AAPA Capital Projects Seminar, Norfolk, Virginia

Plan for Success
Research to Assess

May 8, 2018

Thomas Ward, PE/SE, D.PE
Director, US Maritime Planning
"In preparing for battle I have always found that plans are useless, but planning is indispensable."

*Dwight D. Eisenhower*
PLANNING ELEMENTS

➢ Water
  ▪ Approach Channel
  ▪ Anchorage
  ▪ Turning Basin
  ▪ Harbor Channel
  ▪ Berth

➢ Marine Terminal
  ▪ Quay
  ▪ Quay Equipment
  ▪ Terminal Equipment
  ▪ Storage Yard Layout
  ▪ Gate
  ▪ Rail Working Yard
  ▪ Rail Storage Yard
  ▪ Civil Infrastructure
  ▪ Telecomm Network
  ▪ Operating Systems
  ▪ Power Systems

➢ Port Area
  ▪ Road Network
  ▪ Rail Network
  ▪ Access Roads
  ▪ Rail Working Yard
  ▪ Rail Storage Yard

➢ Hinterland
  ▪ Road Network
  ▪ Rail Network
  ▪ Highways
  ▪ Distribution Centers
STAKEHOLDERS

➢ Sovereign Agencies
  ▪ USACE
  ▪ USCG
  ▪ Federal Aviation / Airport
  ▪ Port Authority
  ▪ Harbor Agency
  ▪ Pilot Service
  ▪ Customs & Border Patrol
  ▪ Air Quality Regulator
  ▪ Water Quality Regulator
  ▪ Permitting Authority
  ▪ Metro Planning Organization
  ▪ Host City Government
  ▪ State DOT

➢ Private Enterprise
  ▪ Vessel Liner
  ▪ Tug Operator
  ▪ Marine Terminal Operator
  ▪ Rail Terminal Operator
  ▪ Rail Switching Entity
  ▪ Rail Class I Operator
  ▪ Warehouse / DC Operator
  ▪ Trucking Company
  ▪ Chassis Pool Operator
  ▪ Support Service Provider
  ▪ Utility Company
  ▪ Beneficial Cargo Owner

➢ People
  ▪ Pilots & Tug Crews
  ▪ Longshore Labor
  ▪ Rail Operating Labor
  ▪ Truck Drivers
  ▪ Boaters
  ▪ Neighbors
### Stakeholder Influence & Concern

#### Sovereign Agencies
- USACE
- USCG
- Federal Aviation / Airport
- Port Authority
- Harbor Agency
- Pilot Service
- Customs & Border Patrol
- Air Quality Regulator
- Water Quality Regulator
- Permitting Authority
- Metro Planning Organization
- Host City Government
- State DOT
- Vessel Liner
- Marine Terminal Operator
- Rail Terminal Operator
- Rail Switching Entity
- Rail Class I Operator
- Warehouse / DC Operator
- Trucking Company
- Chassis Pool Operator
- Support Service Provider
- Utility Company
- Beneficial Cargo Owner
- Pilots & Tug Crews
- Longshore Labor
- Rail Operating Labor
- Truck Drivers
- Boaters
- Neighbors

#### Private Enterprise
- Approach Channel
- Anchorage
- Turning Basin
- Harbor Channel
- Berth
- Quay
- Quay Equipment
- Terminal Equipment
- Storage Yard Layout
- Gate
- Rail Working Yard
- Rail Storage Yard
- Civil Infrastructure
- Telecomm Network
- Operating Systems
- Power Systems
- Road Network
- Rail Network
- Access Roads
- Rail Working Yard
- Rail Storage Yard
- Road Network
- Rail Network
- Highways
- Distribution Centers

#### Stakeholder Influence
- Stakeholder Influence = 2
- Stakeholder Influence = 1
WITH SUCH CLARITY...

What could possibly go wrong?
“I KNOW JUST WHAT TO DO”

➢ If you focus on what seems simple to solve...

➢ ...you’ll likely miss something important
“WE ARE COMMITTED TO THIS SOLUTION”

➢ If you commit to a plan before knowing all the facts...

➢ ...you may not be able to back out.
“THE COMMUNITY WILL BUY IN”

➢ You may not believe in stakeholders...

➢ ...but they believe in YOU!
“THAT’S NOT MY TURF”

➢ Just because they don’t work for you...

➢ ...doesn’t mean you are not responsible for them.
“THEY’LL NEVER GET THAT BIG”

➢ “Prediction is hard...

➢ ...especially about the future” - Berra
YES. AND?

DON’T PANIC
### PORT PLANNING & INVESTMENT TOOLKIT

**Measure**
- Physical and Operational Performance
- Market and Financial Performance
- Impacts*
- Risk

**Form**
- Feasibility
  - Reasonable Project Alternatives
  - Refinement of Reasonable Alternatives

**Evaluate**
- Evaluation Approach
- Alternatives Comparison
- Recommended Project

**Planning**
- Initiate
  - Project Goals & Objectives
  - Data Collection
  - Stakeholder Engagement
- Quantify
  - Existing Conditions
  - Project Drivers
  - Project Needs

**Financing**
- Strategize
  - Investment Approach
  - Project Due Diligence
  - Credit/Debt Profile
- Structure
  - Business Models
  - Finance Alternatives
  - Financial Modeling
  - Debt Implementation & Management
  - Public Private Partnerships
  - Grants
  - Government Loans

**Implementation**

**Monitoring/Evaluation**
A MODEST EXAMPLE...
559,000 TEUs in 2017
18% Growth on 2016

North Terminal: Fairview
Rock Cut
South Terminal: Halterm

CN Mainline
Harbor Bridges

20m Deep
FEASIBILITY
HALIFAX TOOK THE TIME TO GET IT RIGHT

➢ “Leave no stone unturned”
➢ “Assume everything is feasible”
➢ “Bring no preconceptions”
➢ “Draw no conclusions”

➢ Ships, barges, trucks, trains, roads, bridges, rail lines, rail yards, cruise, dry bulk, cranes, air spaces, tunnels, trenches, parks, city traffic, intersections, oil docks, tank farms, navigation, pilotage, tugs, fueling, dray market, dray costs, capital cost, cash flow, resiliency, sustainability, private properties, social license to operate

➢ A balanced, feasible solution is now in hand
REMEMBER:

“They will forget if it is *late,*
They will forget if it *cost* too much,

They will *never* forget if it *does not work.*”

Guy Buzzoni
Global Container Terminals
Bayonne Bridge raised to clear 14,000 TEU container ships into Newark Bay
Opens the whole East Coast to these ships
Halifax is Canada’s Atlantic Gateway

MacKay and MacDonald Bridges cannot be raised
Fairview is inaccessible to 10,000+ TEU ships
Only one Ultra Class ship at a time, at Halterm

Without a second Ultra Class berth south of the bridges, Halifax port volume will stagnate, then decline, raising costs for importer and exporters

A new Ultra Class berth south of the Bridges is needed
Halifax traffic:
- 50% by regional truck
- 50% by long-haul rail

All local container traffic at Halterm, south of the Bridges, moves via downtown streets

The truck count is not huge, but is very visible

Shifting local traffic off of Halifax’s city streets was a major criterion
FEASIBILITY

➢ Dartmouth + Rail Bypass
  ▪ CAD 1,415 M for 1,250,000 TEUs / year
  ▪ Issues: Lead time, First cost, Oil Terminal

➢ Halterm East
  ▪ CAD 654 M for 650,000 TEUs / year
  ▪ Issues: High capacity, Complex phasing

➢ Halterm South
  ▪ CAD 423 M for 650,000 TEUs / year
  ▪ Issues: Point Pleasant Park

➢ Halterm North
  ▪ CAD 401 M for 650,000 TEUs / year
  ▪ Issues: Simplicity, Cruise & Dry Bulk displacement
FINANCE

NATIONAL TRADE CORRIDORS FUND
APPLICANT’S GUIDE
Comprehensive Project Proposal Phase

➢ Conceptual Cost Estimate
➢ Cash Flow Model
➢ Investment Model
➢ Benefit-Cost Analysis
➢ NTCF Grant Funding