Feasibility Assessment of Short Sea Shipping to Service the Pacific Coast

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Objectives and Scope of the Program

- Examination of the commercial and military viability of a west coast short sea shipping service
  - *Addressing the seamless business combination of port, sea and inland transport and the required supporting infrastructure*
  - *Acting as a domestic modal substitute and as a feeder for international shipping networks*
  - *Interfacing with potential end users: domestic and international transportation providers, shippers, consignees, the military and investors*

The Team

- Westar Transport
- Tedesco Consulting
- CDI Marine
- NASSCO
- Scully Capital
- Manalytics International

Challenges Facing Conventional Domestic Transportation Options

- Congestion of highways, surface streets
- Environmental concerns related to highway truck traffic
- Shortage of qualified drivers
- Diseconomies of rail in shorter lanes
- Huge capital investments needed to upgrade highway and rail infrastructure

Evolution of Potential International Feeder Markets

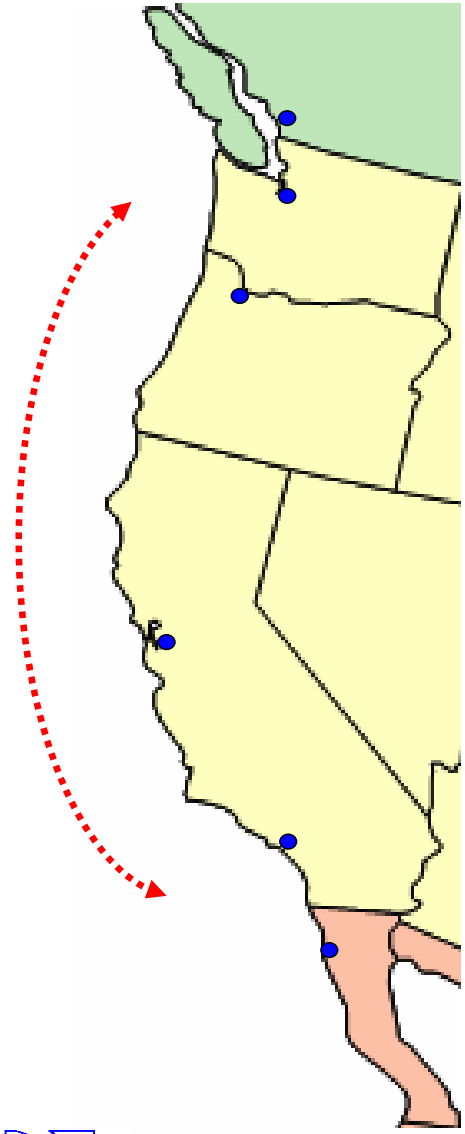
- Huge container ships, as large as 12,000 TEU, are entering the Pacific market
- Vessel economics favor minimizing time in port, and open the door to increased feeder operations
- Short sea service to smaller feeder points may actually speed net transit times

Military Applications

- Strategic Mobility and Sea Basing initiatives closely follow the highly flexible concept of short sea shipping
- Military capability is levered from a successful commercial model
- The commercial model also enables research in hull forms and technology which have significant military impact

The Short Sea Market: Many Regional Submarkets

- Domestic cargoes
  - *North:South routes along the west coast of North America currently moving by truck or intermodal rail, for example:*
    - LA – Seattle/Vancouver
    - SF Bay Area - Mexico
    - San Diego – SF Bay Area
- International cargoes
  - *Cargoes bound for other west coast North American markets but utilizing the PSW gateway*



Sizing and Profiling of the Market is a Critical Task

- Analysis of trade lane volumes on county-to-county basis by commodity type and mode
- Benchmarking of competitive modes
  - *Rates, transit times, etc.*
- Interviewing of potential users: transportation providers, shippers, consignees, and forwarders
  - *Determine transport and modal decision process of these customers*
  - *Develop a set of requirements for various customer types from a door-to-door view*

Development of a Market Diversion Analysis

- Include both domestic lane volumes and international feeder cargoes
- Address share of competitive modes (truck and intermodal rail)
- Based on the interview results, the analysis assesses the likely decision process of users under varying conditions
  - *Cost / service frequency / transit time trade- off*
- Various scenarios for short sea shipping service will be developed
  - *Identify requirements of the operating model for costs, service levels, etc.*

Determine Operating System Parameters for the Market

- Assess the level of operating cost, service, and logistics requirements for the service to meet market needs at varying levels of market diversion
  - *Compare the cost-per-mile for short sea shipping versus current over-land modes*
  - *Generate a series of scenarios incorporating market penetration, fleet size, terminal, market locations and logistics system services*
    - Producing operating costs, throughput, level of service and financial performance

Determine Vessel Requirements

- Use of a ship design synthesis model, the CDI COMPASS tool
- Parametric assessment of alternative designs across service needs, payload, operating costs and capital constraints
  - *Resulting in the most cost-effective vessel that successfully competes with trucks on speed and price*
- Additional parametric evaluation of military requirements
- Alternative technologies for mooring, vehicle loading, and cost performance

Determine Port, Infrastructure and Labor Requirements

- Based on operating system, ship design, and customer requirements
- Operating requirements focused on door-to-door service needs
- Operating costs and capital used in financial assessment

Final Report: Commercial Assessment of Short Sea Shipping

- Independent assessment of the concept in economic and service terms
- Market diversion, driven from trade volumes and actual user input
- Ship design and operating parameters to support the service model
- Scenarios used to test levels of market share, price, service levels, value proposition
- Model capable of testing impact of Harbor Maintenance Tax, operating rules