

Stream Features

Part 1: Data Summary

Description

This coverage depicts Municipally-mapped stream features and includes feature segmentation, coding and extended stream attribute data. Data for the MOAStreams coverage are stored in a geodatabase format and are compiled for distribution in ArcInfo and ArcView formats.

Corporate Dataset Name:

MOAStreams

Feature Class Name:

e04MStreams_arc

e04MStreams_node

Lines:

- Reach
- Subreach

Nodes:

- Outlet
- Source
- Reach
- Subreach
- Endmap
- Pseudo



Data Creation Method

Initial mapping is performed through manual stereoscopic inspection of aerial photography followed by field reconnaissance and GPS and stream data collection. Initial mapping data is transferred to digital format through heads-up screen digitizing using ortho-imagery as a background. Linework is imported to a geodatabase where polygon topology is then built in conformance with MOA hydrography mapping logic.

Data Availability		Extent of Data	
Available as 'MOAStreams' in shape file and ArcGIS file format. Features stored in WMS Geodatabase.		Municipality of Anchorage corporate area Suggested viewing scale 1:6,000 or smaller	
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Stream Features

Part 2: Definitions and Mapping Methods

Stream Features

Stream features mapped by the Municipality of Anchorage include whole stream features and stream segments, and important points along these stream features (see Table 1). Point features include reach and subreach beginning points, stream outlet and source points, and the mapping information features identified as endmap and pseudo points.

Table 1

MOA STREAM FEATURES			
Feature Name	Type	Representation	Description
Stream	Line	Stream	Centerline (thread) of bankfull stream from source to outlet
Stream	Poly (not mapped)	Stream	Active stream channel; reflects tidal influence along coastlands and annual bankfull width at inland locations
Reach	Line	Stream segment	Stream segment with uniform terrain and climate character
Subreach	Line	Stream segment	Stream segment with uniform profile, channel, and riparian character.
Source	Point	Stream source	Beginning point of stream flow.
Outlet	Point	Stream outlet	Final stream discharge point.
Reach Point	Point	Reach start point	Beginning point of reach
Subreach Point	Point	Subreach start point	Beginning point of subreach
Endmap Point	Point	Mapping extent	End of MOA stream mapping
Pseudo Point	Point	Mapping segmentation point	Point of change in information source for stream line location

Stream Feature Definitions

Definitions of Municipal stream features are generally consistent with national mapping concepts and definitions [see particularly the Federal Geographic Data Committee’s (FGDC) Hydrography Standard available for review at http://www.fgdc.gov/standards/status/sub5_5.html or the National Mapping Program standards for hydrography at <http://rmmcweb.cr.usgs.gov/public/nmpstds/nhdstds.html>].

Stream

An MOA stream feature is defined as a watercourse perennially or intermittently conveying waters not solely the result of drainage construction or storm water runoff. If the stream is not piped, it has banks and a bed. A stream also maintains its identity as a watercourse even though it may periodically break up and disappear along its alignment. A watercourse is a natural channel produced wholly or in part by the flow of surface water, or an artificial channel constructed for the conveyance of surface water. Thus, a watercourse represents any surface water conveyance feature and may be further classified as either a ‘stream’ or a ‘drainageway’.

Note that the Municipality makes a careful distinction between a ‘drainageway’ and a ‘stream’. The Municipality defines a drainageway as a watercourse, either natural or constructed, that conveys flow only for limited duration (an ‘ephemeral’ flow) or as the result of constructed drainage (e.g., a subdrain). This classification therefore does not include an ephemeral stream type. Under the Municipality’s classification an ephemeral surface flow feature is, by definition, a drainageway. Streams differ primarily from drainageways in that they typically transmit surface and ground water flows over some prolonged period of time. Flows over a “prolonged period of time” will generally (but not necessarily always) reflect contributions from runoff from multiple storm events, runoff generated from area-wide snow melt or other sources of prolonged snow melt, and ground water discharges.

However, the defining term a “prolonged period of time” does not imply that a feature must have a continual flow to be classified as a stream. Streams may be either ‘perennial’ or ‘intermittent’. Perennial streams have a continual (year-round) flow. Intermittent streams have flows that are either spatially or temporally discontinuous. ‘Temporally’ intermittent streams typically have seasonal periods of flow followed by periods of no-flow, but when flow does occur volumes must still exceed that which would result from single storm events or from ground water flows induced solely from constructed drainages. ‘Spatially’ intermittent streams have sections along the stream alignment where flow is not present either periodically or perennially. Both types of intermittency can be observed in Anchorage streams.

Irregardless of intermittent character, all streams must still display spatial continuity. That is, each uniquely identified stream feature must have either a continuous “line of flow”, or a topographic “line of continuity” (where transmission of surface water either does or could take place).

Municipal definitions and criteria for use in identifying a feature as a ‘stream’ are described in detail in the Watershed Management Section (WMS) document “Classification System for Municipal Hydrologic Features” (document number WMP APg97002). These criteria and definitions conform to Municipal code and to national norms for definition of stream features.

Reach

A ‘reach’ is a stream segment having common adjacent watershed qualities that in part control the streams local character. A reach has generally similar ‘ultimate controls’—factors related to geology, landform, land cover and climate that play important roles in the stream’s form and function. In this sense, adjacent riparian terrain characteristics and geology are relatively constant along a reach, as is slope. Similarly, drainage areas contributing local storm water flows directly to a reach have unique surface hydrology and pollutant generation characteristics, relative to the land cover and land use qualities of the basins.

Subreach

Though ‘ultimate’ controls are often relatively constant over an individual reach, ‘proximate controls’—very localized channel and in-stream characteristics that affect or reflect a stream’s form and function—may vary significantly along a reach. In Municipal stream mapping, unique groupings of these latter characteristics are delineated by segmentation of each reach into one or more ‘subreaches’. A subreach, then, is a stream segment having generally common local channel and habitat characteristics.

Source

A stream ‘source’ is the beginning point of flow in any feature mapped as a stream. In many instances headwater flows are contributed from numerous seeps rather than from one discrete source. In Municipal stream mapping, a source location is the upstream-most point at which sufficient indicators are present to allow reasonable identification of a feature as a discrete stream, as defined by Municipal criteria.

Outlet

A stream outlet is the discharge point of a stream. It is the downstream-most point of any individual stream feature.

Reach Point

A reach point identifies the beginning (downstream end) of a stream reach.

Subreach Point

A subreach point identifies the beginning (downstream end) of a stream subreach.

Endmap Point

An endmap point represents the furthest extent of Municipal mapping for a given stream. It may be used to delineate either an upstream or downstream end point of Municipal stream mapping. This feature is used to identify the upstream or downstream extent of Municipal stream mapping in instances where Municipal mapping has not been completed from stream source to stream outlet. Thus endmap features also indicate an expected significant continuation of a stream feature either upstream or downstream from the endmap point. Where other ('legacy') digital data sources delineate the stream feature above (or below) the endmap point, the endmap point is located to intersect the legacy streamline.

Stream Feature Mapping

Standard methods for mapping Municipal stream features are necessary to ensure mapping efficiency and consistent data quality and to allow users to select and apply comparable data. Because mapping is required at different accuracies and resolutions, methodologies have been developed to support a hierarchy of mapping "levels" (see WMS document number WMP APg0101, "Municipality Of Anchorage Stream Mapping Standards, Ver. 1.01"). Five classified mapping levels and one unclassified mapping level are supported under the Municipality's NPDES hydrography mapping program:

1. Photo Interpretive Mapping
 2. Reconnaissance Mapping
 3. Base Map Survey
 4. Low-Resolution Controlled GPS Survey
 5. High Resolution Controlled Land Survey
- Unclassified (Legacy) Mapping

In general, the MOA will perform new hydrographic mapping to provide systematic improvement in stream geographic and attribute information for whole streams. However, different levels of mapping accuracy will inevitably result along individual streams. Some segments of streams are already mapped at a high level of accuracy. Investigators may also perform higher resolution mapping along discrete segments of streams where more detailed information is later required, independent of the mapping resolution of the rest of the stream. Therefore, the location accuracy ('level') of mapped information for water courses is a quality attribute that will be assigned to segments of hydrologic features and not to whole streams. At all mapping levels, stream mapping accuracy is assessed with respect to the true ground position of the stream centerline.

Legacy Stream Mapping

As computer and survey technologies have improved, means to inexpensively and accurately locate and represent geographic features has expanded. Increased data storage capacity has allowed mappers to attach metadata to the geographic data itself. As these technologies become available, old mapping is supplanted by new map data and its metadata. However, until new mapping can be performed, in some areas old mapping will be used to provide basic geographic information. Unfortunately, though source information is usually available for this mapping, other information about the map data quality or mapping criteria often is not. Where the Municipality has incorporated hydrographic data into its datasets with incomplete or unknown data quality, no mapping level will be assigned and mapping level will be left as a null value. Thus Municipal map data with an unclassified map level is of unknown accuracy or quality and, in fact, data may have either high or low accuracy.

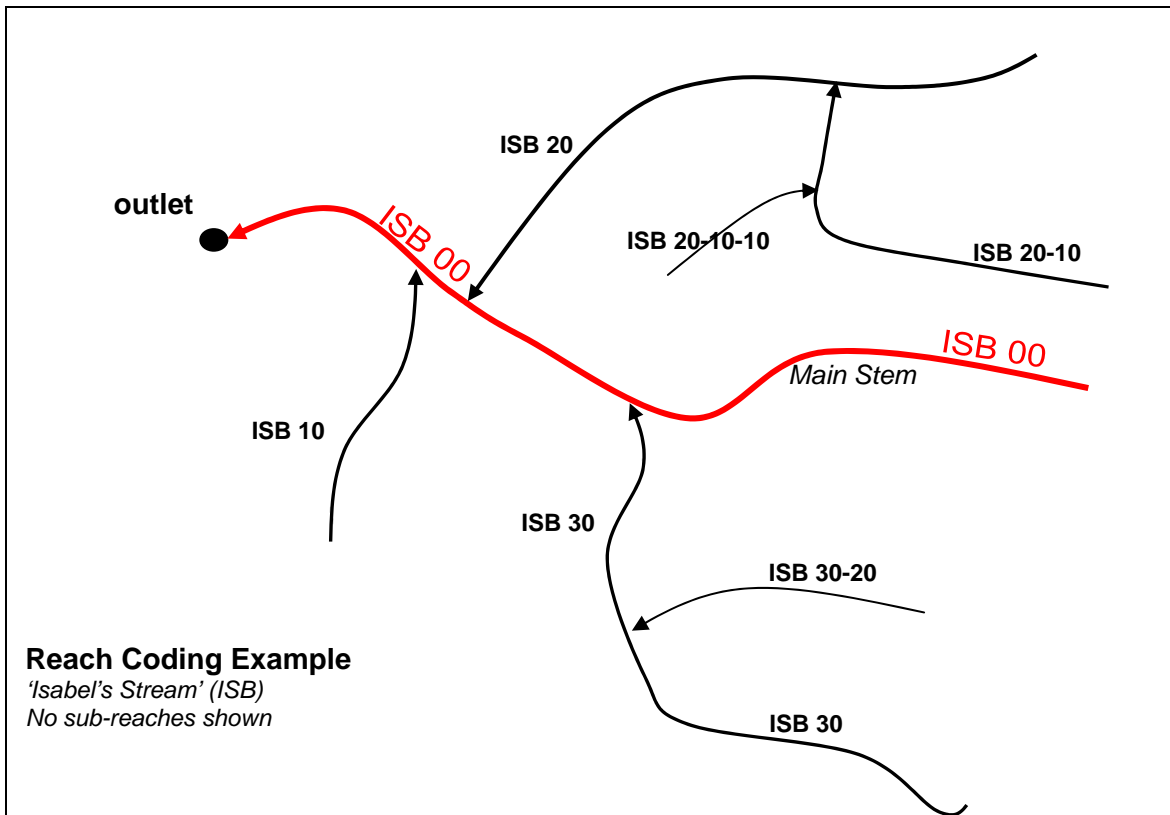
Level 1: Photo Interpretive Stream Mapping

In this method all watercourses or other mapped features are interpreted through use of existing ('legacy') mapping and aerial photography. This mapping method represents a level of effort that focuses on initial, fast, economical characterization and location of hydrographic features. No field verification or other quality assurance testing is performed. Nevertheless, mappers include features at this mapping level only where sufficient photo indicators or existing field information or mapping substantiate the presence of a

stream feature. This means that unknown smaller stream features (typically with bank-full widths of one meter or less) may not be identified in mapping performed at this level.

At this mapping level, each unique stream feature is segmented into reaches and the reaches are assigned identification codes. Reaches are numbered consecutively starting at the downstream end of each discrete stream feature and continuing to the end of that stream feature. The exact beginning and ending points of reaches are commonly selected so as to ease their location on the ground. Sub-reaches are not typically identified during level 1 mapping.

Identification codes assigned to unique stream features (main stems and their tributaries) must conform to standard Municipal practices. Coding of Municipal streams provides a unique tabular identification for these features and provides a means of indexing stream features and segments to a number of different variables. The Municipality has developed conventions for use in assignment of unique identification codes to discrete stream features. In general, all stream features within a stream catchment basin are assigned identification codes in relation to the main stem stream feature within that basin. The main stem is first assigned a three-letter mnemonic code (which reflects the commonly used name of the main stem or the principle branch) and a numeric code, -00, which signifies its identity as the main stem or a primary tributary (i.e., generally a higher order feature in the watershed). The main stem alpha code is then concatenated with a sequence of two-digit numeric codes to create unique identification codes for each tributary to the main stem. Finally, a four place decimal number (nn.nn indicating reach.sub-reach) is assigned to specify reach and sub-reach identities.



Level 2: Reconnaissance Stream Mapping

Reconnaissance mapping includes all elements of photo interpretive mapping but improves mapping resolution and accuracy through additional, iterative, photo interpretive and field reconnaissance efforts. At this mapping level, limited field reconnaissance is performed after initial photo interpretive corrections are made. However, field inspections at this mapping level are performed only with the purpose of ensuring that locations and assigned attributes are grossly correct. No controlled survey or other testing is done to ensure locations are within stated accuracy limits. However, GPS point data can be, and often are,

used to resolve and confirm mapped stream locations. GPS point data for Municipal stream mapping is archived in a separate data set.

Because of the discontinuous nature of the field reconnaissance, identifications and locations of stream features at this mapping level remain substantially based on the professional judgment and local knowledge of the mappers. Nevertheless, feature location accuracy and resolution is improved as a result of ground truthing and GPS point location data. This mapping level also targets all known stream features for reconnaissance-level mapping. Final photo-corrected locations are compiled so as to achieve estimated correct location of mapped stream features to within +15 meters of their true ground position.

At this mapping level both reaches and sub-reaches may be identified. Sub-reaches are segments of reaches that reflect common stream habitat, channel morphology, and degree of stream modification. Sub-reaches may be identified as a part of the stream mapping field reconnaissance or may be identified in later efforts.

At the reconnaissance level, stream attribute data is also commonly collected. Municipal stream attribute mapping collects or estimates data for a range of stream characteristics (see Table 2). Mapping methodologies and definitions for measured or estimated attributes are described in WMS document WMP DBg0002, "Municipality of Anchorage MOA_Streams: V1.12 Data Dictionary".

Table 2

MOA STREAM ATTRIBUTES AND VALUES

Feature	Attribute	Values	Description
Reach	Reach Slope	0.nnnn (dimensionless)	Ratio of reach endpoint elevation change and reach length
	Subreach		
	Flow Type	perennial or intermittent	Spatial or temporal continuity of flow
	Routing Type	source, stem, outlet, continuity	Stream connectivity identity
	Profile Type	1-pool/riffle, 2-estuarine, 3-run, 4-braided, 5-step pool, 6-cascade, 7-bog, 8-multi-channel, 9-flat, 10-piped, 11-continuity	Stream longitudinal profile character
	Maximum Bankfull Depth	nn.n feet	Channel depth from bankfull stage at thalweg
	Mean Bankfull Depth	nn.n feet	Mean bed surface to bankfull stage
	Bankfull Width	nnn.n feet	Mean stream width at bankfull stage
	Width/Depth Ratio	nn.n feet	Ratio of bankfull width to mean bankfull depth
	Floodprone Width	nnn.n feet	Flood surface width at 2x maximum bankfull depth
	Entrenchment	n.n (dimensionless)	Ratio of floodprone width to bankfull width
	Sinuosity	1-s<1.2, 2-1.2<s<1.4, 3-s>1.4	Ratio of stream centerline length to down-valley length
	Bed Material	1-d<100μ, 2-100μ<d<420μ, 3-420μ<d<25mm, 4-	Stream bed material

MOA STREAM ATTRIBUTES AND VALUES

Feature	Attribute	Values	Description
		25mm<d <150mm, 5-150mm<d, 6-peat/root, 7-bedrock/cemented	
	Bank Material	same as Bed Material	'In-place' bank material (exposed to flow between channel bottom and bankfull stage)
	Roughness	0.nnn (dimensionless)	Manning's n
	CEM Class	1-dynamic equilibrium, 2-vertical erosion, 3-lateral erosion and/or aggradation, 4-aggradation	Channel evolutionary stage
	Channel Modification	1-unmodified, 2-slightly modified, 3-moderately modified, 4-highly modified	Degree of human modification to stream channel
	Undercut Bank	1-uc≤10%, 2-10%<uc≤30%, 3-30%<uc≤50%, 4-50%<uc≤75%, 5-75%<uc	Overarching bank structure with overhang >0.5 feet; 100%=both banks
	Canopy	Same as Undercut Bank	Overarching vegetation cover over bankfull width
	Fish Habitat	Whole no. 1 to 9 (dimensionless)	Fish habitat index
	Invertebrate Habitat	Whole no. 1 to 6 (dimensionless)	Invertebrate habitat index

Level 3: Base Map Stream Surveys

Municipal base map stream surveys are performed to conform to the horizontal accuracy standards specified by the Federal Emergency Management Agency (FEMA) in its "Base Map Specifications for the New Digital Flood Insurance Rate Map Product" (May 26, 1999). Reported horizontal locations of mapped features will have a positional accuracy with respect to true ground position that is equal to or better than 38 feet (about 11.5 meters, or equivalent to that of USGS DOQs), as confirmed at the 95% confidence level by controlled surveys.

Level 4: Low-Resolution Controlled GPS Stream Survey

Low-resolution controlled GPS surveys systematically employ GPS technology in the field to accurately locate stream features. At this mapping level, GPS location data are used to *continuously* map entire features. That is, GPS mapping is used to accurately locate a series of points sufficient, when connected to form a series of arcs, to accurately represent the location of part or all of a stream.

In this method, "arcs" used to map stream locations are made up of a series of GPS-located points connected by straight-line segments that, taken as a whole, generally describe the *centerline* of the stream. The centerline of a stream is the line connecting the midpoints of all surface water cross sections measured at the bankfull stage. For this method reported horizontal location of the stream centerline shall have a positional accuracy with respect to true ground position that is equal to or smaller than a distance of 20% of the stream's bankfull width or 1.0 meter, whichever is larger, at a 95% confidence level.

GPS methods used to map centerline arcs shall control for a minimum horizontal accuracy of point locations of one (1.0) meter. Because different GPS instrument brands vary in control settings and

parameters, operation protocols designed to achieve this accuracy are not readily standardized. The Municipality has developed suggested standard operational procedures based on specific GPS mapping receivers. These standards are detailed in WMP APg0101.

Level 5: High-Resolution Controlled Land Survey

Controlled land survey steam mapping incorporates photo interpretive mapping with standardized land surveying techniques to acquire accurate horizontal locations of stream features in the field. Similar to low-resolution GPS mapping, controlled land survey mapping may be used to accurately locate either relatively discrete point features along a stream, or associated series of points representing the linear stream feature itself.

Mapping at this level is performed so as to meet nationally established land survey standards. Municipal Rights-of-Way officers select, review and establish acceptable Municipal survey standards. For stream location mapping, however, the method of representation of linear stream features using surveyed points must meet additional representational requirements similar to those described for “low-resolution GPS” mapping.

Mapping Scale and Accuracy

In general, for those areas for which ortho-imagery is available, stream features mapped for the Municipal mapping levels 1 and 2 will be delineated at 1:2400 (1 map inch to 200 feet on the ground). Where no ortho-imagery is available, streams will be represented at a scale of 1:25000 (about 1 inch to 2083 feet). Digital mapping will be prepared for optimum viewing at a scale of 1:6000 or smaller.

Dependent upon the selected level of mapping, either all stream features will be resolved, or all stream features with a bank-full width greater than 1 meter will be resolved. Stream attributes will be resolved as representative characteristics of whole streams or of portions of streams (“reaches”, “sub-reaches”, “channel units”, and “stations”).

Table 3 summarizes accuracy standards for each of the Municipality’s five mapping levels.

Table 3

MUNICIPAL STREAM MAPPING ACCURACY					
Level	Methodology	Conf.	Accuracy	Feature	Scale
	Unclassified (Legacy) Mapping		Unknown	Stream	
1	Photo Interpretive Mapping	Est.	±25 meters	Stream ≥1 meter	1:2400
2	Reconnaissance Mapping	Est.	±15 meters	Stream C/L	1:2400
3	Base Map Survey (FEMA)	95% @	±11.5 meters	Stream C/L	1:1200
4	Low-Resolution GPS Survey	95% @	±20% BFW or ±1.0 meter	Stream C/L	1:1200
		95% @	±1.0 meter	CL Point	
5	High-Resolution Land Survey	95% @	±20% BFW or ±1.0 meter	Stream C/L	1:1200

BFW=Bankfull Width
C/L=Centerline

Stream Features Part 3: Data Dictionary

The following data dictionary contains basic attribute information about the MOAStreams arcs and nodes featureclasses. Topological interaction between the featureclasses e04MStreams_arc and e04MStreams_node defines the characteristics of the corporate dataset MOAStreams. For further information about these attributes, please see Part 2: Definitions and Mapping Methods. Attributes are not listed in the order that they appear in the featureclass attribute tables.

e04MStreams_arc attributes:

BANK_MATL

Native, in-place geologic or human-placed materials that is exposed in a stream bank section between the top of the stream channel and the bankfull stage. (Source: Data Dictionary)

Value	Definition
1	clay/silt (particles < 100micron diameter)
2	silt/sand (100micron < particles < 420micron diameter)
3	sand/gravel (420micron < particles < 25mm diameter)
4	gravel/cobble (25mm < particles < 150mm diameter)
5	cobble/boulder (particles > 150mm diameter)
6	peat/root (predominantly organic material)
7	bedrock/cemented (indurated rock, concrete or other strongly cemented material or armor)

BED_MATL

Predominant stream bed sediment that may be mobilized by normal flood flow events (return periods of less than 5 years). (Source: Data Dictionary)

Value	Definition
1	clay/silt (particles < 100micron diameter)
2	silt/sand (100micron < particles < 420micron diameter)
3	sand/gravel (420micron < particles < 25mm diameter)
4	gravel/cobble (25mm < particles < 150mm diameter)
5	cobble/boulder (particles > 150mm diameter)
6	peat/root (predominantly fine-grained organic-rich sediment)
7	bedrock/cemented (indurated rock, concrete or other strongly cemented material)

BNK_UNDRCT

Any stream channel area that is active at flows less than bankfull and is significantly roofed by overarching bank materials. (Source: Data Dictionary)

Value	Definition
1	<10%
2	10% < undercut < 30%
3	30% < undercut < 50%
4	50% < undercut < 75%
5	>75%

BF_D

Mean stream depth (in feet) at the mean annual flood stage calculated from measurements taken across representative riffles. (Source: Data Dictionary)

BF_W

Mean stream width (in feet) at the mean annual flood stage calculated from measurements taken at representative riffles. (Source: Data Dictionary)

BFW_BFD

The ratio of the mean bankfull width to the mean bankfull depth (BF_W/BF_D). (Source: Data Dictionary)

CANOPY

Any vegetative cover extending over all or part of the stream water surface at bankfull stage. (Source: Data Dictionary)

Value	Definition
1	Canopy <10%
2	10% < canopy < 30%
3	30% < canopy < 50%
4	50% < canopy < 75%
5	75% < canopy

CEM_CLASS

A CEM class identifies the degree of departure of a stream from a dynamic equilibrium condition expected for a given climate, terrain, stream size, and geology (bank and channel material). CEM is an acronym for channel evolution model. (Source: Data Dictionary)

Value	Definition
1	Dynamic Equilibrium
2	Degrading
3	Widening and Aggrading
4	Aggrading

CHNNL_MOD

Channel modification is the degree to which human activities and structures have directly modified a stream channel, or the extent to which human activities or structures immediately control or influence stream processes and patterns at a range of normal flows (bankfull stage). (Source: Data Dictionary)

Value	Definition
1	Unmodified
2	Slightly Modified
3	Moderately Modified
4	Highly Modified

COMMENTS

Free format comments from mapping science professional. (Source: Data Dictionary)

COMP_DATE

Date of last map compilation. (Source: Data Dictionary)

E04MSTREAMS_

Internal feature number (Source: ESRI)

E04MSTREAMS_ID

Internal feature number (Source: ESRI)

ENABLED

Status of feature participation in a geometric network. (Source: Data Dictionary)

ENTRNCH_E

A qualifier for ENTRNCHMNT measurements. (Source: Data Dictionary)

Value	Definition
=	ENTRNCHMNT = reported value
>	ENTRNCHMNT > reported value
NULL	ENTRNCHMNT not measured

ENTRNCHMNT

The ratio of floodprone width to bankfull width. (Source: Data Dictionary)

FISH_HAB

A qualitative index value that summarizes the presence of critical, stable channel structures or physical features that provide fish habitat. In this context a valid index value between 1 and 9 represents the increasingly significant combined presence of logs and large woody debris, root mats and wads, undercut banks, overhanging vegetation, macrophyte beds, cobbles and boulders, riffles, deep pools, and isolated or backwater pools. (Source: Data Dictionary)

Value	Definition
1	Poor Fish habitat
2	
3	

4	
5	
6	
7	
8	
9	Good fish habitat

FLDPRONE_E

A qualifier for flood prone width measurements. (Source: Data Dictionary)

Value	Definition
=	REAL FLDPRONE_W VALUE = REPORTED
>	REAL FLDPRONE_W VALUE \geq 3X BF_W
NULL	FLDPRONE_W NOT MEASURED

FLDPRONE_W

Flood Prone Width, the bank-to-bank width (in feet) measured at an elevation above the channel bottom (at the thalweg) of 2X the maximum bankfull depth. (Source: Data Dictionary)

FLOW_TYPE

This value represents the temporal character of flow along a reach. (Source: Data Dictionary)

Value	Definition
Perennial	Stream flow occurs continually except during periods of severe cold or drought
Intermittent	Stream flow is not continual but the reach does periodically convey natural flows greater than that originating from a single storm event.

FNODE_

Internal node number for the beginning of an arc (from-node) (Source: ESRI)

INVERT_HAB

A qualitative index value that summarizes the presence of critical stable substrate that may provide for insect colonization and periphyton attachment. In this context a valid index value between 1 and 6 represents the increasingly significant combined presence of submerged logs and large woody debris, fine woody debris, leaf pack, under-cut banks, cobbles and boulders, and gravel. (Source: Data Dictionary)

Value	Definition
1	Poor Invertebrate habitat
2	
3	
4	
5	
6	Good invertebrate habitat

LENGTH

Length of feature in internal units. (Source: ESRI)

LPOLY_

Internal node number for the left polygon. (Source: ESRI)

MAP_ACURCY

Mapping method and associated stream centerline location accuracy. (Source: ESRI)

Value	Definition
1	Photo Interpretive Mapping (better than 25m, estimated)
2	Reconnaissance Mapping (better than 15m, estimated)
3	Base Map Survey (better than 11.5m, controlled survey confirmed)
4	Low Resolution GPS Survey (continuous controlled GPS survey)
5	High Resolution Land Survey (continuous controlled land survey)
-999	Null

MAP_DATE

Date of last mapping or survey activity. (Source: Data Dictionary)

MAP_EDITOR

Mapping science professional (Source: Data Dictionary)

Value	Definition
MOA WMS	Municipality of Anchorage, Watershed Management Service

MAP_SOURCE

Source of feature location information (Source: Data Dictionary)

Value	Definition
WMS	WMS standardized mapping
NETWORK	Modified WTR_WAY legacy digital mapping
WTR_WAY	MOA area-wide legacy digital mapping
USGS1:25K	Digitized 1:25K USGS DRG
USGS1:63K	1:63K USGS DLG
MAJDRN	MOA 1994 Hillside Drainage Study legacy digital mapping
TURNAGAIN	MOA Turnagain legacy digital mapping

MAPCOMPILR

Mapping IT professional (Source: Data Dictionary)

Value	Definition
GeoNorth	Mapping Professional organization

MAX_BF_D

Maximum stream depth (in feet) at the mean annual flood stage calculated from measurements taken at the thalwegs of representative riffles. (Source: Data Dictionary)

OBJECTID

Internal feature number. (Source: ESRI)

PROFILE

A profile type represents a general longitudinal pattern in streambed morphology. (Source: Data Dictionary)

Value	Definition
1	Pool/Riffle
2	Estuarine
3	Run
4	Braided
5	Step Pool
6	Cascade
7	Bog
8	Multi-channel
9	Flat
10	Piped
11	Continuity
-999	null

RCH_SLOPE

The slope of a stream along a reach. The slope of the reach is calculated as the ratio ($\Delta E/L$) of the difference, ΔE , in water surface elevations between the end points of a reach, and the length of the stream reach, L . (Source: Data Dictionary)

RCH_SUBRCH

This value includes the concatenated reach and subreach coding for a segment(formatted as nn.nn, i.e., reach.subreach) and is the final code element in the Segment_ID. It is not a unique value. (Source: Data Dictionary)

RCH

This value identifies all segments belonging to the same stream reach and is a unique identifier for a complete reach feature. It is made up of the first two code elements in the Segment_ID (stream and reach codes) but does not include the subreach code element. (Source: Data Dictionary)

REVISIONNO

Revision.version information for published mapping data. (Source: ESRI)

Value	Definition
1.11	[not provided]
1.12	Prior to Year 2001 Edits

1.13	Year 2001 Edits
2.0	Year 2002 Edits
3.0	Year 2003 Edits
4.0	Year 2004 Edits

ROUTE_TYPE

This value represents the character of the hydraulic continuity of a stream reach within the context of the whole stream feature. (Source: Data Dictionary)

Value	Definition
Source	A stream reach that includes a ‘source’ node; the upstream-most reach of a stream. Where a stream has only one reach—i.e., it includes both ‘source’ and ‘outlet’ nodes—by default the reach is designated as an outlet-type
Stem	An intermediary network reach proceeded and preceded by other reaches of the same stream and along which surface flows (or flows within pipes) occur intermittently or continuously.
Continuity	An intermediary network reach along which flows are transmitted as reservoir storage (as in a run-of-the-river lake or wetland) or as shallow interflow.
Outlet	A stream reach that includes an ‘outlet’ node; the downstream-most reach of a stream.

RPOLY_

Internal node number for the right polygon. (Source: ESRI)

SEGMENT_ID

This value is a unique identity for a given stream segment reported at the most resolute segmentation level available (usually at the reach or subreach level). It typically includes three code elements concatenated to form the Segment_ID value: 1) a stream alpha mnemonic and numeric code, 2) a reach code, and, where available, 3) a subreach code. (Source: Data Dictionary)

SHAPE_Length

Length of feature in internal units. (Source: ESRI)

SHAPE

Feature geometry. (Source: ESRI)

SIN_TYPE

This value indicates the method used in calculating the sinuosity value (SINUOSITY). (Source: Data Dictionary)

Value	Definition
1	Map Measurement
2	Field Estimate
3	Field Measurement
-999	null

SINUOSITY

The ratio of the stream centerline length to its down-valley length, or the ratio of channel slope to valley slope, dependent upon the measurement methodology used. (Source: Data Dictionary)

SLOPE_TYPE

This value indicates the method used in calculating the slope value (RCH_SLOPE). (Source: Data Dictionary)

Value	Definition
1	Map Measurement
2	Field Estimate
3	Field Measurement
-999	null

SNAP_SRCE

Geo-referenced base imagery source (Source: Data Dictionary)

Value	Definition
1M DOQQ	1 meter USGS Digital Ortho Quarter Quads
2FT ORTHO	2 Ft Aeromap (1996) Anchorage digital orthophotos
3FT ORTHO	3Ft Aeromap (2000) Girdwood digital orthophoto
FEMA	FEMA FIRMS
2001 IKONOS	1 meter IKONOS satellite imagery from Space Imaging

STREAM_ID

This value includes the alpha mnemonic and numeric code that uniquely identifies a whole stream feature. This value is the initial code element in the Segment_ID. (Source: Data Dictionary)

STRM_NAME

The commonly used or mapped name of a stream. (Source: Data Dictionary)

SUBWTRSHED

Name of the associated MOA subwatershed feature. (Source: Data Dictionary)

TNODE_

Internal node number for the end of an arc (to-node). (Source: ESRI)

WATER_DEPT

Actual water depth measured at riffle thalweg at MAP_DATE. (Source: Data Dictionary)

WATERSHED

Name of the associated MOA watershed feature. (Source: Data Dictionary)

e04MStreams_node attributes:

ARC_

Internal feature number (Source: ESRI)

ANCILLARYROLE

Geometric network characterization. (Source: ESRI)

ANADROMOUS

USF&W anadromous stream data reference ID. (Source: Data Dictionary)

COMMENTS

Free format comments from mapping science professional. (Source: Data Dictionary)

E04MSTREAMS_

Internal feature number (Source: ESRI)

E04MSTREAMS_ID

Internal feature number (Source: ESRI)

ENABLED

Status of feature participation in a geometric network. (Source: Data Dictionary)

NHD_ID

USGS National Hydrographic Data reference ID. (Source: Data Dictionary)

NODE_TYPE

Points used to represent stream or mapping endpoints, or to represent beginning points of segmentation used to show significant differences in stream character or information quality. (Source: Data Dictionary)

Value	Definition
NULL	Unidentified mapping or internal digital segmentation
PSEUDO	Metadata (source information) segmentation.
SOURCE	Beginning point (upstream end) of a whole stream feature.
REACH	Beginning point of a stream reach segment (the beginning point of the first reach of a stream is defaulted to an 'outlet' type node).
SUBREACH	Beginning point of a stream subreach segment (the beginning point of the first subreach of a reach is defaulted to a 'reach' type node).
OUTLET	Ending point (downstream end) of a whole stream feature.
ENDMAP	Upstream or downstream extent of MOA standard mapping information. An endmap node implies the stream feature continues upstream or downstream of the endmap node.

OBJECTID

Internal feature number. (Source: ESRI)

RCH_SUBRCH

This value includes the concatenated reach and subreach coding for a segment (formatted as nn.nn, i.e., reach.subreach) and is the final code element in the Segment_ID. It is not a unique value. (Source: Data Dictionary)

REVISIONNO

Revision.version information for published mapping data. (Source: Data Dictionary)

Value	Definition
1.11	[not provided]

1.12	Prior to Year 2001 Edits
1.13	Year 2001 Edits
2.0	Year 2002 Edits
3.0	Year 2003 Edits
4.0	Year 2004 Edits

SEGMENT_ID

This value is a unique identity for a given stream segment reported at the most resolute segmentation level available (usually at the reach or subreach level). It typically includes three code elements concatenated to form the Segment_ID value: 1) a stream alpha mnemonic and numeric code, 2) a reach code, and, where available, 3) a subreach code. (Source: Data Dictionary)

SHAPE

Feature geometry. (Source: ESRI)

STREAM_ID

This value includes the alpha mnemonic and numeric code that uniquely identifies a whole stream feature. This value is the initial code element in the Segment_ID. (Source: Data Dictionary)

STRM_NAME

The commonly used or mapped name of a stream. (Source: Data Dictionary)

SUBWTRSHED

Name of the associated MOA subwatershed feature. (Source: Data Dictionary)

WATERSHED

Name of the associated MOA watershed feature. (Source: Data Dictionary)

Stream Features Part 4: FGDC Metadata

Identification_Information:

Citation:

Citation_Information:

Originator: MOA Watershed Management Section

Publication_Date: 01/15/2005

Title: e04MStreams

Edition: 3

Geospatial_Data_Presentation_Form: vector digital data

Online_Linkage: \\Zim\Data\wms\031016_sde_selected\SDEDevelopment031024updates.mdb

Description:

Abstract: Moa_streams is a stream centerline network created by the Municipality of Anchorage, Watershed Management Section. Stream centerlines have been mapped, fitted to digital orthoimagery, segmented, and coded with basic attributes. Mapping methodology includes Level 1 through Level 5 WMS mapping protocols.

Purpose: This dataset is intended for use in all Municipal corporate business which includes ground and surface water flow modeling applications. Stream channel and habitat attributes, NHD data, Anadromous Stream data, and other sample data is intended to be attached to stream segments. Connectivity between streams, other receiving waters, and natural and constructed drainageways is inherent in the data structure

Supplemental_Information: This dataset will be enhanced and expanded as budgets allow and project needs dictate. WMS mapping protocols provided for 5 levels of increasing mapping accuracy for mapping. Stream centerline data is fitted to select digital orthoimagery at a scale of 1:1200. However stream mapping is not intended as a "graphic" coverage (does not portray stream features as polygons.)

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 20010905

Currentness_Reference: ground condition

Status:

Progress: In work

Maintenance_and_Update_Frequency: Annually

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -149.964871

East_Bounding_Coordinate: -149.048395

North_Bounding_Coordinate: 61.457564

South_Bounding_Coordinate: 60.930377

Keywords:

Theme:

Theme_Keyword_Thesaurus: Hydrology, streams, reaches

Theme_Keyword: Hydrology, streams, reaches

Place:

Place_Keyword: Anchorage, Alaska

Access_Constraints:

Refer to Municipality of Anchorage GIS Web page
(<http://www.ci.anchorage.ak.us/gis/gisinternet/htmls/gishome.htm>)
for official policy on use of MOA GIS data.

Use_Constraints:

Refer to Municipality of Anchorage GIS Web page
(<http://www.ci.anchorage.ak.us/gis/gisinternet/htmls/gishome.htm>)
for official policy on use of MOA GIS data.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:
 Contact_Person: Phil Manke
 Contact_Organization: MOA-DPW-Technical Services
 Contact_Position: IT Supervisor
 Contact_Address:
 Address_Type: mailing address
 Address: Department of Public Works, P.O. Box 196650
 City: Anchorage
 State_or_Province: AK
 Postal_Code: 99519-6650
 Country: USA
 Contact_Voice_Telephone: (907) 343-8220
 Contact_Electronic_Mail_Address: MankePJ@muni.org
 Hours_of_Service: 8-5
 Contact_Instructions: Please use phone as primary contact interface
 Data_Set_Credit: MOA WMS
 Native_Data_Set_Environment: Microsoft Windows 2000 Version 5.1 (Build 2600) Service Pack 1; ESRI
 ArcCatalog 8.3.0.800
 Data_Quality_Information:
 Lineage:
 Process_Step:
 Process_Description: Dataset copied.
 Source_Used_Citation_Abbreviation: d:\wms\streams\moa_streams02
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 Source_Used_Citation_Abbreviation: d:\wms\moa_streams\vp
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GEODATABASE\WMS_PILOT_GDB.mdb

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 Process_Description: Metadata imported.
 Source_Used_Citation_Abbreviation: C:\DOCUME~1\vmartin\LOCALS~1\Temp\xml1D.tmp

Spatial_Data_Organization_Information:
 Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: String
 Point_and_Vector_Object_Count: 687

SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: Node, planar graph
 Point_and_Vector_Object_Count: 718

SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: Point
 Point_and_Vector_Object_Count: 4

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Label point
 Point_and_Vector_Object_Count: 34
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: Label point
 Point_and_Vector_Object_Count: 109
 Spatial_Reference_Information:
 Horizontal_Coordinate_System_Definition:
 Planar:
 Grid_Coordinate_System:
 Grid_Coordinate_System_Name: State Plane Coordinate System
 State_Plane_Coordinate_System:
 SPCS_Zone_Identifier: 5004
 Transverse_Mercator:
 Scale_Factor_at_Central_Meridian: 0.999900
 Longitude_of_Central_Meridian: -150.000000
 Latitude_of_Projection_Origin: 54.000000
 False_Easting: 500000.000000
 False_Northing: 0.000000
 Planar_Coordinate_Information:
 Planar_Coordinate_Encoding_Method: coordinate pair
 Coordinate_Representation:
 Abscissa_Resolution: 0.000512
 Ordinate_Resolution: 0.000512
 Planar_Distance_Units: survey feet
 Geodetic_Model:
 Horizontal_Datum_Name: North American Datum of 1927
 Ellipsoid_Name: Clarke 1866
 Semi-major_Axis: 6378206.400000
 Denominator_of_Flattening_Ratio: 294.978698
 Vertical_Coordinate_System_Definition:
 Altitude_System_Definition:
 Altitude_Datum_Name: National Geodetic Vertical Datum of 1929
 Altitude_Resolution: 0.000010
 Altitude_Distance_Units: feet
 Altitude_Encoding_Method: Explicit elevation coordinate included with horizontal coordinates
 Entity_and_Attribute_Information:
 Detailed_Description:
 Entity_Type:
 Entity_Type_Label: e04MStreams_arc
 Entity_Type_Definition: Refer to MOAStreams Features Data Dictionary
 Entity_Type_Definition_Source: Refer to MOAStreams Features Data Dictionary
 Attribute:
 Attribute_Label: OBJECTID
 Attribute_Definition: Internal feature number.
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.
 Attribute:
 Attribute_Label: FNODE_
 Attribute_Definition: Internal node number for the beginning of an arc (from-node)
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Coordinates defining the features.
 Attribute:
 Attribute_Label: TNODE_
 Attribute_Definition: Internal node number for the end of an arc (to-node).

Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Whole numbers that are automatically generated.
 Attribute:
 Attribute_Label: LPOLY_
 Attribute_Definition: Internal node number for the left polygon.
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Whole numbers that are automatically generated.
 Attribute:
 Attribute_Label: RPOLY_
 Attribute_Definition: Internal node number for the right polygon.
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Whole numbers that are automatically generated.
 Attribute:
 Attribute_Label: LENGTH
 Attribute_Definition: Length of feature in internal units.
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Whole numbers that are automatically generated.
 Attribute:
 Attribute_Label: E04MSTREAMS_
 Attribute_Definition: Internal feature number
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Positive real numbers that are automatically generated.
 Attribute:
 Attribute_Label: E3MSTREAMS_ID
 Attribute_Definition: Internal feature number
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.
 Attribute:
 Attribute_Label: SNAP_SRCE
 Attribute_Definition: Source used to snap Map_source data to geo-referenced photography
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: 1M DOQQ
 Enumerated_Domain_Value_Definition: 1 meter USGS Digital Ortho Quarter Quads
 Enumerated_Domain_Value_Definition_Source: Data dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value_Definition_Source: Data dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 2FT ORTHO
 Enumerated_Domain_Value_Definition: 2 Ft Aeromap (1996) Anchorage digital orthophotos
 Enumerated_Domain:
 Enumerated_Domain_Value_Definition_Source: Data dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 3FT ORTHO
 Enumerated_Domain_Value_Definition: 3Ft Aeromap (2000) Girdwood digital orthophoto
 Enumerated_Domain:
 Enumerated_Domain_Value_Definition_Source: Data dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: FEMA

Enumerated_Domain_Value_Definition: FEMA FIRMS
 Enumerated_Domain:
 Enumerated_Domain_Value: 2001 IKONOS
 Enumerated_Domain_Value_Definition: 1 meter IKONOS satellite imagery from Space Imaging
 Enumerated_Domain:
 Enumerated_Domain_Value_Definition_Source: Data dictionary
 Attribute:
 Attribute_Label: MAP_SOURCE
 Attribute_Definition: Mapping source - where existing data was utilized the coverage/data source is listed, where new mapping is performed the method employed is recorded
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: WMS
 Enumerated_Domain_Value_Definition: WMS standardized mapping
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: NETWORK
 Enumerated_Domain_Value_Definition: Modified WTR_WAY legacy digital mapping
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: WTR_WAY
 Enumerated_Domain_Value_Definition: MOA area-wide legacy digital mapping
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: USGS1:25K
 Enumerated_Domain_Value_Definition: Digitized 1:25K USGS DRG
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: USGS1:63K
 Enumerated_Domain_Value_Definition: 1:63K USGS DLG
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: MAJDRN
 Enumerated_Domain_Value_Definition: MOA 1994 Hillside Drainage Study legacy digital mapping
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: TURNAGAIN
 Enumerated_Domain_Value_Definition: MOA Turnagain legacy digital mapping
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: MAP_EDITOR
 Attribute_Definition: Mapping science professional
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: MOA WMS
 Enumerated_Domain_Value_Definition: Municipality of Anchorage, Watershed Management
 Service
 Attribute:
 Attribute_Label: MAPCOMPILR
 Attribute_Definition: Mapping IT professional
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: GeoNorth

Enumerated_Domain_Value_Definition: Mapping Professional organization

Attribute:

Attribute_Label: MAP_DATE

Attribute_Definition: Date of last mapping or survey activity

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: COMP_DATE

Attribute_Definition: Date of last map compilation.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: SEGMENT_ID

Attribute_Definition: This value is a unique identity for a given stream segment reported at the most resolute segmentation level available (usually at the reach or subreach level). It typically includes three code elements concatenated to form the Segment_ID value: 1) a stream alpha mnemonic and numeric code, 2) a reach code, and, where available, 3) a subreach code.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Attribute:

Attribute_Label: RCH

Attribute_Definition: Same as the Stream segment ID. The segment_id uniquely identifies each individual subreach. It is made up of the first two code elements in the Segment_ID (stream and reach codes) but does not include the subreach code element.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: STREAM_ID

Attribute_Definition: This value includes the alpha mnemonic and numeric code that uniquely identifies a whole stream feature. This value is the initial code element in the Segment_ID.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: RCH_SUBRCH

Attribute_Definition: This value includes the concatenated reach and subreach coding for a segment (formatted as nn.nn, i.e., reach.subreach) and is the final code element in the Segment_ID. It is not a unique value.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: PROFILE

Attribute_Definition: A profile type represents a general longitudinal pattern in streambed morphology.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: CHNNL_MOD

Attribute_Definition: Channel modification is the degree to which human activities and structures have directly modified a stream channel, or the extent to which human activities or structures immediately control or influence stream processes and patterns at a range of normal flows (bankfull stage).

Attribute_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 1

Enumerated_Domain_Value_Definition: Unmodified

Enumerated_Domain:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2

Enumerated_Domain_Value_Definition: Slightly Modified

Enumerated_Domain:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:
Enumerated_Domain_Value: 3
Enumerated_Domain_Value_Definition: Moderately Modified
Enumerated_Domain:
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: 4
Enumerated_Domain_Value_Definition: Highly Modified

Attribute:

Attribute_Label: CEM_CLASS
Attribute_Definition: A CEM class identifies the degree of departure of a stream from a dynamic equilibrium condition expected for a given climate, terrain, stream size, and geology (bank and channel material). CEM is an acronym for channel evolution model.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: 1
Enumerated_Domain_Value_Definition: Dynamic Equilibrium
Enumerated_Domain:
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: 2
Enumerated_Domain_Value_Definition: Degrading
Enumerated_Domain:
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: 3
Enumerated_Domain_Value_Definition: Widening and Aggrading
Enumerated_Domain:
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: 4
Enumerated_Domain_Value_Definition: Aggrading

Attribute:

Attribute_Label: FLDPRONE_E
Attribute_Definition: A qualifier for flood prone width measurements.
Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: =
Enumerated_Domain_Value_Definition: Real Fldprone_W value = reported
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: >
Enumerated_Domain_Value_Definition: Real Fldprone_W value >= 3x BF_W
Enumerated_Domain_Value_Definition_Source: Data Dictionary
Enumerated_Domain:
Enumerated_Domain_Value: NULL
Enumerated_Domain_Value_Definition: FldProne_W not measured
Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: FLDPRONE_W
Attribute_Definition: Flood Prone Width, the bank-to-bank width (in feet) measured at an elevation above the channel bottom (at the thalweg) of 2X the maximum bankfull depth.

Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: MAX_BF_D
 Attribute_Definition: Maximum depth (in feet) of stream reach calculated from measurements taken at the thalwegs of representative riffles.
 Attribute_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: BF_W
 Attribute_Definition: Mean stream width (in feet) at the mean annual flood stage calculated from measurements taken at representative riffles.
 Attribute_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: BF_D
 Attribute_Definition: Mean stream depth (in feet) at the mean annual flood stage calculated from measurements taken across representative riffles.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: -999
 Enumerated_Domain_Value_Definition: null
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: SINUOSITY
 Attribute_Definition: The ratio of the stream centerline length to its down-valley length, or the ratio of channel slope to valley slope, dependent upon the measurement methodology used.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Attribute:
 Attribute_Label: SIN_TYPE
 Attribute_Definition: This value indicates the method used in calculating the sinuosity value (SINUOSITY).
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: 1
 Enumerated_Domain_Value_Definition: Map Measurement
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 2
 Enumerated_Domain_Value_Definition: Field Estimate
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 3
 Enumerated_Domain_Value_Definition: Field Measurement
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: -999
 Enumerated_Domain_Value_Definition: null
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: BFW_BFD
 Attribute_Definition: The ratio of the mean bankfull width to the mean bankfull depth (BF_W/BF_D).
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:

Attribute:

Attribute_Label: ENTRNCH_E

Attribute_Definition: A qualifier for ENTRNCHMNT measurements.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain_Value: =

Enumerated_Domain_Value_Definition: Real ENTRNCHMNT value = reported value

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: >

Enumerated_Domain_Value_Definition: Real ENTRNCHMNT value >= reported value

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: NULL

Enumerated_Domain_Value_Definition: ENTRNCHMNT not measured

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: ENTRNCHMNT

Attribute_Definition: The ratio of floodprone width to bankfull width.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: WATER_DEPT

Attribute_Definition: Actual water depth measured at riffle thalweg at MAP_DATE.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: RCH_SLOPE

Attribute_Definition: The slope of a stream along a reach. The slope of the reach is calculated as the ratio ($\Delta E/L$) of the difference, ΔE , in water surface elevations between the end points of a reach, and the length of the stream reach, L .

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: SLOPE_TYPE

Attribute_Definition: This value indicates the method used in calculating the slope value (RCH_SLOPE).

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1

Enumerated_Domain_Value_Definition: Map Measurement

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2

Enumerated_Domain_Value_Definition: Field Estimate

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 3

Enumerated_Domain_Value_Definition: Field Measurement

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: -999

Enumerated_Domain_Value_Definition: null

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: BED_MATL

Attribute_Definition: Predominant stream bed sediment that may be mobilized by normal flood flow events (return periods of less than 5 years).

Attribute_Definition_Source: Data Dictionary

Attribute:

Enumerated_Domain:

Enumerated_Domain_Value: 1

Enumerated_Domain_Value_Definition: clay/silt (particles < 100micron diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2

Enumerated_Domain_Value_Definition: silt/sand (100micron < particles < 420micron diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 3

Enumerated_Domain_Value_Definition: sand/gravel (420micron < particles < 25mm diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition: gravel/cobble (25mm < particles < 150mm diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 5

Enumerated_Domain_Value_Definition: cobble/boulder (particles > 150mm diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 6

Enumerated_Domain_Value_Definition: peat/root (predominantly fine-grained organic-rich sediment)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 7

Enumerated_Domain_Value_Definition: bedrock/cemented (indurated rock, concrete or other strongly cemented material)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute_Label: BANK_MATL

Attribute_Definition: Native, in-place geologic or human-placed materials that is exposed in a stream bank section between the top of the stream channel and the bankfull stage.

Attribute_Definition_Source: Data Dictionary

Attribute:

Enumerated_Domain:

Enumerated_Domain_Value: 1

Enumerated_Domain_Value_Definition: clay/silt (particles < 100micron diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2

Enumerated_Domain_Value_Definition: silt/sand (100micron < particles < 420micron diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 3

Enumerated_Domain_Value_Definition: sand/gravel (420micron < particles < 25mm diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition: gravel/cobble (25mm < particles < 150mm diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 5

Enumerated_Domain_Value_Definition: cobble/boulder (particles > 150mm diameter)

Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 6
 Enumerated_Domain_Value_Definition: peat/root (predominantly organic material)
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 7
 Enumerated_Domain_Value_Definition: bedrock/cemented (indurated rock, concrete or other strongly cemented material or armor)
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute_Label: CANOPY
 Attribute_Definition: Any vegetative cover extending over all or part of the stream water surface at bankfull stage.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: 1
 Enumerated_Domain_Value_Definition: Canopy <10%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 2
 Enumerated_Domain_Value_Definition: 10% < canopy < 30%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 3
 Enumerated_Domain_Value_Definition: 30% < canopy < 50%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 4
 Enumerated_Domain_Value_Definition: 50% < canopy < 75%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 5
 Enumerated_Domain_Value_Definition: 75% < canopy
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: BNK_UNDRCT
 Attribute_Definition: Any stream channel area that is active at flows less than bankfull and is significantly roofed by overarching bank materials.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: 1
 Enumerated_Domain_Value_Definition: <10%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 2
 Enumerated_Domain_Value_Definition: 10% < undercut < 30%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 3
 Enumerated_Domain_Value_Definition: 30% < undercut < 50%
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition: 50% < undercut < 75%
Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 5

Enumerated_Domain_Value_Definition: >75%

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute_Label: INVERT_HAB

Attribute_Definition: A qualitative index value that summarizes the presence of critical stable substrate that may provide for insect colonization and periphyton attachment. In this context a valid index value between 1 and 6 represents the increasingly significant combined presence of submerged logs and large woody debris, fine woody debris, leaf pack, under-cut banks, cobbles and boulders, and gravel.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain:

Enumerated_Domain_Value: 1

Enumerated_Domain_Value_Definition: Poor invertebrate habitat

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2

Enumerated_Domain_Value_Definition:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 3

Enumerated_Domain_Value_Definition:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 5

Enumerated_Domain_Value_Definition:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 6

Enumerated_Domain_Value_Definition: Good invertebrate habitat

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: FISH_HAB

Attribute_Definition: A qualitative index value that summarizes the presence of critical, stable channel structures or physical features that provide fish habitat. In this context a valid index value between 1 and 9 represents the increasingly significant combined presence of logs and large woody debris, root mats and wads, undercut banks, overhanging vegetation, macrophyte beds, cobbles and boulders, riffles, deep pools, and isolated or backwater pools.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 12

Enumerated_Domain_Value_Definition: Logs Poor fish habitat

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 13

Enumerated_Domain_Value_Definition:

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 14
 Enumerated_Domain_Value_Definition:
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 15
 Enumerated_Domain_Value_Definition:
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 16
 Enumerated_Domain_Value_Definition:
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 17
 Enumerated_Domain_Value_Definition:
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 18
 Enumerated_Domain_Value_Definition:
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 19
 Enumerated_Domain_Value_Definition:
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 20
 Enumerated_Domain_Value_Definition: Good fish habitat
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: ANADROMOUS
 Attribute_Definition: USF&W anadromous stream data reference ID.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: NHD_ID
 Attribute_Definition: USGS National Hydrographic Data reference ID.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: STRM_NAME
 Attribute_Definition: The commonly used or mapped name of a stream.
 Attribute_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: FLOW_TYPE
 Attribute_Definition: This value represents the temporal character of flow along a reach.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: perennial
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: intermittent
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: ROUTE_TYPE
 Attribute_Definition: This value represents the character of the hydraulic continuity of a stream reach within the context of the whole stream feature.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

- Enumerated_Domain:
 - Enumerated_Domain_Value: Source
 - Enumerated_Domain_Value_Definition: Stream reach that flows directly from a stream source
 - Enumerated_Domain_Value_Definition_Source: Data Dictionary
- Enumerated_Domain:
 - Enumerated_Domain_Value: Stem
 - Enumerated_Domain_Value_Definition: An intermediary network reach preceded and proceeded by other reaches of the same stream
 - Enumerated_Domain_Value_Definition_Source: Data Dictionary
- Enumerated_Domain:
 - Enumerated_Domain_Value: Continuity
 - Enumerated_Domain_Value_Definition: A Reach representing a network connection of a unique stream feature across stillwater or other spatial breaks in that stream feature
 - Enumerated_Domain_Value_Definition_Source: Data Dictionary
- Enumerated_Domain:
 - Enumerated_Domain_Value: Outlet
 - Enumerated_Domain_Value_Definition: Stream reach that flows into another receiving water body.
 - Enumerated_Domain_Value_Definition_Source: Data Dictionary
- Enumerated_Domain:
 - Enumerated_Domain_Value: Piped
 - Enumerated_Domain_Value_Definition: a piped route
 - Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: COMMENTS

Attribute_Definition: Free format comments from mapping science professional.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: WATERSHED

Attribute_Definition: Name of the associated MOA watershed feature.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: SUBWTRSHED

Attribute_Definition: Name of the associated MOA subwatershed feature.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: ENABLED

Attribute_Definition: Status of feature participation in a geometric network.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: SHAPE

Attribute_Definition: Feature geometry.

Attribute_Definition_Source: ESRI

Attribute_Domain_Values:

- Unrepresentable_Domain: Coordinates defining the features.

Attribute:

Attribute_Label: MAP_ACURCY

Attribute_Definition: Mapping method and associated accuracy.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

- Enumerated_Domain:
 - Enumerated_Domain_Value: 1
 - Enumerated_Domain_Value_Definition: Photo Interpretive Mapping (better than 25m, estimated)
 - Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2
 Enumerated_Domain_Value_Definition: An Reconnaissance Mapping (better than 15m, estimated)
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 3
 Enumerated_Domain_Value_Definition: Base Map Survey (better than 11.5m, controlled survey confirmed)
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 4
 Enumerated_Domain_Value_Definition: Low Resolution GPS Survey (continuous controlled GPS survey)
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 5
 Enumerated_Domain_Value_Definition: High Resolution Land Survey (continuous controlled land survey)
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: -999
 Enumerated_Domain_Value_Definition: Null
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: REVISIONNO
 Attribute_Definition: Revision.version information for published mapping data.
 Attribute_Definition_Source: Data Dictionary
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: 1.11
 Enumerated_Domain_Value_Definition: [not provided]
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 1.12
 Enumerated_Domain_Value_Definition: Prior to Year 2001 Edits
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 1.13
 Enumerated_Domain_Value_Definition: Year 2001 Edits
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 2.0
 Enumerated_Domain_Value_Definition: Year 2002 Edits
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Enumerated_Domain:
 Enumerated_Domain_Value: 3.0
 Enumerated_Domain_Value_Definition: Year 2003 Edits
 Enumerated_Domain_Value_Definition_Source: Data Dictionary
 Attribute:
 Attribute_Label: SHAPE_Length
 Attribute_Definition: Length of feature in internal units.
 Attribute_Definition_Source: ESRI
 Attribute_Domain_Values:
 Unrepresentable_Domain: Positive real numbers that are automatically generated.
 Entity_Type:
 Entity_Type_Label: e04MStreams_node
 Entity_Type_Definition: Refer to MOAStreams Features Data Dictionary

Entity_Type_Definition_Source: Refer to MOAStreams Features Data Dictionary

Attribute:
Attribute_Label: ARC_
Attribute_Definition: Internal feature number.
Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:
Attribute_Label: ANCILLARYROLE
Attribute_Definition: Geometric network characterization
Attribute_Definition_Source: ESRI

Attribute:
Attribute_Label: ANADROMOUS
Attribute_Definition: USF&W anadromous stream data reference ID.
Attribute_Definition_Source: Data Dictionary

Attribute:
Attribute_Label: COMMENTS
Attribute_Definition: Free format comments from mapping science professional.
Attribute_Definition_Source: Data Dictionary

Attribute:
Attribute_Label: E04MSTREAMS_
Attribute_Definition: Internal feature number
Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain: Positive real numbers that are automatically generated.

Attribute:
Attribute_Label: E3MSTREAMS_ID
Attribute_Definition: Internal feature number
Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:
Attribute_Label: ENABLED
Attribute_Definition: Status of feature participation in a geometric network.
Attribute_Definition_Source: ESRI

Attribute:
Attribute_Label: NHD_ID
Attribute_Definition: USGS National Hydrographic Data reference ID
Attribute_Definition_Source: Data Dictionary

Attribute:
Attribute_Label: NODE_TYPE
Attribute_Definition: Type of node as characterized by service that node provides steam network
Attribute_Definition_Source: Data Dictionary

Attribute:
Attribute_Label: OBJECTID
Attribute_Definition: Internal feature number
Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain: Sequential unique whole numbers that are automatically generated.

Attribute:
Attribute_Label: RCH_SUBRCH
Attribute_Definition: This value includes the concatenated reach and subreach coding for a segment(formatted as nn.nn, i.e., reach.subreach) and is the final code element in the Segment_ID. It is not a unique value.
Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: REVISIONNO

Attribute_Definition: Revision.version information for published mapping data.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1.11

Enumerated_Domain_Value_Definition: [not provided]

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 1.12

Enumerated_Domain_Value_Definition: Prior to Year 2001 Edits

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 1.13

Enumerated_Domain_Value_Definition: Year 2001 Edits

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 2.0

Enumerated_Domain_Value_Definition: Year 2002 Edits

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Enumerated_Domain:

Enumerated_Domain_Value: 3.0

Enumerated_Domain_Value_Definition: Year 2003 Edits

Enumerated_Domain_Value_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: SEGMENT_ID

Attribute_Definition: This value is a unique identity for a given stream segment reported at the most resolute segmentation level available (usually at the reach or subreach level). It typically includes three code elements concatenated to form the Segment_ID value: 1) a stream alpha mnemonic and numeric code, 2) a reach code, and, where available, 3) a subreach code.

Attribute_Definition_Source: Data Dictionary

Attribute_Domain_Values:

Attribute:

Attribute_Label: SHAPE

Attribute_Definition: Feature geometry.

Attribute_Definition_Source: ESRI

Attribute:

Attribute_Label: STREAM_ID

Attribute_Definition: This value includes the alpha mnemonic and numeric code that uniquely identifies a whole stream feature. This value is the initial code element in the Segment_ID.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: STRM_NAME

Attribute_Definition: The commonly used or mapped name of a stream.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: SUBWTRSHED

Attribute_Definition: Name of the associated MOA subwatershed feature.

Attribute_Definition_Source: Data Dictionary

Attribute:

Attribute_Label: WATERSHED

Attribute_Definition: Name of the associated MOA watershed feature.

Attribute_Definition_Source: Data Dictionary

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:
Contact_Person: Phil Manke
Contact_Organization: MOA-DPW-Technical Services
Contact_Position: IT Supervisor
Contact_Address:
Address: Dept of Public Works, PO BOX 196650
City: Anchorage
State_or_Province: AK
Postal_Code: 99516-6650
Country: USA
Contact_Voice_Telephone: (907) 343-8220
Contact_Electronic_Mail_Address: MankePJ@muni.org
Hours_of_Service: 8-5
Contact_Instructions: Please use phone as primary contact interface
Resource_Description: Downloadable Data
Standard_Order_Process:
Digital_Form:
Digital_Transfer_Information:
Transfer_Size: 1.678
Metadata_Reference_Information:
Metadata_Date: 20031024
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: MOA-DPW-WMS
Contact_Person: Scott Wheaton
Contact_Position: Watershed Scientist
Contact_Address:
Address_Type: mailing address
Address: Department of Public Works, P.O. Box 196650
City: Anchorage
State_or_Province: AK
Postal_Code: 99519-6650
Country: USA
Contact_Voice_Telephone: (907) 343-8117
Contact_Electronic_Mail_Address: WheatonSR@muni.org
Hours_of_Service: 8-5
Contact_Instructions: Please use phone as primary contact interface
Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Time_Convention: local time
Metadata_Access_Constraints:
Refer to Municipality of Anchorage GIS Web page
(<http://www.ci.anchorage.ak.us/gis/gisinternet/htmls/gishome.htm>)
for official policy on use of MOA GIS data.
Metadata_Use_Constraints:
Refer to Municipality of Anchorage GIS Web page
(<http://www.ci.anchorage.ak.us/gis/gisinternet/htmls/gishome.htm>)
for official policy on use of MOA GIS data.
Metadata_Extensions:
Online_Linkage: <http://www.esri.com/metadata/esriprof80.html>
Profile_Name: ESRI Metadata Profile