W00473

U.S. Department of Commerce National Oceanic and Atmospheric Administration National Ocean Service

DESCRIPTIVE REPORT

Type of Survey:	Navigable Area	
Registry Number:	W00473	
	LOCALITY	
State(s):	New Jersey	
General Locality:	Barnegat Bay	
Sub-locality:	Forked River and Deep Creek Channels	
2019		
CHIEF OF PARTY		
Gahaş	gan & Bryant Associates	
LIB	RARY & ARCHIVES	
Date:		

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	W00473
INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.	

State(s): New Jersey

General Locality: Barnegat Bay

Sub-Locality: Forked River and Deep Creek Channels

Scale: N/A

Dates of Survey: 07/24/2017 to 01/17/2018

Instructions Dated: N/A

Project Number: ESD-PHB-19

Field Unit: New Jersey Department of Transportation

Chief of Party: Gahagan & Bryant Associates

Soundings by: Odom CV100 (SBES)

Odom CV200 (SBES)

Imagery by: N/A

Verification by: Pacific Hydrographic Branch

Soundings Acquired in: meters at Mean Lower Low Water

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via http://www.ncei.noaa.gov/.

DESCRIPTIVE REPORT MEMO

February 03, 2020

MEMORANDUM FOR: Pacific Hydrographic Branch

FROM: Report prepared by PHB on behalf of field unit

Toshi Wozumi

Physical Scientist, Pacific Hydrographic Branch

SUBJECT: Submission of Survey W00473

Hydrographic surveys of New Jersey waterways are conducted to determine navigability and calculate dredged material quantities as requested by the New Jersey Department of Transportation. This survey dataset documents the pre and post construction conditions of the subject channel.

All soundings were reduced to Mean Lower Low Water using Constant Separation. The horizontal datum for this project is North American Datum of 1983 (NAD 83). The projection used for this project is Universal Transverse Mercator (UTM) Zone 18.

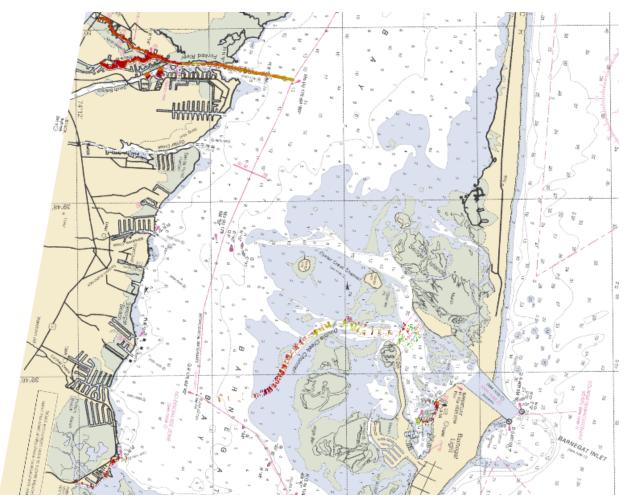
This report does not include vertical and horizontal control information.

This report does not include data acquisition and processing information.

All data were reviewed for DTONs and none were identified in this survey.

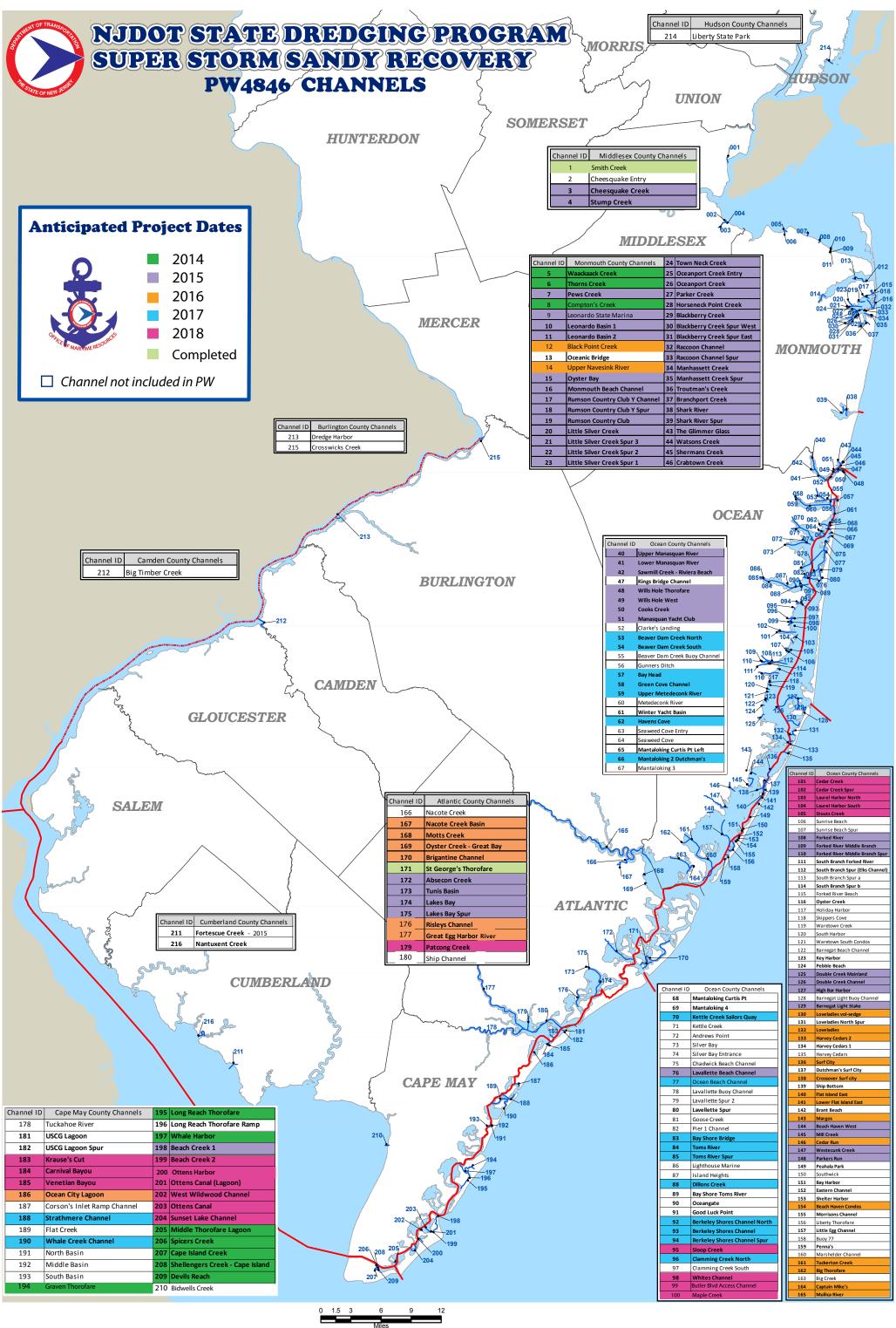
New Jersey Department of Transportation acquired the data outlined in this report.

This survey will be used to update NOAA navigational products where possible.



Overview of W00473 survey area

The survey is partially adequate to supersede previous data. For further information regarding survey equipment and methods refer to the attached NJDOT metadata report.



108-Forked River

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180404
              Publication Time: Unknown
              Title: Forked River Channels, 108-Forked River, New Jersey
              Edition: April, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                  Issue Identification: April, 2018
              Publication Information:
                  Publication Place: Data Submission
                  Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the pre and post construction
              conditions of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                  Beginning Date: 20170724
                  Ending Date: 20171005
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
              West Bounding Coordinate: -74.194375763
```

East_Bounding_Coordinate: -74.145426906 North_Bounding_Coordinate: 39.835462994 South Bounding Coordinate: 39.822570332

Keywords:

Theme:

Theme Keyword Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography Theme_Keyword: Land Status Theme Keyword: Landform

Place:

Place_Keyword_Thesaurus: Geographic Names Information System

Place Keyword: New Jersey

Place_Keyword: Forked River Channels

Temporal:

Temporal_Keyword_Thesaurus: Time

Temporal_Keyword: July Temporal_Keyword: October Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and prudent mariners should not rely solely upon it.

Point_of_Contact:

Contact Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute_Accuracy_Report:

The construction survey on 7/24/2017 was performed using a Trimble SPS 461 RTK GPS and Odom CV200 precision echosounder deployed on the survey vessel Morning Tide, a 25 ft Privateer with twin 150 Hp Honda outboard motors. Surveys on all other days were performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical_Consistency_Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was

checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical Positional Accuracy Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20171005

Process Contact:

Contact Information:

Contact_Organization_Primary:

Contact Organization: Gahagan & Bryant Associates,

Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact Facsimile Telephone: 813.831.4408

```
Hours of Service: 9a-5p M-F
Spatial Data Organization Information:
    Direct Spatial Reference Method: Point
    Point and Vector Object Information:
         SDTS Terms Description:
             SDTS Point and Vector Object Type: Point
             Point and Vector Object Count: 286400
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
              Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                       Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
              Horizontal Datum Name: North American Datum of 1983
              Ellipsoid Name: WGS-84
              Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
             Altitude Datum Name: North American Vertical Datum of 1988
              Altitude Resolution: .1
              Altitude Distance Units: Feet
              Altitude Encoding Method: Explicit elevation coordinate included
```

```
with horizontal coordinates
         Depth System Definition:
              Depth Datum Name: Land survey datum
              Depth Resolution: .1
              Depth Distance Units: Feet
              Depth Encoding Method: Explicit depth coordinate included with
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180404
    Metadata Review Date: 20180404
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
```

Metadata

Metadata_Standard_Version: 1.3

Metadata_Time_Convention: Local time Metadata_Access_Constraints: None

Metadata_Use_Constraints: None

109-Forked River Middle Branch

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180404
              Publication Time: Unknown
              Title: Forked River Channels, 109-Forked River Middle Branch, New
Jersey
              Edition: April, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                   Issue Identification: April, 2018
              Publication Information:
                   Publication Place: Data Submission
                   Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the post construction
              condition of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                   Beginning Date: 20171005
                   Ending Date: 20171005
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
```

West_Bounding_Coordinate: -74.194625072 East_Bounding_Coordinate: -74.180182594 North_Bounding_Coordinate: 39.828395881 South_Bounding_Coordinate: 39.825585763

Keywords:

Theme:

Theme_Keyword_Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography
Theme_Keyword: Land Status
Theme Keyword: Landform

Place:

Place Keyword Thesaurus: Geographic Names Information System

Place_Keyword: New Jersey

Place Keyword: Forked River Channels

Temporal:

Temporal Keyword Thesaurus: Time

Temporal_Keyword: October Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and prudent mariners should not rely solely upon it.

Point of Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute_Accuracy_Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical_Consistency_Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional Accuracy:

Horizontal_Positional_Accuracy:

Horizontal Positional Accuracy Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20171005

Process_Contact:

Contact Information:

Contact_Organization_Primary:

Contact Organization: Gahagan & Bryant Associates,

Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact Facsimile Telephone: 813.831.4408

Hours of Service: 9a-5p M-F

Spatial Data Organization Information:

Direct_Spatial_Reference_Method: Point Point and Vector Object Information:

SDTS_Terms_Description:

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SDTS Point and Vector Object Type: Point
             Point and Vector Object Count: 125513
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
             Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                      Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
             Horizontal Datum Name: North American Datum of 1983
             Ellipsoid Name: WGS-84
             Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
             Altitude Datum Name: North American Vertical Datum of 1988
             Altitude Resolution: .1
             Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
             Depth Datum Name: Land survey datum
             Depth Resolution: .1
             Depth Distance Units: Feet
```

```
Depth Encoding Method: Explicit depth coordinate included with
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180404
    Metadata Review Date: 20180404
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
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Metadata Use Constraints: None

110-Forked River Middle Branch Spur

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180404
              Publication Time: Unknown
              Title: Forked River Channels, 110-Forked River Middle Branch Spur,
New Jersey
              Edition: April, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                   Issue Identification: April, 2018
              Publication Information:
                   Publication Place: Data Submission
                   Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the post construction
              condition of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                   Beginning Date: 20171005
                   Ending Date: 20171005
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
```

West_Bounding_Coordinate: -74.191095317 East_Bounding_Coordinate: -74.186951832 North_Bounding_Coordinate: 39.827380738 South_Bounding_Coordinate: 39.826167541

Keywords:

Theme:

Theme_Keyword_Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography
Theme_Keyword: Land Status
Theme Keyword: Landform

Place:

Place Keyword Thesaurus: Geographic Names Information System

Place_Keyword: New Jersey

Place Keyword: Forked River Channels

Temporal:

Temporal Keyword Thesaurus: Time

Temporal_Keyword: October Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

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Point_of_Contact:

Contact_Information:

Contact_Organization_Primary:

prudent mariners should not rely solely upon it.

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute_Accuracy_Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical_Consistency_Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional Accuracy:

Horizontal_Positional_Accuracy:

Horizontal Positional Accuracy Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20171005

Process_Contact:

Contact Information:

Contact_Organization_Primary:

Contact Organization: Gahagan & Bryant Associates,

Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact Facsimile Telephone: 813.831.4408

Hours of Service: 9a-5p M-F

Spatial Data Organization Information:

Direct_Spatial_Reference_Method: Point Point and Vector Object Information:

SDTS_Terms_Description:

```
SDTS Point and Vector Object Type: Point
             Point and Vector Object Count: 40043
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
             Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                      Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
             Horizontal Datum Name: North American Datum of 1983
             Ellipsoid Name: WGS-84
             Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
             Altitude Datum Name: North American Vertical Datum of 1988
             Altitude Resolution: .1
             Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
             Depth Datum Name: Land survey datum
             Depth Resolution: .1
             Depth Distance Units: Feet
```

```
Depth Encoding Method: Explicit depth coordinate included with
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180404
    Metadata Review Date: 20180404
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
```

Metadata Use Constraints: None

112-South Branch Spur Elks Channel

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180404
              Publication Time: Unknown
              Title: Forked River Channels, 112-South Branch Spur Elks Channel,
New Jersey
              Edition: April, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                   Issue Identification: April, 2018
              Publication Information:
                   Publication Place: Data Submission
                   Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the post construction
              condition of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                   Beginning Date: 20171005
                   Ending Date: 20171005
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
```

West_Bounding_Coordinate: -74.183034554 East_Bounding_Coordinate: -74.181356557 North_Bounding_Coordinate: 39.824757170 South Bounding Coordinate: 39.823473740

Keywords:

Theme:

Theme_Keyword_Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography
Theme_Keyword: Land Status
Theme Keyword: Landform

Place:

Place Keyword Thesaurus: Geographic Names Information System

Place_Keyword: New Jersey

Place Keyword: Forked River Channels

Temporal:

Temporal Keyword Thesaurus: Time

Temporal_Keyword: October Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and prudent mariners should not rely solely upon it.

Point_of_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute_Accuracy_Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical_Consistency_Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional Accuracy:

Horizontal_Positional_Accuracy:

Horizontal Positional Accuracy Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20171005

Process_Contact:

Contact Information:

Contact_Organization_Primary:

Contact Organization: Gahagan & Bryant Associates,

Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact Facsimile Telephone: 813.831.4408

Hours of Service: 9a-5p M-F

Spatial Data Organization Information:

Direct_Spatial_Reference_Method: Point Point and Vector Object Information:

SDTS_Terms_Description:

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SDTS Point and Vector Object Type: Point
             Point and Vector Object Count: 18929
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
             Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                      Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
             Horizontal Datum Name: North American Datum of 1983
             Ellipsoid Name: WGS-84
             Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
             Altitude Datum Name: North American Vertical Datum of 1988
             Altitude Resolution: .1
             Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
             Depth Datum Name: Land survey datum
             Depth Resolution: .1
             Depth Distance Units: Feet
```

```
Depth Encoding Method: Explicit depth coordinate included with
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180404
    Metadata Review Date: 20180404
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
```

Metadata Use Constraints: None

114-South Branch Spur B

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180404
              Publication Time: Unknown
              Title: Forked River Channels, 114-South Branch Spur B, New Jersey
              Edition: April, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                  Issue Identification: April, 2018
              Publication Information:
                  Publication Place: Data Submission
                  Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the post construction
              condition of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                  Beginning Date: 20171005
                  Ending Date: 20171005
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
              West Bounding Coordinate: -74.180062330
```

East_Bounding_Coordinate: -74.177819845 North_Bounding_Coordinate: 39.825975248 South Bounding Coordinate: 39.823785756

Keywords:

Theme:

Theme Keyword Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography Theme_Keyword: Land Status Theme Keyword: Landform

Place:

Place_Keyword_Thesaurus: Geographic Names Information System

Place Keyword: New Jersey

Place_Keyword: Forked River Channels

Temporal:

Temporal_Keyword_Thesaurus: Time

Temporal_Keyword: October Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility

This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and prudent mariners should not rely solely upon it.

Point_of_Contact:

Contact Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact_Address:

Address_Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data Quality Information:

Attribute Accuracy:

Attribute_Accuracy_Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical Consistency Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional_Accuracy:

Horizontal Positional Accuracy:

Horizontal_Positional_Accuracy_Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20171005

Process Contact:

Contact Information:

Contact Organization Primary:

Contact_Organization: Gahagan & Bryant Associates,

Inc.

Contact_Address:

Address_Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours_of_Service: 9a-5p M-F

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point

Point and Vector Object Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Point

```
Point and Vector Object Count: 36110
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
              Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                       Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
              Horizontal Datum Name: North American Datum of 1983
              Ellipsoid Name: WGS-84
              Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
              Altitude Datum Name: North American Vertical Datum of 1988
              Altitude Resolution: .1
              Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
              Depth Datum Name: Land survey datum
              Depth Resolution: .1
             Depth Distance Units: Feet
              Depth Encoding Method: Explicit depth coordinate included with
```

```
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180404
    Metadata Review Date: 20180404
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
```

Metadata Use Constraints: None

125-DoubleCreekMainlandChannel

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180307
              Publication Time: Unknown
              Title: Barnegat Channels, 125-Double Creek Mainland Channel, New
Jersey
              Edition: March, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                  Issue Identification: March, 2018
              Publication Information:
                  Publication Place: Data Submission
                  Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the pre and post construction
              conditions of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                  Beginning Date: 20171004
                  Ending Date: 20171214
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
```

West_Bounding_Coordinate: -74.201203 East_Bounding_Coordinate: -74.187968 North_Bounding_Coordinate: 39.751104 South Bounding Coordinate: 39.744646

Keywords:

Theme:

Theme_Keyword_Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography Theme_Keyword: Land Status Theme Keyword: Landform

Place:

Place Keyword Thesaurus: Geographic Names Information System

Place_Keyword: New Jersey

Place Keyword: Barnegat Channels

Temporal:

Temporal Keyword Thesaurus: Time

Temporal_Keyword: December Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and prudent mariners should not rely solely upon it.

Point_of_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute Accuracy Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical_Consistency_Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional Accuracy:

Horizontal_Positional_Accuracy:

Horizontal Positional Accuracy Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical Positional Accuracy Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20171214

Process_Contact:

Contact Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates,

Inc.

Contact Address:

Address_Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact Facsimile Telephone: 813.831.4408

Hours_of_Service: 9a-5p M-F

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point Point_and_Vector_Object_Information: SDTS Terms Description:

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SDTS Point and Vector Object Type: Point
             Point and Vector Object Count: 77080
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
             Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                      Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
             Horizontal Datum Name: North American Datum of 1983
             Ellipsoid Name: WGS-84
             Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
             Altitude Datum Name: North American Vertical Datum of 1988
             Altitude Resolution: .1
             Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
             Depth Datum Name: Land survey datum
             Depth Resolution: .1
             Depth Distance Units: Feet
```

```
Depth Encoding Method: Explicit depth coordinate included with
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180307
    Metadata Review Date: 20180307
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
```

Metadata Use Constraints: None

126-DoubleCreekChannel

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180307
              Publication Time: Unknown
              Title: Barnegat Channels, 126-Double Creek Channel, New Jersey
              Edition: March, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                  Series Name: Construction Survey
                  Issue Identification: March, 2018
              Publication Information:
                  Publication Place: Data Submission
                  Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the pre and post construction
              conditions of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                  Beginning Date: 20171003
                  Ending Date: 20180117
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
              West Bounding Coordinate: -74.168218
```

East_Bounding_Coordinate: -74.114488 North_Bounding_Coordinate: 39.778297 South Bounding Coordinate: 39.760743

Keywords:

Theme:

Theme Keyword Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography Theme_Keyword: Land Status Theme Keyword: Landform

Place:

Place_Keyword_Thesaurus: Geographic Names Information System

Place Keyword: New Jersey

Place_Keyword: Barnegat Channels

Temporal:

Temporal_Keyword_Thesaurus: Time

Temporal_Keyword: January Temporal Keyword: 2018

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility

This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and prudent mariners should not rely solely upon it.

Point of Contact:

Contact Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact_Address:

Address_Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute Accuracy Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical Consistency Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process Date: 20180117

Process Contact:

Contact_Information:

Contact Organization Primary:

Contact_Organization: Gahagan & Bryant Associates,

Inc.

Contact Address:

Address_Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours_of_Service: 9a-5p M-F

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Point

```
Point and Vector Object Count: 442531
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
              Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                       Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
              Horizontal Datum Name: North American Datum of 1983
              Ellipsoid Name: WGS-84
              Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
              Altitude Datum Name: North American Vertical Datum of 1988
              Altitude Resolution: .1
              Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
              Depth Datum Name: Land survey datum
              Depth Resolution: .1
             Depth Distance Units: Feet
              Depth Encoding Method: Explicit depth coordinate included with
```

```
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180307
    Metadata Review Date: 20180307
    Metadata Contact:
         Contact Information:
             Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
```

Metadata Use Constraints: None

129-BarnegatLightStakeChannel

```
Identification Information:
    Citation:
         Citation Information:
              Originator: Gahagan & Bryant Associates, Inc.(comp.)
              Publication Date: 20180307
              Publication Time: Unknown
              Title: Barnegat Channels, 129-Barnegat Light Stake Channel, New
Jersey
              Edition: March, 2018
              Geospatial Data Presentation Form: XYZ
              Series Information:
                   Series Name: Construction Survey
                   Issue Identification: March, 2018
              Publication Information:
                   Publication Place: Data Submission
                   Publisher: GBA
    Description:
         Abstract:
              Hydrographic surveys of New Jersey waterways are
              conducted to determine navigability and calculate dredged
              material quantities as requested by the New Jersey
              Department of Transportation.
         Purpose:
              This survey dataset documents the pre and post construction
              conditions of the subject channel.
    Time Period of Content:
         Time Period Information:
              Range of Dates/Times:
                   Beginning Date: 20171004
                   Ending Date: 20171215
         Currentness Reference: Ground Condition
    Status:
         Progress: Complete
         Maintenance and Update Frequency: As needed
    Spatial Domain:
         Bounding Coordinates:
```

West_Bounding_Coordinate: -74.116188 East_Bounding_Coordinate: -74.110403 North_Bounding_Coordinate: 39.761533 South Bounding Coordinate: 39.756209

Keywords:

Theme:

Theme_Keyword_Thesaurus: Tri - Service Spatial Data Standard

Theme_Keyword: Hydrography Theme_Keyword: Land Status Theme Keyword: Landform

Place:

Place Keyword Thesaurus: Geographic Names Information System

Place_Keyword: New Jersey

Place Keyword: Barnegat Channels

Temporal:

Temporal Keyword Thesaurus: Time

Temporal_Keyword: December Temporal Keyword: 2017

Access Constraints: None

Use Constraints:

This survey information is accurate as of the date of publication. Hydrographic survey data is subject to change rapidly due to several factors including but not limited to dredging activity and natural shoaling scouring processes. Gahagan & Bryant Associates, Inc. accepts no responsibility for changes in the hydrographic conditions which develop after the date of publication. This information is intended for the internal use of the New Jersey Department of Transportation and it is being provided for external use as a public service. This agency accepts no responsibility for errors or omissions contained in this data. The accuracy of this data is therefore not guaranteed, and

Point of Contact:

Contact Information:

Contact_Organization_Primary:

prudent mariners should not rely solely upon it.

Contact_Organization: Gahagan & Bryant Associates, Inc.

Contact Address:

Address Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact_Facsimile_Telephone: 813.831.4408

Hours of Service: 9a-5-p M-F

Data_Quality_Information:

Attribute Accuracy:

Attribute Accuracy Report:

This construction survey was performed using a Leica GS14 Rover on Leica SmartNet RTK GPS and a Odom CV100 precision echosounder deployed on a 16 ft center console Carolina Skiff with 40 Hp Evenrude outboard motor. The GPS system was used for position and tides, while the echosounder collected depth data. Horizontal grid is New Jersey State Plane Coordinate System (Nad 83). Vertical Datum is NAVD 88.

Logical_Consistency_Report:

Control based on monuments, located in the area of surveys, were checked for horizontal and vertical consistency between dates of survey data collection.

Completeness_Report:

The contruction surveys for this time period have been completed.

Positional Accuracy:

Horizontal_Positional_Accuracy:

Horizontal Positional Accuracy Report:

Horizontal Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Vertical_Positional_Accuracy:

Vertical Positional Accuracy Report:

Vertical Accuracy was checked and verified before and after daily survey efforts. The RTK GPS system was checked with control points located near the project. Daily measuments were taken and compared to the documented actual position to ensure the deltas were within required accuracies of this project.

Lineage:

Process Step:

Process Description:

Hydrographic survey data was collected using an RTK GPS system and precision echosounder. Collected data was stored using Hypack Navigation software. Final processing was performed using software packages Microsoft Excel, ODP, and Autodesk Civil 3D. Quality control checks were performed on all data collected to meet accuracy critieria set in the scope of work.

Process_Date: 20171215

Process_Contact:

Contact Information:

Contact_Organization_Primary:

Contact_Organization: Gahagan & Bryant Associates,

Inc.

Contact_Address:

Address_Type: mailing and physical address

Address: 3802 W. Bay to Bay Blvd.

City: Tampa

State_or_Province: FL Postal Code: 33629

Country: US

Contact_Voice_Telephone: 813.831.4408 Contact Facsimile Telephone: 813.831.4408

Hours_of_Service: 9a-5p M-F

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point Point and Vector Object Information:

SDTS_Terms_Description:

```
SDTS Point and Vector Object Type: Point
             Point and Vector Object Count: 55703
Spatial Reference Information:
    Horizontal Coordinate System Definition:
         Planar:
             Grid Coordinate System:
                  Grid Coordinate System Name: State Plane Coordinate System
1983
                  State Plane Coordinate System:
                       SPCS Zone Identifier: 2900
                       Transverse Mercator:
                           Scale Factor at Central Meridian: 0.999900
                           Longitude of Central Meridian: -074.50000
                           Latitude of Projection Origin: +38.833333
                           False Easting: 492125.0000
                           False Northing: 0
             Planar Coordinate Information:
                  Planar Coordinate Encoding Method: coordinate pair
                  Coordinate Representation:
                      Abscissa Resolution: .00
                       Ordinate Resolution: .00
                  Planar Distance Units: Survey Feet
         Geodetic Model:
             Horizontal Datum Name: North American Datum of 1983
             Ellipsoid Name: WGS-84
             Semi-major Axis: 20925604.474
             Denominator of Flattening Ratio: 298.25722
    Vertical Coordinate System Definition:
         Altitude System Definition:
             Altitude Datum Name: North American Vertical Datum of 1988
             Altitude Resolution: .1
             Altitude Distance Units: Feet
             Altitude Encoding Method: Explicit elevation coordinate included
with horizontal coordinates
         Depth System Definition:
             Depth Datum Name: Land survey datum
             Depth Resolution: .1
             Depth Distance Units: Feet
```

```
Depth Encoding Method: Explicit depth coordinate included with
horizontal coordinates
Distribution Information:
    Distributor:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
                  Country: US
              Contact Voice Telephone: 813.831.4408
    Distribution Liability: This product is intended for the New Jersey Department
of Transportation.
Metadata Reference Information:
    Metadata Date: 20180307
    Metadata Review Date: 20180307
    Metadata Contact:
         Contact Information:
              Contact Organization Primary:
                  Contact Organization: Gahagan & Bryant Associates, Inc.
              Contact Address:
                  Address Type: mailing and physical address
                  Address: 3802 W. Bay to Bay Blvd.
                  City: Tampa
                  State or Province: FL
                  Postal Code: 33629
              Contact Voice Telephone: 813.831.4408
    Metadata Standard Name: FGDC Content Standards for Digital Geospatial
Metadata
    Metadata Standard Version: 1.3
    Metadata Time Convention: Local time
    Metadata Access Constraints: None
```

Metadata Use Constraints: None

APPROVAL PAGE

W00473

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- Collection of Bathymetric Attributed Grids (BAGs)
- GeoPDF of survey products

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved:	

Commander Olivia Hauser, NOAA

Chief, Pacific Hydrographic Branch