

WROC 2015 - Douglas Co. St. Louis River QL2 LiDAR (2015-16); Hydroflattened DSM

Thumbnail Not Available

Tags

elevation, Lidar, Hydrology, GRID, surface model, surface data, terrain data, raster digital data, 1 meter pixel, DSM

Summary

This data, along with its derivatives, is part of a watershed stressor and habitat assessment in the larger Nemadji River watershed. This data was produced all from lidar information as of 2015.

Description

The St. Louis River Area of Concern project area covers approximately 308 square miles. Lidar data was acquired with a nominal point spacing (NPS) of 0.7 meters . Project specifications are based on the U.S. Geological Survey National Geospatial Program Base LIDAR Specification, Version 1.0. The data was developed based on a horizontal projection/datum of Coordinate System: NAD_1983_UTM_Zone_15N, Meters and vertical datum of NAVD1988 (GEOID12A), Meters. LiDAR data was acquired using the Orion Optech H300 sensor. Collection occurred from October 17-19, 2015, while no snow was on the ground and rivers were at or below normal levels.

Credits

There are no credits for this item.

Use limitations

None. However, temporal changes to the Earth's surface may have occurred since the acquisition of the lidar data and may no longer represent current bare earth surface conditions.

Extent

There is no extent for this item.

Scale Range

There is no scale range for this item.

[ArcGIS Metadata](#) ►

[Citation](#) ►

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[Resource Details](#) ►

[CREDITS](#)

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Resource Constraints ►

CONSTRAINTS

LIMITATIONS OF USE

None. However, temporal changes to the Earth's surface may have occurred since the acquisition of the lidar data and may no longer represent current bare earth surface conditions.

[Hide Resource Constraints ▲](#)

FGDC Metadata (read-only) ▼

CITATION

CITATION INFORMATION

ORIGINATOR Ayres Associates

PUBLICATION DATE unknown

TITLE

WROC 2015 - Douglas Co. St. Louis River QL2 LiDAR (2015-16); Hydroflattened DSM

PUBLICATION INFORMATION

PUBLICATION PLACE Madison, WI

PUBLISHER Ayres Associates

DESCRIPTION

ABSTRACT

The St. Louis River Area of Concern project area covers approximately 308 square miles. Lidar data was acquired with a nominal point spacing (NPS) of 0.7 meters . Project specifications are based on the U.S. Geological Survey National Geospatial Program Base LIDAR Specification, Version 1.0. The data was developed based on a horizontal projection/datum of Coordinate System: NAD_1983_UTM_Zone_15N, Meters and vertical datum of NAVD1988 (GEOID12A), Meters.

LiDAR data was acquired using the Orion Optech H300 sensor. Collection occurred from October 17-19, 2015, while no snow was on the ground and rivers were at or below normal levels.

PURPOSE

This data, along with its derivatives, is part of a watershed stressor and habitat assessment in the larger Nemadji River watershed. This data was produced all from lidar information as of 2015.

TIME PERIOD OF CONTENT

TIME PERIOD INFORMATION

RANGE OF DATES/TIMES

BEGINNING DATE 2015-10-17

ENDING DATE 2015-10-19

CURRENTNESS REFERENCE

ground condition

STATUS

PROGRESS Complete

MAINTENANCE AND UPDATE FREQUENCY None planned

SPATIAL DOMAIN

BOUNDING COORDINATES

WEST BOUNDING COORDINATE -92.299251

EAST BOUNDING COORDINATE -91.862322

NORTH BOUNDING COORDINATE 46.752570
SOUTH BOUNDING COORDINATE 46.319511

KEYWORDS

THEME
THEME KEYWORD THESAURUS None
THEME KEYWORD elevation
THEME KEYWORD Lidar
THEME KEYWORD Hydrology
THEME KEYWORD GRID
THEME KEYWORD surface model
THEME KEYWORD surface data
THEME KEYWORD terrain data
THEME KEYWORD raster digital data
THEME KEYWORD 1 meter pixel
THEME KEYWORD DSM

PLACE

PLACE KEYWORD THESAURUS None
PLACE KEYWORD Wisconsin
PLACE KEYWORD Douglas County
PLACE KEYWORD St. Louis River Area of Concern

ACCESS CONSTRAINTS

Any and all accessibility to data of or pertaining to the 2016 lidar dataset is to be determined by the Wisconsin Department of Natural Resources.

USE CONSTRAINTS

None. However, temporal changes to the Earth's surface may have occurred since the acquisition of the lidar data and may no longer represent current bare earth surface conditions.

POINT OF CONTACT

CONTACT INFORMATION

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NATIVE DATA SET ENVIRONMENT

Environment as of Metadata Creation: Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.3.1 (Build 4959) Service Pack N/A (Build N/A)

[Hide Identification ▲](#)

ATTRIBUTE ACCURACY

ATTRIBUTE ACCURACY REPORT

No formal attribute accuracy tests were conducted.

LOGICAL CONSISTENCY REPORT

Spatial consistency of coverage of the 2016 St. Louis River Area of Concern project area was maintained throughout the dataset.

COMPLETENESS REPORT

Spatial consistency of coverage of the 2016 St. Louis River Area of Concern project area was maintained throughout the dataset.

POSITIONAL ACCURACY

HORIZONTAL POSITIONAL ACCURACY

HORIZONTAL POSITIONAL ACCURACY REPORT

A formal accuracy assessment of the horizontal positional information in the data set has not been conducted.

VERTICAL POSITIONAL ACCURACY

VERTICAL POSITIONAL ACCURACY REPORT

Vertical accuracy was tested in open terrain using 25 independent survey points, distributed evenly through the project, and used solely for the purpose of assessing vertical accuracy. Specifications for this project require that the NVA be 19.6 cm or better AccuracyZ at 95 percent confidence level NSSDA standards (point cloud and DEM).

LINEAGE

PROCESS STEP

PROCESS DESCRIPTION

LiDAR processing utilizes several software packages, including GeoCue and the TerraSolid suite of processing components. The GeoCue software is a database management system for housing the LiDAR dataset (usually multiple gigabytes in size). GeoCue incorporates a thorough checklist of processing steps and quality assurance/quality control (QA/QC) procedures that assist in the LiDAR workflow. The TerraSolid software suite is used to automate the initial classification of the LiDAR point cloud based on a set of predetermined parameters. Lidar technicians refer to ground cover research (natural and cultural features) within the project area and determine algorithms most suitable for the initial automated LiDAR classification. (Some algorithms/filters recognize the ground in forests well, while others have greater capability in urban areas). During this process each point is given an initial classification (e.g., as ground, vegetation, or noise) based on the point's coordinates and the relation to its neighbors. Classifications to be assigned include all those outlined by ASPRS standards. The initial classifications produce a coarse and inexact dataset, but offer an adequate starting point for the subsequent manual classification procedure. During this step, "overlap" points are automatically classified (those originating from neighboring flightlines) using information gathered from the ABGPS and IMU data. Any duplicate points existing from adjacent flightlines are removed during this process. Hydrographic breaklines are collected using LiDARgrammetry to ensure hydroflattened water surfaces. This process involves manipulating the LiDAR data's intensity information to create a metrically sound stereo environment. From this generated "imagery", breaklines are photogrammetrically compiled. Breakline polygons are created to represent open water bodies. The LiDAR points that fall within these areas are classified as "water." All hydrographic breaklines include a 0.3 meter buffer, with the Class 2 (bare earth) points being re-classified as Class 10 (ignored ground). TerraSolid is further used for the subsequent manual classification of the LiDAR points allowing technicians to view the point cloud in a number of ways to ensure accuracy and consistency of points and uniformity of point coverage. The TIN was processed to create a GRID or digital elevation model (DEM) with 1 meter pixels. The DSM is a raster representation of the first return LIDAR points. The pixel resolution is 1 meter. The DSM is created utilizing the following classes; 1 (Processed, but unclassified), 2 (Bare-earth ground), 9 (Water), and 17 (Bridge decks).

PROCESS DATE Unknown

Hide Data Quality ▲

HORIZONTAL COORDINATE SYSTEM DEFINITION
PLANAR
MAP PROJECTION
MAP PROJECTION NAME NAD 1983 UTM Zone 15N
TRANSVERSE MERCATOR
SCALE FACTOR AT CENTRAL MERIDIAN 0.9996
LONGITUDE OF CENTRAL MERIDIAN -93.0
LATITUDE OF PROJECTION ORIGIN 0.0
FALSE EASTING 500000.0
FALSE NORTHING 0.0

PLANAR COORDINATE INFORMATION
PLANAR COORDINATE ENCODING METHOD coordinate pair
COORDINATE REPRESENTATION
ABSCISSA RESOLUTION 0.000000002220024164500956
ORDINATE RESOLUTION 0.000000002220024164500956
PLANAR DISTANCE UNITS meter

GEODETTIC MODEL
HORIZONTAL DATUM NAME D North American 1983
ELLIPSOID NAME GRS 1980
SEMI-MAJOR AXIS 6378137.0
DENOMINATOR OF FLATTENING RATIO 298.257222101

Hide Spatial Reference ▲

DISTRIBUTOR
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METADATA DATE 2016-07-06
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METADATA STANDARD NAME FGDC Content Standard for Digital Geospatial
Metadata

METADATA STANDARD VERSION FGDC-STD-001-1998

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