

Town of Mason, New Hampshire

Topographic Map + GPS Grid

LEGEND:

- Transport**
 - Red lines: State Highways
 - Black lines:
 - solid: Town roads, maintained (Class V)
 - : Town roads, not maintained (Class VI)
 -: Private roads or trails
 - .-.-: Mason RR Trail
- Hydrological**
 - Blue line: stream
 - Blue area: pond
 - Green area: wetland
- Boundaries:**
 - Red dashed: Town/State line per USGS topos
 - Red dotted: State line per MA boundary data
- Circles with cross-hairs: GPS'ed locations of town line monuments
- Green dashed line: straight lines between above GPS'ed monuments
- Contours**
 - Heavy: 100' contours, labelled
 - Light: 10' contours
- Structures**
 - building footprints
 - Power line easements

NOTES:

Map CRS: ESPG:3614 NAD83(NSRS2007) / New Hampshire (ftUS)
Grid CRS: ESPG:4326 WGS 84 (GPS standard) in decimal degrees
solid lines: at 0.002 degree intervals, labelled
dotted lines: at 0.001 degree intervals

Town boundaries (dashed red line) are from GRANIT pba.shp (2006), which is largely based on the USGS 7.5' topographic map data.

Roads, RR and Powerline ROW are from GRANIT Roads_DOT.shp (2018), rr.shp (2003) and pipe.shp (2000). The Mason Railroad Trail is drawn as a dash-dot line.

The Powerline Right of Way (ROW) is shown as a red overlay whose width matches the ROW.

Streams, open water (blue), and wetlands (green) are from GRANIT NHDFlowline.shp (2007) and NWIPlusNH.shp (2017)

Building footprints (black) are from Nashua Regional Planning Commission NRPC_Building_Footprints.shp (2017)

Contours - based on 2011 FEMA LIDAR

A Digital Elevation Model (DEM) was created from FEMA 2011 Nashua River Watershed classified LIDAR data (2m horizontal resolution) processed into a 6"x6" DEM using PDAL 1.8.0. Areas of "no data" (no LIDAR points which could be classified as Ground or Water) were filled in using GDAL's "fill nodata" function.

This DEM was then filtered using SAGA's "Gaussian filter" function, set for SD=10 and radius=20 and the smoothed surface was then contoured using GDAL's "Contour" function to produce 5' contour intervals.

Vertical resolution of the LIDAR data is around ±8 inches (0.18m), compared to the ±6' (1.5m) resolution of contouring based on the National Elevation Dataset.

Town boundary GPS checks

The town line monuments were visited and their locations measured using a Bad Elf Surveyor GPS single frequency (L1) receiver set to record data into a RINEX file for a minimum of 15 minutes at each monument. The RINEX files were then post-processed using the Canadian Geodetic Survey's Precise Point Positioning service CSRS-PPP (<https://webapp.geod.nrcan.gc.ca/geod/tools-outils/ppp.php>) to correct for atmospheric conditions and satellite position errors. I estimate that the resulting locations fall within less than a 3 meter radius around the actual location.

The boundary monuments (circle with cross-hair) are color coded as follows:

- Red: State Line monuments, 14" x 14" granite posts set in 1896
- Orange: Town Line monuments, various sized granite posts
- Green: NH Highway bounds, concrete posts near Rte 31/Walker Brook Rd, shown on town line in HCRD plan #12962
- Gray: various survey monuments shown in HCRD registered plans as being on Town Line

The boundary monuments are connected by a dashed-green line. Note: the actual town lines are not necessarily straight lines between monuments and my dashed green lines are not intended to represent the town boundaries. They are nothing more than visual guides to the locations of monuments.

Of note are significant disparities between the town boundaries as shown by the dashed red lines and the monument locations as determined by GPS, for example in the following locations:
SE corner of Greenville, ~ 160 feet
NW corner of Mason, ~ 210 feet
NE corner of Mason, ~ 160 feet



Prepared for the Mason Conservation Commission by Garth Fletcher
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