AAPA American Association of Port Authorities
Alliance of the Ports of Canada, the Caribbean, Latin America and the United States

Port Financing, Investment and Development Initiatives

October 3, 2017

Blair Garcia
US Director – Maritime Division

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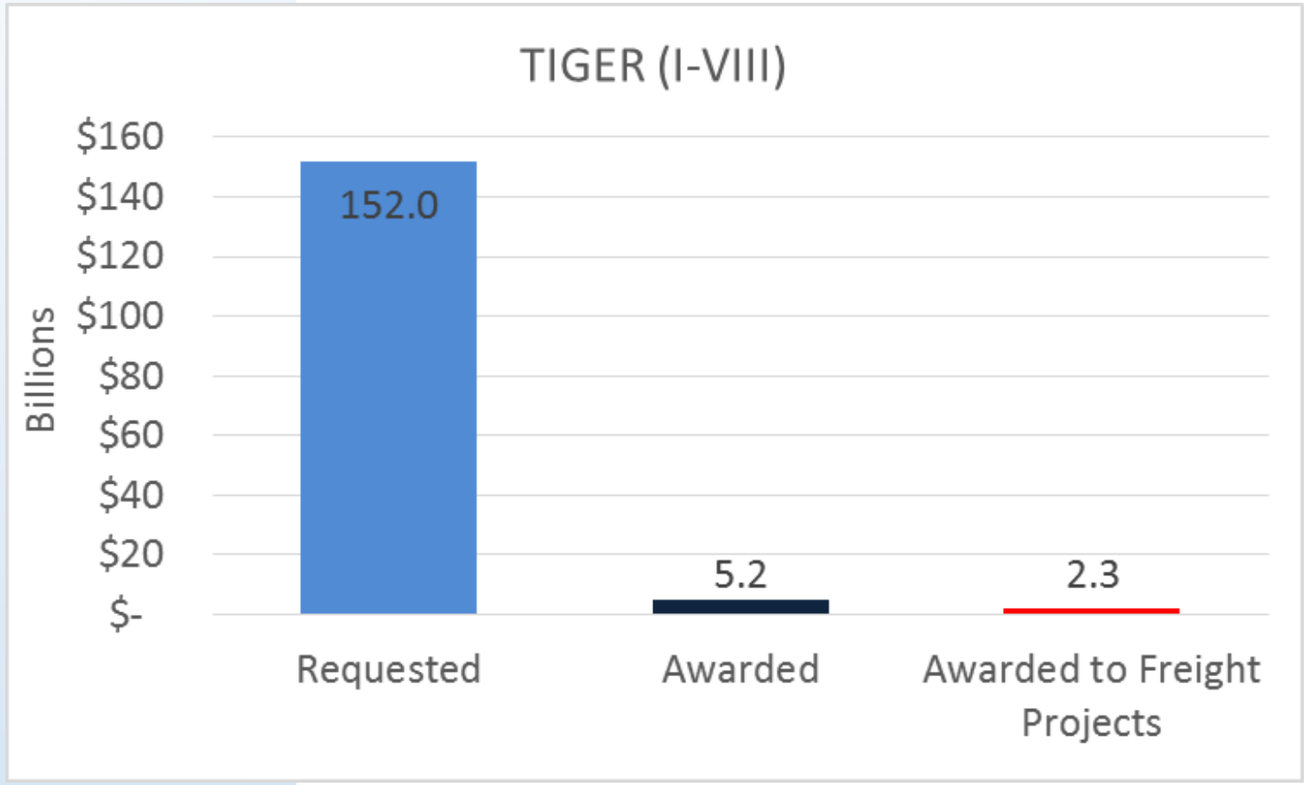
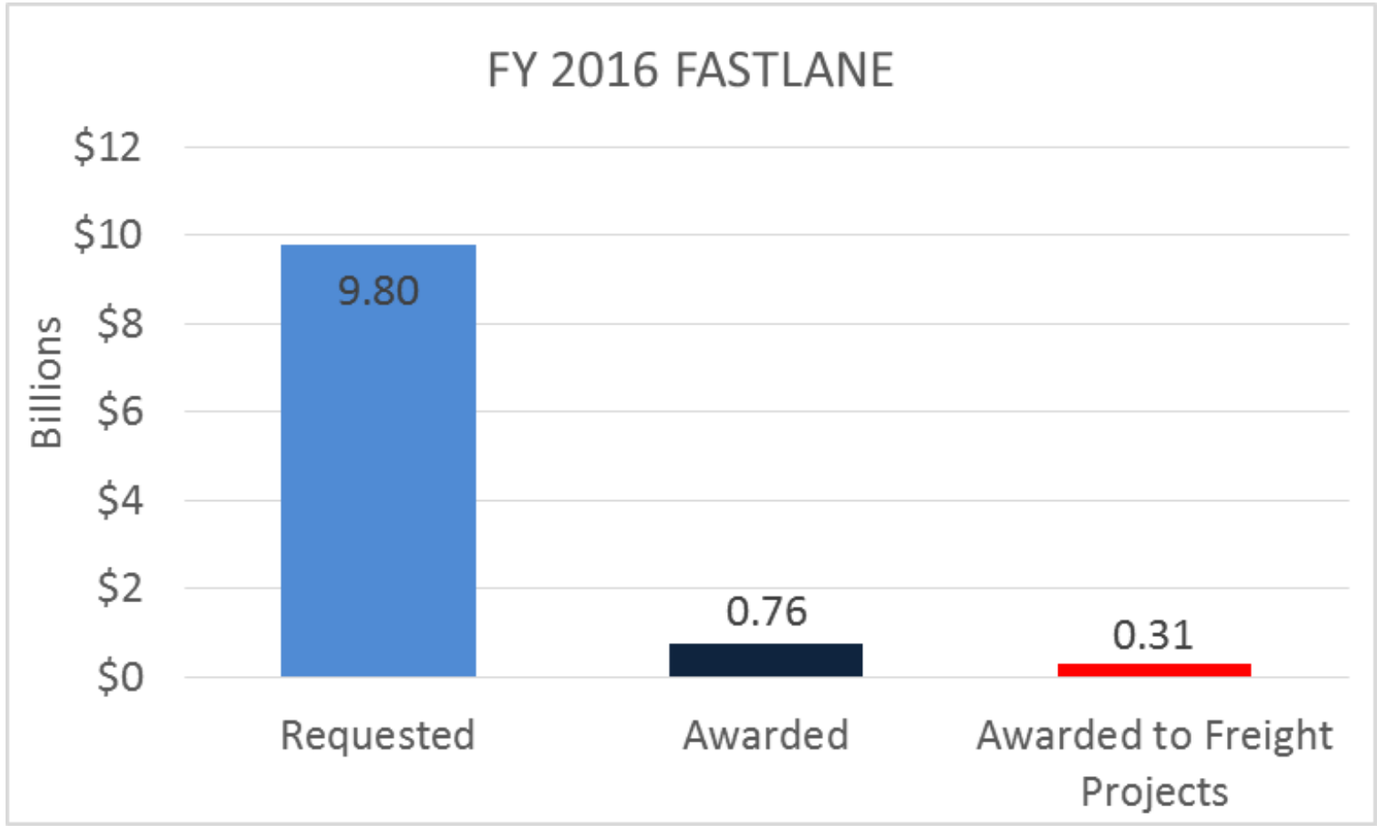
Historic Port Infrastructure Funding



TIGER

- During the previous eight rounds, USDOT received more than 7,500 applications requesting more than $152 billion for transportation projects

Historic Port Infrastructure Funding



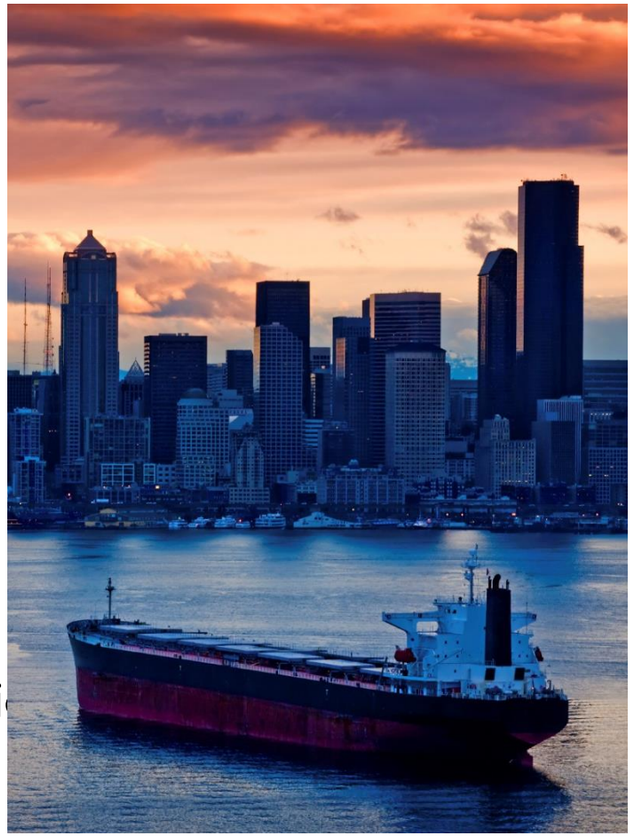
Port Planning & Investment Toolkit (PPIT)

- Develop capital plans that clearly identify future needs;
- Determine the most cost-effective, sustainable and efficient solutions to port challenges;
- Position port projects for federal funding such as TIGER, FASTLANE/INFRA and MPO grants; and
- Get port infrastructure projects into MPO and state transportation programs to qualify for other government funding;
- Obtain private sector funding to support their infrastructure projects.

The possible applications of the Toolkit are broad!

PPIT Working Group

- Initial Pool of Volunteers
  - Led by:
    - Jean Godwin – AAPA
    - Lauren Brand – MARAD
    - Stephen Shafer - MARAD
  - 64 Port Staff & Consultant Volunteers
- Table of Contents Working Group
  - 14 Volunteers
  - Multiple areas of expertise
- Planning & Feasibility Modules Working Group
  - 9 Volunteers
  - Primarily engineering/planning, marketing and economi
- Finance Module Working Group
  - 16 Volunteers
  - Primarily finance, legal and accounting experts



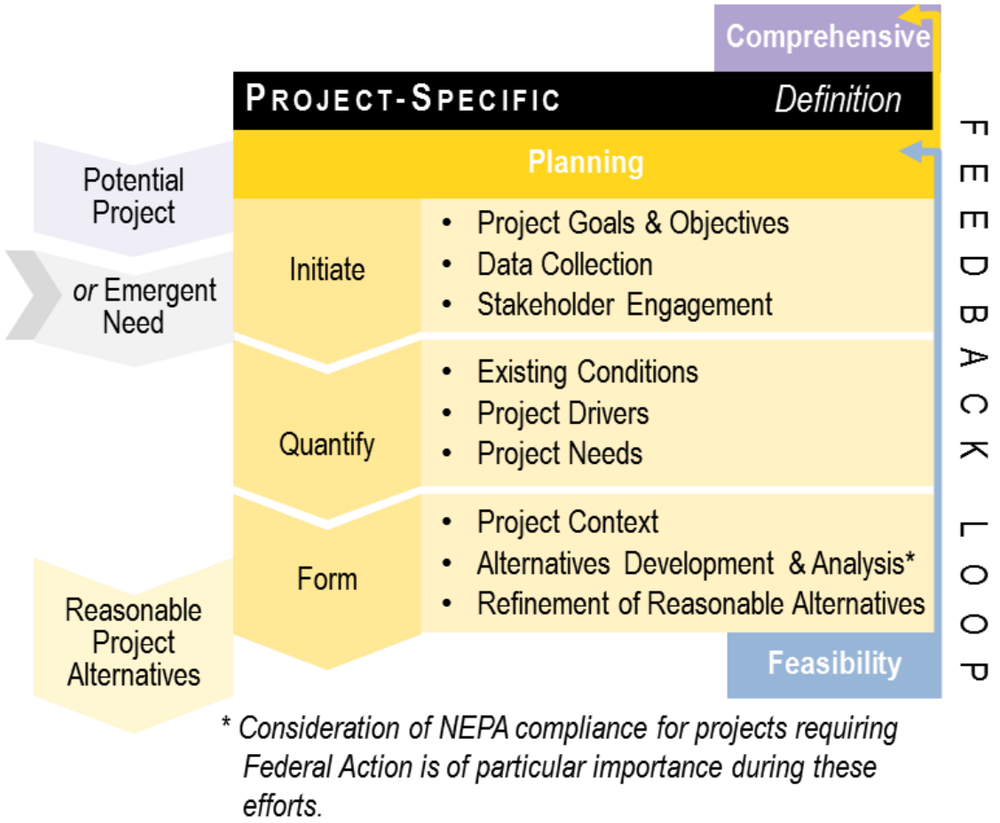
AAPA Professional Port Managers (PPM) Blair Garcia, Elizabeth Ogden, Matt Gresham and Chris Bonura developed the User's Guide and coordinated the working groups.

Project Definition Process

- The Toolkit can be used to lead a port through a logical and thorough step-by-step process to make sound investment decisions
- The key is that planning, feasibility and finance decisions can be made based on certain thought processes, and adapted to specific and changing circumstances of each port project under consideration.

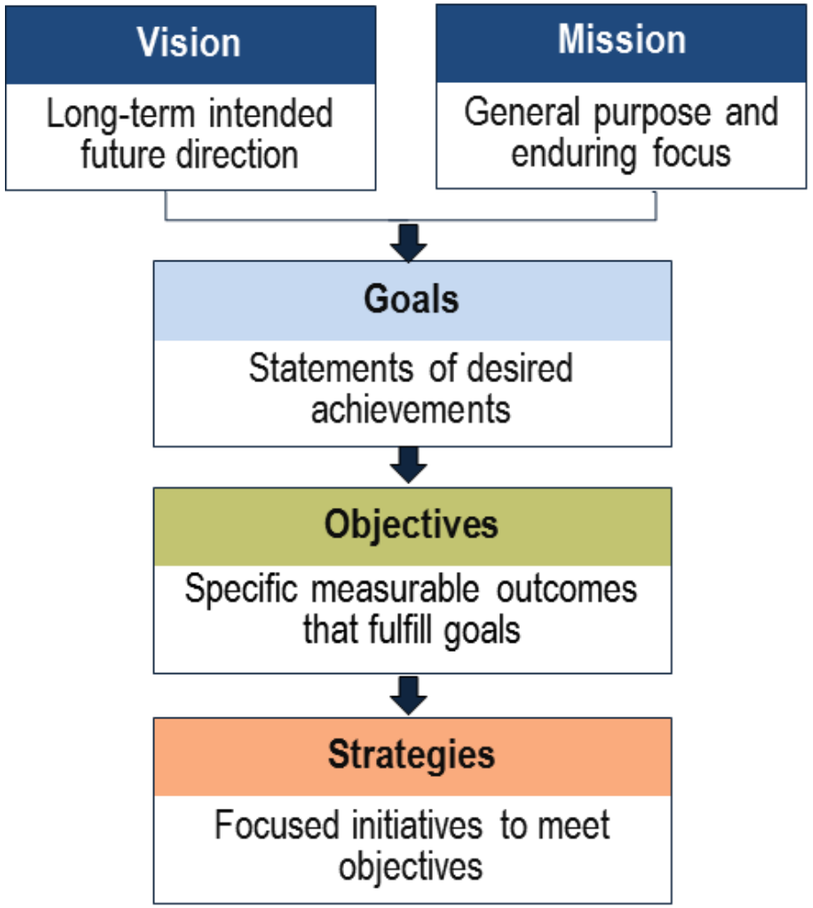
Planning Module

- *Planning Module* clearly defines the planning road map required for successful project financing and funding
- Guides users through a common set of planning concepts and methods
- Maintain a highest and best use strategy for port resources with regard to market, community, environment, land-use, economic, and financial considerations



* *Consideration of NEPA compliance for projects requiring Federal Action is of particular importance during these efforts.*

Initiate: Goals & Objectives



- Every project begins with an initiation effort that involves developing a thorough understanding of the port's needs that led to the project
  - Data Collection
  - Stakeholder Engagement
  - Project Goals and Objectives

Initiate: Data Collection

Strategic	Infrastructure	Operational	Market	Financial
Port Planning Documents	Site Boundaries and Adjacencies	Vessel Statistics	Historical Port Volumes	Life Cycle Costs
Land Use Studies	Facility Configuration Plans	Berth Operating Statistics	Market Forecasts	Revenue
Waterfront and Near - Waterfront Land Ownership Documents	Maps and Aerials of Existing Sites, Facilities and Infrastructure	Yard Operating Statistics	Freight Origins-Destinations Surveys and Statistics	Cost of Capital/ Evaluation Discount Rate
Port Business and Management Documents	Truck and Rail Access, Inland Rail and Highway Networks	Equipment Inventory	Customer Leases/Contracts	Asset Depreciation
Regional Economic and Business Data	Inspection/ Condition Assessment Surveys and Reports	Equipment Deployment Patterns and Productivities	Competitor Port Documents	Tariffs
Transportation Plans and Improvement Program Documents	Waterside Access	Labor Deployment Patterns	Carrier Schedules, Capacity and Fleet Sizes	Macroeconomic Forecasts (Consumer Price Index & Interest Rates)
State/Local Freight Plans	Environmental Site Assessment Reports	Labor agreements		Contracting Requirements

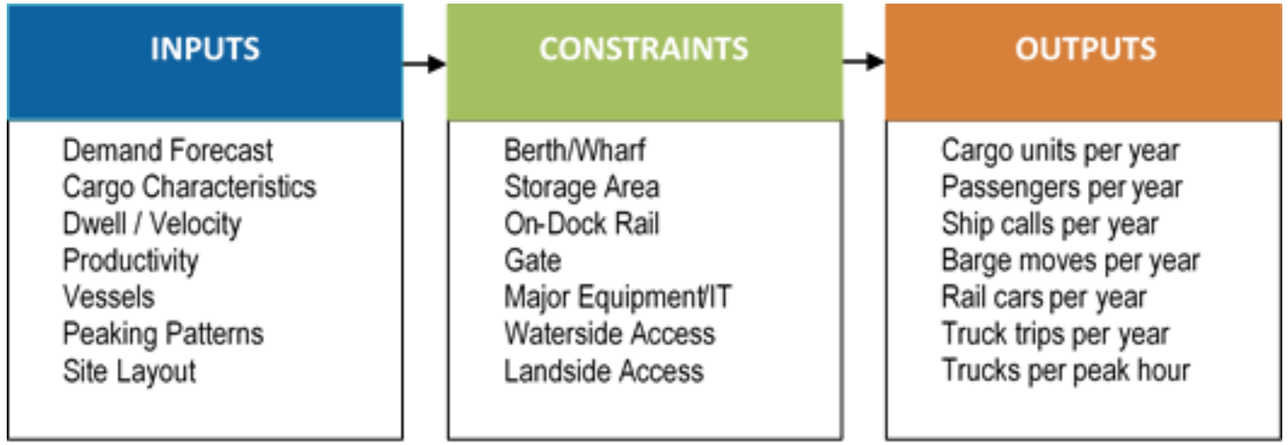
Initiate: Stakeholder Engagement

Potential Port Project Stakeholders

- Terminal operators and tenants
- Ocean carriers
- Cargo owners
- Stevedore/terminal labor
- Community and neighbors
- Inland transportation providers: truckers and rail lines
- Logistics providers: warehousing suppliers, shippers
- Financial/infrastructure investors
- Local/tribal governments
- Environmental agencies
- Regulators
- Metropolitan planning organizations (MPO)
- Regional planning boards
- State transportation authorities/departments
- Non-governmental organizations

Quantify: Existing Conditions

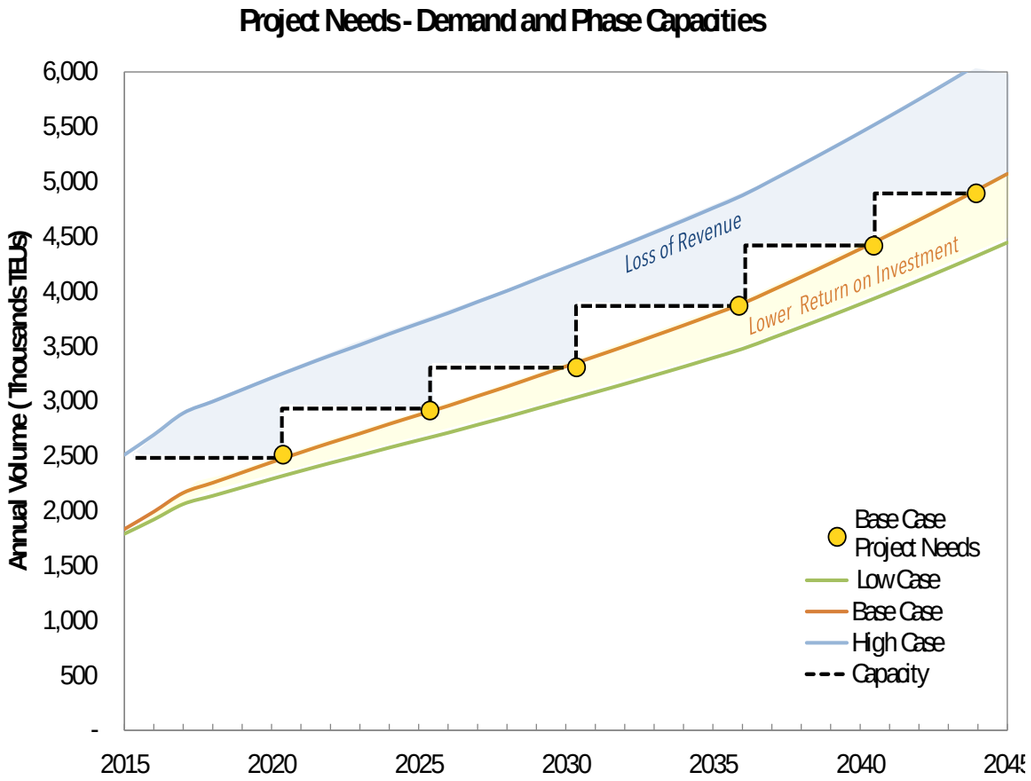
- Identify and quantify the Port's needs by comparing its current capabilities to its potential opportunities and requirements of stakeholders and the community
  - Assets
  - Operations
  - External Influences
  - Volumes & Trade Flows
  - Capacity:



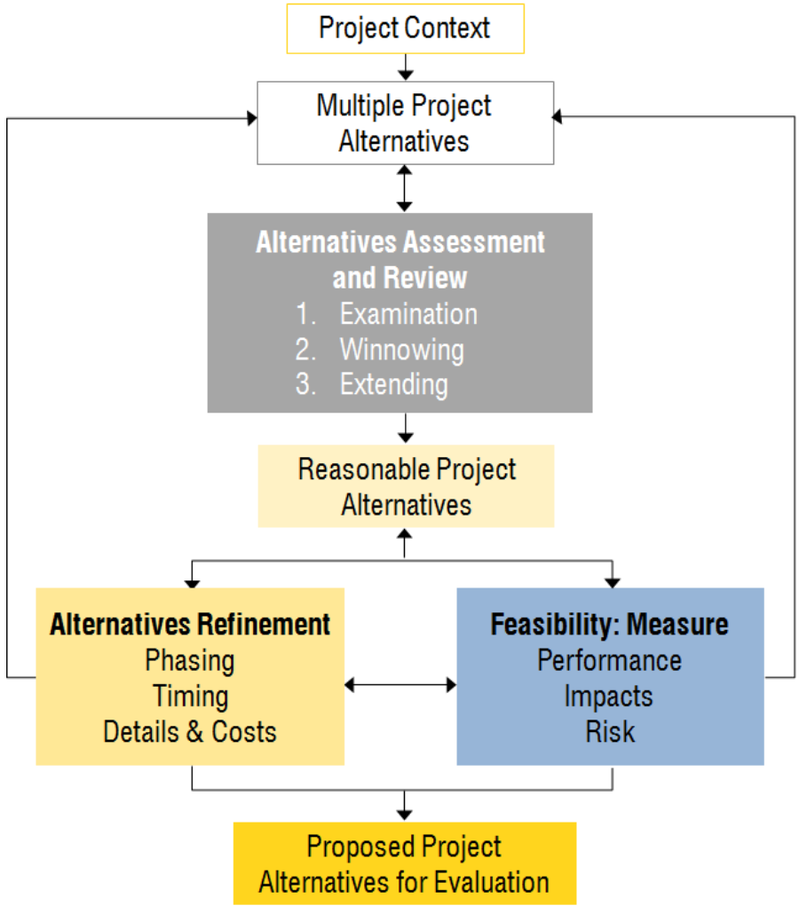
Quantify: Drivers

- Regulatory Environment
- Market Dynamics
- Competitive Position
- Market Forecast

Quantify: Project Needs and Context

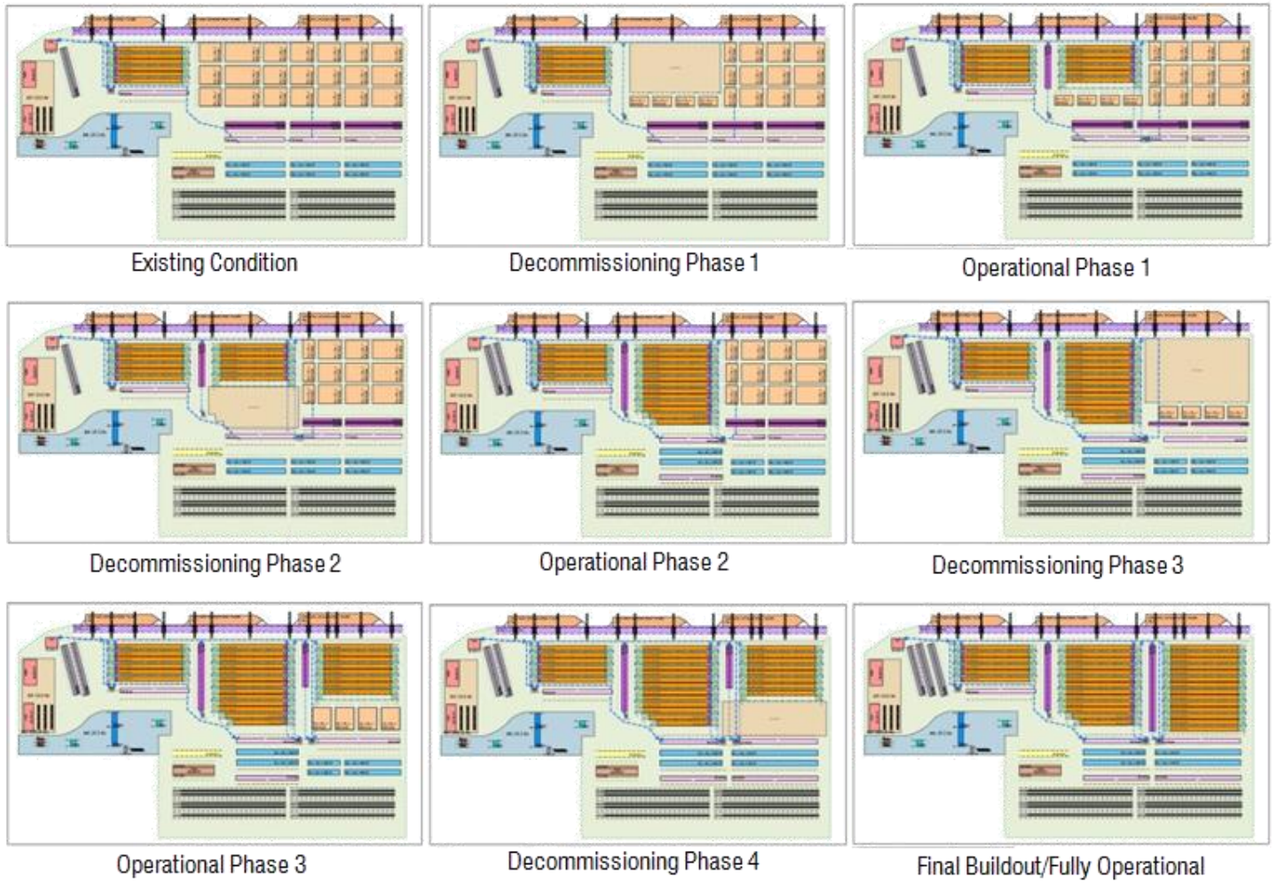


GAP ANALYSIS

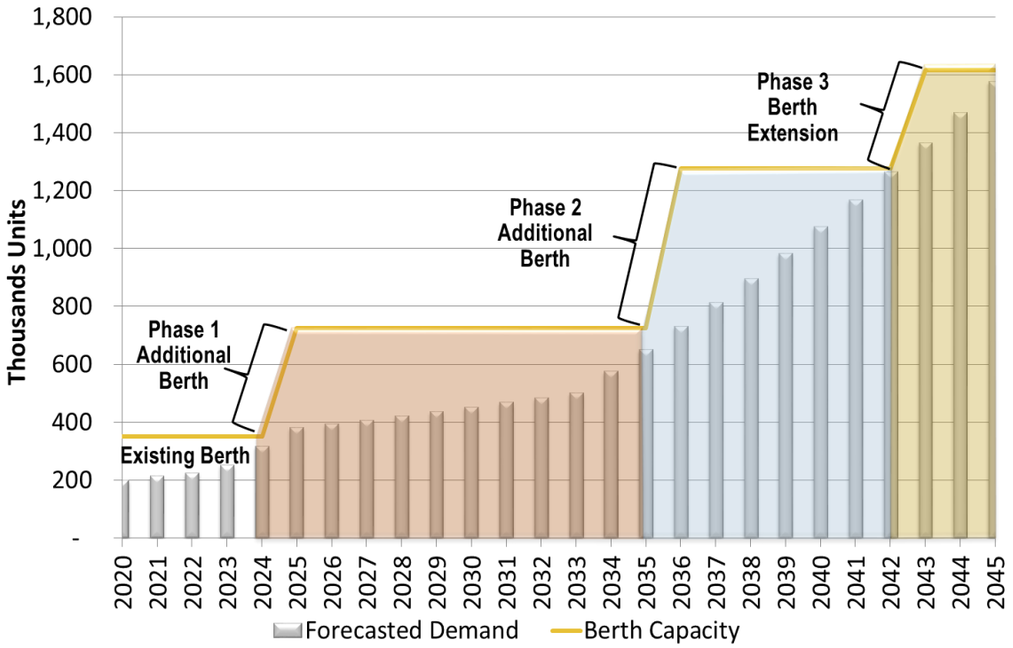


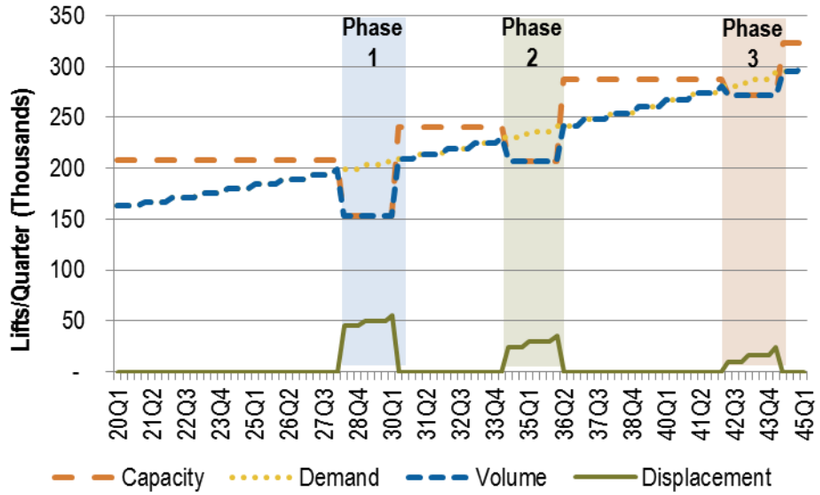
Form: Refine Reasonable Alternatives

- Phasing
- Timing
- Details
- Cost



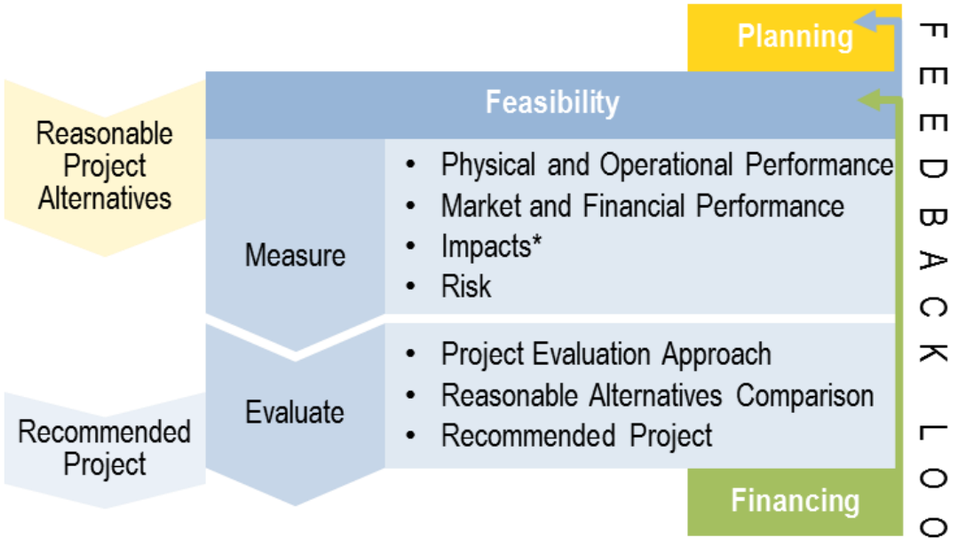
Capacity, Development & Cost Phasing





Feasibility Module

- Feasibility Module describes how ports create financially feasible project plans that take into account all aspects of cost, risk, and reward.
- Identifies the metrics for the physical, commercial and financial components of project success and how the metrics can be measured and evaluated
- Focuses on performing feasibility analyses specific to a port's individual capabilities, markets, and competitive relationships



** Consideration of NEPA compliance for projects requiring Federal Action is of particular importance during these efforts.*

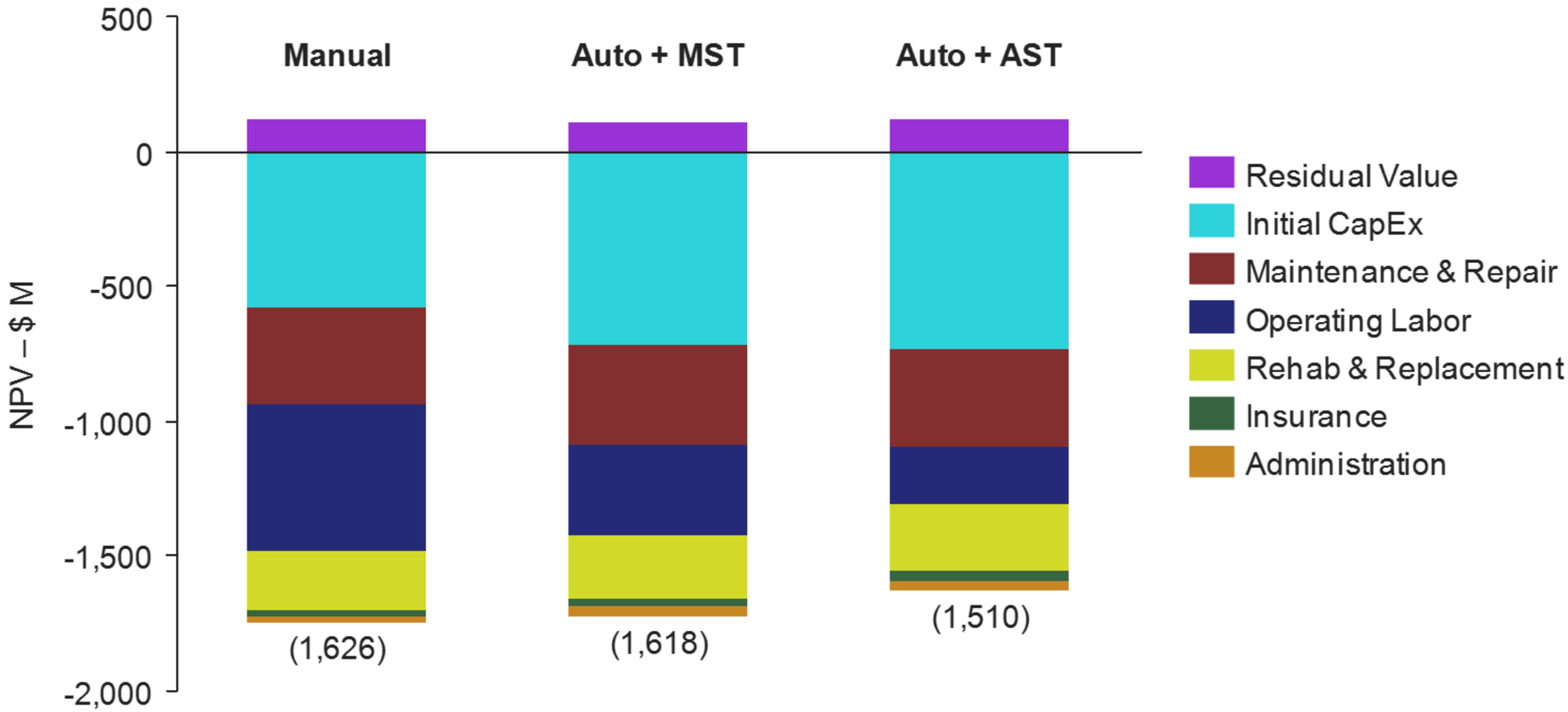
Measure: Physical & Operational Performance

- Capital Resources
- Operating Resources
- Capacity and Productivity

Measure: Market & Financial Performance

- Revenue Forecast
- Cash Flow Modeling
- Capital Expenditure
- Operating Expenditure

Measure: Comparative Costs



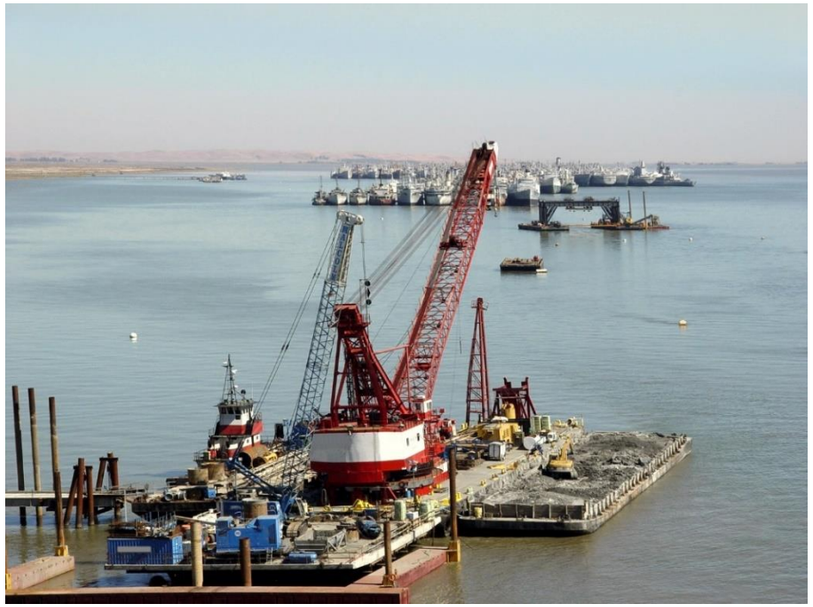
Measure: Impacts

Impact Type	Direct	Indirect	Induced
Institutional/ Port User	Vessel turnaround time	Vessel traffic	Regional waterfront access
	Truck / train service time	Adjacent road/rail use	Regional road/rail use
Social	Port safety	Protection of nearby community	Regional security
	Operating noise	Noise pollution	Regional noise health effects
Economic	Port labor employment	Local logistics employment	Regional employment
	Operating expense	Customer costs	Regional economy
Environmental	# of machines and operating hours	Air emissions	Air quality
	Fuel / power consumption	Power grid capacity	Climate change
	Facility runoff	Water quality	Coastal environment

Measure: Risk

Examples:

- Cost of materials
- Revenue capture
- Construction delays
- Construction cost overruns
- Equipment acquisition delays
- Inflation
- Cost of raising finance
- Maintenance cost overruns
- Life cycle cost acceleration
- Force majeure

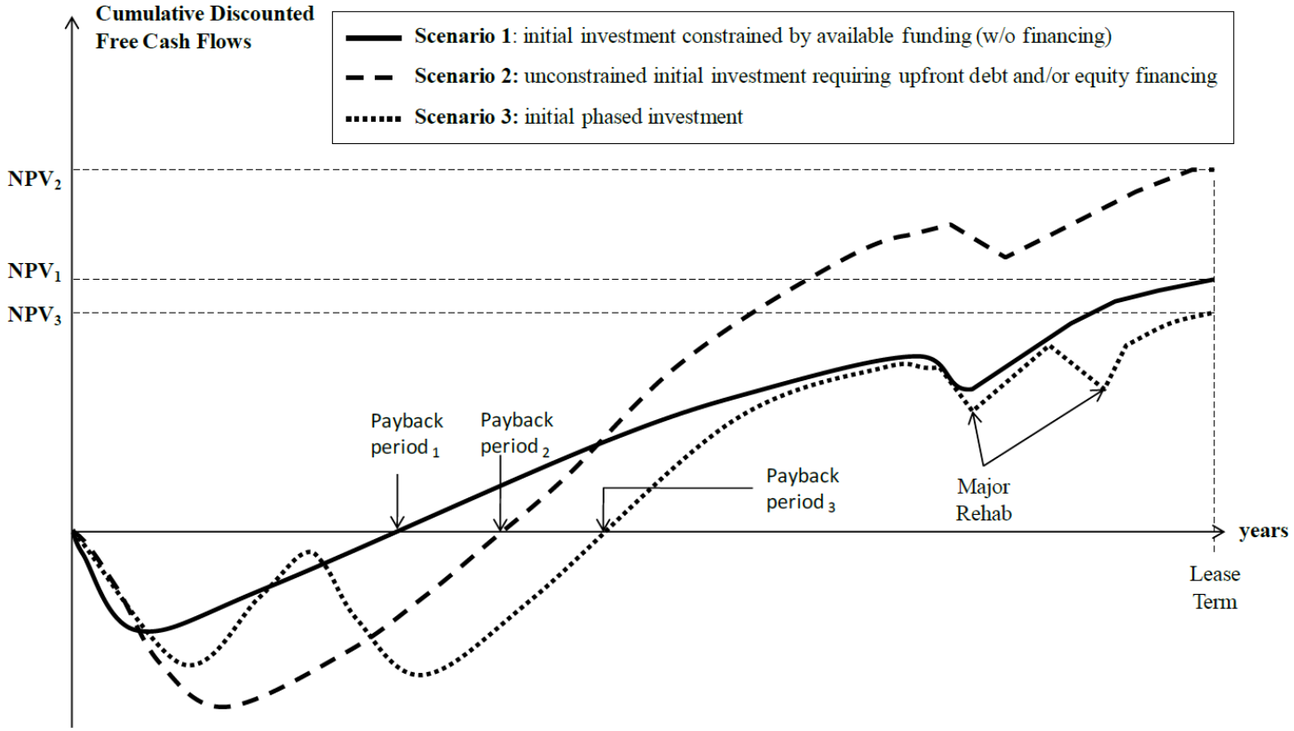


Evaluate: Delivery Approach

Common techniques:

- Cash flow evaluation
- Benefit-cost analysis
- Multi-criteria evaluation

Cash Flow Evaluation



Common techniques:

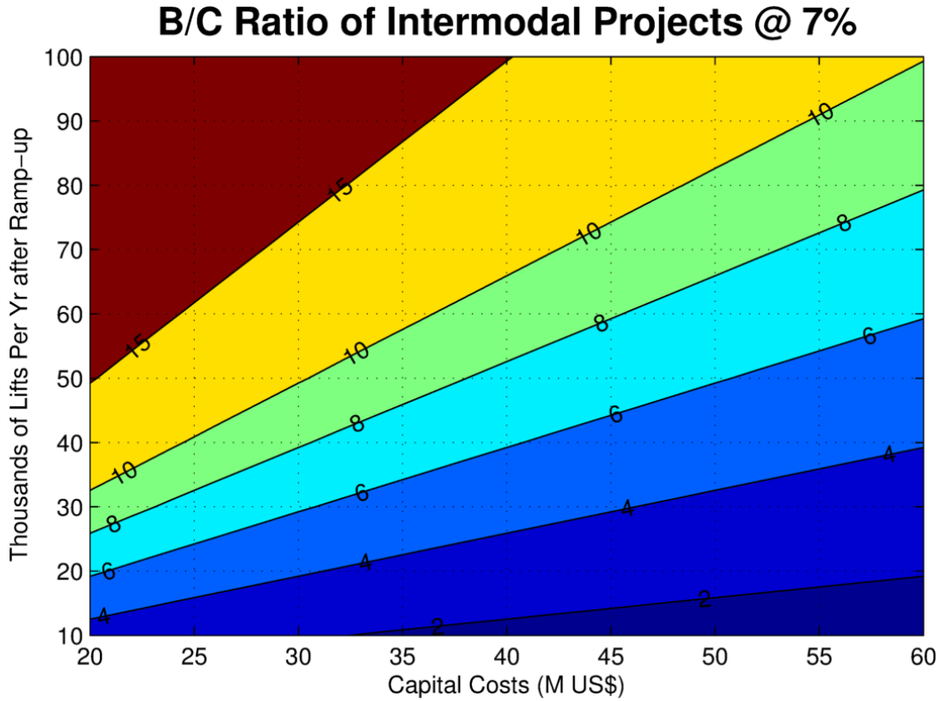
- Net Present Value (NPV)
- Internal Rate of Return (IRR)

Benefit Cost Analysis

- Measure the net welfare change over the life of a project
- BCA is a comparison of:
  - Economic Advantages – Benefits
  - Disadvantages – Costs

Resources:

- BCA Resource Guide
- OMB Circulars A-4 and A-94
- NCFRP Report 38



Multi Criteria Evaluation

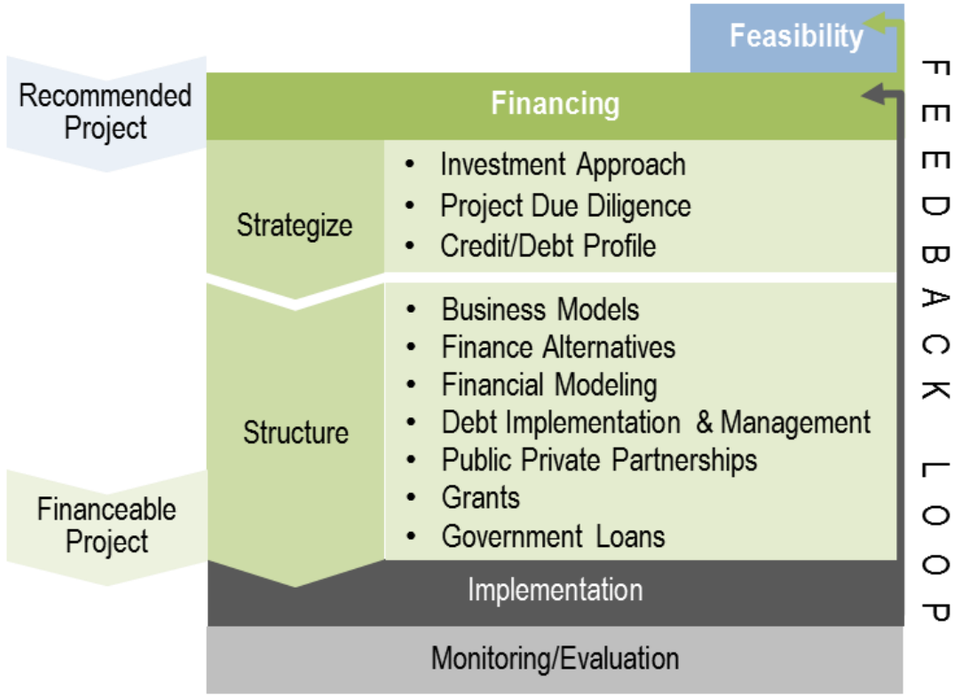
Account Element	Weight 1 - 10	Normalized/Assigned Scores Alt. 1	Alt. 2	Alt. 3	Total Score Alt. 1	Alt. 2
Operational Performance	*32.0*				*283*	*268*
Capacity at Site Buildout	8.5	10.00	8.00	8.67	85	68
Berth Productivity at Buildout	9.5	10.00	8.75	9.06	95	83
Gate Truck Cycle Time	7.0	8.33	10.00	9.09	58	70
Intermodal Service	7.0	*6.3*	*6.7*	*6.7*	44	47
Development	*22.0*				*193*	*168*
Suitability for Phased Implementation	7.0	*9.0*	*8.0*	*7.0*	63	56
Development Complexity	7.0	*8.7*	*7.7*	*7.3*	61	54
Risk of Delay	8.0	*8.7*	*7.3*	*6.0*	69	59
Financial	*26.5*				*225*	*235*
Net Present Value of Costs ($M)	9.0	8.24	9.33	10.00	74	84
Initial (5-year) Capital Outlay ($M)	9.5	10.00	8.57	7.50	95	81
Unit Operating Cost	8.0	7.00	8.75	10.00	56	70
Workforce	*15.0*				*109*	*118*
Worker Safety	8.0	*6.3*	*8.3*	*9.3*	51	67
Skilled Workforce Availability	7.0	*8.3*	*7.3*	*8.0*	58	51
Optimization of Workforce	7.5	10.00	7.50	5.00	75	56
Environmental	*30.5*				*217*	*259*
Carbon Fuel Consumption	6.5	3.33	10.00	6.67	22	65
Noise Pollution	5.0	*5.0*	*8.0*	*9.0*	25	40
Light Pollution	4.0	*5.0*	*8.0*	*9.0*	20	32
Total Energy Consumption	7.0	10.00	8.33	8.06	70	58
Land Utilization	8.0	10.00	8.00	8.67	80	64

Evaluation of Alternatives' Performance. Criteria categories may include:

- Financial
- Economic Impact
- BCR
- Operational
- Environmental
- Risk

Financing Module

- *Finance Module* helps project leads navigate a wide range of capital investment decisions, from simple to complex.
- Used for any number of capital investment activities including, but not limited to:
  - Asset-Backed and Lease Financing
  - Weighing Traditional vs. Alternative Financing
  - Project Finance Structuring
  - Evaluation and Implementation of Public-Private Partnerships
  - Procuring Government Loans and Grants



PPIT Resources

- Project Profiles/Case Studies
- Toolkit Checklist
- Sample Financial Model
- Helpful Resources
  - Manuals and Guides
  - RFQs and Scopes of Service
  - Strategic/Master Plans
  - Feasibility Studies
  - EIS/EIR Documents
- Glossary of Terms

Resource Type	Title	Author	Sponsor	Sponsor Type	Year	Project Location	Project Type	Link
Strategic/Master Plans	Compilation of Data and Recommendations for Port of Fort Pierce Master Plan Update	AECOM	Florida Department of Transportation Distric Four	Public	2013	St. Lucie County, Florida	Port-wide	http://www.stlucieco.gov/pdfs/FtPierce_Sept2013_final.pdf
Strategic/Master Plans	Jacksonville Port Authority: Strategic Master Plan	Martin Associates	Jacksonville Port Authority	Public	2013	Jacksonville, Florida	Port-wide	http://www.jaxport.com/sites/default/files/images/Jaxport%20Strategic%20Plan%20Final.pdf
Strategic/Master Plans	Port of Longview Strategic Plan		Port of Longview	Public	2012	Port of Longview, Washington	Port-wide	http://www.portoflongview.com/Portals/0/Documents/Strategic%20Plan/_FINAL%20ADOPTED%207-13-12.pdf
RFQs and Scopes of Service	RFQ: Professional Consulting Services for Strategic Planning Process and Strategic Business Plan Development		Oregon International Port of Coos Bay	Public	2013	Coos Bay, Oregon	Port-wide	http://portofcoosbay.com/rfq/rfqstratbizplan2013.pdf
RFQs and Scopes of Service	Scope of Services for Port of Fort Pierce Master Plan		Joint Center	Public	2001	St. Lucie County, Florida	Port-wide	http://www.stlucieco.gov/pdfs/port_scope.pdf
RFQs and Scopes of Service	Scope of Work 2014 Marine Hwy Feasibility Study for June 2015 to June 2016	USDA Rural Development	REAP Investment Fund, Inc.	Public	2015	Lake Sakakawea, North Dakota	Marine Highway Facility	http://reapmatters.org/wp-content/uploads/2015/05/Marine-Hwy-Scope-of-Work-FY-14.pdf
Manuals and Guides	Guidance on the Preparation of Port Master Plans	Department for Transport	Department for Transport	Public	2008	United Kingdom	Port-wide	http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/TR030001/2.%20Post-
Manuals and Guides	Leading Practice: Port Master Planning Approaches and Future Opportunities	Ports Australia with Sprott Planning and Environment Pty Ltd.	Ports Australia	Public	2013	Australia	Cruise Terminal	http://www.portsaustralia.com.au/assets/Publications/Master-Planning-Report-Final-low-res.pdf?
Manuals and Guides	Comprehensive Plan Guideline for Washington's Public Ports	Transportation & Infrastructure Committee	Washington Public Ports Association	Public	2009 update	Washington	Port-wide	http://washingtonports.org/wp-content/uploads/2013/01/Comprehensive-Plan-Guidebook1.pdf
Feasibility Studies	Preliminary Feasibilty Study for Container Terminal 10 at Southwest Tsing Yi	AECM Asia Co. Ltd.	Government of the Hong Kong Special Administrative Region	Public	2014	Hong Kong	Container Terminal	http://www.mic.gov.hk/docs/AS01-1.5B%20EN%20(Final)%20Jan%202014.pdf
Feasibility Studies	Inland Port Feasibility Study	Tioga Group	Southern California Association of Governments	Public	2008	Southern California	Inland Port	http://tiogagroup.com/docs/Tioga_Grp_SCAGinlandPortReport.pdf
Feasibility Studies	Study to Determine the Feasibility of a Cruise Ship Berthing Facility	Ports & Maritime Group, Int.	Catalina Island Chamber of Commerce		2011	Avalon, California	Cruise Terminal	http://www.catalinachamber.com/mediafilming/whats-new/cruiseshipfacility
EIS/EIR Documents	Pier S Marine Terminal + Back Channel Improvements Project	AECOM	Port of Long Beach	Public	2012	Long Beach, California	Multi-use Terminal	http://www.polb.com/environment/docs.asp
EIS/EIR Documents	Eagle Rock Aggregate Terminal Project	Aspen Environmental Group	Port of Long Beach	Public	2013	Long Beach, California	Dry Bulk Terminal	http://www.polb.com/environment/docs.asp
EIS/EIR Documents	Jordan Cove Energy and Pacific Connector Gas Pipeline Project Draft EIS	Federal Energy Regulatory Commission	Jordan Cove Energy Project	Private	2014	Coos Bay, Oregon	Energy Improvement	https://www.ferc.gov/industries/gas/enviro/eis/2014/11-07-14-eis.asp

Want to Know More?.....

www.aapa-ports.org/toolkit

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Thank You

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