Rochester Committee
for Scientific Information
Rochester, NY

RCSI Bulletin 24
Town of Irondequoit: Improvements in Sewage Treatment Facilities

By: J. Roger Christensen
March 1967

THE ROCHESTER COMMITTEE FOR SCIENTIFIC INFORMATION
P.O. Box 5236
River Campus Station
Rochester, New York 14627

#24(W)

TOWN OF IRONDEQUOIT: IMPROVEMENTS IN SEWAGE TREATMENT FACILITIES

Background

Since 1964, the Water Pollution Subcommittee of R.C.S.I. has issued reports on sewage pollution of the lower Genesee River. We have noted frequent violations of stream standards, including discharge of sewage solids and evidence of failure to disinfect effluents adequately with chlorine.

The major sources of this sanitary waste have been the two sewage treatment plants, (Summerville and Pattonwood), operated by the Town of Irondequoit. (There are also sources of sewage and industrial waste which do not come from Irondequoit.)

The Summerville plant dates from the first decade of the century, and was providing only an obsolete type of primary treatment (Imhoff tanks). The Pattonwood plant provides a more modern type of primary treatment, with two settling tanks operated in series, mechanical skimmers, a heated sludge digestion tank, and a chlorination facility. The latter depends on small chlorine tanks which are regulated by hand, and which require frequent replacement. If the pressure drops or the tank becomes empty, the sewage will not be disinfected.

At the present time, this plant gives about 40% removal of B.O.D., (the biologically oxidizable organic load, which depletes the receiving water of oxygen). This is about the best efficiency that can be expected from primary (mechanical) sewage treatment.

Present Operations

In late 1966, treatment of sewage at the Summerville plant was discontinued, and the plant was converted to a pumping station, lifting the sewage to Pattonwood. This eliminates one of the sewage outfalls into the Genesee, and a major source of sewage solids and bacterial pollution.

In recent months, we have noted a marked improvement in the operation of the Pattonwood plant:

Tests on effluent at outfall of Pattonwood plant

Apr. 2 - June 14, 1966	6 out of 18 chlorine tests positive (33%)
July 8, 1966 to present	5 out of 7 chlorine tests positive (71%)

Last negative chlorine test: November 18, 1966

January 8, 1967 — settleable solids: 0.1 ml/l (quite good)

Construction at Pattonwood

George Berg, Roger Christensen, and David Wilson visited the Pattonwood and Summerville sites on February 16, 1967. Our hosts were Mrs. Elizabeth Knight of the Irondequoit Press, Councilman Charles Stoffel, Sanitation Superintendent Duane Tillotson, and Laboratory Technician Alphonse Urbanik.

Construction necessary to convert the Pattonwood plant to a secondary treatment facility, (i.e., one providing for biological treatment of the effluent from the primary stage of treatment), was about 80% complete. The additions and improvements will include a trickling filter, (for the biological stage of treatment), a second sludge digestion tank, and automatic chlorination facilities, which will operate from large chlorine tanks.

The total design capacity if 1.2 million gallons per day (m.g.d.), with a present sewage load of about 0.6 mgd. This excess capacity not only provides for future increases in load, but allows for considerable recycling of sewage in the operation of the plant. This increases the removal of B.O.D.

The completed plant should give about 80% removal of B.O.D., about twice the present extent of removal. Looked at in a more meaningful way, from the point of view of the river, the discharge will contain only about one-third as much B.O.D. as the present discharge. Disinfection of the effluent will be easier, cheaper, and more reliable.

The total cost of the capital improvements, according to Mr. Stoffel, will be approximately $700,000. The planning for these improvements began more than two years ago.

The Northeast Plant

This plant, located near Sea Breeze, is a secondary treatment plant with a capacity of 1.5 mgd, and a current load of about 1.3 mgd. The present outfall is located in Irondequoit Bay, near the outlet into Lake Ontario.

Presently under construction is a new outfall line, which will carry the effluent approximately 1 mile out into Lake Ontario. Additional engineering studies are under way concerning possible enlargement of the plant, which will be required if sewers are to be extended to existing and new housing in the area of Irondequoit served by this plant.

Summary and Perspective

The sewage treatment operations of the Town of Irondequoit discharging into the Genesee River have improved in recent months. Present construction, which should be completed early this spring, should lead to considerable additional improvement.

Thus, significant steps have been taken to clean up one of the major sources of the sewage pollution of Lake Ontario in the Rochester vicinity. The City of Rochester continues to discharge, from the Durand-Eastman plant, approximately 97 mgd of sewage receiving only primary treatment.

J. Roger Christensen
Water Pollution Subcommittee
March 1967