# Port of Humboldt Bay Harbor Revitalization Plan

**Final Report** 

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Prepared for: Humboldt Bay Harbor, Recreation and Conservation District

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# Harbor Revitalization Technical Advisory Committee

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#### Humboldt County Association of Governments

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# **Executive Summary**

The Humboldt Bay Harbor, Recreation and Conservation District—along with the City of Eureka and Humboldt County—has undertaken the Port of Humboldt Bay Harbor Revitalization Plan aimed at establishing a new and sustainable maritime focus for the community.

The Port's strategy for revitalization involves two phases, channel deepening and landside improvement. After a 12-year effort, the Humboldt Bay Channel Deepening Project was completed in April 2000. The new 48-foot deep Bar and Entrance Channels and 38-foot deep North Bay and Samoa Channels now provide for greater navigation safety and improved vessel economics. The reduction of light loading and increased economies of scale now possible at Humboldt Bay, particularly for the larger forest products carriers, promises to improve the Port's competitiveness for marine trade.

With the completion of the Channel Deepening Project, the focus of the Harbor Revitalization Plan is on the marine facilities, landside access, diversification opportunities, and the associated economic development and marketing of the Port. As a result of this effort, significant new opportunities were identified for Humboldt Bay, including marine-dependent industrial projects, niche dry and liquid bulk cargoes and the potential for a tourism/marine science cluster. Opportunities for expansion or continuation of existing aquaculture and commercial fishing operations were also identified.

Implementation of the recommended plan emphasizes two key issues:

- Site readiness A number of steps are need to be taken prior to specific opportunities arising in order to remove property restrictions, prepare key publicly-owned sites for marketing and development, and positively position Humboldt Bay.
- Intensified marketing A dedicated harbor marketing function is also recommended within the Harbor District, City and/or County that will act as a single focal point to proactively identify and pursue opportunities for which Humboldt Bay is competitive.

## **Key Sites**

The study area includes all current and potential marine industrial and commercial properties in Humboldt Bay from the Samoa Bridge (CA 255) to the end of Fields Landing Channel on the mainland, and from the Samoa Bridge to the channel entrance on Samoa Peninsula. Using Humboldt County parcel data 80 key parcels were identified and grouped into 16 major sites for consideration in the preparation of the Harbor Revitalization Plan. In some cases, contiguous parcels under separate ownership were initially grouped together into a single site in order to evaluate the full potential of the properties.

The 16 key sites evaluated include six sites with active cargo terminals, five sites with inactive cargo terminals, and five industrial, commercial or other public sites. They include:

Sites With Active Cargo Terminals	Sites With Inactive Cargo Terminals	Other Industrial, Commercial & Public Sites
Schneider Dock Eureka Forest Products/Preston Prop.* Chevron Terminal Humboldt Bay Forest Products* Samoa Pacific Chip Export Dock Simpson Property/Fairhaven Terminal	Dock B/Balloon Track* Phillips Petroleum Fields Landing Terminal Area* Simpson-Samoa (Redwood Dock) Site* Samoa Pacific Pulp Mill Dock	Halvorsen/City Sites* HSU Boating Center Commercial Street/C Street Docks* Parcel 4 Eureka Airport Property

\*Site includes contiguous parcels under separate ownership.

## West Coast & Humboldt Trade Trends

Over the last 20 years, West Coast port traffic has grown by 150 percent as seen in Figure 2, led by containers and automobiles. Bulk cargoes and general breakbulk cargo have grown slightly, while lumber and forest products have declined by more than 50 percent.





As shown in Figure 3, waterborne commerce in Humboldt Bay increased consistently to a peak of over 1.2 million tons in 1991, then dropped significantly to between 400,000 and 600,000 revenue tons for the remainder of the study period. Most notably, declines occurred in general cargo and dry bulks, which are dominated by forest products.





Figure 4 – Relative Cargo Trends Among Selected Ports



By direction of trade, Humboldt Bay's waterborne commerce has exhibited the following trends:

- Exports declined at 9.4% per year between 1990 and 2000; Imports increased sporadically during the time period, with an average annual increase 13.1% between 1990 and 2000;
- Coastwise shipments were also volatile during this time period, increasing at 6.6% per year; and
- Coastwise receipts grew at 1.6% per year during the study period.

Humboldt Bay's decline in waterborne commerce is compared with other similarly situated ports in Figure 4. As shown, Humboldt Bay experienced a 200% increase between 1982 and 1992, after which volumes consistently fell. The relative level of waterborne commerce in 2001 is equal to the volume in 1982. By contrast, most other comparable ports have experienced a decline to levels below their 1982 volumes.

The relative loss of forest products exports and domestic shipments has substantially impacted all ports from Humboldt Bay north to Bellingham, WA. The loss of these cargoes has resulted in heightened competition for the remaining general cargo and dry bulk cargoes.

### Market Opportunity Analysis

Market opportunities for the Port of Humboldt Bay were analyzed for the full range of cargo types and a variety of non-cargo waterfront commercial, recreational and industrial markets as shown below.

Marine Cargo Markets	Waterfront Commercial & Recreational Markets
Dry bulk cargo Liquid bulk cargo Marine-dependent industrial opportunities Non-containerized cargo (breakbulk and general cargo) Fully assembled autos/trucks Containers Ocean barge feeder services	Commercial fishing Aquaculture Marine labs & science centers Public aquariums Marinas, boating & yachting Cruise ships & tour boats Boat building & vessel repair Vessel homeporting Naval vessel museum

Figuro	5 _	Cargo	and	Non	Cargo	Markote	Evaluated	
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A wide range of data sources and analytical methods were used in the market assessment, including Pacific Maritime Association (PMA) cargo data and other sources addressing trade trends along the West Coast and in Northern California. Over 100 interviews were conducted with exporters, importers, domestic shippers, carriers, stevedores, terminal operators, economic development agencies, ports, energy companies, fishing and aquaculture operators, aquariums, marine science centers, the military, ship/boat builders and repair companies, and individuals involved with marine trade in Humboldt Bay. In addition, case studies of seven ports were performed to identify how they have developed

marketing strategies, the relative success of their programs, and the potential relevance of these strategies for Humboldt Bay.

The market assessment focused on identifying opportunities for the Port of Humboldt Bay among traditional markets and potential new diversification markets.

#### Core Advantages

In the course of the market assessment, a number of core competitive advantages were identified for the Port of Humboldt Bay, including:

- Large waterfront industrial sites;
- Natural resource availability;
- Unique tourism surroundings and attractive downtown waterfront nucleus;
- Marine science and environmental base; and
- Livability.

Humboldt Bay has at least three sites in excess of 200 acres, each located on the 38-foot shipping channel. These include the publicly-owned City airport site, the privately-owned Simpson site and the Simpson-Samoa (Redwood Dock) site with mixed ownership, all located on the Samoa Peninsula. Most have had some prior development, which should facilitate permitting, and future development. Large waterfront industrial sites on deep water such as these are a rarity and, thus, a significant advantage for Humboldt.

In addition to forest products, the Humboldt area possesses additional natural resources that are in demand and require waterborne transportation. In particular, bulk aggregates, rock and surplus fresh water are abundant in Humboldt's immediate area and few alternatives are available to compete with waterborne transportation via Humboldt Bay.

Humboldt is fortunately situated amidst unique tourism features, both natural and historical. These include the redwood forests, Eureka's Victorian seaport and Arcata's Victorian homes, all of which receive some measure of national recognition. Likewise, Eureka's Old Town district, waterfront boardwalk and other features create a potentially vibrant downtown waterfront environment. Taken together, these tourism and downtown waterfront features are a unique advantage that can be built upon to revitalize the harbor.

The presence of Humboldt State University (HSU), its marine science program, and the region's strong environmental ethic provide a potential base for new activity on the Humboldt waterfront that could complement the tourism advantages discussed previously. These features create a vibrancy in the Humboldt area that does not exist in most other coastal ports facing similar declines in traditional industries.

Humboldt's natural surroundings, size and amenities offer a very livable environment for its residents. As urban areas in California and the Northwest continue to grow and become congested, Humboldt's livability should be attractive to employees, professionals and managers of new industry that could locate in the area.

#### Key Limitations

The key disadvantages at Humboldt Bay were identified as:

- Small local market size; and
- Inland transportation access.

The limited size of the population and economic base in Humboldt's natural hinterland area are a clear disadvantage in attracting traditional marine cargo business. As a first priority, ocean carriers, importers and exporters look for strong local markets as a basis for establishing waterborne trade and transportation operations. Humboldt's small local market limitation is exacerbated by the fact that the local area is primarily a producing region, generating very little inbound freight for consumption. The one-way nature of the Humboldt local market area diminishes the viability of waterborne, rail and truck transportation operations that could otherwise be feasible with a two-way move.

Humboldt's limited inland rail and truck access is also a significant disadvantage. Truck access to Interstate 5 should be enhanced with improvements to CA 299 at Buckhorn Pass, but highway access will still be less desirable via Humboldt than at competing ports located directly on the interstate system. Likewise rail access may be restored with the reactivation of the North Coast Railroad Authority (NCRA) line, but the time-consuming and circuitous southbound routing—which must backtrack though other competing port areas—will remain a limitation on Humboldt Bay's attractiveness for most rail-oriented marine cargoes to/from points beyond the Bay Area where superior rail connections are needed to compete. However, the restored rail service will be important for marine-dependent industrial opportunities (discussed below) where adequacy of rail service is needed to compete.

#### Market Priorities

Each opportunity was rigorously analyzed in terms of its overall attractiveness and Humboldt's competitiveness, using the factors identified in Figure 6 below. Those markets that were found to be most attractive, and for which Humboldt was found to be competitive, were assigned the highest priority; those least attractive and for which Humboldt is least competitive were assigned the lowest priority.

Market Attractiveness Factors	Humboldt Bay Competitiveness Factors
Overall market size Market growth & stability Capital/infrastructure requirements Profitability Business operating risk Ease of entry Intensity of customer/supplier leverage Intensity of competition	Market share, reputation & image Proximity to the market or resource Navigation access & cost Rail access & cost Highway access & cost Site availability & readiness Facility & operating cost position Workforce availability & productivity Support services availability Business climate Livability

#### Figure 6 – Market Evaluation and Prioritization Factors

Significant global trends driving new opportunities for Humboldt Bay were found to be the rising demand and shortages in the construction, energy, water and seafood markets, as well as growing interest in tourism and the environment. The most promising opportunities are in marine-dependent industrial projects, niche dry and liquid bulk cargoes, aquaculture, tourism and marine science, and boat building. A summary of the attractiveness and Humboldt Bay's competitiveness in each market is presented below in Figure 7.

	Weak Competitive Position	Neutral Competitive Position	Favorable Competitive Position
Attractive Market Segment	Marine Industrial (w/o rail) Vessel Homeporting	Marine Industrial (w/ rail) Liquid Bulks Coastal Lumber Barge (w/o rail) Marine Lab/Science Center Repositioning Cruise Ships	Bulk Aggregates/Rock Aquaculture
Neutral Market Segment	Project Cargoes Coastal Lumber Barge (w/ rail) Rail-On-Barge (w/ rail) Automobiles	Import Forest Products Rail-On-Barge (w/o rail) Public Aquarium Boat Building & Vessel Repair Naval Vessel Museum	Commercial Fishing Marina/Boating/Yachting
Unattractive Market Segment	Containers Breakbulk Steel Fruit	Container Barge	Export Forest Products
	Highest Priority		

#### Figure 7 – Market Prioritization Map

Highest Priority Priority Selective/Potential Priority Lowest Priority

Marine-dependent industrial opportunities are essentially manufacturing facilities requiring a major marine shipping component, either to bring in raw materials or to ship out finished products. Examples include a sheetrock manufacturing plant that imports bulk gypsum or a mini steel mill the imports iron products and/or exports steel slabs and coils. Humboldt's advantages are the availability of large sites on Samoa Peninsula with access to the 38-foot channel, relatively low cost land, labor and livability. While these opportunities are not frequent, they result in a high volume of marine trade and high employment. Readiness and consistent marketing are keys to success.

Dry bulk cargo opportunities include the shipment of bulk aggregates and rock to the Northern California construction market. Resources in Humboldt County are being closely analyzed by a number of companies, with the likelihood that high volumes of bulk aggregate and rock will need to be shipped by ocean barge. Liquid bulk cargo opportunities exist in liquefied natural gas (LNG) and export water. Energy producers and marketers continue to pursue projects to serve the California market, and a major company has shown significant interest in Humboldt Bay as an LNG terminal location, connecting to the California natural gas pipeline system. Likewise, various companies have proposed water export to Southern California over the past several years, and presently a global consortium is exploring the potential to ship surplus Humboldt water using ocean-going waterbag technology.

Aquaculture is an attractive market, given its growth outlook, the relatively low investment requirements, and shellfish farming conditions in Humboldt Bay. Based on these growing conditions, Humboldt stands a good chance of building on its competitiveness in oyster production, the only downside being transportation cost from Humboldt to outside markets.

A number of tourist and marine science activities were found to be potential opportunities, particularly if approached as a synergistic cluster. This could include a public aquarium, cruise dock, Naval vessel museum and marine science center, which would build upon Humboldt's unique tourism surroundings and marine science base.

Based on growth in the luxury yacht market and the experience of the Port of Port Angeles, the opportunity to attract a boat builder to Humboldt Bay appears to have merit. The market analysis was not conclusive on the feasibility of such an operation, but further study and investigation is warranted on the basis of Humboldt's water access, central location for delivery on the West Coast and livability.

While a high priority is recommended for the markets addressed above, existing import and export forest product terminal handling activities should continue to be supported and monitored for potential new opportunities; the potential for a coastal forest products barge service or rail-on-barge service warrant monitoring and further investigation; and the needs of commercial fishing should continue to be supported.

Humboldt's basic weaknesses are in the areas of local market size, lack of proximity to a large metropolitan market and limited inland truck and rail access. These are major competitive disadvantages for cargo handling activities including containers, automobiles, breakbulk steel, fruit, and project cargoes. Furthermore these markets are considered to be unattractive for a niche port or new entrant because of the intensity of competition, high customer leverage, short contract durations and resulting high risk. These markets should be given the lowest priority.

#### Strategic Focus Areas

Building on Humboldt's core advantages and the specific market opportunities identified, several strategic areas of focus were identified for the Harbor Revitalization Plan, including a mix of new and traditional harbor activities:

- Marine-dependent industrial opportunities;
- Niche dry and liquid bulk cargoes;
- Coastal barge feeder market access;

With Current Rail Conditions

- Tourism and marine science;
- Aquaculture and commercial fishing;
- Boat building & vessel repair; and
- Forest products cargo handling.

### **Harbor Revitalization Alternatives**

#### Alternative Scenarios

Alternative revitalization plans for Humboldt Bay were evaluated under six alternative scenarios relative to rail service and public terminal investment. Given the circumstances surrounding the inactive NCRA rail line, alternatives were assessed based on (1) current rail conditions and (2) assuming restoration of rail service in accordance with the operating plans developed in the *Long Term Financial Feasibility of the Northwestern Pacific Railroad* (a companion report to this study). Likewise, three levels of public marine terminal investment were considered including a public general cargo terminal, public investment in bulk or marine industrial docks, and no public investment. The six scenarios are illustrated in Figure 8.

With Public General Cargo Terminal	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public General Cargo Terminal	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public General Cargo Terminal Coastal Feeder Barge Development
With Public Investment In Bulk Or Marine Industrial Docks	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public Bulk/Marine Industrial Dock Investment	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public Bulk/Marine Industrial Dock Investment Coastal Feeder Barge Development
With No Public Terminal Investment	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Coastal Feeder Barge Development

#### Figure 8 – Alternative Harbor Revitalization Scenarios

With Rail Service Restored

The most common type of public marine terminal is a public general cargo terminal used for handling breakbulk cargoes and possibly containers carried by steamship common carriers, and breakbulk, possibly bulk and other cargoes carried by charter vessels. In this scenario, the port authority typically develops and maintains the facilities, contracts out the operation to a private terminal operator/stevedore, and jointly markets the facilities with the operator. The contract commitments by the terminal operator and customers are relatively short (1 to 3 years) resulting in fairly high business risk.

It is also possible for a port authority to participate in the development of a bulk cargo terminal. In this scenario, terminal development is deal-driven, with the port and a private party (the exporter, importer, carrier or terminal operator) jointly developing and maintaining the facilities. The port is typically responsible for preparation of the site and development/maintenance of the waterfront structures (docks or piers), while the operator often provides and maintains all of the bulk material handling facilities.

The third scenario is public investment in the waterfront facilities serving a marinedependent industry. This is very similar to investment in a bulk cargo terminal as described above, assuming that the manufacturer/importer/exporter is involved on a longterm basis. In this case, the port prepares the site and develops and maintains the waterfront structures, and the manufacturer develops and maintains the industrial facilities.

#### Site Utilization Alternatives

Numerous site utilization alternatives were then evaluated to match the priority markets with the key sites in Humboldt Bay, based on detailed siting criteria developed for each market use.

### **Recommended Harbor Revitalization Plan**

Four broad criteria were used to evaluate the alternative revitalization scenarios and associated siting options to arrive at a recommended plan. These are:

- *Market Justification* Is the strategy scenario supported by the market analysis or does it contain key elements that are unsupported?
- *Risk and Reward* Does the strategy assume reasonable risks commensurate with the potential benefits that can be created?
- *Site Utilization* Does the plan assign the available sites in Humboldt Bay to their highest and best use, resulting in a reasonable supply of land for the various markets and considering potential environmental issues?
- *Synergy* Does the overall plan utilize the available sites in a balanced, coherent and synergistic way, or does it lead to inherent conflicts within the harbor?

#### Recommended Strategy

Using these criteria, the scenarios involving public investment in bulk and marinedependent industrial dock facilities are recommended. These strategies target the harbor activities most justified by the market in terms of their overall attractiveness and the Port of Humboldt Bay's competitiveness. Furthermore, by pursuing public investment in bulk and marine-dependent industrial dock facilities, the Harbor District, City and County can play a vital role in attracting and securing new harbor opportunities with an appropriate level of risk. Because these types of facility developments tend to be deal driven and long-term in nature, direct Harbor District participation in their development, or the application of port-issued, tax-exempt industrial development bonds, could provide a valuable service while assuming a reasonable business risk.

The scenarios that include a public general cargo terminal are not recommended because they are not supported by the market analysis and they involve an unreasonably high level of risk. Almost all of the markets that would be involved in public general cargo terminal operations were identified as unattractive in the prioritization analysis, and Humboldt Bay was found to be uncompetitive in most of them as well. The 'build it and they will come' nature of public general cargo terminals, combined with the short contract terms common in the trade, high customer leverage, and intense port competition, would result in excess capacity and a level of risk that is not commensurate with the limited market opportunity available.

As to the rail conditions, a strategy of supporting restoration of the NCRA rail line but preparing for the continuation of no rail service is recommended. The availability of rail service will no doubt enhance the marine-dependent development strategy and the two should be coupled when promoting the Port's needs with state and Federal agencies and representatives. However, there is no certainty that rail service will be funded and restored in the foreseeable future. Therefore, the Harbor District should continue to periodically explore the feasibility of coastal barge feeder services as an alternative to rail.

#### **Recommended Site Utilization**

The priority markets identified in the recommended revitalization strategies were matched with the key sites to develop a recommended site utilization plan as shown in Figure 9.

The Eureka Airport Site and Simpson-Samoa (Redwood Dock) Site are recommended for marine-dependent industrial opportunities. The public ownership aspects of these areas will ensure that the Humboldt community can market these sites for their intended use. Reconfiguration of the Simpson-Samoa (Redwood Dock) area to consolidate coastal dependent industry to the south and other uses to the north could enhance the utility of this area for marine-dependent industrial opportunities. With these two sites, Humboldt will have sufficient property to accommodate two or three major marine industrial customers over the long term.

The Dock B/Balloon Track site is recommended for consideration as a tourism/marine science cluster, possibly including a public aquarium, marine lab, cruise dock, Naval vessel museum and related activities. This location has the advantage of synergy with existing tourism features in Humboldt, including the Old Town area and waterfront boardwalk, which are within walking distance. With proper land use protection, the fisherman's work area would also add maritime ambiance for tourists. Development of

the Halvorsen/City site at the east end of this downtown waterfront strip could compliment the Dock B/Balloon track development, with the two acting as book ends or anchor tenants in a lively people-oriented waterfront district. The site could also be served by a rail trolley connecting the attractions in the district, a water taxi to Woodley Island and Samoa, and the terminus of a short line excursion railroad as discussed in the *Long Term Financial Feasibility of the Northwestern Pacific Railroad*. Until feasibility and master planning are addressed, the Dock B and Balloon Track parcels should be considered together as a single potential site for this use.

Marine Use	Recommended Sites
Marine-Dependent Industrial Opportunities	Eureka Airport Property Simpson-Samoa (Redwood Dock) Site
Bulk Aggregates/Rock	Fields Landing Terminal (southern origin) Samoa-Pacific Pulp Mill Dock (northern origin)
Liquid Bulks	Samoa-Pacific Pulp Mill Dock Simpson Property/Fairhaven Terminal
Marine Science/Tourism	Dock B/Balloon Track Property
Aquaculture Facility	Fields Landing Small-Parcel Site (current needs) Parcel 4 (long term growth)
Boat Building & Vessel Repair	Fields Landing Terminal (public site) Schneider Property (private site)
Fisherman's Work Area	Commercial Street/C Street Dock
Coastal Lumber Barge Service	Eureka Forest Products/Sierra Pacific (open storage) Fairhaven Terminal (covered storage)
Rail-on-Barge Service	Fields Landing Terminal Humboldt Bay Forest Products Schneider Dock
Forest Products Cargo Handling	Eureka Forest/Sierra Pacific (chips, logs lumber) Fairhaven Terminal (pulp, plywood, veneer) Humboldt Bay Forest Products (logs, lumber) Samoa-Pacific Chip Export dock (chips)

Figure 9 – Summary of Recommended Sites for the Priority Markets

For aquaculture development, the Fields Landing Small Parcel Site (Vita Sea Corp.) was found to be most suitable for meeting current needs, based on its location, size and existing infrastructure. It also has the advantage over the Samoa Peninsula Small Parcel Site of being located away from potential deep draft vessel traffic. For long-term needs, if expansion and related aquaculture support and research facilities are pursued, Parcel 4 is recommended because of its larger size.

#### Humboldt Bay Vision

The recommended Harbor Revitalization Plan results in a vision for Humboldt Bay incorporating several interrelated elements:

- People-oriented activities to the north and industry to the south, on both the Eureka side of the harbor and the Samoa Peninsula side, considering the Samoa township development;
- Large-parcel marine-dependent industrial development on Samoa Peninsula south of the Samoa township;
- Niche dry and liquid bulk cargoes on Samoa Peninsula and at Fields Landing Terminal.
- Potential public-private development of marine-dependent industrial and bulk docks;
- Long-term focus on downtown waterfront tourism and marine science with the Dock B/Balloon Track development;
- Permanent homes for aquaculture and commercial fishing work areas; and
- Active development of coastal barge feeders at private terminals as market conditions warrant.

### Implementation Plan

A detailed implementation plan is provided, which emphasizes steps to improve site readiness and intensify marketing. These steps include recommended actions in the areas of site planning, zoning, utilities, transportation infrastructure, follow-up study work, government relations, property negotiations, and other issues. The following key issues relating to site readiness, feasibility and marketing are addressed in the implementation plan:

- Removal of the airport use deed restriction on the Eureka Airport Site in order to ready that location for marine industrial, and a plan for reconfiguration of the site, addressing relocation of New Navy Base Road and environmental issues.
- Resolution of potential ownership, zoning and use conflicts at the Simpson-Samoa (Redwood Dock) Site in order to achieve the optimum configuration for marine-dependent industrial opportunities.
- Conceptual facility planning, environmental evaluation, cost estimates and a business plan for Fields Landing Terminal to address exclusive-use or common-user aggregate handling as soon as an initial user is ready to move to the site selection stage.
- A more detailed market analysis, feasibility study, master plan and business plan for the development of a tourism and marine science cluster the Dock B/Balloon Track area.
- Monitoring and assessment of the feasibility for coastal feeder barge service as market conditions evolve.

- Finalization of site selection for a common use aquaculture facility and continued development of the commercial fisherman's work area.
- A dedicated harbor marketing function within the Harbor District, City and/or County that will act as a single focal point to proactively identify and pursue opportunities for which Humboldt Bay is competitive.
- Incorporation of the Harbor Revitalization Plan recommendations into the appropriate comprehensive or general land use plans to ensure ease of local permitting when opportunities arise.
- Programmatic CEQA reviews when the Revitalization Plan's conclusions and recommendations are incorporated into action plans that establish commitments to carry out the Plan.

# 1. Background & Introduction

Coastal ports throughout the North Pacific have been faced with dramatic shifts and changes in market conditions over the past two decades—changes that have significantly reduced business volumes and vessel activity at their marine terminals and, consequently, employment levels and economic vitality in their communities. Declines in traditional forest products and commercial fishing activities have resulted from diminished resources, new regulations, and shifting economics on both a national and global scale.

Where breakbulk and bulk forest product exports once were the backbone of many coastal ports, logging has been curtailed, mills have shut down, production has shifted to other regions, and containerization has taken market share. A strong U.S. dollar has also diminished export competitiveness in these industries, and timber product imports have emerged. Likewise, where commercial fishing once was a vital component of the economic base for these ports, stocks have been depleted, endangered and threatened species listings abound, catches have declined, and foreign competition has risen.

It is with this global backdrop that the Humboldt Bay Harbor, Recreation and Conservation District—along with the City of Eureka and Humboldt County—has undertaken the Port of Humboldt Bay Harbor Revitalization Plan aimed at establishing a new and sustainable maritime focus for the community.

The Port's strategy for revitalization involves two phases, channel deepening and landside improvement. After a 12-year effort, the Humboldt Bay Channel Deepening Project was completed in April 2000. The new 48-foot deep Bar and Entrance Channels and 38-foot deep North Bay and Samoa Channels now provide for greater navigation safety and improved vessel economics. The reduction of light loading and increased economies of scale now possible at Humboldt Bay, particularly for the larger Panamax forest products carriers, promises to improve the Port's competitiveness for marine trade.

With the completion of the Channel Deepening Project, the focus of the Harbor Revitalization Plan is on the marine facilities, landside access and the associated economic development and marketing of the Port.

The Harbor Revitalization Plan is a strategic planning and feasibility assessment of possible future actions, and does not commit the Harbor District, County or City to any specific future actions to carry out its conclusions or recommendations. Each of the local governments that has an interest in revitalizing the Port will conduct programmatic (plan-level) California Environmental Quality Act (CEQA) reviews when each government incorporates the Revitalization Plan's conclusions and recommendations into action plans that establish commitments to carry out the Plan. Potential environmental consequences that could be associated with the Plan's recommendations were identified and considered by the local agencies in formulating and reviewing the Revitalization Plan's elements.

# 2. Previous Studies

In the preparation of this plan, previous studies and plans dating back to 1975 were identified and assembled, and the more recent reports relevant to this report were reviewed. A complete list of these studies, including abstracts, is included in a separate volume entitled *Port of Humboldt Bay Revitalization Plan: Annotated Bibliography, 2003.* 

# 3. Existing Port Properties

The 38-foot North Bay and Samoa Channels and the 35- to 26-foot Eureka Channel serve the northern portion of Humboldt Bay, and the 26-foot Fields Landing Channel serves the southern portion of the bay. The area includes a wide variety of privately-owned and publicly-owned properties and marine facilities, as well as extensive tideland and environmentally sensitive areas, and is in a tsunami hazard zone. The study area includes all current and potential marine commercial and industrial properties in Humboldt Bay from the Samoa Bridge (CA 255) to the end of Fields Landing Channel on the mainland, and from the Samoa Bridge to the channel entrance on Samoa Peninsula.

Using Humboldt County tax parcel data supplemented by additional research on missing parcels, a total of 235 waterfront or near-waterfront parcels were identified and inventoried. The County records were not double-checked to ensure that all boundaries, ownership, zoning and other data recorded for these parcels were up to date. A complete inventory of these parcels is in Appendix A including, as available:

- Parcel number
- Ownership
- Acreage
- Land and improvement values
- General plan land use designation
- Zoning
- Coastal zone status
- 100-year flood plain status
- Utilities
- Transportation access
- Potential environmental considerations

### 3.1 Key Sites

Eighty key parcels were identified and grouped into 16 major sites for consideration in the preparation of the Harbor Revitalization Plan. They include six sites with active cargo terminals, five sites with inactive cargo terminals, and five industrial, commercial or other public sites. The criteria used to select these key sites include overall site size, channel depth, current use, and potential availability for use/reuse. Sites with existing or previous development were generally included.

The key sites are mapped in Figures 3-1 to 3-11 and the parcel groupings that make up each major site are identified in Appendix A. In some cases, the parcel groupings include adjacent parcels of different ownerships that could potentially be consolidated to make up the site. All acreages discussed below refer to upland acres only, and exclude submerged acreage.

#### 3.1.1 Key Sites – With Active Cargo Terminals

Details on the key sites with active cargo terminals are presented in Figure 3-12. All of these sites are privately owned and operated. They include:

#### Schneider Dock

This 16-acre site is located south of the downtown area on the 38-foot deep North Bay Channel. It includes a multipurpose utility dock that has seen intermittent use by Coast Guard, cruise, marine safety and marine environmental vessels. The last cargo ship to use the facility was in 2000. The site may contain a potential underground storage tank(s). Schneider Dock is pictured in Figure 3-15.

#### **Eureka Forest Products/Preston Properties**

This 29-acre site includes two adjacent ownerships south of downtown on the 38-foot North Bay Channel—Eureka Forest Products (a.k.a., Sierra Pacific) to the north with 17 acres, and Preston Properties to the south with 12 acres. Sierra Pacific handles logs, woodchips and other forest products on its portion of the site. The Preston Properties portion of the site contains potential wetlands, tidelands and old pilings, with a potentially sensitive environmental area to the south. The Eureka Forest Products dock is pictured in Figure 3-16.

#### **Chevron Terminal**

The Chevron Terminal is a 3.5-acre site south of downtown on the 38-foot North Bay Channel. Chevron handles refined petroleum products by ocean barge at this location for itself and seven other gasoline companies.

#### Humboldt Bay Forest Products

The Humboldt Bay Forest Products site involves 77 acres on the 26-foot deep Fields Landing Channel, including adjacent parcels from several ownerships. Import logs are handled at the site. The site contains potential wetlands, flood areas, mud flats and old pilings. The Humboldt Bay Forest Products dock is pictured in Figure 3-17.

#### Samoa Pacific Chip Export Dock

The Samoa Pacific Chip Export Dock is a 17-acre site on Samoa Peninsula served by the 38-foot North Bay Channel. Bulk woodchip exports are handled at this location. The Samoa Pacific Chip facility is pictured in Figure 3-21.

#### Simpson Property

The Simpson Property includes 300 acres on Samoa Peninsula served by the 38-foot North Bay Channel, site of the dismantled former Simpson Paper pulp mill. The site includes an approximately 10- to 15-acre facility called Fairhaven Terminal, operated by Westfall Stevedoring, which handles breakbulk woodpulp exports. It contains potential wallflower layia habitat and wetlands. Fairhaven Terminal is pictured in Figure 3-23.

#### 3.1.2 Key Sites – With Inactive Cargo Terminals

Details on the key sites with inactive cargo terminals are presented in Figure 3-13. This category includes a mix of publicly-owned and privately-owned properties. They include:

#### Dock B/Balloon Track

The Dock B/Balloon Track site, located just south of downtown, includes a total of 54 acres. The 15-acre waterfront parcels are owned by the City of Eureka and the 39-acre

inland parcels are owned by the Northwestern Pacific and Union Pacific railroads. The site is located on the 35-foot deep Outer Reach of Eureka Channel and is bisected by Waterfront Drive. The facilities at Dock B are in poor condition with some use for commercial fishing. The site may contain wetlands and potential issues from former industrial activities.

#### **Phillips Petroleum**

The privately owned, 4-acre Phillips Petroleum (formerly Tosco) site is located on the 38-foot North Bay Channel south of downtown between Schneider Dock and Eureka Forest Products. This site is an inactive liquid bulk facility and may contain potential wetlands or soil contamination.

#### **Fields Landing Terminal**

Fields Landing Terminal (pictured in Figure 3-18) is located at the end of the 26-foot deep Fields Landing Channel. The site could include up to 48 acres, including 31 acres of waterfront property owned by the Harbor District and 17 inland acres owned by the Northwestern Pacific railroad and a private party. It contains potential wetland areas and possibly an underground storage tank(s).

#### Simpson-Samoa (Redwood Dock) Site

This 214-acre site is located on Samoa Peninsula, served by the 38-foot Samoa Channel, and is the location of the former Louisiana Pacific forest products mill and shipping terminal. The Harbor District holds in trust approximately 34 upland acres along the waterfront, and Simpson Samoa and the Samoa Pacific Group own the remaining upland parcels. The structural condition of the timber dock at the site, pictured in Figures 3-19 and 3-20, is poor according to a 1994 EIR, and is likely unusable for modern cargo operations. The site contains potential tidelands, wetlands, archeological resources and old pilings. A residential area, owned by the Samoa Pacific Group is located on a bluff overlooking the site. This area and Samoa Pacific Group's parcels below the bluff are planned for mixed use development, potentially including additional residential, retail, a community center, marina, business park and other uses (see Section 3.2.4 below).

#### Samoa Pacific Pulp Mill Dock

The Samoa Pacific Pulp Mill Dock includes the pulp mill dock operated by Samoa Pacific Cellulose and an adjacent 17-acre upland parcel owned by Samoa Pacific. The site is located on Samoa Peninsula and served by the 38-foot Samoa Channel.

#### 3.1.3 Key Sites – Industrial, Commercial & Other

Details on the key industrial, commercial and other sites are presented in Figure 3-14. This category includes a mix of publicly-owned and privately-owned properties. They include:

#### Halvorsen/City Sites

The Halvorsen and City sites include 27 acres located just east of the downtown area, under the Samoa Bridge. The City owns approximately 15.5 acres and Shoreline Development owns 11.5 acres. The sites are located beyond the Inner Reach of Eureka

Channel where water depths appear to be 8-10 feet according to NOAA charts. This mostly undeveloped area has been considered for hotel development and similar uses in the past. The site contains potential tidelands, wetlands and monitoring wells.

#### HSU Boating Center

The HSU Boating Instruction and Safety Center is an approximately 2-acre site located east of downtown on the 26-foot deep Inner Reach of Eureka Channel. The site is owned by the City of Eureka.

#### **Commercial Street-C Street Docks**

The Commercial Street-C Street Docks include six parcels on the 26-foot deep Inner Reach of Eureka Channel between B Street and F Street in downtown Eureka. The site includes Coast Oyster, Eureka Seafoods and several City-owned parcels.

#### Parcel 4

Parcel 4, owned by the City of Eureka, is located south of downtown on the 38-foot North Bay Channel. The approximately 13.5-acre site is undeveloped, with the Chevron Terminal to the south, a natural resource area to the north and the Bayshore Mall to the east. The site contains potential wetlands, pilings and industrial facility remains.

#### **Eureka Airport Property**

The Eureka Airport Property (pictured in Figure 3-24) is a very large site owned by the City of Eureka on Samoa Peninsula, served by the 38-foot deep North Bay Channel. The total size is 487 acres; however, when a mitigation area and off-road vehicle recreation area are excluded the site size is approximately 347 acres. The airport site contains potential wallflower layia habitat, potential wetlands, dunes and archeological resources.

### 3.2 Other Sites of Interest

#### 3.2.1 Marinas

Humboldt Bay is served by three main marinas:

#### Woodley Island Marina

Owned by the Harbor District, Woodley Island Marina is located on the 26-foot deep Inner Reach of Eureka Channel. This 237-slip facility serves a combination of pleasure craft and commercial fishing boats.

#### Eureka Public Marina

The Eureka Boat Basin, owned by the City of Eureka, is located near downtown on the 26-foot Outer Reach of Eureka Channel. With 134 slips, this facility also serves a combination of pleasure craft and commercial fishing boats.

#### King Salmon Marina

King Salmon Marina, Johnny's Marina & RV Park, and E-Z Landing are located just north of Fields Landing on the 26-foot deep Fields Landing Channel. These privately owned facilities serve a combination of upland residences and recreational vehicles, seasonal boats and pleasure craft.

#### 3.2.2 Boat/Ship Repair

Humboldt Bay is served by two small boat/ship repair facilities:

#### Eureka Boat Yard

This small, privately-owned facility is located on Samoa Peninsula south of the Samoa Pacific Chip Export. Eureka Boat Yard provides repair work on a seasonal basis.

#### **Fields Landing Boat Yard**

The Fields Landing Boat Yard is a self-serve facility provided by the Harbor District at Fields Landing Terminal. The Harbor District provides the haul-out and launch service and the individual vessel owners arrange for repair work at the site.

#### 3.2.3 Small-Parcel Marine Development Sites

Two areas in Humboldt Bay provide locations for small-parcel marine commercial and industrial uses. In this capacity they serve as 'incubator' sites for small industry to develop. They include:

#### **Fields Landing Small-Parcel Site**

This approximately 8-acre area is located between of Humboldt Bay Forest Products and Fields landing Terminal on the 26-foot Fields Landing Channel. It encompasses seven parcels, including Vita Sea Corporation and Eureka Fisheries.

#### Samoa Peninsula Small-Parcel Site

The Samoa Peninsula small-parcel site is located on Samoa Peninsula between the Samoa Pacific Chip Export Dock and the Simpson Property. The approximately 9-acre site encompasses almost 40 parcels, including residential, boat repair, aquaculture and other uses.

#### 3.2.3 Dredge Disposal Sites

Within three adjacent parcels totaling 34.5 acres on Samoa Peninsula is a 23-acre site designated for dredge material disposal and reuse. The parcels are located immediately south of the Samoa Bridge and north of the Simpson-Samoa (Redwood Dock) Site.

#### 3.2.4 Samoa Town Mixed-Use Development Site

The Samoa Town mixed-use development site is a planned, mixed-use development on the site of the old Samoa company town on Samoa Peninsula, served by the 38-foot deep Samoa Channel. The town of Samoa includes existing residences and the Samoa Cookhouse located on a bluff overlooking the original mill site and marine terminal. Samoa Pacific Group, LLC, a local private developer, purchased the site from Simpson Samoa Company in 2001 and have master planned it for a combination of potential uses including residential, retail, a community center, marina, business park and other uses. The site overlooks the Simpson-Samoa (Redwood Dock) site, described in Section 3.1.2 above, and includes parcels that could be incorporated into that site.

Figure 3-1 – Key Marine Sites Port of Humboldt Bay



#### Port of Humboldt Bay Harbor Revitalization Plan

Miles 2 Note: Boundaries are approximate based on County tax parcel data. Dao Principal Highways NCRA Rail Corrido Airport Si Φ Simpsor Eureka 0.5 0 5

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Figure 3-4 – Schneider Dock, Phillips & Eureka Forest Products/Preston Properties Sites







Figure 3-6 – Humboldt Bay Forest Products & Small Marine Development Site







Figure 3-8 – Simpson-Samoa (Redwood Dock) Site







#### Figure 3-10 – Simpson Property & Small Marine Development Site

#### Figure 3-11 – Eureka Airport Site



Figure 3-12 – Key Marine Sites	s – With Active Cargo Terminals	6				
	Schneider Dock	Eureka Forest Products/ Preston Properties	Chevron Terminal	Humboldt Bay Forest Products	Samoa-Pacific Chip Export Dock	Simpson Property/ Fairhaven Terminal
Location	South of downtown area North Bay Channel	South of downtown area North Bay Channel	South of downtown area North Bay Channel	Fields Landing Fields Landing Channel	Samoa Peninsula North Bay Channel	Samoa Peninsula North Bay Channel
Ownership	Private - Schneider	Private - Eureka & Preston	Private - Chevron	Private - Murphy & others	Private - LP	Tideland – Harbor District Upland - Private - Simpson
Operating status	Active Operated by Schneider	Active – Eureka Forest Products (operated by Sierra Pacific) Inactive for cargo – Preston Properties	Active Operated by Chevron	Active Operated by HBFP	Active Operated by Samoa-Pacific	Fairhaven Terminal - Active (operated under license by Westfall Stevedoring) Balance of site - Inactive
Cargoes & operations	Multipurpose utility dock Intermittent berthing of non-cargo vessels One Coast Guard boat in 2001 Last cargo ship was in 2000	Multipurpose forest products Inbound log barges Outbound woodchip barges Occasional inbound lumber barges	Bulk petroleum Dedicated ocean barge every 7-8 days	Inbound logs Averaged ~35 vessels/year since 1999 Mostly inbound log barges 2001 - 30 barges, 55 million bd. ft. 2002 (8 mos.) - 21 barges 40 million bd. ft.	Bulk woodchips ~1 chip ship per quarter 4 chip ships during 2002 (8 mos.)	Fairhaven Terminal: Breakbulk woopulp Outbound pulp from Samoa-Pacific mill to breakbulk ships 3-4 ships per month
Zoning	Coastal dependent industrial Coastal development	Coastal dependent industrial Industrial	Coastal dependent industrial	Commercial Industrial Coastal dependent industrial	Industrial	Industrial
Upland acreage	16 acres	29 acres total 17 acres Eureka 12 acres Preston	3.5 acres	Up to 77 acres	17 acres	Total site: 300 acres Fairhaven Terminal: 10-15 acres
Water frontage & site depth	Waterfront ~1,500' Site depth ~600'	Waterfront ~1,800' Site depth ~800'	Waterfront ~400' Site depth ~300'	Waterfront ~2,250' Site depth ~400-1,000'	Waterfront ~800' Site depth ~750-1,000'	Total site: Waterfront ~4,500' Site depth ~3,500' Fairhaven Terminal: Waterfront ~800' Site depth ~300-500'
Adjacent parcels	Dock B to the north Tosco to the south	Tosco to the north Environmentally sensitive area to the south	Parcel 4 to the north Light industry & residential to the south Railroad & shopping mall to the east	Undeveloped areas, tidelands and Kings Salmon Marina to the north Fields Landing Terminal to the south	Vacant LP parcel & pulp mill to the north Small marine commercial operations to the south	Samoa-Pacific Chip Dock & LP property to the north Town of Fairhaven to the south
Dock	400' wharf w/ single trestle to shore Concrete pile supported w/ concrete deck 14' above MLLW	475' wharf w /three trestles to shore Timber pile supported and decked 14' above MLLW Abandoned rail trestle	~150' wharf w/ mooring/breasting dolphins & catwalks (total ~450') plus single trestle to shore Pile supported and decked	600' wharf w/ two trestles to shore Timber pile supported w/ paved deck 13' above MLLW	1,346' bulk dock w/ concrete capped dolphins and catwalks 18' above MLLW	500' x 66' wharf w/ single trestle to shore Timber pile supported w/ concrete deck 16' above MLLW
Facilities	11 acre paved storage yard 40,000 sq. ft. covered storage	Storage yard 1,000,000 FBM covered lumber storage Bulk woodchip handling equipment	3.5 million gallon tank farm, piping and truck load-out facilities	50 acre storage yard 10,000 sq. ft. covered storage	17 acre yard Bulk woodchip handling equipment	Fairhaven Terminal: 5 acres paved storage 2 covered storage buildings: ~160,000 sq. ft. and ~60,000 sq. ft.
Depth alongside	38'	35'	26'	35'	38'	38'
Channel depth	38'	38'	38'	26'	38'	38'
Highway access	U.S. 101 access through commercial/light industrial area	U.S. 101 access through commercial/light industrial area	U.S. 101 access through commercial/light industrial area	U.S. 101 access via Fields Landing on/off ramp	U.S. 101 access via New Navy Base Road to Arcata/north and CA 255/ Samoa Bridge to Eureka/south	U.S. 101 access via New Navy Base Road to Arcata/north and CA 255/ Samoa Bridge to Eureka/south
Rail access	Located on NWP 1,100' spur on site	Located on NWP Rail spur on site	Located on NWP	Located on NWP 800' spur on site	Located on NWP	Adjacent Simpson parcel located on NWP
Foreign Trade Zone designation	Could be designated	Could be designated	Could be designated	Yes	Could be designated	Could be designated
Potential environmental considerations	Dock with pilings Potential underground storage tank (UST)	Tidelands Wetlands Pilings from old dock Environmentally sensitive area to the south		Wetland areas, flood areas & mud flats Docks and pilings Residential area on street access		Potential wallflower layia habitat Potential wetlands Potential industrial issues Pilings in bay

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Figure 3-13 – Key Marine Sites	a – With Inactive Cargo Terminal	S			
	Dock B/ Balloon Track	Phillips Petroleum (formerly Tosco)	Fields Landing Terminal	Simpson-Samoa (Redwood) Dock	Samoa-Pacific Pulp Mill Dock
Location	South of downtown area Eureka Channel Outer Reach	South of downtown area North Bay Channel	Fields Landing Fields Landing Channel	Samoa Peninsula Samoa Channel	Samoa Peninsula Samoa Channel
Ownership	City of Eureka & Eureka Redevelopment Agency Private - UP & NWP railroads	Private - Tosco	Harbor District Private - NWP & Schmidbauer	Harbor District Private - Simpson, LP & Simpson Samoa Group	Tideland - St. of California Dock & upland - Private - LP
Operating status	Inactive	Inactive	Inactive except for boat yard	No cargo operations on the dock Environmental response on the dock Pulp and ash storage in buildings	Mostly inactive Dock operation controlled by Samoa- Pacific
Zoning	Coastal dependent industrial Public	Coastal dependent industrial	Industrial	Coastal dependent industrial Industrial	Industrial
Upland acreage	54 acres total 15 acres on water (City) 39 acres inland (RR) Bisected by Waterfront Dr.	4 acres	48 acres total 31 acres on water (Port) 17 inland (private) Bisected by rail ROW	214 acres total 34+ acres on waterfront (Port parcel) 180 acres inland (private parcels) ~55 inland acres bisected by rail ROW	17 acres
Water frontage & site depth	Waterfront ~1,100' Site depth ~300-1,500'	Waterfront ~300' Site depth ~600'	Waterfront ~1,600' Site depth~300-500'	Waterfront ~4,300' Site depth ~800-2,000'	Waterfront ~1,800' Site depth ~1,200' (~600' wide upland area only)
Adjacent parcels	39 acre UPRR 'balloon' property across Railroad Ave. and NWP rail line Schneider to the south	Schneider to the north Sierra Pacific to the south	HBFP & small industry to the north Environmentally sensitive area to the south	Dredge disposal sites to the north Residential to the NW Highway/ocean to the west Pulp mill to the south	Upland 80 acre site in use as pulp mill and chip storage operated by Samoa- Pacific
Dock	No usable facilities	~300' liquid bulk dock w/ single trestle to shore	900' marginal wharf Pile supported w/ paved deck 14' above MLLW	1,064' wharf w/ 3 wide shore ramps Timber pile supported w/ timber deck 10' above MLLW	1,200' bulk dock w/ dolphins and catwalks Inboard barge unloading dock
Facilities	No usable facilities	Tank farm and piping	~5 ac. storage yard 9,800 sq. ft. covered storage	~20 ac. storage yard 2 covered storage buildings: ~35,000 sq. ft. (on dock) and ~18,000 sq. ft. (on land)	None
Depth alongside	NA	NA	26'	35'	38'
Channel depth	35'	38'	26'	38'	38'
Highway access	U.S. 101 access through commercial area	U.S. 101 access through commercial/light industrial area	U.S. 101 access via Fields Landing on/off ramp	U.S. 101 access via New Navy Base Road to Arcata/north and CA 255/ Samoa Bridge to Eureka/south	U.S. 101 access via New Navy Base Road to Arcata/north and CA 255/ Samoa Bridge to Eureka/south
Rail access	Located on NWP	Located on NWP	Located on NWP	Located on NWP	Upland property located on NWP
Foreign Trade Zone designation	Yes	Could be designated	Yes	Yes	Could be designated
Potential environmental considerations	Wetlands Former industrial site	Tideland Possible soil contamination	Wetland areas Industrial area Possible UST	Tideland Archeological resource area Wetlands Pilings in the harbor Housing on bluff overlooking site	Tideland

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	Halvorsen/City Sites	HSU Boating Center Site	Commercial-C Street Docks	Parcel 4	City Airport Property
Location	Downtown Above Eureka Channel Inner Reach	Downtown Eureka Channel Inner Reach	Downtown Eureka Channel Inner Reach	South of downtown area North Bay Channel	Samoa Peninsula North Bay Channel
Ownership	City of Eureka & Eureka Redevelopment Agency Private - Shoreline Development	City of Eureka	City of Eureka & Eureka Redevelopment Agency Private - various	City of Eureka	City of Eureka
Operating status	Inactive	Active	Active	Inactive (undeveloped)	Private operator for recreational aviation Fly-in bed and breakfast
Zoning	Waterfront commercial	Waterfront commercial	Waterfront commercial/coastal	Coastal development	Industrial Natural resource
Upland acreage	27 acres 15.5 acres City 11.5 acres Shoreline City portion bisected by bridge overhead	2 acres	6 acres	13.5 acres	487 acres total 347 acres excluding mitigation & recreation areas ~8 acre waterfront parcel bisected by current road alignment
Water frontage & site depth	Waterfront ~2,700 ' Site depth ~150-500'	Waterfront ~750' Site depth ~200	Waterfront ~1,100' Site depth ~250	Waterfront ~1,600' Site depth ~450'	Waterfront ~1,200' Site depth ~3,000'
Adjacent parcels	Undeveloped land to the east Park to the west	Buildings to the east Vacant NWP parcel to the west	Public waterfront boardwalk and development site to the east Eureka Boat Basin to the west	Environmentally sensitive area to the north Chevron Terminal to the south	California Dept. of Fish & Game parc north of waterfront site
Dock	None	None (Adorni Center is used currently)	Small boat/fishing boat docks	None	None
Facilities	None	None (temporary boat house near Adorni Center currently used)	Oyster & fish processing	None	Existing airport facilities used for recreation None on waterfront parcel (greenfield
Depth alongside	NA	NA	NA	NA	NA
Channel depth	Perhaps 8-10' (not on designated channel)	26'	26'	38'	38'
Highway access	U.S. 101 access through commercial/ligh industrial/ residential area	U.S. 101 access through commercial/ligh industrial/ residential area	U.S. 101 access through commercial/ligh industrial area	U.S. 101 access through commercial/light industrial area	U.S. 101 access via New Navy Base Road to Arcata/north and CA 255/ Samoa Bridge to Eureka/south
Rail access	Located on NWP	Located on NWP	Located on NWP	Located on NWP	Located ~1,000' from NWP ROW terminus
Foreign Trade Zone designation	Could be designated	Could be designated	Could be designated	Could be designated	Yes
Potential environmental considerations	Tideland Wetlands City drains Monitoring wells Filled area	Tideland		Potential wetlands Old industrial site Pilings North end of site environmentally sensitive	Potential wallflower layia habitat Potential wetlands Dunes Archeological resource

PB Ports & Marine, Inc.



Figure 3-15 – Schneider Dock

Figure 3-16 – Eureka Forest Products (Sierra Pacific) Dock





Figure 3-17 – Humboldt Bay Forest Products Dock

Figure 3-18 – Fields Landing Terminal





Figure 3-19 – Simpson-Samoa (Redwood Dock) Site

Figure 3-20 – Simpson-Samoa Redwood Dock





Figure 3-21 – Samoa Pacific Chip Export Dock

Figure 3-22 – Simpson Property



Figure 3-23 – Fairhaven Terminal



Figure 3-24 – City Airport Property



# 4. Market Assessment – Marine Cargo

This section describes the existing cargo market conditions in Humboldt Bay within the perspective of U.S. West Coast markets. The macroeconomic conditions impacting future trade growth and a detailed market analysis are presented in this section.

## 4.1 International Macroeconomic Trends

Underlying the freight flows of commodities that are shipped domestically and internationally are not only the outlook for the U.S., and local regions but also the forecasts for the performance of the economies of U.S. trade partners. The background on the economic outlook for these trade partner countries and regions is presented below, with an emphasis on economic conditions that can affect their trade with the United States.

The U.S. and the world went through recession in 2001 after strong U.S. growth throughout most of the 1990s and into 2000. The economies of many major U.S. trade partners had less steady growth during this period. Asia, and especially Japan, had a much more difficult time during the last half of the previous decade, with an economic downturn that earned the name "the Asian crisis" in 1997 and 1998, and two recessions in Japan during the decade even before the 2001 recession.

### 4.1.1 Exchange Rates

One of the key factors affecting the level of trade at any point in time is the relative currency exchange rate between the U.S. dollar and the currencies of its trade partners. For several years, the United States has had an exchange rate policy that has not attempted to reduce the strength of the U.S. dollar. The reasons for the sustained recent strength of the dollar are many, but fundamentally were tied to the willingness and the desire on the part of foreigners to invest in the United States and to hold U.S. currency. The result of the strong U.S. dollar had made purchases of imports relatively cheaper for the U.S. while U.S. exports have been made less price competitive on world markets. The impacts within the U.S. of a strong dollar are not evenly distributed across sectors of industry, the population and the geography of the country. Export-dominated industries and areas, such as in Northern California, suffer from lower export sales and the resulting slowdowns in production and employment. However, for many industries in California, there has been a shift from export to domestic markets. For example, California lumber exports have declined from 2.9% of total shipments in 1990 to 1.0% in 2000.

Industries depending on imported materials as inputs to their own production benefit from the lower dollar prices of imported goods. For example, low dollar-priced foreign electronic and communications equipment benefit those companies and individuals that purchase these imports due to lower expenditures and potentially higher productivity from the ability to afford the foreign-made equipment.

Looking back over the last decade, the dollar reached record highs year after year. The robust expansion up until 2001 drew funds to the U.S. from around the world. The

buildup of the current account deficit indicated that America's obligations to foreign economies have risen to a very high level. Not only has the U.S. economy faced huge outflows of interest payments overseas, the large current account deficit also foretells problems now that foreign investors are reducing their appetite for investments in the United States.

The problems that came with a strong dollar are now starting to diminish, now that the dollar exchange rate has begun to soften. It has taken a long time for the weakening of the dollar to begin, considering that the U.S. economy dipped into recession in 2001. The U.S. Treasury has not encouraged foreign investors into leaving the dollar. Indeed, with the United States' strong position in the global economy, investors worldwide seemed to expect that the U.S. would have a sustained edge over foreign economies, regardless of good times or bad times.

With the U.S. economy serving as the global recovery engine out of the 2001 recession, the forecast is for the U.S. dollar exchange rate to fall over the long term. The Canadian dollar, yen, euro, and British pound have all strengthened against the dollar in 2002, as foreign investors begin to question the invincibility of corporate America. Ironically, those doubts will help export businesses in America, which has seen exports slide as a result of the dollar's strength. This will benefit U.S. exports of goods, such as in agriculture, where the U.S. still has substantial production capacity. However, even a decline of 20% in the dollar (back to the levels of the early 1990s) would not turn U.S. goods exports into a substantial growth engine, because so much manufacturing production has been moved offshore in the interim.

#### 4.1.2 Gross Domestic Product & Trade Growth

The economic performance of major trading partners for Humboldt Bay and other West Coast ports is summarized in the following section.<sup>1</sup>

#### **United States**

U.S. real GDP growth (after adjusting for inflation) has increased at slightly more than 3% during the past two decades and is expected to continue at this rate for the next twenty years. Imports grew much more rapidly than exports in the past but there is expected to be more balanced growth in the future with growth in imports expected to equal growth in exports. However, imports are already at a much higher level than exports and the trade imbalance is expected to remain at current proportions.

#### NAFTA Trading Partners

The North American Free Trade Agreement (NAFTA) has accelerated growth in trade between Canada, Mexico and the United States. Real GDP in Canada is expected to continue at slightly less than 3% per year, while Mexico is expected to grow at 4.3% per year in the next two decades, which outperforms the past two decades. Canada and Mexico experienced very rapid growth in exports during the 1990s. While this is

<sup>&</sup>lt;sup>1</sup> This section is based upon macroeconomic forecasts prepared by DRI-WEFA.

expected to moderate, it will continue to outpace the expected growth in the U.S. Mexico will also experience more rapid growth in imports than in the past.

#### **Pacific Rim Trading Partners**

*Australia.* Among all developed country economies in 2001, Australia best escaped the broad global recession with economic growth sustained during 2001. This achievement was more remarkable with declines in exports due to the decelerating world demand due to the slowdown in the United States, Europe, and Japan, and the resulting weakness in the rest of Asia. It was domestic demand that helped boost Australian economic growth in 2001, with overall growth reaching 2.4% in 2001, following 3.2% growth in 2000. Australia will continue to enjoy relatively strong growth during the long term. The domestic economy will take a gradually less cyclical lead, with a rising contribution from net trade as the rest of the world's economy continues to expand.

China. After Japan, China is becoming perhaps the most important Pacific Rim trade partner for the U.S. This is not so much from the size of the Chinese economy or the current volume of trade, but the fact that China has been growing rapidly as a U.S. trade partner, especially as a source for U.S. imports of manufactured goods. The potential for further growth in trade is significant, as the Chinese economic development has been rapid in recent years, driven partly by large foreign investment in China. China is the one economy in Asia that was least affected by the "Asian crisis" recession of 1997-1998, with sustained growth in gross domestic product of over seven percent annually. China's economic conditions are forecast to remain positive through the long term. Export performance should continue to be strong, aided by global demand recovery. The Chinese government has engaged in deficit spending, partly to build needed infrastructure. China is expected to pursue economic structural reforms to address increasing foreign competition resulting from their entry into the World Trade Organization (WTO). These reforms will result in increased unemployment, which will dampen domestic demand growth. In the long term, the pace of China's long-term growth depends on how successfully the government is in reforming the country's massive and inefficient state companies and their banking system that is plagued by bad loans. These reforms will also transform the Chinese economy into one that is more market oriented and, ultimately, more efficient.

*India*. India's long-term growth prospects depend critically on efforts made by the government to deregulate a broad swathe of the economy and rid it of burdensome regulations stemming from the "license raj." The ability to control the country's nettlesome fiscal deficit will be key in reducing the high cost of capital for the country's private sector. Rapid urbanization rates will act as an important force of change in the long term. India's transformation from a largely autarkic state towards a progressively greater outward orientation will raise the contribution to GDP from net exports, although the pace of change will be gradual and nowhere near the rates that are forecast for East Asian countries. Long-term economic growth is projected at 6.1% per year (real GDP) with growth in imports and exports around 6% per year as well.

*Indonesia.* Indonesia has the largest population of any Southeast Asian country and has the single biggest economy in the region. And benefiting from having the world's fourth-largest population and an endowment of energy resources, Indonesia's economy developed rapidly in the 1980s and into the mid-1990s. Unfortunately Indonesia was severely impacted by the Asian economic crisis in 1997-1998, with massive disruption to its economy and effects that lingered into the global recession of 2001. Recovery has begun in 2002, with projected long-term economic growth at around 3.6% per year. In the long-term, the global recovery is forecast to lift export demand, while high world oil prices will increase export revenues. Domestically, political stability and debt relief can lift business and consumer confidence, laying the foundation for the recovery in investment after the decline in 2001. Indonesia's shaky transition to democracy, after more than three decades of authoritarian rule, has an important role in determining the country's long-term potential for growth. Nevertheless, Indonesia is on the verge of fundamental change; indeed, a number of structural changes are being set in motion that will have significant long-term economic impact.

Japan. For most of the last twenty years, Japan was the second largest U.S. trading partner country after Canada. Recently however, due to the economic problems in Japan, and the success of NAFTA in increasing U.S.-Mexican trade, Japan has fallen to third place behind Mexico. Nevertheless, Japan is still the most significant overseas U.S. trade partner in the world. The outlook for Japan as a U.S. trade partner country is not strong, when compared with faster growing Asian economies, especially China. The primary reasons for this are Japan's continued problems with the structural and regulatory aspects of their own economy. Longer term, a key issue for the Japanese economy will be the aging of its population. With a low birth rate, high longevity, and a relatively early retirement age, transfer payments by the government to the elderly will become extremely burdensome during the next decade. Allowing or even encouraging increased immigration could alleviate this problem, but Japanese policymakers have shown little interest in this option. Thus it is an open question whether or not the government will deal openly with this problem, by adjusting spending and taxes, or will ignore it and fund the imbalance via deficit spending. Japan is expected to continue at an anemic growth rate (real GDP growth of approximately 1.8% per year) for the next two decades. As a result, exports and imports are expected to grow at 4.0% and 4.6% per year respectively.

*Malaysia.* Malaysia will continue to enjoy relatively strong growth through 2010. While it is unlikely that the country will go back to the strong growth levels of the 1990s, the forecast is for growth to average almost 5 percent annually during this period. The forecast for Malaysia in the long-term remains positive, yet it is highly dependent on the continuation of the reforms in the financial sector, as well as stable capital-market policies. A strong and transparent financial sector will improve the domestic investment profile and ensure continued growth. In the long term, Malaysia's ability to continue its impressive growth of the 1980s and 1990s assumes it will ease labor constraints and reduce discriminatory policies that favor Malays over other minority ethnic groups. Malaysia has strong infrastructure, as well as an educated labor pool, which will continue to attract foreign investment. There will still be vulnerability to political disruptions, however, as long as the current government lasts. As a consequence of the draconian capital constraints imposed during the Asian crisis in 1998, Malaysian leader Mahathir is still seen as a loose cannon whose statements and policies can discourage foreign investment. Still, given his domination of Malaysian politics, a succession of struggles after his departure could generate a leadership vacuum and instability for a few years.

*New Zealand.* New Zealand has begun to see recovery following 2001 when annual growth in the economy was 2.8%. The increase in interest rates in 2002 has led to a strengthening currency, with the New Zealand dollar now at its highest level since mid-2000. The domestic economy is showing signs of rebounding, as business and consumer confidence surges. Over the long term, the New Zealand economy is forecast to achieve growth at rates above the average growth compared with the last decade. While the currency will most likely regain some of its value, the current account deficit should begin to improve over the period to 2010. Exports and imports are expected to grow at approximately similar rates of growth.

*Philippines.* The Philippines' near-term economic outlook has improved considerably since 2001. Restored political stability combined with aggressive monetary policy has supported economic growth in the Philippines. The Philippine economy is expected to register annual gains averaging 5% in this decade. Achieving this higher rate requires sustaining growth in the agricultural sector, a recovery in industrial exports, and an improvement in the level of (and environment for) investment. The forecast is that the Philippine economy will reap the returns from ongoing economic and fiscal reform efforts. Investment is expected to increase to 18-19% of GDP by 2007. Long-term prospects for the Philippine economy are generally bright; substantial economic reforms undertaken in the 1990s position the country on a path of sustainable expansion.

*Singapore*. Singapore's economy was hurt by the global recession in 2001 with lingering impacts into 2002. Singapore will continue to experience relatively strong growth through 2010, as both the global economy and domestic technology sector return to growth. While it is unlikely that Singapore will get back to the rates of growth achieved during the expansion of the 1990s, the forecast is for annual GDP growth to average almost 5% the rest of the decade. Singapore's long-term economic outlook remains positive. A move toward expanding the financial-services industry and the announcement that the industry will be deregulated should encourage a renewal of foreign investment in Singapore. Although the government is likely to move slowly, these changes will significantly improve the country's long-term prospects. Singapore's aggressive moves to achieve free-trade agreements with its trading partners, most recently the United States and New Zealand, should also ensure strong export growth in the next decade. Exports will continue to be important for Singapore's growth, but domestic demand will most likely become more relevant to long-term growth. Singapore has good infrastructure and a highly educated work force. A risk to the forecast and sustained long-term growth, however, is the outflow of skilled labor. However, the forecast assumes the government will attempt to reverse this trend by allowing more freedom and encouraging innovation. The government is stable and has always followed prudent economic policy. The chance of sharply reduced growth in the long term remains low.

*South Korea.* South Korea was able to avoid recession in 2001 though their exports were down 20% at one point, and consequently lowered industrial production for the year. In the long term, with relatively high educational attainment, South Korea's attractiveness to foreign investors, and progress in high-tech industries, will enable the country to sustain growth rates in the 4–6% range through 2020. Much of this growth will be internally generated, with the external balance declining as a percentage of South Korean GDP; it is even possible that Korea could see a return to trade deficits, if capital inflows are high enough.

*Taiwan.* Now in recovery after a three-quarter downturn in 2001, Taiwan will enjoy favorable long-term growth. The country's manufacturing sector has successfully been transformed from a low value-added producer, e.g., textiles and toys, into a high valuedadded one, e.g., electronics and computers. Taiwan's persistently high saving rate will allow the country to continue investing aggressively. There is some risk that Taiwan could suffer as Japan has, from shifts in domestic investment to mainland China, reducing domestic employment and consumption. However, the openness of the Taiwan economy and strong links to China will prevent it from falling to the same fate. The forecast is for the population's high level of education and increasing research and development efforts will sustain productivity growth. Another positive factor is the island's openness to trade, which will be bolstered further by entry into the WTO. The island's resources, however, have been highly concentrated in the high-tech industries and export sectors. The distortion of resources and the government's policies will likely restrain the island's further economic transformation and development. In addition, Taiwan's continued concentration on export sectors will make it difficult for the island to avoid being pulled into any global cyclical slowdown by its trade partners.

Thailand. Following a continued slowdown in 2001, Thailand's economy began to recover by year-end. Higher private domestic consumption, boosted by continued spending on government stimulus funds and loosened monetary policy, was the main factor behind the return to economic growth. The government has spent heavily on village development funds, pubic projects, and other emergency stimulus measures to promote the return to growth in the last year. Increasing rural income and a rebounding local stock market, coupled with lower interest rates have led to higher domestic demand for durable goods, which led to higher consumer spending and a boost to the economy. Additionally, due to the global slowdowns, Thailand's exports have not recovered yet, which has slowed the economic recovery, as exports account for some 62% of real GDP at the end of 2001. The long-term outlook for Thailand's economy remains positive, but is dependent on the continuation of reform, especially the restructuring of the financial sector. A stronger and more transparent banking sector will improve the domestic investment profile and ensure continued growth. Thailand has substantial modern infrastructure and a large labor pool, which is forecast to continue to attract foreign firms and investors. Also, in the long term, Thailand will continue to attract long-term foreign direct investment (FDI) from companies keen to position themselves not only for the country's domestic growth potential, but also for its role as a gateway to the Asian market, although it will continue to face strong competition from China. Thailand's longterm position will likely be limited by the degree to which China successfully reforms and advances the development of its own financial system.

*Europe.* Following the recession in 2001, Western Europe's outlook has stabilized and recovery is getting underway. The region's overall GDP is forecast to grow modestly in 2002, after stagnating for most of 2001, where regional GDP was up only 0.5% at an annual rate at the end of 2001. The forecast for Western Europe's average annual GDP growth is 1.5% growth in 2002, but the annual figure masks a substantial acceleration in the second half of the 2002. The forecast projects regional GDP growth will approach 3.0% at an annual rate by the end of 2002. The recovery will be led by exports, but it should also get a big boost from rebuilding of inventory levels, which were reduced sharply during 2001. Europe's economic growth could potentially outpace that of the United States over the next five years because its economy suffers from fewer macroeconomic imbalances than the U.S. economy. The forecast projects Western Europe's average annual GDP growth to be 3.1% in 2003 and 2.7% in 2004. Thereafter, the pace is projected to gently approach the region's trend growth rate of less than 2.5%. However, the U.S. economy's structural superiority is forecast to return to its long-term trend growth rate (which is at least 0.5% per year above Europe's). Europe's long-term growth prospects are constrained somewhat by structural rigidities of its markets, burdensome social-welfare programs, and demographic factors. The forecast projects trend growth rate for Western European GDP at less than 2.5%, compared with the average annual rate of about 2.0% experienced during the 1990s. As with Japan, a serious long-term problem facing Western Europe is the rapid aging of its population, which will put its labor markets and pension systems under increasing stress during the next several decades. The IMF has estimated that by 2050, both Germany and France will have as many pensioners as workers. With no change in their pension systems, it would take more than 40% of the two country's wage bill to keep them solvent. Despite efforts to increase the workforce through immigration and increases in the retirement age, countries such as Germany, France, Italy, and Spain will probably be hit hard by the demographic shifts in the long term, with the United Kingdom and Ireland less affected. Without measures to counter the emerging pension problem, the European Union's per-capita GDP would fall by about 19% by 2050. On average, EU citizens now retire at 58 compared with the statutory retirement age of 65.

*Latin and South America.* The global recession hit Latin America hard in 2001, with return to growth not assured for 2002. Due to political trouble in Argentina and Venezuela, there has been considerable disruption to the economies of the region, affecting trade and foreign direct investment. The political arena is controlling the agenda in Latin America, which reduces the influence of business in achieving potential economic growth. For the long term, Latin American countries are now facing one of the toughest periods in their history. After a decade of progress, reforms are faltering, and all the countries are slowing the pace of reform. The region is experiencing a backlash from the decade of reforms in the 1990s that transformed the economic relationships in these economies and between the economies and the political system. But while the economies have been transformed and modernized, the political systems are still reminiscent of times gone by. All the political clientele-ism and the nepotism that characterized these

countries remain in place. The only difference now is that fewer of the economic resources are still in the hands of the political system to abuse. Now, politicians have to negotiate and deal with rational consumers and businesses that resent the political system's intervention in their affairs. In some countries, such as Venezuela, this backlash has already produced the resurgence of populist governments. Other countries could share this fate, if economic conditions continue to deteriorate or do not improve considerably. The two probable exceptions to this are Chile and Mexico.

	Real	GDP Gro	wth	Exports	of Goods/	Services	Imports of Goods/Services			
Country/Region	80-90	90-00	00-20	80-90	90-00	00-20	80-90	90-00	00-20	
United States	3.2%	3.3%	3.1%	5.7%	7.1%	5.2%	6.9%	9.3%	5.0%	
NAFTA Partners										
Canada	2.8%	2.7%	2.7%	5.5%	8.1%	4.4%	6.4%	6.9%	4.4%	
Mexico	1.9%	3.5%	4.3%	7.8%	13.3%	8.6%	1.7%	13.4%	9.3%	
Pacific Rim Partners										
Australia	3.3%	3.6%	3.3%	6.0%	7.7%	4.7%	5.7%	7.1%	4.7%	
China	9.3%	9.9%	7.3%	9.3%	15.7%	7.8%	6.7%	16.6%	8.1%	
India	5.9%	5.7%	6.1%	5.9%	10.7%	6.0%	5.3%	9.4%	5.7%	
Indonesia	5.7%	3.9%	3.6%	1.0%	6.0%	5.0%	3.4%	4.6%	5.6%	
Japan	4.1%	1.4%	1.8%	5.3%	4.3%	4.0%	5.7%	3.6%	4.6%	
Malaysia	6.0%	6.9%	5.5%	11.0%	12.2%	6.7%	9.7%	11.2%	6.6%	
New Zealand	1.7%	2.7%	3.3%	3.9%	5.6%	4.3%	5.6%	5.3%	4.0%	
Philippines	1.7%	2.9%	4.4%	3.2%	7.5%	6.1%	4.1%	6.2%	6.4%	
Singapore	7.3%	7.4%	4.8%	9.9%	12.7%	6.5%	8.0%	12.0%	6.6%	
South Korea	8.6%	6.1%	5.3%	10.9%	15.7%	5.6%	11.1%	10.8%	6.1%	
Taiwan	7.9%	6.2%	5.3%	10.4%	9.1%	5.5%	10.2%	9.3%	5.2%	
Thailand	7.8%	4.4%	4.8%	14.2%	10.3%	6.1%	11.1%	4.9%	6.8%	
Vietnam	3.7%	7.6%	5.6%	NM	NM	7.0%	NM	NM	6.9%	
Other Regions										
Europe	2.3%	2.2%	2.5%	4.4%	6.1%	4.3%	4.2%	6.0%	4.3%	
Latin/South America	1.0%	3.1%	3.6%	6.3%	6.2%	5.5%	-7.7%	16.0%	5.1%	

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Source: BST Associates using data from DRI-WEFA

NM – Not meaningful

## 4.2 Humboldt Bay Historical Cargo Movements

The following section evaluates trends in waterborne commerce flowing through Humboldt Bay facilities.

#### 4.2.1 All Cargoes By Direction

Exports and domestic receipts dominate waterborne commerce in Humboldt Bay. Between 1990 and 2000, waterborne commerce experienced a peak in 1991 and currently stands at less than one-half this level. By direction of trade, waterborne commerce has exhibited the following trends:

• Exports declined at 9.4% per year between 1990 and 2000.

- Imports increased sporadically during the time period, with an average annual increase 13.1% between 1990 and 2000.
- Coastwise shipments have also been volatile during this time period, increasing at 6.6% per year.
- Coastwise receipts grew at 1.6% per year during the study period.

Commodity	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Annual Change 90-00
Exports	978	931	747	536	635	509	507	582	469	499	366	-9.4%
Imports	11	29	34	14	21	54	17	4	48	90	37	13.1%
Coastwise Shipments	28	709	48	69	368	263	297	228	218	117	54	6.6%
Coastwise Receipts	434	415	358	283	262	280	263	251	238	472	506	1.6%
Total	1,451	2,085	1,187	902	1,286	1,106	1,084	1,065	973	1,178	963	-4.0%

Figure 4-2 – Humboldt Bay Waterborne Commerce (1,000 Metric Tons)

Source: BST Associates using data from the U.S. Army Corps of Engineers

#### 4.2.2 Exports

Exports, which are dominated by forest products, have experienced declines in all major commodities. Wood chip exports stood at 207,000 metric tons in 2000, down from 573,000 tons in 1990. Much of these exports are residual chips produced from lumber production. As lumber production has declined, so have woodchip exports.

Exports	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Annual Change 90-00
Woodchips	573	512	386	357	452	290	248	329	249	291	207	-9.7%
Pulp	307	318	329	122	137	172	195	186	153	204	151	-6.9%
Lumber	19	41	30	43	14	21	-	-	-	-	2	-21.0%
Logs	72	51	-	14	10	24	57	61	34	-	6	-21.5%
Other	7	10	1	1	23	2	7	6	33	4	-	-100.0%
Total	978	931	747	536	635	509	507	582	469	499	366	-9.4%

Figure 4-3 – Humboldt Bay Exports (1,000 Metric Tons)

Source: BST Associates using data from the U.S. Army Corps of Engineers

Pulp exports also declined during the period from 307,000 metric tons in 1990 to 151,000 metric tons. This has occurred because of market conditions. The mill now sends more product to domestic markets. In addition, some exports are containerized and move via other California ports. As a result, the export volumes leaving Samoa have declined from prior levels.

Lumber exports have all but disappeared due to the strength of the dollar overseas and the relative strength of the U.S. economy.

#### 4.2.3 Imports

Imports consist of forest products and project cargoes. In 1993, logs began to be imported into Humboldt Bay from New Zealand and more recently from Canada. These imports have remained volatile during the study period. Lumber imports also occurred during the past three years of the study period. Woodchips were also imported in 1999. There is an inter-relationship between the timber resources available in the local area and the need for outside resources from domestic and foreign sources. As local resources declined due to timber harvest and environmental restrictions, mills began to acquire supplies from more distant sources. Some of these supplies have been imported from foreign sources, depending on prices and availability. Some lumber remanufacturers are also sourcing their resources from overseas.

In addition, Humboldt Bay has received iron/steel and other products from foreign producers to support local construction projects. These events have been sporadic during the study period.

Imports	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Annual Change 90-00
Logs	-	-	-	10	15	29	17	4	1	52	31	NM
Lumber	-	-	-	-	-	-	-	-	1	6	5	NM
Woodchips	-	2	I	-	-	I	I	-	-	18	-	NM
Iron & Steel Products	3	11	4	1	4	-	-	-	-	10	-	-100.0%
Other	8	16	30	3	2	24	I	-	46	4	1	-19.7%
Total	11	29	34	14	21	54	17	4	48	90	37	13.1%

Figure 4-4 – Humboldt Bay Imports (1,000 Metric Tons)

Source: BST Associates using data from the U.S. Army Corps of Engineers NM – Not meaningful

#### 4.2.4 Coastwise Shipments

Shipments of woodchips to domestic producers began in 1993, peaked in 1994 and trailed down considerably in 2000. Future opportunities for domestic shipments depend on mill

Coastwise Shipments	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Annual Change 90-00
Woodchips	-	-	-	16	330	253	288	228	191	117	40	NM
Lumber	25	31	38	46	38	4	-	-	27	-	-	NM
Other	3	679	10	6	-	6	8	-	-	-	14	17.5%
Total	28	709	48	69	368	263	297	228	218	117	54	6.6%

Figure 4-5 – Humboldt Bay Coastwise Shipments (1,000 Metric Tons)

Source: BST Associates using data from the U.S. Army Corps of Engineers NM – Not meaningful

production volumes and local consumption of woodchips. Lumber shipments also declined during the study period and were non-existent during 2000.

#### 4.2.5 Coastwise Receipts

Most of the domestic receipts into Humboldt Bay have consisted of petroleum products that are barged from San Francisco Bay area refineries for local consumption. These volumes are down slightly in 2000 relative to previous years. In addition, woodchips were received in 1999 and 2000.

Coastwise Receipts	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Annual Change 90-00
Petroleum Products	318	335	299	260	249	254	259	249	233	280	264	-1.8%
Chemicals	87	57	47	16	6	12	5	3	5	5	9	NM
Woodchips	-	-	-	-	-	15	-	-	-	186	233	NM
Other	29	24	12	6	6	-	-	-	-	-	-	-100.0%
Total	434	415	358	283	262	280	263	251	238	472	506	1.6%

Figure 4-6 – Humboldt Bay Coastwise Receipts (1,000 Metric Tons)

Source: BST Associates using data from the U.S. Army Corps of Engineers NM – Not meaningful

## 4.3 West Coast & Humboldt Cargo Trends

This section provides analysis of comparative West Coast and Humboldt Bay cargo trends based upon data provided by the Pacific Maritime Association (PMA)<sup>2</sup>. This assessment includes a summary of West Coast cargo trends by port region, focusing on U.S. West Coast ports.

#### 4.3.1 Cargo Trends – U.S. West Coast

As shown in Figure 4-7, the growth in containerized cargo traffic via U.S. West Coast ports has greatly exceeded all other cargo types during the past eighteen years. Using 1982 as a benchmark (=100%), containerized cargo grew 3.5 times between 1982 and 2000. The next largest gain was by fully assembled autos and trucks. However, this growth pattern has been erratic. Auto/truck imports increased rapidly between 1982 and 1986, doubling in volume. These increases were attributed to the rapid increase of imports from Asia. However, between 1986 and 1996, import volumes declined virtually every year, as more of the production to support North American markets was provided by so-called "transplant" facilities (i.e., Japanese and other foreign producers developed plants in the U.S., Canada and Mexico). When the U.S. exchange rates were favorable, there were increases in the export of U.S.-built autos and trucks. However, the "Asian Flu" (initiated in 1997) pushed U.S. exchange rates much higher. Exports have virtually disappeared (except for used vehicles) and imports have continued to climb (i.e., especially imports of SUVs, which have exceeded U.S. production capabilities). In 2000, imports of fully assembled autos/trucks nearly reached the peak volumes established in 1986.

<sup>&</sup>lt;sup>2</sup> PMA data includes cargo that is handled by longshoremen. The only significant volumes that are unreported are liquid bulk cargoes and some dry bulk cargoes.



Figure 4-7 – Comparison of West Coast Cargo Trends

General cargo, which consists mainly of agricultural and forest products and manufactured goods, has been stagnant during the study period. Growth has averaged 1.2% per year between 1982 and 2000. Much of the swing cargo (e.g., cargo that can be handled in either breakbulk or containerized form) has been containerized. Port regions that rely on agricultural and forest products have exhibited strong downward trends due to containerization and as a result of changing international markets and harvest restrictions. Most of the growth in swing cargoes has focused on metal product traffic (steel slabs and wire, aluminum ingots, among other cargoes) that cannot be handled in containers.

Bulk cargoes (defined in this database to include dry bulks only) also exhibited relatively slow growth during this period with growth, averaging 1.4% per year. The large bulk exports (especially grain) tend to exhibit strong cyclical patterns, based on harvest volumes and overseas market conditions.

Finally, lumber and logs exports declined markedly during this period. Between 1982 and 1988, lumber and log exports increased from 5.9 million to 9.0 million revenue tons. Then the industry experienced a steady downward plunge, ending with 2.1 million revenue tons shipped by water in 2000.

## 4.3.2 Cargo Trends – Humboldt Bay

As shown in Figure 4-8, waterborne commerce in Humboldt Bay increased consistently to a peak in 1991, then dropped significantly to between 400,000 and 600,000 revenue

tons for the remainder of the study period. Most notably, declines occurred in general cargo and dry bulks, which as noted previously are dominated by forest products.



Figure 4-8 – Humboldt Bay Cargo Trends

Humboldt Bay's decline in waterborne commerce is compared with other relevant ports and port regions in Figure 4-9, using an index in which volumes in 1982 equal 100%. As shown, Humboldt Bay experienced a 200% increase in 1992, after which volumes consistently fell. The relative level of waterborne commerce in 2001 is equal to the volume in 1982. By contrast, most other competitive ports and port regions have experience a decline below the levels in 1982.

In 2001, these ports stood at the following levels relative to their throughput in 1982:

- Port Angeles's waterborne commerce level in 2001 stood at 45% of the volumes experienced in 1982.
- Grays Harbor stood at 30% of 1982 volumes.
- The Columbia River ports were 60% above 1982 volumes. Some of the growth occurred in containers and autos but most was a result of new accounts (including the Steelscape steel mill and Kalama Elevator in Kalama and the Canpotex facility in Portland).
- Coos Bay stood at 52% of 1982 volumes.
- The Bay Area was 52% above 1982 levels. However, excluding containers and autos, the index fell to 89% of 1982 levels in 2001.

• Stockton and Sacramento (combined) stood at 78% of 1982 volumes.

The relative loss of forest products exports and domestic shipments has substantially impacted all ports from Humboldt Bay north to Bellingham. The loss of these cargoes has resulted in heightened competition for the remaining general cargo and dry bulk cargoes.

Figure 4-9 – Relative Cargo Trends Among Selected Ports



## 4.4 Market Opportunity Analysis

Market opportunities for the Port of Humboldt Bay were analyzed using PMA data, other sources and analytical methods to examine trends along the West Coast and in Northern California. In addition, approximately 50 interviews were conducted with exporters, importers, domestic shippers, carriers and others involved in marine cargo trade in and around Humboldt Bay and Northern California in addition to over 30 interviews conducted for the NCRA railroad feasibility study (see Appendix C).

This section provides an analysis of cargo trends, market requirements for ports and Humboldt Bay's competitiveness for the following cargo types:

- Dry bulk cargo
- Liquid bulk cargo
- Marine-dependent industrial opportunities
- Non-containerized cargo (breakbulk and general cargo)
- Fully assembled autos/trucks
- Containers

#### 4.4.1 Humboldt Bay's Transportation Competiveness

Before discussing the market potential for individual cargo types, it is useful to analyze Humboldt's competitiveness in terms of its inland hinterland and ocean access. The inland hinterland is defined by delineating the inland geographic area in which truck rates to/from Humboldt are equal to or lower than truck rates to/from competing ports. Likewise, it is defined by determining the area in which rail costs to/from Humboldt are equal to or lower than costs to/from competing ports. Ocean access is addressed in terms of sailing time to/from overseas ports compared with competing West Coast ports.

#### **Truck Hinterland**

Based upon interviews with truck carriers and others, Humboldt Bay's competitive range by truck is limited to a fairly narrow hinterland served by U.S. 101 north and south, and CA 299 to Redding and the I-5 corridor as shown in Figure 4-10. Humboldt's truckcompetitive hinterland area is bound approximately by Willits, Redding, Medford and Brookings. Beyond this area, truck rates are generally lower to competing ports, as follows:

- U.S. 101 corridor south of Willits lower truck rates to Bay Area ports
- I-5 corridor south of Redding lower truck rates to Sacramento/Stockton
- I-5 corridor north of Medford lower truck rates to Coos Bay
- U.S. 101 corridor north of Brookings lower truck rates to Coos Bay

Truck competitiveness to/from Humboldt Bay is also limited by truck length restrictions that do not apply at competing ports. Currently, no portion of Humboldt or Trinity counties is served by truck routes meeting Federal STAA (Surface Transportation Assistance Act) interstate truck length guidelines, which provide for semi-trailer lengths of up to 53 feet. Furthermore, truck routes in all directions to/from Humboldt Bay itself do not meet California legal truck length requirements, which allow a king-pin to rear axle (KPRA) length on semi-trailers of up to 40 feet. Advisory routes at three locations limit KPRA length in and out of Humboldt Bay to 32 feet or less:

- East CA 299 at Buckhorn Pass limited to 32-foot KPRA
- South U.S. 101 at Richardson Grove limited to <30-foot KPRA
- North U.S. 101 nine miles north of Trinidad limited to 32-foot KPRA

Currently CalTrans is considering approximately \$120 million in Buckhorn Pass improvements that would remove the Advisory Route restrictions and allow California legal truck lengths connecting to I-5 at Redding. Additional improvements at about six locations along CA 299 (estimated to cost \$2 to \$8 million) would raise the route to Federal interstate STAA standards. CalTrans indicates that these additional improvements might be funded and built either simultaneously with or shortly after the Buckhorn project.




#### **Rail Hinterland**

The Port of Humboldt Bay has in the past been served by the 300-mile long Northwestern Pacific line, which runs north-south connecting with another short line railroad in the Bay Area which then connects with the Union Pacific (UP) mainline (see Figure 4-10). The line is now owned and managed by the North Coast Railroad Authority (NCRA). Service to Humboldt has not been provided since 1996 when the line washed out in the Eel River Canyon.

With service restored, rail access southbound over the NCRA line would take three to four days to interchange with the California Northern Railroad in Schellville and then the UP at Fairfield before heading east. Access to Burlington Northern Santa Fe (BNSF) is not possible, either physically nor through commercial agreements, because of the line's previous ownership by Southern Pacific, which was acquired by UP.

Service between Humboldt Bay and approximately Willits (145 rail miles south of Eureka) would be cost-competitive compared with Bay Area ports for any freight requiring rail service over that relatively short distance. For rail-oriented marine cargoes to/from points beyond the Bay Area, however, the time-consuming and circuitous southbound NCRA routing—which must backtrack though other competing port areas—is a severe limitation on Humboldt Bay's competitiveness. The extra transit time, rail mileage and cost associated with this routing could not compete with the more direct east-west rail service at other ports. Importers, exporters and ocean carriers would, instead, opt to take the ship into Bay Area, Northwest or Southern California ports to connect with the direct mainline BNSF and UP rail routes available there.

While much has been reported about congestion issues at some of these ports, excess capacity exists at many marine terminals along the West Coast and major land acquisitions and port expansions are underway or planned at Vancouver B.C., Tacoma, Oakland, Stockton, Los Angeles, Long Beach and other ports. The compelling economic advantages of their local markets, mainline rail connections and interstate highway connections continues to attract Federal, local and private investment in the facilities and infrastructure needed to handle increasing cargo volumes.

#### Sailing Distance & Time

Humboldt Bay enjoys excellent ocean access, with all of the key facility sites located six miles or closer to open ocean. Generally speaking, vessels sailing between Asia and the West Coast follow a northerly great circle route, with routes to/from the northernmost Asian ports passing close to the Aleutian Islands; ships sailing between Australia, and New Zealand follow a southerly great circle route; and ships from Southeast Asia (e.g., Singapore) follow great circle routes that traverse the middle of the Pacific Ocean.

As a result of these sailing patterns, Humboldt is generally closer to Asian ports than other California ports and farther from Australia and New Zealand. Figure 4-11 summarizes the direct port-to-port distances and sailing time differences for Humboldt Bay and selected ports.

On a direct port-to-port sailing basis compared with Bay Area and Southern California ports, sailing time to/from Humboldt Bay compares as follows:

- North Asia and East Asia
- Southeast Asia, South Asia and Middle East
- Australia and New Zealand
- Panama Canal, South America and Europe

 $\frac{1}{2}$  to  $\frac{1}{2}$  days closer 0 to  $\frac{1}{2}$  days closer About the same  $\frac{1}{4}$  to  $\frac{1}{2}$  days farther

#### Figure 4-11 – Comparison of Sailing Distance and Time, Humboldt Bay and Selected Ports

	Yokohama	Kaohsiung	Singapore	Auckland	Panama Canal
DISTANCE (NAUTICAL MILES)					
Seattle	4,253	5,499	7,062	6,169	4,065
Portland	4,322	5,555	7,142	6,074	3,913
Coos Bay	4,282	5,509	7,284	5,839	3,643
Humboldt	4,359	5,611	7,352	5,704	3,502
San Francisco	4,535	5,806	7,353	5,679	3,328
Sacramento	4,614	5,888	7,435	5,761	3,410
Los Angeles	4,383	6,110	7,867	5,657	2,957
DIFFERENCE IN D	DISTANCE (NAUTICA	AL MILES)			
Seattle	-106	-112	-290	+465	+563
Portland	-37	-56	-210	+370	+411
Coos Bay	-77	-102	-68	+135	+141
Humboldt	0	0	0	0	0
San Francisco	+176	+195	+1	-25	-174
Sacramento	+255	+277	+83	+57	-92
Los Angeles	+479	+499	+515	-47	-545
DIFFERENCE IN SAILING TIME AT 15 KNOTS (HOURS)					
Seattle	-7	-7	-19	+31	+38
Portland	-2	-4	-14	+25	+27
Coos Bay	-5	-7	-5	+9	+9
Humboldt	0	0	0	0	0
San Francisco	+12	+13	0	-2	-12
Sacramento	+17	+18	+6	+4	-6
Los Angeles	+32	+33	+34	-3	-36

Source: www.maritimechain.com and Distances Between Ports

Notes: + = Farther than Humboldt Bay

- = Closer than Humboldt Bay

Singapore serves as a gateway to South Asia & the Middle East

Panama Canal serves as a gateway to the East Coast of the Americas & Europe

Sacramento distance estimated from San Francisco

While Humboldt's sailing time advantage to/from Asia provides some voyage cost savings to ship operators (with vessel costs of \$30,000 to over \$50,000 per day), it does not provide a sufficient advantage on its own to induce ship calls to Humboldt. Steamship voyage and itinerary decisions are based on a multitude of complex and interrelated factors including local market size, rail connections, highway connections, overall itinerary requirements, stowage considerations and others, among which sailing time is often relegated to a lower priority. Many of these market dynamics and port requirements are discussed in Sections 4.4.2 through 4.4.7.

For scheduled, liner steamship markets (e.g., container and breakbulk), ship operators are drawn first and foremost to large local inbound markets like Los Angeles, secondly to mainline rail gateways, and thirdly to large local or regional export markets. Total

transportation time and cost, not sailing time and cost, are the key considerations for intermodal cargo transferred from ship to rail. In terms of pure transportation economics, water transportation has a lower cost per ton-mile than rail or highway, so ships can, in theory, sail farther before connecting to inland modes without raising total transportation cost. While Los Angeles is a day farther than Seattle by water, it is the largest local West Coast market and has shorter and faster rail connections to the Midwest; hence many ships go to Southern California first and then rotate northward.

For Humboldt, any sailing time advantage by water compared with other California ports is offset by its small local market draw and significantly longer inland transportation connections. Within Northern California, liner steamship operators will opt to sail another half day into Bay Area ports in order to save three days on rail transportation. The same is true of bulk cargo operations for commodities originating by rail from the Mountain states and Midwest, such as grain, coal and bulk minerals. As stated earlier, major land acquisitions and port expansions give these ports the capacity to keep up with continuing volume increases.

# 4.4.2 Dry Bulk Cargo

# **Global Dry Bulk Cargo Trends**

Dry bulk cargoes are those that can be handled with a system of conveyor belts, hoppers and other equipment between trucks, railcars, storage facilities and ships. The bulk cargo market is actually not a single market, but rather a collection of individual commodity markets, each subject to its own set of market dynamics and trade trends based on supply, demand and other variables. They generally include commodities and basic materials with a low unit value moving in very high volume, such as coal, iron ore, various forms of semi-processed iron, minerals, cement, grains, and woodchips.

With the Asian economic situation, demand for many bulk products in the Pacific waned in the 1990s. Population and related construction trends on the West Coast have led to increased demand for construction materials such as sand, gravel and cement. As local quarry sources have become depleted, suppliers in California have looked to source bulk construction materials by water from hundreds of miles away, including Canada and Mexico.

Because of their high-volume, low-value nature, profit margins on bulk cargoes tend to be very low making them very sensitive to transportation costs. In some cases, more than half of the delivered cost of bulk cargoes consists of transportation. Two global trends can be noted for dry bulks, both of which are associated with minimizing the transportation cost per ton – larger vessels and unit trains.

Globally, the trend has been toward handling bulk cargoes in larger vessels, and where applicable, unit trains. Coal and iron ore have for some time moved in the largest Capesize vessels (over 80,000 dwt). In the last 10 to 20 years, minerals and grains have increasingly moved in Panamax vessels (up to 70,000 dwt) as opposed to the smaller Handysize and Handymax ships. On the rail side delivery to these larger vessels has been matched by the increased use of unit trains with over 100 railcars of a single commodity. These two phenomena have allowed for highly automated, high-speed port and terminal operations, which also reduced per-unit handling costs. Many dry bulk cargoes exported from the western United States have employed Panamax vessels and unit trains, including grains from the Midwest and minerals from the Mountain States.

For certain bulk commodities, an opposing trend has been the increased refinement of commodities into multiple grades that can be targeted for specific segments of the market. This is the case with grains and some minerals bulks. The increased use of grading has run counter to the use of Panamax vessels and unit trains, resulting in higher handling costs and, in some cases, the application of additional technology to identify and handle railcars with different grades.

# Dry Bulk Market Trends

Bulk cargoes exhibited relatively slow growth between 1982 and 2000 (1.4% per year). This is the result of cyclical patterns of trade, existing depressed economic conditions in Asia for bulk exports, gentrification of waterfronts (which have displaced some bulk terminals) and the fact that bulks may be associated with mature (or slow growth) industries.



#### Figure 4-12 – U.S. West Coast Bulk Cargo Trends

*Trends by Port Range.* Between 1982 and 2000, U.S. West Coast port regions experienced the following trends:

- Southern California was stable, experiencing modest growth of 1.1%. Most of the Southern California bulks consist of exports of petroleum coke from the local refineries and imports of scrap and cement and other building materials, including aggregates and rock.
- Oregon Coast ports declined from 2.7 million revenue tons to 1.9 million revenue tons, or at -1.8% per year. Most of these bulks are forest products (primarily woodchips).
- Oregon Columbia River ports increased from 9.0 million tons in 1982 to 11.2 million revenue tons in 2000 or at 1.2% per year. This region handles grain, chemicals, minerals, fertilizer, alumina and like products.
- Washington Columbia River ports increased from 5.7 million revenue tons to 11.5 million revenue tons, or at 4.0% per year. This region handles a similar mix as in the Oregon side of the Columbia River.
- In Puget Sound, dry bulk traffic increased from 6.7 million to 9.8 million revenue tons in 2000, or at 2.1% per year. Puget Sound ports also handle grain, chemicals, cement, limestone, aggregates, alumina and other related products.
- Northern California decreased from 4.7 million revenue tons to 3.8 million revenue tons, or at growth of -1.1% per year. Northern California handles the same type of products as Southern California but has also handled metallic and mineral ores and agricultural and forest products.

*Import Trends.* Import dry bulk products tend to be raw material inputs for local manufacturing industries or agriculture. During the past decade, dry bulk imports (defined to include gypsum, cement, coke, aluminum ores, fertilizer) grew at 8.6% per year in San Francisco Bay. Growth was strongest for cement, gypsum and fertilizers. Recently imported sand and aggregates from Canada have also been imported. Humboldt Bay would have difficulty competing for these cargoes due to its distance from local markets, especially for low cost/low margin construction imports.

Civil & Marine Slag Cement Company (the U.S. subsidiary of U.K.-based Northeast Slag Cement) was interviewed regarding its planned new slag cement plant at the Port of Stockton. They investigated every port option in the Bay Area for a new \$25 million manufacturing plant that would import 400,000 tons per year of slag cement. For a number of reasons typical of bulk cargo transportation economics, they focused their site search only in the Bay Area and settled on Stockton:

- Demand for the product is construction markets concentrated in the Bay Area
- Profit margins are very narrow in competition with Portland cement and fly ash
- Delivered price is very sensitive to inland transportation cost

*Export Trends.* Dry bulk export products are generally raw agricultural goods from California or the Midwest, woodchips, or mineral ores extracted from mines in the Mountain states. During the past decade, dry bulk exports in San Francisco Bay (mainly coke and steel scrap) grew at 2.3% per year. These products represent poor opportunities

for Humboldt Bay, again mainly due to increased distance and transport costs from producing industries.

Woodchip exports are still a strong component of outbound trade via Humboldt Bay, although volumes have declined from 500,000+ tons in the early 1990s to approximately 200,000 to 300,000 tons in the past few years. Most of these exports are created as a residual product of lumber production. In addition, to product sourced from local mills, some chips are sourced from southern Oregon as a backhaul on trucks delivering solid waste to the Medford Solid Waste Facility.

In addition, the pulp mill has received wood chips by barge in prior years. This practice was discontinued in 2002. However, it could be revived depending upon availability of chips.

There appear to be significant opportunities for domestic aggregates and rock from the Humboldt County area to be barged or railed down to the Bay Area (especially North Bay locations) to meet a looming shortage of construction materials. Based on extraction reports, interviews with Humboldt County officials, and interviews with landowners and permit holders, it is evident that significant volumes could be produced from the Eel River and potentially lesser amounts from the Van Duzen River for shipment to the Bay Area by barge or rail.

Forty-eight Humboldt County sites are currently permitted for in-stream mining of over 2.5 million cubic yards per year. Volumes of 600,000 to 1 million tons per year appear to be within the range of possibility. In addition, 26 sites are permitted for hard rock mining of over 800,000 cubic yards annually. In addition to aggregates, these hard rock sites could produce larger-dimension rock for San Francisco Bay markets. Success in the bulk aggregate and rock markets will depend on transportation costs and potential environmental constraints on harvest volumes.

# Dry Bulk Market Dynamics & Port Requirements

Logistics and port decisions in the bulk cargo trades are controlled entirely by the import and export shippers on a charter ship basis. The shippers, who are often producers of the bulk materials, contract for rail or truck service, contract for marine terminal services and charter the vessels involved in the cargo movement.

Most bulk shipments are agricultural or mining outputs, or raw material inputs for manufacturing, which are less time sensitive than other cargoes, but highly cost sensitive. Inland and ocean transportation costs for bulk products can account for as much as half of the delivered cost of the product. Consequently, logistical decisions for bulk shipments are made purely in the basis of the point-to-point transportation economics of one routing and port alternative versus others.

Bulk cargo movements tend to fall into two different categories based on volume: small lot shipments (e.g., 5,000 tons) that may utilize only a single hold in a vessel or an ocean barge; and large lot shipments (20-60,000 tons) that move by the shipload. Large lot bulk

cargoes include grain and minerals ores produced in locations beyond the North Coast area and shipped in volumes of 500,000 tons per year or more. In either case, the key variables that drive the logistics decisions are volume, distance to/from the port, and the storage, loading and unloading capabilities at the inland location.

Assuming adequate marine terminal facilities are provided at the port, the key requirements of bulk cargo shippers in selecting ports and logistical options are:

# Large Lot Cargoes

- Channel/harbor depth of up to 45 feet for minerals and grain in up to Panamax vessels (up to 70,000 dwt) or up to 65 feet for coal in Cape-size vessels (80-200,000 dwt)
- Mainline rail access by both Class 1 rail carriers (BNSF and UP), or at least the shipper's favored rail carrier
- Lowest cost rail routing (e.g., non-circuitous and non-mountainous routes that avoid additional operating mileage or additional locomotives)
- Direct highway access, not necessarily by interstate highway

# Small Lot Cargoes

- Channel/harbor depth of up to 38 feet for smaller lot bulk products in ocean barges, Handysize and Handymax vessels (10-50,000 dwt)
- Direct rail access, not necessarily by the Class 1 carriers
- Lowest cost rail routing, avoiding more costly circuitous or mountainous routes
- Direct highway access, not necessarily by interstate highway

#### Humboldt Bay's Competitiveness for Dry Bulk Cargo

Because of the unique origins, destinations and requirements of dry bulk cargoes, competitiveness must be evaluated on a case-by-case basis. Humboldt Bay's competitiveness for most dry bulk woodchips, aggregates and rock is strong given the availability of local supply sources and the absence of transportation alternatives to water shipment from Humboldt Bay.

Woodchip exports are likely to continue at current levels. However, changes in the volume of area wide lumber production and/or changes in overseas market conditions (particularly foreign competition) could exert downward pressure on chip exports.

The potential for shipment of aggregates and rock by ocean barge to the Bay Area represents a significant opportunity for increased waterborne traffic from Humboldt Bay. This is particularly true of the North Bay Area, which cannot be accessed by competing sources such as Canada using deep draft shipping. Given the location of the resource, the only competition to ocean shipping from Humboldt Bay would be rail shipment or sourcing of the material from other competing locations.

For bulk cargoes to/from points east of the Bay Area, Humboldt's opportunities are relatively poor, due to its remote location and circuitous highway and rail access to the major raw material consuming industries, mining locations and agricultural areas.

# 4.4.3 Liquid Bulk Cargo

#### **Global Liquid Bulk Cargo Trends**

Liquid bulk cargoes are those handled by pipeline over land and between railcars, trucks and ships. Globally they include crude oil, refined petroleum products, LNG, chemicals, edible oils and inedible oils/fats. Like dry bulk cargoes, liquid bulks are actually a collection of individual commodity markets, each subject to its own set of market dynamics and trade trends based on supply, demand and other variables. They generally include commodities and basic materials with a low unit value moving in very high volume and are very sensitive to transportation cost.

The movement of energy products is expected to exhibit strong growth globally, and should accelerate as the U.S. economy recovers. The most recent Panama Canal shipping market studies indicate energy shipments through the canal will continue to grow, with the fastest growth occurring in LNG shipments.

# Liquid Bulk Trade Trends

On the West Coast, liquid bulks consist primarily of edible oils (safflower, palm, coconut), inedible oils/fats (tallow), asphalt, and petroleum products. In general, these products have exhibited downward trends in traffic volumes in San Francisco Bay and in Humboldt Bay.

Humboldt Bay receives substantial volumes of petroleum products to meet local needs. These products flow via a third party operation at the Chevron facility. No additional facilities are needed at this time, according to the operator.

However, there may be some unique high-volume opportunities for Humboldt Bay in the form of water exports and LNG imports. Based on a request for proposals issued by the City of San Diego water department a few years ago, private operators have investigated the feasibility of shipping surplus Humboldt County water to Southern California, either in converted single-hull tankers or specialized water transport bags (30-50,000 cu. m.) towed by ocean tugs.

In addition, demand in the California energy market has caused private developers to explore numerous gas and power projects throughout the state and in Mexico. Developers have investigated siting an LNG terminal in Humboldt Bay that would connect by pipeline to the statewide pipeline system, most likely via an existing gas right-of-way to Red Bluff, CA.

#### Liquid Bulk Market Dynamics and Port Requirements

Like dry bulk cargoes, the logistics and port decisions in the liquid bulk cargo trades are controlled entirely by the import and export shippers on a charter ship basis. The

shippers, who are often producers, consumers or distributors of the liquid bulk materials, contract for rail or truck service, own or contract for marine terminal services and either own or long-term charter the vessels involved in the cargo movement.

Also like dry bulk cargoes, most bulk shipments are less time sensitive than other cargoes, but highly cost sensitive. Port operations tend to be located near the source of production, consumption or existing distribution facilities like pipelines. In the case of energy products like crude oil, petroleum products and LNG, highway and rail access may not be needed at all, but access to pipeline systems and proximity to power plants may be critical.

The key requirements of liquid bulk cargo shippers in selecting ports and logistical options vary widely depending on the product are:

- Channel/harbor depth of up to 38 feet for cargoes in ocean barges, Handysize and Handymax vessels, up to 45 feet for Panamax vessels (up to 70,000 dwt), or up to 65 feet for crude petroleum in Cape-size vessels (over 80,000 dwt)
- Cost effective access to existing pipeline systems or right-of-way for new pipeline systems, depending on the circumstances
- Close proximity to power plant customers, depending on the circumstances
- Direct rail access, not necessarily by the Class 1 carriers for distribution of products to industrial customers, depending on the circumstances
- Direct highway access, not necessarily by interstate highway for distribution of liquid bulk products (e.g., gasoline) to the retail level, depending on the circumstances

# Humboldt Bay's Competitiveness for Liquid Bulk Cargo

Because of the unique origins, destinations and requirements of liquid bulk cargoes, competitiveness must be evaluated on a case-by-case basis. In certain niche markets, Humboldt Bay may be very competitive. In the case of water exports, its immediate proximity to a potentially marketable resource, excess system capacity and the presence of private water treatment facilities at the pulp mills are advantages. In the case of LNG and other energy projects, Humboldt Bay's land resources and ocean access are advantages, however additional channel improvements may be needed to handle the largest LNG vessels. Generally, Humboldt Bay is not particularly competitive for liquid bulks that are tied to large industries or population centers.

# 4.4.4 Marine-Dependent Industrial Projects

# **Global Marine-Dependent Industrial Trends**

Marine-dependent industrial projects are essentially manufacturing plants that require onsite marine shipping facilities to handle inbound raw materials, outbound products or both. To the extent that these operations handle bulk raw materials, there is a certain amount of crossover between the marine-dependent industrial category and the dry and liquid bulk markets discussed in the previous sections. Opportunities for marine-dependent industrial projects are unpredictable but sometimes tend to come in waves, based on underlying global demand in particular market sectors. Over the past two decades, several trends can be noted:

- Steel Site searches by U.S. and foreign steel producers for steel mini-mill sites and bulk iron processing facilities.
- Oil/gas exploration Searches by the major energy companies for Alaska oil/gas pipeline module fabrication sites.
- Energy Site searches by the major energy companies for power plants and related energy facilities including coal-fired power plants in Mexico and LNG transfer facilities in California.
- Fiber optics Site searches by global telecom and communications companies for fiber optic manufacturing sites, including ocean cable-laying vessel operations.
- Construction Searches by cement producers for processing plant locations.

Current trends include the continuing search by some companies for marine-dependent energy facility sites and construction material sites. As the U.S. recovers from the current recession, these two categories may be expected to present opportunities. Attention should be paid to potential energy projects for the California market.

# **Marine-Dependent Industrial Trade Trends**

Trade statistics are not available for this category of marine cargo so, consequently, most information about the market is anecdotal. Recent examples of this type of marine industrial facility include the Steelscape (formerly BHP) steel mill in Kalama, WA, the United States Gypsum plant in Rainier, OR and the American Bridge Company fabrication plant planned for Reedsport, OR. Nucor Steel conducted an extensive site search on the Pacific Coast for a new mini-mill in the 1990's, ultimately opting to purchase Birmingham Steel Corporation and their Seattle, WA mini-mill. Other site searches in the last several years have included fiber optic manufacturers, energy companies, and pipeline manufacturers. Volume at these plants varies; the Steelscape mini-mill produces about 350,000 tons per year of steel coil products with railcar volumes of between 1,400 and 3,100 between 1998 and 2000.

#### Marine-Dependent Industrial Market Dynamics & Port Requirements

Port and logistical decisions regarding marine industrial cargoes are typically made entirely by the shipper. The shipper, in this case, is a manufacturer with production facilities located on waterfront property and a dock for handling raw material imports or finished export shipments.

Many of the basic decisions about logistics are made as a part of the company's site selection process. Due to the manufacturing considerations in siting these projects, factors such as site attributes, utilities, labor, taxes and livability often outweigh port and logistical requirements in the ultimate decision process. Close proximity to key markets and suppliers can also be an important siting factor, so as to minimize transportation

costs, but this can create a trade-off with site availability and labor issues in urban markets.

The port and logistical requirements for marine industrial cargo will vary from project to project. These operations generally handle bulk inputs or breakbulk outputs, so their requirements are very similar to those described for those categories above. Typical requirements for marine industrial plants include:

- Channel/harbor depth of up to 40 feet for Handysize, Handymax and light-loaded Panamax vessels
- Waterfront site size of 50 to 200 acres
- Mainline rail access by one or both Class 1 rail carriers (BNSF and UP), short line service, or no rail service, depending on the circumstances
- Highway access by interstate or U.S./state highway, depending on the circumstances

# Humboldt Bay's Competitiveness for Marine-Dependent Industrial Projects

With or without rail service, Humboldt Bay will be more competitive for opportunities in which inland transportation factors are less critical than other locational attributes such as land availability, utilities, workforce availability, and livability. With rail service, Humboldt Bay can be fairly competitive for projects requiring the availability of serviceable rail connections, albeit not superior rail service. Without rail service Humboldt will need to be highly selective in the opportunities it pursues, focusing only on those needing water, highway and perhaps pipeline access.

# 4.4.5 Breakbulk Cargoes

#### **Global Breakbulk Trends**

Breakbulk cargoes include unitized, palletized or packaged general goods, which are not containerized. Prior to containerization, virtually all non-bulk cargoes moved in breakbulk form. Since the 1970s, however, the majority of breakbulk cargo has been converted to containers. With the exception of trade with certain less developed countries, which are rapidly adding container capability, most breakbulk general cargo that can be handled in containers has by now been shifted to containers.

As a result of this major shift, several interrelated global trends have occurred in the breakbulk trade. First, it has become far more specialized, targeting certain high-volume commodities such as lumber, woodpulp, paper and steel. Based on the high volume and handling uniformity of the commodities involved, the ocean carriers have introduced more sophisticated cargo unitization methods and newer, larger, more expensive and more sophisticated 'box-hold' vessels to achieve lower per-unit handling costs. These ships have large, squared-off open cargo holds and self-contained bridge-type cranes that can handle large, unitized loads of lumber, paper, pulp, etc. quickly and efficiently like containers. Finally, in trade routes throughout the world, the ocean carriers are load centering more, calling fewer ports and seeking to draw the cargo to the ship.

# **Breakbulk Trade Trends**

Southern California dominates U.S. West Coast ports in general cargo traffic. This region experienced growth of general cargo from 4.4 million revenue tons in 1982 to 6.2 million revenue tons in 2000, or at 1.9% per year. Much of the general cargo handled in Southern California consists of fruit imports and exports, steel slabs, and other manufactured goods.

Northern California is the second largest load center on the U.S. West Coast for general cargo. However, general cargo declined from 1.7 million revenue tons in 1982 to 1.3 million revenue tons in 2000, representing an annualized decline of 1.5% per year. However, growth was positive in the last decade. Breakbulk (defined here as paper, wood and steel products) grew at an average annual rate of 2.7% between 1990 and 2000. Most of the growth was attributed to increases in steel imports, which will likely decline due to the levying of dumping charges against foreign shippers.



Figure 4-13 – U.S. West Coast General Cargo Trends

The Washington Columbia region (Vancouver, Longview and Kalama), which is next largest, grew substantially from 470,000 revenue tons in 1982 to 1.3 million revenue tons in 2000, or at an average growth rate of 5.7%. Much of this growth occurred because of increases in imported steel products, especially at the steel plant in Kalama and imports of wire and other products through Vancouver and Longview. This area experienced the greatest gain in general cargo of all regions along the U.S. West Coast. However, it should be noted that some of the growth in the Washington Columbia represented a shift

from Portland. The Oregon Columbia region grew from 408,000 revenue tons in 1982 to 634,000 revenue tons in 2000, or at 2.5% per year. In Puget Sound, general cargo declined from 1.0 million revenue tons in 1982 to 490,000 revenue tons in 2000, for an average annual decline of -4.3%. This was caused by a shift to containerization and by the loss of forest product mills.

Breakbulk cargoes typically include forest products (logs, lumber, pulp, particleboard and plywood/veneer), metals (especially steel imports), fruit and project cargoes. Interviews were conducted with approximately 20 exporters, importers, terminals operators and carriers involved in breakbulk trade in Humboldt and the Northern California area. The analysis and interview results for each breakbulk cargo category is summarized below:

*Log Exports.* Log exports via Humboldt Bay occurred through the mid 1990s. However, Northern California is in a deficit position with respect to log traffic, meaning that local resources are not adequate to satisfy local demand. As a result, log exports are unlikely to occur in the future.

*Log Imports*. As local timber resources decreased due to restrictions and market conditions, mills without access to local timber have cast a wide net to acquire needed resources. Logs have been imported from New Zealand and Canada among other foreign locations (i.e., approximately 16,000 to 30,000 metric tons per year each from Canadian and other foreign producers in recent years). In addition, logs have been acquired from other Pacific Northwest locations, including the Olympic Peninsula (i.e., 7,000 tons in the mid 1990s).

These inbound logs have served as the lifeblood for many of the smaller forest product producers. It is expected that current import levels will be maintained as long as the producing mills remain in business.

Logs are currently trucked from Humboldt Bay port facilities to the mills. However, the longer the distance of the truck dray, the more expensive the delivered product, which can negatively affect the financial return of the mills. In some cases, rail delivery of the logs could reduce the cost of the delivered product. This concept (rail transport) is being explored in the companion study on the NCRA rail system.

*Lumber Exports.* Between 1990 and 2000, lumber exports of lumber declined at 10.2% per year. There has been a significant increase in the containerized share of lumber export traffic. The breakbulk share of traffic has declined from 40% in early 1990s to about 15% in 2000. Northern California ports account for 5% of U.S. West Coast lumber exports and all West Coast ports have experienced a decline in breakbulk lumber traffic.

The strength of the U.S. dollar in conjunction with the strong U.S. residential and commercial construction market diverted U.S. producers from exporting to delivery to domestic markets. At the present time, all of these deliveries are made by truck and rail.

Interviews with shippers, carriers and terminal operators indicate there is a strong interest in waterborne alternatives to truck shipment of lumber to Southern California. The opportunity for Humboldt Bay to consolidate all local area domestic volumes to Southern California on a coastal barge service is discussed in Section 4.4.8.

*Lumber Imports.* Between 1990 and 2000, lumber imports increased at 7.2% per year. The breakbulk share has declined from more than 80% to approximately 50%. Northern California ports account for 12% of U.S. West Coast lumber imports. There has been a significant increase in Northern California port receipts, especially from Canada, New Zealand and other exporters.

New Zealand Lumber Shippers Ltd. and its contract ocean carrier Jebsens International currently import New Zealand radiata pine lumber into the Port of Sacramento. The potential to shift this cargo to Humboldt Bay was explored; however, the importer indicated that lower inland transportation costs from Sacramento to several nearby remanufacturing mills, including one in Red Bluff, could not be overcome by shipping through Humboldt. Humboldt Bay's opportunity appears to be limited to serving remanufacturers in its area, but most of this product is coming by land, from other port areas or Canadian border crossings.

*Veneer & Plywood Exports.* Between 1990 and 2000, exports of veneer and plywood declined at 13.4% per year. There has been a significant increase in the containerized share of traffic, with the breakbulk share declining from 50%+ in early 1990s to about 8% in 2000. Northern California ports account for 12% of U.S. West Coast exports and all West Coast ports have experienced a decline in breakbulk veneer and plywood traffic.

There is only a limited opportunity for Humboldt Bay to handle export plywood due to its distance from exporting manufacturers.

*Veneer & Plywood Imports.* Between 1990 and 2000, imports of veneer and plywood increased at 5.0% per year. The containerized share of traffic has increased, with the breakbulk share of traffic declining from 60%+ in early 1990s to 40% in 2000. Northern California ports account for 3% of U.S. West Coast imports. In the Pacific Northwest, Vancouver and Portland dominate the Columbia River and Seattle and Tacoma dominate Puget Sound ports.

Just as local Humboldt lumber mills are utilizing imported logs, opportunities could materialize to handle import forest products such as veneer to supply existing mill capacity in the Humboldt area. Through interviews with New Zealand Lumber Shippers and Jebsens, the potential for 8 million cubic meters per year of import veneer to a plywood mill in Southern Oregon was identified. The project depended on the acquisition of the mill by new owners to be supplied by veneer from New Zealand or Chile. Ultimately the investors opted to acquire an East Coast mill and supply it from Europe. Nonetheless, this type of import forest product movement could result in future opportunities for Humboldt.

*Particleboard Exports.* Between 1990 and 2000, exports of particleboard and fiberboard declined at 18.9% per year. This trade is primarily containerized. Northern California ports account for 9% of U.S. West Coast exports and all ports have experienced a decline in particleboard/fiberboard traffic. There is a limited opportunity for Humboldt Bay due to multiple destinations of containerized products. Interviews with the plant manager at the Arcata particleboard plant indicate that the market is entirely domestic.

*Woodpulp Exports.* Between 1990 and 2000, exports of pulp declined at 5% per year. The trade is split approximately 45-50% breakbulk and 50-55% containerized. Northern California ports account for 27% of U.S. West Coast exports.

Samoa Pacific Cellulose is experiencing an increase in domestic shipments and a relative decline in exports, but current breakbulk export levels have remained consistent for the past few years. They export approximately 150,000 tons per year of breakbulk pulp to the Pacific Rim (i.e., Korea, China, Malaysia, Singapore) via Fairhaven Terminal, resulting in three to four ship calls per month. In addition, they export about 40 containers per month of pulp to Asia via the Port of Oakland. This volume of breakbulk pulp exports can be expected to continue grow 3-5% annually as long as the pulp mill remains in operation. The mill has the capacity to produce 35% more product but is limited by wood supply.

*Steel Imports.* Between 1990 and 2000, imports of steel increased at 6% per year. The breakbulk share of steel imports has remained relatively stable at 60% of all volumes. Northern California ports account for 21% of U.S. West Coast exports. Key imports to Northern California are flat-rolled products, railway track, tubes and shapes. Imports into container load centers are typically containerized nails, screws, fasteners, as well as tubes.

Napa Pipe Company uses the Port of Stockton for exports, which represent a small portion of company sales. Stockton is more proximate to the mill (approximately 80 miles to Stockton from Napa as compared with 250 miles to Eureka). In addition, the Port of Stockton has direct loading capability from rail to the ship, which eliminates the need for storage and double handling.

Due to Humboldt's distance from the larger consuming markets and Northern California steel mills compared with competing ports, the opportunity to handle import steel products appears to be remote.

*Fruit Exports.* Between 1990 and 2000, West Coast fruit exports grew at 1.8% per year. Exports are still recovering from the Asian crisis and are facing significant global competition. The trade is now almost entirely containerized, with 89% of fruit exports containerized, and 11% in breakbulk form. The breakbulk share has declined to an averaged of around 185,000 tons per year. Northern California ports account for 32% of U.S. West Coast fruit exports. Oakland is a major exporter due to its proximity to producers. Much of the product is source-loaded in containers at the plant or transloaded to containers in the port area. Seattle is disinvesting of its chill/freeze facility and

Everett's facilities are currently empty. There is a very limited opportunity for Humboldt Bay due to containerization, and the relative distance from agricultural production centers in California.

*Fruit Imports.* Between 1990 and 2000, fruit imports grew at 7.7% per year. Of this, 66% was containerized and 34% was breakbulk in 2000. The breakbulk share has been declining from 60-70% to 30-40% as bananas and other products have shifted from breakbulk reefer ships to container vessels. Northern California ports account for only about 1% to 2% of U.S. West Coast fruit imports.

The opportunity for Humboldt Bay to participate in fruit imports is very poor, given the dramatic shift to containerization. The remaining breakbulk imports have load centered for the entire West Coast at Southern California ports, where half of the import volume is consumed, with truck distribution of the balance up the I-5 corridor.

**Project Cargoes.** Project cargoes include breakbulk, heavy-lift and oversize cargoes handled as a part of a large industrial project such as the construction of a pipeline, the construction of offshore facilities, or the shipment of a used factory. Statistics are not available for project cargo volumes so it is not possible to identify any growth trend for this category.

Typically, these project cargoes require waterside staging and assembly areas where industrial components can be gathered before sea lifting them to their destination. The other requirement for project cargoes is that they are highly dependent on least-cost transportation logistics, seeking the port location where overall rail, highway and ocean transportation costs are minimized. Given Humboldt Bay's poor highway and rail access, opportunities for project cargoes are limited to those originating/terminating in the immediate Northern California area. An example would be a large sawmill or paper mill disassembled and staged for shipment and reassembly in a foreign country.

# **Breakbulk Market Dynamics & Port Requirements**

Control over port decisions and logistics in the breakbulk trade involves a complex relationship between the import/export shippers and the ocean carriers, with the ocean carriers exercising increasing control.

Traditionally, breakbulk carriers made multiple port calls on the West Coast at coastal ports, mill docks and major population centers. Shippers could dictate to the ocean carrier which port or dock they should call if they expected to handle their cargo. Today, with the introduction of the larger and more expensive box-hold vessels, the ocean carriers are calling fewer West Coast ports, seeking to draw the cargo to the ship. Like the container lines, breakbulk carriers are using key ports as load centers, absorbing the inland truck or rail costs needed to draw cargo from other port areas to the ship.

Despite load centering, ocean carriers will call additional ports or mill docks under the right circumstances. Local cargoes that are available in sufficient quantity on a somewhat regular (e.g., monthly) basis and that would otherwise involve extraordinary inland

transportation costs to a load center may be able to induce direct calls by the carrier. Under these circumstances, the cargo involved is typically local to the port, most likely using truck transportation.

The typical port and logistical requirements for a breakbulk ocean carrier include:

# Load Center Ship Calls

- Channel/harbor depth of 35-40 feet for Handysize, Handymax and light-loaded Panamax vessels
- Close proximity to a local metropolitan market with regional cargo volumes of at least 10-20,000 tons per month
- Interstate highway access to regional markets
- Mainline rail access by both Class 1 rail carriers (BNSF and UP), or at least the key shippers' favored rail carrier, for handling of cargoes such as:
  - Import steel and rail products
  - Export forest products and metals from more distant mills
  - Export Midwest machinery and rolling stock.

# Local Ship Calls

- Channel/harbor depth of 35-40 feet for Handysize, Handymax and light-loaded Panamax vessels
- Local volumes of providing at least 500 to 2,000 tons per month
- Direct highway access, not necessarily by interstate highway
- Direct rail access, not necessarily by the Class 1 carriers

#### Humboldt Bay's Competitiveness for Breakbulk Cargo

Humboldt Bay's competitiveness for breakbulk traffic is concentrated in its immediate hinterland area (see Figure 4-10) based mainly on truck transportation due to the circuitous rail access (if restored) as discussed earlier.

As discussed in the commodity review above, Humboldt's greatest opportunities for breakbulk continue to be in the areas of export pulp, import logs, and potentially imports of other forest products to supply existing mill capacity in Humboldt's hinterland. A potential new opportunity for Humboldt Bay may be the creation of a coastal lumber barge service providing domestic market access to Southern California. This service would need to compete with existing truck service. Its feasibility and competitiveness are discussed in Section 4.4.8.

The opportunity to offset Humboldt's inland transportation disadvantages with better ocean access, lower terminal costs or other advantages—and thereby diversify into import steel, fruit, or other products beyond Humboldt's natural truck and rail hinterland—are very limited.

# 4.4.6 Automobiles

#### **Global Automobile Trends**

Two interrelated global trends are affecting the international trade patterns for automobiles. Increasingly, the automobile companies are producing vehicles in the country or continent where they will be marketed, thereby reducing the delivered cost of the vehicles. In its infancy, the automobile import/export trade was based on production in the country of origin with ocean transportation to the final market. As sales of a particular model in any individual country have grown, the auto producers have reached a scale of operation that can support in-country production. Obviously this has the immediate effect of reducing import volumes, although in some cases a reverse flow of exports for particular models results. Honda, for instance produces certain models in Japan for domestic consumption and export to the U.S. and other models in the U.S. for U.S. consumption and export back to Asia and into Europe.

To facilitate global production strategies and manage competition, the auto companies have also been going through a period of consolidation based on mergers, acquisitions and production alliances, creating automobile production organizations that span the U.S., Asia and Europe. These alliances include:

- General Motors, Saab, Opel, Suzuki, Daewoo
- Ford, Mazda, Volvo, Jaguar
- Daimler Benz, Chrysler
- Nissan, Renault
- Mitsubishi, Fiat

Over time, the effect of global production and alliances will be that a declining percentage of small vehicle sales will be based on imports carried by water.

#### **Automobile Trade Trends**

As indicated above, imports of fully assembled autos and light trucks via U.S. West Coast ports grew rapidly from 1982 to 1986 then continued a long downhill slide until 1996. Since then, imports have increased rapidly and reached the previous peak established in 1986.

As with containers, most auto/truck traffic on the U.S. West Coast moves through Southern California. This region has grown from 4.1 million revenue tons in 1982 to 11.4 million revenue tons in 2000, or at an average growth rate of 5.9%. Within Southern California, there has been a shift from Los Angeles and Long Beach to San Diego and Port Hueneme. The relative scarcity of uplands in Los Angeles and Long Beach has forced port authorities to be much stricter on how long autos/trucks dwell in the marshalling yards. Some of these accounts have chosen to shift to neighboring ports (Port Hueneme and San Diego) to achieve lower costs.

Portland is the second largest U.S. West Coast load center for fully assembled autos/trucks, growing from 2.3 million revenue tons in 1982 to 3.6 million revenue tons

in 2000 (or at 2.5% per year). Recently, Toyota renewed its relationship with Portland. Access to two Class I railroads and service to the PNW markets along I-5 are substantial advantages in Portland and Vancouver.

Puget Sound is the third largest load center, growing from 1.9 million revenue tons in 1982 to 2.8 million revenue tons in 2000, or at 2% per year. Seattle and Tacoma are reconsidering auto imports. In Seattle's case, the non-maritime real estate opportunities were judged to be more favorable than the land-intensive auto facility. In Tacoma's case, there is growing competition for space between containerized cargo and fully assembled autos. Both ports are evaluating the highest and best use of their land, which may create opportunities for another port in the Pacific Northwest.

Figure 4-14 – U.S. West Coast Fully Assembled Auto/Truck Trends



Auto imports in Northern California, the fourth largest center for fully assembled autos, declined from 1.8 million revenue tons in 1982 to 1.3 million tons in 2000, or at -1.8% per year. The key ports in Northern California are Benicia and San Francisco. However, some of the auto imports that once moved through Northern California have shifted to other West Coast load centers.

Northern California has experienced a decline in auto business at all ports (Benicia and San Francisco) as auto accounts sought to load center at other ports. The largest gainers of this trend were San Diego, Port Hueneme, Portland, Tacoma and Vancouver, WA.

These ports are dedicated to further building the auto business and have the space to accomplish this goal.

	San Francisco Bay			Total
Year	Richmond	Other SF Bay	Total	West Coast
1990	143,366	197,876	341,242	1,951,973
1991	130,849	201,015	331,864	1,870,882
1992	94,065	159,729	253,794	1,537,657
1993	93,710	123,263	216,973	1,428,934
1994	97,651	139,733	237,384	1,542,864
1995	79,530	53,461	132,992	1,297,168
1996	20,489	49,144	69,633	1,278,333
1997	83	30,192	30,275	1,711,954
1998	12	22,297	22,309	2,054,264
1999	-	7,934	7,934	2,115,057
2000	-	35,062	35,062	2,419,285
CAGR 90-00	-100.0%	-15.9%	-20.4%	2.2%

Figure 4-15 – Auto Imports in San Francisco Bay (Metric Tons)

Source: BST Associates using U.S. Department of Commerce data

Within Northern California, Benicia has successfully attracted Kia auto imports and now has some momentum toward rebuilding the auto business.

#### Automobile Market Dynamics & Port Requirements

Logistical decisions and port selection in the automobile import/export trade are controlled by automobile import companies, with some input from the ocean carriers (particularly in those cases where the auto company has a sister steamship company). Key auto ports on the West Coast include Portland, Tacoma, San Diego, Los Angeles, Long Beach and Port Hueneme. Vancouver, WA handles Subaru imports and Benicia handles automobiles mainly for the Northern California market. Richmond previously handled Honda, but is no longer in the business and Seattle no longer handles automobiles since Nissan consolidated its West Coast operations at Los Angeles earlier this year.

The Northwest ports are mainly intermodal automobile gateways, handling 85% of their vehicles by rail to states as far east as New York and as far south as Texas. San Diego, Los Angeles, Long Beach and Port Hueneme handle vehicles for the large Southern California market by truck and the Sunbelt states by rail. Most of the Asian automakers use two West Coast ports—one in Southern California and one in the Northwest while most European automakers focus their entire West Coast distribution out of Southern California.

A key issue for the automakers is the management and coordination of retail market demand, Asian production, and inventories. The more sophisticated auto companies have developed tightly coordinated systems to scale production to demand resulting in minimal inventories and fast throughput at their West Coast ports. Toyota and Honda have even developed liner-type weekly ship deliveries tied to a weekly processing and delivery cycle at the port. Throughout the strong auto market from the 1990s to date, many cars are actually sold to dealers while they are still on the water en route to port. Consequently fast throughput and quick dispatch by rail is critical to achieving their logistical goals.

Less sophisticated automakers have poor coordination of production with demand (and some poor selling car models), resulting in high inventories and long storage times at their ports. To address these inventory requirements, some car companies and the railroads are developing inland storage and processing depots to position their inventories closer to the ultimate market and utilize less expensive non-waterfront property. Hyundai, for instance, has opened a Dallas/Ft. Worth depot and is considering a Chicago depot.

In addition to adequate marine terminal facilities and terminal operators, the typical requirements an auto importer will have in considering a port call are:

- Channel/harbor depth of 35 feet for pure car carriers
- Close proximity to a local metropolitan market
- Interstate highway access to local and regional markets
- Mainline rail access by both Class 1 rail carriers (BNSF and UP), or at least the auto maker's favored Class 1 rail carrier, with 85-hour service to Chicago
- Automobile processor services and support services such as specialized truck carriers

#### Humboldt Bay's Competitiveness for Automobiles

Despite the availability of plentiful low-cost land, the opportunity for auto imports or exports via Humboldt Bay is limited due to competition from other ports, highway distance from the larger market in San Francisco Bay, and poor/circuitous rail access. As discussed earlier, rail service over the NCRA line would take three to five days to interchange with UP in the Bay Area before heading east, which would not meet the auto companies' requirements for 85-hour service to the Midwest. Humboldt Bay would need to compete with Bay Area ports for imports of fully assembled autos. In addition to Benecia, the Port of Stockton is gearing up to compete for potential automobile opportunities at its newly acquired, 1,400-acre Rough and Ready Island site. As the auto companies continue to consolidate port operations, competition also occurs with ports in the Pacific Northwest and Southern California for intermodal traffic. As a result, Humboldt Bay's opportunities to attract auto business are poor.

#### 4.4.7 Containers

#### **Global Container Trends**

The global container trade has, by far, been the most dynamic market over the past 10 to 20 years, subject to high growth and many complex and overlapping global trends. These dynamics are briefly discussed below:

• Vessel size – The carriers have introduced increasingly larger vessels over time in an effort to reduce the cost per slot mile of shipping. In 1999/2000, the average size of vessels built in the global fleet was about 3,000 TEUs and the largest size built

exceeded 7,000 TEUs in size. This compares with a 2,000 TEU average size and 5,000 TEU maximum size built in 1995. Ten percent of the container ships in service in 2000 were 4,000 TEU or larger, but 42 percent of the ships on order in 2000 were larger than 4,000 TEU in size. Panamax vessels can be placed in virtually any major trade route, including around-the-world and pendulum services which run between Asia, North America and Europe utilizing the Panama and Suez canals. Post-Panamax ships too large for the Panama Canal are generally confined to service in a single ocean.

- Consolidation and alliances In an effort to fully utilize these large vessels while offering frequent service to meet just-in-time requirements, the carriers have gone through an extended period of consolidation based on mergers, acquisitions and space-sharing alliances.
- Global mega hubs A number of global mega-hub ports have emerged, serving as hubs for the largest vessels in service. These include, Los Angeles/Long Beach; Panama; New York/New Jersey; Algeceras, Spain; Rotterdam; Singapore; and Kobe. At these locations and others, various line haul and feeder ship services overlap, enabling carriers to interchange containers from one continent to another. By feeding over Los Angeles/Long Beach or Panama, for instance, the carriers can provide service between Asia and the West Coast of South America.
- Load centers Additional load centers are also served, drawing cargo by truck or intermodal rail service over land. On the West Coast, Oakland, the Puget Sound and Vancouver, B.C. are used as load centers for transcontinental intermodal rail freight and regional truck cargo.
- Vessel over capacity Despite the efforts of the ocean carriers to manage competition and fully utilize their newer, larger vessels, many trade routes suffer from significant over capacity. Vessel space on the Transpacific container trade, for instance, is utilized 75% eastbound, but only 51% westbound. As a result, the carriers do not call just one or two ports with the large vessels (as many analysts had predicted); rather they call several load centers with the large vessels in order to seek cargo.
- Terminal over capacity To control port operations and ensure fast turnaround for the large ships, most carriers have established exclusive terminals for their own use at load centers throughout the world. The result is that there is considerable unused terminal capacity in the system, including on the West Coast.

# **Container Trade Trends**

Container traffic through U.S. West Coast ports increased from 38.7 million revenue tons in 1982 to 174.0 million revenue tons in 2000, or at 8.7% per year. During the same period, Southern California container traffic grew at 11.0% per year. As a result, the market share of Southern California ports increased from 46% in 1982 to 67% in 2000 (a gain of 21%).

Puget Sound (primarily Seattle and Tacoma) is the next largest load center for containers, increasing from 9.6 million revenue tons in 1982 to 33.1 million revenue tons in 2000, or at 7.1% per year during this time period. However, growth has been rather sluggish

during the past seven years. Puget Sound's market share declined from a peak of 28% in 1986 to 19% in 2000 (a decline of 9%). Seattle and Tacoma are facing increased competition from Vancouver, B.C. at the present time.

Northern California ports (including Oakland, San Francisco and Richmond) are the third largest load center on the U.S. West Coast. This area grew from 10.6 to 20.9 million revenue tons during this period, or at 3.8% per year. Market share in Northern California declined from 27% in 1982 to 12% in 2000 (a decline of 15%). A more detailed assessment of San Francisco Bay's containerized market share is presented in Figures 4-16 and 4-17.





Figure 4-17 – U.S.	. West Coast Market Shares	of Containers (full TEUs)
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Year	San Francisco Bay	Southern California	Pacific Northwest	Total
1995	1,167,761	4,350,941	2,070,128	7,588,830
1996	1,082,786	4,647,716	1,959,013	7,689,515
1997	1,079,145	5,120,896	2,020,435	8,220,476
1998	1,069,749	5,401,052	1,986,939	8,457,740
1999	1,163,586	5,950,707	2,123,421	9,237,714
2000	1,280,451	6,905,692	2,193,855	10,379,998

Source: BST Associates using Pacific Maritime Association data

San Francisco Bay container ports are more heavily oriented toward outbound cargo than other West Coast ports. Outbound container trade accounted for 61% of all containerized cargo in 2000 in San Francisco Bay as compared with 29% in Southern California and 50% in the Pacific Northwest (primarily Puget Sound and Portland).

These load centers compete for discretionary containerized cargo moving to the Midwest, East Coast and South regions of the U.S. However, the Port of Oakland estimates that only 10% of the containers currently moving via the Port of Oakland are intermodal (132,240 TEUs) as compared with approximately 50% in Southern California (3.5 million TEUs) and approximately 60% in the Pacific Northwest (1.3 million TEUs). Oakland's goal is to increase its share of intermodal cargo.

Discharged Containers							
Year	Oakland	San Francisco	Richmond	Crockett	Total		
1995	385,481	9,847	892		396,220		
1996	338,993	4,193	1,433		344,619		
1997	360,258	9,702	3,611		373,571		
1998	389,603	11,935	261	134	401,933		
1999	413,771	19,593	140	108	433,612		
2000	463,670	24,415			488,085		
	Loaded Containers						
1995	751,761	15,870	3,910		771,541		
1996	732,907	1,267	3,993		738,167		
1997	698,277	3,844	3,453		705,574		
1998	663,897	3,623	20	276	667,816		
1999	720,668	8,862	6	438	729,974		
2000	780,026	12,340			792,366		

Figure 4-18 – San Francisco Bay Container Market Trends (full TEUs)

Source: BST Associates using Pacific Maritime Association data

Within San Francisco Bay, Oakland dominates with 95% of import (discharged) and 98% of export (loaded) containers. San Francisco holds a 5% share of imports and 2% share of exports. Richmond currently handles no containers but had a 1% share of imports (3,600 full containers) and a 0.5% share of exports (3,453 full containers) in 1997. Richmond was serving several smaller container carriers (Fesco, Southseas, Star among others). These carriers chose to relocate to San Francisco and Oakland.

Based on PIERS data supplied by the Port of Oakland and interviews conducted with several container shippers in the Humboldt area, the container volume to/from Humboldt County is estimated to be approximately 5,000 TEUs per year. The largest container shipper is Samoa Pacific Cellulose, which exports approximately 2,000 40-foot containers per year. The next largest shipper imports 200 temperature controlled 40-foot containers per year—up to 10 per week during its peak season—and most other shippers ship or receive fewer than five containers per month.

#### **Container Market Dynamics & Port Requirements**

Since the introduction of double stack trains and the rise of intermodalism in the late 1980s, the transpacific container trade has been controlled by the steamship carriers. Decisions on port calls, intermodal traffic routing, rail carrier selection and other logistical details are virtually all made by the steamship lines. In making these decisions, the steamship carriers seek to balance vessel operating efficiency, service to local cargo markets and intermodal connections to inland markets.

The container steamship industry continues to go through a period of extensive consolidation, including acquisitions, mergers and the formation of operating alliances in which carrier groups share slots on each other's vessels. The selection of vessel itineraries, port calls and intermodal gateways is complicated by the alliances because several steamship lines must now agree on all decisions.

Vessel sizes continue to increase with the introduction of the large and wider Post-Panamax container ships—those too wide to transit the Panama Canal. Ships in the transpacific trade range in size from 3,000 to 6,000 TEU, the most typical being about 4,000 TEU with maximum sailing drafts of over 45 feet. While much is written about the increasing ship sizes and the likelihood of 8,000 to 10,000 TEU ships, carriers will most likely operate a variety of ship sizes to serve various markets.

Container service has concentrated at five West Coast port areas, where population centers, railroad mainlines and the interstate highways converge. These include: Los Angeles/Long Beach, Oakland, Seattle/Tacoma, Vancouver, B.C., and Portland. Southern California has emerged as the dominant load center (see discussion of population based ports above), with Oakland and Seattle/Tacoma also serving as container load centers. Each carrier group now operates multiple weekly services, generally calling two to four ports and absorbing the cost of trucking cargo from other port areas.

Vancouver, B.C. has emerged as a significant West Coast competitor for intermodal traffic for two reasons: rail mergers have given Canadian Pacific and Canadian National direct access into Chicago and the U.S. Northeast market; and the low value of the Canadian dollar has made Canadian marine terminal and rail services very cost competitive. In addition, Vancouver has experienced a significant shift of breakbulk products to containerization in the past several years. Service at San Francisco has been virtually eliminated, in favor of Oakland, due to poor east-west main line rail service and interstate highway access. Portland—with 290,000 TEUs per year, a 2-3% share of West Coast container volume—struggles to maintain its niche role in the trade due to its relatively small market size, 40-foot channel depth, and close proximity to load centers in Tacoma and Seattle.

In addition to adequate marine terminal facilities and terminal operators, the typical requirements a container carrier will have in considering a port call are the following:

• Channel/harbor depth of 50 feet at load centers and 40-45 feet at middle port calls for Panamax and post-Panamax vessels

- Local market volumes providing at least 1,000 TEUs per weekly vessel call
- Mainline rail access by both Class 1 rail carriers (BNSF and UP), or at least the steamship line's favored rail carrier, with up to 65-hour rail service to Chicago for:
  - Handling eastbound and/or westbound intermodal cargo
  - o Repositioning empty containers from east to west to serve the local market
- Interstate highway access to regional hinterland markets
- Support services such as container and chassis repair, drayage companies, etc.

Ironically, a container carrier group will not likely consider a port call unless other competing carriers are also active in the market on a direct calling basis. Lacking competition by other direct calling carriers, a steamship line has no incentive to make direct ship calls itself; rather it can opt to call at the nearest load center port, requiring shippers to truck their cargo to the ship. Container carriers notoriously "follow the leader" in port selection, rather than seek out niche markets.

In addition to the transpacific container trade, container services to Australia, South America, North Europe and the Mediterranean operate on the West Coast. While carriers in these trades tend to be somewhat more opportunistic relative to smaller port markets, many of the dynamics described above apply, although to a lesser degree than in the transpacific.

#### Humboldt Bay's Competitiveness for Containers

Based on Humboldt Bay's very small local market size, lack of close proximity by highway to a major West Coast market like San Francisco, and poor rail access (assuming rail service is restored), its competitiveness for container cargo is very poor.

Even with rail access restored, Humboldt Bay would not be considered by the container carriers as a potential port call or overflow outlet. As discussed earlier, rail service over the NCRA line would take three to four days to interchange with UP in Fairfield before heading east, which would not meet the steamship lines' requirements for 65- to 85-hour service to the Midwest. This time-consuming and circuitous rail routing—which must backtrack though other competing port areas—is a severe limitation on Humboldt Bay's competitiveness. The extra transit time and rail mileage cannot compete with service at other, more established ports.

It is possible that a limited number of containers could be handled at Humboldt Bay as an adjunct breakbulk carrier service. This type and volume of container traffic is typically handled within the framework of existing breakbulk terminals, often using ship's cranes.

The feasibility of container barge feeder service to Oakland is discussed in Section 4.4.8.

# 4.4.8 Coastal Barge Service Opportunities

In the course of conducting the market opportunities analysis, several situations pointed to the potential need for coastal barge service between Humboldt Bay and other

California ports. This section addresses the potential market for and feasibility of these services.

# **Existing Petroleum Barge Service**

Currently, the only coastal barge service operating in and out of Humboldt Bay is a dedicated petroleum product barge operated by Chevron. Sause Bros. Ocean Towing owns and operates a 62,000-barrel barge on a 7- to 8-day turnaround between the Port of Richmond and Chevron's terminal in Humboldt Bay. Due to Federal regulations, additional barges cannot be operated in a tandem tow with petroleum barges.

# Southern California Forest Products Barge Service

With the absence of rail service to Humboldt, lumber mills in the area are currently restricted to truck delivery of lumber products to their customers in the Bay Area and Southern California. Given the distances, truck transportation is competitive to the Bay Area but it is considered to be a costly means of delivery to the large Southern California market. Consequently, several major forest products shippers in the Humboldt area—as well as barge companies, terminal operators and stevedores—have studied the potential for a coastal barge service to Southern California. During the course of this study, active discussions and negotiations were underway among the parties. The elements of the service and its potential feasibility are discussed below.

*Ocean Barge Operation.* Both Sause Bros. and Brusco Tug & Barge have studied the potential to operate a coastal forest products barge between Humboldt Bay and Long Beach. Currently, Sause Bros. already operates four forest products barges to Long Beach from Grays Harbor and Longview, WA and Columbia City and Coos Bay, OR. Sause has considered running a Humboldt barge in tandem with its existing barge services; however, their captains will not handle tandem ocean barges in and out of the Humboldt Bay entrance channel due to its confined configuration.

The service would require that an ocean tug and barge be dedicated to the operation. For green lumber, which is the main product under consideration, a commonly available flat deck barge would be sufficient. If pulp or other weather sensitive cargoes are also considered, a barge with a covered section would be required.

The barge companies operate as contract carriers for these services, as opposed to common carriers. Consequently, it is incumbent upon one or perhaps two shippers to contract for sufficient volume to underwrite the entire dedicated barge service.

*Humboldt Port Operation.* Several terminals in Humboldt Bay could accommodate ocean barge lumber loading operations including Sierra Pacific, Humboldt Bay Forest Products and Fairhaven Terminal. For covered storage, Fairhaven Terminal may be preferred.

*Long Beach Port Operation.* Fremont Forest Products, a Marubeni subsidiary, operates an 18-acre terminal at the Port of Long Beach where Sause's existing lumber barges are handled. Truck distribution to customers throughout Southern California is handled form

this facility. Fremont is actively interested in handling a forest products barge service from Humboldt Bay.

*Potential Feasibility.* The feasibility of the service will depend on available volumes, costs, contracting methods and other factors. Based on interviews with the parties involved, the service does not appear to be feasible under current conditions. Should conditions change, however, the barge service could be feasible. This would particularly be the case of northbound freight became available to share a portion of the roundtrip cost.

Barge operators and terminal operators indicate a minimum volume of 5-6 million bd. ft. of lumber per voyage is needed to support a dedicated barge with service every 2-3 weeks and indications are that volume of up to 8.5 million bd. ft. may be available for interested shippers.

Current door-to-door truck rates from Humboldt Bay to Southern California are approximately \$55 per MBF (1,000 bd. ft.). For the barge service to be feasible, the total door-to-door cost will need to be less than \$55, depending on the approach that the lumber shippers take to marketing their products in Southern California. (Weyerhaeuser, for instance, maintains a significant lumber inventory in Long Beach so that it can supply mixed loads of lumber on a just-in-time basis to its customers. This value-added delivery system may be able to bear a higher ocean transportation cost.) Based on the trucking, terminal operation, stevedoring and ocean barge costs, it appears that a total cost of about \$60 per MBF could be achieved based on a one-way move of lumber.

A third and very important factor is that the barge companies want to contract for the service with a single entity that would be at risk for the 'dead freight' cost of any volume shortfall. Currently it appears that no single shipper is willing or able to provide a guarantee of 5-6 million bd. ft. per voyage. A potential solution to this is the formation of a shippers' association among the lumber companies. With the shippers' association, each individual lumber company would be liable for a smaller commitment to the association, which would in turn contract with the barge carrier. A formal organization would be required, structured to qualify for antitrust immunity and run by an independent administrator/negotiator.

Two other factors impinge on the general feasibility of this and other ocean barge services. First is the lack of northbound freight potential, and second is the inability to take tandem barge tows through the entrance channel. Both issues seriously undercut the potential economics of ocean barge service. Several possibilities for northbound freight were explored with the operators, but none was found to be viable. If tandem tows were feasible, for instance, a forest products barge from Humboldt Bay could potentially operate not only in tandem with other barges to Fremont Forest Products, but also with potential container or aggregate barges at least as far as the Bay Area.

#### **Container Feeder Barge Service**

A relatively recent phenomenon in the container trade is the emergence of inland container depots—or "ports"—served by container barge feeder or intermodal rail shuttle. These services create the opportunity for ports and inland cities to generate economic activity in the container trade without direct deep-sea container vessel calls.

*Existing Barge Feeder and Rail Shuttle Models.* Figure 4-19 identifies many of the barge feeders and rail shuttles currently in operation or under study in the U.S.

The Portland barge feeder—the most successful model currently in operation—involves two competing barge carriers and service 2-3 days per week between a single multi-user container terminal in Portland and several shallow water ports 365 miles upstream on the Columbia and Snake river system. Total annual volume in the service is about 50,000 loaded TEUs per year with empty containers shipped upstream and loaded containers of export agricultural goods shipped downstream. The container barges move in multiple tows with grain barges, thus reducing transportation costs, and the upriver ports are operated using Inland Boatmen's Union labor instead of ILWU.

Barge Feeders	Barge Feeders	Rail Shuttles	Rail Shuttles
In Operation	Under Study	In Operation	Under Study
Portland-Boardman, OR Portland-Pasco, WA Portland-Lewiston, ID	Oakland-Stockton Oakland-Sacramento New York-Bridgeport, CT New York-Quonset Pt., RI	Seattle-Portland Seattle-Pasco, WA Norfolk-Northern VA Atlanta-Savannah Atlanta-Jacksonville Atlanta-Charleston	Oakland-Stockton Oakland-Sacramento Oakland-Fresno Oakland-Portland Portland-E. Oregon Portland-S. Oregon New York-various points

Figure 4-19 – Container Barge Feeders and Rail Shuttles in Service or Under Study

The Oakland-Stockton and Oakland-Sacramento feeders/shuttles under study involve a market of about 150,000 TEUs per year of agricultural exports in the Fresno-to-Sacramento area. The key question is whether barge or rail operations over a distance of only about 100 miles can compete with truck, where drayage rates are \$250-\$275 per container (round trip). Further complicating the feasibility are the logistics in the Port of Oakland, where multiple container terminals may be origins/destinations for the container traffic, thus requiring multiple barge stops or in-port container drayage and gate moves, which add extra cost.

**Potential Feasibility.** The feasibility of a Humboldt barge feeder in competition with trucks depends on volume, distance, transit time and logistical fit with the container carriers' operations. As indicated in Section 4.4.7, PIERS data and interview sources indicate a total Humboldt County container market of about 5,000 TEUs (3,000 containers) per year. Of this, at least 10% are refrigerated containers, requiring on board generator equipment, that are unsuitable for a startup barge service. Container truck rates from Humboldt County to the Port of Oakland are in the range of \$850-\$1,000 per container door-to-door, including pickup or return of the empty container.

Based on interviews with barge operators and known container terminal handling costs, a total door-to-door cost associated with a weekly Humboldt-Oakland barge service appears to be over \$1,800 per loaded container (assuming a one-way loaded move and empty return). This assumes 2,500 containers per year, a \$10,000/day voyage cost, 50 containers per voyage, \$150/container stevedoring and terminal handling at each port, and drayage at each end of the operation.

Based on these costs and the Portland barge feeder, the conditions for a feasible container barge feeder service appear to include:

- Distance of 300 miles or more between the hub and feeder port locations
- One-way transit time of 36-48 hours
- Relatively low-value, non time-sensitive cargo
- Cost saving features such as shared barge tows, a multi-user terminal at the hub port, or labor savings
- Weekly volume of at least 150 containers (250 TEUs), or about 8-10,000 TEUs per year (one way), of dry van container cargo (excluding temperature controlled containers requiring on-board generator equipment and monitoring) in order to achieve economies of scale.

With current volumes and conditions, container barge service between Humboldt Bay and Oakland does not appear to be feasible. The potential to combine containers with the lumber barge discussed above was also explored with the barge and terminal operators, but it was concluded that the addition of containers to a lumber barge would not result in a net increase in revenue per barge to make the entire operation feasible.

#### **Bulk Aggregate Barge Service**

Unless rail service is restored, bulk aggregates and rock from the Humboldt area discussed in Section 4.4.2 would move by ocean barge into the Bay Area. Preliminary information from barge operators indicates an ocean barge transportation cost of \$12-13 per ton, based on a weekly 5,000-ton barge. Such a service could handle about 250,000 tons per year. If tandem barge tows are feasible, bulk aggregates and rock could provide an excellent base operation that could improve the economics and feasibility of other barge operations.

#### **Rail-On-Barge Service**

Another form of ocean barge service explored is rail-on-barge as a substitute for direct rail service by the NCRA. In this service, railcars would be rolled aboard barges in Humboldt Bay, rolled off of barges at another port, where they would then be interchanged into line haul rail service. Ideally, the barge would interchange at a location where service by both BNSF and UP could be accessed. A rail-on-barge service assumes that NCRA rail service is restored between South Fork, CA and Humboldt Bay, but is not restored through the Eel River Canyon (Operating Scenario I).

*Existing Rail-On-Barge Models.* Rail-on-barge services are very common between various points in Alaska and the U.S. mainland, but all previously operated rail-on-barge services on the West Coast have been discontinued. Active rail-on-barge services include:

- Alaska Railroad Corporation's Alaska Rail Marine service between Seattle and Whittier, AK (weekly)
- Lynden Transport's Alaska Railbelt Marine service between Seattle and Whittier (weekly)
- Canadian National's AquaTrain service between Prince Rupert, B.C. and Whittier

**Potential Feasibility.** The feasibility of the service from Humboldt Bay will depend on available volumes, costs and other factors. Based on the NCRA rail feasibility study, potential rail volumes to Southern California and beyond are in the range of 3,500-5,500 railcars per year and the most recent NCRA rail rates to interchange at the southern end of the NCRA line are \$1,000-\$1,200 per railcar.

Based on interviews with the Alaska Railroad, the cost to provide service would be based on a number of factors including amortization of capital costs to build facilities at both ends of the service, voyage costs, and rail switching and interchange costs at both ends. Apparently, used rail-barge ramps and towers are available on the market at a cost of about \$2 million per ramp and \$1 million per tower. The suitability of these for any particular location and the cost of installation are not known. Transportation costs, assuming a 50-car, 8-track rail-barge, are estimated to be \$7,000/day. In total, the cost of a weekly rail-on-barge service handling 2,600 railcars per year appears to be over \$1,500/railcar, which would not likely be competitive with rail, truck or the Redding rail reload operation.

Complicating the feasibility of such a service is the fact that the logistical requirements of the potential shippers could vary widely, in terms of ultimate destination, transit time, frequency, whether their customer's facilities are rail served, and other factors. Additional study should be undertaken, perhaps in conjunction with the NCRA, to definitively determine the feasibility of rail-on-barge service.

# 5. Market Assessment – Waterfront Commercial & Recreational

This section assesses potential non-cargo waterfront commercial and recreational markets that Humboldt could pursue in order to diversify and revitalize its harbor activity. The study scope for these markets was, by design, less detailed and analytical than that for the marine cargo market assessment, with the goal of identifying potential markets without fully ascertaining their feasibility.

This section provides an analysis of trends, opportunities and requirements for the following waterfront commercial and recreational markets, as well as information about Humboldt Bay's potential competitiveness:

- Commercial fishing
- Aquaculture
- Marine labs and science centers
- Public aquariums
- Marinas, boating and yachting
- Cruise ships and tour boats
- Boat building and vessel repair
- Vessel homeporting
- Naval vessel museums

# 5.1 Commercial Fishing

The commercial fishing industry in Humboldt has been hit hard by restrictions of fishing areas and seasons over the last twenty years. During those years, fishery landings in Humboldt Bay have declined from 20 million pounds in 1990, to under 10 million pounds in 2001. Nevertheless, a strong core group of approximately 200 commercial fisher people based in Humboldt Bay continue to make their living from the harvesting of fish for human consumption and research. The fishing fleet is based at Woodley Marina, City Marina and, to a lesser extent, at King Salmon Marina in South Bay. In addition to the Humboldt Bay-based fleet, the bay provides a safe haven for the South Pacific-based tuna fleet when weather conditions force them to harbor. The tuna fleet generally likes to tie up at the City Marina.

Commercial fisheries activities in Humboldt Bay are diverse and have been documented recently in reports such as the *Comprehensive Business Plan for the Fisherman's Processing Facility* (SHN, March 2001) and the *Humboldt Bay Development Plan* (O'Connell, August, 1991). The SHN report cites the five top fish buyers as Pacific Choice; Eureka Fisheries; Carvalho Fisheries; Caito Fisheries; and Humboldt Seafood Unloaders. Pacific Choice is located on the Inner Reach of Humboldt Bay at the EDA funded fish plant. Eureka Fisheries sold its fish processing facility at Fields Landing in 2001 and now operates at the old ice plant at the foot of J Street. Caito Fisheries currently unloads product next to the Adorni Center, and Carvalho and Humboldt Seafood Unloaders use Dock B.

Although the Humboldt Bay fishery has declined in recent years, the industry remains an important part of Eureka's economy. Diversification efforts have succeeded in bringing people and other businesses closer to the water, but they have contributed to a sense among the commercial fishery that it is subject to displacement. The City has been actively pursuing a common fishery marketing and support center to be built at the foot of C Street, west of the recently completed boardwalk. This center will provide a dedicated locale for many fishery activities and it has the potential to provide a tourist attraction along the waterfront. Approximately two-thirds of the financing has been obtained and project permitting is underway. The City expects the project to be completed within the next two years.

The foot of C Street is currently zoned by the City as for waterfront commercial uses. This zoning designation is appropriate for the fisheries center but does not ensure against encroachment by other permitted uses such as restaurants and water-oriented retail. The current zoning is a concern to fishermen as they have seen tourist-oriented activities force out commercial activities on other waterfronts. This study's findings are that completion of the fisheries center should be a high priority of the City and other supporting agencies, and that serous consideration be given to zoning that will protect fishery activities against further encroachment.

# 5.2 Aquaculture

The U.S. Department of Commerce defines *aquaculture* as the "propagation and rearing of aquatic organisms in controlled or selected aquatic environments for any commercial, recreational, or public purpose." In California, aquaculture goes back to the 1850s with the development of an oyster transplant seed industry. Humboldt Bay provides an excellent environment for shellfish aquaculture because of its good water quality and healthy estuarine environment.

Aquaculture has received considerable recognition in the U.S. over the past 20 years as a viable and important element in the nation's agricultural production. On the federal level, both the U.S. Departments of Agriculture and Commerce are key players in promoting finfish and shellfish markets. In 1998, the Department of Commerce stated its policy goal of increasing the value of domestic aquaculture production from \$900 million to \$5 billion by 2025 to offset the \$6 billion deficit in seafood trade. A complementary goal of increasing jobs from 180,000 to 600,000 is part of the policy.

Humboldt Bay's aquaculture industry consists of shellfish farming of primarily oysters and clams. Both seed and adult oysters are produced. Various methods for shellfish farming are used and summarized below.

• Rack and Bag – Using steel racks placed into the sand or mud bottom, plastic mesh bags filled with small oysters are laid across the tops of the racks where they are surrounded with water when the tide comes in. By elevating the bags of oysters off of the bottom, the oysters are able to feed better and grow faster; the bags also protect the young oysters from predators such as crabs, birds or starfish.

- Flupsey Flupseys provide an upwelling system for a controlled flow of nutrients and water over nursery shellfish. They are generally rectangular in shape, with a porous mesh system that holds the seed or nursery stock. Flupseys are compatible with dock infrastructure; good locations include inboard side of existing piers where they are somewhat protected yet can still take advantage of the estuarine environment.
- Longlines Another suspension method is where adult oyster shells with baby oysters set on them, are then inserted into the strands of a rope. The shells are spaced out every foot or two along a 300- to 600-foot rope, and that rope is then stretched along the ground in the intertidal region at low tide, and the rope is then supported about a foot above the ground with pegs.

Sites in Arcata Bay were designated Conditionally Approved Shellfish Culture areas by state and Federal agencies after considerable investment in water quality improvements, including \$30 million for Eureka sewage plant improvements. The California Department of Fish & Game, Humboldt Bay Harbor District and many other agencies are involved including in permitting aquaculture activities in Humboldt Bay.

Active aquaculture companies in Humboldt Bay and their general areas of operation are summarized below.

- Arcata Bay (conditional use area) Coast Seafoods, North Bay Shellfish, Emerald Coast Seafoods, Aqua Rodeo Farms, Humboldt Bay Oyster.
- Mad River Slough North Bay Shellfish (wet storage on rafts; product sold locally).
- Humboldt Bay Oyster Co. Oyster seed grow out on seven rafts; rack and bag operation.
- Other areas Kuiper Mariculture, Coast Seafoods.

The aquaculture industry in Humboldt Bay is an independent, thriving business community. Its current needs include continued water quality improvement, rapid transport access to markets (throughout the U.S., North America, and Europe) and a dedicated work area for independent shellfish farmers. Such a work area would include a waterfront building with dock access to water; covered areas for harvesting and packaging; tanks for larval settings; and storage for gear and supplies. A 3-4,000 square foot building on a two-acre parcel would be adequate to serve existing independent shellfish farmers with some room for moderate growth.

The Food and Drug Administration, in addition to its program to minimize disease in aquaculture farming, is moving forward on requirements to harvest shellfish and other aquaculture species in a covered area to avoid contamination from birds and other environmental elements. Humboldt Bay shellfish farmers need recognition from their community that their industry is important, and continued consideration of their requirements as other Bay planning efforts move forward.

In terms of potential future activity, there have been several investigations and considerable discussion regarding a maritime aquaculture research and industrial park in Humboldt Bay. This concept expands on the work area concept described above by adding research facilities, educational programs, fisheries/aquaculture support services, public information, independent work areas and other services to industry participants. A frequently-cited model for this type of facility is the Keahole Point Facility on Kona, Hawaii. The facility is sponsored by the Natural Energy Laboratory of Hawaii Authority (NELHA), a state agency that operates the ocean science and technology park in Kailua-Kona. The facility was mandated by the state's support of a research facility for ocean thermal energy conversion (OTEC). The 322-acre site is next to the Kona International Airport and adjacent to one of the steepest bathymetric offshore slopes in the Hawaiian Islands. The infrastructure supports various aquatic commercial and research activities, and includes access roads, potable water, electric power, ocean water, intake and distribution pipes, pumping stations, disposal systems and a return ocean water system. Aquaculture-oriented commercial tenants include producers of abalone, hirame, clams, oysters, seahorses, lobsters and many other marine-related products. Coast Seafoods has a plant at Keahole Point.

Identified funds available for aquaculture investment are from the Department of Commerce's Fisheries Finance Program and the Agriculture Department's Urban Redevelopment grant program. The Fisheries Finance Program's requirements, which provide low interest loans for independent aquaculture farmers, is currently being reviewed by the Department to ascertain whether the program can be applied to municipalities and other multi-objective organizations.

# 5.3 Marine Labs & Science Centers

With increased environmental awareness and declining fish stocks, interest in marine science and related lab facilities in the U.S. has steadily grown over the past few decades. The industry structure encompasses university labs, National Marine Fisheries (NMFS) labs, and other Federal and state agency labs. Some NMFS facilities are stand-alone facilities while others co-locate at university lab sites. Likewise, other Federal and state agency lab facilities.

There are now 28 university marine science labs in the Western U.S., including 14 in California and two in Oregon. In addition to the Telonicher Marine Laboratory, at HSU, the university marine science facilities most proximate to Humboldt are:

- Hopkins Marine Station, Stanford University (Monterey Bay)
- Moss Landing Marine Lab, California State University (Monterey Bay)
- Romberg Tiburon Center for Environmental Studies, San Francisco State University (San Francisco Bay)
- Bodega Marine Laboratory, University of California at Davis (Bodega Bay)
- Oregon Institute of Marine Biology, University of Oregon (Coos Bay)
- Hatfield Marine Science Center, Oregon State University (Yaquina Bay/Newport)
In addition, the Monterey Bay Aquarium Research Institute operates a research facility in Monterey, and the NMFS Southwest Fisheries Science Center, the research arm of NMFS Southwest Region, operates four stand-alone labs in California and Hawaii, including facilities in Santa Cruz and Pacific Grove (Monterey).

The Hatfield Marine Science Center in Newport, OR provides an excellent example of how a port authority has played a key role in the development of marine science facilities and how a university facility can attract additional agency laboratory operations to form a marine science cluster. The Newport science center was originally established by Oregon State University (OSU) with the cooperation of local, state and Federal agencies. It is located on a 50-acre site in Yaquina Bay owned by the Port of Newport along with the Oregon Coast Aquarium.

The Port of Newport furnished the property through a 99-year lease, and the Federal Economic Development Administration granted money for construction. The main building of the Center, a ship support service building, and a dock for oceanographic research vessels were completed in 1965. Additional construction provided modern teaching laboratories and research facilities and on-site housing. The Newport Aquaculture Laboratory and the Research Support Facility were built by the NMFS in 1979 and 1981. In 1990, the Environmental Protection Agency (EPA)completed a new laboratory. At the same time, Federal funds were used to build a research library, which is operated by OSU. The Oregon Department of Fish and Wildlife Regional Marine office is also located on the campus. The United States Department of Fisheries and Wildlife completed an office and laboratory building for its Coastal Refuge Program in 1995.

The Humboldt State University Telonicher Marine Laboratory occupies a 16,200 square foot building overlooking the Pacific Ocean near Trinidad Bay, north of Humboldt Bay. The laboratory has a circulating seawater system, lecture rooms, and labs for biological oceanography, chemical oceanography, geological oceanography, marine biological sciences, mariculture and fisheries instruction and student research. Trinidad and Humboldt Bay, the Pacific Ocean, and several local lagoons provide rocky and sandy inter-tidal and sub-tidal habitats for study.

The HSU lab houses the *Coral Sea*, its 90-foot marine research vessel at Woodley Island in Humboldt Bay. The ship is an outdoor classroom for HSU students and is also available to other researchers who have ocean-going projects requiring a vessel with the capabilities of the *Coral Sea*. Deployed in 1998, the vessel is well equipped, and very conducive to research. Passenger capacity is 25 scientists plus 5 crewmembers. The vessel has sleeping quarters with 12 bunks and a galley.

Interviews with the Telonicher Marine Laboratory at Humboldt State University indicate an interest in consolidating its existing operations and long-term expansion that could be consistent with new facilities on Humboldt Bay.

# 5.4 Public Aquarium

There are a total of nine significant public aquarium facilities on the West Coast, as shown below:

- Birch Aquarium at Scripps (La Jolla)
- Cabrillo Marine Aquarium (San Pedro)
- Aquarium of the Pacific (Long Beach)
- Monterey Bay Aquarium (Monterey)
- Aquarium of the Bay (San Francisco)
- Steinhart Aquarium (San Francisco)
- Oregon Coast Aquarium (Newport)
- Point Defiance Zoo & Aquarium (Tacoma)
- The Seattle Aquarium (Seattle)

Most aquarium facilities are located in metropolitan areas where the local market and tourist traffic can provide high visitor volumes. Three are also associated with significant marine research facilities to create a tourist/marine science cluster; these are the Scripps, Monterey and Newport facilities. The closest facilities to Humboldt are in San Francisco and Newport, Oregon.

As a potential model for Humboldt, the Oregon Coast Aquarium stands out because it is located in a non-metropolitan market and it was developed with the assistance of the local port authority as part of a diversification strategy. In the early 1980s, Newport's economy took a dramatic downturn when both the timber and commercial fishing industries declined. It was clear then that the community needed a broader economic base to insulate it from single-industry economic cycles. A blue-ribbon panel of community leaders from the public and private sectors convened to brainstorm ways to diversify the economy in the Yaquina Bay area. The group was intent on encouraging growth that would allow the community to retain its unique qualities: accessibility to its marine and coastal resources; appeal to a broad range of national and international visitors; and a commitment to quality attractions that would benefit the citizens of Newport as well as the 6 million tourists that visit the Oregon Coast each year. A first-class aquarium and interpretive center was determined to be an excellent fit.

The Oregon Coast Aquarium's founders included representatives of Newport's commercial, municipal, financial and private sectors. In order to ensure the success of such an ambitious project as a state-wide feature, the aquarium's board of directors was expanded to comprise not only a core of Newport community leaders, but also leaders known in the public and private sectors throughout Oregon.

The Oregon Coast Aquarium became incorporated as a (501)(c)(3) not-for-profit educational organization in 1984. Approximately \$300-\$400,000 was raised locally for a master plan and feasibility study, which then enabled the aquarium to begin broader based corporate fund raising in 1987. Over \$11.5 million was raised from a broad partnership of public and private agencies, Oregon-based corporations, foundations and individuals. An additional \$14 million was financed through tax-free bond anticipation notes issued by the state treasurer and the Oregon Health, Housing, Educational, Cultural Facilities Authority, and underwritten by the United States National Bank of Oregon. Total investment in the facility now stands at approximately \$45 million.

The Port of Newport has been involved in the development of the aquarium from the beginning, providing the land for the facility through a 99-year lease. Located on a 50-acre site including the adjacent Marine Science Center, the Port collects \$1 per year as rent for the life of the lease. Interviews with the Port indicate that the land lease discount over the entire lease term may not have been necessary and that a shorter discount period might have provided sufficient stimulus to ensure success while eventually achieving market lease rates for the Port.

Lincoln County, where Newport is located has a population of only 44,000 residents, one-third the size of Humboldt County. The market for the Newport aquarium is almost entirely U.S. 101 seasonal tourist traffic. According to its director, 80% of the aquarium's visitors are drive-by tourists on U.S. 101 as opposed to visitors from Portland or other cities within a day-trip driving distance. The facility was initially designed for 400,000 visitors per year. Visitor volumes have ranged from 500,000 in its first year, to 1 million when 'Keiko' the whale was housed there, to 500,000 per year currently. Most visit between Memorial Day and Labor Day. The aquarium's target visitor volume is 650,000.

Based on Humboldt's population, U.S. 101 visitor volumes, the synergy of the HSU marine science center and the Newport example, it appears that a public aquarium in Humboldt Bay could be feasible. A key issue may be whether the Pacific Coast market between San Francisco and Portland would be over-saturated with two public aquarium facilities.

# 5.5 Marinas, Boating & Yachting

There are four active marinas in the Humboldt Bay study area. They are summarized below:

- Woodley Island Marina Owned and operated by the Port of Humboldt Bay. Woodley Island was designed for the commercial fishing fleet and generally has about a 60%-40% mix of commercial to recreational vessels. There are 237 berths ranging in size from 30' to 70'. At the west end of the marina there is a dock approximately 200' long for larger vessels. The marina has full utilities, water, power (20-50 amps), bilge pump-out, fire protection and 24-hour security.
- Eureka Small Craft Harbor Owned and operated by the City of Eureka. The City Marina is located on 1<sup>st</sup> Street, at the northeastern foot end of the Wharfinger Building.
- Johnny's Marina & RV Park Privately owned and operated, located in King Salmon. Johnny's provides two docks for the mooring of approximately 50 recreational vessels primarily during the summer. The marina has a fuel dock and used to have a launching ramp until State Fish and Game installed a launch facility at Fields Landing that is free to the public.

• EZ Landing Mobile Home Park and Marina – Privately owned and operated

Use of marina space in Humboldt Bay is seasonal. Woodley Island Marina reported an approximate annual occupancy rate of 80%. During the summer months, when the commercial fishery is open and vessels are out, recreational vessels fill the slips. During the winter, when the crabbing season is open, the marina can be full. Recreational marinas in King Salmon are occupied during the summer months but most owners take their boats out during the winter.

The Bay draws boaters primarily from Southern California to Alaska. It is a frequent stop for those making the San Francisco-Alaska trip.

Usage, expansion potential and other needs were investigated. The addition of the City Marina appears to have helped provide adequate capacity for transient commercial vessels. Although occupancy varies, it appears to be seasonally synchronized so that additional capacity is not anticipated to be required in the near or medium term.

# 5.6 Cruise Ships & Tour Boats

Humboldt Bay is an infrequent stop for cruise ships and has an active harbor tour company that operates during the summer months. In the mid-1990s, there were five cruise ship calls to Humboldt. Three of these vessels moored at the LP Redwood Dock and two at the Eureka Forest Products/Sierra Pacific dock.

Humboldt Bay Harbor Cruise traditionally moors its tour vessel at the foot of C Street and occasionally ties up at the City Marina or Adorni Center, depending on the occasion and market. The diverse and healthy ecological community of the Bay is a special attraction for waterfront tours.

Eureka is disadvantaged for cruise stops by U.S. law that prohibits foreign-flag vessels from calling consecutively at U.S. ports. The Passenger Services Act of 1878 allows only U.S.-flagged vessels to make such calls. This means that vessels repositioning to southern cruise routes from Alaska must stop at a Canadian port before entering the U.S., and then make only one call at a West Coast port. Competition among U.S. West Coast ports for these repositioning cruise ship calls is significant.

In spite of the Passenger Services Act and competition, the City of Eureka announced two cruise ship vessel calls planned for Eureka in 2003. One will be by Hapag-Lloyd's *Europa* in May and the other by the new *ResidenSea* in August.

Cruise ships and harbor tour vessels are best served by berthing space with staging areas for passenger loading, security, bus access and other support services. Passengers may disembark for local tours and sightseeing. Attractions in the Humboldt Bay area include the Founder's Grove Redwood Forest, the Morris Graves Art Museum, and Victorian homes. A three- to four-hour excursion allows passengers to get a feel for the area and rejoin the ship and its amenities in a timely manner.

While at dock, the vessel requires electricity, water and perhaps bunkering or other services. In turn, the provider is entitled to dockage for the use of its facilities. This charge may be waived as part of marketing efforts to obtain vessel calls but should not be disregarded over the long term.

There are a few existing sites in Humboldt Bay that can accommodate cruise ship moorage. They include the Schneider Dock, Sierra Pacific and possibly the Redwood Dock (although current conditions may not be conducive). This study's findings demonstrate that cruise facilities located within walking distance of some community attractions or downtown activities are popular with passengers.

Although cruise ship calls to Humboldt Bay are infrequent, they add a vitality and additional interest to the region's 'amenity package.' A designated moorage area, within walking distance of downtown and with staging space for security and landside transportation, should be part of the Humboldt Bay's long-term strategy. In addition, community leaders may want to be supportive of attempts to reform the 124-year old legislation that restricts cruise stops at Humboldt Bay currently.

# 5.7 Boat Building & Vessel Repair

There are limited vessel repair facilities in Humboldt Bay. South Bay Marine used to repair vessels at the Field's Landing site, but they have gone out of business. The Port has a 150-ton travel-lift that is available for public use at Woodley Marina and a marine-ways is available on Samoa Peninsula for small vessel repair. Although Humboldt Bay is a marine-oriented community, there does not appear to be enough demand or interest for vessel repair to substantiate significant investment to expand existing capabilities. The local market could not support such a facility alone and would have to rely on capturing repair work from outside the region. Generally, commercial vessel owners prefer to perform maintenance repairs at their homeport. In addition, established Crescent City facilities provide a 288-ton synchro-lift and a trained labor force for repair and maintenance of vessels under 100 ft.

Historically, Humboldt Bay has had miscellaneous boat-building activities, generally for recreational markets. The market for such boats is currently weak due to the recession. However, the yacht-building industry has weathered the recession successfully, even expanding its capacity to make larger and more luxurious yachts. Two significant factors have contributed to this expansion:

- Creation of U.S. wealth coupled with easing of luxury taxes
- Conversion of underutilized commercial vessel yards to production of luxury yachts

Although the creation of wealth has slowed in the past two years, it has not slowed enough to keep owners from investing in new or upgraded yachts. In general these expenditures are viewed as stable investments. These trends helped lead to Port Angeles, WA's success in attracting a new yacht builder in 2002. The Fields Landing site provides good infrastructure for yacht building or repair. The yacht building and retrofit market should be monitored and contacts established with company representatives so that Humboldt Bay is well positioned for a new or relocating boat builder.

# 5.8 Vessel Homeporting

Opportunities were explored for the 'homeporting' of federal vessels and marine contractors' vessels, especially those supporting the federal dredging program on the West Coast. These activities did not indicate significant marketing potential for further exploration, but are summarized here.

The U.S. Maritime Administration (MarAD), under the Department of Transportation, manages the National Defense Reserve Fleet (NDRF). Established by Section 11 of the Merchant Ship Sales Act of 1946, it serves as a reserve, which could be activated to meet shipping requirements during national emergencies. At its peak, 2, 277 ships were laid up at 12 sites throughout the United States. Currently, NDRF vessels are maintained at the James River,VA, Beaumont, TX, and Suisun Bay, CA, fleet sites, and at designated outport berths. The NDRF consists of dry cargo vessels, tankers, military auxiliaries, and other ship types. Vessels are either owned by MarAD or held for other government agencies on a reimbursable basis.

Opportunities for Humboldt Bay would come under the outport program of the Reserve Fleet. The federal government advertises solicitations on an as-needed basis through the federal procurement system. Services required include adequate mooring, utilities, security, lighting and other 'hotel services' to support the vessel's liveaboards, which usually number nine or ten. Reimbursement to the supplier is on a per-diem basis and contracts are for five or ten years and contain options for extension. Current outported vessel locations on the West Coast include Alameda, Tacoma, and Bremerton.

Dredging contractors dredge California and Oregon coastal ports for the U.S. Army Corps of Engineers. These contracts are intermittent, and supplement port agency and private work that is generally located in large metropolitan ports such as Los Angeles/Long Beach and San Francisco Bay. The distance of Humboldt Bay from these larger projects results in larger mobilization contract costs that competitive bidding can support. Contractors try to have their equipment as near to ongoing or upcoming large projects as possible.

The Harbor District may wish to monitor opportunities at www.eps.gov, the federal government's procurement web site. These advertisements can be posted at any time depending on program requirements.

# 5.9 Naval Vessel Museum

The Historic Naval Ships Association lists 116 historic Naval vessels available for public viewing throughout the U.S. These include a wide variety of ships from aircraft carriers

to destroyers, cruisers, submarines, PT boats, utility vessels and yachts. Of the total, 15 are located on the West Coast, including six in the Bay Area:

- USS *Hornet*, Alameda
- SS Jeremiah O'Brien, San Francisco
- USS *Pampanito*, San Francisco
- USS *Potomac*, Oakland
- Lightship *Relief*, Oakland
- SS *Red Oak Victory*, Richmond

The main program for acquiring a historic Naval vessel as a waterfront tourist attraction is through the U.S. Naval Systems Command Ship Donation Program. The Ship Donation Program has been in existence since 1948 and the authority to donate ships is found in the Title 10 United States (U.S.C.) Section 7306. Currently, 46 ships donated through the program are on display in 21 states throughout the country. Four ships are located on the West Coast including the *Pampanito* in San Francisco; the *Hornet* in Alameda; the *Blueback* in Portland; and the *Turner Joy* in Bremerton. Eleven deep draft ships are currently available for donation, of which five have applications filed to acquire them.

The terms of the program include the following provisions:

- The donee must take possession of the vessel on an as-is and where-is basis
- The transfer of the vessel is at no cost the U.S. government
- The vessel must be on static, permanent display and only movable under tow
- The vessel must be maintained in a condition satisfactory to the Navy
- The donee must purchase insurance for the vessel
- The donee must negotiate a PCB compliance agreement with EPA
- The ship must be returned to the Navy, if requested, in time of national emergency

The Naval Systems Command advises that a successful application to receive a ship donation should include the following:

- Business and finance plan including confirmation the proposal is fully funded or has confirmed financing
- Secure towing plan
- Acceptable and approved display site and mooring plan
- Maintenance plan demonstrating a clear understanding of the requirements
- Curatorial or museum plan involving professional museum development
- Community support

The business/financing plan and the maintenance are critical areas to the success of an application because, according to the Ship Donation Program Office, it cost millions of dollars to convert these vessels into museums or memorials.

In the business plan, the applicant must submit detailed evidence of firm financing to offset all costs associated with the donation including; mooring, towing, environmental

surveys and clean-up, dredging, museum development, maintenance, refurbishment of the vessel, pier, insurance, legal services, etc. Firm financing is defined as available money to ensure the first five years of operation and future stability of the museum for long-term operation. The business/financial plan must include start-up costs (all costs incurred before opening) and support costs for the first five years of operation. The plan should also include a detailed marketing plan with visitor projections and demographic information to support the business and financial plan. In addition, the applicant should provide evidence that planning and resources are in place for disposition of the vessel in the event of bankruptcy or inability to properly maintain the vessel.

The applicant must also provide a detailed maintenance plan. Long-term, short-term, and daily maintenance items must be addressed. Among other areas, the plan should address drydocking and the qualifications of the proposed maintenance staff.

The annual operating budget for a Naval vessel display can vary widely depending on the ship, the display site and facilities, and the size of the market. On the high side, the battleship *New Jersey*, on display in that state, has an annual operating budget of \$5 million. On the low side, the 219-foot submarine *Blueback* (in fresh water) at Portland, OR has an annual operating and maintenance budget of about \$250,000, excluding depreciation of upfront costs. Based on these examples and interviews with the Ship Donation Program, an annual operating budget in the range of \$1 million might be expected.

An examination of the 46 existing ship donations indicates that all are in or near major metropolitan markets and/or Naval bases. With two exceptions, the ships are in markets with populations of 1 million or more people within a 50-mile radius. Most of these markets also have significant tourist traffic as well. The two smallest markets are Muskogee, OK with an area population of about 400,000 and Muskegon, MI with an area population of about 850,000. (The Muskogee example is an unusual case, because there is no port or waterway in the area and the vessel, a submarine, is on display on dry land at a war memorial park.) Most of the sites include attractive and people-friendly berthing facilities and many include shore side museums, memorials, gift shops and other features.

A Humboldt area resident has formed the Humboldt Bay Naval Sea/Air Museum, a nonprofit 501(c)(3) foundation, which is proposing the concept of a Naval museum vessel in Humboldt Bay. He has proposed acquiring the *Sterett*, currently stored in Benicia. The *Sterett* is a 547-foot Navy cruiser with a draft of 29 feet launched from the Puget Sound Shipyard in 1964. The ship saw service during the Vietnam War and was noted for picking up fleeing Vietnamese refugees at sea. A site at Fields Landing Terminal has been proposed, where passing U.S. 101 tourist traffic can be attracted. The Humboldt Bay Naval Sea/Air Museum estimates an operating and maintenance budget of \$900,000.

Based on the research of other sites, it would appear the keys to success of a Naval vessel museum in Humboldt would include acquiring a noteworthy vessel, if available, to create interest and locating it in a cluster with other waterfront tourist attractions. With a

population of about 250,000 in the four county area surrounding Humboldt, combined with U.S. 101 tourist traffic, Humboldt's market size may be a limiting factor.

# 6. Case Studies

The following section presents case studies of seven ports to identify how they have developed marketing strategies, the relative success of these programs, and the potential relevance of the these programs for Humboldt Bay. This section further illustrates the types of facilities that shippers want and how these facilities may compare with Humboldt Bay.

# 6.1 Port of Port Angeles, WA

The Port of Port Angeles is located at the northern end of the Olympic Peninsula in Washington State on the southern shore of the Strait of Juan de Fuca. Port Angeles is located in Clallam County, which has a population of 66,000. The city's harbor lies within Ediz Hook, a three-mile spit that offers shelter from Pacific Ocean swells. The port is strategically located near the major shipping trade routes to the ports of Seattle, Tacoma and Vancouver, B.C. Some marine activities located at Port Angeles due to its strategic location include:

- Home base to the Puget Sound Pilots. All vessels inbound to other Puget Sound locations must secure a pilot from the Port Angeles station.
- U.S. terminus for a privately-operated vehicle and passenger ferry service to Victoria, B.C.
- U.S. Coast Guard Station since 1862, with Air Station added in 1935, the first Air Station on the U.S. West Coast.

# Facilities

The Port of Port Angeles owns and operates two deep-water terminals (T-1 and T-3), which have mainly been used to ship forest products (primarily logs).

- Terminal 1 has been recently developed to accommodate vessels undergoing voyage repair.
- Terminal 3 is the primary a cargo loading terminal. Export logs and lumber are shipped to markets in Japan, Korea, and China. Ocean log barges are frequently loaded from Terminal 3 destined for markets in southern Washington, Oregon and California. A three-acre back-up marshaling area primarily used for log storage supports Terminal 3.

In addition there are four privately operated terminals as follows:

- ITT Rayonier Formally used for receipt and shipment of wood chips, chemicals and fuel oil, this site is currently idle and has an on going clean-up underway.
- Daishowa (America Co. Ltd.) Chip Dock Operations at this facility ceased in January 2002 and the Port is negotiating to purchase the site from Daishowa.
- Daishowa Log Dock Upland and dock owned by Port and formerly leased to Daishowa; Daishowa's operations ceased January, 2002

• Daishowa Mill Dock – This facility is an active pulp and paper operation.

The Port also owns and operates two marinas, a 450-slip Boat Haven in Port Angeles and a 300-slip marina on Sequim Bay. Other properties and operating responsibilities include airports at Port Angeles and Sekiu and two industrial parks. The North Airport Industrial Park was established in the late 1980s and provides 110 acres of improvements for light industrial use. The Southwest Airport Industrial Park has been reserved by the Port for future light and heavy industrial uses.

# **Transportation Infrastructure**

Port Angeles has naturally deep water. It is not served by a Federally authorized navigation channel although the outer 13,300 feet of Ediz Hook is reveted and maintained under Federal authorization. The revetment maintenance includes pockets of beach nourishment along the outside edge approximately every five years.

Highway routes serving Port Angeles include U.S. 101 and SR 104. Highway distances to major markets are:

- Seattle 80 miles
- Tacoma 110 miles
- Portland 235 miles

The closest railheads serving Port Angeles are at Seattle and Tacoma. There is no direct rail access to Port Angeles.

# **Cargo Activities**

Port Angeles has traditionally provided deep draft port facilities for the export of Olympic Peninsula forest products. Historic cargo volumes are illustrated in Figures 6-1 and 6-2.

Export of forest products peaked in 1986, when 2.7 million short tons of logs, lumber, chips, paper and related products were sent to foreign markets through Port Angeles' docks. By 2000, these same exports had dropped 92% to 217,000 short tons.

# Diversification

The Port has undertaken several diversification efforts in response to the downturn in its traditional cargo markets and the emergence of other opportunities. These efforts are summarized below.

*Vessel Building & Repair.* In the early 1990s the Port invested approximately \$1.6 million in a travel lift pier as part of its efforts to anchor Admiral Marine, a yacht building and repair company. The company located on Port property east of the marina, on part of the site used for staging at Terminals 1 and 3. Two years ago, Admiral Marine went out of business and Platypus Marine relocated from Port Townsend and Seattle to Port Angeles. Platypus specializes in restoration and repair of large yachts and employs about 65 people. Approximately 25% of its repair work is performed on vessels

permanently moored in the Puget Sound and Vancouver, B.C. area. The key to Platypus' decision to relocate to Port Angeles was the existing facility.



Figure 6-1 - Port of Port Angeles Cargo Trends (Short Tons)

Figure	6-2 -	Port	of Port	Angeles	Cargo	Trends	(Revenue	Units)
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	General Ca	General Cargo Logs, Lumber		Bull	k	Tota	al	Grand	
Year	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Total
1995	0	4,139	-	102,450	-	168,267	0	274,856	274,856
1996	0	2,706	15,544	107,425	-	277,893	15,544	388,024	403,568
1997	0	0	15,066	71,090	-	175,750	15,066	246,840	261,906
1998	0	84	5,799	34,811	-	200,424	5,799	235,319	241,118
1999	0	0	11,404	22,545	-	236,711	11,404	259,256	270,660
2000	0	0	10,308	10,439	-	190,659	10,308	201,098	211,406
2001	0	0	5,298	-	26,113	159,841	31,411	159,841	191,252

Source: BST Associates using data from Pacific Maritime Association

In 2002, Westport Shipyard announced plans to locate a new yacht manufacturing facility at Port Angeles. The facility is in addition to Westport's other Washington state facilities at Westport and Hoquiam. The new facility will specialize in luxury yachts 164 feet in length and will employ approximately 200 people at an average wage of \$40,000. It is located near Platypus Marine and will share the 330-ton heavy haul out travel lift installed previously by the Port. The key to Westport's decision to locate in Port Angeles was its accessible location to Westport's other Washington manufacturing facilities, the availability of labor, and the willingness of the local community college to add a curriculum program to help train the existing work force. The Port supports deep draft vessel repair at its Terminal 1 facilities. Cascade General operates a Voyage Repair Station at the terminal under an agreement that guarantees 60 days annually of dockage to the Port. The primary current market is tanker repair.

**Coastwise Shipment.** New log transport dynamics have emerged as a result of forest product resource depletion in the Pacific Northwest, and Port Angeles has capitalized on those opportunities. A challenge now is to match the size of the raw log to the size of the mill equipment. Terminal 3 is currently used for coastwise barge shipments of logs, generally inbound from Canada, and outbound to Puget Sound and coastal mills as far south as Coos Bay. The Port has is also monitoring the future solid waste disposal situation in Clallam County. There is widespread sentiment that a new landfill is not permittable, and that solid waste may need to be barged out of the area.

*Aquaculture Development.* Independent from Port activities, an aquaculture initiative began in Port Angeles almost twenty years ago. Washington is a leading aquaculture center, producing 80%-90% of U.S. West Coast sea-farmed products. The first Port Angeles facility was located near the tip of Ediz Spit, and is currently owned by Cypress Island Sea Farms, a Canadian-based company. Five million Atlantic salmon are produced annually at the facility.

There is an ongoing initiative to establish a new aquaculture facility at Port Angeles for the rearing of sable fish and possibly lingcod. Initially conceived as a scallop and mussel sea farm, the recent closure of trawling along the Continental Shelf has refocused the sponsor's target market on fish that more closely replicated the closed fishery. The facility is proposed for five acres of upland and about seven acres of water area between the mill and log docks. The project sponsor, Little Skookum Shellfish Growers, is seeking Federal funding through the U.S. Department of Agriculture rural development grant program.

**Construction.** The Port is currently negotiating with the Washington State Department of Transportation to provide a graving dock and construction staging area in support of two major upcoming State bridge replacement projects. The site is approximately 25 acres of upland adjacent the former Daishowa log dock. There is a considerable time lag between the construction of the two bridge projects, during which time the Port would use the graving dock and infrastructure to support other activities as the market allowed.

# 6.2 Port of Grays Harbor, WA

The Port of Grays Harbor represents a coastal forest products port that has been fairly successful in pursuing a niche cargo diversification strategy. The Port is centrally located on the Washington coast, 50 miles west of the I-5 corridor at Olympia.

# Facilities

The Port has a substantial array of publicly owned facilities, including:

- 36-foot channel depth
- Two hour sailing distance from the open ocean

- Four public marine terminal berths
- Two 50-ton Whirley cranes
- On-dock rail system
- Approximately 175 acres of open storage yards

More than 104,000 sq. ft. of on-dock covered storage Terminal 1 is a barge facility with berth depth of -30 feet MLLW and a 480-foot dock. Terminal 2 is a self-scouring deep water berth with water depth of -41 feet MLLW; a 600-foot dock; 35 acres of paved, secured cargo yard; and 30,000 square feet of warehouse space. Terminal 4 has two self-scouring deep-water berths; water depth of -41 feet MLLW; 1,400 feet of berth; 40 acres of paved, secured cargo yard; on-dock and near-dock rail; and warehousing. At Terminal 4, the port has developed an on-dock rail system with direct discharge options available, and 2,800 feet of track in four parallel spurs.

The Port also has approximately 600 acres of prime industrial property, with sites ranging from less than an acre to 150 acres with marine terminal access. These sites have relatively easy access to the Grays Harbor Airport at Bowerman Field and have been designated as a Foreign Trade Zone.

# Transportation

Four-lane highway access to/from Grays Harbor is provided over U.S. 12 and SR 80 to I-5, approximately one hour away. Distances to key markets are:

•	Seattle	110 miles
•	Tacoma	80 miles
•	Portland	140 miles

Grays Harbor rail service is provided by the Puget Sound & Pacific Railroad, which connects with both the BNSF and UP mainlines approximately 50 miles to the east in Centralia, WA, half way between Seattle and Portland.

# **Cargo Activities**

The Port has experience in handling diverse cargoes, including bulk, breakbulk, neo-bulk and general cargoes. However, as shown in Figure 6-3, cargo volumes in year 2000 were less than half of those experienced in 1995/1996. Most of this decline is attributed to a decline in log exports.

# Diversification

The Port has achieved some success in diversifying its cargo base to non-local container and general cargo products but extremely difficult cargo markets have negatively impacted general cargo (non-bulk) diversification efforts. The Port has recently agreed to a long-term contract with Ag Processors, Inc to handle approximately 2,000 to 3,000 rail carloads (approximately 2 to 3 million tons) of bulk animal feed from the Midwest to Asian consumers. The Port will spend approximately \$7.5 million on railroad improvements at the terminal with \$2.0 million coming from the Washington State Department of Transportation.

	Cont	ainer	General Cargo		Lumbe	r/Logs	То	tal	Grand
Year	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Total
1995	0	170	0	26,490	0	542,958	0	569,618	569,618
1996	0	0	0	72,727	1,968	555,611	1,968	628,338	630,306
1997	0	0	0	57,210	0	457,761	0	514,971	514,971
1998	6,086	0	35,481	24,871	0	267,115	41,567	291,986	333,553
1999	5,457	0	3,886	75,880	0	299,633	9,343	375,513	384,856
2000	5,338	0	2,171	29,693	37,150	231,158	44,659	260,851	305,510

Figure 6-3 – Port of Grays Harbor Cargo Trends (Revenue Units)

Source: BST Associates using data from Pacific Maritime Association

The Port of Grays Harbor's relative diversification success has been built by leveraging the local cargo base to attract non-local cargoes. The Port's strategy included developing needed rail and warehouse infrastructure with public monies and building a marketing initiative with direct support from shippers and carriers. This strategy should be considered at Humboldt Bay as well. However, it must also be kept in mind that Grays Harbor has much better access to I-5 than Humboldt Bay and accesses I-5 at a much more populous and industrialized location, giving it more ready access to a cargo base.

# 6.3 Port of Olympia, WA

The Port of Olympia is another traditional forest products port that has pursued a niche cargo diversification strategy.

# Facilities

Olympia's marine terminals are all located on a 60-acre site. The channel serving the Port is limited to 30-feet of water at MLLW. Facilities include three deepwater berths; 1,950 feet of berth space with 40-foot water depth; on-dock rail; a Customs bonded warehouse; and container yard. Equipment on site includes two container cranes, plus bulk and breakbulk yard handling such as top-picks, yard tractors, yard chassis, front-end bucket loaders, forklifts and log handlers.

In addition, the Port has a secured, full-service, USDA approved, U.S. Customs Bonded warehouse suitable for multi-modal operations. This facility is a 76,000 square foot building (24-foot high open beam construction) with eight truck doors with self-leveling ramps, six drive-in doors with spans up to 78 feet wide and rail siding for six cars. The terminal has on-dock rail service provided by UP and BNSF railroads.

# Transportation

The Port of Olympia is located directly on the I-5 corridor only 60 miles south of Seattle and 30 miles south of Tacoma, with direct mainline rail service by both BNSF and UP.

# **Cargo Activities**

As shown in Figure 6-4, the Port's cargo throughput has fluctuated significantly.

	Container		General	Cargo	Logs, Lu	ımber	Oth	ər	Tota	al	Grand
Year	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Total
1995	0	0	13,222	0	19,025	36,931	0	0	32,247	36,931	69,178
1996	0	0	0	0	150	67,175	0	0	150	67,175	67,325
1997	5,984	82,025	2,410	4,244	0	57,885	0	60	8,394	144,214	152,608
1998	17,918	72,641	2,764	2,881	0	26,454	0	0	20,682	101,976	122,658
1999	0	0	865	2,706	1,160	20,084	14,256	0	16,281	22,790	39,071
2000	221	0	274	0	0	25,533	13,770	0	14,265	25,533	39,798

Figure 6-4 – Port of Olympia Cargo Trends (Revenue Units)

Source: BST Associates using data from Pacific Maritime Association

In 1997 and 1998, the Port was served by Sunmar Lines, which provided coastal freighter service to Far East Russia. This service was attracted to Olympia from Seattle but only operated for two years prior to dissolution due to dismal economic conditions in Russia. This service accounted for virtually all of the container and general cargo throughput handled at the Port. Although several attempts have been made to develop other services and replace the loss of Sunmar, they have not been successful.

The mainstay of the Port continues to be log exports. Recently, the Port attracted Plum Creek Lumber from the Port of Tacoma, 30 miles away, after it was displaced by container terminal expansion. The Port has successfully developed some inbound bulk cargoes (cottonseed and like products) in recent years.

The difficulty that Olympia has had in developing its cargo base underscores the current tough economic conditions impacting Pacific Northwest ports. Olympia has a significant marketing effort to find small-volume niche cargoes that can be attracted from to its facilities. Since the demise of Sunmar, these efforts have been only minimally successful.

# 6.4 Port of Newport, OR

The Port of Newport is a coastal forest products port that over a period of many years has diversified into non-cargo activities including waterfront-related tourism and marine science. Incorporated in 1910 on Yaquina Bay, the Port of Newport's district covers 59 square miles, including the City of Newport. The Port's primary functions are offering shipping terminal facilities, commercial and sport boat moorages and support services. The U.S. Army Corps of Engineers' authorized navigation project at Yaquina Bay includes two high-tide, rubble mound jetties at the entrance, a 40-foot deep entrance channel and 32-foot deep inner channel.

# Facilities

The Port of Newport owns and operates a deep water terminal with a deep water berth length of 620 feet; a barge berth with approximately 265 feet of berth space and a concrete roll-on/roll-off (ro/ro) dock. In addition, there are approximately 10 acres of paved staging area, a container freight station, and storage; and industrial and commercial property.

Newport International Terminal consists of 17 acres of property with over 1,000 feet of waterfront. Facilities include a 620 foot shipping berth with a ro/ro concrete pad; 265 foot wooden barge berth; a 20,000 square foot storage/transit shed partially leased to Foulweather Trawl, a net manufacturer; a nine-acre leased log yard; a three-acre site leased to a fish meal plant; and the terminal operations building.

The Port's Bay Boulevard waterfront facilities include 350 feet of waterfront property; a 220 foot fixed service dock with four hoists; 200 feet of floating docks for dockside vessel repair; moorage for approximately 450 commercial fishing vessels; and operations, maintenance and administration buildings. Upland property includes about 2 acres dedicated to crab gear storage and another 3 acres slated for water-dependent/related development. Englund Marine Supply, a marine supply retail business, provides the impetus for further improvements planned at this site.

# Transportation

Highway access to/from Grays Harbor is provided over U.S. 20 to I-5, approximately 60 miles inland. Distances to key markets are:

•	Seattle	310 miles
•	Portland	130 miles

Portland 130 miles
Bay Area 640 miles

Rail service is not available at Newport.

#### **Cargo Activities**

The Port of Newport has primarily served the local cargo market area. As shown in Figure 6-5, the Port has exclusively handled logs/lumber since 1995. However, these volumes have decreased significantly as a result of industry conditions. The Port has attempted to diversify but its distance from non-local shippers, coupled with limited inland transportation, have retarded these efforts.

-	=	-		-		
	Lumbe	r/Logs	То	tal	Grand	
Year	Discharge	Load	Discharge	Load	Total	
1995	0	7,411	0	7,411	7,411	
1996	0	10,889	0	10,889	10,889	
1997	0	5,503	0	5,503	5,503	
1998	4,866	0	4,866	0	4,866	
1999	6,791	1,882	6,791	1,882	8,673	
2000	2,890	0	2,890	0	2,890	
2001	0	0	0	0	0	
2002*	1,360	0	1,360	0	1,360	

Figure 6-5 – Newport Cargo Trends (Revenue Units)

\*Thru September.

Source: BST Associates using data from Pacific Maritime Association

# Diversification

The Port's stated goals emphasize the non-cargo diversification, while providing adequate facilities for local cargo needs:

*"Fully develop the commercial fishing potential of the Yaquina Bay region. Develop the ocean terminal facilities adequately to fully exploit location* 

advantages in the transit of forest products.

Fully develop the tourism and recreation potential of the Yaquina Bay region."

Diversification activities include a major investment in marine science, tourism and commercial leasing activities

- In South Beach, the Port's holdings include 50 acres leased to the OSU Hatfield Marine Science Center and the Oregon Coast Aquarium.
- The Hatfield Marine Science Center was established by OSU with the cooperation of local, state and Federal agencies. The Port of Newport furnished property and the Federal Economic Development Administration granted money for construction. The main building of the center, a ship support service building, and a dock for oceanographic research vessels were completed in 1965. The complex now also accommodates modern teaching laboratories and research facilities; a research library; on-site housing; NMFS's aquaculture laboratory and the research facility; an EPA research laboratory; Oregon Department of Fish and Wildlife regional marine office; and U.S. Fish and Wildlife laboratory.
- The public aquarium was developed after the science center with local Newport area sponsorship, and now hosts approximately 500,000 visitors per year.
- Adjacent to these properties is the proposed business and technology center, a cooperative planning effort between the Port of Newport, City of Newport and Greater Newport Chamber of Commerce to develop a private industry based business, technology, and research park.
- This park, to be sited on a 5.28-acre parcel owned by the Port, is looked at as an incubator facility that would provide a location for start-up businesses, particularly those that may emerge as a result of research conducted at the marine science center.
- Facilities at the 55-acre Port of Newport Marina & RV Park include 600 moorage slips, a four-lane launch ramp, over 100 full hook-up RV spaces, and a public fishing pier. Marina leases include a micro-brewery/brew pub housed in a 24,000 square foot building, a full-service fuel dock, marine supply store and charterer.
- Also in the marina is the *Newport Belle*, a sternwheeler, built especially as a bed and breakfast.

# 6.5 Port of Umpqua (Reedsport), OR

Reedsport, OR, part of the Port of Umpqua, is a coastal community that recently successfully recruited a substantial marine-dependent industry despite its relatively

remote location and limited transportation access. It is located 140 miles north of the Oregon-California border in Douglas County, with a population of 100,000.

Reedsport is on the lower Umpqua River, 11 miles inland from the Pacific Ocean entrance. There is a Federally authorized shallow draft navigation channel between miles 11 and 12 of the Umpqua River. The entrance channel is authorized to -26 feet and the inside channel to -22 feet; the channels are actually maintained to approximately -16 feet.

# Facilities

Umpqua port facilities include 650 feet of wharf frontage at Gardiner, OR on the Umpqua River's north shore, approximate mile 9.5 and an oil unloading facility owned by International Paper Co. for exclusive use by tanker barges. The Port of Umpqua owns one wharf with 456 feet of water frontage (of which 228 feet is usable for vessels) and another with about 75 feet of water frontage, which has not been used generally for commercial shipping.

# Transportation

Reedsport is served by U.S. 101 and SR 38. SR 38 connects to I-5 60 miles to the east. Highway distances to key markets are:

•	Seattle	380 miles
•	Portland	205 miles
•	Bay Area	555 miles

In addition, Reedsport is served by the Central Oregon & Pacific Railroad (CORP), which provides 12-hour rail service to Eugene, OR where it connects with the UP mainline only. The CORP line was previously owned by Southern Pacific, which in turn was acquired by UP, and the terms of UP's sale of the line preclude access to the BNSF.

# **Cargo Activities**

Many southern Oregon coastal communities have been hit hard by the closure of forest product industries. In 1998, Willamette Industries closed its log purchase yard on Bolon Island in Reedsport. In 1999, International Paper (IP) closed its linerboard mill in Gardiner, on the north shore of the Umpqua River across from Reedsport. Seventy-four salaried and 221 hourly positions were lost with the IP closure. It became apparent to Douglas County that efforts to replace diminishing manufacturing jobs would require the ownership and control of an industrial land base. In March 2000, the County purchased the 156-acre Bolon Island from Willamette Industries. The County paid \$850,000 for the property, which is served by the navigation channel and has rail and highway access.

# Diversification

Unrelated to the County's efforts, American Bridge Company was seeking a site for its West Coast headquarters and production facility. American Bridge is a Fortune 500 company that has been in business over 100 years. After its founding by J.P. Morgan in 1900, it became a subsidiary of U.S. Steel Corporation. American Bridge projects include bridges of all types, complex buildings structural steel erection for large or long span buildings and marine facilities. The San Francisco Bay Bridge and Verrazano Narrows Bridge in New York were constructed by American.

American Bridge was looking for a site with ocean access, rail and highway service, and a good quality of life for engineers. After an initial visit to The Dalles, OR by American Bridge executives, the Oregon Economic Development Department contacted Reedsport-Gardiner representatives about American Bridge's West Coast site search. The end result was that in February 2002 American Bridge announced it would build a 60,000-square-foot fabrication plant and 10,000-square-foot office complex on a 35 acres Bolon Island site purchased from Douglas County. Oregon's Economic and Community Development Department dedicated \$250,000 from its Strategic Reserve Fund for dock modifications on the property to accommodate barge traffic. The company expects to employ 120 people locally and add \$5 million annually to the local economy.

# 6.6 Port of Richmond, CA

The Port of Richmond is located in the North Bay area of San Francisco Bay. It handles high volume of petroleum and products through private liquid bulk terminals plus a variety of general cargoes.

# Facilities

The Port of Richmond, California has four marine terminals, including:

- Terminal 2, which is under long-term lease to California Oils Corporation Terminal Two for shipment and receipt of vegetable oils.
- Terminal 3 is leased to Stevedoring Services of America (SSA) for shipment and receipt of breakbulk and containerized cargoes and project cargo.
- Terminal 4 is currently vacant. This facility has deteriorating infrastructure and poor secondary access. Its future use will be impacted by land use decisions related to the closure of Point Molate Naval Fuel Station, which is located between the terminal and access out of the Port.
- The largest terminal (Point Potrero or Shipyard 3) is underutilized. Marine companies actively use piers 1 and 2. Terminals 5-7, which have good access but deteriorating infrastructure, are primarily engaged in short term uses. Large sections of this terminal are vacant or underutilized. The future use of Terminals 6-7 hinges on developing a co-location plan with the Rosie the Riveter WWII Home Front National Park.

# Transportation

Direct interstate highway access is available on I-80 and I-580 and direct mainline rail access is provided by both the UP and BNSF.

# **Cargo Activities**

As shown in Figure 6-6, Richmond lost auto and container business that was handled at the Port during the mid-1990s. The container business moved to San Francisco and the

auto business disappeared from Northern California. In addition, there have been declining volumes of general cargo and logs/lumber.

	Container		General	Cargo	Logs, Lu	ımber	Auto	)S	Tota	al	Grand
Year	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Total
1995	15,164	66,740	127,936	23,551	9,126	94	641,880	-	794,106	90,385	884,491
1996	24,361	67,881	183,701	9,221	2,288	73	184,544	-	394,894	77,175	472,069
1997	61,387	58,701	230,823	1,080	868	116	-	-	293,078	59,897	352,975
1998	4,437	340	256,159	704	1,130	-	-	-	261,726	1,044	262,770
1999	2,380	102	284,280	1,342	2,140	-	-	-	288,800	1,444	290,244
2000	-	-	303,734	-	2,679	-	-	-	306,413	-	306,413
2001	119	-	185,753	-	981	51	_	-	186,853	51	186,904
2002*	1,258	-	36,949	-	1,076	-	-	-	39,283	-	39,283

Figure 6-6 – Port of Richmond Cargo Trends (Revenue Units)

\*Thru September.

Source: BST Associates using data from Pacific Maritime Association

There appear to be good opportunities for Richmond to expand in the breakbulk trade. There is demand for an additional 8 acres of breakbulk terminal space if the cargoes handled at the Burma Road Terminal in the Port of Oakland can be attracted to Richmond.

There are also good opportunities to retain liquid bulk trade at Terminal 2 by continuing traffic through California Oils, whose lease runs through 2016. However, the demand for liquid bulks at Terminal 4 is considered low due to inadequate access and infrastructure. This terminal will likely be removed from port priority use in the Bay Conservation and Development Commission's (BCDC's) Seaport Plan.

Dry bulks represent an opportunity in the near term and possibly the long-term for local construction projects (especially aggregates, rock and like materials). The opportunity for other dry bulks is uncertain due to competition from other facilities in San Francisco Bay. Containers and autos (neobulk) are expected to have a low opportunity in the near term due to competition from other ports in San Francisco Bay (Oakland for containers and Benicia and San Francisco for autos). The opportunities for these cargoes in the long-term are uncertain. With respect to containers, Oakland can develop additional terminal space and Richmond lacks deeper water and has limited rail access compared with Oakland. With respect to autos, San Francisco Bay has experienced an overall decline in auto traffic. However, the growth that has occurred is in Benicia, which plans to capture the auto trade in San Francisco Bay.

# 6.7 Port Hueneme, CA

Port Hueneme is a model niche cargo port, handling a variety of cargoes including automobiles, fruit and a limited number of containers. It is located just 60 miles northwest of Los Angeles on U.S. 101 and the UP mainline, and serves the Southern California market and lower Central Valley, including its large agricultural and consumer population bases. The navigation channel serving Port Hueneme is 35 feet deep at MLLW.

# Facilities

The Port has two terminal areas. The South Terminal, which primarily serves the agricultural accounts, has one continuous 1,800-linear-foot dock providing three 600-foot berths, Berth Numbers 1, 2 and 3. Reefer Sheds 1A and 1B are operated by Cool Carriers USA, Inc. (1A has 70,735 square feet with 10 truck docks, 1B has 63,196 square feet with 14 truck docks). Reefer Shed 3, which is operated by Del Monte Fresh Produce NA, Inc. has 30,720 square feet of refrigerated space with 15 truck docks. The North Terminal has one continuous 1,450-linear-foot concrete piling wharf with two 700-foot deep-draft berths (35' MLLW), Berth Numbers 4 and 5, designed to accommodate RO/RO operations. These berths primarily support the auto terminal operations but Berth 5 can also serve heavy-lift operations.

The Port has been constrained in the past with a lack of open storage area. However, expansion is now planned in the area vacated by the Naval Civil Engineering Laboratory. The Port has completed planning and expects the site to be in operation by early 2002.

# Transportation

Highway access at Port Hueneme is provided by U.S. 101 and the interstate system. Distances to key markets are:

•	Bay Area	375 miles
•	Los Angeles	60 miles
•	San Diego	185 miles

Direct mainline rail service is available from UP. Direct BNSF rail access is not available.

# **Cargo Activity**

Port Hueneme cargo statistics are shown in Figure 6-7. The Port has developed a strategy to handle smaller accounts with a more personal and lower cost approach than its neighbors to the south. The Port focuses on the import and export of automobiles, heavy agricultural equipment and industrial vehicles, fresh fruit, fresh produce, forest products, and project cargo. The proximity of Port Hueneme to the agricultural base in Southern California and to the population base in the Los Angeles area contributes greatly to its success. To its credit, Port Hueneme has found a means to attract disaffected shippers that previously used the ports of Los Angeles and Long Beach. This opportunity is not available to Humboldt Bay.

	Contair	ner	General	Cargo	Auto	s	Other Car	goes	Tota	al	Grand
Year	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Discharge	Load	Total
1995	12,359	12,223	399,304	342,437	1,090,265	106,732	0	117	1,501,928	461,509	1,963,437
1996	3,060	6,885	456,914	240,669	1,018,953	72,063	0	64	1,478,927	319,681	1,798,608
1997	59,517	33,082	555,287	113,114	1,256,644	77,247	0	21	1,871,448	223,464	2,094,912
1998	77,316	43,520	549,909	145,751	1,570,518	51,790	38,940	13	2,236,683	241,074	2,477,757
1999	169,626	24,684	555,283	115,656	1,903,408	50,129	41,563	0	2,669,880	190,469	2,860,349
2000	175,134	56,797	543,212	129,549	2,389,412	61,184	65,895	10,432	3,173,653	257,962	3,431,615

Figure 6-7 – Port Hueneme Cargo Trends (Revenue Units)

Source: BST Associates using data from Pacific Maritime Association

With respect to agricultural products, the Port developed facilities for Del Monte Fresh Produce in 1978 and opened the Del Monte U. S. Western Distribution Center (i.e., a 40,000 sq. ft. on-dock refrigerated facility) in 1995. The Port of Hueneme Terminal and Multimodal Expansion Program completed in 1999, has enhanced the Port's ability to handle refrigerated containers and ro/ro cargoes due to development of a new railyard that will create a seamless flow of cargo in the terminal areas between ship, truck or rail.

The Port is a very active auto import and export port, serving manufacturers such as BMW, Jaguar, Land Rover, Mazda, Mitsubishi, Saab, Suzuki, and Daewoo to this customized ro/ro facility. Carriers serving the Port in the auto trade include NYK, K-Line, and Wallenius Wilhelmsen Lines ro/ro operations. Cargo volumes have increased markedly during the past six years.

# 6.8 Case Study Implications for Humboldt Bay

Several conclusions can be drawn from the case studies with significant implications for Humboldt Bay:

- Most coastal ports are suffering the same declines in forest products shipping and commercial fishing as Humboldt Bay.
- Some are seeking niche cargo strategies while others are pursuing broader based diversification strategies that consider non-cargo opportunities.
- Ports located closer to major metropolitan markets, such as Port Hueneme, Olympia and Grays Harbor are having more success with niche cargo strategies. However, with the exception of Port Hueneme, which is 60 miles from Los Angeles, these ports are struggling for success, particularly in the general cargo arena.
- Reedsport provides an excellent example of diversification with a marine-dependent industrial opportunity, despite relatively poor highway and rail connections.
- Port Angeles and Newport provide excellent examples of successful diversification into non-cargo activities including aquaculture, boat building, marine science, public aquariums and tourism.

# 7. Prioritization of Markets

The process used to prioritize markets for the Port of Humboldt Bay involves a traditional market segment analysis approach. The market segments discussed in Sections 4 and 5 were evaluated first in terms of their overall industry attractiveness and second in terms of Humboldt Bay's competitiveness. The two variables were then mapped against each other to form an attractiveness/competitiveness matrix. Those markets that were found to be most attractive, and for which Humboldt was found to be competitive, were assigned the highest priority; those least attractive and for which Humboldt is least competitive were assigned the lowest priority.

The evaluation criteria used in this analysis are the business factors shown in Figure 7-1 below.

Market Attractiveness Factors	Humboldt Bay Competitiveness Factors
Overall market size Market growth & stability Capital/infrastructure requirements Profitability Business operating risk Ease of entry Intensity of customer/supplier leverage Intensity of competition	Market share, reputation & image Proximity to the market or resource Navigation access & cost Rail access & cost Highway access & cost Site availability & readiness Facility & operating cost position Workforce availability & productivity Support services availability Business climate Livability

Figure 7-1 – Market Segment Evaluation and Prioritization Factors

It is important to emphasize that market attractiveness is evaluated from an overall industry perspective, not just Humboldt's perspective. The purpose of this is to determine how healthy a business it is to participate or invest in for any niche port—or to pursue for new entrants—as an indicator of its long-term sustainability and risk.

Furthermore, the attractiveness evaluation in this report is based on market and business factors only. If, based on these factors, a market is considered to be desirable, the Port of Humboldt Bay and its stakeholders can then judge whether it is desirable based on community and policy considerations such as job impact, environmental impact, community acceptance, channel utilization and strategic fit. The analysis is structured in this way because, if a market is not desirable on the basis of the business factors, it is not likely worth considering even if it has positive community and policy factors.

Finally, the relative importance of these factors will vary significantly from one market to another. For instance, customer leverage and intense competition are critically important factors that make some traditional cargo markets unattractive, but these factors may be unimportant for certain bulk cargo markets if a port is located close to the resource and few alternatives are available. Likewise, livability is of little or no importance in competing for most traditional cargoes, but it may be critically important in competing for a marine-dependent industry or tourism.

# 7.1 Marine Cargo Markets

# 7.1.1 Attractiveness & Competitiveness

Based on the market analysis in Section 4, the market attractiveness and Humboldt Bay's competitiveness in each marine cargo market segment is assessed below. For each market segment, the pivotal factors determining attractiveness and competitiveness are briefly discussed.

# **Dry Bulk Cargo**

Dry bulk cargoes can be a very attractive market in the case of commodity movements for which a port is well positioned. Bulk volumes tend to be high; capital investment requirements are usually low, with shippers often providing investment in the facilities; and contract terms tend to be longer (e.g., five years or more). For commodities where a port is well positioned, competition is less intense and customer leverage is lower, because they have fewer options. All of these conditions exist in the case of potential aggregate shipments. Humboldt Bay's competitiveness for nearby bulk cargoes like aggregates and rock is very strong based on its proximity to the market, and superior highway and rail access.

# Liquid Bulk Cargo

The attractiveness of liquid bulk cargoes is very similar to dry bulks. In the case of commodities for which a port is well positioned, the business can be very attractive in terms of capital requirements, contract terms, competition, and business risk. These conditions may exist in the case of the potential water project and California LNG opportunity. As discussed in Section 4.4.3, Humboldt's competitiveness for liquid bulk projects can be relatively high, based on land availability, proximity to the resource, and proximity to pipeline systems or right-of-way, in the case of LNG.

# **Marine-Dependent Industrial Projects**

Marine-dependent industrial projects are attractive for a variety of reasons. Marine cargo volumes are often very high; capital requirements are usually low, with the customer providing a major investment in plant and facilities; contract terms are usually very long because of the amortization period required on the customer's investment (e.g., 20 or more years); and once negotiated, the business is relatively immune to competition, customer leverage and business risk. The relatively low number of these opportunities over time, however, means that results may not be achievable for several years.

With or without rail service, Humboldt Bay will be more competitive for opportunities in which inland transportation factors are less critical than other locational attributes such as land availability, utilities, workforce availability, and livability. California's overall business climate—in terms of taxes, permitting requirements and energy costs—may be a hindrance when competing with locations in other states. With rail service, Humboldt Bay can be fairly competitive for projects requiring the availability of rail connections, albeit not superior rail service. Without rail service Humboldt will need to be highly selective in the opportunities it pursues, focusing only on those needing water, highway and perhaps pipeline access.

# **Breakbulk Cargo**

In general, breakbulk cargo is a very undesirable market segment because of the continuing and projected downward trend in market volumes, coupled with intense competition for fewer ship calls as the carriers load center their operations, and the high degree of leverage exercised by the carriers in selecting ports and negotiating rates. Most breakbulk terminals on the West Coast are struggling to maintain volume, and some have been closed or converted to other uses. The attractiveness of breakbulk cargo improves with the presence of a significant and stable local base cargo that is not easily susceptible to competition from other ports or from containerization. In Northern California and the Pacific Northwest, forest product imports are a more attractive market than forest product exports because of their positive growth trend as existing mills seek new sources of supply.

Humboldt Bay's competitiveness for northwestern California forest products is good based on its proximity to the market. Likewise, however, Humboldt's competitiveness for import steel, project cargoes and fruit is poor due to its lack of proximity to the markets and uncompetitive rail service.

# Automobiles

While the market is growing, several factors make automobiles a fairly unattractive business prospect for new entrants. There are relatively few potential customers involved; customers display a very low propensity for relocation; competition for relocating customers is very intense; the auto companies exercise a high degree of leverage in siting and pricing negotiations; and the business is based on fairly short-term contracts.

Despite the availability of large, low-cost sites, Humboldt Bay's competitiveness for autos is poor due to its lack of proximity to a large metropolitan market and its lack of competitive rail service (with or without rail service restored). These factors would lead to prohibitively high transportation costs for an automobile importer.

# Containers

While the overall container market is very large and growing, other factors make the container business unattractive for smaller ports and potential new entrants. Capital costs are very high; only short-term contracts (e.g., three years or less) are available to smaller ports; competition is intense for limited port calls; and steamship customers do not hesitate to exercise substantial leverage over ports and terminal operators in selecting ports and negotiating rates. Container handling as an adjunct to breakbulk carrier service, by contrast, is a relatively simpler and low-risk business. As discussed in Section 4.4.7, Humboldt Bay's competitiveness for container business is very poor, given its extremely small local market and lack of competitive rail service (with or without rail service restored).

Container feeder barge service is a more attractive segment in terms of potential capital requirements, competition and business risk, but the market for it is very limited in size and its growth and stability are uncertain. Competitively, Humboldt Bay would be in a stronger position for feeder service than for direct container vessel service, however,

truck carriers could be expected to offer significant rate and service competition, especially with the limited volume.

# **Coastal Barge Services**

The coastal barge services vary in their attractiveness. The forest products barge is a more attractive market, because virtually no capital investment is required, it has fairly high volume potential, and the fact that all of the key stakeholders will be committed to its success through contractual arrangements if it is launched. The rail-on-barge concept is a less attractive venture, because of the facility, capital investment and equipment commitments required, the complexity of the service and market logistics involved, and the fact that it would need to be a higher-risk common carrier service. Humboldt Bay should be competitive for the coastal forest products barge but less competitive for the rail-on-barge service compared with truck and Redding rail reload alternatives.

# 7.1.2 Marine Cargo Market Priorities

The attractiveness of and Humboldt Bay's competitiveness in each cargo market segment are mapped in Figure 7-2.

	Weak Competitive Position	Neutral Competitive Position	Favorable Competitive Position
Attractive Market Segment	Marine Industrial (w/o rail)	Marine Industrial (w/ rail) Liquid Bulks Coastal Lumber Barge (w/o rail)	Bulk Aggregates/Rock
Neutral Market Segment	Project Cargoes Coastal Lumber Barge (w/ rail) Rail-On-Barge (w/ rail) Automobiles	Import Forest Products Rail-On-Barge (w/o rail)	
Unattractive Market Segment	Containers Breakbulk Steel Fruit	Container Barge	Export Forest Products
	Highest Priority Priority		

#### Figure 7-2 – Marine Cargo Market Prioritization Map

# **Priorities With Rail Service Restored**

Selective/Potential Priority

Lowest Priority

Based on this analysis, bulk aggregate terminal handling, marine industrial projects, and liquid bulk projects should be given the highest priority, assuming rail service is restored. In addition, existing import and export forest product terminal handling activities should

continue to be supported and monitored for potential new opportunities. The pursuit of containers, automobiles, breakbulk steel, fruit, project cargoes, coastal forest products barging, rail-on-barge, and container barging should be given the lowest priority under these conditions.

# **Priorities With Current Rail Conditions**

Assuming rail service is not restored, priority should be put on bulk aggregate terminal handling, liquid bulk projects, and potential marine industrial projects that do not need rail service. Existing import and export forest product terminal handling activities should continue to be supported and monitored for potential new opportunities. The potential for a coastal forest products barge service or rail-on-barge service also warrant monitoring and further investigation. The pursuit of containers, automobiles, breakbulk steel, fruit, project cargoes, and container barging should be given the lowest priority.

# 7.2 Waterfront Commercial & Recreational Markets

Based on the market analysis in Section 5, the market attractiveness and Humboldt Bay's competitiveness in each waterfront commercial and recreational market segment is assessed below. For each market segment, the pivotal factors determining attractiveness and competitiveness are briefly discussed.

# 7.2.1 Attractiveness & Competitiveness

# **Commercial Fishing**

From a long-term business standpoint, commercial fishing and related support services do not appear to be an attractive market, due mainly to the negative trends in the resource and declining landings.

# Aquaculture

This as an attractive market, given its growth outlook, its relatively low investment requirements, and shellfish farming conditions in Humboldt Bay. Based on these growing conditions, Humboldt stands a good chance of being competitive in oyster and clam production, the only downside being transportation cost from of Humboldt to outside markets.

# Marine Labs & Science Centers

This is a very attractive market once established because of the additional research activities that can be attracted from state and Federal agencies, and its synergy with commercial fishing and aquaculture industries. Competition may be a significant factor, however, as science centers in other central West Coast locations may already be too well established to draw new research lab investment to Humboldt.

# **Public Aquarium**

Provided Humboldt's market size is sufficiently large, a public aquarium could be a very attractive waterfront business, particularly in conjunction with other tourist and educational facilities. Competition would come in the form of other attractions in the Northern California area for passing U.S. 101 tourists and potential saturation of the

aquarium market, given the presence of significant facilities within a day's drive north and south of Humboldt.

#### Marinas, Boating & Yachting

The addition of the City Marina appears to have helped provide adequate capacity for transient commercial vessels. Although occupancy varies, it appears to be seasonally synchronized so that additional capacity is not anticipated to be required in the near or medium term.

#### Cruise Ships & Tour Boats

Provided a suitable docking facility can be provided at low cost, cruise ship calls are an attractive market, particularly in conjunction with other tourist activities that can be accessed from the waterfront. The market is limited to repositioning Alaska cruise ships, however, and competition among other West Coast ports for these calls can be intense. Humboldt's relatively small size may be a disadvantage but its unique tourist surroundings (e.g., the redwoods) are an advantage.

#### **Boat Building & Vessel Repair**

Based on growth in the luxury yacht market and the experience of the Port of Port Angeles, the opportunity to attract a boat builder to Humboldt Bay appears to have merit. The market analysis was not conclusive on the feasibility of such an operation, but further study and investigation is warranted on the basis of Humboldt's water access, central location for delivery on the West Coast and livability.

#### **Vessel Homeporting**

While vessel homeporting is an attractive harbor activity, institutional and distance factors limit Humboldt's competitiveness for MarAD reserve fleet vessels and Corps of Engineer contracted dredges, respectively.

#### Naval Vessel Museum

Based on Humboldt's relatively small population size, a Naval vessel museum may prove to be marginally feasible and, hence, a relatively unattractive proposition. Competition will come in the form of other Northern California tourist attractions for local residents and U.S. 101 tourists, as opposed to other Naval museums. As with the public aquarium and repositioning cruise ships, however, the best opportunity will come from clustering Humboldt's waterfront tourist activities in a single location to add to Humboldt's total tourist destination value.

# 7.2.2 Waterfront Commercial/Recreational Market Priorities

The attractiveness of and Humboldt Bay's competitiveness in each market segment are mapped in Figure 7-3.

Based on the foregoing analysis, the highest priority is recommended for aquaculture development and a tourism/marine science cluster potentially encompassing research labs, a public aquarium, Naval vessel museum, and cruise ship dock for repositioning

vessels. In addition, boat building should be monitored and explored for further opportunities and the needs of commercial fishing should continue to be supported.

	Weak Competitive Position	Neutral Competitive Position	Favorable Competitive Position
Attractive Market Segment	Vessel Homeporting	Marine Lab/Science Center Repositioning Cruise Ships	Aquaculture
Neutral Market Segment		Public Aquarium Boat Building & Vessel Repair Naval Vessel Museum	Commercial Fishing Marina/Boating/Yachting
Unattractive Market Segment			
	Highest Priority		

Figure 7-3 – Waterfront Commercial & Recreational Market Prioritization Map



# 7.3 Core Advantages & Disadvantages

Based on all of the foregoing market analysis, the following core competitive advantages and disadvantages for the Port of Humboldt Bay were identified.

# 7.3.1 Core Advantages

Humboldt Bay's core competitive advantages include:

# Large Waterfront Industrial Sites

Humboldt Bay has at least three sites in excess of 200 acres each located on the 38-foot shipping channel. These include the publicly-owned City airport site, the privately-owned Simpson site and the Simpson-Samoa (Redwood Dock) site with mixed ownership, all located on the Samoa Peninsula. Most are former industrial sites, which should facilitate permitting and future development. Large waterfront industrial sites such as these are a rarity and, thus, a significant advantage for Humboldt.

# Natural Resources

Other than forest products, the Humboldt area possesses additional natural resources that are in demand and require waterborne transportation. In particular, bulk aggregates, rock

and surplus fresh water are abundant in Humboldt's immediate area and few alternatives are available to compete with waterborne transportation via Humboldt Bay.

#### Unique Tourism Surroundings & Attractive Downtown Waterfront Nucleus

Humboldt is fortunately situated amidst unique tourism features, both natural and historical. These include the redwood forests and Eureka's and Arcata's Victorian homes, both of which receive some measure of national recognition. Likewise, Eureka's Old Town district, waterfront boardwalk and other features create a potentially vibrant downtown waterfront environment. Taken together, these tourism and downtown waterfront features are a unique advantage that can be built upon to revitalize the harbor.

# Marine Science & Environmental Base

The presence of Humboldt State University, its marine science program, and the region's strong environmental ethic provide a potential base for new activity on the Humboldt waterfront that could complement the tourism advantages discussed previously. These features create a vibrancy in the Humboldt area that does not exist in most other coastal ports facing similar declines in traditional industries.

# Livability

Humboldt's natural surroundings, size and amenities offer a very livable environment for its residents. As urban areas in California and the Northwest continue to grow and become congested, Humboldt's livability should be attractive to employees, professionals and managers of new industry that could locate in the area.

# 7.3.2 Core Disadvantages

Humboldt Bay's core competitive limitations include:

# Local Market Size

The limited size of the population and economic base in Humboldt's natural hinterland area are a clear disadvantage in attracting traditional marine cargo business. As a first priority, ocean carriers, importers and exporters look for strong local markets as a basis for establishing waterborne trade and transportation operations. Humboldt's small local market limitation is exacerbated by the fact that the local area is primarily a producing region, generating very little inbound freight for consumption. The one-way nature of the Humboldt local market area diminishes the viability of waterborne, rail and truck transportation operations that could otherwise be feasible with a two-way move.

# **Inland Transportation Access**

As discussed in Section 4.4.1, Humboldt's limited inland rail and truck access is also a significant disadvantage. Truck access to I-5 can be enhanced with improvements to CA 299 at Buckhorn Pass, but highway access will still be less desirable via Humboldt than at competing ports located directly on the interstate system. Likewise rail access may be restored with the reactivation of the NCRA line, but the time-consuming and circuitous southbound routing—which must backtrack though other competing port areas—will remain a limitation on Humboldt Bay's competitiveness for most rail-oriented marine cargoes to/from points beyond the Bay Area.

# 7.4 Recommended Strategic Areas of Focus

The following strategic areas of focus are recommended based on the market analysis, competitive analysis and prioritization analysis conducted.

# **Marine-Dependent Industrial Projects**

A high priority is recommended on the pursuit of large-scale marine dependent industrial opportunities that could take advantage of the large Samoa Peninsula sites, the 38-foot channel and Humboldt's livability. Without rail service, Humboldt will need to be highly selective in the opportunities it pursues. The restoration of rail service will broaden the scope of potential prospects for Humboldt Bay.

# Niche Bulk Cargoes

Likewise a high priority should be given to niche bulk cargo opportunities such as LNG, aggregates/rock and water. These represent strong opportunities to attract new, high-volume activity to the harbor.

# **Coastal Feeder Market Access**

Despite the apparent infeasibility of coastal feeder barge services under current conditions, these opportunities should be monitored over time and, as warranted, given further study. Under the right circumstances, some combination of coastal lumber barging, rail-on-barge service and/or container barge feeder service could become feasible.

# Marine Science & Tourism

Humboldt's existing advantages in marine science and tourism should be explored further to identify ways they can be built upon to revitalize the waterfront. The market analysis was not conclusive on the feasibility of these activities, but the development of a marine science center, public aquarium, cruise ship berth, vessel museum and similar synergistic science/tourism activities in some combination appears to have significant potential.

# Aquaculture & Commercial Fishing

Both the aquaculture and the commercial fishing industries have facility needs to accommodate existing operations and, in the case of aquaculture, support potential growth. A common-use aquaculture base should receive high priority as a growth opportunity and completion of a commercial fisherman's work area should be pursued to support the needs of this traditional industry.

# **Boat Building & Vessel Repair**

The opportunity to attract a boat builder to Humboldt Bay should be explored further. The market analysis was not conclusive, but Humboldt's water access, central location for delivery on the West Coast and livability may be attractive to a relocating builder.

# **Forest Products Cargo Handling**

Despite downward trends in traditional forest products, this remains a significant activity in the local economy and in the harbor. Although the marine shipping needs of this sector are almost entirely met by private terminals, it should be monitored closely to identify any changing requirements where prudent public involvement can help maintain the cargo movement.

# 8. Revitalization Plan Alternatives

Section 7 identified the priority markets on which the Harbor Revitalization Plan should be focused. This section addresses alternatives for the key elements of the Harbor Revitalization Plan used to pursue those priority markets; that is, the alternative rail conditions, public terminal strategies, and site utilization options embodied in the plan.

# 8.1 Alternative Conditions

# 8.1.1 Rail Service Options

Two alternative rail scenarios are considered—with rail service restored, and with current rail conditions.

# With Rail Service Restored

This scenario assumes that rail service over the entire length of the NCRA rail line is restored. Based on the *Long Term Financial Feasibility of the Northwestern Pacific Railroad* prepared in parallel with this study, this would assume that Operating Scenario 2 was implemented, which would result in a combination of Class 1 and 2 rail trackage (10 and 25 MPH) between Samoa and Schellville. The resulting rail transit time would be approximately four days from Eureka to the UP interchange at Fairfield.

# With Current Rail Conditions

Current rail conditions would assume no rail service at all or, alternatively, service between Samoa and Scotia, just north of the Eel River Canyon, consistent with Operating Scenario 1 in the *Long Term Financial Feasibility of the Northwestern Pacific Railroad*.

# 8.1.2 Public Terminal Options

The alternatives also consider scenarios with and without public marine terminal investment. In addressing this issue, several types of public terminal investment need to be differentiated and considered, as discussed below.

# Public General Cargo Terminal Development

The most common type of public marine terminal is a public general cargo terminal used for handling breakbulk cargoes and possibly containers carried by steamship common carriers, and breakbulk, possibly bulk and other cargoes carried by charter vessels. In this scenario, the port authority typically develops and maintains the facilities, contracts out the operation to a private terminal operator/stevedore, and jointly markets the facilities with the operator. The port receives dockage and wharfage revenues for use of the facilities, often providing discounts on higher volumes and/or sharing revenue on higher volumes with the operator. The contract commitments by the terminal operator and customers are relatively short (1 to 3 years) resulting in fairly high business risk to the port.

Given the number of existing private terminals in Humboldt Bay, two alternatives are available for public/private partnership. Each depends on the willingness of the private operators to participate. First, the Harbor District could pursue the development of a new

terminal at a new site with the idea of consolidating existing private terminal volumes at a single location with improved economies of scale. Under this concept, the existing operators could potentially form a joint venture to operate the facility. Alternatively, if new general cargo requirements were to emerge requiring new terminal improvements, the Harbor District might be able to provide the investment capital in return for a revenue-sharing arrangement.

Typically, all operations at public general cargo terminals are under ILWU jurisdiction, as opposed to private terminals where ILWU jurisdiction may be on the vessel only, with non-union labor or other jurisdictions on the landside operation. This may be a significant competitive issue and a point of concern for the private operators under the public/private scenarios described above.

# Public Investment in Bulk Cargo Terminal Facilities

It is also possible for a port to participate in the development of a bulk cargo terminal. In this scenario, terminal development is deal-driven, with the port and a private party (the exporter, importer, carrier or terminal operator) jointly developing and maintaining the facilities. The port is typically responsible for preparation of the site and development/maintenance of the waterfront structures (docks or piers), while the operator often provides and maintains all of the bulk material handling facilities.

The length of contract depends on the underlying market demand for the commodity, the length of the sale agreement for the commodity and whether the seller or buyer of the commodity is a direct party to the terminal development or not. Depending on these factors short term (3- to 5-year) or long term (10- to 30-year) contractual commitments may result. If long-term underlying agreements are in place and the buyer/seller is directly involved and creditworthy, bulk terminal developments may be financeable using the port's tax-exempt revenue bonding authority.

Bulk terminals can be developed on an exclusive-use basis for a single shipper or as a multi-user facility for shippers of the same or compatible products. In the latter case, because of the lack of exclusivity for a single shipper, the port may need to assume more risk by assuming a greater portion of the facility cost or accepting a shorter contract term. The facility layout needs to accommodate multiple users and, typically, the first user (which helps launch the development) will require preferential rights to use the berth or other parts of the facility. Public investment in a bulk dock, particularly on a multi-user basis, may also affect labor jurisdiction on the dock.

# **Public Investment in Marine Industrial Waterfront Facilities**

A third scenario is public investment in the waterfront facilities serving a marinedependent industry. This is very similar to investment in a bulk cargo terminal as described above, assuming that the manufacturer/importer/exporter is involved on a longterm basis. In this case, the port (or other property owner if the land is not owned by the port) prepares the site, the port develops and maintains the waterfront structures, and the manufacturer develops and maintains the industrial facilities.
With Current Rail Conditions

Because of the long-term nature of the manufacturer's commitment, a long-term contract for use of the dock is often possible. Assuming the manufacturer is also creditworthy, the port authority's dock investment may be financeable using the port's tax-exempt revenue bonding authority. Ideally, the port is compensated in the form of dockage and wharfage revenues for all cargo passing over the dock, subject to a minimum annual guarantee.

As with the bulk terminal, the dock development can be done on an exclusive or multiuser basis under the right circumstances. On a multi-user basis, the port may need to take on more risk by assuming a greater portion of the facility cost or accepting a shorter contract term because of the lack of exclusivity for a single manufacturer. The first user may also require preferential use rights. Ideally, the site should accommodate more than one user on land and more than one ship berth so that additional manufacturers can be attracted. Having made the investment in the first dock, the port can then leverage its investment by attracting a second user and adding a second berth as needed.

Public investment in the marine-industrial dock, particularly on a multi-user basis, will likely impact labor jurisdiction on the dock, which may be a concern to the manufacturer, and therefore should be approached carefully.

With Public General Cargo Terminal	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public General Cargo Terminal	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public General Cargo Terminal Coastal Feeder Barge Development
With Public Investment In Bulk Or Marine Industrial Docks	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public Bulk/Marine Industrial Dock Investment	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Public Bulk/Marine Industrial Dock Investment Coastal Feeder Barge Development
With No Public Terminal Investment	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling <i>PLUS</i> Coastal Feeder Barge Development

With Rail Service Restored

#### 8.1.3 Alternative Revitalization Scenarios

Based on the alternative conditions addressed above, six scenarios for harbor revitalization are defined as shown in Figure 8-1. For the most part, the rail and public terminal conditions do not affect the revitalization scenarios. Certain core target markets are common to all scenarios including marine-dependent industrial projects; niche dry and liquid bulk cargoes; marine science and tourism; aquaculture and commercial fishing; ship building and vessel repair; and forest product cargo handling. Assuming current rail conditions continue, the focus on marine-dependent industries will need to be more selective and coastal barge feeder opportunities should continue to be monitored and developed, as feasible. Public terminal investment can be pursued at three alternative levels—with a public general cargo terminal, with public investment in bulk and/or marine industrial docks, or with no public terminal investment.

## 8.2 Potential Site Utilization

This section matches the priority market segments previously discussed with the key sites identified in Section 3.1 to frame the potential revitalization plan alternatives.

#### 8.2.1 Marine Cargo Site & Terminal Criteria

In matching up marine cargo uses with Humboldt Bay sites, a number of criteria were considered, including those below. Figure 8-2 addresses the detailed site and terminal criteria used, by cargo type.

- Design vessel size and requirements
- Channel depth and navigation access
- Waterfrontage and number of potential berths
- Dock characteristics
- Backland acreage and configuration
- Phasing and expansion flexibility
- Location relative to local cargo markets or sources
- Highway access needs and traffic impacts
- Potential rail access needs
- Adjacent land uses, conflicts and synergies
- Existing improvement reuse opportunities
- Ownership and control

#### 8.2.2 Waterfront Commercial/Recreational Site Criteria

The criteria listed below were considered in matching up waterfront commercial/ recreational uses with Humboldt Bay sites. Figure 8-3 addresses the detailed site criteria used, by market type.

- Vessel size and operational needs
- Channel depth and waterfront requirements
- Water quality (for aquaculture)
- Backland acreage and configuration
- Phasing and expansion flexibility
- Adjacent land uses, conflicts and synergies

··	Breakbulk Cargo	Dry & Liquid Bulk Cargo	Marine-Dependent Industrial Cargo
Design Vessel Navigation Access Dock	<ul> <li>Handymax</li> <li>Ro/Ro</li> <li>Ocean barge</li> <li>35-40 foot channel depth for Handymax</li> <li>Nearby turning basin</li> <li>1,000 foot waterfront/berth</li> <li>Single berth up to ~40% utilization</li> </ul>	<ul> <li>Panamax</li> <li>Handysize/Handymax</li> <li>Ocean barge</li> <li>Up to 45 foot channel depth for Panamax</li> <li>Nearby turning basin</li> <li>1,000 foot waterfront/berth</li> <li>Single berth up to ~40% utilization</li> </ul>	<ul> <li>Panamax</li> <li>Handysize/Handymax</li> <li>Ocean barge</li> <li>Up to 45 foot channel depth for Panamax</li> <li>Nearby turning basin</li> <li>1,000 foot waterfront/berth</li> <li>Single berth up to ~40% utilization</li> </ul>
	<ul> <li>Marginal wharf or offshore wharf with shore ramp(s)</li> <li>1,000 PSF dock live load</li> <li>Crane capable</li> <li>Mobile equipment capable</li> <li>Heavy mobile crane capable</li> </ul>	<ul> <li>Off-shore pier and dolphins or off shore wharf</li> <li>Maintenance equipment capable</li> </ul>	<ul> <li>Marginal wharf or offshore wharf with ramp(s)</li> <li>1,000 PSF dock live load</li> <li>Crane capable</li> </ul>
Backland	<ul> <li>20 to 50 acres located adjacent to the berth</li> <li>750-1,000' foot site depth</li> </ul>	<ul> <li>5 to 100 acres (depending on scope) located within conveying/piping distance of berth</li> <li>250-2,000' foot site depth</li> </ul>	<ul> <li>50 to 200 acres for the plant adjacent to the berth</li> <li>1,000-2,000' foot site depth</li> </ul>
Rail Access	<ul> <li>Rail loading/unloading spur in the backland yard area</li> <li>Rail spur to covered storage building loading dock</li> <li>Rail spur onto wharf for direct transfers</li> <li>Off site rail storage/support yard</li> </ul>	<ul> <li>Rail yard for receipt/delivery of 20+railcars located within conveying/piping distance of berth</li> <li>Rail spurs to railcar loading/ unloading system located within conveying/piping distance of berth</li> <li>Off site rail storage/support yard</li> </ul>	<ul> <li>Rail loading/unloading spur in the plant area</li> <li>Rail spur(s) to plant building loading dock(s)</li> <li>Off site rail storage/support yard</li> </ul>
Highway Access	<ul> <li>Unconstrained truck routes avoiding residential &amp; commercial areas</li> <li>On-site queuing and gate</li> </ul>	<ul> <li>Unconstrained truck routes avoiding residential &amp; commercial areas</li> <li>Truck load/unload system located within conveying/piping distance of berth</li> </ul>	Unconstrained truck routes avoiding residential & commercial areas
Buildings	<ul> <li>30,000+ sq. ft. covered storage building with office</li> <li>Equipment maintenance building (gearlocker)</li> <li>Dock office</li> </ul>	<ul> <li>Possible covered storage building or shed located within conveying distance of berth</li> <li>Tank farm located within piping distance of berth</li> </ul>	Plant buildings
Cranes	<ul><li>Ship's gear</li><li>Possible future multipurpose dock crane</li></ul>	Dry bulk ship loader, ship unloader provided as a part of the facility	<ul><li>Ship's gear</li><li>Possible multipurpose dock crane</li></ul>
Other	Industrial location away from residential & commercial activity	Industrial location away from residential & commercial activity	Industrial location away from residential & commercial activity

#### Figure 8-2 – Marine Cargo Site & Terminal Criteria

	Commercial Fishing Work Area	Aquaculture Work Area	Boat Building & Vessel Repair	Vessel Homeporting
Vessel & Navigation	<ul><li>Commercial fishing boats</li><li>Shallow draft</li></ul>	<ul> <li>Commercial fishing boats</li> <li>Work boats</li> <li>Shallow draft</li> </ul>	<ul> <li>Commercial fishing boats</li> <li>Work boats</li> <li>Yachts</li> <li>Shallow draft</li> </ul>	<ul> <li>Navy ships</li> <li>Coast Guard boats</li> <li>NOAA vessels</li> <li>Contract dredges</li> <li>Up to 35 foot channel &amp; berth depth</li> </ul>
Waterfront & Dock	<ul> <li>100-200 foot waterfront</li> <li>Marginal wharf</li> </ul>	<ul> <li>100-200 foot waterfront</li> <li>Boat dock</li> <li>Shallow water area protected by existing dock or pilings</li> <li>Good water quality w/ high salinity</li> </ul>	<ul> <li>100-200 foot waterfront</li> <li>Boat docks, haul-out &amp; launch</li> </ul>	<ul> <li>Marginal wharf, offshore wharf with shore ramp(s), pier/slip perpendicular to shore</li> </ul>
Backland	• >3 acres	<ul><li>&gt;3 acres (current needs)</li><li>Potentially larger long term</li></ul>		• >3 acres
Highway Access	Industrial/commercial access     to main highway	Industrial/commercial access     to main highway	Industrial/commercial access     to main highway	Industrial/commercial access     to main highway
Other		Water intake		Secure site

Figure 8-3 – Waterfron	t Commercial/Recreational	Site	Criteria
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	Marine Labs & Science Centers	Public Aquariums	Cruise Ships	Naval Vessel Museum
Vessel & Navigation	<ul><li>Research vessel(s)</li><li>Small work boats</li><li>Shallow draft</li></ul>	• N/A	<ul> <li>Large cruise ships w/ 22-30 foot draft</li> <li>Up to 35 foot channel &amp; berth depth</li> </ul>	<ul> <li>Large Navy vessel w/ up to 31 foot draft</li> <li>Up to 35 foot channel &amp; berth depth</li> </ul>
Waterfront & Dock	Research vessel boat dock	Waterfront access for underwater displays	<ul> <li>100-800 foot waterfront</li> <li>Marginal wharf, offshore wharf with shore ramp(s), or pier/slip perpendicular to shore</li> </ul>	<ul> <li>Up to 750 foot waterfront</li> <li>Marginal wharf or offshore wharf with shore ramp(s)</li> </ul>
Backland	5-20 acres, depending on scope	5-20 acres, depending on scope	<ul> <li>&gt;3 acres</li> </ul>	• >3 acres
Highway Access	Industrial/commercial access     to main highway	<ul> <li>Good access to main highway &amp; off-street parking for tourist traffic</li> </ul>	<ul> <li>Good access to main highway &amp; off-street parking for tourist traffic</li> </ul>	Good access to main highway & off-street parking for tourist traffic
Other	Water intake	Locate in cluster with other tourist activities	Locate in cluster with other tourist activities	Locate in cluster with other tourist activities

- Highway access needs and traffic impacts
- Existing improvement reuse opportunities
- Ownership and control

#### 8.2.3 Potential Market & Site Match-Ups

Figure 8-4 identifies the Humboldt Bay sites potentially suitable for the priority marine cargo and waterfront commercial/recreational markets.

Figure 8-4 – Summary of Suitable Sites for the Priority Market
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Marine Use	Potential Sites
Marine-Dependent Industrial	Eureka Airport Property Simpson-Samoa (Redwood Dock) Site Simpson Property
Bulk Aggregates/Rock	Fields Landing Terminal (southern origin) Samoa-Pacific Pulp Mill Dock (northern origin)
Liquid Bulks	Samoa-Pacific Pulp Mill Dock Simpson Property/Fairhaven Terminal Eureka Airport Property
Marine Science/Tourism	Dock B/Balloon Track Property Simpson-Samoa (Redwood Dock) Site Schneider Dock (cruise only)
Aquaculture Facility	Fields Landing Small-Parcel Site (current needs) Samoa Peninsula Small-Parcel Site (current needs) Parcel 4 (long term growth)
Boat Building & Vessel Repair	Fields Landing Terminal (public site) Schneider Property (private site)
Commercial Fishing Work Area	Commercial Street/C Street Dock
Coastal Lumber Barge Service	Eureka Forest Products/Sierra Pacific (open storage) Fairhaven Terminal (covered storage)
Rail-on-Barge Service	Fields Landing Terminal Humboldt Bay Forest Products Schneider Dock
Forest Products Cargo Handling	Eureka Forest/Sierra Pacific (chips, logs lumber) Fairhaven Terminal (pulp, plywood, veneer) Humboldt Bay Forest Products (logs, lumber) Samoa-Pacific Chip Export dock (chips) Simpson-Samoa (Redwood Dock) Site Schneider Dock
Public General Cargo Terminal	Harbor District-Owned Simpson-Samoa (Redwood Dock) Site <u>Public/Private Partnership</u> Eureka Forest Products/Preston Properties (chips, logs lumber) Fairhaven Terminal (pulp, plywood, veneer) Schneider Dock

#### **Marine-Dependent Industrial Sites**

The most suitable sites for marine-dependent industrial opportunities were found to be the Eureka Airport Property, the Simpson-Samoa (Redwood Dock) Site, and the Simpson Property, all on Samoa Peninsula. All are located on the 38-foot channel and all are 200 acres or more in size. The airport property has the advantage of public ownership, which minimizes holding costs and facilitates marketing, and has approximately 1,200 feet of waterfront, which is sufficient for one berth. The Simpson Property has the advantage of redevelopment of an existing industrial site and multiple berths, but it is privately owned and controlled.

The Simpson-Samoa site is the most complex, given the multiple ownerships involved as well as potential zoning and use conflicts with the Samoa township mixed-use development. The current ownership and zoning are illustrated in Figures 8-5 and 8-6, respectively. As can be seen, both the ownership and the coastal dependent zoning tend to run in narrow strips of land paralleling the 4,300-foot waterfront. The Harbor District's approximately 34-acre upland parcel averages only about 300 feet in site depth and the 148-acre coastal dependent zoning area averages only about 1,000 feet in depth from the waterfront. The Samoa township proposal would further narrow the coastal dependent industrial area by converting a portion of it to housing. Under current conditions, the site is poorly situated for large-scale marine-dependent industry, both because of its shallow site depth and because of the inherent conflict with housing.

The currently planned configuration (including the Samoa township development) could be adapted to small- and medium-scale marine-dependent industrial use along the water (e.g., up to about 50 acre site size) if housing is limited to the west side of the rail corridor. The planned industrial park development could help improve the readiness of the marine-dependent industrial site by extending utilities and other services to the area.

An alternate concept for the site is illustrated in Figure 8-7. A 100- to 150-acre marinedependent industrial site with approximately 2,000-foot depth and 2,000 to 3,000 feet of waterfront is shown at the southern end of the site, and uses other than marine-dependent industrial are shown to the north between the Samoa township and the waterfront. The marine industrial area under this concept has the advantage of large site size, good site depth, room for multiple berths, and at least partial public ownership. It would meet the marine-dependent industrial site criteria outlined in Figure 8-2 and facilitate the marineindustrial public investment strategy described in Section 8.1.2.

The northern portion of the site could include the continuation of Samoa Pacific's mixeduse development down to the waterfront, with business park development buffering between the two areas. The whole arrangement would require agreement and land swaps among the owners, as well as zoning changes.



Figure 8-5 – Simpson-Samoa (Redwood Dock) Site







Figure 8-7 – Simpson-Samoa (Redwood Dock) Site Alternate Configuration Concept

#### **Bulk Aggregate Sites**

Fields Landing Terminal is suitable for bulk aggregates and rock originating from the south where the majority of the resource is located, based on its shallower channel depth for ocean barging, existing dock and site size, and its southern location, which will avoid truck traffic in Eureka. Likewise, the Samoa-Pacific Pulp Mill Dock site is suitable for aggregates and rock to the extent they might originate from the north, because its location would avoid truck traffic in Eureka. The existing inactive offshore dock and undeveloped upland site would be suitable for bulk conveyor and loading operations.

#### Liquid Bulk Sites

Suitable sites for liquid bulks, depending on commodity-specific requirements, include the Samoa-Pacific Pulp Mill Dock and the Simpson Property/Fairhaven Terminal. For operations with smaller land requirements such as the water export opportunity, the Samoa-Pacific Pulp Mill Dock is appropriate because of its existing unused offshore pier, deep-water access and smaller upland area. For operations with larger land requirements, such as a potential LNG terminal, the Simpson Property is suitable given its large size, pre-existing industrial status, existing dock, and long waterfront area if a new dock is needed. The Eureka Airport Site could also be suitable for large-scale operations given its large size and access to the 38-foot channel.

#### Marine Science/Tourism Sites

Based its size, close proximity to downtown, Old Town and the boardwalk, and its 35foot channel depth, the Dock B/Balloon Track site is highly suitable for the development of marine science and tourist activities, including such uses as a public aquarium, cruise dock, or Naval vessel museum. Success in this market is dependent on clustering activities within walking distance of one another, which the Dock B/Balloon Track area allows. The nearby Schneider Dock could also potentially be incorporated into the site.

An alternative location for a marine science/tourism cluster could be the Simpson-Samoa (Redwood Dock) Site, which could offer some tourist ambiance because of the unique historic appeal of the Samoa township. Given the residential focus of the Samoa township, however, it does not offer the same opportunity to build upon Eureka's existing tourist attractions.

#### Aquaculture Facility

Based mainly on water quality/salinity issues in the harbor, public ownership and site size, three sites in the harbor were found to be suitable for the development of a common use aquaculture facility. These include Parcel 4; the Vita Sea Corp. parcel in the Fields Landing small parcel development area (between Humboldt Bay Forest Products and Fields Landing Terminal); and a small site in the Samoa Peninsula small parcel development area (immediately south of the Samoa Pacific Chip Export Facility). Parcel 4 has the potential advantage of larger size to accommodate growth as a common-user site over time, but it lacks existing upland infrastructure or in-water structures to harbor flupsey operations. The Fields Landing and Samoa sites, each of which is less than 2.5 acres, have the advantage of existing infrastructure and in-water structures and are large

enough for current needs. They may be undersized if long-term growth and development of the industry is occurs.

#### **Commercial Fishing Work Area**

Previous studies have identified the Commercial Street/C Street area for a new commercial fishermen's work area. The site is suitably located adjacent to similar operations near the downtown/Old Town area. To avoid future use conflicts with potential tourist activities, special zoning protection may be appropriate.

#### **Coastal Lumber Barge Service**

Because of its central location relative to the lumber shippers, the Eureka Forest Products/Sierra Pacific site is very suitable for handling coastal lumber barge service. The facilities at the site are already in use for similar operations, as well. If covered storage were required for weather-sensitive cargoes such as pulp, Fairhaven Terminal would be an appropriate location because of its extensive warehouse capacity.

#### **Rail-on Barge Service**

Suitable locations for a rail-on-barge service depend on rail access, a linear site configuration for rail operations and shallow water access for ocean barging. Fields Landing Terminal, Humboldt Bay Forest Products and Schneider Dock could all be suitable for this type of operation, should it become feasible.

#### **Boat Building & Vessel Repair**

Boat building will require a relatively small site and does not need deep draft access. The current boat yards are at Fields Landing Terminal and the Samoa Peninsula small-parcel area. In addition, the *Eureka Synchrolift*® *System Business Plan and Feasibility Study* evaluated the Schneider site and Dock B. Based on the criteria outlined, a number of sites could accommodate a boat building operation; and Fields Landing and Schneider appear most suitable, depending on whether a publicly-owned or privately-owned site is needed.

#### **Forest Products Cargo Handling**

Several existing sites are currently handling forest products and, based on their unique features and locations, remain suitable for this use. Eureka Forest Products/Sierra Pacific handles a variety of products requiring outside storage, including inbound logs, lumber and woodchips. Likewise Humboldt Bay Forest Products handles inbound logs and other outside storage products. Fairhaven Terminal, with its extensive dockside warehouse space, is the most suitable for weather-sensitive products requiring inside storage, such as pulp, paper, plywood, and particleboard. The Samoa-Pacific Chip Export Dock specializes in bulk woodchip handling. Finally, the Simpson-Samoa (Redwood Dock) Site could be appropriate for forest products handling, although facility improvements would be required and this use could conflict with planned residential development in the Samoa township.

#### Public General Cargo Terminal

If a public general cargo terminal were to be developed, the most suitable sites would be the Simpson-Samoa (Redwood Dock) for a Harbor District-owned facility, or a public/private partnership at the Eureka Forest Products/Preston Properties site, Fairhaven Terminal or Schneider Dock. Fields Landing Terminal and Humboldt Bay Forest Products would not be appropriate because of the shallower 26-foot depth of Fields Landing Channel.

Given the narrow site depth of the Harbor District's upland parcel at the Redwood Dock site, cooperation with the Samoa Pacific Group, owners of the adjacent parcel, would be needed to develop a suitably configured site. The current condition of the 84-year old Redwood Dock itself is not suitable for modern marine terminal operations, and major reconstruction or replacement would be required, particularly if the public terminal were to be suitable for serving cargoes not presently handled at the private docks. Simpson currently limits loading equipment on the dock to no more than a 15-ton mobile crane, which has only a 5,000 lb. lift at its maximum reach. No maintenance has been performed on the dock for at least five years.

The *Final Environmental Impact Report for Louisiana-Pacific Corporation Samoa Terminal Reconstruction* stated in 1994 that the dock's "advanced age has resulted in a state of structural uncertainty." The EIR further noted that on-going maintenance and repair "would further weaken the structure, limiting the efficiency and safety of the work environment and simply postponing the inevitable need for reconstruction." Complete demolition and construction of a new 800-foot bulkhead/fill marginal wharf structure and 600-foot pile supported pier extension was proposed at the time.

An alternative to a new public terminal could be the expansion of Eureka Forest Products, Fairhaven Terminal or Schneider Dock facilities through a public/private partnership if and when specific new cargoes are identified which require new facility features or additional capacity.

# 9. Recommended Revitalization Plan & Implementation Actions

In this section, the alternative revitalization scenarios from Section 8 and the alternative sites for the priority markets are evaluated and narrowed to a single recommended revitalization plan. Recommended implementation actions associated with the plan are also outlined.

## 9.1 Evaluation Criteria

Four broad criteria were used to evaluate the alternative revitalization scenarios and associated sites. These are:

- *Market Justification* Is the strategy scenario supported by the market analysis or does it contain key elements that are unsupported?
- *Risk and Reward* Does the strategy assume reasonable risks commensurate with the potential benefits that can be created?
- *Site Utilization* Does the plan assign the available sites in Humboldt Bay to their highest and best use, resulting in a reasonable supply of land for the various markets and considering potential environmental issues?
- *Synergy* Does the overall plan utilize the available sites in a balanced, coherent and synergistic way, or does it lead to inherent conflicts within the harbor?

## 9.2 Recommended Revitalization Strategy

Using the criteria developed above, the two scenarios involving public investment in bulk and marine-dependent industrial dock facilities are recommended (see Figure 9-1).

With Rail Service Restored	With Current Rail Conditions
Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling	Marine-Dependent Industrial Projects Niche Bulk Cargoes Marine Science & Tourism Aquaculture & Commercial Fishing Boat Building & Vessel Repair Forest Products Cargo Handling
PLUS Public Bulk/Marine Industrial Dock Investment	PLUS Public Bulk & Marine Industrial Dock Investment Coastal Feeder Barge Development

Figure 9-1 – Recommended Revitalization St	trategies
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These strategies target the harbor activities most justified by the market in terms of their overall attractiveness and the Port of Humboldt Bay's competitiveness. Furthermore, by pursuing public investment in bulk and marine-dependent industrial dock facilities, the Harbor District can play a vital role in attracting and securing new harbor opportunities with an appropriate level of risk. Because these types of facility developments tend to be deal driven and long-term in nature, direct participation in their development by the

Harbor District, City of Eureka or County of Humboldt, or the application of port-issued, tax-exempt industrial development bonds, could provide a valuable service while assuming a reasonable business risk.

The scenarios that include a public general cargo terminal are not recommended because they are not supported by the market analysis and they involve an unreasonably high level of risk. Almost all of the markets that would be involved in public general cargo terminal operations were identified as unattractive in the prioritization analysis, and Humboldt Bay was found to be uncompetitive in most of them as well. The 'build it and they will come' nature of public general cargo terminals, combined with the short contract terms common in the trade, high customer leverage, and intense port competition, would result in excess capacity and a level of risk that is not commensurate with the limited market opportunity available.

The scenarios that involve no public investment in marine facilities are also not recommended. Based on the potential bulk cargo and marine-dependent industrial opportunities that could be available, and their deal-driven nature, a 'no public investment' strategy is likely to be too passive and provide too little public stimulus to result in success.

As to the rail conditions, a strategy of supporting restoration of the NCRA rail line but preparing for the continuation of no rail service is recommended. The availability of rail service will no doubt enhance the marine-dependent development strategy and the two should be coupled when promoting the Port's needs with state and Federal agencies and representatives. However, there is no certainty that rail service will be funded and restored in the foreseeable future. Therefore, the Harbor District should continue to periodically explore the feasibility of coastal barge feeder services as an alternative to rail.

## 9.3 Recommended Site Utilization & Site Related Actions

Figure 9-2 summarizes the recommended priority sites for each market segment. These recommendations are discussed below, along with the site related action items recommended to prepare these sites for development.

Marine Use	Recommended Sites
Marine-Dependent Industrial Opportunities	Eureka Airport Property Simpson-Samoa (Redwood Dock) Site
Bulk Aggregates/Rock	Fields Landing Terminal (southern origin) Samoa-Pacific Pulp Mill Dock (northern origin)
Liquid Bulks	Samoa-Pacific Pulp Mill Dock Simpson Property/Fairhaven Terminal
Marine Science/Tourism	Dock B/Balloon Track Property
Aquaculture Facility	Fields Landing Small-Parcel Site (current needs) Parcel 4 (long term growth)
Boat Building & Vessel Repair	Fields Landing Terminal (public site) Schneider Property (private site)
Commercial Fishing Work Area	Commercial Street/C Street Dock
Coastal Lumber Barge Service	Eureka Forest Products/Sierra Pacific (open storage) Fairhaven Terminal (covered storage)
Rail-on-Barge Service	Fields Landing Terminal Humboldt Bay Forest Products Schneider Dock
Forest Products Cargo Handling	Eureka Forest/Sierra Pacific (chips, logs lumber) Fairhaven Terminal (pulp, plywood, veneer) Humboldt Bay Forest Products (logs, lumber) Samoa-Pacific Chip Export dock (chips)

Figure 9-2 – Summary of Recommended Sites for the Priority Markets

#### 9.3.1 Marine-Dependent Industrial Opportunities

#### **Recommended Sites**

The Simpson-Samoa (Redwood Dock) Site and Eureka Airport Site are recommended for marine-dependent industrial opportunities. The public ownership aspects of these areas would ensure that the Humboldt Bay community could market these sites for their intended use. The Simpson-Samoa (Redwood Dock) area, as discussed in Section 8.2.3, should be evaluated to ensure that near-term development plans will compliment the long-term utility of this area for marine-dependent industrial opportunities. With these two sites, Humboldt Bay would have sufficient property to accommodate two or three major marine industrial customers over the long term.

#### **Recommended Site Related Action Items**

The actions recommended below focus on steps that would help ensure that the sites are brought to the most ready condition possible in order to maximize their marketability when opportunities arise.

- Develop conceptual plans for configuration of the Eureka Airport Site, including rerouting of New Navy Base Road.
- Review Eureka Airport Property maintenance practices to ensure that no adverse development conditions arise (e.g., inadvertent wetland formation).
- Work with the Department of the Army and Congress to remove the airport use deed restriction on the Eureka Airport Site.
- Work with Simpson Timber and the Samoa Pacific Group to design ownership, zoning and land use configurations at the Simpson Samoa (Redwood Dock) Site to be conducive with long-term marine-dependent industrial development.
- Develop conceptual plans for configuration of the Simpson Samoa (Redwood Dock) Site to ensure the proposed Samoa Master Plan Industrial Park contributes to the readiness of adjacent marine-dependent industrial development.
- Evaluate utility requirements and capacities on Samoa Peninsula (e.g., wastewater processing) and develop upgrade plans as needed to ensure that sufficient service is available for marine-dependent industries.
- Revise the County of Humboldt Local Coastal Plans to accommodate proposed site development.

#### 9.3.2 Marine Science/Tourism Cluster

#### **Recommended Site**

The Dock B/Balloon Track site is recommended for consideration as a tourism/marine science cluster, possibly including a public aquarium, marine lab, cruise dock, Naval vessel museum and related activities. This location has the advantage of synergy with existing tourism features in Humboldt Bay, including the Old Town area and waterfront boardwalk, which are within walking distance. With proper land use protection, the fisherman's work area would also add maritime ambiance for tourists. Development of the Halvorsen/City site at the east end of this downtown waterfront strip could compliment the Dock B/Balloon track development, with the two acting as book ends or anchor tenants in a lively people-oriented waterfront district. The site could also be served by a rail trolley connecting the attractions in the district, a water taxi to Woodley Island and Samoa, tour boats, and the terminus of a short line excursion railroad as discussed in the *Long Term Financial Feasibility of the Northwestern Pacific Railroad*.

Until a more detailed feasibility study and master plan have been completed, it is not possible to determine whether the entire 54-acre area will be needed and how the space could be utilized. One advantage of the site's relatively large size is the potential to attract Federal and state agency labs to co-locate over time with the initial marine science facility development. For a tourism and public-access facility cluster of this nature, as much as 40% of the site could be needed for access, circulation and parking and another 25% could be needed for open space, landscaping and waterfront protection, leaving 35% or less for facilities. Currently, the street and rail corridor artificially bisect the site into a 15-acre waterfront parcel and 39-acre inland site; however, the optimum configuration may point to the need to reroute the street and rail through the site. For these reasons, the Dock B and Balloon Track parcels should continue to be considered as a single site until feasibility and master planning are completed.

#### **Recommended Site Related Action Items**

Because the feasibility of a marine science/tourism cluster has not been fully established, the site related action items recommended below focus on the organizational, economic feasibility and master planning steps needed to move the concept forward.

- Initiate discussions with Humboldt State University and the National Marine Fisheries Service Southwest Fisheries Science Center (headquartered in La Jolla) regarding future marine research facility requirements, expansion needs and Humboldt Bay's feasibility.
- Undertake a comprehensive market analysis, feasibility study, conceptual master plan and business plan regarding the development of the Dock B/Balloon Track site as a tourism/marine science cluster including such activities as a public aquarium, marine science lab, Naval vessel museum, and cruise ship dock.
- In the same or a separate planning effort, develop a comprehensive waterfront tourism development plan for the entire Eureka downtown waterfront area from Dock B to the Halvorsen site.

- Evaluate the benefits of forming a community development association/foundation to guide and fund initial feasibility and organizational efforts. Consider membership from the City of Eureka, Harbor District, prominent businesses, banks and Humboldt State University.
- If the development is found to be feasible, rezone the Dock B parcels as needed from coastal dependent industrial to other designations.
- Work with the Samoa Pacific Group developers to coordinate development concepts for the Dock B/Balloon Track Site and the Samoa township development to ensure that they complement one another and do not compete.

#### 9.3.3 Aquaculture Development

#### **Recommended Sites**

For aquaculture development, the Fields Landing Small Parcel Site (Vita Sea Corp.) was found to be most suitable for meeting current needs, based on its location, size and existing infrastructure. It also has the advantage over the Samoa Peninsula Small Parcel Site of being located away from potential deep draft vessel traffic. For long-term needs, if expansion and related aquaculture support and research facilities are pursued, Parcel 4 is recommended.

#### **Recommended Site Related Action Items**

To establish a common use aquaculture facility at one of the recommended locations, the following actions would be needed.

- Work with aquaculture industry representatives to identify, finalize and develop a suitable parcel for a common work area with waterfront access.
- Establish more detailed site and operating criteria and develop a conceptual site plan for the facility.

#### 9.3.4 Commercial Fishing Development

#### **Recommended Site**

For commercial fishing, continued construction of the commercial fisherman's work area at the Commercial-C Street site is recommended pursuant to the adopted City permit.

#### **Recommended Site Related Action Items**

A key action item relative to this development would address a potential zoning change for the site.

• Identify appropriate protective zoning for the Commercial Street-C Street area to ensure that other waterfront commercial zoned uses (e.g., restaurants) do not conflict in the future with the planned commercial fisherman's work area and other water-dependent activities.

#### 9.3.5 Dry Bulk Cargo

#### **Recommended Sites**

Fields Landing Terminal is recommended for the handling and shipping of dry bulk aggregates and rock originating from southern origins where the majority of the resource is located and, likewise, the Samoa-Pacific Pulp Mill Dock site should be considered for bulk aggregates/rock originating from northern origins.

#### **Recommended Site Related Action Items**

The recommended action items for bulk aggregate handling would focus on site planning at the Fields Landing Terminal.

• Develop a conceptual facility plan, cost estimates, business plan and pricing/leasing approach for a common-use and/or exclusive use Fields Landing bulk aggregate/rock terminal, as soon as shipper interest moves to the site selection stage.

#### 9.3.6 Liquid Bulk Cargo

#### **Recommended Sites**

The Samoa-Pacific Pulp Mill Dock and Simpson Property/Fairhaven Terminal are recommended for liquid bulk cargo handling.

#### **Recommended Site Related Action Items**

While the potential liquid bulk projects are most likely to be private projects on private sites, the following actions are recommended relative to public participation and the public interest.

- Evaluate the benefits and feasibility of the Harbor District undertaking the dredging, development and ownership of any new LNG dock that may be required in association with a new transfer terminal.
- Develop a set of principles, terms and conditions for waterbag loading operations to ensure that navigation access in the harbor is maintained.

#### 9.3.7 Forest Products Cargo Handling

#### **Recommended Sites**

For traditional forest products cargo handling, continued utilization of the existing private terminals is recommended, including Eureka Forest Products/Sierra Pacific (chips, logs lumber), Fairhaven Terminal (pulp, plywood, veneer), Humboldt Bay Forest Products (logs, lumber), and Samoa-Pacific Chip Export dock (chips).

#### **Recommended Site Related Action Items**

While no immediate site related actions were identified as being needed, the following is recommended:

• Monitor market requirements in the forest products industry to identify and new, changing or emerging facility needs and consider public participation in terminal modifications or expansions where appropriate.

#### 9.3.8 General Site Related Action Items

From an overall planning standpoint, three additional site related planning actions are recommended.

- Ensure that the land uses and other features of the Harbor Revitalization Plan are reflected in all appropriate comprehensive and general land use plans for Humboldt.
- Work with the City of Eureka, Humboldt County and the California Coastal Commission to establish and manage a piling removal mitigation bank that will enable future developers of in-water structures to benefit from the earlier removal of obsolete piling.
- Conduct programmatic (plan-level) CEQA reviews when each government incorporates the Revitalization Plan's conclusions and recommendations into action plans that establish commitments to carry out the Plan.

## 9.4 Additional Implementation Action Items

In addition to the recommended site related action items discussed in Section 9.3 above, the following actions are also recommended for the implementation of the Harbor Revitalization Plan. These items focus mostly on marketing and government relations.

#### Organizational

- Create a dedicated marketing function within the Harbor District and/or other local governments that will function as a focal point to proactively undertake all harbor development marketing activities, including:
  - Maintaining relationships with key local shippers, private terminal operators and stevedores, and with ocean carriers at the West Coast headquarter level;
  - Maintaining relationships with local and state economic development agencies;
  - o Maintaining relationships with industrial development real estate brokers;
  - Developing strategic relationships;
  - Developing and maintaining marketing communications materials;
  - Identifying opportunities, forging relationships with prospective customers and defining customer requirements;
  - Developing logistical, facility, business and pricing proposals;
  - o Managing feasibility studies, site studies and facility planning studies; and
  - Negotiating transactions.

#### Transportation

- Work with CalTrans, local government agencies, State representatives and Humboldt's congressional delegation to pursue funding of Buckhorn Pass and related improvements on CA 299 to achieve Federal STAA interstate trucking standards between Humboldt and I-5 at Redding.
- Fully support state and Federal funding for restoration of the NCRA rail line in association with the region's priority on marine-dependent industrial opportunities.

#### **Marine-Dependent Industrial**

- Collaborate with the City and County to develop a Port of Humboldt Bay marinedependent industrial marketing communications package emphasizing Humboldt Bay's site availability and advantages.
- Maintain a close working relationship with the State of California Technology, Trade and Commerce Agency, ensuring they are aware of Humboldt Bay's target markets and advantages, and encouraging referrals of bona fide marine-dependent industrial opportunities.
- Evaluate the potential for special marine-dependent industrial development incentives for Samoa Peninsula with the State of California, possibly linked to restoration of the NCRA rail line.

- Promote the need for marine-dependent industrial development incentives and NCRA rail line restoration with state legislators.
- Develop and maintain a working relationship with the Port of Oakland, ensuring they are aware of Humboldt's target markets and advantages, and encouraging referrals of bona fide marine-dependent industrial opportunities.
- Present Humboldt's marine-dependent industrial site opportunities to industrial real estate brokers in the Bay Area ensuring they are aware of Humboldt's target markets and advantages, and encouraging referrals of bona fide marine-dependent industrial opportunities.
- Evaluate the potential to retain an industrial real estate broker to help identify and market Humboldt to marine-dependent industrial prospects.
- Present Humboldt's marine-dependent industrial site opportunities to the municipal departments of investment banking firms—especially those specializing in ports such as Goldman Sachs, Paine Webber and Seattle Northwest Securities—to ensure they are aware of Humboldt's target markets and advantages, and encouraging referrals of bona fide marine-dependent industrial opportunities.
- Initiate and maintain contacts with energy companies regarding potential California and Alaska energy projects.

#### **Coastal Feeder Barge Service**

- Monitor shipper requirements and coastal barge feeder opportunities on a periodic (e.g., yearly) basis.
- As needed, reevaluate the feasibility of coastal lumber barge service, rail-on-barge service and container barge service.
- Monitor developments at the Port of Oakland regarding inland intermodal rail shuttle and barge feeder service.
- If needed, consider the formation and administration of a formal forest products shippers association that would enter into take-or-pay freight transportation contracts with members and contract barge carriers for service between Humboldt and Southern California.

#### Marine Science/Tourism

- Work with the Humboldt County Convention and Visitors Bureau and the City of Eureka to develop a marketing plan and response plan for cruise ship opportunities, defining roles and responsibilities among the parties.
- Encourage legislative representatives to support revision of the Passengers Services Act that restricts U.S. cruise vessel port calls.

#### Dry & Liquid Bulk Cargo

• Closely monitor (e.g., monthly) developments with all bona fide shipper opportunities to identify needs and requirements within the Harbor District's jurisdiction.

- Monitor and consider support for any FERC application that would be critical in permitting a proposed LNG terminal.
- Develop a public communications plan addressing the benefits and potential community concerns associated with liquid bulk projects.

#### **Boat Building & Vessel Repair**

• Establish contact with yacht and luxury boat builders, present Humboldt Bay site opportunities, and monitor company plans for facility requirements.

## 9.4 Humboldt Bay Vision

The recommended Harbor Revitalization Plan results in a vision for Humboldt Bay incorporating several interrelated elements:

- People-oriented activities to the north and industry to the south, on both the Eureka side of the harbor and the Samoa Peninsula side, with the Samoa township development.
- Large-parcel marine-dependent industrial development on Samoa Peninsula south of the Samoa township.
- Niche dry and liquid bulk cargoes on Samoa Peninsula and at Fields Landing Terminal.
- Potential public-private development of marine-dependent industrial and bulk docks.
- Long-term focus on downtown waterfront tourism and marine science with the Dock B/Balloon Track development
- Permanent homes for aquaculture and commercial fishing work areas.
- Active development of coastal barge feeders at private terminals as market conditions warrant.

## Appendices

## Appendix A – Inventory of Existing Port Properties

Map of Parcels near Humboldt Bay – Map 1 of 4

Map of Parcels near Humboldt Bay – Map 2 of 4
Map of Parcels near Humboldt Bay – Map 3 of 4

Map of Parcels near Humboldt Bay – Map 4 of 4

Humboldt Bay Harbor District Parcel Data Summary

Humboldt Bay Harbor Recreation and Conservation District Parcel Data Grouped into Key Marine Sites

## Appendix B – Zoning Definitions
# Appendix C – List of Interviews

## List of Interviews

#### **Marine Cargo Related**

Alaska Railroad American Hydroponic Brown Forman Bruce Whisnant (former SSA Senior Vice President) Brusco Tug & Barge Butte College Center for International Trade Development California Northern Railroad Cal-Pacific Carbon CalTrans Charles Ollivier **Chevron Products Company** City of Eureka Civil & Marine Slag Cement Co. **Columbia River Shippers Association** Confidential aggregate shipper Confidential LNG shipper Confidential water shipper County of Humboldt Fetzer Vinvards Fremont Forest Products Gearbulk **Goselin** Transportation Groskopf Warehouse Humboldt Bay Forest Products Humboldt Bay Municipal Water District Hunt & Beherens IMS Worldwide Jebsens International Korbel Champaign Cellars L&M Renner Inc. Lloyd Hecathorn LP Arcata Particleboard Plant Mendocino Forest Products New Zealand Lumber Shippers Limited Pacific Affiliates (Schneider Dock) Pacific Lumber Company Pacific Harbor Line Pacific Maritime PBConsult (advisors to Panama Canal Authority) Peter Friedman, Esq.

Port of Humboldt Bay Port of Oakland Samoa Pacific Cellulose Sause Bros. Ocean Towing Schmidbauer Lumber Sierra Pacific Industries Simpson Timber Sun Valley Bulb Farms Westfall Stevedoring Willowbrook Feeds

### **Railroad Freight Related\***

Agwood Mill & Lumber Arcata/Simpson Redwood Bar Ale Feeds **Bettendorf Trucking Blue Lake Forest Products** Britt Lumber California Department of Conservation Capital Lumber Dairyman's Milling Dairyman's Coop Feed & Supply **Diablo** Timber **Eel River Sawmills** Eureka Sand & Gravel Georgia Pacific (Ft. Bragg) Georgia Pacific (Windsor) Harwood Products Humboldt Bay Forest Products Humboldt Waste Management Authority Hunt & Behrens LP Arcata Particleboard Plant Masonite Corp. Mead Clark Lumber Mendocino County Solid Waste Mendocino Forest Products Pacific Lumber Company Piedmont Lumber Samoa Pacific Cellulose Schmidbauer Lumber Skip Gibbs Company Sierra Pacific Industries Standard Structures Syar Industries Waste Solutions Group Willowbrook Feeds

### Industrial, Commercial & Recreation Related

California Technology, Trade, and Commerce Agency, Office of Business Investment Christensen Yachts City of Eureka Cloudburst Fishing Co. **Coast Seafoods** County of Humboldt Douglas County, OR (Reedsport) Eureka Chamber of Commerce Fisheries Finance Program, NOAA **Glosten Associates** Goldman Sachs, Municipal Finance Department Humboldt Bay Naval Sea/Air Museum Humboldt County Convention and Visitors Bureau Humboldt State University, **Telonicher Marine Laboratory** Johnny's Marina Leo Fredrickson, sailboat builder Little Skookum Shellfish Growers Manson Construction Maritime Administration, Reserve Fleet Program Oregon Coast Aquarium Oregon Museum of Science and Industry Naval Museum Ship Project NAVSEA Ship Donation Program **Platypus Marine** Port Hueneme Port of Grays Harbor Port of Newport Port of Olympia Port of Port Angeles Port of Richmond Sea Grant Extension Program, Humboldt and Mendocino Counties Ted Kuiper and other independent Humboldt Bay shellfish farmers Umpqua Economic Development Partnership U.S. Army Corps of Engineers Western Fishboat Owners Association

#### Westport Shipyard Woodley Island Marina Woods Hole Oceanographic Institute

\*Interviews from the *Long Term Financial Feasibility of the Northwestern Pacific Railroad* applicable to the Harbor Revitalization Plan.

Note: In many cases, multiple interviews were conducted for a single organization.