

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

Thumbnail Not Available

Tags

elevation, Lidar, Hydrology, DEM, GRID, surface model, surface data, terrain data, bare earth, raster digital data, 1 meter pixel

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 However, temporal changes to the Earth's surface may have occurred since the acquisition of the lidar data and may no longer represent current bare earth surface conditions.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](#) ►

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

[Hide Citation](#) ▲

[Resource Details](#) ►

[CREDITS](#)

[Hide Resource Details ▲](#)

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 However, temporal changes to the Earth's surface may have occurred since the acquisition of the lidar data and may no longer represent current bare earth surface conditions.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 DEM

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 DEM
THEME KEYWORD GRID
THEME KEYWORD surface model
THEME KEYWORD surface data
THEME KEYWORD terrain data
THEME KEYWORD bare earth
THEME KEYWORD raster digital data
THEME KEYWORD 1 meter pixel

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
CONTACT ORGANIZATION PRIMARY
CONTACT ORGANIZATION Wisconsin Department of Natural Resources
CONTACT PERSON Matt Steiger
CONTACT POSITION St. Louis River Area of Concern Coordinator
CONTACT ADDRESS
ADDRESS TYPE Mailing and Physical
ADDRESS 1701 N. 4th Street
CITY Superior
STATE OR PROVINCE WI
POSTAL CODE 54880
COUNTRY U.S.A.

CONTACT VOICE TELEPHONE (715) 395-6904
CONTACT ELECTRONIC MAIL ADDRESS Matthew.Steiger@Wisconsin.gov

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

Specifications for this project require that independent checkpoints are used to test the vertical accuracy of the point cloud and DEM. The point cloud specification to be met is 19.6 cm or better at the 95% confidence level for Nonvegetated Vertical Accuracy (NVA) points. The DEM specification to be met is 19.6 cm or better at the 95% confidence level for NVA points, and 29.4cm or better at the 95th percentile for Vegetated Vertical Accuracy (VVA) points. The point cloud was tested against 25 NVA checkpoints, and reported 6.1 cm at the 95% confidence level. The DEM was tested against 25 NVA checkpoints and 20 VVA checkpoints. The DEM test results were 6.4cm at the 95% confidence level for NVA land cover types, and 28.1cm at the 95th percentile for VVA land cover types.

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." Hydro-flattened breaklines were compiled for ponded water that is 2 acres or greater and double lined streams with a minimum width of 6.096 meters (20 feet). Streams break at road crossings (culvert locations). The road fills are not be removed from the DEM. Streams are not broken at bridges. When the identification of a feature as a bridge or culvert cannot be

made reliably, the feature will be regarded as a culvert. Breaklines representing streams and rivers shall be smooth, continuous, and monotonic, and represent the water surface without any stair steps except for dams and rapids. 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.

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

CONTACT INFORMATION

CONTACT ORGANIZATION PRIMARY

CONTACT ORGANIZATION Ayres Associates

CONTACT ADDRESS

ADDRESS TYPE Mailing and Physical

ADDRESS 5201 E Terrace Drive, Suite 200

CITY Madison

STATE OR PROVINCE Wisconsin

POSTAL CODE 53704

COUNTRY U.S.A.

CONTACT VOICE TELEPHONE (608) 443-1200

CONTACT ELECTRONIC MAIL ADDRESS NienowZ@AyresAssociates.com

DISTRIBUTION LIABILITY

Distributor assumes no liability for misuse of data.

CUSTOM ORDER PROCESS

Please contact the organization contact for help in acquiring data.

[Hide Distribution Information ▲](#)

METADATA DATE 2016-07-06

METADATA CONTACT

CONTACT INFORMATION

CONTACT PERSON PRIMARY

CONTACT PERSON Ayres Associates

CONTACT ADDRESS

ADDRESS TYPE Mailing and Physical

ADDRESS 5201 E. Terrace Drive, Suite 200

CITY Madison

STATE OR PROVINCE Wisconsin

POSTAL CODE 53704

COUNTRY U.S.A.

CONTACT VOICE TELEPHONE (608) 443-1200

METADATA STANDARD NAME FGDC Content Standard for Digital Geospatial
Metadata

METADATA STANDARD VERSION FGDC-STD-001-1998

[Hide Metadata Reference ▲](#)