

# **Town of Beaufort Dredging Program 2011-2020**



# Dredging History-Bulkhead Channel

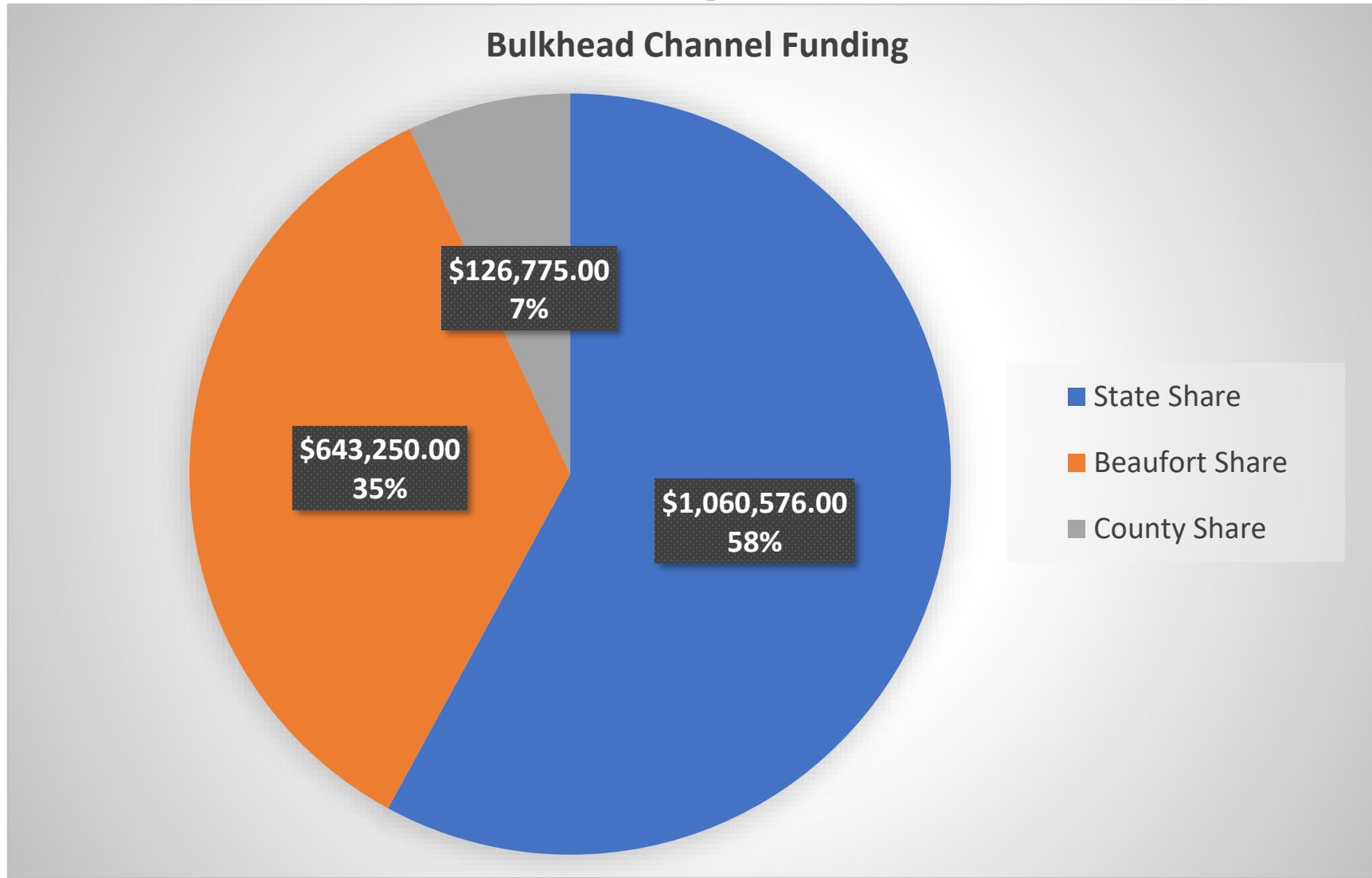
- 2011 Town of Beaufort entered into a Memorandum of Agreement (MOA) with the Army Corp of Engineers for Shallow Draft Dredging of Bulkhead Channel.
- MOA was for only 1-year period and had to be renewed and approved by Congress each year.
- 2011 Town applied for a NC Water Resources Grant for Dredging and was awarded a dollar for dollar match in funds. (See Funding Table from 2011 to present)
- 2013 NC Water Resources entered into a long term MOA with the Army Corps for Statewide Shallow Draft Dredging thus no longer requiring the Town's individual MOA with the Corps. State match was \$ for \$.
- 2016 the State increased their match to 2/3 and local share 1/3 cost for shallow draft dredging.
- 2017 – December – Dredging suspended due to the channel needing an Environmental Assessment needed for Bulkhead Channel and Beaufort Harbor by the Corps.
- 2018 – December 31<sup>st</sup> – Environmental Assessment approved by the Corps and suspension lifted.
- 1.83 Million has been spent on dredging Bulkhead Channel & Beaufort Harbor (Funding Next Slide).

# Dredging History-Bulkhead Channel Funding Table

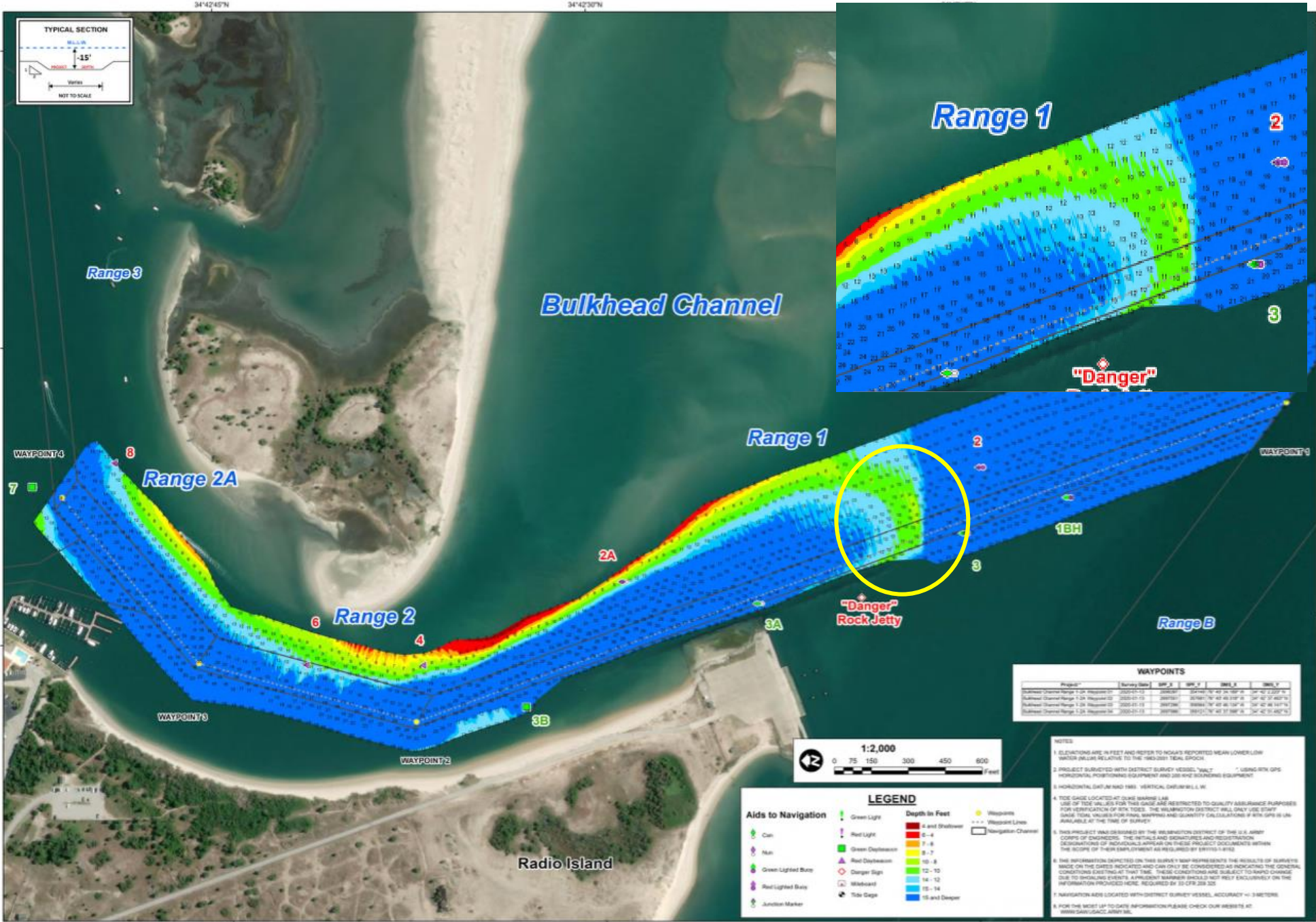
## Bulkhead Channel Funding

Year	State	Local - Beaufort	Local - Carteret Co.	
Fall 2011	\$ 80,000.00	\$ 80,000.00	\$0	
Summer 2013	\$ 60,000.00	\$ 60,000.00	\$0	
Spring 2014	\$ 89,775.00	\$ 60,000.00	\$29,775	
Fall 2014	\$ 55,000.00	\$ 55,000.00	\$0	
Spring 2015	\$ 100,500.00	\$ 64,500.00	\$36,000	
Fall 2015	\$ 97,200.00	\$ 97,200.00	\$0	
Spring 2016	\$ 105,334.00	\$ 26,667.00	\$26,000	
Fall 2016	\$ 80,000.00	\$ 40,000.00	\$0	
Spring 2017	\$ 143,000.00	\$ 35,000.00	\$35,000	
Fall 2017	\$ 80,000.00	\$ 40,000.00	\$0	
All of 2018	\$ -	\$ -	\$0	
Spring 2019	\$ 169,767.00	\$ 84,883.00	\$0	
Totals:	\$ 1,060,576.00	\$ 643,250.00	\$126,775	\$ 1,830,601.00

# Dredging History-Bulkhead Channel Funding Table



# BULKHEAD CHANNEL



**US Army Corps  
of Engineers  
Wilmington District**

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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DATE	DESCRIPTION	AMOUNT	CHECK NO.	BANK	INITIALS
10/1/01	10/1/01	100.00	1001	CHASE	ABC
10/2/01	10/2/01	200.00	1002	CHASE	ABC
10/3/01	10/3/01	300.00	1003	CHASE	ABC
10/4/01	10/4/01	400.00	1004	CHASE	ABC
10/5/01	10/5/01	500.00	1005	CHASE	ABC
10/6/01	10/6/01	600.00	1006	CHASE	ABC
10/7/01	10/7/01	700.00	1007	CHASE	ABC
10/8/01	10/8/01	800.00	1008	CHASE	ABC
10/9/01	10/9/01	900.00	1009	CHASE	ABC
10/10/01	10/10/01	1000.00	1010	CHASE	ABC
10/11/01	10/11/01	1100.00	1011	CHASE	ABC
10/12/01	10/12/01	1200.00	1012	CHASE	ABC
10/13/01	10/13/01	1300.00	1013	CHASE	ABC
10/14/01	10/14/01	1400.00	1014	CHASE	ABC
10/15/01	10/15/01	1500.00	1015	CHASE	ABC
10/16/01	10/16/01	1600.00	1016	CHASE	ABC
10/17/01	10/17/01	1700.00	1017	CHASE	ABC
10/18/01	10/18/01	1800.00	1018	CHASE	ABC
10/19/01	10/19/01	1900.00	1019	CHASE	ABC
10/20/01	10/20/01	2000.00	1020	CHASE	ABC
10/21/01	10/21/01	2100.00	1021	CHASE	ABC
10/22/01	10/22/01	2200.00	1022	CHASE	ABC
10/23/01	10/23/01	2300.00	1023	CHASE	ABC
10/24/01	10/24/01	2400.00	1024	CHASE	ABC
10/25/01	10/25/01	2500.00	1025	CHASE	ABC
10/26/01	10/26/01	2600.00	1026	CHASE	ABC
10/27/01	10/27/01	2700.00	1027	CHASE	ABC
10/28/01	10/28/01	2800.00	1028	CHASE	ABC
10/29/01	10/29/01	2900.00	1029	CHASE	ABC
10/30/01	10/30/01	3000.00	1030	CHASE	ABC
10/31/01	10/31/01	3100.00	1031	CHASE	ABC
11/1/01	11/1/01	3200.00	1032	CHASE	ABC
11/2/01	11/2/01	3300.00	1033	CHASE	ABC
11/3/01	11/3/01	3400.00	1034	CHASE	ABC
11/4/01	11/4/01	3500.00	1035	CHASE	ABC
11/5/01	11/5/01	3600.00	1036	CHASE	ABC
11/6/01	11/6/01	3700.00	1037	CHASE	ABC
11/7/01	11/7/01	3800.00	1038	CHASE	ABC
11/8/01	11/8/01	3900.00	1039	CHASE	ABC
11/9/01	11/9/01	4000.00	1040	CHASE	ABC
11/10/01	11/10/01	4100.00	1041	CHASE	ABC
11/11/01	11/11/01	4200.00	1042	CHASE	ABC
11/12/01	11/12/01	4300.00	1043	CHASE	ABC
11/13/01	11/13/01	4400.00	1044	CHASE	ABC
11/14/01	11/14/01	4500.00	1045	CHASE	ABC
11/15/01	11/15/01	4600.00	1046	CHASE	ABC
11/16/01	11/16/01	4700.00	1047	CHASE	ABC
11/17/01	11/17/01	4800.00	1048	CHASE	ABC
11/18/01	11/18/01	4900.00	1049	CHASE	ABC
11/19/01	11/19/01	5000.00	1050	CHASE	ABC
11/20/01	11/20/01	5100.00	1051	CHASE	ABC
11/21/01	11/21/01	5200.00	1052	CHASE	ABC
11/22/01	11/22/01	5300.00	1053	CHASE	ABC
11/23/01	11/23/01	5400.00	1054	CHASE	ABC
11/24/01	11/24/01	5500.00	1055	CHASE	ABC
11/25/01	11/25/01	5600.00	1056	CHASE	ABC
11/26/01	11/26/01	5700.00			

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ANNUAL

DATE: 14.12.2014

SURF	MAP	MAP	IMAC	© 2011
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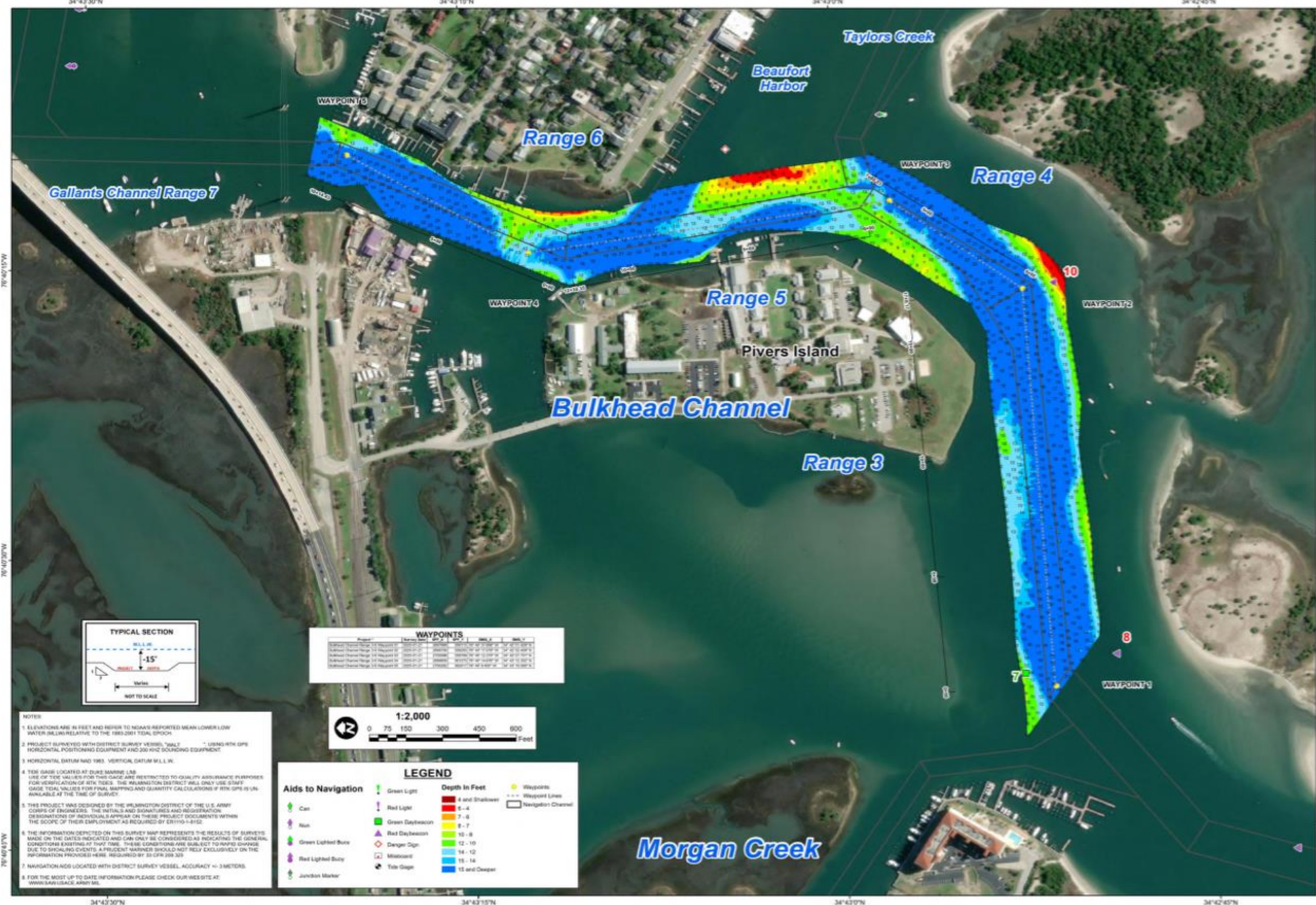
# RANGES

## 1 - 2a



# BULKHEAD CHANNEL

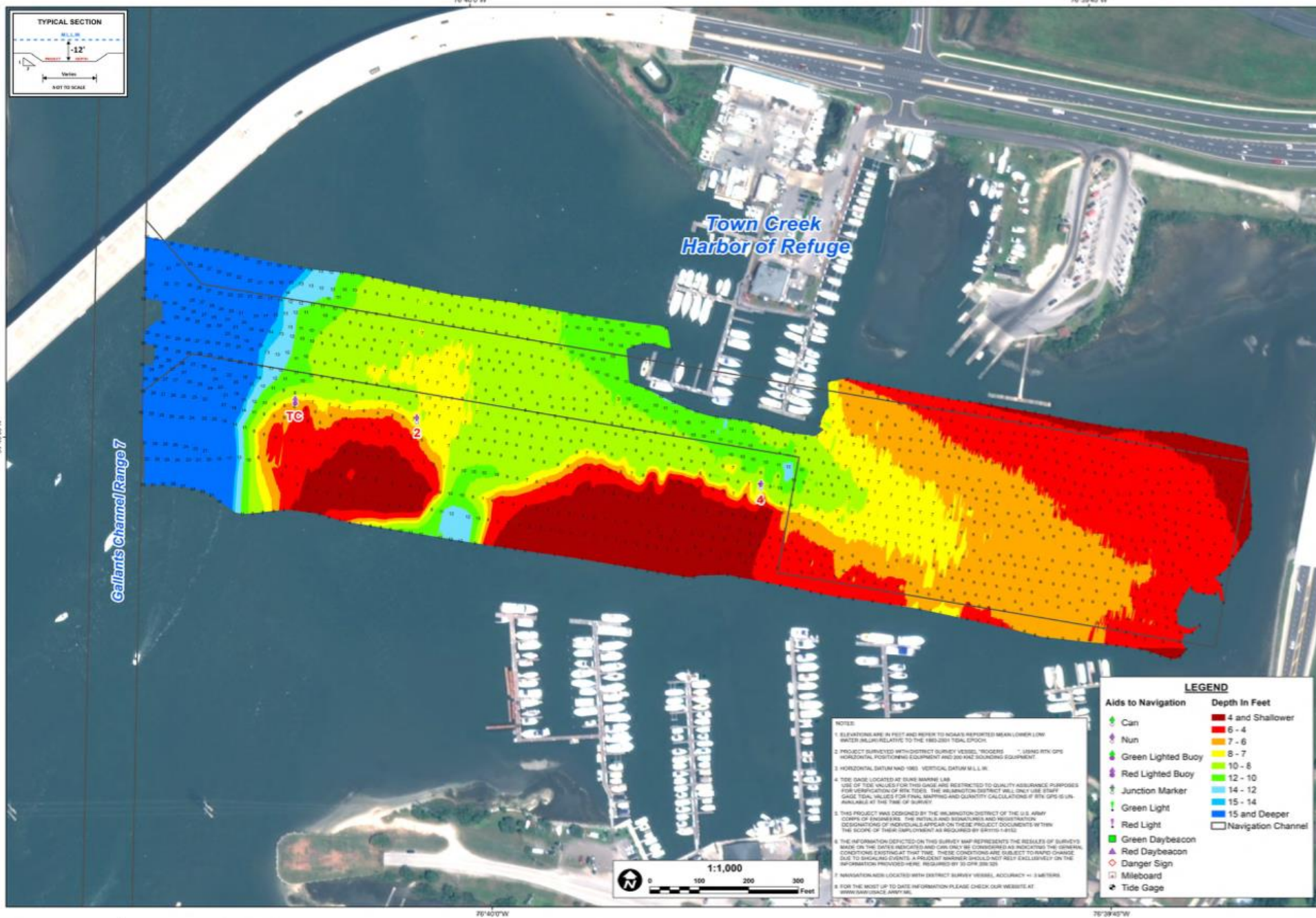
# RANGES





# TOWN CREEK

# HARBOR OF REFUGE



SURVEY DATE: 24 SEPTEMBER 2019	SURVEYED BY: CDP RVA
MAP DATE: 25 SEPTEMBER 2019	MAPPED BY: KYPDPSGD
MAP SCALE: 1:1,000	PROCESSED BY: KYPDPSGD
IMAGERY DATE: 09 AUGUST 2019	MAP FILE NAME: BH_00_TCH_20190924_CS
© 2019 DIGITALGLOBE NEXTVIEW LICENSE	





**Taylors Creek**  
Beaufort, NC

Waypoint 6  
Waypoint 4  
Waypoint 5  
Waypoint 3  
Waypoint 2  
Waypoint 1

Matchline A

**Range 3**  
Surveyed: 13 September 2019

**Range 4**  
Surveyed: 13 September 2019  
Surveyed: 23 September 2019

Carrot Island

Beaufort, NC

**Range 1**  
Waypoint 8  
Matchline B

**Range 2**  
Waypoint 7

**Taylors Creek**  
Surveyed: 13 September 2019

**Range 3**  
Matchline A

**Gallant's Channel**

Beaufort, NC

**Taylors Creek**  
Surveyed: 13 September 2019

Waypoint 10  
Waypoint 11  
Waypoint 9  
Waypoint 7

Pivers Island

**Bulkhead Channel**  
**Range 4**

**Range 1**

**Range 2**  
Matchline B

**LEGEND**

**Aids to Navigation**

- Can
- Nun
- Green Lighted Buoy
- Red Lighted Buoy
- Junction Marker
- Green Light
- Red Light
- Green Daybeacon
- Red Daybeacon
- Danger Sign
- Mileboard
- Tide Gage

**Depth In Feet**

- 4 and Shallower
- 6 - 4
- 7 - 6
- 8 - 7
- 10 - 8
- 12 - 10
- 14 - 12
- 15 - 14
- 15 and Deeper

Waypoints  
Waypoint Lines  
Matchlines  
Navigation Channel

**NOTES**

- ELEVATIONS ARE IN FEET AND REFER TO NOAA'S REPORTED MEAN LOWER LOW WATER (MILLION RELATIVE TO THE 1983-2001 TIDAL EPOCH).
- PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL, "TIGER", USING RTK GPS INSTRUMENTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
- HORIZONTAL DATUM: NAD 83. VERTICAL DATUM: MLLW.
- THIS MAP LOCATED AT THE MARINE LAB.
- USE OF TIDE VALUES FOR THIS GAUGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES. FOR VERIFICATION OF RTK TIDE, THE WASHINGTON DISTRICT WILL ONLY USE SURVEY GAUGE TIDE VALUES FOR FINAL SHIPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.
- THIS PROJECT WAS DERIVED BY THE WASHINGTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION NUMBERS OF INDIVIDUALS APPEAR ON THE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY DHS-115-1-8102.
- THE INFORMATION DERIVED ON THIS SURVEY MAP REPRESENTS THE RESULTS OF SURVEYS BASED ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CHARACTERISTICS OF THE AREA AT THAT TIME. THESE CONDITIONS ARE SUBJECT TO HAZARDOUS DUE TO CHANGING EVENTS. A FLOODING HAZARD SHOULD NOT BE RELIED ON THE INFORMATION PROVIDED HEREIN. REGARDS BY 2019-09-20.
- NAVIGATION AID LOCATED WITH DISTRICT SURVEY VESSEL, ACCURACY +/- 3 METERS.
- FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: [WWW.DHS-115-1-8102](http://WWW.DHS-115-1-8102)

**WAYPOINTS**

Waypoint	Survey Date	SPY X	SPY Y	DMX X	DMX Y
Taylors Creek - Waypoint 1	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 2	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 3	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 4	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 5	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 6	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 7	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 8	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 9	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 10	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N
Taylors Creek - Waypoint 11	2019-09-23	271555	18555	78° 37' 15.00" W	34° 42' 25.00" N

**TAYLOR'S CREEK - RANGES 1 & 2**  
Surveyed: 13 September 2019  
Scale: 1:2,400

**TAYLOR'S CREEK - RANGE 3**  
Surveyed: 23 September 2019  
Scale: 1:2,400

**BEAUFORT HARBOR**  
Surveyed: 13 September 2019  
Scale: 1:2,400

NOT TO SCALE

NOT TO SCALE

NOT TO SCALE

1:2,400

0 200 400 600 Feet

**HYDROGRAPHIC SURVEY**  
U.S. ARMY OF THE ARMY DISTRICT  
WASHINGTON, NORTH CAROLINA

**BEAUFORT HARBOR  
TAYLOR'S CREEK**  
BEAUFORT, NORTH CAROLINA

[https://saw-nav.usace.army.mil/MHCBFT/BEAUFORT\\_HARBOR/TAYLORS\\_CREEK/Taylors\\_Creek.pdf](https://saw-nav.usace.army.mil/MHCBFT/BEAUFORT_HARBOR/TAYLORS_CREEK/Taylors_Creek.pdf)



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**Legend**

- Restricted Area
- Placement Area
- Navigation Channels**
  - Bulkhead Channel
  - Morgan Creek
  - Morehead City Harbor
  - Other Channels

Nearshore Placement Areas	
Data Source: CESAW Imagery © Digital Globe 20180428 Cultural Resources: NC State Archaeology Office	Map Date: 7/10/2018

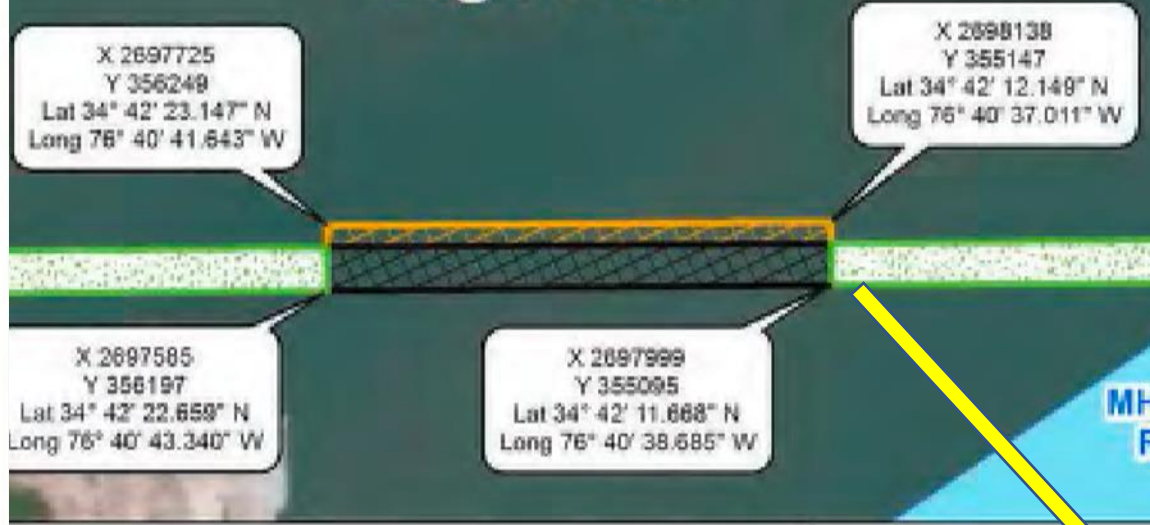




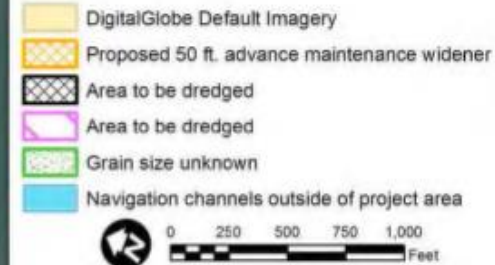
# Dredging-Bulkhead Channel Digging Deeper

- Recently the Town asked the Army Corp of Engineers for an estimated cost to dredge Range 1 of Bulkhead Channel on a quarterly basis. The first quarter includes the expansion of the window of an additional 50 feet. (Next Slide) work could begin in April.
- The estimated cost \$384,000
- Remaining Funds from previous dredging - approximately \$70,000
- Amount needed Total = \$314,000
- Town Share = \$104,667
- State Share = \$209,333

# Bulkhead Channel Ranges 1 -2A



## Legend\*



Map Date: August 16, 2018  
Map #: sawnavgis-2018-07  
© 2018 DigitalGlobe NextView License



- Orange-shaded areas are consistently ≥90% sand (no additional geotechnical analyses required to confirm)
- Black-shaded areas are consistently ≥90% sand (no additional geotechnical analyses required to confirm)
- Pink-shaded areas are ≥90% sand at present (prior to any future hopper dredging beyond present needs, additional geotechnical analyses required to confirm)
- Green-shaded areas are of unknown grain size (prior to any future hopper dredging, additional geotechnical analyses required)
- For additional details, see Section 3 – Alternatives Considered – for specific requirements





# 90 DAY DISTRICT DREDGE SCHEDULES

(PROJECTED FY20 SCHEDULE)

SNELL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
Feb (FY20)	SWG																																				
Mar (FY20)	SWG																																				
Apr (FY20)	SWG																																				
Merritt	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
Feb (FY20)	Rollinson/South Ferry Channel																				Oregon Inlet										X	X					
Mar (FY20)	Oregon Inlet															ERY Maintenance																					
Apr (FY20)	LWF															New River															X						
Currituck	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
Feb (FY20)	Stage Harbor								Shark River										Mispillian								Roosevelt				X	X					
Mar (FY20)	Ocean City/Assateague												Chincoteague										Rudee Inlet						Oregon Inlet								
Apr (FY20)	Oregon Inlet													Bulkhead Channel															Carolina Beach								X
Murden	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
Feb (FY20)	ABS Shipyard																														X	X					
Mar (FY20)	ABS Shipyard																														X						
Apr (FY20)	ABS Shipyard																														X						
	SCHEDULE IS A PROJECTION ONLY AND WILL CHANGE BASED ON AVAILABILITY OF FUNDING, ENVIROMENTAL WINDOWS AND PROJECT CONDITIONS. (As of 02/10/20)																																				

# Dredging-Bulkhead Channel Digging Even Deeper

- Dredging on a quarterly basis would cost approximately:
- Second Quarter \$207,200 (Town Share = \$69,065.97)
- Third Quarter \$207,200 (Town Share = \$69,065.97)
- Fourth Quarter \$207,200 (Town Share = \$69,065.97)

Total Dredging Cost = \$1,005,600

- State Share = \$670,400
  - Town Share = \$335,200
- 
- These estimates are only for Bulkhead Channel Range # 1



# Murden/Currituck: Bulkhead Channel (Initial Cleanup)

as of 02/05/2020

		Amount	Unit		Unit Rate		Total Cost		NOTES
MOB	1	Days	@		\$20,400.00		\$20,400.00		1. MOB is based off of departing from Oregon Inlet
Currituck (24hr)	14	Days	@		\$20,400.00		\$285,600.00		2. Project will be conducted with the Murden or Currituck on 12 hour days.
Weather(20hr)	2	Day	@		\$17,000.00		\$34,000.00		3. Daily production will depend on dredge location/weather.
Crew Change Day (20hr)	2	Day	@		\$17,000.00		\$34,000.00		4. Disposal site is offshore.
Survey Cost/Tech Support	2	Surveys	@		\$4,500.00		\$9,000.00		5. Minimal dredging on crew change day.
Program and Project Management	1	Each	@		\$1,000.00		\$1,000.00		
						Subtotal	\$384,000.00		
						Funds on Hand	\$0.00		
									This is an initial estimate ONLY and will vary depending on weather, project condition and priorities.
						Required	\$384,000.00		

# Murden/Currituck: Bulkhead Channel (Quarterly Maintenance)

		Amount	Unit		Unit Rate		Total Cost		NOTES
MOB	1	Days	@		\$20,400.00		\$20,400.00		1. MOB is based off of departing from Oregon Inlet
Currituck (24hr)	7	Days	@		\$20,400.00		\$142,800.00		2. Project will be conducted with the Murden or Currituck on 12 hour days.
Weather(20hr)	1	Day	@		\$17,000.00		\$17,000.00		3. Daily production will depend on dredge location/weather.
Crew Change Day (20hr)	1	Day	@		\$17,000.00		\$17,000.00		4. Disposal site is offshore.
Survey Cost/Tech Support	2	Surveys	@		\$4,500.00		\$9,000.00		5. Minimal dredging on crew change day.
Program and Project Management	1	Each	@		\$1,000.00		\$1,000.00		
						Subtotal	\$207,200.00		
						Funds on Hand	\$0.00		
									This is an initial estimate ONLY and will vary depending on weather, project condition and priorities.
						Required	\$207,200.00		

ESTIMATED ANNUAL ESTIMATE

1,005,600.00

# **FUNDING OPTIONS\$**

## **For Future Dredging**



