Port of Long Beach
Sustainable Design and Construction Guidelines

Pacific Ports Clean Air Collaborative Working Group Meeting

Doug Sereno, PE, ENV-SP
Director of Program Management
May 10, 2013
Agenda

• Overview
• Purpose
• Benefits
• Key Components
• Pilot Projects
• West Coast Ports Joint Technical Committee
• Linkage to ISI Envision
Overview

- Set of strategies and tools to implement principles of sustainable development in Port projects
- Supports POLB’s *Green Port Policy* goals
- Knowledge capture tool
- Filled a need not found in the port industry
Objectives

• Integrate sustainability into capital projects
• Quantify sustainable project attributes
• Sustainability metrics
• Provide a framework to track pros/cons of implementing sustainable attributes
• Build upon existing processes
• Maintain “license to operate”
Benefits

• Better informs the decision-making process
• Standardized and consistent project delivery
• Standardizes definition of sustainability to staff and stakeholders
• Demonstrates continued leadership
• Measures improvement in sustainability over time
• Tangible evidence of competency
• Sustainability metrics
Key Components

• Strategic Sustainability Checklists
  • Integrates sustainable attributes into 13 Port-specific groupings
• Implementation Process Flow Chart
  • Emphasizes cross-divisional efficiencies and highlights project milestones
• Implementation Process Checklists
  • Encourages standardization of the delivery process
• Sustainability Summary Sheet
  • Serves as a simplified “report card” – used for annual reporting, community outreach, and informs future projects
Strategic Sustainability Checklists

- Checklists contain “strategies” and information to facilitate implementing sustainability into Port projects
- Divided into 13 project type groupings

- Dredging
- Wharves
- Roadways, Railways & Bridges
- Stormwater Management
- Landscaping
- Utilities Systems
- Demolition of Existing Facilities
- Revetment
- Terminals
- Remediation Projects
- Geotechnical Soil Improvement
- Traffic Management
- Technology Projects
Strategic Sustainability Checklists (continued)

- **Purpose**
- Track sustainability attributes
- Document major changes to the project and record “lessons learned”
- Provide a methodology for including or excluding sustainability attributes

Symbols are used to easily identify the benefits of sustainable strategies and goal areas
• Purpose
  • Integrate sustainability into existing Port processes
  • Identify specific and integrated implementation tasks
  • Summarizes scheduling of recommended meetings, reviews, and documentation steps
Implementation Process Checklists

• Purpose
  • Standardizes project delivery methodology
  • Coordinate/communicate with other Divisions
  • Checklist format to lead meeting discussion and review documentation

• Clearly define project criteria in specifications
  - Reinforce design intent

• Identify opportunities to include sustainable attributes throughout the project
Sustainability Summary Sheet

- **Purpose**
  - Documents project performance and serves as a simplified “report card”
  - Sustainability Strategies applied to the project are tabulated at the end of the process

- Provides information on:
  - Involved Port staff
  - Project Scope
  - Overview of sustainable attributes/benefits
  - Lessons learned
Pilot Studies

- Pier A West Remediation Project
- Main Channel Dredging Project
- Pier G North Rail Yard Project
Key Sustainability Strategies Applied to the Project:

- Locally Resourced and Port Stockpiled Materials
- Stormwater Management and On-site Capture
- Minimized Site Disturbance
- Minimized project derived wastes
Main Channel Dredging

Key Sustainability Strategies Applied to the Project:

• Implemented the use of energy efficient equipment
• Contractor retrofitted the dredge substation to maintain peak energy performance
• Conducted operational changes to mitigate air emissions
• Economic savings realized through the combining of 4 projects into one, therefore reducing mobilization and demobilization costs (approximately $1M in savings)
• Port use of dredge material created 12.3 acres of land at no cost to the Port and minimized waste
Main Channel Dredging

Total Number of Implemented Sustainability Strategies

<table>
<thead>
<tr>
<th></th>
<th>26</th>
<th>22</th>
<th>9</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining Sustainability Strategies</td>
<td>21</td>
<td>17</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Total Sustainable Strategies</td>
<td>21</td>
<td>17</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Environmental Strategies</td>
<td>21</td>
<td>17</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Social Strategies</td>
<td>21</td>
<td>17</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Economic Strategies</td>
<td>21</td>
<td>17</td>
<td>11</td>
<td>8</td>
</tr>
</tbody>
</table>

Total Number of Implemented Sustainability Strategies: Triple Bottom Line Approach

- Environmental: 31%
- Social: 20%
- Economic: 49%
Key Sustainability Strategies Applied to the Project:
• Nearly doubled rail capacity, thus contributing to GHG emission reductions through truck trip elimination
• Augmented rail capacity will be a major asset for the terminal operator in attracting new business (improving the economic viability of the project)
• Emphasis placed on the reuse of on-site and stockpiled materials
• Diversion of unused demolition materials to the Port’s stockpile
• PM staff training sessions held on the use of on-site recycled cement materials
• Several project components, including asphalt pavement and concrete retaining walls, were designed for long life cycles (20-30 years)
Pier G, North Rail Yard
• Avoid “good port/bad port” syndrome
• Foster flexibility and adaptability by individual ports
• Build upon sharing of best practices/lessons learned
• Objective guidance/measurement of port sustainability
• Consistent approach for the port enterprise
• Common language understood by stakeholders
• Enhance the overall efficiency, productivity, and environmental performance of each port without disadvantage or limitation to the other ports
West Coast Ports
Joint Technical Committee

• San Diego, Long Beach, Los Angeles, Portland, Vancouver, Tacoma, Seattle
• Two year effort
• “Sustainable Design and Construction Guidelines for Ports”
• Based on POLB Guidelines with greatly expanded strategies
• Two types of strategies - general & 17 project types
• Integration tool to combine project types
• To be hosted on AAPA website
• Unveiling at Ports 2013 – Seattle in August
ISI Envision Infrastructure Rating System

- Institute for Sustainable Infrastructure - 503(c)
  - ASCE
  - ACEC
  - APWA
  - Harvard Zofnass Program
- Over 800 sector-specific rating systems
- Developed Envision system as a national standard for all varieties of infrastructure projects
• Designed to evaluate, grade and give recognition to infrastructure projects that contribute to a more sustainable future
• Scalable and broadly applicable
• Accommodate sector-specific rating systems, such as ports and harbors
• Increased sustainability due to life cycle approach
• Third-party, objective project rating and verification system
• Transformational approach to projects
  • Doing the “Project Right” vs. Doing the “Right Project”
• Five levels of achievement - “Improved” to “Restorative”
• Checklists or Project Rating(independent verification)
• More complex and comprehensive
Thank You

Douglas J. Sereno
doug.sereno@polb.com