Aleutian Islands Risk Assessment

Brief to the Aleutian Islands Risk Assessment Advisory Panel and Management Team

Prepared by: Nuka Research & Planning Group, LLC.

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Considering Options for the Management & Funding of an OPTIMAL RESPONSE SYSTEM in the Aleutian Islands



As part of the Aleutian Islands Risk Assessment (AIRA), the Analysis Team was charged with recommending a structure for the management and funding of a recommended Optimal Response System to enhance oil spill prevention and response in the Aleutian Islands.

The management and funding recommendation describes a Managing Entity, without specifying who will own, govern, or operate the entity. The recommendation was developed by: (1) identifying potential business models based on existing organizations that deliver similar services; (2) comparing those business models based on features commonly considered when establishing a business that delivers services over an extended period of time; and (3) identifying a potential business model and vetting this recommendation with the Analysis Team prior to presenting it to the Advisory Panel.

The Analysis Team recommends a nonprofit organization as the Managing Entity for an Aleutian Islands response system. This entity would most likely contract with other groups for the services needed, though it could also choose to own and operate its own equipment or vessels. In this way, the overall managing organization itself would not have to be an oil spill removal organization (OSRO) certified by the U.S. Coast Guard, but may contract with OSROs and other entities to secure the necessary services.

Vessel operators would pay dues to the Managing Entity to achieve the compliance benefits that it offers, or to secure the prevention and response benefits on a voluntary basis if they so chose. A nonprofit Managing Entity could also accept supplementary funding from grants, pollution settlements, vessels that are not subject to the regulations, or other government or private contributions.

The Analysis Team's recommended Optimal Response System is estimated to cost \$13.6 million per year based on annualized cost estimates. This includes \$793,097 annually for the management and administrative costs associated with the Managing Entity.



The AIRA Optimal Response System Summary Report is supported by a series of interrelated studies as shown in the following figure.

OPERATING ENVIRONMENT

Characterizing Environmental Conditions in the Aleutian Islands

• Summarizes weather data used in Response Gap Analysis and Towing Analyses

Impact of Environmental Conditions on Vessel Incident Response in the Aleuitian Islands: A Response Gap Analysis

 Characterizes how often environmental conditions alone would preclude or significantly impede a range of emergency and oil spill response operations in the region.

REGULATORY REQUIREMENTS

Regulatory Resource Study

- US and Alaska regulations
- Cost of compliance

VESSEL TRAFFIC

2012 Transits of Unimak Pass

- Updates Phase A vessel traffic study
- Estimates innocent passage vessel transits
- Informs per-vessel cost estimates

CONTEXT CONTEXT CONTEXT CONTEXT

OPTIMAL RESPONSE SYSTEM ELEMENTS EMERGENCY TOWING SPILL RESPONSE

Minimum Required Tug Studies

- 2013 study calculates minimum tug bollard pull needed to control representative vessel based on 2010 traffic data.
- 2014 study updates calculation for 75th percentile containership based on 2012 data.

Tug of Opportunity Study

 Calculates the ability of tugs of opportunity in the region to reach various scenario locations and rescue a large ship.

Purpose Designed Towing Vessel

 Presents design and cost estimate for towing vessel intended to maximize features such as speed and seakeeping for Aleutian Islands operations.

Estimated Response Times for Tugs of Opportunity in the Aleutians

• Evaluates availability, capability, and response time for tugs of opportunity to assist 75th percentile containership at various scenario locations based on 2012 tug location data.



Best Available Technology

 Identifies best available technology tugs based on review of existing vessels and set of criteria applicable to Aleutian Islands.

Tug Location Study

 Presents geographic areas that can or cannot be reached by tugs based at different locations in the Aleutian Island.

SPILL RESPONSE & SALVAGE

Considering Options for Salvage & Oil Spill Response in Optimal Response System

 Describes approach used to identify spill response and salvage resources and system components for recommended system.

BENEFITS, COSTS, & IMPLEMENTATION

Benefit-cost Analysis of Risk Reduction Options

 Analyzes predicted benefits and costs and concludes that predicted benefits of proposed system will exceed costs of system implementation.

Considering Options for the Management & Funding of an Optimal Response System

 Describes approach used to identify nonprofit model for recommended system.

AUTHORS

Baldwin & Butler, LLC Pearson Consulting, LLC

EDITED BY

Nuka Research & Planning Group, LLC

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Considering Options for the Management & Funding of an OPTIMAL RESPONSE SYSTEM in the Aleutian Islands

1. INTRODUCTION

As part of the Aleutian Islands Risk Assessment (AIRA), the Analysis Team was charged with recommending a structure for the management and funding of a recommended Optimal Response System to enhance oil spill prevention and response in the Aleutian Islands. This document summarizes the approach taken in that analysis and the recommendation developed. The recommendation is incorporated into *Recommending an Optimal Response System for the Aleutian Islands: Key Findings* (Nuka Research, 2014), which describes the overall system. That system includes services related to emergency towing, oil spill response, salvage, vessel routing, and vessel monitoring.

The U.S. Coast Guard, Alaska Department of Environmental Conservation (ADEC), and the National Fish and Wildlife Foundation (NFWF) initiated the AIRA in 2010. This report is a product from Phase B of the assessment. For more information, see: www.aleutiansriskassessment.com.

2. APPROACH

The management and funding recommendation describes a Managing Entity, without specifying who will own, govern, or operate the entity. The recommendation was developed by: (1) identifying potential business models based on existing organizations that deliver similar services; (2) comparing those business models based on features commonly considered when establishing a business that delivers services over an extended period of time; and (3) identifying a potential business model and vetting this recommendation with the Analysis Team prior to presenting it to the Advisory Panel.

The Analysis Team assumed that the Managing Entity for the Optimal Response System would be established in Alaska under applicable Alaska business law. The Managing Entity would be expected to grow over time and be sufficiently flexible to modify its rates and services without disruption to delivery of its service.

3. BUSINESS MODELS CONSIDERED

The Analysis Team focused its review of potential business models on those entities already providing oil spill prevention and response-related services in other parts of the U.S., including Alaska, as well as other models familiar to the marine industry. The primary focus was on oil spill removal organizations (OSROs), though other models were considered as well. While OSROs informed the analysis, it is important to note that the Analysis Team ultimately recommended a Managing Entity that does not necessarily have to be an OSRO itself – instead, it would most likely contract with one or more OSROs and other service providers, thereby leveraging existing resources and expertise.

OSROs exist – either in full or in part – to help companies fulfill their spill prevention and preparedness obligations under the U.S. Coast Guard regulations. The regulations apply to both tank and non-tank vessels above certain sizes that are operated by U.S. companies or are traveling to or from a U.S. port.¹ The U.S. Coast Guard classifies OSROs based on their documented response capacity and tracks them in a database. There are currently more than 100 OSROs in the United States, including both for-profit and nonprofit entities and cooperatives.² The OSRO guidelines refer only to oil spill recovery or removal capacity (U.S. Coast Guard, 2013), and do not include the emergency towing, salvage, or vessel monitoring or routing that are included in the overall recommendation from the Analysis Team.

3.1 Business Features Considered

Several key business features were considered:

- **Governance**. The way an organization is formed, owned, and led will define its mission, relationship to customers or members, and relationship with, or obligations to, government at different levels.
- **Ownership or membership.** Those creating a new organization will typically become its owners or members, depending on the structure used. An organization may be formed primarily to maximize profit for the owners, or to provide a service or public good for, or with, its members. Both for-profit and nonprofit business models were considered since the ownership or membership interest of each type of organization materially impacts the interests, rights, and duties of those who engage with it.
- **Rates and Revenues.** An OSRO or other organization providing oil spill preparedness or response services will likely collect dues on an ongoing basis to provide the equipment and trained personnel required to meet spill preparedness requirements. If resources are mobilized for an actual response, additional revenues will be generated by providing the necessary services at whatever scale is warranted. The type of business model used drives the options for how an entity sets or assesses its rate and spends or distributes its revenue.
- **Taxes.** An organization's tax obligations will depend on how that entity is structured and established. Taxes may be due to local, state, or federal government. A for-profit company will typically be required to pay tax to one or more levels of government, depending its tax status and how it distributes profits to its owners. A nonprofit is an organization approved by the government to be tax-exempt based on meeting certain requirements in its mission and operations. In this case, any revenues generated in excess of expenses are not distributed to owners but must be reinvested to benefit the public good or social purpose for which the organization exists.

¹ Tank vessel regulations were promulgated in 1996, while non-tank vessel regulations took effect in early 2014. Regulations also apply to certain facilities. The regulatory requirements are described in the Regulatory Resource Study completed for the AIRA Advisory Panel (Nuka Research et al., 2013). ² See <u>https://cgrri.uscg.mil/UserReports/WebClassificationReport.aspx for the U.S.</u> Coast Guard's listing of OSROs by location and response capacity.

• **Other features.** Some aspects of each organizational structure may not apply to the other models. This may include how a business' customers relate to the business, issues related to business debt, or how the business is seen in the eyes of regulators and stakeholders.

3.2 Review of Business Models

The following business models were considered: for-profit, nonprofit, cooperative, port authority, and utility. This section summarizes each of these in general terms, and provides the Alaska Statute reference under which any such organization would operate in Alaska. Section 3.3 compares them in a summary table.

3.2.1 For-profit companies

For-profit companies, including OSROs, are private entities governed by a Board of Directors or owners that have the general mission to maximize the company's value to its owners. Unless otherwise required, rate setting and the distribution of revenues are proprietary and based on the company's consideration of anticipated expenses, capital expenditures, and what the market will bear. Rates may therefore be set based on market demands and a party's willingness to pay.

Starting a for-profit company does not require any enabling legislation, but the company will be subject to federal, state, and possibly local taxes so revenues must be sufficient to meet these obligations as well as other expenses while still satisfying owners' expectations for profit gained.

In the case of many for-profit OSROs, oil spill response services in the marine environment are only a small fraction of overall business. When there is no major spill, the majority of afor-profit OSRO's revenue may come primarily from other environmental service activities that require the same core resources and skills, such as industrial cleaning, waste disposal and field/industrial/production/seismic service support. This daily work essentially drives asset utilization, which sustains the company between spill responses.

3.2.2 Nonprofit OSROs

For nonprofit organizations, including OSROs, a board of directors and/or the organizations' members govern, but do not own, the entity. Nonprofit may obtain tax-exempt status with the federal or state (or local) government, but still retain most of the flexibility of any private corporation (in contrast to a port authority or utility, whose operations and rates are more closely controlled by government).

Nonprofit organizations must exist primarily to serve a public good, and must meet certain requirements in that they establish budgets, handle revenues, set rates, and share information in order to obtain and sustain their tax-exempt status. Revenues that exceed expenditures must be reinvested it to the organization rather than distributed to its members.

Members of nonprofit organization can participate in the organization either by serving on the board of directors or by electing members to that board, or, if included in the bylaws, voting on an annual budget or other key decisions. Dues or fees paid by members are the primary source of revenues for operating and must be charged to members or those using the services according to a transparent structure that applies to all paying members.³ Although dues must be charged fairly, there can still be a tiered structure such that vessels of different types or sizes, for example, are charged different amounts. Nonprofit OSROs may also receive non-budgeted revenue generated when they provide response services, or be eligible for grants from government agencies or private foundations.

Most Alaska nonprofit OSROs follow the classic "fire house" model where core resources are available and ready at all times for the sole purpose of covering their clients' or members' regulatory obligations. In many cases the nonprofit OSRO services are augmented by for-profit subcontractors.

3.2.3 Cooperatives

Cooperatives represent the third and final model currently applied to oil spill preparedness and compliance response services.⁴ A cooperative is owned by and operated for the benefit of those using the services. The profits and earnings generated by the cooperative are distributed among the members, also known as user-owners. Typically, an elected board of directors runs the cooperative, while regular members have voting power to control its direction. Members can become part of the cooperative by purchasing shares, though the amount of the shares they hold does not affect the weight of their vote.

To begin a cooperative, a group of potential members must agree on a common need and a strategy on how to meet that need. If a cooperative chooses to incorporate they must file articles of incorporation, create bylaws, create membership applications to recruit members, conduct charter member meeting and elect directors, obtain licenses and permits and hire employees.

Similar to nonprofits, cooperatives are not taxed on surplus revenues; unlike nonprofits, however, they refund revenue to their members. Cooperatives are also typically eligible for funding opportunities through government grants. On the other hand, relying on member contributions makes cooperative cash flow subject to the extent to which their members use or value the service they provide. Also, if members do not fully participate and perform their duties, whether it be voting or carrying out daily operations, then the business cannot operate at full capacity and risks losing members.

3.2.4 Port authority

While the port authority model is not currently used to provide oil spill preparedness

³ Typically nonprofits cannot undertake work that is beyond the scope of the mission for which they were formed, and are not supposed to use their nonprofit status to compete with tax-paying corporate entities. If a nonprofit does generate revenues that are beyond their nonprofit scope, those revenues would be exempt from its nonprofit status. For this reason, nonprofit OSROs are less likely to perform additional services the way a for-profit OSRO may.

 $^{^4}$ Note that some nonprofit OSROs in Alaska are referred to as "response cooperatives," but are not technically cooperatives as defined by their business structure.

or response services to private vessel operators, this model represents a potential approach to collecting fees and applying those fees to build and operate a localized system. Port authorities are also obviously familiar to the maritime community.

A port authority is a quasi-public entity that is usually established through enabling legislation or local ordinance. Although it is governed by an independent board (as opposed to operated by government employees as a public agency), it is essentially owned by the government. Financially, a port authority operates in a manner similar to a nonprofit in that the focus is primarily on recovering the costs of providing services, rather than generating profit, though reserves can be accrued.

3.2.5 Utilities

Utilities are typically established by a statutory framework to provide a particular service, such as power or water services. The actual business model used will vary, but utilities are heavily regulated by state government, including the government's oversight of rate setting. They are typically created through enabling legislation.

In Alaska, the Regulatory Commission of Alaska (RCA) oversees most utility-related matters. 5

3.3 Summary of Comparison of Business Models

Table 1 summarizes the comparison of business models considered for this study. The summary is based on Alaska statutes. While the attributes are fairly general, they should not be assumed to be the same as those in other states.

 $^{^5}$ The RCA's website is found at: http://rca.alaska.gov/RCAWeb/home.aspx.

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Business Model		For-profit Corp	Nonprofit Corp	Cooperative	Port Authority	Utility
General Category		Corporation		Other		
Applicable AK Statute		AS 10.06	AS 10.20	AS 10.15	AS 29.35	AS 42.05
Тах	Tax / IRS issues	Net revenues taxed via organization and owners.	Net revenues not taxed or distributed, depending on particular IRS 501(c) designation.	Net revenues distributed to owner- members per bylaws or policy. Taxed on non-distributed profits.	Tax exempt	Not applicable. Do not pay taxes as public entities.
	Articles	Yes. Filed with state.	Yes. Filed with state.	Yes. Filed with state.	No. Created by municipal	Depends on business
rnance	Bylaws	Adopted by initial board, then typically amended by owners / shareholders.	Adopted by initial board, then board and later revised by board or members per articles.	Adopted by initial board, then later revised by members per articles.	Adopted, amended by board per terms of enabling ordinance.	Adopted, depending on business style selected (corp or cooperative).
Gover	Board	Identified in original articles, elected by owners thereafter. Number, qualifications, election via bylaws.	Identified in original articles, elected by members/owners thereafter according to bylaws. May be selected by Board.	Identified in original articles, elected by owners thereafter according to bylaws.	Number, qualifications and authority established in enabling ordinance.	Per corp or cooperative style business selected.
bership	Owners / shareholders	Yes. Profits are distributed via ownership interest.	No. May have members but no ownership or value inures to benefit of any member.	Members are owners, but do not accrue profit from revenues. No absentee investors.	Municipalities that have adopted enabling ordinance.	Yes, may be for-profit or nonprofit. "Owners" and customers may differ.
)wnership / Memb	Members	No. Ownership terms and conditions in bylaws.	Optional. May or may not have members, may have different member categories.	Yes	Νο	Optional
	Member types	N/A	May or may not have member categories.	May or may not have different categories.	Depends on enabling legislation.	Depends on enabling legislation.
U	Voting	Directors vote. May be weighted by ownership	Directors vote according to bylaws. May or may not be weighted	Members vote according to bylaws/policies	Directors vote. Limits or controls either in bylaws	N/A Members of utility may vote on some

Table 1. Elements of business models considered for an Aleutian Islands response system

Report to the Aleutian Islands Risk Assessment Advisory Panel & Management Team

Bu	siness Model	For-profit Corp	Nonprofit Corp	Cooperative	Port Authority	Utility
	Rate setting	By management or owners per bylaws.	Per bylaws. May be specific or qualified delegation to board / management.	Prices equal to all who do business with coop. Members may get discount or rebate because of ownership.	Per development plan adopted in enabling ordinance.	Rates approved by Regulatory Commission of Alaska. Must maintain fair and reasonable rates.
Rates / Revenues	Rate constraints	Typically market driven	Need to be based on fair rationale basis. Can't discriminate with pricing between similar customers.	Need to be based on fair rationale basis. OK to include reasonable margins / reserves in rates.	Based on "fair and reasonable" standard. Annual CPA audit usually required.	Must be based on fair rationale basis. May include reasonable margins/reserves in rates.
	Revenue(s) / Profits	Profits distributed to owners after reserves established according to ownership percentage.	Profits are used benefit the organization, not members. May create reserves based on written policy consistent with IRS regulations.	Profits are distributed to member-owners (after reserves are established) according to ownership percentage.	Profits are used benefit the organization, not member municipalities.	Net margins benefit utility. May be used to establish reserves and to maintain fair and reasonable rates.
Other	Participation	Customers who want to do business with company. No requirement to provide service.	Service typically provided to meet public interest. Discrimination among potential customers limited.	Member owners must / should do business with the coop.	Municipalities adopting the enabling ordinance delegate authority for acts to independent legal entity or port authority.	Based on Certificate of Public Convenience and Necessity.
	Debt	Can borrow money.	Can borrow money and receive grants.	Can borrow money.	Can issue bonds, no tax authority, can pledge revenues.	Can incur debt consistent with regulatory approval.

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4. RECOMMENDED BUSINESS MODEL

Based on the research and analysis described here and internal discussion, the Analysis Team recommends a nonprofit organization as the Managing Entity fc Aleutian Islands response system. This entity would most likely contract with c groups for the services needed, though it could also choose to own and operate i own equipment or vessels. In this way, the overall managing organization itself would not have to be an OSRO certified by the U.S. Coast Guard, but may conti with OSROs or other entities for various services. A nonprofit organization is recommended because this structure:

- Incorporates nonprofit drivers to keep costs down: no parties receive dire financial benefit from charging rates that exceed the amount needed to provide for services and necessary reserves.
- Ensures a baseline level of transparency (and thereby an incentive to ke costs down).
- Allows for contributions from multiple types of sources, including memb and non-member shippers, grants, fines/penalties, and appropriations.
- Allows for flexibility in membership dues structure, including the ability charge different fees to different vessels as long as they are based on the concept of equity. For example, dues could be different for categories of vessels such as tankers, container ships, and bulk carriers, or could be charged based on barrels of oil capacity on the vessel.
- Allows the organization to designate "members" that receive specific ben This is intended to incentivize participation, potentially even from vesse operators that are not required to comply with U.S. regulations. Benefits could include charging a reduced rate for any response services impleme or licensing use of branding or a seal to show that they are "doing the ris thing."
- Allows the companies funding the system to govern the system on the no profit board of directors and who direct dedicated staff to accomplish the company's mission.
- Strikes a balance between serving the public good and retaining flexibili non-profit structure reinforces the fact that this entity exists to protect t environment and natural resources; acknowledges that if the market for these services already existed, then the full range of services would alrea be provided by a for-profit entity; and does not require a federal, state, o municipal law to create the entity or dictate its pricing structure (as wou the case for a utility or port authority structure).

The Analysis Team also recommends that all services be provided – either direc or through contracts – by *one* non-profit organization. Even if multiple service providers are engaged, a single entity will be the most efficient way to oversee ε system that provides for different service categories, as it will:

- Ensure that all those contributing are supporting a high quality system (and channeling their funds to maximize and sustain the system, rather than duplicating services).
- Serve as a single point of contact for state and federal regulators.
- Avoid duplicating administrative costs.

In other parts of Alaska, a single entity provides services regionally based on the needs, features, and federal and state regulatory requirements that apply to operators in Alaska's diverse regions. Currently, these include Alaska Clean Seas on the North Slope, Cook Inlet Spill Prevention and Response Inc. in Cook Inlet, Alyeska/Ship Escort Response Vessel System in Prince William Sound, Alaska Chadux Corporation, and Southeast Alaska Prevention and Response Organization in Southeast Alaska.

5. PAYING FOR AN OPTIMAL RESPONSE SYSTEM

Under the nonprofit structure, vessel operators would pay dues to the Managing Entity to achieve the compliance benefits that it offers, or to secure the prevention and response benefits on a voluntary basis if they so chose. The board of the nonprofit organization could choose to prorate dues based on the amount and type of oil carried as cargo or bunker, but such a prorated formula is not specified here. As noted above, benefits such as reduced rates for actual response operations could be used to incentivize companies to become members even if they are not subject to U.S. vessel compliance requirements.

Commitments of other funding from grants, pollution settlements, vessels that are not subject to the regulations, or other government or private contributions could reduce this amount or further enhance the system without increasing membership dues.

The estimate annual, per vessel cost of \$13,000 for the whole system⁶ represents a maximum cost, assuming overall cost estimates are accurate, because:

• Vessels that are *not* subject to U.S. regulations could choose to contribute to the system voluntarily, potentially to gain the additional protection against accidents (and perhaps at a rate that represents a contribution only to the rescue tug and vessel monitoring services), or as an indication of "doing the right thing." P&I clubs seeking the protection and cost mitigation of an accident prevention system, may be encouraged to require their members to participate or contribute on their own. *If* all *large vessels transiting Unimak Pass in 2012 contributed, the per-vessel cost of the Optimal Response System would be just over \$7,000/year.*⁷

 $^{^6}$ This represents an average annual cost per vessel. It is based on the total estimated cost of the system (annualized) divided by the number of large tank and non-tank vessels transiting Unimak Pass in 2012 which would be subject to U.S. vessel response plan regulations.

⁷ This does not include local traffic, such as fishing vessels or barges serving communities in the region.

• The nonprofit structure of the Managing Entity, at least as proposed by the Analysis Team and supported by the majority of Advisory Panel members, would enable acceptance of public or private grants, receipt of settlement funds from oil spills, or other sources to offset costs or speed ramp-up of the system.

6. ESTIMATED MANAGEMENT COSTS

The Analysis Team estimates that the overall, recommended Optimal Response System would cost \$13.6 million per year based on annualized costs. This includes prevention and compliance services (vessel routing measures and vessel monitoring), a dedicated (or near-dedicated) rescue tug, salvage equipment and services, and oil spill response equipment and services (Nuka Research, 2014). This includes an annual cost of \$793,097 for the management and administrative costs associated with the Managing Entity (nonprofit organization) to manage the whole program. Costs are broken down as described in Table 2, with details broken out in Appendix A.

The Managing Entity would need to develop a financial plan or cash flow analysis to ensure that it has sufficient revenues to build the program. This may include identifying options for establishing initial credit, obtaining a grant, arrangements with the contracted service providers, or by phasing in the initial services to allow for revenue to be generated prior to large contracts or acquisitions.

	SERVICE/RESOURCE	EST. ANNUAL COST
ntity	Staff and Overhead	\$605,597
aging Er	Professional Services (legal, tax, accounting)	120,000
Mana	Board of Directors	67,500
	Subtotal	\$793,097

Table 2. Estimated annual costs for Managing Entity

The cost estimates above represent a first order estimate, which would be refined by the managers of the Managing Entity. The Analysis Team also anticipates that the entity will grow over time, so costs will inevitably change.

7. REFERENCES

- Nuka Research et al. (2013). Aleutian Islands risk assessment regulatory resource study. Report to the Aleutian Islands Risk Assessment Advisory Panel.
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- U.S. Coast Guard. United States Coast Guard response resource inventory system. https://cgrri.uscg.mil/UserReports/WebClassificationReport.aspx

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APPENDIX A: BREAKDOWN OF COST ESTIMATES

Management Staff		Variables Interest Rate: Overhead Rate:	5% 25%						
Management Staff	Number	Unit Cost	Capital Cost	Loan Period (years)	Amortized Capital Cost (\$/yr)	Personnel (\$/yr)	Fuel (\$/yr)	Operating & Maintenance (\$/yr)	Overhead (\$/yr)
General Manager	1		\$0	0		\$175,000			\$43,750
Chief Financial Officer	1		\$0	0		\$110,000			\$27,500
Administrative Assistant	1		\$0	0		\$45,000			\$11,250
Office Equipment	1	\$30,000	\$30,000	5	\$6,929				
Office Rent	1		\$0	0				\$48,000	
Utilities and Communications	1		\$0	0				\$14,400	
Vehicles	2	\$35,000	\$70,000	5	\$16,168		\$4,800	\$4,800	
Travel	1		\$0	0				\$48,000	
Insurance (General Liability,									
E&O, Pollution)	1		\$0	0				\$50,000	
Operating Reserve	1	\$0	\$0	15	\$0				
			Total Capital Cost (Principal)		Annual Capital Cost	Annual Personnel Cost	Annual Fuel Cost	Annual Operation & Maintenance	Annual Overhead
		Totals:	\$100,000		\$23,097	\$330,000	\$4,800	\$165,200	\$82,500

Professional Services		Variables Interest Rate: Overhead Rate:	8% 25%	
Profesional Services	Number	Unit Cost	Capital Cost	Operating & Maintenance (\$/yr)
Legal	1		\$0	\$50,000
Tax/Accounting	1		\$0	\$25,000
Engineering	1		\$0	\$15,000
Naval Architect	1		\$0	\$10,000
Travel	1		\$0	\$20,000
			Total Capital Cost (Principal)	Annual Operation & Maintenance
		Totals:	\$-	\$120,000

Board of Directors	Variables				
	Interest Rate:	8%			
	Overhead Rate:	25%			
Board of Directors	Unit Cost	Capital Cost	Personnel (\$/yr)	Operating & Maintenance (\$/yr)	Overhead (\$/yr)
Directors' Stipend - 9 Directors		\$0	\$18,000		\$4,500
Directors Travel		\$0		\$36,000	
Meeting Costs - two meetings per year		\$0		\$4,000	
Insurance		\$0		\$5,000	
			Annual		
		Total Capital Cost	Personnel	Annual Operation &	
		(Principal)	Cost	Maintenance	Annual Overhead
	Totals:	\$-	\$18,000	\$45,000	\$4,500