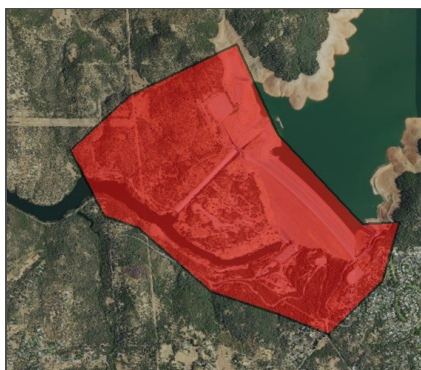


Oroville_Spillway_02-24-2017_Project_Metadata

Shapefile



Tags

Oroville Dam Spillway, Airborne LiDAR Data, Orthophoto Imagery

Summary

The purpose of this project was to provide aerial survey documentation of site conditions following damage to the Oroville Dam Spillway. The study area was initially limited to the spillway structure however; the Task Order was amended to expand the study area to the extent shown here. This work was performed by Towill, Inc. under DWR Contract 4600011239 Task Order 9.

Description

Survey Control – Ground control survey for this project was provided by DWR. A network of aerial targets were marked and surveyed for use by Towill, Inc. and for use with unmanned aerial systems (UAS) being operated at Oroville Dam by others. Survey control values were supplied by the file "Staked Flight Panels To Date_170224.csv" which we received on 02/24/2017 via email.

Airborne Data Acquisition - The LiDAR survey was accomplished using an Optech Orion M300 LiDAR system operating from a fixed wing aircraft (Twin Engine Cessna 402 Tail # N1008A). The airborne mission was conducted on February 24, 2017.

The mission plan was based on the following:

Aircraft Flight Altitude: 3000' AMSL

Aircraft Speed: 120 knots

Number of Flight lines: 11

Nominal Point Density: 10 PPM²

LiDAR Data Post-Acquisition Processing

Airborne GPS Data Processing - Using Novatel, Inc.'s Grafnav version 8.20 software, the differential kinematic data was processed from two base stations, and the solutions compared. This procedure is intended to verify the integrity of the base station coordinates and elevations. Each processing session was computed in both the forward and reverse temporal directions. The comparison of these solutions is intended to provide insight into the quality of

the kinematic ambiguity resolution. The horizontal and vertical datums of the LiDAR data set were realized by adjusting the coordinates of the base station points and the relative application of the geoid model to the final data set.

Two base stations were used to process the ABGPS data: ORVB (CORS) and MC1 located at the McClellan Airfield.

IMU Data Processing and Best Estimated Trajectory - The post-processed ABGPS trajectory was combined with the raw, high-frequency IMU observations in a loosely-coupled Kalman filter-based processing algorithm to produce the final high-frequency Smoothed Best Estimated Trajectory (SBET) using Applanix's POSPac software, version 4.3.

Optech's LiDAR Mapping Suite (LMS) -The ABGPS and integrated IMU data files were used as inputs to process the laser range files collected during the mission. The LMS software package assembles each of these three components and outputs fully georeferenced LAS strip files. The overlap between adjacent strip files are analyzed and if elevation differences exist, these values are used as feedback and the process is repeated.

LiDAR Data Classification

Terrasolid's Terrascan V.1.2 software was used to tile the LAS strip files into manageable size files and to run macro routines which assist in the ground classification. Shaded relief terrain surfaces were reviewed visually for artefacts which were manually reclassified as non-ground features.

Following a thorough QA/QC review by an analyst, ground points comprising the "bare-earth" surface were used to generate three separate deliverables:

ArcGIS DEM -all ground points are used with ArcGIS 10.2 to develop a 32-bit raster DEM with a 1ft GSD.

InRoads Terrain Surface - "bare-earth" ground is keypointed and MicroStation is used to create an InRoads TIN surface.

Civil 3D Surfaces - "bare-earth" ground is keypointed and AutoCAD is used to create an Civil 3D TIN surface.

Aerial Imagery

Aerial imagery was acquired for the study area simultaneously with the LiDAR using a Phase One iXU 1000 (100 megapixel) camera system. This was used to generate orthophoto imagery with a 0.25ft pixel resolution. The imagery was delivered as GeoTIF tiles and MrSID mosaics.

Credits

Towill, Inc. extends thanks to the California Department of Water Resources.

Use limitations

There are no access and use limitations for this item.

Extent

West -121.513345 **East** -121.472067
North 39.553193 **South** 39.525011

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

ArcGIS Metadata ►

Topics and Keywords ►

* CONTENT TYPE Downloadable Data

Hide Topics and Keywords ▲

Citation ►

* TITLE Oroville_Spillway_02-24-2017_Project_Metadata
 CREATION DATE 2017-02-24 00:00:00
 PUBLICATION DATE 2017-03-31 00:00:00

PRESENTATION FORMATS * digital map

Hide Citation ▲

Citation Contacts ►

RESPONSIBLE PARTY

INDIVIDUAL'S NAME Dan Mardock, PLS
 ORGANIZATION'S NAME Department of Water Resources
 CONTACT'S POSITION Contract Manager
 CONTACT'S ROLE originator

CONTACT INFORMATION ►

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 ADMINISTRATIVE AREA California
 POSTAL CODE 95814
 COUNTRY US
 E-MAIL ADDRESS daniel.mardock@water.ca.gov

Hide Contact information ▲

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 Version 6.2 (Build 9200) ; Esri ArcGIS 10.4.1.5686

CREDITS

Towill, Inc. extends thanks to the California Department of Water Resources.

ARCGIS ITEM PROPERTIES

* NAME Oroville_Spillway_02-24-2017_Project_Metadata
 * SIZE 0.001
 * LOCATION file:///\\ADMBRY\C\$_towill\jobs\2017\14750-0109 DWR Oroville
 Spillway\Metadata\Oroville_Spillway_02-24-2017_Project_Metadata.shp
 * ACCESS PROTOCOL Local Area Network

[Hide Resource Details ▲](#)

Extents ►

EXTENT

DESCRIPTION

The flight mission was performed between 10am and 2pm February 24, 2017

TEMPORAL EXTENT

BEGINNING DATE 2017-02-24 00:00:00
 ENDING DATE 2017-02-24 00:00:00

VERTICAL EXTENT

* MINIMUM VALUE 0.0
 * MAXIMUM VALUE 6000.0

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching
 * WEST LONGITUDE -121.513345
 * EAST LONGITUDE -121.472067
 * NORTH LATITUDE 39.553193
 * SOUTH LATITUDE 39.525011
 * EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

* WEST LONGITUDE 6698940.689496
 * EAST LONGITUDE 6710525.369351
 * SOUTH LATITUDE 2317650.271389
 * NORTH LATITUDE 2327851.021140
 * EXTENT CONTAINS THE RESOURCE Yes

[Hide Extents ▲](#)

Resource Maintenance ►

RESOURCE MAINTENANCE

UPDATE FREQUENCY unknown

[Hide Resource Maintenance ▲](#)**Spatial Reference ►**

ARCGIS COORDINATE SYSTEM

* TYPE Projected

* GEOGRAPHIC COORDINATE REFERENCE GCS_NAD_1983_2011

* PROJECTION NAD_1983_2011_StatePlane_California_II_FIPS_0402_Ft_US

* COORDINATE REFERENCE DETAILS

PROJECTED COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 103004

X ORIGIN -115211800

Y ORIGIN -93821500

XY SCALE 36983428.057351544

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 6418

WELL-KNOWN TEXT PROJCS

["NAD_1983_2011_StatePlane_California_II_FIPS_0402_Ft_US",GEOGCS

["GCS_NAD_1983_2011",DATUM["D_NAD_1983_2011",SPHEROID

["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT

["Degree",0.0174532925199433]],PROJECTION["Lambert_Conformal_Conic"],PARAMETER

["False_Easting",6561666.666666666],PARAMETER

["False_Northing",1640416.666666667],PARAMETER["Central_Meridian",-

122.0],PARAMETER["Standard_Parallel_1",38.33333333333334],PARAMETER

["Standard_Parallel_2",39.83333333333334],PARAMETER

["Latitude_Of_Origin",37.66666666666666],UNIT

["Foot_US",0.3048006096012192],AUTHORITY["EPSG",6418]]

REFERENCE SYSTEM IDENTIFIER

* VALUE 6418

* CODESPACE EPSG

* VERSION 8.2.10(10.3.1)

[Hide Spatial Reference ▲](#)**Spatial Data Properties ►**

VECTOR ►

* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

GEOMETRIC OBJECTS

FEATURE CLASS NAME Oroville_Spillway_02-24-2017_Project_Metadata

* OBJECT TYPE composite

* OBJECT COUNT 1

[Hide Vector ▲](#)

ARCGIS FEATURE CLASS PROPERTIES ►

FEATURE CLASS NAME Oroville_Spillway_02-24-2017_Project_Metadata

* FEATURE TYPE Simple

* GEOMETRY TYPE Polygon

* HAS TOPOLOGY FALSE

* FEATURE COUNT 1

* SPATIAL INDEX TRUE

* LINEAR REFERENCING TRUE

*Hide ArcGIS Feature Class Properties ▲**Hide Spatial Data Properties ▲***Data Quality** ►

SCOPE OF QUALITY INFORMATION ►

RESOURCE LEVEL dataset

Hide Scope of quality information ▲

DATA QUALITY REPORT - ABSOLUTE EXTERNAL POSITIONAL ACCURACY ►

DIMENSION vertical

MEASURE DESCRIPTION

QA/QC checkpoints were used to verify the dataset meets horizontal and vertical accuracy standards.

*Hide Data quality report - Absolute external positional accuracy ▲**Hide Data Quality ▲***Lineage** ►

SOURCE DATA ►

DESCRIPTION

Data developed through aerial survey methods.

SOURCE MEDIUM NAME hard disk

*Hide Source data ▲**Hide Lineage ▲***Distribution** ►

DISTRIBUTION FORMAT

* NAME Shapefile

TRANSFER OPTIONS

* TRANSFER SIZE 0.001

[Hide Distribution ▲](#)

Fields ►

DETAILS FOR OBJECT [Oroville_Spillway_02-24-2017_Project_Metadata ►](#)

* TYPE Feature Class

* ROW COUNT 1

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 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 Name ►

* ALIAS Name

* DATA TYPE String

* WIDTH 254

* PRECISION 0

* SCALE 0

[Hide Field Name ▲](#)

[Hide Details for object Oroville_Spillway_02-24-2017_Project_Metadata ▲](#)

DETAILS FOR OBJECT **Attributes**

[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 2017-03-31

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 2017-03-31 08:10:10

LAST MODIFIED IN ARCGIS FOR THE ITEM 2017-03-31 16:30:40

AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes

LAST UPDATE 2017-03-31 16:23:47

[Hide Metadata Details ▲](#)

Metadata Contacts ►

METADATA CONTACT

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ORGANIZATION'S NAME Towill, Inc.

CONTACT'S POSITION Vice President

CONTACT'S ROLE point of contact

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[Hide Contact information ▲](#)

[Hide Metadata Contacts ▲](#)

Thumbnail and Enclosures ►

THUMBNAIL

THUMBNAIL TYPE JPG

[Hide Thumbnail and Enclosures ▲](#)

FGDC Metadata (read-only) ▼