



**US Army Corps
of Engineers®**

After Workshop Report on

IMPROVING THE ECONOMIC ANALYSIS OF SMALL BOAT HARBORS

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For:

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Low tide, June 1996.

PREFACE and ACKNOWLEDGEMENTS

The Alaska and Honolulu Districts within the Pacific Ocean Division of the U.S. Army Corps of Engineers are routinely involved with small boat harbor improvement projects for which the types of data needed for the evaluations of economic benefits are not readily available or documented. This has forced planners to gather data using collection methods that fit within limited study budgets. The lack of independent verification of the data and information used to support economic analyses has raised questions about the adequacy of the economic estimates. Concerns about data quality and documentation have been raised by internal Corps policy compliance reviews of feasibility study reports as well as by Office of Management and Budget (OMB) reviewers.

To address these concerns, Headquarters, USACE (HQ), first compiled and then examined a sample of 15 small boat harbor feasibility studies in Alaska and Hawaii that had undergone review by HQ and OMB. The purpose of this examination was to identify key methodological and data needs and identified problems corresponding to the types of benefit categories that drive project evaluations for the broad range of these small boat harbor projects. Two consultants, Mr. Richard McDonald and Mr. Dave Bastian conducted this review for HQ.

Simultaneous with the HQ review, a policy study of this issue was initiated under the fiscal year 2003 Planning and Policy Studies Program of the U.S. Army Corps of Engineers Institute for Water Resources (IWR). The program is administered in IWR by Eugene Z. Stakhiv, Chief, Planning and Policy Studies Division and in HQ by Janice Rasgus of the Planning and Policy Division. The project study manager at IWR and the editor for this report was Theodore M. Hillyer.

The next step in the study process was to hold a workshop in Anchorage, Alaska on 14-15 August 2003 to discuss the relevant issues. There were a total of 27 participants representing two Corps divisions, three districts, HQ, IWR, consultants and the state of Alaska. This workshop presented an opportunity to build a consensus on needed improvements in methods and data used for small boat harbor evaluations and possible ways to address these needs cost-effectively. The report contained herein is based on the findings of that workshop. The services of a consultant, Mr. Richard McDonald were obtained to prepare the main body of this report.

Since retiring from the Corps of Engineers on December 31, 1994, Mr. McDonald has worked part time as a U.S. Government contractor for the Corps of Engineers performing project reviews. He also performs commercial navigation dock surveys for the Corps of Engineers Navigation Data Center, completing surveys of various facilities across the Nation. His career started with the Corps of Engineers in the St. Paul District in 1965. Between then and the time of his retirement he worked at various times at the Corps of Engineers Institute for Water Resources, the US Department of Energy and as a hydroelectric consultant. For the five years just prior to retirement, Mr. McDonald worked as a Project Review Manager at the Corps Washington Level Review Center. Mr. McDonald received a B.S. degree from the University of

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Minnesota in 1965 and a M.S.C.E. degree from the University of Minnesota in 1968. During the period of 1968-1969 he attended Stanford University where he completed a two-year study program in Engineering-Economic-Planning Systems in the School of Civil Engineering where he met all requirements for PhD except dissertation and final examination.

Special recognition for this workshop needs to go George (Skip) Fach of the Planning and Policy Division of HQ. Although Mr. Fach was unable to attend the workshop, without his support and proponentcy, the workshop would never have been held. The IWR project study manager for this small boat harbor effort also wishes to thank Steve Cone and Lillian Almodovar of the Planning and Policy Division of HQ for providing direction and managing this Policy Study in HQ and Dave Moser, Chief of the Navigation and Water Resources Application Division of IWR for his review comments and active participation in the workshop. Mr. Brian Harper of the Alaska District also deserves special credit for his outstanding effort in hosting and facilitating the August workshop. Review efforts on this report from Mr. Harper, Jonathan Brown of the Buffalo District and Russell Iwamura of the Pacific Ocean Division were also greatly appreciated.

EXECUTIVE SUMMARY

This report summarizes the results of a study on how to improve the economic analysis of small boat harbors. These type projects present a unique set of difficult planning problems. This is particularly true for harbors in Alaska and Hawaii that are exposed to large waves and/or violent weather patterns that require stout (and expensive) wave protection features and rock outcrops in dredged channels, requiring expensive excavation procedures. These small projects have all the expensive components of large projects, but sometimes benefit only a relatively small number of vessels. This sometimes makes justification difficult. These small projects are, however, very important to the states by enhancing the commercial as well as sport fishing and tourism. For many small towns and localities, particularly in Alaska where there is only a limited road network, these harbors represent the only means of commerce and mode of transportation to the rest of the state and the world.

To assist in trying to develop procedures to improve the economic analysis of these projects a workshop was held in Anchorage, Alaska on 14-15 August 2003. A total of 27 individuals from Corps Headquarters, two divisions, three districts, the Institute for Water Resources, consultants and the state of Alaska attended the workshop. The primary purpose of the workshop was to discuss issues related to the economic evaluation of small boat harbors, with an emphasis on Alaska projects. The workshop presented an opportunity to build a consensus on needed improvements in methods and data used for small boat harbor evaluations and possible ways to address these needs cost-effectively.

There were 14 major needs identified at the workshop. These identified needs and recommended solutions of the workshop participants are summarized in following table. In reviewing the needs and recommendations there are two major themes: the need for districts to better use existing sources of data and the need to procure funding for a proposed Commercial Fishing IWR/NED Manual. A table of the needs and recommended actions follows:

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Table of Needs and Recommended Actions	
Identified Need	Recommendation
1. To expand data sources used in harbor planning	<ul style="list-style-type: none"> ▪ Better use of the information readily available from State and local agencies and the various other entities associated with the commercial fishing and recreation industries.
2. To expand efforts to correlate data collected on individual studies	<ul style="list-style-type: none"> • Alaska District will incorporate data correlation activities within a FY 03 Congressional add (Alaska Ports study) to initiate a GI Recon study. The district initiated the study in September 2003.
3. For a regional harbor demand analysis	<ul style="list-style-type: none"> ▪ Alaska District will use the Alaska Ports study to develop a study on regional mooring supply and demand analysis. Such an analysis could help refine data on the vessels served by expansion projects and prevent overlap in the needs assessments for individual harbors.
4. To learn lessons from completed projects	<ul style="list-style-type: none"> ▪ Post-construction surveys are the best source of information on project performance and validity of assumptions used in economic evaluation. Since post-construction surveys can be costly and cannot be funded by limited study or O&M funds, additional funding sources must be identified.
5. To expand Corps economic analysis guidance	<ul style="list-style-type: none"> • Fund the proposed Commercial Fishing IWR/NED Manual. This manual would provide: <ol style="list-style-type: none"> (1) procedures for estimating benefits to commercial fishing from navigation improvements, (2) guidance on how to conduct economic analyses for small boat harbors (to include commercial fishing benefits), and (3) guidance on how to estimate benefits for commercial tour operators and recreation activities. • Districts must participate in development of draft versions of the Manual.
6. For more complete accounting of benefits to recreation vessels	<ul style="list-style-type: none"> ▪ All valid NED benefits need to be considered and documented, including the impacts of improvements on permanent and transient vessels and all harbor facilities protected by harbor improvements. • The proposed Commercial Fishing NED Manual should incorporate cost-effective methodologies for estimating recreation benefits for small boat harbors.
7. To highlight the importance of subsistence benefits	<ul style="list-style-type: none"> ▪ Subsistence activities at Alaska harbor sites must be thoroughly documented in decision documents. • HQ will conduct a policy analysis to review the need and feasibility of changing the low budget status of subsistence harbor development within the context of implementing new legislation. ▪ HQ must expedite the preparation of guidance regarding subsistence harbor project planning and analysis following legislation.
8. To expand the collection of vessel operating cost data to include Alaska fisheries vessels	<ul style="list-style-type: none"> ▪ Expand the Corps' vessel cost data collection activity to include the major types and sizes of vessels employed in various Alaskan fisheries. • HQ pursue funding for the Commercial Fishing IWR/NED Manual as this manual would include expansion of the IWR vessel cost study activities to include the major types of vessels used for commercial fishing and the various types of fishing rigs employed in commercial offshore fishing activity. • IWR implement the study of commercial fishing vessel cost upon receipt of funds.

Table of Needs and Recommendations	
Identified Need	Recommendation
9. To improve vessel delay and operating cost data	<ul style="list-style-type: none"> ▪ Districts should use observation techniques to verify delay data reported by project stakeholders but funding may be a problem. ▪ Subsequent to this workshop, an additional workshop on vessel operating costs was scheduled for mid December. This meeting will investigate what other measures to undertake to improve vessel delay and operating cost data, e.g. gathering information on the major types of commercial tour vessels that operate out of Hawaii and other similar harbors.
10. To refine procedures for valuing time saved by projects	<ul style="list-style-type: none"> ▪ Proposed additional research to clarify methods of deriving and calculating benefits associated with value of time saved and to determine potential alternative use of time. ▪ Alaska District will submit alternative proposals to Headquarters. ▪ IWR to review the relevance of existing practices for determining value of time benefits during the research phase of preparing the proposed Commercial Fishing NED Manual.
11. To clarify scope of risk analysis required for small boat harbors	<ul style="list-style-type: none"> ▪ IWR should incorporate the framework and procedures for risk analysis in the proposed Commercial Fishing NED Manual.
12. To strengthen presentation of non-structural harbor management alternatives	<ul style="list-style-type: none"> ▪ A more complete report presentation of non-structural options is desirable.
13. To highlight the local setting	<ul style="list-style-type: none"> ▪ Improve reporting of local and regional economic impacts, display of clear photographs, referral to data files on Web sites, CD-ROM presentations that accompany the written reports. ▪ Invite report reviewers, particularly OMB, for a site visit of several small boat harbors.
14. For more intensive review coordination during planning	<ul style="list-style-type: none"> ▪ Seek opportunities for better exchange of information between the various levels of the Corps, the ASA (CW) and OMB.

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WORKSHOP SUMMARY

A. INTRODUCTION

A workshop on small boat harbors was held in Anchorage, Alaska on 14-15 August 2003. A list of workshop participants is provided as Appendix A. The primary purpose of the workshop was to discuss issues related to the economic evaluation of small boat harbors. While this workshop focused on small boat harbors in Alaska and Hawaii, workshop recommendations will be applicable to all such projects and will be valuable to all Corps divisions and districts with coastal navigation responsibility.

Small boat harbors are defined as projects that consist of both Federal (e.g. channels, breakwaters) and non-Federal (e.g., docks, ramps, berthing or mooring areas) features, with project outputs normally consisting of enhanced access to open-water lakes and oceans for commercial fishing, recreational boating and sport fishing activities.

Small boat harbors present difficult project planning problems. This is particularly true for harbors in Alaska and Hawaii that are exposed to large waves and/or violent weather patterns that require stout (and expensive) wave protection features and to rock outcrops in dredged channels, requiring expensive excavation procedures. These small projects have all the expensive components of large projects, but sometimes benefit only a relatively small number of vessels. This sometimes makes them difficult to economically justify. Each harbor project has unique features and use patterns that preclude use of generalized data for design and evaluation. Also, planning requirements for small projects are the same as for large ones, but planning budgets are proportionally more limited. Regulations call for the same planning effort as large projects, but less money is available for each task.

B. IMPORTANCE OF SMALL BOAT HARBORS

*The contribution of the Alaska and Hawaiian commercial as well as recreation and sport fishing industry to national income is significant.

*The importance of the Alaska and Hawaiian tourism industry (cruise ship customers, other tourists, charters boat operations (fishing, sightseeing), and services provided to out-of-state yacht voyagers to the regional economy is also significant.

*Waterway transport links are crucial to local commerce and social interaction in Alaska. Rural Alaska's road and highway system is limited. Many towns and villages are only accessible by boat and small aircraft.

*Harbors of refuge have always been important to mariners for safety of small craft operators and on the productivity of commercial fishermen.

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C. REVIEW OF RECENT SMALL BOAT HARBOR REPORTS

A total of 18 planning reports were reviewed, 15 in Alaska and three in Hawaii. Reports reviewed from Alaska District were: Akutan, Chignik, Douglas, False Pass, Haines, Kake, Kodiak, Nome, St. Paul, Sand Point (aka Humboldt), Seward, Sitka, Unalaska, Valdez and Wrangell. Reports reviewed from Hawaii District were: Kawaihae, Kikiaola and Maalaea. A picture portfolio of these projects is contained in Appendix B.

Even though all the projects reviewed are small boat harbors, almost every study had unique aspects that led to a unique set of concerns. The overriding issue was economic justification. The benefit-to-cost ratios presented in the decision documents ranged from 1.2 to 2.0. Only one report (an early version of the Valdez expansion project) indicated that the BCR might be less than 1.0. Typically, only two or three benefit categories (reduced vessel damages, reduced operating costs, and value of time lost) provided almost all of the benefits for a given project. Only Nome had a fairly even distribution between its three benefit categories.

D. RECAP OF HQ REVIEW AND CONCERNS

Most of the Washington-level review comments expressed concerns about the data used to estimate project benefits. Data concerns usually could be grouped into four broad categories: (1) what was the basis for estimating damages incurred by vessels, piers and docks in unprotected or congested harbors; (2) how were the expenses derived (both operating cost and crew cost) of moving vessels to remote locations either during the active fishing season or to winter berths due to the lack of sufficient mooring space; (3) what is the value of time lost to captain and crew due to congestion delays or to the need to seek alternative mooring sites; and (4) why is there no information on residual costs after harbor improvements are implemented.

Other common data concerns included the methods used to derive fishing vessel operating costs, the number of vessels using the harbor but needing to relocate to other ports in the off-season (typically the Seattle-Vancouver area), and the validity of harbormaster wait listings as a measure of demand for harbor expansion. In older reports, breakwater height optimization was frequently questioned, but the District always had justification for the recommended plan. Extreme low tide levels were once used to determine channel depths but this practice has been eliminated.

Other HQ concerns addressed the level of consideration of non-structural congestion reduction alternatives, providing for a full accounting for associated (non-Federal) project implementation costs, and missing report documentation for environmental decisions, resource agency review results, proposed real estate acquisition actions, and Federal/non-Federal cost sharing methods and results.

Based on supplemental information provided by the reporting officers during the Corps review process, all of the concerns were considered to be successfully resolved.

E. SUMMARY OF OMB REVIEW CONCERNS

OMB's concerns on the Seward and Wrangell reports covered many of the same categories discussed above. Many of their concerns related to the data used to estimate economic benefits. OMB requested independent verification of data that was obtained from parties that would benefit from harbor improvements, such as harbor masters and commercial boat operators. Second, OMB questioned some of the Corps methods used to evaluate crew costs, such as using hourly wage rates instead of percentage-of-catch wages for commercial fishermen. Third, they had concerns about the lack of consideration of non-structural methods to alleviate congestion, such as the use of mooring management measures and user fees. OMB reviewers also sought further clarification of the rationale for resolving some of the HQ review concerns.

F. RECAP OF WORKSHOP – OBJECTIVES AND TOPICS DISCUSSED

The objectives of the workshop were to reach consensus on needed improvements in methods and data used for small boat harbor economic evaluations and to identify future potential actions to obtain these improvements cost-effectively. This report summarizes key methodological and data problems, needed planning improvements, and options to meet these needs, as discussed in the workshop. Next, Corps of Engineers Headquarters staff, in coordination with field office representatives, will develop a plan of action for future work to implement the recommendations. If necessary, Headquarters staff would also evaluate the need to revise ER 1105-2-100, the Corps Planning Guidance, to incorporate new policies and/or procedures for the evaluation of economic benefits associated with small boat harbors.

- General topics discussed during the workshop included the following:
- Data issues (sources, survey methods, and “independent verification),
- Methods for application of data methods (regional moorage demand, vessel operating costs, damages to vessels and delay costs),
- Value of time saved,
- Subsistence benefits, and
- Recreation-related activities (boat owners/charter operators, tourism and storm damages).

G. WORKSHOP SUMMARY AND RECOMMENDATIONS

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1. Need to Expand Data Sources Used in Small Boat Harbor Planning.

Workshop participants produced a comprehensive list of data sources to obtain planning data. Potential sources of information include:

-Individual commercial boat captains, vessel owners and harbormasters using personal interviews, ad hoc/focus groups, and mail-out surveys.

-Harbor user organizations, such as the United Fishermen of Alaska and the Harbormasters Association.

-Fish catch/landing data banks maintained by other federal and state agencies (NMFS, USF&WS, Coast Guard, State agencies) and fishing regulation groups (North Pacific Council, Pacific Fisheries Management Council, AK Limited Entry Commission).

-Fisheries literature searches, typically compiled and reported by consultants and/or Sea Grant Universities.

Improved survey methods may be needed to enhance the quality and accuracy of survey results, including better procedures to formulate questionnaires and evaluate survey results. Many of the workshop participants, including Corps planners and economic analysis consultants from the private sector and from academia, have had extensive experience with surveys of commercial fishermen, dock managers, and other fishing industry interests. In many cases, the results were not very useful due to a lack of cooperation by the target populations. This is partly attributed to the natural reluctance of individual fishermen to divulge data on fish catches or on their cost of operations and partly to data privacy protection requirements. Also, harbor managers are frequently kept busy handling the minute-by-minute details of running a crowded marina or protecting property during inclement weather, allowing little time to keep detailed records of arrivals, departures, associated delays, and other information on damage to vessels and equipment due to either overcrowding and/or wave exposure. Nevertheless, there was common agreement that information collected through personal interviews and through other formal survey activity was crucial to understanding both the nature and severity of problems encountered by users and managers at particular harbors and the value of various actions to alleviate these problems.

Action Items:

Workshop participants recommended better use of the information readily available from State and local agencies and the various other entities associated with the commercial fishing and recreation industries in Alaska and Hawaii. Further exploration of databases maintained by other Federal and State agencies may also be warranted. See Appendix C for a complete list of data and information services available.

Use More Effective Survey Techniques. Some workshop participants believed that certain survey techniques worked better than others, leading to a conclusion that it might be worthwhile to substitute some techniques for others that were relied on in the past. For example, some participants believed that discussions with ad hoc or focus groups of harbor users and/or managers yielded more valuable results than using mail-out surveys.

Hire Independent Data Observers. The idea of the Districts hiring independent observers to record vessel arrivals and departures delays, number of rafted vessels, and other key data during representative portions of the year was discussed. This was considered a useful idea, but some participants were skeptical due to tight study budget constraints.

Educate Harbormasters on Federal planning process. There was general agreement that the harbormasters were in a position to be the most valuable information resource regarding the site-specific problems affecting a particular harbor and the best ways to alleviate these problems. However, some harbormasters have a better understanding of the Federal planning process than others, leading to inconsistency in the availability of the kind of hard data that is critical to the project justification process. For example, the harbormaster at Nome keeps detailed records of vessel activity in his harbor, mainly because local taxes are partly derived from mooring charges and landing fees. But this information was also invaluable in analyzing Nome's harbor problems and solutions. Workshop participants believed that efforts to provide educational materials to harbormasters on the importance of recording economic analysis data would lead to more efficient and effective analysis of harbor improvements in the future. The Harbormasters Association is considered a key conduit for this educational effort.

Action Agent: Division/District offices during future project planning activity.

2. Need to Expand Efforts to Correlate Data Collected on Individual Studies.

While harbors and the vessel fleet using each harbor are somewhat site-specific, more work is needed to develop a small boat harbor data bank to improve the efficiency of planning during future studies. Workshop participants believe that it may be possible to sift through the data collected during recent harbor studies and find common data types and useful statistics within each data type. Limited use of some of the generalized data may ease the burden on study budgets, permitting a focus on other kinds of site-specific variables.

Funds for performing a regional harbor supply/demand analyses for Alaska have recently been appropriated (see following paragraphs). Workshop participants believe that these regional studies will also provide the opportunity to collect and analyze information that may eventually form the core of an Alaskan small boat harbors database. The opportunity to perform both the data correlation and the regional demand supply and analysis functions within the same study effort should be incorporated into the study plan.

Action Item: Incorporate data correlation activities within the up-coming regional supply/demand study.

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Action Agent: Division/District offices (to be implemented during development of the regional supply/demand analysis study plan).

3. Need for Regional Harbor Demand Analysis.

There was general agreement that certain kinds of regional harbor studies might contribute to better/more efficient planning at the project level. Much of the demand for harbor expansion stems from the need to accommodate larger fishing vessels (or fish processor vessels) without displacing existing harbor tenants. Participants expressed concern about the need to insure that harbor expansion didn't just attract boats from other nearby harbors, resulting in simple transfers and no NED benefits. The regional mooring supply and demand analysis could help refine data on the vessels served by expansion projects and (hopefully) prevent overlap in the needs assessments for individual harbors. The Energy and Water Development Appropriations Bill for FY 04 that provides funding for Corps activities, includes a clause that provides funds for such a study. The District is eager to begin this analysis, the results of which may totally or at least partially resolve this workshop concern.

Action Item: To be addressed during up-coming regional harbor study.

Action Agent: Division/District offices (to be implemented during development of the regional supply/demand analysis study plan).

4. Need to Learn Lessons from Completed Projects.

Workshop participants recommended post-construction surveys of completed harbors. These surveys can be costly, thus sources of funds for these studies must be identified. Although information from completed projects is usually not directly applicable to other sites (the harbor uniqueness effect), this information could be used to improve the overall planning process. Comparison between planning assumptions and forecasts with completed harbor expansion project results could help to refine the need definition process for new studies, better define existing and future operational practices and lend credibility to expansion assumptions. Also, for certain data types, comparing past planning expectations and outcomes may yield some useful generalized data sets, contributing to the "correlated data" objective discussed above. Funds for new planning studies cannot be used to analyze completed projects. The workshop participants did not establish a link between the "lessons learned" and the "regional supply/demand" topics, but it is obvious that existing harbors, recently improved harbors, and projects in the study pipeline will have to be studied as part of the problem identification and plan formulation phases of the regional supply/demand study. Thus it may be possible to fulfill this "lessons learned" workshop recommendation as part of the regional harbor supply/demand study.

Action Item: Incorporate "lessons learned" data collection activities within the up-coming regional harbor supply/demand study.

Action Agent: Division/District offices (to be implemented during development of the regional supply/demand analysis study plan).

5. Need for Expansion of Corps Economic Analysis Guidance.

At present, the evaluation policies and techniques for small harbors are not adequately explained in Corps planning guidance. Workshop participants believe that improvement is needed during future revisions of the Corps Planning Guidance Notebook (ER 1105-2-100).

IWR has proposed developing an NED manual to provide procedures for estimating benefits to commercial fishing from navigation improvements, guidance on how to conduct economic analyses for small boat harbors (to include commercial fishing benefits), and guidance on how to estimate benefits for commercial tour operators and recreation activities. However, this work has not been undertaken due to lack of funding. The Commercial Fishing IWR/NED Manual will need to address many of the issues discussed at the workshop.

Action: IWR will develop and publish the Commercial Fishing IWR/NED Manual if funds become available.

Action Agents: IWR – publish manual

Alaska and Hawaii Division/Districts: Participate in development of draft versions of the Manual

6. Need for More Complete Accounting of Benefits to Recreation Vessels.

The review contractors attending the workshop mentioned an absence of recreation benefits in some of the harbor reports analyzed. Economists at the workshop expressed a concern that recreation benefits may have little or no value in supporting harbor expansion investment decisions due to the low budgetary priority associated with recreation in current Corps policy. Nevertheless, it was agreed that as long as recreation benefits are equal to or less than half of the total benefits required for justification and were only incidental to improvement for commercial fishing, the budgetary status of the project would not be compromised. After further discussion, it was generally agreed that all valid NED benefits need to be presented in small harbor development studies, including the impacts of improvements on permanent and transit yachts, cruise boat landings, float plane docks, yacht repair yard moorings, and other existing recreation-related harbor facilities that are also benefited by harbor improvements. Benefits to aquaculture facilities within harbors were also mentioned.

Action Items: For studies now underway and for all future harbor improvement studies, fully implement existing planning procedures to identify and evaluate the economic impacts on existing and expected recreation due to proposed commercial fishing harbor improvement projects. This guidance is contained in Section 3-7 and paragraph E-12, Appendix E of ER 1105-2-100 (the Planning Guidance) and Sections 6.4.c. and 17 of EP 1165-2-1 (the Policy Digest). It is expected that the IWR commercial fishing NED manual will include

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additional information on procedure to evaluate the impact of harbor improvements on recreation-oriented activities.

Action Agents: Division/Districts: implement existing guidance. Institute for Water Resources – initiate and complete Commercial Fishing NED Manual. Division/Districts: implement IWR manual guidance when available and factor in and account for recreation vessel demands and benefits.

7. Need to Highlight the Importance of Subsistence Benefits.

Subsistence hunting and fishing activity is both economically important to lower-income Alaskans and culturally important to the native Alaskan population. Protected harbors can extend both the time available for subsistence hunting and fishing activities and can extend the range of available hunting and fishing grounds. This may not be well understood by those accustomed to hunting and fishing for sport, or those with easier road access to hunting or fishing grounds, or those that participate in sport activities in gentler climates. Key problems associated with subsistence activities included available methods to value the harvest. There was considerable discussion about the value of harvested goods versus store bought goods. Attendees familiar with native Alaskan culture believed that the value of harvested goods may not be fully reflected in economic calculations, since the non-tangible value of maintaining ties to historic hunting and fishing processes and food consumption patterns may be of significant importance. Workshop participants agreed that a more complete presentation of the importance of subsistence activities at harbor sites in Alaska was needed. Also, the current low budget priority for subsistence-related projects should be modified, perhaps as a result of legislation now being considered by Congress (see Appendix D).

Action Items: For projects formulated as commercial fishing harbors, study managers should expand the amount of information collected on subsistence hunting and fishing activity in the area and the beneficial impacts associated with alternative harbor improvements.

For project formulated as subsistence fishing harbors, any action will be deferred pending the adoption of current legislation (see Appendix D). If passed and implemented in its present form, the legislation would authorize the Secretary of the Army to recommend subsistence harbor projects without the need to demonstrate economic feasibility, as long as the project met certain criteria regarding remoteness from roads and other commercial harbors, delivered goods would be predominately consumed within the served community, and the project would promote public health and safety, provide access to subsistence resources, and promote social and cultural values. [Note: Actually, absent this legislation if good NED benefit measures can be derived and agreed upon, perhaps we can do more subsistence.]

Action Agents: Division/Districts: Upgrade presentation of subsistence activity in commercial fishing harbor studies now underway.

HQ: When the legislation is approved, expedite the preparation of guidance regarding subsistence harbor project planning and analysis.

District/Division: Provide prior research papers, reports, and studies on measurement of benefits for subsistence harbors.

HQ: Conduct policy analysis to review the low budget status of subsistence harbor development within the context of implementing the new legislation.

8. Need to Expand Collection of Vessel Operating Cost Data.

Workshop participants recognized the need for more complete and accurate data on fishing vessel-operating cost for Alaska fisheries vessels, but it was agreed that this information is extremely difficult to collect during a study. Many harbor expansion requirements are influenced by the cost of traveling long distances to reach fishing grounds, to save the cost of traveling to other ports during the off-season, and save the cost of running from exposed harbors to safe anchorage during storms. The contribution to vessel operating costs from such non-productive activities needs to be estimated and considered to determine economic benefits. For deep-draft navigation studies, vessel cost data is available from continuing Corps data collection activities. However, standardized data on the cost of operation for the type of vessels used in the various fisheries in the different regions of Alaska and Hawaii is not available. This requires the collection of information from local vessels captains and owners who are typically fully occupied in catching fish, making this an expensive and sometimes frustrating data collection process.

The recommendation of the workshop participants is to expand the Corp's vessel cost data collection activity to include the major types and sizes of vessels employed in various Alaskan fisheries. Much of the data would come from performance information available from boat builders. Other sources would also be used. Centralized vessel cost collection would relieve the project planner from a significant workload, allowing scarce economic study funds to be reallocated to other planning tasks, and would also result in the use of uniform and consistent vessel costs for all small harbor studies in Alaska and nationwide. This would improve the degree of comparability between small harbors during the budget allocation process.

Action: Expand the Corps of Engineers vessel cost data collection activity to include small (less than 110-foot) commercial fishing vessels and the major types of tour vessels that operate out of Hawaii and similar harbors serving commercial tour operations. Subsequent to the workshop, an additional workshop on vessel operating costs was scheduled for mid December to look at all aspects of this issue.

Action Agents: USACE: Pursue funding for expansion of the IWR vessel cost study activities to include the major types of vessels used for commercial fishing and the various types of fishing rigs employed in commercial offshore fishing activity.

IWR: Upon receipt of funds and authority, implement the study of commercial fishing vessel cost.

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9. Need to Improve Vessel Delay Data.

Harbor overcrowding has a significant impact on vessels using, or being forced to avoid using, a particular port of call. The amount of time spent seeking a place to land catch, obtain needed supplies and services, untangle from mooring rafts, etc. can detract from time available for fishing, for other productive activities, or from available crew leisure time.

Due to limited planning funds, the measurement of existing delays is sometimes limited to the collection of anecdotal information from harbor masters and a non-random set of fishing boat captains and crews. The workshop participants agreed that improvement of the quality and impartiality of vessel delay data was needed. In order to obtain a better understanding of the extent of delays, and to improve the quality of the data collected, other techniques were discussed such as hiring independent observers to collect site-specific delay data to verify the data reported by project stakeholders and to analyze delay statistics for use in queuing model analysis. The means of funding delay observation activity, such as (perhaps) employing students, augmenting (for a while) the harbor master's work force, use some sort of remote measuring process, etc. was not determined during the workshop.

10. Need to Refine Procedures for Valuing Time Saved by Projects.

The workshop participants reached consensus that the value of crew time wasted due to harbor insufficiency and overcrowding is a valid NED benefit. Existing guidance requires that loss of time due to fishing vessel delays is treated as loss of leisure time and valued at 1/3 the prevailing regional wage rate. Methods used to account for the economic impact of vehicular traffic (formerly known as the value of opportunity cost of time) are derived from research conducted by DOT for vehicular traffic and from an IWR study in 1991). There was spirited discussion among workshop participants regarding whether these parameters are valid for commercial fishermen. Data collected during recent fishing harbor studies suggests that some fishermen would use time saved for employment in other productive activity, therefore, the use of 1/3 the wage rate is far too conservative for these workers. [Note: the 1/3 specification is when there are insufficient blocks of time for alternative employment.] Furthermore, the data to determine the regional wage rate for Alaskan fishermen is not available from any known source. This difference between the values required by guidance and the data collected by project planners in the field has led to disagreements during the review process, and these disagreements have spilled over into the OMB review comments as well. Although the Corps planning process allows District's to propose the use of alternative valuation techniques, there was some skepticism expressed regarding the difficulty of obtain headquarters approval for alternative valuation procedures.

Planning guidance allows for the use of alternate economic evaluation techniques provided that they are pre-approved by headquarters. Exceptions to any existing policy guidance must be demonstrated or supported by data. Many of the evaluation issues in recent reports are specifically related to the alternative use of time (leisure or alternative employment). The workshop participants proposed additional research to clarify methods of deriving and

calculating benefits associated with value of time saved and to determine potential alternative use of time.

Actions: The consensus was to evaluate the potential to review the value of time policies procedures in existing guidance through a review of the IWR 1991 value of time study, perhaps as a part of the effort to develop the commercial fishing NED manual.

An accepted method for translating percentage-of-catch income to an equivalent hourly wage rate needs to be formulated.

Action Agents:

Upon receipt of funding, IWR will review the relevance of existing practices for determining value of time benefits during the research phase of preparing a commercial fishing NED manual.

Division/Districts: In the interim, the District is to submit alternative valuation proposals to HQ.

11. Need to Clarify Scope of Risk Analysis.

Almost all project reports recently reviewed contained some information regarding the sensitivity of benefit-cost calculations to various planning assumptions and data. Some of the most recent reports used risk and uncertainty estimating procedures to help decision-makers judge the merits of plan recommendations. The current trend to improve and refine the risk analysis and presentation of results is expected to continue. Workshop participants expressed no recommendations regarding this topic.

Action: Risk analysis procedures will be discussed in the proposed IWR Commercial Fishing NED Manual.

Action Agent: IWR

12. Need to Strengthen Presentation of Non-Structural Harbor Management Alternatives.

Harbormasters face day-to-day challenges coping with insufficient space in overcrowded harbors. They implement a variety of management measures attempting to balance competing demand for space by transient commercial vessels, the permanent home fleet, and other local economic interests such as fish processing plants and repair yard owners. The requirement to consider a variety of non-structural measures during plan formulation is usually already reflected by these efforts, but sometimes this is not completely explained in project reports. Workshop participants agreed that a more complete report presentation of non-structural options is desirable.

Improving the Economic Analysis of Small Boat Harbors

Action: Upgrade presentation of non-structural management alternatives in fishing harbor studies.

Action Agents: Division/Districts: Upgrade presentation of non-structural alternatives in studies now underway and in future studies.

13. Need to Highlight the Local Setting.

Even reviewers with considerable experience in small boat harbor development in other locales are constantly confounded by the difficulty associated with fishing in the high latitudes. Workshop participants discussed how an improved presentation of the local setting could facilitate a better understanding of the overall need for comprehensive and effective harbor development in Alaska. Improved reporting of local and regional economic impacts (even though not a part of NED justification), display of clear photographs, referral to data files on Web sites, and CD-ROM presentations that accompany the written reports were mentioned as possible tools to highlight the local setting and the beneficial effects of project development.

Action: Upgrade presentation of local setting in fishing harbor studies.

Action Agents: Division/Districts: Upgrade presentation of local setting to the extent possible in studies now underway and in future studies.

14. Need for More Intensive Review Coordination During Planning.

Workshop representatives from field offices expressed a desire for more intensive and personalized interaction with Headquarters, ASA, and OMB report reviewers. They believe that such interaction will lead to a better understanding of the importance of small harbor development and potentially influence the priority placed on such development in the current budget process.

Action: Seek opportunities for interchange of information with elements of the report review hierarchy.

Action Agents: Division/Districts.

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APPENDIX B: PICTURE PORTFOLIO of SMALL BOAT HARBORS UNDER REVIEW

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Note: Pictures are from district homepages.

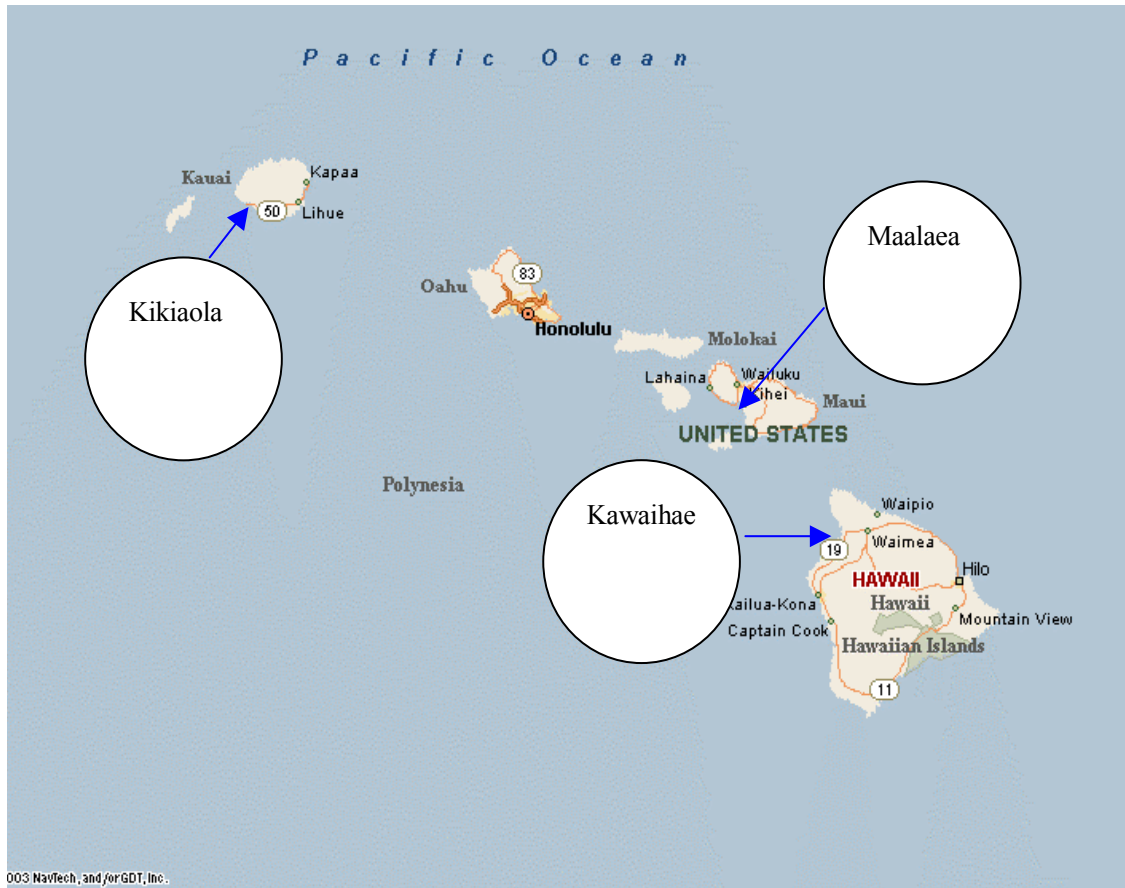
Map of Alaskan Ports



Notes:

1. Map is not to scale, the height has been increased to better show port locations.
2. The arrows highlight the 15 Alaskan ports under study.
3. The port of Douglas is in the vicinity of Juneau
4. The port of Nome is located in the insert.

Map of Hawaiian Ports



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Douglas Harbor



Low tide, June 1996.

Haines, Alaska



The city of Haines and the small boat harbor, April 1997.

Kake Harbor, Alaska



Kodiak Harbor, Alaska



Nome, Alaska



Sand Point aka Humboldt Harbor, Alaska



Seward Harbor, Alaska



Sitka Harbor, Alaska



St. Paul Harbor, Alaska



Valdez Harbor, Alaska



Wrangell Harbor, Alaska



Maalaea, Hawaii



Kawaihae, Hawaii



APPENDIX C: LIST of DATA and INFORMATION SERVICES for SURVEYS

- A. Published studies/universities
- B. Public data/universities
- C. Insurers
- D. Marine surveyors
- E. Repair yards
- F. Manufactures
- G. Cost engineering
- H. Associations
- I. Harbor masters
- J. Fishermen/United Unified Fisheries of America
- K. Trade shows (fish expos)
- L. Port series (NDC) (provides physical plant)
- M. State harbor insurers
- N. Alaska Fish Journal
- O. U.S. Coast Guard
- P. Post project survey (potential data)
- Q. Fish resource managers
- R. Waterborne Commerce Statistics
- S. Alaska Dept. of Fish and Game
- T. Alaska Dept. of Transportation – State registration of boats
- U. Surveys
 - a. mail
 - b. face to face interviews
 - c. phone
 - d. internet surveys
- V. Expert elicitation
- W. Focus groups
- X. GPS tracking
- Y. Observations
- Z. Informal surveys

APPENDIX D: LEGISLATIVE PROPOSAL for REMOTE and SUBSISTANCE HARBORS

H.R.2557

Water Resources Development Act of 2003 (Referred to Senate Committee after being
Received from House)

September 26, 2003

Received; read twice and referred to the Committee on Environment and Public Works

AN ACT

To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America
in Congress assembled,*

TITLE II – General Provisions

SEC. 2011. REMOTE AND SUBSISTENCE HARBORS.

(a) IN GENERAL- In conducting a study of harbor and navigation improvements, the Secretary may recommend a project without the need to demonstrate that the project is justified solely by national economic development benefits if the Secretary determines that--

- (1)(A) the community to be served by the project is at least 70 miles from the nearest surface accessible commercial port and has no direct rail or highway link to another community served by a surface accessible port or harbor; or
- (B) the project would be located in the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Mariana Islands, or American Samoa;
- (2) the harbor is economically critical such that over 80 percent of the goods transported through the harbor would be consumed within the community served by the harbor and navigation improvement; and
- (3) the long-term viability of the community would be threatened without the harbor and navigation improvement.

(b) JUSTIFICATION- In considering whether to recommend a project under subsection

(a), the Secretary shall consider the benefits of the project to--

- (1) public health and safety of the local community, including access to facilities designed to protect public health and safety;

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- (2) access to natural resources for subsistence purposes;
- (3) local and regional economic opportunities;
- (4) welfare of the local population; and
- (5) social and cultural value to the community.