MassGIS LiDAR Terrain Data Project Area Summary July 7, 2017

Project Name	Acquisition Dates	No. of Returns	Nominal Pulse Spacing	Vertical Accuracy	Raster DEM Resolution	Points Delivered	Contours Delivered	Intensity	Projection Information
2002 Boston Area	April, 2002	2	1.25 / 0.75 m	0.14983 m RMSE	1 m	* First return XYZ * Last return XYZ	NA	First return only (raster)	MA State Plane NAD83/NAVD88 Meters
2004 Hampden County	May-July, 2004	NA	10 ft	0.483 ft RMSE	10 ft	Variably-spaced Bare Earth XYZ	2 ft	NA	MA State Plane NAD83/NAVD88 Feet
2004 Southeast Pilot	April 30, 2004	3	*A	NA	2 m	LAS (Non-standard classification)	NA	All returns in LAS file	MA State Plane NAD83/NAVD88 Meters
2005 Blackstone River	NA	NA	NA	NA	8 ft	TIN	2 ft	NA	MA State Plane NAD83/NAVD88 Feet
2006 Bristol County	Nov. 10-26, 2006	NA	1.4 m	*B	4 ft	* First XYZ * Last XYZ * Masspts. XYZ * TIN	2 ft	5 ft raster	MA State Plane NAD83/NAVD88 Feet
2006 Plymouth County	Nov. 10-26, 2006	NA	1.4 m	*B	4 ft	* First XYZ * Last XYZ * Masspts. XYZ * TIN	2 ft	5 ft raster	MA State Plane NAD83/NAVD88 Feet
2006 Shawsheen River	Dec. 16, 2006	NA	3 m	*B	1 m	NA	NA	NA	MA State Plane NAD83/NAVD88 Meters
2009 City of Boston	Nov. 9-10, 2009	4	1.0 m	0.204 ft RMSEz for 16 points	3.28 ft	* LAS 1.1 * 2D non-ground point shapefile with Z value	NA	All returns in LAS file	MA State Plane NAD83/NAVD88 Feet
2010 Concord River	Dec. 2-12, 2010	4	< 1.0 m	NVA = 0.178 m	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2010 Charles River	Dec. 2-11, 2010	4	0.6 m	NVA = 0.186 m	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2010 Quincy	Dec. 17, 2010	4	1.1 m	NVA = 0.057 m	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2010 Narragansett River	Dec. 8-10, 2010	4	0.6 m	NVA = 0.166 m	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2010 Blackstone River	Dec. 15-17, 2010	4	0.6 m	NVA = 0.167 m	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2010 Dukes County	NA	4	3 ft	NVA = 0.47 ft	1 m	* Ground-classified LAS 1.2 * TIN	2 ft 3D	All returns in LAS file	MA State Plane Island Zone NAD83/NAVD88 Feet
2010 Nantucket	NA	4	3 ft	NVA = 0.47 ft	1 m	Ground-classified LAS 1.2	2 ft 3D	All returns in LAS file	MA State Plane Island Zone NAD83/NAVD88 Feet
2011 Nashua River	May 6-7, 2011	4	0.92 m	NVA = 0.172 m	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2011 LiDAR for the Northeast	Winter-Spring 2011 *C	4	< 1 m	NVA = 0.30 m *D	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2012 Hudson-Hoosic & Deerfield	Spring 2012	3	2 m	NVA = 0.15 m	2 m	Ground-classified LAS 1.2	NA	All returns in LAS file	UTM Zone 18N NAD83/NAVD88 Meters
2012 Merrimack Watershed	Winter 2011-2012	4	0.89 m	NVA = 0.14 m	1 m	Ground-classified LAS 1.2	2 ft	All returns in LAS file	UTM Zone 19N NAD83/NAVD88 Meters
2013-2014 Sandy	Fall-Spring 2013-14	3	0.7 m *E	NVA = 18.13 cm	1 m	Ground-classified LAS 1.2	NA	All returns in LAS file and 1m raster	UTM Zones 18N & 19N NAD83 (2011)/NAVD88 Meters
2015 Massachusetts	Spring & Fall 2015	4	0.35 / 0.48 m	NVA = 0.138 m	1 m	Ground-classified LAS 1.4	NA	All returns in LAS file and 1m raster	UTM Zones 18N & 19N NAD83 (2011)/NAVD88 Meters

Notes:

*A Scan lines show paired points approximately 0.6 m apart, and 2.3 m along scan, and 2.65 m between lines, 3.25 m between centers of paired lines.

*B The bare-earth points have a Fundamental Vertical Accuracy of 1.2 ft. (36.3 cm) or better at the 95% confidence level in open terrain

*C LiDAR data acquired along the Massachusetts coast was flown at Daily Predicted Low Tide plus or minus 90 minutes.

*D Barnstable County was flown and processed to meet a bare earth Fundamental Vertical Accuracy (FVA) of 18.13 cm at a 95% confidence level, derived according to NSSDA, i.e., based on vRMSE of 9.25 cm in the "open terrain" land cover category.

Abbreviations:

RMSE Root Mean Square Error

NVA Non-Vegetative Vertical Accuracy (formerly FVA-Fundamental Vertical Accuracy)