

ILLINOIS POLLUTION CONTROL BOARD
January 7, 1993

RESIDENTS OF CEDARVILLE,	)	
	)	
Complainant,	)	
	)	PCB 91-194
v.	)	(Enforcement)
	)	
VILLAGE OF CEDARVILLE,	)	
	)	
Respondent.	)	

ORDER OF THE BOARD (by B. Forcade):

On September 3, 1992, the Board issued an interim opinion and order in this matter. The Board found that the Village of Cedarville (Cedarville) had violated 35 Ill. Adm. Code 306.102(a), 306.303 and 306.304. The Board noted that Cedarville had taken some measures in response to the sewer overflows and had plans for additional actions. However, the Board concluded that a finding of violation combined with the potential health risk resulting from future violations required that a more formal program be mandatorily implemented. The Board directed Cedarville to develop a compliance plan to be submitted to the Board by October 13, 1992. The compliance plan was to detail the steps necessary for Cedarville to achieve and maintain compliance with Sections 306.102, 306.303 and 306.304.

The Board received a compliance plan from Cedarville on October 14, 1992. Because there was no indication that Cedarville had sent a copy of the compliance plan to the Illinois Environmental Protection Agency (Agency), the Board forwarded a copy of the compliance plan to the Agency and extended the time in which the complainants and the Agency could comment on the compliance plan until November 20, 1992. The complainants did not file a response to the compliance plan. The Agency filed its response on November 19, 1992.

As part of the compliance plan, Cedarville reports that the following activities have occurred in relation to the sanitary sewer system:

1. The village has surveyed and observed several manholes in low lying areas. Some manholes have been raised to prevent storm water inflow from entering.
2. Dye testing was conducted in September, 1992 at suspect locations. No dye was detected in the sanitary sewer system downstream of the observed areas.
3. A door to door inspection was conducted for illegal storm water connections.

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4. Smoke testing was conducted for the area contributing to Key Manhole No. 19.

The compliance plan discusses the option of installing a relief sewer to correct the overflow problem. The village board would rather expend funds to solve the source of the problem than to spend the funds to alleviate the problem. The village board believes that the overflow conditions can be alleviated by attacking the source of the excess inflow.

The proposed compliance plan submitted by Cedarville involves follow-up of the testing and inspections already done on the sewer system. The plan also requires monitoring of the manholes near Cedar Court for potential surcharging during heavy rains for a six month period from December 15, 1992 through June 15, 1993. If surcharging is observed, Cedarville will proceed with additional SSES activities and/or consideration of a relief sewer. As part of the compliance plan, all new construction will be inspected to assure that there are no illegal connections. Monthly tabulation of totalized flow from the sewage treatment plant will be kept to compare over time. If a comparison of the flows indicates an increase in flow, an inflow/infiltration assessment will be performed and the appropriate means to correct the problem will be pursued.

The Agency in its comment states that a program of locating and eliminating the sources of infiltration and inflow is not effective for solving the type of problem that exists in Cedarville. The Agency contends that when such programs are instituted, the sources of the infiltration and inflow are too numerous to effectively eliminate and solve the problem. In support of its conclusion the Agency references a July 1980 Technical Report issued by the United States Environmental Protection Agency (USEPA) entitled Evaluation of Infiltration/Inflow Program.¹ The Agency believes that to solve the problem Cedarville must provide a means of delivering sewage out of Cedar Court. The Agency recommends that Cedarville construct a relief sewer or a pumping station to serve the area.

While the Agency's comment raises a genuine concern on the adequacy of the compliance plan, the Board does not find that the concerns of the Agency warrant altering the compliance plan as submitted by Cedarville. Cedarville has already completed many of the activities contained in the compliance plan. The results of the inflow/infiltration assessment performed in 1979 showed inflow/infiltration levels below the USEPA level which would have required additional studies. Cedarville realizes that the addition of a relief sewer may be necessary if the proposed

The Agency did not supply a copy of this report with its comments and the Board has not obtained a copy of the report.

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actions do not reduce the excess flow in the sewer system. The Board has not been presented with sufficient factual information to determine if the magnitude of the inflow/infiltration is such that a relief sewer is required. Cedarville has already made some progress in reducing the number of illegal connections to the sewer system. There is no indication that additional sewer overflows have been experienced by the residents. The last reported sewer overflow occurred on August 19, 1990.

The Board accepts the compliance plan as submitted and directs Cedarville to adhere to the provisions of the compliance plan. The Board directs Cedarville to continue to monitor its progress in eliminating excess flow in the sewer system. The Board further instructs Cedarville to examine the possibility of installing a relief sewer system or pumping station in the area of Cedar Court if it becomes apparent that the inflow/infiltration problem is too expansive to eliminate at the source.

The Board notes that the complainants have the right to petition this Board for relief if Cedarville fails to follow the compliance plan or overflow from the sewers reoccurs.

ORDER

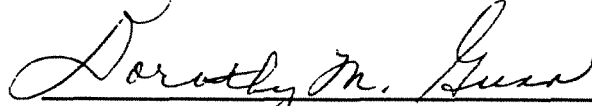
1. The Board hereby accepts the compliance plan submitted by Cedarville. A copy of the compliance plan is attached to this order and incorporated by reference as though fully set forth herein.
2. Cedarville shall implement the provisions of the compliance plan.
3. Cedarville shall cease and desists from further violations of 35 Ill. Adm. Code 306.102, 306.303 and 306.304.
4. This docket is hereby closed.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (Ill. Rev.Stat. 1991, ch. 111 1/2, par 1041) provides for appeal of final orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements. (But see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration, and Castenada v. Illinois Human Rights Commission (1989), 132 Ill. 2d 304, 547 N.E.2d 437.)

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I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above order was adopted on the 7th day of January, 1993, by a vote of 5-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

ILLINOIS POLLUTION CONTROL BOARD

RESIDENTS OF CEDARVILLE,

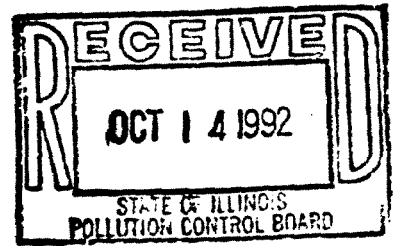
Complainant,

vs.

VILLAGE OF CEDARVILLE,

Respondent.

PCB NO. 91-194
(Enforcement)



NOTICE OF FILING

TO: (See attached Service List)

Please be advised that on October 13, 1992, the attached Village of Cedarville Sewer System Compliance Plan was filed with the Illinois Pollution Control Board, by Federal Express mailing, in accordance with the Interim Opinion and Order of the Board dated September 3, 1992.

Dated: October 13, 1992

VILLAGE OF CEDARVILLE, Respondent

BY HINSHAW & CULBERTSON

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VILLAGE OF CEDARVILLE
SEWER SYSTEM COMPLIANCE PLAN
ILLINOIS POLLUTION CONTROL BOARD
PCB 91-194

October 13, 1992

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~~DISCUSSION AND CONCLUSIONS~~

Infiltration/Inflow Assessment of the Cedarville Sewer System was conducted and reported as part of the Cedarville Facility Plan dated October 1, 1979. Attachment A presents Section III - Infiltration/Inflow Assessment as presented in the referenced Facility Plan. Attachment B presents Exhibit B from that report, comprising the Cedarville Sanitary Sewer System and showing the Key Manholes referenced in the Infiltration/Inflow Assessment.

The results of that assessment indicate that Trunk Line D (flow entering Key Manhole No. 19 from the east) has a high percentage increase inflow during both infiltration and inflow conditions, while Trunk Line C (flow entering Key Manhole No. 19 from the north) has a high percentage increase during inflow conditions. All other trunk lines indicated increases from 65 to 197 percent, with resulting overall system estimated increases of six percent and eight percent of the annual dry weather flow for infiltration and inflow, respectively.

The conclusion of the assessment was that the total system I/I was below the USEPA criteria, such that a Sewer System Evaluation Survey was not required.

The Cedarville Sanitary Sewer System was constructed in 1972, a relatively young system in relation to the age of many municipal systems which are now requiring major infrastructure rehabilitation. Furthermore, the system is constructed with Arnco Truss Pipe, a composite pipe

consisting of an ABS plastic honeycomb structure filled with lightweight concrete, which is installed in ten foot length with solvent welded joint couplings. This piping system minimizes the number of joints in comparison with typical clay sewer pipe systems. Television inspection of the system conducted for the Village of Cedarville has not determined any obvious structural defects such as cracked pipe, separated joints, or root intrusion. Thus, the sanitary sewer main piping is relatively non-suspect of being a major infiltration source. This does not preclude the individual house services from being potential infiltration sources.

Inflow sources into the system could include such things as the following:

1. Manholes in low lying areas or ditches which could become submerged.
2. Direct connections from storm sewers or inlets.
3. Illegal private connections from roof drains, foundation drains, and storm water sump pumps.

SEWER SYSTEM EVALUATION SURVEY ACTIVITIES

In regard to the above inflow sources, the following activities have occurred:

1. The Village has surveyed and observed several manholes in low lying areas. These have been raised to prevent storm water inflow from entering.

2.

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2. Table 1 presents a summary of dye testing conducted in September, 1992 at suspect locations. The results indicate no dye was detected in the sanitary sewer system downstream of the observed areas.
3. The village personnel have conducted door to door surveys to inspect homes for illegal storm water connections. The results of the survey completed through October 7, 1992 are as follows:

Surveys completed	246
Total homes to survey	312
Percent of surveys completed	79
Illegal connections found	34
Percent illegal connections of completed surveys	13.8
Estimated number of illegal connections disconnected prior to survey	29
Estimated total number of illegal connections to date	54
Estimated percentage of illegal connections of survey to date	22½

Table 2 presents a summary of smoke testing conducted for the area contributing to Key Manhole No. 19 (Trunk Line D). The results indicate the following:

1. Two homes at which the house service connections indicate poor joints or cracked piping allowing smoke to emit from the ground.

2. The four inch cast iron service entering Manhole No. 25 should be grouted to eliminate seepage.
3. Follow-up observations must be conducted at three homes to determine the cause of smoke entering the basement. This could be from dry traps in the plumbing allowing smoke to pass through, or from illegal storm water connections.

CONSIDERATION OF RELIEF SEWER

The Village Board understands the concept of a relief sewer to relieve surcharging conditions near Cedar Court. However, this remedy would not solve the source of the problem, but rather would expend funds to alleviate the resulting condition. The Board would rather expend funds to solve the source of the problem, unless it is determined that the source is wide spread throughout the system such that major rehabilitation or replacement of sanitary sewer mains would be required. However, at this time this does not appear to be the case. The results of the activities conducted to date have shown illegal storm water connections to be a known major source. The results of disconnecting these sources should first be monitored to determine if this will alleviate the problem. This can be determined through a program to monitor flows and surcharging during various rainfall events. It is impossible to predict the effect of disconnecting the illegal connections on possible future surcharging at Cedar Court should another rainfall of the

magnitude previously experienced or encountered. The backwater valves on service connections along Cedar Court will provide protection in that event.

PROPOSED COMPLIANCE PROGRAM

I. Evaluation of the Source of Sewer Overflows and Assessment of Present State of the Sewerage System

Dye testing, sewer televising, and manhole surveys have found no major sources of extraneous infiltration/inflow. Smoke testing has determined several possible sources to be checked further. The door to door survey has determined a number of illegal connections which in aggregate could greatly increase extraneous storm water flow into the system.

II. Specific Steps to Eliminate the Identified Problems, and, III. Specific Dates for Completion of Remedial Actions

II. Remedial Action	III. Completion Date
A. Complete door-to-door survey for illegal stormwater	October 31, 1992
B. Follow-up observations to determine reason for smoke entering basements of three homes	October 31, 1992
C. Provide 30 day notice for residents with identified illegal stormwater connections to have corrections made. Also provide 30 day notice to residents in violation of backwater valve ordinance	November 1, 1992

II. Remedial Action	III. Completion Date
D. Grout C.I. service entering MH No. 25. Smoke test Trunk Line C.	November 1, 1992
E. Re-inspect residences which received 30 day notices for compliance.	December 15, 1992

IV. Long Term Monitoring Methods

- A. Short term monitoring for potential surcharging in manholes near Cedar Court.

During a six month period commencing December 15, 1992 and running through June 15, 1993, whenever local rainfall in excess of 1.5 inches in 24 hours is forecast or appears imminent, Village personnel will observe for any surcharge conditions in Manhole No. 12 where Cedar Court enters the main 12 inch trunk line. Observations will be made at four hour intervals until two hours after cessation of heavy rain, and observations will be recorded.

If no surcharge is observed, future observations will only be conducted during periods of highly intensive rain fall, to determine whether any surcharging occurs. If surcharging is observed, additional SSES activities and/or consideration of a relief sewer will be undertaken and reported to the Illinois Pollution Control Board, by September 15, 1993.

- B. Program to eliminate new sources of excess infiltration/inflow in the future.

New sources of excess infiltration/inflow would most likely be created from new building construction where illegal stormwater connections could be made. This will be policed by having all new building permits require a final inspection in the presence of the Superintendent of Public Works and the licensed plumber in which no illegal connections must be demonstrated.

- C. Program to detect increases of flow in the sewage system due to rain, and frequency of inspections.

Monthly tabulation of totalized flow from the sewage treatment plant will be kept to compare flows over time. In addition, daily flows on days when rainfall in excess of 1.5 inches is received in 24 hours, will be tabulated for comparison over time. These comparisons will take into account any known increase in dry weather flows due to increased population served or new commercial/industrial sources of flow.

If comparisons indicate an obvious increase in flows during rainfall or snow melt, new extraneous sources will be suspected, and Infiltration/Inflow assessment or SSES activities will be re-implemented.

TABLE 1

**SUMMARY OF DYE TESTING RESULTS
VILLAGE OF CEDARVILLE, ILLINOIS
SEPTEMBER 1992**

Observation	Location
No Dye	Dyed inlets at the northwest & northeast corners of Washington & Mill Streets. Checked MH-6.
No Dye	Dyed inlet at the northwest corner of Oak Ridge Drive & Mill Street and inlet across from Oak Ridge Drive on Mill Street. Checked MH-67.
No Dye	Dyed inlet at the southeast corner of Oak & Mill Streets. Checked MH-67.
No Dye	Dyed inlet at the southwest corner of Second Street & Mill Street, and inlets on both sides of Mill Street across from Lift Station "A". Checked MH north of Lift Station "A".

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TABLE 2

SUMMARY OF SMOKE TESTING RESULTS
VILLAGE OF CEDARVILLE, ILLINOIS
SEPTEMBER 1992

NO.	LOCATION	OBSERVATIONS
1.	30 Adams Street	Smoke came out of ground around sidewalk at back of house.
2.	50 Adams Street	Smoke came out of ground west side of concrete patio at back of house.
3.	Lot 285 Walnut Street	Smoke came out of uncapped cleanout east side of house.
4.	MH #25	Water leaking in around 4" C.I. service
5.	45 Stephenson Street	Smoke came in basement.
6.	65 Stephenson Street	Smoke came in basement.
	Dark brown house east side of Lafayette Street. Second house south of Washington	Smoke came out of chimney. Seems like there is smoke in basement.

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ATTACHMENT A
INFILTRATION/INFLOW ASSESSMENT
(EXCERPTED FROM CEDARVILLE FACILITY PLAN, OCTOBER 1, 1979)

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III. INFILTRATION/INFLOW ASSESSMENT

Introduction

Under the current requirements of the Federal Water Pollution Control Act, construction grants for treatment works may not be awarded unless it is established that the wastewater collection system discharging into the treatment works is not subject to "excessive" infiltration/inflow.

Sewer system inflow occurs when systems collecting stormwater runoff are directly connected to the sewer system. Inflow can be detected and estimated by measuring flows at key points in the sewer system during rainfall, and calculating any increase in flow over normal dry weather flows.

Sewer system infiltration occurs when soil conditions and groundwater levels are such that they enhance the conveyance of surface water seepage and groundwaters into the system through poor joints and cracks in the sewer pipes and manholes. Normal procedures for determining the possible existence of excessive infiltration are to determine wastewater flowrates during periods when groundwater tables are high and soils are saturated but no inflow producing storm event is present, and comparing them with normal dry weather flows.

Determination of possible excessive infiltration/inflow in the sanitary sewer system is required prior to release of Federal grant funds for construction of treatment plant improvements.

Sources of information used in determining infiltration/inflow are treatment plant flow records, water pumpage records, reports of sewage backups into basements or streets, and field

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flow measurements at key points in the system for various climatological conditions.

Since there is no continuous flow recording equipment at the treatment plant, this data was not available for study of past flow patterns. In order to obtain information for this study, elapsed time meters on a lift station which serves approximately one third of the village were utilized to gather representative information of daily flows over a 3 month period. Charts were prepared to assist village personnel in keeping daily records.

Flow Measurements

Key manholes for flow measurements were selected from available sewer system maps. The key manholes selected divide the total system into 5 major sub-systems in order to help pinpoint any problem areas. A field inspection of these select manholes was made on February 28, 1979, at which time flow measurements for average dry weather conditions were collected. The numbers of the key manholes are as shown on the map in Exhibit B of the Appendix. The conditions of manholes which were entered were recorded. Both depth of flow and weir measurements were taken. These results are summarized in Table 2. On April 16, 1979 a second set of flow measurements were taken for high groundwater conditions. These results are also summarized in Table 2.

Storm inflow flow measurements were taken on June 18, 1979. A storm front moved through the area beginning at 7:30 A.M. continuing until 1:30 P.M. producing a steady rainfall for the

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TABLE 2
VILLAGE OF CEDARVILLE
INFILTRATION/INFLOW STUDY
FLOW MEASUREMENTS

<u>Line</u>	<u>MH</u>	<u>Dia.</u>	<u>Date</u>	<u>Time</u>	<u>Depth of Flow (Ft.)</u>	<u>Weir Rate (GPD)</u>
A	62 E	8"	2/28/79	1:50	.05	3,750
			4/16/79	1:15	.06	9,495
			6/18/79	2:20	.06	8,100
B	62 S	8"	2/28/79	2:10	.07	5,085
			4/16/79	1:35	.14	15,100
			6/18/79	2:30	.10	*
C	19 N	8"	2/28/79	3:00	.03	1,600
			4/16/79	2:20	.04	2,796
			6/18/79	2:45	.03	12,075
D	19 E	8"	2/28/79	3:15	.05	3,360
			4/16/79	2:00	.10	18,000
			6/18/79	2:55	.10	*
-	12 E	12"	2/28/79	3:50	.10	10,000
			4/16/79	2:35	.17	-
			6/18/79	3:05	.14	28,495
E	4 N	8"	2/28/79	4:15	.08	8,500
			4/16/79	2:55	.19	14,450
			6/18/79	3:55	.20	13,990
-	1 a	12"	2/28/79	4:45	.28	40,900
			4/16/79	3:10	.28	-
			6/18/79	4:10	.32	61,500

Overflows Weir
No Measurement Taken

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duration, with a total rainfall accumulation of 0.5 inches. Flow measurements were taken between 2:20 P.M. and 4:10 P.M. beginning at the upstream key manholes and continuing toward the treatment plant. The results of these flow measurements are summarized in Table 2 .

Analysis of Flow Measurement Data

Tables 3 and 4 present summaries of the infiltration and inflow quantities indicated from the instantaneous flow measurements where "instantaneous" refers to non-continuous flow measurement. Infiltration - Table 3 presents the measured instantaneous infiltration for each of the trunk sewers. The resulting total infiltration flowrate is 37,546 gpd. Trunk line D indicates a 436% increase over the measured dry weather flow, while all other lines increased by less than 200%.

TABLE 3

Instantaneous Infiltration into Trunk Sewers

4/16/79

<u>Trunk Line</u>	<u>Wet Weather Flow (gpd)</u>	<u>Dry Weather Flow (gpd)</u>	<u>Instantaneous Infiltration(gpd)</u>	<u>Remarks</u>
A	9,495	3,750	5,745	153% Increase
B	15,100	5,085	10,015	197% Increase
C	2,796	1,600	1,196	75% Increase
D	18,000	3,360	14,640	436% Increase
E	4,450	8,500	5,950	70% Increase
Total			37,546 gpd	

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Inflow - Table 4 presents the measured inflow quantities following the rain event. The resulting total instantaneous inflow rate is 44,870 gpd, or 1870 gallons per hour. Assuming that the duration of this flowrate is 4 hours results in an inflow per event of approximately 7,500 gallons.

TABLE 4
Instantaneous Inflow into Trunk Sewers
6/18/79

<u>Trunk Line</u>	<u>Storm Inflow Flow (gpd)</u>	<u>Dry Weather Flow (gpd)</u>	<u>Instantaneous Inflow (gpd)</u>	<u>Remarks</u>
A	8,100	3,750	4,350	116% Increase
B	15,000 $\pm$	5,085	9,915 $\pm$	195% Increase
C	12,075	1,600	10,475	655% Increase
D	18,000 $\pm$	3,360	14,640 $\pm$	436% Increase
E	13,990	8,500	5,490	65% Increase

Total 44,870 gpd = 1,870 gph

Instantaneous Flowrate x Estimated Duration = Total Inflow per Event
1,870 gph x 4 hours = 7,500 gallons

Analysis of Lift Station Results

Table 5 presents the average daily pumpage through the lift station in 15 day time increments for the 3 month period of March through May. Flows are based upon the pump design ratings of 150 gpm at 70' TDH although actual flows may vary slightly. During the first 15' days of March the ground was frozen and snow covered, so that the average daily pumpage of 12,910 gallons represents dry weather flows. Thawing began on

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TABLE 5

VILLAGE OF CEDARVILLE
LIFT STATION PUMPAGE

<u>Month</u>	<u>Period</u>	Pumpage in GPD		
		<u>Low</u>	<u>High</u>	<u>Average</u>
March 1979	1 - 15	9,900	16,650	12,910
	16 - 30	18,450	47,475	27,091
April	1 - 15	12,825	26,325	17,283
	16 - 30	11,025	20,925	14,254
May	1 - 31	7,650	22,882	12,787

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March 16, with the following 15 day period having an average daily infiltration/inflow of 14,181 gallons through the lift station. Assuming that this is representative of one-third of the total system results in a total system infiltration/inflow of $14,181 \times 3 = 42,543$ gallons per day which compares quite well with the average instantaneous infiltration for that period of 37,546 gpd. As can be seen from Table 6, the average infiltration/inflow was reduced to 13,119 gpd during the first part of April, and daily flows were back to normal dry weather flows by the month of May. The last column in Table 6 indicates the estimated total system I/I for each period, and has a result of approximately 0.9 million gallons of infiltration inflow due to snowmelt and high groundwater conditions.

Estimated Total Annual Infiltration/Inflow

The results of the previous sections indicate quantities of infiltration/inflow due to various sources as summarized below:

<u>Source</u>	<u>Estimated Annual Amount (Million Gallons)</u>
General Infiltration	0.9
Stormwater Inflow	<u>1.2</u>
Total	2.1

These results indicate essentially equal amounts of infiltration and inflow. The present average wastewater flow of 40,000 gpd results in a total annual dry weather flow of 14.6 million gallons. Thus the estimated infiltration and inflow quantities amount to 6% and 8% respectively, for a total of 14% of the annual dry weather flow.

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TABLE 6
VILLAGE OF CEDARVILLE
INFILTRATION/INFLOW ANALYSIS

<u>Month</u>	<u>Period</u>	<u>Lift Station Pumpage in GPD</u> <u>Low</u> <u>High</u>	<u>Average</u>	<u>Lift Station</u> <u>Ave. I/I</u>	<u>Total System</u> <u>Ave. I/I</u>	<u>Estimated</u> <u>Total I/I</u>
March	1-15	9,900	16,650	12,910	0	0
	16-30	18,450	47,475	27,091	14,181	42,543
April	1-15	12,825	26,325	17,283	4,373	13,119
	16-30	11,025	20,925	14,254	1,344	4,032
						895,410 gal.

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The small amount of estimated stormwater inflow indicates that there are no major stormwater drainage system connections to the sanitary sewer system.

The possible sources of the estimated quantity of general infiltration include poor pipe joints, cracked or broken sewer pipe, seepage into manholes, poorly installed house service lines, root intrusion, and other effects of age and deterioration of the sewer system. The locations of these various sources are most likely scattered throughout the system.

Infiltration/Inflow per Inch - Mile

Table 7 presents a summary of the size and length of sanitary sewer mains from the MNA and estimated length of house services in the Village of Cedarville.

TABLE 7

<u>Description</u>	<u>Length</u>	<u>Inch Dia. x Mile</u>
8" Sewer Main	16,664	25.25
12" Sewer Main	4,050	9.20
4" House Service	11,400	<u>8.64</u>
	Total	43.09 Inch-Mile

The highest weekly average infiltration/inflow through the lift station occurred from March 29-April 4, with an average daily I/I as follows:

Ave. Daily Pumpage = 29,886 gal.

Dry Weather Pumpage = 12,910

I/I through lift station = 16,976 gpd

X 3

I/I for Total System = 50,928 gpd/43.09 = 1182 gpd/i

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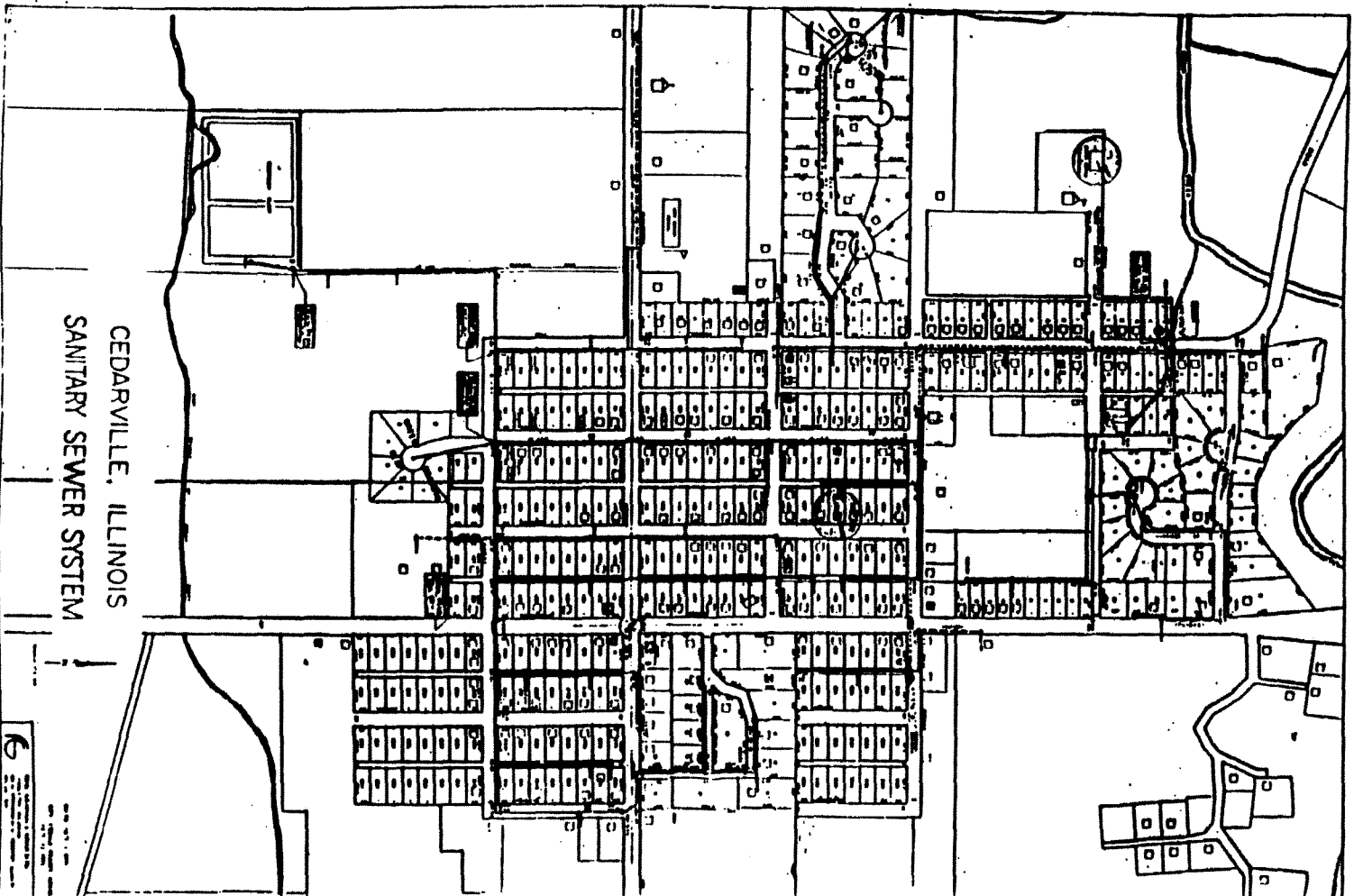
Conclusions

Per PRM 78-10 issued by the USEPA, a maximum infiltration rate of less than 1500 gpd/in.-mi. can be considered as non-excessive, and a cost-effective analysis comparing rehabilitation versus transporting and treating is not required.

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ATTACHMENT B

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