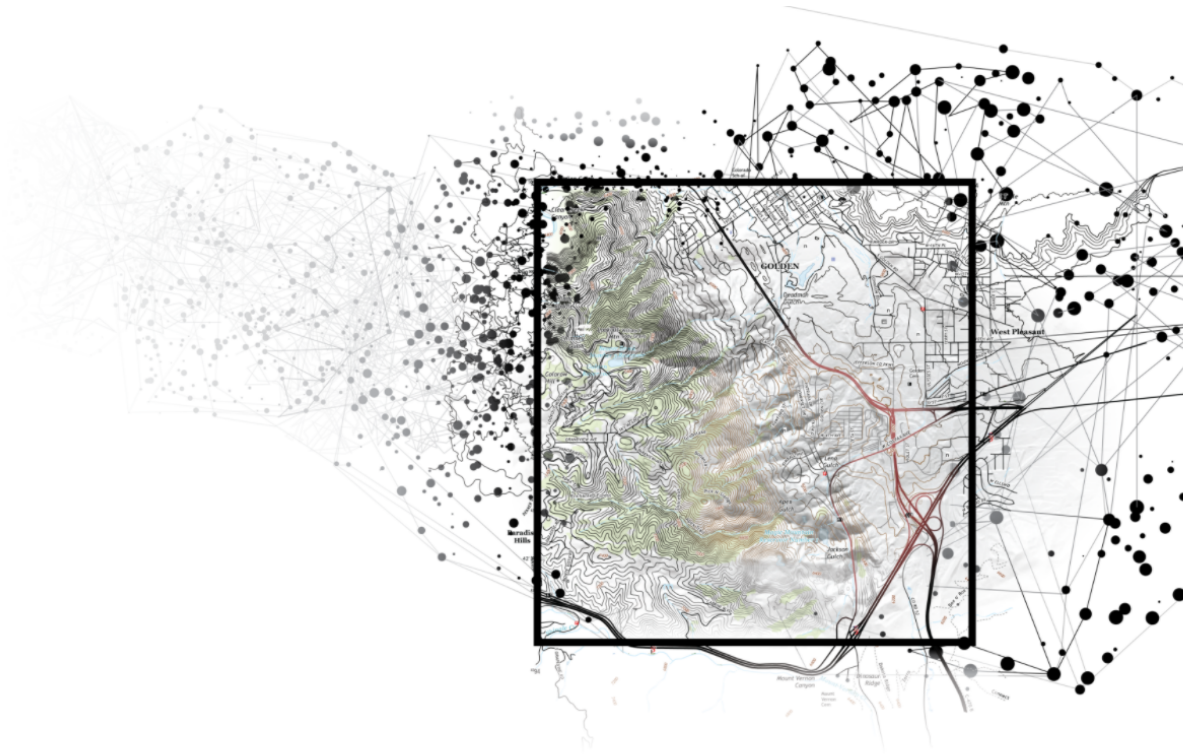


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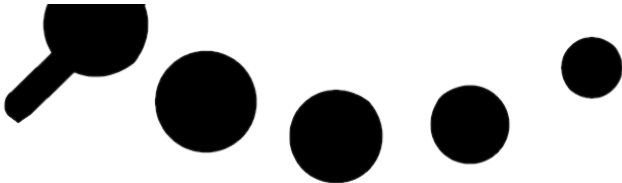
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MAKIN

Spec



Hydrography - NHD/WBD/NHDPlus HR - Data Dictionary Report

FEATURE CLASS

NHDFlowline : NHDFlowlines consist of routes that make up a linear surface water drainage network. Flowlines have a reach code and a measure, allowing for the establishment of upstream/downstream relationships. This network allows for powerful analysis and modeling capabilities.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
Enabled	An indication of whether a feature can participate in a geometric network.	Short Integer	True		"Enabled" attribute values		
FCode	Feature Code. Numeric value that encodes a set of characteristics for a type of feature. This five-digit code has two parts: the first three digits encode the feature type (FType); the last two digits encode values for a unique set of characteristics associated with the feature type. The set of characteristics may be single valued or multi-valued.	Long Integer	True				default value varies, depending on feature
FDate	Date of last feature modification.	Date	False	8			
FlowDir	Direction of flow relative to coordinate order.	Long Integer	False		HydroFlowDirections 0		Domain of values: With digitized Uninitialized
FType	Feature Type. Numeric value that encodes a type of feature, represented as a three-digit code. For further refinement of the feature type classification, see FCode.	Long Integer	False				default value varies, depending on feature
GNIS_ID	A permanent, unique number assigned by the Geographic Names Information System (GNIS) to a geographic feature name for the sole purpose of uniquely identifying that name application as a record in any information system database, dataset, file, or document	Text	True	10			GNIS_ID = "null" if no name is associated with the feature. Removed from WBD as of version 2.3 schema.
GNIS_Name	The Geographic Names Information System (GNIS) assigned proper name, specific term, or expression by which a particular geographic entity is known.	Text	True	65			
InNetwork	Identifies the subset of the NHDFlowline features that will be used/included in NHDPlus.	Short Integer	True		NoYesDomain		InNetwork is an attribute that the user can set to define the subset of the NHDFlowline features that will be used/included in NHDPlus. Yes = In network, Features included in the NHDPlus network. No = Out of network - Features not included in the NHDPlus network.
LengthKM	Length of linear feature. Value is computed when data are in Albers Equal Area projection.	Double	True				Computed
MainPath	The main stream path that tributary streams converge to or diverge from.	Long Integer	True		MainPath		
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False	40			
ReachCode	Unique identifier. The first eight digits are the WBD_HUC8. The next six digits are randomly assigned, sequential numbers that are unique within a HUC8.	Text	True	14			Required for all NHDFlowlines. NHDWaterbody and NHDPoint feature classes allow reach codes, but do not require them.
Resolution	Source resolution.	Long Integer	False		Resolution		Currently NHD is available as separate resolutions. Domain values: Local > 1:12,000 High 1:24,000/12,000 Medium 1:100,000
Shape	Feature geometry.	Geometry	True				

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
Shape_Length	Length of the feature, which may differ from the field measured length due to differences in calculation. Units are map units.	Double	True				All features should have a positive integer value.
VisibilityFilter	Allows for filtering of features for usage of vector data at approximate scales.	Long Integer	False		VisibilityFilter		
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.
WBArea_Permanent_Identifier	Permanent_Identifier of the waterbody through which the flowline flows.	Text	True	40			

SubTypes of NHDFlowline

SubType	Description	Definition
334	Connector	Known, but unspecific, connection between two nonadjacent network segments.
336	CanalDitch	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.
420	Underground Conduit	Underground passage of surface water.
428	Pipeline	Closed conduit with pumps, valves, and control devices, for conveying fluids, gases, or finely divided solids.
460	StreamRiver	Body of flowing water.
468	Drainageway	A drainageway is a watercourse that conveys, or is likely to convey water but lacks a clearly defined channel or banks differentiating it from an ephemeral stream/river. Drainageways typically convey water for limited periods of time and do not carry perennial flow. Drainageways may follow natural topographic flow paths or constructed or human-made flow paths.
558	ArtificialPath	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.
566	Coastline	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.

NON-SPATIAL TABLES

ExternalCrosswalk : Contains associations of Permanent_Identifiers to external source Identifiers.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ExternalID	ID that identifies the feature in the source dataset.	Text	True			40	
ExternalIDEntryDate	Load date of the ExternalID record.	Date	True				
ExternalIDName	Field name in the external source dataset that contains the unique IDs.	Text	True			50	
ExternalIDOriginator	Name of the organization or individual who developed the external dataset/features.	Text	True			130	
OBJECTID	Internal feature or event number.	OBJECTID	False				
OrganizationType	Administrative level code of the organization or individual who developed the external dataset/features.	Long Integer	True				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False			40	

ExternalCrosswalk : Contains associations of Permanent_Identifiers to external source Identifiers.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ExternalID	ID that identifies the feature in the source dataset.	Text	True			40	
ExternalIDEntryDate	Load date of the ExternalID record.	Date	True				
ExternalIDName	Field name in the external source dataset that contains the unique IDs.	Text	True			50	
ExternalIDOriginator	Name of the organization or individual who developed the external dataset/features.	Text	True			130	
OBJECTID	Internal feature or event number.	OBJECTID	False				
OrganizationType	Administrative level code of the organization or individual who developed the external dataset/features.	Long Integer	True				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False			40	

FeatureToMetadata : Table that links the features / objects to one or more processes and their sources. This table gives the model the capability of lineage or the capability of tracking the history of changes for a given feature.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
MetaProcessID	Unique ID for a metadata process description.	Text	False	40			Features are associated to specific process descriptions. The Meta_ProcessID links to the NHDMetadata table.
OBJECTID	Internal feature or event number.	OBJECTID	False				
TNMID	TNMID (short for The National Map Identification) is a unique 40-character field that identifies each element in the database exclusively.	Text	True	40			

MetaProcessDetail : Table with information specific to the processor (contact information) and the process used in loading or updating the dataset features or objects.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
Address	Address line for the address.	Text	True	100			
City	City of the address.	Text	True	40			
ContactEmailAddress	E-mail address to reach contact organization or individual.	Text	True	40			

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ContactInstructions	Supplemental instructions to contact Organization or individual.	Text	True	120			
ContactOrganization	Name or organization to which type of contact applies.	Text	True	100			
ContactURL	The address of a resource on the internet (i.e., a website address) for the contact organization or individual that is associated with loading or updating the data.	Text	True	100			
ContactVoiceTelephone	Telephone number to reach Organization or individual.	Text	True	40			
DataSetCredit	Recognition of those who contributed to the dataset.	Text	True	4000			
EditType	A description of the type of edit made.		True	4	EditType Domain		
LoadDate	Date and time feature or event was loaded into the database. Timestamp indicating when the feature or event was last edited.		True	8			
MetaProcessID	Unique ID for a metadata process description.	Text	False	40			Features are associated to specific process descriptions. The Meta_ProcessID links to the NHDMetadata table.
OBJECTID	Internal feature or event number.	OBJECTID	False				
PostalCode	ZIP or other postal code of the address.	Text	True	20			
ProcessDate	Date when the event was completed.		False	8			
ProcessDescription	Explanation of the event and related parameters or tolerances.	Text	False	4000			
StateOrProvince	State or province of the address.	Text	True	30			

MetaSourceDetail : Information specific to the source of the data, including the citation, data quality and metadata information.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
AttributeAccuracyReport	Explanation of entities and assignments of values in dataset.	Text	True	1800			
BeginningDate	First year of the event (if Range_of_Dates applies).	Date	True	8			
CalendarDate	The year (if Single Date applies).	Date	True	8			
CompletenessReport	Information about omissions, criteria, definitions used to derive dataset.	Text	True	2400			
Edition	The version of the title for the dataset (generally pertains to digital sources only).	Text	True	100			
EndingDate	Last year for the event (if Range_of_Dates applies).	Date	True	8			
HorizPositionalAccuracyReport	Horizontal coordinate measurements and description of tests used.	Text	True	3100			
LogicalConsistencyReport	Explanation of fidelity of relationships in dataset and tests used.	Text	True	1000			
MetadataDate	Date the metadata was last created or updated.	Date	True	8			
MetadataStandardName	Name of the metadata standard used to document the dataset.	Text	True	100			
MetadataStandardVersion	Identification of the version of the metadata standard used to document the dataset.	Text	True	40			
MetaSourceID	A unique identifier that links the element to the metadata tables. This ID is generated and assigned automatically by the database and remains with the object permanently.	Text	True	40			
OBJECTID	Internal feature or event number.	OBJECTID	False				
PublicationDate	Date the dataset is published or made available for release.	Date	True				
SeriesIssue	Information identifying the issue of the series publication of which the dataset is a part (i.e. <specific map name>).	Text	True	200			
SeriesName	The name of the series publication of which the data set is a part (i.e. USGS 1:24,000-scale topographic maps).	Text	True	200			
SourceCitationAbbreviation	Short form alias for source citation.	Text	True	255			
SourceContribution	Brief statement identifying the information contributed by the source to the dataset.	Text	True	750			
SourceCurrentnessReference	The basis on which the source time period of content information of the source data set is determined.	Text	True	255			
SourceIDFieldName	The name of the attribute field that contains the globally unique and persistent identifier of an instance (for example: an instance of a feature or record) in the source data set. Note this is not the ObjectID, OID, FID fields which are auto-generated in ArcGIS.	Text	True	50			
SourceOriginator	The name of an organization or individual that developed the dataset.	Text	True	130			
SourceRefType		Long Integer	True		SourceRefType Domain		
SourceScaleDenominator		Long Integer	True	4			
SourceURL	The name of an online computer resource that contains the source of the dataset, for datasets with website or dataset (online) SourceRefTypes.	Text	True	100			
Title	The name by which the dataset is known (generally pertains to digital sources only).	Text	True	100			
VertPositionalAccuracyReport	Vertical coordinate measurements and description of tests used.	Text	True	3100			

NHDFCode :

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
CanalDitchType	Function or purpose of the feature (Aqueduct or Unspecified).	Text	True				Values are Aqueduct or Unspecified.
ConstructionMaterial	Predominant material used to construct the feature.	Text	True				Values are Earthen, Nonearthen, or Unspecified.
Description	Character string that contains all the characteristics and values associated with a feature code.	Text	False	255			Only some features have attributes; only feature type is used if no additional values are encoded.
FCode	Feature Code. Numeric value that encodes a set of characteristics for a type of feature. This five-digit code has two parts: the first three digits encode the feature type (FType); the last two digits encode values for a unique set of characteristics associated with the feature type. The set of characteristics may be single valued or multi-valued.	Long Integer	True				default value varies, depending on feature

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
HydrographicCategory	Portion of the year the feature contains water.	Text	True	32			Values are Intermittent, Ephemeral or Perennial.
InundationControlStatus	Existence of functional control structures.	Text	True	32			Values are Controlled or Not Controlled.
OBJECTID	Internal feature or event number.	OBJECTID	False				
OperationalStatus	State or condition of the feature.	Text	True	32			Values are Abandoned or Operational.
PipelineType	Function or purpose of the feature.	Text	True	32			Values are Aqueduct, General, Penstock or Siphon.
PositionalAccuracy	The accuracy within which a feature may be confidently positioned.	Text	True	32			Values are Approximate or Definite.
RelationshipToSurface	Vertical location of the feature relative to the surface.	Text	True	32			Values are Abovewater or Underwater.
ReservoirType	Function or purpose of the feature.	Text	True	32			Values are Aquaculture, Decorative Pool, Disposal, Evaporator, Swim Pool, Treatment, Unspecified or Water Storage.
Stage	Height of the feature's water surface.	Text	True	32			Values are High Water Elevation, Date of Photography, Average Water Elevation, Normal Pool, Date of Photography, Spillway Elevation, Flood Elevation.

NHDFeatureToMetadata : Table linking every feature in the NHD to one or many metadata records.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
GLOBALID	An ID that is generated by the geodatabase when database versioning is enabled in ArcSDE.		False				
Meta_ProcessID	40-char GUID value that uniquely identifies a metadata process description in The National Map.	Text	False	40			Features are associated to specific process descriptions. The Meta_ProcessID links to the NHDMetadata table.
OBJECTID	Internal feature or event number.	OBJECTID	False				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False	40			

NHDFlow : Table containing values derived from the topologic connectivity of the geometric network and values of FlowDir attribute of NHDFlowline features. This table is not populated in pre-processed subregions.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
DeltaLevel	Numerical difference between StreamLevel for From feature and stream level for To feature.	Long Integer	True				Only populated if StreamLevel has been calculated.
Direction	Text or Code to describe direction of flow.	Long Integer	True				Flow direction domain values: In, Network Start, Network End, and Non-flowing.
From_Permanent_Identifier	Permanent_Identifier of feature from which the water flows.	Text	False	40			Feature already assigned a ComID retains that value as the Permanent_ Identifier.
OBJECTID	Internal feature or event number.	OBJECTID	False				
To_Permanent_Identifier	Permanent_Identifier of feature to which the feature flows.	Text	False	40			Feature already assigned a ComID retains that value as the Permanent_ Identifier.

NHDFlowlineVAA : NHDFlowline Value Added Attributes table. Table derived entirely from the NHDFlowline features and the NHDFlow table values.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ArbolateSumKM	Sum of the lengths of all the drains that drain to the downstream end of the current drain.	Double	True				
DivergenceFlag	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.	Long Integer	True				
DnDrainCount	Number of drains immediately downstream.	Long Integer	True				
DnLevel	Stream level of drain.	Long Integer	True				
DnLevelPathID	Level path ID of downstream drain.	Double	True				
DnMinHydroSeq	At a divergence, the Hydro sequence number of the minor downstream drain.	Double	True				
FDate	Date of last feature modification.	Date	False	8			
FromNode	Nationally unique ID for the "from" node endpoint of the drain.	Double	True				
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
LevelPathID	Hydro Sequence No. of downstream drain that is on the same level path as this drain according to the DFlow Table.	Double	True				
OBJECTID	Internal feature or event number.	OBJECTID	False				
PathLengthKM	Distance from this drain pourpoint to its terminal drain's pourpoint according to the DFlow Table.	Double	True				

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False	40			
StartFlag	Set to '1' if the drain is a headwater drain according to the DFlow Table, otherwise '0'.	Long Integer	True		NoYesDomain		
StreamLevel	Drain_level of the downstream mainstem drain.	Long Integer	True				
StreamOrder	Strahler stream order number for the drain.	Long Integer	True				
TerminalFlag	Set to '1' if drain is a terminal drain (flows into ocean, Great Lakes, Canada, Mex. or the ground) otherwise set to '0'.	Long Integer	True		NoYesDomain		
TerminalPathID	Hydrologic sequence number of terminal flowline.	Double	True				
ThinnerCode	Ordinal value designed to allow selection of progressively more dense networks. Least dense network= 1.	Long Integer	True				
ToNode	Nationally unique ID for the "to" node endpoint of the drain.	Double	True				
UpHydroSeq	Hydro Sequence No. of upstream mainstem drain.	Double	True				
UpLevelPathId	LevelPathID of upstream mainstem drain.	Double	True				
UpMinHydroSeq	Minimum Hydro Sequence No. of all upstream drains.	Double	True				

NHDMetadata : This table contains FGDC compliant data quality information.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
Address	Address line for the address.	Text	True	100			
AddressType	Information provided by the address.	Text	True	40			
AttributeAccuracyReport	Explanation of entities and assignments of values in dataset.	Text	True	1800			
City	City of the address.	Text	True	40			
CompletenessReport	Information about omissions, criteria, definitions used to derive dataset.	Text	True	2400			
ContactEmailAddress	E-mail address to reach contact organization or individual.	Text	True	40			
ContactInstructions	Supplemental instructions to contact Organization or individual.	Text	True	120			
ContactOrganization	Name or organization to which type of contact applies.	Text	True	100			
ContactVoiceTelephone	Telephone number to reach Organization or individual.	Text	True	40			
DataSetCredit	Recognition of those who contributed to the dataset.	Text	True	4000			
HorizPositionalAccuracyReport	Horizontal coordinate measurements and description of tests used.	Text	True	3100			
LogicalConsistencyReport	Explanation of fidelity of relationships in dataset and tests used.	Text	True	1000			
MetadataDate	Date the metadata was last created or updated.	Date	True	8			
MetadataStandardName	Name of the metadata standard used to document the dataset.	Text	True	100			
MetadataStandardVersion	Identification of the version of the metadata standard used to document the dataset.	Text	True	40			
Meta_ProcessID	40-char GUID value that uniquely identifies a metadata process description in The National Map.	Text	False	40			Features are associated to specific process descriptions. The Meta_ProcessID links to the NHDMetadata table.
OBJECTID	Internal feature or event number.	OBJECTID	False				
PostalCode	ZIP or other postal code of the address.	Text	True	20			
ProcessDate	Date when the event was completed.	Date	False	8			
ProcessDescription	Explanation of the event and related parameters or tolerances.	Text	False	4000			
StateOrProvince	State or province of the address.	Text	True	30			
VertPositionalAccuracyReport	Vertical coordinate measurements and description of tests used.	Text	True	3100			

NHDPlusDivFracMP : Contains specifications about the fraction of a cumulative attribute to be routed through each path in a divergence

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
DivFrac	Fraction for routing cumulative attributes down flowline paths in a divergence	Double	True				Alias "DivergenceFraction"
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
NodeNumber	Unique identifier for the point at the top of the NHDFlowline feature	Double	True				
OBJECTID	Internal feature or event number.	OBJECTID	False				
StatusFlag	Flag reserved for use during NHDPlus Build/Refresh Process	Text	True	1	StatusFlag Domain		
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusEROMQAMA : A table that holds QA statistics for the EROM mean annual flow estimates

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
GageID	NWIS GageID value	Text	True				
GageRef	Identifies if gage is Falcone Reference: 0=No, 1=Yes	Short Integer	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
QA	Cumulative runoff (cfs)	Double	True				
QADelta	QE – QA (cfs)	Double	True				
QAUnitRo	QA / DivDASqKm (cfs/sqkm)	Double	True				
QAURoDelt	Q_Eunitro – Q_Aunitro (cfs/sqkm)	Double	True				
QB	QA – Excess ET (EET) (cfs)	Double	True				
QBDelta	QE – QB (cfs)	Double	True				
QBUnitRo	QB / DivDASqKm (cfs/sqkm)	Double	True				
QBURoDelt	Q_Eunitro – Q_Bunitro (cfs/sqkm)	Double	True				
QC	QA – EET +/- Refgage Regression Adjustment (cfs)	Double	True				
QCDelta	QE – QC (cfs)	Double	True				
QCUnitRo	QC / DivDASqKm (cfs/sqkm)	Double	True				
QCURoDelt	Q_Eunitro – Q_Cunitro (cfs/sqkm)	Double	True				
QD	QA – EET +/- Refgage Regression Adjustment +/- PlusFlowAR (cfs)	Double	True				
QDDelta	QE – QD (cfs)	Double	True				
QDUnitRo	QD / DivDASqKm (cfs/sqkm)	Double	True				
QDURoDelt	Q_Eunitro – Q_Dunitro (cfs/sqkm)	Double	True				
QE	Gage flow (cfs)	Double	True				
QEUnitRo	QE / DivDASqKm (cfs/sqkm)	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusEROMQARPT : QA Report for each Vector Processing Unit(VPU) in run

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
OBJECTID	Internal feature or event number.	OBJECTID	False				
RptLine	QA Report for each Vector Processing Unit (VPU) in run	Text	True	120			

NHDPlusFlow : A table that describes flowing and non-flowing connections between NHDFlowline features

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
DeltaLevel	Numerical difference between StreamLevel for From feature and stream level for To feature.	Long Integer	True				Only populated if StreamLevel has been calculated.
Direction	Common identifier for the downstream NHDFlowline feature	Short Integer	True				
FromPermID	Is geometric connection: 0=No (geometric gap); 1=Yes (connected)	Text	True	40			
FromVPUID	Flow relationship type	Text	True	8			
GapDistKm	Node number at the bottom of FromComID and the top of ToComID	Double	True				
HasGeo	Numerical diff between StreamLevels for FromNHDPID and for ToNHDPID	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
NodeNumber		Double	True				
OBJECTID	Internal feature or event number.	OBJECTID	False				
ToNHDPID		Double	True				
ToPermID	Is geometric connection: 0=No (geometric gap); 1=Yes (connected)	Text	True	40			
ToVPUID	Distance between the downstream and upstream ends	Text	True	8			

NHDPlusFlowlineVAA : A table that holds Value Added Attributes (VAAs) for each NHDFlowline feature in the NHDPlusFlow table and is updated by NHDPlus Build/Refresh process. Differs from the NHDFlowlineVAA table

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ArbolateSu	Arbolate Sum - Kms of stream upstream of bottom of NHD Flowline feature	Double	True				
AreaSqKm	Area of feature in square kilometers based on Albers Equal Area projection.	Double	True				Computed.
DivDASqKm	Divergence-routed cumulative drainage area at downstream end of NHDFlowline feature	Double	True				
Divergence	See Divergence Domain for coded values	Short Integer	True		Divergence Domain		
DnDrainCou	Count of NHDFlowline features immediately downstream	Short Integer	True				
DnHydroSeq	Downstream mainstem hydrologic sequence number	Double	True				
DnLevel	Streamlevel of main stem downstream NHDflowline feature	Short Integer	True				
DnLevelPat	Downstream mainstem level path identifier	Double	True				
DnMinorHyd	Downstream minor hydrologic sequence number	Double	True				
ElevFixed	NHDFlowline feature length (kilometers) used to compute slope	Short Integer	True		NoYesDomain		
FromMeas	Downstream BurnLineEvent Measure (m-value)	Double	True				
FromNode	Nationally unique ID for the "from" node endpoint of the drain.	Double	True				
HWNodeSqKm	Catchment area that drains to headwater node of the NHDFlowline feature	Double	True				
HWType	Headwater Type; 0=Real headwater, 1=Artificial headwater	Short Integer	True		Headwater Type Domain		
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
LevelPathI	Level Path Identifier – Hydrologic sequence no. of most downstream feature	Double	True				
MaxElevRaw	Maximum elevation unsmoothed, in centimeters	Double	True				

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
MaxElevSmo	Maximum elevation smoothed, in centimeters	Double	True				
MinElevRaw	Minimum elevation unsmoothed, in centimeters	Double	True				
MinElevSmo	Minimum elevation smoothed, in centimeters	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
PathLength	Distance to terminal NHDFlowline feature downstream along main path	Double	True				
ReachCode	Unique identifier. The first eight digits are the WBD_HUC8. The next six digits are randomly assigned, sequential numbers that are unique within a HUC8.	Text	True	14			For event feature classes, this value is the ReachCode on which the event is located.
RtnDiv	Returning Divergence Flag	Short Integer	True		NoYesDomain		
Slope	Slope of flowline (meters/meters) based on smoothed elevations	Double	True				
SlopeLenKm	Flag indicating that the downstream elevation is fixed, i.e.; not smoothed	Double	True				
StartFlag	Set to '1' if the drain is a headwater drain according to the DFlow Table, otherwise '0'.	Long Integer	True		NoYesDomain		
StatusFlag	Flag reserved for use during NHDPlus Build/Refresh Process	Text	True	1	StatusFlag Domain		
StreamCalc	Stream Calculator	Short Integer	True				
StreamLeve	Stream level	Short Integer	True				
StreamOrde	Modified Strahler Stream Order	Short Integer	True				
TerminalFI	0=not a terminal NHDFlowline feature; 1=a terminal NHDFlowline feature	Short Integer	True				
TerminalPa	Terminal Path Identifier - Hydrologic sequence number of terminal	Double	True				
Thinner	Not valued; Reserved for future use	Short Integer	True				
ToMeas	Upstream BurnLineEvent Measure (m-value)	Double	True				
ToNode	Nationally unique ID for the "to" node endpoint of the drain.	Double	True				
TotDASqKm	Total upstream cumulative drainage area at downstream end of NHDFlowline feature	Double	True				
UpHydroSeq	Hydro Sequence No. of upstream mainstem drain.	Double	True				
UpLevelPat	Upstream mainstem level path identifier	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.
VPUIIn	Are there VPU inflows? 0(no) or 1(yes)	Short Integer	True		NoYesDomain		
VPUIOut	Are there VPU outflows? 0(no) or 1(yes)	Short Integer	True		NoYesDomain		

NHDPlusIncrLat : Mean latitude of each NHDPlusV2 catchment

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ComID	A value that uniquely identifies each feature in the Medium-Resolution NHD, NHDPlus Version 1, and NHDPlus Version 2 NHDFlowline data. The ComID also corresponds to the Permanent_Identifier in the High-Resolution NHD NHDFlowline data for Alaska, Puerto Rico, and the U.S. Virgin Islands (unless an NHDFlowline feature is updated and assigned a new value for its Permanent_Identifier). This attribute links 1:1M features to feature classes and attribute tables in the NHD and NHDPlus datasets. Because many features were split during the creation of the 1:1M data, there may be multiple features with the same value.	Long Integer	True				There is no predefined set of valid ComID values. A value of "-.999" means "There is no ComID because the stream did not come from the NHD or NHDPlus".
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
MeanLat	Mean latitude in degrees	Double	True				
MissLat	Area of catchment with no data	Double	True				
OBJECTID	Internal feature or event number.	OBJECTID	False				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusIncrPrecipMA : Mean annual precipitation averaged over the area of each catchment

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
MissPMA	Area of catchment with no data	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
PrecipMA	Mean annual precipitation in millimeters x 100	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusIncrPrecipMM01 to MM12 : Mean monthly precipitation averaged over the area of each catchment

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
MissPMM01	Area of catchment with no data	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
PrecipMM01	Mean monthly precipitation in millimeters x 100	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusIncrROMA : Mean annual runoff values

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
MissRMA	Area of catchment with no data	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
RunOffMA	Mean runoff (mm)	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusIncrTempMA : Mean annual precipitation averaged over the area of each catchment

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
HydroSeq	Hydrologic sequence	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
TempMA	Mean annual temperature in degrees centigrade x 100	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusIncrTempMM01 to MM12 : Mean monthly temperature averaged over the area of each catchment

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
HydroSeq	Nationally unique sequence number that places the reach in hydrologic sequence.	Double	True				
MissRMM01	Area of catchment with no data	Double	True				
NHDPlusID	NHDPlus HR Unique identifier of a NHDFlowline feature. Found in NHDPlus HR Only.	Double	True				This field only exists when NHD feature classes are brought into NHDPlus HR.
OBJECTID	Internal feature or event number.	OBJECTID	False				
TempMM02	Mean monthly temperature in degrees centigrade x 100	Double	True				
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDPlusMegaDiv : A table that holds PlusFlow records for divergences that have two or more outflow paths

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
FromNHDPID	Common identifier of the upstream NHDFlowline feature	Double	True				
OBJECTID	Internal feature or event number.	OBJECTID	False				
ToNHDPID	Common identifier of the downstream NHDFlowline feature	Double	True				

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
VPUID	Vector Processing Unit Identifier. Found in NHDPlus HR only.	Text	True	8			This field only exists when NHD feature classes are brought into NHDPlus HR.

NHDProcessingParameters : This table lists the schema and the version of the master NHD database that was used to generate extracted NHD data. This table is most useful to USGS to verify the version used by data stewards for updates.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
OBJECTID	Internal feature or event number.	OBJECTID	False				
ParameterName	The name of the parameter.	Text	False	24	ParameterName Domain		Parameters include Version, Resolution, Processing_Organization and SchemaVersion
ParameterValue	The value for the parameter.	Text	False	100			

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

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
GNIS_ID	A permanent, unique number assigned by the Geographic Names Information System (GNIS) to a geographic feature name for the sole purpose of uniquely identifying that name application as a record in any information system database, dataset, file, or document	Text	True	10			GNIS_ID = "null" if no name is associated with the feature. Removed from WBD as of version 2.3 schema.
GNIS_Name	The Geographic Names Information System (GNIS) assigned proper name, specific term, or expression by which a particular geographic entity is known.	Text	True	100			
OBJECTID	Internal feature or event number.	OBJECTID	False				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False	40			
ReachCode	Unique identifier. The first eight digits are the WBD_HUC8. The next six digits are randomly assigned, sequential numbers that are unique within a HUC8.	Text	True	14			For event feature classes, this value is the ReachCode on which the event is located.
ReachSMDate	Reach spatial modification date.	Date	True	8			The ReachCodeMaintenance table is updated by the NHD Update Tool. When a geometric edit is performed on a feature that contains a ReachCode (NHDFlowline or NHDWaterbody), the NHDReachCodeMaintenance table is updated to the current date to reflect the last spatial modification (SM) date of the associated ReachCode. Any previous records for that Resolution (Medium or High, depending on the target feature class resolution) are overwritten. The Permanent_Identifier field is unique to this table and is not related to NHDFlowline or Waterbody features. The GNIS_ID and GNIS_Name are updated, as these are unique per ReachCode. MValue updates are not considered spatial modifications and thus do not trigger ReachSMDate updates. For events (NHDPointEvent, NHDLineEvent, NHDAreaEvent), when an event is created by the Hydrography Event Management (HEM) Tool, the tool pulls the current ReachSMDate from the ReachCodeMaintenance table for the ReachCode the event is associated with. So, if underlying hydrography features are updated, and events are not, the ReachSMDate in the event table will be out of date in relation to the current hydrography. Users can either synchronize their events using the HEM Tool or they may not, depending on their needs. For example, a user may not want to synchronize their events to the current hydrography if a study was performed on a certain version of the NHD.
Resolution	Source resolution.	Long Integer	False		Resolution		Currently NHD is available as separate resolutions. Domain values: Local > 1:12,000 High 1:24,000/12,000 Medium 1:100,000

NHDReachCrossReference : Information that tracks changes, over time, to reach codes.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ChangeCode	Type of change to the reached feature.	Text	True	4			
NewHUCCode	Hydrologic Unit of feature after migration.	Text	True	8			Used if the flowline was originally assigned a reach code based on an incorrect subbasin assignment.
NewReachCode	Reach code after the change.	Text	True	17			

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
NewReachDate	Date new reach code was assigned (yyyymmdd).	Date	True				
NewUPMI	Upstream Marker Index of Old Reach (RF-3-Alpha Only).	Text	True	5			
OBJECTID	Internal feature or event number.	OBJECTID	False				
OldHUCCode	Hydrologic Unit of feature prior to migration.	Text	True	8			Used if the flowline was originally assigned a reach code based on an incorrect subbasin assignment.
OldReachCode	Reach code prior to change.	Text	True	17			
OldReachDate	Date old reach code was assigned.	Date	True	8			
OldUPMI	Upstream Marker Index of Old Reach (RF-3-Alpha Only).	Text	True	5			
Process	Name of the process that created the reach code change.	Text	True	6	Process Domain		Many processes to create the NHD were done on the National Database and these have standard codes.
ReachFileVersion	Reach File Version in which the change became effective.	Text	True	10	ReachFileVersion Domain		

NHDSourceCitation : This table links to process description information found in the NHDMetadata table. Not all process descriptions have a source citation. Content is based on FGDC Metadata requirements.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
BeginningDate	First year of the event (if Range_of_Dates applies).	Date	True				<Null> if CalendarDate is used.
CalendarDate	The year (if Single Date applies).	Date	True	8			<Null> if BeginningDate and EndingDate are used.
EndingDate	Last year for the event (if Range_of_Dates applies).	Date	True				<Null> if CalendarDate is used.
Meta_ProcessID	40-char GUID value that uniquely identifies a metadata process description in The National Map.	Text	False	40			Features are associated to specific process descriptions. The Meta_ProcessID links to the NHDMetadata table.
OBJECTID	Internal feature or event number.	OBJECTID	False				
Originator	Name of an organization or individual that developed the dataset.	Text	True	400			
PublicationDate	Date the dataset is published or made available for release.	Date	True	8			
SourceCitationAbbreviation	Short form alias for source citation.	Text	True	255			
SourceContribution	Brief statement identifying information contributed by source to dataset.	Text	True	750			
SourceCurrentnessReference	The basis on which the source time period of content information of the source data set is determined.	Text	True	255			
Source_DatasetID	Unique permanent ID value which uniquely identifies a source dataset used in The National Map.	Text	False	40			
SourceScaleDenominator	Denomination of representative fraction on a map.	Long Integer	True				
Title	Name by which the dataset is known.	Text	True	255			
TypeOfSourceMedia	The medium of the source dataset, i.e. paper, CD-ROM, online, or other sources.	Text	True	255			

NHDStatus : NHDStatus is used to track data changes for transaction uploads to the central repository. This table is only populated during editing. It is blank when NHD is downloaded for use.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
ID	Temporary ID assigned to track feature edits.	Text	False	40			When edits are loaded into the national database, the temporary ID is replaced with an official PermID.
OBJECTID	Internal feature or event number.	OBJECTID	False				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False	40			
Status	Type of edit.	Long Integer	False		UpdateStatus Domain		

NHDVerticalRelationship : The table documents the vertical relationship for features (i.e. streams and canals) which cross but do not exchange flow.

Name	Definition	Type	Allow Nulls	Length	Domain	Default Value	Comments
Above_Permanent_Identifier	Permanent_Identifier of feature above the vertical offset.	Text	False	40			Feature already assigned a ComID retains that value as the Permanent_Identifier.
Below_Permanent_Identifier	Permanent_Identifier of feature below the vertical offset.	Text	False	40			Feature already assigned a ComID retains that value as the Permanent_Identifier.
OBJECTID	Internal feature or event number.	OBJECTID	False				
Permanent_Identifier	A 40-character globally unique ID (GUID) value that uniquely identifies the occurrence of each feature or event in The National Map.	Text	False	40			

FEATURE DOMAINS (FCODE DOMAIN)

ArtificialPath FCode

Feature Code	Feature Description	Feature Definition
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Feature Code	Feature Description	Feature Definition
55800	Artificial Path (no attributes)	A surrogate for general flow direction in NHDWaterbodies and NHDAreas. Artificial Paths carry the name of the flowline feature. NHDArea StreamRivers will have an Artificial Path that will carry the name of the river.

CanalDitch FCode

Feature Code	Feature Description	Feature Definition
33600	CanalDitch (CanalDitch Type = null)	An 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. May be a named feature.
33601	CanalDitch (CanalDitch Type = Aqueduct)	An artificial, open waterway designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity.
33603	CanalDitch (CanalDitch Type = Stormwater)	An artificial, open waterway designed to convey stormwater through and from a drainage area.

Coastline FCode

Feature Code	Feature Description	Feature Definition
56600	Coastline (no attributes)	A line of contact between the open sea and the land, including imaginary lines separating inland water bodies from the open sea. The NHD acquires coastline data from the National Ocean and Atmospheric Agency (NOAA) and it is not a product of the USGS. Coastline in the NHD is a representation of the Mean High Water (MHW) as calculated by NOAA and may not match orthoimagery. Coastline in the NHD could be altered but must have an accompanying metadata record that identifies the scientific method used to calibrate the coastline to a known vertical datum. Coastline may be a named feature.

Connector FCode

Feature Code	Feature Description	Feature Definition
33400	Connector (no attributes)	A known, but nonspecific, invisible connection between two nonadjacent network segments.

Drainageway FCode

Feature Code	Feature Description	Feature Definition
46800	Drainageway	A drainageway is a watercourse that conveys, or is likely to convey water but lacks a clearly defined channel or banks differentiating it from an ephemeral stream/river. Drainageways typically convey water for limited periods of time and do not carry perennial flow. Drainageways may follow natural topographic flow paths or constructed or human-made flow paths.

Pipeline FCode

Feature Code	Feature Description	Feature Definition
42800	Pipeline (Product = null, Pipeline Type = null, Relationship to Surface = null)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Type of product conveyed by pipeline unknown. Type of function or purpose of pipeline unknown. Vertical location of pipeline relative to the surface unknown.
42801	Pipeline (Product = water, Pipeline Type = Aqueduct, Relationship to Surface = At or near)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Aqueduct pipeline, designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity. Vertical location of pipeline is at or near the surface.
42802	Pipeline (Product = water, Pipeline Type = Aqueduct, Relationship to Surface = Elevated)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Aqueduct pipeline, designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity. Vertical location of pipeline is elevated (supported above the earth).
42803	Pipeline (Product = water, Pipeline Type = Aqueduct, Relationship to Surface = Underground)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Aqueduct pipeline, designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity. Vertical location of pipeline is underground (buried below the surface).
42804	Pipeline (Product = water, Pipeline Type = Aqueduct, Relationship to Surface = Underwater)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Aqueduct pipeline, designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity. Vertical location of pipeline is underwater (always submerged).
42805	Pipeline (Product = water, Pipeline Type = General Case, Relationship to Surface = At or near)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. General case (common use) pipeline, used to channel flowing water to another site. Vertical location of pipeline is at or near the surface.
42806	Pipeline (Product = water, Pipeline Type = General Case, Relationship to Surface = Elevated)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. General case (common use) pipeline, used to channel flowing water to another site. Vertical location of pipeline is elevated (supported above the earth).
42807	Pipeline (Product = water, Pipeline Type = General Case, Relationship to Surface = Underground)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. General case (common use) pipeline, used to channel flowing water to another site. Vertical location of pipeline is underground (buried below the surface).
42808	Pipeline (Product = water, Pipeline Type = General Case, Relationship to Surface = Underwater)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. General case (common use) pipeline, used to channel flowing water to another site. Vertical location of pipeline is underwater (always submerged).
42809	Pipeline (Product = water, Pipeline Type = Penstock, Relationship to Surface = At or near)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Penstock pipeline, designed to convey water into the turbine of a hydroelectric generating plant. Vertical location of pipeline is at or near the surface.
42810	Pipeline (Product = water, Pipeline Type = Penstock, Relationship to Surface = Elevated)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Penstock pipeline, designed to convey water into the turbine of a hydroelectric generating plant. Vertical location of pipeline is elevated (supported above the earth).
42811	Pipeline (Product = water, Pipeline Type = Penstock, Relationship to Surface = Underground)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Penstock pipeline, designed to convey water into the turbine of a hydroelectric generating plant. Vertical location of pipeline is underground (buried below the surface).
42812	Pipeline (Product = water, Pipeline Type = Penstock, Relationship to Surface = Underwater)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Penstock pipeline, designed to convey water into the turbine of a hydroelectric generating plant. Vertical location of pipeline is underwater (always submerged).

Feature Code	Feature Description	Feature Definition
42813	Pipeline (Product = water, Pipeline Type = Siphon, Relationship to Surface = Unspecified)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Siphon pipeline, designed to convey water by gravitational force over, or under, an obstruction. Vertical location of pipeline is The value is not known and is not required.
42814	Pipeline (Product = water, Pipeline Type = General Case, Relationship to Surface = null)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. General case (common use) pipeline, used to channel flowing water to another site. Vertical location of pipeline is unknown.
42815	Pipeline (Product = water, Pipeline Type = Penstock, Relationship to Surface = null)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Penstock pipeline, designed to convey water into the turbine of a hydroelectric generating plant. Vertical location of pipeline is unknown.
42816	Pipeline (Product = water, Pipeline Type = Aqueduct, Relationship to Surface = null)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Aqueduct pipeline, designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity. Vertical location of pipeline is unknown.
42820	Pipeline (Product = water, Pipeline Type = Stormwater, Relationship to Surface = null)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Stormwater pipeline, designed to convey stormwater through and from a drainage area. Vertical location of pipeline is unknown.
42821	Pipeline (Product = water, Pipeline Type = Stormwater, Relationship to Surface = At or near)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Stormwater pipeline, designed to convey stormwater through and from a drainage area. Vertical location of pipeline is at or near the surface.
42822	Pipeline (Product = water, Pipeline Type = Stormwater, Relationship to Surface = Elevated)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Stormwater pipeline, designed to convey stormwater through and from a drainage area. Vertical location of pipeline is elevated (supported above the earth).
42823	Pipeline (Product = water, Pipeline Type = Stormwater, Relationship to Surface = Underground)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Stormwater pipeline, designed to convey stormwater through and from a drainage area. Vertical location of pipeline is underground (buried below the surface).
42824	Pipeline (Product = water, Pipeline Type = Stormwater, Relationship to Surface = Underwater)	A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids. Stormwater pipeline, designed to convey stormwater through and from a drainage area. Vertical location of pipeline is underwater (always submerged).

StreamRiver FCode

Feature Code	Feature Description	Feature Definition
46000	StreamRiver (no attributes)	A body of flowing water. Portion of the year the feature contains water unknown.
46003	StreamRiver (Hydrographic Category = Intermittent)	A body of flowing water that contains water for only part of the year, but more than just after rainstorms and at snowmelt.
46006	StreamRiver (Hydrographic Category = Perennial)	A body of flowing water that contains water throughout the year, except for infrequent periods of severe drought.
46007	StreamRiver (Hydrographic Category = Ephemeral)	A body of flowing water that contains water only during or after a local rainstorm or heavy snowmelt.

Underground Conduit FCode

Feature Code	Feature Description	Feature Definition
42000	Underground Conduit (Positional Accuracy = null)	A set of naturally occurring subsurface drainage channels formed from the dissolution of soluble rocks in Karst terrain or in terrain similar to karst but formed in nonsoluble rocks, as by melting of permafrost or ground ice, collapse after mining, and by outflow of liquid lava from beneath its solidified crust. The accuracy within which the feature may be confidently positioned is unknown.
42001	Underground Conduit (Positional Accuracy = Definite)	A set of naturally occurring subsurface drainage channels formed from the dissolution of soluble rocks in Karst terrain or in terrain similar to karst but formed in nonsoluble rocks, as by melting of permafrost or ground ice, collapse after mining, and by outflow of liquid lava from beneath its solidified crust. The accuracy within which the feature may be confidently positioned is definite (conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02" (40 feet at 1:24,000 scale), at map scale, of true ground position).
42002	Underground Conduit (Positional Accuracy = Indefinite)	A set of naturally occurring subsurface drainage channels formed from the dissolution of soluble rocks in Karst terrain or in terrain similar to karst but formed in nonsoluble rocks, as by melting of permafrost or ground ice, collapse after mining, and by outflow of liquid lava from beneath its solidified crust. The accuracy within which the feature may be confidently positioned is indefinite (conditions prevent the feature from being confidently positioned. Horizontal data cannot be confidently positioned within 0.02", at map scale, of the true ground position).
42003	Underground Conduit (Positional Accuracy = Approximate)	A set of naturally occurring subsurface drainage channels formed from the dissolution of soluble rocks in Karst terrain or in terrain similar to karst but formed in nonsoluble rocks, as by melting of permafrost or ground ice, collapse after mining, and by outflow of liquid lava from beneath its solidified crust. The accuracy within which the feature may be confidently positioned is approximate (conditions permit the feature to be confidently positioned between 0.02" and 0.1", at map scale, of its true ground position.).

NONFCODE DOMAINS

"Enabled" attribute values

Code	Description	Definition
0	Not enabled	Not enabled, shown as False in the geodatabase.
1	Enabled	Enabled, shown as True in the geodatabase.

HydroFlowDirections

Code	Description	Definition
0	Uninitialized	Direction of flow relative to coordinate order is uninitialized.
1	WithDigitized	Direction of flow relative to coordinate order is with digitized.

MainPath

Code	Description	Definition
0	Unspecified	Unspecified
1	Confluence Main	Location where separate streams join the main path.
2	Divergence Main	Location where the main path diverges into separate streams.

Code	Description	Definition
3	Both Confluence Main and Divergence Main Location where streams both converge and diverge from main path.	

NoYesDomain

Code	Description	Definition
0	No	No
1	Yes	Yes

Resolution

Code	Description	Definition
1	Local	1:12,000 source resolution.
2	High	1:24,000 - 12,000 source resolution.
3	Medium	1:100,000 source resolution.

VisibilityFilter

Code	Description	Definition
0	Unspecified	Objects with a Visibility Attribute = 0 have not been evaluated
100000	Approximately 1:100,000 or Larger Scale	Objects with a Visibility Attribute = 100000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:100,000 (i.e. object should be pruned at scales smaller than 1:100,000)
1000000	Approximately 1:1,000,000 or Larger	Objects with a Visibility Attribute = 1000000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:1,000,000 (i.e. object should be pruned at scales smaller than 1:1,000,000)
12500	Approximately 1:12,500 or Larger Scale	Objects with a Visibility Attribute = 12500 indicates that it is not appropriate to use the object at scales smaller than approximately 1:12,500 (i.e. object should be pruned at scales smaller than 1:12,500)
150000	Approximately 1:150,000 or Larger Scale	Objects with a Visibility Attribute = 150000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:150,000 (i.e. object should be pruned at scales smaller than 1:150,000)
2000000	Approximately 1:2,000,000 or Larger Scale	Objects with a Visibility Attribute = 2000000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:2,000,000 (i.e. object should be pruned at scales smaller than 1:2,000,000)
24000	Approximately 1:24,000 or Larger Scale	Objects with a Visibility Attribute = 24000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:24,000 (i.e. object should be pruned at scales smaller than 1:24,000)
250000	Approximately 1:250,000 or Larger Scale	Objects with a Visibility Attribute = 250000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:250,000 (i.e. object should be pruned at scales smaller than 1:250,000)
4800	Approximately 1:4,800 or Larger Scale	Objects with a Visibility Attribute = 4800 indicates that it is not appropriate to use the object at scales smaller than approximately 1:4,800 (i.e. object should be pruned at scales smaller than 1:4,800)
50000	Approximately 1:50,000 or Larger Scale	Objects with a Visibility Attribute = 50000 indicates that it is not appropriate to use the object at scales smaller than approximately 50,000 (i.e. object should be pruned at scales smaller than 1:50,000)
500000	Approximately 1:500,000 or Larger Scale	Objects with a Visibility Attribute = 500000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:500,000 (i.e. object should be pruned at scales smaller than 1:500,000)
5000000	Approximately 1:5,000,000 or Larger Scale	Objects with a Visibility Attribute = 5000000 indicates that it is not appropriate to use the object at scales smaller than approximately 1:5,000,000 (i.e. object should be pruned at scales smaller than 5,000,000)

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