FINAL REPORT

Governor's Water Pollution Study Subcommittee

July 1964

THE COMMITTEE

Robert Buckmaster, Waterloo, Iowa, Chairman

Dr. Robert L. Morris, Iowa City, Iowa

Rev. Laurence N. Nelson, Bellevue, Iowa

Dr. H. Garland Hershey, Iowa City, Iowa

Robert C. Russell, Iowa City, Iowa

The Honorable Harold H. Hughes
Governor of the State of Iowa
Des Moines, Iowa

Dr. Franklin H. Top, Chairman
Governor's Public Health Advisory Committee
College of Medicine
University of Iowa
Iowa City, Iowa

Dear Governor Hughes and Dr. Top:

On October 4, 1963, the Governor's Water Pollution Study Subcommittee was appointed and charged as follows:

1. Study the present anti-pollution laws of Iowa to determine whether they are in need of revision due to the new demands of the 1960's and the anticipated demands of the 1970's, and to recommend any needed changes.

2. Study the operation of the agencies of state government concerned with the enforcement of anti-pollution statutes to determine whether our present laws are being adequately enforced, whether these agencies are understaffed or underpaid, and recommend any improvements that appear warranted.

3. Recommend any additional steps the Subcommittee feels will assist the State of Iowa in developing and maintaining a program of pollution control that will keep our waters as clean as possible, rather than allowing them to become receptacles for waste assimilation.

Your committee has studied this problem extensively. We have conferred with the state officials presently conducting the water pollution control program and have visited other states, conferring with their officials. We have met and studied the matters under investigation. Your committee has unanimously agreed on the following report which is attached.

Respectfully submitted,

Robert Buckmaster, Chairman
Governor's Water Pollution
Study Subcommittee

HISTORY AND PRESENT STATUS OF WATER POLLUTION CONTROL IN IOWA

History of water pollution control in Iowa:

- Iowa has the common law doctrine of riparian rights requiring reasonable use by adjoining owners of all public water.

- The reasonable use doctrine plus the protection against conditions endangering public health constituted our pollution laws prior to 1924.

- Our present water pollution control statute was enacted in 1924, changed very little since, may have expanded the above common law concept but no case law has been developed to determine if this is true.

Present status of water pollution control in Iowa:

- The Department of Health is given sole jurisdiction of water pollution control.

- The Department of Health uses public health standards and concepts in defining pollution in its control program.

- The Department of Health has never filed a complaint or held a hearing on water pollution on its own motion.

- There is no adequate existing or proposed program to ensure clean waters in this state.

- Policy decisions in the Department of Health have been made by employees without the benefit of policy control by a higher level of public or governmental participation.

How Iowa is handling a similar problem in water use:

- The Iowa Natural Resources Council composed of a representative cross section of interested groups is given jurisdiction of water quantity control.

How states surrounding Iowa are handling water pollution problems:

- All of the states surrounding Iowa have established boards, councils or commissions for policy control of water pollution.

RECOMMENDED PROGRAM FOR POLLUTION CONTROL IN IOWA

Recommended changes in Iowa Law:

- Repeal the present pollution control statutes.

- Enact a new statute creating a water pollution control commission of nine members.

- Give this commission full and complete jurisdiction of water pollution control.

- Designate the State Department of Health as the agency to furnish the technical staff for such commission with the Director of Public Health Engineering as its chief executive officer.

Recommended changes in organization and operation of Water Pollution Control Section of the Department of Health.

Establish five (5) water pollution control regions staffed with a sanitary engineer and a sanitarian based at critical locations permitting surveillance of the salient water shed areas.

Maintain adequate central office staff of experienced engineers to coordinate and plan activities of the regional water pollution control personnel.

Two aquatic biologists should be hired to work with the stream pollution engineers covering the biological aspects of water pollution problems.

The analytical staff of the State Hygienic Laboratories should be augmented by two technicians at the Iowa City Laboratory and by two technicians located at the Des Moines Branch Laboratory. Secure mobile laboratory facilities for the State Hygienic Laboratory, Des Moines Branch, to provide adequate analytical services to the water pollution control effort in the western part of Iowa.

Promote increased coordination with the State Conservation Commission in the detection and solution of stream pollution problems.

COMMENTS

The recommendations outlined above will be considered in more detail in the following pages by setting out the recommendation in each area followed by the committee's comments.

History of water pollution control in Iowa:

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- Our present water pollution control statute was enacted in 1924, changed very little since, may have expanded the above common law concept but no case law has been developed to determine if this is true.

COMMENTS

To understand the basis for pollution control in this state, it is necessary to examine generally its history, both from the standpoint of the statutory and the common law. Since our present pollution control statute was enacted in 1924 and has been changed and modified only slightly since that time, the task is not difficult.

Although there is little case law in Iowa on this subject, there is no doubt that the Iowa common law concerning the quality and quantity of running water is based upon the riparian doctrine which was the common law of England and the Colonies. This doctrine in modified form is the basis for our law and that of most states in the central and eastern portions of the United States. The western states have adopted a different doctrine, that of prior appropriation, because of the shortage of water and the use of water for irrigation. Our present statutes must be read in the light that running water is not susceptible to unqualified ownership and rights to such water are incidental to property ownership. Thus, only riparian owners, that is people whose land abutts a water course or who have a water course running through their land, are entitled to riparian rights. Such persons under this doctrine have a right to have a stream flow through their land in its natural state undiminished in quantity or quality. In the historical development of this doctrine and in the adjustment of conflicting riparian rights, it becomes evident that the riparian owner's right to the purity of a stream is not without limit. He possesses right to the flow and enjoyment of water, but subject to the similar rights of all other riparian owners to their reasonable enjoyment of the stream. It is only, therefore, in an unreasonable or unauthorized use of this common benefit, that legal action will lie. This modification of the basic riparian rights doctrine is known as the reasonable use doctrine. Thus, reasonable use is the only measure of riparian rights and the question of reasonableness is a question of fact.

While there has been a great deal of litigation in the western states under the prior appropriation doctrine, a characteristic of our system and that of most other states in water rights is the absence of frequent litigation. Water users have achieved

an accommodation of their needs through private arrangements and surprisingly few have come before the courts. While this has the advantage of providing a flexible system, it also over a period of time has created large areas of uncertainty without guide lines provided by numerous judicial decisions. In Iowa as in other states, the increasing and often conflicting demands of municipalities, industry and agriculture for pure water have made us acutely aware of the lack of certainty as to the rights in this field. Added to this, are the interests for recreation and conservation which require that the waters in streams be of sufficient quantity and quality to support fish and wild life and permit other legitimate recreational uses.

The dumping of waste, municipal, industrial or other, by a riparian owner is a legitimate use of a water course subject only to it being reasonable. In this connection it might be well to comment that there is nothing on the scientific horizon to indicate that there will ever be any new method of sewage disposal. We can expect that sewage treatment plants will be releasing sewage effluent into our streams in the foreseeable future. How much can be permitted and what it does to other uses will be subject only to the reasonable use concept. In our opinion, this is an unsatisfactory standard and difficult to grapple with because of its general indefiniteness. It can only finally be determined in each particular case by an adversary proceeding in court with little in the way of guide lines to indicate what is a reasonable use. It will be difficult, if not impossible, for a court to balance the various interests including the public interest in clean streams in the absence of guide lines determined to be the water pollution policy of the State of Iowa. This common law standard of riparian rights governed by reasonable use determined in an adversary proceeding in court does not meet the requirements of Iowa today and certainly not tomorrow.

*See: Problems and Programs in Water Pollution, New Mexico Law Review, Vol. 2, No. 3, Pp. 388 to 415 (1962); Has Recent Legislation Limited Private Riparian Rights In Iowa? Drake Law Review, Vol. 8, No. 1, Pp. 59 to 65 (1958); Iowa's New Water Statute--The Constitutionality of Regulating Existing Uses of Water, Iowa Law Review, Vol. 47, No. 3, Pp. 549 to 639 (1962)

In 1924 the Iowa Legislature established the first statutory pollution control by enacting Sections 135.18 to 135.23 and Sections 135.25 and 135.26. Sections 135.27, 135.28 and 135.29 were passed in 1950 and Section 135.24 was passed in 1958. In summary, these sections provide that upon its own motion or upon the petition of certain others, the State Department of Health shall investigate ways and means of eliminating pollution and may determine methods so far as practical and necessary in the light of the use to which the water is being or may be put of controlling the extent of such pollution. The definition of pollution is about the same as that of all states under the riparian doctrine which means contamination or other alteration of the physical, chemical or biological properties or discharge of such substances which will create a nuisance or render such water harmful or detrimental or injurious to public health, safety and welfare, to domestic, commercial, industrial, agricultural, recreational or other legitimate benefits or uses, or to livestock, wild animals, birds, fish or other aquatic life. It would probably be fair to say that this

is merely a restatement of the common law of reasonable use, and will be interpreted by the courts under this doctrine at the present time.

The other sections provide for a hearing on these matters, prescribe the manner for giving notice and give the department power to make orders, provided, however, that no order shall be issued requiring the expenditure of more than $5,000.00 except with the approval of a majority of the members of the Iowa Executive Council. In the event a change is ordered, unless such practice is rendering waters dangerous to the public health, a reasonable time shall be granted to the offender so as to put the method order into effect.

The sections then provide for appeal of either side to the court and provides for trial on appeal and for use of an injunction to enforce the order. The other parts of the law provide for issuing permits through the Department of Health for the disposal of wastes into waters of the state for the construction, installation and modification of disposal systems for the construction or installation of industrial commercial establishments, the operation of which would cause pollution. Provision is made that the plans and specifications for all waste disposal systems shall be submitted to the department and a written permit granted; that the waste disposal system shall be in accordance with plans and specifications approved by the department. The law provides for rules and regulations governing how the department will establish procedures for reports on plans and specifications.

The last section entitled "Sewage Treatment" provides that no sewage or other waste, etc., shall be discharged directly into any state-owned natural or artificial lake, provided that this section shall not be construed to prohibit discharge of adequately treated sewage into a stream tributary to a lake upon the written permission of the State Department of Health and the State Conservation Commission.

There are other statutory references to pollution as follows:

Section 84.1. This section pertains to oil and gas well operators being prohibited from polluting underground strata.

Section 137.9. This has to do with local health officers and gives local health boards power to control local pollution of wells or sources of water supply.

Section 397.26. This section is in the chapter on public utility plants in cities and towns and gives city governments power to protect water works from pollution.

Section 455A.18. This a section in the chapter creating the Iowa Natural Resources Council and gives them general power to investigate, survey and make recommendations concerning water quantities generally by reference to pollution in relation to flood control and water resources.

Section 469.5 and Section 469.8. These sections are under the chapter on mill dams and mill races and provide that the construction and maintenance of such

structures shall not pollute the streams and shall be certified by the Department of Health.

Section 657.2. This section is in the chapter on nuisances and provides that corrupting or rendering unwholesome the water of a river, stream or pond is a nuisance and may be abated by a court in a civil action brought by persons affected by such action.

Section 732.3. This section is under the chapter on public health and safety and among other acts provides that throwing dead animals or refuse in a stream is a criminal offense.

Present status of water pollution control in Iowa:

- The Department of Health is given sole jurisdiction of water pollution control.

- The Department of Health uses public health standards and concepts in defining pollution in its control program.

- The Department of Health has never filed a complaint or held a hearing on water pollution on its own motion.

- There is no adequate existing or proposed program to ensure clean waters in this state.

- Policy decisions in the Department of Health have been made by employees without the benefit of policy control by a higher level of public or governmental participation.

COMMENTS

Under our statutes the State Department of Health is given the jurisdiction and power to conduct all proceedings pertaining to water pollution in the state subject to the statutory requirements heretofore set out generally.

The Department of Health is granted power to investigate and recommend but basically this is a negative policy of plugging holes in the dike using public health standards after pollution occurs rather than a policy or program of surveillance to insure clean water in the state. The staff and resources devoted to this problem are meager and this subject is covered in detail in another part of our report. Even with sufficient manpower and money, however, Iowa will need a different water pollution control program than we now have if we are to effectively tackle the problem now existing and provide a plan and program for long-range control.

Under our present statutes and method of operation, sanitary engineers familiar with the public health aspects of pollution who are employees of the Department of Health are required to make water pollution policy decisions. These decisions are being made in an area that requires the balancing of many interests other than public health and include the legitimate interests of industry, agriculture, municipalities and recreation. These employees cannot help but be subject to pressures, political and otherwise because of the fact they are employees. To expect them to meet this challenge is too much to expect of anyone in a similar position. Insofar as our study indicates, they are dedicated, able men with good backgrounds in public health engineering. In an agricultural society such as Iowa was 75 years ago, this arrangement might have adequately served the public interest. In the more sophisticated society in which we live today it cannot effectively cope with the problem and certainly will not be able to in the future. That there have been few hearings

and orders issued since adoption of the act is itself evidence of a failure of this plan of pollution control.

In addition, the common law of concept of riparian rights modified by reasonable use interpreted by judicial authority is not able, in our judgment, to cope with the modern problems of water pollution control. These are policy judgments that require expert knowledge in a number of fields and a complete understanding of the complicated water problems involved in industry, agriculture, municipal government and recreation. These are policy decisions in the field of the public welfare rather than legal decisions. In a modern industrial society the public has a legitimate interest in clean water as well as the riparian owner. The balancing of these various interests including the public welfare requires policy-making decisions by individuals qualified by experience, training and familiarity with the various problems with adequate surveys and factual knowledge of the Iowa water sheds and their present and future use.

We have no state body or authority existing at the present time that has the knowledge, background and experience, the resources in men or money or the authority to adequately provide a water pollution control program.

How Iowa is handling a similar problem in water use:

- The Iowa Natural Resources Council composed of a representative cross section of interested groups is given jurisdiction of water quantity control.

COMMENTS

In 1949 the legislature, by statue, created the Iowa Natural Resources Council. As stated in the act creating the council, the purpose was to develop the wise use, protection and conservation of water. A provision was made for representative council with full power and authority to make policy decisions concerning proper quantity use of public water. The program and work of this council has been generally well accepted in Iowa, and our committee recommends the creation of a similar authority to ensure quality control of streams and water courses in the public interest in coordination with the Iowa Natural Resources Council.

How states surrounding Iowa are handling water pollution problems:

- All of the states surrounding Iowa have established boards, councils or commissions for policy control of water pollution.

COMMENTS

The states surrounding us have long recognized the necessity for such a water pollution control program and have established boards or commissions with the responsibility of planning, programming and enforcing water pollution control. In Illinois there is a Sanitary Water Board and a Water Pollution Control Advisory Council. In Indiana it is called a Water Pollution Control Board. In Minnesota it is the Water Pollution Control Commission. In Missouri it is called the State Water Pollution Board. Nebraska has a State Water Pollution Control Council. South Dakota has a Committee on Water Pollution. In Wisconsin it is called the State Council on Water Pollution. All of these were created by the Legislature and are generally given power to control the quality of water in the state's streams and water courses. There are, of course, differences in composition of the boards and differences in their powers and procedures. They all, however, have in common a separate water control authority to deal with the problem of pollution. All have historically gone through a history of initially having this subject under the control of the State Department of Health.

* See: Initial Report on Water Pollution in Nine States, 12/13/63 (a report prepared for our committee by the Institute of Public Affairs of the State University of Iowa - attached herewith)

Recommended changes in Iowa law:

- Repeal the present pollution control statutes.

- Enact a new statute creating a water pllution control commission of nine members.

- Give this commission full and complete jurisdiction of water pollution control.

- Designate the State Department of Health as the agency to furnish the technical staff for such commission with the Director of Public Health Engineering as its chief executive officer.

COMMENTS

We recommend that there be created by legislative action a Water Pollution Control Commission with a membership hereinafter suggested. This Commission, after its creation, would carry on a program for Water Pollution Control with the staff and organizational set-up hereinafter set out. We recommend, however, that the State Department of Health be the agency that furnishes the technical services to this Commission. The Department of Health, with limited resources, beset by the many other problems in the field of health, is still the best department to furnish the services necessary to a water pollution control program. The methods already in use by them are field investigation, laboratory tests and evaluation studies. Research development and application of remedies and enforcement of prescribed conditions will be needed in the future. To avoid an unnecessary duplication of work at the lowest cost to the state, we recommend that the Department of Health continue to furnish these services. However, the policy decisions in the pollution field should be divorced from the Department of Health for the reasons that we have heretofore covered.

Most of the states surrounding us are using similar organizations and it has worked well in most states. We have personally visited Minnesota, Kansas, Wisconsin and Missouri and feel the Minnesota approach is best suited to our problems.

We recommend that the Water Pollution Control Commission be composed of nine members with those not holding public office to be appointed by the Governor and approved by the Senate, with terms similar to those of the Iowa Natural Resources Council. We recommend a membership as follows:

1. The Commissioner of Public Health.

2. A representative from the Conservation Commission.

3. A representative from the Iowa Natural Resources Council.

4. A member from the staff of one of our universities who has technical background, training and knowledge in this field.

5. The Secretary of Agriculture.

6. Four public members with some, at least, having a background and knowledge in the fields of industrial waste, municipal waste and conservation.

We recommend that the act follow somewhat the pollution control act of the State of Minnesota, at least in general outline. The Director of Public Health Engineering would be the executive officer of the Water Pollution Control Commission and would carry on the control program under the direction of the Commission.

The legislation, among other things, should create the Commission, specify its membership and provide for its appointment.

The act should define the powers and duties of the Commission which, generally stated, would be complete control of the water pollution program including the administration of all laws affecting pollution, investigation and research, formulation of guide lines, the power to make orders and decisions in connection with the discharge of sewage, industrial waste or other waste, to approve plans and specifications for disposal systems, to issue permits for waste disposal systems, to conduct investigations and hold hearings and in general to fully and completely control the quality of water in the Iowa streams in much the same manner as the Iowa Natural Resources Council now controls the quantity of the water.

Establish five (5) water pollution control regions staffed with a sanitary engineer and a sanitarian based at critical locations permitting surveillance of the salient water shed areas.

COMMENTS

It is recommended that five (5) water pollution control regions be established, wherever possible coinciding with the location of the present Regional Public Health Engineering offices, staffed with a sanitary engineer and a sanitarian. This field staff should become intimately acquainted with the industrial development and the streams of their respective areas. Surveillance of operation, plant effluent quality of sewage plants should be a regular part of their responsibility.

Collection of sufficient numbers of specimens to delineate the chemical, physical and biological quality of the streams in their region should be a carefully planned program under the direction of water pollution control section administrative engineers in the central office of the Division of Public Health Engineering, Des Moines, Iowa.

Coordination of effort between the regional stream pollution engineers and the biologists and conservation officers of the Iowa State Conservation Commission should operate at this "grass roots" level.

The regional stream pollution engineers should cooperate with the aquatic biologists based out of Iowa City and Des Moines.

The greatest deficiency in the water pollution control program at present is the lack of understanding regarding the operational efficiencies of existing sewage treatment plants along with the lack of stream quality data on many of the important streams all over our state. The field staff recommended here should overcome these difficulties and make possible necessary corrective measures before dangerous deterioration of stream quality proceeds to the point of fish kills.

Estimated salaries for these ten regional water pollution control positions would be in the neighborhood of $80,000 per year. Assuming a 50% operating overrun this would mean an increase in regional water pollution control expenditures of approximately $120,000 annually. However, the 30% of time now devoted to water pollution control by the present regional public health engineers and their expenses for that time fraction would essentially be eliminated. This would reduce the $120,000 annual estimate by $36,000 giving an increased engineering staff stream pollution expenditure of approximately $84,000 per year. Location of the regional stream pollution engineers in the present regional public health service offices would be an economy move which should be strongly considered.

Maintain adequate central office staff of experienced engineers to coordinate and plan activities of the regional water pollution control personnel.

COMMENTS

Program planning and coordination of field survey work of the regional water pollution control personnel and aquatic biologists will require considerably more effort than is presently being devoted to this important part of a water pollution control program. The changing industrial scene in Iowa will require an alert, flexible program of surveillance and evaluation. Preparation of reports to the Water Pollution Control Commission will be a vital part of the duties of the central office water pollution control staff and will necessitate experienced engineers with vision and executive ability.

Inasmuch as the vast majority of field work will be done by the ten regional water pollution control individuals, it is estimated that four experienced water pollution control engineers in the central office would provide an adequate nucleus under presently foreseeable situations. These men should have the capability, technical background and philosophical desire to produce successful liaison with the other agencies representing conservation, geology, agriculture and the laboratory.

Two aquatic biologists should be hired to work with the stream pollution engineers covering the biological aspects of water pollution problems.

COMMENTS

A carefully planned program of aquatic biology should be incorporated into the water pollution control program in Iowa. Chemical investigation of water quality tends to evaluate the condition only at the time of sampling, while biological evaluation indicates the effects of contamination which may have occurred prior to the actual time of specimen procurement. In other words, biological investigations cast very important information on the overall acceptability of stream quality. Coupled with adequate chemical and physical analysis, it provides an understanding of the stream which is not possible by conventional chemical and physical analytical procedures alone.

A good biological program must be closely coordinated with good laboratory facilities, and it is recommended that the two aquatic biologists be based at the site of major State Hygienic Laboratory installations. Because of the close association with the laboratory and the necessity for considerable space and equipment backup, it should be considered that these two biologists be on the staff of the State Hygienic Laboratory. It is estimated that these positions would be employable at approximately $8,000 annually with a 50% fraction for operating expenses making a total of $24,000 annually to provide this biological potential.

The analytical staff of the State Hygienic Laboratories should be augmented by two technicians at the Iowa City Laboratory and by two technicians located at the Des Moines Branch Laboratory. Secure mobile laboratory facilities for the State Hygienic Laboratory, Des Moines Branch, to provide adequate analytical services to the water pollution control effort in the western part of Iowa.

COMMENTS

The considerable increase in analytical specimens submitted to the State Hygienic Laboratories in Iowa City and Des Moines would necessitate an increase in staff at these two installations. Two additional technicians at each laboratory should be able to handle the normal increased specimen flow from the five stream pollution regions. Chemical laboratory technicians are presently employable at approximately $6,000 annually which with a 50% operating expense fraction would make a total of $36,000 annually for increased laboratory staff.

A mobile laboratory equipped for both chemical and biological field work and staffed with a chemist provided from the Des Moines Branch Laboratory would make available adequate laboratory facilities to the western and north central portions of Iowa. These are the areas where transportation difficulties are a serious deterent to stream pollution activities resulting in significant deficiencies in stream quality knowledge. This mobile laboratory would be available for use in efficiency reviews of sewage plants, stream investigations and for biological studies. It would probably eliminate the necessity of considering establishment of State Hygienic Laboratory facilities in northwestern Iowa.

This mobile laboratory should be purchased, maintained and staffed by the State Hygienic Laboratory for field service to the Division of Public Health Engineering in the performance of water pollution control responsibilities. Such a mobile facility would cost in the neighborhood of $15,000-$20,000 and would probably require approximately $5,000 per annum operating and travel expense.

Promote increased coordination with the State Conservation Commission in the detection and solution of stream pollution problems.

COMMENTS

Experience has shown that the staff of the State Conservation Commission is usually the first official agency informed regarding emergency fish kill incidents. Water specimens, dead fish and other biological organisms are frequently collected by staff members of the State Conservation Commission and submitted to the State Hygienic Laboratory for initial analytical investigations. In some cases, these are the only specimens which are ever available for detection of causative agents in many incidents. The necessity to educate the State Conservation Commission staff in the intricacies of sample collection is becoming increasingly important.

The Iowa State Department of Health Engineering Division as well as the State Hygienic Laboratory should step up their utilization of the field based conservation officer and the excellent staff of conservation biologists in the investigation of stream pollution problems. This effort in the past has been inadequately utilized and the committee feels that much is to be gained by an association of effort and interest between these two departments. It should be cultivated and nurtured at all departmental levels.

It is obvious that the activation of the preceding recommendations will cost the State of Iowa approximately $169,000 the first year and will be a reoccurring cost of $149,000 each subsequent year. The committee believes that this program is essential if we are to have now and in the future a network of clean streams in our state.

The program outlined here would give Iowa a water pollution control system capable of producing an adequate understanding of the water pollution situation and permitting actual deliberations leading to the solution of deficiencies.

1964 EFFECTIVE SALARY RANGES
for Public Health Engineers

Minnesota	Illinois	Indiana	Wisconsin	Missouri	Iowa	
7700 526-641	7900 460-660	7200			6900-8400	Public Health Engineer A
9000 616-751	9100 525-760		7800		8100-9000	Public Health Engineer B
10,100 694-844	11,200 635-940	12,600	9500		9000-9900	Public Health Engineer C
11,400 781-950	13,000 755=1080	14,100	10,740		9900-10,000	Section Heads D
14,800	15,300	15,900	12,500	12,500	13,500	Directors