National Hydrography Dataset (NHD) Model (v1.06)

June 12 , 2007

USGS science for a changing world

One of eight themes of *The National Map*

The Catalog View

NHD Geodatabase

- Feature dataset Hydrography
  - Geometric network HYDRO_NET
  - Point feature class HYDRO_NET_Junctions
  - Polygon feature class NHDArea
  - Polygon feature class NHDAreaEventFC
  - Line feature class NHDFlowline
  - Line feature class NHDLine
  - Line feature class NHDLineEventFC
  - Point feature class NHDPoint
  - Point feature class NHDPointEventFC
  - Polygon feature class NHDWaterbody
- Feature dataset HydrologicUnits
  - Polygon feature class Basin
  - Polygon feature class Region
  - Polygon feature class Subbasin
  - Polygon feature class Subregion
  - Polygon feature class Subwatershed
  - Polygon feature class Watershed
- Object table HYDRO_NET_BUILDERR
- Relationship NHDAreaEventFCToMeta
- Relationship NHDAreaToMeta
- Object table NHDFCode
- Object table NHDFeatureToMetadata
- Object table NHDFlow
- Relationship NHDFlowlineToMeta
- Object table NHDFlowlineVAA
- Relationship NHDLineEventFCToMeta
- Relationship NHDLineToMeta
- Object table NHDMetadata
- Relationship NHDMetadataHasSourceCitation
- Relationship NHDMetaToFeature
- Relationship NHDPointEventFCToMeta
- Relationship NHDPointToMeta
- Object table NHDProcessingParamaters
- Object table NHDReachCode_ComID
- Object table NHDReachCrossReference
- Object table NHDSourceCitation
- Object table NHDStatus
- Object table NHDVerticalRelationship
- Relationship NHDWaterbodyToMeta

Attribute Tables

Feature Detail

Table NHDFCode

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
FCode	Long integer	No			0			Five-digit integer value comprised of the feature type and combinations of characteristics and values.
Description	String	No					255	
CanalDitchType	String	Yes					32	Function or purpose (Aqueduct or Unspecified)
ConstructionMaterial	String	Yes					32	Predominant material used (Earthen, Nonearthen, or Unspecified).
HydrographicCategory	String	Yes					32	Portion of the year the feature contains water (Intermittent or Perennial).
InundationControlStatus	String	Yes					32	Existence of functional control structures (Controlled or Not Controlled).
OperationalStatus	String	Yes					32	State or condition (Abandoned or Operational).
PipelineType	String	Yes					32	Function or Purpose (Aqueduct, General, Penstock, or Siphon).
PositionalAccuracy	String	Yes					32	The accuracy with which a feature can be confidently positioned (Approximate or Definite).
RelationshipToSurface	String	Yes					32	Vertical location relative to the surface (Abovewater or Underwater).
ReservoirType	String	Yes					32	Function or purpose (Aquaculture, Decorative Pool, Disposal, Evaporator, Swim Pool, Treatment, Unspecified, or Water Stor.)
Stage	String	Yes					32	Height of water surface is the basis for the elevation.
SpecialUseZoneType	String	Yes					32	Function or purpose (Dump site or Spoil area).

Table NHDFlow

Flow table values are derived from the topologic connectivity of the geometric network and attribute values of NHDFlowline features

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
FromComID	Long integer	No			0			ComID from which feature flows
ToComID	Long integer	No			0			ComID to which feature flows
DeltaLevel	Long integer	Yes			0			Difference in level from first reach to second reach
Direction	Long integer	Yes		FlowDirection	0			Integer code for the direction of flow
ToComIDMeas	Double	Yes			0	0		Reach measure at intersection where feature flows

Table NHDFlowlineVAA

NHDFlowline Value Added Attributes are entirely derived from the NHDFlowline features and the Flow table values.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
ComID	Long integer	No			0			10-digit integer value that uniquely identifies each feature or reach, (not the feature or reach).
FDate	Date	Yes			0	0	8	Date of last feature modification
StreamLevel	Long integer	Yes			0			Drain_level of the downstream mainstem drain.
StreamOrder	Long integer	Yes			0			Strahler stream order number for the drain.
FromNode	Double	Yes			0	0		Nationally unique ID for the "from" node endpoint of the drain.
ToNode	Double	Yes			0	0		Nationally unique ID for the "to" node endpoint of the drain
HydroSeq	Double	Yes			0	0		Nationally unique sequence number that places the reach in hydrologic sequence.
LevelPathID	Double	Yes			0	0		Hydro Sequence No. of downstream drain that is on the same level path as this drain according to the DFlow Table.
PathLengthKM	Double	Yes			0	0		Distance from this drain pourpoint to its terminal drain's pourpoint according to the DFlow Table.
TerminalPathID	Double	Yes			0	0		
ArbolateSumKM	Double	Yes			0	0		Sum of the lengths of all the drains that drain to the downstream end of the current drain.
DivergenceFlag	Long integer	Yes			0			If this drain is 1 branch of a flow split, 1=drain is main branch, 2=otherwise, 0= drain not a branch of flow split.
StartFlag	Long integer	Yes			0			Set to '1' if the drain is a headwater drain according to the DFlow Table, otherwise '0'.
TerminalFlag	Long integer	Yes			0			Set to '1' if drain is a terminal drain (flows into ocean, Great Lakes, Canada, Mex. or the ground) otherwise set to '0'.
DnLevel	Long integer	Yes			0			Stream level of drain.
ThinnerCode	Long integer	Yes			0			Ordinal value designed to allow selection of progressively more dense networks. Least dense network=1
UpLevelPathId	Double	Yes			0	0		LevelPathID of upstream mainstream drain.
UpHydroSeq	Double	Yes			0	0		Hydro Sequence No. of upstream mainstem drain.
UpMinHydroSeq	Double	Yes			0	0		Minimum Hydro Sequence No. of all upstream drains.
DnLevelPathID	Double	Yes			0	0		Level path ID of downstream drain.
DnMinHydroSeq	Double	Yes			0	0		At a divergence, the Hydro sequence number of the minor downstream drain.
DnDrainCount	Long integer	Yes			0			Number of drains immediately downstream.

Table NHDVerticalRelationship

Only NHDFlowline features can participate in vertical relationships

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
ComID	Long integer	No			0			10-digit integer value that uniquely identifies the occurrence of each feature.
AboveComID	Long integer	No			0			Common identifier of feature above vertical offset.
BelowComID	Long integer	No			0			Common identifier of feature below vertical offset.

Processing

Table NHDProcessingParameters

Parameters used for processing data.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
ParameterName	String	No					24
ParameterValue	String	No					100

Table NHDStatus

NHDStatus is used to track data changes for transaction uploads to the central repository.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
ID	Long integer	No			0		
Status	Long integer	No		Status	0		

Table NHDReachCode_ComID

Table used to maintain links for backward compatibility with FOD-based systems

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
ComID	Long integer	No			0			10-digit integer value that uniquely identifies the occurrence of each feature
ReachCode	String	No					14	Unique identifier composed of two parts, first eight digits = subbasin code as defined by FIPS 103, next six digits = randomly-assigned sequential number unique within a Cataloguing Unit
ReachSMDate	Date	Yes			0	0	8	Reach Spatial Modification Date
Resolution	Long integer	No		Resolution	0			Code of source resolution: 1=Local resolution, 2=High resolution, 3=Medium resolution
GNIS_ID	String	Yes					10	Unique identifier assigned by GNIS
GNIS_Name	String	Yes					100	Proper name, specific term, or expression by which a particular geographic entity is known

Table NHDReachCrossReference

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
OldReachCode	String	Yes					17	Reach code prior to change
OldReachDate	Date	Yes			0	0	8	Date when OldReachCode was originally assigned (yyyymmdd)
NewReachCode	String	Yes					17	Reach code after change
NewReachDate	Date	Yes			0	0	8	Date when NewReachCode was assigned (yyyymmdd)
OldUPMI	String	Yes					5	Upstream Marker Index of Old Reach (RF-3-Alpha Only)
NewUPMI	String	Yes					5	Upstream Marker Index of New Reach (RF-3-Alpha Only)
ChangeCode	String	Yes		ChangeCode Domain			4	Type of change to the reach feature
Process	String	Yes		Process Domain			6	Process where the change occurred
ReachFileVersion	String	Yes		ReachFileVersion Domain			10	Reach File Version in which change became effective
OldHUCode	String	Yes					8	Hydrologic Unit of feature prior to migration
NewHUCode	String	Yes					8	Hydrologic Unit of feature after migration

Processing Domains

Coded value domain Status
Description; Field type *Long integer*; Split policy *Default value*; Merge policy *Default value*

Code	Description
1	Add Feature
2	Modify Feature Attribute
3	Modify Feature Geometry
5	Delete Feature
6	Delete Relationship
7	Add Metadata
8	Modify VAA
9	Add Event
10	Modify Event
11	Delete Event
12	Modify VAA All
13	Add Relationship

Coded value domain ChangeCode Domain
Description; Field type *String*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
11	11 Old reach to new reach
1P	1P Old reach to part of new reach
P1	P1 Part of old reach to new reach
A	A Add new reach
D	D Delete old reach
PP	PP (historic) Part of old reach to part of new reach
1M	1M (historic) Old reach split to multiple new reaches
M1	M1 (historic) Multiple old reaches merged to single new reach

Coded value domain ReachFileVersion Domain
Description; Field type *String*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
M002.00000	M002.00000 GEO Medium Resolution
H002.00000	H002.00000 GEO High Resolution
L002.00000	L002.00000 GEO Local Resolution
TBD	TBD
M001.00000	M001.00000 (historic) FOD Medium Resolution
H001.00000	H001.00000 (historic) FOD High Resolution
L001.00000	L001.00000 (historic) FOD Low Resolution
M000.00000	M000.00000 (historic) Pre-FOD

Coded value domain Process Domain
Description; Field type *String*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
AVEDIT	AVEDIT
GDBEDT	GDBEDT
100_24	100_24
24_loc	24_loc
AK2FOD	AK2FOD (historic)
ARCUPD	ARCUPD (historic)
FODGDB	FODGDB (historic)
FTIEDT	FTIEDT (historic)
FTIFLO	FTIFLO (historic)
GDBCVN	GDBCVN (historic)
NHDVIS	NHDVIS (historic)
PNWNHD	PNWNHD (historic)
RF3DBL	RF3DBL (historic)

Implicit Associations Between NHD Feature/Object Classes

Table 1	Attribute 1	Relationship	Table 2	Attribute 2
NHDArea	FCode	1-1	NHDFCode	FCode
NHDFlowline	ComID	1-0/m	NHDFlow	FromComID
NHDFlowline	ComID	1-0/m	NHDFlow	ToComID
NHDFlowline	ComID	1-1	NHDFlowlineVAA	ComID
NHDFlowline	ComID	1-0/m	NHDVerticalRelationship	AboveComID
NHDFlowline	ComID	1-0/m	NHDVerticalRelationship	BelowComID
NHDFlowline	FCode	1-1	NHDFCode	FCode
NHDFlowline	ReachCode	0/m-0/1	NHDReachCode_ComID	ReachCode
NHDFlowline	WBAreaComID	0/m-0/1	NHDArea	ComID
NHDFlowline	WBAreaComID	0/m-0/1	NHDWaterbody	ComID
NHDLine	FCode	1-1	NHDFCode	FCode
NHDLineEventFC	ReachCode	0/m-1	NHDReachCode_ComID	ReachCode
NHDPoint	FCode	1-1	NHDFCode	FCode
NHDPoint	ReachCode	0/1-0/1	NHDReachCode_ComID	ReachCode
NHDPointEventFC	FeatureComID	0/1-0/1	NHDArea	ComID
NHDPointEventFC	FeatureComID	0/1-0/1	NHDLine	ComID
NHDPointEventFC	FeatureComID	0/1-0/1	NHDPoint	ComID
NHDPointEventFC	ReachCode	0/m-1	NHDReachCode_ComID	ReachCode
NHDWaterbody	FCode	1-1	NHDFCode	FCode
NHDWaterbody	ReachCode	0/m-0/1	NHDReachCode_ComID	ReachCode
NHDReachCode_ComID	ReachCode	0/1-0/m	NHDReachCrossReference	NewReachCode

FEATURE CLASSES

Simple feature class NHDPoint (Geometry *Point*; Contains M values *No*; Contains Z values *Yes*)

Contains points representing NHD hydrographic landmark features.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
ComID	Long integer	No	0		0			Uniquely identifies the occurrence of each feature, length 10
FDate	Date	No			0	0	8	Date of last feature modification
Resolution	Long integer	No		Resolution	0			Code for source resolution: 1=Local resolution, 2=High resolution, 3=Medium resolution.
GNIS_ID	String	Yes					10	Unique identifier assigned by GNIS, length 10
GNIS_Name	String	Yes					65	Proper name, specific term, or expression by which a particular geographic entity is known, length 65
ReachCode	String	Yes					14	Unique identifier composed of two parts. The first eight digits is the subbasin code as defined by FIPS 103. The next six digits are randomly assigned, sequential numbers that are unique within a Cataloging Unit, length 14.
FType	Long integer	No	458		0			Three digit integer value, unique identifier of a feature type.
FCode	Long integer	Yes	45800		0			Five-digit integer value comprised of the feature type and combinations of characteristics and values.

Subtypes of NHDPoint — Subtype field *FType*; Default subtype *458*. List of defined default values and domains for subtypes in this class

Subtype Code	Subtype Description	Field name	Default value	Domain	Definitions of features
343	DamWeir	Resolution; FCode	34305	Resolution; DamWeir FCode	Barrier constructed to control the flow, or raise the level, of water.
367	Gaging Station	Resolution; FCode	36700	Resolution; Gaging Station FCode	Structure used to measure the characteristics of a hydrographic feature.
369	Gate	Resolution; FCode	36900	Resolution; Gate FCode	Structure that may be swung, drawn, or lowered, to block an entrance or passageway.
398	Lock Chamber	Resolution; FCode	39800	Resolution; Lock Chamber FCode	Enclosure on a waterway used to raise or lower the vessels as they pass from one level to another.
431	Rapids	Resolution; FCode	43100	Resolution; Rapids FCode	Area of swift current in a stream or river characterized by standing waves, boulders, or rocks.
436	Reservoir	Resolution; FCode	43600	Resolution; Reservoir FCode	Constructed basin formed to contain water or other liquids.
441	Rock	Resolution; FCode	44101	Resolution; Rock FCode	Concreted mass of stony material.
450	SinkRise	Resolution; FCode	45000	Resolution; SinkRise FCode	Place at which a stream disappears underground, or reappears at the surface in a karst area.
458	SpringSeep	Resolution; FCode	45800	Resolution; SpringSeep FCode	Place where water issues from the ground naturally.
485	Water IntakeOutflow	Resolution; FCode	48500	Resolution; Water IntakeOutflow FCode	Structure through which water enters or exits a conduit.
487	Waterfall	Resolution; FCode	48700	Resolution; Waterfall FCode	Vertical or near vertical descent of water over a step or ledge in the bed of a river.
488	Well	Resolution; FCode	48800	Resolution; Well FCode	Pit or hole, dug or bored into the earth for the extraction of water or other fluids, or gases.

Simple feature class NHDLine (Geometry *Polyline*; Contains M values *No*; Contains Z values *Yes*)

Contains routes representing linear NHD hydrographic landmark features.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
ComID	Long integer	No	0		0			Uniquely identifies the occurrence of each feature, length 10
FDate	Date	No			0	0	8	Date of last feature modification
Resolution	Long integer	No		Resolution	0			Code for source resolution: 1=Local resolution, 2=High resolution, 3=Medium resolution.
GNIS_ID	String	Yes					10	Unique identifier assigned by GNIS, length 10
GNIS_Name	String	Yes					65	Proper name, specific term, or expression by which a particular geographic entity is known, length 65
LengthKM	Double	Yes			0	0		Length of linear feature, Albers Equal Area, length 8.
FType	Long integer	No	411		0			Three digit integer value, unique identifier of a feature type.
FCode	Long integer	Yes	41100		0			Five-digit integer value comprised of the feature type and combinations of characteristics and values.
Shape_Length	Double	Yes			0	0		

Subtypes of NHDLine — Subtype field *FType*; Default subtype *411*. List of defined default values and domains for subtypes in this class

Subtype Code	Subtype Description	Field name	Default value	Domain	Definitions of features
318	Bridge	Resolution; FCode	31800	Resolution; Bridge FCode	Structure spanning and providing passage over a waterway, railway, or other obstacle.
343	DamWeir	Resolution; FCode	34305	Resolution; DamWeir FCode	Barrier constructed to control the flow, or raise the level, of water.
362	Flume	Resolution; FCode	36200	Resolution; Flume FCode	Open inclined artificial channel constructed of wood, metal, or concrete; generally elevated.
369	Gate	Resolution; FCode	36900	Resolution; Gate FCode	Structure that may be swung, drawn, or lowered, to block an entrance or passageway.
568	Levee	Resolution; FCode	56800	Resolution; Levee FCode	A natural or manmade embankment along the edge of a stream/river, canal/ditch, or waterbody, that protects the surrounding land from flooding.
398	Lock Chamber	Resolution; FCode	39800	Resolution; Lock Chamber FCode	Enclosure on a waterway used to raise or lower vessels as they pass from one level to another.
411	Nonearthen Shore	Resolution; FCode	41100	Resolution; Nonearthen Shore FCode	Structure built of stone, concrete, or other building material, that borders a body of water.
431	Rapids	Resolution; FCode	43100	Resolution; Rapid FCode	Area of swift current in a stream or river characterized by standing waves, or by boulders and rocks.
434	Reef	Resolution; FCode	43400	Resolution; Reef FCode	Chain of rocks or coral at, or near, the surface of the water.
450	SinkRise	Resolution; FCode	45000	Resolution; SinkRise FCode	Place at which a stream disappears underground or reappears at the surface in a karst area.
503	Sounding Datum Line	Resolution; FCode	50302	Resolution; Sounding Datum Line FCode	Line representing the tidal datum to which bathymetric contours are referenced.
533	Special Use Zone Limit	Resolution; FCode	53302	Resolution; Special Use Zone Limit	Limit of an area used for distinctive types of maritime activities.
478	Tunnel	Resolution; FCode	47800	Resolution; Tunnel FCode	Underground or underwater passage.
483	Wall	Resolution; FCode	48300	Resolution; Wall FCode	Upright structure of masonry, wood, plaster, or other building material serving to enclose, divide, or protect an area.
487	Waterfall	Resolution; FCode	48700	Resolution; Waterfall FCode	Vertical or near vertical descent of water over a step or ledge in the bed of a river.

Simple feature class NHDFlowline (Geometry *Polyline*; Contains M values *Yes*; Contains Z values *Yes*)

Consists of routes that make up a linear surface water drainage network.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
ComID	Long integer	No	0		0			Uniquely identifies the occurrence of each feature, length 10
FDate	Date	No			0	0	8	Date of last feature modification.
Resolution	Long integer	No		Resolution	0			Code for source resolution: 1=Local resolution, 2=High resolution, 3=Medium resolution.
GNIS_ID	String	Yes					10	Unique identifier assigned by GNIS, length 10
GNIS_Name	String	Yes					65	Proper name, specific term, or expression by which a particular geographic entity is known, length 65
LengthKM	Double	Yes			0	0		Length of linear feature, Albers Equal Area, length 8.
ReachCode	String	Yes					14	Unique identifier composed of two parts. The first eight digits is the subbasin code as defined by FIPS 103. The next six digits are randomly assigned, sequential numbers that are unique within a Cataloging Unit, length 14.
FlowDir	Long integer	No	0	HydroFlowDirections	0			Direction of flow relative to coordinate order, Length 4
WBAreaComID	Long integer	Yes			0			ComID of the waterbody through which the Flowline (Artificial Path) flows.
FType	Long integer	No	460		0			Three digit integer value, unique identifier of a feature type.
FCode	Long integer	Yes	46003		0			Five-digit integer value comprised of the feature type and combinations of characteristics and values.
Shape_Length	Double	Yes			0	0		

Subtypes of NHDFlowline — Subtype field *FType*; Default subtype *460*. List of defined default values and domains for subtypes in this class

Subtype Code	Subtype Description	Field name	Default value	Domain	Definitions of features
558	Artificial Path	Resolution; FlowDir; FCode	0; 55800	Resolution; HydroFlowDirections; ArtificialPath FCode	Abstraction to facilitate hydrologic modeling through open water bodies and along coastal and Great Lakes shorelines and to act as a surrogate for lakes and other water bodies.
336	CanalDitch	Resolution; FlowDir; FCode	0; 33600	Resolution; HydroFlowDirections; CanalDitch FCode	Artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft.
566	Coastline	Resolution; FlowDir; FCode	0; 56600	Resolution; HydroFlowDirections; Coastline FCode	Line that follows the main outline of the land, including bays, but crosses rivers at their mouth. In the NHD, the outline of selected coastal islands are included as part of the coastline.
334	Connector	Resolution; FlowDir; FCode	0; 33400	Resolution; HydroFlowDirections; Connector FCode	Known, but unspecific, connection between two nonadjacent network segments.
428	Pipeline	Resolution; FlowDir; FCode	0; 42805	Resolution; HydroFlowDirections; Pipeline FCode	Closed conduit with pumps, valves, and control devices, for conveying fluids, gases, or finely divided solids.
460	StreamRiver	Resolution; FlowDir; FCode	0; 46006	Resolution; HydroFlowDirections; StreamRiver FCode	Body of flowing water.
420	Underground Conduit	Resolution; FlowDir; FCode	0; 42000	Resolution; HydroFlowDirections; Underground Conduit FCode	Underground passage of surface water.

Simple feature class NHDArea (Geometry *Polygon*; Contains M values *No*; Contains Z values *Yes*)

Contains regions representing areal NHD hydrographic landmark features.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
ComID	Long integer	No	0		0			Uniquely identifies the occurrence of each feature, length 10
FDate	Date	No			0	0	8	Date of last feature modification
Resolution	Long integer	No		Resolution	0			Code for source resolution: 1 = Local resolution, 2 = High resolution, 3 = Medium resolution
GNIS_ID	String	Yes					10	Unique identifier assigned by GNIS, length 10
GNIS_Name	String	Yes					65	Proper name, specific term, or expression by which a particular geographic entity is known, length 65
AreaSqKm	Double	Yes			0	0		Area of areal features, Albers Equal Area, length 8
Elevation	Double	Yes		ElevationRange	0	0		Elevation, in meters, of water surfaces where water pools are encoded for a few features
FType	Long integer	No	460		0			Three-digit integer value, unique identifier of a feature type
FCode	Long integer	Yes	46006		0			Five-digit integer value comprised of the feature type and combinations of characteristics and values
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Subtypes of NHDArea — Subtype field *FType*; Default subtype *460*. List of defined default values and domains for subtypes in this class

Subtype Code	Subtype Description	Field name	Default value	Domain	Definitions of features
537	Area of Complex Channels	Resolution; Elevation; FCode	53700	Resolution; ElevationRange; Area of Complex Channels FCode	Area where a stream or river flows in an intricate network of interlacing channels
307	Area to be Submerged	Resolution; Elevation; FCode	30700	Resolution; ElevationRange; Area to be Submerged FCode	Known extent of the intended lake that will be created behind a dam under construction
312	BayInlet	Resolution; Elevation; FCode	31200	Resolution; ElevationRange; BayInlet FCode	Water area that is an opening of the sea/ocean into the land, or of an estuary, lake, or river into its shore
318	Bridge	Resolution; Elevation; FCode	31800	Resolution; ElevationRange; Bridge FCode	Structure spanning and providing passage over a waterway, railroad, or other obstacle
336	CanalDitch	Resolution; Elevation; FCode	33600	Resolution; ElevationRange; CanalDitch FCode	Artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft
343	DamWeir	Resolution; Elevation; FCode	34305	Resolution; ElevationRange; DamWeir FCode	Barrier constructed to control the flow or raise the level of water
362	Flume	Resolution; Elevation; FCode	36200	Resolution; ElevationRange; Flume FCode	Open, inclined, artificial channel constructed of wood, metal, or concrete; generally elevated
364	Foreshore	Resolution; Elevation; FCode	36400	Resolution; ElevationRange; Foreshore FCode	Part of a seashore between high-water and low-water marks
373	Hazard Zone	Resolution; Elevation; FCode	37300	Resolution; ElevationRange; Hazard Zone FCode	Area identified as a danger to maritime navigation
403	Inundation Area	Resolution; Elevation; FCode	40308	Resolution; ElevationRange; Inundation Area FCode	Area of land subject to flooding
568	Levee	Resolution; Elevation; FCode	56800	Resolution; ElevationRange; Levee FCode	A natural or manmade embankment along the edge of a stream/river, canal/ditch, or waterbody, that protects the surrounding land from flooding
398	Lock Chamber	Resolution; Elevation; FCode	39800	Resolution; ElevationRange; Lock Chamber FCode	Enclosure on a waterway used to raise/lower vessels as they pass from one level to another
431	Rapids	Resolution; Elevation; FCode	43100	Resolution; ElevationRange; Rapids FCode	Area of swift current in a stream or river, characterized by standing waves or by boulders and rocks
445	SeaOcean	Resolution; Elevation; FCode	44500	Resolution; ElevationRange; SeaOcean FCode	Great body of salt water that covers much of the earth
454	Special Use Zone	Resolution; Elevation; FCode	45401	Resolution; ElevationRange; Special Use Zone FCode	Area where distinctive types of maritime activities occur
455	Spillway	Resolution; Elevation; FCode	45500	Resolution; ElevationRange; Spillway FCode	Constructed passage for surplus water to run over or around a dam
460	StreamRiver	Resolution; Elevation; FCode	46006	Resolution; ElevationRange; StreamRiver FCode	Body of flowing water
461	Submerged Stream	Resolution; Elevation; FCode	46100	Resolution; ElevationRange; Submerged Stream FCode	Old river course inundated by an impounded water body
484	Wash	Resolution; Elevation; FCode	48400	Resolution; ElevationRange; Wash FCode	Usually dry portion of a stream bed that contains water only during or after a local rainstorm or heavy snowmelt
485	Water IntakeOutflow	Resolution; Elevation; FCode	48500	Resolution; ElevationRange; Water IntakeOutflow FCode	Structure through which water enters or exits a conduit

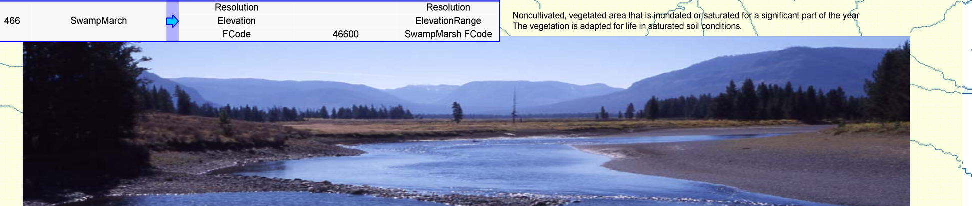
Simple feature class NHDWaterbody (Geometry *Polygon*; Contains M values *No*; Contains Z values *Yes*)

Contains regions representing areal NHD hydrographic waterbody features.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Shape	Geometry	Yes						
ComID	Long integer	No	0		0			Uniquely identifies the occurrence of each feature, length 10
FDate	Date	No			0	0	8	Date of last feature modification
Resolution	Long integer	No		Resolution	0			Code for source resolution: 1 = Local resolution, 2 = High resolution, 3 = Medium resolution
GNIS_ID	String	Yes					10	Unique identifier assigned by GNIS, length 10
GNIS_Name	String	Yes					65	Proper name, specific term, or expression by which a particular geographic entity is known, length 65
AreaSqKm	Double	Yes			0	0		Area of areal features, Albers Equal Area, length 8
Elevation	Double	Yes		ElevationRange	0	0		Elevation, in meters, of water surfaces where water pools are encoded for a few features
ReachCode	String	Yes					14	Unique identifier composed of two parts, first eight digits is subbasin code as defined by FIPS 103, next six digits is randomly assigned sequential number unique within a Cataloging Unit, length 14
FType	Long integer	No	390		0			Three-digit integer value, unique identifier of a feature type
FCode	Long integer	Yes	39004		0			Five-digit integer value comprised of the feature type and combinations of characteristics and values
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Subtypes of NHDWaterbody — Subtype field *FType*; Default subtype *390*. List of defined default values and domains for subtypes in this class

Subtype Code	Subtype Description	Field name	Default value	Domain	Definitions of features
493	Estuary	Resolution; Elevation; FCode	49300	Resolution; ElevationRange; Estuary FCode	Lower end of a river, or a semi-enclosed coastal body of water with access to the open ocean, which is affected by the tides and where fresh and salt water mix
378	Ice Mass	Resolution; Elevation; FCode	37800	Resolution; ElevationRange; Ice Mass FCode	Field of ice, formed in regions of perennial frost
390	LakePond	Resolution; Elevation; FCode	39004	Resolution; ElevationRange; LakePond FCode	Standing body of water with a predominantly natural shoreline surrounded by land
361	Playa	Resolution; Elevation; FCode	36100	Resolution; ElevationRange; Playa FCode	Flat area at the lowest part of an undrained desert basin, generally devoid of vegetation
436	Reservoir	Resolution; Elevation; FCode	43600	Resolution; ElevationRange; Reservoir FCode	Constructed basin formed to contain water or other liquids
466	SwampMarch	Resolution; Elevation; FCode	46600	Resolution; ElevationRange; SwampMarsh FCode	Noncultivated, vegetated area that is inundated or saturated for a significant part of the year. The vegetation is adapted for life in saturated soil conditions.



Event Feature Classes

Simple feature class NHDAreaEventFC (Geometry *Polygon*; Contains M values *No*; Contains Z values *No*)

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
Shape	Geometry	Yes					
OBJECTID	Object ID						
ComID	Long integer	No			0		
EventDate	Date	Yes			0	0	8
ReachCode	String	No					14
ReachSMDate	Date	Yes			0	0	8
ReachResolution	Long integer	No		Resolution	0		
FeatureComID	Long integer	Yes			0		
FeatureClassRef	Long integer	Yes		Event Feature Class Ref	0		
Source_Originator	String	Yes					130
Source_DataDesc	String	Yes					100
Source_FeatureID	String	Yes					40
FeatureDetailURL	String	Yes					255
EventType	Long integer	No		Area Event Type	0		
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	

Simple feature class NHDLineEventFC (Geometry *Polyline*; Contains M values *No*; Contains Z values *No*)

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
Shape	Geometry	Yes					
OBJECTID	Object ID						
ComID	Long integer	No			0		
EventDate	Date	Yes			0	0	8
EventType	Long Integer	No		Line Event Type	0		
ReachCode	String	No					14
ReachSMDate	Date	Yes			0	0	8
ReachResolution	Long integer	No		Resolution	0		
FeatureComID	Long integer	Yes			0		
FeatureClassRef	Long integer	Yes		Event Feature Class Reference	0		
Source_Originator	String	Yes					130
Source_DataDesc	String	Yes					100
Source_FeatureID	String	Yes					40
FeatureDetailURL	String	Yes					255
Offset	Double	Yes			0	0	
FMeasure	Double	No			0	0	
TMeasure	Double	No			0	0	
Shape_Length	Double	Yes			0	0	

Simple feature class NHDPointEventFC (Geometry *Point*; Contains M values *No*; Contains Z values *No*)

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
Shape	Geometry	Yes					
OBJECTID	Object ID						
ComID	Long integer	No			0		
EventDate	Date	Yes			0	0	8
EventType	Long integer	No		Point Event Type	0		
ReachCode	String	No					14
ReachSMDate	Date	Yes			0	0	8
ReachResolution	Long integer	No		Resolution	0		
FeatureComID	Long integer	Yes			0		
FeatureClassRef	Long integer	Yes		Event Feature Class Reference	0		
Source_Originator	String	Yes					130
Source_DataDesc	String	Yes					100
Source_FeatureID	String	Yes					40
FeatureDetailURL	String	Yes					255
Offset	Double	Yes			0	0	
Measure	Double	No			0	0	

Feature Metadata

Relationship class NHDAreaEventFCToMeta — One to many
Relationship class NHDPointToMeta — One to many
Relationship class NHDLineToMeta — One to many
Relationship class NHDAreaToMeta — One to many
Relationship class NHDFlowlineToMeta — One to many
Relationship class NHDPointEventFCToMeta — One to many
Relationship class NHDWaterbodyToMeta — One to many
Relationship class NHDLineEventFCToMeta — One to many

To Meta

In the NHD geodatamodel, feature-level metadata information is included in three tables: NHDFeatureToMetadata, NHDMetadata, and NHDSourceCitation. The NHDFeatureToMetadata table is a link between the features and their metadata. The NHDMetadata table contains the general metadata characteristics for each collection of features. The NHDSourceCitation table lists the sources associated with each metadata instance.

Table NHDFeatureToMetadata

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
ComID	Long integer	Yes			0		
DuuID	Long integer	Yes			0		

Relationship class NHDMetaToFeature

Forward label *MToFeatureToMetadata*; Backward label *ToMetadata*; Type *Simple*; Cardinality *One to many*; Notification *None*

Destination table: Name *NHDFeatureToMetadata*. Origin table: Name *NHDMetadata*; Primary key *DuuID*; Foreign key *DuuID*

No relationship rules defined.

Table NHDMetadata

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
DuuID	Long integer	No			0			Digital Update Unit, unique ID.
ProcessDescription	String	No					4000	Explanation of the process, including parameters or tolerances.
ProcessDate	Date	No			0	0	8	Date when the process was completed.
AttributeAccuracyreport	String	Yes					1800	Explanation of entities and assignments of values in dataset.
LogicalConsistencyReport	String	Yes					1000	Explanation of fidelity of relationships in dataset, and tests used.
CompletenessReport	String	Yes					2400	Information about omissions, criteria, definitions used to derive dataset.
HorizPositionalAccuracyReport	String	Yes					3100	Horizontal coordinate measurements and description of tests used.
VertPositionalAccuracyReport	String	Yes					3100	Vertical coordinate measurements and description of tests used.
MetadataStandardName	String	Yes					100	Name of the metadata standard used to document the dataset.
MetadataStandardVersion	String	Yes					40	Identification of the version of the metadata standard used to document the dataset.
MetadataDate	Date	Yes			0	0	8	Date the metadata was last created or updated.
DataSetCredit	String	Yes					4000	Recognition of those who contributed to the dataset.
ContactOrganization	String	Yes					100	Name or organization to which type of contact applies.
AddressType	String	Yes					40	Information provided about the address, i.e.; mailing, physical, etc.
Address	String	Yes					100	Address line for the address.
City	String	Yes					40	City of the address.
StateOrProvince	String	Yes					30	State or province of the address.
PostalCode	String	Yes					20	ZIP or other postal code of the address.
ContactVoiceTelephone	String	Yes					40	Telephone number to reach organization or individual.
ContactInstructions	String	Yes					120	Supplemental instructions to contact organization or individual
ContactEmailAddress	String	Yes					40	E-mail address to reach contact organization or individual.

Relationship class NHDMetadataHasSourceCitation

Type *Simple*; Cardinality *One to many*; Notification *None*; Forward label *SourceCitation*; Backward label *Metadata*

Origin table: Name *NHDMetadata*; Primary key *DuuID*; Foreign key *DuuID*. Destination table: Name *NHDSourceCitation*

No relationship rules defined.

Table NHDSourceCitation

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
OBJECTID	Object ID							
Title	String	Yes					255	Name by which the dataset is known.
SourceCitationAbbreviation	String	Yes					255	Short form alias for source citation.
Originator	String	Yes					400	Name of an organization or individual that developed the dataset.
PublicationDate	Date	Yes			0	0	8	Date the dataset is published or made available for release.
BeginningDate	Date	Yes			0	0	8	First year of the event (if Range_of_Dates applies).
EndingDate	Date	Yes			0	0	8	Last year of the event (if Range_of_Dates applies).
SourceContribution	String	Yes					255	Brief statement identifying information contributed by source to dataset.
SourceScaleDenominator	Long integer	Yes			0			Denomination of representative fraction on a map.
TypeofSourceMedia	String	Yes					255	The medium of the source dataset, i.e. paper, CD-ROM, online, etc.
CalendarDate	Date	Yes			0	0	8	The year (if Single_Date applies).
SourceCurrentnessReference	String	Yes					255	The basis on which the source time period of content information of the source data set is determined.
DuuID	Long integer	No			0			Digital Update Unit, unique ID

Feature Domains (FCodes)

All coded value domains below: Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*.

Area of Complex Channels FCode

Code	Description
53700	Area of Complex Channels

Area to be Submerged FCode

Code	Description
30700	Area to be Submerged

ArtificialPath FCode

Code	Description
55800	Artificial Path

BayInlet FCode

Code	Description
31200	Bay/Inlet

Bridge FCode

Code	Description
31800	Bridge

CanalDitch FCode

Code	Description
33600	Canal Ditch
33601	Canal Ditch: Canal Ditch Type = Aqueduct
33603	Canal Ditch: Canal Ditch Type = Stormwater

Coastline FCode

Code	Description
56600	Coastline

Connector FCode

Code	Description
33400	Connector

DamWeir FCode

Code	Description
34300	Dam/Weir
34305	Dam/Weir: Construction Material = Earthen
34306	Dam/Weir: Construction Material = Nonearthen

Estuary FCode

Code	Description
49300	Estuary

Flume FCode

Code	Description
36200	Flume

Foreshore FCode

Code	Description
36400	Foreshore

Gaging Station FCode

Code	Description
36700	Gaging Station

Gate FCode

Code	Description
36900	Gate

Hazard Zone FCode

Code	Description
37300	Hazard Zone

Ice Mass FCode

Code	Description
37800	Ice Mass

Inundation Area FCode

Code	Description
40300	Inundation Area
40308	Inundation Area; Inundation Control Status = Controlled
40309	Inundation Area; Inundation Control Status = Controlled; Stage = Flood Elevation
40307	Inundation Area; Inundation Control Status = Not Controlled

LakePond FCode

Code	Description
39000	Lake/Pond
39001	Lake/Pond: Hydrographic Category = Intermittent
39006	Lake/Pond: Hydrographic Category = Intermittent; Stage = Date of Photography
39005	Lake/Pond: Hydrographic Category = Intermittent; Stage = High Water Elevation
39004	Lake/Pond: Hydrographic Category = Perennial
39009	Lake/Pond: Hydrographic Category = Perennial; Stage = Average Water Elevation
39011	Lake/Pond: Hydrographic Category = Perennial; Stage = Date of Photography
39010	Lake/Pond: Hydrographic Category = Perennial; Stage = Normal Pool
39012	Lake/Pond: Hydrographic Category = Perennial; Stage = Spillway

Levee FCode

Code	Description
56800	Levee

Lock Chamber FCode

Code	Description
39800	Lock Chamber

Nonearthen Shore

Code	Description
41100	Nonearthen Shore

Pipeline FCode

Code	Description
42800	Pipeline
42816	Pipeline: Pipeline Type = Aqueduct
42801	Pipeline: Pipeline Type = Aqueduct; Relationship to Surface = At or Near
42802	Pipeline: Pipeline Type = Aqueduct; Relationship to Surface = Elevated
42803	Pipeline: Pipeline Type = Aqueduct; Relationship to Surface = Underground
42804	Pipeline: Pipeline Type = Aqueduct; Relationship to Surface = Underwater
42814	Pipeline: Pipeline Type = General Case
42805	Pipeline: Pipeline Type = General Case; Relationship to Surface = At or Near
42806	Pipeline: Pipeline Type = General Case; Relationship to Surface = Elevated
42807	Pipeline: Pipeline Type = General Case; Relationship to Surface = Underground
42808	Pipeline: Pipeline Type = General Case; Relationship to Surface = Underwater
42815	Pipeline: Pipeline Type = Penstock
42809	Pipeline: Pipeline Type = Penstock; Relationship to Surface = At or Near
42810	Pipeline: Pipeline Type = Penstock; Relationship to Surface = Elevated
42811	Pipeline: Pipeline Type = Penstock; Relationship to Surface = Underground
42812	Pipeline: Pipeline Type = Penstock; Relationship to Surface = Underwater
42813	Pipeline: Pipeline Type = Siphon
42820	Pipeline: Pipeline Type = Stormwater
42821	Pipeline: Pipeline Type = Stormwater; Relationship to Surface = At or Near
42822	Pipeline: Pipeline Type = Stormwater; Relationship to Surface = Elevated
42823	Pipeline: Pipeline Type = Stormwater; Relationship to Surface = Underground
42824	Pipeline: Pipeline Type = Stormwater; Relationship to Surface = Underwater

Playa FCode

Code	Description
36100	Playa

Rapids FCode

Code	Description
43100	Rapids

Reef FCode

Code	Description
43400	Reef

Reservoir FCode

Code	Description
43600	Reservoir
43618	Reservoir: Construction Material = Earthen
43619	Reservoir: Construction Material = Nonearthen
43601	Reservoir: Reservoir Type = Aquaculture
43609	Reservoir: Reservoir Type = Cooling Pond
43603	Reservoir: Reservoir Type = Decorative Pool
43606	Reservoir: Reservoir Type = Disposal
43625	Reservoir: Reservoir Type = Disposal; Construction Material = Earthen
43626	Reservoir: Reservoir Type = Disposal; Construction Material = Nonearthen
43607	Reservoir: Reservoir Type = Evaporator
43623	Reservoir: Reservoir Type = Evaporator; Construction Material = Earthen
43610	Reservoir: Reservoir Type = Filtration Pond
43611	Reservoir: Reservoir Type = Settling Pond
43612	Reservoir: Reservoir Type = Sewage Treatment Pond
43608	Reservoir: Reservoir Type = Swimming Pool
43605	Reservoir: Reservoir Type = Tailings Pond
43604	Reservoir: Reservoir Type = Tailings Pond; Construction Material = Earthen
43624	Reservoir: Reservoir Type = Treatment
43617	Reservoir: Reservoir Type = Water Storage
43614	Reservoir: Reservoir Type = Water Storage; Construction Material = Earthen; Hydro Cat = Intermittent
43615	Reservoir: Reservoir Type = Water Storage; Construction Material = Earthen; Hydro Cat = Perennial
43613	Reservoir: Reservoir Type = Water Storage; Construction Material = Nonearthen
43621	Reservoir: Reservoir Type = Water Storage; Hydrographic Category = Perennial

Rock FCode

Code	Description
44100	Rock
44101	Rock: Relationship to Surface = Abovewater
44102	Rock: Relationship to Surface = Underwater

SeaOcean FCode

Code	Description
44500	Sea Ocean

SinkRise FCode

Code	Description
45000	Sink/Rise

Sounding Datum Line FCode

Code	Description
50300	Sounding Datum Line
50301	Sounding Datum Line: Positional Accuracy = Approx.
50302	Sounding Datum Line:Positional Accuracy = Definite

Special Use Zone FCode

Code	Description
45400	Special Use Zone
45402	Special Use Zone: Special Use Zone Type = Dump Site; Operational Status = Abandoned
45401	Special Use Zone: Special Use Zone Type = Dump Site; Operational Status = Operational
45404	Special Use Zone: Special Use Zone Type = Spoil Area; Operational Status = Abandoned
45403	Special Use Zone: Special Use Zone Type = Spoil Area; Operational Status = Operational

Special Use Zone Limit FCode

Code	Description
53300	Special Use Zone Limit
53301	Special Use Zone Limit: Positional Accuracy = Definite
53302	Special Use Zone Limit: Positional Accuracy = Indefinite

Spillway FCode

Code	Description
45500	Spillway

SpringSeep FCode

Code	Description
45800	Spring/Seep

StreamRiver FCode

Code	Description
46000	Stream/River
46003	Stream/River: Hydrographic Category = Intermittent
46006	Stream/River: Hydrographic Category = Perennial
46007	Stream/River: Hydrographic Category = Ephemeral

Submerged Stream FCode

Code	Description
46100	Submerged Stream

SwampMarsh FCode

Code	Description
46600	Swamp/Marsh
46601	Swamp/Marsh: Hydrographic Category: Intermittent
46602	Swamp/Marsh: Hydrographic Category: Perennial

Tunnel FCode

Code	Description
47800	Tunnel

Underground Conduit FCode

Code	Description
42000	Underground Conduit
42001	Underground Conduit: Positional Accuracy = Definite
42002	Underground Conduit: Positional Accuracy = Indefinite
42003	Underground Conduit: Positional Accuracy = Approx

Wall FCode

Code	Description
48300	Wall

Wash FCode

Code	Description
48400	Wash

Water IntakeOutflow FCode

Code	Description
48500	Water Intake/Outflow

Waterfall FCode

Code	Description
48700	Waterfall

Well FCode

Code	Description
48800	Well

Non-FCode Domains

Coded value domain Area Event Type — Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description

Coded value domain Line Event Type — Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description

Coded value domain Point Event Type — Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
2	Dam
3	Divergence Structure
1	Gaging Station

Range domain ElevationRange — Field type *Double*; Split policy *Default value*; Merge policy *Default value*

Minimum value	Maximum value
-400	9000

elevation values in meters

Coded value domain Event Feature Class Reference — Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
1	NHDArea
2	NHDFlowline
3	NHDLine
4	NHDPoint
5	NHDWaterbody

Coded value domain FlowDirection — Field type *Long integer*; Split policy *Default value*; Merge policy *Default value*

Code	Description
709	In
712	NetworkStart
713	NetworkEnd
714	Non-Flowing

Coded value domain HydroFlowDirections — Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
0	Uninitialized
1	WithDigitized

Coded value domain HydrologicUnitSource — Field type *Long integer*; Split policy *Default value*; Merge policy *Default value*

Code	Description
0	Watershed Boundaries Dataset
1	NHD
2	Other

Coded value domain Resolution — Field type *Long integer*; Split policy *Duplicate*; Merge policy *Default value*

Code	Description
1	Local
2	High
3	Medium

Hydrologic Units Feature Classes

Simple feature class Region (Geometry Polygon; Contains M values No; Contains Z values No)

Regions are the largest drainage basins, containing either the drainage area of a major river or the combined drainage areas of several rivers. Regions are the first level (2-digit) in the hydrologic unit hierarchy.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
Shape	Geometry	Yes						
OBJECTID	Object ID							
Source	Long integer	No		HydrologicUnitSource	0			Name of entity creating extended element.
HUC_2	String	No					2	2-digit identifier
HU_2_Name	String	Yes					80	Name of the Region.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Simple feature class Subregion (Geometry Polygon; Contains M values No; Contains Z values No)

Subdivisions of regions. Subregions are the second level (4-digit) of the hydrologic unit hierarchy.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
Shape	Geometry	Yes						
OBJECTID	Object ID							
Source	Long integer	No		HydrologicUnitSource	0			Name of entity creating extended element.
HUC_4	String	No					4	4-digit identifier
HU_4_Name	String	Yes					80	Name of the Subregion.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Simple feature class Basin (Geometry Polygon; Contains M values No; Contains Z values No)

Basins are the third level (6-digit) of the hydrographic unit hierarchy. Formerly called "accounting units."

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
Shape	Geometry	Yes						
OBJECTID	Object ID							
Source	Long integer	No		HydrologicUnitSource	0			Name of entity creating extended element.
HUC_6	String	No					6	6-digit identifier
HU_6_Name	String	Yes					80	Name of the Basin.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Simple feature class Subbasin (Geometry Polygon; Contains M values No; Contains Z values No)

Subdivisions of basins. Subbasins are the fourth level (8-digit) of the hydrologic unit hierarchy. Formerly called "cataloging units."

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
Shape	Geometry	Yes						
OBJECTID	Object ID							
Source	Long integer	No		HydrologicUnitSource	0			Name of entity creating extended element.
HUC_8	String	No					8	8-digit identifier
HU_8_Name	String	Yes					80	Name of the Subbasin.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Simple feature class Watershed (Geometry Polygon; Contains M values No; Contains Z values No)

Subdivisions within a subbasin. Watersheds are the fifth level (10-digit) of the hydrologic unit hierarchy.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
Shape	Geometry	Yes						
OBJECTID	Object ID							
Source	Long integer	No		HydrologicUnitSource	0			Name of entity creating extended element.
HUC_10	String	No					10	10-digit identifier
HU_10_Name	String	Yes					80	Name of the Watershed.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Simple feature class Subwatershed (Geometry Polygon; Contains M values No; Contains Z values No)

Subdivisions of watersheds. Subwatersheds are the sixth level (12-digit) of the hydrologic unit hierarchy.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	Description
Shape	Geometry	Yes						
OBJECTID	Object ID							
Source	Long integer	No		HydrologicUnitSource	0			Name of entity creating extended element.
HUC_12	String	No					12	12-digit identifier
HU_12_Name	String	Yes					80	Name of the Subwatershed.
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

Poster based on the National Hydrography Dataset (NHD) Geodatamodel, v1.06 06_12_2007
For more information on NHD, please refer to http://nhd.usgs.gov/

Created by: U. S. Geological Survey, National Geospatial Technical Operations Center - II, Denver, Colorado
June 12, 2007