

## SANITARY DISTRICTS IN ILLINOIS

G. C. HABERMEYER AND EDWARD BARTOW,  
STATE WATER SURVEY, URBANA

When Illinois was first settled each individual or family made provision to secure its own water supply and to dispose of its own wastes. As villages and cities grew in size the difficulty of securing water and disposing of wastes increased.

By natural development municipalities installed public water supplies and cared for the removal of wastes. With water from a public supply available the most convenient method of disposing of much of the waste was by water carriage through sewers. That method of disposal is now in general use in all of the larger cities. Many of the earlier settlements were on the banks of the larger streams or on the shores of lakes and the natural point of discharge for sewage or liquid wastes was in the streams or lakes. Later, with the development of railroads, many cities sprang up in localities where there were no large water courses. Sewage from such communities was carried to a small stream or, in many instances, to a ditch which was dry for a considerable portion of the year.

Sewage has been discharged into streams until they are polluted, the degree of pollution depending upon the amount of sewage and the flow of water in the stream. In many places pollution has become serious and the water cannot be satisfactorily used for drinking, fish life has disappeared, the stream cannot be used for pleasure purposes, and noxious odors have caused many complaints.

Cities have grown and it has become necessary to dispose of sewage by means other than discharge into a ditch or small stream close to the city. With increase in the number and size of cities the distances between them have decreased and the need of better disposal of sewage has increased. In order to allow better means of disposal laws have been enacted by the State Legislature providing for the creation of sanitary districts and for the disposal of sewage from territories included in the districts. In accordance with the provisions of these

laws the Sanitary District of Chicago, the North Shore Sanitary District, the Decatur Sanitary District, and the Bloomington and Normal Sanitary District, have been formed.

#### SANITARY DISTRICT OF CHICAGO

For many years Chicago discharged sewage into Chicago River and Lake Michigan. The amount of sewage discharged became very great and as water from the lake was used for a public water supply other means of disposing of the sewage became necessary. In 1889, under the provisions of an act to create sanitary districts, and to remove obstructions in the DesPlaines and Illinois rivers, the Sanitary District of Chicago was organized. The law provides that whenever any area of contiguous territory within the limits of a single county contains two or more incorporated cities, towns or villages so situated that the maintenance of a common outlet for the drainage thereof will conduce to the preservation of the public health, area within the limits of the cities incorporated towns or villages and within three miles thereof may be incorporated as a sanitary district.

Any 5,000 legal voters resident within the limits of a proposed sanitary district can petition the county judge to cause the question of organization to be submitted to the voters. The law provides for the creation of a board of trustees of nine members, which board exercises all the powers and controls all the affairs of the district. The board has power to provide for the drainage of the district by laying out, establishing, constructing and maintaining channels, drains, ditches and outlets, with necessary adjuncts, for carrying off and disposing of the drainage (including the sewage) of the district. The law provided for the levy and collection of taxes for corporate purposes the amount of which in any one year should not exceed one-half of one per centum of the assessed valuation of the taxable property, and for the issue of bonds. Indebtedness could not exceed five per centum of the valuation of the taxable property within the district provided this five per centum did not exceed the sum of \$15,000,000.

The law has been modified from time to time by amendments which include acts conferring police power, allowing additional taxation for specific times and purposes, changing the limit of bonded indebtedness, providing for a minimum flow depending upon the population of the district, authorizing enlargement of the district, providing for converting power available into electric energy, and amending sections in regard to the election of trustees.

The primary purpose of the work of the Sanitary District of Chicago has been sanitation and sanitary conditions have been greatly improved. It constructed the canal from Robey St., Chicago, to Lockport, and diverted sewage from Lake Michigan to this channel, through which it flows to Des Plaines River and thence to Illinois River. A channel has been cut from the lake at Wilmette southward to a connection in the North Branch of Chicago River and a channel known as the Calumet Sag Channel is being constructed to drain areas in the southern part of the district. Investigations have been made of methods of treating sewage and experimental sewage treatment plants have been operated. Chicago River has been deepened and widened and obstructions have been removed, and valuable water power has been developed.

The title and certain provisions of the act under which the Sanitary District of Chicago was formed practically limit the application of the act to that district.

#### NORTH SHORE SANITARY DISTRICT

In April, 1914, the North Shore Sanitary District was created in accordance with "An Act to create sanitary districts, and to provide for sewage disposal." This act, passed and approved in 1911, and amended in 1913, 1915 and 1919, provides for the creation of sanitary districts in territories within one county, including two or more incorporated cities, towns or villages owning and operating either or any of them, a system or systems of water-works and procuring a supply of water from Lake Michigan.

This district extends along Lake Michigan from the north to the south line of Lake County. The proceedings for the establishment of the district were practically the same as those by which the Sanitary District of Chicago was formed. Three hundred instead of five thousand petitioners were necessary to bring the matter up for election. Bond issues with indebtedness not to exceed in amount five per centum of the value of taxable property within the district are provided for and taxes can be levied not to exceed in any year one third on one per centum of the value of taxable property within the district limits.

The board of trustees has power to provide for the disposal of sewage and to preserve the water supplied to the inhabitants from contamination and for that purpose may construct and maintain conduits, pipes, channels, drains and outlets. It must provide suitable and modernly equipped sewage disposal works or plants for the separation and disposal of all solids and deleterious matter from the liquids, and must treat and purify the residue of such sewage so that when it flows into any lake it will not injuriously contaminate the water. The board has power to enter into contract with any city or village for the reduction, treatment and disposal of any garbage or offal, or solid matter removed from sewage at any disposal plant or treatment works.

The district has acquired 30 acres of land for the location of a purification plant, has investigated methods of sewage treatment, and has raised money which is available for construction.

#### GENERAL LAW PROVIDING FOR THE FORMATION OF SANITARY DISTRICTS

The laws under which the Sanitary District of Chicago and the North Shore Sanitary District were formed were limited in their application by provisions of the acts.

In 1917 the Fiftieth General Assembly passed "An Act to create sanitary districts and to provide for sewage disposal". It provides that whenever any area of contiguous territory contains all or parts of one or more

incorporated cities, towns or villages, and is so situated that the construction and maintenance of a plant or plants for the purification and treatment of sewage and the maintenance of a common outlet for the drainage thereof, will conduce to the preservation of the public health, the same may be incorporated as a sanitary district under this Act. No territory can be included, however, which is not within the limits of a city, incorporated town or village, or within three miles outside thereof.

Any one hundred legal voters, resident within the limits of a proposed sanitary district may petition the county judge of the county in which the proposed district, or the major portion thereof is located, to cause the question to be submitted to the legal voters of such proposed district whether such proposed territory shall be organized as a sanitary district under the Act. According to provisions of the act, upon filing the petition in the office of the county clerk, a board of commissioners is organized, consisting of the county judge and two judges of the Circuit Court. At a meeting of this board, of which twenty days' notice is given, all persons in the proposed district have an opportunity to be heard in regard to the location and boundary of the district. The board of commissioners determines the limits and boundaries which are incorporated in an order spread at length upon the records of the County Court. A majority vote at an election held within sixty days of the time of entering the order, at which each legal voter resident within the proposed sanitary district has the right to cast a ballot, and notice of which is given by the county judge at least twenty days prior thereto, is required for organization of a district.

The corporate authority is a board of trustees consisting of three members appointed by the county judge. This board exercises all powers and manages and controls all the affairs and property of the district. It passes all necessary ordinances, rules and regulations for the management and conduct of business of the board of trustees and of the corporation and for carrying into effect the objects for which the sanitary district is formed. It has

power to provide for the disposal of the sewage of the district and to preserve the water supplied to the inhabitants of such district from contamination. The board may construct and maintain conduits, pipes, channels, drains, ditches, and outlets for carrying off and disposing of the drainage (including the sewage) of the district together with such adjuncts and additions as may be necessary or proper to cause such channels or outlets to accomplish the end for which they are designed. The board may also treat and purify the sewage so that when the same flows into any lake or other watercourse, it will not injuriously contaminate the waters. The board may adopt any other feasible method to accomplish the object for which the district is created, and may also provide means whereby the district may reach and procure supplies of water for diluting and flushing purposes. The board of trustees is not authorized to operate a system of water works for the purpose of furnishing or delivery of water to any such municipality or the inhabitants thereof, or to flow sewage of a district into Lake Michigan.

A district may acquire by purchase, condemnation, or otherwise any and all real and personal property, right of way, and privilege, either within or without its corporate limits that may be required for its corporate purposes. In case any district formed is unable to agree with any other sanitary district upon the terms under which it is permitted to use the drains, channels or ditches of such other sanitary district, the right to so use the same may be acquired by condemnation.

The corporation may borrow money and become indebted to an amount not in excess of five per centum of the valuation of the taxable property in the district provided the proposition to issue bonds is carried by vote at election held in the district according to provisions of the act. All bonds issued mature in not exceeding twenty annual installments. At the time of, or before incurring any indebtedness, the board of trustees provides for the collection of a direct annual tax sufficient to pay the interest on the debt as it falls due, and also to pay and discharge the principal as it falls due, and at least within

twenty years from the time of contracting the same. The board may levy and collect other taxes for corporate purposes upon property within the territorial limits of the district, the aggregate amount of which for each year shall not exceed one-third of one per centum of the value of the taxable property within the corporate limits, as the same is assessed and equalized for the State and county taxes of the year in which the levy is made, provided however, that a like sum in addition, a total of two-thirds of one per centum, may be levied when such additional tax has been authorized by the legal voters of such district at an election duly held. Any district formed under provisions of this act has the right to permit territory lying outside its limits, whether within any sanitary district or not, to drain into and use any channel or drain made by it, upon payments, terms and conditions mutually agreed upon, and it has full power and authority to contract for the right to use any drain or channel which may be made by any other sanitary district upon terms mutually agreed upon.

This Act provides for the formation of sanitary districts anywhere in the State and with increasing size of municipalities, and consequent increase in amount of sewage produced in such municipalities, many districts will undoubtedly be formed in the near future. In addition to providing a better means of sewage disposal in many cases than could be secured by municipalities acting individually, it provides for obtaining money for carrying on work without regard to the debt of municipalities included in the district.

#### DECATUR SANITARY DISTRICT

The Decatur Sanitary District was organized in August 1917. Money has been raised by taxation, and on February 24th an election will be held to decide if the tax rate may be raised to 2-3 of 1 per cent, and if bonds, \$860,000 in amount, shall be issued. The board of trustees has employed engineers, prepared plans for intercepting sewers, and let contract for a small amount of construction. If this bond issue is authorized by vote on February 24th,

a contract for intercepting sewer will be let in the near future, and it is expected that money will be available for a purification plant.

#### BLOOMINGTON AND NORMAL SANITARY DISTRICT

The Bloomington and Normal Sanitary District was organized in November, 1919. An area of about eight square miles, including the two cities from which the district takes its name, with the exception of about one square mile area which was previously included in a drainage district, is included in the district. Surveys are now being made for an intercepting sewer.

These districts can be of mutual aid to each other and are co-operating with the State Water Survey Division in a study of sewage purification in the testing station of the Division. Many other cities which have need of more adequate sewage disposal can with advantage make use of the privileges granted in these acts.

#### DISCUSSION OF PAPER BY H. B. HEMENWAY

This subject is one which interests us all as property owners and tax payers. There are certain legal aspects which demand consideration.

Streams and lakes are the natural source of water supply for our cities. They are also natural outlet for our sewers. The one demands that the purity of the water be preserved, and the other naturally causes dangerous pollution.

A city which provides water for its citizens for pay does so, not in its governmental capacity, but as a semi-public corporation. As such it is liable for any damage which may result from impurity of the water sold. So, in *Keever v. Mankato* (113 Minn. 55) the city was held in damages for the occurrence of typhoid fever, resulting from impurity of its supply. There have been many other similar decisions.



There are also numerous decisions to the effect that a city has no more right to maintain a public nuisance than has a private individual. The discharge of sewage into a stream, thereby causing pollution, is a nuisance. If it be a private nuisance, affecting few people, the city or individual causing the damage may be held liable in civil damages, or sometimes it may be enjoined. When, however, the pollution is of water used for a public water supply the act is a public nuisance and it may be enjoined. Not only so, but the city or individual causing the damage may be held in civil damages for all harm done. The upper city may be compelled to pay the expense of the lower city in maintaining its filter plant, and it may be held in addition for sickness and deaths resulting from the impurity of the water.

It has sometimes been claimed that use for over twenty years gave a prescriptive right. That might be so held as regards a private nuisance, but the courts have repeatedly held that no amount of usage could give a prescriptive right to maintain a public nuisance. Where the action has been against private individuals it has sometimes been held that those who had been so discharging private sewage for twenty years might have a prescriptive right, as against other individuals; but the fact that A had so used it for twenty years gave no prescriptive right to B who had only discharged his sewer into the stream for ten years.

In the case of Attorney General vs. Grand Rapids (175 Mich. 503) the plea of prescriptive right was made. The court again affirmed the dictum that no amount of usage could give a prescriptive right to commit a public nuisance; and it added that the fact that Grand Rapids so discharged its sewage when it was a small city give the large city no prescriptive right. Prescriptive right is limited to the kind and amount of usage which was maintained for over twenty years.

In Attorney General v. Birmingham, etc. Drainage District, (1910, L. R. I. Ch. 48) an injunction was granted against the discharge of the drainage district into a stream, but on appeal Sir William Ramsey was ap-

pointed to make a chemical and bacteriological investigation. He found that the sewage was so treated and purified that the water of the stream was actually less impure below the outlet of the sewer than it was above. The injunction was dissolved. Finally, on appeal to the House of Lords (1912, A. C. 788) the dissolution of the injunction was sustained, but with the provision that the purification must be maintained.

Cities must purify their sewage before turning it into streams. It will cost less to maintain proper Imhoff tanks and other purification works than it will to pay damages, and the tendency is to hold cities more rigidly to these requirements.

#### DISCUSSION OF PAPER BY JOHN R. BALL

As related to the facts stated I may mention conditions at Eyanston. South of Hamilton street the government surveyed land, which was taken up, which land was washed away, and its location is now out in the lake.

Opposite where Memorial Hall now stands in the campus I remember a house which stood some distance from the lake. I remember one day hearing a man say that he had cut ten cords of wood between that house and the lake, and one would not notice that any wood had been taken out. All of the foundation of that house long ago disappeared into the lake. It was my observation that the washing out of the banks occurred during north east storms, and that the gain so made by the lake was kept.

Then citizens began to build breakwaters—small piers extending into the lake. These broke the force of the waves, and caused them to deposit sand. Thus land was made. Where I remember to have seen steamers drawing ten or twelve feet of water at the foot of Davis street now there is solid land, made first by the deposit of sand by the lake, and later increased by filling done by the city. The city did not begin to fill in until after the lake had receded.