOOP	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 9,675.00	$ 100.00	R	MASTER HEATING & COOLING
6/22/2016	9447	SOPER, DAVID	4 SWEET GUM LANE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 4,656.00	$ 100.00	R	NORTH BEACH SERVICES
6/22/2016	9448	MCKITTRICK-GRANT, MARIANNE	9 SIXTH AVENUE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 4,600.00	$ 100.00	R	NORTH BEACH SERVICES
6/22/2016	9449	SMITH, STEPHEN	132 CROOKED BACK LOOP	SINGLE FAMILY DWELLING	ACCESSORY - STORAGE BUILDING	$ 8,000.00	$ 100.00	R	PAUL DELACRUZ
6/23/2016	9450	WATERS, RICHARD	13 SEVENTH AVENUE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,540.00	$ 100.00	R	R.A HOY HEATING & A/C, INC
6/23/2016	9439	GARDNER, CHRISTOPHER	244 N WOODLAND DRIVE	SINGLE FAMILY DWELLING	ADDITION	$ 28,700.00	$ 297.00	R	TODD COYLE CONSTRUCTION, LLC
6/23/2016	9451	SOUTHERN SHORES CIVIC ASSOCIATION, INC	148A OCEAN BOULEVARD	COMMERCIAL - WIRELESS COMMUNICATION TOWER	COLLOCATION - T-MOBILE	$ 5,000.00	$ 100.00	C	FCI TOWERS, INC.
6/23/2016	9452	SHAFFER, SHELLY	263 DUCK ROAD	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,300.00	$ 100.00	R	ALL-IN-ONE MECHANICAL
6/27/2016	9455	PALECKI, LOU	25 THRIRTEENTH AVENUE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,000.00	$ 100.00	R	SURSIDE HEATING AND COOLING, INC
6/27/2016	9445	SMITH CONTRACTING NC, LLC	45 DUCK WOODS DRIVE	SINGLE FAMILY DWELLING	NEW CONSTRUCTION OF SFD	$ 240,000.00	$ 1,794.10	R	SMITH CONTRACTING NC, LLC
6/30/2016	9460	DUCK ROAD HOUSE, LLC	223 DUCK ROAD	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 5,000.00	$ 100.00	R	ATLANTIC HEATING & COOLING, LTD.
6/30/2016	9461	WATKINS, JOHN	4 SANDFIDDLER COURT	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 4,985.00	$ 100.00	R	ATLANTIC HEATING & COOLING, LTD.
6/30/2016	9459	BELLA MANAGEMENT	90 SKYLINE DRIVE	SINGLE FAMILY DWELLING	OTHER - MECHANICAL	$ 6,000.00	$ 100.00	R	SURSIDE HEATING AND COOLING, INC

6/30/2016	9454	JACKSON, ANTHONY	214 OCEAN BOULEVARD	SINGLE FAMILY DWELLING	NEW CONSTRUCTION OF SFD	$ 852,000.00	$ 2,916.30	R	SHORELINE BUILDERS, INC.
6/30/2016	9438	HUNGERFORD, HAROLD	348 SEA OATS TRAIL	SINGLE FAMILY DWELLING	ADDITION	$ 28,000.00	$ 760.20	R	PROPERTY OWNER
					BUILDING PERMIT TOTAL $ RESIDENTIAL	$4,394,946.00	$ 19,329.70		
					BUILDING PERMIT TOTAL $ COMMERCIAL	$ 5,000.00	$ 100.00		
					TOTAL FEES $ =	$ 4,399,946.00	$ 19,429.70		
					# RESIDENTIAL =			36	
					# COMMERCIAL =			1	
					PLANNING/PLAN REVIEW/CAMA FEES =		$ 1,750.00		
					GRAND TOTAL $ OF FEES COLLECTED		$ 21,179.70		

June 2016

Southern Shores Police Department

INCIDENTS	ARRESTS	ACCIDENTS	CITATIONS	WARNINGS	ORDINANCE VIOLATIONS
Larceny – 7 Drug Vio – 10 DWI – 1 ALE Vio – 1 All Traffic – 2 Other - 1 Total - 22	Drug Vio – 2 DWI – 1 ALE Vio - 1 Total - 4	Total - 6	Driver's License – 4 Registration – 7 Speeding – 18 Stop Light/Sign – 4 ALE Vio – 1 Seat Belt – 3 Unsafe Move – 2 Other – 10 2nd Charge - 8 Total - 57	Driver's License – 2 Passing Vio – 1 Left of Center – 4 Registration – 9 Speeding – 19 Stop Sign/Signal – 39 Seat Belt – 6 Inspection – 1 Other – 5 Equipment - 16 **Total - 102**	No permit – 22 Parked in no parking area – 3 Parking in ROW - 7 Total - 32

Calls For Service - 989

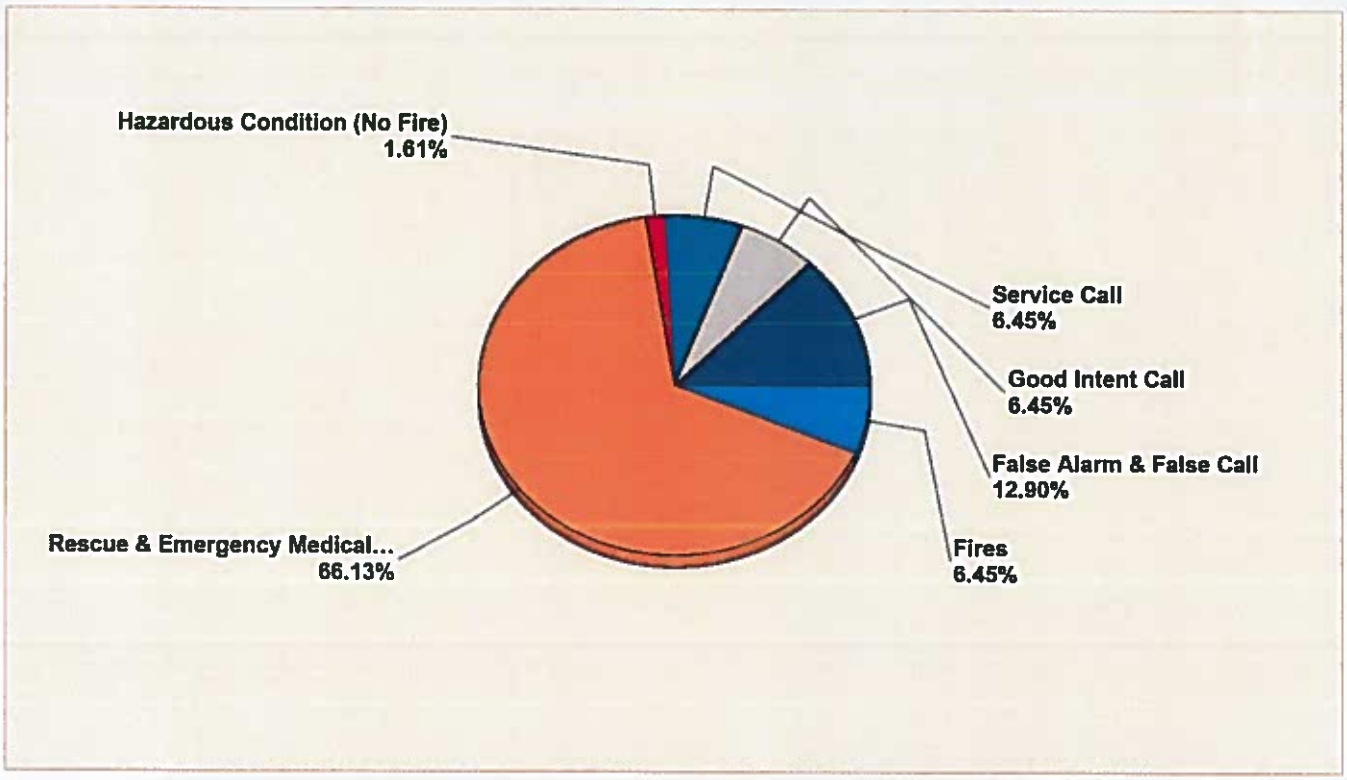
Southern Shores VFD

Southern Shores, NC

This report was generated on 7/5/2016 3:14:07 PM

Breakdown by Major Incident Types for Date Range

Zone(s): All Zones | Start Date: 06/01/2016 | End Date: 06/30/2016



MAJOR INCIDENT TYPE	# INCIDENTS	% of TOTAL
Fires	4	6.45%
Rescue & Emergency Medical Service	41	66.13%
Hazardous Condition (No Fire)	1	1.61%
Service Call	4	6.45%
Good Intent Call	4	6.45%
False Alarm & False Call	8	12.90%
TOTAL	62	100.00%

Only REVIEWED incidents included. Summary results for a major incident type are not displayed if the count is zero.

EMERGENCY REPORTING
emergencyreporting.com

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
111 - Building fire	2	3.23%
112 - Fires in structure other than in a building	1	1.61%
134 - Water vehicle fire	1	1.61%
321 - EMS call, excluding vehicle accident with injury	36	58.06%
322 - Motor vehicle accident with injuries	2	3.23%
324 - Motor vehicle accident with no injuries.	1	1.61%
352 - Extrication of victim(s) from vehicle	1	1.61%
364 - Surf rescue	1	1.61%
441 - Heat from short circuit (wiring), defective/worn	1	1.61%
551 - Assist police or other governmental agency	1	1.61%
553 - Public service	3	4.84%
611 - Dispatched & cancelled en route	2	3.23%
651 - Smoke scare, odor of smoke	2	3.23%
735 - Alarm system sounded due to malfunction	3	4.84%
743 - Smoke detector activation, no fire - unintentional	2	3.23%
745 - Alarm system activation, no fire - unintentional	3	4.84%
TOTAL INCIDENTS:	62	100.00%

Only REVIEWED incidents included. Summary results for a major incident type are not displayed if the count is zero.

Town of Southern Shores
Budget Amendment Number # 1

Code Enforcement/Planning Increases			Code Enforcement/Planning Decreases		
Account Number	Description	Amount	Account Number	Description	Amount
	Revenues				
40-39909	Unassigned Fund Balance	$65,470			
	Expenditures				
63-50132	Code Update	$65,470			
		$0			$0

Explanation: Cost to complete Code Rewrite
The $ 65,470 appropriation to the Administrative Department Contingency line will revert to Unassigned Fund Balance on June 30, 2017.

Recommended By:

J. Peter Rascoe, III, Town Manager

TOWN OF SOUTHERN SHORES SEAL NC

Approved By:

Tom Bennett, Mayor

7/5/2016
Date

Town of Southern Shores

5375 N. Virginia Dare Trail, Southern Shores, NC 27949
Phone 252-261-2394 / Fax 252-255-0876
www.southernshores-nc.gov

RESOLUTION 2016-07-01

A RESOLUTION DECLARING CERTAIN PROPERTY OF THE TOWN TO BE SURPLUS AND AUTHORIZING THE DISPOSITION OF SAID PROPERTY

WHEREAS, the Town Council of the Town of Southern Shores, North Carolina, has determined that the Town owns certain personal property that is no longer needed or usable by the Town; and

WHEREAS, the property is described below:

Description	Make	Model	Year	Condition	Est Value	Ser Vin No#
Police Vehicle	Ford	Crown Vic	2009	Good	$8,500.00	4787
Police Vehicle	Dodge	Charger	2010	Good	$9,500.00	529
Police ATV LSV	Polaris	EV LSV	2012	Good	$4,500.00	20469
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-003976
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002570
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-003920
Taser X26	Taser	X26	2008	Fair	$150.00	X00-659366
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002438
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-004055
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002559
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002454
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002498
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002480
Taser X26	Taser	X26	2008	Fair	$150.00	XCE-002496
In Car Camera	L3	Flashback	2008	Good	$300.00	FB31D050938
In Car Camera	L3	Flashback	2009	Fair	$200.00	FB2SN0005901
In Car Camera	L3	Flashback	2009	Good	$200.00	FB005248
In Car Camera	L3	Flashback	2009	Good	$200.00	FB0014302
In Car Camera	L3	Flashback	2009	Good	$200.00	FB005249
In Car Camera	L3	Flashback	2009	Good	$200.00	FB005247
Radar Unit	Gold Eagle	Dual Annt	2010	Fair	$300.00	E29627

NOW, THEREFORE, BE IT RESOLVED by the Southern Shores Town Council that the Town Manager or his designee are hereby authorized to dispose of the aforementioned property by any means allowable to include offering for sale at public auction, donation to a nonprofit organization, internet on-line offering, private negotiation and sale, upset bid process, or destruction.

AND BE IT FURTHER RESOLVED that property described in this resolution is surplus as of July 5, 2016.

TOWN OF SOUTHERN SHORES SEAL NC

ATTEST:

Thomas G. Bennett, Mayor

Sheila Kane, Town Clerk

GENERAL PUBLIC COMMENT SIGN-UP SHEET

July 5, 2016

We encourage your public comments. All speakers must recognize the utmost importance of maintaining the decorum of Town meetings and of the need for all to have an opportunity to speak in a timely and uninterrupted manner. Please limit your comments to 3 minutes and speak courteously and respectfully to the Council as a whole. The 3 minute time allotted is your time to speak. You may choose to use all of it or less, but it is not transferrable to anyone else. Public comment is your opportunity to provide input on Town matters. It is not meant to be a dialogue exchange between you, members of the Council, or others in the audience.

NAME	MAILING ADDRESS OF RESIDENT	TOPIC
Ann Laughner	25 E. Dogwood Tr	Hwy 12/ E. Dogwood - Standing Water
[illegible]		
[illegible]	[illegible]	Park & Trail/Skyline
Bill Broaddus	31 E. Dogwood	Road Flooding
[illegible]	360 [illegible] Tr	
Toni Adamski	183 Duck Rd.	
Ann Sjoerdsma	69 Hickory Trail	misc.

PUBLIC HEARING
July 5, 2016

Public Hearing-Consideration of Ordinance 2016-07-01- An Ordinance Establishing a Capital Improvement Plan with Authority to Implement for FY 2016-2017

NAME (PRINT)	ADDRESS
Ann Sjoerdsma	69 Hickory Trail

epartment of Public Works
Administration
Maintenance Garage
Public Facilities Maintenance
Sanitation
Water Distribution
Water Operations

Town of Nags Head
Post Office Box 99
Nags Head, North Carolina 27959
Telephone 252-441-1122
Fax 252-441-3350
www.nagsheadnc.gov

Ralph Barile
Public Works Director

David Ryan, P.E.
Project Coordinator

MEMORANDUM

To: Town of Southern Shores & Town of Duck

From: David Ryan, PE, Project Coordinator

Date: June 30, 2016

Re: Proposals for Post-Storm Debris Removal and Monitoring Services for FY 16/17

On May 18, 2016, the Town of Nags Head Department of Public Works issued Requests for Proposals (RFP's) to provide post-storm debris cleanup and infrastructure repair services, and debris monitoring services for the period July 1, 2016 through June 30, 2017. The RFP's were sent to twenty-five total firms, ten for debris removal services, and fifteen for debris monitoring services. Advertisements for RFP's were placed in the Coastland Times, on the Town of Nags Head website, on the North Carolina Department of Administration Interactive Purchasing website, in addition to being forwarded to North Carolina's Small Business and Technology Development Center. Three (3) addenda were issued for the Debris Removal RFP and two (2) addenda were issues for the Debris Monitoring RFP to clarify proposal requirements.

Proposals for Debris Management/Removal Services were received from six firms and only one firm had submitted debris monitoring proposals. The firms submitting proposals for debris removal included Four Points Recycling. (Jacksonville, NC), Crowder Gulf, (Theodore, AL), Custom Tree Care Disaster Response, (Topeka, KS), DRC Emergency Services, LLC (Mobile, Alabama), Southern Disaster Recovery, (Simpsonville, SC) and TFR Enterprises, Inc. (Leander, TX). The single submission for Debris Monitoring services was received by Witt-Obrien (Washington, DC).

Due to the fact that only one proposal was submitted in response to the Debris Monitoring RFP, these services were re-advertised in an effort to secure competitive bids. The submission deadline was extended to June 28, 2016 with an additional five (5) five firms contacted and subsequently three (3) proposals received. The firms submitting proposals for debris monitoring services included Johnson Environmental & Disaster Consulting Services. (Wilmington, NC), Witt-O'Briens, (Washington, DC) and Rostan Solutions, LLC (Valrico, FL).

ticketing price was considered for the evaluation. In review of the results of the analysis, Johnson Environmental & Disaster Consulting Services, Wilmington, NC, was selected based upon the competitive hourly rates provided.

If you have any questions or comments regarding the review process or information provided, please contact David Ryan, P.E. at the Nags Head Department of Public Works at 252.441.6221 or david.ryan@nagsheadnc.gov.

Attachments: Debris Removal Proposal Summary
Appendix A USACE Hurricane Debris Estimating Model
FY 2016/17 Debris Removal Unit Cost Analysis Phase One
FY 2016/17 Debris Removal Unit Cost Analysis Phase Two-A/Two-B
FY 2016/17 Debris Removal Unit Cost Analysis Phase Hauling Evaluation Matrix.
FY 2016/17 Debris Monitoring Price Evaluation Matrix

Debris Removal Services Proposal Summary

	DRC Emergency Services	Crowder Gulf	Southern Disaster Recovery	TFR Enterprises	Custom Tree Care	Four Points Recycling
Town of Nags Head						
Category One Event						
Hauling	$ 332,348.68	$ 493,158.00	Non-responsive	$ 216,116.00	$ 381,886.95	$ 359,635.36
Phase One	$ 398,650.00	$ 216,160.00		$ 327,950.00	$ 310,800.00	$ 224,977.20
Phase Two-A	$ 1,747,786.00	$ 1,358,254.00		$ 1,519,025.25	$ 2,791,551.75	$ 1,765,335.75
Phase Two-B	Not Provided	$ 368,800.00		$ 773,550.00	Not Provided	$ 707,600.00
Total	$ 2,478,784.68	$ 2,436,372.00		$ 2,836,641.25	$ 3,484,238.70	$ 3,057,548.31
Town of Southern Shores						
Category One Event						
Hauling	$ 130,226.56	$ 190,564.00	Non-responsive	$ 80,959.00	$ 142,705.40	$ 124,430.12
Phase One	$ 398,650.00	$ 216,160.00		$ 327,950.00	$ 310,800.00	$ 224,977.20
Phase Two-A	$ 1,747,786.00	$ 1,358,254.00		$ 1,519,025.25	$ 2,791,551.75	$ 1,765,335.75
Phase Two-B	Not Provided	$ 368,800.00		$ 773,550.00	Not Provided	$ 707,600.00
Total	$ 2,276,662.56	$ 2,133,778.00		$ 2,701,484.25	$ 3,245,057.15	$ 2,822,343.07
Town of Duck						
Category One Event						
Hauling	$ 151,233.36	$ 211,844.00	Non-responsive	$ 93,481.80	$ 159,894.90	$ 131,067.72
Phase One	$ 398,650.00	$ 215,520.00		$ 327,950.00	$ 310,800.00	$ 224,977.20
Phase Two-A	$ 1,747,786.00	$ 1,358,254.00		$ 1,519,025.25	$ 2,791,551.75	$ 1,765,335.75
Phase Two-B	Not Provided	$ 368,800.00		$ 773,550.00	Not Provided	$ 707,600.00
Totals	$ 2,297,669.36	$ 2,154,418.00		$ 2,714,007.05	$ 3,262,246.65	$ 2,828,980.67

FY 16/17 Debris Monitoring Price Evaluation Matrix

Item No.	Debris Monitoring Positions	Johnson Environmental Paper-Based Ticketing Price (Per Hour)	Witt-O'Brien's Paper-Based Ticketing Price (Per Hour)	Rostan Solutions Paper-Based Ticketing Price (Per Hour)
1	Project Managers	$65.00	$67.00	$67.00
2	Operation Managers	$53.00	$55.00	$60.00
3	Field Supervisors	$46.00	$48.00	$42.00
4	GIS Analyst	$41.00	$55.00	$38.00
5	Environmental Specialists	$41.00	$55.00	$34.00
6	Billing/Invoicing/Date Managers	$31.00	$35.00	$48.00
7	Project Coordinators	$41.00	$55.00	$28.00
8	Load Ticket Data Entry Clerks	$27.00	$27.00	$24.00
9	Collection Crew Monitors	$31.50	$32.50	$31.00
10	Tower Monitors	$31.50	$32.50	$31.00
11	Residential Drop-Off Monitors	$31.50	$32.50	$31.00
12	Automated Ticketing Specialist	N/A	N/A	N/A
13	Senior Grant Management Consultant	$75.00	$130.00	$140.00
14	Grant Management Consultant	$53.00	$115.00	$125.00
15	Administrative Assistant	$27.00	$25.00	$22.00
16	Senior Planner	$44.00	$150.00	$105.00
17	Planner	$37.00	$120.00	$90.00
	Total	$675.50	$1,034.50	$916.00

[ ] Low Bid Submitted

Town of Southern Shores

5375 N. Virginia Dare Trail, Southern Shores, NC 27949
Phone 252-261-2391 / Fax 252-255-0876
www.southernshores-nc.gov

Ordinance Establishing a Capital Improvement Plan with Authority to Implement for Fiscal Year 2016-2017

Whereas the Town Council of the Town of Southern Shores did on June 7, 2016 adopt a general operating budget for the Fiscal Year 2016-2017 [*Ordinance No. 2016-06-01*] authorizing expenditures necessary for the general operation and financial management of the Town; and

Whereas Ordinance No. 2016-06-01 authorizes a budget appropriation in Section 1. A. for "Public Works Department – Streets, Bridges, & Canals", which includes a lesser amount therein equal to $516,000 to be used for capital improvement of Town streets;

Whereas, by adoption of the budget, the Town Council did reserve authorization for expenditure of the appropriated amount of $516,000 for capital street improvements during FY 2016-2017 - until adoption of this Ordinance; and

Whereas, the Town of Southern Shores Town Council did receive from its Capital Improvement Planning Committee, and subsequently publish, a recommended list of streets determined to need capital improvement by rebuild/replacement rather than be subject to continuous repair; and

Whereas, the Town Council has now held a separate public hearing to receive comment on the proposed list of streets determined to need rebuild/replacement by capital improvement, and has now deliberated on the matter;

Now, Therefore in accordance with its authority to establish policy for operations of the Town of Southern Shores, the Town Council does, by this Ordinance, authorize and direct the Budget Officer/Town Manager to proceed with implementing capital improvements to those streets listed on attached Exhibit A [*Capital Street Improvement prioritization for FY 2016-2017 as recommended by the CIP Committee May 19, 2016*], incorporated herein by reference, in accordance with Section V. (Para. 2.) of Ordinance No. 2016-06-01, and in such general priority indicated as "Targets for rebuild for FY 16-17" while utilizing the appropriated amount of $516,000 for such purpose, and assuring that the designs and construction of such street improvements are in accordance with current policy of the Town regarding rebuilding of Town streets.

Enacted by the Southern Shores Town Council this the 5th day of July, 2016.

Tom Bennett, Mayor

TOWN OF SOUTHERN SHORES SEAL NC

Attest: _____
Sheila Kane, Town Clerk

Capital Street Improvement prioritization for FY 2016-2017 as recommended by the CIP Committee May 19, 2016

"Targets" for rebuild for FY 16-17:

1. **Yaupon Trail - street rebuild due to asphalt failure, edge failure and continuing tree root undermining. Bulkhead replacement. [recommend phasing]**
2. **Wild Swan Lane – street rebuild: cracking, root upheaval, potholes, and stormwater. [exclude extreme south and north ends]**
3. **Osprey Lane [within house addresses #95-105] - street rebuild: alligator cracking, root upheaval, and stormwater**
4. **Juniper Trail- asphalt failure in area south of the Juniper culvert bridge on both street and sidewalk**

Remaining priorities for rebuild:

5. **Clamshell Trail - asphalt & subgrade failure. [phased: Chicahauk Trail to Otter Slide- remainder following]**
6. **Turtle Pond Court - street rebuild [Public Works to perform minor repairs to extend life of street]**
7. **Twisted Tree Court - street rebuild [Public Works to perform minor repairs to extend life of street]**
8. **South Dogwood Trail**
9. **East Dogwood Trail**
10. **North Dogwood Trail**
11. **Wax Myrtle Trail - Block and alligator cracking, edge failures. [recommend partial]- including Dolphin and Porpoise Run**
12. **Ginguite Trail - [recommend partial segments]**
13. **Land Fall Loop - street rebuild: alligator cracking.**
14. **Happy Indian Lane - cul-de-sac rebuild: alligator cracking, eroded areas.**
15. **Teal Court - repair, portion of road leading to cul-de-sac cracking.**
16. **Hillcrest Drive**
17. **Sea Oats Trail**
18. **Spindrift Trail/High Dune Loop/Wild Pony Intersection**
19. **Clamshell Trail/Chicahauk Trail Intersection**
20. **Wax Myrtle and Hickory Intersection**
21. **Pintail Trail**
22. **Skyline Road and Highway 12 Intersection- stormwater flooding issue**
23. **West Holly Trail- stormwater flooding and driveability issues**

****NC Hwy 12-East Dogwood Trail stormwater flooding- a separate individual line item of $300,000 has been included in the FY 2016-2017 budget for a potential project in partnership with the NCDOT to mitigate this flooding, if the Council approves such a project. Fund matching may be available from the state to offset this budgetary allotment.**

July 1, 2016 P. Rascoe

MEMORANDUM TO COUNCIL

RE: Town Real Property at # 7 Skyline Road

The real property located at # 7 Skyline Road and purchased by the Town of Southern Shores in May 2015, has now been vacant of a rental tenant since March 31, 2016. The property's land-use designation, as indicated by the Town's adopted Zoning Map, is Government and Institutional (G&I). At the time of acquisition by the Town, the Council's intended use of the property was to retain it for strategic planning purposes for a future use consistent with Governmental and Institutional zoning, as it is directly adjacent to and bordering on existing Town property (existing Town Hall complex).

As previously reported to the Council, removal of personal property items from the property's existing two-bedroom, one-bathroom structure has now been completed, as well as evaluations of several options for future maintenance of the property. Town staff presents the following options for Council to consider authorizing for maintenance of this Town property:

1. Leave the structure in its current sub-standard condition, secure the property from entrance, and maintain current monthly electricity account to provide temperature control to attempt to keep mold from accumulating, remaining mechanicals working, and pipes from freezing.

   Staff Note: Without major renovation improvements, the structure will continue to dilapidate, and become an attraction for vermin nuisances and break-ins.

2. Renovate the structure sufficient to market rent the property for residential use (permitted under G&I zoning for single family dwellings). [Attached is a contractor's estimate to renovate the property.]

   Staff Note: Necessary funds for the renovation of the property are not currently budgeted. If Council desires to authorize renovation of the structure for market rental purposes, Town staff recommends Council authorize a $20,000 appropriation from the Capital Reserve Fund.

   Contractor renovation estimate = $19,882.03

3. Demolish and dispose of the structure, including the small out building, remove and dispose of the underground septic system, rough-grade the site, and maintain the site in its natural condition combined with the existing Town hall complex. (This option would allow the Town to maintain the real property in its natural state combined with the Town Hall complex, until Council later considers and adopts a formal plan for specific governmental and institutional use.) [Attached is a contractors' estimate to demolish and dispose of main structure.]

   Staff Note: Necessary funds for the renovation of the property are not currently budgeted. If Council desires to authorize demolition of the structure and out-building, Town staff recommends Council authorize a $11,000 appropriation from the Capital Reserve Fund.

Contractor demolition and hauling estimate =	$9,448.00
Contractor septic tank removal estimate =	$1,000.00
Total =	$ 10,448.00

Parcel Number: 022871000

Print Date: 6/28/2016

County of Dare, North Carolina

*Owner and Parcel information is based on current data on file and was last updated on 6/23/2016

Owner Information:
TOWN OF SOUTHERN SHORES
5375 N VA DARE TRL
SOUTHERN SHORES NC 27949

Parcel Information:
Parcel: 022871000 PIN: 987717011724
District: 20 - SOUTHERN SHORES
Subdivision: SO/SH AMD PORTION PLAT A SEC 1
LotBlkSect: LOT: 4 PT 3 BLK: A SEC: 1
Multiple Lots: -
PlatCabSlide: PL: 2 SL: 32 Units: 1
Deed Date: 05/28/2015 BkPg: 2023/0659

Property Use: RESIDENTIAL

7 SKYLINE RD

BUILDING USE and FEATURES

Building Value: $53,300

Building Use:	CONTEMPORARY/MODERN
Exterior Walls:	VINYL / ALUM
Full Baths:	1 Half Baths: 1
Bedrooms:	2
Heat-Fuel:	3 - ELECTRIC
Heat-Type:	2 - FORCED AIR
Air Conditioning:	4 -CENTRAL W/AC

Actual Year Built: 1950

Finished sqft for building 1: 1408
Total Finished SqFt for all bldgs: 1408

MISCELLANEOUS USE

Misc Value: $1,500

Misc Bldg a: (RS1) FRAME UTILITY SHED Year Built: 1984 sqft: 240

LAND USE

Land Value: $170,800

Land Description : 20-Ocean Influence F

TOTAL LAND AREA: 11000 square feet

Total Value: $225,600

*Values shown are Next Year Values on file as of 6/23/2016

E .trical	Move Range outlet to new location and upgrade to current code, install 4 ceiling fans & bond plumbing if copper pipe to secure from future shocking.	$	780.00
Plumbing	Supply & install 8" deep double bowl, stainless steel kitchen sink with Delta 400 series faucet with side spray.	$	845.00
Appliances	Frigidaire Freestanding 4.2-cu ft Electric Range (White) (Common: 30-in, Actual: 29.88-in)	$	442.69
Appliances	Frigidaire 18-cu ft Top-Freezer Refrigerator (White)	$	691.11
Cabinetry	Cabinetry as drawn using a durable white, easy to clean finish, Solid wood face frame, Shaker door style	$	1,814.23
Painting	Paint all ceilings throughout first floor	$	2,340.00
Flooring	Install carpet over 8lb rebond padding in LR/DR, Porch, and strips of carpet x2 in 2 bedrooms. Remove existing carpet and pad. Replace all metal transitons. Carpet, pad and installation of new carpet figured at 2.67 s/ft. This gives you either a berber style carpet or a twist. This is the grade of carpet we use in year round rental homes. Price may change when we do an onsite measurement.	$	4,153.50
Labor	Demo existing cabintry & tops	$	455.00
Labor	Install new cabinetry & tops	$	845.00
Labor	Build new code complient railing on stairs	$	845.00
M terials	Railing parts, screws for cabinetry, caulks, etc.	$	682.50
Ceiling Fans	4 - Casual style 44-in Indoor fan with white finish Single light kit with frosted white glass brings overhead illumination to your space (bulbs included)	$	409.50
Range Hood	Broan Undercabinet Range Hood (White Monochromatic) (Common: 30-in; Actual: 29.87-in)	$	58.50
Waste	1 15 Yard Dumpster	$	520.00
		$	14,882.03

Misc./unforeseen conditions $5,000.00

Total rough estimate $19,882.03

East Coast Abatement & Demolition Co.,Inc.

176 Windchaser Way Moyock NC 27958 ♦ Office 252-232-7740 Fax 252-232-7741

Date 5/12/2016

Town of Southern Shores
Rachel Patrick
Rpatrick@southernshores-nc gov

Re: Demolition and disposal of the residential structure located at 7 Skyline Rd. in Southern Shores, N.C.

Thank you for the opportunity to offer a proposal on the above referenced project. East Coast Abatement and Demolition will provide the necessary supervision, labor, supplies, equipment and transporation to perform the following scope of work:

Scope of work to include:

- Price includes mobilization of equipment to and from the job site.
- Price includes demolition and disposal of the two-story frame house located at 7 Skyline Rd.in Southern Shores, N.C. as per site visit.
- Price includes demolition of the structure, removal of all footings, foundations, pilings, and associated concrete slabs as per site visit.
- Price includes freon evacuation and HVAC demo.
- Price includes removal and disposal of all associated entrance porches and steps as per site visit.
- Price includes removal and disposal of all associated concrete sidewalks, planters, and stepping stones as per site visit.
  *Note: Concrete driveway to be left in place along with the back detached storage building as per site visit. East Coast will use all precautions available but cannot be held liable for any cracking of the driveway that may occur due to the use of heavy equipment.
- Price includes removal and disposal of the small pump house in the front yard along with a PVC cap on the well as per site visit.
- Price includes rough grading of all disturbed areas for positive drainage.
- Price includes Town of Southern Shores demo permit and utility disconnect letters.

Lump Sum: $ 9,448.00
Exclusions:

- Asbestos surveys or permits
- Unknown asbestos or other hazardous material
- Locating, capping or disconnection of any utilities.
- Importing or compaction of any backfill.
- UST's
- Saw cutting (saw cutting is available at an additional charge)
- Erosion and sediment control
- Security fencing
- New work of any kind
- Anything not specifically stated in the scope of work above
- Pumping out or septic tank removal.

If you have any questions or concerns regarding this proposal feel free to call me at 252-232-7740.

Sincerely,

Roland McCoy
Estimator

Drainage Analysis

NC 12 @ E. Dogwood Trail

Southern Shores, NC

Flooding on NC12 south of the East Dogwood Trail Intersection

Prepared for:

June 22, 2016

NC 12 @ East Dogwood Trail Intersection
Drainage Analysis

General

The Town of Southern Shores, along with NCDOT, has identified the NC 12 / East Dogwood Trail intersection as a problem flooding area that needs to be addressed. The purpose of this study is to quantify the problem, identify the sources of runoff, and to examine the impact of multiple potential solutions.

Existing Conditions

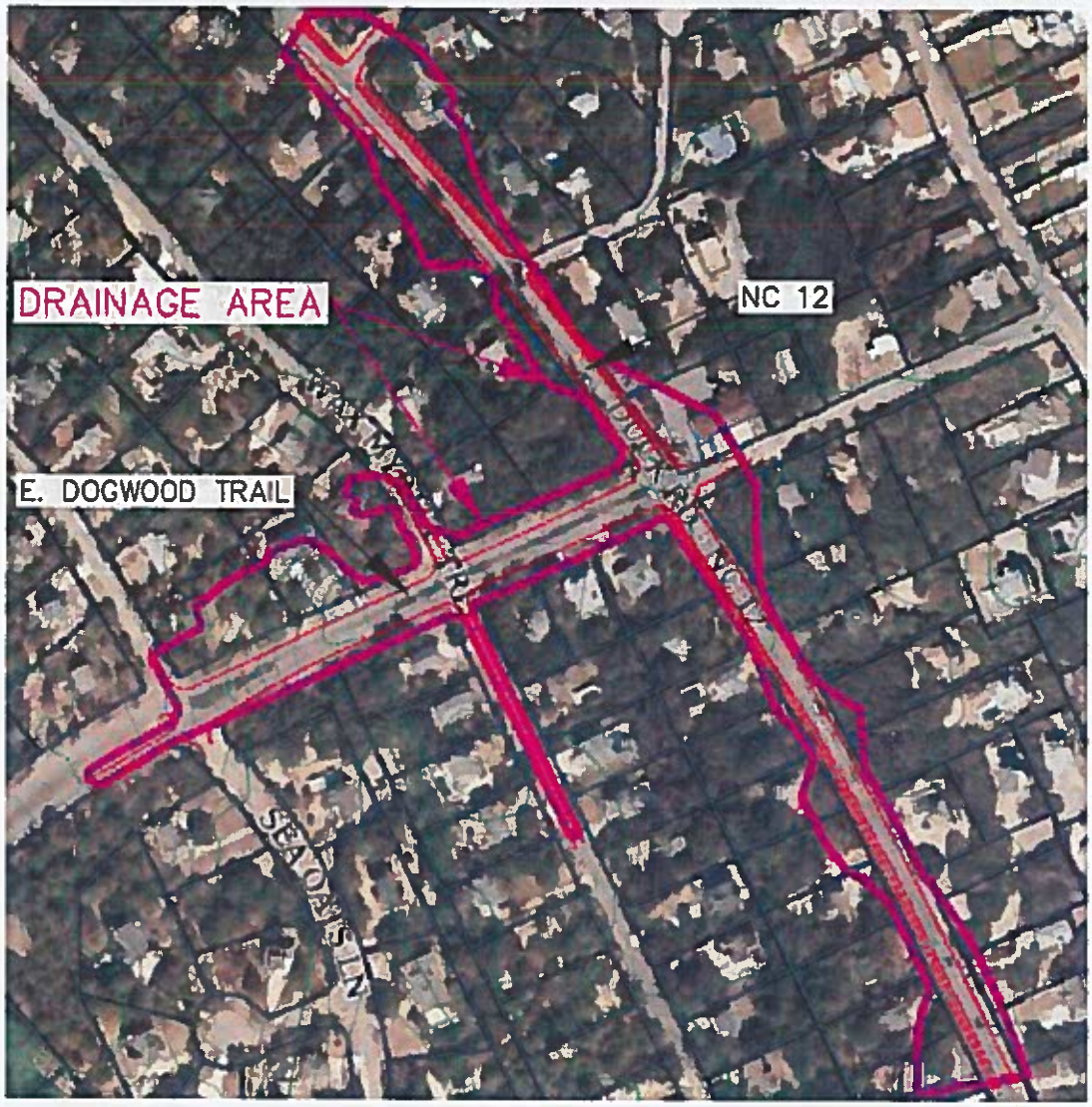
The area of NC 12 just to the south of the intersection of NC12 and East Dogwood Trail is the low point in a drainage area consisting of approximately 8.47 acres. This drainage area is made up of portions of the NC 12 right of way to the north and the south of the intersection as well as a portion of East Dogwood Trail to the west of the intersection. Existing drainage infrastructure is minimal, consisting primarily of very shallow and intermittent swales along the sides of the roads. During a significant rainfall event, the few shallow swales that exist are overwhelmed and runoff travels down the sides of Dogwood Trail and NC 12 and pools in the low point south of the intersection, where it spreads into the southbound lane of NC 12 and across the adjacent multipurpose trail.

Runoff from north of the intersection and the north side of Dogwood Trail must surface flow across Dogwood Trail at the intersection in order to reach the low point, commonly spreading into the southbound lane of NC 12. The low-point where the runoff ultimately pools is comprised of the southbound lane of NC 12, a 2' wide (+/-) grass strip, an asphalt multipurpose trail, and a block retaining wall. Since this pooling area is comprised mostly of impermeable surfaces, infiltration is slow compared to surrounding areas. There is no reasonable outfall available for this area. Two separate observed rainfall events (0.93 inch rainfall and 0.57 inch rainfall) resulted in runoff encroaching into the southbound lanes more than 24 hours after the storm events.

Runoff Calculations

Existing drainage divides were established utilizing NCDOT provided LIDAR data, aerial photography, and on-site visual determinations. The resulting drainage area consists of 8.47 acres of area, generally following the right-of-ways to the north, south, and west of the intersection. Contributing area includes NCDOT Right-of-Way, Town of Southern Shores Right-of-Way, and private property.

Drainage Area Map:



For this analysis, the drainage area was further divided into three subareas, consisting of East Dogwood Trail subarea, NC 12 North subarea, and NC 12 South subarea. Area and impervious coverage tabulations are as follows (as measured from aerial data):

East Dogwood Trail Subarea:

Drainage Area: 139,499 sf (3.20 ac.)

Impervious Coverage:

Road:	58,331 sf
Driveways:	3,586 sf
Buildings:	2,478 sf
Total:	64,395 sf

NC 12 North Subarea:

Drainage Area: 118,118 sf (2.71 ac.)

Impervious Coverage:

Road:	34,174 sf
Driveways:	12,155 sf
Buildings:	3,134 sf
Asphalt Trail:	5,246 sf
Total:	54,709 sf

NC 12 South Subarea:

Drainage Area: 111,407 sf (2.56 ac.)

Impervious Coverage:

Road:	34,060 sf
Driveways:	7,005 sf
Buildings:	653 sf
Asphalt Trail:	6,475 sf
Total:	48,193 sf

Runoff calculations were performed utilizing the Simple Method (Scheuler, 1987). Runoff from a 1 inch rainfall event was calculated utilizing the areal tabulations above:

Runoff produced by 1 inch rainfall event, by subarea:

East Dogwood Trail subarea:	2,405 cf	
NC 12 North Subarea:	4,593 cf	
NC 12 South Subarea:	4,083 cf	
Total Calculated Runoff:	11,081 cf	(1" rainfall event)

Evaluation of Calculated Runoff

To evaluate the accuracy of the runoff calculations, a comparison was made to an observed storm event. On May 3rd, 2016, the Outer Banks received a significant rainfall event which was recorded at a Southern Shores rain gauge (rain gauge weather station data: weatherunderground.com) as having a 0.93 inch rainfall depth. Flooding of NC 12 was observed and documented within an hour of the passing of significant rainfall.

Utilizing the 1" runoff calculations above, total runoff is calculated to be 10,305 cf for a 0.93 inch rainfall event (0.93 x 11,081 cf). Utilizing available topo and rough estimates of the observed spread (survey-grade measurements could not be made at the time of the flooding), we estimate approximately 7,000 cf of runoff was ponded in the low point just south of the intersection. The difference between calculated values and observed estimated values can be attributed to a number of factors:

- At the time of the observation, there was a substantial volume of water still ponded in the NC 12 right-of-way north of the intersection and water was still flowing from north to south across East Dogwood Trail at the intersection.
- The runoff calculations do not account for a small amount of water that was caught-up in the minor drainage infrastructure (minor swales) that does exist.
- There are terrain undulations that trap some runoff that cannot be reasonably accounted for in a study of this scope.
- The simple method tends to slightly overestimate runoff in our high permeability soils.
- The actual volume ponded is a coarse estimate due to the inability to obtain survey-grade measurements at the time of the storm.

Given the nature and purpose of this analysis, we actually consider the observed ponding to be a reasonable confirmation of the calculations, with the calculated runoff being conservative. The purpose of this study is to explore alternatives for correcting the flooding problem. Therefore, calculated values (conservative) will be used for further analysis. The readers of this analysis may simply multiply the runoff calculated in the rest of this report by 0.8 if they choose to evaluate a less conservative approach to predicting the effectiveness of proposed drainage improvement options.

Runoff from Statistical Rainfall Events

To provide analysis reference points, statistical storm runoff volumes are provided below. (Ref. NOAA Atlas 14):

Storm Duration: 1 hr		
Frequency	Rainfall Depth (in)	Runoff Volume (cf)
1 yr	1.53	16954
2 yr	1.83	20278
5 yr	2.21	24489
10 yr	2.60	28811

Storm Duration: 24 hrs		
Frequency	Rainfall Depth (in)	Runoff Volume (cf)
1 yr	3.29	36456
2 yr	4.00	44324
5 yr	5.16	57178
10 yr	6.14	68037

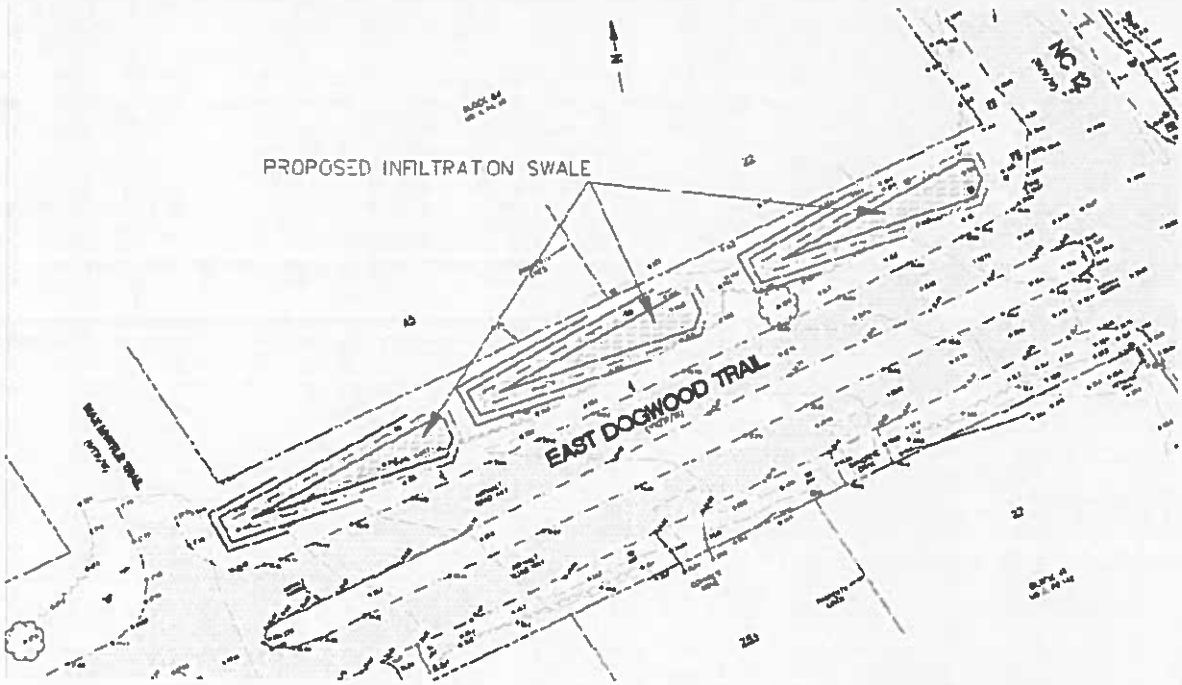
Per NOAA Atlas 14, the rainfall event observed on May 3rd of 0.93 in. should occur more frequently than a 1 year return interval, meaning that NC 12 will be inundated multiple times a year. This is in agreement with observed conditions.

Analysis of Potential Drainage Improvements

Due to the lack of a reasonable outfall in the area, any proposed mitigation must capture runoff, store it off the road surface, and then dispose of it via infiltration. The only areas available for this storage and infiltration are the permeable areas within the right-of-ways and a vacant lot (currently in private ownership) in the southeast quadrant of the intersection. These were evaluated as follows:

Dogwood Trail right-of-way infiltration swales:

Dogwood trail is arranged as a "boulevard", with a wide right-of-way, and center median. Unfortunately, the upper portion of the road is in relatively steep terrain, and so the efficiency of roadside systems which may be placed in the upper half of the road is compromised. The best opportunity for runoff capture, storage, and infiltration occurs on the north side of the road, within the lower section of East Dogwood Trail as it approaches NC12:



Three tiered swales, arranged as shown above, will yield approximately 800 cf of stormwater storage each (total of 2,400 cf of stormwater storage for the three swales shown).

Discussion Points:

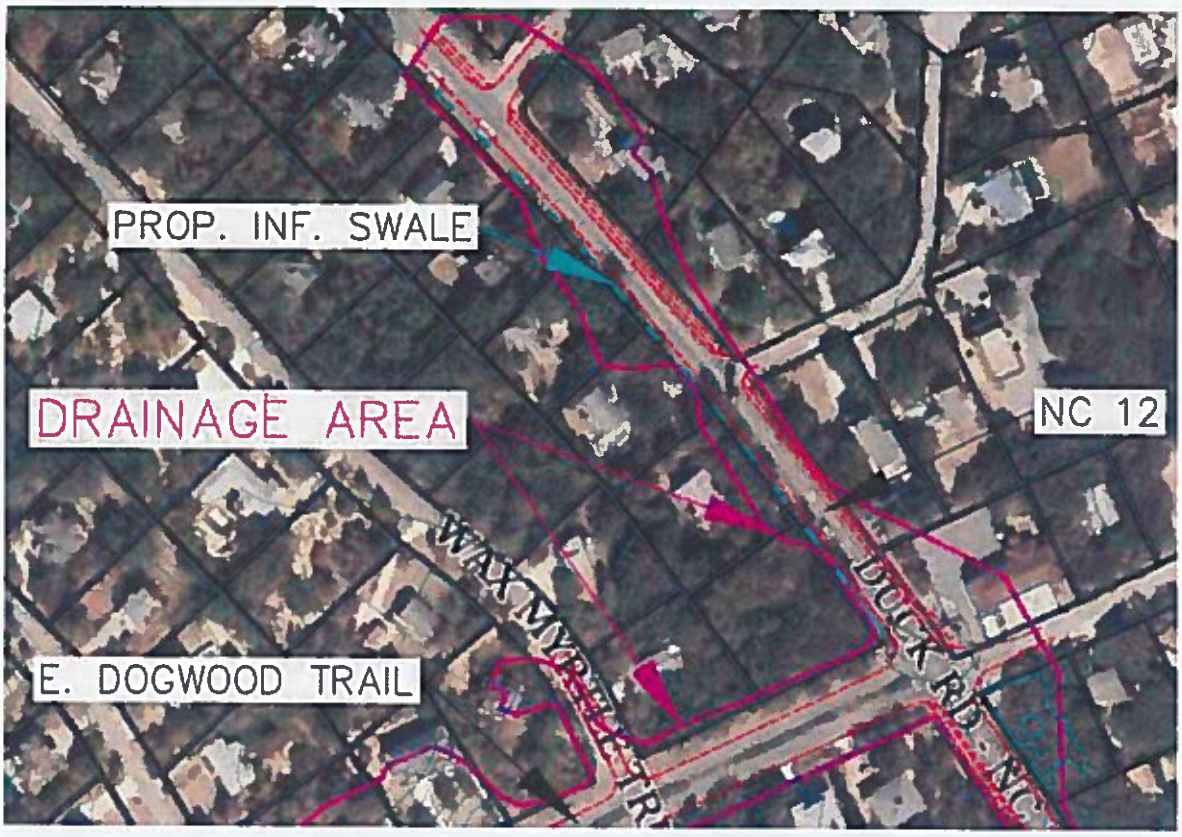
- Installation would primarily be a grading exercise
- Relatively low cost
- Work is located entirely within right-of-way
- Potential for utility conflicts
- Would require that the treeline be cut-back to the right-of-way line
- Will require diligent maintenance – particularly in the first year after construction to ensure erosive situations, when they arise, are dealt with swiftly.

Cost Estimate:

It is estimated that the cost for right-of-way improvements outlined would be in the neighborhood of +/- $5,000

NC 12 Right-of-Way Infiltration Swale:

The NC 12 right-of-way includes an asphalt multi-use path. It's location on the west side of NC 12 south of the intersection and the east side on NC 12 north of the intersection renders these areas as poor candidates for storage within the right-of-way. The east side of NC 12 to the south of the intersection does not receive much runoff. Therefore, the best candidate for storage in the right-of-way is the west side of NC 12, north of the intersection:



The right-of-way available would allow for a 6' shoulder and 1' deep infiltration swale (3:1 side slopes) through much of the area shown. A 750' long swale would provide storage for approximately 2,250 cf of runoff. Allowing for variables in terrain, driveways, etc., it should be anticipated that an infiltration swale along this alignment would likely actually yield approximately 2,000 cf of runoff storage.

Discussion Points:

- Installation would primarily be a grading exercise
- Relatively low cost
- Work is located entirely within right-of-way
- Potential for utility conflicts
- Would require that the treeline be cut-back to the right-of-way line
- Will require periodic maintenance to retain the storage volume (this type of roadside swale on the Outer Banks tends to fill-in over time).

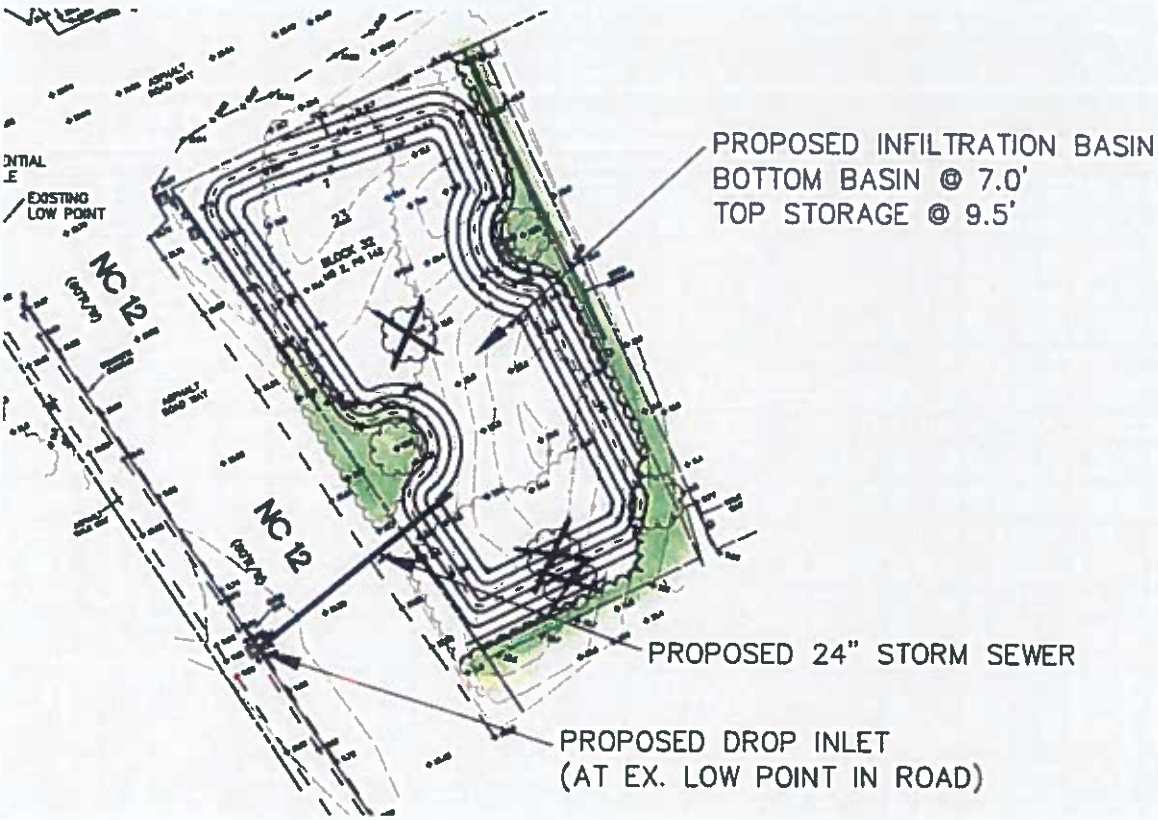
Cost Estimate:

It is estimated that the cost for right-of-way improvements outlined would be in the neighborhood of +/- $3,000

Vacant Lot Infiltration Basin

An important component of this study is to analyze the impact of an infiltration basin located on the vacant parcel in the southeast quadrant of the intersection. The existing parcel is vacant with dune terrain and is approximately 50%covered in live oak canopy.

Soils borings were performed and seasonal high water table (SHWT) indicators were encountered at an elevation of approximately 5.5' MSL. Based on the elevation of SHWT, the existing road elevation, and the need to pipe stormwater under NC 12 from the road's low point to the infiltration basin, a bottom basin elevation was established at 7.0' MSL. Significant trees were located by the surveyor and proposed grading for the basin was established maintaining approximately an 8' existing-grade buffer around the significant perimeter trees.:



The vacant lot yields an infiltration basin with a capacity of 15,036 cf of runoff storage. Significant trees to be removed are indicated with a bold "X". If these trees were to remain, it would reduce the capacity of the basin by approximately one third. Once the basin is graded, the Town may landscape the entirety of the basin, including the planting of new trees.

Discussion Points:

- Installation would primarily be a grading exercise
- Relatively low construction cost
- Large volume of runoff storage available
- Requires installation of drop inlet & storm sewer crossing NC 12
- Vacant lot will have to be acquired by Town / NCDOT ($)

Cost Estimate:

Drop Inlet and Culvert: +/- $50,000 (NCDOT Estimate)
Lot Improvements: +/- $32,000
Land Acquisition: To be negotiated by Town

Infiltration Systems: Subsurface Infiltration & Storage

A quick discussion of subsurface infiltration and storage is warranted. The volume calculations presented above only represent the above-grade storage capacity of the different potential improvements. This area is blessed with highly permeable soils with rapid infiltration capacity. During a rainfall event, runoff will typically infiltrate into the subsurface at a rate upwards of 20 inches per hour until the soil is fully saturated and at a somewhat reduced rate once the soil is saturated. When we impound runoff in infiltration swales or an infiltration basin, the soil void space between the bottom of the storage feature and the water table will saturate, providing additional capacity to the feature which can easily exceed 10% of the calculated above-grade storage. These are also dynamic systems: If a storm event continues to occur after the soils are saturated, there is continued disposal (at a slower rate) into the groundwater system that will allow for additional capacity to be developed within the system during the storm event.

Summary of Options:

Option	Storage Available	Estimated Cost
Dogwood Trail Infiltration Swales	2,400 cf	$5,000
NC 12 Infiltration Swale	2,000 cf	$3,000
Vacant Lot Infiltration Basin	15,036 cf	$82,000*
*Incl. $50k for culvert crossing. Does NOT include land acquisition cost.		

Conclusions:

For reference, the runoff totals from statistical (1 hour duration) storm events are presented again below:

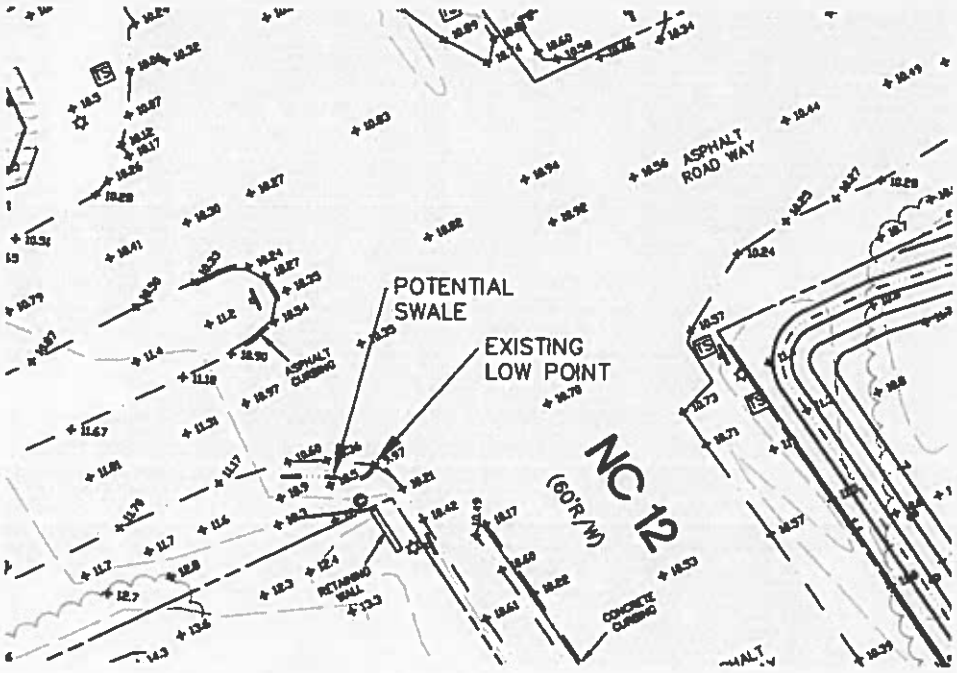
Storm Duration: 1 hr		
Frequency	Rainfall Depth (in)	Runoff Volume (cf)
1 yr	1.53	16954
2 yr	1.83	20278
5 yr	2.21	24489
10 yr	2.60	28811

As concluded earlier, observed conditions and our runoff analysis indicate that without drainage improvements, NC 12 will be inundated at this location multiple times a year. Per the Summary of Options, some improvement can be achieved without the acquisition of new land, but to have an impact that approaches the statistical 1 yr or 2yr storm event, the vacant lot will need to be acquired and an infiltration basin installed.

Additional Observations:

Nuisance Flooding at Intersection:

Although it is not a part of the larger flooding problem intended to be addressed in this study, there is a low point in the edge of pavement at the southwest corner of the intersection that results in regular nuisance ponding.



There are two potential options to address this problem:

Shallow Swale: As shown on the schematic above, there is an opportunity to grade-in a small swale behind the low point to allow runoff to "pond" into a grassed area. This small swale will not have significant capacity and on any substantial rainfall, water will still pond across the edge of pavement in this location. The big improvement that will be realized with this approach is that the water will now be able to infiltrate into the soils much faster and so the puddle in this location should disappear quickly after most storm events. The most attractive aspect of this option is its inexpensive cost – the Town's public works department can perform this work and, for discussion, we should use a "cost" of less than $1,000.

Drop Inlet & Storm Sewer: The other option would be to install a drop inlet at this location & storm sewer to connect to the drop inlet & storm sewer associated with the potential infiltration basin on the vacant lot across NC 12. This would eliminate ponding from this location for most rainfall events. This would require the cutting, patching & re-paving of approximately 125 feet of the multi-use trail and there are multiple potential utility conflicts. Based on NCDOT's estimate of the road culvert crossing, we should anticipate a cost of approximately $30,000 to install this option.