

E. GROUNDWATER

Groundwater can represent an important natural resource for a community. Groundwater is important to many residents because they rely on its availability for drinking, either through the use of individual wells or through a series of wells, as is often the case for a public water supply system. The conservation and protection of groundwater is very important because it can take many years to replace a depleted groundwater supply and it can be extremely expensive to remove pollutants from a contaminated aquifer.

Groundwater within the Study Area is found in two sources; the shallow deposits of windblown lake sand and, the deep, unconsolidated deposits of stratified drift. Windblown lake sand is fine to medium sand that always overlies clay. Dunes on the surface are common with steep slopes and wetlands. Due to the presence of underlying clay, a high water table is usually encountered except near large gullies or streams. The Study Area contains widespread deposits of this material. Consequently, the seasonal water table is between 0-4 feet in many locations throughout the Study Area as illustrated on Exhibit II-E-1.

Groundwater can be obtained from these windblown and lake sands through shallow dug wells or through the use of well points. However, groundwater from these types of wells can be easily polluted and thus, are not as reliable as drilled wells which obtain water from greater depths.

Stratified drift is a layered sand and gravel mix which is saturated with groundwater. In most cases stratified drift is an excellent groundwater aquifer and this is where the Study Area's principal source of groundwater can be found. The location of stratified drift is shown on Exhibit II-E-2.

The stratified drift shown on Exhibit II-E-2 is mapped with a 25-foot contour interval. Silty zones within the stratified drift unit consist of layered silt that reduce the area's water bearing capacity. Recharge areas are zones of permeable material which are hydrologically connected to the aquifer system. These areas are important to the continued maintenance of the subsurface aquifers.

Of particular note within the Study Area is the Loudonville esker which is a high yielding aquifer. This aquifer is the source of the Latham Water District artesian well located near the southeast quadrant of the Airport property. The District's well is capable of producing over 300 gallons per minute under its own artesian pressure, and over 1,000 gallons per minute under pumped conditions. The water from this aquifer, however, contains high levels of iron and manganese. Therefore, the Latham Water District maintains this well only for emergency purposes.

Impacts and Mitigation Measures:

Future development within the Study Area has the potential to affect the quality of groundwater. The excavation of soil for roadway and building construction could require cutting below the groundwater table, especially in areas where groundwater is between 0-4 feet below the surface. This situation can expose groundwater to sources of contamination.

In an effort to reduce impacts on groundwater, the Town, Village, and County should consider certain factors when reviewing development plans for various projects within the Study Area. These factors should include the identification of areas that will require excavation below the water table and the identification of land uses which could have the potential to store contaminants on-site. When situations involving potential impacts to groundwater are identified, specific



LEGEND

 DEPTH 0-4' FEET

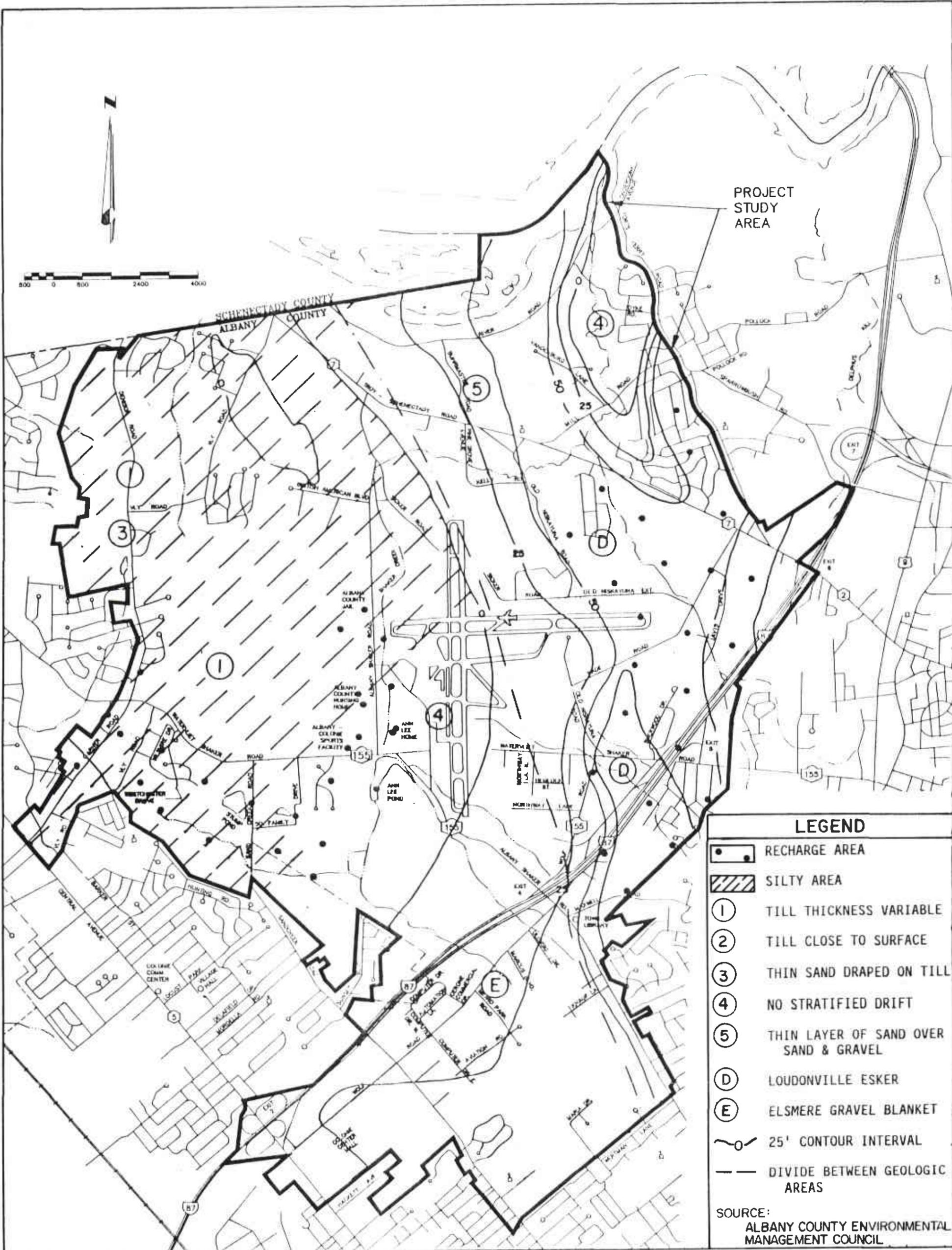
SOURCE:
TOWN OF COLONIE CONSERVATION
ADVISORY COUNCIL MAPPING

CHA CLOUGH, HARBOUR & ASSOCIATES
ENGINEERS & PLANNERS
3 WINNERS CIRCLE ALBANY, N.Y., 12205

DEPTH TO SEASONAL WATER TABLE

EXHIBIT NO.
II - E - 1

**AIRPORT AREA GENERIC
ENVIRONMENTAL IMPACT STATEMENT**



LEGEND

- RECHARGE AREA
- SILTY AREA
- 1** TILL THICKNESS VARIABLE
- 2** TILL CLOSE TO SURFACE
- 3** THIN SAND DRAPED ON TILL
- 4** NO STRATIFIED DRIFT
- 5** THIN LAYER OF SAND OVER SAND & GRAVEL
- D** LOUDONVILLE ESKER
- E** ELSMERE GRAVEL BLANKET
- 25' CONTOUR INTERVAL
- DIVIDE BETWEEN GEOLOGIC AREAS

SOURCE:
ALBANY COUNTY ENVIRONMENTAL
MANAGEMENT COUNCIL

CHA CLOUGH, HARBOUR & ASSOCIATES
ENGINEERS & PLANNERS
3 WINNERS CIRCLE ALBANY, N.Y. 12205

THICKNESS OF STRATIFIED DRIFT

AIRPORT AREA GENERIC ENVIRONMENTAL IMPACT STATEMENT

EXHIBIT NO.
II - E - 2

mitigation measures should be employed. These measures could include: consider slab-on-grade construction in areas of high groundwater; if standard septic system construction is not feasible in areas of seasonal high groundwater, then fill systems meeting Albany County Department of Health standards should be required; require curtain or french drains around proposed septic systems in appropriate areas; to maintain road integrity, require underdrains in appropriate areas; if private water supplies are desired for single family residences, then require verification of groundwater quality and quantity from on-site pump testing; and require proper containment for contaminants associated with any new development during pre and post-construction periods, e.g., containment for above ground tanks and proper design for underground tanks in accordance with NYSDEC standards.

Recently the NYSDEC identified an area of soil contamination on the property occupied by the Albany County Airport. The NYSDEC has determined that the soil in the area of the old underground tank farm adjacent to the rental car lot has been contaminated by oil, and as such, remedial measures should be undertaken to correct the problem. Initially, this will include the excavation and disposal of contaminated soil in conformance with NYSDEC Petroleum Bulk Storage Regulations (6 NYCRR Part 613). If the oil is found in contact with the groundwater table and there is evidence that the oil has migrated significantly, then more extensive remedial action may be required. This might include the pumping and treatment of the groundwater to remove the contaminants.

This problem will likely be corrected during the proposed expansion of the passenger terminal facilities. These underground tanks have been permanently removed from service by the fixed base operator, Page Avjet. New above-ground fuel storage tanks have been installed, and this will greatly reduce the potential of

future groundwater contamination by fuel stored at the Airport. Nevertheless, the potential for groundwater contamination in the Study Area will increase in the future as a result of projected development.

The Loudonville esker lies partially within the Study Area and includes an aquifer which has been tapped by the Latham Water District. The District maintains a well which, due to high levels of iron and manganese in the well water, is only used for emergency purposes. Given the continuing vulnerability to the Mohawk River and the Latham Water District intake to spills and other contamination events, the Town of Colonie may wish to consider protecting the Loudonville esker aquifer and other recharge areas in the Study Area from future contamination. One means to achieve this objective would be to establish an Aquifer Overlay Protection Zone in the Town.

In 1990, the New York State Department of Health promulgated draft Watershed Rules and Regulations to protect from contamination the public water supplies drawing from the Schenectady Aquifer. A copy is included in the FGEIS as Appendix 15. These proposed rules establish protection zones and include specific regulations to limit land uses which may contravene the quality of groundwater. They are included in this FGEIS as an example of a potential mitigation measure which should be considered by the lead agency and involved agencies to preserve groundwater resources within and adjacent to the Study Area.