

ALASKA LEGISLATURE COMMITTEE FILES 1991-1992 8672
7607 SENATE RESOURCES

"A Commitment to Alaskans" is a working document meant to lay the foundation for a more refined plan in the future. As such, the Department would like to solicit public and agency input regarding information contained in this draft as well as any additional information or ideas which could be of assistance in this planning effort.

Additionally, an Interagency Task Force is being formed to act as a catalyst for advancing and refining the goals, strategies and objectives outlined on the following pages. If you are interested in participating in one of the Task Force's working groups, please let us know.

Please address all comments/ideas to:

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As Alaska looks to the future and a growing population, it is essential that we strive to provide sanitation services which protect the public health of our residents and provide a foundation for economic development opportunities.

It is the goal of this Administration that no Alaskan be deprived of the quality of life afforded by the provision of water, sewerage, and solid waste services.

DRAFT: JANUARY 7, 1992

OVERVIEW

Without adequate water, sewerage, and solid waste facilities, the vitality of Alaska's communities is hampered, public health threatened, and opportunities for economic development severely restricted.

As the State looks towards the twenty-first century, it is critical that we commit to an efficient, well planned approach to providing these public services to all Alaska.

This document offers a strategy for formulating a systematic approach to addressing the water, sewerage, and solid waste needs of Alaska's communities. It presents recommendations for maximizing the efficiency of current sanitation systems and optimizing future capital project investments. As a long-term management proposal, goals are outlined and action strategies presented for review.

This is a working policy document meant to lay the foundation for a more refined implementation plan.

A BLUE PRINT FOR SOLVING ALASKA'S SANITATION NEEDS

FUNDAMENTAL GOAL:

It is the goal of this administration that no Alaskan be deprived of the quality of life afforded by the provision of adequate water, sewerage, and solid waste services.

STRATEGY:

To achieve this goal, a five point management strategy is recommended.

- Develop a Comprehensive Interagency Approach to Problem Solving.
- Adhere to a Stable Six Year Funding Commitment.
- Six Year Capitalization of the Alaska Clean Water Fund.
- Promote a Solid State/Federal/Community Partnership.
- Enhance the State's "Insurance Policy" Programs (Training & Technical Assistance).

TIME FRAME:

If the recommendations outlined in this plan are effectively implemented, water, sewerage, and solid waste services will be provided in every Alaskan community by the year 2010. Intermediate steps may be required to achieve the final level of service.

Due to the distinct demographic and economic conditions as well as the diverse sanitation needs of Alaska's urban and rural communities, two separate plans for implementing the State's overall sanitation management strategy are required.

The first plan, outlined on pages ** through **, is a strategy for addressing the sanitation needs of the State's urban communities. The second plan, which begins on page **, presents recommendations for solving the water, sewerage, and solid waste problems in rural areas. These plans are intended to stand alone and may, therefore, contain some redundancy.

Under each plan, management goals are presented followed by action strategies for goal advancement.

**GOALS AND STRATEGIES FOR
SOLVING THE
SANITATION NEEDS
OF
URBAN ALASKA**

The Sanitation Needs of Urban Communities are Dramatic.

The immediate and long term need for increasing the availability of funds for urban water, sewer, and solid waste management projects is dramatic. During the next twenty years, it is estimated that a minimum of \$1 billion will be needed to plan, design, construct, expand, upgrade, replace, and rehabilitate sanitation systems in the State's incorporated municipalities.

AGING FACILITIES

The majority of urban water, sewerage, and solid waste facilities in place today were constructed between 1973 and 1985 at a cost which exceeded \$750 million. Since the average useful life of these facilities is 15-20 years, it is projected that there will be a major demand for system replacement between 1992-2005. The exact extent of these replacement costs is not yet known, however, due to inflation and a variety of other economic factors, costs will exceed the first round investment.

POPULATION GROWTH

Alaska is the second fastest growing State in the nation and its highest growth rates have traditionally been concentrated in incorporated communities. The population in many of these communities has already increased beyond the design capacity of their sanitation systems and system overload has become a serious problem. This increased burden on a treatment facility shortens its useful life and can result in inadequate treatment, recurring system malfunctions, or a complete system breakdown. New facilities need to be constructed or old facilities expanded to accommodate the growing population of these communities.

In addition to replacing aging systems and accommodating population growth, local governments will soon be faced with meeting new federal drinking water and solid waste standards. Complying with these new standards will require a major investment in extensive system upgrades for many communities.

NEW DRINKING WATER REQUIREMENTS

The federal government has recently redefined safe drinking water requirements. The fiscal impact of the new standards is currently under review. It is known, however, that a major investment will be required to bring systems into compliance with new surface water filtration and lead/copper rules.

NEW SOLID WASTE REQUIREMENTS

Due to the expense of upgrading landfills to meet new federal requirements, many cities will likely opt to close their landfills and build new ones. This will not be cheap. A recent study for the Juneau landfill, for example, estimated closure costs of approximately \$10 million. When constructing new facilities, communities will be required to meet federal design standards which will necessitate a substantial expenditure.

GOALS

The following goals have been identified as cornerstones to addressing the sanitation needs of urban Alaska:

- Maximize limited State revenues through an equitable division of State and local financing alternatives.
- Promote a State/Community partnership approach to problem solving.
- Assist communities protect public health and attain/maintain compliance with State and federal requirements.
- Develop a systematic approach to meeting community facility rehabilitation and replacement needs.
- Formulate an effective strategy for meeting population growth needs and ensuring adequate sanitation services are provided throughout urban Alaska.

Four Action Strategies are recommended as solid practical steps toward achieving these goals:

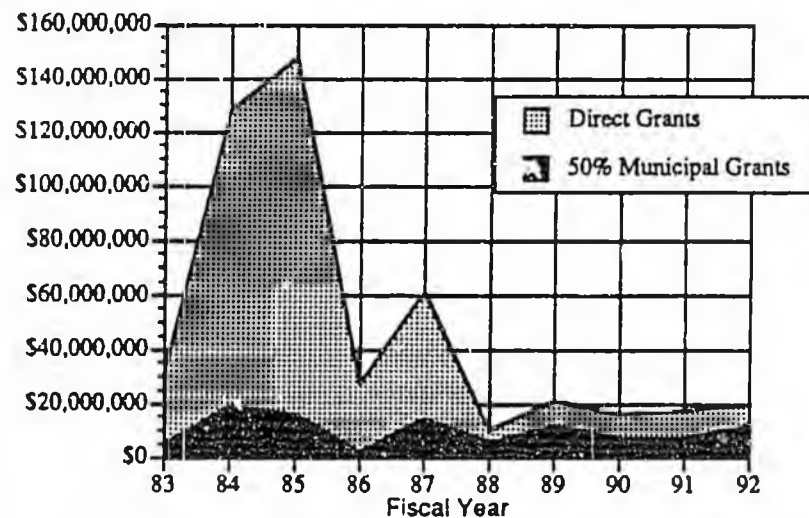
- Stabilize funding for sanitation infrastructure.
- Optimize the State's investment in sanitation facilities.
- Promote State/Community partnerships
- Develop a planning database.

ACTION STRATEGY: Stabilize funding for sanitation infrastructure.

A stable and predictable funding commitment for the construction of sanitation facilities is necessary to achieve the goal of adequate sanitation services in every Alaskan community.

As shown in the graph below, State funding of community sanitation facilities has been sporadic at best. When State revenues were high, it was relatively easy for local governments to obtain grants. However, as oil revenues declined so did the State's investment in these projects. The unpredictable nature of this "boom and bust" funding cycle has made planning for long term capital improvements virtually impossible for local governments. In fact, there have been instances where communities were successful in receiving State funding for the planning, design and the first construction phase of a project, but have not received financial assistance for the phases necessary to complete the project.

State Funding History of Sanitation Projects*



* excluding projects funded through Village Safe Water

By committing to a stable Municipal Matching Grants budget, the State and local governments would be able to plan for and finance public sanitation projects in a more effective and efficient manner.

Likewise, by capitalizing the Alaska Clean Water Fund loan programs, the State would provide Alaska's urban communities with a predictable, perpetual and, eventually, self-sustaining financial resource (as describe in objective 2 of the next Action Strategy).

ACTION STRATEGY:**Optimize State investment sanitation infrastructure.**

It is estimated that well over \$1 billion will be needed to finance sanitation infrastructure in incorporated cities and boroughs during the next twenty years.

This demand greatly exceeds limited State and local revenues. It is therefore vital that we: (a) provide a financially prudent, long term strategy to solve sanitation needs and (b) stretch and leverage every dollar spent on sanitation infrastructure to the greatest extent possible.

Objective 1 Obtain State match for leveraging federal capitalization of the Wastewater Loan Program.

Since 1972, Alaska communities have relied upon federal wastewater grants to partially fund their larger, more complex wastewater treatment and collection systems. However, in 1987 Congress phased out the 15 year old grant program and replaced it with state administered revolving loan funds. This action marked the beginning of a new era in financing wastewater projects. The Federal Wastewater Loan Program was the State's response to this change in national direction.

As part of its FY 93 budget request, the Department will pursue an appropriation of \$1.6 million as its final capitalization request for the Federal Wastewater Loan Program. This appropriation will fulfill the State's matching requirements for capturing all remaining federal "seed" monies (\$23 million) earmarked for the program.

After State Fiscal Year 1993, State appropriations will not be required to keep the program operating. It will be self-sustaining through loan repayments and will have the resources available to offer an average of \$9.3 million in loans per year for community wastewater projects.

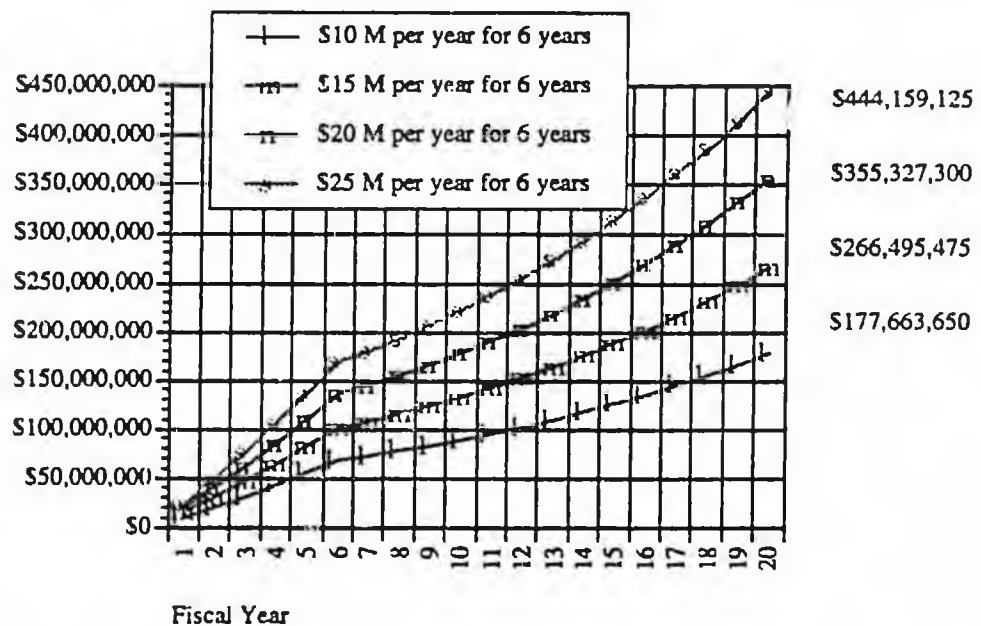
Objective 2 Capitalize the State Construction Loan Program.

For the next six years, the Department plans to request an appropriation to the State Construction Loan Program as part of its capital budget submission. Due to the large demand for financial assistance from this loan program (last year alone, community requests exceeded \$95 million), a minimum capitalization of \$10 million per year for six years is recommended. At this level, over \$177.7 million in sanitation projects could be financed over twenty years.

If revenues are available, a more aggressive six year capitalization commitment is recommended.

AN ENDOWMENT FOR THE FUTURE.

The graph below compares the value of new projects which could be financed through the State Construction Loan Program over a twenty year period under four capitalization scenarios, where \$10, \$15, \$20 and \$25 million are appropriated each year for six years.



Under Scenario 1, the State capitalizes the fund at the rate of \$10 million per year for six years. This commitment level would allow the fund to finance \$177,663,650 worth of projects over a twenty year period.

As the capitalization level increases under the remaining three scenarios, the number of projects that can be funded over a twenty years and the average return to the revolving fund increase proportionately. Under each scenario the State would realize more that a 225 percent return on its initial investment after 20 years.

How would the program work?

Like any revolving loan program, a specific amount is appropriated to capitalize the fund. These monies are then loaned to communities for a specific purpose—in this case, to plan, design and construct water, sewerage, and solid waste management projects. Once a project is completed, communities have one year to collect user fees or assessments before they begin repaying the loan. As monies are repaid, they are reloaned to finance additional projects. In this way, the fund continually recycles its assets. The cycle is perpetual, funds keep revolving, and a continually greater number of projects are constructed from the "seed" monies appropriated to capitalize the fund.



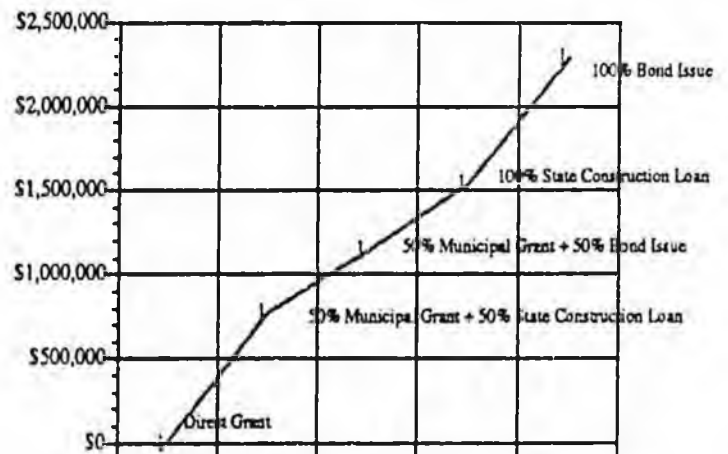
(insert graphic = overview of loan fund concept)

The program's financing terms are attractive. Communities may receive low interest loans through the program for up to 100 percent of costs associated with water, sewer, and solid waste projects. Interest rates are based on two-thirds of the Municipal Bond Index rate at the time a loan is made. Over the last two years, this has equalled an average interest rate of 4.5 percent. Loan repayment periods may be up to twenty years.

Although most of the State's larger communities can afford to repay a loan for 100 percent of a projects costs, some of the smaller cities do not have the population or economic base to repay a large

loan. For these communities an equitable solution is a grant/loan mix. This "package" approach could be accomplished by combining State Construction Loans with Municipal Matching Grants.

A strategy to assess the appropriate grant/loan mix for these communities will be pursued as part of the Department's on-going planning effort. This effort will require analysis of several factors on a community-by-community basis including current user charges, operation and maintenance expenses, community population, per capita income, and the availability of various local revenue streams which could be dedicated to loan repayment.



Cost to Community to Construct a \$1 Million Project Under 5 Funding Options

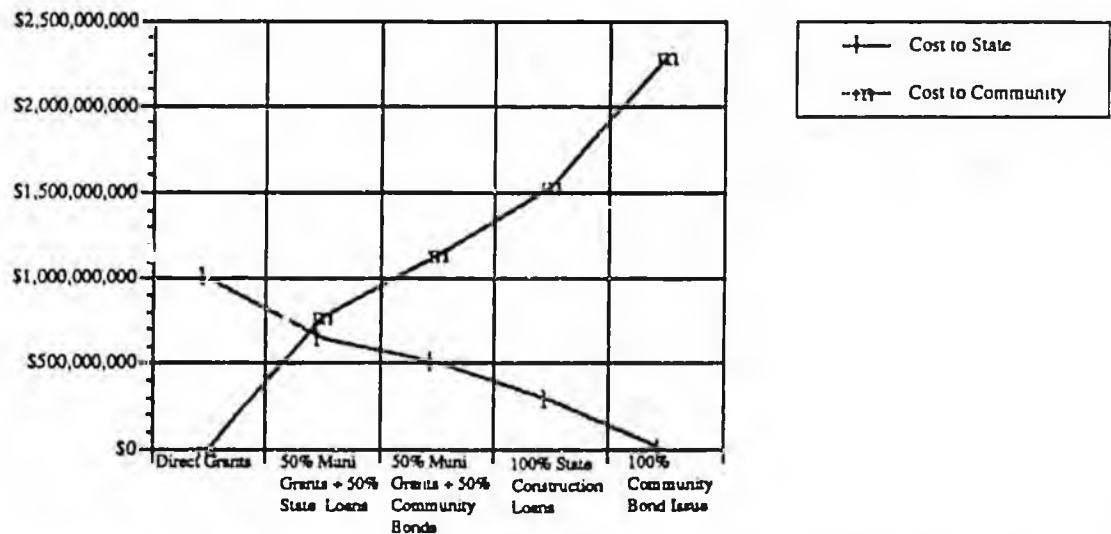
Objective 3 Promote an equitable solution to capital project financing.

Addressing the water, sewerage, and solid waste needs of the State's urban communities is estimated to cost in excess of \$1 billion over the next 20 years. Unfortunately, local governments and the State have limited financial resources. So the question arises ... how will the planning, design and construction of these projects be financed?

The State can not do it alone. Revenues are declining and demands on budgets are already burdensome. Neither can communities afford to finance multi-million dollar projects. There are few revenue streams which local governments can dedicate to sanitation facility construction. Residential user fees are already steep in most communities and are earmarked for system operation, maintenance, and replacement costs.

The Department recommends an equitable division of financial responsibility between the State and local governments. The graph below compares the costs to communities and the State to construct \$1 billion in projects over the next twenty years under five financing mechanisms: State Direct Grants, State Construction Loans; Municipal Bonds; Municipal Grants combined with State Construction Loans; and a 50/50 Municipal Grant/community bond combination.

Comparison of cost to communities and the State to Construct 1 Billion in projects over the next 20 years under 5 financing alternatives



As shown above, the most equitable division of financial responsibility between the State and local governments would be provided by combining Municipal Grants and State Construction Loans. The grant/loan ratio could be changed based upon a community's financial capabilities. This approach is used in many States throughout the U.S. where grant/loan blends for water and sewer projects are based upon what is called an ability to pay index.

Objective 4 Increase funding through the Municipal Grants Program

The Department proposes a Municipal Grants capital budget commitment of \$12 million per year for the next six years to help communities defray a portion of their water, sewer, and solid waste costs. The program leverages community participation on a dollar for dollar basis, so the reach of each dollar appropriated as a municipal grant is doubled when compared to direct grants. Since it has been proven that the success of a project depends on local participation, the Department will work to persuade local governments and the legislature to utilize the program as the State's primary grant mechanism for sanitation projects in larger communities. To assist cities and boroughs finance the local share of their project costs, low interest State Construction loans and Federal Wastewater loans will be offered. After capitalization of the Alaska Clean Water Fund, reliance on Municipal Grants as a funding mechanism will gradually decrease.

Objective 5 Establish a policy specifying the conditions under which Direct Grants may be used as a funding alternative.

In order to increase the efficiency of limited State revenues, it is recommended that Direct Grants only be used when communities (a) do not have the population or economic base to repay a low interest loan or to provide the match requirements of the Municipal Grants program, (b) have the proven managerial capability to administer a grant; (c) have in-house technical experts to oversee planning, design, and construction activities related to the project; (d) are willing to provide at least 10% of project costs or the equivalent in in-kind services; and (e) have proven the capability to operate and maintain a facility.

ACTION STRATEGY:

Promote a State/community partnership.

It is essential that community participation in a project go beyond signing a grant offer or passing a resolution. It is equally vital that the State's role transcends simply disbursing payments. Experience has shown that communities who actively work with the State and participate in the solution to their sanitation problems are more likely to adequately operate and maintain their facilities.

Objective 1 Local commitment to participate in funding.

Requiring a local funding commitment not only ensures that projects are a community priority, it also increases community interest in operating and maintaining projects in which they have made a financial investment. Historically, the matching requirement of the Municipal Grants program has been the catalyst for this commitment in urban communities. Now, the Alaska Clean Water Fund loan programs are also available to assist all urban communities participate in project costs.

Objective 2 Cooperative planning.

A successful project requires adequate and cooperative planning. Without planning, resources may not be available to complete construction; a community may get a project which is different from what they wanted; the facility constructed may not be feasible, practical, or the most cost effective alternative available; and the cost of operating and maintaining the system may be too expensive for the community. It is, therefore, vital that both local residents and individuals with experience and expertise are part of the planning team. Project cost estimates must be accurate or construction could be halted prior to completion. Public hearings should be held frequently during planning to ensure the community gets what it wants and has the information necessary to choose the most cost effective, feasible, and practical project alternative.

Cooperative Planning between communities and the Department is an integral part of successful projects. It is a requirement of Municipal Grants, Federal Wastewater Loans, and State Construction Loans.

Objective 3 Operation and maintenance.

In addition to a commitment to properly operate and maintain their facilities, funding for sanitation projects should be conditioned upon a local commitment to (a) hire operators certified at a level commensurate with the technical complexity of the facility, and (b) require operator participation in refresher courses and skill advancement training.

The Department will provide assistance for addressing these requirements by (a) ensuring communities are aware of operation and maintenance costs associated with a project prior to construction, (b) assisting communities to calculate user fees sufficient to finance operation and maintenance costs, and (c) by offering training, technical assistance, and certification programs for system operators.

ACTION STRATEGY:**Develop an inventory database for use as a planning tool.****Objective 1 Conduct a statewide survey of the existing facilities in incorporated cities and boroughs.**

The Department will conduct surveys of incorporated cities and boroughs to develop a computerized inventory of the existing level of sanitation services provided in each community.

Objective 2 Ascertain the rehabilitation, replacement, and expansion needs of each community.

The Department will work with Municipalities to inspect their water, sewer, and solid waste facilities to document the condition of each and to ascertain rehabilitation, replacement, upgrade, and expansion needs. This information will be entered into the State's data base and will be used as an intricate component of an ongoing planning effort to assist communities in financing and constructing needed system improvements in the most systematic and efficient manner.

Objective 3 Examine the financial capability of each community.

Using information obtained from communities, the State Department of Labor, and the U.S. Census Bureau, the financial capabilities of each incorporated city and borough will be evaluated to determine the most equitable method of financing their sanitation needs. Economic variables which will be included in the assessment will include per capita income, current user fees, population base, average household size, bond rating, and extent of the community's outstanding debt.

Objective 4 Develop a 20 year analysis of community sanitation needs.**Objective 5 Develop a comprehensive long range facility funding plan.**

**GOALS AND STRATEGIES FOR
SOLVING THE
SANITATION NEEDS
OF
RURAL ALASKA**

Providing Adequate Sanitation Services is Crucial to the Vitality, Public Health, and Economic Growth of Rural Alaska.

As Alaska looks to the future and a growing population, it is essential that we strive to provide services which protect the public health of our rural residents and lay a foundation for economic development opportunities.

Adequate water, sewerage, and solid waste services are cornerstones to realizing these goals.

As the twenty-first century nears, citizens in over half of the State's rural communities do not have piped water or flush toilets. Over ninety percent of the sewerage facilities in rural Alaska have been assessed by the federal government as inadequate. State and federal agencies have estimated the costs of providing acceptable sanitation facilities in every rural community to be \$1.2 to \$1.3 billion. These are startling statistics and they highlight the magnitude of the problem.

Without adequate water and sewerage facilities, personal hygiene is difficult, if not impossible. The lack of facilities to properly dispose of human waste, combined with insufficient quantities of safe water often result in threats to public health. Village residents experience a number of waterborne and communicable diseases which could be avoided if means to support improved personal hygiene and safe drinking water were available.

The provision of acceptable sanitation services is often a prerequisite to economic development and growth. However, many villages lack these basic facilities. Numerous rural communities, for example, are unable to attract the seafood processing industry because their water and sewerage facilities do not meet standards required to support the industry. Likewise, the full potential of the tourism business may not be realized in rural Alaska since even the most seasoned traveler would prefer to visit an area where safe drinking water and flush toilets are available and refuse is consolidated out of sight. Another example of an economic development opportunity which demands sanitation infrastructure is port development. To attract shoreline businesses, not only do our ports and harbors need adequate docks and breakwaters, but adequate water and sewer are also critical. Under MARPOL, coastal communities must also provide solid waste facilities in order to engage in marine commerce, yet adequate facilities are not available in many of our more promising rural ports.

One of the indicators often used to measure the quality of life in a community is the public service infrastructure provided to residents. Carrying a sloshing bucket of human waste to pitch in a pond or hauling water from a watering point would not be acceptable to the vast majority of Americans, yet many rural Alaskans contend with these hardships daily. Providing water, sewerage, and solid waste services to every community by the year 2010 will allow all Alaskans to experience the quality of life taken for granted throughout the rest of the nation and much of the world.

PUBLIC
HEALTH

ECONOMIC
DEVELOPMENT

QUALITY
OF LIFE

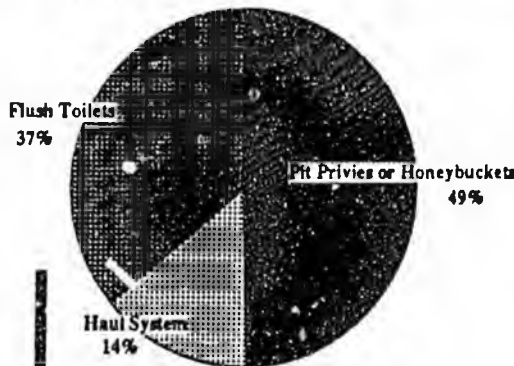
CURRENT SANITATION CONDITIONS

Considerable progress has been made in constructing water, sewerage, and solid waste systems in rural areas, however, much remains to be done. Currently, approximately 40 percent of the State's rural communities provide piped water to residents' homes and only 37 percent have flush toilets.

WASTEWATER

Sewage disposal methods in 63 percent of the State's villages are substandard to flushing toilets. Fourteen percent of the State's rural communities operate a **sewage haul system**. This basic collection/disposal service consists of residents hand-hauling filled honeybuckets to mobile dumpsters located throughout the community. The dumpsters are then hitched to a vehicle and hauled to a lagoon or pond for disposal. Forty-nine percent of Alaska's villages have service levels which are frequently compared to those in third world nations. These methods consist of **pit privies** and **individual honeybucket haul**. With the individual honeybucket haul method, a bucket serves as a toilet. Plastic garbage bags are used as a liner for the bucket. As the bucket fills, residents lift the plastic bag and its contents out of the bucket and hand carry the bag to a bunker, lagoon, tundra pond, landfill or, too frequently, undesignated dumping areas located within the residential area.

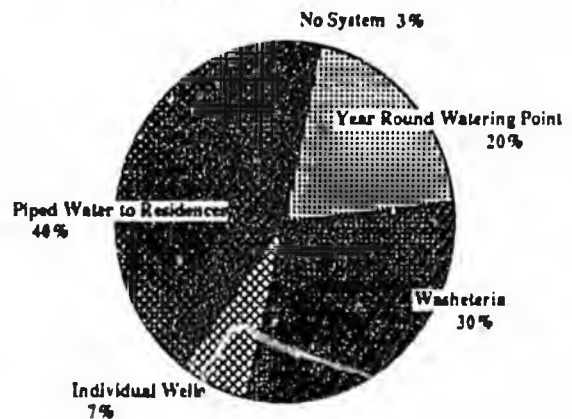
EXISTING WASTEWATER SERVICE LEVELS IN RURAL ALASKA



WATER

Water systems in rural Alaska vary greatly in complexity and service level. Approximately 40 percent of Alaska's villages provide residents with piped water; 30 percent own and operate a community washeteria; and 20 percent operate year round watering points which may vary from several spigots located throughout the village to a single building from which potable water is dispensed and hand carried by residents to their homes. In the remaining 10 percent, a community water system is not in place and water is collected individually by residents either from individual wells (7%) or from ice, streams, creeks, or by rain catchment (3%).

EXISTING WATER SERVICE LEVELS IN RURAL ALASKA



A CALL TO ACTION.

After twenty years of trying to address the sanitation needs of rural Alaska, it is clear there are no quick fix solutions. This plan seeks to develop a new current approach to problem by defining feasible solutions.

The problem is multifaceted. First, our current selection process for determining which projects will receive grant assistance is short-sighted. Too often the State's annual sanitation funding plan is thrown together during the closing days of the legislative session based upon political criteria rather than need. A long term, stable funding approach has not been available.

Second, it has become clear that technology alone will not address the water, sewerage, and solid waste needs in rural Alaska. Competent operators, adequate user fees, proper accounting, and the support of a well managed community government are equally vital components to solving sanitation problems.

Third, demographic, economic, and climatic conditions make sanitation system construction and operation in rural Alaska among the most expensive and technically challenging in the world. Yet little research has been conducted to develop alternatives to expensive and complex piped systems capable of providing an equal level of service.

Finally, a long term strategic approach to solving rural sanitation needs has never been formulated. Rather, planning has been limited to a one year period and has been based solely upon the outcome of the State capital budget process. This process has proven ineffective.

As the first step toward addressing these and other related issues and instituting a more unified approach to solving the sanitation problems of rural Alaska, the Department recommends the formation of an Interagency Task Force. This group would act as the catalyst for advancing and refining the goals, strategies and objectives outlined on the following pages.

STATE BUDGET PLAN

As a vital step toward meeting the administration's ultimate goal of providing piped water and flush toilets in every Alaskan community, the Department proposes a preliminary six year capital budget plan.

- Provide washeterias and sewage haul systems in 48 of the State's 48 villages which now have Level I Drinking Water Systems (watering points or individual haul from non-treated sources).

Estimated Cost: \$72 million
Required capital funding per year (for 6 years): \$12 million

- Improve solid waste systems in 36 of the State's 210 villages to meet required EPA solid waste standards.

Estimated Cost: \$18 million
Required capital funding per year (for 6 years): \$ 3 million

- Upgrade piped systems in 12 of the State's 210 villages to comply with the new federal Surface Water Treatment Rule and effluent standards.

Estimated Cost: \$42 million
Required capital funding per year (for 6 years): \$ 7 million

TOTAL COST PER YEAR (for 6 years): \$22 million

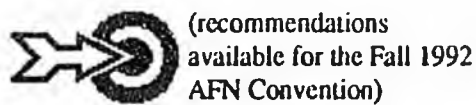
This preliminary six year budget plan will be further refined based upon the recommendations of the Interagency Task force, the availability of federal funding, and the success of innovative technologies as an alternative to conventional piped systems.

Implementing this budget plan will require a change to the State's current criteria system for prioritizing projects as well as a commitment by the State legislature to allocate capital funds in accordance with the plan. Further, a decision to provide water and wastewater services to all rural residents will require that the issue of State subsidies be addressed.

Estimated Timeline for Solving Unmet Needs

1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

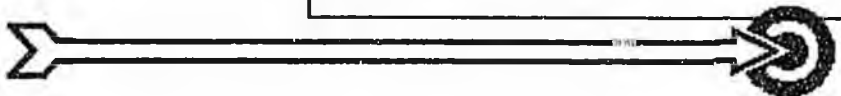
- Interagency Task Force Recommendations



- Upgrade Level 1 Water Systems (water point) to Level 2 (washeteria/honeybucket haul)



- Upgrade Level 2 Systems (washeteria/haul systems) to Level 4 (piped or trucked services)



- Upgrade Level 4 Systems (piped or trucked services) to full compliance with federal water standards.



- Upgrade all systems to full compliance with federal water standards

Data not available to make projection.

- Solid Waste System Upgrades



- Piped or trucked services in all communities which desire the services and are capable of operating and maintaining the systems.



Service Levels Defined	Communities Served
Level 1 water = non treated or watering point	48
Level 1 sewer = pit privies or honeybuckets	103
Level 2 water = washeteria	63
Level 2 sewer = community sewage haul system	29
Level 3 water = individual wells	15
Level 3 sewer = on-site septic systems*	
Level 4 water = piped/truck haul	92
Level 4 sewer = piped/truck haul	78

*included as flush systems for purposes of this report.

Assumptions:
 1) \$50 million available per year from all known sources..
 2) Time lines will be shortened if additional funding is obtained

GOALS:

The following goals have been identified as cornerstones to addressing the sanitation problems of rural Alaska:

- Provide adequate water, sewerage, and solid waste services in every Alaskan community.
- Improve public health and quality of life.
- Optimize State and federal funding.
- Provide infrastructure vital to economic development.
- Increase facility operation, maintenance, and management capabilities.

The Department recommends the following six Action Strategies as solid practical steps toward achieving these goals:

- Form an Interagency Task Force.
- Commit to a State/Federal/Community Partnership.
- Stabilize funding for rural sanitation projects.
- Assist communities increase operation and maintenance capabilities.
- Investigate and promote new technology.
- Develop a systematic approach to addressing needs.

As the first step toward addressing these and other related issues and instituting a more unified approach to solving the sanitation problems of rural Alaska, the Department recommends the formation of an Interagency Task Force. This group would act as the catalyst for advancing and refining the goals, strategies, and objectives outlined throughout this plan.

During the first year of the proposed plan, the recommendations of the Interagency Task Force will be developed. These recommendations will be integrated into the State's implementation strategy during the balance of the planning period.

ACTION STRATEGY:

Form an Interagency Task Force.

Due to the magnitude of sanitation needs in rural Alaska, a unified, multiagency approach to problem solving is necessary. An Interagency Task Force will be established to review, analyze, and recommend policies, standards, and solutions for formulating a federal/State/community twenty year rural sanitation strategy. The Task Force will consist of individuals, groups, and agencies representing a variety of interests and disciplines. Representation will include State and federal agencies, local officials, the Legislature, the University of Alaska, Health Corporations and rural leaders. Participation, input and recommendations from experts in the areas of engineering, housing, finance, business, health and education will provide the Task Force with the policy direction necessary to develop a comprehensive twenty year strategy for meeting the water, sewerage, and solid waste needs in rural Alaska.

Because of the complexity and number of issues at hand, the Task Force will work more efficiently if divided into several subgroups. Each subgroup will be assigned specific issues to analyze and will be responsible for reporting recommendations to the full Task Force for inclusion in the States rural sanitation strategy. During the first year of the strategy, the Department will concentrate on obtaining program direction from Task Force recommendations on the following:

Objective 1 Establish uniform standards for federal and State housing

The existing minimum water and sewerage service standards of State and federal housing programs will be reviewed by the Task Force. Current standards will be examined for compatibility with the State's overall goal of providing water, sewerage, and solid waste services to every Alaskan community. Where current standards are inadequate, specific parameters will be recommended as minimum health requirements.

If adopted, these parameters would be required in every new home constructed in Alaska by federal and State housing authorities. Additionally, methods for modifying plumbing in existing homes which do not meet the minimum code will be explored.

Objective 2 Develop a policy for subsidizing the operation and maintenance of village owned facilities.

The Task Force will review the feasibility of providing a subsidy program for operation and maintenance of village sanitation facilities. Many villages do not have the population or economic base to adequately budget for operation, maintenance and replacement costs related to providing sanitation services. These costs will be reviewed and compared to the average household income in each rural region of the State to determine an equitable solution to O&M budgeting. The cost of subsidized O&M will then be compared to the cost and benefits achieved through expansion of the Remote Maintenance Worker Program.

Objective 3 Recommend policies for promoting water quality testing and monitoring.

In recent years, an average of 300 incidents per year of poor quality water have been documented from community drinking water systems throughout the State - water containing everything from fecal coliform to leeches. The importance of detecting public drinking water deficiencies early is obvious. Early detection allows immediate mitigative measures to be taken to protect public health. Without testing and monitoring, contamination of a community's drinking water supply may go unnoticed until cases of illness are reported.

Based upon the recommendations of the Task Force, the Department proposes developing a program to provide:

- Treatment and testing equipment to system operators in every community;
- Training for water system operators regarding testing/sampling requirements and techniques;
- Community access to bacti laboratories; and
- Incentives for local governments to sample and monitor the quality and safety of their drinking water.

Objective 4 Provide detailed recommendations regarding the level of local commitment which should be required by State sanitation construction grants.

The Task Force will consider the level of local commitment which should be required for rural sanitation projects. Currently, rural communities do not provide match for water, sewer, and solid waste projects. Rather, these projects are funded entirely by the State or federal government. The Task Force will study: (a) the practicality, feasibility, and impacts of making local matching funds a grant requirement; (b) the level of local participation which should be committed to project construction; (c) the application of in-kind services as an alternative to match monies when a community does not have the financial capability of providing even a minimum funding match; and (d) whether the enabling statute for the Village Safe Water Program which now specifically states "A contribution toward the cost of the construction of a facility may not be required from its users" should be amended.

Objective 5 Develop and institute a sanitation education curriculum.

Breaking the cycle of water borne disease in remote communities takes more than capital projects - a health education program is needed to augment ongoing construction activities. The Task Force will explore working with the Department of Education, the U.S. Public Health Service, and local school districts to develop and implement a complete "health education kit" including videos, posters, and text books. These materials would be made available to teachers in remote locations to educate children of the importance of personal hygiene, safe drinking water, proper sewage disposal, and adequate solid waste management.

It is suggested that health education become an integral part of all sanitation construction projects in rural Alaska. The whys and hows of properly using new facilities as well as information regarding communicable diseases (what they are, how they are spread, and how to prevent contacting them); the water cycle; the importance of boiling non-treated drinking water; and the importance of separation distances between places where water is obtained and where sewage or solid waste is hauled would be among the topics explored.

Objective 6 Improve roads in communities where haul systems are the selected alternative.

Geographic, climatic, and economic conditions in many rural communities make piped utilities impractical or infeasible. In such cases, residents frequently select water and sewer haul systems as preferred project alternatives. Haul systems require roads with bearing capacity adequate to handle large water and sewage transportation vehicles. Unfortunately, many of the communities who desire haul systems, either do not have roads or have roads which do not now have adequate bearing capacity.

The Task Force will explore coordinating funding and resources with the U.S. Public Health Service, the Bureau of Indian Affairs and the Department of Transportation in order to construct new gravel roads or improve the bearing capacity of existing roads in communities where haul systems are the preferred alternative to piped systems.

Objective 7 Develop utilities for joint use by villages and schools.

In many villages, two separate water and sewer systems are operated. One provides service to the community and the other to the school. As a result there are two treatment plants, two wastewater collection and disposal systems and dual plumbing, heating and electrical systems to support them.

Based upon the recommendations of the Interagency Task Force, the Department proposes identifying those communities where dual systems exist; examining the requirements of each; and determining where joint utilities are cost effective and practical. It is further recommended that a joint utilities pilot study be conducted by REAA's prior to applying the "joint utilities" approach in several areas.

Objective 8 **Explore State/Regional and Village Corporation Financial Partnerships.**

Many communities do not have the economic base to assist in financing sanitation projects. The Corporations which represent village residents, however, may have the resources to assist. The task force will explore the possibility of forming a financial partnership between the State and Regional and Village corporations for funding rural water, sewerage, and solid waste projects.

Objective 9 **Recommend the conditions under which Direct Grants may be used as a funding alternative.**

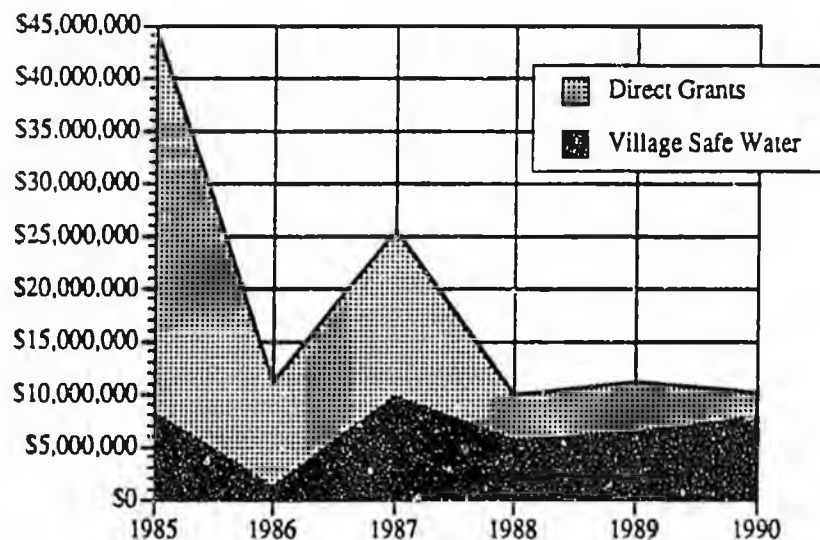
The task force will determine the circumstances under which direct grants are an appropriate mechanism for funding rural sanitation projects. Based upon this analysis, the task force will develop and recommend a policy specifying the situations under which the use of direct grants should be considered.

ACTION STRATEGY: Stabilize funding for rural water, sewer, and solid waste projects.

It is virtually impossible for the State to enter the twenty-first century with hopes of providing every Alaskan community with adequate sanitation services without a stable funding commitment for the construction of necessary facilities.

As shown in the graph below, State and federal funding of rural sanitation facilities has been sporadic at best. When State revenues were high, it was relatively easy for local governments to obtain grants. However, as oil revenues declined so did the State's investment in water, sewerage, and solid waste projects. The unpredictable nature of this "boom and bust" funding cycle has made long term capital improvement planning virtually impossible for local governments. Likewise it does not allow for a systematic, long term Statewide approach to address community sanitation needs.

History of State Funding for Rural Sanitation 1985-1990



By committing to a stable Village Safe Water capital budget, the State, federal, and local governments will be better able to plan for and finance public sanitation projects.

ACTION STRATEGY:**Commit to a State/federal/community partnership.**

It is essential that community participation in a project go beyond signing a grant offer or adopting a resolution. It is equally vital that State and federal roles transcend simply disbursing payments.

Objective 1 Build a partnership through local commitment.

Experience has shown that communities who actively participate with funding agencies in addressing their sanitation needs are more likely to adequately operate and maintain their facilities. If residents feel they have a vested interest in a project, the chances for its success increase greatly. The Department therefore supports requiring a local commitment to the construction, operation and maintenance of sanitation facilities constructed with State and federal funding.

It should be noted, however, that not all communities have the financial resources to contribute funding to the capital costs of a project. It is suggested that in such instances, based upon the recommendations of the Interagency Task Force, opportunities for "in-kind" services be explored.

Objective 2 Budget cooperative between State and federal agencies.

It is recommended that the Department strengthen its budget through cooperation with other State and federal agencies which fund rural sanitation projects. Not only will this effort leverage federal funding available for sanitation facilities, it will also ensure that duplication of effort is avoided.

In the past, the Village Safe Water program has cooperated with the Public Health Service and the Housing and Urban Development Agency in budget development. It is recommended that this relationship be expanded to include the Environmental Protection Agency and the Farmers Home Administration.

Additionally, there are several bills pending in Congress to establish new federal funding programs for sanitation projects in small communities. The Department suggests tracking and monitoring these bills closely and if they gain passage immediately inviting members of the new funding programs to participate in the State/federal budgeting cooperative.

ACTION STRATEGY:

Assist communities increase operation and maintenance capabilities.

The construction of rural sanitation facilities represents a multi-million dollar investment by the State in public health protection for village residents. Increased commitment to the operation and maintenance of these facilities is necessary if rural public health and the State's large investment in sanitation facilities are to be safeguarded. Weaknesses in planning, staffing, and budgeting lead to sanitation system failures as surely as equipment and mechanical breakdowns. Unless this trend is reversed, additional system failures are predicted and a tremendous financial burden will be placed on the State. The Department proposes the following multi-disciplinary approach to help deal with these problems.

Objective 1 Define operation & maintenance capabilities and needs in each community.

Using data obtained from Remote Maintenance Workers, Village Safe Water Engineers, Public Health Service Engineers, Native Health Corporations and community leaders, the Department will assess the operation and maintenance capabilities and needs in each rural community. The Operations Assistance program within the Department will use this information to target training efforts in communities lacking sufficient expertise for operating and maintaining their systems.

Objective 2 Work with State agencies and authorities to develop and implement a utility management training program.

The Department recommends working with the U.S. Environmental Protection Agency, and the Department of Community and Regional Affairs, and the Alaska Energy Authority to develop and institute a management training program to assist rural communities in implementing basic financial, accounting, bookkeeping and management systems necessary to properly manage public utilities. Through the program, local officials would learn to compare revenues to actual costs and adjust user fees accordingly; investigate alternative sources of system revenues; develop utility billing procedures and policies; and institute proper accounting and solid business management practices.

Objective 3 Enhance the Operator Training and Certification Program.

The Department proposes to place increased emphasis on operations assistance to water and wastewater operators in rural areas. By stepping up its training program and offering certification testing more frequently, the Department would be better able to increase the number of certified personnel operating rural systems. The Department recommends providing a higher level of operator training through a variety of efforts including cooperative arrangements with federal and State agencies as well as various institutions of higher learning.

The benefits of expanding the State's Operator Training and Certification program are many. Without adequate training, operators will not be capable of keeping their sanitation systems going. Conversely, a well trained operator will protect expensive systems and ensure a longer useful life for capital projects constructed with state funds. System replacement costs would be further mitigated.

The Department recommends augmenting its current training lending library by developing videos which specifically address Alaska's unique systems and conditions.

As part of the proposed program enhancements, the Department recommends increasing current efforts in the following areas (1) providing hands on training for Remote Maintenance Workers, (2) administering verbal certification exams as needed; (3) providing over-the-shoulder training for operators; (4) providing class room training in regional "hub" areas; and (5) developing a comprehensive, holistic approach to solving operation and maintenance problems associated with village sanitation facilities.

Objective 4 **Expand the Remote Maintenance Worker Program.**

Most of the State's rural communities lack a public works department, a full time professional water/sewer operator, and in many cases an electrician or plumber. Systems are frequently left in the hands of volunteers who, with limited resources and knowledge, face a wide array of mechanical, environmental, and public health related problems. In areas where climatic, economic, and demographic conditions make operation and maintenance of facilities arduous, technical expertise is of great importance. However, the remote location of most villages makes it economically infeasible for outside services to be obtained when technical assistance is most needed. The Remote Maintenance Worker Program offers a partial solution to this problem.

Currently, the program consists of eight Remote Maintenance Workers (RMWs) who are mechanical experts as well as trainers. Each RMW is assigned a circuit of 10-15 villages and resides in a hub community within their area. Through the efforts of these RMWs, the program employs a two-fold approach to protecting costly facilities and public health.

1. Technical Assistance. Due to the remoteness and climatic conditions found in most villages, even minor operational problems can result in malfunctions that can lead to catastrophic system failure. As technical experts, RMWs are available to villages 24 hours a day throughout the year for advice and emergency repairs.

2. Operator Training. As educators, RMWs provide operators with emergency and routine on-the-job training. Operators are trained at their own speed at a level commensurate with their individual requirements.

The solid commitment and ongoing cooperation of the legislature, the Department of Environmental Conservation, several Native Health Corporations, and rural villages throughout the State is positively reflected in the success of the RMW program.

Unfortunately, less than half of the State's rural communities are serviced by a Remote Maintenance Worker (refer to exhibit *)

The Interagency Task Force will evaluate expanding the RMW program so that within the next five years, all rural communities are served by a Remote Maintenance Worker. This will ensure the protection of rural public health and the State's capital investment in rural sanitation infrastructure. RMW assistance will only be provided until a community has obtained the competence to operate its system without State assistance.

• Insert •

**Map showing areas served by an RMW with a
listing of villages covered/not covered**

ACTION STRATEGY:

New technology- research & development projects.

The Department proposes active investigation and promotion of innovative and alternative technology for the delivery of rural sanitation services. Demographic, economic, and climatic conditions make sanitation construction and operation in rural Alaska among the most expensive and technically challenging in the nation. A research and development program needs to be instituted to develop alternatives to expensive and complex piped systems capable of providing an equal level of service.

Research and development activities should represent a community, State, federal, University and private sector cooperative effort both in funding and design. A multi-tiered approach to investigating and developing new sanitation technologies is suggested.

As the first step in this cooperative effort, the Department advocates sponsoring annual technology seminars where promoters of innovative and alternative sanitation technologies can present their concepts to the engineering community. This would encourage new ideas from manufacturers and designers and would introduce sanitation engineers to nontraditional technologies.

It is suggested that the Interagency Task Force include a research and development subcommittee to review new technologies including those presented during annual technology seminars to determine which merit further study.

As funding allows, those technologies recommended by the subcommittee as showing the most promise would undergo field testing which would consist of three phases. The first phase would include targeting a receptive village to host the demonstration project, a project inception briefing during a council meeting of the hosting community, and (if necessary) fabrication of prototype units. During phase two, prototypes would be installed in the homes of four to ten volunteer families. Phase 3 would consist of project evaluation. If the project is a success and well received by the village, expansion of the technology into the rest of the community would be recommended through the capital budget process.

This phased approach would allow communities to participate in and assess each step of a demonstration project before continuing on to the next phase. Further, it would allow communities to observe and evaluate technologies prior to deciding whether to adopt the new technology on a community-wide basis.

All studies, evaluations, and reports regarding the successes or failures of new sanitation technologies in village Alaska would be made available to interested parties.

ACTION STRATEGY:

Develop a systematic approach to addressing sanitation needs in rural Alaska.

Local communities frequently do not have a realistic current long range sanitation construction plan. Therefore, it is difficult for the State to establish a long term spending plan that includes community specific projects. For that reason, our planning process in the past has been keyed to local government needs as expressed annually through local priorities.

Objective 1 Conduct a Statewide survey of the existing facilities in rural communities.

The Department will conduct surveys of rural communities to develop and update a computerized inventory of the existing level of sanitation service provided in each of the State's rural communities.

Objective 2 Develop a 20 year analysis of community sanitation needs.

The Department recommends developing an assessment of the capital investment necessary to address each rural community's water, sewerage, and solid waste needs. Cost estimates would consider existing levels of treatment (from data obtained during the Statewide survey recommended above) and the types of system improvements currently needed (e.g. upgrades, expansion, or reconstruction, or new construction). In addition to providing cost estimates for addressing today's sanitation needs, the capital investment required to solve future needs would be projected over a twenty year period. Forecasts would consider population projections, system replacement costs, and facility improvements necessary to comply with State and federal requirements.

Objective 3 Develop a comprehensive long range facility funding plan.

The Department recommends incorporating the recommendations of the Task Force and data obtained during the state-wide survey and twenty year needs analysis proposed above into a comprehensive long range facility funding plan. The plan could serve as a basis for the allocation of capital budget funding. It could also be used to assist State and federal agencies in program planning, policy evaluation, and program management. Additionally, it could be used as a tool for local governments in the development of multi-year community capital improvement plans.

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

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410 WILLOUGHBY AVENUE, SUITE 105
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January 22, 1992

The Honorable Dick Eliason
President
Alaska State Senate
P.O. Box O
Juneau, AK 99811

Dear Senator Eliason:

Today I am transmitting to you the fiscal year 1991 Annual Report on the Oil and Hazardous Substance Release Response Fund, also known as the "Response Fund," pursuant to AS 46.08.060.

Last year, in my transmittal letter, I noted that the Annual Report had several deficiencies. Most notably, we were incomplete in accounting for expenditures made from the Response Fund by other agencies, and incomplete in our accounting of the location and condition of oil spill response assets owned by the State. I also noted that we had commissioned an audit on previous uses of the Fund, and Fund management practices.

I am pleased to inform you that, as a result of that audit, several important Response Fund management changes have been made to correct the deficiencies noted last year. These are detailed in the enclosed Annual Report. As well, we have stepped up our efforts at cost recovery, and the prospects for recovering costs from the Fund's largest use so far, response to and litigation over the T/V Exxon Valdez oil spill, has been assured with the recent settlement.

The lack of a proper accounting system for Response Fund assets has yet to be fully resolved. However, by the end of this fiscal year we intend to have a full accounting of the location, condition, and estimated value of all equipment purchased with Response Funds. Physical assets, as well as accounts receivable from responsible parties, will be listed on the Response Fund's balance sheet for fiscal year 1992. We will continue to audit physical assets, and plan to begin a regular maintenance and depreciation plan. Fund assets, either in use by state agencies or in depots awaiting emergencies, are a critical component of Alaska's response capability.

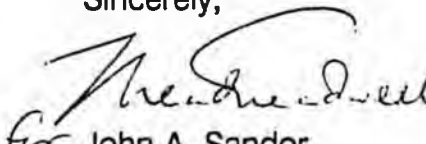
January 22, 1992

As the Legislature considers the FY 1993 budget for the Fund, I would note with concern the fact that the spill reserve has dipped to \$12 million. We believe the spill reserve should be at least \$30 million to give the state the best flexibility for response to another emergency. To rely on federal response funds or the emergency powers of the Governor leaves the state little room for quickly undertaking many of the activities we found essential during Exxon Valdez, including supporting local response. Last year, with the passage of Senate Bill 25, the Legislature "earmarked" \$10 million of the Spill Reserve to assist local communities in emergency response.

We have made major gains in developing state and local response capability in the last year, establishing DEC's Spill Prevention and Response Division (SPAR), and developing a more cooperative relationship with our sister federal, state, and local agencies who we must work in concert with during an emergency. In the future we will work with the Legislature on increasing Response Funds for the voluntary response corps, equipment depots, local and State training, research and development, and the cleanup of contaminated sites.

Thank you for your support. Please contact me if you have any questions or require additional information regarding the Department's management of the Response Fund.

Sincerely,


for John A. Sandor
Commissioner

KNT/rr (SPAR-eliason.470)

cc: Nancy Quinto, Senate Secretary

DRAFT

A COASTAL COMMUNITIES OIL SPILL COOPERATIVE FOR ALASKA

A F E A S I B I L I T Y S T U D Y

*Oil Spill Response
By Alaskans, for Alaska.*





Regional Citizens' Advisory Council / 601 West Fifth Avenue, Suite 500 / Anchorage, Alaska 99501-2254 / (907) 277-7222 / FAX (907) 277-4523

**MEMORANDUM: Regional Citizens' Advisory Council
Oil Spill Prevention and Response Committee**

92 - 1

TO: Lloyd Jones
RE: Review of Draft ACCC Study
DATE: 1/14/92

The RCAC's OSPR Committee is requesting final comments on this draft Alaska Coastal Communities Cooperative Study (ACCC) by February 15, 1992.

Pursuant to a request from the Nearshore Working Group, RCAC undertook a feasibility study of the concept of a coastal communities oil spill cooperative. This co-op would provide the means for local involvement in spill response, with particular focus on shoreline protection and nearshore response, which are the major remaining gaps in the spill protection scheme for Prince William Sound and other coastal areas.

The OSPR Committee has already gone through one phase of soliciting comments on the concept; and these comments have been addressed in this draft of the study. We are forwarding a copy of this most recent draft of the feasibility study for your comments.

The RCAC endorsed the concept of a coastal communities cooperative at its December 1991 meeting. We will continue to refine the technical issues involved in creating such an organization. From those of you who cannot support this co-op concept, we invite suggestions for alternative methods to achieve our common goal.

**A COASTAL COMMUNITIES OIL SPILL
COOPERATIVE FOR ALASKA**

A F E A S I B I L I T Y S T U D Y

PRINCE WILLIAM SOUND

REGIONAL CITIZENS ADVISORY COUNCIL

Anchorage, Alaska • January 1992

prepared by
International Spill Technology Corporation
1300 Walton, College Station, Texas 77840

EXECUTIVE SUMMARY

The organizational structures and response equipment necessary to initiate the first strike against major crude oil spills are largely in place in Alaska. There are, however, a number of problems left unresolved by the existing spill response capability in the state, including:

- the need for an implementation plan for shoreline protection and nearshore response;
- the need to equip and train local residents to respond to spills;
- the need to effectively organize, train and use the capabilities of the fishing fleet and other vessels;
- the need to protect against the very real problem of noncrude spills.

The Alaska Coastal Communities Cooperative (ACCC) provides a comprehensive and realistic solution to the major gaps in spill response in Alaska and provides a model for other states to follow. A Coastal Communities Cooperative would provide a means by which local knowledge and local resources are used in an effective and timely manner during a spill response. The ACCC will ensure that those who are closest to the spill, who have the most to lose and who care the most about protecting the coastal environment are involved in the response. The ACCC will satisfy both industry's and the state's obligations under state and federal law to involve local residents in spill response and provide adequate response to spills.

The ACCC will be established as a non-profit organization with a governing board representing industry, federal, state and local government, environmental, fishing, and native interests. It will also have a technical advisory board with similar, but broader and more technical membership. The ACCC will have a director to operate the ACCC on a day to day basis. The ACCC staff and volunteers will be organized according to NIIMS-ICS guidelines.

ACCC's primary mission is to protect shoreline and nearshore resources anywhere in coastal Alaska. Its role in any given response may vary from providing primary response for small spills in local communities to being part of a coordinated response managed by industry, the state or the federal government.

The ACCC will have main bases in the regions of maximum risk. Spill specialists would serve Southeast, Prince William Sound, the Seward-Kodiak-Cook Inlet area, the Aleutians and western Alaska. Depots of equipment and supplies would be placed in each of these regions to supplement existing industry and local community resources. ACCC is designed to complement the roles of the three major Alaska cooperatives. In the interest of minimizing costs, competition and confusion, the ACCC's role would be carefully defined to avoid duplication of services.

The ACCC has an initial capitalization cost of \$30 million and a \$6 million per year operating budget. The primary sources of money are industry and the State Oil and Hazardous Substance Release Response Fund. Spill response activities would be reimbursed by the responsible party.

There is broad support for the Alaska Coastal Communities Cooperative. Fishermen, community members, environmentalists, members of industry and native Alaskans have lent their endorsement to the concept of the Alaska Coastal Communities Cooperative.

There are legitimate needs in oil spill control in Alaska which have not yet been adequately addressed. The Alaska Coastal Communities Cooperative is an excellent way to satisfy these needs.

THE INTERNATIONAL SPILL TECHNOLOGY CORPORATION

The International Spill Technology Corporation is the consulting enterprise of Dr. Roy W. Hann, Jr. Dr. Hann is the director of the Center for Oil Spill Technology for Texas A&M University, Texas Engineering Experiment Station. Dr. Hann has twice headed Texas A&M's Environmental Engineering Program and has also served as director of the University's Sea Grant program.

Dr. Hann's oil spill work began with his early research on Texas ship channels and estuaries, along with his appointment to the U.S. Coast Guard-sponsored National Academy of Science's Committee on Maritime Hazardous Materials in 1970. After directing the environmental studies for the Sea Dock project, a proposed deep water port in Texas, and directing the team which developed the curriculum for the API-sponsored Oil Spill School at Texas A&M in 1974, Dr. Hann was selected by the U.S. Coast Guard to serve as a science advisor to the U.S.C.G. Strike Force sent to assist the government of Chile with the Metula tanker spill in the Straits of Magellan. This event led Dr. Hann to create Texas A&M's Oil Spill Technical Assistance Program, which has participated, in various capacities, in a large number of spill responses in the United States and abroad.

Among the more notable spills on which Dr. Hann has worked are the Amoco Cadiz, Cabo Tomar, Ixtoc I, Burmah Agate, Esso Bayways, Alvenus, Mega Borg, and the Ranger and Hawkins blowouts. His Alaska assignments have included a study of discharges from the production platforms in Cook Inlet, Exxon Valdez monitoring programs review, and several studies for the Regional Citizens' Advisory Council.

Dr. Hann has developed training courses which were presented in four regions of the world for the International Maritime Organization (IMO) and in Chile, Brazil and India. Dr. Hann has served in a wide range of oil pollution, marine resource and environmental study roles for international agencies, the United States government, the state of Texas, various oil companies and individuals. In 1983, he was awarded the prestigious Palladian medal by the National Audubon Society and the American Association of Engineering Societies for his work in the field of environmental conservation.

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VI. SUMMARY

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COVER: The diagram on the cover depicts the cooperation of individuals, communities, state government, federal government, academia, the petroleum industry and other industry to create the Alaska Coastal Communities Cooperative to fill a mission of oil spill prevention, preparation, response, training and technical development to protect the natural resources of coastal Alaska and its citizens.

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I. INTRODUCTION

In recent years there has been a worldwide effort to develop the capability to respond quickly and effectively to oil spills. Alaska has been part of this effort; indeed, it is probably not an overstatement to say that Alaska has been on the leading edge of this movement. During that time, Alaska's readiness to respond has been greatly enhanced through the collective efforts of government, industry and residents. This extensive effort has resulted in a much better understanding of Alaska's needs, and the recognition that oil spill response capability is not fully realized in Alaska. The impetus for this study was the identification of a significant gap in the various ongoing efforts to provide adequate response in Alaska and the attempt to find a solution.

The existing network of industry-based oil spill cooperatives (the Cook Inlet Spill Response, Inc. (CISPRI) in Cook Inlet, the Ship Escort and Response Vessel Service (SERVS) in Prince William Sound, and Alaskan Clean Seas (ACS) in the Arctic) has focused, with good reason, on initial response in the vicinity of the spill. Far less emphasis has been placed on the protection of shorelines and nearshore areas and the recovery of spilled oil from those areas. This type of response is of particular concern to the people of coastal communities who depend on the natural resources of coastal waters.

To fill this gap, residents of coastal communities have repeatedly raised the idea of creating a coastal communities cooperative; people in industry and government have also been supportive of the concept. This report explores the concept of an Alaska coastal communities cooperative (ACCC) in an effort to determine its feasibility, and if it is feasible, how to make best use of it.

A central thrust of the concept is the creation of an organization to make use of the people and equipment available in local communities to protect coastal resources. Coastal communities have made it quite clear that they are not only able to provide assistance during spill responses, they are eager to do so. As one person put it, "It's not a question of whether to get local citizens involved in spill response, but of how to do it. They're going to be there; the *Exxon Valdez* (oil spill) proved that."

The state legislature recognized this when it passed SB 264, which mandates establishment of local equipment depots and local response corps. The express intent of the law was to create the structure and the means by which fishermen and other local residents could bring to a spill response their considerable equipment, knowledge of local conditions, and commitment to protecting coastal resources.

The federal Oil Pollution Act of 1990 similarly requires that oil spill response in Prince William Sound include the mobilization of local resources. The responses to both the *Exxon Valdez* spill and the recent Kenai Pipeline Co. spill in Cook Inlet prove the inefficacy of waiting until after the spill to organize local resources. The ACCC would organize local resources and provide appropriate training, equipment and coordination to deal with both small spills and catastrophic spills. In doing so, it would help satisfy the requirements of federal and state law.

There are other reasons a coastal communities cooperative makes sense. For instance, it is neither economical nor prudent for each contingency plan holder to establish a separate equipment and technology base of the size necessary to respond to the largest potential oil spill it might experience. Indeed, most companies have not chosen to meet their legal requirements to clean up oil spills by going into the spill response business themselves. They may rely on oil spill cooperatives or independent oil spill clean up companies. Sometimes they can contract with oil

industry service companies that have diversified into the spill response business. In Alaska, however, the service companies are often geographically remote from the areas at highest risk of spills.

Alaska has three large, well-staffed regional industry cooperatives. Yet, by their nature and charter, these cooperatives do not have jurisdiction over all the potential oil spill events in Alaska. In the first instance, they do not encompass the entire coastline at risk from oil spills. And in the regions for which they are responsible, the industry cooperatives focus on initial response at the source of the spill and lack the ability to protect all of the nearshore and shoreline areas that could be affected by a spill. Nor can they cover the entire range of response capability required by emerging Alaska law and regulations, particularly the contingency planning and response standards of Alaska House Bill 567.

This report evaluates how an Alaska coastal communities cooperative could provide a reasonable degree of protection for small spill risks in communities and an additional layer of capability to assist the existing industry cooperatives with a major crude oil spill. The ACCC provides a method for industry and government to jointly finance the acquisition of equipment for use by local fishermen and other residents familiar with the area and motivated to protect their coastlines. The state, the public and the industry all benefit by the establishment of an organization that will meet state and federal requirements, while lowering overall costs and increasing the effectiveness of spill responses.

The following sections explain in detail the concept of the ACCC. Section II focuses on feasibility considerations. Section III explains how the ACCC would be equipped, organized and structured to prepare for and carry out a spill response in the Alaska coastal zone. Section IV explores technical response training and technology development the ACCC would carry out in support of its primary mission. Section V looks at the financial operation of the ACCC, including its annual operating costs and capital equipment levels. The final section presents an overall view of the concept, develops conclusions and discusses the plan of action needed to bring the ACCC to fruition.

THE NEED FOR THE COOPERATIVE

When the *Exxon Valdez* spill began, there was no organized system to make maximum use of Alaska resources. This can be partially explained by comparing southcentral Alaska to other areas in the world that have heavy oil production and transportation activities.

Normally, the production of a large volume of crude oil is accompanied by a large infrastructure of oil field service industries such as supply boat operations, spill cleanup contractors, logistics suppliers, etc. In Alaska, however, oil production is primarily based on land in the north, while the shipping operations are located 800 miles to the south. Cook Inlet is the notable exception, where in smaller scale, they go on side by side. Thus, in Alaska, the shipping risk is for the most part not offset by the significant offshore service capability, as it is, for example, in southern Louisiana.

In responding to the *Exxon Valdez* spill, Exxon quickly looked to its support industry in Europe and the lower 48 states since this was the group with which it normally worked. Unfortunately, because the oil industry did not have any such working relationship with Alaskan fishermen, fish spotters, vessel charterers, local contractors and their equipment, and other local resources, there was no quick and effective way for Exxon to put these valuable assets to use in its spill response. The desirability of effectively using Alaskan resources is one of several factors that would be addressed by the ACCC.

In looking at the goal of better preparedness for future oil spills, the problems to be solved include:

1. The risk of major crude oil spills in coastal Alaska will be reduced by prevention requirements, but still exists and today is only partially addressed.
2. The risk of refined oil product spills in coastal Alaska has not been adequately addressed at this time. See A.D. Little, "Study of Non-crude Tank Vessels and Barges," Task 4 - Response Organizations and Depots (July, 1991).
3. To date, industry planning and response efforts for potential crude oil spills have focused heavily on containment and removal at the spill site, rather than shoreline protection and nearshore response. Greater emphasis needs to be placed on shoreline protection and nearshore recovery, especially since past history indicates that site responses are only partially successful.
4. The primary spill response organization in Prince William Sound, Alyeska's SERVS division, will withdraw from a major spill response within 72 hours after the spill and relinquish spill management and operations to the company whose tanker caused the spill. Thus, there is a need for an operational structure to bridge the transition from SERVS management to management by the responsible party.
5. The existing oil spill cooperatives have geographic and operational limits imposed by their member companies or by government. Consequently, these cooperatives do not have responsibility for dealing with all the spills that might occur throughout coastal Alaska. For example, SERVS will respond only to spills from the Valdez terminal and Trans-Alaska Pipeline tankers, and then only in Prince William Sound. No cooperative has responsibility for spills in the Aleutian Islands or Western Alaska. The recent formation of SEAPRO, a cooperative in Southeast Alaska, is a welcome addition to the scene. However, its organizational structure and responsibilities are not yet clearly defined and at this time, it owns no equipment.
6. State funds derived from taxes on crude oil production and earmarked for the creation of a statewide system of oil spill equipment depots and local response corps have yet to be used for these purposes.
7. Local resources that can effectively participate in spill response have not yet been effectively trained, equipped or organized to achieve their maximum effectiveness on either small spills or major crude oil spills.
8. Although some oil spill equipment and resources have been stored by industry in local communities, the ability to rapidly deploy this equipment has not yet been demonstrated.
9. Although the level of technical expertise available in Alaska has greatly increased in the past few years, there is no effective system in place to augment that expertise with local knowledge to maximize the effectiveness of oil spill response.
10. Environmental and economic considerations will influence future oil spill response activities more than they have in the past. Far from being a burden, however, incorporation of these concerns into spill response will enhance the success of response activities while simultaneously minimizing environmental harm and the resulting damage claims. Accomplishing this requires a clear knowledge of Alaskan ecosystems, the effect of Alaskan conditions on oil spill equipment and technology, and a clear knowledge of the impact of oil spill response methods on the Alaskan environment.

11. Section 5005 of the Oil Pollution Act of 1990 requires the pre-spill positioning of response equipment and a hatchery protection program in Prince William Sound, as well as the establishment of an oil spill response organization. OPA '90 also requires oil spill response training for the residents of Prince William Sound and the local fishing industry. The act requires practice exercises to test the effectiveness of the equipment and personnel described in oil spill contingency plans.

Sections 4201 and 4202 of OPA '90 clearly mandates a response capability greater than that needed for an Exxon Valdez spill size. Equally clearly, no existing organization in Alaska has met that requirement.

There are undoubtedly a number of ways in which to accomplish each of these eleven goals. The advantage of establishing an entity like the ACCC, as proposed in this report, is that the ACCC can be used to solve all of the stated problems.

THE ALASKA COASTAL COMMUNITY COOPERATIVE AS A SOLUTION

Oil spill cooperatives come in all different sizes, budgets and configurations depending on the will of their members, as modified by government and public influence. Oil spill cooperatives have different organizational structures, levels of equipment inventory, personnel levels and operating budgets.

It is worthwhile to discuss the various types of oil spill cooperatives and note the ways in which they differ and their strengths and weaknesses. The author has classified oil spill cooperatives on a scale from Class A through Class F. This rating system is displayed in Figure 1.

The Class A cooperative has a professional, full-time director; a professional staff; a significant equipment inventory; and a reserve of equipment and personnel provided by its membership.

The Clean Seas and Clean Coastal Waters Cooperatives in California, the Clean Sound Cooperative in Washington state, and CISPRI in Cook Inlet are all Class A cooperatives.

The Class B cooperative is similar to the Class A, except its personnel are provided by contract. The Delaware Bay and River Cooperative and the Clean Harbors Cooperative in New York are Class B Cooperatives. Clean Coastal Waters in California has just followed the prevailing trend of moving up from Class B to Class A by opting for direct employment of staff, and hence, greater professionalism.

Class C cooperatives are primarily equipment pools maintained by a professional manager and a maintenance staff. The equipment pool is for use by member companies and their contractors. The Class C cooperative is not a response organization and does not fill a management role during response, except for equipment maintenance. The Clean Gulf Cooperative for offshore production operators in the Gulf of Mexico is a Class C cooperative. Alaska Clean Seas has been a Class C cooperative, but upgraded to a Class A cooperative in 1991.

Class D cooperatives are merely equipment pools maintained by contractors. The equipment is made available to member companies at the time of a spill.

FIGURE 1

HIERARCHY OF OIL SPILL COOPERATIVES

TYPE

- A. TRUE PROFESSIONAL COOPERATIVE:
 - 1) CORE OF EQUIPMENT
 - 2) PROFESSIONAL DIRECTOR
 - 3) PROFESSIONAL FULL-TIME STAFF
 - 3) MEMBERSHIP PROVIDES IMMEDIATE RESPONSE RESERVE

- B. CONTRACTOR STAFFED PROFESSIONAL COOPERATIVE:
 - 1) CORE OF EQUIPMENT
 - 2) PROFESSIONAL DIRECTOR
 - 3) OPERATIONS PROVIDED BY CONTRACTOR
 - 4) MAY OR MAY NOT HAVE MEMBER RESPONSE RESERVE

- C. CONTRACTOR-OPERATED EQUIPMENT POOL
 - 1) CORE OF EQUIPMENT
 - 2) CONTRACTOR PROVIDES PERSONNEL TO MAINTAIN AND OPERATE EQUIPMENT

- D. EQUIPMENT POOL WITH MAINTENANCE CONTRACTOR

- E. EQUIPMENT POOL IN WAREHOUSE OR PLACED WITH MEMBER COMPANIES

- F. MUTUAL AID AGREEMENT COOPERATIVE

Class E cooperatives are equipment pools stored in warehouses or at member company sites.

Class F cooperatives are mutual aid cooperatives, in which members agree to share equipment during a spill. The fledgling Southeast Alaska Petroleum Response Organization (SEAPRO) is currently a Class F cooperative, although it plans to upgrade its status to Class D or higher in the near future.

Most major cooperatives started as Class D, E, or F cooperatives in the 1970's and have subsequently progressed to Class A cooperatives. The Marine Spill Response Corporation (MSRC) in the lower forty-eight is planning to start operations as a Class A cooperative.

Most cooperatives in the United States are purely industry cooperatives without government participation. A notable exception is the highly successful, but moderately sized, Corpus Christi Area Spill Cooperative in Corpus Christi, Texas. The Corpus Christi Cooperative has received funding from the city and county governments. In Japan, the Marine Safety Administration sponsors the Maritime Disaster Prevention Center. In addition to the funding it receives from the national government, the center is supported by facility and trip charge user fees.

Not surprisingly, given the special conditions in Alaska, no one cooperative is a perfect model for Alaska. Thus, a somewhat unique industry-state-local government-local resource format is envisioned for the ACCC.

Industry should be involved because it creates much of the risk and has the legal and financial responsibility to respond and to develop the capability to respond. Industry may acquire resources to place with the ACCC, and will pay a portion of the capital and operating costs.

Local government will be involved because equipment and personnel will be placed in strategic local communities. In addition, the ACCC would spearhead the response to spills in local harbors and waterways.

Local resources will be involved because fishermen, charter operators, tug and barge operators and their vessels and crews would be major resources in the ACCC's response strategy.

State government will be involved because it is required by law to establish local response corps and equipment depots, and is in some instances required to respond to spills.

The federal government may be involved if it chooses to place federal response resources with the ACCC for maintenance and deployment, or if it chooses to contract with the ACCC to participate in federalized or federally-directed spills.

In summary, to meet the spill response needs in Alaska, the ACCC should be a Class A cooperative, which is funded by government and industry and which uses local resources as its reserve for major responses.

OBJECTIVES

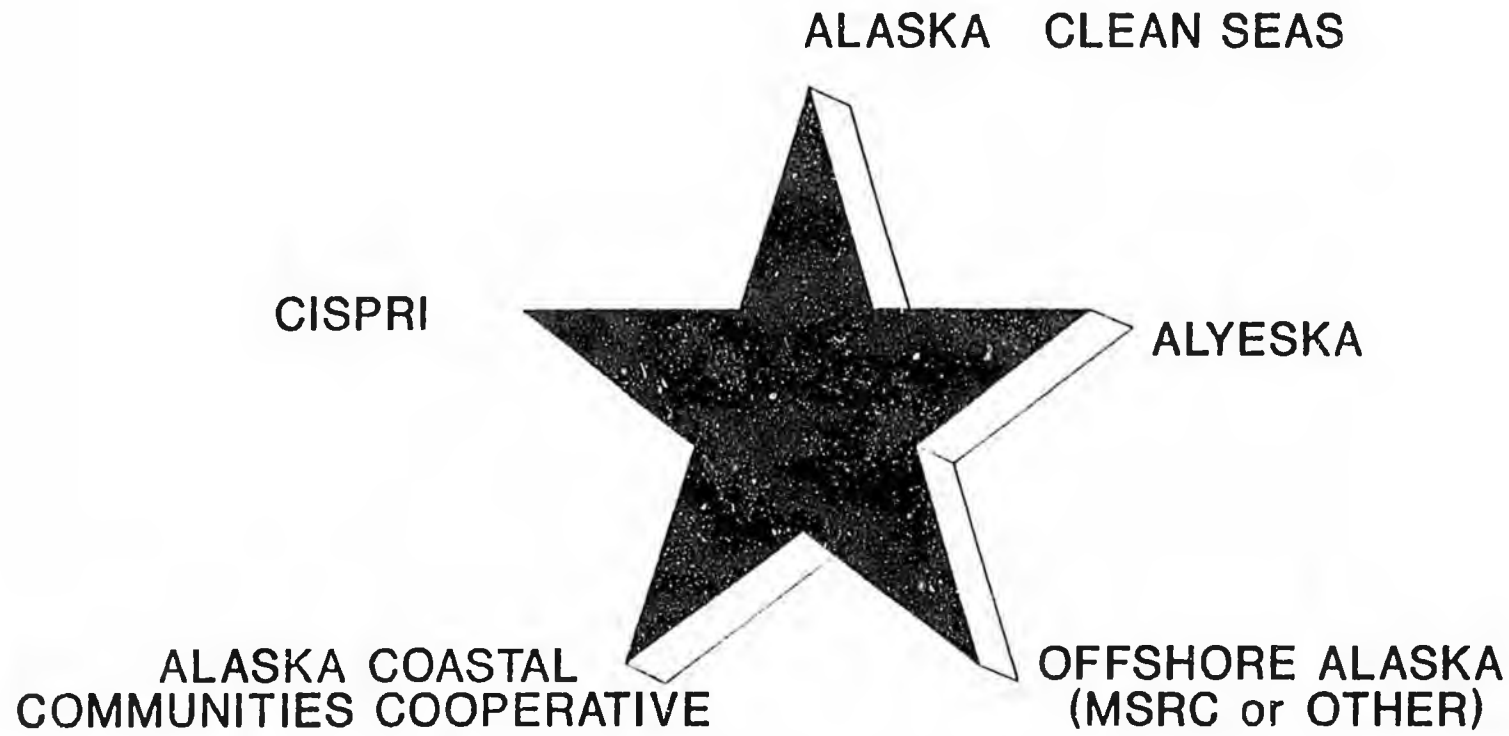
To solve the stated problems, the objectives of the ACCC will be:

1. To provide a mechanism for harnessing the considerable energy, resources, knowledge, and commitment of local residents to enhance oil spill response capability in coastal Alaska.¹
2. To develop the capability to carry out shoreline protection and nearshore response activities in support of response to crude oil spills in Cook Inlet and Prince William Sound, and surrounding areas or coastline potentially affected by TAPS tanker trade.
3. To train the core staff and the reserve staff of local residents, fishermen and vessel operators in oil spill control technology, the National Institute of Incident Management System - Incident Command System (NIIMS-ICS), Hazardous Waste Operations and Emergency Response (HAZWOPER), and marine firefighting so they will be qualified to participate in oil spill responses.
4. To participate in oil spill response activities for catastrophic crude oil spills by providing shoreline protection, nearshore response and other appropriate actions for which the ACCC is equipped and trained. These activities would complement the activities of existing cooperatives, with ACCC acting as a response action contractor on behalf of SERVS, CISPRI, a member company, the state of Alaska or the federal government. ACCC's participation in these spills will be pursuant to NIIMS-ICS guidelines.
5. To develop a data base of and a contractual relationship with operators of fishing, charter, and other vessels to provide support vessel services during a spill response.
6. To serve as the contracting entity to dispatch support vessel services to SERVS, CISPRI, or member companies.
7. To develop the capability to respond to spills of refined oil products throughout the coastal waters of Alaska.
8. To implement refined oil spill response activities in the coastal waters of Alaska, as either a primary or support response action contractor on behalf of a member company, the state of Alaska or the federal government.
9. To develop a Response Plan to guide ACCC's response actions.
10. To develop a Technical Response Program that includes development of technology suitable for the ACCC mission and assistance to member organizations in prevention and contingency planning.

The fulfillment of these objectives would substantially improve the state of readiness for oil spill response in Alaska and result in a substantial increase in spill response performance. The ACCC would be a focal point in the star of oil pollution control of Alaska shown in Figure 2. With the establishment of the ACCC, the major remaining problem would be response in the open water of the Gulf of Alaska.

FIGURE 2

ALASKA OIL SPILL RESPONSE CONCEPT



ADVANTAGES OF THE ACCC

As a supplement to existing oil spill control activities, the ACCC would generate a number of advantages.

1. The total level of oil spill response capability in Alaska would be significantly enhanced in two ways. First, all appropriate local resources will be put to use. Secondly, the ACCC will ensure that the response equipment it acquires is compatible with existing resources, thus creating maximum response capability at minimum cost. For example, there are skimmer heads that use seiner vessel hydraulics and small barges for storage of recovered oil that can be towed and serviced by seiners.
2. Industry funds and resources can be leveraged by government funds and resources. For example, rather than having government and industry establish separate equipment depots for crude and product spills, a common, well-managed pool would serve both and create a greater unified response capability.
3. Trained, equipped and effectively managed local resources can respond more quickly to a spill, thus limiting the spread and impact of the spill, which reduces environmental and economic damage and cleanup costs.
4. Greater public trust will be generated to the benefit of both industry and government when an Alaska based response entity is created because the public will be assured that local resources will be effectively used in protecting local coastlines, and because the public will participate in governing the ACCC through representation on its board of directors.
5. Costs for the ACCC's response would generally be substantially lower than a contractor's bill for the same efforts. This is because ACCC's core personnel would be billed at regular payroll rates, supplies are generally billed at cost, equipment is not generally charged for except for repairs, and the not-for-profit status creates no reason to overcharge a client.
6. A separate organization like the ACCC can easily initiate action in parallel with other response organizations. For example, while a primary response group is fully engaged in recovery activities near the spill site, the ACCC can simultaneously be carrying out shoreline protection activities.
7. If contract vessel support services are provided to both parties by a third such as the ACCC, response activity is less likely to be interrupted when spill management passes from SERVS as initial responder to the spiller.
8. The ACCC can provide a combination of local knowledge and technical knowledge that will augment the expertise of the spiller or its contractors, which will markedly improve response efforts. Furthermore, locally developed data bases of response capabilities are likely to be more accurate than externally maintained data bases.
9. The existence of a permanent organization like the ACCC will alleviate the serious problem of loss of knowledge and experience acquired during a spill.
10. Logistics bottlenecks can be minimized by the dispersed pre-positioning of equipment. With trained responders and equipment available throughout coastal Alaska, response activities can be initiated with greater speed and can be carried out when they would otherwise be constrained by weather or transportation limitations.

11. The ACCC can assist industry in fulfilling the contingency planning and spill response requirements of HB 567, as well as OPA 90's requirements for mobilization of local residents and vessels.
12. The ACCC provides a mechanism for the state to fulfill its mandate to create local response corps and equipment depots, and its need for training state government staff and the local response corps.
13. Creation of the ACCC will very likely increase the support for and likelihood of the legislature passing acceptable responder liability relief in 1992.

PREVIEW OF THE ACCC ORGANIZATIONAL STRUCTURE

A not-for-profit corporation is the likely organizational structure for the ACCC. A management board will be appointed from the contributing participants and public groups. This board will set the policy and budget of the organization. A separate technical advisory board will be appointed to deal with equipment selection, training requirements, technical aspects of response, and evaluation of drills and response activities. The board will hire the director who will manage the ACCC on a day-to-day basis and serve as its spill response manager.

Local advisory groups, such as the LEPC's, will operate in the individual districts to coordinate local response with other community emergency response resources within in the communities, such as volunteer fire departments, EMS's, etc. LEPCs will provide a policy-making body when local guidance is needed.

Five major sections of the cooperative will operate in both spill and non-spill periods. A command staff will assist the director in administrative, government coordination, and public information activities. An operational staff will prepare for and implement response operations in the field for a wide range of spill scenarios in various geographical locations.

The operational support/logistics section will handle a wide range of activities to enable the operations section to perform effectively in the field. This section will also manage the program for support vessels on contract with the ACCC, and provide support for the response activities of SERVS, CISPRI or member companies, as requested.

The operations support/financial section will manage all income and expenses, and handle all accounting/bookkeeping functions for the organization.

The technical response section will be responsible for strategic and tactical planning under the NIIMS Incident Command System (ICS), the training and technology development programs, and development of the Operations Response Plan.

A response core of full time employees will be supplemented by a trained local reserve in each community and by selected contractors, including response and support vessel owners and operators.

This structure is presented in greater depth in Sections II and III of this report.

SECTION II: FEASIBILITY CONSIDERATIONS

There are many different ways to measure the feasibility of a project. Most commonly, feasibility involves financial feasibility (e.g., will the project generate enough income to warrant a capital expenditure) or technical feasibility (e.g., can a project be built from a technological standpoint).

Many, much larger cooperatives such as SERS and MSRC have been proven feasible. Therefore, a moderate sized coop such as ACCC is feasible, as well.

Also, both SERVS and MSRC have been deemed financially feasible by their members on grounds other than just stand alone economic analysis. In other words, their costs have been judged acceptable as part of the overall cost of transporting oil to refineries and/or to the consumer. This acceptance is undoubtedly influenced by legal requirements and public relations.

Basic financial feasibility is not, however, the only issue involved in assessing the feasibility of the ACCC. The others include political feasibility, legal feasibility, resource feasibility, fiscal feasibility and mission feasibility.

POLITICAL FEASIBILITY

Political feasibility is realized if a concept meets the objectives of the political groups and entities from whom support or approval is needed. For the ACCC, these groups include the following:

1. The state legislature. The primary role of the Legislature vis a vis the ACCC is to appropriate funds from the Oil and Hazardous Substance Release Response Fund to underwrite a portion of its equipment acquisition and operating expenses. This contribution will encourage industry participation in the ACCC. The Legislature will also be called upon to resolve the issue of immunity for responders. It may also be necessary for the legislature to pass special legislation to permit state funds to be used by a non-profit entity such as the ACCC.
2. The administrative branch of the Alaska state government, including the Governor's Office, the Division of Emergency Services (DES), and the Department of Environmental Conservation (DEC).

DES and DEC are responsible for the implementing the programs funded by the Oil and Hazardous Release Substance Fund, and thus have a significant interest in appropriations from the fund. Specifically, the ACCC would provide a mechanism for satisfying many of the requirements of SB 264 (local equipment depots, local response corps, etc.), which DES is tasked with implementing. These agencies would also be involved in carrying out the state's response obligations for small spills.

3. The North Slope Crude Oil Tanker Fleet Operators (e.g., BP, ARCO, Exxon, Amerada Hess, Chevron, and Tesoro). These operators create the major risk of a spill in Prince William Sound, and would therefore be expected to support a major part of the ACCC's capital and operating budgets. The benefits of doing so include using the ACCC's response capability to satisfy their contingency planning and spill response requirements under state and federal law, particularly the requirement for a nearshore response and shoreline protection plan and the and the OPA 90 requirement for mobilization of local residents and vessels during a spill.

4. Alyeska and Its Owner Companies (BP Exploration Inc., Exxon Pipeline Co., Arco Pipeline Co., Mobil Alaska Pipeline Co., Phillips Alaska Pipeline Co., Union Alaska Pipeline Co., and Amerada Hess). As a potential user of ACCC services, Alyeska would be a contributor to the ACCC capital and operating budget. Responsibility for maintaining and deploying equipment from SERVS equipment depots might be transferred to the ACCC, as might other tasks such as the hatchery protection program. In the event of a spill from the Valdez terminal or from the pipeline, Alyeska may use the vessel support services or the response capability of the ACCC.
5. Cook Inlet Crude Oil Tanker Fleet and Facility Operators. This group includes the Drift River Terminal, pipeline operators, production platforms, and refineries, as well as tanker operators. As contributing members of ACCC, these companies would call on the ACCC for nearshore response and shoreline protection or to supplement CISPRI's activities. They would benefit by using ACCC's capabilities to offset their response planning responsibilities under state and federal law.
6. The Non-Crude Storage and Transportation Industry. This group includes the fuel suppliers that transport and store non-crude petroleum products and any industrial operations that store petroleum products in or near coastal waters. Unless they have access to an organization like ACCC, these companies may find it difficult to comply with the requirements for upgraded contingency plans and response capabilities. The cost of membership in the ACCC would be significantly less than the costs of independently satisfying these requirements.
7. The Department of Defense. The federal government transports large quantities of refined oil products into Alaska for military uses, and thus has the same interest (and problems) as other fuel suppliers.
8. The United States Coast Guard. The USCG serves as the Federal On-Scene Commander (FOSC) for oil spills, as specified in the National Contingency Plan. As such, the USCG may use the ACCC as a response action contractor for mystery spills or for other spill responses which it is directing. It is also possible that the USCG will choose to place federal response equipment with the ACCC for maintenance and deployment.
9. The State Emergency Response Commission (SERC) and the Local Emergency Planning Committees (LEPC's). These committees are designated under state and federal law to carry out local emergency planning. The ACCC would be a response resource for the SERC and LEPC's.
10. Coastal Communities. In addition to the socio-economic harm they suffer as a result of catastrophic spills, the coastal communities have a risk of local oil pollution in their waterways and harbors. Some communities have volunteer spill response units that would be supported by the ACCC, or they may become part of the ACCC.
11. The Prince William Sound and Cook Inlet Regional Citizens Advisory Councils. These organizations provide oversight and recommendations on petroleum transportation issues. They would perceive the ACCC as a significant improvement in existing response capabilities.
12. Native Village Corporations and Regional Native Corporations. As substantial landowners in the areas at risk from spills, whose constituents depend on the subsistence resources of the coasts, the Native corporations are major players in any decisions that affect the level of protection for residents and natural resources from oil spills. With shoreline protection and nearshore response as one of its primary missions, the ACCC will be addressing a major concern of the Native corporations. Native villages would be among the local communities in which equipment would be located, and residents and boats from these communities would be part of the ACCC's complement.

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13. Environmental Organizations. Naturally enough, groups concerned about natural resources, wildlife and pollution have been and continue to be interested in assuring compliance with state and federal requirements for oil spill response. In addition to the enhancement of response capability that the ACCC would provide, these groups are likely to see the consolidation of response activities with ACCC as a plus from another standpoint: consolidation of local involvement in one organization will decrease the complexity of overseeing that local resources are being fully incorporated into contingency plans.
 14. The Fishing Industry. Fishermen are concerned about protecting the fishing resources and the effective use of the fishing fleet's ability to protect those resources. The fishing industry is also the source of a significant number of small spills, and as such may find itself in need of the ACCC's services.
 15. Local residents, businesses, charter vessel operators, and contractors. Many of these people depend on coastal resources for their livelihoods and recreation, and thus have a heightened interest in participating in the activities of the ACCC. Moreover, spill response is a growth industry in Alaska, and it is not unreasonable for those communities that suffer the most from oil spills to be able to offset their risk of loss somewhat by participating in a professional response organization.
 16. Recreational Users and Providers. Tourism and recreation is an increasingly important part of the Alaskan economy. Indeed, many small businesses in coastal Alaska depend for their survival on income from recreational users. The interests and concerns of both the tourist industry and individual recreational users must be considered when making decisions about protection of coastal resources.
 17. Academic and Research Institutions. These entities are potential participants in the planning, engineering and scientific support of the ACCC.

These groups fall into four basic categories: government, sponsoring and user entities, potential participants in the ACCC's planning and response activities, and interested parties. Some groups may belong in more than one category, for instance Native corporations may be participants and are obviously interested parties. The ACCC will be successful if:

1. The state is willing to assign the state agency depots and response corps role to the ACCC for coastal spills.
2. The coastal spill response needs of the entire state are met by the ACCC.
3. The state accepts the feasibility of creating a joint industry/government solution to the identified needs. The Corpus Christi Area Spill Control Association demonstrates that such a joint effort can succeed. It is a modest sized and simply organized cooperative compared to the large West Coast cooperatives. Nevertheless, it is highly successful in its geographic and environmental setting. Local government rather than industry provides its personnel reserve. Its local government orientation has led to very low response costs, even when contractors are used. Exorbitant rates are not tolerated by the cooperative's manager, who doubles as the City of Corpus Christi's Petroleum Director.
4. The Legislature is able to craft an acceptable, long-term solution to the issue of responder immunity from tort liability during the 1992 session.

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5. The state has a role which provides oversight management of the ACCC through either participation on the Board of Directors or the budget review process.

The ACCC will be even more feasible if the Trustees of the *Exxon Valdez* Trust Fund recognize that one-time funding of a part of the capital acquisition for the ACCC would provide significant protection of Prince William Sound and the spill affected region.

Is the ACCC feasible to the potential participants in its planning & response activities? It will be if:

1. The participants recognize their interests are best served by the local communities focus of the ACCC.
2. They perceive they will be properly trained and equipped.
3. They recognize the ACCC will follow a policy of fair and reasonable compensation for service.
4. They recognize that all will benefit from having the ACCC as a focus for their services under one contract with a responsible party, rather than each individual being required to negotiate his/her own contract.
5. The participants have a role in the management of the ACCC.

Is the ACCC feasible to other interested parties. It will be if:

1. They recognize that a locally based ACCC, with a strong technical component that will take advantage of local knowledge, can lead to a faster, better managed response that reduces economic and environmental damage.
2. They concur that the ACCC warrants responder immunity.
3. They are involved in the management of the ACCC.

The answer to the question of the political feasibility of the ACCC is that it can be politically feasible.

RESOURCE FEASIBILITY

In looking at resource feasibility, this report focuses on three important resources; personnel, support vessels and the shoreside space and facilities that must be available to support the ACCC concept.

PERSONNEL

The core group of employees for the ACCC is expected to come from a diverse group of individuals with oil industry, maritime, academic, fishing, contractor and tradesman backgrounds, primarily Alaska residents. Alaskans will provide the main source of staffing. However, they will establish relationships with Corpus Christie.

The staffing of Corpus Christi has shown that such personnel can be found and recruited to an oil spill cooperative, thus core staffing is deemed feasible.

The other personnel requirement for the ACCC is the trained reserve that will be recruited from the local communities. A ready reserve of over 2,000 participants is a realistic expectation.

As shown by the partial listing of population figures of Table 1, the population of coastal Alaska is significant, but not large. The seasonal and entrepreneurial nature of many Alaskan jobs and businesses, and Alaskans' concern for their environment, make it likely that reasonable numbers of the population can, and will, make themselves available for either short or long-term response activities. Their availability for the real event will likely be greater than for spill drills.

TABLE 1: POPULATION OF ALASKA COMMUNITIES (1990)

Anchorage	226,338
Kenai	6,327
Seward	2,699
Cordova	2,110
Valdez	4,068
Whittier	299
Kodiak	6,365
Homer	3,660
Seldovia	316
Juneau	26,751
Ketchikan	8,263
Sitka	8,588
Unalaska	3,089
Sand Point	878
Chenega	94
Tatitlek	119

(Source: Dave Dengel, City of Valdez, Community Development Department.)

Finally, of course, the *Exxon Valdez* spill proved there is no dearth of Alaskans willing to work on a spill response. The availability of personnel is not an obstacle to the establishment of the ACCC.

VESSEL RESOURCES

It cannot be gainsaid that Alaska has a remarkable inventory of vessels suitable for use during an oil spill response. The winter haul-out greatly reduces the number of vessels available during the off season, but this could be overcome by providing standby funds for winter availability for a core of selected vessels. The vessel fleet and their crews, would be a major asset of the ACCC. Considerable experience in using and developing this resource has already been gained by Alyeska and Exxon, on which ACCC could be expected to build.

It is not unreasonable to expect to provide sufficient vessels and crews for as many as 50 strike teams of six to eight vessels each, plus additional vessels in the event of a catastrophic spill. This has been verified by the *Exxon Valdez* spill, in which 488 vessels were used from Prince William Sound, 93 from Southeast Alaska, 284 from Seward, 111 from Anchorage, and 182 from Kodiak.

A recent preliminary study carried out for RCAC indicates that there are 3,699 vessels of various types with lengths greater than 20 feet in Southcentral Alaska. Figures were not available for Southeast Alaska, the Aleutians or Western Alaska, but could be gathered if the ACCC concept were accepted. Nonetheless, these figures indicate a significant reservoir of vessels that could be used in the event of a spill. In a spill response, vessels are utilized for a variety of purposes. The most useful vessels are the seiners and trawlers that are equipped with variable pitch propellers or trolling gears. These attributes permit them to pull oil boom for long periods of time at slow speeds.

Table 2 shows the vessel fleet of South Central Alaska from the RCAC sponsored preliminary study.

TABLE 2: SOUTHCENTRAL ALASKA FISHING FLEET

<u>VESSELS</u>	<u>(1)</u> <u>TOTAL</u>	<u>(2)</u> <u>PWS</u>	<u>(2)</u> <u>CI</u>	<u>(2)</u> <u>KODIAK</u>	<u>OTHER</u>
GILLNETTERS	1034	550	580		4
SEINERS	680	280	80	320	
CHARTER BOATS	252				
TENDERS	168	50		100	
CRABBERS	78				
LONG LINERS	318				
TRAWLERS	19				
TUGS	6				
LANDING CRAFT	+				
BARGES	+				
OTHER	107				
TOTAL	3,699				

Sources: (1) Fishing Vessel Analysis; RCAC, January 1992
 (2) Personal communications from Tom Copeland, June 1991

The hydraulic systems of many vessels, especially seiners, can often be used as the power pack for off-the-shelf skimmer systems. Seiners and other large vessels generally have sufficient power to pull and maneuver small barges.

Stern and bow gillnetters can be rigged for boom towing under certain circumstances. The extremely fast bowpickers can provide valuable support services, such as shuttling operations for personnel, delivery of both oil spill and medical supplies, security services and other similar duties, particularly in support of shoreline operations.

Tenders and crabbers can serve as berthing, logistics, and communication centers. They also could support transfer operations from small barges to a larger mother barge. These vessels also may be capable of functioning as maintenance and repair platforms.

Tugs would be essential for moving and tending the large barges used for storage of recovered oil. Landing barges are essential for supporting beach cleanup operations and for moving bulk supplies.

Charter boats have proved important in moving people and supplies, assisting in communications, and supporting shoreline assessment activities. Seaplanes can fill an important roles as observation aircraft, and for communication, emergency medical evacuation, transportation, and coordination roles.

Table 3 shows the estimates in Alyeska's contingency plan of the number of vessels available two, five and ten days into a spill operation.

TABLE 3: VESSELS AVAILABLE AT 2, 5 AND 10 DAYS

<u>Vessel</u>	<u>2 days</u>	<u>5 days</u>	<u>10 days</u>
Bowpickers	107	118	124
Sternpickers (18-43 ft.)	27	32	34
Seiners (32-56 ft.)	180	210	255
Tenders (60-120 ft.)	61	70	82
Tugs (40-230 ft.)	16	41	85
Crewboats (36-150 ft.)	12	15	26
Supply Vessels (120-220 ft.)	10	21	30

It is believed these numbers can be increased considerably through ACCC efforts.

It also must be recognized that the vessel fleet is a heterogeneous resource in terms of vessel size, condition, the skill of skippers and crews, and the inherent free spirit associated with this entrepreneurial field.

The Exxon Valdez spill and Alyeska's subsequent experience has shown that fishing vessels and other local vessels are a feasible, albeit imperfect resource.

SPACE RESOURCES

Space, particularly near the shoreline, will be of considerable importance to the ACCC. Shoreline operating space appears to be at a premium in Alaska. The ACCC will need one or more bases of operation with substantial indoor space (on the order of 50,000 to 80,000 square feet). This indoor space will be used for offices, response centers, classroom training, hands-on equipment training, communications, warehousing of materials and equipment, parts inventory and repair operations.

The ACCC will need substantial dock footage to service and equip barges, contract vessels, and first strike vessels. The large number of small barges and vessels will likely necessitate the availability of its own small dry-dock capability. Cranes, forklifts and other equipment will be needed for deployment and loading of vessels.

Tankage and flat storage areas will be necessary for interim storage of recovered oil. Open storage will be needed for bulky items and Conex storage units.

Similar but smaller scale space needs will exist at remote storage depots. Consideration is being given to deploying and docking self-contained, barge-based response depots at remote locations. These could periodically be rotated back to ACCC bases for maintenance and repair.

The availability of space is unknown at this time and would be the subject of a detailed search in subsequent studies or during early stages of the cooperative's implementation. Special leasing terms or donation of state, local, native corporation or industrial sites may well influence base location.

LEGAL FEASIBILITY

The first issue is the proper form of charter. MSRC has chosen to pursue the status of a not-for-profit corporation. Other cooperatives have chosen to remain partnerships of member companies.

The ultimate solution for the ACCC will likely hinge on issues such as state participation in a non-profit entity, the extent of tort liability, borrowing and purchasing policies, and whether a quasi-state entity has the flexibility to respond effectively under the pressure and timetables required by response scenarios.

The primary question appears to be whether to seek tax-exempt status. Doing so would severely restrict the cooperative from having a separate pricing structure for members and non-members. A not-for-profit corporation could be implemented as a quasi-government entity like the Alaska Housing Authority. This approach could make state participation easier.

Responder immunity is necessary for the ACCC to avoid tremendous liability exposure. It is anticipated that the state legislature will take up the issue of immunity for spill responders again during the upcoming session.

If the not-for-profit form is implemented, the most important contract will be to implement state funding. Discussion of a possible format will await agency decisions and specific legal advice. A contract covering professional service and placement of major equipment items could be negotiated with comparative fiscal and legal ease.

A host of other contracts would be needed with industrial members, other users of ACCC services, support vessel

and operators, as well as for facility acquisition and response contractors employed by the ACCC.

The issue of insurance will require much attention in this age of litigation. Six major areas are identified for later attention. The insurance topic has been subdivided into routine operations and spill response periods. Separate rates and perhaps even policies will apply. Indemnification clauses in contracts must also be considered.

In its contingency plan, Alyeska listed some 152 permits considered necessary to respond to an oil spill. The ACCC will need to proceed carefully to ensure that all regulatory obligations are met.

Discussions with the Clean Coastal Waters and Clean Sound Cooperatives indicate legal and insurance issues are significant, current problems; but these problems can be overcome for a reasonable cost.

Thus, although not without obstacles, the ACCC is legally feasible. (N.B. The overall concept of legal feasibility is being addressed by a professional maritime lawyer, and will be discussed in a separate document.)

TABLE 4: MAJOR LEGAL ISSUES FOR THE ACCC

1. Form of charter and management structure.
 - A. Not for profit
 - B. Not for profit - tax exempt
 - C. Quasi-government entity (similar to Alaska Housing Authority)
 - D. For profit corporation
2. Responder immunity: Extension of HB 196
3. Contracts with:
 - A. State of Alaska
 - B. Organizations contracting with the ACCC for its services
 - C. Vessel operators
 - D. Facility acquisition
 - E. Contractors and suppliers
4. Insurance during non-spill periods:
 - A. Director liability
 - B. Business liability
 - C. Payroll, including Jones Act
 - D. Vessel
 - E. Equipment and facilities
 - F. Employee health, life and disability
5. Insurance during spill response
6. Indemnity agreements
7. Permits
8. Funding guarantees for expenses during spill response operations

FINANCIAL FEASIBILITY

The ACCC can be developed if funds are provided. The size and scope of the cooperative will be dictated by the ultimate level of funding. There are, however, several financial issues that do affect the feasibility of the cooperative.

1. The allocation of cost between parties, e.g., how much by the state; how much by the North Slope Crude Oil Tanker Fleet Operators, Cook Inlet Tanker Fleet Operations, the Crude Oil Terminals, and how much by the non-crude petroleum industry in Alaska.
2. Who will be the owners of the ACCC equipment and what service charges made for its use in a spill or drill.
3. What mechanism will be developed for interim financing to pay for spill response until reimbursement is received from the responsible party. Possible sources: the U.S. Oil Spill Trust Fund, the Alaska Oil and Hazardous Substance Release Fund or other appropriate sources.
4. Can the ACCC issue bonds or use commercial borrowing to acquire all or part of the needed equipment inventory?
5. Can the ACCC use sole source purchasing authority for selected equipment needs, repair parts, spill time contracts, etc.
6. Will the ACCC have different rates for members and non members for personnel and other non-equipment items.
7. How will operating funds be obtained for response operations until reimbursement is made?

All of these financial issues can be resolved. Thus, it is believed that with proper design, the cooperative can be financially feasible in all needed areas.

MISSION FEASIBILITY

The ACCC seeks to do effectively the job that is proposed for it, but its supporters are mindful of the old saying about fools walking where angels fear to tread. It is appropriate to measure carefully the mission against the level of resources provided and vice versa for the ACCC.

The ACCC offers several important benefits, and provides financial leverage for the several partners, but the cooperative must be careful it does not promise to carry out tasks for ridiculously less than others can, or to promise results beyond its capability. For this reason, MSRC has been careful to avoid giving performance guarantees, merely promising instead the best effort under the unique circumstances of a spill. The ACCC would be foolish not to follow this lead. With this reservation, it is deemed feasible that ACCC can accomplish its mission.

SECTION III: THE ALASKA COASTAL COMMUNITIES COOPERATIVE AS INITIALLY PERCEIVED

The complete design of an oil spill cooperative is beyond the scope of this project. Nonetheless, sufficient detail of the cooperative as it is perceived at this time is necessary for the reader to obtain a clear picture of the concept, and to serve as a platform to discuss needed decisions and alternative concepts.

MISSION - BASIC CONCEPT

The overall mission of the ACCC is summarized in the following statements.

The Cooperative will be prepared to respond as a contractor under the direction of a state, federal or On Scene Coordinator and operate within the NIIMS Incident Command System (ICS) in response to spills.

It will also be authorized to initiate its own spill response when it recognizes that a spill has occurred and to do whatever actions are feasible until the government or responsible party takes over the response.

Response to three different classes of spills is envisioned:

- A. For spills of crude oil from a tanker or terminal, the cooperative will support the operations of SERVS and CISPRI with contract fishing and other support vessels and will initiate shoreline protection, nearshore response and other response activities within its capabilities in support of the response effort.
- B. For major product spills from a tanker or large barge, the cooperative will be prepared to carry out a leadership or response contractor role in support of the responsible party, covering spill site containment and removal, shoreline protection, nearshore removal and beach cleanup.
- C. Throughout the state, the cooperative will be prepared to respond in coordination with the responsible party for product spills from a marine terminal, barge, ferry, fishing vessel, industry bulk storage facility, etc. This response would deal with all aspects of the response from spill site containment and removal to shoreline protection, nearshore removal and shoreline cleanup.

Furthermore, it will be the mission of the cooperative to carry out a wide range of prevention, contingency planning, response preparation, training, research and technical assistance activities to support its primary response mission, and to prevent or minimize the impact of spills in the state of Alaska.

ORGANIZATIONAL STRUCTURE

A coordinating management board is envisioned for the Alaska Coastal Communities Cooperative regardless of the formal charter mechanism to be selected.

Figure 3 depicts the management board, and suggests that its membership will be selected from state government, the designated citizens advisory councils, the state and local emergency planning committees, the Alyeska consortium and/or the North Slope Crude Oil Tanker Fleet Operators, the transporters and distributors of crude oil and petroleum product, fishing and wildlife interests and the federal government. Each of these entities has an interest in seeing that an effective response mechanism to oil spills is developed.

It is further envisioned that a technical advisory board will be established to provide guidance and review activities from a technical standpoint, rather than a management standpoint. Specific activities would include providing recommendations and evaluating plans for equipment acquisition and technical operating methods, assistance in developing training programs and suggesting and reviewing research programs.

It is further envisioned that the cooperative's director will choose an internal organization that closely follows the NIIMS ICS structure. This would be reflected by an administrative staff, an operations response core, and operations support group with logistics and finance components and a technical response planning group.

The response core would be supported by community task forces of reserve and/or volunteer forces and contract operational resources. The operation support group with logistics and finance components would be backed by contractor resources and would manage the key support vessel contracting program. The technical response group would be responsible for response planning, technical response, training and technology development activities.

GEOGRAPHICAL DISTRIBUTION

The mission of the ACCC dictates that it place its administrative bases, equipment resources and personnel where they can best carry out their responsibilities. Selection of ACCC sites will ultimately be based on spill risks, potential magnitude of spills, properties of materials likely to be spilled, local environmental conditions that influence air and water transportation, and facilities available or provided to the ACCC.

Obviously the ACCC mission to assist with catastrophic crude oil tanker and terminal spills requires a major presence in or near Prince William Sound and Cook Inlet. Furthermore, the A.D. Little study clearly shows major product activity is present in Southeast Alaska, the Aleutians, Cook Inlet and, to a lesser degree, Prince William Sound. Depots will be placed based on the risk and the suitability of equipment and technology in the local environmental system.

PREVENTION CONCEPTS

The most effective cooperatives work hard to encourage their membership to avoid spills. Prevention planning concepts are depicted in Figure 4. The role of the ACCC's staff will be to assist those who store, transport and transfer oil by recommending the steps they can take through facility modification, operations, maintenance and initial response actions to minimize the occurrence of spills and to minimize the spread and ultimate response effort to deal with problems that occur.

FIGURE 3

ORGANIZATIONAL STRUCTURE OF THE ALASKA COASTAL COMMUNITIES COOPERATIVE

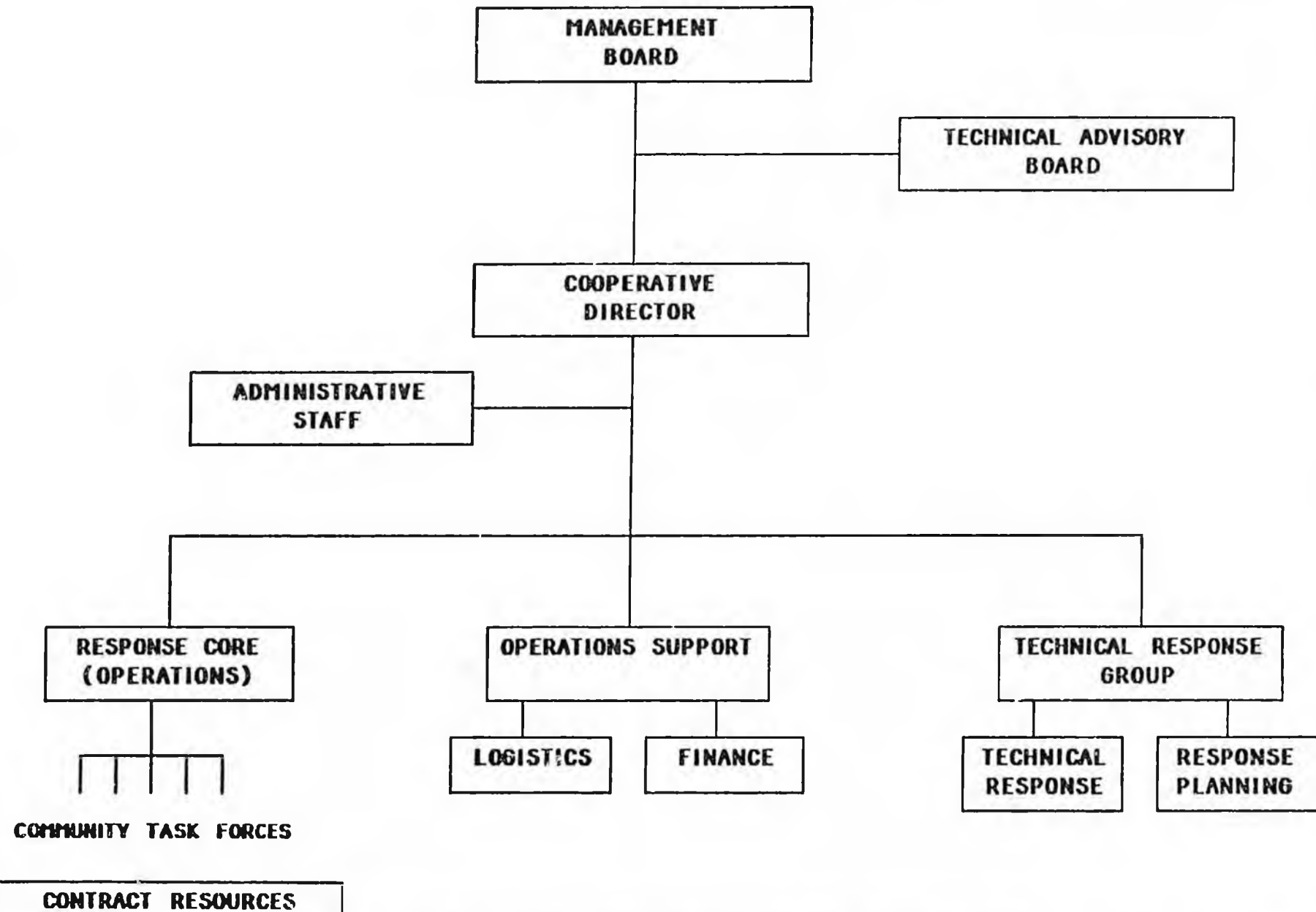
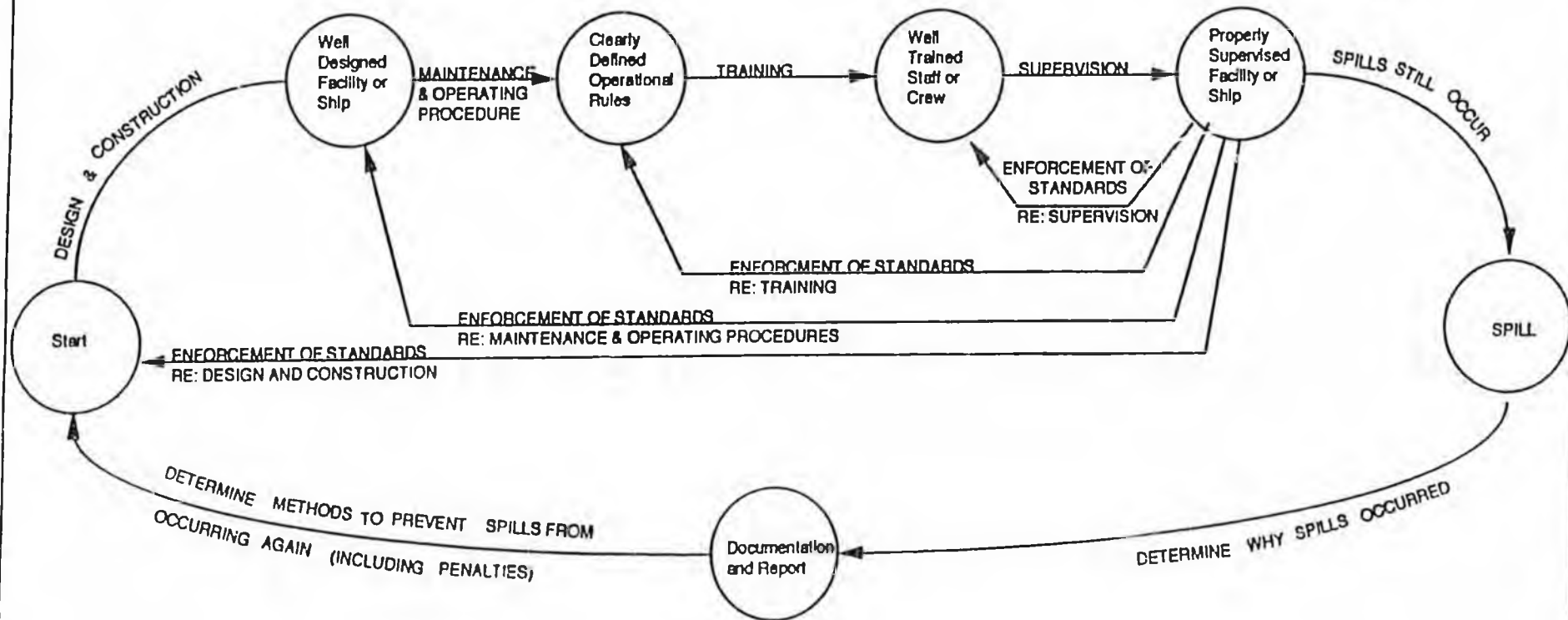


FIGURE 4

THE PREVENTION PLANNING CYCLE



CONTINGENCY PLANNING

MSRC specifically prohibits its personnel from helping in contingency plan preparation for its member companies, except for reviewing the components that refer to MSRC capability and proposed action.

The organizational format of the ACCC should be such that liability issues will not dictate such an arms length relationship. Indeed, the role of the ACCC in carrying out its responder role as the immediate backup to responsible party personnel requires a close linkage between industry and the ACCC, determining operational actions on a site specific basis.

Figure 5 shows a typical contingency planning diagram. Of particular importance are the site specific planning and the resource acquisition steps. This will include both responsible party and ACCC assets and efforts.

OPERATIONAL CONCEPTS

The main business of the ACCC is spill response. In this section we discuss how the ACCC will implement its response actions.

Four levels of response are contemplated; these can be compared to the classic one alarm, two alarm, three alarm and four alarm fire response.

Level one would be a response to a product spill anywhere in Alaska where the spill response could be completely staffed by the responsible party, the core professional staff of the ACCC, local response team volunteers and contractors hired directly by the responsible party. The equipment resource used would be only that of the responsible party, the cooperative and the contractors.

Level two would be a spill requiring the personnel and equipment of level one plus the use of the cooperative's pool of support vessels equipped with ACCC-owned or managed equipment and ACCC reserves or volunteer staff.

Level three would be a spill involving the resources of level two, plus equipment brought from outside the ACCC region to match up with available ACCC contract support vessels. The outside equipment could be rented from contractors or suppliers, obtained through mutual aid agreements with Alaska or lower 48 cooperatives, industry inventories or obtained by mutual agreement or USCG request.

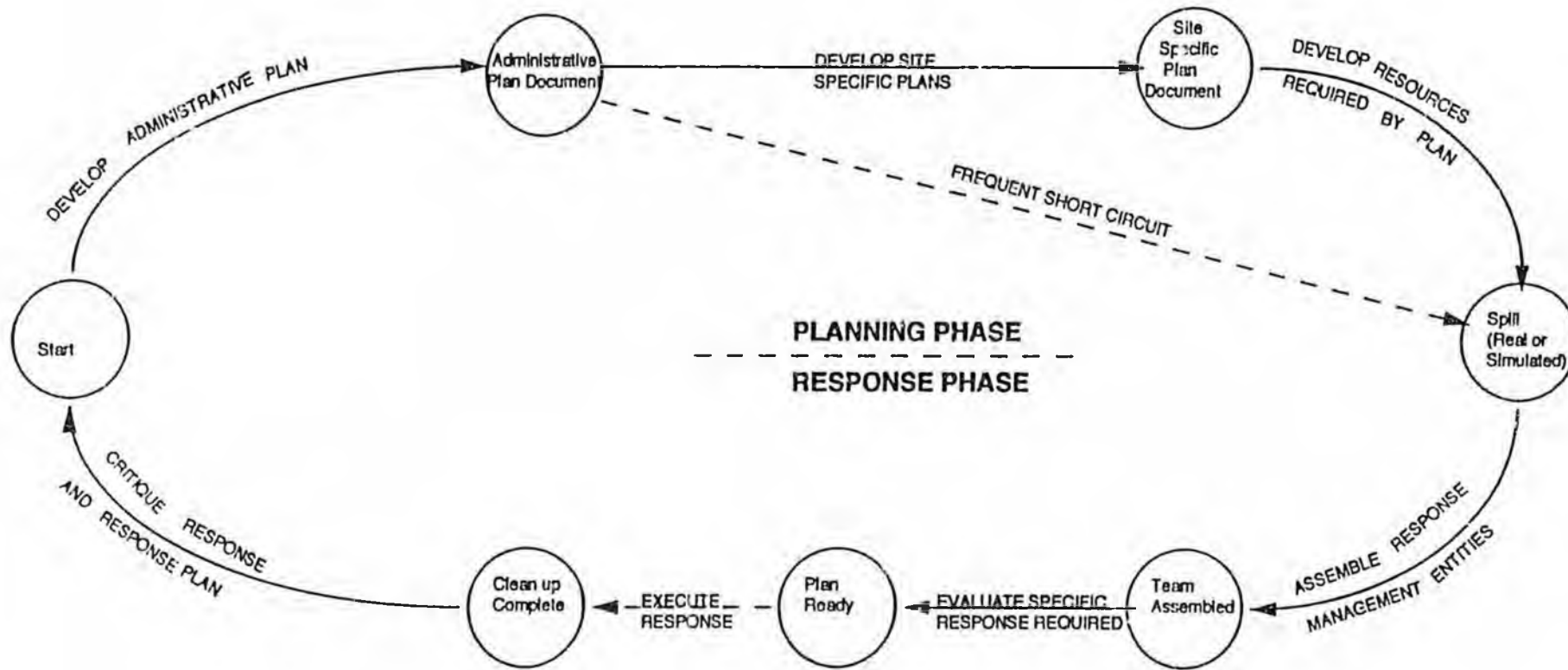
Level four would include all aspects of level three plus the maximum obtainable resources from SERVS, CLIPRI, and Alaska Clean Seas; mutual aid resources from lower 48 cooperatives, international resources available from the Oil Spill Service Center in Southampton, England and the full resources of the federal government including newly acquired USCG resources and the Navy ESSM bases at Stockton, California and Williamsburg, Virginia.

One of ACCC's most important tasks will be to ensure that it is prepared to use this equipment through maintenance of an inventory or data base, establishment of appropriate acquisition methods and training of personnel to use the equipment.

Equipment types that match those in the cooperative inventory; for which spare parts are on hand; and for which the cooperative core staff and reserves are best trained to use and maintain will be the first acquired.

FIGURE 5

THE CONTINGENCY PLANNING CYCLE



OPERATING FORMAT DURING NON-SPILL PERIODS

The core staff of the ACCC is responsible for managing the day-to-day business of the cooperative. In doing so, they will carry out a list of everyday activities similar to that of any comparable business. The format for the non-spill periods will remain the same as for spill periods, namely administrative support, Operations, Operations Support/Logistics, Operations Support/Finance and Technical Response/Planning.

Administration and Administration Support:

This group will work with the Board of Directors and the Technical Advisory Board to shape the direction of the ACCC; work with state government and member companies to ensure spill time operations; and work with the media and the public to present the concept of the ACCC to the public. The Administration will work with local communities in the development of their response teams and arranging ACCC logistical support. The Administration would, of course, tend to the business of managing the ACCC.

Operational Group:

The operational group will carry out activities needed to prepare for future spill response operations, including:

- Equipment selection and acquisition
- Receiving and testing equipment
- Cleaning, repair and stowing of equipment
- Preventive maintenance programs
- Stock or restock depots
- Readiness drills
- Participate in operational or hands-on training

Operational Support/Logistics Group:

The logistics team will carry out its activities to replenish the inventory of the ACCC from the last spill, and to prepare for the next one. Activities include:

- Logistics planning
- Maintain and assure the readiness of the vessel support program
- Manage non-spill logistic operations
- Participate in drills
- Conduct routine personnel activities
- Maintain inventory of the ACCC

Operational Support/Finance Group:

The finance team will carry out its activities to manage financially the day-to-day operations of the ACCC and complete accounting activities relating to oil spills. These activities include:

- Routine accounts receivable, payable and payroll
- Manage ACCC finances
- Calculate and invoice response costs for past spills
- Budget preparation and monitoring activities

Technical Response & Planning Group:

The Technical Response/Planning team will operate in several areas:

Participating with other teams in developing NIIMS-ICS planning concepts for spill time activities.

Planning technical response activities for spills and drills .

Conduct training either internally or in concert with existing Alaskan higher education entities.

Conduct research on special technology appropriate for the cooperative team, including but not limited to: fishing vessel response capabilities, evaluation of unique Alaska resources and oil spill response techniques particularly appropriate for Alaska. This technology development would be partially by staff and partially in association with Alaska research organizations, e.g., University of Alaska, Prince William Sound Science Center, the spill technology review council etc.

Environmental assessment of past or potential spill sites not already accomplished by other organizations.

Interact with the state, federal and academic/scientific/engineering communities and environmental groups.

When the spill bell rings, the ACCC shifts immediately to the response mode and all non-essential activities are set aside so that the maximum response effort can be implemented.

RELATIONSHIP OF THE ACCC WITH EXISTING ALASKA COOPERATIVES

In the aftermath of the *Exxon Valdez*, Alyeska developed an extensive spill response capability, including its Ship Escort and Response Vessel Service (SERVS). SERVS is the largest and best equipped oil spill response organization at this time in the United States.

SERVS was established by Alyeska to prevent spills through escort services and to respond rapidly to spills should they occur. SERVS is a large, well equipped response organization whose major but not entire focus is directed at fast containment and removal at the site of a tanker spill. SERVS is a cooperative in as much as Alyeska, its parent company, is a cooperative. Alyeska and SERVS have limitations placed on themselves regarding long-term response, geographical distribution of personnel, transition of response management and transition of SERVS role back to vessel escort duties.

These restrictions, whether externally or internally generated, create gaps and needs that the ACCC proposes to fill. These perceived gaps are:

1. The 72 hour transition from Alyeska to North Slope Crude Oil Tanker Operator management.
2. A mandate to respond only to spills of North Slope crude oil.
3. The limitation of response activities to spills inside Prince William Sound.
4. A greater focus on response near a spill source than on shoreline protection and nearshore response programs.

The ACCC proposes to be the entity to complement the oil spill protection provided by SERVS by filling several of these gaps.

The 72 hour transition gap effect will be minimized by the ACCC Contract Vessel Program.

The SERVS focus on response at the site of a stricken tanker will be complemented by the ACCC's emphasis on shoreline protection and nearshore removal.

The ACCC will take the primary response role for non-crude spills throughout most of the state.

The problem of spill response outside of Prince William Sound will be mitigated by the statewide scope of the ACCC.

Cook Inlet Spill Prevention and Response, Inc. (CISPRI), is a true Class A Oil Spill Cooperative with the key requirements of a professional manager, pool of response equipment, professional core staff and response backup from member companies. It is a rapidly growing oil spill cooperative that serves the oil production, refinery and transportation industry in Cook Inlet. Its scope is broader than that of SERVS and covers all the roles normally carried out by a cooperative.

The interaction of the ACCC with CISPRI will have to be negotiated more carefully than with any other cooperative. The January 1992 spill in Cook Inlet indicates that spill response could benefit from the ACCC and CISPRI supporting one another — especially in the area of providing local vessels to support CISPRI's efforts.

The interaction of SERVS, CISPRI and the ACCC is shown pictorially in Figure 6. The role of these entities are shown by circles. The shaded areas between CISPRI and the Alaska Coastal Community Cooperative and SERVS shows those areas of operations where either or both organizations could operate.

Negotiation between the cooperatives, their member boards and others will indicate where boundary lines or beneficial supportive duplication is desired.

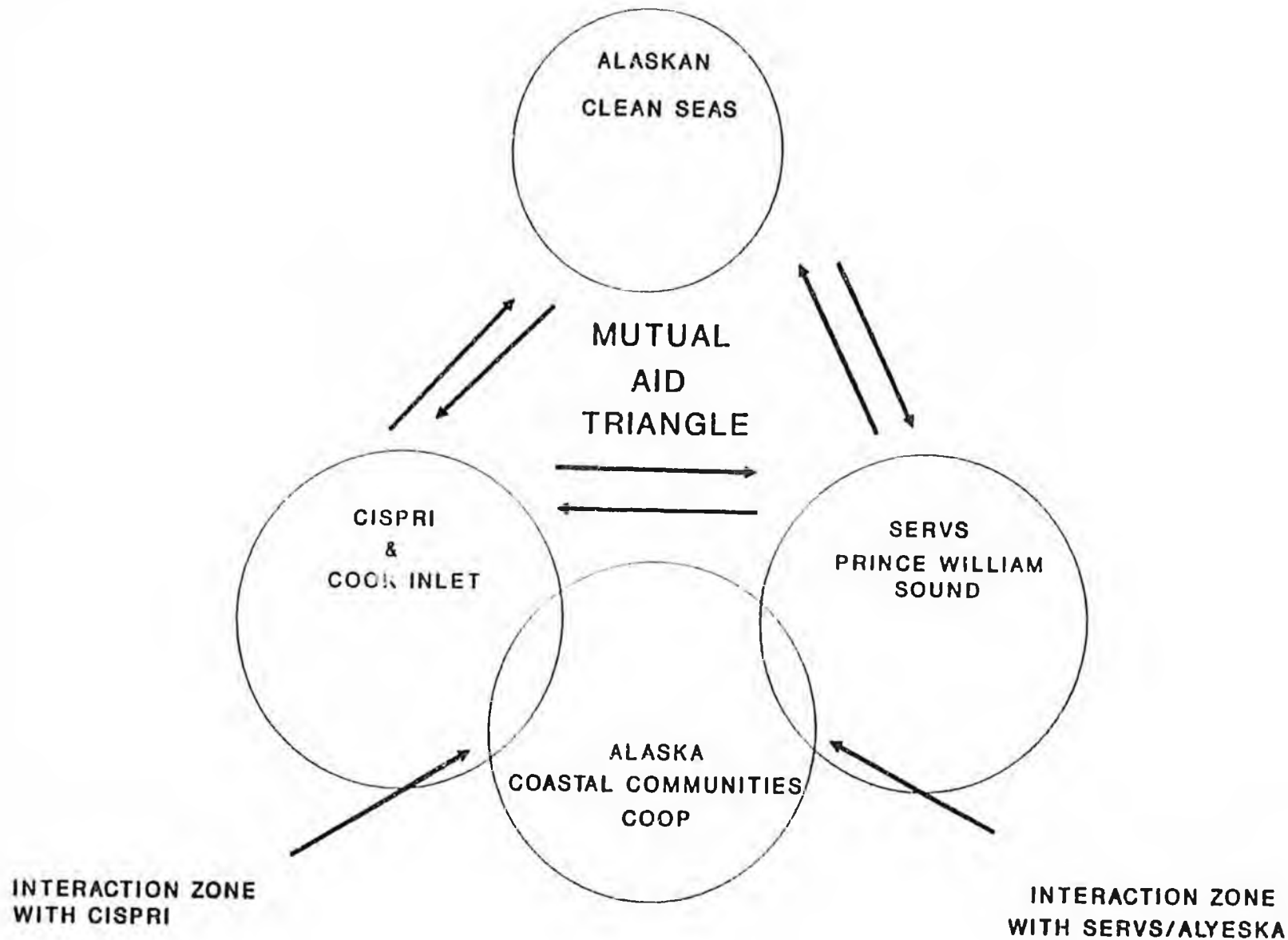
For example, Alyeska currently places equipment resources in storage in several coastal communities. Deployment is now expected by SERVS contractors who may or may not be in the local communities. With the development of the ACCC, Alyeska may choose to place this equipment and the responsibility for its deployment with the ACCC.

The Alaska Clean Seas Cooperative operates almost entirely in the North Slope/Beaufort Sea area. The ACCC's only perceived interaction with ACS, except in the area of mutual aid, would be in the event of a fuel spill in their region under circumstances not covered by a major oil company or by Alaskan Clean Seas.

A new spill cooperative, Southeastern Alaska Petroleum Response Organization (SEAPRO), has recently been established in Southeast Alaska. It is primarily a mutual aid cooperative (Class F) at this time, but contemplates buying equipment in the future. When the ACC becomes a reality, SEAPRO may with its original format.

FIGURE 6

INTERACTION OF THE ACCC WITH SERVS, CISPRI AND ACS



THE SUPPORT VESSEL CONTRACT PROGRAM

Local fishing fleets and other vessels proved to be indispensable during the *Exxon Valdez* spill response. Since that time, the efficacy of using fishing vessels for spill response has been recognized in other parts of the country. For instance, an organization called the Fisherman's Oil Response Team (FORT) is now in operation in the Clean Seas operating area near Santa Barbara, California. The Clean Sound (Washington) and Clean Coastal Waters (southern California) cooperatives have also budgeted funds for fishing vessel support programs.

Although the need to use local vessels became quickly apparent during the *Exxon Valdez* response, the methods for doing so were inefficient and inconsistent. In particular, the system of individual contracts between Exxon or its contractors and the vessel operators left much to be desired. Subsequent contracting procedures between Alyeska and vessel operators have solved some, but not all the problems.

Currently, individual contracts are negotiated between fishing vessel owners and both Alyeska and individual North Slope Crude Oil Tanker Fleet Operators for support services during an oil spill, from a TAPS tanker. This is necessitated because Alyeska's contracts with fishing vessels are not transferrable to the Tanker Fleet Operators, who will be taking over from Alyeska 72 hours into the response. One can easily foresee the potential for disruption of spill response efforts due to contractual difficulties arising from this two-tiered process.

Furthermore, another set of contracts is required for vessels to participate in Cook Inlet spills managed by CISPRI.

Creation of the ACCC would alleviate all these problems by simplifying the process. As the contracting entity for the fishing and other vessels to be used on oil spills throughout coastal Alaska, the ACCC can provide one-stop shopping for other responders in need of the services of local vessels. We anticipate the ACCC would have in its reserve most of the vessels appropriate for spill response activities, and an extensive data base of all pertinent specifications of those vessels. This will allow ACCC to provide boats with the characteristics the responder needs without delay.

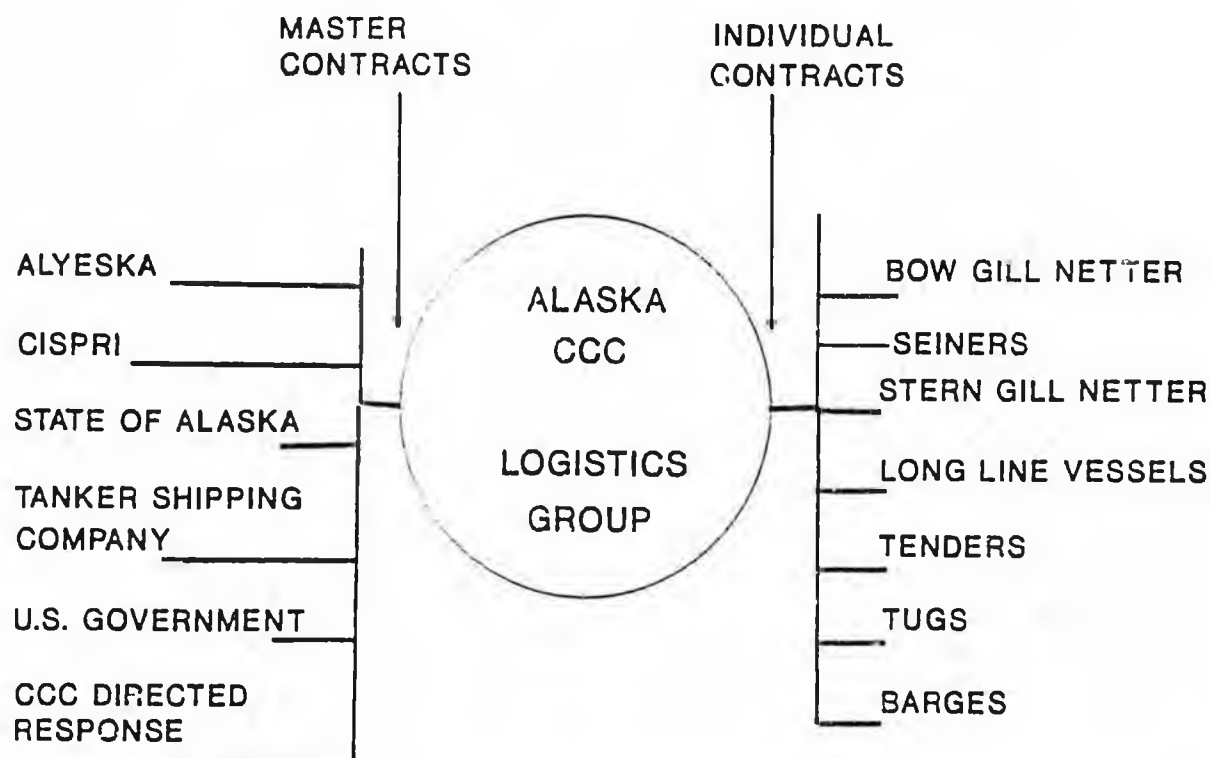
Figure 7 shows how the vessel program would work. The ACCC would contract with each vessel owner for services based on guidelines established by its governing board. These contracts would provide for the vessels to be assigned to the spill responses of whatever company contracts for the ACCC's services. If a transition occurs from party 1 to party 2 and both have contracts with the ACCC, the continuity of the vessel service is accomplished.

In carrying out the vessel contract program the cooperative will follow several basic guidelines:

1. Compensation will be realistic in terms of costs incurred and activities foregone by participating in drills or spill response. For example, if a spill occurs during a short and valuable fishing season, and the vessel operator is asked to forego this fishing opportunity, he/she should be reasonably compensated for the loss of this higher pay activity. Conversely, during other times, compensation would not include any such premiums.
2. During a spill response, vessels in the program will operate pursuant to NIIMS-ICS command structure. Industry's concern that vessel operators contracted for services will carry out their services under the designated command structure will be addressed by a contract provision obligating vessel operators to do so.

FIGURE 7

VESSEL CONTRACTING PROGRAM



3. Vessels provided under the program to a spill response would be instructed to remain on spill duties until relieved or replaced by a suitably equipped vessel and a properly briefed crew in order to provide assurance to the responder that vessel owners will not come and go as they please.
4. Participation in the program will be based on criteria including vessel specifications, crew qualifications, and past performance. All geographic areas will be represented in the program. The use of such criteria is intended to provide the highest level of services possible, while eliminating the potential for geographical or other favoritism or other unfair practices.
5. The ACCC would expect its members and other responders to route all requests for local vessel support services through the ACCC so long as the cooperative has the ability to supply the vessels needed.

EQUIPPING THE COOPERATIVE

A preliminary capital acquisition plan has been prepared for the ACCC to identify equipment resources that will enable ACCC to accomplish its mission and are compatible with its resource base. The priorities for selecting equipment were identified as:

-
1. Nearshore protection equipment consisting of booms, anchoring systems and related components placed with or purchased by the ACCC to protect sensitive areas or to deflect spilled oil toward natural holding bays (also known as "keeper beaches") or into recovery equipment.
 2. A fleet of mini-barges that can be moved by fishing vessels for temporary storage of recovered oil, which would also serve for other shoreline protection and nearshore response needs.
 3. Skimming equipment, booms and other equipment that matches the space, hydraulics and weight limitations of fishing and other support vessels.
 4. Equipment comparable to that which might be brought to Alaska from the outside in the event of a catastrophic spill, primarily in order to train local personnel how to operate such equipment
 5. Equipment suitable for response to spills in harbors and ports.
 6. Equipment necessary to deploy equipment placed with the cooperative by Alyeska, the state, the federal government or tanker owners and operators (e.g., deployment vessels, loading ramps, cranes).
 7. Equipment and facilities for the response bases.
 8. Communication equipment.
 9. Equipment for safety, engineering and scientific operations, such as explosion meters, meteorological equipment, laboratory equipment, cameras and video recorders, etc.
 10. Response vessels equipped with skimmers and boom for fast first strike response activities.

Operationally, the plan consists of:

- Local first response strike forces for fast deployment at high risk locations.
- Equipment for up to 50 task forces comprised of two to six boom deployment vessels, two seiners with mini-barges, boom, skimmers, transfer pumps and auxiliary equipment.
- Three heated oil storage barges to receive oil from mini-barges.
- Equipment for approximately 30 local depots.
- Equipment for modest levels of shoreline cleanup operations.
- Equipment for field measurements for safety and operations support

The details of the equipment acquisition plan are being documented in a separate report. Final selection would be made under the direction of the ACCC Board and its Technical Advisory Committee.

SECTION IV: TECHNICAL DEVELOPMENT AND TECHNICAL RESPONSE TRAINING

A major role of the ACCC is to create a large, trained reservoir of Alaskans able to staff a response to a major oil spill. In order to accomplish this, the ACCC must provide for training of its core staff, support vessel operators and crews, and other workers and volunteers in such subjects as oil spill response methods, NIIMS ICS, firefighting, safety and hazardous waste operations and emergency response (HAZWOPER). There are, of course, other people who need similar training, including state and federal agency personnel and industry employees. This training can either be offered in Alaska or individuals could be sent to out-of-state training courses.

Practically speaking, though, the large numbers to be trained (e.g., in the thousands) make attendance at courses in the lower 48 a complex and overly expensive proposition. Also, lower 48 training courses could not be expected to give much emphasis to the technology needed for Alaska, while an Alaskan course could be tailored to apply specifically to Alaskan conditions and technology appropriate to meet those needs.

Training in oil spill control and hazardous spill operations can be extremely costly if the courses are offered by a group that must provide both equipment for hands-on work and staff outside the context of a spill response organization (either cooperative or independent business). Training as a function of the cooperative allows response equipment to be used for training and vice versa. Teaching a diverse group of trainees also helps keep the organization technically sharp and is a productive activity during periods between spills.

The training program suggested for the ACCC will focus on the unique needs of Alaska, its environment, its industries and the ACCC. The main training center will be located at one of ACCC's main equipment bases in order to facilitate access to a large inventory of equipment. The program will have both classroom and hands-on components. In order to ensure high quality and take advantage of existing resources and expertise, we recommend that the program be integrated with local education institutions — perhaps Prince William Sound Community College, the University of Alaska's Marine Science Institute, the Alaska Vocational Training Institute, the University of Alaska Kenai campus, or some combination of these. In this setup, ACCC training staff would become adjunct staff of the college or university.

Training courses would also be offered in coastal communities throughout Alaska. These courses will likely focus on basic spill response, hazardous spill response training, training for local administrators to show how to work with or use the cooperative, first response training drills at specific industrial facilities, and training of local vessel operators in the deployment of ACCC's response equipment.

It is our intent that ACCC's program work with and supplement the activities local academic organizations. The programs will be patterned after the successful programs offered since the early 1970's at the Texas A&M University's Oil Spill School at Galveston, Texas, the Occupational and Environmental Safety and Firefighting courses and associated programs in College Station, and the National Spill School at the Texas A&M's Corpus Christi State University.

Texas A&M's new Center for Oil Spill Technology is coordinating the training activities described above., as well as Texas A&M's Oil Spill Technical Response Program. The University is available to assist in developing ACCC's training program, including prepackaging instructional and visual aid materials, curriculum, and instructors.

Table 5 shows a tentative list of course topics to be considered for development. Some courses would be given throughout the year, while others would be given on an annual or as needed basis.

TABLE 5: POTENTIAL TRAINING COURSES

Main Training Facility

A. Oil Spill Control

1. Basic 40 hour course in oil spill technology
2. Shoreline protection and nearshore containment and removal strategy (24 hr.)
3. Shoreline cleanup methods
4. Initial response methods for terminals and vessels
5. Deployment of sweeps and skimmers (classroom course)
6. Deployment of equipment (hands on exercise)
7. Handling oil spill residues
8. Other oil spill response technologies: dispersants, burning bioremediation, etc.
9. Response simulations/drills
10. Maintenance of oil spill equipment
11. Training for local administrators

B. NIIMS Incident Command System

1. Basic concepts
2. Operational concepts
3. Operational support
4. Technical response/planning

C. Hazardous Waste Operation and Emergency Response

1. 40 hr. HAZWOPER
2. 24 hr. hazardous response with additional emphasis on Alaska Environmental Hazards
3. Shorter term hazardous response
4. Wilderness survival, frost bite, hypothermia, heat exhaustion and other safety concerns.

D. Marine Firefighting

Community Training Courses

Courses A1, A4, A11 and A6 from the list above, as appropriate with emphasis on locally based equipment. Courses B1, C2, C3 and C4, as appropriate

FINANCIAL ASPECTS OF THE TRAINING PROGRAM

The costs of training ACCC staff, contract vessel crews and local residents will be funded from the core budget. If state agency personnel, industry employees or others request training, tuition would be charged. Thus, the training program could be partially self supporting:

EQUIPMENT FOR TRAINING

Equipment and supplies for the training program will fall in three major categories:

- A. Equipment from ACCC's main response inventory (for example, the booms and skimmers that would be used by manual operators.
- B. Equipment obtained to train ACCC personnel in the use of equipment that might be brought to Alaska during a response to a catastrophic spill (e.g., the Navy's Mark 5 skimmers; the Coast Guard's skimming barriers, etc.).
- C. Visual aids, laboratory equipment, safety equipment, personal protective gear, etc. needed specifically for training programs.

TECHNOLOGY DEVELOPMENT PROGRAM

The remote nature of Alaska, its vast coastal shoreline, the importance of its marine resources and the unique spill response technology needed for oil spill control make it extremely important that the ACCC have at least a modest research program.

The purpose of this program is not to compete or duplicate the major research programs of the federal government, or of the industry's MSRC. Rather, ACCC's program would be undertaken to assure that the technology developed in these other programs is adapted for use in Alaska.

The technology development program would be under the leadership of a research director who would report to the director of the technical response/planning section. This individual would be qualified for an adjunct or research faculty position with either the Sea Grant program or Marine Science Institute of the University of Alaska and have the ability to submit research proposals through the University for projects to be carried out by the cooperative.

The technology development program is expected to be partially self-funded through external financial support.

Potential projects for initial study are:

1. Investigation of optimum boom characteristics and techniques for vessels of different sizes, horse power and configuration.

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2. Determination of most practical configurations and techniques for towing temporary storage barges behind fishing vessels.
 3. Optimum equipment and techniques for transfer of recovered oil from temporary storage barges to larger barges or other vessels.
 4. Characteristics of shorelines at risk from refined product spills in areas not included in other surveys by either government agencies or industry.
 5. Options for disposal, reuse, or recycling of recovered oil, oiled debris, and used response equipment in Alaska.
 6. Design of interim storage areas for recovered oil and debris.

TECHNICAL RESPONSE/PLANNING PROGRAM

The Technical Response program will include planning, training, and technology development. The Technical Response/Planning program will involve a trained local reserve and volunteers just like the cleanup side of the response. This reserve will use individuals with legal, business, scientific and engineering backgrounds and also will utilize Alaska's academic, scientific and research organizations and/or consultant capabilities. Specifically the program will utilize the University of Alaska and the Prince William Sound Science Center.

The program's responsibilities during non-spill periods will include development and updating ACCC's response plan; development of interim storage areas for use by ACCC; background scientific and engineering studies needed for response planning; permit acquisition; development of a safety program for ACCC, training; and technical development.

The technical response program will assure that the necessary technical and environmental information is brought into ACCC's response planning and operations.

The ACCC is expected to combine Planning and Technical Response activities. During the spill, the Technical Response group will carry out the activities listed in Table 6 in conjunction with their appropriate role in a spill response.

After the spill response is completed, the Technical Response group will continue activities of documentation, damage assessment, monitoring of restoration, litigation support, and archiving of information so that the current Response Plan may be upgraded based on recent experience.

TABLE 6: TECHNICAL RESPONSE ACTIVITIES DURING A SPILL RESPONSE

- Mobilize technical response
- Determine properties of spilled material
- Predict changes in spilled materials
- Predict the movement of spilled materials
- Provide local knowledge and technical advice on response methods and strategy
- Contribute to development of the written response plan that details the response activities to be accomplished on a day-to-day basis (including methods appropriate for different ecosystems)
- Predict and measure shoreline impacts
- Provide information on response resources
- Measure effectiveness of response equipment and methods
- Quantify oil recovery rates and volume of oil remaining
- Ensure that ACCC responders have information on ecological aspects of the spill
- Assist in negotiations with federal and state agencies and environmental groups
- Assist with public relations activities
- Document the event, impact zone, and response
- Conduct on-site training (e.g., safety, response techniques, or new technology)

ACCC would not undertake all of these functions in every response in which it participated. The decision would be governed by the nature of ACCC's role in the response (i.e., whether ACCC was acting as a response action contractor under the direction of a responsible party or as the principal responder to a mystery spill under its jurisdiction. In any event, ACCC technical advisors would undertake the role of translating scientific or technical guidance from external sources into operating directions for the personnel under its management.

SECTION V: FINANCIAL ASPECTS OF THE ACCC

GENERAL FINANCIAL CONSIDERATIONS

The overriding financial issues for the ACCC are how much funding is needed and where will the funding come from? Before addressing that, however, it is best to consider the funding needs of oil spill cooperatives, which generally fall into three categories:

- Capital equipment and facility funds.
- Routine operating funds.
- Operating funds during a spill response

The first two can be predicted and budgeted for, but the latter can be determined with accuracy only at the time of a spill. In order to avoid the situation currently facing MSRC, we have set out all assumptions on which financial predictions are based and compared our predictions with actual operating budgets of similar cooperatives. (MSRC, when first proposed as PIRO in 1989, had a five year budget of between \$255 and 345 million. MSRC's budget is now projected at over a billion dollars for the same period.)

The budget for the ACCC is targeted at a capital equipment and facility value of \$30,000,000 and an annual operating cost of \$6,000,000 when fully equipped and operative.

There are two ways to develop a projected budget for ACCC. The first is to estimate a cooperative's budget is to look at other cooperatives with similar missions and geographical scope, and make a logical comparison between those cooperatives and the one you are contemplating. The second way is to build the capital and annual operating budgets item by item and total the costs. This report uses both methods, as a means of cross-check the validity of the figures. The costs for the ACCC derived using these two methods were remarkably similar.

A detailed item-by-item capital budget has been developed by the author as a separate work product. In this analysis, the costs of four major categories of capital resources were investigated:

- A. Shoreline protection and nearshore response.
- B. Shoreline cleanup response support.
- C. Response depots and centers for refined product spills.
- D. Support facilities and equipment base.

Shoreline protection and nearshore response includes equipment necessary to operate in four modes.

1st Mode - Fast response for protection, containment and removal with core vessels and equipment

2nd Mode - Reserve team and contract vessel deployment of shoreline protection booms and related equipment.

3rd Mode - Reserve team collecting oil deflected and consolidated by shoreline protection teams.

4th Mode - Reserve team working on open water containment and removal.