NHDPlus V21 National Seamless Geodatabase

December 4, 2016

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Introduction

This national dataset was built from the NHDPlusV21 data.

A complete understanding of the content of this dataset, how to use the data, how to interpret the data, and the relationships between the feature classes, can be obtained from the NHDPlusV21 User Guide available here:
> **https://s3.amazonaws.com/nhdplus/NHDPlusV21/Documentation/NHDPlusV2_User_Guide.pdf**

Not all NHDPlusV21 feature classes and tables are included in this dataset. No NHDPlusV21 raster components are included.

The NHDPlusV21 data that is included has been reformatted to reduce the number of feature classes and tables as follows:

- PlusFlowlineVAA, HWnodearea, ElevSmooth, CumulativeArea, FeatureureIDGridCode, PlusFlowlineLakeMorphology, and EROM Mean Annual Flow attributes are collapsed onto NHDFlowline.
- Simplified catchments and detailed catchments are both included as separate feature classes.
- Non-redundant BurnWaterbody and PlusWaterbodyLakeMorphology attributes were collapsed into NHDWaterbody and NHDArea.
- Gages were deleted from NHDPoint.
- Dams were deleted from NHDPoint, NHDLine, NHDArea.
- NHDxxxxxEventFC feature classes were deleted.
- EROM and EROMQA fields were renamed to remove "0001".
- All the Version Text file names are in a single table.
- HUC2, HUC4, and HUC6 fields were added to the National WBD snapshot.
- Redundant fields were removed, as needed.

\NHDEvents\Gage (feature class)

Gage contains the locations of stream flow gages on the NHDFlowline features.

Field Name	Description	NHDPlusV21 Source
ReachCode	ReachCode on which Stream Gage is located	GageLoc
Reachresol	Reach Resolution, "Medium" (i.e. 1:100K scale) or "High" (i.e. 1:24K scale or better)	GageLoc
Source_Ori	Originator of Event	GageLoc
Source_Fea	Gage ID/USGS NWIS Site Number	GageLoc
Featuredet	URL where detailed gage data can be found (NWISWEB)	GageLoc
Measure	Measure along reach where Stream Gage is located in percent from downstream end of the one or more NHDFlowline features that are assigned to the ReachCode	GageLoc
EventType	"StreamGage"	GageLoc
FLComID	ComID of the NHDFlowline feature on which the gage is located.	GageLoc
Agency_CD	Agency Code	GageInfo
Station_NM	Station Name	GageInfo
State_CD	State Code	GageInfo
State	State Abbreviation	GageInfo
DASqMi	NWIS Drainage Area (in square miles)	GageInfo
DASqKm	NWIS Drainage Area (in square kilometers)	GageInfo
LatSite	NWIS Latitude	GageInfo
LonSite	NWIS Longitude	GageInfo
Active	Active/Inactive Status	GageInfo
ActiveDate	Date status was determined	GageInfo
GagesII	Is this a reference gage in the GagesII dataset	GageInfo

\NHDPlusCatchment\Catchment (polygon feature class)

Description: Contains a catchment polygon for either an NHDFlowline_Network feature or a Sink feature.

Note: Some polygons may be multipart polygons.

Field Name	Description	Format	NHDPlusV21 Source
FeatureID	FeatureID of a Catchment which is equal to the ComID of an NHDFlowline_Network feature or the SinkID of a Sink feature	Long Integer	Catchment
GridCode	GridCode for feature	Long Integer	Catchment
AreaSqKm	Catchment area in square kilometers	Num(13,4)	Catchment
SourceFC	Source Feature Class ("NHDFlowline" or "Sink")	Char(20)	Catchment

\NHDPlusCatchment\CatchmentSP (polygon feature class)

Description: Contains a simplified catchment polygon for either an NHDFlowline_Network feature or a Sink feature.

Note: Some polygons may be multipart polygons.

Field Name	Description	Format	NHDPlusV21 Source
FeatureID	FeatureID of a Catchment which is equal to the ComID of an NHDFlowline feature or the SinkID of a Sink feature	Long Integer	CatchmentSP
GridCode	GridCode for Feature	Long Integer	CatchmentSP
AreaSqKm	Catchment area in square kilometers	Num(13,4)	CatchmentSP
SourceFC	Source Feature Class ("NHDFlowline" or "Sink")	Char(20)	CatchmentSP

\NHDSnapshot\NHDFlowline_Network (line feature class)

Description: NHD linear features of types: stream/river, canal/ditch, pipeline, artificial path, coastline, and connector. These linear features are included in the NHDPlus surface water network.

Field Name	Description	Format	NHDPlusV21 Source
ComID	Common identifier of the NHD feature	Long Integer	NHDFlowline
FDate	Feature Currency Date	Date	NHDFlowline
Resolution	NHD database resolution (i.e. "high", "medium" or "local")	Character (6)	NHDFlowline
GNIS_ID	Geographic Names Information System ID for the value in GNIS_Name	Character(10)	NHDFlowline
GNIS_Name	Feature Name from the Geographic Names Information System	Character(65)	NHDFlowline
LengthKM	Feature length in kilometers	Num(11,3)	NHDFlowline
ReachCode	Reach Code assigned to feature	Character (14)	NHDFlowline
FlowDir	Flow direction is "With Digitized	Character (14)	NHDFlowline
WBAreaComI	ComID of the NHD polygonal water feature through which a NHD "Artificial Path" flowline flows	Long Integer	NHDFlowline
FType	NHD Feature Type	Character (32)	NHDFlowline
FCode	Numeric codes for various feature attributes in the NHDFCode lookup table	Num(5)	NHDFlowline
StreamLeve	Stream level	Num(2)	PlusFlowlineVAA
StreamOrde	Modified Strahler Stream Order	Num(2)	PlusFlowlineVAA
StreamCalc	Stream Calculator4	Num(2)	PlusFlowlineVAA
FromNode	Unique identifier for the point at the top of the NHDFlowline feature	Num(11)	PlusFlowlineVAA
ToNode	Unique identifier for the point at the end of the NHDFlowline feature	Num(11)	PlusFlowlineVAA
HydroSeq	Hydrologic sequence number; places flowlines in hydrologic order; processing NHDFlowline features in ascending order, encounters the features from downstream to upstream; processing the NHDFlowline features in descending order, encounters the features from upstream to downstream	Num(11)	PlusFlowlineVAA
LevelPathI	Level Path Identifier - Hydrologic sequence number of most downstream NHDFlowline feature in the level path	Num(11)	PlusFlowlineVAA
PathLength	Distance to the terminal NHDFlowline feature downstream along the main path	Num(13,4)	PlusFlowlineVAA

TerminalPa	Terminal Path Identifier - Hydrologic sequence number of terminal NHDFlowline feature	Num(11)	PlusFlowlineVAA
ArbolateSu	Arbolate Sum - Kilometers of stream upstream of the bottom of the NHDFlowline feature	Num(13,4)	PlusFlowlineVAA
Divergence	0 – feature is not part of a divergence 1 – feature is the main path of a divergence 2 – feature is a minor path of a divergence	Num(1)	PlusFlowlineVAA
StartFlag	0 – feature is not a headwater flowline 1 – feature is a headwater flowline	Num(1)	PlusFlowlineVAA
TerminalFl	0 – not a terminal NHDflowline feature 1 – a terminal NHDFlowline feature	Num(1)	PlusFlowlineVAA
DnLevel	Streamlevel of main stem downstream NHDflowline feature	Num(2)	PlusFlowlineVAA
UpLevelPat	Upstream mainstem level path identifier	Num(11)	PlusFlowlineVAA
UpHydroSeq	Upstream mainstem hydrologic sequence number	Num(11)	PlusFlowlineVAA
DnLevelPat	Downstream mainstem level path identifier	Num(11)	PlusFlowlineVAA
DnMinorHyd	Downstream minor hydrologic sequence number	Num(11)	PlusFlowlineVAA
DnDrainCou	Count of NHDFlowline features immediately downstream	Num(2)	PlusFlowlineVAA
DnHydroSeq	Downstream mainstem hydrologic sequence number	Num(11)	PlusFlowlineVAA
FromMeas	ReachCode route measure (m-value) at bottom of NHDFlowline feature	Num(8,5)	PlusFlowlineVAA
ToMeas	ReachCode route measure (m-value) at top of NHDFlowline feature	Num(8,5)	PlusFlowlineVAA
RtnDiv	Returning Divergence Flag; 0 = no upstream divergences return at the top of this NHDFlowline feature 1 = one or more upstream divergences returned to the network at the top of this NHDFlowline feature 9 = not applicable for coastline flowlines	Num(1)	PlusFlowlineVAA
VPUIn	Are there VPU inflows? 0(no) or 1(yes)	Num(1)	PlusFlowlineVAA
VPUOut	Are there VPU Outflows? 0(no) or 1(yes)	Num(1)	PlusFlowlineVAA
AreaSqKm	Catchment Area	Double	PlusFlowlineVAA
TotDASqKm	Total upstream catchment area from downstream end of flowline.	Double	PlusFlowlineVAA
DivDASqKm	Divergence-routed upstream catchment area from downstream end of flowline.	Double	PlusFlowlineVAA
Tidal	Is Flowline Tidal? 1=yes, 0=no	Num(1)	PlusFlowlineVAA
TOTMA	Mean Annual Time of Travel (days)	Double	PlusFlowlineVAA
WBAreaType	Feature Type of NHDWaterbody or NHDArea identified in WBAreaComID	Character(32)	PlusFlowlineVAA

HwNodeSqKm	Catchment area in square kilometers that drains to the headwater node of the NHDFlowline feature	Num(13,4)	HeadwaterNodeArea
MaxElevRaw	Maximum elevation (unsmoothed) in centimeters	Num(10,3)	Elevslope
MinElevRaw	Minimum elevation (unsmoothed) in centimeters	Num(10,3)	Elevslope
MaxElevSmo	Maximum elevation (smoothed) in centimeters	Num(10,3)	Elevslope
MinElevSmo	Minimum elevation (smoothed) in centimeters	Num(10,3)	Elevslope
Slope	Slope of flowline (meters/meters) based on smoothed elevations; a value of -9998 means that no slope value is available. See Appendix A, step 22 for information about slope computation.	Num(12,8)	Elevslope
ElevFixed	Flag indicating that the downstream elevation is fixed (i.e. not smoothed)	Char(1)	Elevslope
HWType	"H" – real headwater, "A" – Artificial Head water (i.e. all inflows have Gapdist > 43m)	Char(1)	Elevslope
SlopeLenKm	NHDFlowline feature length (kilometers) used to compute slope. Will be less than NHDFlowline.LengthKM when the NHDFlowline feature was trimmed during the hydro-enforcement process. See Appendix A, step 14 and 15 for information about trimming of NHDFlowlines.	Num(11,3)	Elevslope
QA_MA	Mean Annual Flow from runoff (cfs)	Num(14,3)	EROM_MA0001
VA_MA	Mean Annual Velocity for QA (fps)	Num(14,5)	EROM_MA0001
QC_MA	Mean Annual Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_MA0001
VC_MA	Mean Annual Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_MA0001
QE_MA	Mean Annual Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_MA0001
VE_MA	Mean Annual Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_MA0001
QA_01	January Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_010001
VA_01	January Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_010001
QC_01	January Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_010001
VC_01	January Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_010001
QE_01	January Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_010001

VE_01	January Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_010001
QA_02	February Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_020001
VA_02	February Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_020001
QC_02	February Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_020001
VC_02	February Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_020001
QE_02	February Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_020001
VE_02	February Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_020001
QA_03	March Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_030001
VA_03	March Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_030001
QC_03	March Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_030001
VC_03	March Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_030001
QE_03	March Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_030001
VE_03	March Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_030001
QA_04	April Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_040001
VA_04	April Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_040001
QC_04	April Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_040001
VC_04	April Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_040001
QE_04	April Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_040001
VE_04	April Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_040001
QA_05	May Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_050001
VA_05	May Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_050001

QC_05	May Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_050001
VC_05	May Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_050001
QE_05	May Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_050001
VE_05	May Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_050001
QA_06	June Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_060001
VA_06	June Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_060001
QC_06	June Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_060001
VC_06	June Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_060001
QE_06	June Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_060001
VE_06	June Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_060001
QA_07	July Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_070001
VA_07	July Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_070001
QC_07	July Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_070001
VC_07	July Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_070001
QE_07	July Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_070001
VE_07	July Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_070001
QA_08	August Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_080001
VA_08	August Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_080001
QC_08	August Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_080001
VC_08	August Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_080001

QE_08	August Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_080001
VE_08	August Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_080001
QA_09	September Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_090001
VA_09	September Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_090001
QC_09	September Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_090001
VC_09	September Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_090001
QE_09	September Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_090001
VE_09	September Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_090001
QA_10	October Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_100001
VA_10	October Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_100001
QC_10	October Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_100001
VC_10	October Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_100001
QE_10	October Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_100001
VE_10	October Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_100001
QA_11	November Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_110001
VA_11	November Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_110001
QC_11	November Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_110001
VC_11	November Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_110001
QE_11	November Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_110001

VE_11	November Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_110001
QA_12	December Mean Monthly Flow from runoff (cfs)	Num(14,3)	EROM_120001
VA_12	December Mean Monthly Velocity for QA (fps)	Num(14,5)	EROM_120001
QC_12	December Mean Monthly Flow with Reference Gage Regression applied to QB (cfs). **Best EROM estimate of "natural" mean flow.**	Num(14,3)	EROM_120001
VC_12	December Mean Monthly Velocity for QC (fps). Best EROM estimate of "natural" mean velocity.	Num(13,5)	EROM_120001
QE_12	December Mean Monthly Flow from gage adjustment (cfs). **Best EROM estimate of actual mean flow.**	Num(14,3)	EROM_120001
VE_12	December Mean Monthly Velocity from gage adjustment (fps). Best EROM estimate of actual mean velocity.	Num(13,5)	EROM_120001
LakeFract	Fraction of lake assigned to Flowline	Double	PlusFlowlineLakeMorphology
SurfArea	Lake surface area assigned to flowline in square meters	Double	PlusFlowlineLakeMorphology
RAreaHLoad	Reciprocal area hydraulic loads assigned to flowline in days/meter	Double	PlusFlowlineLakeMorphology
RPUID	RPU Idendifier	Text(8)	
VPUID	VPU Idendifier	Text(8)	

\NHDSnapshot\NHDFlowline_NonNetwork (line feature class)

Description: NHD linear features that are not included in the NHDPlus surface water network.

Field Name	Description	Format	NHDPlusV21 Source
ComID	Common identifier of the NHD feature	Long Integer	NHDFlowline
FDate	Feature Currency Date	Date	NHDFlowline
Resolution	NHD database resolution (i.e. "high", "medium" or "local")	Character (6)	NHDFlowline
GNIS_ID	Geographic Names Information System ID for the value in GNIS_Name	Character(10)	NHDFlowline
GNIS_Name	Feature Name from the Geographic Names Information System	Character(65)	NHDFlowline
LengthKM	Feature length in kilometers	Num(11,3)	NHDFlowline
ReachCode	Reach Code assigned to feature	Character (14)	NHDFlowline
FlowDir	Flow direction is "Uninitialized"	Character (14)	NHDFlowline
WBAreaComI	ComID of the NHD polygonal water feature through which a NHD "Artificial Path" flowline flows	Long Integer	NHDFlowline
FType	NHD Feature Type	Character (32)	NHDFlowline
FCode	Numeric codes for various feature attributes in the NHDFCode lookup table	Num(5)	NHDFlowline

\NHDSnapshot\NHDWaterbody (polygon feature class)

Description: NHD polygonal features of types: Playa, Ice Mass, LakePond, Reservoir, SwampMarsh, and Estuary.

Field Name	Description	Format	NHDPlusV21 Source
ComID	Common identifier of the NHD Waterbody feature	Long Integer	NHDWaterbody
FDate	Feature Currency Date	Date	NHDWaterbody
Resolution	NHD database resolution (i.e. "high", "medium" or "local")	Character (6)	NHDWaterbody
GNIS_ID	Geographic Names Information System ID for the value in GNIS_Name	Character(10)	NHDWaterbody
GNIS_Name	Feature Name from the Geographic Names Information System	Character (65)	NHDWaterbody
AreaSqKm	Feature area in square kilometers	Num(11,3)	NHDWaterbody
Elevation	Feature elevation in feet	Num(10,3)	NHDWaterbody
ReachCode	Reach Code assigned to feature	Character (14)	NHDWaterbody
FType	NHD Feature Type	Character (32)	NHDWaterbody
FCode	Numeric code for various feature attributes; definitions for codes found in the NHDFCode lookup table	Num(5)	NHDWaterbody
OnOffNet	On/Off network flag – 1 = On network, 0 = Off network	Num(1)	BurnWaterbody
PurpCode	Purpose Code	Char(2)	BurnWaterbody
PurpDesc	Purpose Description	Char(254)	BurnWaterbody
MeanDepth	Mean lake depth in meters from J. Hollister	Double	PlusWaterbodyLakeMorphology
LakeVolume	Lake volume in cubic meters from J. Holister	Double	PlusWaterbodyLakeMorphology
MaxDepth	Max lake depth in meters from J. Hollister	Double	PlusWaterbodyLakeMorphology
MeanDUsed	Mean lake depth in meters used (includes estimated values where Mean_Depth is missing)	Double	PlusWaterbodyLakeMorphology
MeanDCode	Mean Depth Code (coded domain – see NHDPlusV21 User Guide)	Character(1)	PlusWaterbodyLakeMorphology
LakeArea	Lake area in square meters	Double	PlusWaterbodyLakeMorphology

\NHDSnapshot\NHDArea (polygon feature class)

Description: NHD polygonal features of types: Area to be Submerged, BayInlet, Bridge, CanalDitch, DamWeir, Flume, Foreshore, Hazard Zone, Lock Chamber, Inundation Area, Rapids, SeaOcean, Special Use Zone, Spillway, StreamRiver, Submerged Stream, Wash, Water IntakeOutflow, and Area of Complex Channels.

Field Name	Description	Format	NHDPlusV21 Source
ComID	Common identifier of the NHD area feature	Long Integer	NHDArea
FDate	Feature Currency Date	Date	NHDArea
Resolution	NHD database resolution (i.e. "high", "medium" or "local")	Character (6)	NHDArea
GNIS_ID	Geographic Names Information System ID for the value in GNIS_Name	Character(10)	NHDArea
GNIS_Name	Feature Name from the Geographic Names Information System	Character 65)	NHDArea
AreaSqKm	Feature area in square kilometers	Num(11,3)	NHDArea
Elevation	Feature elevation in feet	Num(9,3)	NHDArea
FType	NHD Feature Type	Character (32)	NHDArea
FCode	Numeric codes for various feature attributes; definitions for codes found in the NHDFCode lookup table	Num(5)	NHDArea
OnOffNet	On/Off network flag – 1 = On network, 0 = Off network	Num(1)	BurnWaterbody
PurpCode	Purpose Code	Char(2)	BurnWaterbody
PurpDesc	Purpose Description	Char(254)	BurnWaterbody

\NHDPlusBurnComponents\Sink (point feature class)

Description: Point locations of sinks used for hydro-enforcement.

Field Name	Description	Format	NHDPlusV2 1 Source
SinkID	Unique identifier for Sink point	Long Integer	Sink
PurpCode	Purpose of Sink, See Appendix E	Char(2)	Sink
PurpDesc	Description of Sink	Char(254)	Sink
FeatureID	The id of a feature in another feature class. This is a ComID, if the feature is in NHDFLowline or NHDWaterbody Gaz_ID, if the feature is in WBD_Subwatershed PolyID, if the feature is in BurnAddWaterbody	Long Integer	Sink
SourceFC	The feature class of the feature referenced in FeatureID. Values are "NHDFlowline", "NHDWaterbody", "WBD_Subwatershed", and "BurnAddWaterbody".	Char(20)	Sink
GridCode	GridCode assigned to the Sink point	Long Integer	Sink
InRPU	RPU ID that holds the Sink.	Char(8)	Sink
Catchment	"Y" – line will receive a catchment, "N" or Null - will not receive a catchment	Text(1)	Sink
Burn	"Y" – line will be used for hydro-enforcement, "N" or Null - will not be used for hydro-enforcement	Text(1)	Sink

\NHDPlusBurnComponents\Wall (line feature class)

Description: Lines used as walls in hydro-enforcement.

Field Name	Description	Format	NHDPlusV2 1 Source
WallID	Unique identifier for wall line	Long Integer	Wall
Source_Id	Place holder for WBD unique identifier (not part of the WBD data model used for NHDPlus)	Long Integer	Wall

\NHDPlusBurnComponents\LandSea (polygon feature class)

Description: Polygons used for hydro-enforcement along the NHD coastline.

Field Name	Description	Format	NHDPlusV21 Source
LandSeaID	Unique identifier for land/sea polygon	Long Integer	LandSea
Land	A numeric code to identify land/sea/estuary areas. 1 = Land, -2 = Sea, -1 = Estuary	Short Integer	LandSea

\NHDPlusBurnComponents\BurnAddLine (line feature class)

Description: Additional lines not in BurnLineEvent that are needed for hydro-enforcement.

Field Name	Description	Format	NHDPlusV21 Source
LineID	Unique identifier for wall line	Long Integer	BurnAddLine
PurpCode	Purpose of added line. See Appendix E.	Text(2)	BurnAddLine
PurpDesc	Description of added line.	Text(254)	BurnAddLine
GridCode	Manually assigned gridcodes. See Appendix A, Step 15.	Long Integer	BurnAddLine
StreamLeve	Manually assigned stream level value. See Appendix A.	Short Integer	BurnAddLine
HydroSeq	See PlusFlowLineVAA; a manually assigned number that puts the additional line is the proper hydrologic sequence with BurnLineEvent.	Long Integer	BurnAddLine

\NHDPlusBurnComponents\BurnAddWaterbody (polygon feature class)

Description: Additional waterbodies not in BurnWaterbody that are needed for hydro-enforcement.

Field Name	Description	Format	NHDPlusV21 Source
PolyID	Unique identifier for wall line	Long Integer	BurnAddWaterbody
PurpCode	Purpose of added waterbody (see Appendix E)	Text(2)	BurnAddWaterbody
PurpDesc	Description of added waterbody	Text(254)	BurnAddWaterbody
OnOffNet	0 = Off network, 1 = On network	Short Integer	BurnAddWaterbody
FCode	See NHDFCode		BurnAddWaterbody

\NHDPlusBurnComponents\BurnLineEvent (Line Feature Class)

Description: Events describing the parts of NHDFlowline features used for hydro-enforcement.

Field Name	Description	Format	NHDPlusV21 Source
ComID	Common identifier of an NHDFlowline feature	Long Integer	BurnLineEvent
Reachcode	NHDFlowline Reachcode	Text(14)	BurnLineEvent
FromMeas	Downstream BurnLineEvent Measure (m-value)	Num(8,5)	BurnLineEvent
ToMeas	Upstream BurnLineEvent Measure (m-value)	Num(8,5)	BurnLineEvent
BurnLenKM	Feature length (kilometers)	Num(11,3)	BurnLineEvent
InRPU	RPU that contains the BurnLineEvent feature	Text(8)	BurnLineEvent
GridCode	GridCode assigned to the NHDFlowline feature	Long Integer	BurnLineEvent
Catchment	"Y" – line will receive a catchment, "N" - will not receive a catchment	Text(1)	BurnLineEvent
Burn	"Y" – line will be used for hydro-enforcement, "N" - will not be used for hydro-enforcement	Text(1)	BurnLineEvent

\WBDSnapshot\HUC12 (polygon feature class)

Description: Boundaries of 12-digit Hydrologic Units.

Field Name	Description	Format	NHDPlusV21 Source
HUC_8	8-digit Hydrologic Unit Code	Char(8)	NationalWBDSnapshot
HUC_10	10-digit Hydrologic Unit Code	Char(10)	NationalWBDSnapshot
HUC_12	12-digit Hydrologic Unit Code	Char(12)	NationalWBDSnapshot
Acres	Size of 12-digit HUC	Double	NationalWBDSnapshot
NContrib_A	Non-contributing area in 12-digit HUC	Double	NationalWBDSnapshot
HU_10_GNIS	10-digit HUC GNIS name	Char(23)	NationalWBDSnapshot
HU_12_GNIS	12-digit HUC GNIS name	Char(23)	NationalWBDSnapshot
HU_10_Name	10-digit HUC name	Char(80)	NationalWBDSnapshot
HU_10_Mod	Identifies inter-basin transfers (IT), dams at outlet (DM), etc. that modify natural overland flow as modifications are identified from most significant to least significant modification(s). Hydrologic units with no modification are marked with NM. 　　SC - Storm water Canal or Drainage Canal 　　ID - Irrigation Ditch 　　IT – Inter-basin Transfer 　　BC - Barge Canal or Navigation Canal 　　SD - Storm water Ditch 　　PD - Pipe Diversion 　　CD - Channel Diversion 　　NC - Noncontributing Area 　　KA - Karst 　　LE - Levee 　　NM - No Modifications 　　OC - Overflow Channel or Flume 　　DM - Dam at outlet or HU boundary 　　GC - General Canal/Ditch 　　PS - Pumping Station 　　DD - Drainage Ditch 　　SI - Siphon 　　AD - Aqueduct 　　RS - Reservoir	Char(20)	NationalWBDSnapshot

	TF - Transportation Feature (road, railroad, docks etc.) GF - Ground-Water Flow MA - Mining Activity UA - Urban Area GL - Glacier IF - Ice Field OF - Overbank Flow OT – Other		
HU_10_Type	The hydrologic unit type that most closely identifies the watershed. S - "Standard" hydrologic unit - Any land HU with drainage flowing to a single outlet point, excluding non-contributing areas. This includes areas or small triangular wedges between adjacent HU's that remain after classic hydrologic units are delineated. Some examples include "true", "classic", "composite", and "remnant" hydrologic units. C - "Closed Basin" hydrologic unit - A drainage area that is 100% non-contributing. This means all surface flow is internal, no overland flow leaves the hydrologic unit through the outlet point. F - "Frontal" hydrologic unit - Areas along the coastline of lakes, oceans, bays, etc. that have more than one outlet. These HU's are predominantly land with some water areas at or near the outlet(s). M - "Multiple Outlet" hydrologic unit An area that has more than one natural outlet; for example, an outlet located on a stream with multiple channels. This does not include frontal or water hydrologic units, hydrologic units with artificial inter-basin transfers, drainage outlets through karst or ground-water flow, or outlets that cross a stream with an island. This code should be used only in rare instances. W - "Water" hydrologic unit - Hydrologic units that are predominantly	Char(1)	NationalWBDSnapshot

	water with adjacent land areas, ex. lake, estuaries, and harbors.		
	I - "Island" hydrologic unit - A hydrologic unit that is one or more islands and adjacent water out to the toe of the shore face.		
	U - "Unclassified" hydrologic unit - A hydrologic unit that can't be defined or doesn't fit into one of the types that have been listed.		
HU_12_DS	Downstream 12-digit HUC	Char(10)	NationalWBDSnapshot
HU_12_Name	12-digit HUC name	Char(80)	NationalWBDSnapshot

HU_12_Mod	Identifies inter-basin transfers (IT), dams at outlet (DM), etc. that modify natural overland flow as modifications are identified from most significant to least significant modification(s). Hydrologic units with no modification are marked with NM.
	    SC - Storm water Canal or Drainage Canal
	    ID - Irrigation Ditch
	    IT – Inter-basin Transfer
	    BC - Barge Canal or Navigation Canal
	    SD - Storm water Ditch
	    PD - Pipe Diversion
	    CD - Channel Diversion
	    NC - Noncontributing Area
	    KA - Karst
	    LE - Levee
	    NM - No Modifications
	    OC - Overflow Channel or Flume
	    DM - Dam at outlet or HU boundary
	    GC - General Canal/Ditch
	    PS - Pumping Station
	    DD - Drainage Ditch
	    SI - Siphon
	    AD - Aqueduct
	    RS - Reservoir
	    TF - Transportation Feature (road, railroad, docks etc.)
	    GF - Ground-Water Flow
	    MA - Mining Activity
	    UA - Urban Area
		Char(20)	NationalWBDSnapshot

	GL - Glacier IF - Ice Field OF - Overbank Flow OT - Other		

HU_12_Type	The hydrologic unit type that most closely identifies the watershed.
	    S - "Standard" hydrologic unit - Any land HU with drainage flowing to a single outlet point, excluding non-contributing areas. This includes areas or small triangular wedges between adjacent HU's that remain after classic hydrologic units are delineated. Some examples include "true", "classic", "composite", and "remnant" hydrologic units.
	    C - "Closed Basin" hydrologic unit - A drainage area that is 100% non-contributing. This means all surface flow is internal, no overland flow leaves the hydrologic unit through the outlet point.
	    F - "Frontal" hydrologic unit - Areas along the coastline of lakes, oceans, bays, etc. that have more than one outlet. These HU's are predominantly land with some water areas at or near the outlet(s).
	    M - "Multiple Outlet" hydrologic unit An area that has more than one natural outlet; for example, an outlet located on a stream with multiple channels. This does not include frontal or water hydrologic units, hydrologic units with artificial inter-basin transfers, drainage outlets through karst or ground-water flow, or outlets that cross a stream with an island. This code should be used only in rare instances.
	    W - "Water" hydrologic unit - Hydrologic units that are predominantly water with adjacent land areas, ex. lake, estuaries, and harbors.
	    I - "Island" hydrologic unit - A hydrologic unit that is one or more islands and adjacent water out to the toe of the shore face.
		Char(1)	NationalWBDSnapshot

	U - "Unclassified" hydrologic unit - A hydrologic unit that can't be defined or doesn't fit into one of the types that have been listed.		
Meta_ID	Most recent Meta_ID which links to content in WBD metadata	Char(4)	NationalWBDSnapshot
States	List of states within the 12-digit HUC	Char(20)	NationalWBDSnapshot
GlobalID	Globally Unique Identifier	Char(38)	NationalWBDSnapshot
GAZ_ID	Identifier assigned by NHDPlus production process	Long Integer	NationalWBDSnapshot
WBD_Date	WBD Snapshot Date	Date	NationalWBDSnapshot
VPUID	NHDPlus VPU Identifier	Text(8)	NationalWBDSnapshot
AreaHUC12	Area in square kilometers	Double	NationalWBDSnapshot
HUC_2	Hydrologic Region Code	Text(2)	
HUC_4	Hydrologic Sub-region Code	Text(4)	
HUC_6	Hydrologic Basin Code	Text(6)	

DivFracMP (table)

Description: Contains specifications about the fraction of a cumulative attribute to be routed through each path in a divergence. The ComIDs in this table represent NHDFlowline surface water features, found in the PlusFlow table, that form a network divergence (i.e. a flow split). All the paths in a given divergence are identified in this table by a unique NodeNumber.

PlusFlowlineVAA.Divergence always follows the named stream path. When stream name is used to determine the main path in a divergence, the entries in the DivFracMP table do not override the main path designation in the Divergence flag in PlusFlowlineVAA. When stream name does not determine the main path, then values in DivFracMP will establish the value in PlusFlowlineVAA.Divergence.

All divergences are represented in this table. If DivFracMP values are specified, they are used in the divergence routing method of all NHDPlus accumulated attributes, such as drainage area. Divergences where no information is known about the fractional split have DivFracMP.DivFrac = -9998 for all paths in the divergence. In this case, the Divergence Routing method uses the PlusFlowlineVAA.Divergence field and routes a fraction of 1 to the main path (i.e. Divergence = 1) and a fraction of 0 to all other paths (i.e. Divergence = 2). The impact of using DivFracMP in the Divergence Routing method is discussed in section "Understanding and Using NHDPlusV2".

When not set to -9998, the sum of the DivFrac values for all paths in a divergence (i.e. all records with the same NodeNumber) must equal 1.

Field Name	Description	Format	NHDPlusV2 1 Source
NodeNumber	See PlusFlowlineVAA.FromNode	Num(11)	DivFracMP
ComID	ComID of an NHDFlowline feature which is a path in a divergence	Long Integer	DivFracMP
DivFrac	Fraction used for routing cumulative attributes down the flowlines paths in a divergence. Values between 0 and 1	Num(5,4)	DivFracMP

NHDFCode (Table)

Description: The FCode table describes attribute codes used in the FCode fields of feature tables.

Field Name	Description	Format	NHDPlusV2 1 Source
FCode	A numeric code that represents the feature type plus its encoded attribute values	Long Integer	NHDFCode
Descriptio	Text description of feature type and the encoded attributes	Character (255)	NHDFCode
CanalDitch	Canal Ditch Type (aqueduct, unspecified)	Character (32)	NHDFCode
Constructi	Construction material (earthen, nonearthen, unspecified)	Character (32)	NHDFCode
Hydrograph	Intermittent or perennial	Character (32)	NHDFCode
Inundation	Inundation Area Type (debris basin, dewatering area, duck pond, general case, percolation basin, retarding basin)	Character (32)	NHDFCode
Operationa	Operational Status (abandoned, operational, under construction)	Character (32)	NHDFCode
PipelineTy	Pipeline type (aqueduct, general case, penstock, siphon)	Character (32)	NHDFCode
Positional	Positional accuracy (approximate, definite, indefinite, not applicable)	Character (32)	NHDFCode
Relationsh	Relationship to surface (abovewater, at or near, elevated, underground, underwater, unspecified)	Character (32)	NHDFCode
ReservoirT	Reservoir type (aquaculture, decorative pool, disposal-tailings pond, disposal-unspecified, evaporator, swimming pool, treatment-cooling pond, treatment-filtration pond, treatment-settling pond, treatment-sewage treatment pond, unspecified water storage)	Character (32)	NHDFCode
Stage	Elevation stage (Normal Pool, Flood Elevation, Average Water Elevation, Date of Photography, High Water Elevation, Spillway Elevation)	Character (32)	NHDFCode
SpecialUse	Special use category (dump site, spoil area)	Character (32)	NHDFCode

NHDPlusComponentVersions (Table)

Description: A table of NHDPlus components and their versions loaded in this National database.

Field Name	Description	Format	NHDPlusV21 Source
ComponentName	NHDPlus component name and version	Text(50)	NHDPlusComponentVersions

PlusARPointEvent (table)

Description: A table containing point events which represent the locations of flow additions to and flow removals from the stream network. The network location is provided by the ReachCode and measure based on the linear referencing system of the NHDFlowline feature class. The geometry of the point events may be derived using the ArcGIS Linear Referencing Tool called Make Route Event Layer.

Field Name	Description	Format	NHDPlusV21 Source
ComID	A nationally unique negative ComID assigned to the point of addition or removal	Long Integer	PlusARPointEvent
EventDate	Data event was created	Date	PlusARPointEvent
ReachCode	See NHDFlowline	Char(14)	PlusARPointEvent
ReachResol	"Medium"	Char(7)	PlusARPointEvent
Source_Fea	External identifier of the event point, generally a key in an external database	Char(40)	PlusARPointEvent
Measure	m-value (0 to 100) of the point location along the NHDFlowline route defined by ReachCode	Num(8,5)	PlusARPointEvent
EventType	"Addition" or "Removal"	Char(100)	PlusARPointEvent

PlusFlow (table)

Description: A table that describes flowing and non-flowing connections between NHDFlowline features. The table contains entries for: (1) pairs of NHDFlowline features that exchange water, (2) headwater NHDFlowline features, (3) terminal NHDFlowline features, (4) surface water NHDFlowline features that connect to coastline NHDFlowline features, and (5) coastline NHDFlowline features that connect to each other.

Note: Native NHD contains a flow table called NHDFlow. NHDFlow contains only geometric connections between NHDFlowline features. PlusFlow, on the other hand, includes non-geometric and geometric connections. Non-geometric connections are used to represent situations such as return flows along an international border and underground connections in karst topography.

Field Name	Description	Format	NHDPlusV21 Source
FromComID	Common identifier for the upstream NHDFlowline feature	Long Integer	PlusFlow
ToComID	Common identifier for the downstream NHDFlowline feature	Num(11)	PlusFlow
NodeNumber	Node number at the bottom of FromComID and the top of ToComID	Num(11)	PlusFlow
Direction	714 – coastal connection (FromComID may be a coastline and ToComID is always a coastline) 709 – flowing connection 712 – network start (ToComID is a headwater) 713 – network end (FromComID is a network end)	Num(3)	PlusFlow
GapDistKm	Distance between the downstream end of FromComID and the upstream end of ToComID	Double	PlusFlow
HasGeo	"Y"es FromComID touches ToComID, "N"o, there is a geometry gap between FromComID and ToComID	Char(1)	PlusFlow

PlusFlowAR (table)

Description: A table that describes the connections between NHDFlowline features, flow addition points and flow removal points. See PlusARPointEvent

Type of Table Entry	FromComID	ToComID
Flow addition	Addition point	NHDFlowline feature
Flow removal	NHDFlowline feature	Removal point
Flow Transfer	Removal point	Addition point
Flow use/consumption	Removal point	none

Field Name	Description	Format	NHDPlusV2 1 Source
FromComID	ComID of NHDFlowline feature, Addition point, or Removal point	Long Integer	PlusFlowAR
FromFC	"NHDFlowline" or "PlusARPointEvent"	Char(20)	PlusFlowAR
ToComID	ComID of NHDFlowline feature, Addition point, or Removal point	Long Integer	PlusFlowAR
ToFC	"NHDFlowline" or "PlusARPointEvent"	Char(20)	PlusFlowAR
Quantity	Quantity of Flow through this connection	Double	PlusFlowAR
Units	Units of measurement for Quantity, "CFS" = cubic feet per second	Char(10)	PlusFlowAR