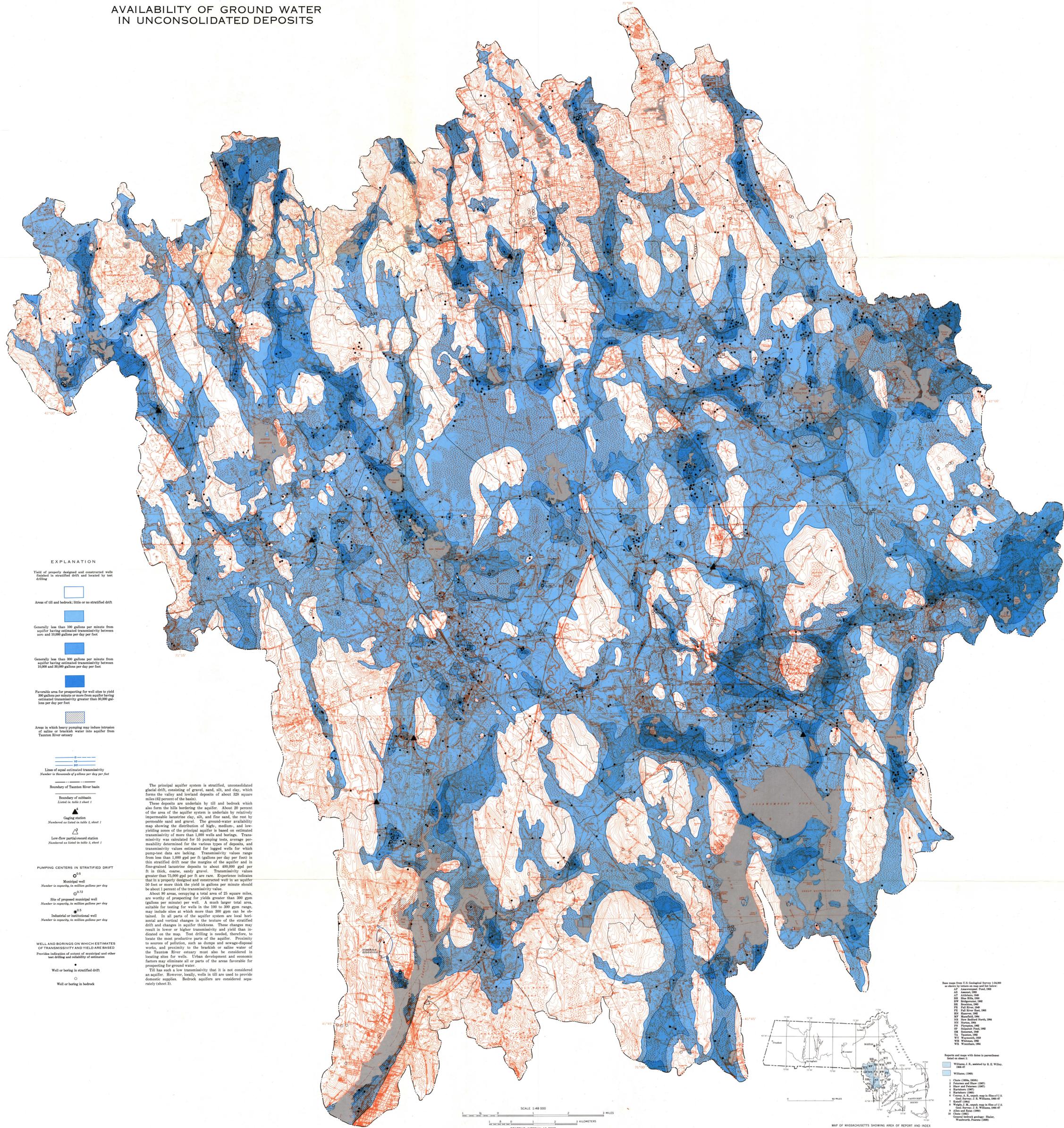


AVAILABILITY OF GROUND WATER
IN UNCONSOLIDATED DEPOSITS



EXPLANATION

- Yield of properly designed and constructed wells finished in stratified drift and located by test drilling
- Areas of till and bedrock, little or no stratified drift
- Generally less than 100 gallons per minute from aquifer having estimated transmissivity between zero and 10,000 gallons per day per foot
- Generally less than 300 gallons per minute from aquifer having estimated transmissivity between 10,000 and 30,000 gallons per day per foot
- Favorable area for prospecting for well sites to yield 300 gallons per minute or more from aquifer having estimated transmissivity greater than 30,000 gallons per day per foot
- Areas in which heavy pumping may induce intrusion of saline or brackish water into aquifer from Taunton River estuary

- Lines of equal estimated transmissivity
Number in thousands of gallons per day per foot
- Boundary of Taunton River basin
- Boundary of subbasin
Listed in table 1
- Gauging station
Numbered as listed in table 2, sheet 1
- Low-flow partial-record station
Numbered as listed in table 2, sheet 1

- PUMPING CENTERS IN STRATIFIED DRIFT
- Municipal well
Number in capacity, in million gallons per day
 - Site of proposed municipal well
Number in capacity, in million gallons per day
 - Industrial or institutional well
Number in capacity, in million gallons per day

- WELLS AND BORINGS ON WHICH ESTIMATES OF TRANSMISSIVITY AND YIELD ARE BASED
- Provides indication of extent of municipal and other test drilling and reliability of estimates
- Well or boring in stratified drift
 - Well or boring in bedrock

The principal aquifer system is stratified, unconsolidated glacial drift, consisting of gravel, sand, silt, and clay, which forms the valley and lowland deposits of about 328 square miles (92 percent of the basin). These deposits are overlain by till and bedrock which also form the hills bordering the aquifer. About 20 percent of the area of the aquifer system is overlain by relatively impermeable lacustrine clay, silt, and fine sand, the rest by permeable sand and gravel. The ground-water availability map showing the distribution of high, medium, and low-yielding zones of the principal aquifer is based on estimated transmissivity of more than 1,000 wells and borings. Transmissivity was calculated for 50 pumping tests, average permeability determined for the various types of deposits, and transmissivity values estimated for logged wells for which pump-test data are lacking. Transmissivity values range from less than 1,000 gpd per ft (gallons per day per foot) in this stratified drift near the margins of the aquifer and in fine-grained lacustrine deposits to about 400,000 gpd per ft in thick, coarse, sandy gravel. Transmissivity values greater than 70,000 gpd per ft are rare. Experience indicates that in a properly designed and constructed well in an aquifer 50 feet or more thick the yield in gallons per minute should be about 1 percent of the transmissivity value. About 90 areas, occupying a total area of 25 square miles, are worthy of prospecting for yields greater than 300 gpm (gallons per minute) per well. A much larger total area, suitable for testing for wells in the 100 to 300 gpm range, may include sites at which more than 300 gpm can be obtained. In all parts of the aquifer system are local horizontal and vertical changes in the texture of the stratified drift and changes in aquifer thickness. These changes may result in lower or higher transmissivity and yield than indicated on the map. Test drilling is needed, therefore, to locate the most productive parts of the aquifer. Proximity to sources of pollution, such as dumps and sewage-disposal works, and proximity to the brackish or saline water of the Taunton River estuary must also be considered in locating sites for wells. Urban development and economic factors may eliminate all or parts of the areas favorable for prospecting for ground water. Till has such a low transmissivity that it is not considered an aquifer. However, locally, wells in till are used to provide domestic supplies. Bedrock aquifers are considered separately (sheet 3).

- Base maps from U.S. Geological Survey 1:50,000 as shown by letters on map and list below
- A7 Ansonville, 1902
 - A8 Amherst, 1902
 - A9 Attitash, 1902
 - B1 Barre, 1902
 - B2 Bangor, 1902
 - B3 Bangor, 1902
 - B4 Bangor, 1902
 - B5 Bangor, 1902
 - B6 Bangor, 1902
 - B7 Bangor, 1902
 - B8 Bangor, 1902
 - B9 Bangor, 1902
 - C1 Cambridge, 1902
 - C2 Cambridge, 1902
 - C3 Cambridge, 1902
 - C4 Cambridge, 1902
 - C5 Cambridge, 1902
 - C6 Cambridge, 1902
 - C7 Cambridge, 1902
 - C8 Cambridge, 1902
 - C9 Cambridge, 1902
 - D1 Danvers, 1902
 - D2 Danvers, 1902
 - D3 Danvers, 1902
 - D4 Danvers, 1902
 - D5 Danvers, 1902
 - D6 Danvers, 1902
 - D7 Danvers, 1902
 - D8 Danvers, 1902
 - D9 Danvers, 1902
 - E1 Eastford, 1902
 - E2 Eastford, 1902
 - E3 Eastford, 1902
 - E4 Eastford, 1902
 - E5 Eastford, 1902
 - E6 Eastford, 1902
 - E7 Eastford, 1902
 - E8 Eastford, 1902
 - E9 Eastford, 1902
 - F1 Ferrisburgh, 1902
 - F2 Ferrisburgh, 1902
 - F3 Ferrisburgh, 1902
 - F4 Ferrisburgh, 1902
 - F5 Ferrisburgh, 1902
 - F6 Ferrisburgh, 1902
 - F7 Ferrisburgh, 1902
 - F8 Ferrisburgh, 1902
 - F9 Ferrisburgh, 1902
 - G1 Grafton, 1902
 - G2 Grafton, 1902
 - G3 Grafton, 1902
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 - H1 Haverhill, 1902
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 - H6 Haverhill, 1902
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 - H9 Haverhill, 1902
 - I1 Ipswich, 1902
 - I2 Ipswich, 1902
 - I3 Ipswich, 1902
 - I4 Ipswich, 1902
 - I5 Ipswich, 1902
 - I6 Ipswich, 1902
 - I7 Ipswich, 1902
 - I8 Ipswich, 1902
 - I9 Ipswich, 1902
 - J1 Jamaica Plain, 1902
 - J2 Jamaica Plain, 1902
 - J3 Jamaica Plain, 1902
 - J4 Jamaica Plain, 1902
 - J5 Jamaica Plain, 1902
 - J6 Jamaica Plain, 1902
 - J7 Jamaica Plain, 1902
 - J8 Jamaica Plain, 1902
 - J9 Jamaica Plain, 1902
 - K1 Keene, 1902
 - K2 Keene, 1902
 - K3 Keene, 1902
 - K4 Keene, 1902
 - K5 Keene, 1902
 - K6 Keene, 1902
 - K7 Keene, 1902
 - K8 Keene, 1902
 - K9 Keene, 1902
 - L1 Lowell, 1902
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 - M1 Middlebury, 1902
 - M2 Middlebury, 1902
 - M3 Middlebury, 1902
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 - M6 Middlebury, 1902
 - M7 Middlebury, 1902
 - M8 Middlebury, 1902
 - M9 Middlebury, 1902
 - N1 North Andover, 1902
 - N2 North Andover, 1902
 - N3 North Andover, 1902
 - N4 North Andover, 1902
 - N5 North Andover, 1902
 - N6 North Andover, 1902
 - N7 North Andover, 1902
 - N8 North Andover, 1902
 - N9 North Andover, 1902
 - O1 Orange, 1902
 - O2 Orange, 1902
 - O3 Orange, 1902
 - O4 Orange, 1902
 - O5 Orange, 1902
 - O6 Orange, 1902
 - O7 Orange, 1902
 - O8 Orange, 1902
 - O9 Orange, 1902
 - P1 Pittsfield, 1902
 - P2 Pittsfield, 1902
 - P3 Pittsfield, 1902
 - P4 Pittsfield, 1902
 - P5 Pittsfield, 1902
 - P6 Pittsfield, 1902
 - P7 Pittsfield, 1902
 - P8 Pittsfield, 1902
 - P9 Pittsfield, 1902
 - Q1 Quincy, 1902
 - Q2 Quincy, 1902
 - Q3 Quincy, 1902
 - Q4 Quincy, 1902
 - Q5 Quincy, 1902
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 - R1 Rutland, 1902
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 - R9 Rutland, 1902
 - S1 South Andover, 1902
 - S2 South Andover, 1902
 - S3 South Andover, 1902
 - S4 South Andover, 1902
 - S5 South Andover, 1902
 - S6 South Andover, 1902
 - S7 South Andover, 1902
 - S8 South Andover, 1902
 - S9 South Andover, 1902
 - T1 Taunton, 1902
 - T2 Taunton, 1902
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 - U7 Uxbridge, 1902
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 - U9 Uxbridge, 1902
 - V1 Vermont, 1902
 - V2 Vermont, 1902
 - V3 Vermont, 1902
 - V4 Vermont, 1902
 - V5 Vermont, 1902
 - V6 Vermont, 1902
 - V7 Vermont, 1902
 - V8 Vermont, 1902
 - V9 Vermont, 1902
 - W1 Waltham, 1902
 - W2 Waltham, 1902
 - W3 Waltham, 1902
 - W4 Waltham, 1902
 - W5 Waltham, 1902
 - W6 Waltham, 1902
 - W7 Waltham, 1902
 - W8 Waltham, 1902
 - W9 Waltham, 1902
 - X1 Westford, 1902
 - X2 Westford, 1902
 - X3 Westford, 1902
 - X4 Westford, 1902
 - X5 Westford, 1902
 - X6 Westford, 1902
 - X7 Westford, 1902
 - X8 Westford, 1902
 - X9 Westford, 1902
 - Y1 York, 1902
 - Y2 York, 1902
 - Y3 York, 1902
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 - Y7 York, 1902
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 - Z1 Zanesville, 1902
 - Z2 Zanesville, 1902
 - Z3 Zanesville, 1902
 - Z4 Zanesville, 1902
 - Z5 Zanesville, 1902
 - Z6 Zanesville, 1902
 - Z7 Zanesville, 1902
 - Z8 Zanesville, 1902
 - Z9 Zanesville, 1902
- Reports and maps with dates in parentheses
based on sheet:
- Williams, J. R., edited by R. E. Willey, 1967
 - Williams, 1965
 - Chen (1958, 1959)
 - Kennedy and Shaw (1967)
 - Shaw and Peterson (1967)
 - Bartholomew (1965)
 - Combs (1965)
 - Combs and R. W. Smith in Geol. U.S. Geol. Survey, J. R. Williams, 1966-67
 - Kent (1964)
 - Wagner, J. M., report on flow in flow of U.S. Geol. Survey, J. R. Williams, 1966-67
 - Chen (1961)
 - Chen (1961)
 - General hydrogeology: Rubin, Woodworth, Foster (1959)

SCALE 1:48,000
CONTOUR INTERVAL 10 FEET
SHOW TO MEAN SEA LEVEL

