Tools & Techniques for Port Property Management

June 19, 2007
Early Port – Downtown Development Evolution

Port facilities
- Deep water / sheltered harbor
- Crossroads of trade
- Developed to foster maritime trade

City supported port activities
- Housing workers
- Storage of goods
- Trade and commerce

Urban flight / suburbs
- Downtown industrial area
- Unpleasant environments
Today’s Port’s Face Competition for Use of Land Area

– Maritime Land Uses (water dependant)
– Maritime Land Uses (non-water dependant)
– Quasi-Maritime Land Uses
– Non-Maritime Land Uses
– Urban Redevelopment
– Developer Interests
Non-Maritime Land Uses Returning to Port Areas

- Hotels
- Convention Centers
- Sports Arenas / Stadiums
- Residential development
- Office / Commercial development
- Recreational uses
- Others
Why the Change in Attitude?

- Urban renewal policy
- Downtown redevelopment activity
- Limited waterfront land and access to coastal areas
- Urban waterfronts are hip
Port’s are Valuable Assets – Why Protect Them?

- Unique location
- Sunk investment cost
- High replacement value
- Viable economic engines
  - Regional asset
  - Statewide asset
  - National asset
Potential Replacement Costs

- Wharf: $15k to $25K per LF
- Dredging: $6 to $100 per cu. yd.
- Backlands: $250K to $600K per acre
- Buildings: $100 to $300 per sq. ft.
Constraints to Port Development

- Lack of available land with deep water access
- Dramatic increase in land values
- Price of construction products have nearly doubled in the last 5 years
- Continued material price escalations likely, due to increased demand for building materials worldwide
- Environmental constraints to development
Initial Conclusions:

- Creation of new port facilities are costly and difficult
- We need to protect what we have
- We need the ability to expand
- We are sailing into new waters
- We need the tools to effectively thrive in today’s environment
Port Tool Box for Port Property Management

- Port Master Plan
- Current Market Forecast
- Economic Impact Data
- Community outreach
- External communication
- Compromise / Negotiation
Components of a Solid Comprehensive Master Plan

– Market forecast
– Capacity analysis
– Efficiency enhancement study
– Technical studies
– Terminal needs assessment / Land Use Plan
– Project identification / Cost estimate
– Economic impact modeling
– Phased development plan / CIP
Market Forecast

– Conservative forecasting
– Tenant interviews
– Industry trends
– Understand your strengths and weaknesses
– Identify potential marketing opportunities
Simplified Master Planning Process

PHASE I

Step 1  Data Collection
- MASTER FACILITY INVENTORY
  - Terminal Area
  - Berth Length
  - Draft at Berth
  - Storage Method
  - Storage Area
  - Storage Capacity
  - Cargo Dwell Time
- 5-YEAR PEAK CARGO FLOWS
  - General Cargo/Break Bulk
  - General Cargo/Auto RoRo
  - General Cargo/Dry Bulk
  - Liquid Bulk
    - Petroleum
    - All Other Liquid Bulk

PHASE II

Step 2  Existing Capacity Models
- EXISTING CARGO CAPACITY BY TERMINAL AREA (MT/acre)
- EXISTING CARGO CAPACITY BY BERTH LENGTH (MT/Berth)
- EXISTING CARGO CAPACITY BY STORAGE UTILIZATION (Dwell Constrained)

Step 3  Existing Capacity Models
- PROJECTED CARGO FORECAST BY CARGO TYPE
- ANTICIPATED TECHNOLOGY MODIFICATIONS (YARD/BERTH)
- REVISED CAPACITY ANALYSIS (YARD/BERTH)

Step 4  Capacity Demand
- FUTURE FACILITY DEMAND
  - Number of Berths
  - Terminal Area
  - Storage Capacity
  - Annual Throughput
# Existing Terminal Capacity Example

<table>
<thead>
<tr>
<th>Break Bulk - Steel Products</th>
<th>Berth 5 - Existing Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of cargo</strong></td>
<td>Steel + Coils</td>
</tr>
<tr>
<td><strong>Number of Berths</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Berth length (ft)</strong></td>
<td>900</td>
</tr>
<tr>
<td><strong>Typical vessel LOA (ft)</strong></td>
<td>600</td>
</tr>
<tr>
<td><strong>Vessel calls per year</strong></td>
<td>48</td>
</tr>
<tr>
<td><strong>Vessel calls per month</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Berth operating hours per day</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Cargo handling speed (MT/hour)</strong></td>
<td>60</td>
</tr>
<tr>
<td><strong>Cargo transfer per vessel call (MT/vessel call)</strong></td>
<td>6,000</td>
</tr>
<tr>
<td><strong>Annual existing berth throughput (MT)</strong></td>
<td><strong>288,000</strong></td>
</tr>
<tr>
<td><strong>Terminal acres (Acres)</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Storage type</strong></td>
<td>Outdoor/Decked</td>
</tr>
<tr>
<td><strong>Total static storage capacity (MT)</strong></td>
<td>35,000</td>
</tr>
<tr>
<td><strong>Dwell time (days)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Annual existing yard throughput capacity</strong></td>
<td>425,833</td>
</tr>
<tr>
<td><strong>Unit Throughput Capacity (MT/Acre)</strong></td>
<td>28,389</td>
</tr>
</tbody>
</table>

- **Increased calls – weekly service**
- **Berth capacity limits**
Terminal Efficiency Enhancements - Improve What is There

- Cargo handling technology
- Storage densification
- Terminal/Gate automation
- Reduced dwell times
- Empty storage depots
Cargo Handling Improvements - New Quay Cranes

Single Hoist and Head Block
Bromma Spreader

Dual Hoist and Head Blocks
ZPMC
Cargo Handling Improvements – Next New Quay Cranes

Source: Cargo Systems May 2007
Cargo Handling Improvements – General Cargo

Specialized loading equipment

- Multi-Hook Spreader Bar
- Pallet Racks
- Increased lifts per hour
Future Terminal Needs Assessment

\[
\text{Projected Capacity Demand} - \text{Near-Term Capacity Existing & Planned Capacity} = \text{Capacity Shortfall} = \text{New Terminal Capacity Required}
\]
Market Driven - Terminal Needs Assessment Example

- **Dry Bulk - Cement**
  - Existing: 6.6 acres
  - 5-Year: 6.7 acres
  - 10-Year: 7.3 acres
  - 20-Year: 8.3 acres

- **Dry Bulk - Aggregates**
  - Existing: -
  - 5-Year: 1.8 acres
  - 10-Year: 2.6 acres
  - 20-Year: 4.2 acres

- **Break Bulk - Lumber**
  - Existing: 0.9 acres
  - 5-Year: 0.9 acres
  - 10-Year: 1.0 acres
  - 20-Year: 1.1 acres

- **Break Bulk - Steel**
  - Existing: 8.4 acres
  - 5-Year: 6.2 acres
  - 10-Year: 6.7 acres
  - 20-Year: 7.7 acres

- **All Non Container Terminals**
  - Existing: 16.0 acres
  - 5-Year: 15.5 acres
  - 10-Year: 17.6 acres
  - 20-Year: 21.3 acres
Fitting 10 Pounds into a 5 Pound Sack

– Evaluate future needs
– Develop reasonable approaches to accommodate growth
– Consider multiple alternatives using an iterative review process
– Prepare for compromise
– Create a long-range vision, with interim phases
Economic Impact Data

– Identify key economic impacts
  • Jobs
  • Wages
  • Taxes
– Stratify by city, region, state, congressional
– Summarize data into one page fact sheet
– Publish data on Port website
– Help community understand your importance
Benefits of a Comprehensive Port Master Plan

- Provide a long-range vision for future growth
- Balanced market-driven vision plan
- Identify future areas of growth/acquisition
- Identify declining and emerging markets
- CIP provides solid investment strategy
- Regular updates to evaluate goals and directives
Balance master plan with local realities
Multi-pronged Community Outreach Program

- Port Stakeholders
- Public Stakeholders
- Governmental Stakeholders
- External Communication
Community Outreach - Port Stakeholders

- Port staff
- Tenants
- Pilots
- Labor unions
- Shipping lines
- Federal and State agencies
- Seek their input and goals through charrettes
- Build consensus for plan internally
Community Outreach – Public Stakeholders

– Identify key public stakeholders
– Involve them early
– Identify key issues
– Involve them in the beginning, middle and end
– Continuous education process
Community Outreach – Governmental Stakeholders

- Identify local business leaders
- Regular interaction with local government leaders
- Joint workshops for appointed/elected officials
- Reach out to your state government officials
- Invite Governor and other officials to tour your facilities
- One page fact sheets
- Long-term / on-going program
Community Outreach – External Communication

- Website postings
- Speak at community meetings
- Local newspaper
- Cable networks
- Local television news programs
External Communication Topics – Get the Word Out

- Update public on the Master Plan process
- Post items of interest and key findings
- Educate public on port operations
- Identify local/regional/state economic impacts
  - Jobs, wages, revenue, etc.
- Identify environmental programs and benefits
Community Outreach Benefits

– Make stakeholders part of the “team”
– Educate local community
– Build political support at local and statewide level
– Solidifies the port’s local and regional importance
– Build consensus for future port operations
Compromise and Negotiation

- Know which battles are important
- Compromise can open the door to opportunity
- Identify alternative solutions
- Participate in off-port options if necessary
- Usually the path of least resistance and reduced cost
- Avoid legal remedies if possible
Conclusions

- Develop a road map
- Balanced flexible market driven Vision Plan
- Supported by sound analysis and study
- Involve stakeholders throughout plan development
- Review and update plan on regular intervals
- On-going outreach and education
- Seek consensus