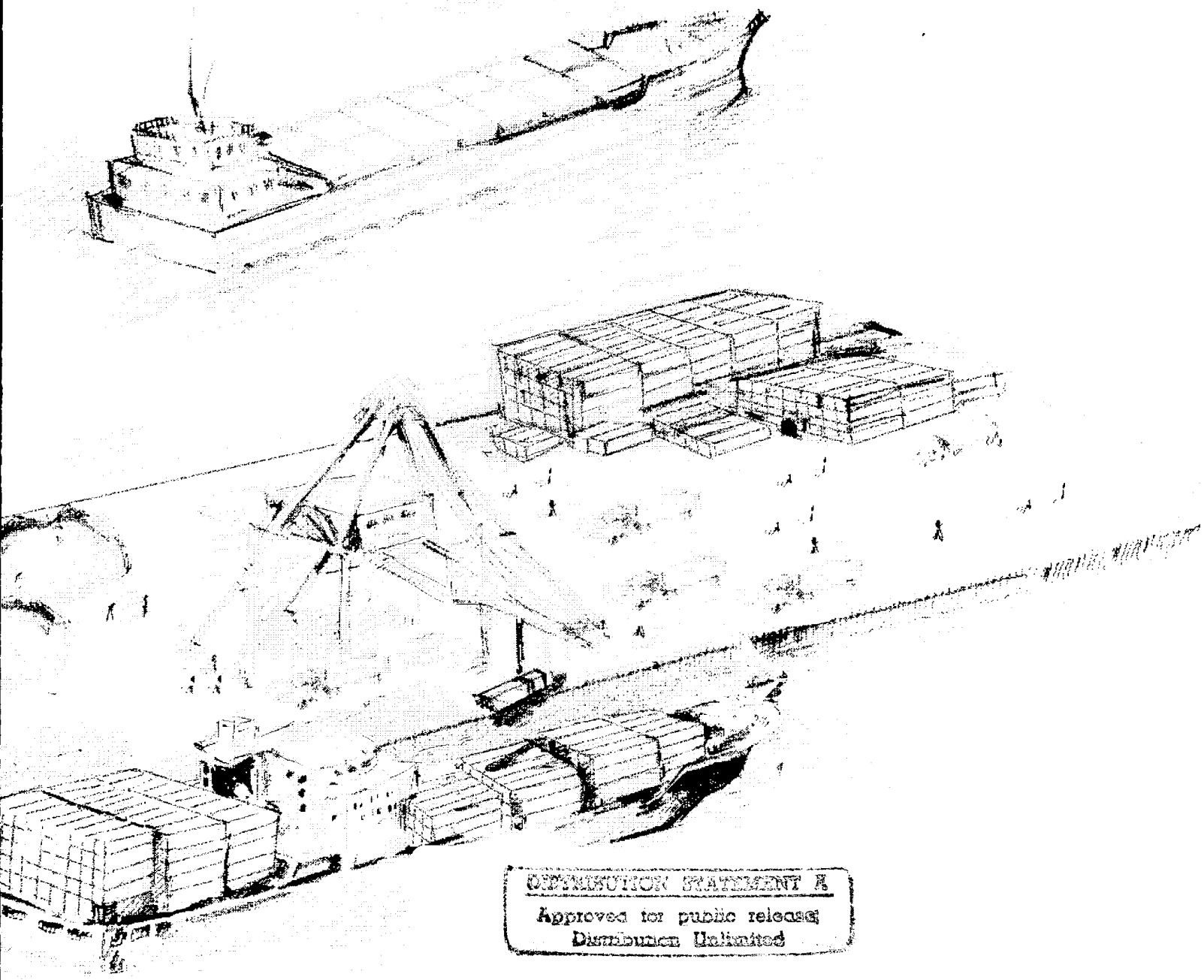
National Dredging Needs of Ports and Harbors in the U.S.

Literature Search



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The National Dredging Needs Study of Ports and Harbors
Literature Search

This report is part of a series of reports which are being published by the U.S. Army Corps of Engineers during the National Dredging Needs Study. It is a survey of available information on dredging and associated points of contact.

> *The National Dredging Needs Study of Ports and Harbors - Literature Search, IWR Report 95-NDN-1, prepared by DRI/McGraw-Hill for the Navigation Analysis Division, Institute for Water Resources, October 1995, 72 pp.*

A number of reports presenting the result of the first phase are expected to be published in 1996, in addition to this report, including:

> *Historical Economic Perspective of Ports, IWR Report, prepared by the Navigation Analysis Division, Institute for Water Resources.*
>
> *Annual Review/Interim Report, IWR Report, prepared by the Navigation Analysis Division, Institute for Water Resources.*
>
> *Foreign Ports Comparison, IWR Report, prepared by DRI/McGraw-Hill for the Navigation Analysis Division, Institute for Water Resources.*
>
> *Final Dredging Needs Report, IWR Report, prepared by the Navigation Analysis Division, Institute for Water Resources.*

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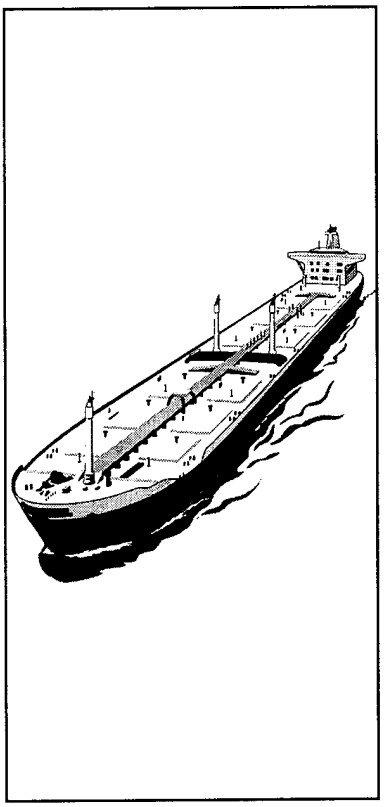
Reports may be ordered by writing (above address) or calling, faxing (preferred) or E-mailing requests to Mrs. Arlene Nurthen, IWR Publications, (703)428-8435 (fax), or arlene.nurthen@inet.hq.usace.army.mil (e-mail).



THE NATIONAL DREDGING NEEDS STUDY OF PORTS AND HARBORS

Literature Search

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Prepared by

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Washington, D.C.

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October 1995

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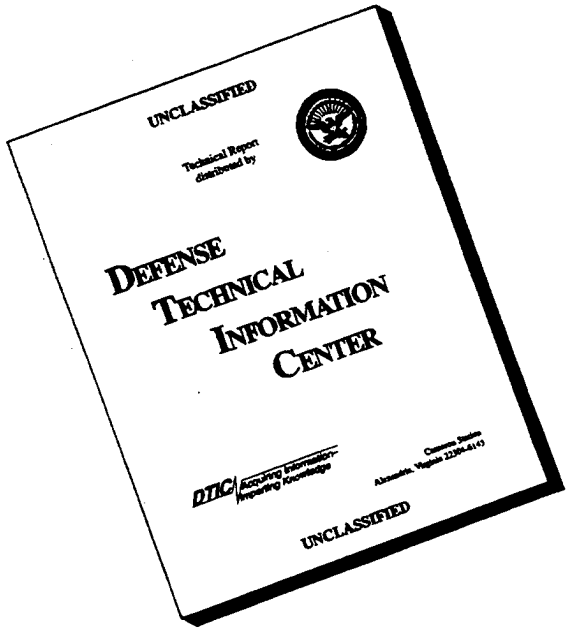

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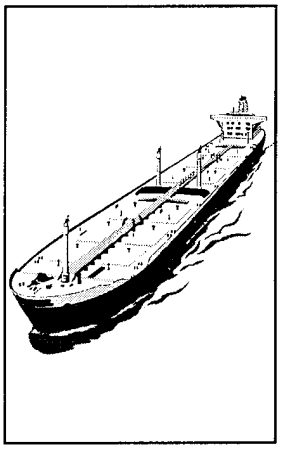

Acknowledgments

This document is one of a series of reports which responds to Section 402, Water Resources Development Act of 1992, which authorizes the conduct of such studies as necessary to provide a report to Congress assessing the dredging needs of the national ports and harbors. This report was prepared under contract by DRI/McGraw-Hill. The work was directed by Mr. Phillip J. Thorpe, Study Manager of the National Dredging Needs of Ports and Harbors program. Christine Montoney assisted in this effort and performed the final editing of the document.

Headquarters oversight for the National Dredging Needs program is provided by the Directorate of Civil Works through G. Edward Dickey, Planning Division, and Robert M. Daniel, Chief, Formulation/Evaluation Branch. Norman T. Edwards is the program monitor for the study. The Corps of Engineers Institute for Water Resources (IWR) has detailed management responsibility under Kyle E. Schilling, Director of the Institute and Robert A. Pietrowsky, Chief, Navigation Analysis Division.

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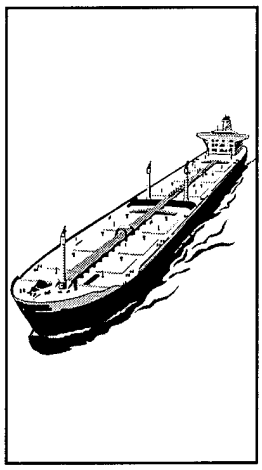

Chapter 1 - Introduction

This report is part of the National Dredging Needs Study which responds to Section 402 of the Water Resources and Development Act of 1992. The Act authorized the conduct of such studies as necessary to provide a report to Congress assessing the dredging needs of the national ports and harbors of the U.S. The study is a macro level assessment of national port and harbor dredging needs and will include: 1) an analysis of the existing and projected future project depths; 2) an examination of the types and sizes of vessels used under existing and future conditions; 3) an analysis of existing and future world trade patterns; 4) an assessment of the future national waterside infrastructure needs; and 5) a comparison of depths of the United States and selected world ports.

The study is being conducted in a series of phases some of which are sequential in nature, but many that overlap and will be conducted simultaneously. An interim report will be prepared to summarize the Existing Dredging Needs of Ports and Harbors by the end of FY 1996 along with several other interim study products. A final report summarizing the entire study will be completed by the end of FY 1997. The study phases are listed below:

I Study Preparation and Initiation
II Literature Review and Historical Economic Perspective
III Identify National (Deepwater) Ports and Harbors
IV Develop Dredging Needs Determinants
V Identify and Analyze Competitive World Ports
VI Identify Existing Dredging Needs
VII Identify Future Dredging Needs
VIII Evaluate Total Dredging Needs of Ports and Harbors
IX Develop Management Tools for Comprehensive Database

This report is the Literature Search for the National Dredging Needs Study, and it serves as an overview and executive summary for the bibliography developed by DRI/McGraw-Hill for the U.S. Army Corps of Engineers, Institute for Water Resources (IWR). The report documents a literature search of existing studies and reports from both public and private sources, which includes information regarding:

- the status and capacities of U.S. ports
- the commercial use and baseline economic growth of U.S. ports
- projected growth and potential capacity problems at U.S. ports
- trade impacts from public policy decisions such as the North American Free Trade Agreement

The literature search was conducted via on-line databases, interviews with government associations and private companies, and visits to major transportation libraries. The bibliography presented in Appendix A, as well an accompanying electronic version, includes 232 citations. Copies of all works cited were not obtained, but an effort has been made to obtain all of the particularly important works.

No bibliography is ever complete. The best possible effort has been undertaken to catalog all relevant publications and databases, and now relies on users of the bibliography to identify significant sources not yet included. In particular, this bibliography is likely to be incomplete on studies commissioned for internal use only by public or private organizations.

Definitions

Before proceeding further, it is necessary to clarify the specific definition used in this report of some commonly used marine terms. An accepted definition of a **port** is a harbor area that has marine terminal facilities for transferring cargo/passengers between ships/boats and land. A **harbor** is an area of water affording a natural or artificial refuge for ships. It does not have to have marine terminal facilities, and only those harbors that do can also be called a port. There are 573 "ports" in the United States as defined by the Water Commerce Statistics Center of the Corps of Engineers.

Access to these ports are provided by **channels** or **waterways** which rarely are naturally deep. In many cases, the federal government is responsible for providing adequate channel depth through the U.S. Army Corps of Engineers. These areas of Corps responsibility are often called **federal channels** and are officially designated as Corps **projects**. Almost all ports have federal Corps of Engineers projects at them, though the projects may not cover the entire port. There may also be multiple Corps of Engineers projects for a given port. The Corps of Engineers has 926 port and harbor projects, with 296 **deepwater** projects (or deep draft), with depths greater than 14 feet and 630 **shallow water** projects (or shallow draft) with depths less than or equal to 14 feet. Most of the **deepwater ports** are **coastal or Great Lakes ports**, while **shallow water ports** are located on the **inland waterway system** of the Mississippi River and Tributaries.

Purpose

The purpose of the Literature Search of the National Dredging Needs Study is to present a synopsis of existing literature concerning the current situation of ports in the United States. The studies included discuss the following pertinent issues: current port capacity; forecast of trade; forecast of capacity; environmental dredging impediments or beneficial uses; technological changes; policy impacts; dredging maintenance; dredging construction; economics and finance; legislative; and current trade. The information contained in these studies, as a group, describe the current status of the U.S. port system. This description, in accordance with the intended result of this task, relates levels of commercial use and its projected growth, usage of harbors and expected changes in that usage, and the development of landside facilities to port capacities, physical limitations of the ports and harbors, and trade impacts on ports caused by policy decisions.

These port studies have been produced by various public and private organizations that have an interest in U.S. ports and harbors, world fleets, and commodity flows. The literature that has been compiled in this task will be used in other parts of this study to evaluate the commercial use of ports and harbors in the United States and their prospect for growth, landside access to port facilities, physical limitations of ports

and harbors, and trade impacts on ports resulting from national policy issues, such as the North American Free Trade Agreement (NAFTA). The purpose of this comprehensive research effort is to gain the necessary background knowledge to make impartial decisions concerning the United States' ports and their dredging needs.

The contribution of U.S. ports to the health of national and regional economies has been long understood. National ports and harbors are crucial links in the transportation network, and handle over 95% of the U.S.'s international trade (almost $500 billion per year). The U.S. Department of Transportation, Maritime Administration estimates that cargo activity at U.S. ports supported 1.5 million jobs in 1991, contributed $70 billion to the gross national product, and provided $52 billion in personal income. Yet, as Erik Stromberg, past President of the American Association of Port Authorities (AAPA) , has noted, "Too often ports and the freight and cargo that move through them are the forgotten stepchildren in the debate on our national transportation infrastructure needs." [1]

Deepwater ports in the United States are operating in an era marked by a myriad of opportunities and challenges: the expectation of rapid growth in international trade, particularly following the passage of NAFTA and now General Agreement on Tariffs and Trade (GATT), consolidation and a movement toward larger ships with fewer ports of call in the global shipping industry; heightened environmental vigilance; and rapid technological advancements.

Increasingly, dredging -- both for maintenance and expansion purposes -- is being identified as a key development need facing a number of major deepwater ports throughout the United States. In a recent survey by the AAPA, dredging and disposal was listed as an issue of significant concern by 54% of all ports -- including more than two-thirds of all ports along the East Coast.[2] Says Stromberg of the AAPA, "[C]apital financing for port development projects and the adoption of national policies that recognize the need to invest in dredging navigation channels as well as provide efficient landside access to port facilities are the preeminent issues for our nation's ports." Unfortunately, a comprehensive database of the dredging needs of national ports and harbors has not been available to policy-makers to date. To this end, section 402 of the Water Resources Development Act of 1992 authorizes the conduct of such studies as necessary to provide a report to Congress that assesses the dredging needs of the national ports and harbors of the United States.

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[1] Stromberg, Erik, President of the American Association of Port Authorities, in testimony before the House Public Works and Transportation Subcommittee on Investigation and Operations, May 4, 1994.

[2] American Association of Port Authorities, Planning and Research Committee, *Strategic Planning Survey: Port Issues and Strategies*, AAPA (Alexandria, VA), June 1994, p. 3.

Contacts

An initial list of 28 organizations was developed to contact for this literature search. In most cases, these organizations were contacted initially by telephone. The majority of these organizations were cooperative and contributed copies of reports, publications lists, and so forth. We were able to construct a second-tier group of contacts through direct referrals by members of the initial list, as well as citations in publications collected from the initial group.

Organizations contacted included:

- U.S. Army Corps of Engineers
- U.S. Department of Transportation, Maritime Administration
- U.S. Department of Transportation, Federal Transit Administration
- U.S. Department of Transportation, Bureau of Transportation Statistics
- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Department of the Interior, Ecological Service
- U.S. Environmental Protection Agency
- U.S. Department of Commerce, National Technical Information Service
- Congress of the United States, House and Senate Committees on Commerce, Science, and Transportation
- National Research Council, Transportation Research Board
- National Research Council, Marine Board
- American Association of Port Authorities
- International Association of Ports and Harbors
- United Nations Conference on Trade and Development
- Society of Naval Architects and Marine Engineers
- American Association of State Highway and Transportation Officials
- Port Authority of New York and New Jersey

We supplemented this list of public agencies and professional associations by contacting leading private vendors of shipping and port-related data, including:

- Drewery Shipping Consultants
- Fairplay Information Systems
- Lloyd's of London Press
- Containerization International Magazine
- BRL Marine Database
- Clarkson's
- Fernley's

A complete list of contacts is included in the Appendix.

In addition, a number of libraries specializing in transportation or maritime policy were visited or contacted, including:

- U.S. Department of Transportation, Volpe Transportation Systems Center (Cambridge, MA)
- American Association of Port Authorities (Alexandria, VA)
- U.S. Coast Guard Academy (Groton, CT)
- U.S. Merchant Marine Academy and National Maritime Research Center (Kings Point, NY)
- Harvard University (Cambridge, MA)
- Massachusetts Institute of Technology (Cambridge, MA)
- Massachusetts Maritime Academy (Buzzards Bay, MA)
- State University of New York at Stony Brook
- Woods Hole Oceanographic Institute (Woods Hole, MA)

Finally, we utilized a number of on-line search services, including:

- Transportation Research Information Services (TRIS)
- Lexis/Nexus
- Government documents
- United Nations documents

Criteria for Inclusion

The following guidelines were established for inclusion of items in the bibliography:

- U.S. government official reports have priority for inclusion, but specific studies of individual ports are, in general, not appropriate for this database. For regularly updated reports, only the most recent versions are cited.

- Relevant U.S. government databases covering transportation and trade also have priority for inclusion.

- Textbooks with relevant subject matter are included, in general, if they were published within the last ten years.

- Consulting studies for general sale are included, in general, if they were conducted within the last five years.

- Studies that focus on coastal and Great Lakes ports are included in the bibliography, but articles on inland ports are excluded.

- Studies of key foreign reports are included if there are references to dredging or vessel sizes that will be handled in the future.

- Landmark legislation and regulations relating to the dredging process may be included in the database, but Congressional and other public testimony, in general, are excluded.

- Old one-time studies, in general, are excluded from the database under the assumption that the most critical and well-received works will be updated on a periodic basis.

- Studies focusing on labor practices, port management, maritime security, terminal operations, technology, or engineering are not included unless they contained specific mention of dredging.

- Studies by individual port authorities or local universities used primarily for marketing and promotion purposes are not included in the database.

These guidelines were followed as much as possible, but some exceptions were made on a case-by-case basis when relevant material was present.

Format of Bibliography

This bibliography was designed to be detailed yet easy to use and analyze. Basic information available for each entry includes:

- Author of the article or study
- Source name, location, and phone number
- Title of the article or study
- Publication date and/or frequency
- Indication of whether a copy of the study has been obtained
- Media type (hard-copy, electronic, or both)
- Brief description of the purpose and key conclusions of the study, when a copy of the full study or an abstract has been obtained

The studies have also been classified under two dimensions: level of analysis, and subject. Level of analysis includes:

- International
- National
- Regional
- Port-Specific
- or any combination of the above

Subject categories include:

- Current port capacity
- Forecasts of capacity

- Current trade activity
- Forecasts of trade
- Maintenance dredging (federal or non-federal)
- Construction dredging (federal or non-federal)
- Environmental (impediments to dredging, or beneficial uses of dredged material)
- Economics and finance
- Technological changes
- Legislative
- Policy impacts
- NAFTA
- Seminal studies
- Other

Studies can be classified in one or more of the above categories.

A detailed reference guide to the bibliography is available in Appendix A.

Description of the Bibliography

The bibliography developed for this task includes 232 entries. Copies of 55 entries (24%) have been obtained.

About 30% of the entries in the bibliography have been published in the past five years. An additional 16% are updated on an annual basis (or at some other regular frequency), and thus have been released in the last 1-2 years. Only about 16% of the entries were published more than a decade ago with no update.

The entries in the bibliography show great diversity in terms of level of analysis. More than 54% include information at the national (United States) level, and 41% have port-specific analysis. About 31% of the entries have international analysis. Regional analysis tends to be underrepresented, accounting for just 15% of the entries.

The bibliography covers an array of subjects. The three most common subjects are current capacity and characteristics of ports; current trade activity; and technology. Each of these topics accounts for about 30% of the entries in the database. Issues directly related to dredging -- including construction and maintenance dredging, environmental impediments, and beneficial uses of dredged material -- are represented in 15% to 23% of the entries. Policy impacts, legislation, economics, and finance also are common subjects. Few forecasts of trade or capacity are included in the database.

Although 23.7% of the database entries include the subject of policy impacts, the subject of NAFTA specifically is discussed much less frequently. Only 1.3% of the entries include an analysis of NAFTA: *Waterways, Rail, and International Trade Issues*, *Maritime Transportation Strategic Planning*, and *Landside Access to U.S. Ports*. NAFTA plays a significant role in encouraging competition and strategic

Distribution by year of publication

Date	*Number*	*%*
1970s	11	4.7
1980-1985	26	11.2
1986	14	6.0
1987	12	5.2
1988	12	5.2
1989	13	5.6
1990	17	7.3
1991	9	3.9
1992	17	7.3
1993	16	6.9
1994	14	6.0
1995	1	0.4
Annual update	29	12.5
Ongoing update	4	1.7
Other regular frequency	6	2.6
Not available	31	13.4

Level of analysis

Level	*Number*	*%*
International	72	31.0
National	126	54.3
Regional	35	15.0
Port-Specific	91	39.2
Not available	1	0.4

Numbers do not add up due to multiple levels for some entries.

alliances, affecting national transportation systems, import and export volumes, and international traffic. *Waterways, Rail, and International Trade Issues* examines these issues in depth and concludes that NAFTA is advantageous for business, but problematic for transportation.

The bibliography is drawn from numerous public and private organizations. The largest single source organization is the U.S. Department of Transportation, Maritime Administration, which accounts for 16% of all entries. Other large single sources include: the National Research Council's Transportation Research Board and Marine Board; the U.S. Army Corps of Engineers, and the American Association of Port Authorities.

Subject category

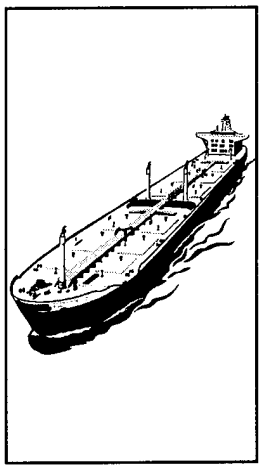
Subject	*Number*	*%*
Current port capacity	75	32.3
Current trade activity	68	29.3
Technological changes	68	29.3
Policy impacts	55	23.7
Maintenance dredging	54	23.3
Environmental -- impediments to dredging	53	22.7
Construction dredging	50	21.5
Environmental -- beneficial uses of dredged material	36	15.5
Economics and finance	36	15.5
Legislative	27	11.6
Forecasts of capacity	25	10.7
Forecasts of trade	22	9.5
NAFTA	3	1.3
Other	47	20.0

Numbers do not add up due to multiple subjects for some entries.

Source

Publisher	*Number*	*%*
U.S. Department of Transportation, Maritime Administration	38	16.3
British maritime publishers (Lloyd's, Clarkson's, etc.)	21	9.0
Transportation Research Board (National Research Council)	17	7.3
U.S. Universities	17	7.3
U.S. Army Corps of Engineers	17	7.3
Other associations	14	6.0
Marine Board (National Research Council)	12	5.2
American Association of Port Authorities	10	4.3
U.S. Publishers	9	3.9
International Association of Ports and Harbors	8	3.4
United Nations	8	3.4
Other U.S. government agencies	8	3.4
Other	8	3.4
Trade journals	8	3.4
U.S. consulting firms	7	3.0
International Association of Dredging Companies	6	2.6
Permanent International Association of Navigation Congresses	6	2.6
U.S. Congress	6	2.6
U.S. Department of Commerce	6	2.6
U.S. General Accounting Office	5	2.1

Numbers do not add up due to multiple sources for some entries.



Chapter 2 - Seminal Works

Ten works in this bibliography have been identified as "seminal." These sources -- some lengthy, some relatively brief -- are noteworthy for their effort to address one or many aspects of the dredging issue in a thorough, understandable fashion.

Excerpts of the 10 works follow.

Beneficial Uses of Dredged Material: A Practical Guide

Sponsor: Permanent International Association of Navigation Congresses (Brussels)
Date of Publication: 1992
Format: Hard-copy report, 36 pages
Level of analysis: International
Subjects covered: Beneficial uses of dredged material, impediments to dredging, maintenance dredging, construction dredging

This report addresses one of the central issues in the dredging debate facing many ports: use of the dredged material. The central premise is that the majority of dredged material is suitable for reuse, rather than disposal, and thus should be treated as a valuable resource. The publication is intended for a wide audience including port authorities, regulators, environmentalists, and the public, and is written in nontechnical language.

One of the useful features of this publication is its presentation of a methodology for the handling of dredged material that first considers whether the material is contaminated; second characterizes the material, and considers beneficial use options and available sites to determine whether a beneficial use is a technical possibility; and third, examines public policy, environmental impact, and cost/benefit analysis to determine whether a recommended use is an acceptable solution.[3]

The schematic divides dredged materials into five types: rock; gravel and sand; consolidated clay; silt and soft clay; and mixtures of any of the above. Beneficial uses fall into three categories: engineered uses such as land creation and improvement, beaches, and offshore berms; product uses such as construction materials, topsoil, and aquaculture; and environmental enhancement such as upland habitats, wetland creation, and multipurpose site enhancement.

The publication's major shortfall is that it does not provide much insight into contamination criteria, on the grounds that acceptable limits vary throughout the world and change over time.

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[3] Permanent International Association of Navigation Congresses, *Beneficial Uses of Dredged Material: A Practical Guide*, Brussels, 1992, p. 8.

Dredging Coastal Ports: An Assessment of the Issues

Sponsor: National Research Council, Commission on Engineering and Technical Systems, Marine Board
Publisher: National Academy Press (Washington, D.C.)
Date of Publication: 1985
Format: Hard-copy report, 212 pages
Level of analysis: National, Port-Specific
Subjects covered: Current capacity, forecast of capacity, dredging (construction and maintenance), environment (impediments to dredging and beneficial uses of dredged material), economics and finance, legislative, policy impacts, technology

Although ten years old now, *Dredging Coastal Ports* still stands out as one of the most complete treatments of the dredging issue that is publicly available. *Dredging Coastal Ports* is considered to be somewhat of a primer on the subject.

At the request of the U.S. Army Corps of Engineers, the Marine Board conducted a two-year study "to appraise the nation's needs for dredging in coastal ports for the near- and mid-term future."[4] Primary authorship for the study rested in a committee of 13 specialists drawn from universities, dredging companies, shipping companies, railroads, manufacturers, and port authorities, along with representatives from the Corps, the U.S. Coast Guard, and the U.S. Maritime Administration.

The report sets out to answer six questions -- all of which remain critical issues today:

- Does the United States need additional port capacity to handle larger ships?
- Is dredging the most attractive way for the United States to handle larger ships?
- How should dredging be funded and what are the implications for dredging of various funding approaches?
- What are the causes of the slowdown in decision making for local projects and the stalemate for federal projects, and what are the ways to bring increased speed, predictability, and stability to the decision making process?
- What are the problems associated with design and implementation of new construction and maintenance dredging and how can they be dealt with?
- What are the environmental problems associated with dredging and how can they be effectively managed?

[4] National Research Council, Marine Board, *Dredging Coastal Ports: An Assessment of the Issues*, National Academy Press (Washington, D.C.), 1985, p vii.

The Marine Board's research came at a time of heightened awareness of capacity problems at the nation's ports, following the energy crises of the 1970s and evidence of a stalemate in the port construction decision-making process. The report's central conclusion is "that the nation needs additional capacity to handle large vessels and that such a capacity should exist on each of the nation's coasts."[5] Importantly, the committee notes that this conclusion is not based on detailed economic analysis nor consensus in the expert community (a review of existing literature "found only disagreement"). Rather, the committee's belief was that in view of an uncertain future for international trade and transportation and a long lead time for major federal dredging projects, the nation would be best served by commencing dredging projects now to ensure adaptability in the future.[6]

Due to the disagreement amongst the experts at the time, a comprehensive forecast of the specific depths that would be required to meet the expected national dredging needs was not included. This did not detract, however, from the Marine Board's conclusion that dredging projects must be commenced sooner rather than later.

This argument rings true, and even more so today. Indeed, one could argue that international trade is becoming increasing important to individual nations. Over the past decade, trade (the combined value of imports and exports) has swelled from 17.7% to 26.6% of inflation-adjusted Gross Domestic Product in the U.S. DRI's U.S. Economic Service projects that this share could top 50% by 2020. A number of landmark events in the past decade -- the collapse of the Soviet Union and end of the Cold War, the devaluation of the dollar in 1985, the implementation of the Free Trade Agreement with Canada in 1989 and the North American Free Trade Agreement in 1994, the new General Agreement on Tariffs and Trade in 1994 -- have shown the growing importance of international trade. In addition to these historical events, expectations of explosive growth in many East Asian and Latin American nations indicate that it is reasonable to assume that international trade will triple over the next 25 years. If this is the case, then the recommendations of this report take on even greater urgency.

The report moves on from a fairly general introduction to a detailed examination of specific topics such as options for handling larger vessels; funding issues; the institutional decision-making process; technical considerations and needs to be met in dredging U.S. ports; and environmental issues. The discussion at times becomes technical. Appendices include general design criteria for dredged navigational facilities; a list of public policies and legislation pertinent to dredging; and a list of commissioned papers and background materials used in the study.

[5] Ibid., p. 2

[6] Ibid., p. 3

Dredging for Development

Sponsor: International Association of Ports and Harbors, Committee on Port and Ship Safety, Environment, and Construction, Dredging Task Force
Publisher: IAPH (Tokyo)
Date of Publication: 1991 (third edition)
Format: Hard-copy report, 60 pages
Level of analysis: International
Subjects covered: Dredging (construction and maintenance), environment (impediments to dredging and beneficial uses of dredged material), economics and finance, technology

Dredging for Development is a layman's guide to the subject of dredging, intended particularly for government officials and port managers from developing countries. However, because the publication is written in non-technical language and provides a broad overview with moderate detail, it is also useful as an introductory tool for a U.S. policy-maker unfamiliar with the dredging process.

Topics covered include the nature, importance, and objectives of dredging; the nature, excavation; transport, and disposal of dredged materials; types and choice of dredging equipment; the port development process; and international agreements on environmental issues. The treatment of most of these topics is somewhat cursory, with an emphasis on the logistical and technical issues involved in the dredging process. This approach stands in contrast to the policy focus of most other entries in the bibliography.

Appendices include a section on typical dredging contract provisions; a report on port development activities of the World Bank; a listing of relevant international organizations and lending institutions; and a bibliography.

Environmental Considerations for Port and Harbor Developments

Authors: John D. Davis, Scott MacKnight, IMO Staff, Others
Sponsor: World Bank, in association with the International Maritime Organization
Publisher: World Bank (Washington D.C.): Technical Paper Number 126, Transport and the Environment Series
Date: 1990
Format: Hard-copy, 83 pages
Level of analysis: International
Subjects covered: Environmental (impediments to dredging, beneficial uses of dredged material), dredging (construction and maintenance), policy impact.

Environmental Considerations for Port and Harbor Development is arguably the most complete treatment we could find on the range of environmental issues involved in port-related projects. The paper is aimed at World Bank staff and the staff of the bank's borrowers who are associated with lending operations

involving port development, but is useful for port managers, engineers, and government officials. The paper is cited in several other works as an authoritative source of environmental information.

Indeed, the most useful section of the report may be a comprehensive "check list" of environmental issues that typically need to be considered in port planning projects, accompanied by additional information and guidance on how to proceed with each item. A listing of sources is particularly useful. Issues covered include the impacts of dredging and dredged-material disposal; construction of piers, breakwaters and other structures; alteration of ship traffic patterns; ship discharges; detection and clean-up of spills; waterfront industry discharges; relocation and land use disputes; air-borne emissions; hazardous cargoes; and other related topics. The discussion can be technical at times.

An appendix examines the "Environmentally Sound Disposal of Dredged Materials," an issue the World Bank's research identified as of critical importance. Without careful consideration of the impact of regulations on dredged-material disposal, the authors note, ports in many industrialized nations could have trouble maintaining their navigation access.[7] This appendix looks at quality standards for dredged materials, international regulations governing the environment, the effect of environmental restrictions on dredging, and disposal options.

Environmental Regulatory Process: Does It Work? Dredging U.S. Ports

Sponsor: National Research Council, Transportation Research Board
Date of Publication: 1994
Format: Hard-copy report, 62 pages
Level of analysis: National, Port-Specific
Subjects covered: Environmental dredging impediments, technological changes, policy impacts, dredging maintenance, dredging construction, legislative

This study summarizes a key session on the dredging of U.S. ports presented at the Transportation Research Board's (TRB) 73rd Annual Meeting on January 11, 1994. The session was sponsored by TRB's Committee on Ports and Waterways and Committee on Environmental Analysis in Transportation. Four of the participants represented the perspective of the regulated organization, while four other participants represented the regulator's perspective. The session focused on the institutional gridlock that confronts dredging projects.

Although dredging harbors and shipping lanes is a relatively simple process from an engineering viewpoint, from an environmentalist perspective this process is quite complex. Local, state, and federal governments regulate the dredging process with various policies that influence the local level.

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[7] Davis. John D., Scott MacKnight, International Maritime Organization staff, and Others, *Environmental Considerations in Port and Harbor Development*, World Bank Technical Paper Number 126, Transport and the Environment Series (Washington D.C.), 1990, p. 51

Current government regulations attempt to mutually encourage environmental and economic benefits of individual dredging projects. Critics argue, however, that these regulations act to increase the barriers to the dredging projects. A technological lag exists between detecting and resolving environmental problems, and the permitting process is much too lengthy and complex.

The report proceeds to recommend more focused leadership by regulatory agencies, including stricter deadlines and quicker response times. Federal, state, and local governments, as well as individual ports and local environmental interest groups should become involved in reforming the regulatory process of dredging ports.

Port Development in the United States

Sponsor: International Association of Ports and Harbors
Author: John M. Pisani, Director, Office of Port and Intermodal Development, Maritime Administration, U.S. Department of Transportation
Publisher: IAPH Foundation (Tokyo)
Date of Publication: 1989 (third edition)
Format: Hard-copy report, 49 pages
Level of analysis: National
Subjects covered: Current capacity, forecast of capacity, current trade, dredging (construction and maintenance), environment (impediments to dredging and beneficial uses of dredged material), economics and finance, policy impact, technology

Port Development in the United States is an issues paper prepared by John M. Pisani, Director of the Office of Port and Intermodal Development at the Maritime Administration, for the annual IAPH conference in 1989. As such, it is somewhat of an unofficial statement of MarAd's viewpoint on port development. The paper is intended for an international audience with a limited background in U.S. port policy.

Pisani sets out to examine the current status, key issues, and future outlook for U.S. ports, including ocean, Great Lakes, and inland waterways. Topics covered include current port capacity and trade; current and projected funding sources; environmental, safety, and security issues. Pisani's central conclusion is that deepwater ports in the U.S. enjoyed relative prosperity at the end of the 1980s, but will face a number of challenges through the end of the century, including:

- the need to invest in modern terminal facilities to handle larger ships and decrease vessel turnaround time
- the trend toward fewer ports of call and a concentration of activity at port "load centers"
- intermodal access issues, including the need to modify intermodal terminal facilities for double-stack train technology

- the development of new computer information and automation systems
- the need to contain port labor costs
- and the need to optimize capacity utilization.[8]

Focused discussion of dredging is limited.

The publication is particularly noteworthy for the type of data presented, including: the distribution of ports by region, cargo type, and terminal type; top U.S. ports for oceanborne foreign trade; and double-stack rail service. Other useful features include a summary of the landmark Water Resources Development Act of 1986, and a summary of U.S. environmental and safety laws related to ports.

A Report to Congress on the Status of the Public Ports of the United States

Sponsor: U.S. Department of Transportation, Maritime Administration
Date of Publication: Annual
Format: Hard-copy; length varies by year
Level of analysis: National, Regional, Port-Specific
Subjects covered: Current capacity, current trade, environment (impediments to dredging, beneficial uses of dredged material), dredging (maintenance and construction), technology, economics and finance, policy impact, legislation

Congress has ordered the Secretary of Transportation to submit each year a report on the public ports of the United States, examining three topics:

- economic and technological development of the ports
- extent to which the ports contribute to the national welfare and security
- factors that may impede the continued development of the ports[9]

Prepared annually by the Maritime Administration, this report is useful as the official DOT statement on ports in the U.S. MarAd's reports to Congress certainly do not break any new ground, but are useful for providing a quick summary as well as year-to-year comparisons of the performance and challenges of U.S. ports.

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[8] Pisani, John M., *Port Development in the United States (Status, Issues, and Outlook)*, The IAPH Foundation (Tokyo), 1989, pp. 32-40.

[9] Title 49, United States Code, Section 308(c)

The report to Congress typically is divided into two sections: a data-intensive overview of current conditions in the port industry, including foreign and domestic trade, containerization, historical and projected capital expenditures, and summary income statements. The second section provides a broad look at major issues facing ports, including financing, environment, permitting and dredged material disposal, intermodal land transportation access, and land use conflicts. Pertinent federal legislation is also reviewed.

Transportation Statistics Annual Report

Authors: Rolf R. Schmitt, Editor-in-Chief
Sponsor: U.S. Department of Transportation, Bureau of Transportation Statistics
Date: Annual (1994 is most recent)
Format: Hard-copy, 205 pages
Level of analysis: National, regional, port-specific.
Subjects covered: Current capacity, environment, policy impact, other.

The Transportation Statistics Annual Report is the keystone publication of the U.S. Department of Transportation's Bureau of Transportation Statistics (BTS). As such, this report serves as a useful reference on the current state of not only the transportation sector, but also the statistics that describe and evaluate it. In the views of the authors, the state of both transportation and transportation statistics is cloudy.

The transportation system portrayed in this work is one in which passenger travel and freight movements continue to increase, while the size and capacity of the infrastructure on which these movements take place have not expanded significantly. Innovations such as intermodal networks, parcel express delivery, and just-in-time inventory management have contributed to major gains in freight transportation service, while at the same time passenger service is deteriorating due to increasing congestion on interstate highways and a shift to hub-and-spoke air travel systems.[10] A better understanding of the transportation system, the authors argue, will require better coverage and increased quality of existing data, as well as the design of new indicators.

The report is organized by topic rather than mode, with chapters on the role of transportation in the economy; an inventory of the existing transportation network; current usage levels and performance indicators; costs; safety; environmental impact; and similar topics. Concluding chapters make recommendations for new or improved data sources, and the BTS' future agenda. An appendix outlines current transportation data programs.

Water (and air) transportation tends to be downplayed in favor of surface modes, but the report provides some useful observations on how ports and waterways tie into the overall transportation network. The report is impressive in its breadth of discussion and data, yet is extremely readable.

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[10] Schmitt, Rolf R., Editor-in-Chief, *Transportation Statistics Annual Report*, U.S. Department of Transportation, Bureau of Transportation Statistics (Washington D.C.), 1994, p. ii.

Urban Ports and Harbor Management

Editor: Marc J. Hershman
Publisher: Taylor & Francis (New York)
Date of Publication: 1988
Format: Textbook, 354 pages
Level of analysis: National, Port-Specific
Subjects covered: Current capacity, environment (impediments to dredging), technology, economics and finance, policy impact, legislation

Urban Ports and Harbor Management is a comprehensive textbook examining the evolving role of the public port agency in managing the natural resources of urban harbors at a time of conflicting demands over use and policy. Often-cited, the book likely is a vital manual for port authority managers. For study of the dredging issue, it is useful through both its individual chapters on relevant topics such as federal port policy and environmental mitigation, as well as the broad context it provides in viewing the port not only as a transportation node, but also a "maritime cultural resource."[11] *Urban Ports and Harbor Management* is a highly readable publication, noteworthy for its broad-brush approach, its mix of perspectives, and its frequent use of case studies.

The central theme of the book is the idea that ports and harbors are critical resources from a variety of perspectives (transportation, economic development, environment, recreation), but that conflicts over use and tangled regulatory powers have prevented concerted planning and necessary investment programs. Because of its governmental powers and land and financial resources, the public port agency, Hershman argues, is in a unique position to lead the development of a collective vision for harbor management.

Individual chapters in the book are written by experts from a wide spectrum of fields. Chapters of particular interest include:

- a discussion of the physical characteristics of harbors, including explanation of a number of technical terms;
- a review of federal port policy, including the role of key agencies, with the conclusion that the federal government needs to establish a focal point for attention to port development issues[12];

[11] Hershman, Marc J., editor, *Urban Ports and Harbor Management: Responding to Change along U.S. Waterfronts*, Taylor and Francis (New York), 1988, p. vii.

[12] Ibid., p. 118

- an analysis of the impact of containerization on port competition, facility needs, and intermodal access, arguing that containerized general cargo shipping is the most far-reaching technological development facing shippers and ports in the past 30 years[13];

- and an examination of the role of the port in environmental mitigation, often related to dredging projects, with the argument that ports should take a pro-active role in resource assessment and mitigation to reduce permit delays and uncertainty in the planning process[14].

Other chapters explore the historical development of ports; the role of the port in fostering economic development, particularly in non-cargo areas; the status of the modern fishport; the role of small-boat marinas; trends in waterfront revitalization; a study of port organization plans and methods of ensuring accountability; and an interview with Professor Thomas J. Dowd of the Institute for Marine Studies at the University of Washington on port finances. A glossary provides definitions of key words.

Vessel and Port Technologies at the Turn of the Century

Authors: Mark L. Chadwin, Wayne K Talley
Source: Old Dominion University
Sponsor: Transportation Research Board (Washington, D.C.)
Date of Publication: 1992
Format: Article, 24 pages
Level of analysis: International
Subjects covered: Technology, current capacity, forecast of capacity.

Although it only briefly touches the dredging issue, *Vessel and Port Technologies at the Turn of the Century* is noteworthy as a concise description of expected technological developments over the next decade that will shape the operating environment for deep-water ports. The paper was researched by two authors from Old Dominion University for the Transportation Research Board.

The authors take the middle-of-the-road approach that most changes in the design and operation of vessels and ports through the start of the 21st century will be evolutionary, not revolutionary. This approach stems from two reasons: first, shipping is an increasingly mature industry; and second, the authors envision no major technological breakthroughs or economic shifts (i.e., a dramatic increase in energy prices) in this next decade. Instead, the next decade is likely to be characterized by "the widening application of existing patterns and the more complete exploitation of technologies already exploited."[15]

Among the major changes expected by the authors:

- Containerization of cargoes will grow throughout the 1990s, but at a slower rate than in the past.

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[13] Ibid., p. 125

[14] Ibid., p. 256

[15] Chadwin, Mark L. and Wayne K. Talley, Old Dominion University, *Vessel and Port Technologies at the Turn of the Century*, Transportation Research Board (Washington D.C.), January 1992, p. 2

- Excess capacity will plague the shipping industry at least through the mid 1990s, although the long-term supply-demand balance is unclear.

- Gearless cellular vessels will dominate the major routes, but roll-on, roll-off and other vessel types will remain in operation due to their flexibility and military applications

- Radical new designs are unlikely, but greater use of hydrofoils or hovercraft to transport priority containers on shorter routes is possible.

- Ocean carriers will continue to consolidate and cut costs, while also pursuing product differentiation.

- Competition will increase between ports, with certain ports emerging as "winners" by becoming load-centers for major carriers, while other ports are relegated to feeder port status.[16]

In terms of dredging, perhaps the key trend identified in the report is that container ships are expected to grow larger as common perceptions about geographic, commercial, and technological limits disappear. In the 1980s, the authors point out, the physical limits of the Panama Canal were seen as the upward bound on container ship size. However, the rapid growth in trans-Pacific trade, along with the rise of double-stack trains and other intermodal services that permit "landbridging" across the United States, has eliminated this barrier. Similarly, the focus of container activity at a handful of load centers (Singapore, Rotterdam, Los Angeles-Long Beach) has made building larger container ships cost-effective. Container ships have economies of scale while at sea, but diseconomies of scale while in port. Hence, "jumbo" container ships with capacity of 5,000-6,000 TEUs are likely by the end of the decade.[17]

The implication of this scenario is that major deep-water ports will need to remain committed to maintenance dredging and channel-deepening projects to accommodate these larger ships and remain competitive. However, container activity should continue to focus on a handful of load center ports (such as L.A.-Long Beach), with barge service or overland service to feeder port cities. Understanding which ports are likely to achieve and maintain this load center status will help the Corps and other planning agencies allocate scarce dollars for dredging projects. Feeder ports may not require any deepening projects since they would not receive the larger ships. Moreover, if usage of hydrofoils and hovercraft grows to the levels expected, channel or berth depth could become a less significant issue for many small to medium sized ports. Indeed, while the authors expect ports to complete the current "bubble" of investment projects, they note that -- in the absence of radical changes in ship design -- port investment will shift toward rapidly industrializing nations in Asia, the Pacific, Eastern Europe, and Latin America.[18]

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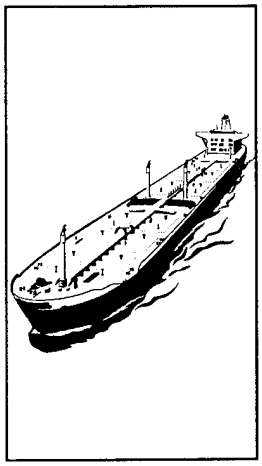
[16] Chadwin, and Talley, p. 1

[17] Chadwin and Talley, p. 4-5.

[18] Chadwin and Talley, p. 13



Appendix A - Bibliography Entries

NATIONAL DREDGING NEEDS STUDY OF PORTS AND HARBORS BIBLIOGRAPHY FIELD DESCRIPTIONS

The following is a description of the information which comprises the bibliography produced for this task. The bibliography is presented in two tables, each with the 232 entries, as shown in the formats below. The information is arranged by type as field entries in the row entry for each bibliography item.

TABLE 1
AUTHOR: Author of the article or study. Last name first.
TITLE: Title of the article or study
SOURCE : Organization that published or sponsored the study.
SOURCE LOCATION: Location of the publisher or organization that sponsored the study.
SOURCE PHONE NUMBER: Phone number of the publisher or study sponsor.
DATE: Date (by year only) that study was conducted, when available.
AT IWR: Indicates whether a copy of this study was obtained for USACE/WRSC/IWR. Designated by (Y)es or (N)o.
LEVEL: This field indicates whether the scope of the item is International, National, Regional, or Port Specific.
DESCRIPTION ON ARTICLE: Provides a brief description of the article or study.
SEMINAL WORK: Provides indicator for those studies identified as seminal works.
MEDIA TYPE: Provides indication of whether publication is available in printed form (H- for hardcopy) and machine readable format (S - for softcopy)

TABLE 2
This table repeats the **Author, Title,** and **Source** before identifying which subjects are covered in the scope of the study. The table starts on page 49, and the subjects are as follows:
CURRENT PORT CAPACITY (CC)
FORECAST OF TRADE (FT)
FORECAST OF CAPACITY (FC)
ENVIRONMENTAL - Dredging Impediments (EDI) or Beneficial Uses (EDB)
TECHNOLOGICAL CHANGES (T)
POLICY IMPACTS (PI)
DREDGING MAINTENANCE - Federal (DMF) or Non-Federal (DMNF)
DREDGING CONSTRUCTION - Federal (DCF) or Non-Federal (DCNF)
ECONOMICS AND FINANCE (EF)
LEGISLATIVE (L)
CURRENT TRADE (CT)
NAFTA (T)
OTHER (O)

TABLE 1

ITEM	AUTHOR	TITLE	SOURCE	SOURCE LOCATION	SOURCE PHONE NUMBER	DATE	AT IWR (Y/N)	LEVEL: INTERNATIONAL NATIONAL, REGIONAL, PORT-SPECIFIC	DESCRIPTION OF ARTICLE OR PUBLICATION	Media Type H-Hard Copy, S-Soft Copy
1	Ocean Shipping Consultants, Ltd.	American Containerisation to 2005: An Analysis of Container Trade, Shipping Capacity and Port Development in the Western Hemisphere	Ocean Shipping Consultants, Ltd.	Surrey, UK	011-44-93-256-0332	1993	N	International		H
2	Office of Port and Intermodal Development	Automated Port Pricing Model	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1986	N	National, Port-Specific	Model for calculating cost compensatory prices for usage of public marine terminal facilities. Long-run goal is for ports to become economically self-sufficient.	H
3	Office of the Chief of Engineers	Beneficial Uses of Dredged Material	U.S. Army Corps of Engineers	Fort Belvoir, VA	202-272-0660	1986	Y	National		H
4	Maestro, Betsy and Ellen DelVecchio	Big City Port	Four Winds Press	New York, NY	212-702-2000	1983	N	Port-Specific		H
5	Clarkson Research Studies, Ltd.	The Bulk Carrier Register	Clarkson Research Studies, Ltd.	London	011-71-283-8955	annual	N	International	Register of bulk carriers.	H
6	Kendall, Lane C.	The Business of Shipping	Cornell Maritime Press	Cambridge, MD	410-758-1075	1986	N	National		H
7	Immer, John R.	Cargo Handling	Work Saving International	Washington, DC	NA		N	National		H
8	Ocean Shipping Consultants, Ltd.	Container Port Pressures to 1995--An Analysis of Port Competition and Trade Development	Ocean Shipping Consultants, Ltd.	Surrey, UK	011-44-93-256-0332	1988	N	International		H
9	Dowd, Thomas J.	Considering Strategic Planning for Your Port?	Washington Sea Grant Port Management. Series	Seattle, WA	206-543-9686	1987	N	National	Discusses issues involved in developing a port strategic plan.	H
10	Dowd, Thomas J.	Container Terminal Leasing/Pricing Methods and Their Economic Effects	Washington Sea Grant Port Management. Series	Seattle, WA	206-543-9686	1984	N	National		H
11	Dowd, Thomas J. and Thomas M. Leschine	Container Terminal Productivity: A Perspective	Washington Sea Grant Port Management. Series	Seattle, WA	206-543-9686	1989	N	National		H
12	Boyes, Jane	Containerisation International Yearbook	Containerisation International	London	011-44-71-439-5000	annual	N	International, Port-Specific	Annual compilation of data on port capacity and activity levels, equipment inventory, and other series, along with commentary on trends in container shipping activity.	H

ITEM	AUTHOR	TITLE	SOURCE	SOURCE LOCATION	SOURCE PHONE NUMBER	DATE	AT IWR (Y/N)	LEVEL: INTERNATIONAL NATIONAL, REGIONAL, PORT-SPECIFIC	DESCRIPTION OF ARTICLE OR PUBLICATION	Media Type H-Hard Copy, S-Soft Copy
13	Skaggs, Leigh L. and David V. Grier	Current Status of Cost-Shared Deep-Draft Harbor Projects	U.S. Army Corps of Engineers	Fort Belvoir, VA	202-272-0660	1989	Y	Port-Specific	Review of current status of major deep-draft harbor improvement projects in the U.S.	H
14	Office of Port and Intermodal Development	Current Trends in Port Pricing	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1978	N	Port-Specific		H
15	Foreign Agricultural Service	Desk Reference Guide to U.S. Agriculture Trade	U.S. Department of Agriculture	Washington, DC	202-720-2791	1990	N	National	Overview of U.S. agricultural trade from an import and an export perspective. Contains statistical information, as well as discussion of key issues and impacts of trade legislation such as the Free Trade Agreement with Canada, GATT.	H
16	United Nations Conference on Trade and Development Secretariat	Development and Improvement of Ports: The Principles of Modern Port Management and Organization	United Nations	Geneva	011-41-22-907-1234	1992	N	International		H
17	Permanent Technical Committed Committee II	Development of Modern Marine Terminals	Permanent International Association of Navigation Congresses	Brussels	011-322-208-5216	1987	N	International		H
18	Office of Domestic Shipping	Domestic Waterborne Trade of the United States	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	annual	N	National	Database on historical U.S. waterborne trade activity.	H
19	Commission on Engineering and Technical Systems	(Seminal Work) Dredging Coastal Ports: An Assessment of the Issues	National Research Council, Marine Board	Washington, DC	202-334-2000	1985	Y	National, Port-Specific	Results of two-year study. Key finding: the U.S. needs to increase its capacity to handle large ships. Addresses issues including project selection, funding, environmental effects, and decision-making process.	H
20	Committee on Port and Ship Safety, Environment and Construction	(Seminal Work) Dredging for Development: Report of the Dredging Task Force	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1991	Y	International	Describes the process of dredging, its impact on the environment and the necessary equipment. Incorporates dredged material disposal, construction and maintenance into the discussion. Intended for government and port officials in developing countries.	H
21	Office of Port and Intermodal Development	Economic Impact of the U.S. Port Industry: An Output Analysis of Waterborne Transportation	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1978	N	National		H

ITEM	AUTHOR	TITLE	SOURCE	SOURCE LOCATION	SOURCE PHONE NUMBER	DATE	AT IWR (Y/N)	LEVEL: INTERNATIONAL NATIONAL, REGIONAL, PORT-SPECIFIC	DESCRIPTION OF ARTICLE OR PUBLICATION	Media Type H-Hard Copy, S-Soft Copy
22	Office of Port and Intermodal Development	The Effect of Federal Standards on U.S. Public Port Development	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1978	N	National		H
23	Miller, William J.	Encyclopedia of International Commerce	Cornell Maritime Press	Cambridge, MD	410-758-1075	1985	N	International		H
24	Ocean Shipping Consultants, Ltd.	The European Container Market in the 1990s	Ocean Shipping Consultants, Ltd.	Surrey, UK	011-44-93-256-0332	1990	N	International		H
25	National Security and International Affairs Division	European Single Market: Issues of Concern to U.S. Exporters	U.S. General Accounting Office	Washington, DC	202-512-6000	1990	N	International		H
26	Office of Port and Intermodal Development	Existing and Potential U.S. Coal Export Loading Terminals	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1992	N	National, Regional, Port-Specific	Listing of current and potential U.S. ports involved in coal exporting activities and channel deepening projects. Available and potential capacity could help the U.S. boost coal exports.	H
27	Malpas, P.	Fairplay World Ports Directory	Fairplay Information Systems Ltd.	Surrey, UK	011-44-71-538-0191	annual	N	International, Port-Specific	Directory of ports, including information on physical characteristics, berthing facilities, and dues.	H
28	Lescroart, John	Fieldston Coal Transportation Manual 1990-91	The Fieldston Company	Washington, DC	202-775-0240	1991	N	International		H
29	Muskin, Jerold B.	Firstport Project: 20/20 Foresight--Proceedings of the International Conference on Ports of the Future	Drexel University	Philadelphia, PA	215-895-2400	1988	N	International		H
30	Pedlow, Robert	Guide to Port Entry	Shipping Guides Ltd.	Reigate, UK	NA	annual	N	International, Port-Specific	Encyclopedia of international ports, including information on regulations, pilotage, physical characteristics, cargo-handling facilities, inland transportation, and other issues.	H
31	Herbich, John B.	Handbook of Coastal and Ocean Engineering	Gulf Publishing Company	Houston, TX	703-529-4301	1990-1991	N	National		H
32	National Waterways Conference	Implementing Public Law 99-662(H.R. 6), The Water Resources Development Act of 1986	National Waterways Conference	Washington, DC	202-296-4415	1987	N	National		H

ITEM	AUTHOR	TITLE	SOURCE	SOURCE LOCATION	SOURCE PHONE NUMBER	DATE	AT IWR (Y/N)	LEVEL: INTERNATIONAL NATIONAL, REGIONAL, PORT-SPECIFIC	DESCRIPTION OF ARTICLE OR PUBLICATION	Media Type H-Hard Copy, S-Soft Copy
33	Transportation Research Board	Intermodal Marine Container Transportation: Impediments and Opportunities	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1992	Y	National	Study to determine where and how government action might assist in overcoming impediments and fostering efficiency in intermodal marine container transportation, especially through technological or institutional innovation.	H
34	Office of the Comptroller General	International Trade Issues	U.S. General Accounting Office	Washington, DC	202-512-6000	1992	N	National		H
35	Transportation Research Board	Landside Access to U.S. Ports	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1993	Y	National, Port-Specific	Study of the accessibility of United States ports to land transport facilities. Discusses barriers and offers suggestions to improve access to ports. Issues relating to efficiency, jurisdictional status, defense, and policy are also included.	H
36	Jansson, J.O. and D. Shneerson	Liner Shipping Economics	Metheun	New York, NY	NA	1987	N	International		H
37	Cuny, Paul J.	Lloyd's Ports of the World	Lloyd's of London Press	Colchester, UK	011-44-206-772-277		N	International, Port-Specific	Directory of world ports.	H
38	Dobson, Huw and Anthony Beresford	Lloyd's Maritime Atlas of World Ports and Shipping Places	Lloyd's of London Press	Colchester, UK	011-44-206-772-277	annual	N	International	Atlas of trade routes and ports.	H
39	Staff of the Committee on Ways and Means	Overview and Compilation of U.S. Trade Statutes	U.S. House of Representatives	Washington, DC	202-225-3121	bi-annual	N	National	Review of key foreign trade statutes, updated at the start of each Congress.	H
40	Dowd, Thomas J.	Port Capital Investment Decisions-Making: A Process	University of Washington	Seattle, WA	206-543-9686	1991	N	National, Port-Specific	Discusses factors involved in decision-making regarding port capital investments.	H
41	Pisani, John M.	(Seminal Work) Port Development in the United States: Status, Issues and Outlook	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1989	Y	National, Regional, Port-Specific	Provides the current status and a future outlook for the development of U.S. ocean, Great Lakes, and inland waterways ports. General discussion of issues facing deep-water ports such as container ships, intermodal access, automation, and the environment.	H
42	Office of Port and Intermodal Development	Port Handbook for Estimating Cargo Handling Capability	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1986	N	National, Port-Specific	Methodology to estimate port throughput capability based on standardized berthing modules. Can be used in new port planning or for evaluating existing ports.	H

ITEM	AUTHOR	TITLE	SOURCE	SOURCE LOCATION	SOURCE PHONE NUMBER	DATE	AT IWR (Y/N)	LEVEL: INTERNATIONAL NATIONAL, REGIONAL, PORT-SPECIFIC	DESCRIPTION OF ARTICLE OR PUBLICATION	Media Type H-Hard Copy, S-Soft Copy
43	American Association of Port Authorities	Port Maintenance	American Association of Port Authorities	Alexandria, VA	703-684-5700	1970	N	National, Port-Specific	Dated but often-cited source on port maintenance and dredging.	H
44	United Nations Conference on Trade and Development Secretariat	Port Marketing and the Challenge of the Third Generation Port	United Nations	Geneva	011-41-22-907-1234		N	International		H
45	United Nations Conference on Trade and Development Secretariat	Port Organization and Management	United Nations	Geneva	011-41-22-907-1234	1993	N	International		H
46	Standing Committee on Construction and Maintenance	Port Planning, Design and Construction	American Association of Port Authorities	Alexandria, VA	703-684-5700	1973	N	National, Port-Specific	Dated but often-cited reference manual on port design and construction. Examines how expected changes in ship characteristics and trade patterns will impact design of port terminals and other facilities.	H
47	Dowd, Thomas J.	Port Pricing: A Process	University of Washington	Seattle, WA	206-543-9686	1992	N	Port-Specific		H
48	Haarmeyer, David and Peter Yorke	Port Privatization: An International Perspective	Reason Foundation	Los Angeles, CA	310-391-2245	1993	N	International		H
49	Office of Port and Intermodal Development	Port Risk Management Guidebook	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1985	N	Port-Specific		H
50	Water Resources Support Center	Products and Services Available to the Public Provided by the Water Resources Support Center Navigation Data Center	U.S. Army Corps of Engineers	Fort Belvoir, VA	703-355-3062	1989	N	National	Listing of products and services available to the public through the Army Corps of Engineers' Water Resources Support Center.	H
51	Office of Port and Intermodal Development	A Report to the Congress on the Public Ports of the United States	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	annual	Y	National, Regional	Annual report to Congress on public ports, including institutional nature of port industry, economic and technological developments, national defense issues, and port development. Sections on ocean, Great Lakes, and inland waterway/riverports.	H
52	Marine Board	Responding to Changes in Sea Level: Engineering Implications	National Research Council, Marine Board	Washington, DC	202-334-2000	1987	N	National		H

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53	United Nations Conference on Trade and Development Secretariat	Review of Maritime Transport	United Nations	New York, NY	212-963-1234	NA	N	International		H
54	Zachial, M.	Shipping Statistics Yearbook	Institute of Shipping Economics and Logistics	Bremen, Germany	011-49-421-220-960	annual	N	International		H
55	Transportation Division	Shipping in Canada	Statistics Canada	Ottawa, Canada	613-951-9823	annual	N	International, Port-Specific		H
56	American Association of Port Authorities	Strategic Planning: A Guide for the Port Industry	American Association of Port Authorities	Alexandria, VA	703-684-5700	1988	N	National, Port-Specific		H
57	Government Printing Office	Survey of State Funding of Landside Port Facilities, Cargo Terminals, and Harbor Improvement Projects 1977-1988	Standing Committee on Water Transportation	Washington, DC	202-224-3121	1989	N	National, Port-Specific	Survey on state funding of port facilities, port improvement projects, and landside transportation projects.	H
58	Pedlow, Robert, et al.	The Ships Atlas	Shipping Guides Ltd.	Reigate, UK	NA	1994	N	International	Atlas of shipping routes and major ports.	H
59	United Nations Conference on Trade and Development Secretariat	Strategic Planning for Port Authorities	United Nations	Geneva	011-41-22-907-1234	1993	N	International		H
60	United Nations Conference on Trade and Development Secretariat	Sustainable Development for Ports	United Nations	Geneva	011-41-22-907-1234	1993	N	International, Port-Specific	Review of factors that can contribute to better management, efficiency, and sustainable development of ports, from both a technical and an economic perspective. Dredging is one of the key issues that needs resolution.	H
61	Clarkson Research Studies Ltd.	The Tanker Register	Clarkson Research Studies Ltd.	London	011-44-71-283-8955	annual	N	International	Register of tankers.	H
62	U.S. Department of Transportation	Transportation Planning Applications	U.S. Department of Transportation	Washington, DC	202-366-4000	1989	N	National		H
63	Office of Market Development	U.S. Exports and Imports Transshipped via Canadian Ports	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	annual	N	National	Database on U.S. imports and exports that move through Canadian ports.	H

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64	International Trade Administration	U.S. Exports to Mexico: A State-by-State Overview 1987-1991	U.S. Department of Commerce	Washington, DC	202-377-3808	1992	N	National	Database on U.S. exports to Mexico, by state.	H
65	National Security and International Affairs Division	U.S.-Mexico Trade: Trends and Impediments in Agricultural Trade	U.S. General Accounting Office	Washington, DC	202-512-6000	1990	N	National	Discussion of U.S./Mexican agricultural trade activity and developments, including NAFTA.	H
66	Office of Port and Intermodal Development	The U.S. Stevedoring and Marine Terminal Industry	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1993	N	National	Overview of fundamental characteristics and role of the cargo-handling industry in the U.S. economy. Outlines key issues such as environment (including disposal of dredged material), productivity, and technology. Suggests future challenges.	H
67	Hershman, Marc J., editor	(Seminal Work) Urban Ports and Harbor Management: Responding to Change Along U.S. Waterfronts	Taylor and Francis	Washington, DC	202-289-2174	1988	Y	National, Port-Specific	Textbook examining the evolving role of the public port agency in managing the natural resources of urban harbors at a time of conflicting demands over use and policy. Chapters on federal port policy, port finance, strategic planning, and mitigation.	H
68	Office of Port and Intermodal Development	Usage Pricing for Public Marine Terminal Facilities	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1981	N	National		H
69	Water Resources Support Center	Waterborne Commerce of the United States	U.S. Army Corps of Engineers	Fort Belvoir, VA	703-355-3062	annual	Y	National, Port-Specific	Database on U.S. waterborne trade.	HS
70	Frankel, Ernst Gabriel	The World Shipping Industry	Provident House	Kent, UK	NA	1987	N	International		H
71	Smith, Frederick J.	Your Port and the Local Economy	Oregon State University Extension Service EM 8395	Corvallis, OR	503-885-1150	1988	N	Port-Specific		H
72	Rolf R. Schmitt, Editor-in-Chief	(Seminal Work) Transportation Statistics Annual Report	U.S. Department of Transportation, Bureau of Transportation Statistics	Washington, DC	202-366-DATA	1994	Y	National, Regional, Port-Specific	Keystone publication of BTS, focusing on the state of the transportation system, looking at all key modes. Includes both data and commentary, as well as recommendations for improving quality and quantity of transportation statistics.	H
73	Transportation Research Board	Data for Decisions: Requirements for National Transportation Policy Making	National Research Council, Transportation Research Board	Washington, DC	202-334-3213	1992	Y	National	Independent study by the TRB of data requirements to support transportation policy making. Also identifies the necessary institutional changes required to make these data available. Recommends establishment of a national transportation data center.	H

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74	Volpe National Transportation Systems Center	Directory of Transportation Data Sources	U.S. Department of Transportation, Bureau of Transportation Statistics	Washington, DC	202-366-DATA	1993	Y	National	Comprehensive listing of transportation data bases, publications, and models, including abstracts, data sources, attributes, significant features or limitations, and contact points.	H
75	Ocean Shipping Consultants, Ltd.	World Container Port Demand to 2010	Ocean Shipping Consultants Ltd.	Surrey, UK	011-44-93-256-0332	1994	Y	International, National, Regional	Detailed analysis of regional container port demand, including: forecast of trade through 2010 under different economic scenarios; analysis of port capacity and planned development projects; analysis of container terminal productivity.	H
76	Office of Port and Intermodal Development	United States Port Development Expenditure Report	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1994	Y	National, Regional, Port-Specific	Analysis of AAPA capital expenditure survey on 1992 levels and plans for 1993-97. Capital spending expected to total $5.5 billion during 1993-97. Update of 1991 report, which summarized 44 years of historical capital spending.	H
77	Maritime Administration	The Interagency Working Group on the Dredging Process: Options Paper	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-1765	1994	Y	National	Summarizes outreach meetings and presents options for improvement to the dredging authorization process, covering: federal interagency and external coordination, proactive local planning, dredged material disposal, funding, and project development.	H
78	Maritime Administration	Environmental Regulations Applicable to Dredging and Dredge Disposal Activities	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	NA	Y	National	List maintained by MarAd of 70 environmental regulations (Congressional acts, executive orders, etc..) relating to the dredging process.	H
79	Transportation Research Board	ISTEA and Intermodal Planning: Concept, Practice, Vision	National Research Council, Transportation Research Board	Washington, DC	202-334-3213	1993	Y	National	Proceedings of conference sponsored by all five modal administrations of Department of Transportation, intended for preparation of an action agenda to support intermodal planning at all levels.	H
80	Transportation Research and Analysis Center, Inc.	Characteristics of U.S. and Foreign Ports	Transportation Research and Analysis Center, Inc.	Ponte Vedra Beach, FL	904-285-6099	1994	Y	Port-Specific	Database of physical characteristics of U.S. and foreign ports, covering harbor type, depth, anchorage, tide, and turning area.	HS
81	Transportation Research and Analysis Center, Inc.	Review of Deep Draft Studies	Transportation Research and Analysis Center, Inc.	Ponte Vedra Beach, FL	904-285-6099	1994	Y	Port-Specific	Database and executive summary of navigation reports for deep draft coastal ports generated or resulting from the Water Resources Development Act.	HS

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82	Office of Port and Intermodal Development	National Port Assessment, 1980-90	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1980	Y	National, Regional	National assessment of marine terminal needs of U.S. ocean and inland riverboat ports. Capital improvement needs are derived by comparing current cargo-handling capacity with projected flows of foreign and domestic commerce.	H
83	Transportation Research Board	(Seminal Work) Environmental Regulatory Process: Does It Work? Dredging U.S. Ports	National Research Council, Transportation Research Board	Washington, DC	202-366-4357	1994	Y	National, Port-Specific	Institutional gridlock confronts dredging projects. Key issues are the technological lag between detecting and resolving environmental problems, and the length and complexity of permitting process. Articles by port authorities, regulatory agencies, etc.	H
84	Canadian Shipowners Association	Canadian Shipowners Association Annual Report	Canadian Shipowners Association	Ottawa, Canada	613-232-3539	annual	Y	International	Annual report of Canadian Shipowners Association, with commentary on key industry, legislation, and international trade developments, and detailed statistics on shipments by commodity and trade type.	H
85	Statistics Canada	Shipping in Canada	Ministry of Industry, Science and Technology	Ottawa, Canada	613-951-0579	1990	Y	International, Port-Specific	Comprehensive overview of marine transport activity in Canada, including domestic and international commodity flows, port activity and vessel traffic; emerging trends such as containerization; and aggregate financial and operating statistics for shippers.	H
86	Chadwin, Mark L. and Wayne K. Talley	(Seminal Work) Vessel and Port Technologies at the Turn of the Century	Old Dominion University/Transportation Research Board	Washington, DC	202-334-2934	1992	Y	National	Analysis of developments in the design and operation of vessels and ports in the 21st century. Most changes will be evolutionary, not revolutionary. Technological advances will be more widespread, and rationalization and concentration will continue.	H
87	Maritime Administration	Survey on Landside Transportation Access to U.S. Ports	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1991	Y	National	Port system cannot operate at maximum levels of efficiency if ports are not readily accessible by landside modes of transportation. Survey of 46 ports cites key problems regarding land use, regulation, physical impediments, and coordination.	H
88	Maritime Administration	Untangling Dredging Regulations	U.S. Department of Transportation, Maritime Administration	San Francisco, CA	415-744-3097	1976	Y	National		H
89	Abrams, Alan	NY Dredge Plan Fails In Avoiding Conflict	Journal of Commerce	New York, NY	1-800-221-3777	1994	Y	Port-Specific		H
90	New England River Basins Commission	The Dredging Dilemma: System Problems and Management Solutions	New England River Basins Commission	Boston, MA	617-423-6900	1981	N	Regional		H

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91	Kagan, Robert A.	The Dredging Dilemma: How Not to Balance Economic Development and Environmental Protection	Institute of Governmental Studies, Univ. of California, Berkeley	Berkeley, CA	510-642-3175	1990	N	Regional, Port-Specific		H
92	Energy Information Administration	Port Deepening and User Fees: Impact on U.S. Coal Exports.	U.S. Department of Energy, Energy Information Administration	Washington, DC	202-586-2363	NA	N	National, Port-Specific	Other coal-importing and coal-exporting countries are deepening their ports. The U.S. similarly needs deeper ports so that its coal exports remain competitive. Imposing user fees to pay for the deepening of ports would raise the cost of ocean transport.	H
93	Government Printing Office	National Waterways Study Final Report: Waterways Science and Technology	U.S. Congress	Washington, DC	202-783-3238	NA	N	National		H
94	Marine Board	Contaminated Marine Sediments	National Research Council, Marine Board	Washington, DC	202-366-4357	1995 (est.)	N	National		H
95	Louisiana State University	The Maritime System of the Americas and Intermodal Operation of Ocean Going Vessels, and the Feasibility of Short-Sea Vessel Operation	Louisiana State University	Baton Rouge, LA	504-388-1175	1994	N	International		H
96	Remen, R.I.	California and the Pacific Rim Trade	National Research Council, Transportation Research Board	Washington, DC	202-334-3213	1992	N	International, Regional		H
97	Steinberg, B.	The Provisions in the Water Resources Development Act of 1986 (PL-99-662) for Ports and Waterways	National Research Council, Transportation Research Board	Washington, DC	202-334-3213	1988	N	National		H
98	Gooley, Toby B.	Can U.S. Ports Keep Up With Growing Trade?	Traffic Management Journal	NA	NA	1994	N	National		H
99	Kelly, Daniel F. and Jon Jacobs	Atlantic Ship Lines Chart New Course	International Business (NAI) Journal	NA	NA	1992	N	International		H
100	King, Elliott	Upgrades for U.S. Ports	Global Trade Journal	NA	NA	NA	N	National, Port-Specific		H
101	King, Elliot	U.S. Asian Ports Jockey for Position	Global Trade Journal	NA	NA	1991	N	Regional, Port-Specific		H
102	Bradley, Peter	Heading into the Wind: Steamship Lines and Ports Respond to a Tough Marketplace with Attractive Rates and Services	Purchasing (PRG) Journal	NA	NA	1990	N	National, Port-Specific		H

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103	Office of Market Promotion	Domestic Waterborne Commerce of the United States	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4374	annual	N	National, Port-Specific	Information on domestic waterborne commerce by commodity, vessel, operator, shipping and receiving dock, type service, and trade segment. Also includes detailed data on vessels and operators engaged in this commerce. Data from COE.	HS
104	Office of Trade Analysis and Insurance	Maritime Statistical Information System	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-2277	quarterly	N	National, Port-Specific	Detailed information on U.S. oceanborne foreign trade statistics by commodity, vessel, port, weight, and value; vessel data on all merchant vessels over 1,000 gross tons and worldwide itineraries for same vessels. Data from Census, Lloyd's.	HS
105	Office of Port and Intermodal Development	Port Facilities Inventory	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-5477	ongoing	N	Port-Specific	System of detailed information on more than 4,000 major ocean and river port facilities, including location, physical characteristics, cargo handling equipment and capacities. Data from U.S. Army Corps of Engineers, local port authorities.	S
106	Foreign Trade Division	U.S. Waterborne Exports and General Imports (TIM-987)	U.S. Department of Commerce, Bureau of the Census	Washington, DC	301-763-5140	annual	N	National, Regional, Port-Specific	Information on exports and imports by type of vessel service, coastal district, customs district and port, foreign trade overseas, and flag of vessel. Data from U.S. and Canadian customs services.	H
107	Foreign Trade Division	U.S. Waterborne Exports and Outbound Intransit Shipments (TA-780)	U.S. Department of Commerce, Bureau of the Census	Washington, DC	301-763-5140	annual	N	National, Port-Specific	Information on shipping weight and value by type of vessel service, customs district and port of lading, foreign port or country/area of unlading, commodity, and country of destination. Intransit tables present data on country of origin and destination.	S
108	Foreign Trade Division	U.S. Waterborne General Imports and Inbound Intransit Shipments (TA-380)	U.S. Department of Commerce, Bureau of the Census	Washington, DC	301-763-5140	annual	N	National, Port-Specific	Information on type of vessel service by customs port, foreign port, commodity, and country of origin. Data includes shipping weight, value, import charge, and percentage of containerized cargo. Inbound shipments in transit also included.	S
109	Foreign Trade Division	Vessel Entrances and Clearances (TA-987)	U.S. Department of Commerce, Bureau of the Census	Washington, DC	301-763-5140	annual	N	Regional, Port-Specific	Information by district and port for number of entrances and clearances, net registered tonnage, and flag. Data from U.S. and Canadian customs.	HS

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110	Navigation Data Center	Dredging Information System	U.S. Army Corps of Engineers	Ft. Belvoir, VA	703-355-3061	monthly	N	Port-Specific	Database comprising all dredging contracts awarded by Corps of Engineers. Includes quantity of dredged material, type of dredge, method of disposal, units of contract measurement, government estimate, winning bid and bidder, and small business status.	S
111	Waterborne Commerce Statistics Center	Estimated Waterborne Commerce Statistics	U.S. Army Corps of Engineers	New Orleans, LA	504-862-1424	annual	N	National, Port-Specific	Provides tonnage estimates of national waterborne commerce and selected waterways by commodity groupings for the most recent calendar year, as well as actual historical data. Data from vessel companies.	H
112	Waterborne Commerce Statistics Center	Origin and Destination of Waterborne Commerce of the United States, Public Domain Data	U.S. Army Corps of Engineers	New Orleans, LA	504-862-1424	annual	N	Regional	Aggregated information that summarizes waterborne commodity movements between 26 geographic regions or between individual states. Vessel operating companies are required to file reports, but confidentiality is protected.	H,S
113	Navigation Data Center	Port Series, 1921-Present	U.S. Army Corps of Engineers	Ft. Belvoir, VA	703-355-0047	every 8-12 years	N	Port-Specific	Detailed information on commercial facilities at principal U.S. coastal, Great Lakes, and inland ports, including berthing, cranes, transit sheds, grain elevators, marine repair plants, fleeting areas, and docking and storage facilities.	H,S
114	Waterborne Commerce Statistics Center	Tonnage for Selected United States Ports	U.S. Army Corps of Engineers	New Orleans, LA	504-862-1424	annual	N	Port-Specific	Database of tons handled at U.S. ports in a given calendar year, with breakout of domestic and foreign tonnage.	H,S
115	Waterborne Commerce Statistics Center	Waterborne Commerce of the United States	U.S. Army Corps of Engineers	New Orleans, LA	504-862-1424	annual	N	National, Regional, Port-Specific	Database of waterborne commerce, including tonnage and ton-miles of freight traffic by commodity, comparative statement of trips, traffic, and draft of vessels. Published in four regional sections, plus a national summary.	H,S
116	Military Traffic Management Command, Transportation Engineering Agency	Analysis of Ports for National Defense	U.S. Department of the Army	Newport News, VA	804-599-1186	every 3 years	N	Port-Specific	Evaluations of capabilities of 22 commercial ports to support early deployment of military units during a contingency. Includes berthing, ship mixes, staging areas, cargo handling apparatus, rail and highway access, and theoretical cargo throughput.	H,S
117	Gerwick, B. C.	Alternatives to Dredging	National Research Council, Marine Board	Washington, DC	202-334-2000	NA	N	National		H
118	Gunn, B.	Money and Ports: User Fees and Cost Sharing	National Research Council, Marine Board	Washington, DC	202-334-2000	NA	N	National		H

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119	Oppenheimer, C. H.	Environmental Effects of Dredged Material	National Research Council, Marine Board	Washington, DC	202-334-2000	NA	N	National		H
120	Marine Board	Record of the Public Meeting of the Study of National Dredging Issues	National Research Council, Marine Board	Washington, DC	202-334-2000	1983	N	National		H
121	Maritime Transportation Research Board	Public Involvement in Maritime Facility Development	National Academy of Sciences, Maritime Transportation Research Board	Washington, DC	202-334-2000	1979	N	National		H
122	Maritime Administration	(Seminal Work) Report to the Congress on the Status of U.S. Ports	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	annual	N	National, Regional	Annual report to Congress examining the economic and technological development of U.S. ports, contribution of ports to national welfare and security, and factors that may impede continued development of ports.	H
123	Maritime Administration	Public Port Financing in the United States	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1985	N	Port-Specific		H
124	Marine Board	Improving Productivity in U.S. Marine Container Terminals	National Research Council, Marine Board	Washington, DC	202-334-2000	1986	N	National		H
125	General Accounting Office	Report to the Congress on American Seaports -- Changes Affecting Operations and Development	U.S. General Accounting Office	Washington, DC	202-512-6000	1979	N	National		H
126	Stromberg, Erik	Environmental Challenges Faced by Commercial Ports	International Maritime Organization	Baltimore, MD	NA	1988	Y	National		H
127	Planning and Research Committee	Survey of Major Port Issues	American Association of Port Authorities	Alexandria, VA	703-684-5700	1988	N	National, Regional		H
128	Abernathy, Walter A.	Facilities, Operations, Labor and Logistics -- Looking into the 21st Century	International Association of Ports and Harbors	Seoul, Korea	011-81-3-3580-0364	1987	N	International		H
129	Davis, J.D., S. MacKnight, IMO Staff, and others	(Seminal Work) Environmental Considerations for Port and Harbor Development	World Bank	Washington, DC	202-477-1234	1990	Y	International	Provides comprehensive "checklist" of items that need to be considered in planning for port-related projects, including dredging and dredged-material disposal. Appendix examines "Environmentally Sound Methods of Dredged Material Disposal."	H

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130	U.S.. Army Corps of Engineers	Environmental Engineering for Coastal Shore Protection	U.S. Army Corps of Engineers	Washington, DC	202-272-0660	1988	N	National		H
131	U.S. Environmental Protection Agency	Technical Guidance for the Designation of Ocean Dredged Material Disposal Sites	U.S. Environmental Protection Agency	Washington, DC	202-260-2090	1984	N	National		H
132	Betram, K.M.	Alternatives to Deep-Draft Port Dredging for U.S. Coal Export Development: A Preliminary Assessment	Argonne National Laboratory	Argonne, IL	708-252-2000	1982	N	National, Port-Specific		H
133	National Security and International Affairs Division	Observations Concerning Plans and Programs To Assure the Continuity of Vital Wartime Movements Through United States Ports	U.S. General Accounting Office	Washington, DC	202-512-6000	1983	N	National, Port-Specific		H
134	Office of Technology Assessment	Report on Port and Shipping Safety and Environmental Protection	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-1939	NA	N	National		H
135	American Association of Port Authorities/Maritime Administration	Strategic Planning: A Guide for the Port Industry	American Association of Ports Authorities/U.S. Department of Transportation, Maritime Administration	Alexandria, VA	703-684-5700	1988	N	National, Port-Specific	A guide to strategic port-planning. Includes steps to port-planning, a realistic time frame, and port issues and strategic solutions to problems. All levels of a port agency are potential participants.	H
136	Le Blanc, Louis A.	A Covariance Model for Capacity Analysis of Port Intermodal Facilities	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1986	N	Port-Specific	A model of intermodal transport infrastructure and a covariance interpretation. The data from the model can be used to develop a realistic decision-making approach to port planning and port expansion.	H
137	Lethbridge, John R.	Problems of Transport for Island Communities	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1987	N	Regional	Discusses the problems of maritime access for small islands. Deals with transport costs, tariffs, bulk cargo rates, terminal fees, operating costs, and possible alternatives.	H
138	Maritime Administration	Cargo Systems International, Vol.16, No.10	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1989	N	National, Regional, Port-Specific	Intermodalism benefits the U.S. economy. Landbridge developments are expected to increase trade, and cargo handling needs to be made more efficient.	H

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139	Maritime Administration	Cargo Systems International, Vol.17, No.2	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1990	N	Regional, Port-Specific	Drastic circumstances will result if ports' expansion plans are dismissed. A simulation of port development is recommended to reduce operating costs.	H
140	Fritchey, Robert	Work Boat, Vol.47, No.5/6	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1990	N	National, Port-Specific	A shallow water port brings business into its community via water transportation.	H
141	Kolarova, Elizabeth Scott	Container News, Vol.25, No.4	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1990	N	Regional, Port-Specific	Expansion of port facilities have benefited U.S. and Canadian West Coast ports. Reviews individual ports' container traffic, expanded facilities, and future plans.	H
142	Maritime Administration	Port Construction and Ocean Technology, Vol.5, No.1	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	1990	N	National, Port-Specific	There are an increasing number of current dredging projects occurring in the U.S. Ports are fighting to remain competitive, and deeper channels are needed to facilitate the changing sizes of container and bulk ships.	H
143	Marcus, Henry S., James E. Short, John C. Kuypers, and Paul O. Roberts	Federal Port Policy in the United States	Massachusetts Institute of Technology	Cambridge, MA	617-253-8000	1976	N	National, Port-Specific	Role of the U.S. federal government in port decision-making. Historically, the government would not discriminate against ports, but the rising importance of environmental issues has forced the government to interfere in the competition between ports.	H
144	U.S. Department of Commerce and Bushnell, Pearsall, and Trozzo, Inc.	Economic Effects of Levying a User Charge on Foreign and Domestic Commerce to Finance Harbor Maintenance	U.S. Department of Commerce and Bushnell, Pearsall, and Trozzo, Inc.	Washington, DC	202-377-2000	1983	N	National, Regional	The implementation of a user charge on waterborne commerce does not result in a direct increase of government revenues. The commodity balance of trade may shift, and the port and shipping industries may suffer from lower sales, employment and income.	H
145	Office of Technology Assessment	Wastes in Marine Environments	U.S. Congress, Office of Technology Assessment	Washington, DC	202-224-8996	1987	N	National, Regional, Port-Specific	Evaluates the condition of various marine environments and offers solutions for waste management.	H
146	Murphy, P., D. Dalenberg, and J. Daley	A Contemporary Perspective of International Port Operations; Transportation Journal (vol. 28, no. 2)	American Society of Transportation and Logistics	Louisville, KY	NA	1988	N	International	A report based on a survey of 236 international ports. Examined the importance of capacity and available resources to trade competitiveness.	H
147	Marine Engineering	Dredging--Busting the Legislative Jam (vol. 91 no. 2)	Marine Engineering	NA	NA	1986	N	National		H

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148	DRI/McGraw-Hill and Temple, Barker & Sloan	World Sea Trade Service	DRI/McGraw-Hill and Temple, Barker & Sloan	Lexington, MA	617-863-5100 and 617-861-7580	ongoing	Y	International, National, Regional	Provides historical and forecast data of international cargo movements by ship type, size and route. Incorporates trade policy, port traffic forecasting, and world sea trade. Commodity flows can depict structural changes in economic markets over time.	HS
149	DRI/McGraw-Hill	World Trade Forecasting Service	DRI/McGraw-Hill	Washington, DC	202-383-2000	ongoing	y	International, National	Forecast and historical data on world trade activity.	HS
150	International Association of Dredging Companies	Terra et Aqua	International Association of Dredging Companies	The Hague, Netherlands	011-317-352-3334	1993	Y	National, Regional, Port-Specific	Current articles on ports and port-related issues. Also includes a literature review and an event calendar.	H
151	Hanappe, Paul and Michel Savy	Industrial Ports and Economic Transformations	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1980	Y	International, Regional, Port-Specific	Broadly examines port capacity issues and the historical background leading to the challenges of ports today. Takes an international approach to looking at port capacity dilemmas by measuring industrial activity globally.	H
152	Transportation Research Board	Impediments to Landside Access to U.S. General Cargo Ports	National Research Council, Transportationi Research Board	Washington, DC	202-334-2934	1991	Y	National, Regional, Port-Specific		H
153	Fairplay Information Systems Ltd.	Sea-Base	Fairplay Information Systems Ltd.	Surrey, UK	011-44-81-645-2840	ongoing	N	Port-Specific	On-line database with detailed profiles of major ports worldwide, including location, maximum draft, traffic figures, tidal variation, entry restrictions, landside transportation, warehousing, berth details, etc.	S
154	Office of Port and Intermodal Development	Directory of U.S. Federal Agencies with Port-Related Responsibilities	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	NA	Y	National	Directory of federal agencies with programs that impact the port industry, ranging from regulation and inspection to promotion and information.	H
155	Betist, H.	Finance for Port Development, Terra et Aqua, No.27	International Association of Dredging Companies	The Hague, Netherlands	011-317-352-3334	NA	N	International	Discusses port development by examining the roles of port companies, individual port authorities and the bank.	H
156	Frankel, E.G.	The Impact of Technological Change on Port Development, Terra et Aqua, No.28	International Association of Dredging Companies	The Hague, Netherlands	011-317-352-3334	NA	N	International	Port capacity is no longer the single motivation for technological changes in port development. The recent emphasis on intermodal transportation is increasing the number of technological changes within ports at a faster pace.	H

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157	Kennedy, G.	Privatization of Maintenance Dredging Expectations and Experience, Terra et Aqua, No.32	International Association of Dredging Companies	The Hague, Netherlands	011-317-352-3334	NA	N	International	Evaluates the impact of private versus public ownership of dredging. Privatization allows for efficiency in capital, labor and dredged material disposal	H
158	Murden, W.R.	An Overview of the Beneficial Uses of Dredged Material	International Association of Dredging Companies	The Hague, Netherlands	011-317-352-3334	NA	N	National, Regional	An emphasis should be placed on the beneficial uses of uncontaminated dredged material (which comprises 95% of all dredged material) as opposed to the controversial 5% of contaminated material dredged annually.	H
159	De Meyer, C.P. & Malherbe, B.	Optimization of Maintenance Dredging Operations in Maritime and Estuarine Areas	International Association of Dredging Companies	The Hague, Netherlands	011-317-352-3334		N	International	Sedimentation needs to be controlled to keep ports clean and easily accessible. Equipment and the sediments should be studied to achieve optimal cost effectiveness.	H
160	Marcus, S. Henry	Intermodal Movement of Marine Containers	MIT Sea Grant College Program	Cambridge, MA	617-253-8000	1993	N	Port-Specific	Examines changes in intermodal movement, using case studies including the ports of Long Beach, New York, and New Orleans. New innovations in any aspect of transportation can either help or hurt a company depending on its market position and response.	H
161	DeMonie, G.	Measuring and Evaluating Port Performance and Productivity	United Nations Conference on Trade and Development	New York, NY	212-963-6902	1987	N	International, Port-Specific	Discussion of key factors that underlie port performance (turnaround time, quality of cargo-handling, inland transport access) and methods for measuring and comparing performance.	H
162	Office of Port and Intermodal Development	Port Economic Impact Kit	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	NA	N	National, Port-Specific	Model developed to help ports assess their economic impact on the local community, primarily using an input-output approach.	H
163	Bruun, Per	Port Engineering	Gulf Publishing Company	Houston, TX	713-529-4301	1989/90	N	International, Port-Specific	Overview of engineering issues related to ports. Detailed chapter on dredging discusses equipment, techniques, disposal and beneficial uses of dredged material, and environmental issues.	H
164	Office of Port and Intermodal Development	United States Port Development Expenditure Survey	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	annual	Y	Port-Specific	Survey of planned port development expenditures.	H

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165	Committee on Contaminated Marine Sediments	Contaminated Marine Sediments -- Assessment and Remediation	National Research Council, Marine Board	Washington, DC	202-334-2000	1989	N	National, Port-Specific	Improving the nation's capability to assess, manage, and remediate contaminated marine sediments is crucial to the health and use of the marine environment. Despite the widespread nature of the problem, understanding is not well-developed.	H
166	Environmental Law Institute	Wetland Mitigation Banking	Environmental Law Institute	Washington, DC	202-939-3800	1993	N	National, Port-Specific	Wetland mitigation banking is an alternative approach to onsite compensatory mitigation, in which larger offsite wetland areas are used to mitigate for several independent wetland development activities (such as port expansion or dredging).	H
167	Institute for Water Resources, Water Resources Support Center	Guidelines for the Establishment, Maintenance, and Operation of Wetland Mitigation Banks	U.S. Army Corps of Engineers	Fort Belvoir, VA	703-355-2240	1993	N	National	With over 100 wetland mitigation banks soon to be in operation, a significant number have fallen short of expectations due to poor site selection or faulty design. The Corps seeks a more active role in bank establishment, certification, and oversight.	H
168	O'Connor, Dr. Joseph	Managing Dredged Materials: Evaluation of Disposal Alternatives in the New York-New Jersey Metropolitan Region	New York University/U.S. Army Corps of Engineers	New York, NY	202-272-0660	1989	N	Port-Specific	The Port of NY/NJ's need to dispose between 2 and 20 million cubic feet annually of dredged materials is complicated by toxicity and a lack of suitable space. Report covers a range of options, including beneficial uses of the dredged materials.	H
169	Permanent International Association of Navigation Congresses	(Seminal Work) Beneficial Uses of Dredged Material: A Practical Guide	Permanent International Association of Navigation Congresses	Brussels	011-322-208-5216	1992	Y	International	Dredged material can have significant value if properly applied in a beneficial use. Report describes potential beneficial uses and generalizes the assessment procedure for selecting uses.	H
170	International Association of Ports and Harbors	Report on the Survey on the Disposal of Dredged Material, 1987-1990	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1992	Y	International, Port-Specific	Results of IAPH survey of 88 ports on disposal of dredged material. Over half of dredged material during period resulted from maintenance, and 77% was disposed at sea. Just 8.5% was disposed for beneficial uses.	H
171	Birgeles, Joseph J.	1992 Dredging and Disposal Survey	American Association of Port Authorities	Alexandria, VA	703-684-5700	1992	Y	National, Regional	Survey of 51 ports by AAPA confirms that ports throughout U.S. are facing difficult times regarding dredging, due to lack of disposal sites, environmental constraints, and funding issues.	H

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172	Committee on Port & Ship Safety, Environment, and Construction	IAPH Guidelines for Environmental Planning and Management in Ports and Coastal Area Developments	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1991	N	International	Guidelines to assist port authorities with environmental impact assessment. Brief focus on disposal of dredged material.	H
173	U.S. Army Corps of Engineers	Dredging Desk Reference	U.S. Army Corps of Engineers	Fort Belvoir, VA	202-272-0660	1993	N	National	Dictionary of terms commonly used in dredging, including both general and technical terms. Encompasses environment/regulation, dredged material, dredge plant and equipment, dredging operations and management, survey and electronics, and disposal.	H
174	American Association of Port Authorities	Strategic Planning Survey: Port Issues and Strategies	American Association of Port Authorities	Alexandria, VA	703-684-5700	1994	Y	National, Regional	AAPA survey of 94 ports: 76% identify facility development and capital requirements as major issues; more than 50% cite environmental regulations, and dredging and disposal.	H
175	Lloyds's of London Press	Lloyd's Nautical Yearbook	Lloyd's of London Press	London	011-44-71-833-8933	annual	N	International	Annual review of major developments in the maritime industry, along with listing of major waterways, key legislation, etc.	H
176	Institute for Shipping Economics and Logistics	Shipping Statistics Yearbook	Institute for Shipping Economics and Logistics	Bremen, Germany	011-49-421-220-960	annual	N	International, Port-Specific	Annual compilation of data on world shipping activity, including size of fleet, trade levels, port activity, shipbuilding. Special focus on European markets.	H
177	Maritime Administration	United States Oceanborne Foreign Trade Routes	U.S. Department of Transportation, Maritime Administration	Washington, DC	202-366-4357	annual	N	National, Port-Specific	Database with detailed information on cargoes moving on trade routes both to and from the United States. Includes highlights of U.S. oceanborne trade, maps of key routes, and detailed data on largest ports.	H
178	United Nations Conference on Trade and Development Secretariat	Port Performance Indicators	United Nations	New York, NY	212-963-1234	1976	N	International, Port-Specific	Recommends financial and operational statistics that should be maintained by a port authority to monitor the port's performance.	H
179	Office of Technology Assessment	Coal Exports and Port Development	U.S. Congress, Office of Technology Assessment	Washington, DC	202-224-8996	1981	N	National	U.S. coal exports could be expanded, but the development of U.S. port capabilities to handle greater coal exports depends on federal dredging policy. Cost allocation and permitting procedures need revision.	H
180	International Association of Ports and Harbors	IMO/IAPH Joint Survey on the Disposal of Dredged Materials	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1989	N	International	Survey on disposal of dredged materials.	H

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181	Permanent International Association of Navigation Congresses	Economic Methods of Channel Maintenance	Permanent International Association of Navigation Congresses	Brussels	011-322-208-5216	1989	N	International	Offers options to reduce the cost of maintenance dredging, including forecast of amount of material to be dredged, selection of equipment, disposal methods, etc. Technical in nature.	H
182	Port Safety, Environment and Construction Committee	London Dumping Convention and Its Effects on World Ports: Activity Report (1979-1984)	International Association of Ports and Harbors	Tokyo	011-81-3-3580-0364	1985	Y	International	Reference and activity report on the impact of the London Dumping Convention on disposal of dredged materials.	H
183	American Association of Port Authorities	Seaports of the Americas	American Association of Port Authorities	Alexandria, VA	703-684-5700	annual	Y	International, Port-Specific	Annual AAPA directory of ports in the U.S., Canada, and Latin America, including key staff, annual tonnage, primary cargoes, channel depths, terminal facilities, services, etc.	H
184	Sherman, Rexford B.	Public Seaport Agencies in the United States and Canada	American Association of Port Authorities	Alexandria, VA	703-684-5700	1990	Y	International, Port-Specific	The U.S. port system differs from Canada's due to its highly decentralized nature. Each local port authority is unique in terms of structure.	H
185	American Association of Port Authorities	Public Port Development: Mitigation in the 1990s	American Association of Port Authorities	Alexandria, VA	703-684-5700	1992	Y	National	Shifting national policy has made environmental restrictions a more important issue in port development. Incorporating mitigation as an integral part of the port project will facilitate timely project completion.	H
186	Commission on Engineering and Technical Systems	The Roles of Government and Industry in Research and Development for the Maritime Industries	National Research Council, Marine Board	Washington, DC	202-334-2000	1986	Y	National	Addresses importance of fostering research and development in maritime industries, and relative roles of industry and government. Includes review of major technological developments and discussion of dredging issues.	H
187	Transportation Research Board	Maritime Transportation Strategic Planning	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1992	Y	International, National, Port-Specific	Proceedings of the Maritime Transportation Strategic Planning Workshop. Examined current issues affecting the maritime industry: international and domestic policy, competitiveness, finances, customer demands, efficiency, and intermodalism.	H
188	Transportation Research Board	Port-Land Access: Public Policy Issues	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1992	Y	National, Regional, Port-Specific	A panel which deliberated over the problem of port access by road, rail and waterways. Special presentations deal specifically with California regions, while a more global perspective is given by a representative of each mode of transportation.	H

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189	Transportation Research Board	Facing the Challenge: The Intermodal Terminal of the Future	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1986	Y	National, Port-Specific	Contains papers presented at the Conference on Intermodal Freight Terminal Design. Proposes cooperation of labor to increase the efficiency and decrease the costs of container terminals.	H
190	Transportation Research Board	Marine and Intermodal Transportation: Freight Movement and Environmental Issues	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1992	Y	National, Regional, Port-Specific	Examines the environmental and logistical complications pertaining to the multimodal movement of freight. Includes discussions on port technologies, environmental impacts and response capabilities, trade logistics and waterway queues.	H
191	Transportation Research Board	Ports, Waterways, Rail, and International Trade Issues	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1990	Y	National, Regional, Port-Specific	This research is focused on improving U.S. maritime trade and transportation. Papers compiled in this record include discussions on U.S. trade with Canada, ship-handling and passenger ferry service.	H
192	Maritime Administration	Untangling Dredging Regulations	U.S. Department of Commerce, Maritime Administration	San Francisco, CA	415-744-3125	1976	Y	National, Regional	Dredging is pertinent to the competitiveness of U.S. ports and the maritime industry. Current legislation often overlaps other acts, and the process of changing legislation is filled with beaurocracy, unnecessary costs and delays.	H
193	New England River Basins Commission	The Dredging Dilemma: System Problems and Management Solutions	New England Governors' Conference	Boston, MA	617-423-6900	1981	N	Regional	Identifies problem areas associated with dredging and evaluates regional dredging projects at the state level. Environmental, financial and competitiveness aspects are examined.	H
194	Kagan, Robert A.	The Dredging Dilemma: How Not to Balance Economic Development and Environmental Protection	University of California, Berkeley	Berkeley, CA	510-642-3175	1990	N	National, Port-Specific	Examines delays caused by lawsuits, beaurocracy and entangled regulations. A more cooperative decision-making process is suggested as well as a more in-depth understanding of economic efficiency and environmental protection.	H
195	McSweeny, James and Edward Margolin, Committee on National Dredging Issues	Analysis of the Impact and Incidence of Alternate Deep Water Port Cost Recovery Mechanisms	National Research Council, Marine Board	Washington, DC	202-334-2000	NA	Y	National, Regional, Port-Specific	A comparison of cost recovery projects for small, medium-sized and large ports. Policy issues, such as the use of cost effectiveness and the role of government, are important influences of dredging costs.	H
196	Transportation Research Board	Impediments to Landside Access to U.S. General Cargo Ports	National Research Council, Transportation Research Board	Washington, DC	202-334-2933	1991	Y	National, Regional, Port-Specific	An analysis of the accessibility of U.S. ports to landside transportation. This growing problem is weakening the intermodal system of the U.S. and needs to be faced directly.	H

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197	Lloyd's Maritime Information Services Ltd. and DRI/McGraw-HIll	World Fleet Forecast Service	Lloyds Maritime Information Services Ltd. and DRI/McGraw-Hill	London; Lexington, MA	617-863-5100	Semi-annual updates	Y	International, National	Provides current forecasts on the world shipping fleet by vessel type, size and trade route. Projections based on international commodity trade forecasts.	S
198	Reed, Mark and Victor J. Bierman, Jr., eds.	Proceedings of a Workshop for the Development of a Scientific Protocol for Ocean Dump Site Designation	Applied Science Associates, Inc. and U.S. Environmental Protection Agency	Wakefield, MA and Narragansett, RI	401-789-6224	1983	Y	National	Proceedings of a workshop intended to develop a protocol for information pertaining to the designation of ocean dump sites. Exposure methodologies, hazards and policies were comprehensively analyzed by expert scientists and technicians.	H
199	Francingues, N.R., Jr. and Palermo, M.R.	Management Strategy for Disposal of Dredged Material, Vol.1 of Dredging and Dredged Material Disposal	American Society of Civil Engineers	Clearwater Beach, FL	NA	1984	N	National		H
200	American Society of Civil Engineers	Dredging and Dredged Material Disposal	American Society of Civil Engineers	Clearwater Beach, FL	NA	NA	N	National		H
201	Central Dredging Association	Environmentally Acceptable Methods of Dredging and Handling Harbour and Channel Sediments	Central Dredging Association	Hamburg, Germany or Delft, Netherlands	NA	1988	N	International		H
202	Palermo, M.R., N.R. Francingues, C.R. Lee, and R.K. Peddicord	Evaluation of Dredged Material Disposal Alternatives: Test Protocols and Contaminant Control Measures	Eleventh World Dredging Congress	Brighton, UK	NA	1986	N	International		H
203	Permanent International Association of Navigation Congresses	Disposal of Dredged Material at Sea	Permanent International Association of Navigation Congresses	Brussels	011-322-208-5216	1986	N	International		H
204	Permanent International Association of Navigation Congresses	Disposal of Contaminated Dredged Material at Sea	Permanent International Association of Navigation Congresses	Brussels	011-322-208-5216	1986	N	International		H
205	U.S. Army Corps of Engineers	Dredging and Dredged Material Disposal, Engineer Manual 1110-2-5025	U.S. Army Corps of Engineers	Washington, DC	202-272-0660	1983	N	National		H

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206	U.S. Army Corps of Engineers	Beneficial Uses of Dredged Material, Engineer Manual 1110-2-5025	U.S. Army Corps of Engineers	Washington, DC	202-272-0660	1986	N	National		H
207	Permanent International Association of Navigation Congresses	Disposal of Dredged Materials at Sea, Supp. to Bulletin No.52	Permanent International Association of Navigation Congresses	Brussels	011-322-208-5216	1986	N	International		H
208	Brannon, J.M., R.E. Hoeppel, and D. Gunnison	Efficiency of Capping Contaminated Dredged Material, Vol.2 of Dredging and Dredged Material Disposal	American Society of Civil Engineers	Clearwater Beach, FL	NA	1984	N	National		H
209	Controller General of the United States	Managerial Changes Needed to Speed Up Processing Permits for Dredged Projects	Committee on Merchant Marine and Fisheries, U.S. House of Representatives	Washington, DC	202-226-3529	1980	N	National		H
210	Hammon, Alfred	The Water Resources Development Act of 1986, article in Marine Policy Reports	University of Delaware	Newark, DE	302-328-9401	1987	N	National		H
211	Engler, R.M.	Managing Dredged Materials, Vol.33, No.2 , article in Oceanus	Woods Hole Oceanographic Institute	Woods Hole, MA	508-548-1400	1990	N	International		H
212	NA	Dredging and Port Construction	NA	NA	NA		N	NA		H
213	Graves, S.C., M. Horwitch, and E.H. Bowman	Deep-Draft Dredging of the U.S. Coal Ports: A Cost-Benefit Analysis, Vol.17, article in Policy Sciences	NA	NA	NA	1984	N	National, Port-Specific		H
214	Kamlet, K.S.	Dredged-Material Ocean Dumping: Perspectives on Legal and Environmental Impacts, Vol.2, article in Wastes in the Ocean, Dredged-Material Disposal in the Ocean	Wiley & Sons	New York, NY	212-850-6000	1983	N	International		H
215	Feldman, R. and E. Haber	Bibliography of Selected National Dredging Issues, Vol.2	National Research Council	Washington, DC	202-334-2000		N	National	A 612 page bibliography on dredging. This reference, however, is outdated and copies are not accessible from the National Research Council.	H
216	Drewery Shipping Consultants		Drewery Shipping Consultants	London	011-44-71-538-0191		N	International	Source for tanker and drybulk vessel data.	HS
217	Lloyd's Register	Lloyd's Register of Shipping	Lloyd's Register	New York, NY	212-425-8050		N	International	Source for original source of vessel fleet data.	HS

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218	Lloyd's of London Press		Lloyd's of London Press	New York, NY	212-529-9500		N	International	Source for data on vessel and port characteristics.	S
219	BRL Marine	BRL Marine Database	BRL Marine	London	081-44-81-469-0611		N	International	Data on new building contracts pending and placed, vessel sale and purchase data, and vessel fleet data by ten vessel categories.	S
220	Clarkson Research Studies, Ltd.		Clarkson Marine Data Base	London	011-71-283-8955		N	International	Source for vessel data.	S
221	Fernley's		Fernley's	United Kingdom	011-71-224-4888		N	International	Source for publications and data pertaining to bulk shipping.	S
222	Noritake, Michihiko	Congestion, Cost and Pricing of Seaports, article in Journal of Waterways and Harbors Division	American Society of Civil Engineers	Clearwater Beach, FL	212-705-7285	1985	N	National		H
223	Abernathy, W.A.	On Operation, Labour & Logistics	International Association of Ports and Harbors	Tokyo	011-81-3-3591-4261	1987	N	International		H
224	Porter, McNeil, CSX-Sealand, Baltimore	Impact of Intermodalism on Ports	International Association of Ports and Harbors	Tokyo	011-81-3-3591-4261	1989	N	International		H
225	Sub-Committee on Port Safety and Environment	Practical Guidelines for Ports on Environmental Issues--Soil Pollution in Ports	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	1993	N	International		H
226	Sub-Committee on Port Safety and Environment	Survey on the Eleven Environmental Priorities in Port	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	1990	N	International		H
227	Haar, H.R., Jr., New Orleans	Dredging and Environment	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	1991	N	International		H
228	Smagghe, Jean, Port Autonome du Havre, France	The Consequence of the Changing World on Maritime Trade and Its Effect on Ports	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	1993	N	International		H
229	Liburdi, Lillian, Port Authority of New York & New Jersey	Port Promotion in the Shifting Winds of Trade	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	1993	N	International		H
230	Lee, Dwayne, Port of Los Angeles	Recent Dredging Experiences of International Ports	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	NA	N	International		H

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231	Jurriens, Kick, Port of Rotterdam, the Netherlands	Environment and Ports Development in a Changing World	International Assocation of Ports and Harbors	Tokyo	011-81-3-3591-4261	NA	N	International		H
232	Herbich, John B.	The Handbook of Dredging Engineering	McGraw-Hill, Inc	New York	212-512-4115	1994	N	International	Reference Book containing Engineering Techniques for Dredging	H

TABLE 2

ITEM	AUTHOR	TITLE	SOURCE	SUBJECTS: CURRENT PORT CAPACITY (CC), FORECAST OF TRADE (FT), FORECAST OF CAPACITY (FC), ENVIRONMENTAL - Dredging Impediments (EDI) or Beneficial Uses (EDB), TECHNOLOGICAL CHANGES (T), POLICY IMPACTS (PI), DREDGING MAINT. - Federal (DMF) or Non-Federal (DMNF), DREDGING CONSTRUCTION - Federal (DCF) or Non-Federal (DCNF), ECONOMICS and FINANCE (EF), LEGISLATIVE (L), CURRENT TRADE (CT), NAFTA (N), OTHER (O)													
1	Ocean Shipping Consultants, Ltd.	American Containerisation to 2005: An Analysis of Container Trade, Shipping Capacity and Port Development in the Western Hemisphere	Ocean Shipping Consultants, Ltd.	CC	FT	FC								CT		
2	Office of Port and Intermodal Development	Automated Port Pricing Model	U.S. Department of Transportation, Maritime Administration									EF				
3	Office of the Chief of Engineers	Beneficial Uses of Dredged Material	U.S. Army Corps of Engineers				EDB									
4	Maestro, Betsy and Ellen DelVecchio	Big City Port	Four Winds Press													
5	Clarkson Research Studies, Ltd.	The Bulk Carrier Register	Clarkson Research Studies, Ltd.													O
6	Kendall, Lane C.	The Business of Shipping	Cornell Maritime Press									EF				
7	Immer, John R.	Cargo Handling	Work Saving International													
8	Ocean Shipping Consultants, Ltd.	Container Port Pressures to 1995--An Analysis of Port Competition and Trade Development	Ocean Shipping Consultants, Ltd.	CC	FT	FC								CT		
9	Dowd, Thomas J.	Considering Strategic Planning for Your Port?	Washington Sea Grant Port Management. Series			FC						EF				
10	Dowd, Thomas J.	Container Terminal Leasing/Pricing Methods and Their Economic Effects	Washington Sea Grant Port Management. Series									EF				
11	Dowd, Thomas J. and Thomas M. Leschine	Container Terminal Productivity: A Perspective	Washington Sea Grant Port Management. Series					T								
12	Boyes, Jane	Containerisation International Yearbook	Containerisation International	CC				T								
13	Skaggs, Leigh L. and David V. Grier	Current Status of Cost-Shared Deep-Draft Harbor Projects	U.S. Army Corps of Engineers	CC						DMF, DMNF	DCF, DCNF	EF				

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14	Office of Port and Intermodal Development	Current Trends in Port Pricing	U.S. Department of Transportation, Maritime Administration									EF				
15	Foreign Agricultural Service	Desk Reference Guide to U.S. Agriculture Trade	U.S. Department of Agriculture						PI					CT		
16	United Nations Conference on Trade and Development Secretariat	Development and Improvement of Ports: The Principles of Modern Port Management and Organization	United Nations					T								O
17	Permanent Technical Committed Committee II	Development of Modern Marine Terminals	Permanent International Association of Navigation Congresses					T								0
18	Office of Domestic Shipping	Domestic Waterborne Trade of the United States	U.S. Department of Transportation, Maritime Administration											CT		
19	Commission on Engineering and Technical Systems	Dredging Coastal Ports: An Assessment of the Issues	National Research Council, Marine Board	CC		FC	EDI, EDB	T	PI	DMF, DMNF	DCF, DCNF	EF	L			O
20	Committee on Port and Ship Safety, Environment and Construction	Dredging for Development: Report of the Dredging Task Force	International Association of Ports and Harbors				EDI, EDB	T		DM	DC	EF				
21	Office of Port and Intermodal Development	Economic Impact of the U.S. Port Industry: An Output Analysis of Waterborne Transportation	U.S. Department of Transportation, Maritime Administration	CC					PI					CT		
22	Office of Port and Intermodal Development	The Effect of Federal Standards on U.S. Public Port Development	U.S. Department of Transportation, Maritime Administration	CC					PI							
23	Miller, William J.	Encyclopedia of International Commerce	Cornell Maritime Press											CT		

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24	Ocean Shipping Consultants, Ltd.	The European Container Market in the 1990s	Ocean Shipping Consultants, Ltd.		FT									CT		O
25	National Security and International Affairs Division	European Single Market: Issues of Concern to U.S. Exporters	U.S. General Accounting Office		FT				PI					CT		
26	Office of Port and Intermodal Development	Existing and Potential U.S. Coal Export Loading Terminals	U.S. Department of Transportation, Maritime Administration	CC	FT	FC					DC			CT		
27	Malpas, P.	Fairplay World Ports Directory	Fairplay Information Systems Ltd.	CC								EF				
28	Lescroart, John	Fieldston Coal Transportation Manual 1990-91	The Fieldston Company											CT		
29	Muskin, Jerold B.	Firstport Project: 20/20 Foresight--Proceedings of the International Conference on Ports of the Future	Drexel University		FT	FC		T						CT		
30	Pedlow, Robert	Guide to Port Entry	Shipping Guides Ltd.	CC												
31	Herbich, John B.	Handbook of Coastal and Ocean Engineering	Gulf Publishing Company					T								
32	National Waterways Conference	Implementing Public Law 99-662(H.R. 6), The Water Resources Development Act of 1986	National Waterways Conference						PI	DMF	DCF	EF	L			
33	Transportation Research Board	Intermodal Marine Container Transportation: Impediments and Opportunities	National Research Council, Transportation Research Board	CC				T	PI	DM	DC					O
34	Office of the Comptroller General	International Trade Issues	U.S. General Accounting Office		FT				PI					CT		
35	Transportation Research Board	Landside Access to U.S. Ports	National Research Council, Transportation Research Board	CC				T	PI					CT	N	O
36	Jansson, J.O. and D. Shneerson	Liner Shipping Economics	Metheun									EF				
37	Cuny, Paul J.	Lloyd's Ports of the World	Lloyd's of London Press	CC										CT		

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38	Dobson, Huw and Anthony Beresford	Lloyd's Maritime Atlas of World Ports and Shipping Places	Lloyd's of London Press													
39	Staff of the Committee on Ways and Means	Overview and Compilation of U.S. Trade Statutes	U.S. House of Representatives										L			
40	Dowd, Thomas J.	Port Capital Investment Decisions-Making: A Process	University of Washington							DM	DC	EF				
41	Pisani, John M.	Port Development in the United States: Status, Issues and Outlook	International Association of Ports and Harbors	CC		FC	EDI, EDB	T	PI	DM	DC	EF		CT		
42	Office of Port and Intermodal Development	Port Handbook for Estimating Cargo Handling Capability	U.S. Department of Transportation, Maritime Administration	CC		FC										
43	American Association of Port Authorities	Port Maintenance	American Association of Port Authorities					T		DM						O
44	United Nations Conference on Trade and Development Secretariat	Port Marketing and the Challenge of the Third Generation Port	United Nations													O
45	United Nations Conference on Trade and Development Secretariat	Port Organization and Management	United Nations													O
46	Standing Committee on Construction and Maintenance	Port Planning, Design and Construction	American Association of Port Authorities	CC	FT	FC	EDI	T		DM	DC			CT		
47	Dowd, Thomas J.	Port Pricing: A Process	University of Washington									EF				
48	Haarmeyer, David and Peter Yorke	Port Privatization: An International Perspective	Reason Foundation									EF				
49	Office of Port and Intermodal Development	Port Risk Management Guidebook	U.S. Department of Transportation, Maritime Administration									EF				O

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50	Water Resources Support Center	Products and Services Available to the Public Provided by the Water Resources Support Center Navigation Data Center	U.S. Army Corps of Engineers													O
51	Office of Port and Intermodal Development	A Report to the Congress on the Public Ports of the United States	U.S. Department of Transportation, Maritime Administration	CC			EDI, EDB	T	PI	DMF	DCF	EF	L	CT		
52	Marine Board	Responding to Changes in Sea Level: Engineering Implications	National Research Council, Marine Board					T								
53	United Nations Conference on Trade and Development Secretariat	Review of Maritime Transport	United Nations	CC				T						CT		
54	Zachial, M.	Shipping Statistics Yearbook	Institute of Shipping Economics and Logistics	CC										CT		
55	Transportation Division	Shipping in Canada	Statistics Canada	CC										CT		
56	American Association of Port Authorities	Strategic Planning: A Guide for the Port Industry	American Association of Port Authorities	CC												O
57	Government Printing Office	Survey of State Funding of Landside Port Facilities, Cargo Terminals, and Harbor Improvement Projects 1977-1988	Standing Committee on Water Transportation							DMNF	DCNF	EF				
58	Pedlow, Robert, et al.	The Ships Atlas	Shipping Guides Ltd.											CT		O
59	United Nations Conference on Trade and Development Secretariat	Strategic Planning for Port Authorities	United Nations													O
60	United Nations Conference on Trade and Development Secretariat	Sustainable Development for Ports	United Nations				EDI	T								

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61	Clarkson Research Studies Ltd.	The Tanker Register	Clarkson Research Studies Ltd.													O
62	U.S. Department of Transportation	Transportation Planning Applications	U.S. Department of Transportation	CC		FC										
63	Office of Market Development	U.S. Exports and Imports Transshipped via Canadian Ports	U.S. Department of Transportation, Maritime Administration											CT		
64	International Trade Administration	U.S. Exports to Mexico: A State-by-State Overview 1987-1991	U.S. Department of Commerce											CT		
65	National Security and International Affairs Division	U.S.-Mexico Trade: Trends and Impediments in Agricultural Trade	U.S. General Accounting Office		FT				PI					CT		
66	Office of Port and Intermodal Development	The U.S. Stevedoring and Marine Terminal Industry	U.S. Department of Transportation, Maritime Administration	CC	FT		EDI	T						CT		
67	Hershman, Marc J., editor	Urban Ports and Harbor Management: Responding to Change Along U.S. Waterfronts	Taylor and Francis	CC			EDI	T	PI				L			O
68	Office of Port and Intermodal Development	Usage Pricing for Public Marine Terminal Facilities	U.S. Department of Transportation, Maritime Administration						PI			EF				
69	Water Resources Support Center	Waterborne Commerce of the United States	U.S. Army Corps of Engineers											CT		
70	Frankel, Ernst Gabriel	The World Shipping Industry	Provident House	CC				T						CT		O
71	Smith, Frederick J.	Your Port and the Local Economy	Oregon State University Extension Service EM 8395						PI			EF				
72	Rolf R. Schmitt, Editor-in-Chief	Transportation Statistics Annual Report	U.S. Department of Transportation, Bureau of Transportation Statistics	CC			E	T	PI					CT		O

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73	Transportation Research Board	Data for Decisions: Requirements for National Transportation Policy Making	National Research Council, Transportation Research Board						PI							O
74	Volpe National Transportation Systems Center	Directory of Transportation Data Sources	U.S. Department of Transportation, Bureau of Transportation Statistics													O
75	Ocean Shipping Consultants, Ltd.	World Container Port Demand to 2010	Ocean Shipping Consultants Ltd.	CC	FT	FC		T						CT		
76	Office of Port and Intermodal Development	United States Port Development Expenditure Report	U.S. Department of Transportation, Maritime Administration							DM	DC	EF				
77	Maritime Administration	The Interagency Working Group on the Dredging Process: Options Paper	U.S. Department of Transportation, Maritime Administration				EDI		PI	DMF, DMNF	DCF, DCNF	EF				
78	Maritime Administration	Environmental Regulations Applicable to Dredging and Dredge Disposal Activities	U.S. Department of Transportation, Maritime Administration				EDI, EDB		PI	DM	DC		L			
79	Transportation Research Board	ISTEA and Intermodal Planning: Concept, Practice, Vision	National Research Council, Transportation Research Board	CC				T	PI							O
80	Transportation Research and Analysis Center, Inc.	Characteristics of U.S. and Foreign Ports	Transportation Research and Analysis Center, Inc.	CC												
81	Transportation Research and Analysis Center, Inc.	Review of Deep Draft Studies	Transportation Research and Analysis Center, Inc.	CC		FC						EF				
82	Office of Port and Intermodal Development	National Port Assessment, 1980-90	U.S. Department of Transportation, Maritime Administration	CC	FT	FC		T			DC	EF		CT		

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83	Transportation Research Board	Environmental Regulatory Process: Does It Work? Dredging U.S. Ports	National Research Council, Transportation Research Board				EDI, EDB	T	PI	DMF, DMNF	DCF, DCNF		L			
84	Canadian Shipowners Association	Canadian Shipowners Association Annual Report	Canadian Shipowners Association										L	CT		
85	Statistics Canada	Shipping in Canada	Ministry of Industry, Science and Technology	CC				T				EF		CT		
86	Chadwin, Mark L. and Wayne K. Talley	Vessel and Port Technologies at the Turn of the Century	Old Dominion University/Transportation Research Board	CC		FC		T								
87	Maritime Administration	Survey on Landside Transportation Access to U.S. Ports	U.S. Department of Transportation, Maritime Administration	CC												
88	Maritime Administration	Untangling Dredging Regulations	U.S. Department of Transportation, Maritime Administration						PI				L			
89	Abrams, Alan	NY Dredge Plan Fails In Avoiding Conflict	Journal of Commerce							DM						
90	New England River Basins Commission	The Dredging Dilemma: System Problems and Management Solutions	New England River Basins Commission							DM	DC					
91	Kagan, Robert A.	The Dredging Dilemma: How Not to Balance Economic Development and Environmental Protection	Institute of Governmental Studies, Univ. of California, Berkeley				EDI		PI	DM	DC	EF				
92	Energy Information Administration	Port Deepening and User Fees: Impact on U.S. Coal Exports	U.S. Department of Energy, Energy Information Administration	CC	FT		EDI, EDB		PI	DMF, DMNF	DCF, DCNF			CT		
93	Government Printing Office	National Waterways Study Final Report: Waterways Science and Technology	U.S. Congress					T								
94	Marine Board	Contaminated Marine Sediments	National Research Council, Marine Board				EDI									

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95	Louisiana State University	The Maritime System of the Americas and Intermodal Operation of Ocean Going Vessels, and the Feasibility of Short-Sea Vessel Operation	Louisiana State University	CC				T								O
96	Remen, R.I.	California and the Pacific Rim Trade	National Research Council, Transportation Research Board											CT		
97	Steinberg, B.	The Provisions in the Water Resources Development Act of 1986 (PL-99-662) for Ports and Waterways	National Research Council, Transportation Research Board						PI				L			
98	Gooley, Toby B.	Can U.S. Ports Keep Up With Growing Trade?	Traffic Management Journal	CC	FT									CT		
99	Kelly, Daniel F. and Jon Jacobs	Atlantic Ship Lines Chart New Course	International Business (NAI) Journal											CT		O
100	King, Elliott	Upgrades for U.S. Ports	Global Trade Journal	CC		FC										
101	King, Elliot	U.S. Asian Ports Jockey for Position	Global Trade Journal	CC										CT		
102	Bradley, Peter	Heading into the Wind: Steamship Lines and Ports Respond to a Tough Marketplace with Attractive Rates and Services	Purchasing (PRG) Journal									EF				O
103	Office of Market Promotion	Domestic Waterborne Commerce of the United States	U.S. Department of Transportation, Maritime Administration											CT		O
104	Office of Trade Analysis and Insurance	Maritime Statistical Information System	U.S. Department of Transportation, Maritime Administration											CT		O
105	Office of Port and Intermodal Development	Port Facilities Inventory	U.S. Department of Transportation, Maritime Administration	CC												
106	Foreign Trade Division	U.S. Waterborne Exports and General Imports (TIM-987)	U.S. Department of Commerce, Bureau of the Census											CT		

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107	Foreign Trade Division	U.S. Waterborne Exports and Outbound Intransit Shipments (TA-780)	U.S. Department of Commerce, Bureau of the Census											CT		
108	Foreign Trade Division	U.S. Waterborne General Imports and Inbound Intransit Shipments (TA-380)	U.S. Department of Commerce, Bureau of the Census											CT		
109	Foreign Trade Division	Vessel Entrances and Clearances (TA-987)	U.S. Department of Commerce, Bureau of the Census											CT		
110	Navigation Data Center	Dredging Information System	U.S. Army Corps of Engineers				EDI, EDB			DMF	DCF	EF				
111	Waterborne Commerce Statistics Center	Estimated Waterborne Commerce Statistics	U.S. Army Corps of Engineers											CT		
112	Waterborne Commerce Statistics Center	Origin and Destination of Waterborne Commerce of the United States, Public Domain Data	U.S. Army Corps of Engineers											CT		
113	Navigation Data Center	Port Series, 1921-Present	U.S. Army Corps of Engineers	CC												
114	Waterborne Commerce Statistics Center	Tonnage for Selected United States Ports	U.S. Army Corps of Engineers											CT		
115	Waterborne Commerce Statistics Center	Waterborne Commerce of the United States	U.S. Army Corps of Engineers	CC										CT		
116	Military Traffic Management Command, Transportation Engineering Agency	Analysis of Ports for National Defense	U.S. Department of the Army	CC												
117	Gerwick, B. C.	Alternatives to Dredging	National Research Council, Marine Board					T	PI	DM	DC					
118	Gunn, B.	Money and Ports: User Fees and Cost Sharing	National Research Council, Marine Board									EF				
119	Oppenheimer, C. H.	Environmental Effects of Dredged Material	National Research Council, Marine Board				EDI, EDB			DM	DC					

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120	Marine Board	Record of the Public Meeting of the Study of National Dredging Issues	National Research Council, Marine Board				EDI, EDB			DM	DC						
121	Maritime Transportation Research Board	Public Involvement in Maritime Facility Development	National Academy of Sciences, Maritime Transportation Research Board	CC								EF					
122	Maritime Administration	Report to the Congress on the Status of U.S. Ports	U.S. Department of Transportation, Maritime Administration	CC			EDI, EDB	T	PI	DM	DC	EF	L	CT			
123	Maritime Administration	Public Port Financing in the United States	U.S. Department of Transportation, Maritime Administration									EF					
124	Marine Board	Improving Productivity in U.S. Marine Container Terminals	National Research Council, Marine Board					T									
125	General Accounting Office	Report to the Congress on American Seaports -- Changes Affecting Operations and Development	U.S. General Accounting Office	CC				T									
126	Stromberg, Erik	Environmental Challenges Faced by Commercial Ports	International Maritime Organization				EDI										
127	Planning and Research Committee	Survey of Major Port Issues	American Association of Port Authorities														O
128	Abernathy, Walter A.	Facilities, Operations, Labor and Logistics -- Looking into the 21st Century	International Association of Ports and Harbors	CC		FC		T									O
129	Davis, J.D., S. MacKnight, IMO Staff, and others	Environmental Considerations for Port and Harbor Development	World Bank				EDI, EDB	T	PI	DM	DC						
130	U.S.. Army Corps of Engineers	Environmental Engineering for Coastal Shore Protection	U.S. Army Corps of Engineers				EDI	T									
131	U.S. Environmental Protection Agency	Technical Guidance for the Designation of Ocean Dredged Material Disposal Sites	U.S. Environmental Protection Agency				EDI, EDB			DM	DC						

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132	Betram, K.M.	Alternatives to Deep-Draft Port Dredging for U.S. Coal Export Development: A Preliminary Assessment	Argonne National Laboratory	CC						DM				CT		
133	National Security and International Affairs Division	Observations Concerning Plans and Programs To Assure the Continuity of Vital Wartime Movements Through United States Ports	U.S. General Accounting Office	CC												O
134	Office of Technology Assessment	Report on Port and Shipping Safety and Environmental Protection	U.S. Department of Transportation, Maritime Administration				E									O
135	American Association of Port Authorities/Maritime Administration	Strategic Planning: A Guide for the Port Industry	American Association of Ports Authorities/U.S. Department of Transportation, Maritime Administration													O
136	Le Blanc, Louis A.	A Covariance Model for Capacity Analysis of Port Intermodal Facilities	U.S. Department of Transportation, Maritime Administration	CC		FC										
137	Lethbridge, John R.	Problems of Transport for Island Communities	U.S. Department of Transportation, Maritime Administration	CC								EF		CT		
138	Maritime Administration	Cargo Systems International, Vol.16, No.10	U.S. Department of Transportation, Maritime Administration					T						CT		O
139	Maritime Administration	Cargo Systems International, Vol.17, No.2	U.S. Department of Transportation, Maritime Administration		FT	FC		T				EF				
140	Fritchey, Robert	Work Boat, Vol.47, No.5/6	U.S. Department of Transportation, Maritime Administration									EF				O
141	Kolarova, Elizabeth Scott	Container News, Vol.25, No.4	U.S. Department of Transportation, Maritime Administration	CC		FC		T	PI			EF		CT		

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142	Maritime Administration	Port Construction and Ocean Technology, Vol.5, No.1	U.S. Department of Transportation, Maritime Administration					T			DC	EF				
143	Marcus, Henry S., James E. Short, John C. Kuypers, and Paul O. Roberts	Federal Port Policy in the United States	Massachusetts Institute of Technology				EDI, EDB	T	PI	DMF	DCF	EF	L			
144	U.S. Department of Commerce and Bushnell, Pearsall, and Trozzo, Inc.	Economic Effects of Levying a User Charge on Foreign and Domestic Commerce to Finance Harbor Maintenance	U.S. Department of Commerce and Bushnell, Pearsall, and Trozzo, Inc.		FT				PI			EF				
145	Office of Technology Assessment	Wastes in Marine Environments	U.S. Congress, Office of Technology Assessment				EDI, EDB	T	PI	DMF			L			
146	Murphy, P., D. Dalenberg, and J. Daley	A Contemporary Perspective of International Port Operations; Transportation Journal (vol. 28, no. 2)	American Society of Transportation and Logistics	CC				T						CT		
147	Marine Engineering	Dredging--Busting the Legislative Jam (vol. 91 no. 2)	Marine Engineering				EDI		PI	DM	DC		L			
148	DRI/McGraw-Hill and Temple, Barker & Sloan	World Sea Trade Service	DRI/McGraw-Hill and Temple, Barker & Sloan	CC	FT	FC								CT		
149	DRI/McGraw-Hill	World Trade Forecasting Service	DRI/McGraw-Hill		FT									CT		
150	International Association of Dredging Companies	Terra et Aqua	International Association of Dredging Companies	CC			EDI, EDB	T	PI	DM	DC			CT		
151	Hanappe, Paul and Michel Savy	Industrial Ports and Economic Transformations	International Association of Ports and Harbors	CC								EF		CT		
152	Transportation Research Board	Impediments to Landside Access to U.S. General Cargo Ports	National Research Council, Transportationi Research Board	CC												O

ITEM	AUTHOR	TITLE	SOURCE	SUBJECTS: CURRENT PORT CAPACITY (CC), FORECAST OF TRADE (FT), FORECAST OF CAPACITY (FC), ENVIRONMENTAL - Dredging Impediments (EDI) or Beneficial Uses (EDB), TECHNOLOGICAL CHANGES (T), POLICY IMPACTS (PI), DREDGING MAINT. - Federal (DMF) or Non-Federal (DMNF), DREDGING CONSTRUCTION - Federal (DCF) or Non-Federal (DCNF), ECONOMICS and FINANCE (EF), LEGISLATIVE (L), CURRENT TRADE (CT), NAFTA (N), OTHER (O)											
153	Fairplay Information Systems Ltd.	Sea-Base	Fairplay Information Systems Ltd.	CC		FC								CT		
154	Office of Port and Intermodal Development	Directory of U.S. Federal Agencies with Port-Related Responsibilities	U.S. Department of Transportation, Maritime Administration						PI							O
155	Betist, H.	Finance for Port Development, Terra et Aqua, No.27	International Association of Dredging Companies									EF				
156	Frankel, E.G.	The Impact of Technological Change on Port Development, Terra et Aqua, No.28	International Association of Dredging Companies	CC				T								
157	Kennedy, G.	Privatization of Maintenance Dredging Expectations and Experience, Terra et Aqua, No.32	International Association of Dredging Companies				EDI, EDB		PI	DM	DC	EF				
158	Murden, W.R.	An Overview of the Beneficial Uses of Dredged Material	International Association of Dredging Companies				EDI, EDB			DM	DC					
159	De Meyer, C.P. & Malherbe, B.	Optimization of Maintenance Dredging Operations in Maritime and Estuarine Areas	International Association of Dredging Companies				EDI	T		DM		EF				
160	Marcus, S. Henry	Intermodal Movement of Marine Containers	MIT Sea Grant College Program					T	PI							
161	DeMonie, G.	Measuring and Evaluating Port Performance and Productivity	United Nations Conference on Trade and Development	CC				T						CT		
162	Office of Port and Intermodal Development	Port Economic Impact Kit	U.S. Department of Transportation, Maritime Administration									EF				
163	Bruun, Per	Port Engineering	Gulf Publishing Company	CC			EDI, EDB	T		DM	DC	EF				
164	Office of Port and Intermodal Development	United States Port Development Expenditure Survey	U.S. Department of Transportation, Maritime Administration	CC		FC										

ITEM	AUTHOR	TITLE	SOURCE	SUBJECTS: CURRENT PORT CAPACITY (CC), FORECAST OF TRADE (FT), FORECAST OF CAPACITY (FC), ENVIRONMENTAL - Dredging Impediments (EDI) or Beneficial Uses (EDB), TECHNOLOGICAL CHANGES (T), POLICY IMPACTS (PI), DREDGING MAINT. - Federal (DMF) or Non-Federal (DMNF), DREDGING CONSTRUCTION - Federal (DCF) or Non-Federal (DCNF), ECONOMICS and FINANCE (EF), LEGISLATIVE (L), CURRENT TRADE (CT), NAFTA (N), OTHER (O)														
165	Committee on Contaminated Marine Sediments	Contaminated Marine Sediments -- Assessment and Remediation	National Research Council, Marine Board				EDI			DMF	DCF						
166	Environmental Law Institute	Wetland Mitigation Banking	Environmental Law Institute				EDI	T	PI			EF					
167	Institute for Water Resources, Water Resources Support Center	Guidelines for the Establishment, Maintenance, and Operation of Wetland Mitigation Banks	U.S. Army Corps of Engineers				EDI		PI								
168	O'Connor, Dr. Joseph	Managing Dredged Materials: Evaluation of Disposal Alternatives in the New York-New Jersey Metropolitan Region	New York University/U.S. Army Corps of Engineers				EDI, EDB			DM							
169	Permanent International Association of Navigation Congresses	Beneficial Uses of Dredged Material: A Practical Guide	Permanent International Association of Navigation Congresses				EDI, EDB			DM	DC						
170	International Association of Ports and Harbors	Report on the Survey on the Disposal of Dredged Material, 1987-1990	International Association of Ports and Harbors				EDI, EDB			DM	DC						
171	Birgeles, Joseph J.	1992 Dredging and Disposal Survey	American Association of Port Authorities				EDI, EDB			DM	DC	EF					
172	Committee on Port & Ship Safety, Environment, and Construction	IAPH Guidelines for Environmental Planning and Management in Ports and Coastal Area Developments	International Association of Ports and Harbors				EDI, EDB			DM	DC						
173	U.S. Army Corps of Engineers	Dredging Desk Reference	U.S. Army Corps of Engineers				EDI, EDB	T		DM	DC						
174	American Association of Port Authorities	Strategic Planning Survey: Port Issues and Strategies	American Association of Port Authorities	CC			EDI			DM	DC	EF					
175	Lloyds's of London Press	Lloyd's Nautical Yearbook	Lloyd's of London Press	CC				T	PI				L				

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176	Institute for Shipping Economics and Logistics	Shipping Statistics Yearbook	Institute for Shipping Economics and Logistics	CC										CT		
177	Maritime Administration	United States Oceanborne Foreign Trade Routes	U.S. Department of Transportation, Maritime Administration	CC										CT		
178	United Nations Conference on Trade and Development Secretariat	Port Performance Indicators	United Nations	CC								EF		CT		
179	Office of Technology Assessment	Coal Exports and Port Development	U.S. Congress, Office of Technology Assessment	CC	FT		EDI	T	PI	DM	DC	EF	L	CT		
180	International Association of Ports and Harbors	IMO/IAPH Joint Survey on the Disposal of Dredged Materials	International Association of Ports and Harbors				EDI, EDB			DM	DC					
181	Permanent International Association of Navigation Congresses	Economic Methods of Channel Maintenance	Permanent International Association of Navigation Congresses				EDI, EDB	T		DM		EF				
182	Port Safety, Environment and Construction Committee	London Dumping Convention and Its Effects on World Ports: Activity Report (1979-1984)	International Association of Ports and Harbors				EDI		PI	DM	DC		L			
183	American Association of Port Authorities	Seaports of the Americas	American Association of Port Authorities	CC										CT		
184	Sherman, Rexford B.	Public Seaport Agencies in the United States and Canada	American Association of Port Authorities						PI				L			
185	American Association of Port Authorities	Public Port Development: Mitigation in the 1990s	American Association of Port Authorities				EDI		PI				L			
186	Commission on Engineering and Technical Systems	The Roles of Government and Industry in Research and Development for the Maritime Industries	National Research Council, Marine Board					T	PI		DC					

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187	Transportation Research Board	Maritime Transportation Strategic Planning	National Research Council, Transportation Research Board		FT	FC			PI				L	CT	N	O
188	Transportation Research Board	Port-Land Access: Public Policy Issues	National Research Council, Transportation Research Board		FT									CT		
189	Transportation Research Board	Facing the Challenge: The Intermodal Terminal of the Future	National Research Council, Transportation Research Board	CC		FC		T	PI							O
190	Transportation Research Board	Marine and Intermodal Transportation: Freight Movement and Environmental Issues	National Research Council, Transportation Research Board	CC		FC		T				EF				O
191	Transportation Research Board	Ports, Waterways, Rail, and International Trade Issues	National Research Council, Transportation Research Board					T	PI			EF		CT	N	O
192	Maritime Administration	Untangling Dredging Regulations	U.S. Department of Commerce, Maritime Administration				EDI, EDB		PI	DMF, DMNF			L			
193	New England River Basins Commission	The Dredging Dilemma: System Problems and Management Solutions	New England Governors' Conference				EDI	T	PI	DMF						
194	Kagan, Robert A.	The Dredging Dilemma: How Not to Balance Economic Development and Environmental Protection	University of California, Berkeley				EDI						L			
195	McSweeny, James and Edward Margolin, Committee on National Dredging Issues	Analysis of the Impact and Incidence of Alternate Deep Water Port Cost Recovery Mechanisms	National Research Council, Marine Board	CC						DM		EF				
196	Transportation Research Board	Impediments to Landside Access to U.S. General Cargo Ports	National Research Council, Transportation Research Board				EDI	T	PI				L			

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197	Lloyd's Maritime Information Services Ltd. and DRI/McGraw-Hill	World Fleet Forecast Service	Lloyds Maritime Information Services Ltd. and DRI/McGraw-Hill		FT									CT		
198	Reed, Mark and Victor J. Bierman, Jr., eds.	Proceedings of a Workshop for the Development of a Scientific Protocol for Ocean Dump Site Designation	Applied Science Associates, Inc. and U.S. Environmental Protection Agency				EDI	T	PI				L			
199	Francingues, N.R., Jr. and Palermo, M.R.	Management Strategy for Disposal of Dredged Material, Vol.1 of Dredging and Dredged Material Disposal	American Society of Civil Engineers				EDI			DM	DC					
200	American Society of Civil Engineers	Dredging and Dredged Material Disposal	American Society of Civil Engineers				EDI	T		DM	DC					
201	Central Dredging Association	Environmentally Acceptable Methods of Dredging and Handling Harbour and Channel Sediments	Central Dredging Association				EDI, EDB	T		DM	DC					
202	Palermo, M.R., N.R. Francingues, C.R. Lee, and R.K. Peddicord	Evaluation of Dredged Material Disposal Alternatives: Test Protocols and Contaminant Control Measures	Eleventh World Dredging Congress				EDI	T								
203	Permanent International Association of Navigation Congresses	Disposal of Dredged Material at Sea	Permanent International Association of Navigation Congresses				EDI, EDB									
204	Permanent International Association of Navigation Congresses	Disposal of Contaminated Dredged Material at Sea	Permanent International Association of Navigation Congresses				EDI									
205	U.S. Army Corps of Engineers	Dredging and Dredged Material Disposal, Engineer Manual 1110-2-5025	U.S. Army Corps of Engineers				EDI, EDB	T		DM	DC					
206	U.S. Army Corps of Engineers	Beneficial Uses of Dredged Material, Engineer Manual 1110-2-5025	U.S. Army Corps of Engineers				EDB									

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207	Permanent International Association of Navigation Congresses	Disposal of Dredged Materials at Sea, Supp. to Bulletin No.52	Permanent International Association of Navigation Congresses				EDI	T									
208	Brannon, J.M., R.E. Hoeppel, and D. Gunnison	Efficiency of Capping Contaminated Dredged Material, Vol.2 of Dredging and Dredged Material Disposal	American Society of Civil Engineers				EDI	T									
209	Controller General of the United States	Managerial Changes Needed to Speed Up Processing Permits for Dredged Projects	Committee on Merchant Marine and Fisheries, U.S. House of Representatives										L				
210	Hammon, Alfred	The Water Resources Development Act of 1986, article in Marine Policy Reports	University of Delaware										L				
211	Engler, R.M.	Managing Dredged Materials, Vol.33, No.2 , article in Oceanus	Woods Hole Oceanographic Institute				EDI										
212	NA	Dredging and Port Construction	NA								DCF, DCNF						
213	Graves, S.C., M. Horwitch, and E.H. Bowman	Deep-Draft Dredging of the U.S. Coal Ports: A Cost-Benefit Analysis, Vol.17, article in Policy Sciences	NA														
214	Kamlet, K.S.	Dredged-Material Ocean Dumping: Perspectives on Legal and Environmental Impacts, Vol.2, article in Wastes in the Ocean, Dredged-Material Disposal in the Ocean	Wiley & Sons				EDI, EDB						L				
215	Feldman, R. and E. Haber	Bibliography of Selected National Dredging Issues, Vol.2	National Research Council														O
216	Drewery Shipping Consultants		Drewery Shipping Consultants														O
217	Lloyd's Register	Lloyd's Register of Shipping	Lloyd's Register														O
218	Lloyd's of London Press		Lloyd's of London Press	CC													O
219	BRL Marine	BRL Marine Database	BRL Marine														O

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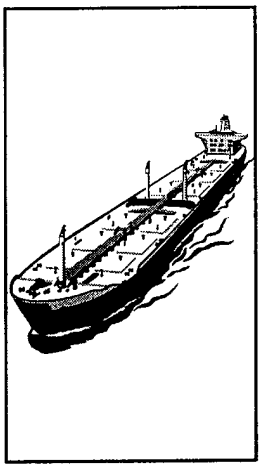
220	Clarkson Research Studies, Ltd.		Clarkson Marine Data Base													O
221	Fernley's		Fernley's													O
222	Noritake, Michihiko	Congestion, Cost and Pricing of Seaports, article in Journal of Waterways and Harbors Division	American Society of Civil Engineers	CC								EF				
223	Abernathy, W.A.	On Operation, Labour & Logistics	International Association of Ports and Harbors													O
224	Porter, McNeil, CSX-Sealand, Baltimore	Impact of Intermodalism on Ports	International Association of Ports and Harbors					T								O
225	Sub-Committee on Port Safety and Environment	Practical Guidelines for Ports on Environmental Issues--Soil Pollution in Ports	International Assocation of Ports and Harbors				EDI, EDB									
226	Sub-Committee on Port Safety and Environment	Survey on the Eleven Environmental Priorities in Port	International Assocation of Ports and Harbors				EDI									
227	Haar, H.R., Jr., New Orleans	Dredging and Environment	International Assocation of Ports and Harbors				EDI, EDB			DM	DC					
228	Smagghe, Jean, Port Autonome du Havre, France	The Consequence of the Changing World on Maritime Trade and Its Effect on Ports	International Assocation of Ports and Harbors		FT			T						CT		
229	Liburdi, Lillian, Port Authority of New York & New Jersey	Port Promotion in the Shifting Winds of Trade	International Assocation of Ports and Harbors		FT									CT		
230	Lee, Dwayne, Port of Los Angeles	Recent Dredging Experiences of International Ports	International Assocation of Ports and Harbors				EDI, EDB	T		DM	DC					
231	Jurriens, Kick, Port of Rotterdam, the Netherlands	Environment and Ports Development in a Changing World	International Assocation of Ports and Harbors				EDI, EDB	T								
232	Herbich, John B.	The Handbook of Dredging Engineering	McGraw-Hill, Inc					T		DM	DC					



Appendix B - Literature Search Contents

Department of Transportation

U.S. Maritime Administrative Office of Support 202-366-4357--Bill Dean, Crystal Reese
"Report on the Status of the Public Port Industry"
"Public Port Capital Expenditures Survey"
"Landside Access to U.S. Ports"
"Survey on Landside Transportation Access to U.S. Ports"
"United States Port Development Expenditure Report"
"A Report to Congress on the Status of the Public Ports of the United States"
"National Port Assessment 1980/1990: An Analysis of Future U.S. Port Requirements"

Bureau of Transportation Statistics
"Directory of Transportation Data Sources"

House and Senate Committees

Commerce, Science, and Transportation Committee
National Ocean Policy Study

Department of the Interior

Ecological Services
Fish and Wildlife Service 703-358-2183--Ralph Swanson

Transportation Research Board (TRB)

Division A, Technical Activities 202-334-3205--Jeff Factire 202-334-2003 (fax)
Library 202-334-2933--Stephanie Smith
TRIS search
Publications Office 202-334-3213
Circular #427: "The Environmental Regulatory Process, Does It Work? Dredging U.S. Ports"
Interim Report: "Impediments to Landside Access to U.S. General Cargo Ports"
Special Report #234: Data for Decisions: Requirements for National Transportation Policy Making"
Record #1263: "Ports, Waterways, Rail, and International Trade Issues 1990"

Special Report #240: "ISTEA and Intermodal Planning: Concept, Practice, Vision"
Circular #391: "Port-Land Access: Public Policy Issues"
Circular #392: "Maritime Transportation Strategic Planning"
State of the Art Report #4: "Facing the Challenge: The Intermodal Terminal of the Future"
Record #1333: Marine and Intermodal Transportation: Freight Movement and Environmental Issues"

Marine Board, National Research Council 202-334-2000

Sharon Russell
"Analysis of the Impact and Incidence of Alternate Deep Water Port Cost Recovery Mechanisms"

American Association of Port Authorities 703-684-5700
Tony McDonald
Rex Sherman, Director of Research

Environmental Protection Agency (EPA)

John Gooden 202-260-9910
Tom Chase 202-260-1909

International Association of Ports and Harbors

European office 011-44-71-242-1200--Betty
Main office (Tokyo, Japan) fax 011-81-3-3580-0364--R. Kondoh
"Industrial Ports and Economic Transformations"
Terra et Aqua (periodical published by the International Association of Dredging Companies-IADC)
"Dredging for Development"
"Port Development in the United States (Status, Issues and Outlook)

Permanent International Association of Navigation Congresses--PIANC

DuWayne Koch, U.S. Representative 202-504-4312
Washington, D.C. library 202-272-1008

The Society of Naval Architects and Marine Engineers 201-798-4800
Charlie Wilson
Debbie, Publications Officer
"Index of SNAME Publications"

American Association of State Highway and Transportation Officials

"Survey of State Funding of Landside Port Facilities, Cargo Terminals and Harbor Improvement Projects, 1977-1988"

Massachusetts Maritime Academy 508-830-5000

TRIS Search performed here

State University of New York, Stony Brook

Jeri Schoof 516-632-8701

New England River Basins Commission 617-423-6900

"The Dredging Dilemma: System Problems and Management Solutions"

Mass Maritime Academy 508-830-5000

Woods Hole Oceanographic Institute 508-548-1400

"Managing Dredged Materials," Vol.33, No.2, article in *Oceanus*

NY/NJ Port Authority

Mr. Burgellas, Research

World Bank 202-477-1234

Sonya Payne, Publications 202-473-2211
"Environmental Considerations for Port and Harbor Developments"

United Nations 212-963-1234

Applied Science Associates, Inc. 401-789-6224
Liz fax: 401-789-1932
"Proceedings of a Workshop for the Development of a Scientific Protocol for Ocean Dumpsite Designation"

McGraw-Hill

S&P Library-- Rick Purdue

Drewry Shipping Consultants 011-44-71-538-0191

Jeanette Soper, Publications

Fairplay Information Systems 011-44-81-645-2840

Lloyd's Register of Shipping 212-425-8050

Lloyd's of London Press 212-529-9500

Clarkson's 011-071-283-8955

Fernley's 011-071-224-4888

Other Contacts:

Coast Guard (New London, CT) 203-444-8510

Other House and Senate Committees:
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International Longshoremen's and Warehousemen's Union 415-775-0533
Russ Barkman, Research director
Gene Varna, Librarian

International Longshoremen's Association 215-425-1200

National Longshoremen's Labor Board

International Association of Great Lakes Ports 416-863-2035

Society of Marine Port Engineers 908-381-7673

Department of Transportation
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13. ABSTRACT *(Maximum 200 words)*

This Literature Search presents a synopsis of existing literature concerning the current situation of ports in the United States. The studies and reports which were reviewed are from public and private sources and discuss the following pertinent issues: port capacity; forecast of trade; forecast of capacity; environmental dredging impediments or beneficial uses; technological changes; policy impacts; dredging maintenance; dredging construction; economics and finance; legislative and current trade. These studies and reports, as a group, describe the current status of the U.S. port system and relate levels of commerical use, projected growth, usage of harbors, development of landside facilities, physical limitations of the ports, and trade impacts caused by policy decisions. A bibliography is presented which includes 232 citations.

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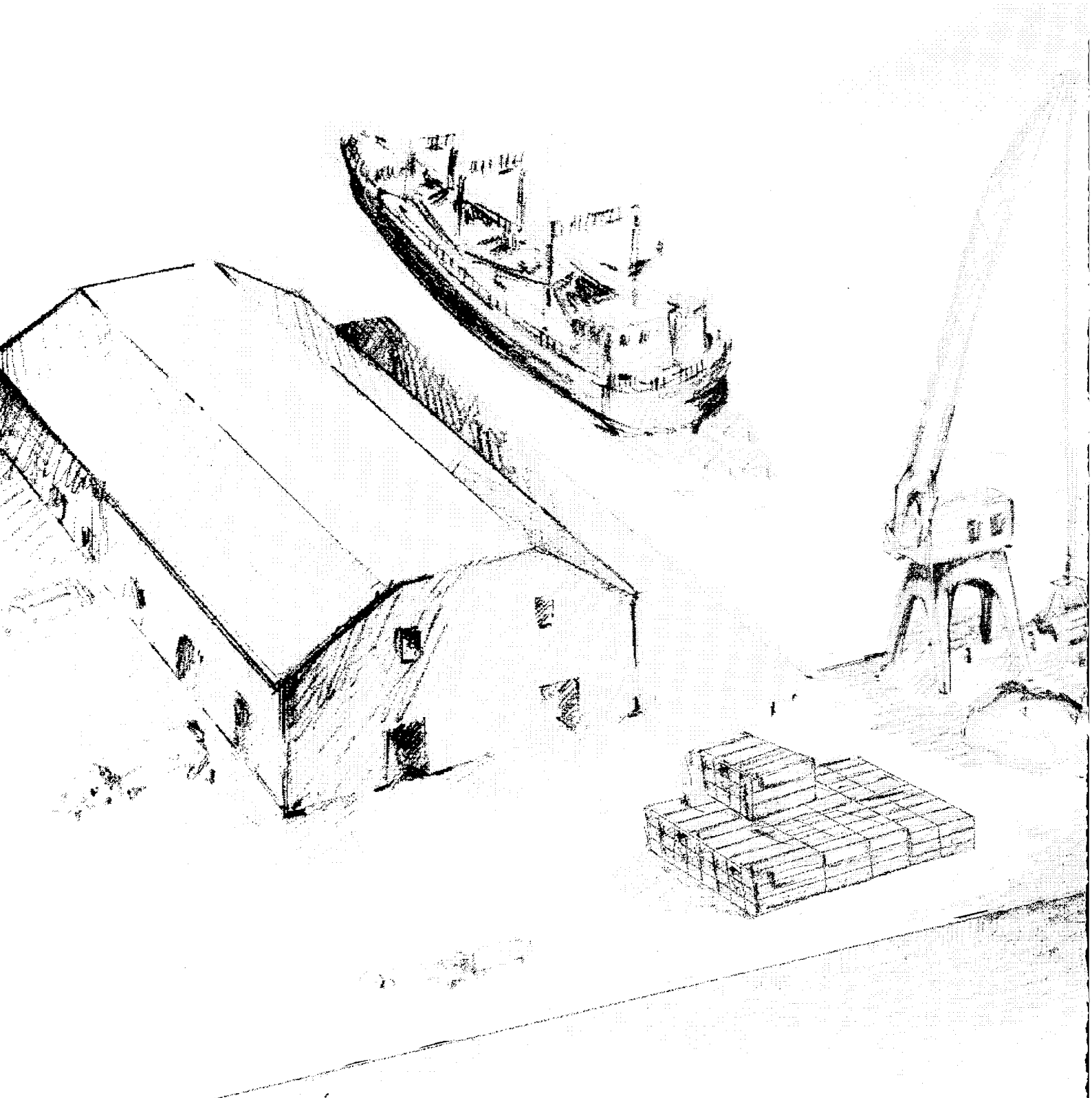

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