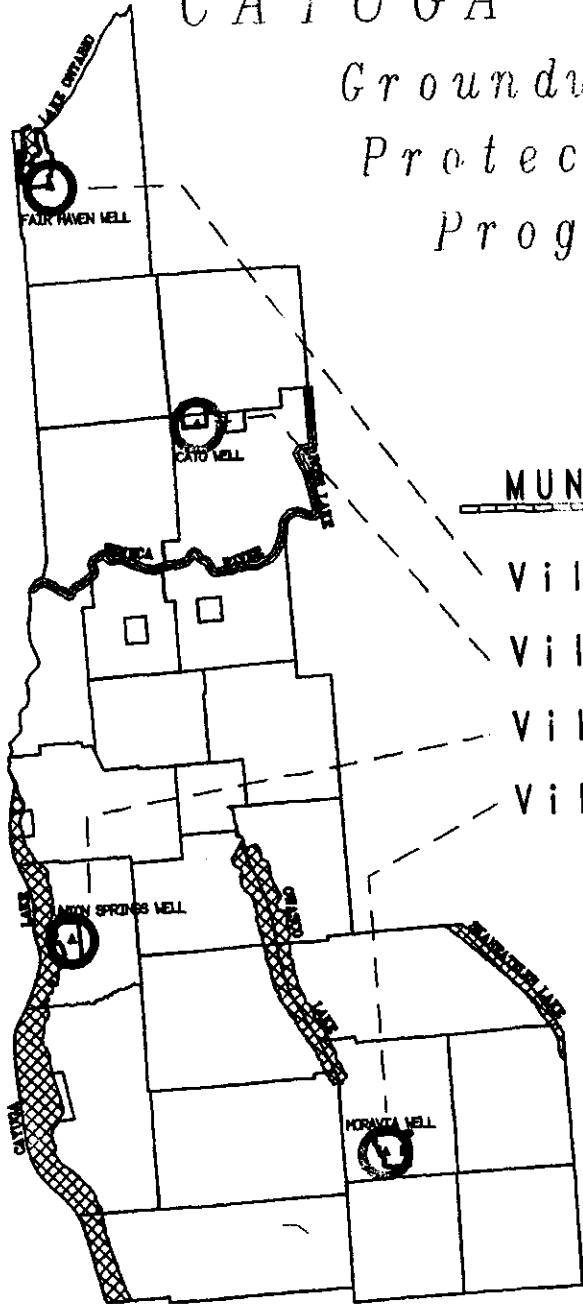
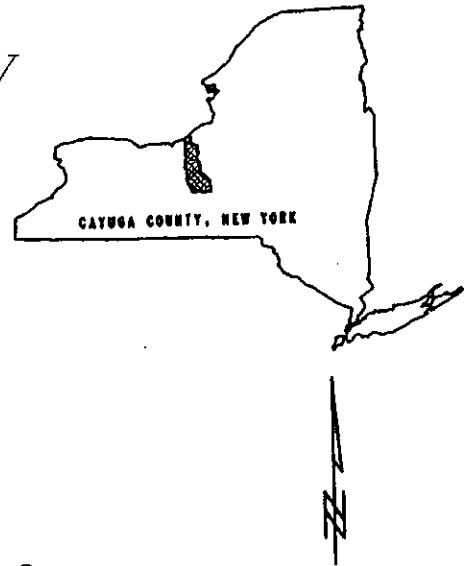


CAYUGA COUNTY

Groundwater Protection Program



MUNICIPAL WELLS

- Village of Fair Haven
- Village of Cato
- Village of Union Springs
- Village of Moravia

PREPARED FOR: Statewide Water Quality Management Program



BY:
Cayuga County GIS
Cayuga County Planning Board
Robert N. Brower, Director of Planning
The Environmental Management Council
GIS Technician: Ken White

IN COOPERATION WITH:
NYSDEC; Central NY Regional Planning and Development Board; Cayuga County Health Department; The Villages of Fair Haven, Cato, Union Springs and Moravia; and Town Planning Boards.

SPRING - SUMMER, 1995

MAP: UNPC05E

CAYUGA COUNTY
WELLHEAD PROTECTION PROGRAM

August 1995

Prepared by: The Cayuga County Planning Board, Robert N. Brower, Director; David Miller, Local Planning Coordinator; The Environmental Management Council; Ken White, Technical Staff, GIS; Bruce Natale, P.E.; Travis Reynolds, Research and Document Development.

In cooperation with: New York State Department of Environmental Conservation; Central New York Regional Planning and Development Board; Cayuga County Health Department; The Villages of Moravia, Union Springs, Cato, and Fair Haven, and Town Planning representatives.

VILLAGE OF FAIR HAVEN

Well Data:

The Village of Fair Haven municipal water supply well field is situated southeast of the village in the Town of Sterling. The well field provides water to approximately 976 persons through 804 services, as well as a large summer population which includes Fair Haven State Park. The average daily demand as measured from May 1989 to April 1990 was 150,000 gallons per day. Samples were collected in 1985 and tested for organics. All of those tested for were found to be within acceptable limits. No well log data is available.⁹ The wellfield consists of two drilled wells and a spring fed daywell. The daywell dates from 1940 and is used in emergency situations. The first older drilled well was drilled in 1967 and is used mainly in the summer. The second well was drilled in 1986 and is used mainly in the winter.

Site Characteristics:

The well is located approximately 1 mile southeast of the village of Fair Haven, 600 ft. south of Route 104A. The general flow of groundwater is North Northwest and the estimated maximum well yield is 800,000 GPD.

Soils in the well area are predominantly composed of the Alton, Sloan, and Williamson soil series. The slopes of these soils range from rolling to 8%. The Sloan and Williamson series soils have a low vulnerability rating based on their permeability rate of .20 - .63 inches per hour. The Alton series has a medium vulnerability rating based on a permeability rate of .63 - 6.3 inches per hour.¹⁰

Land use in the wellhead area as shown in the 1978 NRI indicates that the well area is surrounded by active cropland (Ac) and the land upgradient of the wellhead area is forest (Fn).

The topographic map indicates that most of the surface drainage in the vicinity that would likely recharge the system originates within a mile of the wellhead.

The Town and Village are not served by municipal sewage treatment works. However, the County Sanitation Code requires testing of individual septic systems at five year intervals.

Threats:

Figure 21 shows the approximate location of spills recorded since 1980 within the one mile radius study area. No petroleum storage or point sources are in proximity to the south of the well and no spills had been recorded in this direction within the one mile radius. With the location of the wellheads in proximity to Route 104A, the threat of accidental fuel spills still exists.

Relative to potential threat of septic system discharge, the County's Sanitation Code needs to be strongly enforced especially in areas upgradient of the wellhead location.

Protection:

In 1990 the village contracted the environmental engineering firm of Sterns and Wheeler to draft a wellhead protection plan. The plan outlined zones of protection around vulnerable areas of the wellhead.

Recommendations:

The village has taken the initiative to compose a wellhead protection plan that demonstrates commitment to the reduction of controllable threats. Adherence to the plan and consideration of the following recommendations will help ensure future water quality.

⁹ Vulnerability Analysis for Public Water Supply; Village of Fair Haven; Steenburgh & Catto; 1990.

¹⁰ Cayuga County Soil Survey; USDA; 1970

General

10

- I. Protect existing quality of groundwater supply and protect from future contamination.
- II. Protect areas with potential for future well sites.
- III. Investigate obtaining sound, in-depth hydrogeologic information.
 - A. Well log data in the area for past and future wells
 - B. Obtain aquifer recharge area data
 - C. Obtain accurate subsoil data
 - D. Obtain accurate groundwater flow data
- IV. Include groundwater impacts when completing State Environmental Quality Review Act reviews.
- V. Require registration and testing of all fuel holding tanks within the 1 mile radius of the wells, especially underground tanks.
- VII. Develop emergency contingency plan for spills or contamination within the 1 mile radius of the wells.

Land Use/Regulation

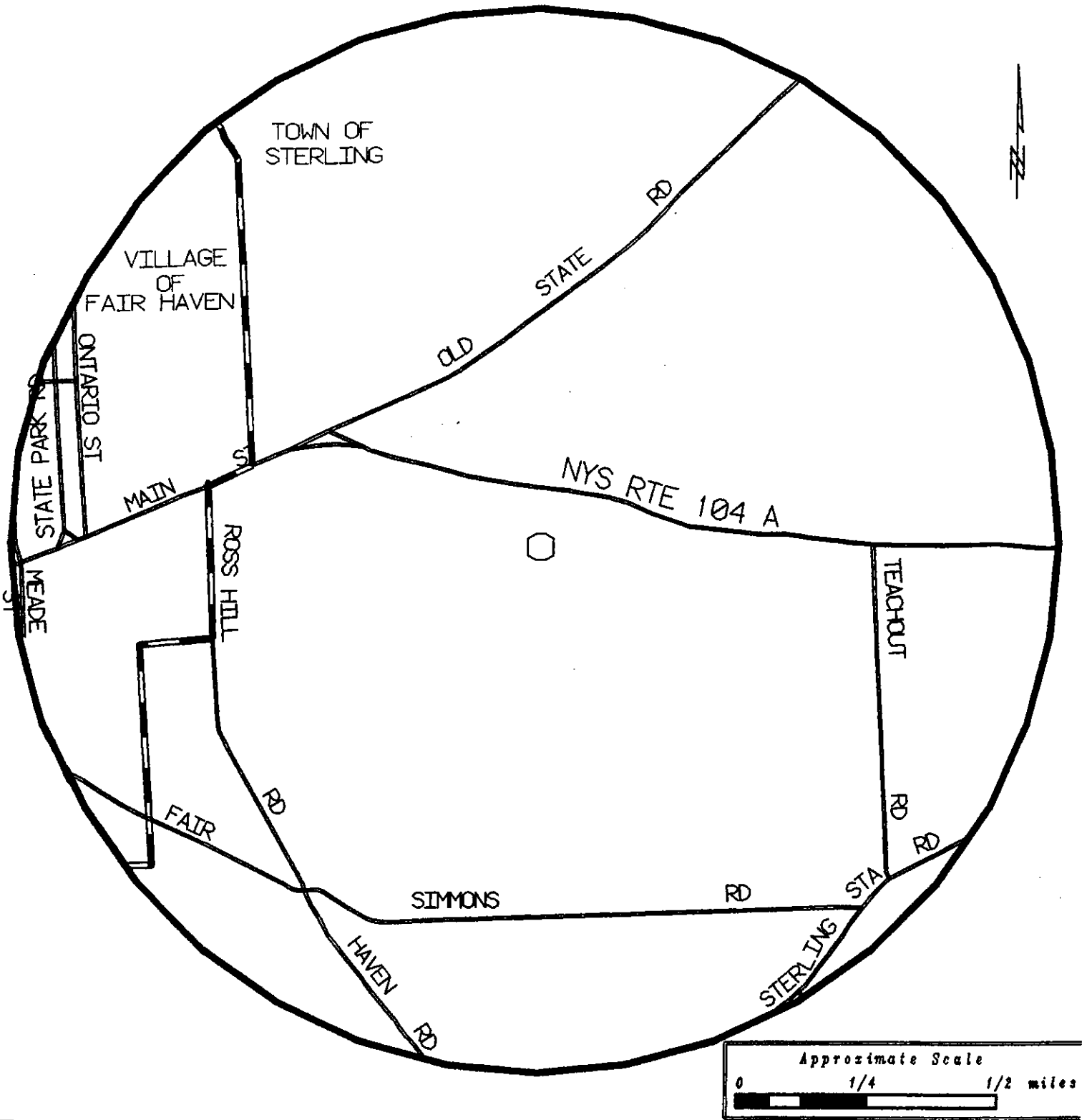
- I. Adhere to Regulatory Safeguard proposal in Appendix A concerning land use/zoning.
- II. Once recharge areas are determined, limit development near those areas. If recharge areas are determined to extend beyond the Village boundaries, then work with the Town on implementation of development limitations.
- III. Include groundwater impact review into land use decisions such as zoning ordinance amendments, variances, special permits, and site plan reviews involving property within the 1 mile protection radius if this material has not been included in a SEQR review. Work with the Town on implementation where protection and/or recharge zones are beyond Village limits.
- IV. Pesticide use concerning agricultural lands within the wellhead protection radius should be closely examined. Storage and mixing of pesticides within the protected zones should be limited to facilities that meet DEC recommended guidelines. The village should consider working with lands in agricultural production to implement Integrated Pest Management practices and Nutrient Management Programs to reduce applications of pesticides and fertilizers.
- V. The Village as well as the Town of Sterling should attempt to minimize impervious surfaces over known recharge areas once they are determined.
- VI. Require registration and testing of all fuel holding tanks within the 1 mile radius of the wells.

Education

- I. The Village and County should involve themselves with the promotion of groundwater awareness and protection. The education of residents as well as businesses in the area can lead to the highest levels of protection for the water supply. Potential efforts could include:
- A. Advocate newspaper articles that inform readers about the aquifer, wells, water system, and potential contaminants, as well as individual actions that residents can take to control contamination.
 - B. Keep decision-makers such as elected officials informed as to local concerns.
 - C. Hold informational meetings concerning the water quality of the Village, to discuss proposals for the Village wellhead protection plan, and circulate informative brochures that include the above.
 - D. Provide quality educational materials to residents of the village which discuss:
 - 1. Alternatives to hazardous household chemicals.
 - 2. Alternatives to lawn and garden chemicals.
 - 3. Proper disposal of automotive fluids.
 - 4. Proper disposal of paints, paint solvents and clean-up wastes.
- II. Distribute the wellhead protection plan to citizens of the Village and the Town of Sterling.

VILLAGE OF FAIR HAVEN

One mile radius around community water supply well head

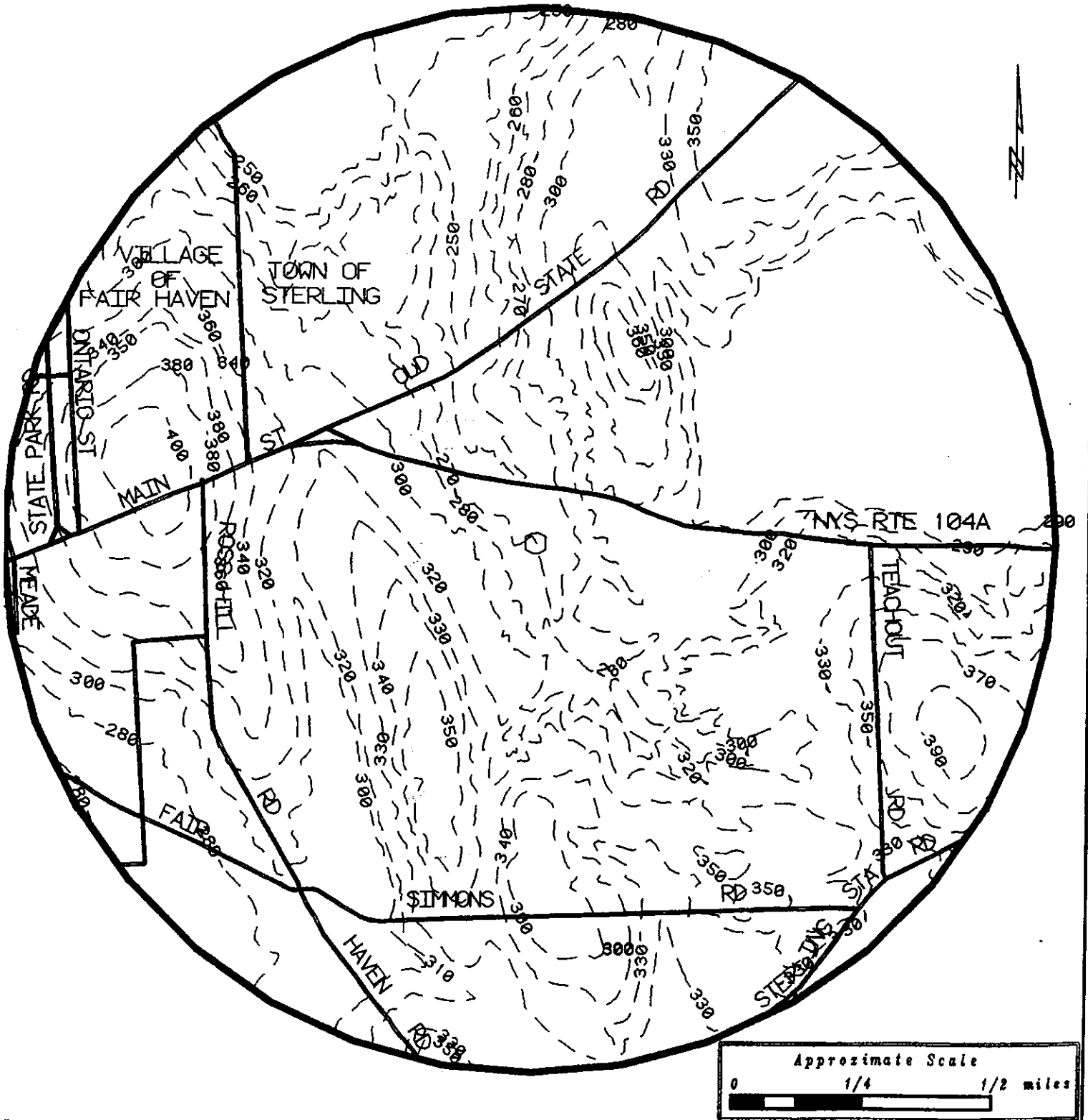


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WELL HEAD LOCATION 
BASE MAP - Roads and Streets
Town of Sterling

VILLAGE OF FAIR HAVEN

One mile radius around community water supply well head



AREA FOR: Statewide Water Quality Management Program

BY:
 Cayuga County GIS
 Cayuga County Planning Board
 Robert N. Brower, Director of Planning
 The Environmental Management Council
 GIS Technician: Ken White

WELL HEAD LOCATION ○
 TOPOGRAPHY

Town of Sterling

SPRING - SUMMER: 1988

figure 17: WHPTOPO.FH

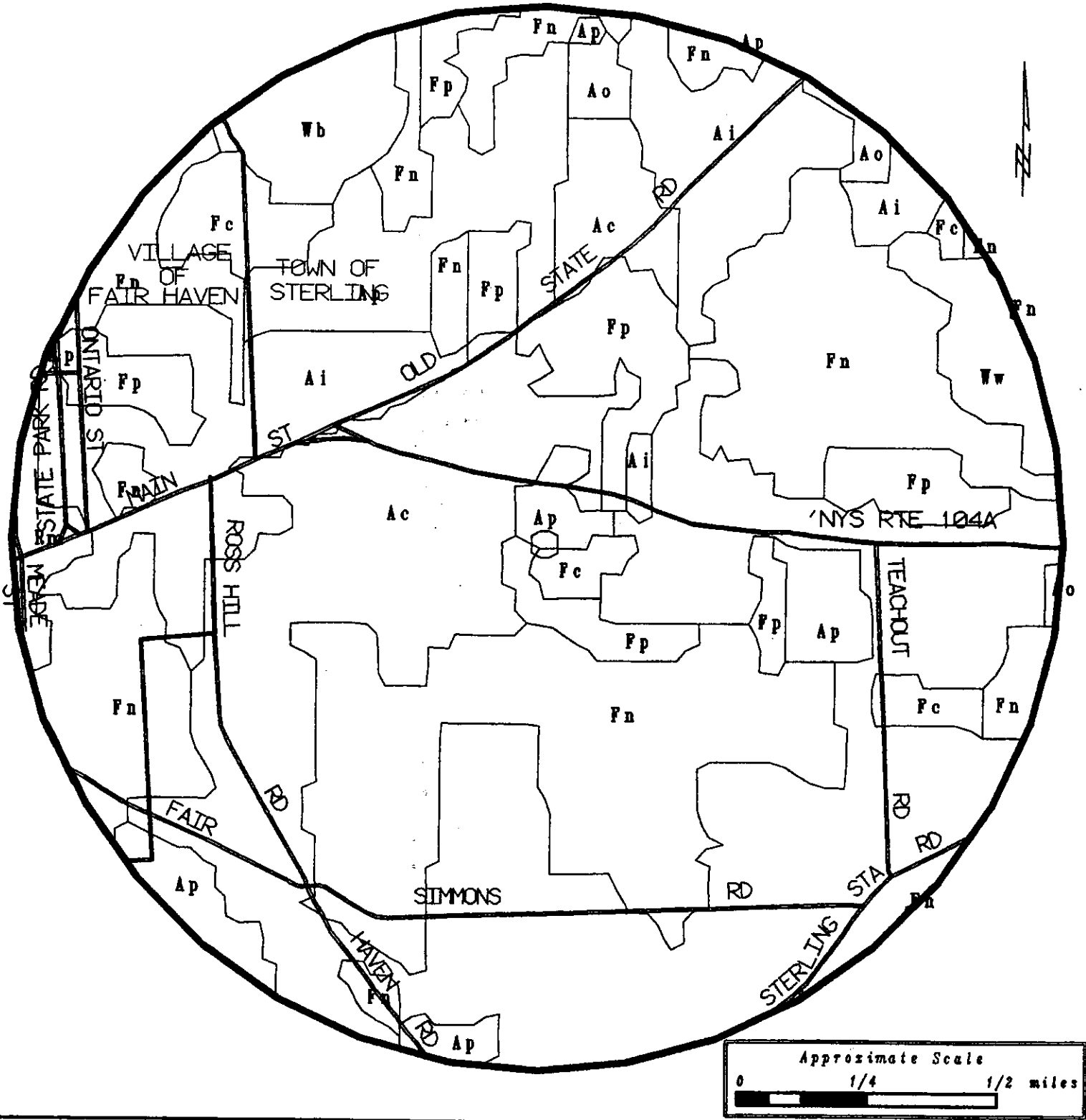
The following land use legend represents the standard Land Use Natural Resources (LUNR) classification method employed during the air photo interpretive preparation of the Cayuga County Natural Resource Inventory (NRI) in 1978.

LAND USE LEGEND

Ac	Active Cropland
Ah	Horticulture
Ai	Inactive Cropland
Ao	Orchard
Ap	Active Pasture
Ar	Research Farm
At	High Intensity Crop
Av	Vineyard
Ay	Specialty Farm
Cc	Shopping Center
Cs	Commercial
Eg	Sand or Gravel Pit
Fc	Brushland (<30')
Fn	Forest (>30')
Fp	Plantation
Ih	Heavy Manufacturing
Il	Light Manufacturing
Nr	Exposed Rock
Ns	Sands
Or	Outdoor Recreation
P	Public Use
Rc	Labor Camp
Rh	High Density Residential
Rk	Developed Shoreline
Rl	Low Density Residential
Rm	Medium Density Residential
Rr	Rural Hamlet
Rs	Residential Strip
Ta	Airport Facility
Th	Transportation Facility
Tr	Railroad Facility
Tt	Communication Facility
Uc	Under Construction
Wb	Marshes, Swamps, Bogs
Wc	Artificial Waterbody
Wn	Natural Waterbody
Ws	Streams and Rivers
Ww	Wooded Wetland

VILLAGE OF FAIR HAVEN

One mile radius around community water supply well head

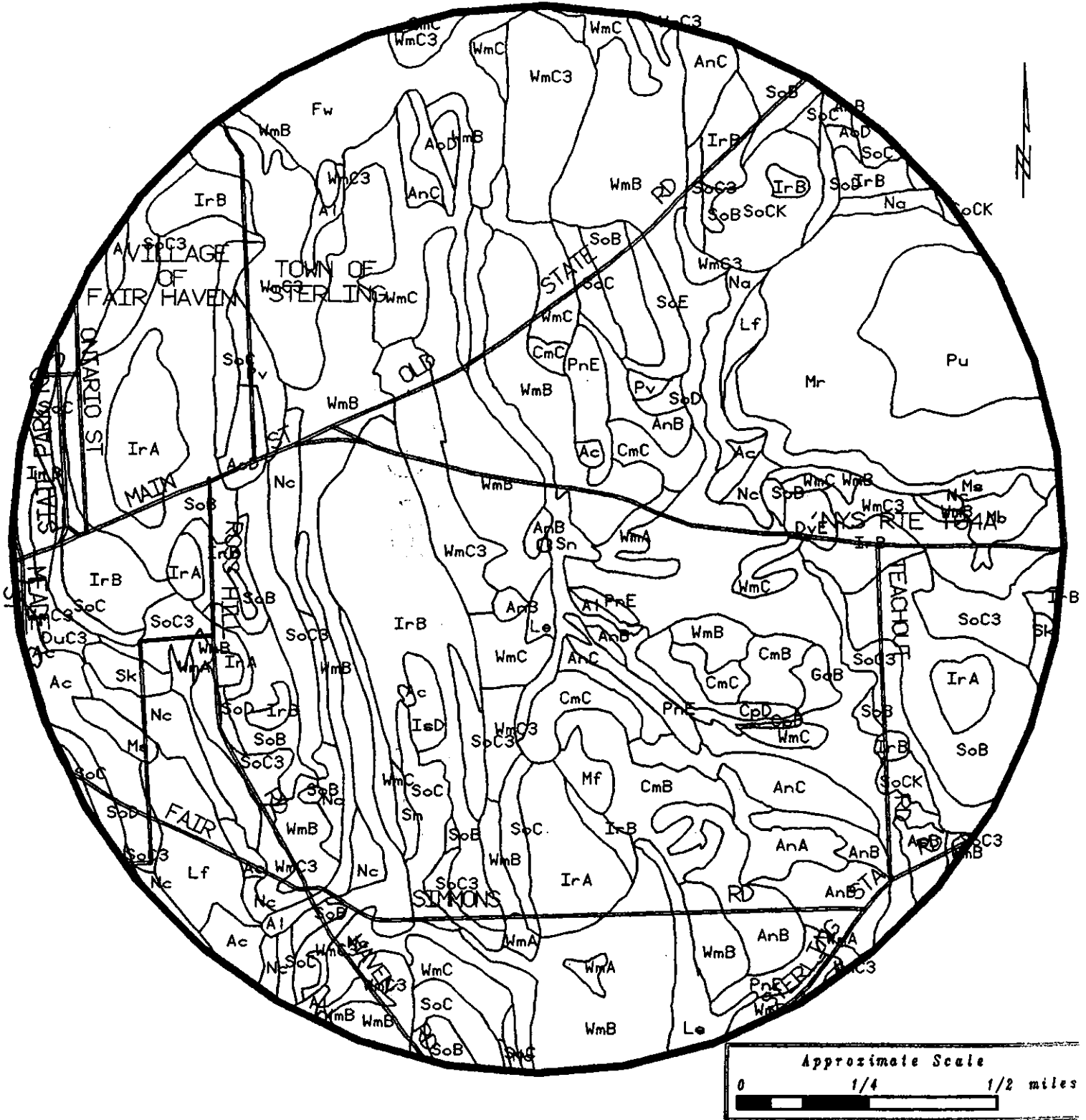


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WELL HEAD LOCATION ○
 LAND USE LUNR Classification System: 1978
 Town of Sterling
 SPRING - SUMMER: 1998
 figure 18: WHPLUSE.FH

VILLAGE OF FAIR HAVEN

One mile radius around community water supply well head



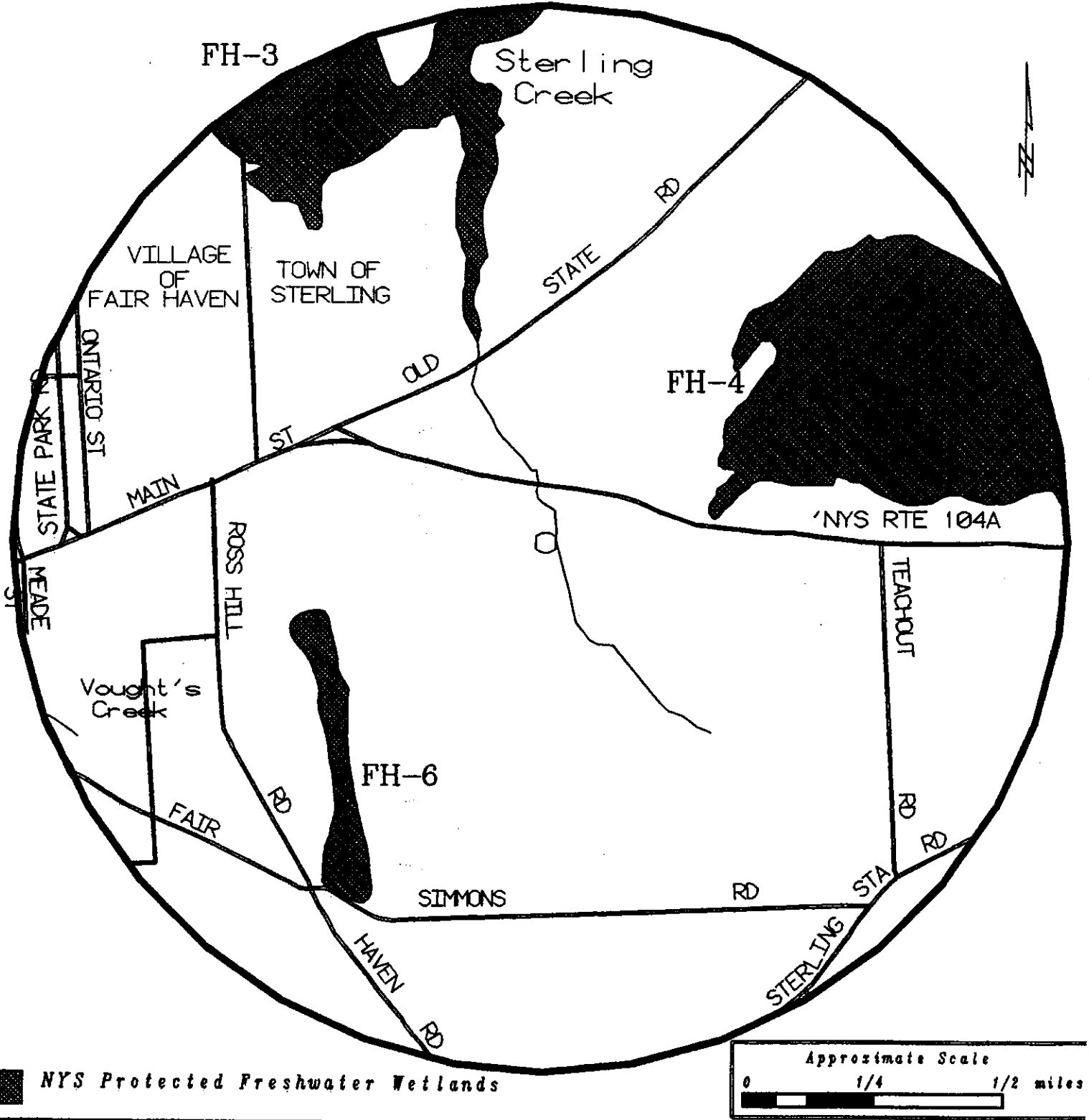
PREPARED FOR: Statewide Water Quality Management Program
BY: Cayuga County GIS
Cayuga County Planning Board
Robert N. Brower, Director of Planning
The Environmental Management Council

WELL HEAD LOCATION ○
SOILS Cayuga County Soil Survey: 1971
Town of Sterling

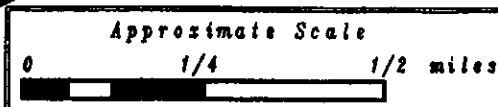
figure 19:WHPSOILS.FH

VILLAGE OF FAIR HAVEN

One mile radius around community water supply well head



■ NYS Protected Freshwater Wetlands



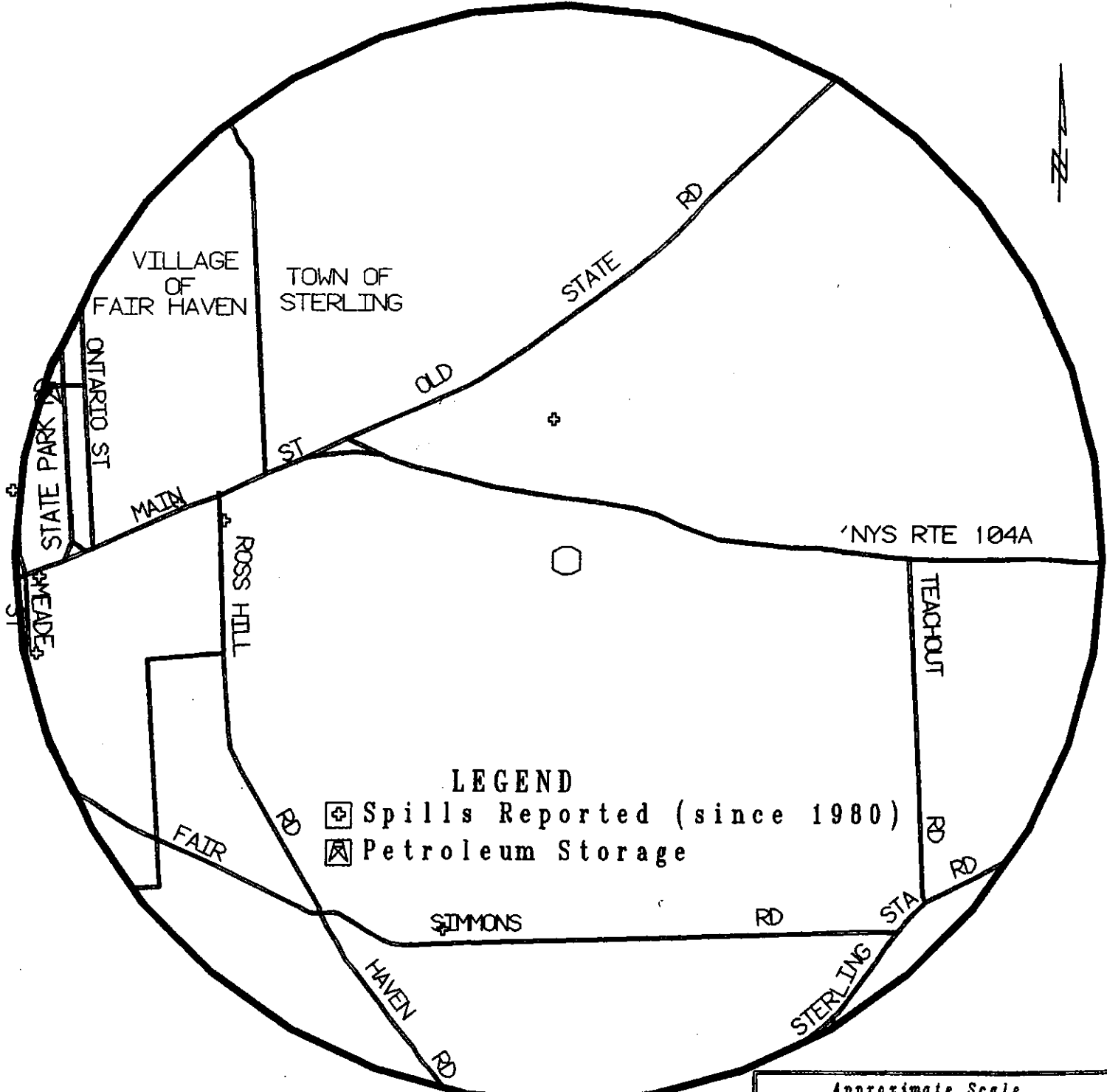
PREPARED FOR: Statewide Water Quality Management Program
 GIS BY: Cayuga County GIS
 Cayuga County Planning Board
 Robert N. Brewer, Director of Planning
 The Environmental Management Council

WELL HEAD LOCATION ○
 HYDROLOGY

Town of Sterling

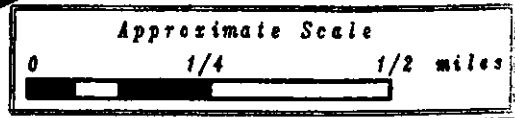
VILLAGE OF FAIR HAVEN

One mile radius around community water supply well head



LEGEND
 ☒ Spills Reported (since 1980)
 ☒ Petroleum Storage

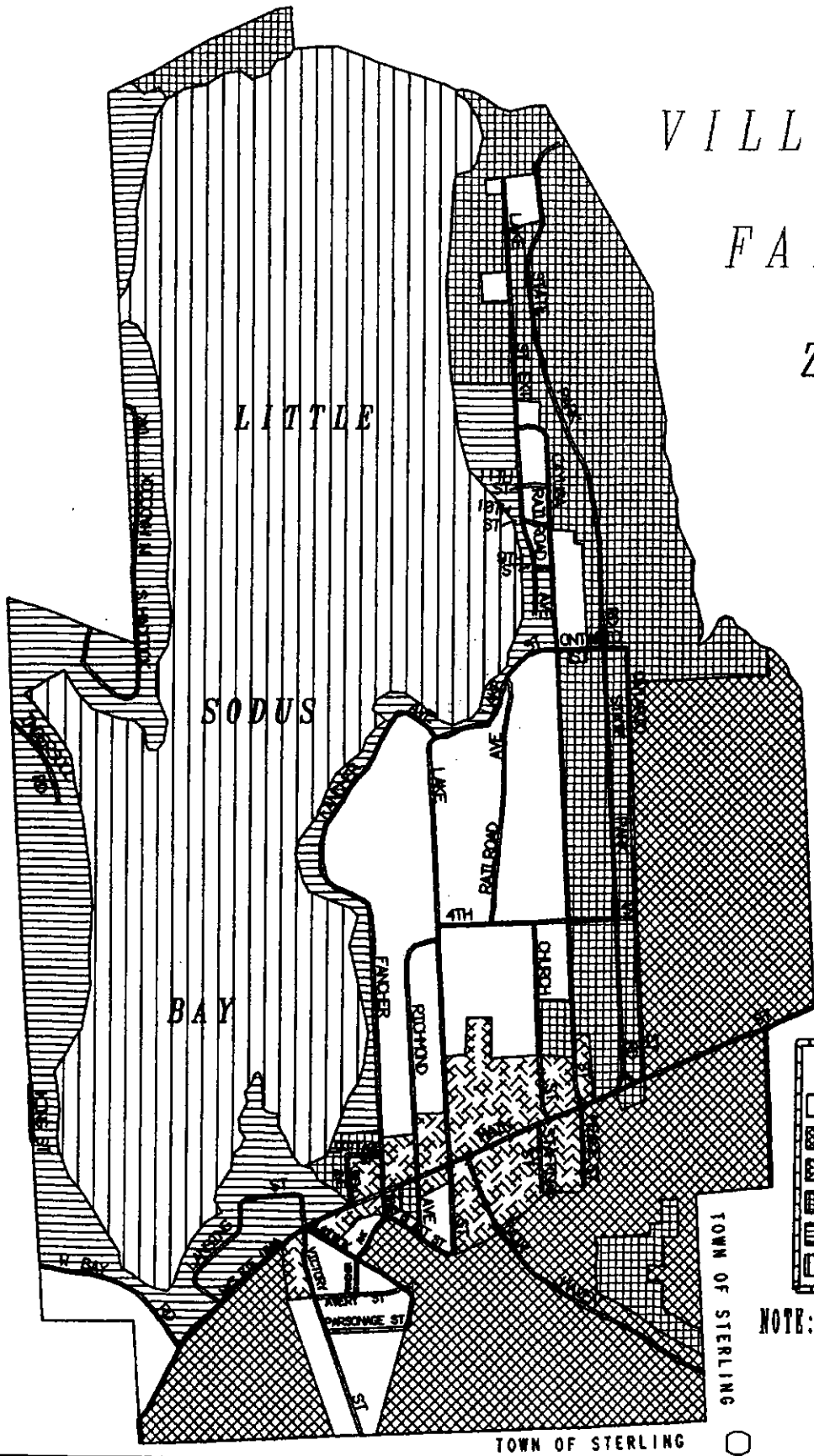
NOTE: All locations approximate



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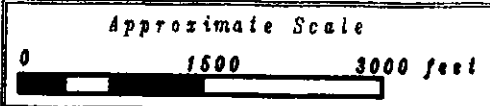
WELL HEAD LOCATION ☐
THREATS TO GROUNDWATER
 Petroleum spills, Petroleum storage, Pesticide storage,
 Hazardous Waste Generators, Closed Solid Waste Facilities
 Point Discharges (SPDES)
 SPRING - SUMMER: 1998

VILLAGE OF FAIR HAVEN ZONING MAP



LEGEND	
	RESIDENTIAL
	AGRICULTURAL/RESIDENTIAL
	CENTRAL BUSINESS
	PUBLIC RECREATIONAL
	BAY FRONT
	LITTLE SODUS BAY

NOTE: Town of Sterling currently has NO zoning regulations



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WELL HEAD LOCATION

Town of Sterling

SPRING - SUMMER: 1996

figure 22:VILLZONE.FH