

Water &
Wastewater
... Advisory
Board
Presentation

4-09-92



Operations Assistance A Working System

Presented by the Water and Wastewater Works Advisory Board

Alaska's geographically and culturally diverse populous has unique water and wastewater needs. Approximately one-half of the state's 550,000 people are located in urban areas served by large conventional community water and sewer systems. The remaining rural Alaskan families also desire community water and wastewater services. Often unique and innovative systems are required to overcome restraints imposed by climatic and geological conditions. Competent operators are required to provide safe water supplies and adequate wastewater disposal.

Tables I and II depict sanitation project funding during the past 11 years. There is a combined expenditure of more than \$842,000,000 in federal and state monies for new and improved sanitation facilities. Figure I and table I depict annual state funding appropriated for water, wastewater and solid waste projects over the past

ten years. Sanitation systems require significant operation and maintenance expenditures. Frequent system failures, often preventable by adequate operator training and utility management, result in service interruptions and community

FIGURE I, EXPENDITURES FOR STATE SANITATION PROJECTS VS. OPERATIONS ASSISTANCE PROGRAM FUNDING

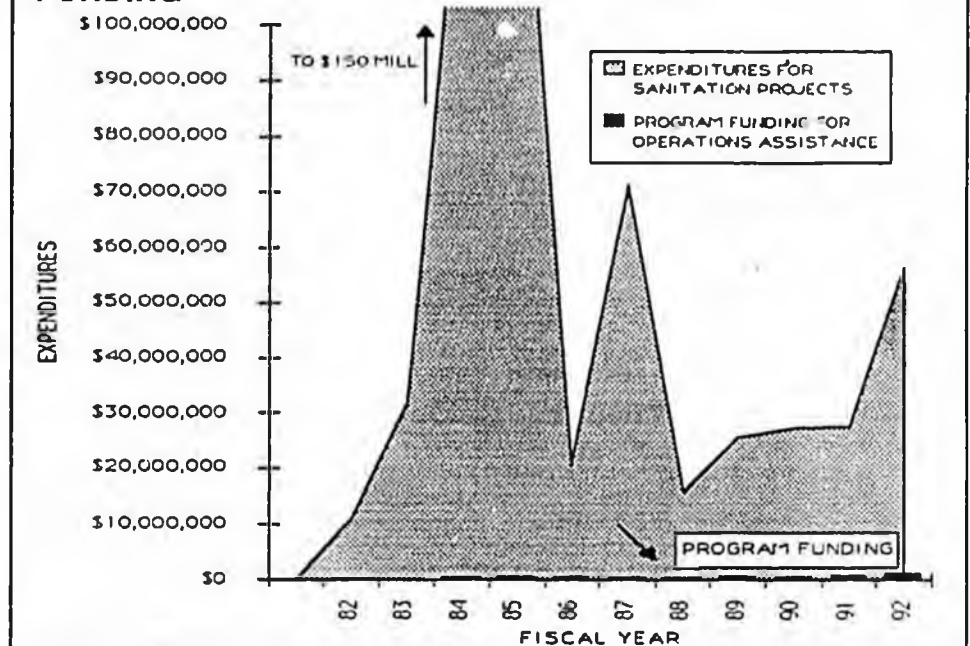


TABLE I, STATE FUNDING HISTORY FOR SANITATION PROJECTS X 1,000

FISCAL YEAR	MUNICIPAL GRANT	VILLAGE WATER	SAFE WATER	DIRECT DOA	TOTAL
82	\$9,359	\$1,609			\$10,968
83	\$4,590	\$515		\$26,442	\$31,547
84	\$28,187	\$691		\$108,587	\$137,465
85	\$15,700	\$7,972		\$127,072	\$150,744
86	\$1,823	\$867		\$17,780	\$20,470
87	\$14,881	\$10,381		\$45,964	\$71,226
88	\$5,980	\$5,623		\$4,312	\$15,915
89	\$11,795	\$6,239		\$7,538	\$25,572
90	\$7,050	\$11,164		\$8,895	\$27,109
91	\$7,490	\$6,852		\$13,042	\$27,384
92	\$11,600	\$27,157		\$17,559	\$56,316
TOTAL					\$574,716

health concerns.

An effective water and wastewater facilities program includes proper operation and maintenance of the constructed systems to delay capital replacement costs while providing community health services. The annual investment in the Alaska Department of Environmental Conservation's (ADEC) Operations Assistance Unit is a cost-effective budget expense to enhance public health and to protect new capital expenditures.

The Division of Facility Construction and Operations of ADEC is responsible for

**TABLE II
FEDERAL SANITATION FUNDING
FOR ALASKA X 1,000**

YEAR	EPA GRANTS/LOANS	INDIAN HEALTH SERVICE	HUD	TOTAL
82	\$13,900	\$8,892		\$22,792
83	\$13,900	\$8,887	\$3,499	\$26,286
84	\$13,900	\$4,664	\$2,347	\$20,911
85	\$13,900	\$5,206	\$2,646	\$21,752
86	\$13,900	\$4,386	\$9,251	\$27,537
87	\$13,400	\$4,928	\$3,085	\$21,413
88	\$12,900	\$7,165	\$2,250	\$22,315
89	\$10,600	\$8,290	\$3,474	\$22,364
90	\$10,900	\$5,300	\$4,385	\$20,585
91	\$12,300	\$15,000	\$3,000	\$30,300
92	\$11,600	\$15,000	\$5,000	\$31,600
			TOTAL	\$267,855

protecting the state's investment in water and wastewater facilities, the public's health and the environment by ensuring that these facilities are properly operated and maintained. The Operations Assistance Unit consists of three individual components: Operator Certification and Training, Remote Maintenance Worker (RMW) and a Federal, over-the-shoulder training grant. The Unit currently has a staff of four with a annual budget of \$324,530 which includes general funds, operator receipts, federal 104(g)(1) funds and the Governor's Board Water/Wastewater Works Advisory Board funds. This figure does not include the \$799,200 RMW grant funds. Table III represents funding for the Operations Assistance Unit over the past four years. Figure I also compares sanitation (capital) project funding with Operations Assistance Program funding.

The Advisory Board is an integral part of the State's Operator Certification and Training Program. The Board is a "working board" which specifically serves to advise the program staff regarding operator certification and training. The Board hears operator's appeals, determines regulatory policies and guidelines, assists with the development of regulations and reviews other related issues including reciprocity with other states.

The volunteer board is technically-oriented and consists of engineers, operators, facility managers and other individuals that are actively involved and interested in the water and wastewater industry. This important group has proven

to be an especially beneficial resource to the Department in providing direction to the operator certification and training program. Recently, the Department has taken steps to further utilize the Board's technical capabilities, requesting assistance in regulatory developments impacting the water and wastewater industry and related issues.

The mandatory state Operator Certification Training Program evolved from an industry-initiated, voluntary program in 1976. Subsequently, 18 AAC 74 required that water treatment and distribution systems, as well

as, wastewater treatment and collection facilities be classified and operated by certified personnel. Continuing education requirements as well as separate certifications are required for all operators.

Certification of operators involves reviewing and evaluating applications for experience and education; development and grading of 20 different exams; coordination of special Operator in Training (OIT) courses and exams for village operators; record keeping, notification and resolution of operator concerns. These certification efforts represent a significant portion of the staff's work load and significant endeavors to effectively manage the 500 plus currently certified operators holding a combined total of 1036 certificates. A substantial effort and staff time is allocated towards training and certification of operators of smaller systems which do not require certified operators.

During 1991 over 500 exams were given from Ketchikan to Barrow which required arranging and coordinating over 40 proctor sites. Operator attendance at proctor sites ranged from one to over 30 examinees. Advisory Board members often serve as proctors. Table IV depicts the number of certified operators by level and classification as of January 1, 1992.

By statute, certification regulations only apply to systems with 100 or more service connections or which are used by 500 or more people. Approximately 90 systems serving 446,305 people (80% of the state's population), currently fit this category. However, the majority of systems, those

**TABLE III
OPERATIONS ASSISTANCE PROGRAM FUNDING X 1,000**

FISCAL YEAR	GENERAL FUND	OPERATOR RECEIPTES	REMOTE MAINT. WORKER	104(G)(1) OVER/SHOULDER	ADVISORY BOARD	TOTAL
89	\$86	\$27	\$585	\$35	\$5	\$738
90	\$93	\$18	\$538	\$35	\$5	\$689
91	\$291	\$20	\$577	\$35	\$5	\$928
92	\$280	\$18	\$799	\$35	\$5	\$1,137
TOTAL						\$3,492

servicing less than 500 people, are also encouraged to have certified operators. An integral part of the certification program is the continuous classification of all systems in the state by the Department to determine the skill level required to operate each system. Currently, the Department is re-evaluating the system classifications of the 90 systems that serve greater than 500.

Recently promulgated federal drinking water regulations require "qualified" operators in many of the smaller rural Alaskan systems. This expanded emphasis will increase the number of systems requiring certified or "qualified" operators and classification. Approximately 160 additional systems not currently subject to state certification are affected. Additional classification, training and certification efforts will be necessary to fulfill the needs of all Alaskan communities as well as comply with regulatory requirements.

System size is not always a good indicator of system complexity or susceptibility to catastrophic failure. To effectively operate and maintain a system, an operator needs specialized training in operations and maintenance as well as sampling, monitoring, and reporting.

ADEC's training program has traditionally consisted of:

- ☛ Short Courses - classroom training by either staff and/or private contractors.

- ☛ Operator Lending Library - available by mail for in-house training.

- ☛ Technical Assistance - to operators and communities.

- ☛ Communication and Coordination of Training Opportunities - development of ADEC/private training calendar and quarterly newsletter distributed to a mailing list of over 1,500. In addition, ADEC is now actively involved in joint training efforts with the Public Health Service, the Department of Community and Regional Affairs, the Alaska Water Management Association and others.

Table V is a summary of ADEC short courses offered over the past eight years. Figure II depicts the ADEC training budget for the same period. Operator receipts are also used to update the library, publish the newsletter and other operator services. Prior to 1986 the program received approximately \$120,000 yearly specifically for training. Cost-cutting measures impacted the program and the training funds were lost. Subsequently, ADEC instituted a fee system which generates approximately \$18,000 - \$20,000 dollars per year.

**TABLE IV
ACTIVE CERTIFICATES***

	OIT	I	II	III	IV	TOTAL
WATER DISTRIBUTION	46	82	51	15	13	207
WATER TREATMENT	68	56	82	43	29	308
WASTEWATER COLLECTION	25	18	55	10	12	170
WASTEWATER TREATMENT	36	00	105	67	43	351
TOTAL	175	336	293	135	97	1036

* Numbers reflect total number of active certificates, not total number of operators. Operators may hold more than one certificate.

**TABLE V
SUMMARY OF ADEC SHORT COURSES**

	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90
NUMBER OF COURSES OFFERED	5	8	6	7	2	6	1	2
NUMBER OF LOCATIONS	26	23	18	12	3	11	4	2
TOTAL STUDENTS TRAINED	291	429	239	148	67	185	73	31
TOTAL TRAINING DAYS	44	79.5	51	35	9	24	16	12

SUMMARY

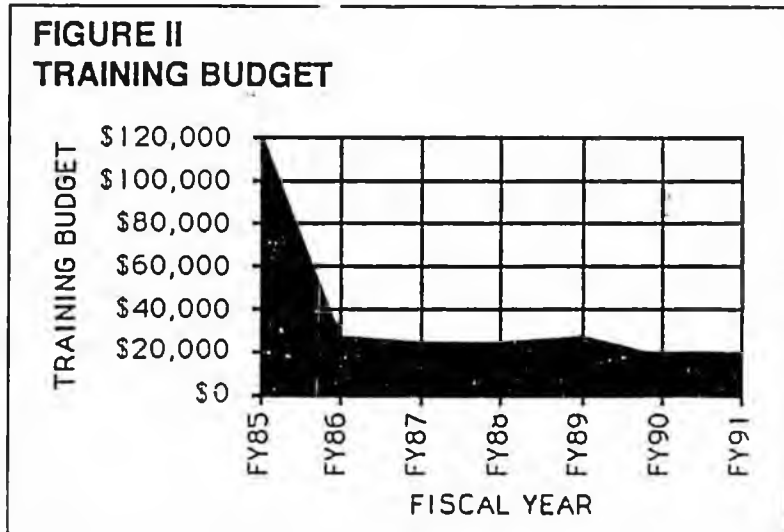
As the information depicts, the state has expended large capital appropriations in the construction of water and wastewater facilities. Furthermore, it is clear that the State needs to protect its investment in utility systems. Many existing systems risk premature failure unless a greater emphasis is placed on routine operation and maintenance and utility management.

To protect public health and capital investments in water and wastewater facilities, long-range operator certification and training programs must be maintained. This is difficult as state and federal revenues decrease. In order for certification and training programs to continue to be effective, there must be adequate routine annual operator certification and training budgets.

If you have further questions

regarding the Operations Assistance Unit of ADEC or the Water/Wastewater Works Advisory Board, please feel free to contact the Department or one of the Board members. ❖

**FIGURE II
TRAINING BUDGET**



ADVISORY BOARD MEMBERS

✓ James Berg
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Alaska State Legislature

HOUSE RESOURCES COMMITTEE

P.O. Box V
State Capitol
Juneau, Alaska 99811
(907) 465-3715

March 5, 1992

Tuckerman Babcock, Chairman
Task Force on Boards and Commissions
P.O. Box 110001
Juneau, Alaska 99811-0001

Dear Mr. Babcock:

This letter is to express our concern over the proposed consolidation of the Water Resources Board and the Water and Wastewater Works Advisory Board. The effort to streamline boards and commissions statewide is commendable. However, we do not believe this particular proposed consolidation will be cost-effective and in the best interests of the state.

The Wastewater Works Advisory Board and the Water Resources Board have very different mandates under state statute. We do not believe that their functions could be merged effectively or easily.

The Wastewater Works Advisory Board is a technical board whose responsibilities deal primarily with the maintenance and operation of public water and wastewater systems. The Board advises and assists the Department of Environmental Conservation in its certification of operators and its classification of water and wastewater systems. The Board also reviews qualifications of applicants for examination and certification and helps develop a training program. The board helps to ensure the integrity of our public water and wastewater systems.

The Water Resources Board, on the other hand, is the only citizens' board that actively works on water policy issues. Citizens are appointed because of their general knowledge of the use of water and its conservation and protection. They inform the Governor on all matters related to the use and appropriation of water in the state such as water quality, quantity, and the multi-purpose nature of water in general. As members of the House Resources Committee, we are familiar with their work through their annual presentations to the Committee. They perform a valuable service in guiding our nascent state policy on this important and common property resource.

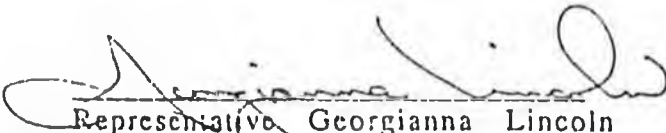
We simply do not believe that merger of these boards will enhance their function in serving the State. Other than sharing the word "water" in their titles, they have little similarity in function.

We hope the effort to merge these boards will be reconsidered in light of these concerns.


Sincerely,



Representative Cliff Davidson
Chairman, House Resources Committee



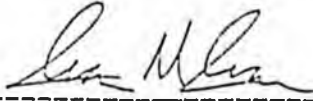
Representative Georgianna Lincoln
Vice-Chair, House Resources Committee




Representative Loren Lemay



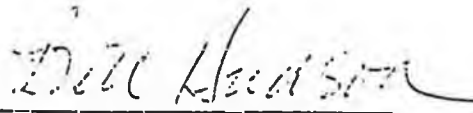
Representative Tom Moyer



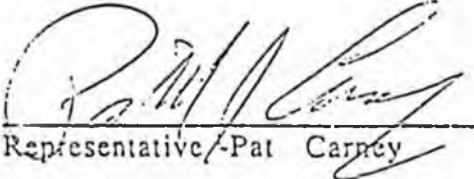
Representative Ivan Ivan



Representative David Finkelstein



Representative Bill Hudson



Representative Pat Carney

cc: Water Resources Board
Water and Wastewater Works Advisory Board
Commissioner Heinze, Department of Natural Resources
Commissioner Sandor, Department of Environmental Conservation
Commissioner Rosier, Department of Fish and Game
Members, Governor's Task Force on Boards and Commissions

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

March 26, 1992

*The Honorable Cliff Davidson
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182*

Dear Representative Davidson:

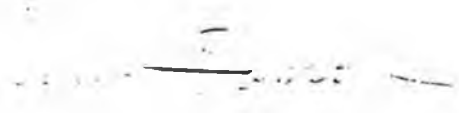
Thank you for your letter expressing ideas and concerns about the preliminary recommendations presented to the Governor's Task Force on Boards and Commissions.

I appreciate your concerns over the possible combination of the Water Resources Board and the Water and Wastewater Works Advisory Board. Your comments have been shared with members of the Task Force.

We have heard from members and staff that deal with each of these boards and the Task Force is considering possible alternative recommendations. Written testimony has been encouraged and is helping to make the Task Force's review process healthy and productive.

Thank you again for your insight. I deeply appreciate your participation in this review process.

Sincerely,


*Tuckerman Babcock
Chair, Governor's Task Force on
Boards and Commissions*

(7) "person" has the meaning given in AS 01.10.060, and includes the state and political subdivisions of the state, including the Alaska Railroad Corporation and the University of Alaska;

(8) "repair" means only a repair that might directly affect the safety of the dam or reservoir, as determined by the department;

(9) "reservoir" means a basin, appurtenant to a dam, that is capable of impounding water. (§ 2 ch 30 SLA 1987)

Chapter 25. Alaska State Commission of Oceanography.

[Repealed, § 3 ch 115 SLA 1969.]

Chapter 26. Commission for Ocean Advancement Through Science and Technology.

[Repealed, § 4 ch 115 SLA 1969, as amended by § 81 ch 69 SLA 1970.]

Chapter 30. Water and Wastewater Works Operators.

Section	Section
10. Classification	70. Certificates without examination
20. Water and Wastewater Works Advisory Board	80. Regulations
30. Training	90. Guidelines
40. Certification requirement	100. Reciprocity
50. Examinations	110. Temporary certification
60. Certification	120. Prohibited acts
	130. Definitions

Collateral references. — 78 Am. Jur. 94 C.J.S., Waters, §§ 250-253, 261.
 2d, Waterworks and Water Companies,
 § 2.

Sec. 46.30.010. Classification. The department shall classify all potable water systems and facilities actually used or intended for use by the public, and all wastewater systems and facilities that discharge into publicly owned wastewater systems, or to receiving bodies of water, or on land used by others. The classification shall give due regard to

- (1) the size and type of the systems and facilities;
 - (2) the character of water or wastewater to be treated;
 - (3) other physical conditions affecting the systems and facilities;
- and

§ 46.30.020

WATER, AIR, ENERGY, ETC.

§ 46.30.060

(4) the skill, knowledge and experience required of an operator.
(§ 1 ch 244 SLA 1976)

Sec. 46.30.020. Water and Wastewater Works Advisory Board. There is created the Water and Wastewater Works Advisory Board composed of the commissioner of environmental conservation and eight additional members appointed by the governor. The Water and Wastewater Works Advisory Board shall advise and assist the department in the administration of the training and certification program. Appointments to the board shall be for a period of five years. Vacancies shall be filled in the same manner as the original appointments. (§ 1 ch 244 SLA 1976; am § 129 ch 6 SLA 1984)

Sec. 46.30.030. Training. The department shall, with the assistance and advice of the Water and Wastewater Works Advisory Board, provide a water and wastewater works operator training program. The purpose of this program is to provide mechanisms for water and wastewater works operators to become certified under the provisions of this chapter and for certified operators to maintain and improve their competency in operating water and wastewater systems or facilities. The department shall coordinate and cooperate with educational institutions and other organizations or individuals in the administration of this section. (§ 1 ch 244 SLA 1976)

Sec. 46.30.040. Certification requirement. All potable water supply and wastewater systems and facilities, whether publicly or privately owned, which serve 100 or more service connections or are used or intended for use by 500 or more persons, must at all times be under the supervision of an operator whose competency is certified to by the department in a classification corresponding to the classification of the system or facility to be supervised. (§ 1 ch 244 SLA 1976; am § 130 ch 6 SLA 1984)

Sec. 46.30.050. Examinations. Examinations shall be held at least annually at times and places set by the department. Separate examinations shall be given for each operator classification. Applicants who fail to pass an examination may repeat the examination at subsequent regularly scheduled examinations. (§ 1 ch 244 SLA 1976)

Sec. 46.30.060. Certification. The department shall issue certification entitling those persons who successfully complete the required examinations to supervise the operation of potable water supply and wastewater systems and facilities after considering the recommendations of the advisory board. The certificate must designate the class of system for which the operator is qualified in accordance with the classification system of the department. The certificate shall be valid

for three years unless revoked for cause or replaced by one of a higher grade. (§ 1 ch 244 SLA 1976; am § 1 ch 14 SLA 1986)

Sec. 46.30.070. Certificates without examination. Certificates may be issued without an examination to persons employed as water or wastewater works operators on September 24, 1976, who request a waiver. The examination waiver shall be printed on the certificate. An operator certified under this section may request to have a certificate transferred to another facility of the same general class and type or to another facility of lower class. The request shall be granted if, in the opinion of the department, the transfer would not adversely affect the health and safety of the public or the environment. The department shall consider the recommendations of the Water and Wastewater Works Advisory Board before granting or denying a request under this section. (§ 1 ch 244 SLA 1976)

Cross references. — For validation of §§ 2 and 3, ch. 14, SLA 1986, in the Temporary and Special Acts, see certain erroneously issued certificates, see

Sec. 46.30.080. Regulations. The department, with the advice of the Wastewater Works Advisory Board, shall adopt regulations for administration of this chapter. The regulations shall include

(1) the basis for classification of potable water supply and wastewater systems and facilities, including the type and size of lesser systems and facilities, if any, to which the provisions of this chapter do not apply, as required by AS 46.30.010;

(2) criteria for the qualification of applicants for operator certification corresponding to each of the classifications referred to in AS 46.30.010;

(3) procedures for examination of candidates and renewal of certificates;

(4) procedures for the revocation of certificates;

(5) determination as to which additional personnel shall be certified when certification is required for more than the operator in direct responsible charge. (§ 1 ch 244 SLA 1976)

Sec. 46.30.090. Guidelines. The department, to the extent it determines feasible, shall be guided by the standards recommended by the Association of Boards of Certification for Operating Personnel in Water and Wastewater Utilities. (§ 1 ch 244 SLA 1976)

Sec. 46.30.100. Reciprocity. Certificates may be issued without examination in the comparable classification to an applicant who holds a certificate in a state, territory, or possession of the United States, if its certification requirements and examinations are compa-

rable to those of this state and if reciprocal privileges are granted to operators certified in this state. (§ 1 ch 244 SLA 1976)

Sec. 46.30.110. Temporary certification. In the event of unusual or emergency circumstances or following the hiring of new employees, temporary certificates may be issued to an operator until a time when the operator can be examined and certified. Within two weeks after employment of such an operator, the department must be notified in writing and information shall be provided, including the operator's name, background, experience, training, education, and references. Thereafter, the operator may be issued a temporary certificate which shall remain valid only for that time required for the next routine examination and evaluation. (§ 1 ch 244 SLA 1976)

Sec. 46.30.120. Prohibited acts. It is unlawful

(1) for any potable water supply or wastewater system or facility subject to AS 46.30.040 to be operated unless the operator is certified under the provisions of this chapter;

(2) for any person to perform the duties of an operator without being certified under the provisions of this chapter. (§ 1 ch 244 SLA 1976; am § 131 ch 6 SLA 1984)

Sec. 46.30.130. Definitions. In this chapter

(1) "certificate" means certificate of competency issued by the department stating that the operator has met the requirements for the specified operator classification of the certification program;

(2) "department" means the Department of Environmental Conservation;

(3) "potable water supply system" means the system of pipes, structures, and facilities through which water is obtained, treated and sold, distributed or otherwise offered to the public for household use or any use by humans;

(4) "wastewater system" means the system of pipes, structures, equipment and processes required to collect, carry away and treat domestic and industrial wastewater and dispose of the effluent. (§ 1 ch 244 SLA 1976)

18 AAC 74.130 ENVIRONMENTAL CONSERVATION 18 AAC 74.140

(f) To classify wastewater collection systems under (a) of this section, the department will use the following point system:

Item Size	Points
Maximum population served, per day	1 point per 10,000 or part
Miles of sewer line	
0 — 2	2
2 — 10	6
10 — 100	15
100 and over	25
Utilidor (walk through)	16
Standby generators at lift stations	6
Lift station types (Choose one most used in system)	
Wet well with pump above well	10
Wet well with submersible pumps	14
Wet well/dry well	16
Pneumatic ejectors	16
Number of lift stations	
0 — 5	3
5 — 15	5
15 — 35	8
35 and over	10

*Limit 10 points each

(Eff. 8/21/78, Register 67; am 8/24/85, Register 95)

Authority: AS 46.30.010
AS 46.30.060
AS 46.30.090

18 AAC 74.130. TRAINING. Repealed 8/24/85.

18 AAC 74.140. WATER AND WASTEWATER WORKS ADVISORY BOARD. The board will

(1) advise and assist the department as the department certifies operators and classifies water and wastewater systems;

(2) review qualifications of applicants for examination and certification in cooperation with the department or at the applicant's request;

- (3) advise the department as the department prepares and gives examinations;
- (4) make recommendations to the department as the department issues, cancels, invalidates, or revokes certificates;
- (5) assist the department in determining the number of certified operators needed for proper system operation;
- (6) make recommendations to the legislature and the governor for legislation concerning operation and maintenance of public water supply and wastewater systems;
- (7) assist and advise the department as the department develops and administers a training program; and
- (8) give other assistance as requested by the department. (Eff. 8/21/78, Register 67; am 8/24/85, Register 95)

Authority: AS 46.30.020
AS 46.30.030
AS 46.30.060

18 AAC 74.150. COMPOSITION OF THE WATER AND WASTEWATER WORKS ADVISORY BOARD. Deleted 8/24/85.

Editor's notes. — Under AS 44.62.060(b) and 44.62.125(b), 18 AAC 74.150 was deleted by the regulations at- torney 8/24/85 because it lacked statutory authority.

18 AAC 74.160. APPEALS. A person aggrieved by a department action taken under this chapter may ask the board to hear the grievance and make a recommendation to the department. Use of this procedure does not affect any right the aggrieved person may have under the Administrative Procedure Act (AS 44.62). (Eff. 8/21/78, Register 67; am 8/24/85, Register 95)

Authority: AS 46.30.080

18 AAC 74.170. FEES. (a) The department will accept for processing an initial application for examination only if the application is accompanied by a nonrefundable application fee of \$10.

(b) The department will accept for processing an application for reexamination only if the application is accompanied by a nonrefundable application fee of \$10.

(c) The fee for each examination to be taken is \$15. Except as provided in (f) of this section, the examination fee is nonrefundable.

(d) The fee to renew a certificate is \$30. The fee is nonrefundable.

(e) The fees for issuing a temporary certificate are a \$10 application fee and a \$15 certificate fee. The fees are nonrefundable.

(f) If the department is notified in writing at least two weeks before the examination date that an applicant cannot take a scheduled exam-

18 AAC 74.900 ENVIRONMENTAL CONSERVATION 18 AAC 74.900

ination and wishes to be rescheduled, the examination fee paid by the applicant will be applied to the next examination cycle without reapplication.

(g) For all department-sponsored operator training classroom courses, the following fee schedule applies; the fees are nonrefundable except as provided in (h) of this section:

- 1-day course — \$ 75
- 2-day course — 100
- 3-day course — 150
- 4-day course — 175
- 5-day course — 200

(h) The department will, in its discretion, cancel an operator training classroom course with fewer than 10 students registered. If a course is canceled by the department, the fee paid under (g) of this section will be refunded.

(i) All department-sponsored correspondence courses providing continuing education unit (CEU) credits require a nonrefundable fee of \$10 per CEU.

(j) The fees for a reciprocal certificate, as described in AS 46.30.100, are a \$10 application fee and a \$15 certificate fee. The fees are nonrefundable. (Eff. 1/23/86, Register 97)

Authority: AS 46.30.030	AS 46.30.080
AS 46.30.050	AS 46.30.100
AS 46.30.060	AS 46.30.110

18 AAC 74.900. DEFINITIONS. Unless the context indicates otherwise, in this chapter

(1) "applicant" means a person seeking a certificate under this chapter;

(2) "approved" means approved by the department;

(3) "board" means the Water and Wastewater Works Advisory Board created by AS 46.30.020;

(4) "certificate" means a certificate of competency, issued to an operator by the department, stating that the operator has met the requirements for the specified level of the certification program.

(5) "department" means the Department of Environmental Conservation;

(6) "on-site" means to be present at a system for an amount of time and at intervals acceptable to the department, based upon the complexity of the treatment process, or means to be on-call within two hours travel time of the system when not physically present at the system and when there is no back-up operator present who is certified at no less than one level below the classification of the system and who is designated to assume the operator's duties.

(7) "operating experience" means the time spent at a system in satisfactory performance of operation duties;

(8) "operator" means a person engaged in the on-site operation of a water supply or wastewater system; "operator" does not ordinarily mean an official, such as the city engineer or public works superintendent, exercising only general administrative supervision;

(9) "operator in training" means a person receiving on-the-job training under the supervision of a certified operator or through an organized training program, who desires to obtain a certificate and who is, or can show probable employment as, an operator of a water or wastewater system;

(10) "responsible charge" means the on-site active supervision of system operations;

(11) "service connection" means a pipe, with all its parts, that connects a water or sewer main with building plumbing;

(12) "system" means a water supply system or a wastewater system;

(13) "wastewater collection system" means pipelines or conduits, pumping stations and force mains, and all other related constructions, devices, and appliances used to conduct wastewater to a wastewater treatment system;

(14) "wastewater system" means the system of pipes, structures, equipment, and processes required to collect, carry away, and treat domestic or industrial wastewater and dispose of the effluent;

(15) "wastewater treatment system" means devices, structures, and equipment used to treat, neutralize, stabilize, or dispose of wastewater and residuals;

(16) "water distribution system" means post-treatment storage facilities, conduits, mains, lines, pumping stations, or other devices used to carry water to the consumer, and includes a groundwater supply treated only with chlorine;

(17) "water supply system" means any source of water, intake works, collection system, treatment works, storage facility, or distribution system from which water is available for human consumption; "water supply system" includes systems providing water to more than one residence, or to a factory, office building, restaurant, school, or similar facility, but does not include a system serving only a single-family residence; and

(18) "water treatment system" means devices, structures, and equipment used to condition, purify, or refine water for human consumption, and does not include a groundwater supply treated only with chlorine. (Eff. 8/21/78, Register 67; am 2/21/81, Register 77; am 8/24/85, Register 95)

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