

# Geomorphic Features/Turnover-LR Turnover

## Shapefile



## Tags

Susitna-Watana Hydroelectric Project, Susitna River, Chulitna River, Talkeetna River, Alaska, Geomorphology, 1950s, 1980s, 2012

## Summary

This turnover shapefile provides a graphical and quantitative determination of the area of floodplain that was converted to river channel and the area of river channel that was converted to floodplain over the period from the 1950s to 2012 in the Lower Susitna River Segment.

## Description

The overall goal of this effort was to collect information on geomorphic features and perform a turnover analysis in areas with the potential to be affected by construction and operation of the proposed Susitna-Watana Hydroelectric Project in Alaska.

This shapefile is part of the mapping and data analysis related to the proposed Susitna-Watana hydroelectric project and is presented in "Mapping of Geomorphic Features and Turnover within the Middle and Lower Susitna River Segments from 1950s, 1980s, and Current Aerials Technical Memorandum" prepared for Alaska Energy Authority by Tetra Tech, Inc. in September 2014. This data was developed as part of the Susitna-Watana Hydroelectric Project Geomorphology Study (Study 6.5). The effort is identified in the RSP Study 6.5 Section 6.5.4.4 and ISR Study 6.5 Section 7.2.1.4 "Assess Geomorphic Change Middle and Lower Susitna River Segments." The technical memorandum was posted on the "Documents" page on Susitna-WatanaHydro.org on September 26, 2014 and was submitted to FERC under the "Second Set of 2014 Technical Memoranda for Initial Study Plan Meetings of Alaska Energy Authority under P-14241" on September 29, 2014.

An initial version of Geomorphic Feature Mapping was presented in 2013 in the Technical Memorandum "Mapping of Geomorphic Features within the Middle and Lower Susitna River Segments from 1980s and 2012 Aerials" prepared for Alaska Energy Authority by Tetra Tech, Inc. in March 2013. This initial Technical Memorandum was posted on the "Documents" page on Susitna-WatanaHydro.org under "2012 Environmental Studies" and delivered as part of ISR Study 6.5 Section 5.4.1 Electronic Data. The electronic data included 1980s Middle River Geomorphic Features (file name: ISR\_6\_5\_GEO\_1980sM\_GeoFeAqMHab.shp), 2012 Middle River Mapped Geomorphic Features (file name: ISR\_6\_5\_GEO\_2012M\_GeoFeAqMHab.shp), 1980s Lower River Geomorphic Features (file name: ISR\_6\_5\_GEO\_1983\_L\_GeomFeat.shp), and 2012 Lower River Geomorphic Features (file name: ISR\_6\_5\_GEO\_1983\_L\_GeomFeat.shp).

This shapefile is part of a set of new and updated shapefiles used for mapping and data analysis of Geomorphic Features and Turnover in the Middle and Lower Susitna River segments. The following shapefiles comprise the set of shapefiles used for the updated data analysis: 1950s Lower River Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_1950s\_LR\_GeomFeat.shp), 1980s Lower River Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_1983\_LR\_GeomFeat.shp), 2012 Lower River Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_2012\_LR\_GeomFeat.shp), 1950s Middle River Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_1950s\_MR\_GeomFeat.shp), 1980s Middle River Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_1980s\_MR\_GeomFeat.shp), 2012 Middle River Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_2012\_MR\_GeomFeat.shp), 2013 Middle River/Three Rivers

Confluence Area Geomorphic Features (i.e MR-8) (file name: ISR\_MTG\_6\_5\_GEO\_2013\_MR\_3RC\_GeomFeat.shp), 2013 Lower River/Three Rivers Confluence Area Geomorphic Features (file name: ISR\_MTG\_6\_5\_GEO\_2013\_LR\_3RC\_GeomFeat.shp), Middle River Turnover (file name: ISR\_MTG\_6\_5\_GEO\_MR\_Turnover.shp), Lower River Turnover (file name: ISR\_MTG\_6\_5\_GEO\_LR\_Turnover.shp), Middle River Channel 2012 to 2013 Channel Erosion (file name: ISR\_MTG\_6\_5\_GEO\_2012to2013\_MR\_ChannelErosion.shp), Three Rivers Confluence 2012 to 2013 Channel Erosion (file name: ISR\_MTG\_6\_5\_GEO\_2012to2013\_3RC\_ChannelErosion.shp). Primary updates included the addition of 1950s Middle and Lower River geomorphic feature mapping, development of Middle and Lower River Turnover shapefiles, the extension of geomorphic feature mapping on the lower reaches of the Chulitna and Talkeetna rivers, and the development of shapefiles to assess channel change between 2012 and 2013 as the result of large flow events. Updates to 1980s and 2012 Middle and Lower River geomorphic feature mapping was also conducted.

The mapping presented herein, as part of the new and updated shapefile set, supersedes the mapping presented in the initial technical memorandum and delivered with the ISR.

Geomorphic features were digitized from aerial orthoimagery captured during the 1950s, 1980s, and 2012. Delineated geomorphic features in this shapefile are limited to geomorphic reaches LR-1 through LR-6, CL-1, TK-1, and YN-1. An area of geomorphic delineation was developed to define the outer limit of the geomorphic features to be mapped. The limit is referred to as the "geomorphic boundary." It encompasses the active channel area and serves as an estimate of the outer limits of areas that may be affected by the Project in terms of hydraulics and channel morphology. The boundary was defined in coordination with the Riparian Instream Flow Study and the Botanical Resources Riparian Study. The lateral limits of the geomorphic boundary were set using the procedure described below.

The geomorphic boundary was delineated at an approximate scale of 1:3000 using the 2012 color aerials and images from the 2011 Matanuska-Susitna Borough light detection and ranging (LiDAR) survey. The outer limits were initially identified following the riverward edge of a terrace that typically ranged from approximately 20 to 40 feet above the main channel water-surface elevation at the time of this 2011 LiDAR survey. In areas where steep canyon or hillsides existed rather than a terrace, these features were followed at an elevation of approximately 20 to 40 feet above the adjacent channel water-surface elevation. In locations where tributaries joined the main channel and cut through the terrace or canyon walls, the boundary was extended upstream until the tributary water-surface elevation matched that of the main channel terrace at the tributary mouth. The corridor was then narrowed in some locations to reflect man-made features that constrain the river, primarily the railroad embankment. It was assumed that the Alaska Railroad will maintain this alignment, and the Susitna River will not migrate through the embankment; if it does, the Railroad will repair and reestablish the embankment in its original location. In a few locations, where hydrologic connections were judged to continue through the railroad embankment to features on the landward side of the embankment, the low-lying area landward of the railroad was included within the geomorphic boundary. This was done in order to include these features that may be affected by changes in water-surface elevations created by the Project. Lastly, a minimum buffer of 150 feet was added along the main channel water's edge, except in locations where the railroad embankment was identified as the outer limits of the boundary. For this exception, the boundary was not offset 150 feet and the railroad embankment formed the geomorphic boundary. The boundary also extended 3.1 miles up the Yentna River. The area of geomorphic delineation was extended an additional 5.1 miles to a total of 10.0 miles on the Talkeetna River and was extended 9.1 miles to a total of 12.4 miles on the Chulitna River.

Geomorphic feature delineations were made from the aerial photographs using ArcGIS 10.0 at a scale of 1:3000. All geomorphic feature delineations were made within the defined geomorphic boundary. The geomorphic features followed defined bank lines and included the wetted feature, exposed substrate, and other low-lying areas within the banks of the feature. Geomorphic features do not have to have a wetted connection to the Susitna River. This connection does not have to be direct, but could be through one or more additional geomorphic features. For example, an upland slough could connect to a side slough, which connects to a side channel and ultimately the main channel. If the water body was isolated and there was not a connection to the Susitna River, then the wetted area was mapped as additional open water (AOW).

The Geomorphology Program Lead and the Geomorphology Task Lead provided training to the

senior hydraulic engineers/geomorphologist and the GIS analysts to ensure appropriate identification and application of the classification categories. Senior hydraulic engineers/geomorphologists reviewed the feature and type delineations for completeness, adherence to the classifications, and scale criteria. The senior hydraulic engineers/geomorphologists frequently consulted with the Geomorphology Program Lead and the Geomorphology Task Lead on the application of the definitions and for advice when differentiation between geomorphic classifications and/or features was challenging.

Markups were provided to the staff performing the delineation in comments on the GIS files, marked up portable document files (PDFs), and written instructions. Comments were provided for both specific items such as changing the classification of a specific feature, type, or general concerns such as the quality of the digitization and proper interpretation of the definitions. The GIS analysts performed the corrections per the instructions of the reviewers. The reviewers conducted a back-check of the changes made to the classifications and provided additional instructions on changes. The correction/ review cycle was repeated if necessary. Throughout the process, the senior hydraulic engineers consulted with the Geomorphology Program Lead or the Geomorphology Task Lead to refine definitions and help make decisions for unique situations encountered. The files were then reviewed for topology errors such as gaps between delineations (slivers) and overlaps. The summed areas of the geomorphic feature classes were compared to the geomorphic reach outer boundary to ensure complete and non-overlapping coverage.

The geomorphic features were then simplified, with all channel features comprising the Susitna River channel (MC, BIC, BAB, SCC, US, SS) merged as Channel features, and all other features (TR, VI, BG, AOW) merged as Land (Floodplain) Features. The 1950s, 1980s, and 2012 simplified features were then union-ed to create one turnover shapefile, identifying polygons by whether they were floodplain or channel in each time period. The turnover shapefile provides a graphical and quantitative determination of the area of floodplain that was converted to river channel and the area of river channel that was converted to floodplain over the period from the 1950s to 2012.

## Credits

Alaska Energy Authority;  
Tetra Tech

## Use limitations

None

## Extent

<b>West</b>	-150.908929	<b>East</b>	-149.926072
<b>North</b>	62.482086	<b>South</b>	61.274508

## Scale Range

<b>Maximum (zoomed in)</b>	1:5,000
<b>Minimum (zoomed out)</b>	1:150,000,000

## ArcGIS Metadata ►

### Topics and Keywords ►

\* **CONTENT TYPE** Downloadable Data  
EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No

**PLACE KEYWORDS** Susitna River, Chulitna River, Talkeetna River, Alaska

**TEMPORAL KEYWORDS** 1950s, 1980s, 2012

THEME KEYWORDS Susitna-Watana Hydroelectric Project, Susitna River, Geomorphology

[Hide Topics and Keywords ▲](#)

## Citation ►

TITLE Geomorphic Features/Turnover-LR Turnover  
 ALTERNATE TITLES SuWa\_6\_5\_LR\_Turnover\_20170630  
 PUBLICATION DATE 2017-06-30 00:00:00

PRESENTATION FORMATS digital map  
 FGDC GEOSPATIAL PRESENTATION FORMAT vector digital data

[Hide Citation ▲](#)

## Citation Contacts ►

RESPONSIBLE PARTY  
 ORGANIZATION'S NAME Tetra Tech, Inc.  
 CONTACT'S ROLE originator

[Hide Citation Contacts ▲](#)

## Resource Details ►

DATASET LANGUAGES English (UNITED STATES)  
 DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

STATUS completed  
 SPATIAL REPRESENTATION TYPE vector

\* PROCESSING ENVIRONMENT Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.4.0.5524

CREDITS  
 Alaska Energy Authority;  
 Tetra Tech

ARCGIS ITEM PROPERTIES  
 \* NAME SuWa\_6\_5\_LR\_Turnover\_20170630  
 \* SIZE 33.433  
 \* LOCATION file:///D:/D-VR1  
 \H\$\Metadata\GeomFeat\_Turnover\GeomFeat\_Turnover\SuWa\_6\_5\_LR\_Turnover\_20170630  
 \SuWa\_6\_5\_LR\_Turnover\_20170630.shp  
 \* ACCESS PROTOCOL Local Area Network

[Hide Resource Details ▲](#)

## Extents ►

EXTENT  
 DESCRIPTION  
 ground condition

TEMPORAL EXTENT  
 BEGINNING DATE 2014-03-01 00:00:00  
 ENDING DATE 2014-10-01 00:00:00

## EXTENT

## GEOGRAPHIC EXTENT

## BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching

\* WEST LONGITUDE -150.908929

\* EAST LONGITUDE -149.926072

\* NORTH LATITUDE 62.482086

\* SOUTH LATITUDE 61.274508

\* EXTENT CONTAINS THE RESOURCE Yes

## EXTENT IN THE ITEM'S COORDINATE SYSTEM

\* WEST LONGITUDE 1486641.091866

\* EAST LONGITUDE 1652923.177076

\* SOUTH LATITUDE 2658783.150955

\* NORTH LATITUDE 3099234.619160

\* EXTENT CONTAINS THE RESOURCE Yes

[Hide Extents ▲](#)**Resource Points of Contact ►**

## POINT OF CONTACT

ORGANIZATION'S NAME Alaska Energy Authority

CONTACT'S ROLE owner

## CONTACT INFORMATION ►

## PHONE

VOICE 907-771-3000

FAX 907-771-3044

## ADDRESS

TYPE both

DELIVERY POINT 813 West Northern Lights Boulevard

CITY Anchorage

ADMINISTRATIVE AREA AK

POSTAL CODE 99503

COUNTRY US

E-MAIL ADDRESS [SUWAhelp@aidea.org](mailto:SUWAhelp@aidea.org)[Hide Contact information ▲](#)

## POINT OF CONTACT

ORGANIZATION'S NAME Tetra Tech

CONTACT'S POSITION Principal Investigator for Geomorphology Study

CONTACT'S ROLE principal investigator

## CONTACT INFORMATION ►

## PHONE

VOICE 206.728.9655

FAX 206.728.9670

## ADDRESS

TYPE both

DELIVERY POINT 1420 5th Ave., Suite 550

CITY Seattle

ADMINISTRATIVE AREA WA

POSTAL CODE 98101

COUNTRY US

E-MAIL ADDRESS [info@tetrattech.com](mailto:info@tetrattech.com)

[Hide Contact information ▲](#)

[Hide Resource Points of Contact ▲](#)

## Resource Maintenance ►

### RESOURCE MAINTENANCE

UPDATE FREQUENCY not planned

[Hide Resource Maintenance ▲](#)

## Resource Constraints ►

### LEGAL CONSTRAINTS

#### LIMITATIONS OF USE

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### CONSTRAINTS

#### LIMITATIONS OF USE

None

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## Spatial Reference ►

### ARCGIS COORDINATE SYSTEM

\* TYPE Projected

\* GEOGRAPHIC COORDINATE REFERENCE GCS\_North\_American\_1983

\* PROJECTION NAD\_1983\_StatePlane\_Alaska\_4\_FIPS\_5004\_Feet

\* COORDINATE REFERENCE DETAILS

#### PROJECTED COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 102634

X ORIGIN -16806300

Y ORIGIN -52448700

XY SCALE 137255069.87923574

Z ORIGIN -100000

Z SCALE 10000

M ORIGIN -100000

M SCALE 10000

XY TOLERANCE 0.0032808333333333331

Z TOLERANCE 0.001

M TOLERANCE 0.001

HIGH PRECISION true

LATEST WELL-KNOWN IDENTIFIER 102634

WELL-KNOWN TEXT PROJCS["NAD\_1983\_StatePlane\_Alaska\_4\_FIPS\_5004\_Feet",GEOGCS["GCS\_North\_American\_1983",DATUM["D\_North\_American\_1983",SPHEROID["GRS\_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Transverse\_Mercator"],PARAMETER["False\_Easting",1640416.666666667],PARAMETER["False\_Northing",0.0],PARAMETER

```
["Central_Meridian",-150.0],PARAMETER["Scale_Factor",0.9999],PARAMETER
["Latitude_Of_Origin",54.0],UNIT["Foot_US",0.3048006096012192],AUTHORITY
["Esri",102634]]
```

#### REFERENCE SYSTEM IDENTIFIER

\* VALUE 102634  
 \* CODESPACE Esri  
 \* VERSION 8.0.1

[Hide Spatial Reference ▲](#)

## Spatial Data Properties ►

#### VECTOR ►

\* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

#### GEOMETRIC OBJECTS

FEATURE CLASS NAME SuWa\_6\_5\_LR\_Turnover\_20170630  
 \* OBJECT TYPE composite  
 \* OBJECT COUNT 19808

[Hide Vector ▲](#)

#### ARCGIS FEATURE CLASS PROPERTIES ►

FEATURE CLASS NAME SuWa\_6\_5\_LR\_Turnover\_20170630  
 \* FEATURE TYPE Simple  
 \* GEOMETRY TYPE Polygon  
 \* HAS TOPOLOGY FALSE  
 \* FEATURE COUNT 19808  
 \* SPATIAL INDEX FALSE  
 \* LINEAR REFERENCING TRUE

[Hide ArcGIS Feature Class Properties ▲](#)

[Hide Spatial Data Properties ▲](#)

## Geoprocessing history ►

[Hide Geoprocessing history ▲](#)

## Distribution ►

#### DISTRIBUTOR ►

##### CONTACT INFORMATION

ORGANIZATION'S NAME Alaska Energy Authority  
 CONTACT'S ROLE distributor

##### CONTACT INFORMATION ►

##### PHONE

VOICE 907-771-3000  
 FAX 907-771-3044

##### ADDRESS

TYPE both  
 DELIVERY POINT 813 West Northern Lights Boulevard  
 CITY Anchorage  
 ADMINISTRATIVE AREA AK  
 POSTAL CODE 99503

COUNTRY US  
E-MAIL ADDRESS SUWAhelp@aidea.org

*Hide Contact information ▲*

ORDERING PROCESS  
TERMS AND FEES None

*Hide Distributor ▲*

DISTRIBUTION FORMAT  
\* NAME Shapefile

TRANSFER OPTIONS  
\* TRANSFER SIZE 33.433

ONLINE SOURCE  
LOCATION [http://gis.suhydro.org/SuWa/06-GEO/6.05-GEO/GIS/GeomFeat\\_Turnover](http://gis.suhydro.org/SuWa/06-GEO/6.05-GEO/GIS/GeomFeat_Turnover)

ONLINE SOURCE  
LOCATION <http://www.susitna-watanahydro.org/type/documents/>  
NAME "Mapping of Geomorphic Features and Turnover within the Middle and Lower Susitna River Segments from 1950s, 1980s, and Current Aerials TM" under "September 26, 2014; Technical Memorandum Filings". There are a total of 16 links associated with this technical memorandum. There is one link for the following: (1) TM, (2) Appendix A, (3) Appendix B, (4) Appendix C – Part 1, (5) Appendix C – Part 2, (6) Appendices D, E, & F, (7) Appendices G & H, (8) Appendices I & J, (9) Appendix K, (10) Appendix L, (11) Appendix M, (12) Appendices N & O, (13) Appendices P & Q, (14) Appendix R, (15) Appendix S, and (16) Appendix T.

*Hide Distribution ▲*

## Fields ►

DETAILS FOR OBJECT [SuWa\\_6\\_5\\_LR\\_Turnover\\_20170630](#) ►

\* TYPE Feature Class  
\* ROW COUNT 19808

DEFINITION  
Delineated turnover features

DEFINITION SOURCE  
Tetra Tech, Inc.

FIELD [Area\\_Sqft](#) ►

\* ALIAS Area\_Sqft  
\* DATA TYPE Double  
\* WIDTH 19  
\* PRECISION 0  
\* SCALE 0

FIELD DESCRIPTION  
Area of the delineated polygon containing the geomorphic feature

DESCRIPTION SOURCE  
ESRI

DESCRIPTION OF VALUES  
Numerical Value



*Hide Field Area\_Sqft ▲*

FIELD Shape ►

- \* ALIAS Shape
- \* DATA TYPE Geometry
- \* WIDTH 0
- \* PRECISION 0
- \* SCALE 0

FIELD DESCRIPTION

Feature geometry.

DESCRIPTION SOURCE

ESRI

DESCRIPTION OF VALUES

Coordinates defining the features.

*Hide Field Shape ▲*

FIELD GeomReach ►

- \* ALIAS GeomReach
- \* DATA TYPE String
- \* WIDTH 20
- \* PRECISION 0
- \* SCALE 0

FIELD DESCRIPTION

Geomorphic Reach of the 1950s polygon - the geomorphic reach the polygon is contained within.

DESCRIPTION SOURCE

Tetra Tech

LIST OF VALUES

VALUE CL-1

DESCRIPTION CL-1

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE MR-8

DESCRIPTION MR-8

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-6

DESCRIPTION LR-6

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-5

DESCRIPTION LR-5

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE YN-1

DESCRIPTION YN-1

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE TK-1

DESCRIPTION TK-1

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-4

DESCRIPTION LR-4

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-3

DESCRIPTION LR-3

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-2

DESCRIPTION LR-2

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-1

DESCRIPTION LR-1

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

#### DESCRIPTION OF VALUES

Geomorphic Reach of the 1950s polygon - the geomorphic reach the polygon is contained within.

*Hide Field GeomReach ▲*

#### FIELD FID ►

\* ALIAS FID

\* DATA TYPE OID

\* WIDTH 4

\* PRECISION 0

\* SCALE 0

#### FIELD DESCRIPTION

Internal feature number.

#### DESCRIPTION SOURCE

ESRI

#### DESCRIPTION OF VALUES

Sequential unique whole numbers that are automatically generated.

*Hide Field FID ▲*

#### FIELD 2012 ►

\* ALIAS 2012

\* DATA TYPE String

\* WIDTH 10

\* PRECISION 0

\* SCALE 0

#### FIELD DESCRIPTION

Classification of 2012 turnover feature, "L" is Floodplain, "Ch" is Channel

#### DESCRIPTION SOURCE

Tetra Tech

#### LIST OF VALUES

VALUE Ch

DESCRIPTION Channel  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE L  
 DESCRIPTION Floodplain  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

#### DESCRIPTION OF VALUES

Classification of 2012 turnover feature, "L" is Floodplain, "Ch" is Channel

*Hide Field 2012 ▲*

#### FIELD extended ►

\* ALIAS extended  
 \* DATA TYPE String  
 \* WIDTH 5  
 \* PRECISION 0  
 \* SCALE 0

#### FIELD DESCRIPTION

The boundary of geomorphic delineation for CL-1 and TK-1 were extended for this updated study. However, aerial photography was not available in the 1980s for the extended areas, so this class was added to ensure that those areas not covered by 1980s photos could be separated, and would only be compared between the 1950s and 2012

#### DESCRIPTION SOURCE

Tetra Tech

#### LIST OF VALUES

VALUE YES  
 DESCRIPTION Area is in the extended portion of CL-1 or TK-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE NO  
 DESCRIPTION Area is NOT in the extended portion of CL-1 or TK-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

#### DESCRIPTION OF VALUES

The boundary of geomorphic delineation for CL-1 and TK-1 were extended for this updated study. However, aerial photography was not available in the 1980s for the extended areas, so this class was added to ensure that those areas not covered by 1980s photos could be separated, and would only be compared between the 1950s and 2012

*Hide Field extended ▲*

#### FIELD 1980s ►

\* ALIAS 1980s  
 \* DATA TYPE String  
 \* WIDTH 10  
 \* PRECISION 0  
 \* SCALE 0

#### FIELD DESCRIPTION

Classification of 1980s turnover feature, "L" is Floodplain, "Ch" is Channel

#### DESCRIPTION SOURCE

Tetra Tech

## LIST OF VALUES

VALUE L  
 DESCRIPTION Floodplain  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE Ch  
 DESCRIPTION Channel  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

## DESCRIPTION OF VALUES

Classification of 1980s turnover feature, "L" is Floodplain, "Ch" is Channel

*Hide Field 1980s ▲*

FIELD **GeomReac\_2** ►

\* ALIAS GeomReac\_2  
 \* DATA TYPE String  
 \* WIDTH 5  
 \* PRECISION 0  
 \* SCALE 0

## FIELD DESCRIPTION

Geomorphic Reach of the 2012 polygon - the geomorphic reach the polygon is contained within.

## DESCRIPTION SOURCE

Tetra Tech

## LIST OF VALUES

VALUE LR-2  
 DESCRIPTION LR-2  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-1  
 DESCRIPTION LR-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE YN-1  
 DESCRIPTION YN-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-6  
 DESCRIPTION LR-6  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-5  
 DESCRIPTION LR-5  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE TK-1  
 DESCRIPTION TK-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE CL-1  
 DESCRIPTION CL-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-4

DESCRIPTION LR-4  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-3  
 DESCRIPTION LR-3  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE MR-8  
 DESCRIPTION MR-8  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

#### DESCRIPTION OF VALUES

Geomorphic Reach of the 2012 polygon - the geomorphic reach the polygon is contained within.

*Hide Field GeomReac\_2 ▲*

#### FIELD 1950s ►

\* ALIAS 1950s  
 \* DATA TYPE String  
 \* WIDTH 10  
 \* PRECISION 0  
 \* SCALE 0

#### FIELD DESCRIPTION

Classification of 1950s turnover feature, "L" is Floodplain, "Ch" is Channel

#### DESCRIPTION SOURCE

Tetra Tech

#### LIST OF VALUES

VALUE L  
 DESCRIPTION Floodplain  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE Ch  
 DESCRIPTION Channel  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

#### DESCRIPTION OF VALUES

Classification of 1950s turnover feature, "L" is Floodplain, "Ch" is Channel

*Hide Field 1950s ▲*

#### FIELD GeomReac\_1 ►

\* ALIAS GeomReac\_1  
 \* DATA TYPE String  
 \* WIDTH 6  
 \* PRECISION 0  
 \* SCALE 0

#### FIELD DESCRIPTION

Geomorphic Reach of the 1980s polygon - the geomorphic reach the polygon is contained within.

#### DESCRIPTION SOURCE

Tetra Tech

## LIST OF VALUES

VALUE LR-6  
 DESCRIPTION LR-6  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-5  
 DESCRIPTION LR-5  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-3  
 DESCRIPTION LR-3  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE CL-1  
 DESCRIPTION CL-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-4  
 DESCRIPTION LR-4  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE MR-8  
 DESCRIPTION MR-8  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-1  
 DESCRIPTION LR-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE YN-1  
 DESCRIPTION YN-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE LR-2  
 DESCRIPTION LR-2  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE TK-1  
 DESCRIPTION TK-1  
 ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

## DESCRIPTION OF VALUES

Geomorphic Reach of the 1980s polygon - the geomorphic reach the polygon is contained within.

*Hide Field GeomReac\_1 ▲*

## FIELD AllAerials ►

\* ALIAS AllAerials  
 \* DATA TYPE String  
 \* WIDTH 3  
 \* PRECISION 0  
 \* SCALE 0

## FIELD DESCRIPTION

The portions of the area of geomorphic delineation that were covered by the 1950s, 1980s and 2012 aerials were attributed "yes" because they could be used for a comparison of geomorphic feature areas. On the Lower Susitna River Segment, several areas of its

reaches were not covered by the 1980s and 2012 aerial photography. These areas are tabulated per reach separately from the geomorphic features. Geomorphic features that were not covered in the 1980s or 2012 aerial photography sets were not compared.

#### DESCRIPTION SOURCE

Tetra Tech

#### LIST OF VALUES

VALUE YES

DESCRIPTION Area WAS compared between 1950s, 1980s and 2012 aerial photography.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

VALUE NO

DESCRIPTION Area was NOT compared between 1950s, 1980s and 2012 aerial photography.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Tetra Tech

#### DESCRIPTION OF VALUES

The portions of the area of geomorphic delineation that were covered by the 1950s, 1980s and 2012 aeriels were attributed "yes" because they could be used for a comparison of geomorphic feature areas. On the Lower Susitna River Segment, several areas of its reaches were not covered by the 1980s and 2012 aerial photography. These areas are tabulated per reach separately from the geomorphic features. Geomorphic features that were not covered in the 1980s or 2012 aerial photography sets were not compared.

*Hide Field AllAerials ▲*

#### FIELD DataLink ►

- \* ALIAS DataLink
- \* DATA TYPE String
- \* WIDTH 250
- \* PRECISION 0
- \* SCALE 0

#### FIELD DESCRIPTION

Hyperlink to downloadable dataset on AEA server

#### DESCRIPTION SOURCE

Tetra Tech/AEA

#### DESCRIPTION OF VALUES

Hyperlink to downloadable dataset on AEA server: [http://gis.suhydro.org/SuWa/06-GEO/6.05-GEO/GIS/GeomFeat\\_Turnover](http://gis.suhydro.org/SuWa/06-GEO/6.05-GEO/GIS/GeomFeat_Turnover)

*Hide Field DataLink ▲*

#### FIELD DocLink ►

- \* ALIAS DocLink
- \* DATA TYPE String
- \* WIDTH 254
- \* PRECISION 0
- \* SCALE 0

#### FIELD DESCRIPTION

Link to associated downloadable report on AEA server

#### DESCRIPTION SOURCE

Tetra Tech/AEA

## DESCRIPTION OF VALUES

Link to associated downloadable report on AEA server: <http://www.susitna-watanahydro.org/type/documents/> "Mapping of Geomorphic Features and Turnover within the Middle and Lower Susitna River Segments from 1950s, 1980s, and Current Aerials TM" under "September 26, 2014; Technical Memorandum Filings". There are a total of 16 links associated with this technical memorandum. There is one link for the following: (1) TM, (2) Appendix A, (3) Appendix B, (4) Appendix C – Part 1, (5) Appendix C – Part 2, (6) Appendices D, E, & F, (7) Appendices G & H, (8) Appendices I & J, (9) Appendix K, (10) Appendix L, (11) Appendix M, (12) Appendices N & O, (13) Appendices P & Q, (14) Appendix R, (15) Appendix S, and (16) Appendix T.

[Hide Field DocLink ▲](#)

[Hide Details for object SuWa\\_6\\_5\\_LR\\_Turnover\\_20170630 ▲](#)

[Hide Fields ▲](#)

## Metadata Details ►

METADATA LANGUAGE English (UNITED STATES)  
METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset  
SCOPE NAME \* dataset

\* LAST UPDATE 2017-06-26

## ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0  
METADATA STYLE FGDC CSDGM Metadata  
STANDARD OR PROFILE USED TO EDIT METADATA FGDC

CREATED IN ARCGIS FOR THE ITEM 2014-10-13 10:55:43  
LAST MODIFIED IN ARCGIS FOR THE ITEM 2017-06-26 12:24:21

## AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes  
LAST UPDATE 2017-06-26 12:24:21

[Hide Metadata Details ▲](#)

## Metadata Contacts ►

## METADATA CONTACT

ORGANIZATION'S NAME Alaska Energy Authority  
CONTACT'S ROLE owner

## CONTACT INFORMATION ►

PHONE  
VOICE 907-771-3000  
FAX 907-771-3044

## ADDRESS

TYPE both  
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ADMINISTRATIVE AREA AK  
POSTAL CODE 99503  
COUNTRY US  
E-MAIL ADDRESS SUWAhelp@aidea.org

*Hide Contact information ▲*

*Hide Metadata Contacts ▲*

## Metadata Maintenance ►

MAINTENANCE

UPDATE FREQUENCY not planned

*Hide Metadata Maintenance ▲*

## Thumbnail and Enclosures ►

THUMBNAIL

THUMBNAIL TYPE JPG

*Hide Thumbnail and Enclosures ▲*

## FGDC Metadata (read-only) ▼