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ENERGY ACTIVITIES

Energy production is a mainstay of Alaska's economy, and involves most of the large development projects in the state. The Department of Environmental Conservation has responsibilities for regulation of air, land and water quality in connection with these projects. At the same time, in-state consumption of energy has become a widespread concern, and this agency has a strong responsibility to promote efficient and conservative use of energy in the state.

Major energy projects are complex and long-term activities; they substantially affect the environment. The Department works closely with developers and other resource agencies, to ensure that environmental concerns are addressed early, and regulatory requirements are met in a timely manner.

As energy resources become more difficult to develop and energy prices increase, it becomes essential to the state, along with the rest of the nation, to develop two available sources of energy--improved efficiency of energy use and renewable energy resources. The Department is particularly concerned with promoting energy efficiency and renewable resources, since these energy sources generally have less associated environmental impact than the development of oil, gas, coal, and large hydroelectric projects.

Through its regulatory programs, the Department can significantly affect energy use at the local level. In the solid waste program, the Department is attempting to find appropriate local or regional solutions to solid waste problems emphasizing material and energy recovery. The Department has established a full-time position devoted to developing resource recovery programs. In building sanitary facilities in remote villages, the Department is giving priority to villages which can use a renewable energy resource. And, the Department is supporting exemptions from federal secondary sewage treatment requirements in towns where such treatment is not necessary and creates excessive cost burdens through energy requirements. The Department provides environmental evaluation assistance to the Division of Energy and Power Development, and has participated in panels and workshops at the Alaskan Alternative Energy Conferences held in 1979 and 1980.

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WETLANDS PROTECTION

Regulatory programs to protect wetlands have been formed because of widespread public and legislative awareness that wetlands have too often been altered or destroyed. Wetland habitats perform important functions with substantial social and economic values. For example, they can be:

- highly productive ecosystems, including those that produce commercially important fish and shellfish;
- important habitat for migratory waterfowl, shorebirds and furbearers;
- areas for purification of ground and surface water through natural filtration;
- water retention areas to buffer storm and floodwaters, and shield other areas from erosion;
- maintain natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics; and
- recreational, educational and scientific resources.

Under authority in the Clean Water Act, the Department of Environmental Conservation reviews permits issued by the Corps of Engineers and other federal agencies to certify that activities proposed comply with State Water Quality Standards and other state environmental regulations. The Corps issues permits for placing structures or discharging dredged or fill material in navigable waters. Under the Corps expanded jurisidction, wetlands are included within the scope of "waters of the State." The regulations of the Corps recognize wetlands as "a productive and vital public resource, the unnecessary alternation or destruction of which should be discouraged as contrary to the public interest," and provide that no permit may be granted to work in wetlands unless it is determined that the benefits outweigh damage to the wetland resource.

The Alaska Coastal Management Program requires all state agencies, municipalities and private parties that conduct activities having a direct and significant impact on coastal waters to be in conformance with that program. Federal actions must be consistent to the "maximum extent practicable." Wetlands are addressed by a specific standard, stating:

> "Wetlands and tideflats must be managed so as to assure adequate water flow, nutrients, and oxygen levels and avoid adverse effects on natural drainage patterns, the destruction of important habitat, and the discharge of toxic substances." (6 AAC 80.130)

The program also incorporates sections of the sections of the Corps of Engineers regulations, including those regarding wetlands. All permits and certifications in the coastal zone issued by the Department are required to be consistent with these standards.

Direct federal activities affecting the coastal zone also are reviewed by State agencies for consistency with ACMP. In addition to the above standards, federal agencies must also observe the Executive Order regarding wetland protection. This order requires all federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out agency responsibilities. Federal agencies may not undertake or assist new construction in wetlands unless there exists no practicable alternative and all practicable measures are taken to minimize harm to wetlands.

The Department is currently working with other agencies, through the joint Federal-State Wetlands Task Force, to establish criteria for classifying wetlands and determining their sensitivity to development by conducting necessary inventory work. Geographic areas recently emphasized include the North Slope, Kenai Peninsula and Sitka. These criteria will provide a uniform basis for applying the laws and regulations specified above. The Department is also considering the use of a general permit, or general regulations, to replace individual permits for certain types of activities in wetlands, or in those types of wetlands which are less critical for fisheries and wildlife. Providing more information to applicants and reducing the time required in issuing permits and authorization for activities in wetlands are major objectives toward which the Department and the Corps of Engineers are working.

Authorities: PL 92-500 (The Clean Water Act) Sections 208, 401 and 404
The River and Harbor Act of 1899, 33 CFR 320-329
(regulations of the U. S. Army Corps of Engineers)
18 AAC 70 (Alaska Water Quality Standards)
President Carter's Executive Order (May 1977) on
wetlands and floodplains
Federal Coastal Zone Management Act
Alaska Coastal Management Program
AS 16.10.010 (Anadromous Stream Protection)
AS 46.15 (Water Use Act)
AS 38.05.070 (Tidelands Leasing)
AS 38.05.323

Department Contact: Doug Redburn, 465-2687

MAJOR PROJECT REVIEW

An important function of the Department of Environmental Conservation is review of major industrial projects and working closely with industry to assure that environmental safeguards are incorporated early into project design and planning, and that regulatory costs and delays are avoided.

The ALPETCO petrochemical and refinery complex in Port Valdez, oil and gas leasing in Upper Cook Inlet and the ARCO Waterflood reinjection project planned for Prudhoe Bay are examples of major projects that the Department has addressed within the last year. All are large operations potentially impacting air, land, and water quality.

The major environmental issues surrounding the ALPETCO project include maintaining air quality, ensuring that plant and wastewater discharges meet State water quality standards, and that pipelines and other facilities are constructed in an environmentally sound manner.

DEC has attempted to resolve these issues in several ways. The Department has assisted EPA in preparing the required environmental impact statement. Through this process, the Department has been able to provide the company with concerns identified by State agencies. Air quality controls have been discussed and agreed upon by EPA, the State and ALPETCO. Water quality concerns have been accommodated through a strong working relationship between the applicant, EPA and DEC concerning monitoring, control of petroleum hydrocarbons, cyanide, and potential effects on water quality from discharges of toxic heavy metals. Plant design and monitoring of biological and chemical parameters were agreed upon far in advance of the deadline for permit applications.

The Prudhoe Bay Waterflood Project is a proposal by ARCO and SOHIO to inject Beaufort Sea water into the Prudhoe Bay oil field to enhance secondary recovery of oil which would otherwise be unrecovered. The water quality issues that are of concern include backwashing of filtered sediments into the marine environment from the water treatment facility, chlorine discharges, the marine effects of causeway extensions, and requirements for gravel.

The Department is attempting to clarify its concerns early to avoid misunderstandings later. Several meetings sponsored by the Corps of Engineers provided State and federal resource agencies with opportunities to discuss concerns and regulatory requirements. This process is designed to speed completion of the environmental impact statement process scheduled for November 1980 by defining critical issues. The Department is working closely with ARCO and SOHIO on the design of air and water quality control programs and helping to ensure that project planning complies with State standards and regulations.

The Management and Technical Assistance Section of the Department is responsible for conducting major project reviews. The section staff serves as, or supports, the single contact person that the Department assigns to work with an industry to coordinate all regulatory requirements.

Authority: State of Alaska Governor's Administrative Order #55
U. S. Office of Management and Budget Circular A-95

Department Contact: Dick Marcum, 465-2685

WATER QUALITY MANAGEMENT PLANNING

(208 Program)

Water quality management planning in Alaska is carried out as part of a national program mandated by Section 208 of the Clean Water Act. The objectives of water quality management planning are to achieve and maintain surface water quality consistent with the 1983 national goals, defined in federal policy as fishable and swimmable. In order to accomplish these objectives, a planning process for continuing water quality management must be established and implementable plans must be developed. This program is the major means by which control of "non-point" pollution from runoff or erosion.

Plans and projects under the 208 program must include significant public involvement through citizen advisory committees, newsletters, public meetings and hearings and other means as appropriate.

Alaska 208 Program

The Alaska Department of Environmental Conservation is responsible for 208 planning for the entire state, except for the Municipality of Anchorage which is "designated" to do its own 208 planning. The technical work of the program is conducted by private consultants, other government agencies (local, state or federal), or ADEC staff, as appropriate, and is funded largely by federal grants from the USEPA. The state's initial 208 efforts, recently completed, consist of five technical investigations conducted over a two and one-half year period at a cost of $700,000, on the following subjects:

- village sanitation - NPDES Assumption
- waste oil disposal
- timber harvesting
- transportation corridors
- placer minning.

The results of these studies are summarized in the Alaska Water Quality Management Plan for Non-Point Pollution Sources, November 1979.

Projects which are currently underway but are not yet completed include:

- development of onsite sludge disposal guidelines
- statewide water quality problem identification and assessment
- placer mining demonstration project
- development of a state agricultural water quality management plan
- development of sludge disposal guidelines
- waste oil demonstration project
- protection of community water supply watersheds
- data management needs in ADEC.

These projects are funded by $422,655 grant covering a three year period, 1980 to 1983.

The next phase of the program, submitted to EPA for funding, will consist of investigations into the following subjects:

- placer mining aerial surveillance and enforcement
- village facilities assistance
- wetlands best management practices.

The cost of these studies and the plans to implement them will be approximately $436,000 over a three year period, 1981 to 1984.

An additional activity of the 208 program is Anchorage 208 program oversight. This entails working with the Municipality of Anchorage in this development of their water quality management plan, attendance at their policy advisory committee and review and comment on program output.

Accomplishments to Date

The completed portions of the Alaska 208 program have already resulted in several accomplishments. Among these are:

- statewide water quality management plan for non-point pollution sources;
- best management practices for timber harvest operations;
- ADEC work program for dealing with pollution from placer mines;
- revised water quality standards; and,
- an inventory and assessment of Alaskan water quality problems, both point source and non-point source.

One result of these accomplishments is a noticeable increase in public understanding and support for a variety of ADEC programs.

Future 208 Program

ADEC has developed a prioritized list of study needs related to existing and anticipated water quality problems. Several projects have been designed and are presently awaiting decisions by EPA on their eligibility for funding. Over the next several years, ADEC must consider and develop a strategy for transferring funding responsibility from federal to state sources, as new federal funding will terminate in 1983.

Authority: AS 46.03.060
PL 95-217 (Federal Clean Water Act 1977)

Department Contact: George Franklet, 465-2626

PERMIT PROCESS AND ASSISTANCE

The Department of Environmental Conservation has an on-going effort to revise and simplify the permit process.

In an effort to define procedures for the Department, regulations addressing the availability of information to the public (18 AAC 10), administrative procedures for permit issuance and appeal proceedings (18 AAC 15), and enforcement procedures (18 AAC 95) were promulgated. Also, all water and water quality, air and solid waste regulations were reviewed and have been or will be amended as necessary to clearly define environmental standards and decision making criteria.

The department's three regional offices and the permit section are responsible for implementing the department's programs. The regional offices provide technical assistance to developers and review project proposals and propose department decisions, and initiate enforcement actions. The permit section provides support to the regional offices and the commissioner's office performing the administrative actions related to permit issuance. The section also contributes to many of the department's efforts to simplify the permit process.

The department currently is evaluating its forms and, as appropriate, each form is being retitled, numbered, and drafted for printing. When necessary, forms are being designed to reflect the program needs and to more effectively communicate desired information. All permit application forms are being revised so that they have a consistent, more manageable format and, whenever possible, application forms are being consolidated.

More realistic procedures for issuing permits are being established. The emphasis is to compliment the substantive work on an application rather than allow the procedural actions to become a surrogate for the substantive work. Whenever possible, duplicate efforts by staff are being eliminated, paper flow is being streamlined, and administrative time is being reduced. Also, when several agencies conduct permit reviews for a single project, duplicate paperwork and procedures often can be consolidated. The simplified procedures can be extended into interagency agreements.

In 1977, the Environmental Procedure Coordination Act (AS 46.35) was enacted. This act designated DEC as the lead agency for a coordinated permit process and established requirements for master applications, consolidated public notices and hearings, and the permit information centers, as well as processing procedures. The department has proposed amendments to the Act after consultation with industry representatives, as well as agency and legislative staffs, to make the Act a better instrument for improving the state's regulatory process.

Currently, the department is working with the Department of Law and other state agencies to write regulations which establish standard procedures for issuing permits. These regulations also define three classes of permits and assign responsibility for coastal management consistency determinations to various agencies. It is anticipated that the regulations will become effective early in 1981.

The Department, working with the Department of Commerce and Economic Development, published the Directory of Permits as an inventory of federal and state permits, licenses, certifications, plan reviews, leases and other approvals which may be needed for the construction of any activity in Alaska. Each listing included a description, major requirements for issuance, the authority and agency contacts for each permit. The directory has been made available to government agencies, libraries, consultants, and industry representatives.

A revision of the directory will be completed early in 1981. In addition to updating the descriptions of permits, a discussion of the services available through the Alaska Permit Information Centers, and an index of the permits which may be needed for a project will be added. Also, the possibility of establishing the directory and subsequent revisions on a subscription basis will be explored.

The Alaska Permit Information Center has been established as a single information source about permit requirements. Through offices in Anchorage, Fairbanks, and Juneau, the Permit Center can assist the public and developers by identifying (1) the government agencies which have jurisdiction for a proposed activity, (2) a contact within each agency whom a developer should contact for assistance, and (3) the permits which might be required for the project. Each office has a toll free telephone number (279-0254 in Anchorage, 452-2340 in Fairbanks and 465-2615 in Juneau) with an answering device for receiving calls after business hours. Currently, each office is receiving over 30 inquiries a month and is able to respond to most inquiries immediately.

Upon request, the Permit Center will host pre-application conferences. The purpose of this conference is not to judge the worthiness of a project. Rather, it is to enable a developer to learn what requirements he must fulfill to get agency approval and to secure technical assistance as he completes the design of the project. Subsequent meetings, with agency staff before and after applications are submitted, are encouraged.

Also, the Permit Centers will coordinate the review of a master application and the subsequent issuance of state permits. Although not frequently used, a master application, when submitted by a developer, will be processed and will result in the issuance of all required state permits by a predetermined date.

Working with the Departments of Fish and Game and Natural Resources during early 1980, the department developed a master application for water related permits required for placer mining. The application was well-received and was a successful consolidation of several individual applications. Therefore, the three departments decided to revise the application to include land use authorization and to correct the inadequacies which were discovered through initial usage of the form. Also, the Department of Revenue decided to use the form as the application for the Alaska Mining license. The revised form is to be in the agency's offices for use no later than January 12, 1981.

Since the placer mining application is a successful consolidation of several forms and procedures are being developed for its use, it is a model which the department plans to develop further. The master application concept can be applied to more activities and perhaps can be expanded to include more permits. Because many

federal and state agencies are involved in the regulation, through permits of activities, there is a frequent duplication of procedural requirements for the permits. To reduce duplicate efforts and high costs, the department is developing procedures for consolidating public notice and for eliminating duplicate inter-agency reviews as well as consolidating applications. Both federal and state agencies are being included in this effort.

Authority: AS 46.03
AS 46.35

Department Contact: Woody Angst, 465-2670

401 CERTIFICATION

Section 401 of the Federal Water Pollution Control Act requires that any one applying for a federal license or permit for any activity, including the construction or operation of facilities, which may result in a discharge into the navigable waters of the State shall provide the federal permitting agency with a certification from the State that any such discharge will be in compliance with all applicable sections of the act. The federal license or permit cannot be issued unless the State certification has been obtained or has been waived. Section 401 also provides that a certification may include any limitations and monitoring requirements necessary to make sure that the applicant will comply with the applicable sections of the Federal Water Pollution Control Act and with any other appropriate requirements of State law. Conditions included in the State certification become conditions of the federal license or permit.

In Alaska, the Department of Environmental Conservation is the State agency which provides the certification.

The types of permits most often requiring certification in Alaska include the U. S. Environmental Protection Agency National Pollutant Discharge Elimination System permits for point source discharges, Corps of Engineers permits for work in navigable waters, including wetlands, and dredge and fill activities in the waters of the United States, U. S. Coast Guard bridge permits over navigable waters and Federal Energy Regulatory Commission licenses for hydroelectric power plants.

The Department has written agreements with the U. S. Environmental Protection Agency and the Corps of Engineers to initiate processing certification simultaneous with the federal agencies' own public notice period to avoid unnecessary delays for the applicant.

401 certification is a powerful tool for the State in preventing water-related pollution because the project or activity is generally reviewed and negotiated before it is implemented and specific conditions can be placed on the federal permit or license to prevent problems. The projects are judged primarily for impact on water quality against the State Water Quality Standards, and for consistency with regulations of the Alaska Coastal Management Program. Other applicable regulations will be considered, depending on the project.

Authority: AS 46.03.020
AS 46.03.090
AS 46.03.100
AS 46.03.110

Department Contact: Doug Redburn, 465-2687

COASTAL ZONE CONSISTENCY

All activities conducted in the coastal zone must be in full compliance with the standards and guidelines of the Alaska Coastal Management Program (ACMP). Additionally, in local areas with approved district plans, activities must also be conducted consistent with the provisions of the district plan. The Department of Environmental Conservation is given a particular responsibility, in that this program incorporates directly the air, land, and water quality statutes, regulations and procedures of the Department of Environmental Conservation.

Application of the program through the Department's activities occurs in two instances. In both cases, proposed projects and activities affecting the coastal zone are reviewed by the Department to determine whether they are consistent with district programs and ACMP standards. This process is termed "consistency review." The Department's consistency reviews focus on its own statutes, regulations, and procedures and the standards of the ACMP, but may consider other program standards.

In the first case, any application to the Department for a permit, certification, approval or grant for a project which may significantly affect the coastal zone must undergo a consistency review internally. This is termed the "State consistency" process. Procedures for this review have been specified by the Commissioner through a General Management Order. If the proposed project is found to be consistent with an approved district program and the ACMP standards, the application must be approved. If the project is found to be inconsistent, the application must be denied (approval may be granted in some cases upon a showing of significant public need and absence of a feasible and practicable alternative) or conditioned with stipulations to maximize conformance of the project with the standards and guidelines.

In the second case, the Department may be involved in a consistency review of federal activities significantly affecting the coastal zone. This is termed "federal consistency." Under the Federal Coastal Zone Management Act, each federal agency or applicant for a federal permit must conduct activities in the coastal zone in a manner consistent with the Alaska Coastal Management Program, to the maximum extent practicable. The federal agency must submit to the State a copy of the applicant's consistency finding for each significant activity. The State's A-95 procedures are used to obtain a consistency review from appropriate State agencies, federal agencies and local governments. The State then evaluates agency comments and submits concurrence with, conditional comments, or objection to the consistency determination to the parent federal agency. The criteria for consistency review of direct federal activities are the same as for a project requesting a permit or other authorization. An agreement is currently being discussed which will separate responsibility for federal consistency determinations between several State agencies to avoid making two or more rulings on the same project by different agencies.

The standards and guidelines of the Alaska Coastal Management Program constitute an umbrella authority over the operations and activities of each State agency. The consistency review, with respect to district programs and ACMP standards, has become an important element of the Department's permitting programs and also for the State's control of federal activities within the coastal zone.

Authority: AS 46.40; 44.19; 44.47

Department Contact: Doug Redburn, 465-2687

SOLID WASTE PERMITS

Current regulations require any landfill, intermediate disposal facility (transfer station, baler, etc.), incinerator, landspreading operation, and composting, recycling and reclamation facility to obtain a permit. The department's 100 permits, however, have been issued only to owners and operators of landfills, landspreading facilities, transfer stations, and incinerators.

The department has found that some facilities do not need permits because they are adequately controlled by other regulations or permits, or do not present a significant threat to human health or the environment. By the end of April 1981, the department will promulgate revised solid waste management regulations. At that time, permits will no longer be needed for intermediate disposal facilities, incinerators, and composting, recycling and reclamation facilities.

Improperly sited and maintained sanitary landfills and landspreading operations may cause water, air and land pollution. Therefore, in order to continue encouraging efforts to comply with standards, maintain environmental quality, and protect public health, the department will continue to require permits for these operations.

Authority: AS 46.03.020(10)(A)
46.03.020(10)(E)
46.03.140
46.03.160

Department Contact: Tom Hanna, 465-2666

PREVENTION OF SIGNIFICANT DETERIORATION

In response to widespread environmental concern, the 1977 Clean Air Act Amendments established the Prevention of Significant Deterioration (PSD) program. This program is designed to maintain a high level of air quality by limiting new pollutant sources and requiring the use of the best technology available. The program consists of two major parts:

> First, each area was classified into four categories according to present air quality, and limits on the allowable change in air quality were fixed. A procedure for reclassifying certain areas was also established.
>
> Second, a mandatory pre-construction review and permit program was established. This program applies only to new or modified major emitting facilities as defined in the act. It requires an applicant to prepare a comprehensive analysis of air quality changes which would result from the project, and to obtain a permit prior to starting construction.

In Alaska, four areas are Class I. This classification provides for maximum protection from air pollution. The areas are Mt. McKinley National Park and the three wildlife refuges of Tuxedni, Bering Sea (St. Matthew) and Simeonof. Virtually no increase in pollution is allowable in or near these areas.

The rest of the State is Class II, which will allow increased air pollutant levels of 25% of the current standard. While this is a very restrictive limitation, it will allow for moderate industrial growth. The State has authority to reclassify localized areas into a Class III designation if more industrial growth is desired. This would allow a change in air quality of up to 50% of the current standards.

US EPA is currently managing the PSD permits program in Alaska. During the past 15 months, the following projects were subjected to PSD review:

PROJECT NAME	STATUS
Phillips Petroleum Company drilling rig	Permit granted
North Slope Facilities' expansion	Permit granted
Golden Valley Electric Association #2	Project cancelled
US Coast Guard Kodiak Power Plant	Permit granted
ALPETCO Refinery	Permit granted
North Slope Productivity Enhancement	Permit granted
North Slope Waterflood	Application submitted
Tesoro Refinery Modification	Permit granted
Alyeska Pump Stations 2, 5, 7	Permit granted
Alaska LNG Plant	Permit granted
Northwest Alaskan Gas Line Compression Stations	Application submitted

Two projects which are currently preparing applications include the US Borax molybdenum project near Ketchikan, and the Noranda Greens Creek mining project on Admiralty Island. Beluga Coal Field and any gas liquids processing facility will also require PSD review.

The PSD permit application may consist of a relatively straightforward description of the facility, if the estimated change in air quality is very low. However, in most cases a thorough technical analysis is required, including very sophisticated computer models.

EPA Region X has the responsibility to review the PSD permits in Alaska until the State establishes an acceptable program. The department has revised air quality regulations and programs and requested that the State assume responsibility for the PSD program. One objective will be to keep the monitoring requirements and permit processing time to a minimum in order to reduce costs to the applicant. The department will provide technical assistance to applicants through the permitting process, to ensure that all steps are completed as quickly as possible.

The department also has revised the administrative regulations necessary to reclassify areas if additional industrial growth or stricter air quality protection is desired.

Authority: AS 46.03.020(10)(A)
46.03.140
46.03.150
46.03 160

Department Contact: Stan Hungerford, 465-2667

AIR QUALITY EFFECTS OF WOOD STOVES

Wood stoves have been used frequently as an alternative heating source throughout Alaska, but not until 1979 have they begun to heavily supplement oil-fired furnaces as a heating source in urbanized areas. While this is a logical and highly desirable response to the sharply rising oil prices, it causes increased visible air pollution. This has been particularly noticeable in urbanized areas, such as Juneau's Mendenhall Valley and in the Fairbanks area.

Wood stove usage is expected to further increase in the next few years. This paper reviews the potential air pollution problems of wood stoves, recommends ways in which this problem can be minimized, and presents ideas to reduce the potential health hazard of this heating source.

Wood Stove Pollution and Effects

Wood stoves emit large quantities of ash and material which give the whitish-blue color to stack exhausts. They also emit carbon monoxide and hydrocarbons. The solid particles are made up of partially-burned wood, ash, and liquid hydrocarbons which condense from the stove gases.

Formation of combustion by-products are significantly higher when burning wood instead of oil or gas because the combustion devise does not achieve adequate mixing of air and fuel within the immediate proximity of the flame. Hence, the wood itself is not responsible for poor combustion but simply the manner in which it is burned.

When completely burned, wood will form water vapor and carbon dioxide and give off heat. To be effective, the burning process must be maintained for a long period of time at a high temperature with adequate air supply to achieve complete oxidation of the fuel. The end products of complete combustion do not have any direct health or nuisance effects. However, incomplete combustion can cause the following:

1. Solid particles
   - highly visible: in large enough quantities and right weather conditions, can cause substantially reduced visibility;
   - health: generally are not a health hazard, but under the right conditions can become a respiratory irritant and have direct adverse health effects;
   - odor: although usually pleasant smelling, can become very irritating and pungent in large amounts.
2. Carbon monoxide
   - health: causes decreased awareness and ability to react, because it restricts the blood's ability to carry oxygen. At high enough levels, can have adverse effects on cardiovascular patients, and can cause death.

3. Heat loss - Incomplete combustion generally means less heat is obtained from your wood. This is slightly offset by a lower stack temperature which means that less heat escapes up the stack.

When do Wood Stoves Become an Air Problem?

Wood stoves emit 30-250 times more solid particles, and 1,000 times more carbon monoxide than oil-fired furnaces (on a heat-equivalent basis)! In spite of this, wood stoves have not created a problem in the recent past because there have not been enough of them. However, with the recent increases in wood fuel use as motivated by favorable economics and energy independence, prolonged smoke conditions are occurring in some of the more populated valley locations throughout the State. This haze is likely to become common during most winter and fall conditions when there is little or no wind, and thin or no cloud cover. During these periods, temperature inversions occur in which pollutants will be trapped in a layer below 300 feet above ground.

What Can be Done to Wood Stove Emissions?

The more efficient combustion that occurs, the less emissions. As noted before, there are virtually no emissions with complete combustion. The most important consideration is to DRY YOUR WOOD SUPPLY, a 1/2 cord of wood can have up to 2 tons of water, all of which must be vaporized before the wood will burn--this can take up to 30% of the entire heat content of the wood.

The next major consideration is to make certain that the fire is maintained in as efficient a manner as possible. Remember, during incomplete combustion all of the available heat energy is not being extracted from the wood. Dry wood, and a well placed fire which can allow enough oxygen to mix throughout the fire are very important. Finally, a properly designed stove which will allow for efficient combustion is recommended: preheated air systems and stoves with a secondary combustion chamber cannot operate efficiently with a large load of wood and insufficient air. A significant amount of pollution will result.

When buying a stove, take the time to evaluate your heating needs. Proper sizing of a wood burning appliance for your specific home is very important. Oversizing can result in a tendency to starve your fire of air to prevent overheating of the room. This produces a smoldering fire which results in increased emissions and creosote deposition on your stack. Undersizing, on the other hand, may result in interior discomfort and additional fuel reloadings each day.

Action Proposed by the Department of Environmental Conservation

Currently, the department has not regulated wood stove emissions, primarily because they have not been known to cause any major pollution problems. However, the deaprtment is conducting some air monitoring studies to assess the present health-related impacts of increased wood burning in select locations.

To aid persons using wood stoves in efficient stove operation and in reducing their air pollution effects, the department will

1. publish detailed "do's and don'ts" for operating wood stoves to reduce the air pollution effects;

2. evaluate all possible control options which might be available to ensure that wood stoves are adequately operated for proper combustion including the practicality of setting emission standards.

Results of the monitoring study currently in progress will be available this coming spring. The department will then determine whether any additional control steps are needed.

Authority: AS 46.03.020(10)(A)
46.03.140

Department Contact: Tom Hanna, 465-2666

WASTEWATER PERMITS

The Department of Environmental Conservation is responsible for ensuring that liquid wastes discharged into the water or onto the land of the State do not harm public health or the environment. In order to accomplish this a permit procedure controls wastewater discharges. The department reviews projects to assure that standards to protect public health and the environment are maintained. The views of other agencies and the public are sought through public notice and hearings.

For many small and routine discharges, the department intends to develop "general permits" which would eliminate or reduce specific permit applications and processing. The department will emphasize informing the public of standards for discharges, and enforcing general standards for these discharges.

For example, there are many on-site sewage disposal systems in Alaska. As presently worded, the law requires these systems to be regulated by permit. These systems can, however, be effectively controlled by regulations, enforcement and plan review.

Other small discharges which may effectively be controlled by either a general permit or through regulations are: seafood processors, placer miners, exploratory camps, small community sewage facilities, on and offshore oil drilling platforms, and water reinjection. It is believed that general permits and regulations may well be our best tool to protect public health and the environment while at the same time reducing delay and complexities in the permitting process.

The best means presently available to accomplish this goal would be the passage of a bill which would give the department the authority to issue general permits.

Authority: AS 46.03.100
46.03.110

Department Contact: Gary Hayden, 465-2651

SURFACE OILING PERMITS

The Department of Environmental Conservation has statutes which state that no person may discharge, cause to be discharged or permit the discharge of petroleum or other petroleum products into, or upon the waters or land of the State except in quantities, times, locations and other circumstances and conditions that the department may permit.

In 1973, the Department of Environmental Conservation proposed surface oiling regulations which require a surface oiling permit before any petroleum products can be discharged onto the land. The regulations allow construction of five types of conventional asphalt paved surfaces without permits and outline general conditions applicable to all surface oiling permits to avoid pollution of lands and adjacent waters.

The object of requiring a permit for the oiling is to know when and where oiling is being done, and to know how much of what kind of oil is being discharged onto the land.

Requiring a permit also allows the department to directly forbid oiling by denying a permit where there is a high probability of pollution, such as in high rainfall areas.

The permits are simple to obtain either by letter or in person at one of the department's regional or district offices. No public notice or review period is required. Several hundred permits are issued annually by the Anchorage and Fairbanks offices, primarily for dust control on unpaved surfaces. Few permits are issued in Southeast Alaska because high rainfall tends to carry the oil into adjacent surface waters, and considerably less dust control is needed.

The most common violation of the regulations is application of too much oil to the surface, forming pools of oil which is splashed on cars or which may run off into surface water.

The department is considering eliminating surface oiling permits and regulating the discharge of oil to the land for dust suppression or disposal of minor amounts of oily wastes by standard conditions in the surface oiling regulations. Discharges of oil to the land for one time or routine disposal of large quantities of oily waste can be controlled by a waste disposal permit.

Authority: AS 46.03.740

Department Contact: Deena Henkins, 465-2609

WATER QUALITY STANDARDS

Alaska's water quality standards define water pollution and how to measure it. The standards accomplish this by identifying the uses of Alaska's waters and establishing the pollution control necessary to ensure the long-term protection of those uses.

All Alaska's waters have been classified according to use. Classifications for marine and fresh waters are: (1) drinking water supply; (2) industrial water supply; (3) water recreation; (4) growth and propagation of aquatic life and wildlife; and (5) harvesting for consumption of raw mollusks and other aquatic life. Standards are set to prevent pollution which would substantially reduce or eliminate the use of water for these purposes.

The water quality standards are the legal mechanism by which man-caused sources of pollution can be controlled. The standards are the basis for State wastewater disposal permits, and State approval of various federal permits. They are the primary enforcement tool for prosecution of those who pollute State waters. The standards also serve as guidelines for the development of environmentally sound methods for cleaning pollution from non-point sources.

The water quality standards are revised every three years in order to include updated technical information and changing environmental conditions. The revisions involve extensive participation by citizens, organizations, industry, and State, federal and local governments. During the revisions completed in February 1979, workshops and an extensive mailing and media campaign were held across the State. Suggestions made at these well-attended workshops were incorporated into the revisions and presented once again at public hearings. In all, ten different Alaskan communities were visited at least once during the revision process. Upon final completion, the revised standards are sent to the U. S. Environmental Protection Agency for approval.

The department attempts to influence the U. S. Environmental Protection Agency's development of water quality and pollution control standards. The department also tries to assure that nationally used standards are either appropriate for Alaskan conditions or include the flexibility needed to meet unique circumstances often present in Alaska.

Authority: AS 46.03.070
AS 46.03.080

Department Contact: Alex Viteri, 465-2660

DRINKING WATER PROGRAM

Years of public health and water supply expertise and experience have led to the universally accepted conclusion that human health is directly affected by the chemical and bacteriological quality of water consumed. It is universally accepted that controlling the concentration of certain chemical and biological parameters and seeking certain water system management practices will significantly decrease mortality and morbidity rates.

Dramatic and acute incidents of drinking water contamination have over the years sent scores of seriously ill people in Alaska to hospitals because of defects in water supply and distribution systems. The most recent incident affected 189 persons working in a crab processing facility at Unalaska. Since 1971, eight dramatic waterborne disease outbreaks have been documented in Alaska. Besides such sensational events, there are long term chronic consequences of consuming substandard water which are frequently not recognized by the public or even measurable by public health officials. Of the diseases which are measured, hepatitis A, shigellosis, and salmonellosis, can be transmitted by water. Alaska's incidence of heptatitis A was nearly 14 times that of the State of Washington in 1976. The incidence of salmonellosis and shigellosis were 1.6 to 2.3 times that of Washington, respectively.

There are several methods of supervising public water systems, varying from strict enforcement of legal requirements to financial assistance for water suppliers. ADEC has chosen a balanceed program, the major features of which are:

1) a continuing public education program,
2) technical assistance in solving water supply problems,
3) formal regulations that set minimum standards for water supplies,
4) plan review for additions to existing water systems and construction of new facilities,
5) training and certification of water system operators,
6) inspecting water systems,
7) surveillance for waterborne diseases, and
8) a construction grants program.

ADEC's prime objective is to assure that all public water supplies provide safe water. The department prefers to assist water system owners and operators in their efforts to meet acceptable standards. But legal remedies are also available if all else fails.

The drinking water program is seventy-five percent funded by a federal grant--for FFY '81 the grant was approximately $763,100. The state provides twenty-five percent matching funds--for FFY '81 match was $254,400. This $1,017,500 program can support approximately 20.5 man-years of staff time.

Authority: AS 46.03.020(10(c)

Department Contact: Gary Hayden, 465-2651

ON-LOT SEWAGE DISPOSAL

About 23-25% of Alaskans attempt to dispose of their household sewage by underground soil absorption systems. The soil absorption systems usually consist of a septic tank to remove floating and settleable solids and perforated pipes in a trench or a seepage pit to allow the wastewater from the septic tank to seep into the ground. Soil conditions in Alaska are usually not suitable for underground disposal and odorous, potentially disease-causing untreated sewage often reappears in roadside ditches and backyards or contaminates nearby water wells. Even with acceptable soil conditions, cold stress reduces the efficiency and life expectancy of underground sewage disposal systems and increases their costs. Alternative treatment systems are only partly successful and much more costly. In some common soil conditions, on-lot sewage disposal must be ruled out altogether, with community collection sewers and off-site treatment systems the best alternative.

Alaska statutes require plans of sewerage systems to be submitted and approved by DEC prior to construction. For individual residences, DEC has waived this requirement with three exceptions:

1. When requested by and in cooperation with, local governments.

2. When requested by a financial institution as part of a loan approval requirement, especially for FHA, VA, and other federally guaranteed loans.

3. In areas of known unsuitable soil conditions.

With the absence of approval or permit requirements, it is up to the builder or buyer to ensure that his on-lot system meets the regulations. However, DEC frequently provides technical assistance to people building on-lot sewage systems.

Another means to ensure that adequate sewage disposal systems are installed has been for DEC to conduct training sessions for contractors routinely involved in construction of such systems. Work done by graduates of training sessions could be approved without an actual on-site visit by DEC.

It is estimated that during FY 81, DEC will be requested to approve about 500 bank loan related on-lot sewage systems, provide technical assistance to over 1,500 home builders and conduct four training sessions for septic tank installers.

Poor Soil Conditions

The two major causes of septic tank/drainfield failures are high water table and shallow soil over bedrock--at least four to six feet of dry soil below a drainfield is needed for effective purification of sewage. Fine silts and muskeg cannot accept sewage. With deep burial required to prevent freeze-up of sewer pipes, this limits practical use of conventional septic tank systems to the Mat-Su Valley and certain soils in Anchorage and Kenai Peninsula areas.

In other areas, artificial sand beds can be built to filer septic tank output or prefabricated miniature sewage treatment plants can be installed, both at greater costs. With any on-lot system, lot sizes must be sufficient to provide buffer zones to protect water wells from contamination. With such large lots, eventual hookup to community collector sewers is hindered because of the low density of dwellings.

Subdivision Plan Review

A potentially serious situation for home builders is when a new property owner cannot secure financing for home construction because soils are unsuitable for on-lot sewage disposal, or the property value of a recently constructed home is reduced because of failing on-lot sewage disposal systems. These potential problems can be greatly reduced by review of soil conditions before a residential subdivision is developed. Subdivision developers are required to submit soil, terrain, and other information so that DEC can determine whether on-lot sewage disposal is acceptable or whether alternatives should be developed. Local governments can be delegated this subdivision plan review authority. To date, only the Municipality of Anchorage has assumed this role. Subdivision soils review is the only means by which prospective buyers can be assured that on-lot sewage disposal can be provided for their residences.

Authority: AS 46.03.020
.090
.100
.110

Department Contact: Deena Henkins, 465-2609

WATER, SEWERAGE & SOLID WASTE CONSTRUCTION GRANTS

The department, through the Facility Construction and Operation Section, administers a construction grants program which provides incorporated communities assistance in constructing needed community water, sewerage and solid waste projects. The financial assistance provided by this program amounts to 50% of eligible project costs not financed by the federal government. Additionally, if it can be shown that a solid waste processing or disposal system utilizes resource recovery, the State will increase its grant amount to 60% of the eligible project costs not financed by the federal government.

The department's construction grants program has been in existence since 1970 and over the years has helped provide adequate drinking water and acceptable sewage disposal for Alaskans in all regions of the State. The Second Session of the Eleventh Legislature expanded the department's statutes to include additional responsibilities for a solid waste construction grants program. This new program will help communities address the problems of disposing of their solid waste.

In support of the construction grants program, the section performs the following functions:

* review of grant applications
* review of project plans and specifications
* analysis of project construction and operating costs
* processing of grant offers and payment requests
* on-site inspections during construction and following project completion
* preparation of project audit reports to ensure that grant funds were properly utilized by the grantee

At the present time, there is no priority list for projects due to sufficient funds. The funding source for the State grants are general obligation bonds which have been periodically authorized by the voters. Presently, approximately $13.4 million are available for obligation to projects through this program.

Authority: AS 46.03.030

Department Contact: Keith Kelton, 465-2610

VILLAGE SAFE WATER

The Village Safe Water Act calls for at least one facility for safe water and hygienic sewage disposal in each village in Alaska.

Since 1972, eleven VSW facilities have been constructed. They are in the villages of Northway, Chevak, Alakanuk, Selawik, Nulato, Koyukuk, Beaver, Pitkas Point, Kongiganak, Tanana, and Council. A facility is being designed for Akiachak and will be constructed during the summer and fall of 1980.

In these eleven villages the VSW projects consist of sanitation facilities to which village residents can come to obtain water supply and sewage disposal services, with bathing and laundry services available to all except Council. No piped water distribution or sewage collection systems are involved except for water and sewer service lines to schools.

Construction methods used so far have included: (1) competitive bid construction contracts administered by what was then the Alaska Department of Public Works; (2) competitive bid construction contracts administered by the Alaska Department of Environmental Conservation (ADEC); and (3) force account construction by the village through construction management contracts with engineering consultants.

The force account/construction management method of construction has been the most satisfactory of the three methods used. Facilities constructed that way have been built cheaper and faster than those built under competitive bid construction contracts; the quality of construction has been better, and the villages have been more intimately involved in, and satisfied with, their projects.

VSW facilities have cost from $118,000 at Council for a project begun in FY 78, to over $1,400,000 at Tanana, of which $755,000 were VSW funds. Villages served have ranged in size from 60 (Council) to over 550 (Selawik).

Experience in the VSW program has proved that financial, technical, and/or management assistance to the villages is necessary to ensure that the facilities continue to operate. ADEC provides technical and management assistance to the eleven villages. The VSW operation and maintenance support program has made it possible for all completed VSW facilities to serve the public as intended. It is instructive to note that the operation and maintenance cost per village has been decreasing in actual dollars (i.e., ignoring inflation) over the last few years.

VSW staff have been working to implement bond propositions authorized by the Legislature and approved by the voters in 1978 and 1980. For example, SB 449 directed this department to make sanitation improvements in eleven communities and specified the amount to be spent in each place. Projects are underway or have been completed in ten of these communities. HB 689 which was recently approved authorizes the expenditure of $10 million in 20 communities and VSW staff have been developing facility plans for each place which will: (1) identify sanitation problems; (2) recommend needed improvements; and (3) estimate project costs and a tentative construction schedule.

Authority: AS 46.07

Department Contact: Greg Capito, 465-2664

OFFICE OF SEAFOOD AND ANIMAL INDUSTRY

The Office of Seafood and Animal Industry, which is lodged in the Commissioner's Office, is charged with extensive responsibilities in the areas of meat, seafood and milk. We have located our staff in areas where there is readily available transportation or a concentration of specialized activity. For instance, our dairy sanitarian is stationed in Palmer, a seafood sanitarian resides in Kodiak. The bulk of our field staff work out of Anchorage, Anchorage being the transportation crossroads of Alaska. In Palmer, we have specialized laboratory back-up to support our field staff.

Our activities are concentrated for the most part at the food manufacturing level. The only areas where we deal at the retail level are in meat markets, milk and milk product sales, and transient fish peddlers. We interface with environmental sanitation inspectors at the retail level. Our inspectional duties vary from continuous inspection in the meat program, to routine inspections of the other facilities under our regulatory control. We work very closely with the U.S. Food and Drug Administration and with the U.S. Department of Agriculture. In fact, our meat inspection program is funded, to a great extent, by USDA under provisions of the Wholesome Meat Act. The seafood produced in plants under inspection is sold in the national and international markets.

We do not give any particular program special or high priority, rather attempting to provide equal service to the entire scope of our assigned duties.

Our office assists in the development of new sources of business, we are working with the seafood people in the development of a clam processing and harvesting industry. Because of the potential for paralytic shellfish poisoning, extensive and complicated testing must be done. We assist, advise, contribute financially, and act as an intermediary with the U.S. Food and Drug Administration on the interstate shipment of the product.

Where possible, we work and assist in the other functions of DEC and other state and federal agencies.

Our overall policy is to serve and protect the public to the extent of our resources.

Authority: AS 3 and AS 17

Department Contact: Fred Honsinger, D.V.M., 465-2628

ENVIRONMENTAL SANITATION

The goal of the Environmental Sanitation Section is to protect the health and productivity of residents and visitors to Alaska. Assistance is given in the form of education, inspection, consultation and enforcement of regulations. Direct service is provided in all areas of the State (except Anchorage, which has assumed health powers) by a field staff of 16 professional sanitarians stationed in 11 regional and district offices.

The science of keeping people healthy through the observance of sanitation has grown from a few simple hygienic practices in biblical times to the modern science of environmental health comprised of bacteriology, biology, physics, chemistry and engineering. In Alaska, authority for sanitation services is mandated by six statutes and 21 sets of administrative code associated with food handling, water supplies, housing, rodent control, public health nuisances and public facility sanitation. Environmental services at restaurants, bars, food stores, bakeries, hospitals, day care centers, schools, swimming pools, tourist accommodations, fairs, barber/beauty shops and similar public facilities. Periodic, unannounced inspections of these establishments are made to protect the public from the hazards of poor sanitation.

Food service is the first priority in the area of routine regulatory inspections. There is a continuing need for improvement in food handling practices in the State. Since food-borne illness is frequently not reported unless large numbers of people are involved, there is no way of documenting the actual number of cases occurring during the year. However, each year sanitarians are called upon to investigate proven cases.

Miscellaneous sanitation services, consisting of field investigations of complaints, recommendations on nuisance conditions and distribution of health education material are also furnished by the staff. Requests are also received to speak to various groups concerning various aspects of environmental health.

The overall policy of the Environmental Sanitation Section is protection of the public health by means of education, technical assistance and implementation of applicable State statutes and regulations.

Authority: AS 17.05
17.20
18.05.040
18.35

Department Contact: Joe Cladouhos, 465-2656

LITTER REDUCTION PROGRAM

A goal of the department is to reduce litter throughout Alaska and thus enable citizens and visitors, in their daily experiences, to enjoy a clean and aesthetically pleasing environment. An additional objective is to promote the recovery of resources and energy from discarded materials and thereby achieve a reduction in litter through resource conservation. On June 5, 1980, the State Legislature passed a new Litter Control and Resource Recovery Act, which provides for a wide range of activities to achieve the goals of litter reduction and resource recovery.

The State of Alaska has a special need to deal effectively with the problem of litter, and this was recognized by the Legislature. The State is often thought of as a "last frontier," both by visitors and by residents, and many are appalled by the growing appearance of litter. Visible evidence of the throw-away society is especially unwelcome in a State which is considered to represent the ultimate in natural beauty.

Litter control is but one of several solid waste problems and the program is therefore, placed within the Air and Solid Waste Management Section of the department. Litter is a problem which is traceable to acts of negligence or bad habits of many individuals, and for this reason a major component of the program emphasizes public awareness and education. Additional measures include increasing the number and use of litter receptacles in public places, distributing litter bags for use by individuals in their cars and boats, grants to public and private entities to encourage litter reduction and resource recovery, establishing youth litter patrols, prohibiting littering and enforced compliance with litter laws, and prohibiting the sale of detachable ring tabs and plastic six-pack holders. Emphasis is placed upon coordination of these activities with those required by the other solid waste management efforts of the department.

The new liter and resource recovery law further mandates public involvement by providing for a seven member Advisory Council. This is a citizen committee appointed by the Governor to advise and work with department employees to implement the program. The staff includes a litter program coordinator, a resource recovery development specialist, an administrative clerk, and a public information officer. These employees in the central office are aided in the program by a field officer in each of the three regional offices. The field officers work to coordinate the programs in their respective regions, including activities with communities, schools, litter patrols, public relations, receptacles, and enforcement.

Authority: AS 46.06

Department Contact: Joe Ferguson, 465-2634

RESOURCE RECOVERY

The policy of the resource recovery program is to develop practices and incentive which encourage the reuse of materials, promote energy conservation, reduce the amount of solid waste to be disposed of, and protect the aesthetic values of the State. The ultimate goal of the program is to achieve measurable increases in the amounts of materials which are recycled or reused. The 1980 legislative session passed the new Litter Control and Resource Recovery Act, which calls for the reduction of litter, recovery of all recyclable materials, and a move toward a more aware and informed public. In carrying out the responsibility under the act, the Department of Environmental Conservation will actively involve other State agencies, local government organizations, and the general public in developing the Litter and Resource Recovery program.

During World War II, significant amounts of materials were salvaged from municipal wastes. Some wastes were set aside in the home for separate collection by a collection agency, civic group, or social service agency. Many communities also removed salvageable materials prior to final disposal. However, as labor costs rose and the compactor truck was introduced, these operations became more expensive and most were slowly abandoned. Today, there is increasing concern about conserving our resources. There are new and more stringent air and water pollution control laws, and industry's costs for processing raw materials are increasing. Rapidly rising energy costs favor the reuse of waste material, as their processing requires less energy and causes less pollution. Landfill space is becoming increasingly difficult to find, thereby providing incentives to cut down on the materials going to landfills. New landfills are difficult to locate, and new facilities are not always acceptable to communities.

The Department of Environmental Conservation has developed a program, as authorized in the Litter Control and Resource Recovery Act, which will help to conserve the State's valuable resources and energy. It will identify all possible markets and opportunities for waste recycling, and promote development of recycling facilities and programs throughout the State. There are several barriers to resource recovery in Alaska. These are primarily long haul distances, high freight rates and low population densities. The resource recovery program will determine the types of materials that may be recycled and actively work with industry to improve the logistics and cost effectiveness of recovery. An extensive public relations program will help educate the public to the problems and needs of the State and the means by which each individual may contribute to these efforts. The department is also in the process of establishing a public advisory council which is expected to provide effective and practical direction for the litter and recycling programs as they are developed over the next year.

Grants will be made available for demonstration projects and for the establishment, implementation and operation of any programs which will further the aims of the act. The program's first efforts will be to help communities evaluate whether or not heat recovery from the burning of solid waste is practical, and to encourage the use of equipment for separating or compacting materials.

The resource recovery program consists of a development specialist who acts as program manager, supported in part by three field officers, an information office, and a clerk. The manager of the litter program will be providing additional support and assistance, as well as other technical and planning staff in the Solid Waste Section of the department.

Authority: AS 46.06

Department Contact: Tom Hanna, 465-2666

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MAR 16 1981

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

JAY S. HAMMOND, GOVERNOR

465-2650

POUCH O – JUNEAU 99811

March 12, 1981

Bettye — Environmental? response

Senator Bettye Fahrenkamp
Pouch V
State Capitol Bldg. Room 113
Juneau, Alaska 99811

Dear Senator Fahrenkamp:

As discussed at the senate resource committee meeting on March 4, 1981 I have enclosed several copies of the Chena River and Noyes Slough water quality "success story". This article was prepared and published by the U. S. Environmental Protection Agency in June, 1980. The article summarizes the history of the serious water quality problems that faced the residents of this area and the clean up measures taken by various government agencies to correct it.

Although the water quality of the Noyes Slough is now a success story, sediment deposition caused by local development and beaver dams have stagnated the slough's waters. Before the slough could support canoeing and other public recreational uses dredging of the slough will be needed. The City of Fairbanks has repeatedly expressed interest in having the slough dredged but to date no funds for this program are available.

Please feel free to call me with any further questions you may have on this. I can be reached at 465-2650.

Sincerely,

Gary Hayden

Gary Hayden, P. E.
Chief
Water Quality Management

cc: Doug Lowery, ADEC
Lane Tompson, Public Works Director
City of Fairbanks

United States
Environmental Protection
Agency

Office of Water
Planning and Standards (WH-551)
Washington, DC 20460

June, 1980

EPA

A Water Quality Success Story

Chena River and Noyes Slough, Fairbanks, Alaska

(This story deals with progress in cleaning up conventional pollutants such as oxygen-demanding materials, suspended solids and bacteria. However, toxic substances may be present which may require further abatement actions.)

Today, Alaska's Chena River, a near-arctic stream which flows through the City of Fairbanks only 130 miles below the Arctic Circle abounds with sport fish and attracts hundreds of nature lovers, picnicers, and boaters.

And Noyes Slough, a winding side channel to the Chena north of Fairbanks flows through a wooded suburban surrounding and awaits funding so that it can be transformed into a haven for boating and hiking.

Only a few years ago, however, water quality along the Chena River and Noyes Slough was quite another story.

POLLUTION ALONG THE CHENA RIVER IN FAIRBANKS

By the late 1960's, municipal wastes were discharged into the Chena River from about 25,000 people in Fairbanks, the United States Army base at Fort Wainwright, and a utilities area which served the Town of College outside the Fairbanks city limits. These wastes received primary waste treatment from several outdated facilities which were not designed to remove the increasing load of oxygen-demanding wastes placed on the river.

According to a Federal Water Pollution Control Administration study conducted in early 1970, chemical oxygen demand levels -- a measure of the oxygen-consuming capacity of water or wastewater measured in milligrams per liter (mg/l) -- at four locations along the Chena River were between 44 and 47 mg/l. These levels were far higher than anticipated for a stream like the Chena which flows through a largely undeveloped area.

While Fairbanks is not an industrial city, dry-cleaning plants and small industries such as auto paint shops and an industrial gas generating plant also discharged wastes directly into the Chena, or to the Fairbanks primary treatment plant.

In a citizen's brochure published in 1970, the Alaska Conservation Society's Tanana-Yukon Chapter stated: "In terms of bacterial pollution, the City of Fairbanks is violating Alaska's water quality standards which set limits for coliform bacteria in water for the following uses: Drinking water - less than 50 coliform organisms per 100 milliliters (ml); swimming - less than 240 organisms per 100 ml; and boating and fishing - less than 1,000 organisms per 100 ml.

"At the present time," the Chapter concluded, "coliform counts taken in the Chena River by the Alaska Water Laboratory range anywhere from 37,000 to 500,000 coliform organisms per 100 ml."

Reacting to this environmental degradation, sportfishermen angling for grayling and whitefish now went upstream of Fairbanks where the river's cold, near-arctic waters were cleaner.

POLLUTION IN NOYES SLOUGH

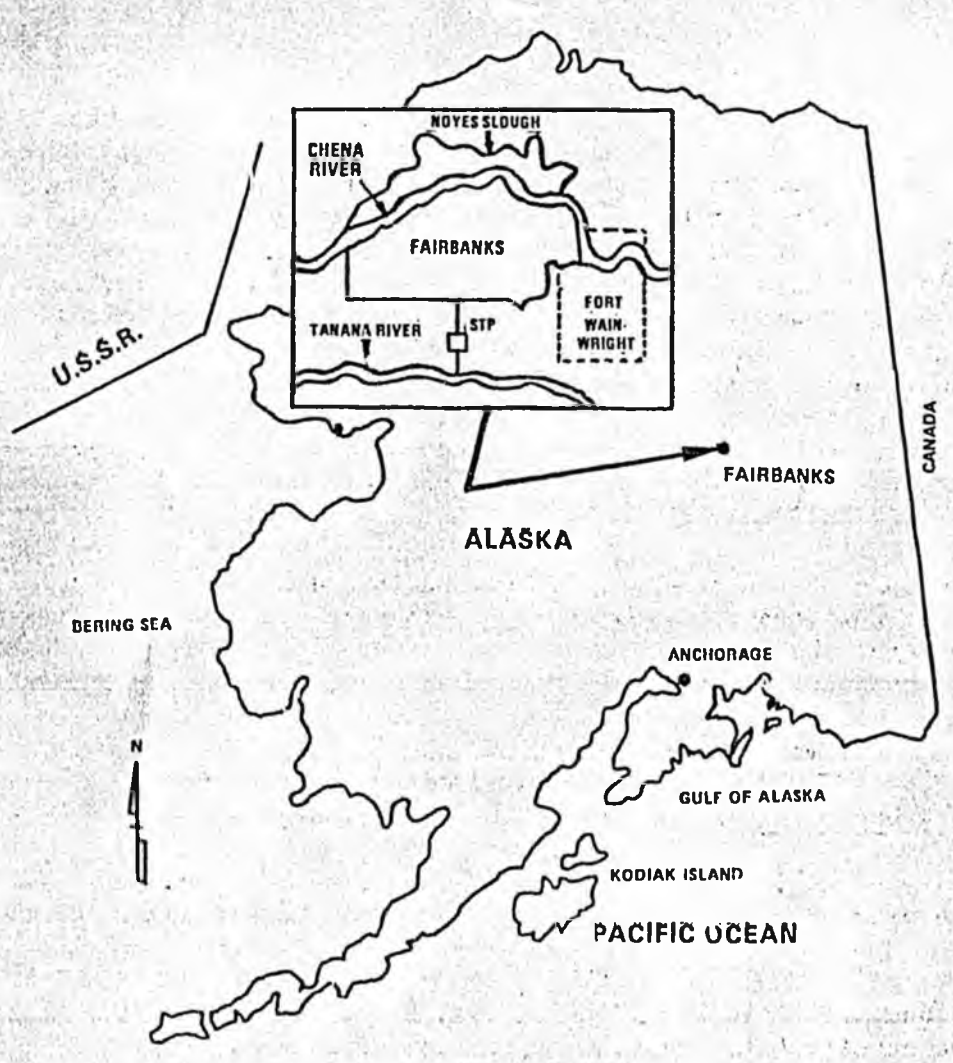
Grossly degraded in the recent past, pollution along this small waterway exemplifies the nuisance conditions and ravages that raw sewage discharged without proper treatment can inflict on homeowners.

Noyes Slough begins at the Chena in the City of Fairbanks, circles north through the formerly unsewered Slaterville, Lemeta and Aurora subdivisions, and winds back into the Chena on the west side of Fairbanks. Until recently, the Noyes served as a sewage dumping ground for the subdivisions along its banks. Electrical power was supplied by a utility which used water from local wells, then pumped its cooling water back into the slough. Since there was no local sewage authority and enforcement at that time, people living along the Noyes laid sewer pipes directly from their homes into the slough and sent raw sewage into the stream.

When the utility stopped discharging cooling water into the Noyes in 1967, clumps of sewage, mounds of garbage and scrap car bodies surfaced. Local health officials sampled the water and found that it contained an astronomical 6 million bacteria per 100 ml.

Reacting to this public health hazard, the Fairbanks Superior Court ordered property owners along the slough to install septic tanks and stop piping sewage directly into the Noyes until sewage lines could be installed. Shortly after, many of these tanks proved to be inadequate; their contents entered overloaded septic drainage fields and from there, seeped into the ground water.

Eventually, things came to a crisis in the Lemeta subdivision along the slough for a husband and wife whose name, for the sake of



anonymity, has been changed to the John Doe family in the following newspaper article.

In the article which appeared in the October 30, 1969 edition of the Fairbanks Daily News-Miner, a staff writer wrote: "There is a sewer line which is busily discharging raw sewage into Noyes Slough. The line serves Block 18 in Lemeta, and the sewage produced by all but a few of these people is served by a single overloaded septic tank."

The writer added an ironic touch.

"The tank, which fails to meet state and federal standards, isn't even in Block 18. It's on property belonging to John Doe, who, in turn, isn't even hooked up to the same tank. When asked to describe the effluent from the sewer line whose outfall is directly behind her home, Mrs. Doe shuddered. 'Horrible,' she said. 'I'd call it solids.'"

Shortly after, another staff writer described this family's plight.

"With the advent of warm weather, the Does are forced into a strange way of life. Their home is equipped with a special air conditioner to filter out the overwhelming stench from the slough, and their windows must be closed tight and covered with screens to keep out flies which swarm to luxuriate in the stinking mess. Mrs. Doe is looking forward to another summer of splitting headaches brought on by sewer gas, and her husband is so tense he's afraid he'll be rude to his customers. On top of that," the writer continued, "they must haul nearly every drop of water they use in their house. The polluted slough water has seeped back into the water table and ruined their well water. Often, the Does must pour hauled water back into their toilet to flush it; their well water is so bad that it literally pollutes the toilet."

A couple of months later, a National Broadcasting Company television news team arrived in Alaska to do a documentary on new developments, particularly in oil, while keeping a weather eye open for environmental hazards for another series the network was producing.

Early one morning, the news team was in Fairbanks preparing to head for the North Slope when an article on the John Does in the Fairbanks Daily News-Miner caught its attention.

A day or so later, the Does went on national television. After the interview, Mrs. Doe asked the anchorman if he would live on the slough.

"I wouldn't live here," he replied brusquely. "I've been all over the country but I've never seen such gross pollution."

LOCAL AND STATE CLEANUP ACTIONS

Toward the end of the 1960's, Fairbanks city officials decided to annex the outlying suburbs to provide these communities with sewer services.

In 1969, the State of Alaska Boundary Commission held public hearings in Fairbanks on the annexation issue, and in early 1970, annexation became a reality when the Lemeta, Aurora, Johnston and Graehl subdivisions -- some 3,700 people and 3,000 acres -- became part of the City of Fairbanks.

Next, and top priority on the cleanup schedule, was the City of Fairbanks' sewer improvement project which called for diverting sewage from Fairbanks, Fort Wainwright, and the outlying suburbs away from the Chena River through a sewer interceptor system to a new regional secondary treatment plant below Fairbanks on the Tanana River. Wastewaters from the city, its suburbs, and local small industry would be carried by trunk lines to the interceptor system for treatment at the secondary regional facility, and discharged

after treatment into the Tanana.

Finally, the project called for eventually phasing out the old Fairbanks, Fort Wainwright and College Utilities outfalls on the Chena, and also phasing out all of the outmoded primary treatment facilities along the river.

In 1971, the City of Fairbanks placed a sewage facilities bond issue on the city ballot asking that the citizens approve a general obligations bond issue to help finance the sewer improvement project. In a brochure published during this period, the Tanana-Yukon Chapter strongly urged that the citizens vote "yes."

"If you are interested in restoring the Chena River," the Chapter said, "you can help by approving the bond issue when it appears on the ballot. The city is making a firm commitment but voter delays mean we'll have missed this golden opportunity. If we don't clean up now we'll have to do it later, under much less favorable circumstances.

"Since a bond election is required for the city's share in funding sewage treatment facilities," the Chapter concluded, "our executive committee has decided to meet with other interested organizations to explore ways to meet the problem. Chapter members can contact Ernie Mueller."

Today, Mr. Ernst Mueller is the Commissioner, Alaska Department of Environmental Conservation (DEC) which was created in 1971.

Working with the Chamber of Commerce, the League of Women Voters, the Fairbanks Outboard Association, the American Association of University Women, and Students for Environmental Action -- and coordinating its grass roots push to clean up the Chena concurrently with the Sierra Club, the Fairbanks Environmental Center and the Tanana Valley Sportsmen's Association -- the Tanan-Yukon Chapter sponsored an intensive mailing campaign to get additional voter acceptance for the bond issue. Using a high school print shop and student volunteers, the Chapter printed and mailed thousands of brochures describing the bond issue to registered voters in the Fairbanks metropolitan area.

Shortly after, the citizens of Fairbanks voted approval on the city ballot.

FEDERAL CLEANUP ACTIONS

In July, 1972, the U.S. Environmental Protection Agency (EPA) awarded the City of Fairbanks $979,360 to construct an interceptor sewer system and a pumping station. In the following year, the EPA awarded Fairbanks $6.6 million to construct a regional secondary treatment plant and a sludge disposal facility on the Tanana River,

plus interceptor sewers, manholes, and lift stations, and a year later, awarded the city an additional $8.3 million to complete this project.

All of these new facilities were on line by mid-1976. The Fairbanks Wastewater Treatment Facility presently removes 90 percent of the biochemical oxygen demand -- a measure of the organic matter in water which consumes oxygen during biological processes that break it down -- and suspended solids in its discharges, and uses gaseous oxygen to enhance wastewater oxidation.

On October 18, 1972, Congress passed the 1972 Amendments to the Federal Water Pollution Control Act. Section 402 of the Act established the National Pollutant Discharge Elimination System (NPDES). Implemented since its inception by the EPA and the states, this system defines the requirements for permits to discharge into the nation's waters.

Between 1974 and mid-1976, the EPA issued discharge permits under the NPDES program to the City of Fairbanks, Fort Wainwright, and the College Utilities Corporation.

The EPA, in addition, recently funded two Facilities Planning Studies under Section 201 of the landmark federal 1972 Water Act.

In December, 1978, the EPA awarded the Fairbanks North Star Borough $19,635 to address the problem of septic tank failure in the Ballaine Lake subdivision. During February, 1979, the EPA also awarded the City of Fairbanks $33,855 to develop a facilities plan for disposal of dewatered sewage sludge generated by the regional secondary treatment plant. The planning area includes a 20-mile radius around Fairbanks; within this area, the study will address the problem of sewage sludge from the regional treatment plant and sludge from septic tanks. Many of the outlying suburbs still use septic tanks for other on-lot sewage disposal.

These preliminary engineering studies will assess wastewater treatment within each community, and will develop cost-effective solutions to local waste treatment problems.

EPILOGUE

Today, the 110-mile-long interceptor sewer system encircles Fairbanks. Along the way, its trunk lines receive the wastes from the city, most of its outlying suburbs including Lemeta, its small industries and Fort Wainwright, and carry these wastes to the regional plant for secondary treatment. By June, 1980, the interceptor system will tie in to the College Utilities Corporation to receive wastewaters from outside the northwestern portion of the city limits, including the University of Alaska, the College area and a few new housing developments.

These cleanup actions have had a positive environmental effect upon the Chena River. According to a study conducted by the Alaska DEC in 1978, the chemical oxygen demand load to the Chena previously sampled at four locations had dropped to between 5 and 8 mg/l, a marked improvement.

Today, DEC water quality specialists in Fairbanks say that "the level of bacterial pollution in these waters has dropped dramatically since pre-cleanup days, when coliform counts ranged from 37,000 to 500,000 coliform organisms per 100 ml.

"We conducted a bacteriological survey of the Chena in July, 1977, and found that the coliform count at one sampling location was down to 70 coliform organisms per 100 ml, and that counts taken at five other locations along the lower river in Fairbanks ranged from 10 to 25 organisms per 100 ml, a resounding tribute to the combined local, state, and federal cleanup actions which have saved the Chena River."

In response to greatly improved water quality conditions along this Alaskan stream, anglers in and around Fairbanks have returned to these waters to catch grayling -- a gourmet delight and a prince of a sportfish -- and whitefish, a species which is valued for its tasty white meat. Since cleanup, boat landings and a picnic and camping ground have appeared along the Chena, attracting boaters, canoers, and nature lovers. Canoeing enthusiasts test their skills during racing competitions held in the summer, and a raft race highlighted the festivities last July during Fairbanks' annual Golden Days celebration.

Noyes Slough is no longer a pesthole, but there is still work to be done.

Raw sewage still poured into it after Lemeta was annexed to Fairbanks, and continued to pollute the stream until 1973, when Lemeta tied into the regional interceptor system. At that point in time, Noyes Slough ceased to be a municipal cesspool.

In 1972, Alaska DEC water quality specialists conducted a survey along the Noyes to collect evidence of sewage-related problems. The DEC discovered that several local residents were violating state waste disposal regulations and ordered them to either connect into the expanding trunk lines to the interceptor system, or remove their discharges from the slough.

The DEC surveyed the Noyes again in 1975, this time to check the number of remaining outfalls and determine which outfalls required further state enforcement, and in 1978 conducted a last survey: This final inspection now showed there were no more sewage dischargers to these waters and that water quality had improved along the entire length of Noyes Slough.

Since the Noyes is a slow-moving stream with a low dilution capability, the remaining problem was getting fresh, fast-flowing water into it to flush it out, allowing the stream to restore itself and to help clean up pockets of bottom sediments which were still relatively polluted.

In 1976, Fairbanks city officials started cleanup by dredging many blocked up areas, deepening the eastern end of the Noyes where it originates on the Chena River, and dredging the mouth of the slough to the west.

Then in mid-1978, a Fairbanks sanitary specialist paddled down the Noyes in a rented canoe to verify once again if it was still the unnatural sewer some people still claimed that it was.

Followed by a local newscaster from Station DTVF-TV, his inspection showed that: Public outcries that many householders were still dumping sewage were unfounded; yes, there were still car bodies, old furniture, beer bottles, toilets, wheelbarrows, toys, and an old hot water tank in the slough; but most encouraging, his trip confirmed the conclusions of the DEC surveys by turning up an inventory of zero visible sewage outfalls and only one half-way suspicious-looking storm sewer.

His report, submitted to the Fairbanks City Council with 24 photographs taken as evidence, concluded that "Noyes Slough is now in fairly good condition and can be made into a canoeing area with the help of the city and the people who live on, or near it."

Right now, the Noyes is clean enough to support beaver, muskrat and mink, "but lack of funds," says the Tanana-Yukon Chapter, "is the main bottleneck in the push to dredge the full length of the Noyes so that it can be used for boating, and cleaning up its banks to provide paths for hiking."

"We sampled the Noyes for bacteria in 1978," says the Alaska DEC, "and found that instead of 6 million bacteria per 100 ml the coliform count had dropped to a meager 70 per 100 ml. With gross water quality degradation a thing of the past, we hope and expect that the slough will be fully restored in the very near future."

(Information for this story was kindly contributed by: Mr. Ernst Mueller, Commissioner, Alaska Department of Environmental Conservation, Juneau; Mr. Wallis Droz, City Manager, Fairbanks; Mr. Merritt Mitchell, formerly with the EPA Arctic Environmental Research Station, Fairbanks; Mr. Stanley Brust, EPA Alaska Operations Office, Anchorage; and Mr. Douglas Lowery, Alaska Department of Environmental Conservation, Fairbanks. We thank them for their valued assistance and cooperation.)

Success stories in print:

Buffalo River, New York
Beaver Creek, Tennessee
Chena River and Noyes Slough, Alaska
Deerfield River, Massachusetts
Detroit River, Michigan
Dillon Reservoir, Colorado
Rocky Mountains
Escambia Bay, Florida
Grove and Center Creeks, Missouri
Hackensack River, New Jersey
Haley Pond, Maine
Kodiak Harbor, Alaska
Lake Minnetonka, Minnesota
Mohawk River, New York
Monongahela River, West Virginia
and Pennsylvania
Naugatuck and Lower Housatonic
Rivers, Connecticut
Neches River, Tidal Area, Texas
Ogden Bay, Utah
Pearl River near Bogalusa,
Louisiana
Pemigewasset River, New Hampshire
Roseberry Creek, Alabama
Sope Creek, Cobb County, Georgia
St. Johns River, Florida
Willamette River, Oregon
Yellowstone National Park,
Wyoming

DEPARTMENT OF FISH & GAME BRIEFING 2-18-81

Alaska State Legislature

POUCH V
STATE CAPITOL
JUNEAU, ALASKA 99811
(907) 465-3834
(907) 465-3835

Senate

Committee on Resources

February 18, 1981
1:30 p.m.

Beltz Room
Room 211 - Capitol

MEMBERS PRESENT

SENATOR FAHRENKAMP
SENATOR FISCHER
SENATOR MULCAHY
SENATOR ELIASON
SENATOR STURGULEWSKI
SENATOR GILMAN

The Chairman stated that since questions had arisen during the Feburary 16th hearing on SB 162, as to the suitability, of site location of the grain terminal, that Keith Campbell, Seward City Councilman, was to testify on the subject.

Keith Campbell, stated that the City of Seward takes exception to the February 11th memo by the Alaska Agricultural Council, Transportation Committee. In particular the conclusions the memo draws weighting factors in-favor of the Port of Anchorage over the Port of Seward. And the portion of the memo which states that the Transportation Committee will recommend to the full Council that the Port of Anchorage be picked even if it costs up to $2 million more to build it in Anchorage. (complete transcript of his testimony attached).

Senator Fischer put forth the motion to move SB 162 with individual recommendations.

The Committee was briefed by Ronald Skoog, Commissioner, Department of Fish and Game, Gregory Cook, Executive Director, Board of Fisheries and Game, and Don W. Collinsworth, Deputy Commissioner, Resource Management.

Ronald Skoog, stated that the main goals of the Department of Fish and Game are; rehabilitation, maintanance of resources in their present state, management of the species and allocation of the resources among user groups, and resource enhancement.

He discussed the Department's relationship with the Department of Public Safety and the Boards of Fisheries and Game. The Department is responsible

for the management of the resources, conducting inventories and gathering data. The Boards of Fisheries and Game promogate regulations based on the information provided by the Department. The Department of Public Safety is responsible for enforcement of the law and regulations.

He stated that the areas of concern to the Department are: 1. subsistence, 2. increasing demand by the public for fish and game, 3. development of the fisheries; and, 4. implementation of the Alaska Lands legislation.

Gregory Cook stated that the Boards of Fisheries and Game are separate from the Department of Fish and Game. The Board's role is to set regulations. In addition to the Board, there are 66 local Advisory Committees. Members of the local committees are elected locally. He stated that he has two concerns about the Advisory Committees; 1. Members pay for their own travel and hotel expenses while attending the meetings, and there are not funds to reimburse them. He suggested the Advisory Committee members receive per diem payments. 2. Creation of specialized regional personnel to help the Advisory Committees to insure that the Alaska Lands Legislation and State law are met.

He stated that there are two topics of concern to the Board of Game: 1. clear-cut logging in Southeast Alaska and its effect on the wildlife population; and, 2. the Board would like to see some barley planted for feed in the Bison Range around Delta.

He stated that the Board of Fisheries would like to see; 1. improved research capabilities and data collection by the Department, and, 2. Improve the level of enforcement via more personnel.

Don Collinsworth outlined the programs and budgets of the different Divisions within the Department of Fish and Game. The detailed figures will be forwarded to the Committee.

He stated that the dollar value of the sports fish catch in 1980 was $115 million. This figure includes cost of buying fishing items, assessory services and hotel costs. The management of the Limited Entry program was moved to the Department of Fish and Game by Executive Order. The Division of Fisheries Rehabilitation Enhancement and Development's (FRED) main goals are to protect, maintain, rehabilitate, enhance and develop the fisheries.

In response to the question, what is the estimated dollar level generated by sports hunting for game? Commissioner Skoog stated that it was $100-200 million which does not include marine mammals.

In response to the question, the Committee has heard testimony that the Department of Fish and Game says the Susitna project will adversely impact the Cook Inlet fishery, I would like to see the report, memo, news release or documentation that states this? Commissioner Skoog, stated that there is a preliminary draft document that states that there would be an impact on the fishery. This document was necessary inorder to proceed with the two year study of Susitna by the Department. He further stated that effects of the fishery will depend upon how the flow from the Dam is managed.

MAR 19 1981

STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SUBPORT BUILDING
JUNEAU, ALASKA 99801
PHONE: (907) 465-4100

Bettye
The Chairman

March 16, 1981

The Honorable Bettye Fahrenkamp
Alaska State Senate
Chairman
Senate Resources Committee
Pouch V, State Capitol
Juneau, Alaska 99811

Dear Senator Fahrenkamp:

A short time ago it was my pleasure to appear before the Senate Resources Committee to provide information about the Divisions of Commercial Fish; Sport Fish; Game; Fisheries Rehabilitation, Enhancement and Development; and Boards within the Department of Fish and Game.

At the time of my appearance Committee members asked that the information given orally be provided in written form. Copies of this material for distribution to the members of the Senate Resources Committee is enclosed. If you or other members of the Committee need additional information regarding these divisions, please let me know.

Sincerely,

Don W. Collinsworth
Deputy Commissioner
Resource Management

Enclosures

cc: Keith Specking

11-K11LH

Summary of Numerical Data

	Comm. Fish	Sport Fish	Game	FRED	Boards
I. Number employees					
A. 81 Off season-includes seasonal	173	71	115	209	4
B. 81 Peak season-includes seasonal	674	143	148	318	4
II. Budgets					
A. 81 Allocated					
1. Operating	14,651,100	4,390,000	7,185,000	10,490,700	452,000
2. CIP	1,312,300	252,000	-0-	8,970,000	-0-
B. 82 Governor's request					
1. Operating	15,693,700	5,480,000	8,722,100	11,673,700	515,400
2. CIP	1,551,300	540,000	250,000	3,593,000	-0-
V. For 82					
D. New positions requested					
Permanent	9	-0-	-0-	3	-
Seasonal	36	-0-	-0-	63	-
Non permanent	14	-0-	-0-	-0-	-
VI. User groups					
B. Estimated number persons	43,714	250,000	156,190***	1,293,696	
C. Licenses sold	47,439	206,800			
VII. Value of resource					
A. Estimated value to user groups	531,100,000*	2,556,000*	100,000,000	80,600,000	na
B. Revenue generated to State	19,849,100**	115,000,000	2,581,000	-	na
VIII. Employment					
Est. primary and secondary	50,000***	unknown	28,655		na

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* 1980 ** est. 1982 *** does not include affiliated industries

Division of Commercial Fish

I. Number of employees

A. Off season including seasonals	173
B. Peak season including seasonals	674

II. Budgets

A. FY 81 allocated	
1. Operating	$14,651,100
2. CIP	1,312,300
B. FY 82 Governor's request	
1. Operating	$15,693,700
2. CIP	1,551,300

III. Distribution of staff

Regions:	Anchorage	Juneau	Kodiak
Areas:	Bethel	Chignik	Cold Bay
Cordova	Dillingham	Dutch Harbor	Fairbanks
Glennallen	Haines	Homer	Ketchikan
King Salmon	Kotzebue	Nome	Petersburg
Sand Point	Sitka	Soldotna	Wrangell
Yakutat			

IV. For FY 81

A. Major program emphasis

1. Protect, maintain, rehabilitate, and develop the commercial and subsistence fisheries resources of the State of Alaska and adjacent marine waters for the optimum economic and social benefit of all Alaskan citizens;

2. Develop and maintain a socio-political environment and legal framework which provide adequate public input to the determination of resource use objectives and ensure State autonomy and divisional flexibility in managing Alaska's commercial fisheries resources most effectively to meet those objectives, and;

3. Organize and develop the Division's technical team, human, and fiscal assets to manage effectively and efficiently the commercial resources of the State.

B. Major successes or achievements

1. The 1980 salmon harvest of 110 million fish was a record year resulting in five successive years with major increases in the statewide salmon harvest, and the best salmon harvest since 1936. The 110 million salmon were worth over $280 million to the fishermen.

2. The 1980 Bering Sea king crab harvest of 141 million pounds, valued at over $150 million to the fishermen, was the highest catch ever recorded.

3. Alaska's 1980 domestic groundfish harvest increased to over 90 million pounds from the 1979 record catch of 30.0 million pounds. Continually increasing groundfish harvests are expected when a new "model groundfish processing facility" opens in Kodiak in 1981.

A. Direction for increases in funds requested

Kodiak and Alaska Peninsula herring and shrimp fisheries and the troll fisheries of Southeast are being subjected to considerable use pressure resulting in over harvests and decline of resource populations.

1. The requested funding would provide the research and ability to set realistic harvest levels in the developing herring and forage fish fisheries thus providing management based upon maximum sustained yield concepts.

2. The additional survey time requested would provide population assessments for stocks which are depressed or presently nonconsistent producers. Stock status data would be used to allow harvests where justified.

3. Programs addressing resolution of allocation problems and identification of separate stocks in the Southeastern troll fishery were previously conducted with Federal funds.

B. Number of new positions requested and primary orientation

1. Southeastern troll salmon programs:, 2 PFT, 22 seasonal

2. Kodiak herring studies: 1 PFT, 1 seasonal, 10 non-permanent

3. Special projects (included in Division's budget last year but for administrative purposes they are considered new hires): 6 PFT, 13 seasonal, 4 non-permanent.

VI. User groups

A.	Commercial fishermen served	43,714
B.	Number gear and crew licenses sold	47,439

VII. Value of resource

A.	To user groups	$531,100,000*
B.	Revenue generated to State	19,849,100**

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* 1980
** 1982 estimated

VIII. Employment

Estimated primary and secondary employment 50,000***

IX. A. Major resource management areas of greatest concern are northwestern Gulf of Alaska shrimp populations, Bering Sea and Kodiak herring resources, Southeastern Alaska abalone, and salmon troll fisheries.

B. Major user groups and program related concerns include the Division's (Department's) relationship to and interaction with Federal agencies and organizing the staff to meet foreseen crises.

X. Miscellaneous

Since statehood the Alaska Legislature has generally supported the ADF&G enabling the Department to effectively research and manage the State's fish and wildlife resources. As a result commercial, sport and subsistence fishery resources have been maintained or enhanced. However, several of Alaska's fish and wildlife resources are still in or have recently entered a time of decline. To reverse these trends the Department must meet its data needs and change management strategies.

*** Does not include affiliated industries

Division of Sport Fish

I. Number of employees
   A. Off season including seasonals 71
   B. Peak season including seasonals 143

II. Budgets
   A. FY 81 allocated
      1. Operating $4,390,000
      2. CIP 252,000

   B. FY 82 Governor's request
      1. Operating $5,480,000
      2. CIP 540,000

III. Distribution of staff (filled PFT positions)

Headquarters	12
Region I	13
Region II	26
Region III	12

Locations:	Anchorage	Barrow	Cooper Landing
Cordova	Delta Junction	Dillingham	Fairbanks
Glennallen	Juneau	Ketchikan	King Salmon
Kodiak	Kotzebue	McGrath	Nome
Palmer	Petersburg	Sitka	Soldotna
Talkeetna	Tok	Yakutat	

IV. For FY 81

   A. Major program emphasis
      1. Management of salmon stocks in urban areas
      2. Economic survey--Phase I
      3. Kenai River king salmon population estimate

   B. Major successes or achievements
      1. Acquisition of public access sites (8 on the Kenai Peninsula, 2 in the Mat-Su valley)
      2. Cooperative fishery habitat research program in Southeast Alaska
      3. Creation of a new coho sport fishery at Whittier

V. For FY 82
   A. Major program emphasis
      1. Implementation of (d)(2) legislation
      2. Monitoring Cook Inlet hook and line subsistence salmon fishery
      3. Continued acquisition and development of public access areas

   B. Special interest projects
      1. Kenai River stock enumeration floating king salmon trap
      2. Cooperative fishery habitat research at Trap Bay

   C. No new positions in FY 82 budget

(5)

VI. User groups

A.	Sport fishermen	
B.	Estimated number served	250,000
C.	Number licenses sold	206,800

VII. Estimated value of the resource

A.	To user groups	$ 2,556,000*
B.	Revenue generated to State	115,000,000

VIII. Employment

Recreational fishing in Alaska is responsible for a large but unknown number of Alaskans employed in associated dependent industries, mostly family or small partnerships.

IX. Problem areas

A. Major resource management concerns
   1. Protection of fishery habitat from adverse modification
   2. Acquiring public access
   3. Staying ahead of angler demands without disrupting other traditional fisheries
   4. Unstable funding from Federal grant programs

B. Major user group concern
   Being able to achieve a reasonable catch of fish within a reasonable distance at a reasonable cost.

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* Value of fishery harvest consumed

V. Number of employees
- A. Off season, PFT — 115
- B. Peak season including seasonals — 148

II. A. FY 81 allocated
- 1. Operating — $7,185,000
- 2. CIP — -0-

B. FY 82 Governor's request
- 1. Operating — $8,722,100
- 2. CIP — 250,000
- 3. (d)(2) Supplemental-operational — 300,000
- CIP — 1,200,000

III. Distribution of staff

Regions:	Juneau	Anchorage	Fairbanks
Nome			
Areas:	Ketchikan	Petersburg	Sitka
Yakutat	Cordova	Soldotna	Kodiak
Palmer	Glennallen	King Salmon	Dillingham
Tok	McGrath	Bethel	St. Marys
Galena	Kotzebue	Barrow	Fort Yukon

IV. For FY 81

A. Areas of concern and principal focus

1. Maintain wildlife populations in spite of increased human demand. Develop Alaska's petroleum reserves and exploitation of timber resources impact upon wildlife. Private land ownership and establishment by Congress of many national parks upon which recreational hunting will not be permitted will concentrate hunting and trapping on to a smaller land and wildlife resource base. Modernize data management system. Minimize impact of development on wildlife resources.

2. The passage of Federal (d)(2) legislation makes it imperative that the State develop an improved resource information base and establish a new system of advisory committees and boards to assure appropriate allocation of the State's wildlife resources. Unless (d)(2) dictates are met by the State, resource management on many Federal lands will be controlled exclusively by the Federal Government.

B. Major successes

1. The status of two caribou populations, which because of inadequate information had been believed to be declining, was determined and both herds were found to be in good health.

2. Newly-developed moose census procedures were applied to three major moose populations yielding reliable information.

3. More effective public input system into regulatory process.

4. Maintenance of critical areas open to wildlife uses in National Interest Lands legislation.

V. For FY 82
   A. Major program emphasis
      1. Improve the quality of wildlife status information and to increase the capabilities for storage and retrieval of data.

      2. Regain State management of marine mammals through modifications of Federal legislation and regulations.

   B. No new positions in FY 82 budget

VI. User groups
   A. All citizens and visitors to Alaska who have an interest in wildlife, hunters, trappers, photographers, hikers, bird watchers, and campers.

   B. Estimated number served

1. Hunters, resident (16 years or older)	74,485*
2. Hunters, nonresident	7,289

VII. Value of the resources

A. Estimated value to user groups	$100,000,000**
B. Revenue generated to State	2,581,000***

VIII. Employment

Estimated primary and secondary employment	28,655 persons

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* Plus additional estimated 15,000 under 16 years of age
** Annually
*** Licenses and tags

Division of Boards

I. Number of employees
   A. Off season 4
   B. Peak season 4

II. Budgets
   A. FY 81 allocated $452,800
   B. FY 82 Governor's request 515,400

III. Distribution of staff
   Juneau Fairbanks

IV. For FY 81
   Major program emphasis
   1. Planning and executing meetings of Board of Fisheries and Board of Game
   2. Coordination of advisory committee activities
   3. Day-to-day coordination of divisions with boards and boards with other agencies and Legislature.

V. For FY 82
   Major program emphasis will be the same as for FY 81

VI. User groups
   As the population of Alaska increases, human development and alteration of natural ecosystems also increase, usually to the detriment of wildlife or fisheries. Concurrently human demands for utilization of these limited natural resources increase. The two boards serve to resolve conflicts among competing segments of the public while attempting to preserve the biological integrity of the resources.

VII. Problem areas
   Reconciliation of the needs of rural, urban, commercial, recreational and aesthetic (nonkillers) users in view of scarce resources.

Division of Fisheries Rehabilitation, Enhancement & Development

I. Number of employees
   A. Off season including seasonal 209
   B. Peak season including seasonal 319

II. Budgets
   A. FY 81 allocated
      1. Operating $10,490,700
      2. CIP 8,970,000
   B. FY 82 Governor's request
      1. Operating $11,673,700
      2. CIP 3,593,000

III. Distribution of staff

Locations:	Juneau	Anchorage	Cordova
Dillingham	Fairbanks	Kodiak	Petersburg
Homer	Ketchikan	Palmer	Sitka
Soldotna			

IV. For FY 81
   A. Major program emphasis
      The "shakedown" of new hatcheries and the development of brood stock at the hatcheries.

   B. Major successes
      More than 879,000 State hatchery-bred salmon returned to the hatcheries and fisheries during 1980.

V. For FY 82
   A. Major program emphasis
      1. Continued brood stock development
      2. Hatcheries which have completed "shakedown" will operate as near to design capacity as possible
      3. Improve and intensify evaluation of marked and tagged hatchery fish
      4. Emphasize commitment to sport fishermen through trout and salmon stocking projects
      5. Provide technical assistance to private nonprofit aquaculture corporations as needed

   B Special projects
      Construction of Main Bay, Trail Lakes, and Sikusuilaq springs hatcheries

   C. Increased funding, above inflation, will be directed to

      1. Increased production of existing facilities
      2. Operation of Main Bay, Snettisham, and Clear
      3. Evaluation: Mark, tag, and recovery

D. New positions requested

1. Permanent 3
2. Seasonal/Part Time
   11 positions for 28 man months
   23 positions for 69 man months
   29 non-permanent positions for 75 man months

VI. User groups
A. Commercial, sport, and subsistence fishermen, visitors

VII. Capital investment
The State has $78,000,000 invested in hatcheries and $2,600,000 in fishways.

//

DEPARTMENT OF FISH AND GAME

Robert J. Simon
COMMERCIAL FISHERIES
ENTRY COMMISSION

Ronald O. Skoog
COMMISSIONER

BOARDS OF FISHERIES
AND GAME

William G. Demmert, Jr.
DEPUTY COMMISSIONER
PROGRAM MANAGEMENT

Richard C. Lee
SPECIAL ASSISTANT

Mary K. Jablonski
SPECIAL ASSISTANT

Stan A. Moberly
SPECIAL ASSISTANT

Don W. Collinsworth
DEPUTY COMMISSIONER
RESOURCE MANAGEMENT

DIVISION
OF
DATA
SERVICES

D. Kelso
DIVISION
OF
SUBSISTENCE

R. Logan
DIVISION
OF
HABITAT
PROTECTION

R. Clark
DIVISION
OF
ADMINISTRATION

C. Lehman
VESSELS
SECTION

D. Moulton
PUBLIC
COMMUNICATIONS
SECTION

R. Somerville
DIVISION
OF
GAME

R. Andrews
DIVISION
OF
SPORT
FISHERIES

S. Pennoyer
DIVISION
OF
COMMERCIAL
FISHERIES

R. Roys
DIVISION
OF
FISHERIES
REHABILITATION,
ENHANCEMENT
AND
DEVELOPMENT

G. Cook
DIVISION
OF FISH
AND GAME
BOARDS

REGIONAL OFFICES

AREA OFFICES

REGIONAL OFFICES

AREA OFFICES

ALASKA DEPARTMENT OF FISH AND GAME REGIONAL AND FIELD OFFICES

	Comm. Fish	Sp. Fish	F.R.E.D.	Game	Habitat	Subsistence	Admin
Anchorage	X	X	X	X	X	X	X
Barrow				X			
Bethel	X					X	
Chignik	X						
Cold Bay	X						
Cooper Landing				X			
Cordova	X						
Delta Junction		X		X			
Dillingham	X		X	X		X	
Dutch Harbor	X						
Fairbanks	X	X	X	X	X	X	X
Ft. Yukon				X			
Galena				X			
Glennallen	X	X		X			
Haines	X						
Homer	X	X	X				
Juneau	X	X	X	X	X	X	X
Ketchikan	X	X	X	X			
King Salmon	X	X		X			
Kodiak	X	X	X	X			
Kotzebue				X		X	
McGrath				X		X	
Nome	X			X		X	
Palmer		X	X	X			
Petersburg	X	X	X	X	X		
St. Marys	X						
Sand Point	X						
Seward		X					
Sitka	X	X	X	X	X		
Soldotna	X	X	X	X			
Talkeetna				X			
Tok				X			
Wrangell	X						
Yakutat				X			

ALASKA DEPARTMENT OF FISH AND GAME - STATUS OF PROGRAM SUPPORT

Presentation to Senate Resources - February 18, 1981

William G. Demmert, Jr., Ed.D.
Deputy Commissioner
Program Management
Alaska Department of Fish and Game

ALASKA DEPARTMENT OF FISH AND GAME - STATUS OF PROGRAM SUPPORT

Presentation of Senate Resources - February 18, 1981

DIVISION OF ADMINISTRATION

1. Personnel Management and payroll administration functions have undergone significant changes. The most important have been related to the implementation of the nonpermanent hire law passed in 1979. The law made it more difficult to hire nonpermanent personnel than to appoint permanent seasonal employees. Because of this fact, the Department's need for large numbers of short-time workers during peak seasons forced us to create numerous new permanent seasonal positions. A number of problems have been experienced, particularly in trying to fill positions in a timely manner. On the brighter side, the Division has been delegated the authority for position classifications under range 18, which should considerably reduce the time required to complete classification actions. The Division has also been delegated recruitment and examining responsibility for certain classes unique to the Department of Fish and Game, which should help save even more time. Unfortunately, the current personnel and payroll system is both labor and paper intensive, which makes time-saving a difficult problem. A methods review of this function is planned for later this calendar year with the Division of Personnel, with hopes to automate many of these activities.

2. In recent years, the demands placed on the entire Department have grown considerably. This fact, aggravated by program expansion in

commercial fisheries, hatcheries, habitat protection, subsistence, etc., have severely stressed all support services provided by the Division. Particularly difficult problems are faced by the fiscal management program. The Division is currently developing in cooperation with the Department of Administration, a pilot accounting and pre-audit system using electronic technology. When complete, the system will provide greater accuracy, more rapid payment to vendors, improved reporting, and be a significant methods improvement over current manual systems.

3. The Department's Affirmative Action program is moving ahead. Activities to date include drafting an Affirmative Action Plan, a review of potential problems, initiation of training for supervisors, and examination of employee development program possibilities.

4. Office space and housing continue to be a major stumbling block. The problems are not unique, but in a number of areas the housing problems have affected the success of our resource management programs. As more land becomes available and loan programs begin to affect the rural housing picture some of these problems will be reduced, albeit not eliminated. At present the Division is either negotiating for or bidding out warehouse, office and housing space in a number of communities, including Juneau, Anchorage, Barrow, Homer, Cordova, Dillingham, Sand Point, Kotzebue, Bethel, St. Mary's and McGrath. However, substantial problems continue to exist. A request for capital improvement funding for housing and office facilities has been deferred to FY83.

PUBLIC COMMUNICATIONS SECTION

1. Publication of the Department's magazine, Fish Tales and Game Trails, was resumed. In a major change from the publication's earlier editorial policy, each edition will focus on a specific issue related to Alaska's fish and wildife resources. The first issue covered the effect of clearcut logging, the second is intended to cover land use, etc. Representative groups from all sides of each issue are being given an opportunity to contribute articles. Plans have been made to begin distributing the magazine to Outside subscribers at no additional cost to the State.

2. A series of illustrated television public service announcements was implemented. To date, 13 different spots have been aired. At an average cost of under $1,000 each, these spots are an extremely cost-effective means of reaching large numbers of Alaskans with important messages. Emphasis is given to messages requesting adherence to State laws and regulations and encouraging cooperation with Department research programs.

3. The Section received two internationally recognized awards from the Association for Conservation Information. The first award for "Outstanding Program in Environmental Education," was for the Alaska Wildlife Notebook Series Teacher's Guide; the second, for "Outstanding Film," was for Return To Creamer's Field.

HABITAT PROTECTION SECTION

1. A number of the Section's more significant activities have occurred in the area of regulatory reform. The Section began a regulatory reform program on its own initiative in 1978. In 1980, a statewide program was begun, now supervised by Special Assistant Attorney General Jon Tillinghast. Specific activities of the Section include:

   A. Regulation Development: The Section has in the past conducted regulatory programs without specific regulations. The Section has now drafted regulations which will be presented to the Boards of Fisheries and Game in March. The draft regulations are intended to increase consistency and predictability of the Section's activities. Industry benefits include improved project planning and fewer delays.

   B. Uniform State Regulations: The Section has been participating in the effort to draft uniform procedural regulations for all agencies which issue development-related permits (ADF&G, DNR, DEC). These regulations will clarify State agency roles and authorities, eliminate duplication of effort in certain programs, and reduce public confusion over permit processing.

   C. Standardized Application Forms: The effort to develop a standard placer mining permit application resulted in just such an application and a joint ADF&G, DNR and DEC policy

clarifying state enforcement policy. In 1981, the agencies involved received an appropriation allowing greater representation in the field as the result of the first coordinated interagency budget submittal of its type.

E. Policy Clarification: The Section is currently clarifying policies associated with its regulatory program, and drafting policy positions on various other issues. The policies should make the Department's positions more predictable and will provide developers with advance notice of ways to minimize conflicts with species and habitats.

F. Procedures: Procedural outlines have been issued specifying the way in which future Title 16 permits will be issued. The procedures will make Departmental actions more sound legally, will provide the public with a clear indication of the authorities used, and will clarify the Department's justification for its actions.

G. Update of the Anadromous Stream Catalog: Many problems with the Anadromous Stream Catalog will be eliminated with an update scheduled for completion in 1982. Only those streams actually containing anadromous fish will be classified in the new version; many previously classified streams will be eliminated.

2. The State land disposal program continues to generate a great deal of controversy, with the 100,000-acre annual disposal quota being

the single most controversial feature. The Habitat Section has completed or is currently active in the following:

A. Land Classification: The Section has worked intensively to gather information on potential fish and wildlife lands throughout the State and to help get those lands classified.

B. Identification of Public Interest Lands: The Section actively participated in the identification of public interest lands prior to disposal. Lands identified for access, public hunting, and key wildlife values were subsequently removed from the disposal pool.

C. Legislation: The Section has participated in the preparation of draft language to provide for fish and game concerns.

SUBSISTENCE SECTION

1. The Subsistence Section is a research group charged with providing information on the significance and functioning of subsistence throughout Alaska. It is not an advocacy group but does assist in formulating policy within the Department. The FY81 budget provided for nine researchers at various locations (Barrow, Kotzebue, Nome, Fairbanks, Anchorage, Dillingham, Bethel, Galena, Juneau), and for a small support and management staff. Authorized positions at Ft. Yukon, McGrath and Glennallen remain unfilled due to budget constraints.

2. The Section produced about 25 original reports, primarily for the use of the Department and the Boards of Fisheries and Game. These reports have contributed significantly to the adoption of policies for fish and game regulatory activities and management plans. In addition, these reports provided information regarding the effects of previous actions by the Boards. The Section provided other agencies with information relating to OCS and other oil and gas development, the opening of the North Slope Haul Road, the gas pipeline, land disposal and other matters.

VESSELS SECTION

Vessels Section provided approximately 1150 days of manned vessel time and 500 days of unmanned vessel time in support of various Department projects. In addition, the Section carried almost 400 tons of Department freight, primarily to remote areas. The vessels themselves are used as working platforms for salmon, crab, shrimp, and other research as well as for mobile housing for field personnel. Voyages range from day trips to longer open-sea trips of several weeks' duration. Many of the larger vessels are equipped to perform several different tasks including experimental trawling, hydro-acoustic surveys, seining, gillnetting, etc.

The vessel "Resolution" was the first of the Department's vessels to visit Nome. This occurred during the spring herring fishery.

DEPARTMENT
OF
NATURAL
RESOURCES
2-23-81

Alaska State Legislature

BETTYE FAHRENKAMP, CHAIRMAN
VIC FISCHER, VICE-CHAIRMAN
BRAD BRADLEY
DICK ELIASON
DON GILMAN
BOB MULCAHY
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Senate

Committee on Resources

February 23, 1981
1:30 p.m.

Beltz Room
211 - Capitol

MEMBERS PRESENT

SENATOR FAHRENKAMP
SENATOR FISCHER
SENATOR MULCAHY
SENATOR ELIASON
SENATOR GILMAN

The Committee was briefed by Jeff Haynes, Deputy Commissioner, Department of Natural Resources, Reed Stoops, Director, Division of Research and Development, Tom Bergstrom, Director, Division of Administration and Management, Ross Schaff, State Geologist, Division of Geological and Geophysical Surveys, Dr. Wyatt Gilbert, Deputy State Geologist, Nick Carney, Director, Division of Agriculture, and Art Davidson, Special Agricultural Consultant. Jeff Haynes stated that the Department's mission is the conveyance of land and resources to private owners through leasing and disposal methods. The Department of Natural Resources is production oriented. The indicator of what they plan to produce during a particular year can be seen in their annual budget. He stated that because the State does not know what there is on or under the land they conduct resource inventories. In order to have development, a land base is needed and the Department has tried to help through land allocation.

Reed Stoops stated that last year they conducted work shops and asked resource industries to identify those lands they were most interested in. When these were completed they came up with a draft set of goals, objectives, identified land of interest, put the information into a computer which printed out a map. Then the Department worked on determining the designation of the lands to best achieve the objectives which resulted in the various land allocations. The map shows surface allocation and potential subsurface resources. With this map they can see subsurface resources prior to surface land disposals and potential conflicts. He cautioned the Committee that the planning map is based upon the best available information at the time it was produced. Its

scale is in 1000 acre grids making it difficult to be site specific. It was drawn before d-2 but will be updated this year. And, it shows only state land resources. He stated that an example of how the map can be used is that on a statewide basis you can see that the state can provide the needed timber, but looking at the map can see the specific areas where supply and demand are out of balance.

Ross Schaff stated that the state is limited in its resource data base. Only 7% of the state is mapped in an usable scale. He is proposing a five year long range data collection process. He stated that the resource inventory process consists of: compulation of existing data and automation, collection of new information in the field, resource inventory inorder to have a statistical approach for management, and the production of reports, maps and interpertive maps.

Jeff Haynes stated that the Department's goal is to have continuous land disposals in excess of demand. The purpose of the Municipal Land Selection was to provide residental land near road systems because most of the state land is remote. Presently the municipalities have working titles to the land but inorder for it to be patented, the land has to be surveyed and this is where a problem develops because some municipalities do not have the front end money to do the surveying.

Nick Carney delineated the cost and schedule of State investment in agricultural development through 1990. (copy attached)

Lawmakers want plan for state's agriculture

By MICHAEL MULNIX
Empire Staff Reporter

While state agriculture specialists want the legislative go-ahead for additional money for the Nenana-Totchaket Farm Project, lawmakers Friday said more information about the state's total agricultural plan is needed before any more money is doled out.

Agriculture officials asked lawmakers for an immediate $500,000 for continuation of a bridge design program at the Nenana project south of Fairbanks. The Senate Resources Committee, however, indicated it would not support such an appropriation until some sort of long-range agricultural plan is formulated.

"My main concern is tying in all the agricultural concerns in the state," Sen. Arliss Sturgulewski, R-Anchorage, told agriculture officials. "I'm really concerned. It seems like we have huge holes in our (agriculture) plan. Tell me, who's minding the store? Who gives us the total plan? Who ties together the elements? We just seem to be lurching into it."

ALASKA NEWS

Sen. Vic Fischer, R-Anchorage, said he wanted to see "an overall, integrated plan" for the next decade before giving more money to the state's major agriculture projects at Nenana, Delta and Point MacKenzie.

"We're putting people out there, and doggone it, let's don't put them out there to fail," Sturgulewski said, indicating support for a comprehensive plan for agriculture. "Let's not supply them with a whole lot of promises and commitments and then tell them we've gotten tired of it and are going to cut them off. Nobody wants that."

The Legislature has already poured about $80 million into the three agriculture projects and will likely shell out more this session. The $500,000 asked for on Friday "is needed to keep the project (at Nenana) alive," according to Nenana Mayor Jack Coghill.

Phase one of the Nenana project calls for $17 million more to be spent by spring of 1982 for a road and bridge system to get into the area.

The Nenana project was funded for $500,000 last session for feasibility studies. Coghill said the money was spent to determine if vegetables or c or both, could be raised on the land.

Coghill said th industry "is a very viable one," but the vegetable industry a real question" because of the short season.

"But we're just on the tip of the iceberg (with the project). We've got a long way to go," Coghill said.

Most critical of the project was Sen. John Sackett, R-Galena, who said he has seen no indication any long-range planning for state agriculture exists. Sackett is not on the Resources Committee but sat in for the hearing.

"I doubt very much you even know what you need next," Sackett told Bob Palmer, state coordinator of special projects, and Nick Carney, director of the Division of Agriculture.

Palmer said he would have more answers if more money was provided for additional feasibility studies.

"As far as developing a long-term plan ... there was more than enough for us to have to accomplish with the short-term projects before worrying about any long-term plan," Palmer said. "Important questions need to be answered, but we've been tight-fisted about money. If we get more money, then we'll be able to answer more questions."

Carney agreed with the need to establish a long-term, statewide plan for agriculture, saying the current program "lacks coordination." He argued, however, that the Division of Agriculture is suffering "growing pains" due to huge expansion of state agricultural lands.

The state had 17,000 acres of agricultural land two years ago compared to 50,000 now, Carney said.

Carney said the $500,000 for access into the Nenana area is crucial if the project is to continue on schedule. The actual lottery disposal of the area is scheduled to take place about a year from now.

Terry Gardiner, D-Ketchikan, co-chairman of the House Resources Committee, indicated he would support more money for a long-range plan for the state's agricultural projects.

"It's no small wonder we don't have any plan because the dollars we've spent have been for the projects themselves and not on organizational plans. We have advocated very little for administration," Gardiner said.

Lawmakers gave agriculture officials two weeks to come up with some sort of comprehensive plan for agriculture.

T-H puts more residents to work

By MARK BAUMGARTNER
Empire Staff Reporter

Apparently undaunted by the grim economic forecasts, the Tlingit and Haida Private Industry Council is forging ahead under title sevens, by and large, escaped the ax.

Within CETA title seven is a special job-creation program for Natives.

"The Department of Labor propriate $6.6 million this year for title seven's Native American programs.

Parr expected between $1—1.5 million to come to programs sponsored by the PIC.

until they learn the job," Parr said of the program.

He expects the jobs to be permanent, so that after the trainee becomes competent he or she will stay on in an unsub-

Committee File 2/23/84

RESOURCE EVALUATION AND MAPPING PROGRAM

Information about natural resources in various parts of the State of Alaska is critically needed as the basis for land use and land classification decisions, land disposals, land trades, and general resource planning. Resource information permits decisions affecting natural resource development to be based on an estimate of the importance of those resources at a national, state, and local level. Geologic factors, such as the magnitude of geologic hazards and the engineering geology conditions affecting potential development are also an important part of such decisions.

The amount of information about natural resources in most of Alaska is woefully inadequate for many of the decisions about land classification that are currently being made. Geologic investigation in the State is still in its infancy compared to the contiguous 48 states. Much of hte work that has been done in Alaska, to date, has been either very broad and general in scope, and not suited to even regional needs, or has been focused on matters of federal concern, such as the D2 issue.

The resource inventory program is a comprehensive and systematic method of assessing the potential of various resources within areas of State concern. The inventory includes an assessment of the industrial materials, metallic minerals, geothermal, coal, uranium, oil and gas, soils, water, forestry, and agricultural potential of an area, along with an analysis of the geologic hazards and engineering geology conditions. The purpose of the inventory program is to provide the public, the

administration, the legislature, and local governments with meaningful estimates and descriptions of resources in advance of the time when major resource and land management decisions are made.

The proposed resource inventory program is not intended to duplicate or ignore resource assessment work being done within the State under existing projects. The results from ongoing projects, such as the DGGS geothermal energy investigations, will be included with data gathered by the resource inventory program.

Resource inventory studies have been conducted at various levels of detail and sophisticaton in Alaska for over 75 years, but most of this work has been very general and broad in scope. Although much information gathered by earlier programs is informative, most of it has not been specific enough for truly-informed decision-making. Much of it has been presented in a format that is not useful to the general public or those outside of the resource sciences. Many resource studies were planned to answer some immediate crisis, and have proved to be of limited value, because resource investigations generally require a number of years to produce really useful, high quality results. In addition, some major efforts at resource inventory have attempted to compile existing data rather than to expand the resource data base. The existing data base is clearly inadequate for determining land classification and use, providing resource information for use by the public and local governments, or for assessing the economic effects of many land-related decisions.

Resource inventory assessments require systematic and protracted effort over a period of several years, if high quality results are to be

realized. A comprehensive resource inventory program has the advantage of coordinating and pooling a broad range of knowledge, logistics, and investigative techniques. For these reasons, the DGGS Resource Inventory Program is being proposed as a Capital Improvement Project.

SCOPE

The proposed resource inventory program will investigate areas where increased public or industrial use is expected to lead to development in the foreseeable future, or where pending decisions and potential conflicts over various types of land use hinge on resource information. The program is designed to produce resource data within these areas of sufficient detail to be useful at a local as well as at a State level. The type of work to be done will be more detailed than most of the work currently being planned and done by U.S. Geological Survey, and will focus on areas where State concerns, usually on State-owned or selected land, are paramount.

Obviously, all State lands should eventually be investigated in this manner, but a program to cover all State land in the planned detail will take several decades to accomplish. This program proposes to investigate about 15% to 20% of State-controlled lands within the next 5 years, a level of effort that is reasonably within the resources of State government to accomplish. Eventually, all State-owned land should be studied in this manner, and a systematic approach of meeting that objective would be simply an extension of this initial resource inventory program into areas that appear to need such information when the extension is planned.

METHODS

The resource inventory program consists of several distinct steps or phases. The program is proposed on an area by area basis as a series of essentially independent projects, except for the computer derived resource estimates, which would be essential for all projects. However, the process of resource inventory is essentially the same for all areas. The scope and cost of each step in a given area depends on the existing data base and the type of information needed in that area.

Because the resource inventory process is much the same for all areas, a general description of the process is given below which will apply to all the areas being proposed for such investigation.

Phase I: Compilation and Program Design

The first step in a resource inventory program is the compilation of existing data. From the compilation, the need for additional data can be determined, and the field investigations and remote-sensing projects can be planned. For the areas which have been proposed in this program, the status of the existing data base is known to various investigators within the DGGS, and the formal compilation of such data would not be a particularly complex or difficult process. The compilation will largely be an internal process in the project for planning purposes, and publication of the compilations is not anticipated. Information on oil and gas, coal, vegetation, agricultural lands, minerals and recreation has been digitized through DNR's ALAR's computer system and the Division of

Research and Development's Regional Resource Planning project. This data base, which utilized compilations by the Land Use Planning Commission and information provided by a series of meetings with researchers from industry forms the basis for preliminary classifications, conflict identification, and identification of more specific resource evaluation. Results of the compilation phase will periodically be added to this preliminary automated data base.

Phase II: Data Collection and Analysis

The next step of the resource evaluation program is the acquisition of additional data to provide the coverage and detail necessary to make resource estimates and maps in the detail that is required for decision making. Field investigations over a period of several years are planned for each area to acquire the data. Logistics for field investigations and remote-sensing needs within areas will take advantage of multiple-use of equipment, transportation, and personnel. Some considerable cost savings should be possible using this program.

The analysis of the data and samples acquired by the field investigations is a major step in the program. Many of the sample analyses will be handled through the DGGS geotechnical laboratory, and certain special analyses will be submitted to commercial and university laboratories. Analysis and presentation of the remote-sensing data will be done mostly on a contract basis.

The following types of data by resource will constitute the primary objectives of the resource evaluation program.

Water

Water data collected will include surface and subsurface water quality determinations, aquifer location and characteristics, minimum stream flow determinations, compilation of well log data, identification of permafrost location and characteristics, lake level histories, ground water characteristics, meteorlogical information, and flood plain delineation. The water resource inventory program will be a cooperative with the Water Resources Divison of the USGS through which the State dollars are matched by federal on a 1:1 ratio. The primary objective of the water inventory program is an understanding of the natural water systems so that appropriation can be made on an informed basis.

Geothermal

A on-going statewide hot springs inventory, partially funded by DOE and state operating funds will provide the basis for selecting site specific work within the regions outlined in this proposal. The purpose of the geothermal resource inventory program will be to evaluate the energy resource potential of geothermal anomalous areas including hot springs, deep sedimentary horizons, and volcanoes. Much of the inventory work will be done in cooperation with the Geophysical Institute and the USGS with partial funding anticipated from DOE. The primary objectives are to identify anomalous areas and provide an estimate of the energy resource.

Minerals

The resource potential of metallic, industrial (limestone, phosphate, etc.), and energy minerals (uranium, oil shale) will be defined through detailed geologic bedrock mapping and probabilistic trend analyses. Useful geologic maps are now available for only an estimated 7% of the state. Most states have 100% coverage at an 1 inch to a mile scale and therefore are at a distinct advantage in their ability to provide mineral and energy resource information. Geologic maps represent the most frequent request from industry (coal, oil and gas, and mineral) and are the basis for information supplied by DGGS to management agencies.

Coal

The location of Alaska's coal fields are roughly known but very little detailed information has been collected. The extent and volumes of coal will be defined through geologic mapping. Samples will be anlaysed for rank, inpurities, water and ash content, and energy potential.

Oil and Gas

The DGGS oil and gas resource evaluation program is tied directly to the State's leasing schedule and is funded through a separate CIP and DNR operating budget. Basin-wide resource estimates, however, are not and constitute the main contribution of this proposed CIP. The methodology for oil and gas estimates as welll as minerals is described in Phase III.

Vegetation

Data to be collected will include distribution and type of vegetation, timber volumes, mortality rations, growth per acre per species, range conditions, and browse type.

Surficial Geology

Surficial geology is a study of unconsolidated materials at the Earth's surface including the distribution and volume of construction materials (sand and gravel), engineering characteristics, wetlands, geologic hazards, soils, and type and importance of these materials few studies detailed enough for quality decision making have been made. Data collected will be through remote sensing techniques, especially aerial photointerpretation and field mapping. Detailed soils inventory will be done in cooperation with the U.S. Soils Conservation Service.

Phase III: Resource Estimates and Computer Modelling

The application of computer simulation models where quantitative resource estimates are desired is a technique not often used by DNR agencies, although a major effort was made in the case of the 1979 Beaufort Sea Lease Sale, using the facilities of the USGS. In that instance, estimates were made of oil and gas resources on acreage offerred for lease for the purpose of estimating the value of various tracts. Analogous computer models exist for estimating oil and gas resources on a regional basis (i.e., basin and sub-basin) and for estimating mineral potential. The DNR

resource inventory program will include such modelling as an integral part of the inventory process, so that users of the products of the program will have included an estimate of the resource potential of an area along with a measure of the statistical certainty of that resource estimate. This type of computer modelling or simulation is generally accepted as the best method for deriving meaningful resource estimates.

Resource estimates can be used as the basis for economic studies of the potential value of any given resource. Obviously, an economic analysis would be highly desirable for specific resources in many reas. Such economic studies, however, are based on a great many factors, including market forecasts, the cost of production and transportation facilities, supply forecasts on a world-wide basis, and so forth, information beyond the scope of a resource inventory CIP. If the need arises, such economic studies could be carried out and accomplished expeditiously, because resource estimates would be available as the basis for the economic estimates, along with a knowledge of other factors, such as engineering conditions, and geologic hazards that affect the potential economic value of a resource.

Phase IV: Reports and Publications

The remainder of the resource inventory program will be devoted to publication of the results in a number of different user-oriented formats. The initial reports will be the technical reports and maps that are the documented record of the data and results of various technical analyses and computer modelling studies. Such technical reports constitute the

permanent scientific record of the investigations, and are widely used by industry, government, and the academic world. The final products will include resource estimates, location and derivative maps, and descriptive reports written for general use by the public, the legislature, the administration, and local governments. A list of products or results is given below:

Technical Reports and Maps

Geologic bedrock maps . . . . . scale 1:63,360 or larger

Geochemical maps . . . . . scale 1:63,360

Soils maps . . . . . scale 1:31,680 or larger

Vegetation maps . . . . . scale 1:31,680 or larger

Surficial geology maps . . . . . scale 1:31,680 or larger

Hydrologic maps . . . . . scale 1:63,360 or larger

Isopach maps (unconsolidated materials)

Technical Reports (soils, hydrology, vegetation, geology)

Subsurface sections (consolidated and unconsolidated)

Derivative Maps

Slope and slope stability maps

Mineral potential maps

Depth to ground water maps

Water quality suitability maps

Sand a gravel location, quality and production maps

Geologic hazards (flood plain, permafrost, unstable soils, seismicity) maps

Oil and Gas potential

Coal Distribution/quality maps

Water table maps

Water decline maps

Agricultural suitability maps

Erosion susceptibility maps

Land use maps

Archaeology location maps

Other

STUDY AREAS

The resource evaluation program is subdivided into a series of projects focusing on specific areas. Nine different areas each have conditions that will require detailed resource information either immediately or in the very foreseeable future. The information needs in these areas have been determined by studies done under the Regional Resource Plans within DNR, expressions of information needs by industry, and consultation with other State and Federal departments.

The program therefore is a combination of the nine different area projects offerred in the following descriptions. The funding of the program is broken down by area as well as by resource. The program should be considered as incremental on an area by area basis. The only exception is the component designed to produce the computer simulation models for the resource estimates. The nucleus of personnel and the computer time to develop the models is listed as a separate function, and should be regarded as essential to the project as a whole.

The North Slope is included in the list for this program although the foremost resource interest on the North Slope is the oil and gas, which is being evaluated on a sale area basis by a previous CIP and a number of operating program projects. Surface materials and water resources information on the North Slope are integral aspects of oil and gas development which are included in this resource evaluation and mapping CIP.

Table 1 summarizes the status of resource evaluation for each project area as well as the significant primary products of the investigation.

Seward Peninsula

Mineral resources have been a primary interest in the Seward Peninsula since the days of the gold rush. Recent increases in the market price of certain metallic minerals and the increase in the price of gold have led to renewed exploration and evaluation of the area by private industry. Interest exists for both hardrock and placer type deposits. In addition, a modest potential for coal for local use and geothermal energy exist in the area. Interest in the agricultural potential of reindeer grazing is also important. The land ownership pattern on the Seward Peninsula is very complex, and will probably lead to efforts by State, federal, and private (native) agencies to trade and consolidate holdings on the peninsula into some sort of coherent pattern. Also, the proximity of the scheduled oil lease sales on the offshore continental shelf by the federal government could lead to an accelerated increase in population and to the

siting of industrial facilities on the peninsula. Resources and other geologic factors affecting development will be very important in deciding how, where, and if many of these activities will be carried out.

Upper Kuskokwim Area

The Kuskikwim region encompasses a number of different resource values, including both hardrock and placer mineral deposits, coal, and oil and gas. A potential for agriculture and forestry also exist in the area, and will depend on the quality and character of the water and soil resources.

DNR has already initiated some field investigations related to mineral resources in parts of the area, and this proposal would integrate and expand the scope of present investigations. Soils studies in the area would be done on a matching fund basis by the Soils Conservation Service of the federal government.

Copper River Basin, Chugach Mountains, Matanuska Valley Area

Resources in the area include metallic minerals, oil and gas, coal, agriculture and forestry. Proximity to the central transportation facilities make this a likely area for population expansion, and will increase interest in the mineral and petroleum resources. The coal resources have some potential for local or in-state use.

DNR has begun a very modest mineral investigaiton in the Chugach Mountains, and the present proposal would expand this study to encompass a greater area, and provide for remote-sensing and additional investigations to cover the sols, forest, water, and coa resources of the area.

A USGS proposal to start a reconnaissance study of the Anchorage quadrangle under their AMRAP program will be helpful in producing some of the required information, and cooperation between the two agencies will be worked out so that the data necessary for State use will become available from both projects.

Western Susitna Valley

The coal resources of the area are likely to cause major development in the foreseeable future. The mineral resources of the bordering mountains of the Alaska Range are also an important potential value in the area. Recreaional activity in the area is already high, and will probably increase substantially when development of the coal resources takes place. A very significant potential for agriculture and forestry also exist, and investigation of this resource is pending. The geologic factors and hazards affecting the development of industrial and other types of acitvity in the area will be important consideration in the planning that will be necessary to minimize the conflicts of use in the area, both at a State the local level.

At this time, only minor investigations of the geology of the area have been undertaken, and the start of a resource inventory program in the area will provide needed information in an area that is almost certainly going to experience a significant increase in the demands on the resource.

The investigation of the agriculture potential of the area will be done on a matching fund basis with the Soils Conservation Service of the federal government.

Southeastern Alaska

Because of the state ownership pattern in southeastern Alaska, a regional resource inventory project is not planned. However, some local studies are required to investigate the mineral and forestry resources on state-owned land and in areas where State interests are affected. Southeastern Alaska is one of the most highly mineralized regions in the State, and current exploration interest is extremely high, in spite of the large amounts of wilderness proposed in the current D2 legislation. Water resource data is especially lacking for hydroelectric power sites.

Tanana Basin and Fairbanks Area

The mineral potential of parts of the area is high, as in interest in the water, forest, and agricultrual potential. The development of housing and industry will also lead to increased interest in the geologic factors limiting sugh activities.

A number of resource investigations have been funded for portions of this area and are currently in progress. The main objectives of this proposal are to coordinate and compile the results of those investigations, and evaluate in detail the soil, forest, and mineral resources. Additional field investigations will be conducted to fill in gaps between existing projects and to fill out the resource inventory of the entire area.

Upper Koyukuk and Southern Brooks Range

The potential for metallic minerals in this area is extremely high. Tens of billions of dollars of proven reserves exist in parts of the southern and western Brooks Range. Critical questions now exist about the development of transportation and production facilities, and conflicts over land use and ownership in the area are extremely serious. The mineral potential of the area is high enough to be important on a statewide and national scale.

For these reasons, a knowledge of the location and potential of the mineral resources, the engineering and geologic constraints on development of transportation and production facilities, and the potential for other uses, such as recreation, forestry, and agriculture, will be useful for decision and policy makers on State, regional, and local levels.