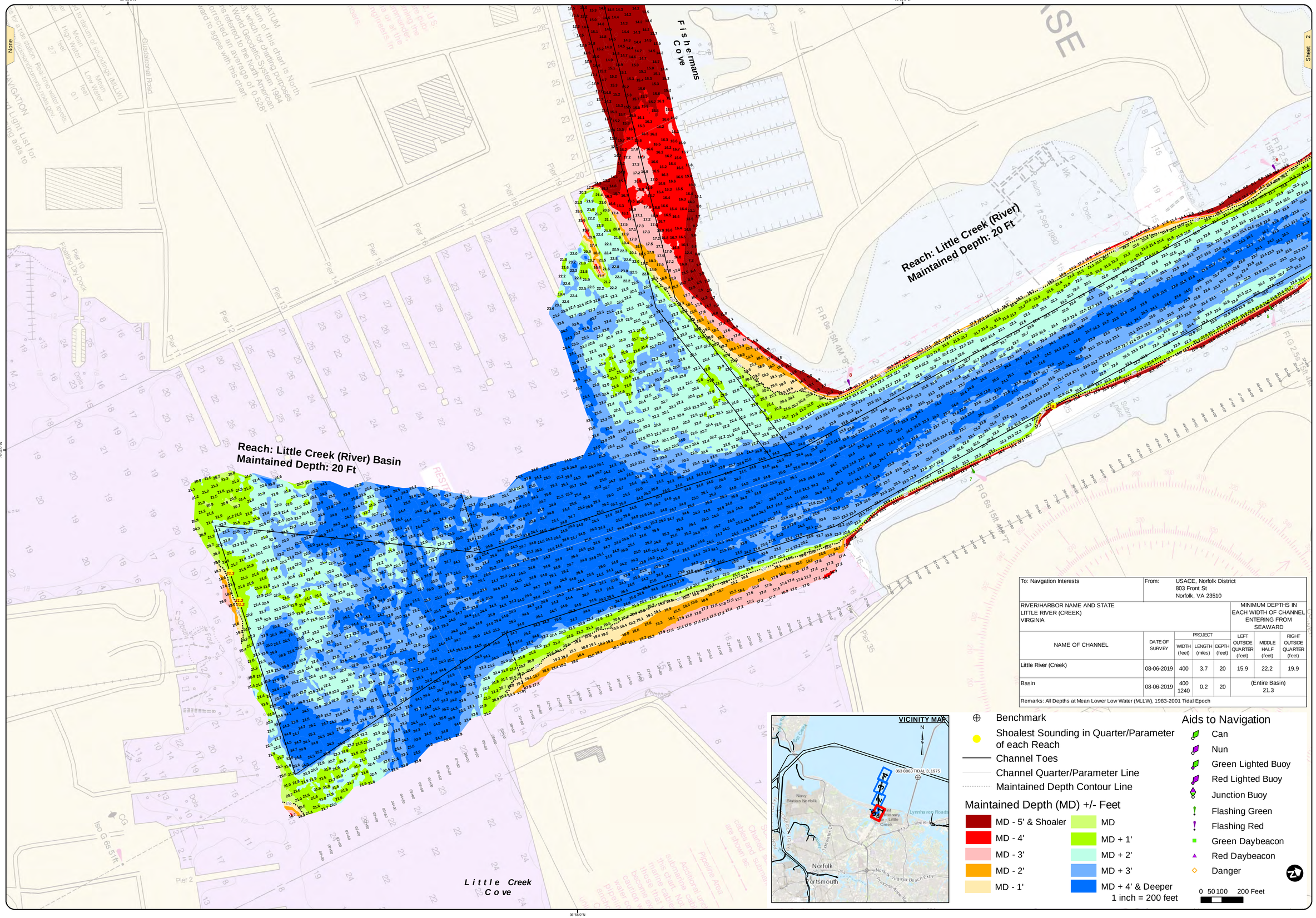


To: Navigation Interests	From: USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE LITTLE RIVER (CREEK) VIRGINIA					MINIMUM DEPTHS IN EACH WIDTH OF CHANNEL ENTERING FROM SEAWARD		
NAME OF CHANNEL	DATE OF SURVEY	PROJECT WIDTH (feet)	PROJECT LENGTH (miles)	PROJECT DEPTH (feet)	LEFT OUTSIDE QUARTER (feet)	MIDDLE HALF (feet)	RIGHT OUTSIDE QUARTER (feet)
Little River (Creek)	08-06-2019	400	3.7	20	15.9	22.2	19.9
Basin	08-06-2019	400 1240	0.2	20	(Entire Basin) 21.3		
Remarks: All Depths at Mean Lower Low Water (MLLW), 1983-2001 Tidal Epoch							

Benchmark
Shoalest Sounding in Quarter/Parameter of each Reach
Channel Toes
Channel Quarter/Parameter Line
Maintained Depth Contour Line

Maintained Depth (MD) +/- Feet

- MD - 5' & Shoaler
- MD - 4'
- MD - 3'
- MD - 2'
- MD - 1'
- MD
- MD + 1'
- MD + 2'
- MD + 3'
- MD + 4' & Deeper

1 inch = 200 feet

Aids to Navigation

- Can
- Nun
- Green Lighted Buoy
- Red Lighted Buoy
- Junction Buoy
- Flashing Green
- Flashing Red
- Green Daybeacon
- Red Daybeacon
- Danger

0 50 100 200 Feet

US Army Corps of Engineers Norfolk District

NOTES:

1. PROJECT: CHANNEL 20 FT DEEP (MAINTAINED AT 20 FT) AND 400 FT WIDE FROM THE 20 FT CONTOUR IN CHESAPEAKE BAY TO RAILROAD TERMINALS INCLUDING BASIN 20 FT DEEP AND 400 FT TO 1240 FT WIDE AND 1160 FT LONG.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 40 FT RADIUS.
4. BACKGROUND: NOAA_RNC GIS WEB MAP SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMARTNET
TIDE APPLICATION: RTK/NOAA VDATUM MDL
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5'
BIN SELECTION METHOD: AVERAGE CELL CENTER

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 1 FOOT
HORIZONTAL CONTROL: RTK/LEICA SMARTNET

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS "863 8863 Tidal No. 3, 1975"	26.96'	25.13'(GEOID12B)	2.55'	0+00 to 212+00

LITTLE RIVER (CREEK)
PROJECT CONDITION SURVEY

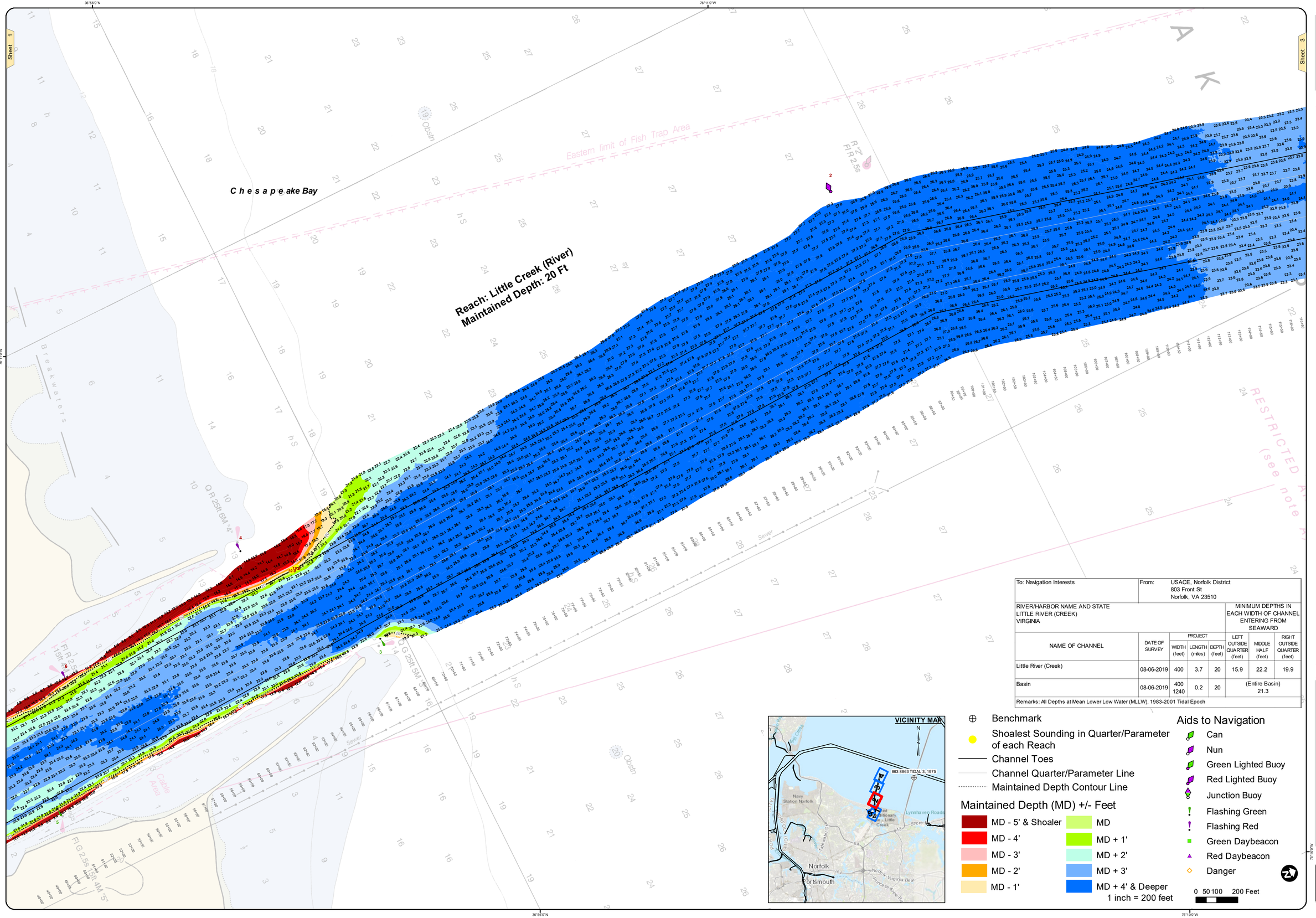
SURVEY DATE:
August 06, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: LC_01_LCK_20190806_CS

SHEET 1 of 5
Map Produced: 9/4/2019

APPROVED:
Jeff Swallow
Digitally signed by Jeff Swallow
Date: 2019.09.09 09:30:45 -04'00'
Chief, Navigation Analysis Section

APPROVED:
Digitally signed by LEGASPI.ERIC.C.1174258275
Date: 2019.09.11 07:51:58 -04'00'
Chief, Navigation Support and Survey Section



To: Navigation Interests	From: USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE LITTLE RIVER (CREEK) VIRGINIA					MINIMUM DEPTHS IN EACH WIDTH OF CHANNEL ENTERING FROM SEAWARD		
NAME OF CHANNEL	DATE OF SURVEY	PROJECT WIDTH (feet)	PROJECT LENGTH (miles)	PROJECT DEPTH (feet)	LEFT OUTSIDE QUARTER (feet)	MIDDLE HALF (feet)	RIGHT OUTSIDE QUARTER (feet)
Little River (Creek)	08-06-2019	400	3.7	20	15.9	22.2	19.9
Basin	08-06-2019	400 1240	0.2	20	(Entire Basin) 21.3		
Remarks: All Depths at Mean Lower Low Water (MLLW), 1983-2001 Tidal Epoch							

Benchmark
Shoalest Sounding in Quarter/Parameter of each Reach
Channel Toes
Channel Quarter/Parameter Line
Maintained Depth Contour Line

Maintained Depth (MD) +/- Feet

- MD - 5' & Shoaler
- MD - 4'
- MD - 3'
- MD - 2'
- MD - 1'
- MD
- MD + 1'
- MD + 2'
- MD + 3'
- MD + 4' & Deeper

1 inch = 200 feet

Aids to Navigation

- Can
- Nun
- Green Lighted Buoy
- Red Lighted Buoy
- Junction Buoy
- Flashing Green
- Flashing Red
- Green Daybeacon
- Red Daybeacon
- Danger

0 50 100 200 Feet

US Army Corps of Engineers Norfolk District

NOTES:

1. PROJECT: CHANNEL 20 FT DEEP (MAINTAINED AT 20 FT) AND 400 FT WIDE FROM THE 20 FT CONTOUR IN CHESAPEAKE BAY TO RAILROAD TERMINALS INCLUDING BASIN 20 FT DEEP AND 400 FT TO 1240 FT WIDE AND 1160 FT LONG.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 40 FT RADIUS.
4. BACKGROUND: NOAA_RNC GIS WEB MAP SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (* XYZ) AND METADATA (* MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 1 FOOT
HORIZONTAL CONTROL: RTK/LEICA SMARTNET

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMARTNET
TIDE APPLICATION: RTK/NOAA VDATUM MDL
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5'
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS *863 8863 Tidal No. 3, 1975*	26.96'	25.13'(GEOID12B)	2.55'	0+00 to 212+00

LITTLE RIVER (CREEK)

PROJECT CONDITION SURVEY

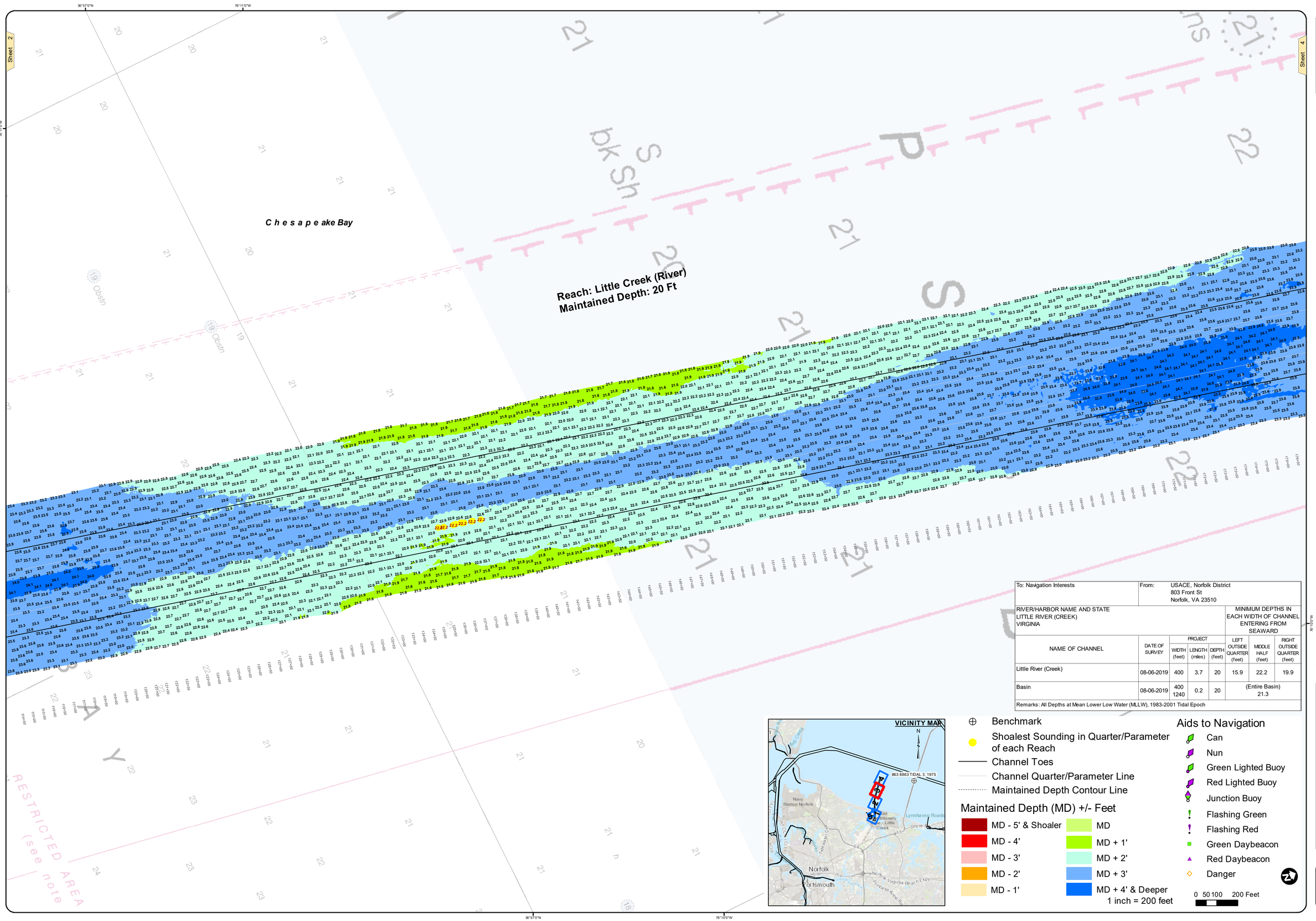
SURVEY DATE:
August 06, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: LC_01_LCK_20190806_CS

SHEET 2 of 5
Map Produced: 9/9/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests		From: USACE, Norfolk District 803 Front St Norfolk, VA 23510					
RIVER/HARBOR NAME AND STATE LITTLE RIVER (CREEK) VIRGINIA					MINIMUM DEPTHS IN EACH WIDTH OF CHANNEL ENTERING FROM SEAWARD		
NAME OF CHANNEL	DATE OF SURVEY	PROJECT			LEFT OUTSIDE QUARTER (feet)	MIDDLE HALF (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)			
Little River (Creek)	08-06-2019	400	3.7	20	15.9	22.2	19.9
Basin	08-06-2019	400 1240	0.2	20	(Entire Basin) 21.3		
Remarks: All Depths at Mean Lower Low Water (MLLW), 1983-2001 Tidal Epoch							

Benchmark

Shoalest Sounding in Quarter/Parameter of each Reach

Channel Toes

Channel Quarter/Parameter Line

Maintained Depth Contour Line

Maintained Depth (MD) +/- Feet

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Aids to Navigation

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- Red Daybeacon
- Danger

0 50 100 200 Feet

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT: CHANNEL 20 FT DEEP (MAINTAINED AT 20 FT) AND 400 FT WIDE FROM THE 20 FT CONTOUR IN CHESAPEAKE BAY TO RAILROAD TERMINALS INCLUDING BASIN 20 FT DEEP AND 400 FT TO 1240 FT WIDE AND 1160 FT LONG.
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3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 40 FT RADIUS.
4. BACKGROUND: NOAA, RNC GIS WEB MAP SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD83(2011)
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED VERTICAL DATUM: MLLW
HORIZONTAL CONTROL: RTK/LEICA SMARTNET
VERTICAL REFERENCE DATUM: NOS MLLW
VERTICAL DATUM: NOAA CORPS
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMARTNET
VERTICAL ACCURACY: +/- 0.5 FEET
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS 863 8863 Tidal No. 3, 1975	26.96'	25.13'(GEOID12B)	2.55'	0+00 to 212+00

LITTLE RIVER (CREEK)
PROJECT CONDITION SURVEY

SURVEY DATE:
August 06, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: LC_01_LCK_20190806_CS

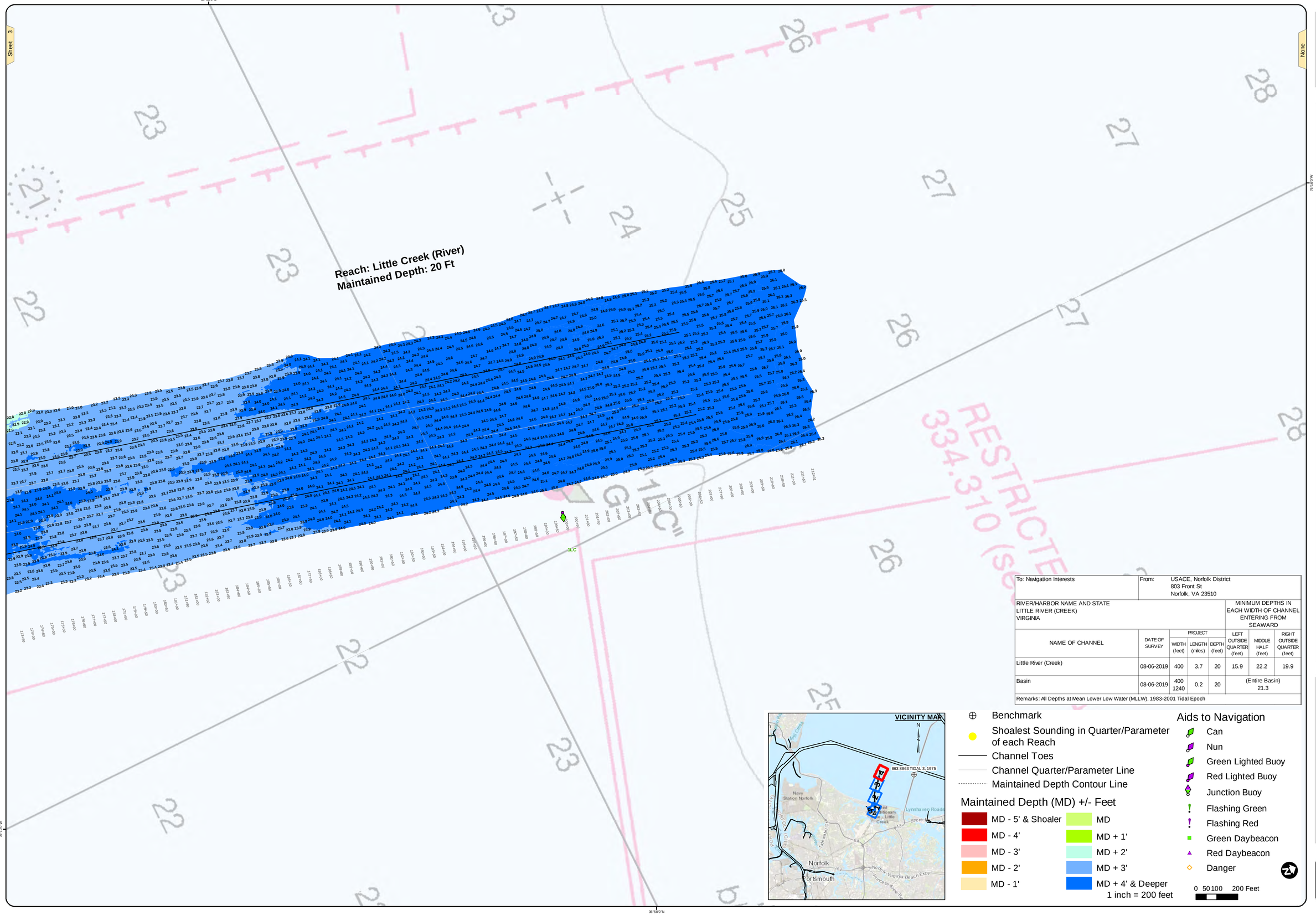
SHEET 3 of 5
Map Produced: 9/9/2019

APPROVED:

Chief, Navigation Analysis Section

APPROVED:

Chief, Navigation Support and Survey Section



To: Navigation Interests	From: USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE LITTLE RIVER (CREEK) VIRGINIA					MINIMUM DEPTHS IN EACH WIDTH OF CHANNEL ENTERING FROM SEAWARD		
NAME OF CHANNEL	DATE OF SURVEY	PROJECT WIDTH (feet)	PROJECT LENGTH (miles)	PROJECT DEPTH (feet)	LEFT OUTSIDE QUARTER (feet)	MIDDLE HALF (feet)	RIGHT OUTSIDE QUARTER (feet)
Little River (Creek)	08-06-2019	400	3.7	20	15.9	22.2	19.9
Basin	08-06-2019	400 1240	0.2	20	(Entire Basin) 21.3		

Remarks: All Depths at Mean Lower Low Water (MLLW), 1983-2001 Tidal Epoch

US Army Corps of Engineers Norfolk District

NOTES:

1. PROJECT: CHANNEL 20 FT DEEP (MAINTAINED AT 20 FT) AND 400 FT WIDE FROM THE 20 FT CONTOUR IN CHESAPEAKE BAY TO RAILROAD TERMINALS INCLUDING BASIN 20 FT DEEP AND 400 FT TO 1240 FT WIDE AND 1160 FT LONG.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 40 FT RADIUS.
4. BACKGROUND: NOAA_RNC GIS WEB MAP SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (* XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 1 FOOT
HORIZONTAL CONTROL: RTK/LEICA SMARTNET

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMARTNET
TIDE APPLICATION: RTK/NOAA VDATUM MDL
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5'
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS "863 8863 Tidal No. 3, 1975"	26.96'	25.13'(GEOID12B)	2.55'	0+00 to 212+00

LITTLE RIVER (CREEK)

PROJECT CONDITION SURVEY

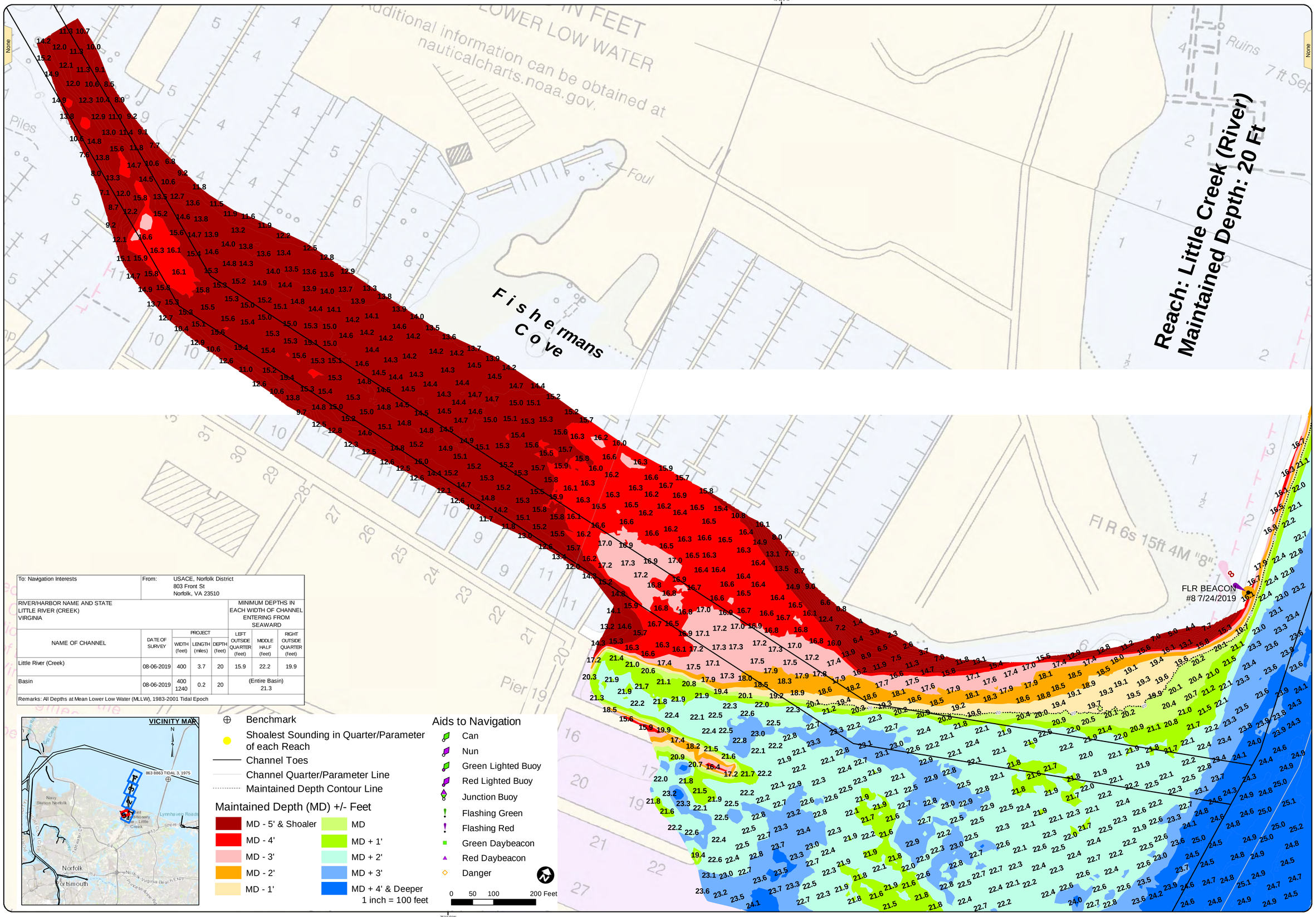
SURVEY DATE:
August 06, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: LC_01_LCK_20190806_CS

SHEET 4 of 5
Map Produced: 9/4/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests		From: USACE, Norfolk District 803 Front St Norfolk, VA 23510					
RIVER/HARBOR NAME AND STATE LITTLE RIVER (CREEK) VIRGINIA					MINIMUM DEPTHS IN EACH WIDTH OF CHANNEL ENTERING FROM SEAWARD		
NAME OF CHANNEL	DATE OF SURVEY	PROJECT			LEFT OUTSIDE QUARTER (feet)	MIDDLE HALF (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)			
Little River (Creek)	08-06-2019	400	3.7	20	15.9	22.2	19.9
Basin	08-06-2019	400 1240	0.2	20	(Entire Basin) 21.3		
Remarks: All Depths at Mean Lower Low Water (MLLW), 1983-2001 Tidal Epoch							

VICINITY MAP

Benchmark

Shoalest Sounding in Quarter/Parameter of each Reach

Channel Toes

Channel Quarter/Parameter Line

Maintained Depth Contour Line

Maintained Depth (MD) +/- Feet

- MD - 5' & Shoaler
- MD - 4'
- MD - 3'
- MD - 2'
- MD - 1'
- MD
- MD + 1'
- MD + 2'
- MD + 3'
- MD + 4' & Deeper

Aids to Navigation

- Can
- Nun
- Green Lighted Buoy
- Red Lighted Buoy
- Junction Buoy
- Flashing Green
- Flashing Red
- Green Daybeacon
- Red Daybeacon
- Danger

1 inch = 100 feet

0 50 100 200 Feet

US Army Corps of Engineers Norfolk District

NOTES:

1. PROJECT: CHANNEL 20 FT DEEP (MAINTAINED AT 20 FT) AND 400 FT WIDE FROM THE 20 FT CONTOUR IN CHESAPEAKE BAY TO RAILROAD TERMINALS INCLUDING BASIN 20 FT DEEP AND 400 FT TO 1240 FT WIDE AND 1160 FT LONG.
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6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
HORIZONTAL DATUM: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
PROJECTED HORIZONTAL ACCURACY: +/- 0.5 FEET
HORIZONTAL CONTROL: RTK/LEICA SMARTNET

VERTICAL REFERENCE DATUM: NOS MLLW
VERTICAL DATUM: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMARTNET
VERTICAL MODELING: ACTUAL MODEL
SYSTEM METHOD: MULTI-BEAM
BIN SIZE: 5x5
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS 7663 8863 Tidal No. 3, 1975	26.96'	25.13 (GEOID12B)	2.55'	0+00 to 212+00

LITTLE RIVER (CREEK)
PROJECT CONDITION SURVEY

SURVEY DATE: August 06, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: LC_01_LCK_20190806.CS

SHEET 5 of 5
Map Produced: 9/3/2019

APPROVED:

Chief, Navigation Analysis Section

APPROVED:

Chief, Navigation Support and Survey Section