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Report to the Colorado General Assembly:

WATER POLLUTION IN COLORADO PART II



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* * * * *

The Legislative Council, which is composed of five Senators, six Representatives, and the presiding officers of the two houses, serves as a continuing research agency for the legislature through the maintenance of a trained staff. Between sessions, research activities are concentrated on the study of relatively broad problems formally proposed by legislators, and the publication and distribution of factual reports to aid in their solution.

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WATER POLLUTION IN COLORADO

PART II

**Legislative Council
Report To The
Colorado General Assembly**

**Research Publication No. 115
December 1966**

COLORADO GENERAL ASSEMBLY

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LEGISLATIVE COUNCIL

ROOM 341, STATE CAPITOL
DENVER, COLORADO 80203
222-9911 - EXTENSION 2285

November 29, 1966

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Rep. Mark A. Hogan
Rep. John R. P. Wheeler

To Members of the Forty-sixth Colorado General Assembly:

Under the provisions of House Joint Resolution No. 1024, 1965 regular session, the Legislative Council appointed a committee to conduct a study of the pollution problems of surface and underground waters in this state. The preliminary report of this committee, dated November 23, 1965, is contained in our Research Publication No. 105.

The accompanying committee report and recommendations relating to water pollution were approved by the Legislative Council at its meeting on November 28, 1966, for transmission to the members of the Forty-sixth General Assembly.

Respectfully submitted,

Senator Floyd Oliver
Chairman

FO/mp

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Rep. Forrest G. Burns
Rep. Richard G. Gebhardt
Rep. Harrie E. Hart
Rep. Mark A. Hogan
Rep. John R. P. Wheeler

November 14, 1966

Senator Floyd Oliver, Chairman
Colorado Legislative Council
Room 341, State Capitol
Denver, Colorado

Dear Mr. Chairman:

Your committee appointed to study the pollution problems of the state's surface and underground waters has completed its work for 1965-66 and submits the accompanying report and recommendations.

By its action in the 1966 session, the General Assembly responded well to the need for an accelerated centralized program of water pollution abatement and control in Colorado as recommended by this committee in its previous report. However, based on the committee's work in 1966, some additional legislation as pointed out in our accompanying report seems necessary.

Respectfully submitted,

Senator David J. Hahn,
Chairman
Committee on Water Pollution

DJH/mp

FOREWORD

Among other assignments, House Joint Resolution No. 1024, 1965 regular session, directed the Legislative Council to conduct a two-year study of the pollution problems of surface and underground waters in Colorado and to prepare drafts of recommended legislation for consideration in the 1967 session. The membership of the committee appointed to carry out this assignment consisted of:

Senator David J. Hahn, Chairman	Rep. Don Friedman
Rep. George H. Fentress, Vice Chairman	Rep. Joseph Gollob
Senator Donald E. Kelley	Rep. George Jackson
Rep. D. H. Arnold*	Rep. Louis Rinaldo
Rep. Lowell B. Compton	Rep. Thomas Wailes

*Deceased.

Senator Floyd Oliver, chairman of the Legislative Council, also served as an ex officio member of the committee.

Because of the adoption of the Federal Water Quality Act on October 2, 1965, the members of the water pollution committee increased their efforts during the fall of 1965 in order that a draft of recommended legislation would be available for consideration in the 1966 session. This draft was included in the committee's first report (Legislative Council Research Publication No. 105, November 1965) and was adopted in the 1966 session with a few amendments (Chapter 44, Session Laws of 1966).

As may be noted from the accompanying report of this committee, the members devoted much of their attention following the session to additional changes that might be needed to improve the 1966 act as well as to state programs to assist local governmental units and industry to finance waste disposal projects. The committee made no recommendation for the continuation of this study since the members believe that such a decision will rest on action taken or not taken in the 1967 session.

Phillip E. Jones, senior research analyst for the Legislative Council, had the primary responsibility for the staff work on this study, with the aid of Roger M. Weber, research assistant. Miss Clair T. Sippel, secretary of the Legislative Reference Office, provided the committee with bill drafting services.

November 28, 1966

Lyle C. Kyle
Director

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WATER POLLUTION COMMITTEE FINDINGS AND RECOMMENDATIONS

In accordance with the provisions of House Joint Resolution No. 1024, 1965 regular session, the Legislative Council Committee on Water Pollution has conducted a study of water pollution problems in Colorado, including the preparation of legislative changes for consideration by members of the General Assembly. In fact, much of the work of the committee was completed in 1965 when it submitted its preliminary report and a proposed bill to the 1966 regular session.¹

In this connection, based on the work of the committee in 1965 and the committee's recommended draft of a bill, the members of the 1966 regular session adopted Senate Bill No. 2 (Chapter 44, Session Laws of 1966). Among other things, the Colorado Water Pollution Control Act of 1966 created the State Water Pollution Control Commission as the state agency to conduct a centralized program of water pollution prevention, control, and abatement for Colorado. One of the major duties of the commission is to adopt reasonable standards of quality for the waters of the state for water pollution control purposes, with such standards to become effective on March 1, 1967.

The members of the Legislative Council Committee on Water Pollution agreed that, in view of the 1966 action taken by the General Assembly, the role of the committee in 1966 should be limited to (1) reviewing the progress of, and problems encountered by, the State Water Pollution Control Commission; (2) considering methods or programs for financing necessary improvements of water treatment facilities in Colorado; and (3) recommending statutory changes needed in our state laws regarding water pollution control, including amendments to the 1966 act and related measures and the repeal of conflicting or overlapping laws.

State Water Pollution Control Commission -- Progress and Problems

A substantial part of the duties of the newly-created State Water Pollution Control Commission hinges on the uncovering of the sources of water pollution and achieving agreement -- and action -- on programs to make the state's waters clean once again. The commission's major assignment during its first year of operation consists of the preparation of "reasonable standards of quality of the waters of the state for the prevention, control, and abatement

1. Water Pollution in Colorado, Colorado Legislative Council, Research Publication No. 105, November 1965.

of pollution," with such standards to become effective on March 1, 1967. Closely related to this task is the matter of advising the legislative branch on measures needed to effectuate water pollution control in Colorado as a state-directed, rather than federal-directed, program.

Several meetings have been held by the commission, beginning with the first meeting on March 31, 1966, following the appointment of the 11 commission members by the governor. Among other things, the members attended a two-day conference on pollution of the South Platte River and took under consideration the report submitted by the federal water pollution survey team. The members also met with representatives of various state and federal agencies currently having authority over some phase of water pollution control or the collection of data on water pollution to lay the groundwork for cooperative efforts with respect to the commission's program. Similarly, the commission met with representatives of local organized health departments for a briefing on current water pollution control programs, ways of expanding these programs, and program needs in terms of finances and staff.

In addition, commission members reviewed the history of the federal grant construction program for municipal sewage treatment plants preparatory to assuming the responsibility for acting on allocations in Colorado as of July 1, 1966. The members also studied a logical procedure for setting water quality standards and classifying streams as to use, outlined the major causes of pollution in the state, and discussed various means of correcting these causes.

In terms of major action taken by the commission during the first few months of its existence, it has:

1. Agreed that both discharge effluent and stream quality standards should be used in determining and controlling pollution effectively; approved existing domestic sewage effluent standards for the state; and agreed to require secondary treatment of all domestic wastes as a minimum requirement.

2. Decided to divide the state into two separate areas for analysis and abatement of water pollution -- (A) above 7,000 feet where water is generally of good quality at the present time, and (B) the balance of the state, or below 7,000 feet, where the majority of pollution occurs -- and to use basic parameters of coliform, dissolved oxygen, BOD, pH, plus others as needed; and to accumulate and analyze data available from all cooperating agencies in Area A, first, and then moving to Area B so that an adequate inventory of pollution can be made and necessary check points established.

3. Filed a "letter of intent" with the federal water pollution authority that Colorado will adopt quality criteria applicable

to interstate waters in accordance with the provisions of the Federal Water Quality Act of 1965.

4. Allocated \$10,000 of its current budget for contracting with local health departments (Boulder, Denver, Pueblo, Tri-County, and Weld) to aid them in the purchase of necessary laboratory equipment to analyze stream samples and to establish or expand stream monitoring plans in their areas, thereby enabling these local health departments to handle many violations locally.

5. Required reports from all municipalities and industries currently discharging wastes into the waters of the state.

6. Adopted the ranking criteria system of the State Board of Health for use in the federal construction grant program, and allocated 1.7 million dollars as follows:

Denver Metro (main plant), final appropriation.....	\$ 629,485
Fort Collins, final appropriation.....	252,711
Colorado Springs.....	47,550
Denver Metro (Thornton-N. Washington Interceptor).....	487,080
Paonia.....	29,935
LaSalle.....	39,500
Boulder (remaining funds).....	<u>269,939</u>

Total grant funds awarded \$ 1,756,200

7. Adopted forms for the review of plans, specifications, and proposed locations of sewage treatment facilities in this state.

8. Established a subcommittee to prepare stream quality standards for consideration by the full commission.

9. Set tentative dates for basin hearings in the first part of 1967 on water quality standards and water pollution problems as follows: South Platte River Basin, Greeley, January 1967; Arkansas River Basin, Pueblo, February 1967; Colorado River Basin, Glenwood Springs, March 1967; Rio Grande River Basin, Monte Vista, April 1967; and San Juan River Basin, Durango, May 1967.

10. Accepted a map showing the locations of existing and operating mines as presented by Mr. G. A. Franz, deputy commissioner of the State Bureau of Mines.

At the time of meeting with the Legislative Council Committee on Water Pollution on September 22, 1966, the commission also had several matters that were still under consideration, including: (1) possible means of assistance to industry and to heavily-indebted communities; (2) the disinfection of all domestic wastes and industrial wastes from treatment plants (chlorination and ultraviolet rays); standards on chemical wastes and mine tailings; (4) industrial standards, including either a choice of specific

amounts to be permitted, or requiring secondary treatment of all wastes with the specific prohibition of toxic wastes; (5) contracts with other agencies and groups in order to complete a statewide sampling network of all streams; and (6) meetings with neighboring states to prepare mutually-satisfactory standards for the quality of water in streams crossing state lines.

The problems reported by the commission, while not numerous, represent significant areas for legislative consideration, as follows:

1. Under the Colorado Water Pollution Control Act of 1966, a void exists after the commission establishes minimum stream quality standards. In order to achieve compliance with stream quality standards adopted by the commission, the commission recommends amending the law to provide the commission with specific authority to adopt effluent or waste discharge standards, i.e., standards to apply to the source of the discharge as well as standards applying to the quality of the receiving waters.

2. Water pollution problems are becoming more pressing each year with the increase in the number of seasonal visitors to Colorado and the use of campers. These are mobile violators who move from place to place in a relatively short span of time and, the commission believes, the law should provide the commission with authority to control the obvious type of mobile violator discharging waste into a stream and to achieve immediate compliance by ticketing such a violator at the time when the pollution is discovered. This authority would not apply, however, to a municipality or industry where stream analysis as to the pollution would be involved.

3. A third problem involves emergency pollution situations constituting a threat to human and animal health and safety. As one example of this type of situation, the commission reported that, during this past summer, raw sewage from inhabitants of a trailer court was being dumped into a stream less than three miles above the source of domestic water supply for the city of Buena Vista. Under the procedures set out in the present law, it was almost two weeks before anyone was able to get any action taken to abate this situation. The commission recommends that the law be amended to provide it with the necessary powers to act in an emergency situation where immediate action is needed to protect human or animal life.

4. Commission members attended hearings of the State Board of Health involving 22 municipalities having no sewage treatment plants at the present time. These cities are overbonded or have no tax base with which to finance the necessary systems to take care of their sewage problems. Even with the federal government assuming 30 per cent of these costs, the commission believes that the state of Colorado must face up to this problem and initiate a program to assist these local governments by providing financial aid

to match federal grants for the construction of sewage collection lines and sewage treatment facilities.

5. In view of the higher standards for waste treatment that are required under the 1966 law, industry is faced with the problem of having to expend substantial amounts of money on waste treatment facilities as part of the state program to maintain the quality of the water in our streams. As matters stand now, industry will be penalized in two ways. First, as mentioned, industry will be required to spend its private funds on waste treatment facilities. Second, this construction will result in a higher assessed valuation for industry so that any one company will end up paying more taxes on its physical plant as a result of its efforts to reduce or eliminate its waste output. The commission recommends that the state provide tax relief to industry for the construction of waste treatment facilities. This relief should be limited to a waste treatment facility itself and not the over-all physical plant, and past efforts as well as future efforts in this respect should be recognized.

6. Commission members are uncertain as to the interpretation of a few of the provisions in the 1966 act. However, the commission has requested the assistance of the Attorney General on this point, and these questions either will be resolved prior to the 1967 session or the members may request that clarifying amendments be made at that time.

7. The commission's current budget for fiscal year 1966-67 is funded as follows: \$113,000 from funds appropriated to the State Department of Public Health; \$50,000 from funds appropriated directly to the commission; and \$45,000 provided by the federal government. In order to meet program needs under the 1966 act, the commission is requesting a budget for fiscal year 1967-68 totaling some \$286,000, or about \$78,000 more than its current budget. The requested budget provides \$145,000 for personal services; \$100,850 for operating expenses, including \$70,800 for contractual services with local health units and \$10,000 for a mobile laboratory, equipment, and automobile to pinpoint sources of water pollution in the field and to work with local treatment plants; \$15,000 for data processing services; \$22,300 for travel; and \$3,000 for capital outlay.

State Assistance for Waste Treatment Facilities

With the adoption of the Water Pollution Control Act of 1966, Colorado embarked on a concerted program of water pollution abatement and control. One result of this action is that major attention is being focused on improving and sustaining a high level of domestic and industrial waste treatment programs at the local level. Accordingly, in order to explore the possible governmental costs involved, the committee conducted a survey to develop information on estimated present (1966) and future (to 1976) needs of local

water treatment plants and programs in Colorado.² The results of this survey may be summarized as follows:

1. Despite the relatively high level of domestic waste treatment programs in Colorado and the increases made therein between 1953 and 1965, there are still areas in Colorado, including some so-called tourist centers, where neither primary nor secondary treatment facilities are available and, in a few cases at least, where there are no plans to provide these facilities within the next decade.

2. In addition, several of the primary and secondary treatment facilities are operating at the present time at or above capacity and, on the basis of estimates submitted, this situation will be substantially worse in 1976 than it is in 1966 unless improvements in these facilities are made.

3. On the other hand, many communities have already begun to expand and improve their waste treatment facilities, or plan to do so over the next ten years, and these planned improvements or additions are estimated to total around \$41.8 million on the basis of today's prices for those communities participating in the survey, or areas representing approximately 70 per cent of the state's population. This \$41.8 million total may be compared with the reported cost of present primary and secondary facilities in these communities of some \$54 million, almost \$30 million of which is attributed to facilities of Metropolitan Denver Sewage Disposal District No. 1.

4. Presently local governmental waste treatment programs for which information was reported have been financed largely through the use of general obligation bonds for primary treatment facilities and through the use either of general obligation or revenue bonds and federal aid in the case of secondary treatment facilities.

5. Methods of financing waste treatment plants and programs appear to pose a major problem for some communities. This problem is especially evident in communities where resident population is greatly increased by outside visitors during various seasons of the year. In these cases, their assessed valuation may be so small as to preclude the use of general obligation bonds, for all practical purposes, as a source of financing the construction of sewage treatment facilities.

6. On the basis of 77 responses from local communities concerning methods of financing construction costs, in 40 per cent of

2. A copy of the results of the committee's survey is contained in Appendix A.

the cases it was felt that the state should share in these costs, ranging from a low of five per cent in state aid to a high of 50 per cent. At the same time, federal aid for these projects was also felt to be necessary or desirable by 70 per cent of those replying. Generally speaking, the net effect in these cases would be to spread the costs of construction over the local, state, and federal units of government, with the state share being used to reduce local effort from its present level. Correspondingly, however, these reports from local communities indicate that the costs for operation and maintenance should be financed at the local level, with most of the funds coming from service charges.

Committee Recommendations

By its action in the 1966 session, the General Assembly responded well to the need for an accelerated centralized program of water pollution control and abatement in Colorado. However, based on the committee's continuing review of water pollution problems during 1966 and the experience of the State Water Pollution Control Commission since its creation in March of this year, additional legislative action needs to be taken.

The members of the General Assembly should make a concerted effort in the 1967 session to provide the commission with the tools necessary to accomplish its program objectives and the objectives of the Colorado Water Pollution Control Act of 1966. In addition to the operating funds needed for this program, which is a matter beyond the scope of this committee, a few statutory changes seem essential if the accomplishments expected of the commission are to be realized. Moreover, if, as has been reported to the committee, Colorado is going to be a test area for the implementation of the Federal Water Pollution Act of 1965, the members of the General Assembly who believe as this committee does in the state retaining the primary responsibility for water pollution control, rather than the federal government, should provide the commission with their unified support of the commission's program.

Specifically, the committee recommends that the Colorado Water Pollution Control Act of 1966 be amended to vest authority in the Division of Administration, State Department of Public Health, for the designation of representatives of three other state agencies -- the Department of Agriculture, the Department of Game, Fish, and Parks, and the Oil and Gas Conservation Commission -- to assist in the implementation and enforcement of this 1966 law. Additionally, as also contained in the attached Bill A, the committee believes that the commission should be provided with the power to deal immediately with emergency situations where public health is threatened.

In connection with the powers of the State Water Pollution Control Commission, the committee has reviewed the law's provisions and believes that no major changes need be made at this time other

than those contained in Bill A. Specifically, the committee feels that the law as adopted in 1966 provides the commission with the power to control waste discharges at the source through the establishment of water quality standards. This impression was substantiated by comments made to the committee at its meeting on November 14, 1966, by Mr. Murray Stein, chief of enforcement for the Federal Water Quality Authority.

The committee recognizes that a problem exists with respect to the financing of waste treatment facilities by local units of government and by various industries in Colorado. However, in the first instance, the answer as to the amount of state aid that could be provided local units of government will depend on the amount of state funds available for this purpose, and this is a matter that will be better handled during the 1967 session. Similarly, the committee believes that some form of tax relief should be granted to industries for past and future efforts in treating their wastes discharged into the waters of this state, but committee members are not in a position to recommend a specific form of tax relief due to a lack of time.

As its final recommendation, the committee believes that the over-all responsibility for water pollution control should be vested in the State Water Pollution Control Commission. The General Assembly should therefore repeal or amend various statutes in the 1967 session to make our laws clear as to where this responsibility lies. In line with this recommendation, the committee has had a bill prepared but is not submitting it at this time since the provisions therein will be directly related to action and policies that will be adopted by the State Water Pollution Control Commission in December or January.

1 BILL A

2 A BILL FOR AN ACT

3 CONCERNING THE POLLUTION OF THE WATERS OF THE STATE, AND THE
4 PREVENTION, ABATEMENT, AND CONTROL THEREOF.

5 Be It Enacted by the General Assembly of the State of Colorado:

6 SECTION 1. Section 7 (2) of chapter 44, Session Laws of
7 Colorado 1966, is amended to read:

8 Section 7. Powers and duties of division of administration.

9 (2) The division of administration, through its duly authorized
10 representatives, shall have power to enter, at reasonable times AND
11 AFTER REASONABLE NOTICE, upon any private or public property for
12 the purpose of inspecting, investigating, and determining conditions
13 relating to the pollution of any waters of the state. IN THE MAKING
14 OF SUCH INSPECTIONS, INVESTIGATIONS, AND DETERMINATIONS, THE DIVI-
15 SION, INSOFAR AS PRACTICABLE, MAY DESIGNATE AS ITS AUTHORIZED
16 REPRESENTATIVES ANY QUALIFIED PERSONNEL OF THE DEPARTMENT OF AGRI-
17 CULTURE, THE DEPARTMENT OF GAME, FISH, AND PARKS, AND THE OIL AND
18 GAS CONSERVATION COMMISSION. THE DIVISION MAY ALSO REQUEST AND
19 RECEIVE ASSISTANCE FROM ANY OTHER STATE AGENCY OR STATE INSTITUTION
20 OF HIGHER LEARNING.

21 SECTION 2. Section 16 of chapter 44, Session Laws of Colorado
22 1966, is amended to read:

23 Section 16. Injunction - emergency power. (1) Whenever in
24 the opinion of the commission, after proper notice and hearing, any
25 person is engaging, continues to engage, or threatens to engage in
26 any act or practice which constitutes or will constitute a violation
27 of any order of the commission, the commission shall make applica-
28 tion, through the attorney general, to the district court for an

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1 order enjoining such act or practice. The district court after
2 notice, as prescribed by the court, to the parties in interest
3 shall then proceed to hear the matter and if it finds that the
4 order was lawful and reasonable, it may issue an injunction or a
5 restraining order in accordance with the Colorado rules of civil
6 procedure. In any action for injunction or restraining order
7 brought pursuant to this section, any finding of the commission
8 shall be prima facie evidence of the fact or facts found therein.
9 An appeal or a writ of error may be taken from any such order of
10 the court in the same manner as is provided in civil cases.

11 (2) WHENEVER THE COMMISSION SHALL DETERMINE, AFTER INVESTI-
12 GATION, THAT ANY PERSON IS DISCHARGING OR CAUSING TO BE DISCHARGED
13 INTO THE WATERS OF THE STATE DIRECTLY OR INDIRECTLY ANY WASTES
14 WHICH IN THE OPINION OF THE COMMISSION CONSTITUTES A CLEAR, PRESENT,
15 AND IMMEDIATE DANGER TO THE HEALTH OF THE PUBLIC, THE COMMISSION
16 SHALL ISSUE ITS WRITTEN ORDER TO SAID PERSON THAT HE MUST IMMEDI-
17 ATELY DISCONTINUE THE DISCHARGE OF SUCH WASTES INTO THE WATERS OF
18 THE STATE AND WHEREUPON SUCH PERSON SHALL IMMEDIATELY DISCONTINUE
19 SUCH DISCHARGE. IF SUCH PERSON, NOTWITHSTANDING SUCH ORDER, CON-
20 TINUES THE DISCHARGE OF SUCH WASTES INTO THE WATERS OF THE STATE,
21 THE COMMISSION SHALL MAKE APPLICATION, THROUGH THE ATTORNEY
22 GENERAL, TO THE DISTRICT COURT OF THIS STATE FOR THE DISTRICT IN
23 WHICH THE SAID DISCHARGE IS OCCURRING FOR A TEMPORARY RESTRAINING
24 ORDER, PRELIMINARY INJUNCTION OR PERMANENT INJUNCTION AS PROVIDED
25 IN THE COLORADO RULES OF CIVIL PROCEDURE. SUCH ACTION IN SUCH
26 DISTRICT COURT SHALL BE GIVEN PRECEDENCE OVER ALL OTHER MATTERS
27 PENDING IN SUCH DISTRICT COURT. THE INSTITUTION OF SUCH INJUNCTION
28 PROCEEDING BY THE COMMISSION SHALL CONFER UPON SAID DISTRICT COURT

1 EXCLUSIVE JURISDICTION TO DETERMINE FINALLY THE SUBJECT MATTER OF
2 THE PROCEEDING.

3 SECTION 3. Safety clause. The general assembly hereby finds,
4 determines, and declares that this act is necessary for the immedi-
5 ate preservation of the public peace, health, and safety.

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Appendix A

MEMORANDUM NO. 10

September 14, 1966

TO: Committee on Water Pollution

FROM: Legislative Council Staff

SUBJECT: Estimated Present and Future Needs of Sewage Treatment Plants and Programs in Colorado, 1966-1976

With the adoption of Senate Bill No. 2, 1966 regular session, Colorado embarked on a concerted program of water pollution abatement and control. This bill was designed, initially at least, to provide for the establishment of water quality standards for the rivers and streams in Colorado and the development of a statewide program of enforcement of these standards.

A substantial part of the duties of the newly-created State Water Pollution Control Commission hinges on the uncovering of the sources of water pollution and achieving agreement -- and action -- on programs to make the state's waters clean once again. In this phase of the commission's activities, major attention will undoubtedly be focused on improving and sustaining a high level of domestic and industrial waste treatment programs at the local level.

Accordingly, with the cooperation of the Colorado Municipal League and the Water Pollution Section of the State Department of Public Health, the staff conducted a survey to develop information on estimated present (1966) and future (to 1976) needs of local waste treatment plants and programs in Colorado.

Scope of Survey

Inquiries relating to the estimated present and future status of waste treatment plants and programs were sent to some 248 towns and municipalities and 194 special districts in Colorado. Replies were obtained from local governmental units representing approximately 70 per cent of the state's estimated 1966 population of 1,982,000 as follows:

No Treatment.....	5,556
Primary Treatment.....	20,005
Second Treatment.....	<u>1,377,086*</u>
	<u>1,402,647</u>

*Includes Metropolitan Denver Sewage Disposal District No. 1. See Table 1 for details on estimated population served. It may be noted that population estimates were not reported in every case.

While the information requested was not supplied or was not available in every instance, sufficient material was received to prepare the following text and tables on this subject.

Summary of Survey

As pointed out by the committee in its report to the 1966 session, "a survey of domestic sewage treatment programs in 1953 compared to those in 1965 in Colorado shows that substantial improvements were made in the intervening 12 years. Moreover, a report of the State Department of Public Health indicates that additional improvement will be or are planned to be made within the next few years so that domestic treatment programs in Colorado will be at a comparatively high level."¹ The staff's inquiry was intended to obtain more specific information on the need for improvements in waste treatment programs today and over the next decade as well as comments and suggestions on the estimated costs involved and how these should be financed. The results on this survey may be summarized as follows:

1. Despite the relatively high level of domestic waste treatment programs in Colorado and the increases made between 1953 and 1965, there are still areas in Colorado, including some so-called tourist centers, where neither primary nor secondary treatment facilities are available and, in a few cases at least, there apparently are no plans to provide such facilities within the next decade.

2. In addition, at the present time several of the primary and secondary treatment facilities are operating at or above their planned capacity and, on the basis of the estimates submitted, this situation will be substantially worse in 1976 than it is in 1966 unless improvements are made.

1. Water Pollution in Colorado, Colorado Legislative Council Research Publication No. 105, November 1965, p. xi.

3. On the other hand, many communities have already begun to expand and improve their waste treatment facilities, or plan to do so over the next decade, and these planned improvements or additions are estimated to total around \$41.8 million on the basis of today's prices for those communities participating in the survey, or areas representing approximately 70 per cent of the state's population. This \$41.8 million total may be compared with the reported cost of present primary and secondary facilities of some \$54 million, almost \$30 million of which is attributed to facilities of Metropolitan Denver Sewage Disposal District No. 1.

4. Present local governmental waste treatment programs for which information was reported have been financed largely through the use of general obligation bonds for primary treatment facilities and through the use either of general obligation bonds or revenue bonds and federal aid in the case of secondary treatment facilities.

5. Methods of financing waste treatment plants and programs appear to pose a major problem for some communities. This problem is especially evident in communities where resident population is greatly increased by outside visitors during various seasons of the year. In these cases, their assessed valuation may be so small as to preclude the use of general obligation bonds, for all practical purposes, as a source of financing the construction of sewage treatment facilities.

6. On the basis of 77 responses concerning methods of financing construction costs, in 40 per cent of the cases it was felt that the state should share in these costs, ranging from a low of five per cent in state aid to a high of 50 per cent. At the same time, federal aid for these projects was also felt necessary or desirable by 70 per cent of those replying. Generally speaking, the net effect in these cases would be to spread the costs of construction over the local, state, and federal units of government, with the state share being used to reduce local effort from its present level. On the other hand, these reports indicated that the costs for operation and maintenance should be financed at the local level, with most of the funds coming from service charges.

Present and Future Status of Domestic Waste Treatment Programs

Tables 1, 2, 3, and 4 contain general information relating to the present (1966) and future (1976) status of domestic waste treatment programs in Colorado based on replies from local governmental units providing these services for approximately 70 per cent of the state's estimated 1966 population. Consequently, the estimates contained in this memorandum represent the situation for less than the state as a whole and, as a general rule, could be increased by roughly one-third to reflect the situation statewide.

Population Served

As may be noted in Table 1, the bulk of Colorado's resident population live in areas having secondary waste treatment programs at the present time. This group includes most of the large urban areas in the state as well as many smaller communities. Those areas reporting no treatment plants almost totally consist of small population centers with the exception of LaSalle, Paonia, and Walsenburg.

Demands for domestic waste treatment services over the next ten years are estimated to increase on the whole between 55 and 65 per cent. A steady-to-substantial increase is expected for present concentrated-population centers. At the same time, many of the smaller areas having either no treatment plant or primary treatment services only in 1966 anticipate very slight growth or even a decrease in population.

Present Facilities

Colorado communities have invested a minimum of \$54 million in their present sewage treatment facilities, and annually spend some \$1.7 million for their operation, based on the figures reported in Table 2. A large part of this total is attributed to Metropolitan Denver Sewage Disposal District No. 1 -- almost \$30 million in capital construction costs for these facilities alone.

For capital construction costs for these communities as a group, general obligation bonds were relied on heavily to finance primary treatment facilities, with no federal aid being provided, while secondary treatment facilities were financed largely from the issuance of general obligation or revenue bonds plus some federal aid in about half of the constructions.

Operating Capacity of Present Primary and Secondary Treatment Facilities

The presence of a primary or secondary treatment facility does not necessarily mean that the waste of a community is being adequately treated. On the basis of estimates provided by the communities themselves, about 40 per cent of the primary treatment facilities are operating at or in excess of their present capacity and, unless improvements are made, about the same number of these communities will be faced with the same situation in 1976. Similarly, as also may be noted in Table 3, the number of communities whose secondary treatment facilities are operating at or in excess of present capacity will increase from ten in 1966 to 34 ten years from now. This latter group includes several communities with relatively large resident populations as well as some of the tourist centers in the state.

Anticipated Future Facilities

Most of the Colorado communities participating in the survey report plans for improving their sewage treatment facilities within the next ten years. Based on the estimated costs shown in Table 4, a minimum of \$41.8 million will be expended for capital construction during this period, and operating expenses are expected to increase by slightly more than half a million dollars a year. More significantly, all of the communities whose secondary treatment facilities are operating at or above capacity in 1966 report plans for improvements in their physical systems over the next decade, and all but two (Ault and Otis) of the communities having primary treatment facilities operating at or above capacity anticipate similar programs for improvements. In addition, 11 local entities with no treatment plants at present expect to have secondary treatment facilities by 1976.

Suggested Methods of Financing Future Costs

A strong minority (40 per cent) of those communities participating in the survey indicated that the state should share in capital construction costs to provide improved sewage treatment facilities in the future. A larger number (71 per cent) suggested that federal aid should be provided, the net effect being that the federal government would pick up those costs not shared by the state and local units. As may also be noted in Table 5, very little interest was shown in having either the state or the federal government share in the operation and maintenance costs of these facilities.

General Comments from Communities

All of the communities in the survey were invited to comment about problems connected with the financing and operation of sewage treatment facilities in Colorado such as difficulties in securing federal aid; topographical or geological problems; and problems with industrial wastes. Excerpts from the comments submitted, grouped on the basis of present treatment facilities, are contained in the following paragraphs:

No Treatment Plant

Town of Crestone: "...the Town of Crestone, Colorado, does not now have any plans for present and future need of sewage plant, as we do not feel that there is need for it with our present population."

Town of Collbran: "...the town was, and still is, unable to finance a sewer system."

East Belleview Water & Sanitation District: "At the present time this is a water distribution district only. At such time as we could economically hook onto an existing sewer line, we would consider doing so."

Town of Fruita: "We are trying to obtain ground for sewer lagoon. Until such time we are not eligible for federal aid which we hope to obtain to help with the construction of this project."

Town of Genoa: "At the present time each home has a private cesspool and unless unforeseen growth takes place, it will probably remain the same." (Note: This same comment was reported by several of the smaller communities.)

Green Mountain Falls: "Green Mountain Falls is primarily a summer community with a population of 179 in the 1960 census and some 1800 to 2000 during the summer. All sewage is handled with cesspools."

Town of Grover: "At this time we have only private individual sewage disposals -- septic tanks and leech fields. We do have tight soils which hinder leech fields. We feel that this hinders any future growth and also present businesses find it hard to dispose of wastes necessary to pass health department inspections. At times the water table is high which also presents a problem.

"At the present time the population is probably too small to support a system at present-day costs.

"We would be most interested in finding a way to finance a disposal system."

Town of Silverton: "We are in dire need of a sewer line and also a sewage treatment plant, and we don't have any moneys for such a project and our sewage does pollute the stream here."

Town of Telluride: "Telluride has no sanitation district and no sewage disposal plant or sewage treatment of any kind. The raw sewage of Telluride goes directly into the San Miguel River."

Town of Victor: "In a distressed area such as ours, we would have great difficulty supplying any amount of matching funds for sewage treatment facilities."

Winter Park West Sanitation District: "Unit sewage disposal costs in the mountain areas are consistently higher than in the plains. Also the need for better, more reliable treatment is greater where the effluent discharges to small mountain streams. Possibly additional financial assistance is justified in these areas."

Primary Treatment Facilities

Ault Sanitation District: "As of now, no federal aid has been asked for but with equipment wearing out and in some cases, becoming obsolete the time may come when outside aid will be required, in what amounts cannot be estimated at this time."

Calhan Sanitation District: "If the state and federal governments could finance 50 per cent, I think the local district should carry the other half."

City of Mancos: "So many times federal aid programs are announced and the people know about it. However, when application is made there are no funds available to go along with the program or the red tape involved is insurmountable."

Rye: "Unable to get commitment on federal aid."

Steamboat Springs: "...present facilities are inadequate.

"We have preliminary engineering studies for facilities. We have approximately \$70,000 cash on hand for facilities and have applied to the Federal government for assistance. As soon as this assistance is received, we will commence construction.

"...we do plan to construct expandable sewage facilities which will take care of the likely requirement for the reasonable future."

Secondary Treatment Facilities

Aspen Sanitation District: "Towns and districts should improve planning with highway department, railroads, etc., for better use of pipeline routes and rights of way."

Bayfield Sanitation District: The General Assembly "should tighten up the requirements to set up special improvement districts in the original instance...the ability to tax people should not be spread out."

Town of Berthoud: "We have had no problem in securing federal aid. Our relations with the federal government and state government has been very satisfactory. As of now we have had no problem with industrial waste."

City of Brush: "Because of the regulations required by federal aid grants, most smaller cities are further ahead to finance their own sewage treatment facilities. The cost is generally considerably more when federal aid is included because of all the engineering requirements and labor costs."

Colorado Springs: "In the past the City of Colorado Springs has found most grant applications to be accepted or rejected with due regard to community needs. However, it has been felt that when an application is rejected that the applicant be given a chance to explain all facets of the project and receive all valid reasons as to why the project was not accepted.

"Another point is a statement of clarification concerning metropolitan areas: It has never been quite clear to the City of Colorado Springs, serving 12 districts and areas besides the City itself, how we differ from the rules governing a metropolitan sanitation district except that control is not handled by a board.

"This can be of great importance since it will affect our grant status in the future under the new federal bills."

Town of Dillon: "The operation of any sewage facility above Lake Dillon is somewhat dependent on the Denver Water Board. A master plan should be developed for Summit County partly at state or City of Denver cost."

Estes Park Sanitation District: "State should have more authority to enforce and correct stream pollution problems.

"Our federal grant for plant construction, completed last year, was 100% satisfactory."

Florence Sanitation District: "...As the plant grows older, our maintenance and upkeep (expense) will increase.

"I think the government should see if they could get the power and gas companies to give us a cheap rate on the utilities."

City of Gunnison: "Federal and state aid in planning is good but all facilities should carry their own finance and revenue so as to avoid the unnecessary expenditures that accrue with federal planning."

City of Longmont: "Definitely a problem of securing federal aid."

Monte Vista: "We have no particular problems at present but would expect that location sites for new lagoons might be expensive and hard to obtain in the future. We should try to protect the city from this as much as possible by acquiring these sites soon."

Naturita Sanitation District: "We need extensions and enlargements but we are up to our mill levy now. Cannot afford any more taxes. The Town needs a water filtration plant desperately."

Olney Springs Sanitation District: "No comments except we feel that it is the responsibility of each community to dispose of their own wastes."

Rifle: "If the state continues to preempt local revenue sources, we will have problems financing and operating all phases of local government."

Sterling: "Topographical problem this area involves at present use of lift stations which add considerably to costs. If State and Federal agencies insist on 'optimum' operating conditions, should have some share in operation costs to bring to their attention difficulty in providing costs of these requirements. Feel industrial wastes are much more responsible for pollution problems than are municipalities, yet 'crack down' is emphasized on municipalities."

"As a City Manager, I find it difficult to follow the rationale of the Federal programs that encourage the development of many small, inefficient systems in the fringes of municipalities. We are faced right now with the problem of why should the rural (sub-division) hook onto the City system when they can secure 50 per cent of the cost under some type of Federal program. I grant in some instances it is a two-way street and the cities have been somewhat arbitrary. However, I do feel that these Federal programs have weakened the bargaining position of the cities, compounding the problem of annexation."

Strasburg Sanitation & Water District: "No particular problems so far; as to federal aid, am against it."

Table 1

ESTIMATED POPULATION SERVED -- 1960, 1966, 1971, 1976

<u>Municipality or Special District</u>	<u>1960 Population</u>	<u>1966 Population</u>	<u>1971 Population</u>	<u>1976 Population</u>
<u>No Treatment Plant:</u>				
Breckenridge	393	432	2,100	2,700
Central City	250	300	350	400
Coal Creek	206	224	---	---
Collbran	---	300	---	---
Creede	350	400	---	---
Fruita	450	450	---	---
Georgetown	---	---	900	1,500
Grover	135	120	120	110
Hiland Acres	---	100	200	300
Keota	---	7	---	---
La Salle	1,079	1,200	1,250	1,300
Nunn	---	200	---	---
Paonia*	1,083	1,100	1,600	2,000
Raymer	91	93	95	97
Ridgway	140	135	130	125
South Clarkson	20	20	20	20
Tamarac	25	25	30	35
Vona	130	---	150	150
Victor	434	400	---	---
Walsenberg*	---	---	---	6,000
Winter Park West	0	50	500	1,000
Subtotal:	4,786	5,556	7,445	15,737

*Received federal grant-in-aid in July 1, 1966.

Table 1
(continued)

<u>Municipality or Special District</u>	<u>1960 Population</u>	<u>1966 Population</u>	<u>1971 Population</u>	<u>1976 Population</u>
<u>Primary Treatment Facilities:</u>				
Ault	800	850	900	1,200
Calhan	400	400	475	500
Center	1,600	1,600	2,000	2,500
Cheyenne Wells	1,000	1,000	1,000	1,000
Crook	200	165	150	150
Fleming	600	600	600	600
Glenwood Springs	3,637	4,600	6,000	7,000
Hayden	750	1,000	1,200	1,500
Holly	1,250	1,165	1,350	1,500
Keenesburg	450	475	500	600
Kremmling	576	750	850	900
La Veta	632	700	825	925
Lyons	706	775	800	875
Mancos	800	900	1,100	1,350
New Castle	440	500	600	---
Otis	550	550	600	700
Rye	200	250	300	350
Silt	380	450	450	520
Simla	400	425	425	425
Steamboat Springs	1,851	2,100	3,000	---
Wellington	531	635	700	750
Wiley	110	115	125	128
Subtotal:	17,863	20,005	23,950	23,473

Table 1
(continued)

<u>Municipality or Special District</u>	<u>1960 Population</u>	<u>1966 Population</u>	<u>1971 Population</u>	<u>1976 Population</u>
<u>Secondary Treatment Facilities:</u>				
Aspen	3,000	6,200	8,000	10,000
Artesia	300	300	400	500
Aurora	48,548	69,000	83,600	102,000
Bayfield	750	800	900	950
Bennett	325	350	400	500
Berthoud	1,014	1,500	1,875	2,250
Brighton	8,000	8,400	10,000	12,000
Brush	3,565	5,000	5,500	6,500
Carbondale	700	1,000	1,500	2,000
Colorado Springs	93,500	130,050	186,180	254,118
Craig	4,000	4,300	4,500	4,750
Del Norte	360	400	450	500
Denver Metro	---	828,000	943,750	1,238,500
Dillon	---	200	2,000	3,000
East Alamosa	---	112	150	200
Englewood	40,600	60,900	83,000	99,000
Estes Park	1,200	1,500	1,800	2,000
Evans	---	2,500	3,000	3,500
Flagler	700	700	700	700
Florence	2,200	2,300	2,500	2,500
Fort Collins	25,027	37,500	47,500	57,500
Fort Lupton	2,194	2,250	2,500	2,680
Fort Morgan	7,400	7,900	---	---
Gilcrest	356	440	540	675
Golden	7,118	8,650	9,800	11,000

Table 1
(continued)

<u>Municipality or Special District</u>	<u>1960 Population</u>	<u>1966 Population</u>	<u>1971 Population</u>	<u>1976 Population</u>
Grand Junction	18,000	24,000	30,000	40,000
Granby	503	660	1,500	2,000
Greeley	29,000	35,000	---	---
Gunnison	3,477	4,200	4,800	6,200
Gypsum	0	325	375	425
Haxtun	990	1,000	1,000	1,000
Highland Acres	0	100	200	300
Holyoke	1,560	1,657	1,667	1,667
Hudson	465	490	510	550
Idaho Springs	1,500	1,500	---	---
Johnstown	1,000	1,100	1,250	1,500
Julesburg	1,870	1,870	---	---
Kersey	310	360	425	500
Kit Carson	350	350	400	500
La Junta	8,026	9,200	11,000	15,000
Lamar	7,369	8,200	8,700	9,000
Las Animas	3,402	3,450	3,500	3,600
Littleton	13,760	20,000	33,000	52,000
Limon	1,815	2,015	2,200	2,400
Longmont	15,000	16,500	25,700	33,800
Loveland	9,734	13,200	16,100	18,000
Monte Vista	3,500	3,650	4,400	4,800
Montrose	5,044	8,000	10,000	14,000
Naturita	200	197	250	400
Olney Springs	263	295	310	325

Table 1
(continued)

<u>Municipality or Special District</u>	<u>1960 Population</u>	<u>1966 Population</u>	<u>1971 Population</u>	<u>1976 Population</u>
Palisade	1,900	2,000	2,400	2,600
Platteville	500	600	750	800
Rifle	2,135	2,500	3,000	4,500
Salida	4,560	4,900	5,250	5,500
Sterling	10,751	11,800	12,500	14,000
Strasburg	---	450	460	470
Trinidad	10,671	10,540	10,600	11,000
Walden	1,000	900	900	900
Weld Co. Tri-Area	1,400	1,600	1,800	2,000
West Jeffco	40	75	200	300
Wray	2,082	2,100	3,000	4,000
Yuma	2,000	2,050	2,300	2,450
Subtotal	415,034	1,377,086	1,600,992	2,073,810
TOTAL	437,683	1,402,647	1,632,387	2,113,020

Table 2

COST OF PRESENT FACILITIES, SOURCE OF FUNDING,
AND ANNUAL (1965) OPERATING EXPENSE

<u>Municipality or Special District</u>	<u>Present Facilities</u>		<u>Annual Operating Expense</u>
	<u>Capital Costs</u>	<u>Source of Funding*</u>	
<u>Primary Treatment Facilities:</u>			
Ault	\$ 45,000	GOB	\$ 12,165
Calhan	70,000	GOB	1,000
Center	135,000	GOB	11,725
Cheyenne Wells	65,000	GOB	7,000
Crook	35,000	GOB	1,083
Fleming	3,194	General tax	1,848
Glenwood Springs	---	---	3,200
Hayden	---	---	400
Holly	50,000	RB	1,000
Keenesburg	78,000	GOB	1,800
Kremmling	136,515	GOB	6,200
La Veta	2,500	GOB	250
Lyons	49,600	GOB	1,450
Mancos	---	---	2,000
New Castle	68,000	GOB	2,200
Otis	74,500	GOB	2,400
Rye	8,800	RB, Assessments	700

Table 2
(continued)

<u>Municipality or Special District</u>	<u>Present Facilities</u>		<u>Annual Operating Expense</u>
	<u>Capital Costs</u>	<u>Source of Funding*</u>	
<u>Secondary Treatment Facilities:</u>			
Aspen	\$ 130,000	GOB, FA	\$ 57,500
Aurora	610,000	RB	91,300
Bayfield	103,000	GOB, RB, FA	2,000
Bennett	56,815	GOB	1,100
Berthoud	150,000	RB, FA	8,750
Brighton	250,000	GOB, RB	47,571
Brush	---	RB	6,770
Carbondale	15,000	GOB	150
Castle Rock	44,690	FA, School District	3,150
Colorado Springs	9,470,896	RB, FA, Aid to Constr.	401,581
Craig	300,000	GOB, FA, Reserves	20,500
Del Norte	---	---	3,207
Denver Metro	29,910,729	RB, FA	---
Dillon	20,000	FA, Sale of land	950
East Alamosa	286,000	GOB, FA	16,720
Englewood	1,099,778	RB, FA	116,500
Estes Park	427,715	GOB, FA	26,675
Evans	284,588	GOB, RB, FA	64,060
Flagler	135,000	GOB	2,495
Florence	---	GOB, FA	16,099
Fort Collins	610,000	GOB, RB, Surplus	20,950
Fort Lupton	146,000	RB, FA	7,000
Fort Morgan	180,000	Reserves	7,350
Gilcrest	8,850	GOB	552
Grand Junction	1,000,000	GOB, RB	80,500

Table 2
(continued)

<u>Municipality or Special District</u>	<u>Present Facilities</u>		<u>Annual Operating Expense</u>
	<u>Capital Costs</u>	<u>Source of Funding*</u>	
Granby	\$ 152,703	GOB	\$ 6,890
Greeley	1,500,000	RB, FA	307,820
Gunnison	286,480	RB, FA	9,451
Gypsum	77,000	GOB, FA	800
Haxtun	35,000	Rates	2,537
Hiland Acres	28,667	GOB	---
Holyoke	89,266	GOB	665
Hudson	78,000	GOB	2,400
Idaho Springs	---	RB	11,000
Johnstown	71,382	GOB, FA	900
Julesburg	150,000	RB, FA	3,489
Kersey	500	GOB	1,300
Kit Carson	85,000	GOB	1,234
La Junta	450,000	RB	38,801
Lamar	100,000	State Aid, Cash	3,395
Las Animas	76,000	Use Charge	6,000
Littleton	1,251,163	RB, FA, Fees	57,639
Limon	21,000	RB	6,800
Longmont	601,434	GOB, FA, Cash	20,625
Loveland	600,000	RB	19,205
Monte Vista	142,000	GOB, FA	5,900
Montrose	362,200	GOB, RB, FA.	12,200
Naturita	44,259	GOB, FA	700
Olney Springs	35,000	GOB	100
Palisade	35,000	Rental	1,000

Table 2
(continued)

<u>Municipality or Special District</u>	<u>Present Facilities</u>		<u>Annual Operating Expense</u>
	<u>Capital Costs</u>	<u>Source of Funding*</u>	
Platteville	\$ 80,000	GOB, FA, Fees	\$ ---
Rifle	150,000	GOB, RB, FA	16,655
Salida	280,000	RB, FA	19,811
Sterling	650,000	RB, FA	87,369
Strasburg	10,000	GOB	---
Trinidad	40,000	---	6,400
Walden	65,300	RB, FA	3,100
Weld Co. Tri-Area	140,000	GOB	1,750
West Jeffco	131,590	GOB, FA	4,424
Wray	39,817	FA, Cash	---
Yuma	30,000	Cash	1,700
Subtotal	\$53,127,822		\$1,665,490
TOTAL	\$54,079,731		\$1,729,961**

*NOTE: "GOB" means general obligation bonds; "RB" means revenue bonds, and "FA" means federal aid.

**Does not include figures for Denver Metro Sewage Disposal District No. 1.

Table 3

ESTIMATED NEEDS 1966-1976 BASED ON CAPACITY
OF PRESENT PRIMARY OR SECONDARY
TREATMENT FACILITIES

<u>Municipality or Special District</u>	<u>Per Cent of Operating Capacity</u>		
	<u>1966</u>	<u>1971</u>	<u>1976</u>
<u>Primary Treatment Facilities:</u>			
Ault	150%	125%	100%
Calhan	75	125	150
Center	125	75	100
Cheyenne Wells	75	75	---
Crook	75	75	75
Fleming	75	75	75
Glenwood Springs	125	---	---
Hayden	125	150	160
Holly	50	50	75
Keenesburg	50	75	100
Kremmling	50	50	50
La Veta	100	125	150
Lyons	66	75	75
Mancos	50	75	75
Otis	100	100	100
Rye	100	125	150
Silt	100	---	---
Simla	75	75	75
Wellington	25	100	100
Wiley	50	75	75
Subtotal of units at or in excess of present capacity:	8	7	9

Table 3
(continued)

Municipality or Special District	Per Cent of Operating Capacity		
	1966	1971	1976
<u>Secondary Treatment Facilities:</u>			
Aspen	75-200%	250%	400%
Aurora	85	150	200
Bayfield	50	75	75
Bennett	40	60	85
Berthoud	75	90	100
Brighton	75	100	125
Brush	--	150	100
Carbondale	75	100	125
Castle Rock	75	100	100
Colorado Springs	100	125	175
Craig	50	56	60
Del Norte	75	85	100
Denver Metro	75	90	98
Dillon	25	250	300
East Alamosa	10	15	20
Englewood	60	85	99
Estes Park	50	75	100
Evans	75	100	125
Flagler	50	50	50
Florence	150	150	150
Fort Collins	75	50	50
Fort Lupton	60	70	80
Fort Morgan	75	125	150
Gilcrest	40	75	100
Grand Junction	100	150	175
Granby	125	200	100
Greeley	75	90	100
Gunnison	50	75	80-90
Gypsum	66	75	87
Haxtun	100	100	100
Hiland Acres	25	75	90
Holyoke	60	70	75
Hudson	95	100	150
Idaho Springs	50	---	---
Johnstown	75	94	112
Julesburg	75	75-100	90
Kersey	50	75	75

Table 3
(continued)

<u>Municipality or Special District</u>	<u>Per Cent of Operating Capacity</u>		
	<u>1966</u>	<u>1971</u>	<u>1976</u>
La Junta	50%	100%	125%
Lamar	50	75	75
Las Anamas	100	125	125
Littleton	75	100	125
Limon	100	125	150
Longmont	75	125	150
Loveland	75	80-90	100
Monte Vista	62	75	90
Montrose	50	75	100
Naturita	50	100	---
Olney Springs	33	40	50
Palisade	75	80	100
Platteville	100	100	100
Rifle	50	75	100
Salida	90	100	150
Sterling	88	92	104
Strasburg	50	50	60
Trinidad	100	100	75
Walden	50	75	75
Weld County Tri-Area	75	100	100
West Jeffco	15	50	75
Wray	80-90	75	---
Yuma	50	50	75
Subtotal of units at or in excess of present capacity:	10	25	34
TOTAL of units at or in excess of present capacity:	18	32	43

Table 4

ANTICIPATED FUTURE FACILITIES AND ESTIMATED
INCREASED COSTS, 1966-1976

Municipality or Special District	Anticipated Future Facilities	Estimated Increased Costs			Personnel (Annual)
		Physical Plant	Sewage Pipe		
<u>No Treatment Plant:</u>					
Breckenridge	Secondary	\$ 62,000	\$ 170,000	\$ 3,000	---
Central City	Secondary	---	---	---	---
Crested Butte	Secondary	---	---	---	---
East Dillon	Secondary	---	---	---	---
Fruita	Secondary	125,000	---	---	---
Georgetown	Secondary	95,000	35,000	4,000	---
La Salle	Secondary	165,000	---	5,000	---
Paonia	Secondary	100,000	30,000	5,000	---
Vona	Secondary	30,000	---	---	---
Winter Park West	Secondary	105,000	175,000	5,000	---
Yampa	Secondary	---	---	---	---
Subtotal:		\$ 682,000	\$ 410,000	\$ 22,000	
<u>Primary Treatment Facilities:</u>					
Calhan	---	1,600	---	---	---
Center	Secondary	15,000	20,000	5,000	---
Cheyenne Wells	---	15,000	---	---	---
Fleming	---	4,000	5,000	---	---
Glenwood Springs	---	250,000	---	---	---

Table 4
(continued)

Municipality or Special District	Anticipated Future Facilities	Estimated Increased Costs		
		Physical Plant	Sewage Pipe	Personnel (Annual)
Hayden	Secondary	\$ 2,000	\$ ---	\$ 2,400
Keenesburg	---	5,000	---	---
Kremmling	---	2,000	15,000	3,800
La Veta	Secondary	15,000	25,000	1,200
Lyons	Secondary	2,500	---	1,500
Mancos	---	5,000	---	---
New Castle	Secondary	50,600	---	1,200
Rye	Secondary	100,000	---	---
Silt	Secondary	61,000	13,000	---
Steamboat Springs	Secondary	225,000	125,000	10,000
Wellington	---	2,400	5,000	1,000
Wiley	---	9,000	6,000	2,500
Subtotal:		\$ 765,100	\$ 214,000	\$ 28,600
<u>Secondary Treatment Facilities:</u>				
Aspen	---	123,000	170,000	15,000
Aurora	---	880,000	1,000,000	18,000
Brighton	---	250,000	50,000	10,000
Brush	---	---	---	3,500
Carbondale	---	10,000	---	---
Castle Rock	---	40,000	---	---
Colorado Springs	---	4,626,000	4,937,000	92,374
Craig	---	---	75,000	---
Del Norte	---	---	40,000	---
Denver Metro	---	8,500,000	10,900,000	250,000

Table 4
(continued)

<u>Municipality or Special District</u>	<u>Anticipated Future Facilities</u>	<u>Estimated Physical Plant</u>	<u>Estimated Increased Sewage Pipe</u>	<u>Personnel (Annual)</u>
Dillon	---	\$ 150,000	\$ 50,000	\$ 6,000
East Alamosa	---	---	25,000	---
Englewood	---	75,000	250,000	---
Estes Park	---	---	35,000	---
Evans	---	25,000	5,000	---
Flagler	---	2,000	3,000	2,500
Florence	---	4,600	1,000	1,500
Fort Collins	---	---	---	6,500
Fort Morgan	---	225,000	5,000	5,000
Gilcrest	---	2,500	30,000	800
Grand Junction	---	2,000,000	500,000	8,000
Granby	---	80,000	10,000	2,500
Greeley	---	50,000	---	---
Gypsum	---	---	50,000	---
Haxtun	---	5,000	---	---
Hiland Acres	---	---	10,000	---
Hudson	---	5,000	---	---
Idaho Springs	---	---	100,000	4,500
Johnstown	---	25,000	20,000	2,000
Kersey	---	1,000	2,000	450
Kit Carson	---	---	5,000	---
La Junta	---	300,000	600,000	10,000
Lamar	---	---	20,000	5,000
Las Animas	---	5,000	---	---
Littleton	---	300,000	---	15,000

Table 4
(continued)

Municipality or Special District	Anticipated Future Facilities	Estimated Increased Costs		
		Physical Plant	Sewage Pipe	Personnel (Annual)
Limón	---	\$ 10,000	\$ 6,000	\$ 1,000
Longmont	---	500,000	100,000	5,000
Loveland	---	---	50,000	---
Monte Vista	---	70,000	30,000	3,000
Montrose	---	50,000	60,000	8,000
Naturita	---	80,000	20,000	---
Palisade	---	---	---	500
Platteville	---	25,000	35,000	3,000
Rifle	---	---	50,000	---
Salida	---	100,000	30,000	5,000
Sterling	---	500,000	750,000	25,000
Trinidad	---	627,000	---	---
Walden	---	---	500	---
West Jeffco	---	---	40,000	---
Wray	---	25,000	---	---
Yuma	---	---	2,000	---
Subtotal		\$19,671,100	\$20,066,500	\$509,124
TOTAL		\$21,118,200	\$20,690,500	\$559,724

Table 5

SUGGESTED METHODS OF FINANCING CONSTRUCTION AND OPERATING COSTS

Municipality or Special District	Capital Construction Costs					Operating and Maintenance Costs				
	General Obligation Bonds	Revenue Bonds	State Aid	Federal Aid	Other	Service Charge	Mill Levy	State Aid	Federal Aid	Other
<u>No Treatment Plant:</u>										
Breckenridge	50%	--	20%	30%	--	90%	10%	--	--	--
Georgetown	--	50%	10	40	--	--	--	--	--	--
Hiland Acres	100	--	--	--	--	100	--	--	--	--
La Salle	--	50	15	35	--	50	--	15%	35%	--
Paonia	40	--	30	30	--	--	--	--	--	--
Raymer	50	--	25	25	--	75	25	--	--	--
Ridgway	--	100	--	--	--	100	--	--	--	--
South Clarkson	--	--	--	--	--	100	--	--	--	--
Vona	--	--	--	50	50%	--	--	--	--	--
Winter Park West	70	--	--	30	--	80	20	--	--	--
<u>Primary Treatment Facilities:</u>										
Ault	100	--	--	--	--	70	30	--	--	--
Calhan	--	--	25	25	50	50	50	--	--	--
Center	100	--	--	--	--	100	--	--	--	--
Cheyenne Wells	100	--	--	--	--	--	100	--	--	--
Crook	50	--	25	25	--	100	--	--	--	--
Fleming	25	25	--	50	--	75	25	--	--	--
Hayden	25	--	25	50	--	50	50	--	--	--
Holly	--	100	--	--	--	100	--	--	--	--
Keenesburg	100	--	--	--	--	90	10	--	--	--
Kremmling	75	--	--	25	--	75	25	--	--	--

Table 5
(continued)

Municipality or Special District	Capital Construction Costs					Operating and Maintenance Costs				
	General Obligation Bonds	Revenue Bonds	State Aid	Federal Aid	Other	Service Charge	Mill Levy	State Aid	Federal Aid	Other
La Veta	50%	--	--	50%	--	100%	--	--	--	--
Lyons	50	--	20%	30	--	100	--	--	--	--
Mancos	50	--	--	50	--	100	--	--	--	--
Rye	--	--	--	100	--	50	50%	--	--	--
Silt	--	--	--	--	--	90	10	--	--	--
Simla	--	--	--	--	--	--	100	--	--	--
Steamboat Springs	--	25%	--	50	25	100	--	--	--	--
Wellington	--	25	25	50	--	60	--	15%	25%	--
Wiley	--	--	25	25	50	50	50	--	--	--
Secondary Treatment Facilities:										
Aspen	70	--	--	30	--	75	25	--	--	--
Aurora	--	70	--	30	--	100	--	--	--	--
Bayfield	--	--	--	25	--	--	--	--	--	--
Bennett	100	--	--	--	--	51	43	--	--	6%
Berthoud	--	40	10	50	--	100	--	--	--	--
Brighton	75	--	25	--	--	--	--	--	--	--
Brush	--	50	25	25	--	98	--	--	--	2
Carbondale	70	--	--	30	--	90	10	--	--	--
Castle Rock	--	--	--	--	--	75	10	--	--	--
Colorado Springs	--	30-50	--	30-50	--	100	--	--	--	--
Craig	66	--	--	33	--	100	--	--	--	--
Del Norte	60	--	15	25	--	85	--	5	10	--
Denver Metro	20	20	30	30	--	90	10	--	--	--
Dillon	--	70	30	--	--	100	--	--	--	--
East Alamosa	40	--	30	30	--	100	--	--	--	--

Table 5
(continued)

Municipality or Special District	Capital Construction Costs					Operating and Maintenance Costs				
	General Obligation Bonds	Revenue Bonds	State Aid	Federal Aid	Other	Service Charge	Mill Levy	State Aid	Federal Aid	Other
Englewood	--	100%	--	--	--	100%	--	--	--	--
Estes Park	--	70	--	30%	--	--	100%	--	--	--
Evans	90%	--	5%	5	--	53	47	--	--	--
Flagler	25	--	--	75	--	--	--	--	--	--
Florence	60	--	10	30	--	66	10	10%	14%	--
Fort Collins	--	65	--	30	5%	100	--	--	--	--
Fort Lupton	--	70	--	30	--	80	20	--	--	--
Fort Morgan	--	100	--	--	--	100	--	--	--	--
Gilcrest	50	--	--	50	--	35	15	--	50	--
Granby	100	--	--	--	--	60	40	--	--	--
Greeley	--	100	--	--	--	100	--	--	--	--
Gunnison	--	70	20	10	--	100	--	--	--	--
Gypsum	33	--	33	33	--	--	--	--	--	--
Haxtun	--	--	--	--	--	100	--	--	--	--
Hiland Acres	100	--	--	--	--	100	--	--	--	--
Holyoke	--	--	--	--	--	100	--	--	--	--
Hudson	100	--	--	--	--	100	--	--	--	--
Idaho Springs	--	50	50	--	--	90	--	10	--	--
Johnstown	60	--	10	30	--	100	--	--	--	--
Julesburg	70	--	--	30	--	100	--	--	--	--
Kersey	--	--	--	--	--	40	60	--	--	--
Kit Carson	--	--	10	50	--	--	--	--	--	--
La Junta	--	50	50	40	--	100	--	--	--	--
Lamar	--	50	50	--	--	100	--	--	--	--
Las Animas	--	70	--	--	--	100	--	--	--	--

Table 5
(continued)

Municipality or Special District	Capital Construction Costs					Operating and Maintenance Costs				
	General Obligation Bonds	Revenue Bonds	State Aid	Federal Aid	Other	Service Charge	Mill Levy	State Aid	Federal Aid	Other
Littleton	--	50%	20%	30%	--	100%	--	--	--	--
Limon	--	--	--	--	100%	100	--	--	--	--
Longmont	--	--	--	50	50	100	--	--	--	--
Loveland	100%	--	--	--	--	100	--	--	--	--
Monte Vista	50	--	20	30	--	100	--	--	--	--
Naturita	20	--	20	60	--	--	--	--	--	--
Olney Springs	100	--	--	--	--	50	50	--	--	--
Palisade	--	--	--	--	100	100	--	--	--	--
Platteville	70	--	--	30	--	--	--	--	--	--
Rifle	66	--	--	33	--	80	20	--	--	--
Salida	--	90	--	10	--	100	--	--	--	--
Sterling	--	60	10	30	--	90	--	5%	5%	--
Strasburg	100	--	--	--	--	100	--	--	--	--
Trinidad	50	--	--	50	--	100	--	--	--	--
Walden	--	--	--	100	--	100	--	--	--	--
Weld Co. Tri-Area	60	--	--	40	--	100	--	--	--	--
West Jeffco	70	--	--	30	--	50	50	--	--	--
Wray	--	--	--	--	--	100	--	--	--	--
Yuma	80	--	10	10	--	100	--	--	--	--