

NOTICE OF COMPLETE APPLICATION

Applicant: Village of Fairhaven Date: December 19, 1985

Address: Robert Wallace, Mayor
Fancher Ave., Fairhaven, NY 13064

Permits applied for and application number(s) Water Supply Application #7647, #71-85-0336

Project description and location. Town/City of Sterling County of Cayuga

The construction of a new well to be located approximately one half mile east of the Village, and the taking of up to 500 gallons per minute to supplement existing sources.

SEQR DETERMINATION: (check appropriate box)

- SEQR-1 Project is not subject to SEQR because it is an exempt, excluded or a Type II action.
- SEQR-2 Project is a Type I action; it has been determined that the project will not have a significant effect on the environment. A Negative Declaration has been prepared and is on file.
- SEQR-3 Project is an unlisted action; it has been determined that the project will not have a significant effect on the environment.
- SEQR-4 A draft environmental impact statement has been prepared on this project and is on file.
- SEQR-5 A final environmental impact statement has been prepared on this project and is on file.

~~XXXXXXXXXXXX~~

AVAILABILITY FOR PUBLIC COMMENT: Applications may be reviewed at the address listed below. Comments on the project must be submitted to the Contact Person indicated below by no later than January 17, 1986

CONTACT PERSON: Patrick M. Snyder
NYS Dept. of Environmental Conservation
PO Box 5170, Fisher Ave.
Cortland, NY 13045-5170 Telephone: 607-753-3095

TO THE APPLICANT:

1. THIS IS NOT A PERMIT

- 2 This is to advise you that your application is complete and a review has commenced. Additional information may be requested from you at a future date, if deemed necessary, in order to reach a decision on your application.
- 3 Your project is classified MAJOR. Accordingly, a decision will be made within 90 days of the date of this Notice. If a public hearing is necessary, you will be notified within 60 days and the hearing will commence within 90 days of the date of this notice. If a hearing is held, the final decision will be made within 60 days after the hearing is completed.
- 4 Publication of this Notice in a newspaper is: required not required
If required, please consult the accompanying transmittal letter for further instructions.

CC: Chief Executive Officer
Environmental Notice Bulletin Room 509, 50 Wolf Road, Albany, N.Y. 12233-0001
file

Lee Flocke
Gilbert Faustel
David Eshbaugh

APPLICANT

DAVID H. ESHBAUGH, P.E.
 Consulting Engineer
 119 Fayette St. Manlius, NY 13104

LETTER OF TRANSMITTAL

(315) 682-5307

TO Dept. of Environmental Conservation

P. O. Box 5170, Fisher Avenue

Cortland, New York 13045

DATE	10/8/85	JOB NO.	
ATTENTION	Regional Permit Administrator		
RE	Village of Fairhaven		
	Water Supply Improvements		

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop drawings Prints Plans Samples Specifications
 Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
3			Application/Joint Application for Permit
3			Supplement W-I
3			Village Board Project Authorization Resolution
3			Exhibits A, B, C, D, E, F, G, H, I,

THESE ARE TRANSMITTED as checked below:

- For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ 19 _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO Robert Wallace, Mayor, Village of Fairhaven

SIGNED: _____

LIST OF EXHIBITS

- A. AREA MAP
- B. VICINITY MAP
- C. ENGINEER'S REPORT (SEPT. 1984)
- D. LETTER ADDENDUM TO ENGINEER'S REPORT (DEC. 1984)
- E. ENGINEER'S OPINION OF PROBABLE COST (MAY 1985)
- F. CAYUGA COUNTY HEALTH DEPT. ANNUAL WATER SUPPLY EVALUATION (JAN. 1985)
- G. WATER ANALYSIS REPORTS
- H. SEQR DETERMINATION
- I. "AID TO LOCALITIES GRANT" - PROGRAM NARRATIVE

HEARING HALL

FAIRHAVEN VILLAGE HALL
CAYUGA STREET
FAIRHAVEN, N.Y.

NEWSPAPER

WAYUGA COMMUNITY NEWSPAPERS, INC.
MAIN STREET
RED CREEK, N.Y. 13143
(315) 754-6229
PUBLICATION SCHEDULE - WEEKLY (THURS.)
(INFORMATION BY MONDAY)

KEY OFFICIALS

MAYOR - VILLAGE OF FAIRHAVEN
ROBERT WALLACE
FANCHER AVENUE
FAIRHAVEN, N.Y.
(315) 947-5202

SUPERINTENDENT OF PUBLIC WORKS - VILLAGE OF FAIRHAVEN
PAT GUERAN
CAYUGA STREET
FAIRHAVEN, N.Y.
(315) 947-5725

DESIGN ENGINEER

DAVID H. ESHBAUGH, P.E.
CONSULTING ENGINEER
119 FAYETTE STREET
MANLIUS, N.Y. 13104
(315) 682-5307

New York State Department of Environmental Conservation
Addresses on Back of Page**JOINT APPLICATION
FOR PERMIT**Department of the Army, Corp of Engineers
Addresses on Back of Page
NCBCP-S Corp of Engineers

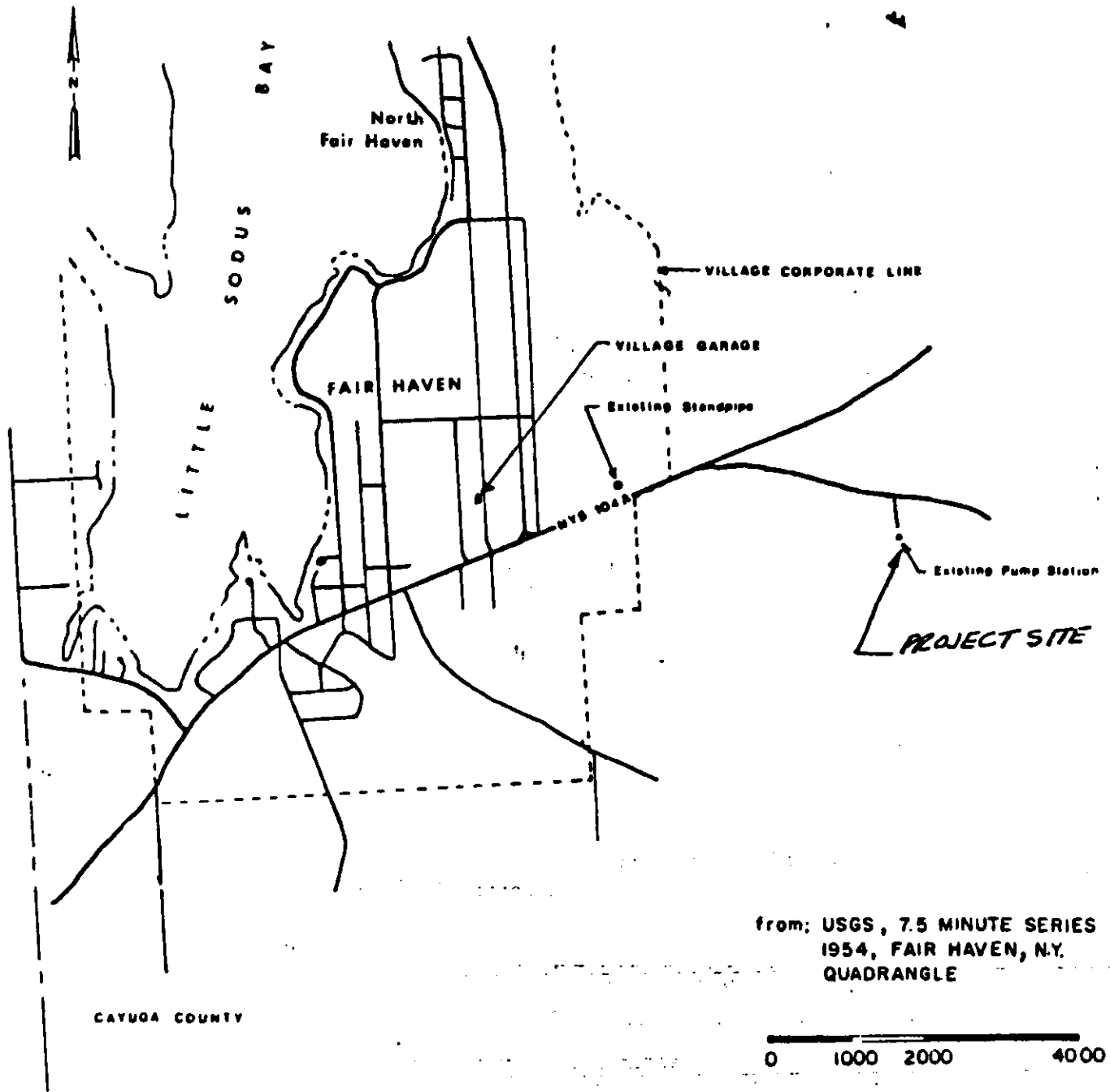
DEC Application No. _____

Application No. _____

Read instructions on back before completing this application. Please type or print clearly in ink. Use separate addenda and exhibits to provide all required data and explanations for which space on this form is inadequate.

- ARTICLE 25 (TIDAL WETLANDS)**
- ARTICLE 15, TITLE 5 (PROTECTION OF WATERS)**
- For the disturbance of a stream bed or bank.
- For the construction, reconstruction, or repair of a DAM or other impoundment structure
- For excavation in or fill of navigable waters.
- ARTICLE 15, TITLE 15 (WATER SUPPLY)**
- ARTICLE 15, TITLE 3 (CONTROL OF AQUATIC INSECTS, WEEDS, OR UNDESIREABLE FISH)**
- ARTICLE 24 (FRESHWATER WETLANDS)**
-
- SECTION 10 (RIVER & HARBOR ACT OF 1899)** for structures and work in navigable waters of the U.S.
- SECTION 404 (FEDERAL CLEAN WATER ACT OF 1977)** for disposal of dredged or fill material in waters of the U.S.

1. NAME OF APPLICANT: Village of Fairhaven			
2. APPLICANT IS A/AN <input type="checkbox"/> Individual <input type="checkbox"/> Partnership <input type="checkbox"/> Association <input type="checkbox"/> Corporation <input checked="" type="checkbox"/> Municipality <input type="checkbox"/> Governmental Agency			
3. NAME AND TITLE OF OFFICIAL SIGNING APPLICATION Robert Wallace, Mayor		Phone (315) 947-5202	
Street Address or Post Office Box Fancher Avenue			
Post Office Fairhaven		State New York	Zip Code 13064
4. NAME AND ADDRESS OF OWNER (If not applicant) Street Address or Post Office Box Post Office State Zip Code			
5. PROJECT LOCATION: (City or Village) Village of Fairhaven			
Town Sterling		County Cayuga	
5a. Name of Stream or other Waterbody: (If appropriate; when un-named, show on map—See Item 5b)		5b. Specific project site or area is marked on U.S.G.S. or equivalent map, attached as Exhibit No. 1.	
6. WILL PROJECT UTILIZE STATE OWNED LAND? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
7. PROPOSED USE: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Public <input type="checkbox"/> Commercial		8. PROPOSED STARTING DATE: November 1985	9. APPROXIMATE COMPLETION DATE: July 1986
10. APPLICATION FEE \$ 50.00 Enclosed			
11. PROJECT DESCRIPTION: (Feet of rip-rap new channel; cubic yards of material to be removed; draining, dredging, filling, and location of disposal sites; type of structure to be installed, height of dam, size of impoundment; capacities of proposed water sources; extent of distribution system; etc.) 12" dia. 500 gpm well incl. pump, 400'± 8" water main with valves and fittings, emergency power generator, and structures.			
12. INDICATE ANY OTHER TYPE PERMITS APPLIED FOR OR ANTICIPATED TO BE APPLIED FOR RELATIVE TO THIS PROJECT: Building permit - Town of Sterling			
13. NAME AND ADDRESS OF OFFICIAL NEWSPAPER OF LOCALITY WHERE PROPOSED WORKS ARE LOCATED: Wayuga Community Newspapers - Fairhaven Register			
14. IS ANY PORTION OF THE ACTIVITY FOR WHICH A PERMIT IS SOUGHT NOW BEGUN OR COMPLETE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes", explain in addenda, giving reasons and dates, and show existing work on drawings or maps.			
15. PROVIDE SEPARATE LIST OF NAMES, ADDRESS, AND PHONE NUMBERS OF OWNERS OF PROPERTY ADJOINING THE WORK ("CORPS" PERMITS ONLY) NOTE that the Corps of Engineers CANNOT process applications lacking this information.			
16. CERTIFICATION: I hereby affirm under penalty of perjury that information provided on this form and all attachments submitted herewith are true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the State Penal Law. As a condition to the issuance of a permit, the applicant accepts full legal responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from the said project. In addition, Federal Law, 18 U.S.C. Section 1001 provides for a fine of not more than \$10,000 or imprisonment for not more than five years, or both, where an applicant knowingly and willfully falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.			
10-23-85		Robert Wallace Mayor	



VICINITY MAP

EXHIBIT #1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12231-0001
APPLICATION FOR PUBLIC WATER SUPPLY PERMIT

Supplement W-1

Read instructions on reverse side of last sheet before completing this application. PLEASE TYPE OR PRINT CLEARLY IN INK.

FOR DEPARTMENT USE ONLY	
APPLICATION NO.	
WSA NO.	

PROJECT DESCRIPTION

Type of Project

New water supply - well.

Project Purposes

To solve the water supply problems of the Village of Fairhaven, N.Y.

This project involves: check appropriate items: ACQUISITION of existing facilities. INSTALLATION of new facilities.
 CHANGES in capacities of existing facilities. ABANDONMENT of existing facilities.

Items checked, provide BRIEF description or identification:

12" dia. 500 gpm well incl. pump, 400' ± 8" water main with valves and fittings, emergency power generator, and structures.

This project will involve the taking of up to 500 gallons of water (per minute) (pumped from ground water well
Figure given represents: increase in taking or total taking (proposed source)

If certain exhibits are omitted or reduced in scope by incorporation of files on prior applications, identify such applications and exhibits: (if more than 3, use 3 most recent or 4 most significant)

SA No.	NAME	EXHIBITS
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PROJECT AUTHORIZATION

List all exhibits documenting the project authorization, such as resolutions, certificates of incorporation, contracts, referendum results, etc. - See special instructions accompanying this form:

Village board resolution

PROJECT JUSTIFICATION

By the act of signing this application, the applicant certifies that each of the following statutory conditions is or will be satisfied, AND that a proper justification for each is given in exhibits attached to this application:

- THE PLANS PROPOSED BY THE APPLICANT ARE JUSTIFIED BY PUBLIC NECESSITY.
- THE PLANS TAKE PROPER CONSIDERATION OF OTHER SOURCES OF SUPPLY WHICH ARE OR MAY BECOME AVAILABLE.
- THE PLANS PROVIDE FOR PROPER AND SAFE CONSTRUCTION OF ALL WORK CONNECTED THEREWITH.
- THE PLANS PROVIDE FOR THE PROPER SANITARY CONTROL OF THE WATERSHED AND PROPER PROTECTION OF THE SUPPLY.
- THE PLANS PROVIDE FOR AN ADEQUATE SUPPLY.
- THE PLANS ARE JUST AND EQUITABLE TO THE OTHER MUNICIPAL CORPORATIONS AND CIVIL DIVISIONS OF THE STATE AFFECTED THEREBY AND TO THE INHABITANTS THEREOF.
- THE PLANS MAKE FAIR AND EQUITABLE PROVISIONS FOR THE DETERMINATION AND PAYMENT OF ANY AND ALL DAMAGES TO PERSONS AND PROPERTY, BOTH DIRECT AND INDIRECT, WHICH WILL RESULT FROM THE ACQUISITION OF SAID LANDS OR THE EXECUTION OF SAID PLANS.

LEGAL STATUS

Type II Action.

SIGNATURE

TO DATE

VILLAGE OF FAIR HAVEN
FAIR HAVEN, NEW YORK 13064
315-947-5112

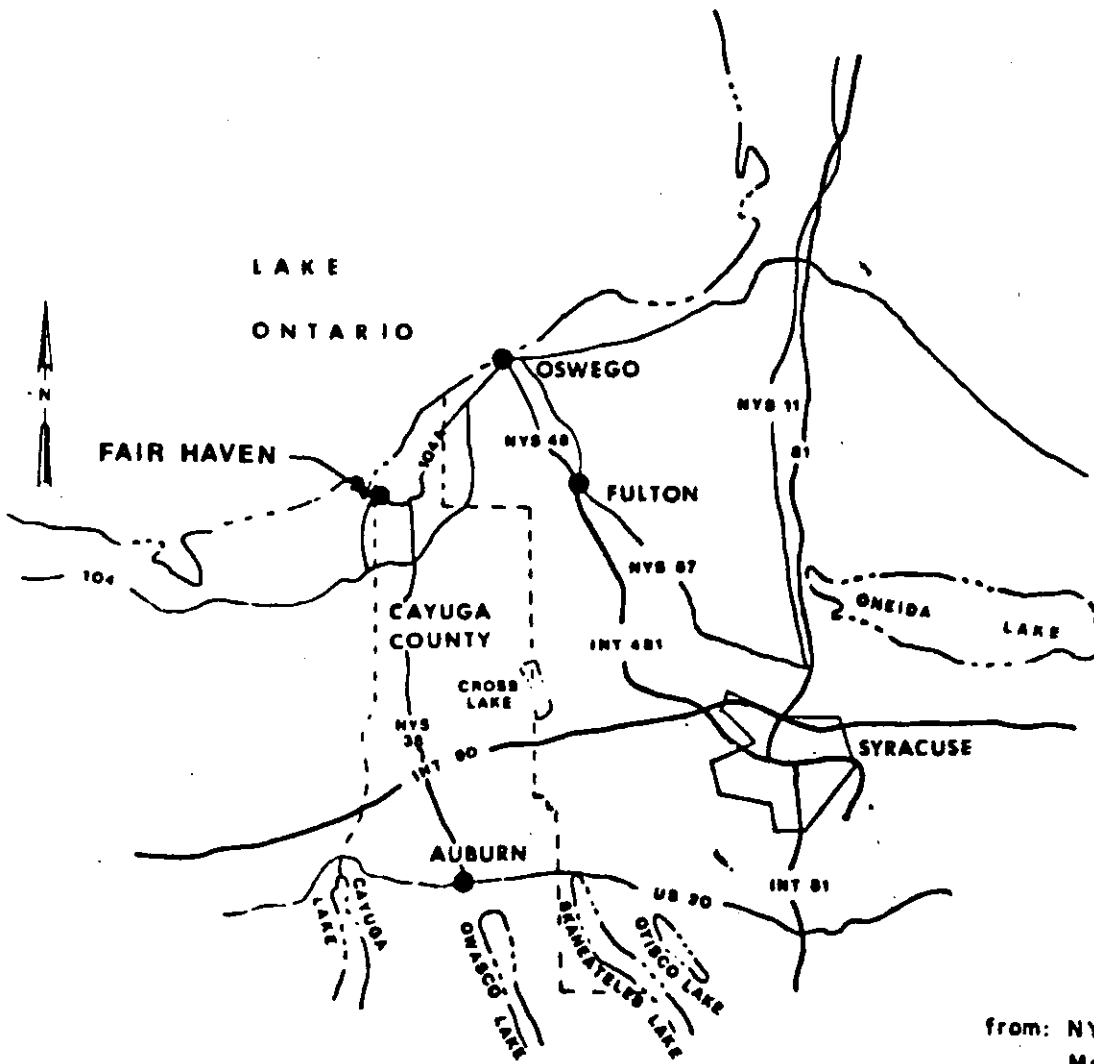
Resolution authorizing the Water Renovation Project

WHEREAS the Village of Fair Haven has several deficiencies in its water system namely lack of adequate storage, insufficient pumping capacity and lack of standby power, and

WHEREAS the installation of a new well with additional pumping capacity will solve the problem of adequate supply, and

WHEREAS the addition of standby emergency generation equipment will solve the problem of maintaining an adequate water supply during power outages, then

BE IT THEREFORE RESOLVED that the Village Board of the Village of Fair Haven hereby authorizes the Village water system improvements.

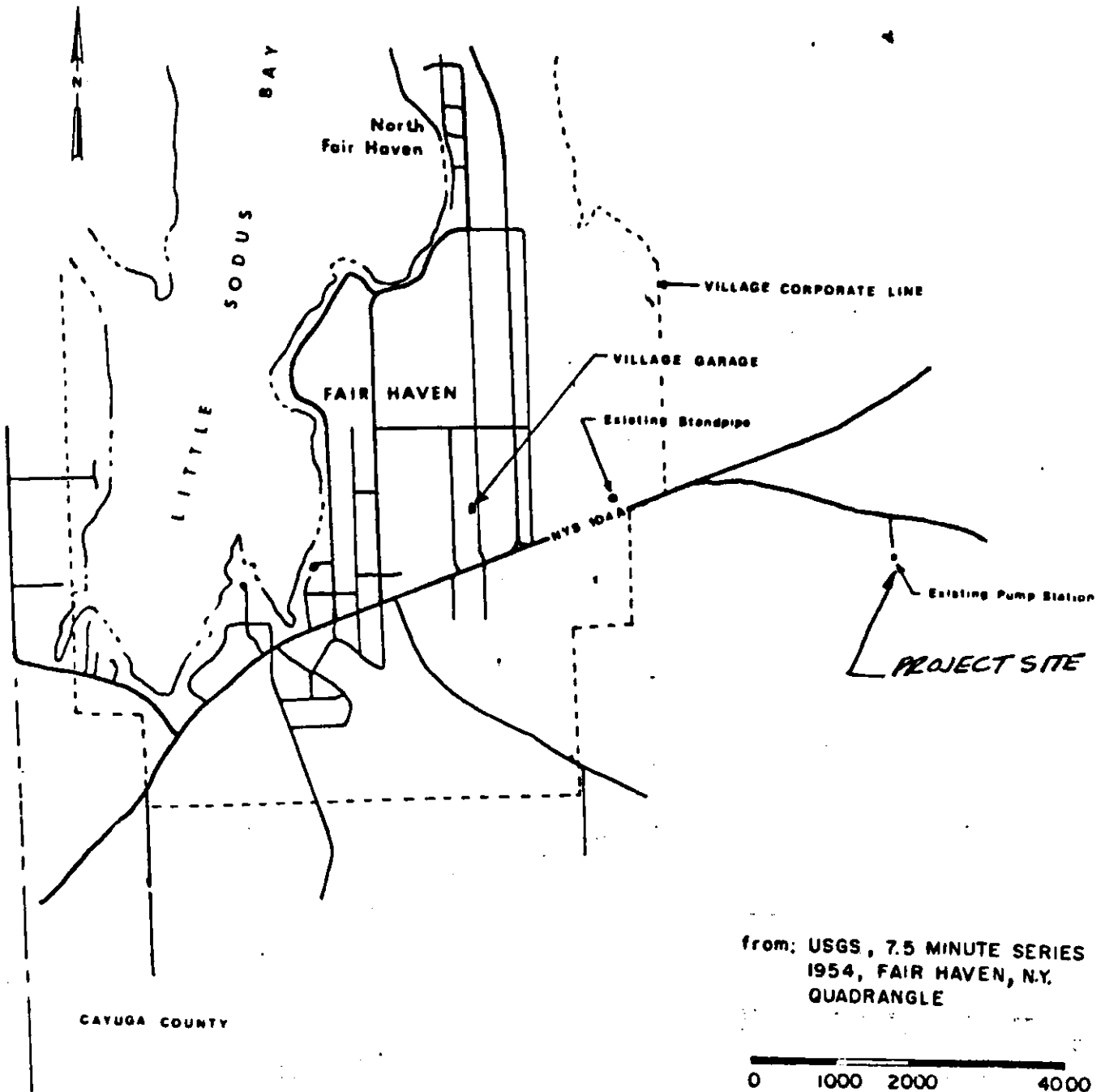


from: NYS ROAD MAP, RAND
McNALLY, 1972 EDITION



AREA MAP

EXHIBIT "A"



VICINITY MAP

**ENGINEERING REPORT
FOR
WATER SYSTEM IMPROVEMENTS**

**Village of Fair Haven
Cayuga County, New York**

September 1984

**David H. Eshbaugh, P.E.
Consulting Engineer**

Henneberry Road, Manlius, New York 13104

(315) 682-5776

EXHIBIT "C"

ENGINEERING REPORT

INTRODUCTION

The purpose of this report is to describe the existing water facilities of the Village of Fair Haven, New York, including water use data, fire flow requirements, source of supply and potential problems (immediate and future).

The Scope of Work for this engagement includes: a) A review of all available information and data including previous contract documents, engineering reports and test data provided by the Village and pertinent to the project, b) Field reconnaissance and testing as required to verify or uncover additional information, c) Present alternate schemes and recommendations for improving the water supply system including preliminary cost estimates.

GENERAL BACKGROUND

A detailed background may be found in the Engineering reports by Pickard and Anderson Engineers dated November 1976 and May 1977. A brief summation of this information follows.

The Village of Fair Haven is located in the Town of Sterling, Cayuga County, New York, and is situated at the south end of Little Sodus Bay along Lake Ontario, approximately fifteen miles west of the City of Oswego.

The Village is a commercial and recreational center for the area around the Bay and the Fair Haven Beach State Park.

The topography may be described as gently rolling, with ground elevations ranging from 240 feet along the Bay shore to 412 feet at the standpipe located on the hill east of the Village (USGS datum).

A review of US Census reports indicates a permanent population and population trend as follows:

<u>Year</u>	<u>Population</u>	<u>Remark</u>	<u>% Increase</u>
1960	764	Census	-
1970	859	Census	12.5%
1980	976	Census	13.6%
1985	1044	Estimated	-
1990	1112+/-	Projection	14.0%
2000	1268+/-	Projection	14.0%
2010	1446+/-	Projection	14.0%

In addition to the permanent population, there are seasonal residents during the summer months. Accurate records of the number of seasonal residents are not available; however it is estimated to be around 3000 additional persons. The Fair Haven Beach State Park, open from May 1 to October 31, each year adds approximately 400,000 total persons over the 180 day period, or an average of about 2000 persons per day to this seasonal increase in population. Therefore, for at least 6 months of the year, the Village water facilities must supply and distribute water to approximately 6000 residents at the present time.

During the remaining 6 months of the year, this requirement drops off to as little as 1000 residents.

EXISTING WATER WORKS FACILITIES

The present village water system consists of the following elements:

<u>Item</u>	<u>Year Constructed</u>	<u>Description and Remarks</u>
1. Dug Well	1940	Spring fed well, 14'+/- inside diameter, 14'+/- deep, 12" thick concrete walls and roof slab, gravel bottom.
2. Pump Station	1940	<p>a) 19'x14' brick and wood structure with a concrete base slab.</p> <p>b) 160 gpm Goulds Pump with G.E. electric motor 20 HP, 3 ϕ, 1760 RPM, 1.15 service factor.</p> <p>c) 75 gpm Goulds Pump 12½ HP, 4 cylinder gasoline, continental engine (standby system)</p> <p>d) Recording equipment by Simplex Valve & Meter Co.</p>
3. Drilled Well	1968	47' deep, 12" diameter casing with 10' screen.
4. Pump Station	1968	<p>a) 11'x15' concrete block and brick structure, with a concrete base slab.</p> <p>b) Layne New York Co., vertical centrifuge turbine pump, with U.S. Motors electric 30 HP, 3 ϕ, 60 cycles, 1800 RPM delivering 325 gpm.</p> <p>c) Electric service and control panels.</p> <p>d) Chlorination equipment consisting of a hypochlorinator by Precision Control Products.</p>

<u>Item</u>	<u>Year Constructed</u>	<u>Description and Remarks</u>	
5. Storage	1940	150,000 gal. steel standpipe (115,000 gal useable capacity - remaining 35,000 gal held in reserve to maintain minimum pressure at adjacent residence and at Victory Street hydrant.) Interior has metalized surface recoated once prior to 1977 and reported to be in good condition. Exterior was repainted in 1983.	
6. Transmission Main	1977	a) Approximately 4200' of 8" transite main from well supply site to the standpipe.	
	1940	b) Approximately 2000' of 8" transite main from the standpipe to the Village distribution system.	
7. Distribution System	Various	b) Approximately 20,000' of 4", 3", 2", 1", 3/4" transite, plastic and galvanized extensions added as needed for expansion.	
		1958	c) Approximately 16,000' of 8" transite main installed along West Bay Road.
		1977	d) Approximately 6285' of 6" transite main installed along Wilcox Street, Avery Street, South Richmond Ave., Cottage Street, Fancher Ave., Church Street, Fourth Street, and approximately 2495' of 8" transite main installed along Cayuga Street.

WATER USE

A five year (1979-1983) average of water use was compiled. The average yearly total of gallons pumped during this five year period was 82,282,400 gallons. Assuming a loss rate of 20%, this leaves 65,825,920 gallons used by the residents. Using the sum of the permanent residents and the seasonal residents without the State Park impact, as the population base, this is an average of about 44 gallons per day per person. Averaging the water use for both the summer 6 month period and the off season 6 month period, and using the estimated population figures for the same periods, the following usage information was determined:

<u>Time Period</u>	<u>Total Population Use</u>	<u>Per Capita Usage</u>
May 1-October 31	264,710 gpd	44 gpd
November 1 - April 30	192,415 gpd	192 gpd

It appears from this rough data that there is an extremely large amount of unaccounted for water use in the off season time period. This excessive use may possibly be accounted for by leaks within the State Park System and continual use by the seasonal residents such as keeping water running to prevent pipes from freezing. It may indicate however, that the seasonal drop off in population does not really happen, and it would be wise to take this into account in future planning.

For the purpose of the alternatives and recommendations in this report, a per capita water use of 50 gpd was used. Also for this purpose, a projected population figure was established for the year 2000.

Base Population	1268
Seasonal Residents	3432
State Park Impact	<u>2300</u>
Total	7000

A figure of 7,000 persons was used.

WATER DEMAND

7,000 x 50 gpd =	350,000 gpd demand
+ 20% losses	<u>70,000</u> losses
Total Demand	420,000 gpd

Assuming a maximum of 16 hours of pumping per day, 420,000 ÷ (16x60) equals 438 gpm. With storage facilities "floating" on the system, the pumping capacity should equal the demand. Therefore an increase in pumping capacity is needed.

FIRE FLOW REQUIREMENTS

In addition to the water use described above, fire protection must also be provided. The Insurance Services Office (ISO), recommends that fire demands be based on an ISO prepared survey. The last complete survey for the Village of Fair Haven was done in 1966 and updated in 1976. The next scheduled survey is for the year 1991. ISO Fire Flow Test results for 1966 and 1976 indicate the following:

April 1966 Standpipe at Near Capacity; 9:20 a.m. - 10:15 a.m.

Location	Pressure-PSI		Flow - gallons per min.		
	Static	Residual	Obtained During Test	Available at 20 psi	Recorded at 20 psi <small>RECOMMENDED</small>
Main At Lake	75	36	1650	1950*	2000
Victory at Avery	68	47	700	1100*	750
Lake St., Next to Last North	77	22	640	650	500
Bell West of Fancher	82	53	810	1250*	1500
West Bay Rd., 3rd from Last North	80	16	580	550	500

*Fire flows shown are not available for recommended duration.

October 1966 Standpipe 90% full; 1:00 p.m. - 3:00 p.m.

Location	Pressure-PSI		Flow - gallons per min.		
	Static	Residual	Obtained During Test	Available at 20 psi	Recorded at 20 psi <small>RECOMMENDED</small>
Main and Lake	75	48	1300	1900	3000
2nd Hydrant on West Bay Road	85	70	480	1050	500
Lake Street & Park	74	52	860	1400	2000
Fancher North of Bell St.	79	42	910	1250	2500
Main & Church	65	32	1580	1950	750
7th & Cayuga St.	83	20	890	890	500
Victory & Avery	65	46	650	1050	750

For the purpose of obtaining current flow information, additional flow testing was done on September 12, 1984 by David H. Eshbaugh, P.E., with the assistance of Pat Guerin of the Village of Fair Haven. Five locations were chosen for comparison with the ISO fire flow tests. These tests were conducted between 10:00 a.m. and 11:00 a.m. with the standpipe approximately 60% full.

Location	Pressure - psi		Flow - gallons per minute Obtained During Test
	Static	Residual	
Main and Lake	80	55	1164
Lake and Park	75	45	1036
Fancher North of Bell St.	80	58	978
Main and Church	45	35	1062
7th and Cayuga St.	83	57	1139

The ISO Reports make the following statements and recommendations:

- 1) Supply Works - "Inadequate to maintain recommended fire flow for required duration."
- 2) "Consideration should be given to the installation of additional sources of supply, treatment facilities, and/or elevated storage to provide in addition to consumption needs, an 8-hour flow of 2000 gallons per minute in the principle business section, and flows at other locations . . . for at least 4 hours."
- 3) "Mains should be looped wherever practical."

OBSERVATIONS

Since the ISO reports were published, the Village has undertaken the task of improving their system by the looping of several distribution mains, installation of new sections of transmission and distribution mains, and has instituted a program of leak detection and repair. While these efforts are commendable, and have improved the system, there are major problems still remaining. These problems are:

1. Lack of adequate supply to satisfy ISO fire flow requirements.
2. Lack of adequate supply storage capacity for backup in case of equipment failure or power outage.
3. Lack of sufficient pumping capacity to keep up with peak demand thereby reducing storage and line pressure in the distribution system.
4. Lack of standby power to operate the pumping system during power outages. At the present time in the event of power failure, there is no standby emergency power for the existing drilled well. In the event of a power outage, and the present standpipe was approximately half full (60,000 useable gallons), and the water demand continued at the Year 2000 average rate, there would be a reserve of approximately 4 hours. If a fire occurred during the outage, or if the standpipe was low (as it usually is on a daily basis at the present time during the summer months), this lack of reserve would be critical.
5. Leaks in the distribution system within the State Park.

6. Lack of backflow prevention at critical locations in the distribution system. (Necessary to prevent the contamination of the entire village water supply system from several possible points or potential sources of contamination).
7. Excessive "water hammer" in the well discharge piping due to rapid starting and stopping of the well pump -- lack of pump control valve.

ALTERNATIVES AND RECOMMENDATIONS

Alternative 1:

To correct problems 1 and 2, it is recommended that additional storage capacity be provided in the form of a new steel storage tank to be located on an elevated site at the Western side of the Village. Additional transmission main would be required to connect the new storage tank to the existing distribution system. ISO fire flow recommendation of 2,000 gpm for 8 hours is equal to 960,000 gallons. Assuming 150,000 gallons in existing standpipe and 500 gpm pumping capacity from a modified existing pump and well plus 500 gpm pumping capacity from a new well (See Alternate 2), a required capacity for additional storage would be 330,000 gal. A more reasonable design parameter would be a flow of 3,000 gpm for a 2 hour duration or a 360,000 gallon storage capacity. For preliminary cost estimates, a 350,000 gallon tank will be assumed.

Alternative 2:

To correct problem 3, it is recommended that two things be done. First, increase the pumping capacity of the present well and pump. Second, develop a new second well adjacent to the present well site with pumping capacity to match the improved first well and pump.

As a result of testing and data obtained in October 1981 by Layne New York Co., Inc. during maintenance work, it was determined that the existing well capacity could be increased from the present 325 gpm to approximately 500 gpm. Modification of the existing Layne New York equipment would require increasing the motor size to 50+/-HP and adding additional stages to the turbine pump.

Alternative 3:

To correct problem 4, it is recommended that emergency standby power be provided by installing a 125 KV diesel powered generator at the present pump station. The generator could be installed outside or in a new generator building. It should include a new service and low voltage starter for the well pump. It could be done at the same time as alternative 2 with probable cost savings.

Alternative 4:

To correct problems 5 and 6, it is recommended that backflow preventors be installed at the critical points in the distribution system. The Fair Haven Beach State Park should be advised that they should install, at their cost, a master backflow preventor at the beginning of their distribution system to isolate the entire park from the remainder of the Village system. The State Park should also be advised to undertake a leak survey and repair program.

The remaining locations for the installation of backflow preventors could be taken care of by the Village.

PRELIMINARY COST ESTIMATES

ALTERNATIVE 1:

1A) 350,000 gallon pedestal spheroid	\$ 320,000
2,000 +/- LF 8" transmission main	55,000
Land Acquisition	<u>5,500</u>
	380,500
15% Contingency	<u>57,500</u>
	\$ 438,000
Engineering (approx.)	<u>26,000</u>
Project Cost	\$ 464,000

1B) 350,000 gallon ground storage	\$ 175,000
reservoir or standpipe	55,000
2,000 +/- LF 8" transmission main	<u>5,500</u>
Land Acquisition	235,500
15% Contingency	<u>35,500</u>
	\$ 271,000
Engineering (approx.)	<u>16,000</u>
Project Cost	\$ 287,000

Note: Alternative 1B is more cost effective.

ALTERNATIVE 2:

Step 1: Increase pump capacity with 50+/- HP motor and additional pump stages	\$ 7,000
15% Contingency	<u>1,050</u>
	8,050
Engineering (approx.)	<u>950</u>
Cost Step 1	\$ 9,000
Step 2: Develop new well	\$ 25,000
15% Contingency	<u>3,750</u>
	28,750
Engineering (approx.)	<u>2,750</u>
Cost Step 2	31,500
Total Project Cost	\$ 40,500

ALTERNATIVE 3:

125 KV Diesel generator	\$ 15,000
Low voltage starter and service	12,000
Fuel Storage Tank	500
Building Addition	<u>2,500</u>
	30,000
15% Contingency	<u>4,500</u>
	34,500
Engineering (approx.)	<u>2,500</u>
Project Cost	\$ 37,000

ALTERNATIVE 4

6" Backflow Preventor	\$ 7,000
Concrete valve pit, etc.	<u>3,000</u>
	10,000
15% Contingency	<u>1,500</u>
	11,500
Engineering (approx.)	<u>1,250</u>
	\$ 12,750

Note: This work should be accomplished and paid for by the State Park

Residential backflow preventor as needed	\$ 500
No Engineering Cost	
Project Cost	\$ 500

The problem of "water hammer," with the present well pump, (Problem #7), is being worked on at the present time by Village forces with the installation of electric timer control for the pump motor. This may or may not be totally successful. If not resolved, it will be necessary to install a hydromatic pump control valve to regulate the flow during startup and shutting down of the pump. Elimination of this "water hammer" (caused by rapid fluctuation of the water column in the well during startup and shutdown of the pump), must be accomplished before damage to the system occurs. Cost of this modification has not been included in this report. The cost can be readily established pending results of the work being done by the Village forces.

December 12, 1984

Re: Engineering Report for
Water System Improvements
Village of Fair Haven
Fair Haven, New York

Mr. Robert Wallace, Mayor
Village of Fair Haven
Fair Haven, NY 13064

Dear Mayor Wallace:

In response to your request on December 10, 1984 and in confirmation of our meeting with the Village Board on October 29, 1984, I submit the following summary of two additional alternatives discussed, as an addendum to my written report of September 1984.

Alternative A: Refurbish or expand the existing dug well.

- Comments:
1. Dug wells are not desirable for a couple of reasons:
 - a) They are susceptible to surface water contamination.
 - b) They are susceptible to extended dry periods.
 2. The existing dug well could not satisfactorily be expanded because:
 - a) There would be a very likely possibility of disturbance and contamination during attempted expansion efforts.
 - b) Deepening or enlarging by means of sheet piling would be very expensive and would have the likely possibility of sealing off the aquifer during driving and thereby destroying the well.
 - c) Drilling a casing through the existing well bottom could also seal off the aquifer and would require similar effort and cost as a new drilled well.
 3. The only alternative would be to dig a new basin and install a new larger pump. For a cost estimate assume a 20 foot diameter by 25 foot deep basin with a 5 foot stone or gravel bottom and a new 320 gpm pump.

EXHIBIT "D"

Alternative ACost Estimates:

Excavation	\$ 5,612.
Backfill	8,619.
Structure	15,000.
Gravel Bottom	465.
320 gpm pump	4,750.
Piping	2,375.
Site Development	<u>3,179.</u>
	40,000.
15% Contingency	6,000.
	46,000.
Engineering (approx.)	2,500.
TOTAL	\$ 48,500.

Alternative B: Addition of Water Use Meters

Comments: In order to identify and eliminate the unaccounted for water use and to gain control over the entire distribution system for record keeping and billing purposes, it is highly recommended that the Village install water use meters. Assuming a current base and seasonal population of approximately 4,000 persons and an average of 3½ persons per household, allowing for meters already in use, the Village would need approximately 1,000 meters. In this quantity the unit cost for meters would be:

Cost Estimate:

Badger thermoplastic housing meter with remote recorder	\$ 45.00 + each
Installation	55.00+ each
Total Unit Cost	\$ 100.00 + each

If I can be of any further assistance, please do not hesitate to call me.

Very truly yours,

David H. Eshbaugh, P.E.

/pb

DAVID H. ESHBAUGH, P.E.

CONSULTING ENGINEER
119 FAYETTE STREET, MANLIUS, NEW YORK 13104
(315) 682-5307

VILLAGE OF FAIRHAVEN
WATER SYSTEM IMPROVEMENTS
VILLAGE OF FAIRHAVEN
CAYUGA COUNTY, NEW YORK
ENGINEERS OPINION OF PROBABLE COST
MAY, 1985

DEVELOPMENT OF NEW WELL

NEW 12" WELL WITH 24-72 HOURS OF PUMP TESTS AND DEVELOPMENT	\$18,500.00
NEW 30 HP, 5 STAGE VERTICAL TURBINE PUMP	6,500.00
PIPING AND TIE IN TO MAIN	1,000.00
CHLORINATOR	1,250.00
CONTROLS AND PIPING	1,250.00
PUMP HOUSE	1,500.00
	<u>\$30,000.00</u>
15% CONTINGENCY	4,500.00
	<u>\$34,500.00</u>

STANDBY GENERATOR

NEW 150 KV DIESEL GENERATOR	\$20,000.00
REWORK EXISTING SERVICE	5,000.00
500 GAL. FUEL STORAGE TANK	1,000.00
REMODEL EXISTING PUMP HOUSE	750.00
SWITCH GEAR AND MISCELLANEOUS	1,500.00
	<u>\$28,250.00</u>
15% CONTINGENCY	4,250.00
	<u>\$32,500.00</u>

EXHIBIT "E"

ENGINEERS OPINION OF PROBABLE COST
MAY, 1985

NEW WATER USE METERS (MATERIAL ONLY)

REPLACEMENT COMPONENTS PLUS
REMOTE RECORDER

406 @ \$25.00 each \$10,150.00

NEW THERMOPLASTIC HOUSING METER
WITH REMOTE RECORDER

330 @ \$45.00 each \$14,850.00

\$25,000.00

SUB TOTAL

\$ 92,000.00

ENGINEERING @ 7%

6,440.00

LEGAL & ADMINISTRATIVE
COSTS @ 3%

2,760.00

TOTAL PROJECT COST

\$101,200.00



CAYUGA COUNTY
HEALTH DEPARTMENT

WILLIAM L. CATTO, P.E.
Public Health Director

January 9, 1985

Mayor Robert Wallace
& Village Board
Village of Fair Haven
Fair Haven, New York 13064

Re: Annual Water Supply Evaluation
Fair Haven (V), Cayuga County

Gentlemen:

Several stop-by inspections were conducted by this department during 1984 and a formal evaluation was made on October 11, 1984, of the water supply serving the village of Fair Haven.

The following is a list of improvements made to the water supply over the past year:

- 1) A protective fence was installed around the standpipe and well field.
- 2) A digital P.C. was purchased to keep accurate data on activity in the water supply.
- 3) A licensed engineer was hired to do a needed study of the water supply.

It was also noted that the following items are still in need of attention:

- 1) Over the past several years, we have requested the village to upgrade its cross-connection (water use) ordinance to meet modern technological advancements and to actively enforce the ordinance. At present, the village is concerned about the State Park and McIntyre's Bait Shop and rightfully so. An upgraded ordinance would give the village some legal clout to force these establishments to make the necessary improvements.
- 2) During the summer, the village was pumping water up to 20 hours per day and had difficulty providing sufficient water to the residents. An effort should be made to develop another well and add additional storage capacity at the west end of the village. There appears to be a problem with the hydraulic gradient of the distribution system on the west side of the village, therefore, the reservoir should be placed there. This would eliminate the loss of pressure on Victory Street. The village

cont'd....

is required to maintain a working pressure of 20 psi at ground level in all parts of the distribution system as outlined in Part 5, Section 5-1.27 of the New York State Sanitary Code. Therefore, the County Health Department is asking that an "all-out" effort be made to correct this sanitary code violation.

3) The village has also shown concern over the volume of water used by the State Park during the summer months. It is our suggestion that the village read the meter on a weekly/monthly basis, and not annually, to determine if any leaks are in the system. Based on the number of people employed by the park, a somewhat accurate figure can be determined as to the extent of leaks during the winter. As the year progresses and new sections are turned on, the amount of water used should determine any problems within a section.

Should you have any question on any of the above items, please contact this office.

Very truly yours,

Johannes A. Peters

Johannes A. Peters
Sr. Public Health Technician
Environmental Health Division

JAP/ab



O'BRIEN & GERE

Safe Drinking Water Act

CLIENT VILLAGE OF FAIR HAVEN JOB NO. 2661.001.517

DESCRIPTION Test Well

SAMPLE NO. 76242 DATE COLLECTED 4-24-85 DATE REC'D. 4-24-85 DATE ANALYZED _____

Primary Inorganic Chemicals	ppm	Secondary Inorganic Chemicals	ppm
Arsenic	<0.01	Chloride	3.
Barium	<0.1	Iron	0.05
Cadmium	<0.01	Manganese	0.05
Chromium	<0.01	Sodium	4.2
Fluoride	<0.01	Zinc	<0.01
Lead	<0.01	Conductivity	140.0
Mercury	0.0005	Calcium	26.4
Nitrate	0.63	Total Dissolved Solids	140.
Silver	<0.01	Total Alkalinity	92.
Selenium	<0.01	pH, Laboratory	8.0
Organic Chemicals		Temperature	10°C
Endrin		Calcium Carbonate	65.9
Lindane			
Methoxychlor			
Toxaphene			
2,4-D			
2,4,5-TP Silvex			

Methodology: Federal Register — 40 CFR, Part 136, December 3, 1979

Comments:

Authorized: DR. Brondau
Date: 6-3-85

EXHIBIT "G"

CAYUGA COUNTY LABORATORY

AUBURN, NEW YORK

JANICE ROSS, M.D., DIRECTOR

OWNER

*Village of Fair Haven
Cayuga Co*

ADDRESS

DATE RECD.

April 30 1985

CHARGE

76594

LAB NO.

DATE COLLECTED

4/30/85 8:30 AM

DATE EXAMINED

4/30/85 nk

DATE REPORTED

nk

SUPPLY CHLORINATED WHEN

SAMPLED YES

NO

RESIDUAL Cl_2

PPM

COMMENTS:

mt

SAMPLE FROM

*2" from floor eye Cayuga
Test Well*

SOURCE

DISTANCE FROM POLLUTION

MPN / 100 ML

0

2 BACTERIA / ML

COLIFORM GROUP

< 1

THESE RESULTS INDICATE WATER WAS OF A SATISFACTORY SANITARY QUALITY WHEN THE SAMPLE WAS COLLECTED.

RESULTS OF EXAMINATION OF WATER
MILIPORE FILTRATION

AGAR COUNT 24 HRS. - 35°C

0.1 ML. *0* 1.0 ML. *2* BACTERIA / ML. *2*

MPN / 100 ML. *< 1*

THESE RESULTS INDICATE WATER WAS OF A SATISFACTORY SANITARY QUALITY WHEN THE SAMPLE WAS COLLECTED.

VOL. ML.	WATER POLLUTED		BGB	
	LACTOSE	POS	24 HRS	48 HRS
10				
1.0				
0.1				
1-102				
1-103				
1-104				
1-105				
1-106				



O'BRIEN & GERE

Safe Drinking Water Act

CLIENT VILLAGE OF FAIR HAVEN JOB NO. 2661.001.517

DESCRIPTION Test Well

SAMPLE NO. 76242 DATE COLLECTED 4-24-85 DATE REC'D. 4-24-85 DATE ANALYZED

Primary Inorganic Chemicals

ppm

- Arsenic
- Barium
- Cadmium
- Chromium
- Fluoride
- Lead
- Mercury
- Nitrate
- Silver

Secondary Inorganic Chemicals

ppm

- Chloride
- Copper
- Iron
- Manganese
- Sodium
- Sulfate
- Zinc
- Corrosivity

Organic Chemicals

ppb

- Endrin <0.05
- Lindane <0.05
- Methoxychlor <0.5
- Toxaphene <0.5
- 2, 4-D <0.2
- 2, 4, 5-TP Silvex <0.1

Methodology: Federal Register — 40 CFR, Part 136, December 3, 1979

Comments:

Authorized: *ARH*

Date: 5-13-85

APPENDIX B

SHORT ENVIRONMENTAL ASSESSMENT FORM

INSTRUCTIONS:

(a) In order to answer the questions in this short EAF it is assumed that the preparer will use currently available information concerning the project and the likely impacts of the action. It is not expected that additional studies, research or other investigations will be undertaken.

(b) If any question has been answered Yes the project may be significant and a completed Environmental Assessment Form is necessary.

(c) If all questions have been answered No it is likely that this project is not significant.

(d) Environmental Assessment

- 1. Will project result in a large physical change to the project site or physically alter more than 10 acres of land? Yes X No
2. Will there be a major change to any unique or unusual land form found on the site? Yes X No
3. Will project alter or have a large effect on an existing body of water? Yes X No
4. Will project have a potentially large impact on groundwater quality? Yes X No
5. Will project significantly effect drainage flow on adjacent sites? Yes X No
6. Will project affect any threatened or endangered plant or animal species? Yes X No
7. Will project result in a major adverse effect on air quality? Yes X No
8. Will project have a major effect on visual character of the community or scenic views or vistas known to be important to the community? Yes X No
9. Will project adversely impact any site or structure of historic, pre-historic, or paleontological importance or any site designated as a critical environmental area by a local agency? Yes X No
10. Will project have a major effect on existing or future recreational opportunities? Yes X No
11. Will project result in major traffic problems or cause a major effect to existing transportation systems? Yes X No
12. Will project regularly cause objectionable odors, noise, glare, vibration, or electrical disturbance as a result of the project's operation? Yes X No
13. Will project have any impact on public health or safety? Yes X No
14. Will project affect the existing community by directly causing a growth in permanent population of more than 5 percent over a one-year period or have a major negative effect on the character of the community or neighborhood? Yes X No
15. Is there public controversy concerning the project? Yes X No

PREPARER'S SIGNATURE: Robert M. Wallace

TITLE: Mayor

REPRESENTING: Village of Fair Haven

DATE: 11/1/85

DAVID H. ESHBAUGH, P.E.

CONSULTING ENGINEER

119 FAYETTE STREET, MANLIUS, NEW YORK 13104
(315) 682-5307

VILLAGE OF FAIRHAVEN
WATER SYSTEM IMPROVEMENTS
VILLAGE OF FAIRHAVEN
CAYUGA COUNTY, NEW YORK

PROGRAM NARRATIVE

1.0. OBJECTIVES AND NEEDS FOR ASSISTANCE

The Village of Fairhaven water supply, storage and distribution system is inadequate for the needs of the village. Several problems exist, these are:

1. Lack of adequate supply to satisfy ISO fire flow requirements.
2. Lack of adequate supply storage capacity for backup in case of equipment failure or power outage.
3. Lack of sufficient pumping capacity to keep up with peak demand thereby reducing storage and line pressure in the distribution system.
4. Lack of standby power to operate the pumping system during power outages. At the present time in the event of power failure, there is no standby emergency power for the existing drilled well. In the event of a power outage, and the present standpipe was approximately half full (60,000 useable gallons), and the water demand continued at the Year 2000 average rate, there would be a reserve of approximately 4 hours. If a fire occurred during the outage, or if the standpipe was low (as it usually is on a daily basis at the present time during the summer months), this lack of reserve would be critical.
5. Leaks in the distribution system within the State Park.

In order to solve these problems, the village requires financial assistance as the cost of the required solutions is too high for the residents to bear alone.

2.0 RESULTS OR BENEFITS EXPECTED

The installation of a new water well with additional pumping capacity will immediately solve the supply problem and the addition of standby emergency power generation equipment will enable the supply to be maintained during power outages.

EXHIBIT "I"

3.0 APPROACH

A. SCOPE:

<u>Description</u>	<u>Cost</u>
<u>DEVELOPMENT OF NEW WELL</u>	
NEW 12" WELL WITH 24-72 HOURS OF PUMP TESTS AND DEVELOPMENT	\$18,500.00
NEW 30 HP, 5 STAGE VERTICAL TURBINE PUMP	6,500.00
PIPING AND TIE IN TO MAIN	1,000.00
CHLORINATOR	1,250.00
CONTROLS AND PIPING	1,250.00
PUMP HOUSE	1,500.00
	<u>\$30,000.00</u>
15% CONTINGENCY	4,500.00
	<u>\$34,500.00</u>
 <u>STANDBY GENERATOR</u>	
NEW 150 KV DIESEL GENERATOR	\$20,000.00
REWORK EXISTING SERVICE	5,000.00
500 GAL. FUEL STORAGE TANK	1,000.00
REMODEL EXISTING PUMP HOUSE	750.00
SWITCH GEAR AND MISCELLANEOUS	1,500.00
	<u>\$28,250.00</u>
15% CONTINGENCY	4,250.00
	<u>\$32,500.00</u>
 <u>NEW WATER USE METERS</u>	
REPLACEMENT COMPONENTS PLUS REMOTE RECORDER 406 @ \$25.00 each	\$10,150.00
NEW THERMOPLASTIC HOUSING METER WITH REMOTE RECORDER 330 @ \$45.00 each	\$14,850.00
	<u>\$25,000.00</u>
	<u><u>\$25,000.00</u></u>
SUB TOTAL	\$ 92,000.00
ENGINEERING @ 7%	6,440.00
LEGAL & ADMINISTRATIVE COSTS @ 3%	2,760.00
	<u>2,760.00</u>
TOTAL PROJECT COST	<u>\$101,200.00</u>

B. SCHEDULE:

1. Advertise and Bid Contract for drilling and development of new well _____ November 8, 1985
2. Award Contract _____ November 22, 1985
3. New well completion _____ December 15, 1985
4. Advertise and Bid Contract for pump, piping, pump house, standby generator, etc. _____ January 1, 1986
5. Award Contract _____ January 30, 1986
6. Project Completion _____ July 1, 1986

C. CONTROL:

Construction administration will be handled by the Design Engineer with the assistance of the Village Superintendent of Public Works. Period inspections on site during critical stages of construction will be made.

Appropriate tests of the water source will be made in compliance with Health Dept. requirements.

Appropriate testing of all components will be done to insure compliance with the contract documents before final acceptance.

D. PERSONNEL:

Village of Fairhaven
Robert Wallace, Mayor (315) 947-5202
Patrick Gueran, Superintendent of Public Works (315) 947-5725
Design Engineer
David H. Eshbaugh, P.E.
Consulting Engineer
119 Fayette Street, Manlius, N.Y. 13104; (315) 682-5307

4.0 GEOGRAPHIC LOCATION

The Village of Fairhaven is located in the Town of Sterling, Cayuga County, New York, and is situated at the south end of Little Sedus Bay along Lake Ontario, approximately fifteen miles west of the City of Oswego,

The Village is a commercial and recreational center for the area around the Bay and the Fairhaven Beach State Park.

The topography may be described as gently rolling, with ground elevations ranging from 240 feet along the Bay Shore to 412 feet at the standpipe located on the hill east of the Village (USGA datum).

66.8A(C)

32.12

ROUTE

66.8A(C)

32.2

66.8A(C)

44

2580

980737 104

101.86

66.8A(C)

44

OF