

Figure 1. All Franklin County bedrock wells (points) and Bedrock Units Grouped by Yield. The map is the Franklin County (7758) portion of the statewide analyses of 92,315 wells. Map scale is 1:250,000. Refer to the statewide groundwater resource maps on the VGS web site for a discussion of this data and map. Web: <http://www.anr.state.vt.us/dec/geog/water/STATEInx.htm>

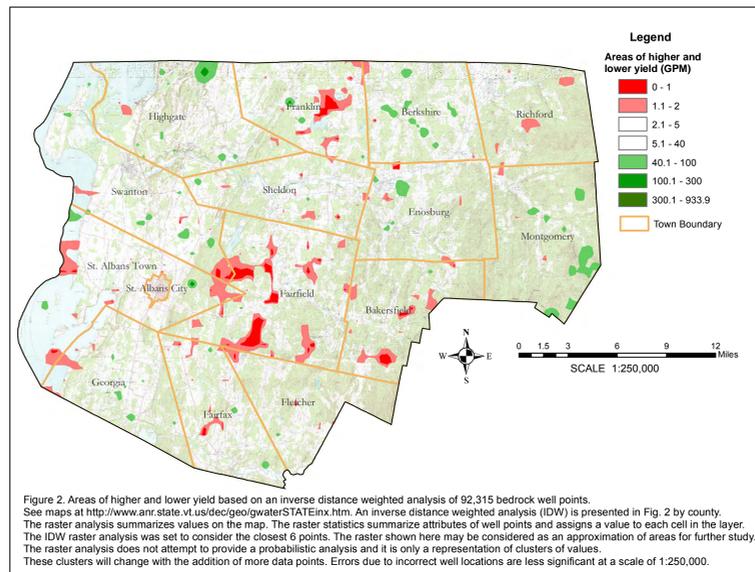


Figure 2. Areas of higher and lower yield based on an inverse distance weighted analysis of 92,315 bedrock well points. See maps at <http://www.anr.state.vt.us/dec/geog/water/STATEInx.htm>. An inverse distance weighted analysis (IDW) is presented in Fig. 2 by county. The raster analysis summarizes values on the map. The raster statistics summarize attributes of well points and assigns a value to each cell in the layer. The IDW raster analysis was set to consider the closest 6 points. The raster shown here may be considered as an approximation of areas for further study. The raster analysis does not attempt to provide a probabilistic analysis and it is only a representation of clusters of values. These clusters will change with the addition of more data points. Errors due to incorrect well locations are less significant at a scale of 1:250,000.

#### GROUNDWATER RESOURCES BY COUNTY

This Franklin County groundwater resource map shows yield (gallons per minute) data for bedrock wells as reported in the VT DEC Water Supply Division database. The map is part of a series used to evaluate Vermont's groundwater resources using existing data. A total of 92,315 wells in the State of Vermont were analyzed in the accompanying statewide study. Data was divided into counties for presentation and scale (Figs 2, 3). Well locations in the database are from well driller descriptions and sketches. Some wells have been located by GPS or by correlating a well log to an E911 address. In Franklin County 4,093 out of 7,558 wells or 54% have an E911 or GPS address (Figure 1). The remainder have suspect locations.

Well yield (gpm) is generally estimated in the field with a bucket and timer. The time period is usually short and measurements are not meant to be precise. Comparisons of the mean and median values for all wells and the mean and median values for wells in Franklin County are shown in Table 1.

Wells are grouped into yield categories on the map presented here. Depth and yield vary due to many factors, including non-geologic factors. For example, a homeowner may drill until they obtain a desired yield. The factors are not indicative of capacity. Moore et al., 2002\*, published "Factors Related to Well Yield in the Fractured-Bedrock Aquifer of the New Hampshire" in which they discussed a number of factors correlated positively or negatively to well yield. Among these factors are year drilled, median household income, drilling method, up gradient drainage area, thickness of overburden, depth drilled, proximity to streams/water bodies, type of bedrock, steepness of slope, elevation, fractures, and geologic structures.

The map presented is designed to be used in conjunction with other data and analyses. Groundwater flow in the crystalline bedrock of Vermont is mainly along planar features such as fractures, cleavage, faults, and bedding. These planar features may be interconnected and groundwater flow within this system is complex.

\*Moore, R.B., Schwartz, G.E., Clark, S.F., Jr., Walsh, G.J., and Degnan, J.R., 2002. Factors related to well yield in the fractured-bedrock aquifer of New Hampshire: USGS Professional Paper 1660.

	State of Vermont	Franklin County
# of wells	92,315	7,558
# of located wells	15,389	4,093
Mean yield, GPM	14	12
Median yield	6	5
Maximum reported yield	1200	435
Standard Deviation	23	20
Mean depth, FT	293	312
Median depth, FT	260	300
Maximum reported depth	1,765	1,212
Standard deviation	158	126
% wells with yield ≤ mean	70%	5,627/7,558 or 74%
% wells with yield > mean	30%	1,931/7,558 or 26%
% wells with depth ≤ mean	56%	4,212/7,558 or 56%
% wells with depth > mean	44%	3,346/7,558 or 44%

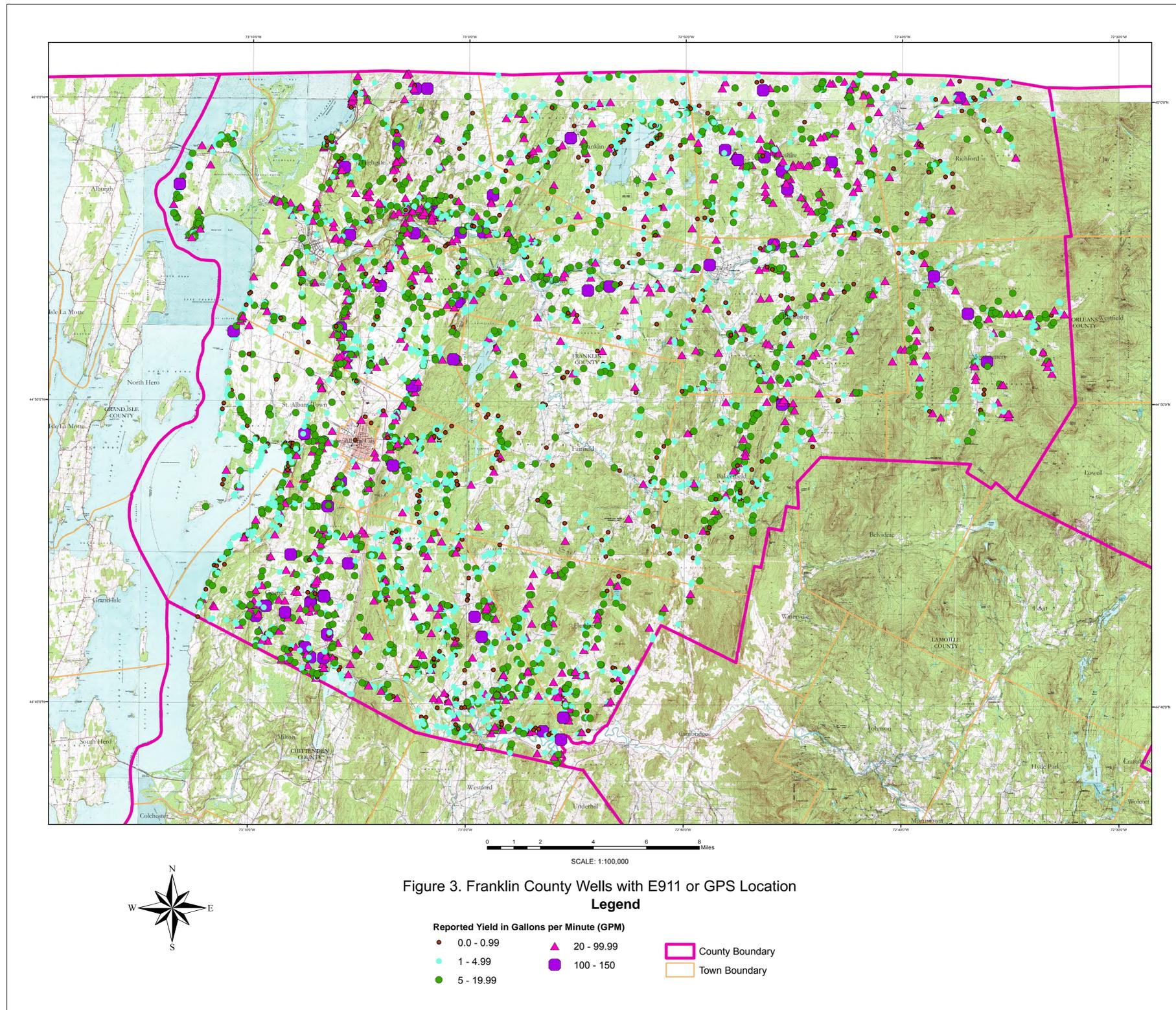


Figure 3. Franklin County Wells with E911 or GPS Location

## REPORTED WELL YIELDS IN FRANKLIN COUNTY, VERMONT

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