

# **Economic Evaluation of the Port of Alaska**

## **Phase I: Executive Summary**

*Prepared for*

**Matanuska-Susitna Borough Port Commission**

**March 15, 1990**

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## **Phase I: Executive Summary**

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### **Matanuska-Susitna Borough Port Commission**

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*Prepared by*

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**March 15, 1990**

## Executive Summary

### Introduction

- Temple, Barker & Sloane, Inc. (TBS) was asked to assist the Matanuska-Susitna Borough Port Commission (MSBPC) to evaluate the economic feasibility of new port development (e.g., Port of Alaska) at Point MacKenzie.
  
- TBS proposed a two-phased approach for assisting the MSBPC:
  - Phase I: Feasibility Evaluation
  
  - Phase II: Strategic Planning
  
- The focus of Phase I was to:
  - Identify *realistic*, potential market opportunities for port development
  
  - Identify discrete development scenarios based on the realistic opportunities
  
  - Assess the development scenarios according to market potential, expected financial performance, economic impact, and associated risks
  
  - Prioritize the development scenarios in light of this assessment
  
- This document summarizes TBS's Phase I conclusions and recommendations.

***Potential Opportunities for Port Development***

- TBS's assessment of market opportunities focused on noncontainerized dry cargo and marine industrial uses.
  - Aggregates
    - Sand and gravel
    - Limestone
  - Cement
  - Breakbulk general cargo
  - Foreign trade zone
  - Marine industrial park
  - Fabrication site for oil and gas drilling and support modules
  - Offshore oil support base
  - Passenger cruise terminal
  - Drilling cement

## **Conclusions**

- Based on the review of the market, production, economics, competition, and other factors related to these uses, TBS identified three *realistic* opportunities for further analysis:

<b>Opportunity</b>	<b>Market Potential</b>	<b>Timing</b>
Coal exports	Low to moderate	Near- to mid-term (2-5 years)
Wood chips	Low to moderate	Mid- to long-term (3-5 years)
Round logs	Low	Mid- to long-term (3-5 years)

- In addition, four areas for potential development were identified:
  - Fabrication of oil and gas production machinery and equipment
  - Offshore oil and gas operations support base for Cook Inlet activity
  - Location of a regional oil response center or equipment pre-staging site by the Petroleum Industry Response Organization (PIRO)
  - Home port or port-of-call for cruise ships

***Coal Exports***

- TBS analyzed the price per ton that Port of Alaska would need to charge to recover costs versus the estimated rate that Idemitsu Kosan requires to make Wishbone Hill coal competitive in overseas markets. The analyses suggest that at an annual throughput of 1.1 million tons per year:
  - Significant subsidy (i.e., \$4.03-\$5.12 per ton for Wishbone Hill coal) would be required for the development of the Port of Alaska as a coal export port for Wishbone Hill coal.
  - The combination of inland transportation by truck from Wishbone to the Port and a 2,000-ton ship loader provides the most economical alternative.
  
- Similarly, TBS analyzed the economics of handling both Wishbone Hill and incremental volumes of Usibelli coal. The analysis suggests that a sustained annual throughput of 1.8 million tons per year would necessitate subsidies of \$0.85 to \$2.51 per ton.

***Forest Products***

- TBS estimates that, depending upon the final forest resource management programs adopted by the Borough and State, forest products cut from land within the Mat-Su Borough could result in the following traffic through the Port of Alaska:
  - Round logs: 1 to 3 ship calls per year
  - Wood chips: 1 to 4 ship calls per year

- On the basis of VEI Consultants' forecast of forest product exports, the Port of Alaska could expect the following traffic:
  - High case: 14 ship calls per year
  - Moderate case: 4 ship calls per year
  - Low case: No vessel calls
  
- The volume of traffic that would result from forest product exports through the Port of Alaska is insufficient by itself to cover the capital cost of constructing the Port. Consequently, forest products should be viewed as an incremental cargo opportunity for the Port of Alaska.

### ***Oilfield Module Fabrication***

- Point MacKenzie may be a feasible site for a manufacturing facility specializing in small- and medium-sized oilfield module fabrication.
  
- However, to successfully compete for this business, Point MacKenzie will have to offer a superior combination of costs and service to VECO's competitors.

***Offshore Oil and Gas Support Base***

- The demand for supply boat services for Cook Inlet oil and gas fields is relatively small and infrequent (monthly to yearly) and is currently being met by boats operating out of Nikiski on the Kenai Peninsula.
- TBS interviews with oil and gas companies operating in Cook Inlet indicate that the existing size of the supply boat fleet is adequate to meet their demands. Therefore, there is no growth predicted for the number of supply boat contractors operating on Cook Inlet.
- TBS believes there is little potential opportunity for the Port of Alaska to serve as a support base for offshore supply boats.
  - The supply boat fleet servicing the Cook Inlet platforms is small, with limited potential for growth.
  - A Port of Alaska support base would have to lure supply boat operators away from the Kenai Peninsula.
  - The Port of Alaska is geographically disadvantaged for most offshore operations relative to Nikiski.

***PIRO Facilities***

- While Port MacKenzie's geographic location lacks proximity to a major airfield capable of handling large freighter aircraft, an opportunity may exist for the Port of Alaska to offer a turnkey facilities and service project to PIRO.
  - The Port provides the facilities – under long-term lease to PIRO.
  - The Port also provides – under contract – the services; e.g., the manpower, to initially respond to an oil spill.
  
- Establishment of a PIRO RRC or equipment pre-staging site at Point MacKenzie represents an opportunity.
  
- The MSBPC should continue to pursue this opportunity as it develops.
  - The MSBPC has already established contact with PIRO.
  - The MSBPC should remain in regular contact with PIRO and initiate preparation of a sales package for the Point MacKenzie site.

***Cruise Ship Operations***

- While exploring development opportunities for Point MacKenzie, TBS examined the Alaskan cruise market and Point MacKenzie's potential for becoming a cruise terminal site.
  
- TBS findings indicate that the opportunity for a cruise terminal on Point MacKenzie is very limited.
  - Point MacKenzie does not provide passenger experience substantially different from experiences obtained by calling at ports on the Kenai Peninsula.
  
  - Cruise lines operating seven-day voyages to Alaska from Vancouver, BC, could not call at Point MacKenzie without making substantial changes to their schedules or itineraries.
  
  - Of the cruise lines operating 8- to 14-day voyages to Alaska from Vancouver, Cunard's vessel would be the most likely candidate for calling at Point MacKenzie. However, it is unlikely that a Point MacKenzie facility could draw Cunard away from Anchorage.

## **Financial Analysis of Selected Port Development Alternatives**

- TBS conducted a financial analysis of selected port development alternatives for Point MacKenzie.
- The alternatives listed are those cargo opportunities identified as offering the most potential for the proposed port, e.g., coal and wood chips (see Exhibit 1).
  - These alternatives represent the "baseload cargo" potential for the proposed port; the potential volumes are sufficiently large to amortize a significant portion of the capital development costs.
- In addition, TBS tested the effects of handling represented volumes of general cargo and logs (see Exhibit 2).
- Annual cash flows were discounted using a discount factor of 8 percent per annum – average annual yield for savings bonds.

**Executive Summary**  
**Financial Analysis of Selected Port Development Alternatives**

*Exhibit 1*

***Alternative Port Development Scenarios***

<b>Case</b>	<b>Description</b>	<b>Projected Annual Cargo Throughput</b>
Case 1	<ul style="list-style-type: none"><li>■ Maximum throughput with rail access</li><li>– Wishbone Hill and Usibelli coal exports</li><li>– Wood chip exports</li><li>– Log exports</li><li>– General cargo imports and exports</li></ul>	1,925,000 by 1995
Case 2	<ul style="list-style-type: none"><li>■ Wishbone Hill coal exports throughput with rail access</li></ul>	1,100,000 by 1992
Case 3	<ul style="list-style-type: none"><li>■ Wishbone Hill coal exports with road access</li></ul>	1,100,000 by 1992
Case 4	<ul style="list-style-type: none"><li>■ Wishbone Hill coal and forest products with road access</li><li>– Wishbone Hill coal exports</li><li>– Wood chip exports</li><li>– Log exports</li></ul>	1,200,000 by 1995

**Executive Summary**  
**Financial Analysis of Selected Port Development Alternatives**

*Exhibit 2*

**Summary of Port Development Scenario Assumptions**

	Case 1	Case 2	Case 3	Case 4
<i>Tonnage Assumptions (short tons)</i>				
Wishbone Hill Coal	1,100,000	1,100,000	1,100,000	1,100,000
Usibelli Coal	700,000	-	-	-
Wood Chips	90,000	-	-	90,000
Logs	10,000	-	-	10,000
General Cargo	25,000	-	-	-
<i>Port Infrastructure Assumptions</i>				
Heavy Truck Haul (road)			✓	✓
Railroad	✓	✓		
Bulkhead, Dock & Dolphins	✓	✓	✓	✓
Coal Conveyor & Stockpiler (2,000 TPH)	✓	✓	✓	✓
Chip Loader	✓			✓
Utilities	✓	✓	✓	✓

**Executive Summary**  
**Financial Analysis of Selected Port Development Alternatives**

- The net present values for each development case are presented in Exhibit 3. For each case, two alternative financing schemes were considered:
  - 7.5 percent interest: assumes that the Mat-Su Borough would be able to issue tax-exempt bonds
  - 10 percent interest: assumes that the Port of Alaska would not be a multi-user port, and hence the Mat-Su Borough would not qualify for tax-exempt status
  
- The analyses show that, under the best case (high cargo throughput and tax-exempt financing), the net present value of the project approximates \$11 million. In the worst case, in which Port of Alaska would handle only Wishbone Hill coal and cannot issue tax-exempt bonds, the net present value of the project is estimated at a negative \$42 million.
  
- Sensitivity analyses were performed for each case (based upon 10 percent interest) to determine the effect of changes in the estimated capital costs upon the net present value of each case. These analyses are summarized in Exhibit 4 and indicate the following:
  - A 20 percent reduction in the total capital cost of the project results in net present values ranging between a positive \$16 million and a negative \$25 million.
  - A 20 percent increase in the total capital cost of the project results in net present values ranging between a negative \$21 million and a negative \$55 million.

**Executive Summary**  
Financial Analysis of Selected Port Development Alternatives

*Exhibit 3*

**Cash Flow Summary**  
**Net Present Value**

(\$ millions)

Cash	10 Percent Interest	7.5 Percent Interest
Maximum throughput with rail infrastructure	\$ - 3	\$ 11
1.1m tons Wishbone Hill coal with rail infrastructure	- 42	- 29
1.1m tons Wishbone Hill coal with road infrastructure	- 39	- 28
1.1m tons Wishbone Hill coal, chips, and logs with road infrastructure	- 40	- 29

Source: TBS analysis.

**Executive Summary**  
**Financial Analysis of Selected Port Development Alternatives**

*Exhibit 4*

**Cash Flow Sensitivity Analysis**  
**Net Present Value**

(\$ millions)

<b>Cash</b>	<b>Percent Change in Estimated Capital Costs</b>		
	-20 Percent	Base Case	+ 20 Percent
Maximum throughput (rail)	\$16	\$- 3	\$- 21
1.1m tons Wishbone Hill coal (rail)	- 24	- 42	- 60
1.1m tons Wishbone Hill coal (road)	- 24	- 39	- 53
1.1m tons Wishbone Hill coal, chips, & logs (road)	- 25	- 40	- 55

Note: Net present value based upon 10 percent bond interest rate.

Source: TBS analysis.

## **Economic Impact Analysis of Selected Port Development Alternatives**

- TBS's estimates of the direct annual expenditures in the Greater Anchorage area related to cargo handling at Point MacKenzie are presented in Exhibit 5.
- It must be noted that throughput charges are a key component of direct impacts (e.g., \$3.00 per ton for coal). If the Port charges a lower throughput rate in order to be competitive, the direct impact would be lower.
- Based on updated data from past TBS studies, the total economic impact (direct, indirect, and induced effects) – on an annual ongoing basis – related to cargo operations (e.g., stevedoring, vessel services, terminal charges, inland transport, and other expenses) is estimated in Exhibit 6 for alternative cargo throughput scenarios.
- Approximately two-thirds of the direct impacts (\$7.50 per ton) and employment impact for coal are related to inland transportation activity that likely would occur whether the coal moves through Point MacKenzie or Seward.
- Employment impacts would potentially be lower if the marine terminal operations are integrated (i.e., if coal terminal workers also operate the woodchip terminal). The port employment estimates do not consider opportunities for improved efficiency if a single operator has the flexibility to allocate the work force across different cargo activities.

**Executive Summary**  
**Economic Impact Analysis of Selected Port Development Alternatives**

*Exhibit 5*

**Port of Alaska – Estimated Direct Impact Vectors by Cargo Type**

*(dollars per short ton)*

Expenditure Category	Coal	Woodchips	General
Navigation Services	\$0.10	\$0.25	\$1.20
Supplies	0.05	0.07	0.25
Repairs	0.05	0.06	0.10
Stevedoring	0.85	2.00	15.00
Equipment Rental	0.00	0.00	0.50
Container Stuffing	0.00	0.00	0.25
Throughput Charges	3.00 <sup>a</sup>	3.00 <sup>a</sup>	3.00 <sup>a</sup>
Warehousing	0.00	0.00	1.30
S/S Agency	0.04	0.06	0.60
Customs Brokers	0.00	0.00	0.10
Banking and Insurance	0.02	0.03	0.50
Other Professional Services	0.02	0.03	0.40
Crew Expenditures	0.02	0.04	0.25
Inland Transportation	7.50	7.00	10.00
<b>Total</b>	<b>\$11.65</b>	<b>\$12.54</b>	<b>\$33.45</b>

<sup>a</sup>Throughput rates are representative of market conditions. Actual economic impacts would depend on the actual throughput rate the Port of Alaska could charge and still be competitive.

Source: TBS analysis.

**Executive Summary**  
**Economic Impact Analysis of Selected Port Development Alternatives**

*Exhibit 6*

***Port of Alaska – Estimated Total Cargo-Related Economic Impacts***

	Cargo Throughput Estimate (thousand of short tons)	Total Impacts			Employment
		Total Output (millions of dollars per year)	Wages (millions of dollars per year)	Tax	
<i>Case 1: Maximum Throughput</i>					
Coal	1,800	\$31.5	\$7.4	\$1.1	212
Chips	90	1.7	0.4	0.1	11
Logs	10	0.5	0.1	0.02	3
General cargo	25	1.3	0.3	0.04	8
<b>Total</b>		<b>\$35.0</b>	<b>\$8.2</b>	<b>\$1.3</b>	<b>234</b>
<i>Case 2/3: Wishbone Hill Coal</i>					
Coal	1,100	\$19.2	\$4.5	\$0.70	130
<i>Case 4: Wishbone Hill Coal and Forest Products</i>					
Coal	1,100	\$19.2	\$4.5	\$0.70	130
Chips	90	1.7	0.4	0.1	11
Logs	10	0.5	0.1	0.02	3
<b>Total</b>		<b>\$21.4</b>	<b>\$5.0</b>	<b>\$0.8</b>	<b>144</b>

Note: These estimates are for economic impacts associated with given levels of cargo activity. They do not provide a basis for assessing the market or economic feasibility of port development, nor do they indicate that these levels of throughput are achievable.

Source: TBS analysis.

**Executive Summary**  
**Economic Impact Analysis of Selected Port Development Alternatives**

- The construction phase impacts of Port of Alaska development are estimated based on three alternative capital development scenarios, ranging from a low of \$59 million to a high of \$115 million, that provide an indication of the range of construction impacts. Impacts are estimated to total 480 to 940 man-years of employment and local expenditures \$62 million to \$121 million (Exhibit 7).
  - These impacts are only associated with the construction phase of the Port and therefore are not sustainable beyond the completion of the port facilities.

**Executive Summary**  
**Economic Impact Analysis of Selected Port Development Alternatives**

*Exhibit 7*

***Port of Alaska – Capital Expenditure Economic Impact Scenarios***

	<b>Capital Costs<sup>1</sup></b>	<b>Employment<sup>2</sup></b>	<b>Output<sup>1</sup></b>	<b>Wages<sup>1</sup></b>	<b>Tax<sup>1</sup></b>
Low	59.00	481	61.95	17.72	2.11
Medium	86.00	701	90.30	25.83	3.07
High	115.00	938	120.75	34.53	4.11

<sup>1</sup>In millions of dollars.

<sup>2</sup>In man-years.

Note: Based on 33 percent wage/output ratio, \$34,000 average annual wage, and same multipliers as for cargo operations. Assumes 30 percent leakage of initial purchases outside Anchorage.

Source: TBS analysis.

**Summary**

- Realistic market opportunities (opportunities for which the Port of Alaska offers distinctive competencies or competitive advantages) potentially available to the proposed Port of Alaska are limited.
  
- The Port of Alaska faces formidable competitive challenges.
  
- Given significant capital investment requirements, the Port of Alaska will be at a competitive cost disadvantage – on a full cost basis – relative to its competitors. As a result, port costs likely will have to be subsidized, at least in the near- or mid-term.
  
- Attracting baseload cargo volumes sufficient to amortize much or all of the development cost is an important success factor for port development at Point MacKenzie. Economic and industrial development impacts are also key factors to be considered.
  
- TBS’s financial analysis shows the net present value of alternative baseline development scenarios to range between a negative \$42 million and a negative \$3 million.

**Executive Summary**  
**Summary**

- The estimated economic benefits of operating the Port of Alaska include:
  - Sales revenues: \$19 million to \$35 million
  - Wages: \$5 million to \$8 million
  - Taxes: Around \$1 million
  - Employment: 130 to 234 persons
  
- Up to two-thirds of these benefits may occur regardless of whether the Port of Alaska is developed.

## **Recommendations**

- The MSBPC and Borough should carefully consider and compare the full range of alternative economic development options available (port and nonport) and their associated investment requirements and economic benefits in deciding whether to proceed with the development of the Port of Alaska.
  
- Should the MSBPC decide to proceed in developing the Port of Alaska, it should:
  - Pursue long-term coal export contracts
  
  - Build, in conjunction with the Borough, maximum political support in the Alaskan legislature for the Port of Alaska
  
  - Prepare and implement – as soon as possible – business plans for pursuing the identified opportunities
  
- Resolution of forest resource management policies is essential to pursuing wood chip exports.