



Port Planning and Investment Toolkit

Introduction and User's Guide



U.S. Department of Transportation

Maritime Administration



American Association
of Port Authorities

Alliance of the Ports of Canada, the Caribbean, Latin America and the United States



Preface

This Port Planning and Investment Toolkit was developed through a cooperative agreement between the United States Department of Transportation (USDOT), Maritime Administration (MARAD) and the American Association of Port Authorities (AAPA) [DTMA-91-H-2013-0004]. Opinions or points of view expressed in this document are those of the authors and do not necessarily reflect the official position of, or a position that is endorsed by, the United States (U.S.) Government, USDOT, or any sub-agency thereof. Likewise, references to non-Federal entities and to various methods of infrastructure funding or financing in this document are included for illustrative purposes only and do not imply U.S. Government, USDOT, or subagency endorsement of or preference for such entities and funding methods.

This document is not a replacement of existing policies or consultation handbooks and does not constitute a standard, specification or regulation. The exhibits, processes, methods and techniques described herein may or may not comply with specific national, state, regional and local regulatory requirements.

All material included in the Toolkit is copyrighted, 2019 by AAPA. The materials may be used for informational, educational or other non-commercial purposes. Any other use of the materials in this document, including reproduction for purposes other than described above, distribution, republication and display in any form or by any means, printed or electronic, is prohibited without the prior written permission of the AAPA.

The Toolkit will be updated periodically as new regulations and policies are developed affecting port planning, feasibility and investment requirements related to the applicable laws discussed in the specific modules. Additional information, updates, and resources of the Toolkit are available on the AAPA website at <http://www.aapa-ports.org/PPIT> and the MARAD website at <https://www.maritime.dot.gov/ports/port-planning-and-investment-toolkit>.

For all other queries regarding the Toolkit, please contact Aaron Ellis, Public Affairs Director, AAPA at 703-684-5700.

JUNE 2019



Introduction

In response to a growing population, shifts in the global freight supply chain, and increased congestion at U.S. ports and along the intermodal system, commercial ports are investing in infrastructure and technologies to provide capacity for the future, efficiently integrate landside connections, and meet the societal needs of the wider community. The challenge ports are facing is identifying and defining projects that are operationally and financially attractive to port stakeholders, as well as government agencies, external investors and the public, while also supporting the port's strategic objectives, and timeliness for a successful project outcome.

Purpose & Need

To address this challenge, the American Association of Port Authorities (AAPA) and the U.S. Department of Transportation (USDOT), Maritime Administration (MARAD) organized a team of U.S. port industry experts to develop an easy-to-read, easy-to-understand, and easy-to-execute Port Planning and Investment Toolkit (PP&IT or Toolkit).

The goal of the project is to provide U.S. ports with a resource that offers a common framework and examples of best practices when planning, evaluating and funding/financing freight transportation, facility and other port-related improvement projects.

This Toolkit focuses on the efforts involved in defining a project and the development of a project plan in support of pursuing project financing and/or funding.



The Toolkit consists of a collection of modules that focus on various types of projects for ports of all sizes and markets. The first module identifies the important considerations that should be included in the project development and financing process for a wide range of port projects and establishes the framework for subsequent modules.

The analytical tools and guidance contained in this comprehensive resource are designed to aid ports in developing "investment-grade" project plans and obtain capital for their projects in a variety of ways, including: (1) improve the chances of getting port infrastructure projects into Metropolitan Planning Organization (MPO) and state transportation programs to qualify for formula funding; (2) better position port projects for federal aid; and (3) assist ports in obtaining private sector investment.

Context

Since the range of users is diverse, the term port owner in the Toolkit modules encompasses port authorities, terminal operators, private companies, and project sponsors that own and/or operate a port.



A port is considered to be a single- or multiple-facility entity that enables the transfer of cargo and/or passengers between logically-linked transport modes (e.g., truck to barge to ocean-going vessel). A port may provide services at inland multimodal facilities as well as along navigable waterways.

In a given year, a port owner may undertake any one or several planning efforts (Exhibit I-1) that lead to potential port projects. Comprehensive planning outcomes typically include the identification of future port developments and potential projects. Project-specific planning efforts involve the definition of a project and culminate in a project plan in support of pursuing project financing and/or funding.

Although port planning efforts occur at different stages and at varying degrees of specificity ranging from strategic to tactical, they are often interconnected such that the decision cycles resulting from one planning effort can influence the outcomes of other efforts.

In addition, any of the comprehensive planning efforts can provide input into the development of project plans, and project plans in turn can influence the identification of other potential projects.

For example, a strategy to increase refrigerated cargo business as an outcome of a port's Strategic Plan may cause higher local truck traffic and create a need for additional warehouse space and reefer plugs, impacting the Regional Goods Movement Plan and the port's Operations & Maintenance Plan and Capital Improvement Plan, among others. Similarly, a Transportation Access Plan that identifies a need for an overpass at the port impacts the port's Land Use Plan, Stormwater Plan, and Inter-Terminal Plan.

Comprehensive Planning: Identification of Potential Projects

Comprehensive planning efforts have been organized into three groups with associated ranges of focus:

- Direction (long to short term);

Exhibit I-1: Examples of Port Planning Efforts

COMPREHENSIVE						PROJECT-SPECIFIC	
Direction		Operation		Resource		Project	
Long Term	Strategic Master Land Use Economic Development	External Focus	Sustainability Clean Air Action Risk Management Business Continuity Climate Change Stormwater Hazardous Material Inter-Terminal Operations & Maintenance	Regional Focus	Regional Integration Goods Movement Transportation Access Navigation/Dredging Capital Investment Capital Improvement Redevelopment Security Energy Asset Management	New/ Expand	Renovate
Short Term	Business Marketing	Internal Focus	Outcomes <i>Vision</i> <i>Goals</i> <i>Objectives</i> <i>Strategies</i> <i>Actions</i> <i>Operational Needs</i> <i>Resource Needs</i> <i>Potential Projects</i>	Outcomes <i>Process Improvement</i> <i>Program</i> <i>Priorities</i> <i>Efficiencies</i> <i>Operational Needs</i> <i>Resource Needs</i> <i>Potential Projects</i>	Outcomes <i>Resource Enhancement</i> <i>Program</i> <i>Priorities</i> <i>Operational Needs</i> <i>Resource Needs</i> <i>Potential Projects</i>	Site Terminal Infrastructure Facility Equipment Service	Outcomes <i>Project Plan</i> <i>Plan of Finance</i> <i>Reasonable Project Alternatives</i> <i>Recommended Project</i> <i>Investment Strategy</i> <i>Financeable Project</i>
Identification of Potential Projects						Project Definition	
<i>Strategic/Conceptual</i>				<i>Tactical/Defined</i>			



INTRODUCTION/USER'S GUIDE

- Operation (external to internal); and
- Resource (regional to port) planning.

Direction planning documents such as master plans and land use plans typically clarify and communicate a port's vision, goals and objectives. This type of comprehensive planning is critical for guiding a port owner's development and management of land, infrastructure and facilities over a period of 10 to 20+ years. Similarly, strategic plans typically outline a port's market position and direction, ensuring that resources are allocated to achieve the port owner's defined goals and objectives. Business and marketing plans present shorter-term actions to support a port's long-term plans. Port owners should undertake a *Direction* planning effort before beginning to define specific projects, with the exception of projects that emerge suddenly.

Port owners may also complete more detailed *Operation* planning efforts to sustain or improve the port's service and address impacts resulting from the port's operation.

Resource planning efforts focusing on enhancing regional and port-specific assets are most likely to generate potential projects, requiring capital investment and a project plan.

These three groups of comprehensive planning efforts usually involve:

- Developing or refining a port's vision, goals and objectives
- Quantifying a port's needs, capabilities and the gap between
- Conducting outreach with the stakeholders, including the public and nearby community, as well as resource agencies (local, regional, state and federal)
- Identifying actions, developments or improvements that can fill the gap between needs and capabilities
- Considering possible social, economic and environmental impacts and requirements

All planning efforts should proactively consider compatibility with laws and regulations that may be applicable to a potential project. Early consultation with community organizations, the public, and local, regional, state and federal agencies will help inform the planning process going forward, expedite project developments when they come to fruition and help to secure stakeholder support.

Project-Specific Planning: Project Definition

Once a potential project is identified as a result of a comprehensive planning effort or to address an unexpected or emergent need, the planning focus shifts to defining the project. Project-specific planning should be completed to define the exact scope and impacts of a potential project before a port owner can convince local, state, federal and/or private partners to make monetary investments.

Efforts for defining a project include:

- Establishing project needs, capabilities, opportunities and constraints
- Conducting outreach with the stakeholders and resource agencies (community, local, regional, state and federal)
- Demonstrating project fitness, feasibility and cost
- Justifying project value, benefits and impacts
- Establishing the project's timeline
- Identifying needed funding and financing sources

Activities within the structure of the project-specific planning process are often similar to comprehensive planning efforts, such as quantifying needs and capabilities, stakeholder outreach and assessing impacts, differing primarily in scale and level of detail. Thus, port owners embarking upon comprehensive planning efforts will find value in the guidance provided in this Toolkit.



User's Guide

This User's Guide provides direction to Toolkit users when accessing the various modules and resources in the Toolkit. The Toolkit has been organized to help the user quickly understand and gain access to the appropriate content of interest. Each Toolkit module is comprised of an **Introduction** that provides the *Purpose and Need* of the module, as well as the *Context* and *Outline*; and three sections that are aligned with the primary phases involved in project definition: **Planning**, **Feasibility** and **Financing**. The *Context* defines key terms and concepts to help convey the module's content to the user. The *Outline* describes the module's general structure to assist the user with navigating through the document.

The **Planning** Section of each module provides guidance to the user when beginning to identify factors that must be addressed when planning for the port project. This section provides clearly defined steps of the planning efforts needed to support a financeable project.

The **Feasibility** Section of each module addresses the process of refining a project plan by considering all aspects of cost, risk, and reward. This section includes approaches for assessing and evaluating the benefits and costs of project alternatives created during the planning phase.

The **Financing** Section of each module describes different approaches for evaluating project financing strategies and identifying ways to obtain grant funding and public/private financing. It includes examples of financing strategy solutions designed to address a variety of needs.

Modules may include additional sections to take into account different aspects of specific project types. In general, seven elements make up the primary phases, as shown in Exhibit I-2, to provide a high-level structure for the Toolkit modules.

Exhibit I-2: Module Phases and Elements



Appendices are included to provide usable resources related to each module. A Glossary of Terms defines key terminology in each module, providing a common basis of communication. Click on a word or phrase that is italicized and underlined in light blue as shown *here* to be taken directly to the Glossary to view its definition.

Project profiles are presented in the Appendix or integrated throughout each module. The profiles provide users with different real-world project examples that demonstrate best practices.

Supplemental materials in the Appendices address a range of topics specific to the module. For example, the General Projects Module includes methods for assessing *Throughput Capacity* and *Trade Demand* in the Appendices.

The Toolkit also provides a Resource Catalog and a Port Concession Evaluation Model. The *Resource Catalog* is a searchable spreadsheet containing references and links to applicable studies and reports, academic papers, trade publications and other pertinent material on port planning and feasibility.

The *Port Concession Evaluation Model* is a sample financial model provided for illustrative purposes that can be used for considering key elements of a financial feasibility analysis and financing strategy for a port terminal concession.

**U.S. Department of Transportation
Maritime Administration
West Building
1200 New Jersey Avenue, SE
Washington, DC 20590**

**American Association of Port Authorities
1010 Duke St.
Alexandria, VA 22314**



**U.S. Department of Transportation
Maritime Administration**



**American Association
of Port Authorities**

Alliance of the Ports of Canada, the Caribbean, Latin America and the United States