ILLINOIS POLLUTION CONTROL BOARD
August 4, 1988

IN THE MATTER OF:	)	
	)	
JOINT PETITION OF THE CITY OF OTTAWA AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY FOR EXCEPTION TO THE COMBINED SEWER OVERFLOW (CSO) REGULATIONS.	)	PCB 88-52

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter comes before the Board on a joint petition filed on March 21, 1988[1] by the City of Ottawa ("Ottawa") and the Illinois Environmental Protection Agency ("Agency") for exception to 35 Ill. Adm. Code 306.305 (a) and (b) to relieve Ottawa from the requirement to construct and operate certain combined sewer overflow ("CSO") transport and treatment facilities.

Hearing was held at the Ottawa City Hall on June 9, 1988. No members of the public were in attendance.

For the reasons described below, the Board finds that Petitioners have made the showings requisite for granting the relief requested. The relief will accordingly be granted, subject to conditions as stipulated to by Petitioners and consistent with the Board's rules and regulations.

CSO REGULATIONS

The Board's CSO regulations are contained in 35 Ill. Adm. Code Subtitle C, Chapter I, Part 306. They were amended in R81-17, 51 PCB 383, March 24, 1983. Sections pertinent to the

[1] 35 Ill. Adm. Code 306.373 establishes a January 1, 1986 deadline for filing of CSO exception petitions. In a prior proceeding, PCB 86-165, Ottawa, which had not yet been joined as co-petitioner by the Agency, sought a variance from this deadline. By Order of January 22, 1987 (75 PCB 66) the requested variance was granted until July 1, 1987. Ottawa then moved the Board to extend the deadline to October 1, 1987, which request was granted (78 PCB 470). On September 21, 1987 Ottawa once more moved that the deadline be extended. On October 29, 1987 the Board established the filing deadline as February 15, 1988. This notwithstanding, the Board accepted filing of the instant petition at its March 24, 1988 meeting.

instant matter are Sections 306.305 and 306.361(a). Section 306.305 provides as follows:

> All combined sewer overflows and treatment plant bypasses shall be given sufficient treatment to prevent pollution, or the violation of applicable water standards unless an exception has been granted by the Board pursuant to Subpart D.
>
> Sufficient treatment shall consist of the following:
>
> a) All dry weather flows, and the first flush of storm flows as determined by the Agency, shall meet the applicable effluent standards; and
>
> b) Additional flows, as determined by the Agency but not less than ten times average dry weather flow for the design year, shall receive a minimum of primary treatment and disinfection with adequate retention time; and
>
> c) Flows in excess of those described in subsection (b) shall be treated, in whole or in part, to the extent necessary to prevent accumulations of sludge deposits, floating debris and solids in accordance with 35 Ill. Adm. Code 302.203, and to prevent depression of oxygen levels; or
>
> d) Compliance with a treatment program authorized by the Board in an exception granted pursuant to Subpart D.

Subpart D allows the discharger to file a petition for an exception either singly, or jointly with the Agency as Ottawa has done. A joint petition may seek an exception based on minimal discharge impact as provided in Section 306.361(a):

> An exception justification based upon minimal discharge impact shall include, as a minimum, an evaluation of receiving stream ratios, known stream uses, accessibility to stream and side land use activities (residential, commercial, agricultural, industrial, recreational), frequency and extent of overflow events, inspections of unnatural bottom deposits, odors, unnatural floating material or color, stream morphology and results of limited stream chemical analyses.

Pursuant to 306.361(a) Ottawa and the Agency assert that overflows from its combined storm and sanitary sewer system have minimal impact on water quality, and do not restrict the use, of the Fox and Illinois Rivers (the receiving streams).

SUPPORT DOCUMENTS

Petitioners presubmitted several documents in support of their petition. Principal among these is Exhibit 5, "C.S.O.S - Phase III, Water Quality Evaluation for the City of Ottawa", prepared by Robert H. Renwick and Associates, Inc., Ottawa's consulting engineers. Exhibit 5 summarizes information gathered as part of Ottawa's Municipal Compliance Plan (Exh. 1), Phase I (Exh. 2) and Phase II (Exh. 3) of Ottawa's CSO investigations, and computer modeling of the CSO system (Exh. 4). Exhibit 5 also presents various water quality evaluations, including results of field studies, first flush determinations, and evaluation of assimilative capacities of the receiving streams. Lastly, Exhibit 5 considers various CSO control strategies.

At hearing Ottawa presented additional exhibits, including copies of the presubmitted testimony of Ottawa's Mayor George D. Small and of its consulting engineers (Exh. 10, 11 and 12), and responses (Exh. 13) to prehearing questions submitted by the Board (Board Exh. 1). Subsequent to hearing, Joint Petitioners submitted supplemental information in response to matters raised during the hearing (Exh. 14, 15, and 16) and a revised proposed order (Exh. 17).

BACKGROUND

The City of Ottawa, which is the county seat of LaSalle County, is located at the confluence of the Fox River with the Illinois River, with the Fox River entering from the north. Ottawa's 1980 population was 18,176 and its corporate area encompasses approximately seven square miles.

The Illinois River divides the city into two major sections. These are the section north of the Illinois River ("North Area"), which contains the central business district, and the section south of the Illinois River ("South Area"). In many aspects of the Ottawa CSO situation, these two sections operate as separate systems.

The former course of the Illinois and Michigan Canal also extends through Ottawa. The water portion of the canal is now abandoned and used as parkland (R. at 57). The only waterflow within the former canal within Ottawa is intermittent flow from a storm sewer which enters the park near the western edge of Ottawa (R. at 56).

Ottawa owns and operates a wastewater treatment plant. The plant is located on the south bank of the Illinois River. It has an existing capacity of approximately 4.5 MGD. The plant was originally constructed in 1956 as a primary treatment plant, and was upgraded to provide secondary treatment in 1969.

Ottawa also owns and operates approximately 310,000 feet of sewers, which includes sanitary, storm, and combined sewers. Approximately half of the sewers were constructed prior to 1915. Several of the major industries located in Ottawa, including Libby Owens Ford, U.S. Silica, and Borg-Warner, are not connected to the city's sewers (Petition at par. 1). Other major industries and institutions, including Dr. Pepper Bottling Company, Snap-On-Tools, Illinois Bell Telephone Company, and Ottawa Community Hospital, do not contribute wastes to the sewer system which might create hazardous or toxic conditions at CSOs (Id.; Exh. 5 at 1-3).

Most of the sewers built prior to 1950 were combined. Since that time Ottawa has undertaken steps to separate formerly combined sewers. Nevertheless, at present approximately 50 percent of the sewered area remains on combined sewers (Petition at par. 4); in general, combined sewers exist in and serve those areas of Ottawa closest to the Fox and Illinois Rivers. A small area of the Village of Naplate also contributes sanitary sewer discharges to the Ottawa system (Exh. 13 at 1; R. at 38).

Under normal flow conditions all sanitary and combined sewer flow is directed to the waste water treatment plant via a system of interceptors and force mains. All flows from the North Area are combined at the Walker Street pump station and pumped across the Illinois River directly to the treatment plant. Flows from the South Area are separately delivered to the treatment plant in two lines (Exh. 5 at 3-7).

Combined sewer flows in excess of 4.5 MGD are diverted at the treatment plant into three in-series storm water lagoons (Exh. 7 at 4); no sanitary sewer flow is received by the lagoons (Ex. 15 at 2). There the excess flows are subject to aeration and sedimentation. Effluent from the third lagoon is blended with treatment plant effluent and chlorinated before discharge into the Illinois River (Id.). Ottawa calculates that the percentage of storm water bypassed to the storm lagoons for a design storm of 1.25 in/hr with a one hour duration is between 15% and 25% (Id. at 5).

Excess flow from the combined sewers enters the CSO system via diversion structures located within manholes ("diversion manholes" or "DMHs"). There is a total of 21 diversion manholes in the Ottawa system. For the purpose of its CSO analyses, Ottawa has divided the city into 10 regions, each of which is given a number; regions 1-7 are located in the North Area and 8-10 are located in the South Area (Exh. 5 at 3-5). Each DMH is identified by a two number code specifying its city region and the sequence of the DMH. For the purpose of the CSO control program, Ottawa has also divided the North Area into sections, the Northeast Section which contains sewers whose CSOs are

tributary to the Fox River, and the Northwest Section which contains sewers whose CSOs are tributary to the Illinois River.

Several factors introduce complexities into analyses of the Ottawa CSO system. Among these are the substantial age of much of the combined sewer system, and the attendant uncertainty of records regarding the nature and location of sewer structures. Additionally, in the 1930's the level of the Illinois and Fox Rivers was permanently raised by construction of the Starved Rock Dam, which caused submersion of many of the sewer outlets. At present, four of the CSO outfalls, 009, 014, 018, and 019, are submerged 100% of the time (Exh. 13 at par. 5; R. at 51). Although three of these have sluice gates to prevent river backup into the sewer system (Id.), the submersion inhibits specific observation of the frequency and magnitude of overflow events at the actual overflow points.

Additionally, two of the outfalls, 007 and 008, have been covered over during a construction project (Exh. 13 at par. 6). Although Ottawa believes that these two still discharge by percolation through the covering debris (R. at 52), it is obviously difficult to accurately determine the quantity and quality of the discharges from these outfalls. Existing, but inaccessible, hydraulic connections between outfalls adds a further complication (Exh. 13 at par. 6).

North Area CSOs

There are eleven existing CSO outfalls within Ottawa's North Area[2], as follows:

ID	Location	Receiving Stream	Up-Sewer CSOs	No. of DMHs
NORTHEAST SECTION				
011	Main St. West	Fox	013, 014, 016, 017	1
013	East Madison	Fox	014,016,107	1
014	S. Guion St.	Fox	none	2
016	E. Superior St	Fox	none	1
017	E. Michigan St.	Fox	none	1
018	Main St. East	Fox	none	1

[2] Early documents in the instant record identify 12 CSOs in the North Area. One of these, 010, was eliminated during a bridge construction project in 1984 (Exh. 5 at 2-1).

NORTHWEST SECTION

006	Riverview Dr.	Illinois	none	1
007	East Island Ave.	Illinois	006	1
008	S. Leland St.	Illinois	006, 007	1
009	S. Buchanon St.	Illinois	none	6
019	S. Chester St.	Illinois	none	1

Drainage areas directly tributary to individual CSO outfalls range from 1.5 acres for 008 to 304 acres for 009; populations range from 36 for 006 to 4,837 for 009 (Exh. 5 at 4-3). However, because an individual sewer line may have successive diversion points, it is possible for discharge originating in an up-sewer area to be diverted into one or more down-sewer CSOs.

Ottawa calculates that the sewer system's average dry weather concentrations of BOD_5 and suspended solids are 204 mg/l and 120 mg/l, respectively (Exh. 5 at 4-18).

Ottawa undertook a modeling program, using the U.S. Environmental Protection Agency's SWMM3 model, to quantify the magnitude of first flush produced by the design storm[3]. An initial run was made to determine the quantity and quality of first flush at each of the seventeen diversion manholes. A separate run was then made to determine the quantity and quality of the first flush which is actually diverted to the receiving streams. Results, as found at Exhibit 5, p. 4-39 and 4-40, are:

		Volume (cubic feet)		Diverted Pollutants (lbs)	
CSO	DMH	Total	Diverted	BOD	SS
NORTHEAST SECTION					
011	6-2	705	625	4	6
013	6-4	30,750	30,325	1,094	1,068
014	3-1	3,390	2,965	7	28
	3-2	6,295	5,575	14	122
(014 Subtotals)		9,685	8,540	21	150
016	3-4	305	135	1	1
017	3-5	90,805	82,135	1,011	1,147
018	7-2	740	655	5	9
SECTION TOTALS		133,990	122,415	2,136	2,381

[3] 1.2 in/hr with a 60 minute duration and preceded by at least 10 days without a storm event (Ex. 5 at 1-5).

NORTHWEST SECTION

006	4-3	565	430	1	8
007	4-2	570	465	2	11
008	4-1	480	375	1	6
009	5-1	490	190	1	5
	5-2	2,465	1,595	54	67
	5-3	13,370	7,390	12	121
	5-4	2,185	2,010	4	40
	5-5	800	420	11	32
	5-6	156,870	145,330	242	1,774
(009 Subtotals)		176,180	156,935	323	2,040
019	7-3	3,825	2,830	10	25
SECTION TOTALS		181,620	161,035	437	2,089

These data indicate that in the North Area the sewer system currently captures and diverts to the treatment plant only about 10% of the first flush volume; capture percentage for first flush BOD and suspended solids is on the same order (Exh. 5 at 4-39, 3-40). The data also indicate that there is wide variation in both the quantity and quality of the first flush at the various diversion manholes and CSO outfalls.

Based on these data Ottawa characterizes three of the diversion manholes as "major points of interception and overflow" (Exh. 5 at 3-7). These are DMH 5-6, which contributes to outfall 009, and the diversion manholes which contribute to outfalls 013 and 017, respectively. Each has a first flush volume in excess of 30,000 cubic feet for the design storm; each also has a suspended solids load greater than 1,000 pounds. Ottawa further characterizes the three outfalls, 009, 013, and 017, as appearing "to have major flow and organic discharges during the design storm" (Exh. 5 at 1-6; emphasis in original).

Ottawa further used the SWMM3 model to calculate the quantity and quality of design storm flows beyond the first flush, and equal in volume to ten-times dry weather flow, for each the seventeen diversion manholes. The total volume of such flows is 142,846 cubic feet, and the total BOD and suspended solids loads are 136 and 743 pounds, respectively (Exh. 5 at 4-44). The largest volumes and loads are associated with the same diversion manholes and outfalls which have the largest first flush volumes and loads.

South Area CSOs

Ottawa's South Area currently has three permitted CSOs:

ID	Location	Receiving Stream	Up-Sewer CSOs	No. of DMHs
002	Allen Park	Illinois	003, 004	2
003	1st and Prospect	Illinois	004	1
004	3rd and Van Buren	Illinois	none	1

Outfall 002 has the largest directly contributing area at 171 acres, as well as the largest directly contributing population at 1,737 (Exh. 5 at 4-3). Additionally, because it lies down-sewer from both 003 and 004, it can receive discharge from the direct-contribution areas of these outfalls.

Of the South Area diversion manholes, the two contributing to outfall 002 are characterized by Ottawa as "major points of interception and overflow" (Exh. 5 at 3-10). However, neither the diversion manholes nor the outfalls in the South Area were monitored during the field data collection effort; similarly, they were not involved in the first flush determinations. Ottawa explains that:

> the South side situation is interrelated to the proposed Illinois Department of Transportation's Route 23 South improvement program. This Plan of Study also identified a proposed interceptor to be constructed to convey the Allen Park Overflow No. 002 to the treatment plant. All these factors were evaluated and the decision by the City was approved by the Illinois E.P.A. to not monitor or include in the first flush determination these areas on the South side of Ottawa. Exh. 5 at 3-11.

Construction of the Route 23 interceptor will cause elimination of outfall 002 and the conveyance of its former discharge to the treatment plant (Exh. 5 at Appendix 2).

CONTROL AND IMPACT-REDUCTION PROGRAM

General Alternatives

Ottawa has investigated alternatives by which it might moot the need for the relief requested, or, in the alternative, minimize the impact of its CSOs. Five alternatives were originally considered. The principal elements and costs, as outlined in Exhibit 5, are:

> Alternative 1: construction of facilities necessary to achieve compliance under Section 306.305, as

outlined in the Municipal Compliance Plan, Exh. 1; estimated project cost is $16.5 million with an annual operation, maintenance, and replacement cost of $605,000.

Alternative 2: capture of the full first flush at the five most significant diversion manholes plus phased sewer separation in the South Area; estimated project cost is $11.5 million.

Alternative 3: capture of full first flush at the three most significant diversion manholes plus phased sewer separation in the South Area; estimated project cost is $9.8 million

Alternative 4: phased sewer separation in both the North and South Areas; estimated cost is $9.5 million.

Alternative 5: institution of an operation plan designed to reduce CSO impacts using existing collection and transportation facilities with minor physical changes; estimated project cost is $1.4 million.

Proposed Alternative (Alternative 6)

Upon subsequent discussion with the Agency, Ottawa developed Alternative 6, which is the alternative here recommended to the Board by the Joint Proponents. Alternative 6 consists of a five-part program. It combines the major elements of Alternatives 4 and 5 in that it includes both a sewer separation program and a program of operations and minor physical modifications.

The principal component of the Alternative 6 plan is separation of sewers in each of the CSO areas. Separation is proposed to be undertaken in three phases, with the lineal feet and sewer to be separated and the completion dates as follows:

Area	Phase I	Phase II	Phase III
Northeast	12,770	7,270	
Northwest	5,650	5,650	
South	900	6,650	3,380
Completion Date	Dec. 1990	Feb. 1993	Sept. 1993

The second part of Alternative 6 consists of an operation plan which would include, but not be limited to (Exh. 12 at 4):

1) Regular sewer inspection to monitor the condition and satisfactory functioning of all parts of the system;

2) A routine maintenance and cleaning program for all sewers, catch basins, pump station wet wells, regulators, and other system appurtenances;

3) Scheduling regular operation of sluice gates on overflows where rising river stages can create system flooding with river water;

4) Identifying the hydraulic and storage capacity of the total sewer system so these features can be fully utilized during wet weather;

5) Other techniques to ensure the sewage system is adequately maintained for optimum operation capability.

Ottawa further asserts that a specific individual on the City staff will be assigned the responsibility and given the authority to set up and run this operational plan on a continuing basis.

The third part of the Alternative 6 consists of a program of physical changes directed to the flood prone and other portions of the sewer system designed to reduce or eliminate river water intrusion and other identified major sources of inflow (Exh. 12 at 4-5). Anticipated changes include:

1) Bolt-down and gasketed water tight manhole covers on all manholes where flooding or surface ponding can occur;

2) Adjusting overflow weir heights to maximize sewage diversion to the treatment plant interceptor and prevent outfall sewer surcharges backing into the interceptor;

3) Install sluice gates on overflows where rising river stages can result in river water intrusion;

4) Sewer rehabilitation and replacement to reduce inflow/infiltration and maintain system integrity;

5) Inspect and direct all downspouts and yard drains that can be disconnected from sanitary or combined sewers and reconnect to surface drainage or separate storm sewers; and,

6) Other procedures and physical changes that will help retain the available system capacity for transporting the flows with the most pollutants.

Two final portions of Alternative 6 consist of provisions for providing the Agency with an annual report of CSO-related activities and monitoring of the effectiveness of the sewer modifications projects (Exh. 12 at 5).

The total capital costs of the facilities to be constructed under Alternative 6 is approximately $5.74 million. This includes $5.44 million for the sewer separation portions and $300,000 for the operation, maintenance, and modifications portions (Exh. 12 at 6).

Alternative 6 Effects

Implementation of Alternative 6 will have a substantial effect on the impact of Ottawa's CSOs. Sewer separation alone in the Northeast Sector will allow for capture of 99.5% of the first flush (Exh. 5 at 4-56, 4-58; Exh. 13 at par. 11) as opposed to less than 10% capture at present (Exh. 5 at 4-39, 4-40). First flush to the Fox River would therefore be effectively eliminated. Moreover, the two most significant CSO overflows to the Fox River, 013 and 017, would essentially be eliminated (Exh. 12 at 7).

It is estimated that separation in the Northwest Sector will cause a reduction in first flush discharged to the Illinois River from that sector by approximately 20 to 25% over the present approximately 90% discharge (Exh. 13 at par. 11). Collectively, the sewer separations in the Northeast and Northwest Sectors would cause a 54 to 57% reduction in first flush discharges from the North Side (Id.).

The impact of implementation of Alternative 6 on the South Area CSOs is less readily quantified because modeling studies were not conducted for this area. However, the combined program of Alternative 6, including the separation of over 11,000 lineal feet of sewers should significantly reduce the number and volume of CSO discharges reaching the Illinois River from the South Area (Exh. 12 at 7).

Ottawa does not, at this time, propose to remove any specific CSO from service. However, Ottawa does propose to monitor the effectiveness of each of the various steps in Alternative 6 and to report the results to the Agency (Exh. 12 at 5). Thereafter, removal of CSO outfalls will be undertaken where feasible (Id.; Exh. 13 at 12).

Part of past problems with CSO discharges has been related to the fact that 50 manholes which either had no lids or had lids

with one or more pickholes were subject to flooding during periods of high river levels. Since 1979 when this circumstance was quantified, Ottawa has either installed or replaced a majority of these manhole lids with lids having concealed pickholes and a sealing gasket (Exh. 2 at par. 8). Implementation of Alternative 6 will further this effort.

A subsidiary benefit of Alternative 6 is that it would also alleviate the more critical areas of basement flooding in the Northwest Sector (Exh. 12 at 7).

DOCUMENTATION OF MINIMAL IMPACT

Section 306.361(a) requires that Petitioners seeking a CSO exception on the basis of minimal discharge impact, as is the case here, make a number of showings. Pursuant thereto, Petitioners provide the following information and observations:

Receiving Stream Ratios

Drainage areas of both the Fox and Illinois Rivers are large at Ottawa, 2,658 and 10,949 square miles, respectively. River discharges are correspondingly high: seven-day, ten-year low flows are 250 and 3,200 cubic feet per second, respectively (Exh. 5 at 4-5). Ottawa observes that even under the present CSO regime, this provides worst-case dilution ratios for the design storm ranging from 4:1 to 47:1 for the CSO discharges to the Fox River and 16:1 to 1690:1 for the CSO discharges to the Illinois River (Exh. 14 at 1). With the significant reduction in CSO discharges under Alternative 6, the dilution ratios would be increased from these figures.

Ottawa modeled the impact on the two rivers of the calculated BOD loadings of the design storm under the seven-day, ten-year low flow conditions. Some oxygen depletion was noted below the two large outfalls to the Fox River, 013 and 017, under the present CSO regime. Ottawa observes:

> However, the accumulated depletion of these two significant sources on the Fox River does not lower the D.O. concentration below 5.0 mg/l before the combined flows reach the Illinois River where the D.O. concentration quickly returns to above 7.0 mg/l. These D.O. values are within the allowable water quality standards and suggest even these two significant overflows on the Fox River can be satisfactorily handled with a quick increase in D.O. as the flows reach the Illinois River. All the ... [flows which reach] the Illinois River via overflow No. 009 have such little impact ... [as to not change the slope of the Illinois River's D.O. curve]. Exhibit 5 at 4-45.

Implementation of Alternative 6 would eliminate 99.5% of the first flush volume and 99.8% of the BOD currently discharged to the Fox River (Exh. 5 at 4-56). Under these conditions, it can be reasonably assumed that the assimilative capacity of the Fox will be sufficient to produce a negligible DO impact even under the worst-case conditions.

Known Stream Uses

The principal water contact activity in the Ottawa area is water skiing, which is carried out on the Illinois River; the Fox River is too narrow and shallow for water skiing (Exh. 3 at 9). Fishing occurs on the Fox and Illinois River both from shore and boats (Id.). There are no swimming areas or beaches on either the Fox or Illinois Rivers in the vicinity of Ottawa (R. at 68).

Accessibility to Stream Side Land Use Activities

The Ottawa CSO outfalls are located for the most part in fully developed residential, commercial, and recreational areas. However, approximately half of the CSO outfalls are located along steep rock bluffs and two are located in deep ravines; access to these is generally limited (Exh. 3 at 9).

Among the CSO outfalls located along low-lying banks, two are accessible only after a long hike (Exh. 3 at 9). Another, 014, is accessible only across private property which is posted for no trespassing. Two of the sites, 002 and 018, are generally accessible to children and shore fisherman (Id.)

Frequency and Extent of Overflow Events

Ottawa contends that due to the complex nature of the Ottawa sewer system, the minimal impact of the CSOs on the receiving streams, and the large costs for obtaining the data, that it was not justified to do a detailed study of the frequency and extent of overflow events beyond that revealed by the SWMM3 modeling (R. at 58). The Agency agrees. Joint Petitioners therefore request that the need to provide this information be waived pursuant to 35 Ill. Adm. Code 306.361(d) (R. at 70). The request is granted.

This notwithstanding, it may be noted that Exhibit 8 contains a computation of the rainfall intensity needed to trigger an overflow for each of the 21 diversion manholes under the current CSO regime. These range from 0.04 to 0.52 inches per hour.

Ottawa believes that Alternative 6 will significantly reduce the frequency and extent of overflow events (R. at 61), commensurate with the projected decreases in the overflow volumes for the North Side CSOs and the decrease in the amount of

combined sewers in both the North and South Areas. Ottawa further proposes to conduct monitoring of the CSO system as the various steps of Alternative 6 are completed. Results are to be reported to the Agency (Exh. 12 at 5).

Inspections of Outfalls (Bottom Deposits, Odors, etc.)

A Preliminary Stream Inspection (Exh. 3) was conducted in February, 1987. This involved a physical inspection of the Illinois and Fox Rivers and near stream property at each of the 14 existing CSOs to look for any sludge deposits, sewage related odors, floating debris of sanitary sewer origin, and any other visible sign of pollution. No evidence of CSO impact was discovered at ten of the 14 CSO outfalls.

Of the remaining four CSO outfalls, two were discovered to have a steady dry weather discharge. Ottawa asserts that the dry weather flow at one of these, 002, was eliminated in April 1987 by raising the height of the diversion weir, as confirmed by subsequent field inspection (Exh. 13 at par. 8; R. at 54). Ottawa also asserts that preliminary plans to eliminate dry weather flow in the second, 016, are being prepared and will be included in bid letting for a sanitary sewer project in July 1988 (Exh. 11 at 4; R. at 54).

The remaining two, 011 and 017, will be substantially impacted by sewer separation in the Northeast Section. At both complete capture of the first flush will occur.

Although inspection of the CSO outfalls was conducted during the winter, it is contended by Ottawa that an inspection during warm weather would not have produced significantly different results. As reasons thereto, Ottawa emphasizes the high scouring velocities of the Illinois and Fox Rivers, and the fact that Ottawa has not received any complaints of CSO discharges from the many warm weather users of the rivers (Exh. 13 at par. 3).

Stream Morphology

All of the CSOs discharge to the main channels of the Fox and Illinois Rivers, with the exception of outfall 019 which is located in a slew off the Illinois River. Both rivers are generally large and straight. Neither river is subject to log jams or other naturally occuring vegetation debris in the Ottawa area due to the relatively swift currents in the rivers (Exh. 3 at 8).

In general, the Illinois River in the vicinity of the CSO outfalls has a bottom consisting of a thin layer (less than 3 inches thick) of silt, sand, and gravel over bedrock. Two exceptions occur at 018 and 019: the bottom at the former consists of three to four feet of silt and the latter discharges

into a silty slough. The bottom on the Fox River consists of silt, sand, and gravel deposits which are generally thicker than those of the Illinois River (Exh. 3 at 8).

Stream Chemical Analyses

During its field investigation phase, Ottawa collected sediment samples near each of the CSO outfalls for volatile suspended solids ("VSS") analysis. In most cases both upstream and downstream samples showed VSS concentrations in the range of 0.3 to 15% (Exh. 3 at 9). Two outfalls, 002 and 016, showed an exception to this pattern, with VSSs as high as 29% and 37.5%, respectively (Id.). Ottawa associates these high concentrations with the dry weather flow found to occur at both outfalls. Separation of sewers tributary to 002 and 016 should produce a significant reduction in the quality and quantity of the discharges.

CONCLUSION

The Board determines that Petitioners have shown pursuant to 35 Ill. Adm. Code 306.361(a) that exception to 35 Ill. Adm. Code 306.305(a), as it relates to first flush of storm flows, and to 35 Ill. Adm. Code 306.305(b) would produce minimal impact on the receiving stream. Accordingly, the Board will grant the exception. The Board further will accept the conditions as agreed to by Joint Petitioners in their Proposed Order as modified in the Amended Petition of March 27, 1987.

ORDER

The City of Ottawa is hereby granted an exception from 35 Ill. Adm. Code 306.305 (a) as it relates to first flush of storm flows and from Ill. Adm Cope 306.305(b) for combined sewer overflows, to the Fox and Illinois Rivers, subject to the following conditions:

1. The City will prepare an operational plan for and make modifications to its sewer system, as specified in the petition, by October 1, 1989. Thereafter, an annual report detailing performance of the specified activities will be submitted to the Agency by January 31st of each year.

2. The City will construct Phases I, II, and III of its sewer separation program, as summarized below and further described in Alternate 6 of the petition:

a) Phase I, which consists of a total of 19,320 lineal feet of storm sewer construction in the Northeast, Northwest, and South Sectors, shall be completed by December 1, 1990.

b) Phase II, which consists of a total of 19,570 lineal feet of storm sewer construction in the Northeast, Northwest, and South Sectors, shall be completed by February 1, 1993.

c) Phase III, which consists of a total of 3,380 lineal feet of storm sewer construction in the South sector, shall be completed by September 1, 1993.

3. Upon completion of each phase the City will conduct flow monitoring for one season to assess the effectiveness of the separation program and report the results to the Agency. A plan of study for each monitoring effort will be agreed upon by the City and Agency. Where monitoring indicates that an overflow may be safely removed from service, the City shall do so according to a mutually agreeable schedule.

4. The City shall eliminate the illegal sewer connection near outfall 006 by November 1, 1988.

5. This grant of exception does not preclude the Agency from exercising its authority to require as a permit condition a CSO monitoring program sufficient to assess compliance with this exception and any other Board regulations and other controls, if needed, for compliance, including compliance with water quality standards.

6. This grant of exception is not to be construed as affecting the enforceability of any provisions of this exception, other Board regulations, or the Environmental Protection Act.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 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.

IT IS SO ORDERED.

Board Member J. Theordore Meyer concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 4th day of August, 1988, by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board