
OC Survey – Geospatial Data Products:

OC Survey is distributing various Geospatial data sets that have been produced and distributed by the United States Geological Survey (USGS) as well as a few products created by the OC Survey Geospatial/Geodetic unit. These data sets are used to support the USGS National Elevation Dataset ([NED](#)) and FEMA Floodplain mapping. These data sets and products can be valuable resources for various planning and analysis activities such as hydrological, slope, elevation, etc. OC Survey provides no warranty, expressed or implied, as to the accuracy, reliability, or completeness of the furnished data.

We are currently providing two USGS data sets being:

- 1) LiDAR - Millions of 3-dimensional data points (LAS file)
- 2) DEM - Digital elevation model (TIF file)

We are currently providing three OC Survey data products being:

- 1) CONTOURS – Estimated elevations at intervals (SHP & KMZ file)
2 foot (within 1-meter area)
20 foot (outside 1-meter area)
- 2) HILLSHADE DEM – Hill shade relief (TIF & KMZ file)
- 3) COLORED HILLSHADE DEM – Hill shade relief (TIF & KMZ file)

All Geospatial data products are based on the same data set. The contours were generated from the DEM. The DEM was generated from the LiDAR data. With this, one needs to understand the specifics of the LiDAR data in order to properly use these products.

LiDAR Meta Data (per USGS):

Time period of collection: December 17, 2011 to February 9, 2012

Nominal Pulse Spacing (NPS): 1 meter (estimated average of irregular point spacing)

Coverage of 682 square miles of Orange County which excludes the eastern portion of the County.

Vertical Accuracies (95%):

Fundamental Vertical Accuracy (FVA) open non-vegetated terrain =	0.25 meters (0.8 feet)
Supplemental Level Accuracy (SLA) individual land cover categories =	0.36 meters (1.2 feet)
Consolidated Accuracy (CLA) combined land cover categories =	0.36 meters (1.2 feet)

Raw and classified point cloud fully compliant LAS version with option of v1.2 or 1.3 and Point Record Format 1,3,4, or 5

Hydro-flattened

Reference System:

To use the data set and products properly, one must understand the reference frames they are based upon. All data is on the same datum being North American Datum 1983 (NAD83), 2007.00 Epoch. The projections and units are as follows:

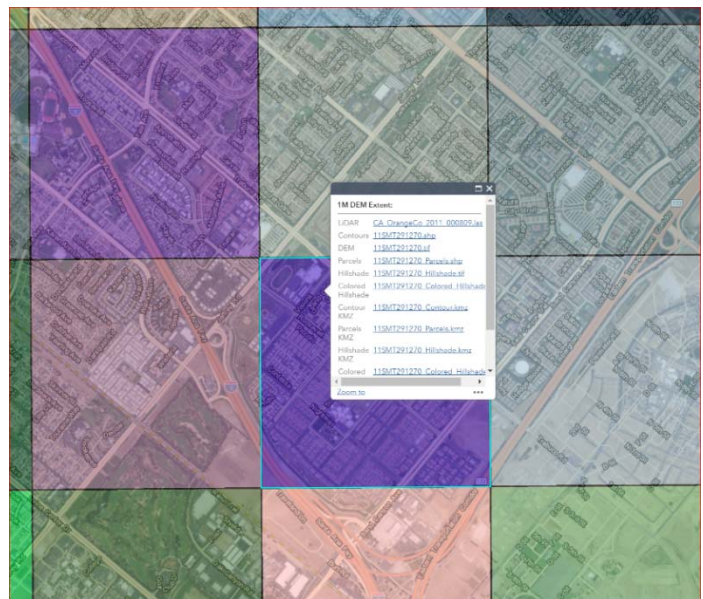
LiDAR	Horizontal = UTM Zone 11 N, NAD83 (Meters), Vertical = NAVD 88
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DEM CONTOURS HILLSHADE DEM COLORED HILLSHADE DEM	Horizontal = CCS83, Zone VI, (US Feet), Vertical = NAVD 88 (US Feet)
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Geospatial Data Download

We have created a [Web Map application](#) which contains a County wide grid based on the USGS LiDAR grid (1500m x 1500m). Selecting any of the grids will give you the option to download any data product available within that grid. All files are in a zipped file format except for the KMZ files.

Note: these files are large, especially the LiDAR files. Be patient when downloading.

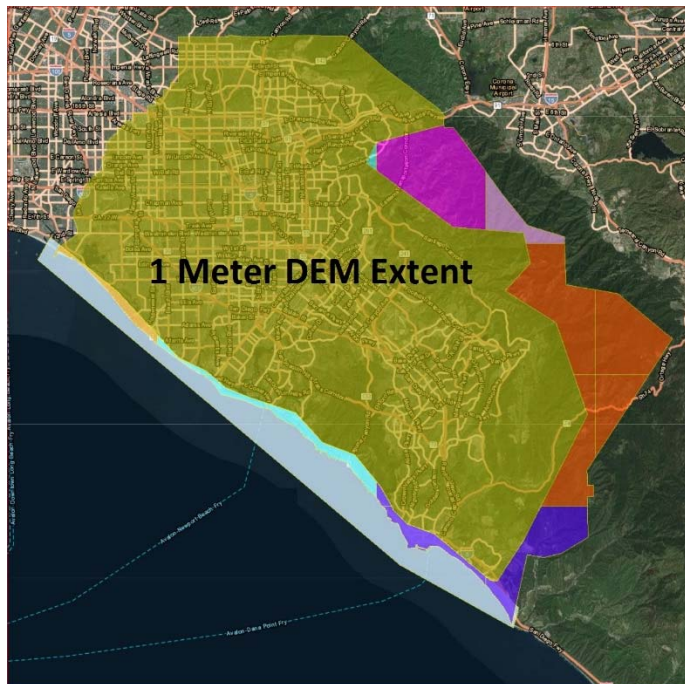


Within the “1 meter DEM extent”, you will find;

LiDAR .LAS files	(2011 - 1 meter NPS)
Contours .SHP and files	(2 foot contours based on DEM)
DEM .TIF files	(2011 - 1-meter, high resolution)

Outside of the “1 meter DEM extent”, you will find;

DEM .TIF files	(older and 10-meter, lower resolution resampled to 1 meter)
Contours .SHP files	(20 foot contours based on DEM)



Please contact myself for any questions that arise,

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