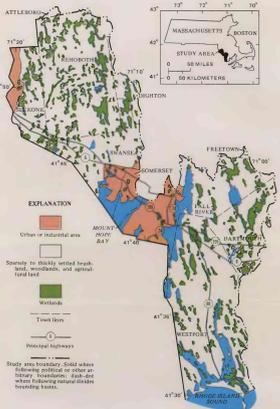
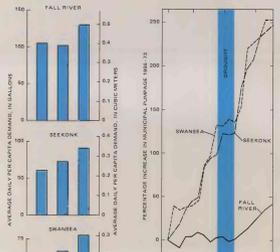


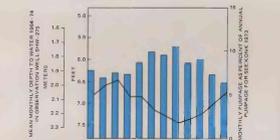
INTRODUCTION



THE STUDY AREA INCLUDES PARTS OF FALL RIVER, ATTLEBORO, SEKONK, WESTPORT, DIGHTON, SWANSEA, SOMERSET, FREETON, MARSHFIELD, AND WESTPORT, ALL IN BRISTOL COUNTY, MASSACHUSETTS. ... **Over the past 20 years the population of Fall River has been relatively stable, while the population of nearby towns has increased as much as 70 percent.** ... **Approximately 85 percent of public water supply in the study area comes from surface-water resources (primarily the Fall River system).** ... **The principal water uses are residential, agricultural, and industrial.** ... **The most favorable areas for ground-water development are located in the lower Fall River valley, along the middle and upper reaches of the Fall River, Westport River, along the Swansea River, and around Central Street.** ... **Population increase in the town has been accompanied by a marked increase in municipal water demand.** ... **There has been an increase in the per capita demand for water.**



INCREASED MUNICIPAL WATER DEMANDS DURING THE SUMMER (BAR GRAPH) CORRELATE WITH THE SEASONAL WATER TABLE DECLINE (LINE GRAPH) IN THE STUDY AREA. THIS IS EVIDENCE OF THE IMPACT OF SEASONAL GROUND-WATER STORAGE DEFLECTION.

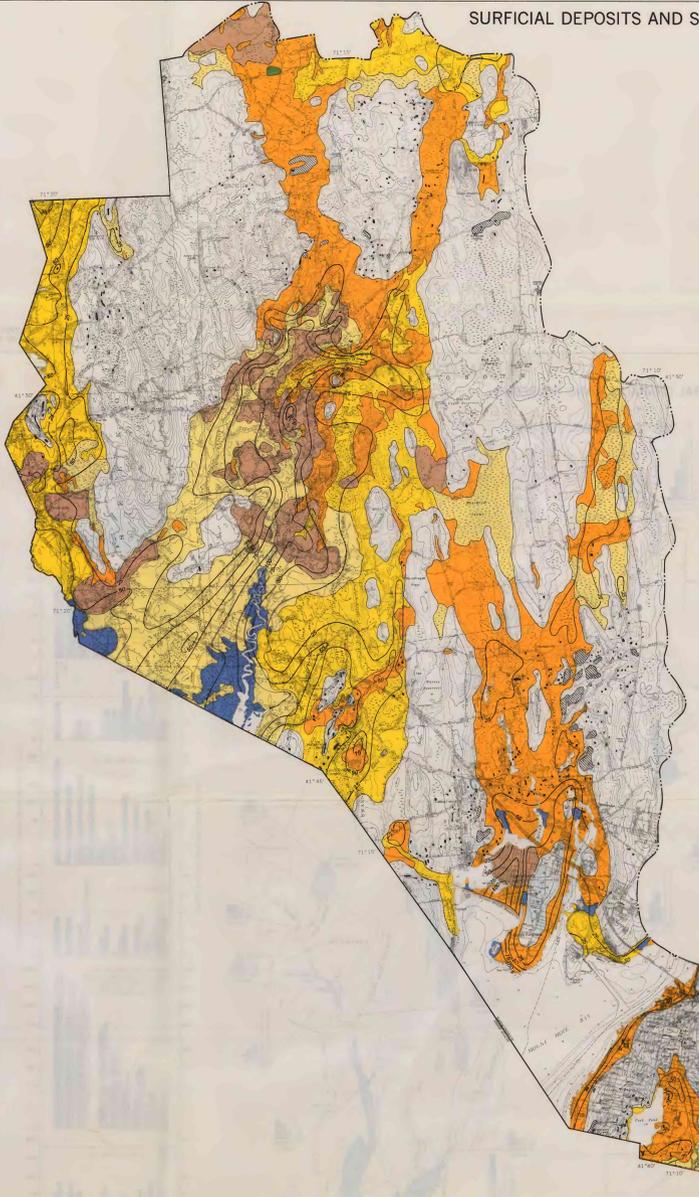


1973 water purveyance for public supplies within the study area (million gallons).

Table with 4 columns: Municipality, Ground Water, Surface Water, Total. It lists water purveyance data for various municipalities in the study area.

* Estimate based on reported yield of wells.
** Estimate based on 1973 purveyance and reported yield of wells.

SURFICIAL DEPOSITS AND SATURATED THICKNESS



INDEX TO 1:24,000 TOPOGRAPHIC MAPS
GEOLOGIC MAPPING BY
Allen, W.B., and Gorman, L.A., 1959. Ground-water map of the East Providence quadrangle, Massachusetts-Rhode Island. Rhode Island Water Resources Coordinating Board CWM-4.
Allen, W.B., and Ryan, D.L., 1958. Ground-water map of the Fall River quadrangle, Massachusetts-Rhode Island. Rhode Island Water Resources Coordinating Board CWM-5.
Pollock, S.J., 1964. Bedrock geology of the Taunton quadrangle, Rhode Island-Massachusetts. U.S. Geol. Survey Bull. 1128-D.
Smith, J.H., 1955. Surficial geology of the Bristol quadrangle and vicinity, Rhode Island-Massachusetts. U.S. Geol. Survey Geol. Quadr. Map CG-78.
Williams, J.R., 1964-67, 1972-73. Unpublished reconnaissance maps and field notes for Attleboro, Attleboro, East Providence, Fall River, Fall River East, New Bedford North, Norton, Somerset, and Westport (Mass.) quadrangles.

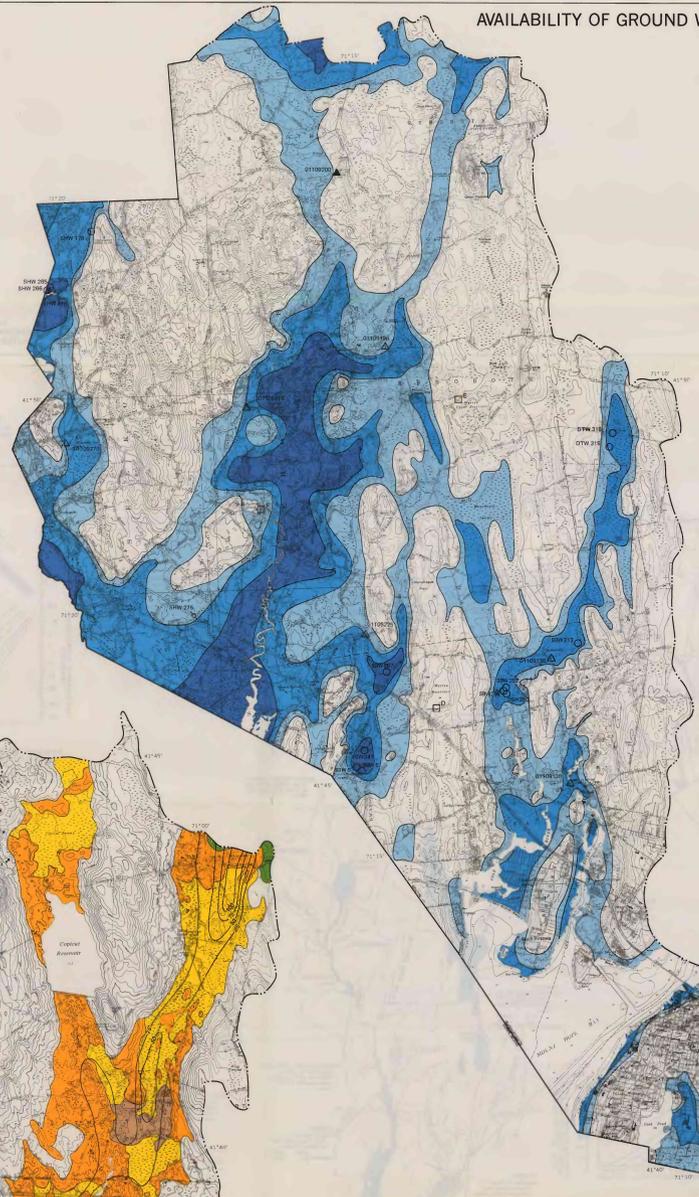
DESCRIPTION AND WATER-BEARING CHARACTERISTICS
UNCONSOLIDATED DEPOSITS AND BEDROCK

Table with 4 columns: Description of materials, Topographic expression, water runoff, and infiltration capacity, Water table, and Explanation for ground water. It provides detailed characteristics for various deposit types and bedrock.

Hydraulic conductivity of an isotropic medium (assuming a homogeneous fluid) is the volume of water of the flowing hydraulic fluidity that will move in unit time under a unit hydraulic gradient through unit area measured at right angles to the direction of flow (Lorant and others, 1972, p. 4).



AVAILABILITY OF GROUND WATER IN UNCONSOLIDATED DEPOSITS



AVAILABILITY OF WATER TO INDIVIDUAL WELLS

A few gallons per minute can be obtained from dug wells in certain, localized, clay gravel (G) wells in unconsolidated deposits. ... **OUTWASH**
Less than 100 gpd/min (0-6 ft/d)
100-200 gpd/min (6-10 ft/d)
More than 200 gpd/min (10 ft/d)
Public surface water supply. Location of wells is shown in table; location on map is that of pumping station.
Public ground-water supply. Number refers to that in table.
Observation well; water-level records given in graph.
Stream-gaging station and number.
Low-flow partial-record station and number.
Wells and water table are shown only in study area; low-flow partial-record station is indicated on map by a triangle.
* Transmissivity is the ratio at which water of the prevailing hydraulic conductivity is transmitted through a unit width of the aquifer under a unit hydraulic gradient (Lorant and others, 1972, p. 1).

PUBLIC SUPPLY PUMPING STATIONS

Table with 4 columns: Municipality, Mic Generation, Source, Capacity (million gallons per day). It lists public supply pumping stations and their characteristics.

CONVERSION FACTORS

Table with 3 columns: Multiply English units by, Length, and To obtain SI units. It provides conversion factors for various units used in the report.

REFERENCES

Hoch, R.J., and Hecker, G.M., 1970. Reinvestigation of ground-water conditions of Honomoch Beach and Gooseberry Neck, Westport, Massachusetts. U.S. Geol. Survey Open-File Report 70-2.
Johnson, H.F., and Dickerson, D.C., 1974. Availability of ground water in the Blackstone River area, Rhode Island and Massachusetts. U.S. Geol. Survey Water Resources Div. WRS-74-7.
Lohman, S.W., 1972. Ground-water hydrology. U.S. Geol. Survey Paper 708, 70 p.
Lohman, S.W., and others, 1972. Definition of selected ground-water terms - revision and conceptual re-examination. U.S. Geol. Survey Water Supply Paper 1484, 21 p.
Quinn, A.W., 1971. Bedrock geology of Rhode Island. U.S. Geol. Survey Bull. 1295, 68 p.
Shaw, N.S., Woodworth, J.B., and Forster, A.F., 1969. Geology of the Narragansett Basin. U.S. Geol. Survey Mon. 1, 402 p.
Williams, J.R., 1968. Availability of ground water in the northern part, Taunton and Taunton River basins, southeastern Massachusetts. U.S. Geol. Survey Water Resour. Div. Atlas HA-300.
Williams, J.R., Farnell, D.E., and Wiley, R.E., 1973. Water resources of the Taunton River basin, southeastern Massachusetts. U.S. Geol. Survey Hydrologic Atlas HA-304.
Williams, J.R., and others, 1974a. Water resources of the coastal drainage basins of southeastern Massachusetts. Westport River, Dighton to Taunton River, Kingston. U.S. Geol. Survey Hydrologic Atlas HA-307.
Williams, J.R., and others, 1974b. Water resources of the coastal drainage basins of southeastern Massachusetts. Plymouth to Taunton River, Taunton River. U.S. Geol. Survey Hydrologic Atlas HA-307.
Williams, J.R., and Wiley, R.E., 1973. Bedrock topography and structure of unconsolidated deposits, Taunton River basin, southeastern Massachusetts. U.S. Geol. Survey Misc. Geol. Map 1:42, 242.

WATER RESOURCES OF THE COASTAL DRAINAGE BASINS OF SOUTHEASTERN MASSACHUSETTS,
WESTPORT RIVER, WESTPORT TO SEKONK

R. E. Willey, J. R. Williams, and G. D. Tasker
1978