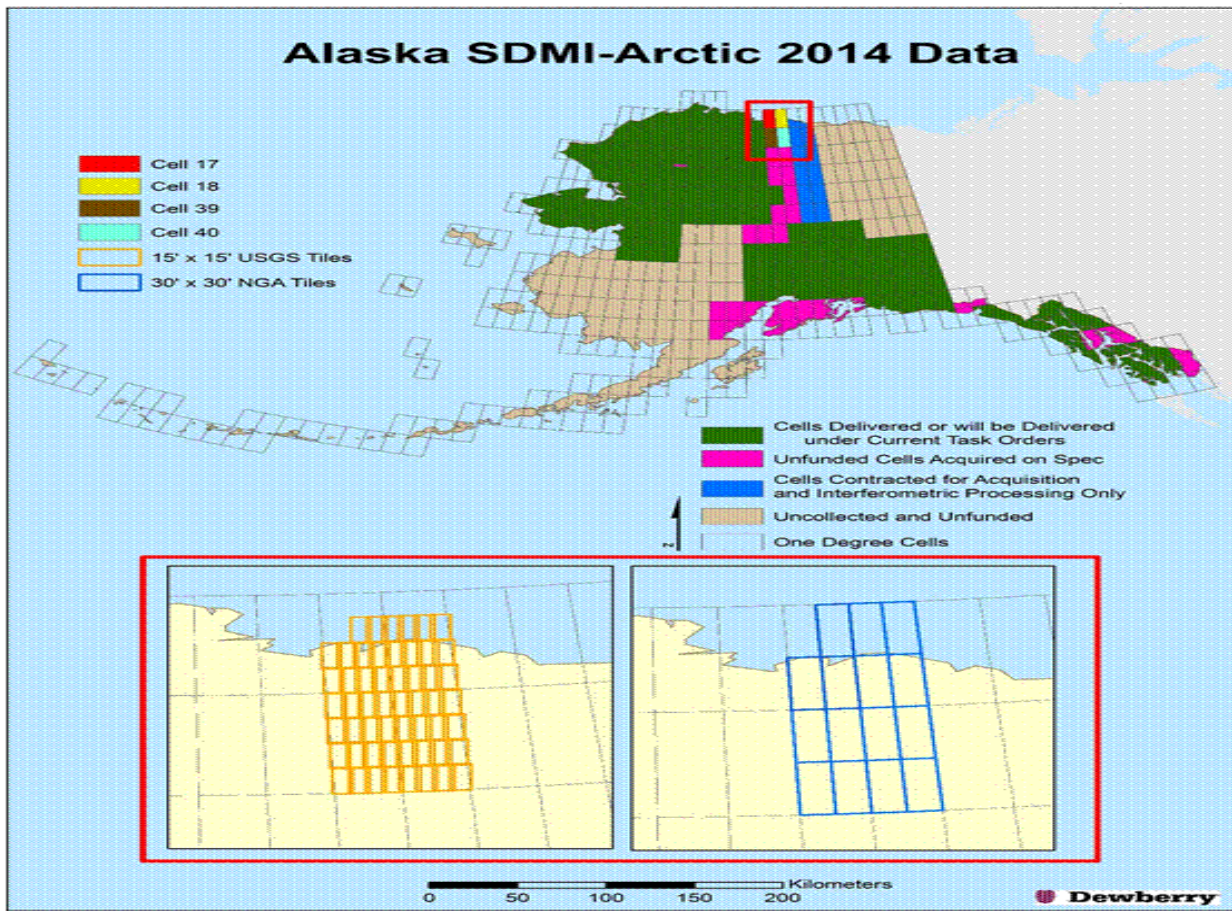




IFSAR Quality Assessment Report

Alaska Mid-Accuracy DEM Arctic 2014

NGTOC



Project Information

Project:

Contractor: Project Type:

Project Points of Contact:

Name:	Type:	Phone:	Email:
Pat Emmett	CPT	573-308-3587	

REPORT QUALIFICATION SUMMARY:

Project Subdivision:

Task Order Overall:

meets requirements

Metadata:

1 of 1 Reviews Accepted
0 Reviews Not Accepted

List Lots:

- 2

of:

Vertical Accuracy:

1 of 1 Reviews Accepted
0 Reviews Not Accepted

Dates Collected Range:

Collection Start:

Collection End:

Vertical Offset:

1 of 1 Reviews Accepted
0 Reviews Not Accepted

Void Fill:

4 of 4 Reviews Accepted
0 Reviews Not Accepted

Sensor Type:

Breakline:

1 of 1 Reviews Accepted
0 Reviews Not Accepted

Project Aliases:

DEM(s):

1 of 1 Reviews Accepted
0 Reviews Not Accepted

Licensing:

DSM(s):

1 of 1 Reviews Accepted
0 Reviews Not Accepted

ORI(s):

1 of 1 Reviews Accepted
0 Reviews Not Accepted

NED Review:

1 of 1 DEM tile reviews recommended for NED
1/3rd
1 of 1 DEM tile reviews recommended for NED
1/9th

Project Description:

This project is for the IfSAR acquisition, processing, and delivery of a mid-accuracy DEM with 20-foot contour accurate bare earth data for the AOI depicted in Attachment A (labeled as 2013 spec cells), comprising approximately 12,694 square km (4,901 sq mi) of *landmass in cell numbers 17, 18, 39, 40. These cells were acquired on spec by Intermap in 2013.* Additionally, new IfSAR acquisition and IP processing only (with the plan to eventually fully process and deliver a mid-accuracy DEM with 20-foot

contour accurate bare earth data) is requested for the AOI depicted in Attachment A (labeled as Acquire and IP only), comprising approximately 50,051 square km (19,325 sq mi) of *landmass in cell numbers 19, 20, 41, 42, 67, 68, 92, 93, 118, 119, 146, 147.*

Additionally, the USGS would like Dewberry to include in their technical and cost proposal, the ellipsoid processing (to provide ellipsoid heights) of the data processed in this task. For all areas, the contractor shall collect and provide a mid-accuracy Digital Elevation Model with a 20' contour accuracy and an Orthorectified RADAR Image (ORI) or similar product at a pixel resolution of 5.0m or better. Reflective Digital Surface Model (DSM) and a bald-earth Digital Terrain Model (DTM) DEM data with regular 5-meter post spacing shall also be provided for all areas. Additionally, HRTe3 data format for the entire area will be provided. FGDC-compliant metadata shall be provided for each data file and an ISO 9001 data-quality certification report shall be provided for each 15-minute tile.

Applicable Specification:

AK Mid Accuracy

Review Information

Reviewer:

Date

Delivered:

3rd Party QA Performed:

Date

Assigned:

Action To Contractor Date:	Issue Description:	Return Date:
1/27/2015	<p>DEM/DTMDSM errors:</p> <p>-10000 elevations exist in no-data areas in water in cells 17 and 18 DTM and DSM. see error shapefile.</p> <p>XML Metadata errors:</p> <p>xml metadata says the horizontal datum is to be <horizdn>NAD83 CORS96 EPOCH 2003.00</horizdn></p> <p>the task order requirement on page 4 of G14PD00812-Arctic DEM 2014-AWARD.pdf reads:</p> <p>3. Data format:</p> <p>a. All Data: The nominal area of coverage per data set shall be 15 minute tiles. Datasets shall include not less than 350 meters over-edge in X and Y. The horizontal datum shall be NAD 83 and the vertical datum shall be NAVD 88. The project area shall be Alaska Albers. All units shall be meters..</p> <p>Please correct horizontal datum in all metadata to be NAD83 and re-deliver.</p> <hr/> <p>The Albers projection is not described consistently in all vector data. Breaklines, fill source, void, and slope.shps are not in Alaska Albers NAD83.</p> <p>please re-deliver all vector data in AK Albers,</p>	

Datum NAD83.

FYI

Notes only: Cell.shp (cell footprint), SwathLocator.shp and ProjectArea.shp are projected in Geographic arc degrees. The task order calls for Geographic in these shapefiles.

Review Complete:

Dates Project Worked:

Start:	<input type="text" value="1/20/2015"/>	<input type="text" value="2/12/2015"/>
End:	<input type="text" value="1/27/2015"/>	<input type="text" value="2/12/2015"/>

Project Materials Received

METADATA						
<i>Deliverables</i>	<i>Delivered</i>	<i>XML Metadata</i>	<i>Required</i>	<i>Format</i>	<i>Quantity</i>	<i>Additional Details</i>
Collection Report:	<input type="checkbox"/>		<input type="checkbox"/>	PDF	<input type="text" value="1"/>	<input type="text"/>
Survey Report:	<input type="checkbox"/>		<input type="checkbox"/>	PDF	<input type="text" value="1"/>	<input type="text"/>
Processing Report:	<input type="checkbox"/>		<input type="checkbox"/>	PDF	<input type="text" value="1"/>	<input type="text"/>
QA/QC Report:	<input type="checkbox"/>		<input type="checkbox"/>	PDF	<input type="text" value="1"/>	<input type="text"/>
Project Level XML Metadata:	<input type="checkbox"/>		<input type="checkbox"/>	XML	<input type="text"/>	<input type="text"/>
Project Extent:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.shp	<input type="text" value="1"/>	<input type="text"/>
Tile Scheme:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.shp	<input type="text" value="1"/>	<input type="text"/>
Checkpoints:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.shp	<input type="text" value="1"/>	<input type="text"/>
Void Mask:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.shp	<input type="text" value="54"/>	<input type="text"/>
Slope Mask:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.shp	<input type="text" value="54"/>	<input type="text"/>

Fill Source Mask:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>.shp</u>	<input type="text" value="54"/>	<input type="text"/>
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Additional Comments:

NED

Deliverables	Delivered	XML Metadata	Required	Format	Quantity	Additional Details
DEM Tiles:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TIF	<input type="text" value="54"/>	<input type="text"/>
Breaklines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.shp	<input type="text" value="54"/>	<input type="text"/>

Additional Comments:

OTHER

Deliverables	Delivered	XML Metadata	Required	Format	Quantity	Additional Details
DSM(s):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TIF	<input type="text" value="54"/>	<input type="text"/>
ORI(s):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TIF	<input type="text" value="54"/>	<input type="text"/>
Flightline (SBETs):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Select...	<input type="text"/>	<input type="text"/>

Additional Comments:

Geographic Information

Area Extent: Sq. Miles

Tile Size: Degrees

DEM/DTM Grid Spacing: Meters

Coordinate Reference System:

Projection:

Horizontal NAD83 Meters

Datum:

- U.S. Feet
- Int'l Feet

Vertical

NAVD88

Datum:

- Meters
- U.S. Feet
- Int'l Feet

THIS PROJECTION COORDINATE REFERENCE SYSTEM IS CONSISTENT ACROSS THE FOLLOWING DELIVERABLES:

- | | |
|--|---|
| <input type="checkbox"/> Project Extent | <input type="checkbox"/> Fill Source Mask |
| <input type="checkbox"/> Project Tile Scheme | <input type="checkbox"/> Breakline(s) |
| <input type="checkbox"/> Checkpoints | <input type="checkbox"/> DEM(s) |
| <input type="checkbox"/> Void Mask | <input type="checkbox"/> DEM XML Metadata |
| <input type="checkbox"/> Slope Mask | <input type="checkbox"/> DSM(s) |
| | <input type="checkbox"/> DSM XML Metadata |
| | <input type="checkbox"/> ORI(s) |
| | <input type="checkbox"/> ORI XML Metadata |

Additional Comments:

the albers projection is not described consistently in all vector data.

Project Review

AK Mid Accuracy DEM Arctic 2014 Lot 1 2010

Metadata Review

Provided metadata files have been parsed using 'mp' metadata parser. Any errors generated by the parser are documented below for reference and/or corrective action.

The DEM XML Metadata parsed without errors.

Check if 'Best Use' metadata for NED: Project Level Tile Level

The DSM XML Metadata parsed without errors.

Check if 'Best Use' metadata for NED: Project Level Tile Level

The ORI XML Metadata parsed without errors.

Check if 'Best Use' metadata for NED: Project Level Tile Level

Based on this review, the USGS accepts the xml metadata provided.

Additional Comments:

XML Metadata errors:

xml metadata says the horizontal datum is to be
 <horizdn>NAD83 CORS96 EPOCH 2003.00</horizdn>

the task order requirement on page 4 of G14PD00812-Arctic DEM 2014-AWARD.pdf reads:

3. Data format:

- a. **All Data:** The nominal area of coverage per data set shall be 15 minute tiles. Datasets shall include not less than 350 meters over-edge in X and Y. **The horizontal datum shall be NAD 83** and the vertical datum shall be NAVD 88. **The project area shall be Alaska Albers.** All units shall be meters..

Please correct horizontal datum in all metadata to be NAD83 and re-deliver.

Note: xml metadata was not delivered for breakline, checkpoint or void fill .shp files

End of Metadata Review

Vertical Accuracy Review

Required Vertical Accuracy

Yes No

REQUIRED PRIMARY VERTICAL ACCURACY

Primary Vertical Accuracy Type: Slope 0-10 degree

Confidence Interval Required: th % CI

Required Unit:

Required # of checkpoints:

Required RMSEz:

Required Vertical Accuracy (RMSEz * .% CI)

Additional Required Vertical Accuracy Information:

Reported Vertical Accuracy

Yes No

REPORTED PRIMARY VERTICAL ACCURACY

Primary Vertical Accuracy Type: Slope 0-10 degree

Confidence Interval Reported: th % CI

Reported Unit:

Reported # of checkpoints:

Reported RMSEz:

Reported Vertical Accuracy (RMSEz * .% CI)

Additional Reported Vertical Accuracy Information:

No checkpoints in the Arctic 2014 Lot 1 cells are located in slope categories other than 0°-10°. Cells 17 and 18 are partial cells (to the coast) and not full 1-degree cells.

Reviewed Vertical Accuracy

Yes No

REVIEWED PRIMARY VERTICAL ACCURACY

Primary Vertical Accuracy Type: Slope 0-10 degree

Confidence Interval Reviewed: th % CI

Reviewed Unit:

Reviewed # of checkpoints:

Reviewed RMSEz:

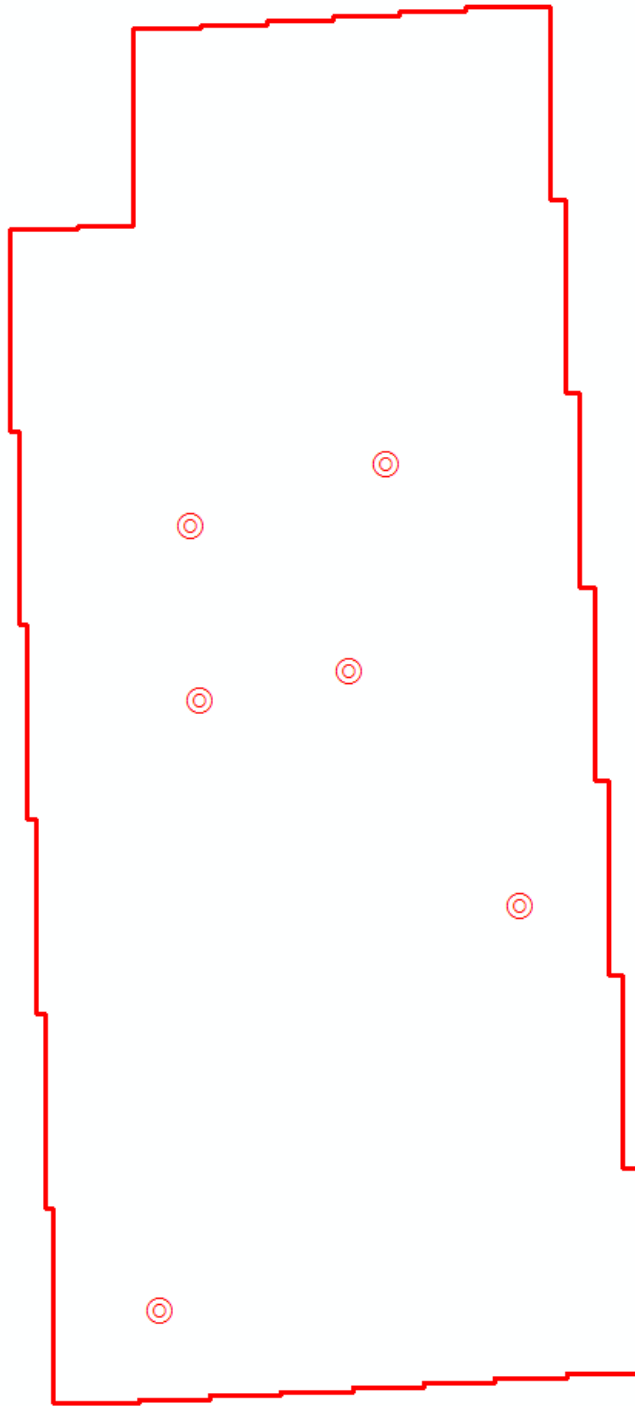
*Reviewed Vertical Accuracy (RMSEz * .% CI)*

Checkpoints are well distributed?

Enough checkpoints for task order?

Enough checkpoints for NED?

Checkpoint Distribution Image



Vertical Accuracy Results:

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*Additional Reviewed
Vertical Accuracy
Information:*

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Based on this review, the USGS accepts the vertical accuracy.

End of Vertical Accuracy Review

Vertical Offset Review

cell 17 and 18, cells 17 and 39, cells 18 and 40, and cells 39 and 40

Review Required: Yes No

Absolute maximum allowed: Absolute actual Maximum:

Absolute reported maximum: Unit:

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

there was no offset value for any cell combination. all values were 0.

End of cell 17 and 18, cells 17 and 39, cells 18 and 40, and cells 39 and 40 Vertical Offset Review

Void Fill Review

cell 17

Review Required: Yes No

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	<input type="text" value="3"/> %	Maximum void allowed: (after fill)	<input type="text" value="not applicable"/>
Maximum void allowed per tile: (prior to fill)	<input type="text" value="5"/> %	Maximum void allowed per tile: (after fill)	<input type="text" value="not applicable"/>
Maximum void reported: (prior to fill)	<input type="text" value="not reported"/>	Maximum void reported: (after fill)	<input type="text" value="not applicable"/>
Maximum void reported per tile: (prior to fill)	<input type="text" value="not reported"/>	Maximum void reported per tile: (after fill)	<input type="text" value="not applicable"/>
Maximum void reviewed: (prior to fill)	<input type="text" value="0.095329062"/> %	Maximum void reviewed: (after fill)	<input type="text" value="not applicable"/>
Maximum void reviewed per tile: (prior to fill)	<input type="text" value="0.399707444"/> %	Maximum void reviewed per tile: (after fill)	<input type="text" value="not applicable"/>

Void Fill Source:

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of cell 17 Void Fill Review

Void Fill Review

cell 18

Review Required: Yes No

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	<input type="text" value="3"/> %	Maximum void allowed: (after fill)	<input type="text" value="not applicable"/>
Maximum void allowed per tile: (prior to fill)	<input type="text" value="5"/> %	Maximum void allowed per tile: (after fill)	<input type="text" value="not applicable"/>
Maximum void reported: (prior to fill)	<input type="text" value="not reported"/>	Maximum void reported: (after fill)	<input type="text" value="not applicable"/>
Maximum void reported per tile: (prior to fill)	<input type="text" value="not reported"/>	Maximum void reported per tile: (after fill)	<input type="text" value="not applicable"/>
Maximum void reviewed: (prior to fill)	<input type="text" value="0.003253449"/> %	Maximum void reviewed: (after fill)	<input type="text" value="not applicable"/>
Maximum void reviewed per tile: (prior to fill)	<input type="text" value="0.027996280"/> %	Maximum void reviewed per tile: (after fill)	<input type="text" value="not applicable"/>

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of cell 18 Void Fill Review

Void Fill Review

cell 39

Review Required: Yes No

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	<input type="text" value="3"/> %	Maximum void allowed: (after fill)	<input type="text" value="not applicable"/>
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Maximum void allowed per tile: (prior to fill)	5 %	Maximum void allowed per tile: (after fill)	not applicable
Maximum void reported: (prior to fill)	not reported	Maximum void reported: (after fill)	not applicable
Maximum void reported per tile: (prior to fill)	not reported	Maximum void reported per tile: (after fill)	not applicable
Maximum void reviewed: (prior to fill)	0.001968801 %	Maximum void reviewed: (after fill)	not applicable
Maximum void reviewed per tile: (prior to fill)	0.031268576 %	Maximum void reviewed per tile: (after fill)	not applicable

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of cell 39 Void Fill Review

Void Fill Review

cell 40

Review Required: Yes No

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	Maximum void allowed: (after fill)	not applicable
Maximum void allowed per tile: (prior to fill)	5 %	Maximum void allowed per tile: (after fill)	not applicable
Maximum void reported: (prior to fill)	not reported	Maximum void reported: (after fill)	Select or type... %
Maximum void reported per tile: (prior to fill)	not reported	Maximum void reported per tile: (after fill)	not applicable
Maximum void reviewed: (prior to fill)	0.000000017 %	Maximum void reviewed: (after fill)	not applicable

Maximum void reviewed per tile: (prior to fill)	0.000581634 %	Maximum void reviewed per tile: (after fill)	not applicable
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Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of cell 40 Void Fill Review

Breakline Review

Review Required: Yes No

BREAKLINE FILE CHARACTERISTICS:

- Separate folder for breakline files.
- Breaklines contain elevation values.
- Waterbody Breaklines.

Polyline Polygon

Single elevation value per waterbody feature.

Required.

Waterbody Elevations were created via Unknown waterbody level techniques.

- Double Line Stream Breaklines (Streams Approximately > 50 ft).

Polyline Polygon

Downstream DLS Flow is Select...

Required.

- Single Line Breaklines.
- No missing or misplaced breaklines.

Based on this review, the USGS accepts the breakline files.

End of Breakline Review

DEM Review

BARE-EARTH DEM TILE CHARACTERISTICS:

- Separate folder for bare-earth DEM files
- Raster File Type: TIF
- Raster Cell Size: Meters

Tile bit depth/pixel Type:

Interpolation or Resampling Technique: Unknown

DEM tiles overlap: Yes No

DEM tiles conform to Project Tiling Scheme

Quantity of DEM files conforms to Project Tiling Scheme

DEM tiles are uniform in size

DEM tiles properly edge match and free of edge artifacts

Tiles are free from Spikes and Pits

Tiles are free from Data Holidays

Tiles do not exhibit systematic sensor error or comrowing

DEM tiles are properly Hydro Flattened Yes No

Waterbodies 2 Acers or greater are flattened

Streams 50 ft or greater are flattened in a downstream manner

Tidal Boundaries/Shorelines are flattened

No missing islands

Perennial ice/snow treated as terrain

Annual ice/snow not treated as terrain

Bridges/Overpasses are properly removed

Culverts are maintained (Not Hydro Enforced)

Depressions, Sinks, are not filled in (Not Hydro Conditioned)

Vegetation properly removed

Manmade structures properly removed

Tiles meet NED 1/3rd Requirements: Yes. No.

Tiles meet NED 1/9th Requirements: Yes. No.

Based on this review, the USGS accepts the DEM tiles.

ADDITIONAL COMMENTS, ERRORS, ANOMALIES, OR OTHER ISSUES:

Very deep chasms exist in water in cells 17 and 18 DTM and DSM. see error shapefile.

End of DEM Review

DSM Review

Review Required: Yes No

DSM TILE CHARACTERISTICS:

Separate folder for bare-earth DEM files

Raster File Type: TIF

Raster Cell Size: 5 Meters

Tile bit depth/pixel type: 32_BIT_FLOAT

Interpolation or Resampling Technique: Unknown

DSM tiles overlap: Yes No

DSM tiles conform to Project Tiling Scheme

Quantity of DSM files conforms to Project Tiling Scheme

DSM tiles are uniform in size

DSM tiles properly edge match and free of edge artifacts

Tiles are free from Spikes and Pits

Tiles are free from Data Holidays

Tiles do not exhibit systematic sensor error or comrowing

DSM tiles are properly Hydro Flattened Yes No

Waterbodies 2 Acers or greater are flattened

Streams 50 ft or greater are flattened in a downstream manner

Tidal Boundaries/Shorelines are flattened

No missing islands

Perennial ice/snow treated as terrain

Annual ice/snow not treated as terrain

Culverts are maintained (Not Hydro Enforced)

Depressions, Sinks, are not filled in (Not Hydro Conditioned)

Based on this review, the USGS accepts the DSM tiles.

ADDITIONAL COMMENTS, ERRORS, ANOMALIES, OR OTHER ISSUES:

Very deep chasms exist in water in cells 17 and 18 DTM and DSM. see error shapefile.

End of DSM Review

ORI Review

Review Required: Yes No

ORI TILE CHARACTERISTICS:

Separate folder for ORI files

Raster File Type: TIF

Raster Cell Size: Meters
 Tile bit depth/pixel type:
 Interpolation or Resampling Technique: Unknown

- ORI tiles overlap: Yes No
- ORI tiles conform to Project Tiling Scheme
- Quantity of ORI files conforms to Project Tiling Scheme
- ORI tiles are uniform in size
- ORI tiles properly edge match and free of edge artifacts
-
- Tiles are free from Data Holidays
- Tiles do not exhibit systematic sensor error or comrowing
- ORI tiles validate hydroflattening/breakline placement and quantity

Based on this review, the USGS accepts the ORI tiles.

End of ORI Review

Based on this review, the provided delivery meets the Task Order requirements.

NED Information

Final to NED mosaic created: Yes No

Metadata Created: Yes No

Additional Comments:

END OF REPORT