

Week	Date	Topic	Reading	Assignment due	Lab due / Exam
1	23-Jan	Introduction, syllabus, class schedule, GIS examples, geospatial datasets, ESRI's ArcGIS			
2	30-Jan	Data management, metadata, ArcCatalog, coordinate systems, map projections, geodesy	Ch 1	Ch 1 Tutorial all, Tutorial questions 1, 2, 3	
3	6-Feb	Categorizing data: thematic maps, graduated colors, graduated symbols, proportional symbols, dot density	Ch 2-3	Ch 2 Tutorial to Step 55, Ch 2 tutorial questions 1-8, 11part 1 and 2 Ch 3 Tutorial to Step 39, Ch 3 tutorial questions 1-3	
4	13-Feb	Scale, layers, paths, data frame, map elements, cartography	Ch 4	Ch 4 Tutorial, all steps, Tutorial questions 1-9	
5	20-Feb	Attribute tables	Ch 5	Ch 5 Tutorial	
6	27-Feb	Map algebra, spatial queries	Ch 6 and 8	Ch 6 and 8 Tutorial	
7	6-Mar	Raster datasets			Exam
8	13-Mar	Spring break	Spring break	Spring break	Spring break
9	20-Mar	Sampling, interpolation, intro to Sand Table Project,	Ch 11		
10	27-Mar	Interpolation			
11	3-Apr	Terrain analysis			
12	10-Apr	Cartography, projections			Lab 3
13	17-Apr	Hillslope and flood analysis			Lab 4
14	24-Apr	Lab 4		Ch 3 Steps 46-57	
15	1-May	Final Project presentations			
16	6-11 May	Finals Week	Finals Week	Finals Week	

Project reports and presentations due May 1

USGS Topos

- USGS was entrusted with the responsibility for mapping the country in 1879
- In 2009, the USGS and National Geospatial Program launched a new generation of maps – termed US Topo
- US Topos are produced from a national GIS database on a 3 yr repeating cycle

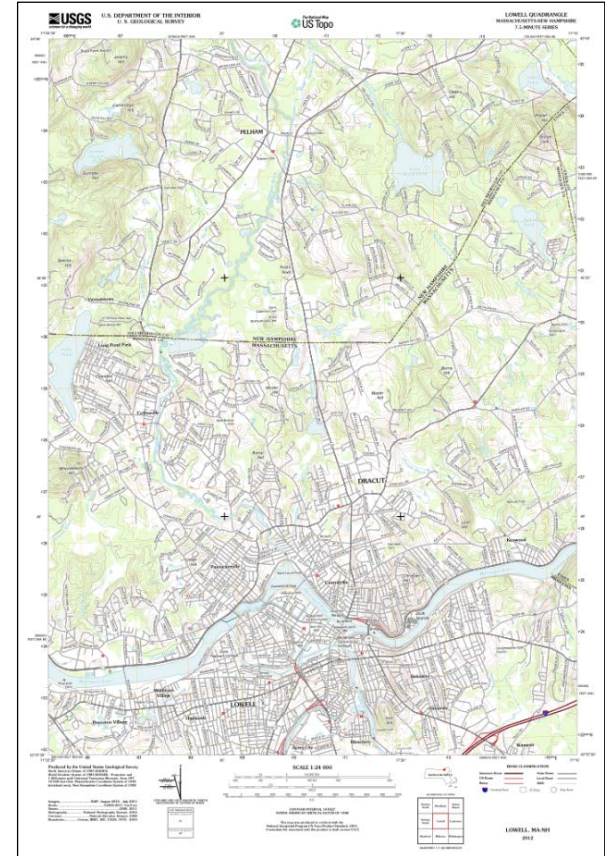
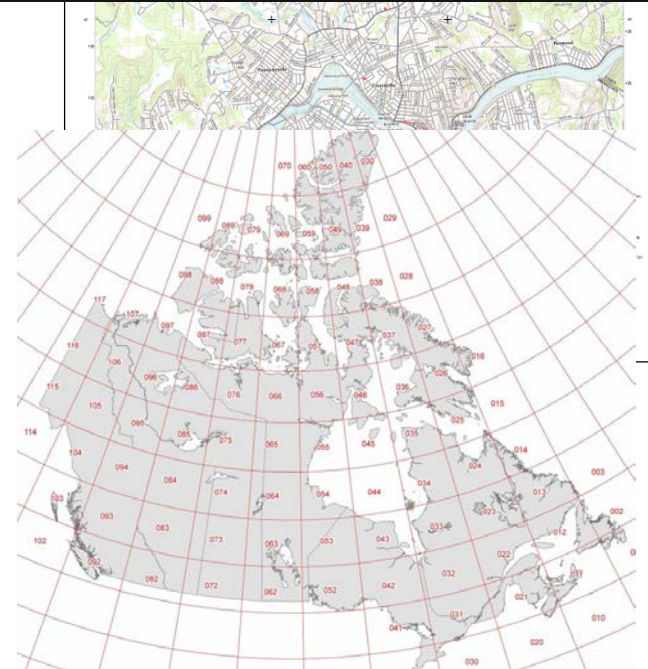
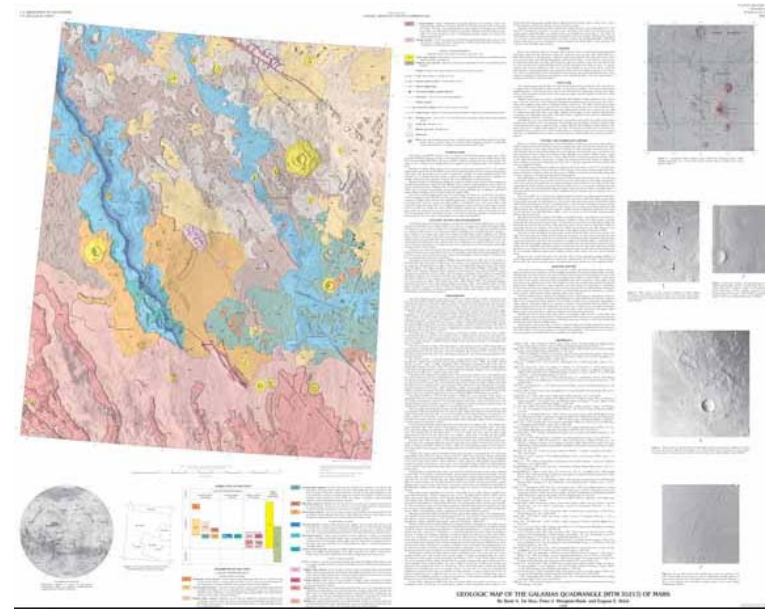


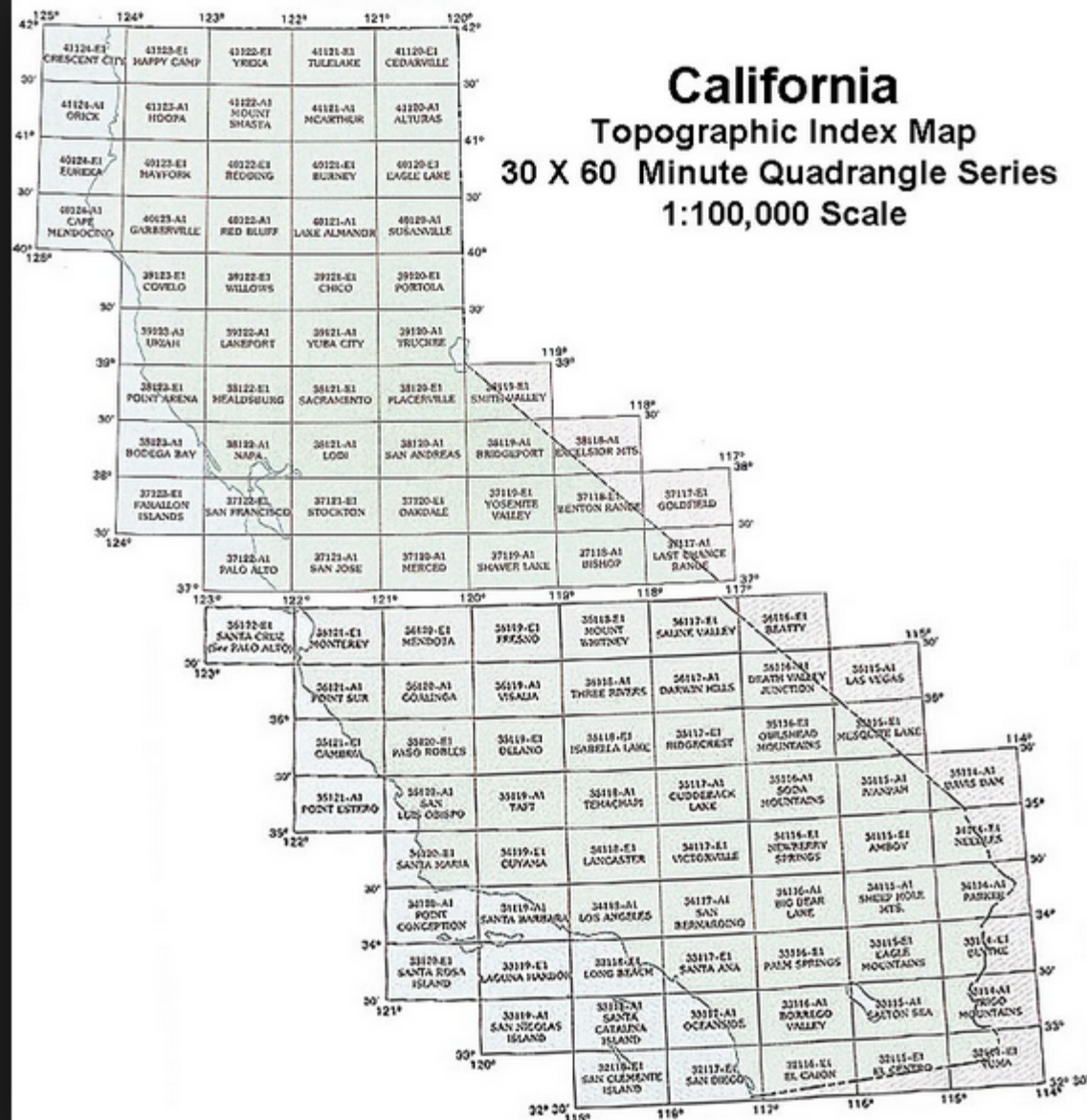
Figure 1. USGS topographic map of Lowell

USGS Topos

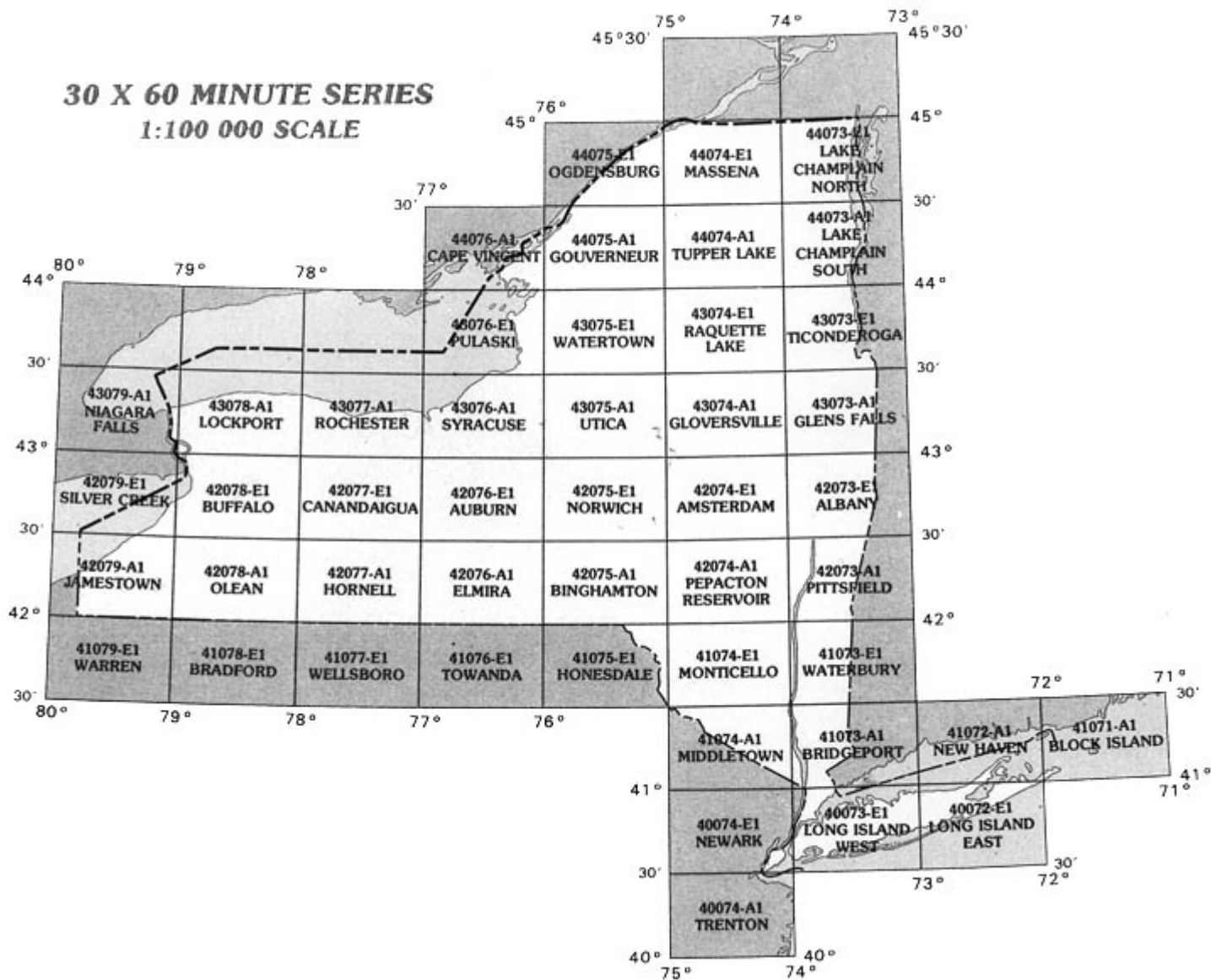
- 1:24,000-scale topographic maps (large scale), also known as 7.5-minute quadrangles “quad”
 - 1 inch = 2000 ft
 - almost 200 features
- **Layered construction of the PDF files allows users to turn data layers on and off**
- Parallels (latitude) of the quadrangle are not straight lines, but curved to match earth’s lines of latitude
- Meridians are not parallel, but point inward toward poles
- Surfaces of other planets have also been divided into quadrangles by the USGS

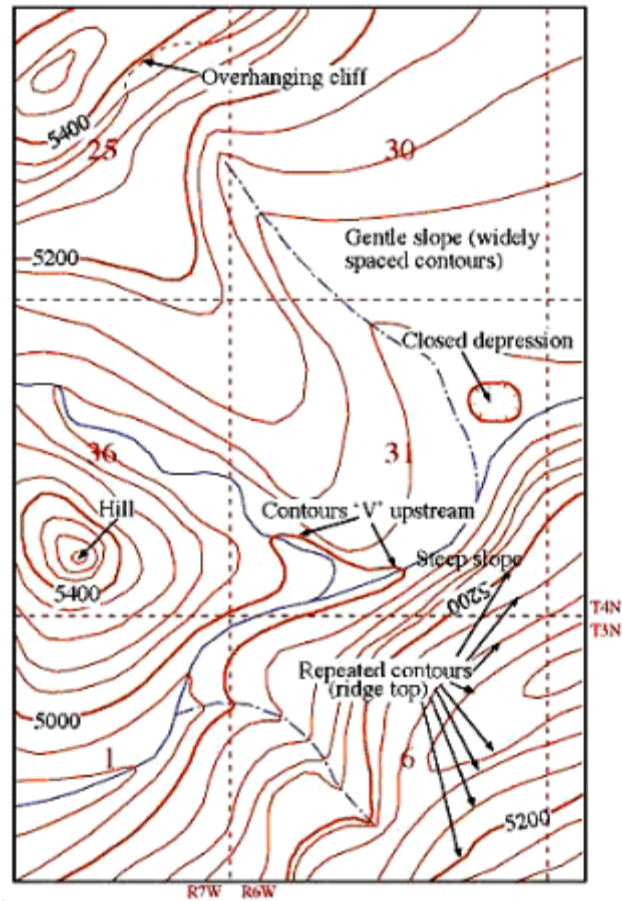


California
Topographic Index Map
30 X 60 Minute Quadrangle Series
1:100,000 Scale



30 X 60 MINUTE SERIES
1:100 000 SCALE





USGS Topos – Map elements

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)

World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 19T
10 000-foot ticks: Massachusetts Coordinate System of 1983
(mainland zone), New Hampshire Coordinate System of 1983

This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

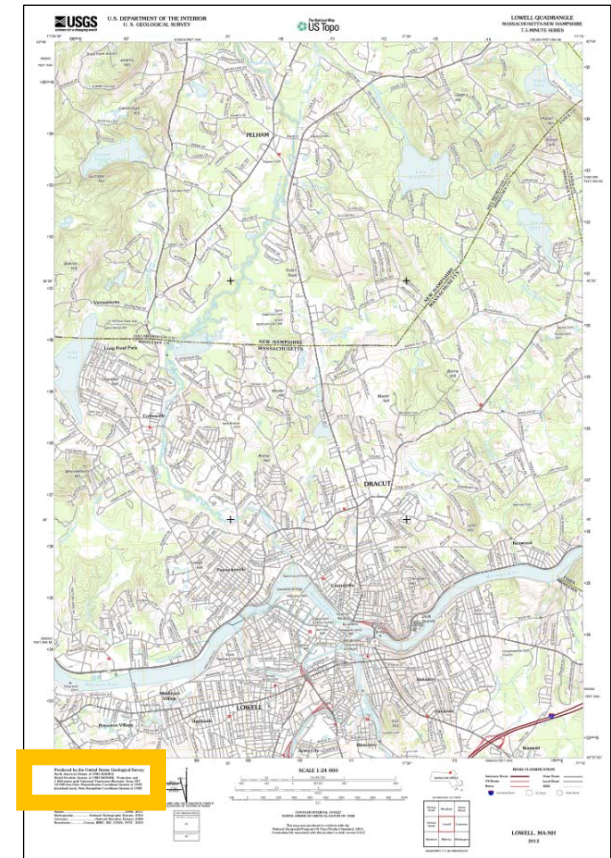


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USGS Topos – Map elements

Imagery.....NAIP, July 2014
Roads..... HERE, ©2013 - 2014
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2012
Boundaries.....Multiple sources; see metadata file 1972 - 2015

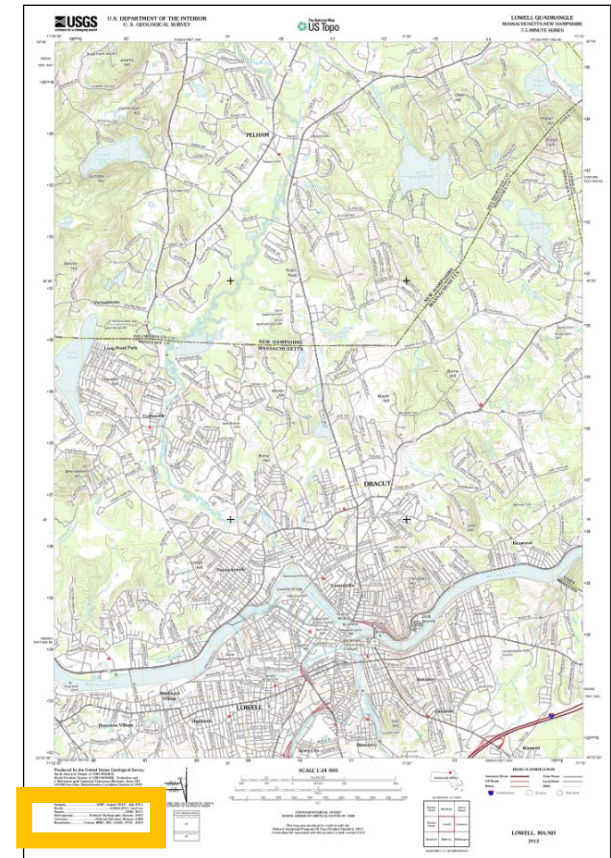


Figure 1. USGS topographic map of Lowell

Geographic north

Magnetic north

Modelled

Observed

Alert

Eureka

Ellesmere Island

Grise Fiord

Resolute

Arctic Bay

Pond Inlet

Baffin Island

Victoria Island

Cambridge Bay

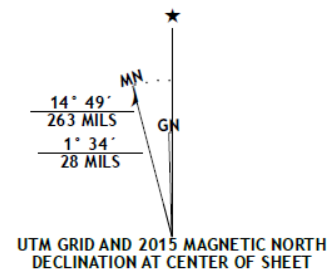
100 km

14°

263

1°

28



USGS Topos – Map elements

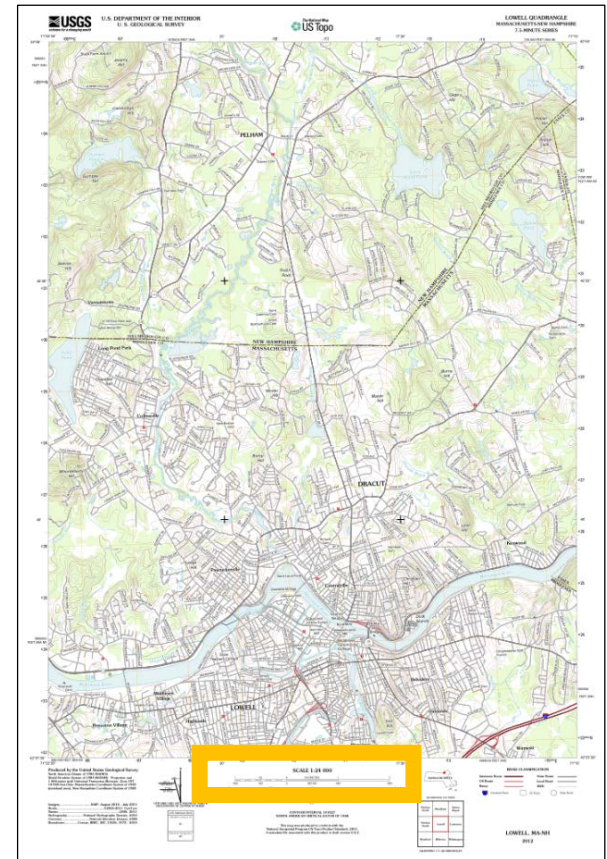
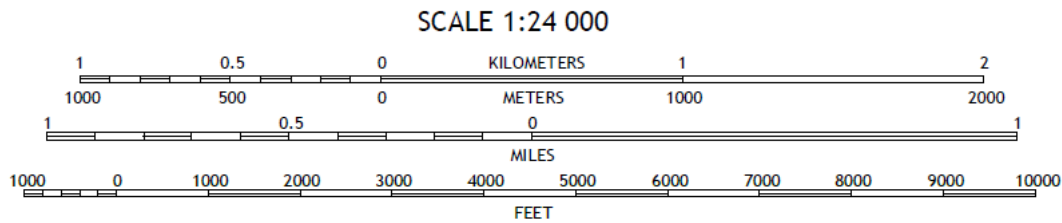


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USGS Topos – Map elements

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

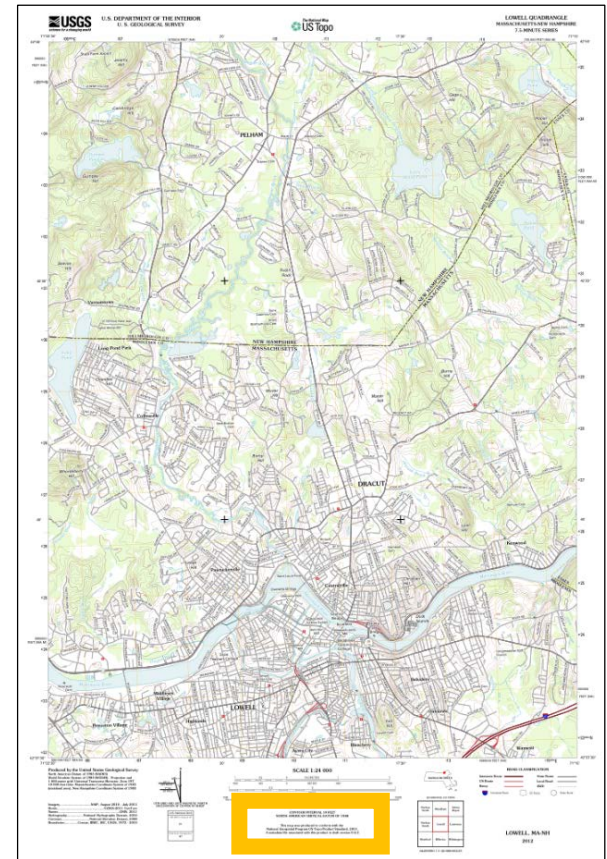


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USGS Topos – Map elements

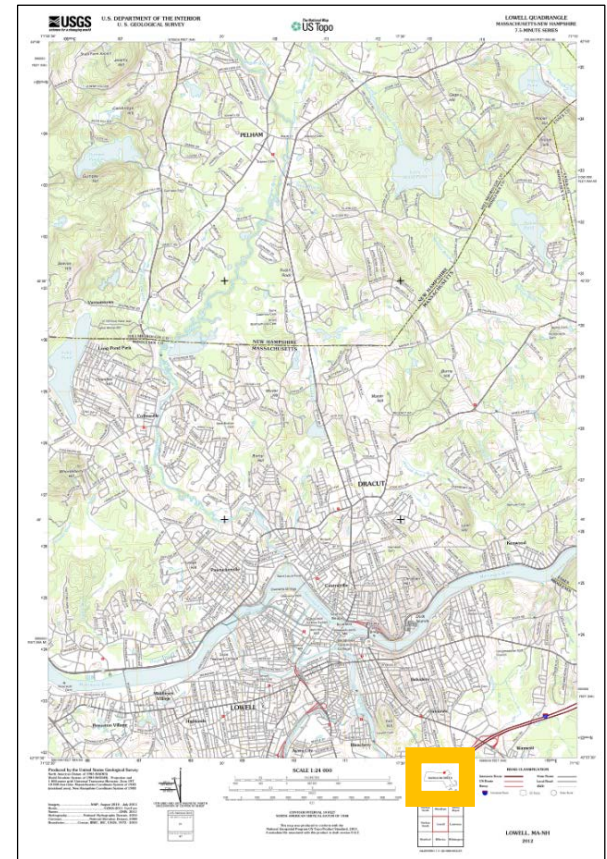
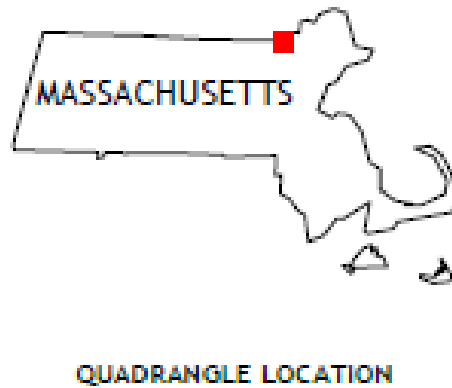


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USGS Topos – Map elements

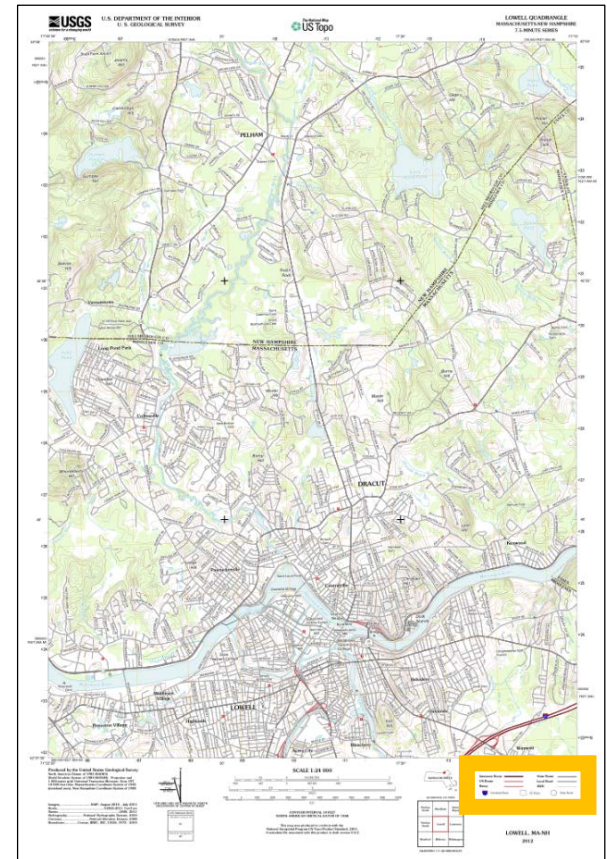
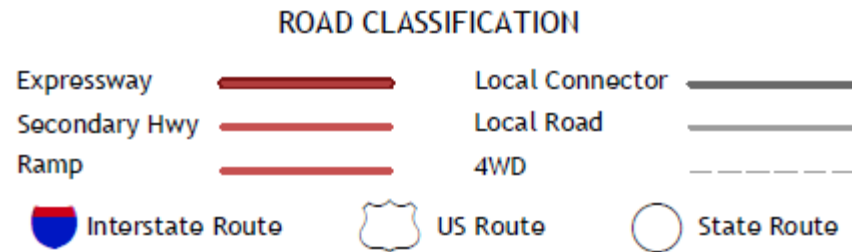


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USGS Topos – Map elements

LOWELL, MA-NH
2015

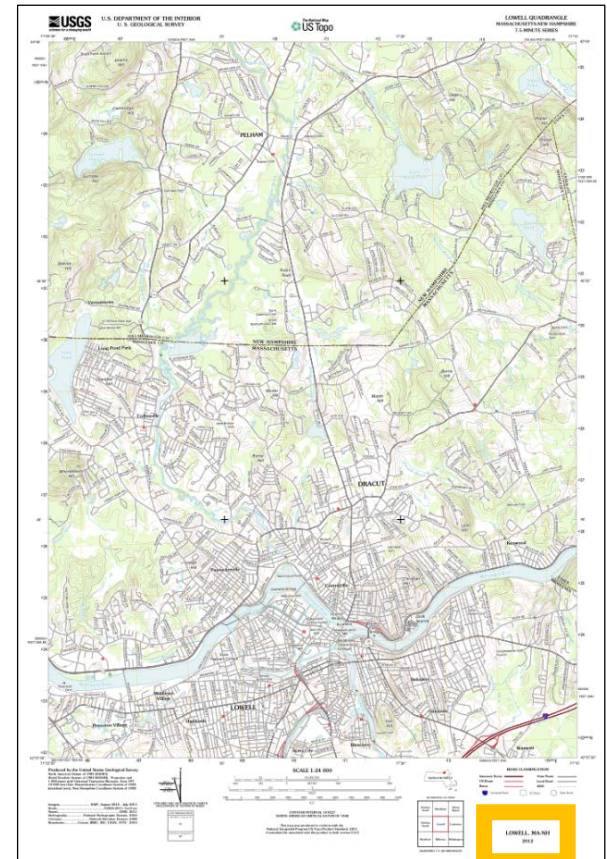


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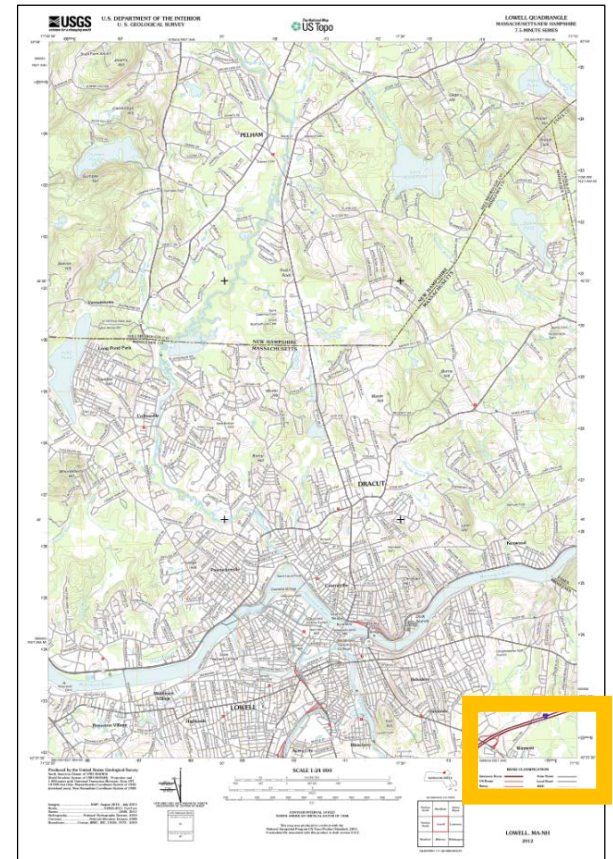
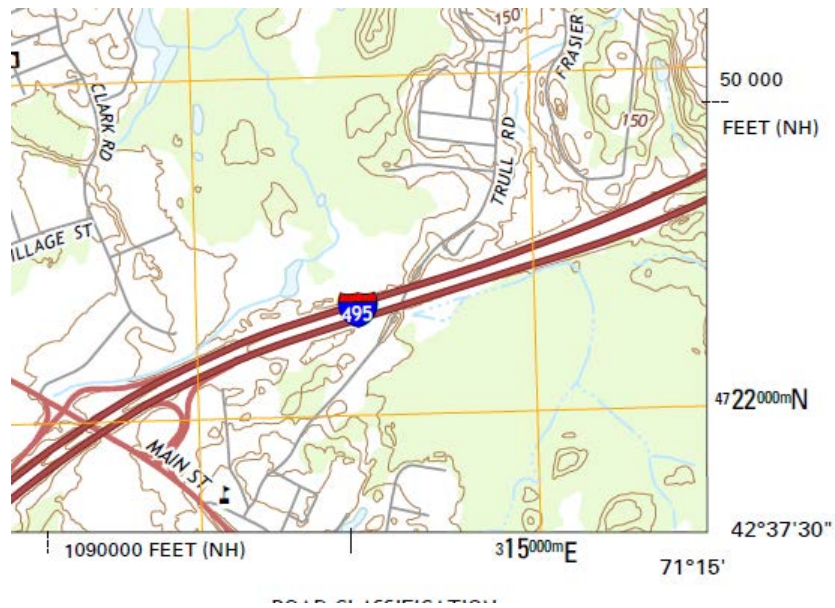


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Lab 4